
Traffic Impact and Access Study

TEC Project File No. T0852.04

Capital Commerce Center

McGovern Boulevard – Lancaster, Massachusetts

Prepared for: **Town of Lancaster, Massachusetts**
Prescott Building
701 Main Street
Lancaster, Massachusetts 01523



On Behalf of: **Capital Group Properties**
259 Turnpike Road, #100
Southborough, Massachusetts 01772



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.



Samuel W. Gregorio, PE, PTOE, RSP₁
Senior Design Engineer – Transportation Planning & ITS

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EXECUTIVE SUMMARY

TEC, Inc. (TEC) has been retained by Capital Group Properties (the “Applicant”) to prepare a Traffic Impact and Access Study (TIAS) for the proposed Capital Commerce Center (the “Project”) along McGovern Boulevard and Lunenburg Road (Route 70) in Lancaster, Massachusetts. The Applicant proposes to construct the Project as a dynamic mixed-use housing, industrial / commercial, and retail redevelopment, intended as a “*Live | Work | Play*” mix of uses to bolster the surrounding neighborhood while utilizing the site’s proximity to regional access points on both Route 2, Interstate 495 (I-495), and Interstate 190 (I-190).

The study was prepared in accordance with Massachusetts Department of Transportation’s (MassDOT) *Transportation Impact Assessment (TIA) Guidelines*¹ and was prepared in consultation with both the Town of Lancaster and the MassDOT District 3 Office. The Project is concurrently being reviewed by various state agencies; including MassDOT, as part of the Massachusetts Environmental Policy Act (MEPA) review process.

PROJECT DESCRIPTION

The site is currently occupied by multiple retail and industrial establishments. Along McGovern Boulevard, the existing site includes the FC Stars outdoor soccer complex comprised of three (3) soccer fields, a 11,800 square foot (SF) J.B. Hunt Transport Services facility, a 2,300 SF Dunkin Donuts, a 5,000 SF Mobil gas station with convenience market, and the soil / gravel yard for Central Mass Sand & Gravel.

The Project will retain the existing three (3) outdoor soccer fields, Dunkin Donuts, and Mobil Gas Station and raze both the existing J.B. Hunt Transport Services facility and the Central Mass Sand & Gravel site. The proposed mixed-use development program includes construction of a 2,484,400 square foot (SF) industrial park, 37,600 SF of professional office, 41,300 SF of additional retail space (48,600 SF total with existing Dunkin Donuts and Mobil), and 150 residential apartment units.

The Project proposes to retain the access/egress to the site via McGovern Boulevard and the minor retail driveways for the existing Mobil Gas Station and Dunkin Donuts along Lunenburg Road. The J.B. Hunt Transport Services facility is currently accessed via a separate full access/egress driveway along Lunenburg Road which will be closed. Individual minor driveways along Lunenburg Road will be constructed specifically for turning movements to/from on-site retail tenants along the site frontage similar to the existing Mobil Gas Station and Dunkin Donuts.

¹ *Transportation Impact Assessment (TIA) Guidelines*; Massachusetts Department of Transportation; March 13, 2014.

STUDY PARAMETERS

This following study is based on current traffic data collected at key study area intersections in December 2018 and August 2019, prior to the onset of the COVID-19 pandemic. These key locations include:

1. Main Street (Route 70/117) / Seven Bridge Road (Route 117) / Driveway
2. Main Street (Route 70/117) / Lunenburg Road (Route 70)
3. Lunenburg Road (Route 70) / McGovern Boulevard
4. Lunenburg Road (Route 70) / Old Union Turnpike
5. Lunenburg Road (Route 70) / Woods Lane / Fort Pond Road
6. Old Union Turnpike / Route 2 (Interchange 103) Eastbound Ramps
7. Fort Pond Road / Route 2 (Interchange 103) Westbound Ramps

The future planning horizon examines traffic operations under existing conditions (2019), as well as a 9-year planning horizon (2028) for traffic-volume projections, which includes an evaluation of the No-Build conditions (without the proposed project), Build conditions (with the proposed project), and Build with Mitigation conditions (with the proposed project and any proposed mitigation).

SITE TRIP GENERATION ESTIMATES

The TIAS provides a detailed assessment of estimated site-generated traffic based on industry standard trip rates published in the Institute of Transportation Engineers (ITE) publication, *Trip Generation, 10th Edition* and empirical traffic data from perspective tenants, as available. Although the business goals of perspective tenants are to not have industrial park shift changes overlap with the general commuter peak hour along Lunenburg Road, the projections assume a conservative (worst-case) scenario to present the overlapping of shift changes and commuter peak period. The proposed mixed-use redevelopment is thereby anticipated to generate 7,314 new vehicle trips during the average weekday, with 926 new vehicle trips (710 entering and 216 exiting) during the weekday morning peak hour and 916 new vehicle trips (363 entering and 553 exiting) during the weekday evening peak hour. On a typical Saturday the development is anticipated to generate 4,176 new vehicle trips with 378 new vehicle trips (193 entering and 185 exiting) during the Saturday midday peak hour.

PROPOSED TRANSPORTATION IMPROVEMENTS

Independent of the Capital Commerce Center off-site transportation mitigation, MassDOT is currently in the process of planning, designing, or completing significant transportation improvements in the vicinity of the project that will provide significant reserve capacity to the area roadway network. These improvements, which are to occur regardless of the Capital Commerce Center, include:

- Reconstruction of the intersections of Main Street (Route 70/117) / Lunenburg Road (Route 70) and Main Street (Route 70/117) / Seven Bridge Road (Route 117) to provide new traffic signals, turn lanes, and enhanced pedestrian and bicycle accommodations. This project, identified as MassDOT Project File No.

608779, is currently in the final design stage and is anticipated to be constructed in 2022; and

- Reconstruction of Route 2 Interchange 103 (formerly Interchange 35) to provide expanded freeway acceleration and deceleration lanes, relocation of ramps, and the addition of intersection improvements for the Lunenburg Road / Fort Pond Road intersection. Based on recent discussions with MassDOT, no specific project alternative has been identified and it is expected that the design of any alternative, or programming on the Transportation Improvement Program (TIP) is a few years away. Design of improvements at Interchange 102 (formerly Interchange 34) to the immediate west with Old Union Turnpike have commenced and are scheduled to be constructed prior to 2025.

The Applicant is committed to implement and construct transportation mitigation measures to both complement the above-mentioned MassDOT improvements and further improve both traffic operations and safety and address existing and future deficiencies for all users. This includes off-site roadway improvements along Main Street, McGovern Boulevard, Lunenburg Road, and the Route 2 Westbound (WB) Ramps at Interchange 103 (formerly Interchange 35). The proposed improvements will include, but are not limited to:

- Provide traffic signal timing optimization at each stage of occupancy to two new traffic signals along Main Street being constructed as part of the upcoming MassDOT Project File No. 608779;
- Construction of a fully actuated traffic signal at the intersection of Lunenburg Road / McGovern Boulevard;
- Reconstruction / widening of Lunenburg Road to provide a northbound left-turn lane and southbound right-turn lane onto McGovern Boulevard;
- Construction of a shared-use path along the westerly side of Lunenburg Road adjacent to the site to introduce pedestrian and bicycle accommodations;
- Reconstruction of McGovern Boulevard to consist of a two to four-lane cross-section with multimodal roadway accommodations that will enhance healthy transportation alternatives such as walking and bicycling along McGovern Boulevard;
- Construction of a temporary/interim fully actuated traffic signal at the intersection of Lunenburg Road / Fort Pond Road / Woods Lane within the existing intersection geometry;
- Construct modifications to the Route 2 WB Interchange 103 (formerly Interchange 35) off-ramp deceleration lane and roadway shoulder to extend queue storage; and
- Construct minor modifications to the Route 2 WB Interchange 103 (formerly Interchange 35) on-ramp acceleration lane and freeway shoulder to slightly extend acceleration area based on constraints of the Route 70 bridge.

The Applicant has also committed to several Transportation Demand Management (TDM) measures aimed to reduce single-occupancy vehicle (SOV) trips and overall vehicular traffic to/from the redevelopment site and better manage traffic generated by the proposed project.

Finally, the Applicant has committed to implementing a Traffic Monitoring Plan (TMP), which is intended to monitor traffic operations and parking occupancy throughout the construction and for a period following completion of the Project. A detailed review of these mitigation measures is further defined in this TIAS.

I. INTRODUCTION

PURPOSE OF STUDY

TEC, Inc. (TEC) has been retained by Capital Group Properties (the “Applicant”) to prepare a Traffic Impact and Access Study (TIAS) for the proposed Capital Commerce Center (the “Project”) along McGovern Boulevard and Lunenburg Road (Route 70) in Lancaster, Massachusetts. The Applicant proposes to construct the Project as a dynamic mixed-use housing, industrial / commercial, and retail redevelopment, intended as a “*Live | Work | Play*” mix of uses to bolster the surrounding neighborhood while utilizing the site’s proximity to regional access points on both Route 2, Interstate 495 (I-495), and Interstate 190 (I-190).

The existing site is currently occupied by an FC Stars outdoor soccer complex comprised of three (3) soccer fields, a 11,800 square foot (SF) J.B. Hunt Transport Services facility, a 2,300 SF Dunkin Donuts, a 5,000 SF Mobil gas station with convenience market, and the soil / gravel yard for Central Mass Sand & Gravel. The Project consists of redeveloping the existing site; but retaining the existing three (3) outdoor soccer fields, Dunkin Donuts, and Mobil Gas Station. The proposed mixed-use development program includes construction of a 2,484,400 square foot (SF) industrial park, 37,600 SF of professional office, 41,300 SF of additional retail space (48,600 SF total with existing Dunkin Donuts and Mobil), and 150 residential apartment units.

The Project proposes to retain the access/egress to the site via McGovern Boulevard and the minor retail driveways for the existing Mobil Gas Station and Dunkin Donuts along Lunenburg Road. The J.B. Hunt Transport Services is currently accessed via a separate full access/egress driveway along Lunenburg Road which will be closed. Individual minor driveways along Lunenburg Road, at the site frontage, will be constructed specifically for turning movements to/from on-site retail tenants similar to the existing Mobil Gas Station and Dunkin Donuts.

Changes Since the May 2021 TIAS

Since the filing of the TIAS with the Town of Lancaster in May 2021, the Applicant has modified the building program resulting in a reduction of floor area within the industrial component, the office component, and the retail component. The change in building footprints throughout the site will result in a reduction of site generated traffic as compared to the original TIAS. This includes approximately 906 less vehicle trips on a typical weekday, with 82 less vehicle trips (73 entering and 9 exiting) during the weekday morning peak hour and 106 less vehicle trips (25 entering and 81 exiting) during the weekday evening peak hour. In addition, there is projected to be 450 less vehicle trips during the typical Saturday with 62 less vehicle trips (33 entering and 29 exiting) during the Saturday midday peak hour. The reduction in projected site generated traffic for the site effects the results of the traffic impact analysis and generally reduces the overall impact of the site of the study area roadways and intersections.

METHODOLOGY

TEC has evaluated the traffic operations for the study area under existing and future conditions consistent with the *Transportation Impact Assessment (TIA) Guidelines* issued by the Massachusetts Department of Transportation (MassDOT)² and the standards of the Traffic Engineering and Transportation Planning professions for the preparation of such reports. The future planning horizon examines traffic operations under existing conditions (2019), as well as a 9-year planning horizon (2028) for traffic-volume projections, which includes an evaluation of the No-Build conditions (without the proposed project), Build conditions (with the proposed project), and Build with Mitigation conditions (with the proposed project and any proposed mitigation).

² *Transportation Impact Assessment (TIA) Guidelines*; Massachusetts Department of Transportation; March 13, 2014.

II. EXISTING CONDITIONS

TRAFFIC STUDY AREA

A comprehensive field inventory of existing traffic conditions on the study area corridors and intersections was conducted during various site visits by TEC staff from March 2019 through August 2019. The field investigations consisted of existing roadway geometrics, operating characteristics, study area safety concerns, and multi-modal accommodations.

Study Area Intersections

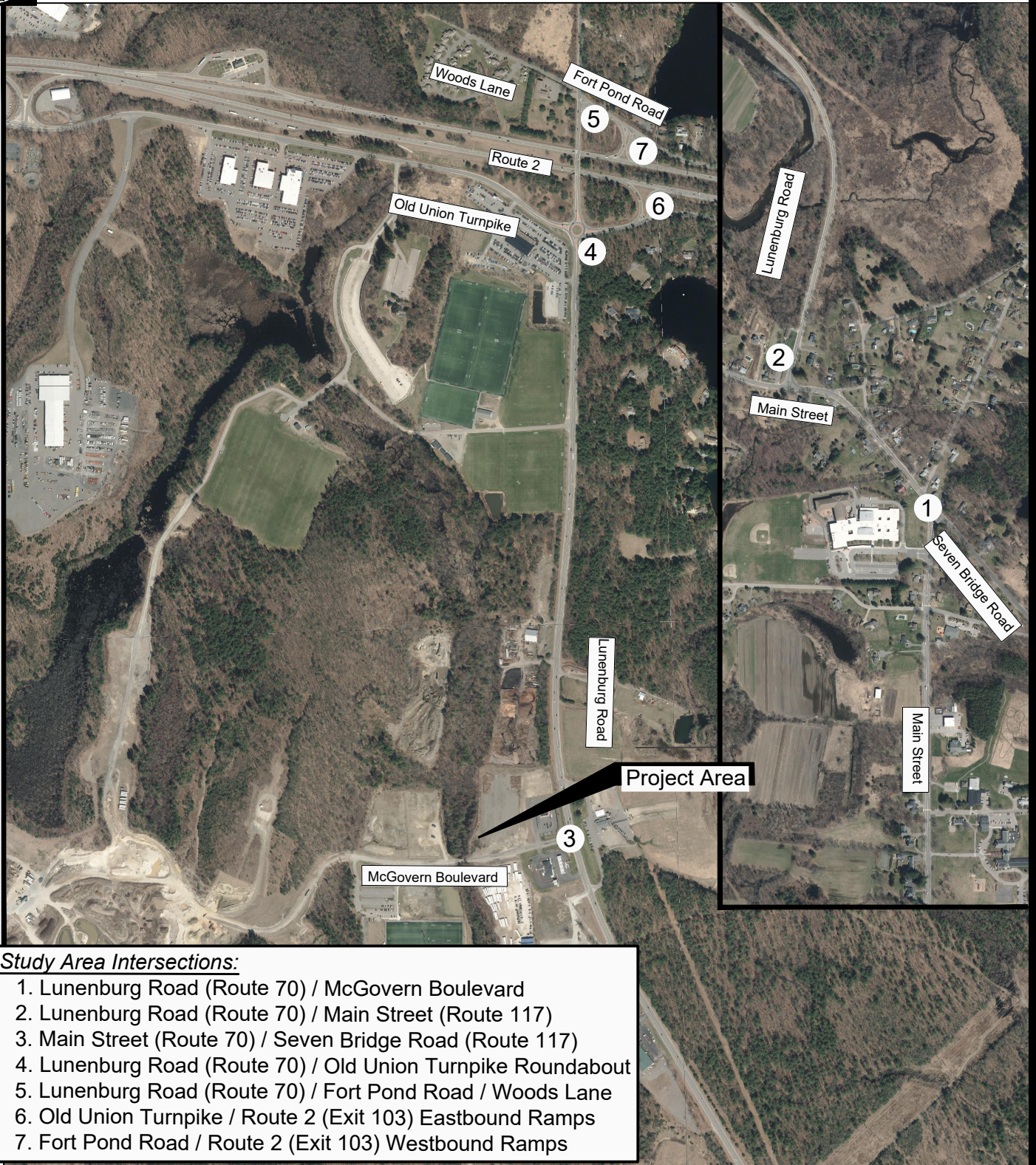
The study area was selected to contain the major roadways providing local access/egress to/from the project site. This includes an evaluation of intersection in which the site-generated trips increase the peak hour traffic volume by more than 5 percent and/or by more than 100 vehicles per hour per MassDOT's *TIA Guidelines* (Section 3.I.C). The following intersections were therefore evaluated as part of the study area:

1. Main Street (Route 70/117) / Seven Bridge Road (Route 117) / Driveway
2. Main Street (Route 70/117) / Lunenburg Road (Route 70)
3. Lunenburg Road (Route 70) / McGovern Boulevard
4. Lunenburg Road (Route 70) / Old Union Turnpike
5. Lunenburg Road (Route 70) / Woods Lane / Fort Pond Road
6. Old Union Turnpike / Route 2 (Interchange 103) Eastbound Ramps
7. Fort Pond Road / Route 2 (Interchange 103) Westbound Ramps

The study area intersections and project limits are shown graphically in Figure 1.

GEOMETRY

The field inventory included collection of existing roadway geometrics, pedestrian and bicycle accommodations, traffic volumes, sight distances, and safety data for the existing study area. A description of the existing roadway and intersection inventory is provided within this section.



- Study Area Intersections:**
1. Lunenburg Road (Route 70) / McGovern Boulevard
 2. Lunenburg Road (Route 70) / Main Street (Route 117)
 3. Main Street (Route 70) / Seven Bridge Road (Route 117)
 4. Lunenburg Road (Route 70) / Old Union Turnpike Roundabout
 5. Lunenburg Road (Route 70) / Fort Pond Road / Woods Lane
 6. Old Union Turnpike / Route 2 (Exit 103) Eastbound Ramps
 7. Fort Pond Road / Route 2 (Exit 103) Westbound Ramps

Figure 1

Project Location Map &
Study Area Intersections



TEC, Inc.
146 Dascomb Road
Andover, MA 01810

Roadways

Lunenburg Road (Route 70)

Lunenburg Road, signed as MA State Route 70, is a north-south urban principal arterial roadway maintained by the Town of Lancaster. The roadway provides regional connection between the Town of Shirley to the north and Main Street (Route 70/117) to the south. In the vicinity of the project site, Lunenburg Road is approximately 44-foot wide with 10-foot shoulders. Directional flow along Lunenburg Road is separated by a double-yellow centerline. A posted/regulated speed along the corridor is 50 miles per hour (mph)³ in the vicinity of McGovern Boulevard. Land uses along Lunenburg Road generally include light industrial and light commercial uses. There are no sidewalks or bicycle accommodations provided along Lunenburg Road.

Existing Intersections

Main Street (Route 70/117) / Seven Bridge Road (Route 117) / Driveway

Main Street and a residential driveway intersect Seven Bridge Road to form a three-legged, stop-controlled intersection. The Main Street eastbound approach operates under free-flow conditions and consists of a general-purpose travel lane with a gentle channelized right-turn onto Main Street heading south which operates under free-flow conditions. The Main Street northbound approach operates under stop-control and consists of a single general-purpose travel lane. Directional flow along the Main Street northbound approach is separated by a raised asphalt median at the intersection and a painted double-yellow centerline. The Seven Bridge Road westbound approach operates under free-flow conditions and consists of a single general-purpose travel lane with directional flow separated by a double-yellow centerline. A continuous sidewalk, separated by a grass buffer, is provided along the southerly side of Main Street from the west and the westerly side of Main Street from the south. There are no crosswalks or bicycle accommodations provided at the intersection.

As part of the upcoming Main Street Improvement Project (MassDOT Project File No. 608779), a new fully actuated traffic signal is proposed at this location. The Main Street eastbound approach will be widened to include a through lane and an exclusive right-turn lane. The Seven Bridge Road westbound approach will be widened to include an exclusive left-turn lane and a through lane. Bicycle lanes will be installed along Main Street northbound and a new shared-use path will be constructed along the southerly side of Main Street between Lunenburg Road and a point 275-feet south of Seven Bridge Road.

Main Street (Route 70/117) / Lunenburg Road (Route 70)

Lunenburg Road intersects Main Street to form a three-legged, stop-controlled intersection. The Lunenburg Road southbound approach operates under stop-control and consists of an exclusive left-turn lane and an exclusive right-turn lane with directional flow separated by a marked double-yellow centerline and a short divisional island on the approach. The Main Street eastbound and westbound approaches operate under free-flow conditions and consist of a single general-purpose travel lane with directional flow separated by a double-yellow centerline. A sidewalk,

³ MassDOT Speed Regulation 619-A dated March 2, 1977

separated by a grass buffer, is provided along the southerly side of Main Street. There are no crosswalks or bicycle accommodations provided at the intersection.

As part of the upcoming Main Street Improvement Project (MassDOT Project File No. 608779), a new fully actuated traffic signal is proposed at this location. The Main Street eastbound approach will be widened to include an exclusive left-turn lane and a through lane. The Main Street westbound approach will be widened to include a through lane and an exclusive right-turn lane and a through lane. The Lunenburg Road southbound approach will be widened to include exclusive left-turn and right-turn lanes. Bicycle lanes will be installed along Lunenburg Road southbound a new shared-use path will be constructed along the southerly side of Main Street between Lunenburg Road and a point 275-feet south of Seven Bridge Road.

Lunenburg Road (Route 70) / McGovern Boulevard

McGovern Boulevard intersections Lunenburg Road to form a three-legged, stop-controlled intersection. The McGovern Boulevard eastbound approach operates under stop-control and consists of a single general-purpose travel lane with directional flow separated by a raised landscaped median. The Lunenburg Road northbound and southbound approaches operate under free-flow conditions and consist of a single general-purpose travel lane with directional flow separated by a marked centerline. No pedestrian or bicycle accommodations are provided at this intersection. Advanced warning signage with flashers noting: "Business District Ahead – Vehicles Entering & Exiting" is posted along both sides of Lunenburg Road approximately 2,000-feet from the intersection.

Lunenburg Road (Route 70) / Old Union Turnpike

Old Union Turnpike intersects Lunenburg Road to form a four-legged roundabout intersection. The intersection was reconstructed as a roundabout in 2013 as part of MassDOT Project File No. 605216 which created a significant amount of reserve capacity at the intersection. All four intersection approaches consist of a single general-purpose travel lane with directional flow separated by a splitter island. In addition, each approach enters the roundabout under yield-control. The roundabout's inscribed circle is approximately 130-feet in diameter and is comprised of a 17.5-foot travel lane and a 10-foot truck brick truck-apron. Crosswalks are provided across the eastbound and northbound approaches to the roundabout; however, sidewalks do not carry out past the immediately roundabout limits. There are no formal bicycle accommodations through the roundabout.

Lunenburg Road (Route 70) / Fort Pond Road / Woods Lane

Fort Pond Road and Woods Lane intersect Lunenburg Road to form a four-legged stop-controlled intersection. In addition to the standard roadway connections, the driveway to the Heart of New England Council Boy Scouts of America Service Center enters Lunenburg Road directly opposing Fort Pond Road. Woods Lane is offset to the north by approximately 100-feet. The Woods Lane eastbound approach is under stop-control and consists of a general-purpose travel lane with directional flow unmarked. The Fort Pond Road westbound approach is under stop-control and consists of an exclusive left-turn lane and a channelized through/right-turn lane with directional flow separated by a raised asphalt median. The Lunenburg northbound approach is free-flowing and consists of shared left-turn/through lane and a channelized right-turn lane with directional flow separated by a marked centerline. The Lunenburg Road

southbound approach is free-flowing and consists of a single general-purpose travel lane with directional flow separated by a marked centerline. No pedestrian or bicycle accommodations are provided at this intersection.

Old Union Turnpike / Route 2 Interchange 103 Eastbound Ramps

The Route 2 Interchange 103 (formerly Interchange 35) Eastbound (EB) Ramps intersect Old Union Turnpike to form a three-legged unsignalized intersection. The Route 2 EB Ramps southbound approach consists of an exclusive left-turn lane under stop-control and a channelized right-turn lane under yield-control. Directional flow along the ramps is separated by a raised landscaped median. The Old Union Turnpike eastbound approach is free-flowing and consists of a single general-purpose travel lane with directional flow separated by a marked centerline. The Old Union Turnpike westbound approach is free-flowing and consists of a through lane and a channelized right-turn lane under yield-control with directional flow separated by a marked centerline. There are no formal bicycle accommodations. MassDOT recently installed new 'Do Not Enter', 'One-Way', and 'Wrong Way' signage along the Route 2 EB Ramps as part of their recent Wrong Way Crash initiative.

Fort Pond Road / Route 2 Interchange 103 Westbound Ramps

The Route 2 Interchange 103 (formerly Interchange 35) Westbound (WB) Ramps intersect Fort Pond Road to form a three-legged unsignalized intersection. The Route 2 WB Ramps northbound approach consists of an exclusive left-turn lane under stop-control and a channelized right-turn lane under yield-control. Directional flow along the ramps is separated by a raised landscaped median. The Fort Pond Road eastbound approach is free-flowing and consists of a through lane and a channelized right-turn lane under yield-control with directional flow separated by a marked centerline. The Fort Pond Road westbound approach is free-flowing and consists of a single general-purpose travel lane with directional flow separated by a marked centerline. There are no formal bicycle accommodations. MassDOT recently installed new 'Do Not Enter', 'One-Way', and 'Wrong Way' signage along the Route 2 WB Ramps as part of their recent Wrong Way Crash initiative.

PUBLIC TRANSPORTATION

The Project is situated on the eastern edge of the Montachusett Regional Transit Authority (MART) region; however, currently no service is provided in the vicinity of the site.

EXISTING TRAFFIC VOLUMES

Traffic volume data for this report was obtained from Manual Turning Movement Counts (TMCs) and supplemented with Automatic Traffic Recorder (ATR) counts conducted at the study area intersections. The details of the data collection effort for this project are described below.

Turning Movement Counts

To establish existing traffic-volume conditions within the study area, manual TMCs were conducted at the study area intersections on multiple dates during the typical weekday and the typical Saturday including traffic volumes within the defined weekday morning (7:00 AM to 9:00 AM), weekday evening (4:00 PM to 6:00 PM), and Saturday midday (11:00 AM to 2:00 PM) peak periods. Areas schools were generally in regular session during the dates in which the weekday

TMCs were collected. Saturday TMCs were conducted during late summer when tourism and outdoor activities were generally at peak season.

Weekday traffic counts performed as part of this project are currently more than two years old from the date of TIAS submission; however, all traffic counts included in the project were conducted pre-COVID 19 and reflect a conservative condition of traffic volumes as compared to current 2021 conditions. Traffic counts and adjustments used as part of this TIAS follow current MassDOT guidelines (Engineering Directive E-20-005) for use of historical traffic counts during the COVID-19 pandemic. Table 1 presents the date, time period, and nature of each TMC performed. A detailed summary of the TMCs partitioned into 15-minute intervals is provided in Appendix A.

Table 1 – Turning Movement Count Summary

<u>Intersection</u>	<u>Dates of Counts</u>	
	<u>Weekday</u>	<u>Saturday</u>
Main Street / Seven Bridge Road / Shirley Road	12/19/2018	8/17/2019
Main Street / Lunenburg Road	12/19/2018	8/17/2019
Lunenburg Road / McGovern Boulevard	12/19/2018	8/17/2019
Lunenburg Road / Old Union Turnpike	12/19/2018	8/17/2019
Lunenburg Road / Woods Lane / Fort Pond Road	12/19/2018	8/17/2019
Old Union Turnpike / Route 2 Exit 103 EB Ramps	12/19/2018	8/17/2019
Fort Pond Road / Route 2 Exit 103 WB Ramps	12/19/2018	Not Collected

Automatic Traffic Recorder Counts

Automatic Traffic Recorder (ATR) counts were conducted concurrently with the TMCs from Tuesday, December 18, 2018 to Wednesday, December 19, 2018 to gather daily traffic-volume, vehicle classification, and speed data for the study area roadways during a continuous 48-hour time period. The ATR provided volume, speed, and classification data for Lunenburg Road, north of the Kimball Farm Driveway. A summary of the weekday ATR traffic data is presented in Table 2. A detailed summary of the ATR counts, partitioned into 15-minute intervals, are provided in Appendix B.

Table 2 – 2019 Weekday Traffic Volume Summary

<u>Location</u>	<u>Weekday Traffic Volume^(a)</u>	<u>Weekday Morning Peak Hour</u>			<u>Weekday Evening Peak Hour</u>		
		<u>Traffic Volume^(b)</u>	<u>K Factor^(c)</u>	<u>Directional Distribution^(d)</u>	<u>Traffic Volume</u>	<u>K Factor</u>	<u>Directional Distribution</u>
Lunenburg Road, north of Kimball Farm Dwy	10,977	712	6.5	51.3% SB	1,022	9.3	62.7% NB

^a Daily traffic expressed in vehicles per day

^b Hourly traffic expressed in vehicles per hour

^c Percent of daily traffic volumes which occurs during the peak hour

^d Percent of peak-hour volume in the predominant direction of travel
 NB = Northbound; SB = Southbound

Lunenburg Road, in the vicinity of McGovern Boulevard, carries approximately 11,000 vehicles per day (vpd) on an average weekday. Directional distribution along the roadway was roughly split 50-50 during the weekday morning peak hour and heavily weighted northbound in the

weekday evening peak hour. Speed data indicates that the average speed and 85th percentile speed along Lunenburg Road northbound are 47 and 52 mph, respectively. The average speed and 85th percentile speed along Lunenburg Road southbound are 50 and 55 mph, respectively. This indicates that vehicular traffic along the corridor is generally traveling at or in the immediately vicinity of the posted and regulated speed limit of 50 mph.

Seasonal Adjustment

In accordance with MassDOT standards, traffic volumes are typically adjusted to reflect average-month conditions for preparation of a traffic impact assessment. A review of historic traffic volume counts collected by MassDOT at a permanent count station along Route 2 in Lancaster⁴ indicated that traffic volumes in December are approximately 5.6 percent lower than average-month conditions. The traffic volumes at this location also indicate that traffic volumes in August are approximately 7.1 percent higher than average-month conditions. Therefore, the December 2018 traffic volumes were upwardly adjusted by 5.6 percent to reflect a conservative analysis scenario. August 2019 traffic counts were unadjusted to reflect a conservative analysis scenario. Although these counts are along a freeway roadway, Lunenburg Road through the study area generally operates consistent with commuter and tourist seasonal patterns.

As noted, December 2018 counts are present in the study area and represent a condition in the past. To analyze a comparative existing condition at these intersection locations, 2018 traffic volumes were upwardly adjusted to reflect a 2019 condition. This was done by utilizing a 0.5 percent per year ambient growth rate over the one-year period. The growth rate is further described in the “Future Conditions” section of this TIAS. No further traffic volume growth adjustments to the current year of 2021 were made to be consistent with published MassDOT recommendations during the COVID-19 pandemic. The compiled seasonal adjustment data is provided in Appendix C. The resulting 2019 Existing Condition weekday morning and weekday evening peak hour traffic volumes are shown graphically in Figure 2.

SAFETY ANALYSIS AND REVIEW

A comprehensive traffic safety analysis was conducted for the study area intersections. The traffic safety analysis included the compilation and examination of study intersection crash data, a general safety review with consideration given to items on the MassDOT Safety Review Prompt List, and sight distance measurements. Details of each step in the traffic safety analysis are described in the following section.

⁴ MassDOT Permanent Count Station 34 – Lancaster – Route 2 – west of Route 70



Not to Scale

Capital Commerce Center - Lancaster, MA

Traffic Impact and Access Study

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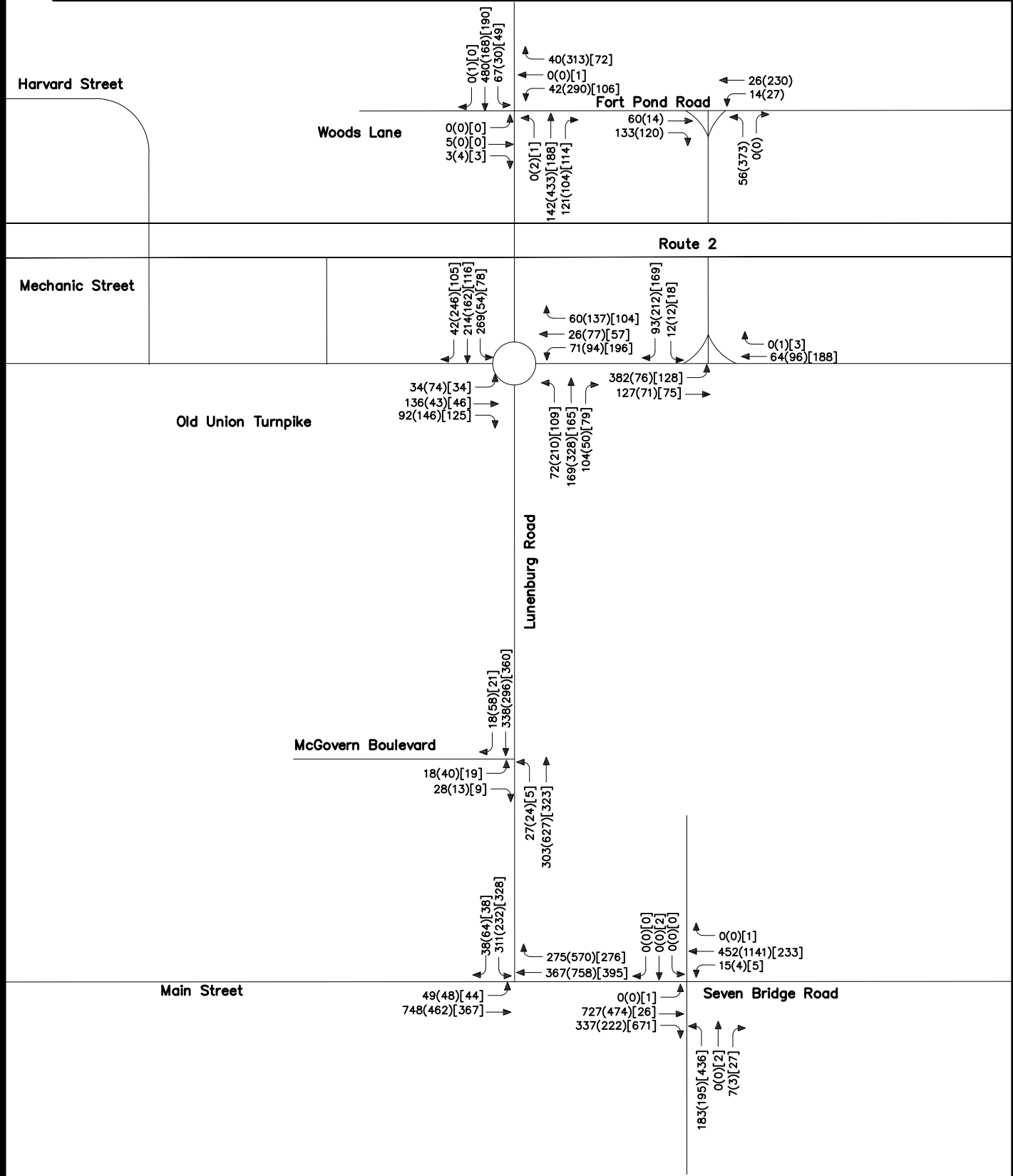


Figure 2

2019 Existing Conditions
Weekday Morning, Weekday Evening,
and Saturday Mid-Day
Peak Hour Traffic Volumes



Crash History and Data

Crash data for the study area intersections were compiled and analyzed for the most recent consecutive five-year period (2015-2019) of complete data on file with the MassDOT Interactive Mapping Portal for Analysis and Crash Tracking (IMPACT) online website. For the intersections along Main Street, historical crash information was acquired from the Main Street (Route 70/117) Improvements *Functional Design Report* (FDR)⁵. For the Route 2 Interchange 103 (formerly Interchange 35) freeway off-ramp intersections and interchange with Old Union Turnpike and Fort Pond Road, individual crash reports were acquired from the MassDOT Traffic and Safety Engineering Section for 2014 through 2018. The crash history for each ramp, separate from the interchange in its entirety, was summarized in a letter to MassDOT titled *Supplemental Crash Data Summary – Route 2 Interchange 35 Ramps*⁶. The motor vehicle crash data was reviewed to determine if any crash trends exist within the study area. Summaries of the vehicle crash data and intersection crash rates are provided in Table 3.

Highway Safety Improvement Plan Eligible

The U.S. Congress enacted the “Fixing America’s Surface Transportation Act” (FAST) Act in 2015. This act provides guidance and funding for the implementation of a State Highway Safety Improvement Program (HSIP); continuing upon the past SAFETEA-LU legislation from 2005. As part of this program, all states are required to develop a Strategic Highway Safety Plan (SHSP). The MassDOT guidelines require a Road Safety Audit (RSA) to be conducted where HSIP-eligible crash clusters are present within the study area of a private development sphere of influence, prior to finalizing the Massachusetts Environmental Policy Act (MEPA) process. An intersection is defined as HSIP-eligible if the intersection is within the top 5% of clusters in its respective Regional Planning Commission (RPC) boundaries based on Equivalent Property Damage Only (EPDO). EPDO rates crashes based on the collision severity.

Based on the MassDOT online crash cluster database, the Main Street / Lunenburg Road intersection is considered 2017 HSIP-eligible (current crash years of HSIP-eligibility). The Route 2 Interchange 103 (formerly Interchange 35) was also considered ‘2015’ HSIP-eligible. Many freeway interchanges across the Commonwealth are noted as HSIP-eligible locations; however, this is generally the result of crashes being geocoded on the center of the interchange, as opposed to the specific crash location along a freeway segment, along the ramps, or other location of the interchange. At the time of the original state review process, the interchange was no longer on the HSIP-eligible listing; however, TEC coordinated with MassDOT to complete an evaluation of the crash history at the interchange’s surface intersection using individual crash reports and confirmed that the study area intersections were not HSIP-eligible. A letter confirming this was sent to MassDOT on September 13, 2019.

⁵ *Functional Design Report – Main Street (Route 70/117) Improvements – Lancaster, MA*; prepared by TEC, Inc.; Revised April 1, 2019

⁶ *Supplemental Crash Data Summary – Route 2 Interchange 35 Ramps*; prepared by TEC, Inc.; September 13, 2019

Table 3 - Crash Data Summary

		Main Street / Seven Bridge Road / Shirley Road ^(a)	Main Street / Lunenburg Road ^(a)	Lunenburg Road / McGovern Boulevard	Lunenburg Road / Old Union Turnpike
Crash Year:	2012	4	5	-	-
	2013	4	11	-	-
	2014	0	2	-	-
	2015	2	8	0	4
	2016	2	13	0	0
	2017	-	-	0	4
	2018	-	-	0	5
	2019	-	-	0	4
		TOTAL	12	39	0
Annual Average Crash Rate (MEV): Significant:		2.40	7.80	0.00	3.40
		0.30	0.94	0.00	0.50
		No	Yes	No	No
Type:	Angle	10	15	0	3
	Rear-end	0	12	0	6
	Sideswipe	1	0	0	1
	Single	0	10	0	6
	Head-On	1	1	0	0
	Ped / Bike	0	0	0	0
	Not Reported	0	1	0	1
		TOTAL	12	39	0
Surface Conditions:	Dry	7	26	0	13
	Wet	3	9	0	2
	Snow/Slush/Ice	0	4	0	2
	Other / Unknown	2	0	0	0
		TOTAL	12	39	0
Severity:	PDO	10	31	0	13
	Non-Fatal Injury	2	8	0	3
	Not Reported	0	0	0	1
		TOTAL	12	39	0
Day of Week:	Monday-Friday	11	28	0	13
	Saturday- Sunday	1	11	0	4
		TOTAL	12	39	0
Time of Day:	6:00AM-9:00AM	3	6	0	2
	9:00AM-3:00PM	2	13	0	4
	3:00PM-6:00PM	1	8	0	3
	6:00PM-6:00AM	5	12	0	8
		TOTAL	12	39	0

^a From *Functional Design Report – Main Street (Route 70/117) Improvements – Lancaster, MA*; prepared by TEC, Inc.; Revised April 1, 2019

Table 3 - Crash Data Summary (Continued)

		Lunenburg Road / Woods Lane / Fort Pond Road	Old Union Turnpike / Route 2 Exit 103 EB ^(b)	Fort Pond Road / Route 2 Exit 103 WB ^(b)
Crash Year:	2012	-	-	-
	2013	-	-	-
	2014	-	0	0
	2015	2	1	0
	2016	2	0	0
	2017	0	1	0
	2018	2	3	1
	2019	3	-	-
		TOTAL	9	5
Annual Average Crash Rate (MEV): Significant:		1.80	1.00	0.20
		0.34	0.58	0.07
		No	No	No
Type:	Angle	6	2	1
	Rear-end	1	1	0
	Sideswipe	1	0	0
	Single	0	1	0
	Head-On	1	0	0
	Ped / Bike	0	1	0
	Not Reported	0	0	0
	TOTAL	9	5	1
Surface Conditions:	Dry	8	5	1
	Wet	0	0	0
	Snow/Slush/Ice	0	0	0
	Other / Unknown	1	0	0
	TOTAL	9	5	1
Severity:	PDO	5	2	0
	Non-Fatal Injury	4	3	1
	Not Reported	0	0	0
	TOTAL	9	5	1
Day of Week:	Monday-Friday	5	3	1
	Saturday- Sunday	4	2	0
	TOTAL	9	5	1
Time of Day:	6:00AM-9:00AM	0	2	0
	9:00AM-3:00PM	4	1	1
	3:00PM-6:00PM	3	1	0
	6:00PM-6:00AM	2	1	0
	TOTAL	9	5	1

^b From Supplemental Crash Data Summary – Route 2 Interchange 35 Ramps; prepared by TEC, Inc.; September 13, 2019

Prior to this Town and MEPA review processes, TEC and the City of Lancaster facilitated an RSA for the intersection of Main Street / Lunenburg Road in coordination with the MassDOT Traffic and Safety Engineering Section. An RSA, as defined by the FHWA, is the *formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team*. The RSA report for this location was published on May 27, 2017⁷. A copy of the RSA, as approved by MassDOT, is provided in Appendix D.

Crash Rate Worksheets

In addition to examining the number of crashes at the study area intersections, a crash rate was calculated to compare the occurrence of crashes to the volume of traffic passing through the intersection. The crash rate per million entering vehicles (MEV) was calculated using the evening peak hour volumes from the TMCs and a calculated K-factor obtained from the ATR counts to establish a daily intersection traffic volume. The crash rates at each of the study area intersections were compared to the statewide and district-wide averages published by MassDOT in June 2018 to determine the significance of the crash occurrence. The statewide average for unsignalized intersections is 0.57, and the District 3 average for unsignalized intersections is 0.61. A compilation of the MEV rate calculation worksheets and detailed crash data are provided in Appendix E.

Crash Data Summary

Main Street / Seven Bridge Road / Shirley Road

The Main Street (Route 70/117) / Seven Bridge Road (Route 117) intersection experienced less than three (2.4) crashes per year over the five-year study period, yielding a crash rate of 0.30 crashes per MEV. The crash rate for this intersection is significantly lower than the statewide and district-wide averages for unsignalized intersections. Approximately, 83 percent (10 of 12) of the crashes were angled crashes, and the remaining 17 percent (2 of 10) of the crashes were equally distributed amongst sideswipe and head-on crashes. The reported crashes were heavily skewed toward the first half of the week, with 75 percent (9 of 12) of the crashes occurring Monday through Wednesday. Of the reported crashes, 42 percent (5 of 12) were attributed to “failure to yield right-of-way”, 33 percent (4 of 12) were “inattention / distracted”, 17 percent (2 of 12) were “visibility obstructed / glare” and the remaining 8 percent (1 of 12) were “erratic / aggressive / reckless driving”.

Main Street / Lunenburg Road

The intersection of Main Street / Lunenburg Road experienced a total of 39 reported crashes (7.8 per year) at the intersection during the five-year study period. The crash rate for this intersection is significantly higher than the statewide and district-wide averages for unsignalized intersections, with 0.94 crashes per MEV. Approximately 40 percent of the crashes (15 of 39) were angled crashes, 30 percent (12 of 39) were rear-end crashes, 25 percent (10 of 39) were single vehicle crashes, and the remaining 5 percent (2 of 39) were equally distributed amongst head-on and other/not reported crashes at the intersection over the five-year study period. Of the reported crashes, 44 percent (17 of 39) were attributed to “inattention/distracted”, 21 percent (8 of 39) were

⁷ *Main Street (Route 117) / Lunenburg Road (Route 70) – Lancaster, Massachusetts - Road Safety Audit*, TEC, Inc.; Lawrence, Massachusetts; July 18, 2017

“failure to yield right-of-way” or “other /not reported”. Further details related to crash history is provided in the RSA report.

Lunenburg Road / Old Union Turnpike

The intersection of Lunenburg Road / Old Union Turnpike experienced a total of seventeen (17) reported crashes (3.40 per year) at the intersection during the five-year study period. The crash rate for this intersection is significantly lower than the statewide and district-wide averages for unsignalized intersections, with 0.35 crashes per MEV. Six (6) of the crashes were rear-end crashes on the approach to the roundabout. Six (6) additional crashes were single vehicle crashes. Additionally, only three (3) crashes were non-fatal injury crashes as the impact of crashes at roundabouts is traditionally low impact. Only five (5) of the crashes occurred during either the weekday morning or weekday evening peak periods, indicating that congestion may not be a leading factor in crashes at this location.

Route 2 Interchange 103

The Route 2 Interchange 103 (formerly Interchange 35) and associated ramp network experienced 61 reported crashes (12.2 per year) during the five-year study period. The overwhelming majority of these crashes occurred on the freeway in the vicinity of the interchange with no effect or cause related to the surface intersection with Old Union Turnpike and Fort Pond Road. Individual crash reports were processed from the MassDOT Traffic and Safety Engineering Section for 2014 through 2018 in order to determine the crash history of the two surface intersections as part of the study area. The crash reports show that over the five-year period, only six (6) crashes occurred; five (5) at the intersection of Old Union Turnpike / Route 2 Exit 103 EB Ramps and one (1) at the intersection of Fort Pond Road / Route 2 Exit 103 WB Ramps. Each location experienced less than two crashes per year on average and therefore it was deemed that no notable crash trend exists for the five-year study period.

All other study area intersections experienced less than two crashes per year on average and therefore it was deemed that no notable crash trend exists for the four-year study period.

Sight Distance Measurements

TEC measured the available sight distances at the various stop-controlled approaches of the study area intersections. The available sight lines were compared to minimum requirements established by the American Association of State Highway and Transportation Officials (AASHTO).

Sight distance represents the length of roadway that is visible to a driver traveling within the roadway. Two types of sight distance are typically evaluated for driveways and intersections: stopping sight distance (SSD) and intersection sight distance (ISD). SSD is the minimum distance required for a driver traveling along a roadway to perceive an object in the roadway and stop safely in advance of the object when traveling on a wet pavement surface. SSD is measured from an eye height of 3.5-feet to an object height of 2-feet above the ground, which is equivalent to a driver viewing the taillight of a vehicle ahead. SSD is measured along the centerline of the travel lane approaching the driveway or intersection.

ISD represents the length of the roadway visible to a driver waiting to exit a driveway or minor street. Minimum ISD requirements are based on the distance required for a driver to exit a minor street onto a major street without requiring an approaching vehicle to reduce its speed from the design speed to less than 70 percent of the design speed. ISD is measured from an eye height of 3.5-feet to an object height of 3.5-feet and is measured from a distance 14.5-feet beyond the edge of the travel-way of the major roadway to represent a driver waiting to exit a driveway or minor roadway.

SSD is typically considered the critical sight distance, as it represents the minimum distance required for safe stopping, while ISD represents an acceptable speed reduction for approaching vehicles. The ISD, however, must be at least equal to the minimum required SSD in order to prevent a driver from entering the roadway when an approaching vehicle is too close to safely stop. The guidance provided by AASHTO states:

“If the available sight distance for an entering or crossing vehicle is at least equal to the appropriate stopping sight distance for the major road, then drivers have sufficient sight distance to anticipate and avoid collisions. However, in some cases, this may require a major-road vehicle to stop or slow to accommodate the maneuver by a minor-road vehicle. To enhance traffic operations, intersection sight distances that exceed stopping sight distances are desirable along the major road.”

Tables 4 and 5 provide a summary of the available SSD and ISD at the intersection of Lunenburg Road / McGovern Boulevard, respectively.

Table 4 – Existing Stopping Sight Distance Measurements

Approach / Direction	Operating Speed ^a	AASHTO Recommended Minimum	Measured Stopping Sight Distance
Lunenburg Road at McGovern Boulevard: <i>Lunenburg Road northbound</i>	52 MPH	455 FT	> 700 FT
<i>Lunenburg Road southbound</i>	55 MPH	495 FT	> 700 FT

^a Operating speeds calculated as 85th percentile speed from ATR counts on December 18 through December 19, 2018

Table 5 – Existing Intersection Sight Distance Measurements

Approach / Direction	Operating Speed ^a	AASHTO Desired Minimum ^b	AASHTO Recommended Minimum	Measured Intersection Sight Distance
Lunenburg Road at McGovern Boulevard: <i>North of McGovern Boulevard</i>	55 MPH	610 FT	495 FT	> 700 FT
<i>South of McGovern Boulevard</i>	52 MPH	575 FT	455 FT	> 700 FT

^a Operating speeds calculated as 85th percentile speed from ATR counts on December 18 through December 19, 2018

^b ISD calculated using time gap (t_g) at design speed of 6.5 seconds for passenger car left-turn

As shown in Tables 4 and 5, the ISD and SSD at the intersection of Lunenburg Road / McGovern Boulevard are well in excess of AASHTO minimum recommendations.

III. FUTURE CONDITIONS

Traffic volumes in the study area were projected to the year 2028, which reflects a 9-year planning horizon from the original date of permitting. The traffic conditions for the year 2028, under No-Build conditions, were developed to document the operating conditions independent of the proposed project; including all existing traffic and new traffic resulting from background growth. Anticipated site-generated traffic volumes for the proposed redevelopment were superimposed upon the No-Build traffic networks to reflect the Build conditions with the proposed project.

BACKGROUND TRAFFIC GROWTH

Traffic growth is a function of the expected land development in the immediate area and the surrounding region. Several methods can be used to estimate this growth. Traffic engineers frequently employ an annual percentage increase in traffic growth, which is applied to all traffic volumes under study. The drawback to such a procedure is that some turning volumes may actually grow at either a greater or a lesser rate at particular intersections.

An alternative procedure identifies the location and type of planned development, estimates the traffic to be generated, and assigns it to the area roadway network. This procedure produces a more realistic estimate of growth for local traffic; however, the potential growth in population and development external to the study area are not accounted for in the traffic projections.

To provide a conservative analysis framework, both procedures were considered.

General Background Growth

To project traffic to a future horizon year, TEC utilized MassDOT published year-by-year annual growth data between 2016 and 2019. The data indicates that for urban minor arterials, traffic volumes between 2016 and 2017 grew 1.7 percent, between 2017 and 2018 growing 0.3 percent, and between 2018 and 2019 decreasing 0.4 percent. This equates to an annual growth rate of approximately 0.53 percent per year on average between 2016 and 2019. To provide a consistent analysis scenario, a 0.5 percent per year compounded annual background traffic growth rate was used to account for potential future traffic growth external to the study area and any presently unforeseen development. MassDOT historic count station data have been included in Appendix F.

Specific Developments by Others

TEC coordinated with the Town of Lancaster Community Development and Planning Department to identify nearby private and public development projects in the vicinity of the study area that are either in the planning process or were recently approved by the municipal Planning Board. After discussions with Town officials and a review of recently approved projects, there was one specific

project that had been identified that is anticipated to contribute significant additional traffic volumes to the study area. A description of the development is provided below:

- *Fort Pond Road Industrial Development* – Ft. Pond Realty, LLC is currently in the planning stage for an industrial park development along the northerly side of Fort Pond Road, near Shirley Road, in Lancaster. The site proposes, at a conceptual level, to construct approximately 1,078,000 SF of industrial space with access/egress provided along a single driveway approximately 1,400-feet west of Shirley Road and the Route 2 Interchange 105 (formerly Interchange 36). A solar panel array is also proposed, but not expected to generate measurable traffic. No traffic impact assessment has been completed to date; therefore, TEC projected site generated traffic based on industry standard trip rates published in the Institute of Transportation Engineers' (ITE) publication *Trip Generation, 10th Edition* for Land Use Code (LUC) 130 – Industrial Park. The distribution of industrial park site-generated traffic volumes was based on gravity models using 2009-2013 U.S. Census Bureau Journey-to-Work/Home data for the Town of Lancaster. Further details regarding the trip generation and distribution calculations are provided in Appendix G. The resulting development traffic volumes for the weekday morning, weekday evening, and Saturday midday peak-hours are illustrated in Figure 3.

FC Soccer Complex

At the time of the weekday TMCs in December 2018, no outdoor activities were being hosted at the FC Stars outdoor soccer complex. To provide a conservative analysis, site-generated trips were estimated for the three (3) existing outdoor soccer fields and superimposed on the seasonally adjusted 2028 No-Build traffic volumes to simulate a condition in which the soccer fields were in active season. To estimate the potential traffic volumes generated by the additional use, TEC utilized standard trip rates published in the ITE industry standard publication *Trip Generation, 10th Edition* for LUC 488 – Soccer Complex. The new traffic volumes were distributed along the roadway network based on a gravity model that incorporated population within a 7.5-mile radius. The resulting FC Soccer weekday morning and weekday evening peak-hour traffic-volume networks is illustrated in Figure 3. No projections were made for the Saturday midday peak hour as traffic counts conducted for this period were collected in August 2019 when outdoor activities were generally at peak season.

INDEPENDENT IMPROVEMENT PROJECTS

Main Street Traffic Signal Project (MassDOT Project 608779)

The Town of Lancaster and MassDOT are currently at the final design stage for roadway and traffic improvements along the Main Street corridor from Lunenburg Road and Seven Bridge Road. The improvements have been designated under state funding as MassDOT Project File No. 608779. The proposed improvements are needed to address existing safety and operational deficiencies regarding the intersection geometry, conflicting turning movements, multi-modal accommodations, and delays.



Not to Scale

Capital Commerce Center - Lancaster, MA

Traffic Impact and Access Study

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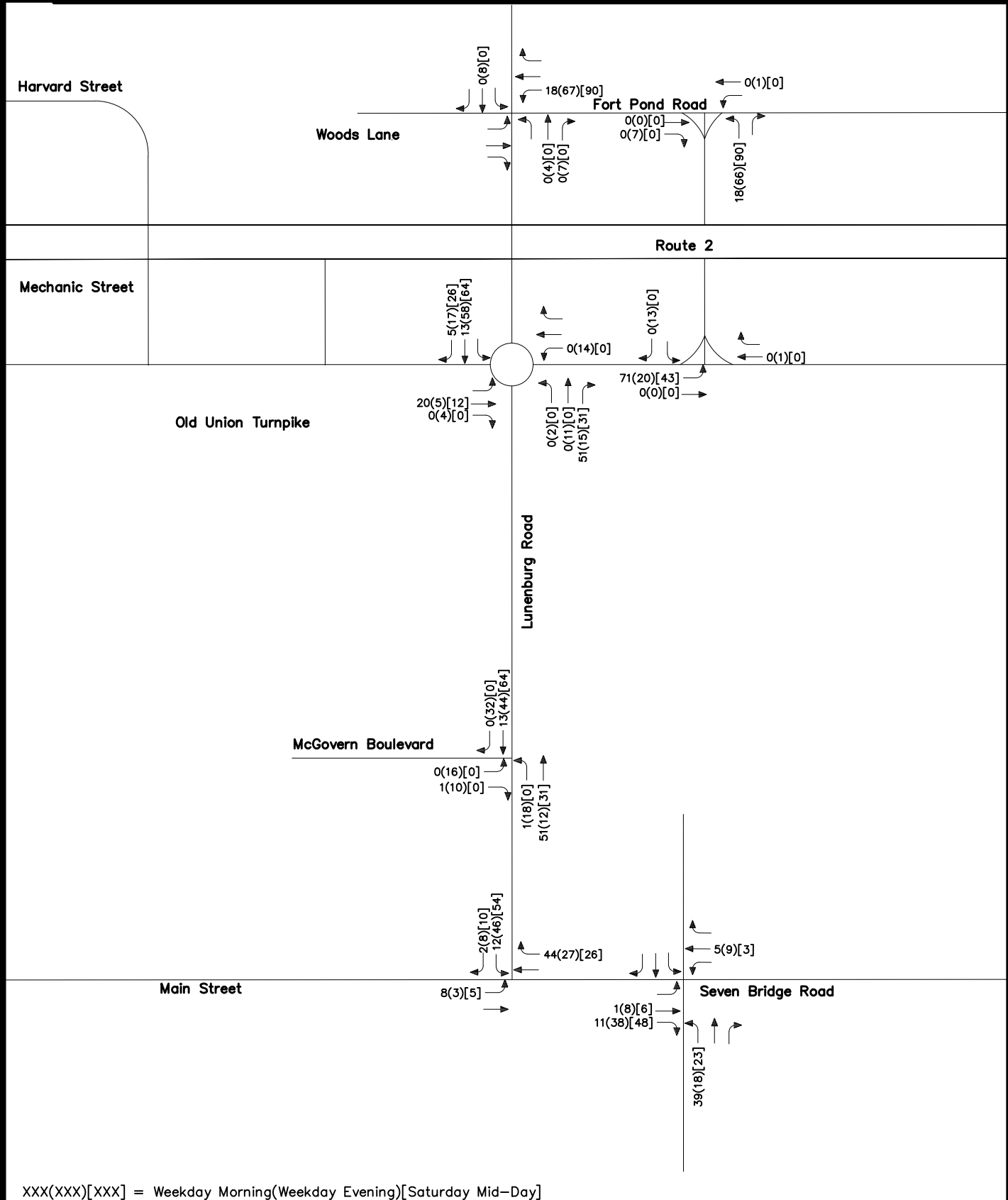


Figure 3

FC Soccer Project (Existing) Trips & Fort Pond Realty Development Trips Weekday Morning, Weekday Evening, and Saturday Mid-Day Peak Hour Traffic Volumes



- Installation of a fully actuated traffic signal at the intersections of Main Street / Lunenburg Road and Main Street / Seven Bridge Road with vehicular, bicycle, and pedestrian detection;
- Minor widening or pavement removal to accommodate turn lanes at both traffic signals and consistent cross-sections within the project limits;
- Realignment of Otis Street and Buttonwood Lane approaches to Main Street, providing perpendicular intersections;
- Construction of a new shared-use path along the southerly side of Main Street, from Lunenburg Road to the Mary Rowlandson Elementary School;
- Construction of a sidewalk with granite curbing along the southerly side of Main Street, west of Lunenburg Road, and along the northerly side of Main Street, west of Seven Bridge Road;
- Realignment of the Main Street / Seven Bridge Road intersection and removal of existing channelizing traffic islands;
- Minor reconstruction of existing stormwater drainage infrastructure and installation of new stormwater drainage infrastructure within the project limits;
- Striping of enhanced bicycle accommodations, including bicycle lanes along Lunenburg Road, bicycle lanes along Main Street northbound south of Seven Bridge Road;
- Striping of new pavement markings and installation of new *Manual on Uniform Traffic Control Devices* (MUTCD) compliant regulatory, warning and guide signs throughout the project limits;
- Construction of new Americans with Disabilities Act (ADA) / Architectural Access Board (AAB) accessible curb ramps, where necessary, within the project limits; and
- Pavement resurfacing within the project limits.

Construction of the Main Street corridor improvements are expected to commence in the spring of 2022.

Future Route 2 Interchange 103 Improvements

In February 2016, MassDOT, in coordination with TranSystems, prepared an alternatives analysis for improvements along several Route 2 interchanges east of Interstate 190⁸ in Harvard and Lancaster, MA. The study identified five (5) Interchange 103 (formerly Interchange 35) conceptual alternatives that would directly affect the study area of the Capital Commerce Center TIAS. A brief description of each alternative is provided below:

- Alternative #1 – Relocates the Route 2 EB off-ramp west of the Route 70 overpass. This relocation places the ramp exit approximately 1,100 feet from the proposed Interchange 102 (formerly Interchange 34) on-ramp, which does

⁸ *Route 2 Interchange Improvements Alternatives Analysis; Harvard / Lancaster, MA; prepared by TranSystems; February 2016.*

not provide adequate distance for the Interchange 102 acceleration lane. Accordingly, an auxiliary lane is provided between the two ramps. The ramp terminal is located on Old Union Turnpike approximately 400 feet west of the Route 70 roundabout. The Route 2 WB on-ramp is retained. The Route 2 WB on-ramp would be relocated west of the Route 70 Bridge with a terminal on Route 70 approximately opposite Fort Pond Road. This ramp relocation results in a 750-foot auxiliary lane between the ramp and the Johnny Appleseed Visitor Center exit. The Route 2 WB off-ramp is retained. The four-way intersection this ramp forms with Route 70 and Fort Pond Road includes installation of a traffic signal.

- Alternative #2 – Identical to Alternative #1 on the Route 2 EB side. On the westbound side, the alternative relocates the Route 2 WB off-ramp connecting directly to Route 70 in a half-diamond configuration. To enable Fort Pond Road to remain on its current alignment, this ramp is located tight to the Route 70 Bridge over Route 2. The Route 2 WB on-ramp terminal is located opposite the westbound off-ramp. The intersection of the relocated Route 2 WB ramps with Route 70 includes addition of a traffic signal. Locating this intersection near the bridge over Route 2 also improves vertical sight distance as it is placed closer to the apex of the crest vertical curve. The existing intersection of Fort Pond Road with Route 70 remains unsignalized and the intersection with Woods Lane remains in its existing configuration.
- Alternative #3 - This alternative maintains ramp and intersection configuration on the Route 2 WB side identical to Alternative #2. The Route 2 EB off-ramp is relocated to connect directly to Route 70. The ramp diverges from Route 2 in a similar fashion as under Alternatives #1 and #2 and forms an unsignalized T-intersection with Route 70 south of the bridge over Route 2.
- Alternative #4 – Similar to Alternative #1 except it replaces a signalized intersection of Route 70 and Fort Pond Road with a roundabout. Woods Lane is relocated to the north to provide separation from the roundabout. Due to space requirements, the roundabout further impacts the Boy Scouts of America property and Woods Lane relocation requires minor right-of-way acquisition from the parcel located just to the north.
- Alternative #5 – This alternative eliminates the Route 2 EB off-ramp and combines it with the Interchange 102 (formerly Interchange 34) eastbound off-ramp. On the Route 2 WB side, this alternative could be identical to any of the alternatives described above.

At this time, each alternative presents a significantly superior condition in terms of traffic safety and/or traffic operations over the existing condition. Further investigation of the alternatives is still being considered by MassDOT for future projects. Based on recent discussions with MassDOT, no specific project has been identified at this interchange and it is expected that the design of any alternative, or programming on the Transportation Improvement Program (TIP) remains a few years away. The TIAS does not assume that the improvements will be in place by the 2028 horizon year; however, it is understood that these improvements may be in place should funding become available. Currently the adjacent interchange to the west is currently in the 25% Design process and signifies MassDOT's commitment to reconstruction of these several interchanges.

Further discussion of traffic operations in relation to the project is summarized in the capacity and queue analysis section.

2028 NO-BUILD TRAFFIC VOLUMES

The 2028 No-Build weekday morning, weekday evening, and Saturday midday peak-hour traffic-volume networks were developed by applying the 0.5 percent per year compounded annual background traffic growth rate on the 2019 Existing Condition peak-hour traffic volumes over the 9-year design horizon (dependent on date of traffic count) and adding the projected traffic generated by the existing FC Soccer facility and the proposed traffic generated by the Fort Pond Road Industrial Development. The resulting 2028 No-Build weekday morning, weekday evening, and Saturday midday peak-hour traffic-volume networks are illustrated in Figure 4.

SITE GENERATED TRAFFIC

The Capital Commerce Center Project consists of redeveloping the existing site, but retaining the existing FC Stars soccer complex, Dunkin Donuts, and Mobil Gas Station.

The proposed mixed-use development program includes construction of a 2,484,400 SF industrial park, 37,600 SF of professional office, 41,300 SF of additional retail space (48,600 SF total with existing Dunkin Donuts and Mobil), and 150 residential apartment units. The Project proposes to retain the access/egress to the site via McGovern Boulevard. TEC estimated the site-generated traffic based on industry standard trip rates published in the ITE publication, *Trip Generation, 10th Edition* for LUC 130 – Industrial Park, LUC 221 – Multifamily Housing Mid-Rise, LUC 710 – Office, and LUC 820 – Shopping Center. Site generated trips related to Building A (1,182,000 SF) within the industrial park were based on empirical data from a perspective tenant.

Parameters and Credits

LUC 820 – Shopping Center Average Rate vs. Fitted Curve

The TIAS document estimates site generated traffic to/from the retail uses on-site utilizing the ‘average rate’ equation for LUC 820 – Shopping Center as documented in the ITE publication, *Trip Generation, 10th Edition*. It is typical that retail land uses are evaluated using the publication’s ‘fitted curve’ equation for state project permitting. TEC has evaluated the land uses’ trip generation based on size and scope of retail to be constructed as part of the site and the existing retail uses already in place. The project proposes 41,300 SF of additional retail space in addition to the recently constructed Dunkin Donuts and Mobil Gas Station. The remaining retail is not intended to be high-intensity similar to the namesake “Shopping Center” which generally assumes an integrated unit of shops, whereas the proposed project would result in several out parcels within a single parking field.

In previous editions of the ITE publication, a separate land use was established to umbrella over similar retail set-ups, LUC 826 – Specialty Retail Center. The land use code was defined as generally small strip shopping centers that contain a variety of retail shops. It is TEC’s engineering judgement that the ‘average rate’ equation for projections of traffic for the additional retail space on-site is a conservative and applicable standard to measure future volumes.

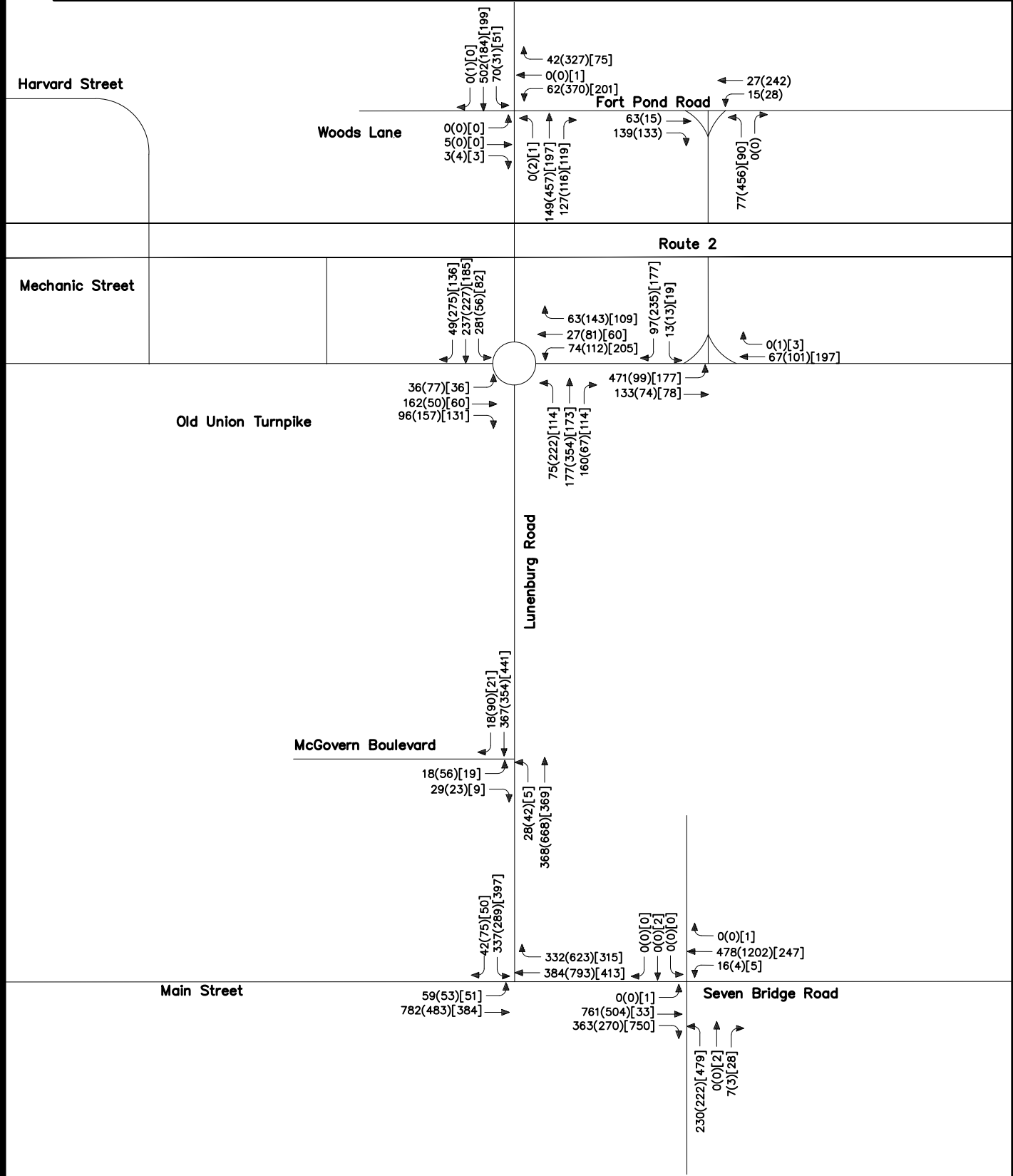


Not to Scale

Capital Commerce Center - Lancaster, MA

Traffic Impact and Access Study

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XXX(XXX)[XXX] = Weekday Morning(Weekday Evening)[Saturday Mid-Day]

Figure 4

2028 No-Build Conditions
Weekday Morning, Weekday Evening,
and Saturday Mid-Day
Peak Hour Traffic Volumes



LUC 130 – Industrial Park Data Extraction

The ITE publication *Trip Generation, 10th Edition* provides standard trip rates and equations for dozens of land uses. The data as provided typically denotes the number of trips versus a specific independent variable. It is not uncommon that the data as presented in the publication is modified to closely mimic the specific land use and type. For instance, if a development is in a rural area, removing urbanized-related data is appropriate. Or, if data is provided for a land use on a large scale of building footprints, specific parts of the data can be extracted to provide a more accurate depiction of a specific development plan within a size range. In 2018, ITE released its online application version of the *Trip Generation, 10th Edition* publication. One of the several goals of the online application was to simplify the specific querying of data for engineers and planners to provide a more pointed and precise selection of land use data to individual development proposals. If specific data is extracted, it is important to provide justification for the extraction.

TEC has provided extracted site trip generation data under LUC 130 – Industrial Park for the weekday morning and weekday evening peak hours. *Trip Generation, 10th Edition* provides only an ‘average rate’ equation for these two time periods under this land use; however as typical industrial parks get larger, the data advocates that the ‘average rate’ equations significantly overestimate site traffic. For example, in the weekday morning and weekday evening peak hour, all industrial parks with more than 1,500,000 SF represented in the data have trip ends well below the ‘average rate’ line. To moderate this significant overestimation, TEC queried only the data for industrial parks with more than 1,000,000 SF of gross floor area. This allows the trip generation for the weekday morning and weekday evening peak hours to be considerably more realistic in nature, while still being conservative to the ITE data points. This methodology was only conducted for the weekday morning and weekday evening peak hours as the weekday daily calculation is based upon a fitted curve and the Saturday daily and Saturday midday calculations provide too small of a sample size to justify extracted data points. The methodology utilized for this land use was approved by MassDOT District 3 upon discussion. Worksheets directly from the ITE online application are included in Appendix H.

Building A Empirical Trip Generation

Building A represents 1,182,000 SF of the 2,484,400 SF industrial park space. The Applicant has worked with a perspective tenant to this space on a detailed trip generation estimate for the typical weekday and typical Saturday. These estimates were based on the site’s expected truck traffic and the maximum number of employees to/from the site. Separate trip generation estimates were provided for the typical day during the off-peak season and for the typical day during the peak season (immediately prior to and including the Christmas retail season). The industrial building is anticipated to generate approximately 2,366 vehicle trips on a typical off-peak weekday which includes 370 truck trips (185 truck trips entering and 185 truck trips exiting). The bulk of the trips will be centered around two major employee shift changes. Each shift change will result in 499 employees exiting and 499 employees entering.

The current shift changes are still to be determined by the perspective tenant; however, the perspective tenant has reiterated that their business goal is to not have these shift changes overlap with the general commuter peak hour along Lunenburg Road. The perspective tenant has also noted that shifts will not overlap in order to keep the parking demand at a minimum; therefore, one shift will generally leave the site prior to the next shift arriving. The traffic associated with the shift change is expected to be completed over the course of a 3-hour span. Entering shift

change trips are represented as 20% of entering trips occur in the first hour, 75% of entering trips occur in the second hour, and the remaining 5% of entering trips occur during the third hour. Exiting shift change trips are represented as 75% of entering trips occur in the first hour, 20% of entering trips occur in the second hour, and the remaining 5% of entering trips occur during the third hour. This again generally suggests that the bulk of shift change exiting traffic will not overlap with the entering traffic per the direction of the perspective tenant.

To project a conservative analysis scenario, TEC has overlapped a one-hour portion of the shift change trip generation and the one-hour commuter peak period along Lunenburg Road. For the weekday morning peak hour, the entering intensive hour (390 trips entering and 116 trips exiting) was utilized as it is expected that this hour will be the closest in time to the commuter peak. For the weekday evening peak hour, the balanced (half-way) period between the entering and exiting intensive hour (253 trips entering and 253 trips exiting) was utilized as it is expected that this hour may occur with the peak hour and may corrected with other shared trips in the area. The perspective tenant has also noted that 16 truck trips will enter, and 16 truck trips will exit separate from employees during each peak hour during the off-peak season. A summary of Building A empirical trip generation is included in Appendix H.

Existing Land Uses Trip Generation Credit

The existing site includes several minor uses over the two distinct development zones. Within the development zone connected to McGovern Boulevard, the site includes the FC Stars outdoor soccer complex comprised of three (3) soccer fields, a 11,800 SF J.B. Hunt Transport Services facility, a 2,300 SF Dunkin Donuts, a 5,000 SF Mobil gas station with convenience market, and the soil / gravel yard for the Central Mass Sand & Gravel.

TEC previously noted that site generated traffic related to the FC Stars outdoor soccer complex was assessed as part of the weekday morning and weekday evening No-Build scenarios as the December 2018 traffic counts would not generate for traffic volumes at this facility because it is a seasonal operation (assumed to be included in traffic counts for the Saturday midday peak hour). Traffic generated by the other existing land uses would be present in the December 2018 and April 2019 traffic counts.

The existing land uses to be removed from the site do generate a modest amount of traffic volumes throughout the course of typical weekday. The Applicant reached out to both J.B. Hunt Transport Services and Central Mass Sand & Gravel to obtain existing empirical trip generation data for a typical weekday. Based on these conversations, both sites combined generate approximately 416 vehicle trips on a typical day based on 350 total truck trips (175 entering and 175 exiting) per day and 22 combined daily employees. Whereas Central Mass Sand & Gravel typically does not draw substantial traffic on a typical Saturday, Saturday trip generation estimates for the J.B. Hunt Transport Services trips were estimated based on the ITE *Trip Generation, 10th Edition* for LUC 130 – Industrial Park. A limited trip generation credit has been taken for both the 11,800 SF J.B. Hunt Transport Services facility and the Central Mass Sand & Gravel site. This credit is depicted in Table 7.

Internal Capture

It is reasonable to expect that some site-generated trips to the site will be shared amongst multiple land uses. For example, someone traveling to the industrial park may choose to visit the retail

buildings within the Project site. More precisely, some site-generated trips to the site will be shared amongst the existing and separated proposed land uses. For example, someone travelling to the industrial park may decide to purchase gas at the Mobil Station or a coffee at Dunkin Donuts adjacent to the Project site. This internal capture can occur as the proposed mixed retail uses, the existing Mobil gas station, and the Dunkin Donuts provide direct access/egress to/from the proposed Project along McGovern Boulevard without exiting onto Lunenburg Road. As a result, a reduction in the overall external trips experienced at the site driveways can be anticipated as a result of multi-use, or shared, trips that include stops at more than one use on the site.

Although a large amount of sharing can occur it is likely that much of this internal capture will still be with new trips to the site as the trips that are currently, or potentially will travel to/from the retail areas and uses would be established once the Project is constructed. Based on information contained in the industry standard ITE publication *Trip Generation Handbook, 3rd Edition*, multi-use trips were assigned for trip sharing amongst the industrial park, office, residential, and the retail uses. Credit was not taken for internal capture between the proposed uses / existing land uses and the soccer complex. This provides an overall conservative analysis of site trip generation. The multi-use trip generation worksheets are included in Appendix H.

Pass-by Trips

Not all the trips generated by the proposed mixed-use redevelopment will be new to the roadway network. Many of the trips generated by the proposed redevelopment are already present in the existing traffic flow passing by the site and may decide to visit the site on their way to another destination. For example, a driver travelling along Lunenburg Road on the way home from work in Fitchburg may stop at the on-site neighborhood retail and then continue their trip home. These vehicle trips are known as “pass-by” trips and are subtracted from the total trips to calculate the total primary (or “new”) trips that affect the volume of traffic within the study area away from the site. Based on information contained in the industry standard ITE publication *Trip Generation Handbook, 3rd Edition*, approximately 26 to 34 percent of the general retail / shopping center site-generated traffic is expected to be pass-by traffic. TEC has confirmed that the number of pass-by trips estimated for the project is less than 15 percent of the adjacent street traffic per MassDOT standards.

Trip Generation Summary

Tables 6 and 7 provide a summary of the resulting trip generation estimate separated by LUC and the total trip generation separated by multi-use, transit, pass-by, and primary trips. The detailed trip generation calculation worksheets are provided in Appendix H.

Table 6 – Total New Trip Generation Summary by Land Use Code

Time Period	Industrial Park (LUC 130)	Industrial Building A (Empirical)	Multifamily Housing (LUC 221)	Professional Office (LUC 710)	General Retail (LUC 820)	Total Trips
<i>Weekday Daily</i>						
IN	1,783	1,183	408	183	780	4,337
<u>OUT</u>	<u>1,783</u>	<u>1,183</u>	<u>408</u>	<u>183</u>	<u>780</u>	<u>4,337</u>
TOTAL	3,566	2,366	816	366	1,560	8,674
<i>Weekday Morning</i>						
IN	308	390	14	38	25	775
<u>OUT</u>	<u>82</u>	<u>116</u>	<u>40</u>	<u>6</u>	<u>15</u>	<u>259</u>
TOTAL	390	506	54	44	40	1,034
<i>Weekday Morning (No Bldg A)</i>						
IN	308	16	14	38	25	401
<u>OUT</u>	<u>82</u>	<u>16</u>	<u>40</u>	<u>6</u>	<u>15</u>	<u>159</u>
TOTAL	390	32	54	44	40	560
<i>Weekday Evening</i>						
IN	74	253	40	7	76	450
<u>OUT</u>	<u>264</u>	<u>253</u>	<u>26</u>	<u>37</u>	<u>82</u>	<u>662</u>
TOTAL	338	506	66	44	158	1,112
<i>Weekday Evening (No Bldg A)</i>						
IN	74	16	40	7	76	213
<u>OUT</u>	<u>264</u>	<u>16</u>	<u>26</u>	<u>37</u>	<u>82</u>	<u>425</u>
TOTAL	338	32	66	44	158	638
<i>Saturday Daily</i>						
IN	0	1,183	437	42	952	2,614
<u>OUT</u>	<u>0</u>	<u>1,183</u>	<u>437</u>	<u>42</u>	<u>952</u>	<u>2,614</u>
TOTAL	0	2,366	874	84	1,904	5,228
<i>Saturday Midday</i>						
IN	0	100	34	11	97	242
<u>OUT</u>	<u>0</u>	<u>100</u>	<u>36</u>	<u>9</u>	<u>89</u>	<u>234</u>
TOTAL	0	200	70	20	186	476

Table 7 – External Trip Generation Summary

Time Period	Total Trips ^a	Multi-Use Trip Credit	Existing Trip Credit ^b	Pass-by Trips	External Primary Trips
<i>Weekday Daily</i>					
IN	4,337	304	208	168	3,657
OUT	<u>4,337</u>	304	208	<u>168</u>	<u>3,657</u>
TOTAL	8,674	608	416	336	7,314
<i>Weekday Morning</i>					
IN	775	20	42	3	710
OUT	<u>259</u>	<u>20</u>	<u>20</u>	<u>3</u>	<u>216</u>
TOTAL	1,034	40	62	6	926
<i>Weekday Morning (No Bldg A)</i>					
IN	401	20	42	3	336
OUT	<u>159</u>	<u>20</u>	<u>20</u>	<u>3</u>	<u>116</u>
TOTAL	560	40	62	6	452
<i>Weekday Evening</i>					
IN	450	47	20	20	363
OUT	<u>662</u>	<u>47</u>	<u>42</u>	<u>20</u>	<u>553</u>
TOTAL	1,112	94	62	40	916
<i>Weekday Morning (No Bldg A)</i>					
IN	213	47	20	20	126
OUT	<u>425</u>	<u>47</u>	<u>42</u>	<u>20</u>	<u>316</u>
TOTAL	638	94	62	40	442
<i>Saturday Daily</i>					
IN	2,614	302	12	212	2,088
OUT	<u>2,614</u>	302	12	<u>212</u>	<u>2,088</u>
TOTAL	5,228	604	24	424	4,176
<i>Saturday Midday</i>					
IN	242	26	2	21	193
OUT	<u>234</u>	<u>26</u>	<u>2</u>	<u>21</u>	<u>185</u>
TOTAL	476	52	4	42	378

^a From Table 6

As shown in Table 7, the proposed mixed-use development is anticipated to generate 7,314 new vehicle trips during the average weekday, with 926 new vehicle trips (710 entering and 216 exiting) during the weekday morning peak hour and 916 new vehicle trips (363 entering and 553 exiting) during the weekday evening peak hour. On a typical Saturday the development is anticipated to generate 4,176 new vehicle trips with 378 new vehicle trips (193 entering and 185 exiting) during the Saturday midday peak hour.

Table 7 also provides an evaluation of estimated trip generation for the site where shift times for the perspective tenant of Building A do not overlap the commuter peak hours (shown in grey). As previously noted, TEC has overlapped a one-hour portion of the shift change trip generation and the one-hour commuter peak period along Lunenburg Road to provide a conservative scenario. When shift times for this tenant can be confirmed to not occur while overlapping with the commuter peak, the commuter peak hour would experience a significant decrease in overall impact. If the

influx of employee traffic entering and exiting the defined Building A does not occur during these hours, only a negligible number of trips would remain and would generally include some truck traffic entering and exiting and other non-employee related trips (i.e., parcel delivery). This equates to 470 less trips during the weekday morning peak hour and 474 trips less during the weekday evening peak hour.

Heavy Vehicle Trip Generation

The previously mentioned site trip generation includes both passenger vehicles and heavy vehicles, such as tractor-trailers. Without specific tenants identified, the number of passenger vehicles vs. heavy vehicles cannot be specifically determined. It is reasonable to assume that an overwhelming majority of traffic to/from the site would be passenger vehicles for employees to service the industrial park. Whereas tractor-trailer parking and loading bays are provided at various locations within the site, many tractor-trailers will be parked on-site and not necessarily utilized on a day-to-day basis. The perspective tenant for Building A has noted that a tractor-trailer associated with this building will typically remain on-site for up to five (5) days.

A major component of the Project is the removal of two existing land uses on the site; including, the 11,800 SF J.B. Hunt Transport Services facility and the Central Mass Sand & Gravel site. The existing land uses to be removed from the site contribute a significant number of heavy vehicles to the roadway network on a typical day. As previously noted, empirical estimates from the on-site uses identified 350 heavy vehicle trips on a typical weekday, 40 during each the weekday morning and weekday evening peak hour, primarily in the form of tractor-trailer and/or gravel trucks. As part of the Project, all 350 of these truck trips would be eliminated.

The ITE publication *Trip Generation, 10th Edition* has limited data on heavy vehicle traffic to/from industrial park uses (LUC 130) with only three (3) data points identified for each the weekday daily, weekday morning, and weekday evening. In addition, the larger industrial park data point is for 435,000 SF; only 16 percent the size of the proposed industrial square footage. TEC therefore considered LUC 155 – High-Cube Fulfillment Center Warehouse, a similar land use, where more than ten (10) data points were available for comparing heavy-vehicle traffic to overall traffic generated by the use. In addition, the use provides data points up to 1,800,000 SF, more comparable to the proposed site. This data is still limited and does not necessarily represent specific tenants or mixes of tenants. The data showed that this land use generates 7% to 13% percent trucks during the typical weekday and the corresponding peak hours. Table 8 summarizes the truck traffic summaries for the industrial land uses as shown in the ITE publication.

Table 8 – Potential Heavy Vehicle Trip Generation

Time Period	Industrial Park (LUC 130)	High-Cube Fulfillment Center (LUC 155)
<i>Weekday Daily</i> # of Studies	30% (3)	13% (10)
<i>Weekday Morning</i> # of Studies	13% (3)	13% (21)
<i>Weekday Evening</i> # of Studies	15% (3)	7% (21)

As previously noted, the Building A perspective tenant is anticipated to generate approximately 370 truck trips (185 truck trips entering and 185 truck trips exiting) which represents approximately 15% of total building traffic. It is reasonable to assume that the remaining industrial park land uses at the site would generate between 7% and 13% truck traffic, or approximately 245 to 460 trucks on a typical day.

SITE TRIP DISTRIBUTION

The Project proposes to retain the access/egress to the site via McGovern Boulevard and the minor retail driveway for the existing Mobil Gas Station and Dunkin Donuts. The J.B. Hunt Transport Services is currently accessed via a separate full access/egress driveway along Lunenburg Road and will be closed. Individual minor driveways along Lunenburg Road, at the site frontage, will be constructed specifically for turning movements for on-site retail tenants similar to the existing Mobil Gas Station and Dunkin Donuts.

Calculating Distribution by Land Use

Industrial Park and Office Land Uses

The distribution of industrial park and office space site-generated traffic volumes was based on gravity models using 2009-2013 U.S. Census Bureau Journey-to-Work/Home data for the Town of Lancaster. The industrial park and office space distribution models the commutes of workers to Lancaster from the top 25 residential cities and towns, which represent approximately 87 percent of total Lancaster workforce. The top 87 percent of resident communities generally allow for an approximation of overall distribution of traffic. Additional communities at this level each contribute less than 0.70 percent of the Lancaster workforce each which is deemed to not change the distribution of traffic calculations significantly.

As previously mentioned, a limited number of trips to/from the industrial land use on-site is projected to be heavy vehicles. As noted in the above-mentioned section, the percentage of trucks can widely change based on the specific tenants or mixes of tenants. The trip distribution for the industrial land use is projected to send 48 percent of traffic to/from Route 2 and additional traffic to the south along Route 70 to access Interstate 190 via Route 117 (Main Street) and Interstate 495 via Route 117 (Sevens Bridge Road). As the total number of trucks is unknown and a substantial percentage of traffic already allocated to the/from freeway locations, no separate truck distribution was evaluated separated from the industrial land use.

Residential Land Use

The distribution of the multi-family residential site-generated traffic volumes was based on gravity models using 2009-2013 U.S. Census Bureau Journey-to-Work/Home data for the Town of Lancaster. The residential distribution models the commutes of residents from Lancaster to the top 33 workforce cities and towns, which represent approximately 90 percent of total Lancaster residents. The top 90 percent of workforce communities generally allow for an approximation of overall distribution of traffic. Additional communities at this level each contribute less than 0.75 percent of the Lancaster residents each which is deemed to not change the distribution of traffic calculations significantly.

Retail Land Use

The distribution of retail site-generated traffic volumes was based on a gravity model using 2017 U.S. Census Bureau estimated population data, location of competing opportunities, and travel time for the surrounding communities within a 7.5-mile radius of the Project site. The retail distribution models the commutes of residents from the Town of Lancaster and eleven (11) adjacent communities to/from the Project site after weighting each community based on total population.

Trip Distribution Summary

The resulting primary trip distributions for the hotel, industrial park, residential units, and soccer complex are shown in Table 9. Trip distribution gravity models are included in Appendix I. The weekday morning and weekday evening site-generated traffic-volume networks are presented in Figure 5.

Table 9 – Trip Distribution Summary

Direction	Industrial			
	Park	Office	Residential	Retail
Route 2 to/from east	6%	6%	12%	18%
Route 2 to/from west	42%	42%	23%	7%
Mechanic Street to/from west	8%	8%	2%	2%
Fort Pond Road to/from east	1%	1%	1%	1%
Old Union Tnpk to/from east	1%	1%	1%	1%
Route 117 to/from east	7%	7%	28%	23%
Route 117 to/from west	4%	4%	3%	5%
Route 70 to/from north	6%	6%	3%	28%
<u>Route 70 to/from south</u>	<u>25%</u>	<u>25%</u>	<u>27%</u>	<u>15%</u>
Total	100%	100%	100%	100%

2028 BUILD TRAFFIC VOLUMES

The 2028 Build Condition traffic-volume networks consist of the 2028 No-Build traffic volumes with the addition of the site-generated traffic for the proposed redevelopment. The resulting 2028 Build weekday morning, weekday evening, and Saturday midday peak-hour traffic-volume networks are presented in Figure 6.



Not to Scale

Capital Commerce Center - Lancaster, MA

Traffic Impact and Access Study

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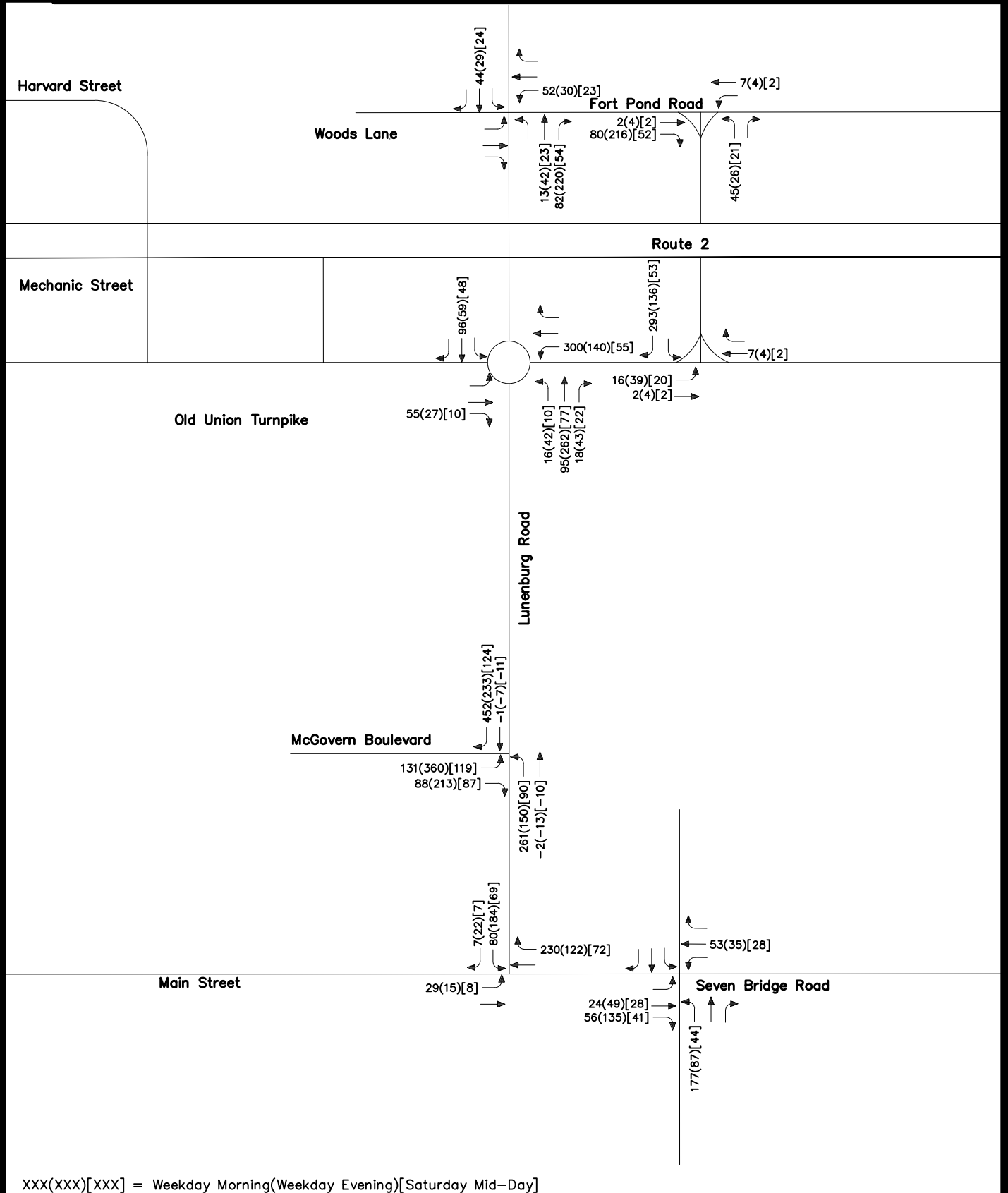


Figure 5

Site-Generated Traffic
Weekday Morning, Weekday Evening,
and Saturday Mid-Day
Peak Hour Traffic Volumes



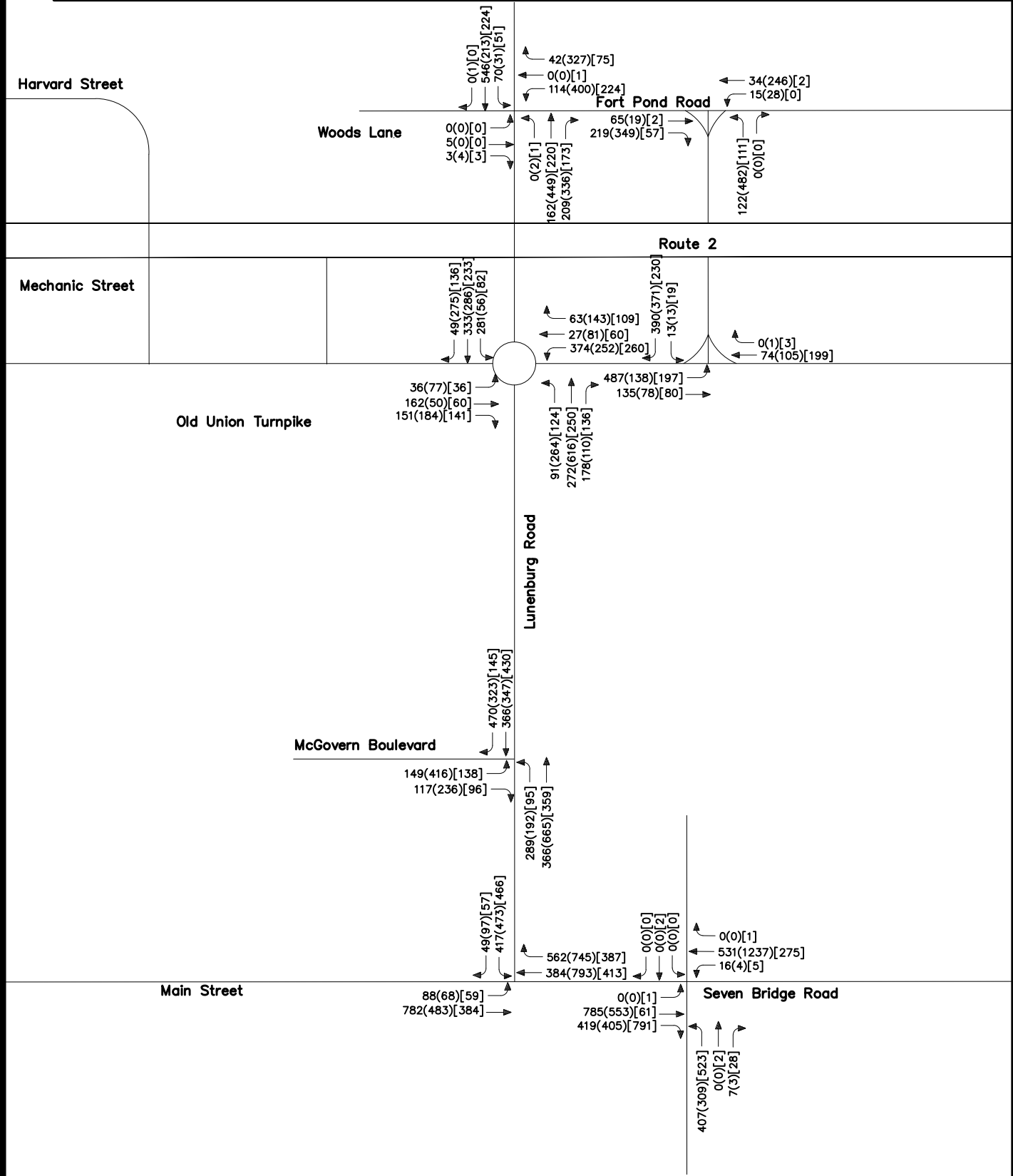


Not to Scale

Capital Commerce Center - Lancaster, MA

Traffic Impact and Access Study

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XXX(XXX)[XXX] = Weekday Morning(Weekday Evening)[Saturday Mid-Day]

Figure 6

2028 Build Conditions
Weekday Morning, Weekday Evening,
and Saturday Mid-Day
Peak Hour Traffic Volumes



IV. WARRANTS

LEFT-TURN LANE WARRANTS

A left-turn lane warrant analysis was conducted for the intersection of Lunenburg Road / McGovern Boulevard using hourly traffic volumes based on TMCs conducted in December 2018. The potential left-turn lane along Lunenburg Road northbound was analyzed under both unsignalized and signalized intersection conditions.

The *MassHighway Project Development and Design Guide*⁹ define left-turn lane volume warrants at unsignalized and signalized intersections based on the Transportation Research Board's (TRB) publication, the *Highway Capacity Manual (HCM) 6th Edition*¹⁰. The criteria are based on the operating speed of the roadway (50 mph posted), the opposing volume, and the percent of left-turning vehicles for the advancing vehicle volume. Based on both the signalized and unsignalized operating conditions on Lunenburg Road, the traffic volumes do warrant the construction of a left-turn lane on the Lunenburg Road northbound approach.

An excerpt from the *MassHighway PDDG* noting the criteria for the introduction of a left-turn lane by traffic volume is provided in Appendix J.

TRAFFIC SIGNAL WARRANTS

A traffic signal warrant analyses was conducted for the intersections of Lunenburg Road at McGovern Boulevard and Lunenburg Road at Fort Pond Road to document the warranting condition should a traffic signal be recommended as mitigation for the project. TEC performed the traffic signal warrant analyses based on criteria contained within the *MUTCD*¹¹. The *MUTCD* contains eight warrants for evaluating the need for installation of a traffic signal. The two multi-hour volume-related warrants were evaluated to determine whether a traffic signal is warranted at the four intersections described above. These warrants include:

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

For the purposes of this analysis, TEC utilized TMCs and 12-hour ATRs conducted at the subject intersections to assess the warranting conditions over a typical weekday.

⁹ *MassHighway Project Development and Design Guide*, MassHighway (now Massachusetts Department of Transportation (MassDOT) – Highway Division); Boston, Massachusetts, 2006

¹⁰ *Highway Capacity Manual 6th Edition*; Transportation Research Board; Washington, DC; 2016

¹¹ *Manual on Uniform Traffic Control Devices (MUTCD)* – Federal Highway Administration / U.S. DOT – 2009 Edition.

Site-generated traffic volumes to be utilized in the traffic signal warrant analyses were assessed based on trip generation rates obtained in the ITE publication, *Trip Generation, 10th Edition*. As many hours during the day are not represented based on the ITE trip generation data, TEC projected site generated traffic onto the non-peak hours based on engineering judgement for each land use.

Warrant Adjustments – Lunenburg Road at McGovern Boulevard

85th Percentile Speed greater than 40 MPH - As noted in the ATR counts collected in December 2018, vehicle speeds along Lunenburg Road northbound and southbound entering the intersection at McGovern Boulevard were measured with an 85th percentile speed at or greater than 40 mph during free-flow conditions. Therefore, the *MUTCD* notes that traffic volume reductions in the 70% and 56% columns of Table 4C.1 of the *MUTCD* shall govern for use in the traffic signal warrant.

Right-Turn Side-Street Traffic Volumes - The McGovern Boulevard eastbound approach is proposed to consist of an exclusive left-turn lane and an exclusion right-turn lane. For this approach geometry, the *MUTCD* states:

“...engineering judgment and rationale should be applied to a street approach with one through/left-turn lane plus a right-turn lane. In this case, the degree of conflict of minor-street right-turn traffic with traffic on the major street should be considered. Thus, right-turn traffic should not be included in the minor-street volume if the movement enters the major street with minimal conflict. The approach should be evaluated as a one-lane approach with only the traffic volume in the through/left-turn lane considered.” (MUTCD - Sect 4C.01 ¶10)

Right-turns exiting the minor-street can generally be discounted at a traffic signal due to the lesser conflict seen between right-turns on minor-streets and major-street traffic. At the intersection of Lunenburg Road / McGovern Boulevard, a 100 percent reduction for right-turns was applied to the McGovern Boulevard eastbound approach based on the potential for a lesser vehicle conflict for right-turning vehicles and the presence of an exclusive right-turn lane.

Number of Lanes - As part of this traffic signal warrant analysis, the Lunenburg Road “major street” approach and the McGovern Boulevard “minor street” approach to the intersection were designated as one-lane approaches. The *MUTCD* provides guidance that states:

“Engineering judgment should also be used in applying various traffic signal warrants to cases where approaches consist of one lane plus one left-turn or right-turn lane. The site-specific traffic characteristics should dictate whether an approach is considered as one lane or two lanes. For example, for an approach with one lane for through and right-turning traffic plus a left-turn lane, if engineering judgment indicates that it should be considered a one-lane approach because the traffic using the left-turn lane is minor, the total traffic volume approaching the intersection should be applied against the signal warrants as a one-lane approach. The approach should be considered two lanes if approximately half of the traffic on the approach turns left and the left-turn lane is of sufficient length to accommodate all left-turn vehicles.” (MUTCD Section 4C.01 ¶9)

This paragraph generally states that engineering judgement shall be utilized in determination of number of travel lanes on the major and minor street. The Lunenburg Road northbound approach consists of “one” lane as the level of left-turning volume within an exclusive left-turn lane represents only 22 to 45 percent of the approach volume. In addition, as right-turns will not be evaluated along McGovern Boulevard, the McGovern Boulevard approach will be considered a one-lane approach within the traffic signal warrant calculations.

Warrant Adjustments – Lunenburg Road at Fort Pond Road / Woods Lane

Right-Turn Side-Street Traffic Volumes - The Fort Pond Road westbound approach consists of an exclusive left-turn lane and an exclusive right-turn lane. The right-turn lane also serves ‘through’ movements to Woods Lane. For this approach geometry, the MUTCD states:

“...engineering judgment and rationale should be applied to a street approach with one through/left-turn lane plus a right-turn lane. In this case, the degree of conflict of minor-street right-turn traffic with traffic on the major street should be considered. Thus, right-turn traffic should not be included in the minor-street volume if the movement enters the major street with minimal conflict. The approach should be evaluated as a one-lane approach with only the traffic volume in the through/left-turn lane considered.” (MUTCD - Sect 4C.01 ¶10)

Right-turns exiting the minor-street can generally be discounted at a traffic signal due to the lesser conflict seen between right-turns on minor-streets and major-street traffic. At the intersection of Lunenburg Road / Fort Pond Road, a 100 percent reduction for right-turns was applied to the Fort Pond Road westbound approach based on the potential for a lesser vehicle conflict for right-turning vehicles and the presence of an exclusive / channelized right-turn lane.

Warrant Results

Based on the existing traffic volumes and the addition of the projected site-generated trips for each proposed land use, the intersection of Lunenburg Road / McGovern Boulevard meets the criteria for Warrant 1 and Warrant 2. As a traffic signal is warranted and due to the operating and safety conditions of the intersection without a traffic signal in place, installation of a traffic signal at this intersection is recommended as part of the off-site corridor improvements along Lunenburg Road. The off-site mitigation section of this TIAS defines the timing and scope of the traffic signal installation. The signal warrant analysis worksheets are included in Appendix K.

Based on the existing traffic volumes and the addition of the projected site-generated trips for each proposed land use, the intersection of Lunenburg Road / Fort Pond Road / Woods Lane meets the criteria for Warrant 2 at full build out. New traffic volume data was not obtained as part of the TIAS due to the COVID-19 pandemic’s effect on statewide traffic volumes. As a traffic signal may be warranted and due to the operating and safety conditions of the intersection without a traffic signal in place, installation of a traffic signal at this intersection is recommended as part of the off-site corridor improvements along Lunenburg Road. The off-site mitigation section of this TIAS defines the timing and scope of the traffic signal installation, including the location’s reconstruction as part of a MassDOT interchange reconstruction project. The signal warrant analysis worksheets are included in Appendix K.

V. TRAFFIC OPERATIONS

Measuring existing and future traffic volumes quantifies traffic flow within the study area. To assess quality of flow, roadway capacity and vehicle queue analyses were conducted under Existing, No-Build, Build, and Build with Mitigation traffic-volume 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.

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.¹² 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 intersection's ability to process vehicles under various traffic control and volume scenarios and lane use arrangements. The vehicle queue analysis was performed using the Synchro 11.0™ intersection capacity analysis 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 (6) 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

¹² The capacity analysis methodology is based on the concepts and procedures presented in the *Highway Capacity Manual 6th Edition*; Transportation Research Board; Washington, DC; 2016

be exceeded only five (5) percent of the time; or approximately three (3) 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 unsignalized 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 study 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 10 summarizes the relationship between level of service and average control delay.

Table 10 – 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 (seconds per vehicle)	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.; 2016

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 11 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 11 – 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 (seconds per vehicle)	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.; 2016

Roundabout Intersections

The capacity and queue analysis for the roundabout location was performed using the Georgia Department of Transportation (GDOT) Version 4.2 Roundabout Analysis Tool software which is also based upon the methodology and procedures presented in the *HCM 6th Edition*. This analysis tool is utilized over Synchro as it is a MassDOT approved methodology. The levels-of-service of roundabouts are equivalent to the levels-of-service of unsignalized intersections and 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 study 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 roundabout intersections are also given in the *HCM 6th Edition*. Table 12 summarizes the relationship between level-of-service and average control delay.

Table 12 – Level-of-Service Criteria for Roundabouts ^(a,b)

Level-of-Service (v/c < 1.0)	Level-of-Service (v/c ≥ 1.0)	Average Control Delay (seconds per vehicle)	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.; 2016

^b Based on unsignalized intersection LOS

TRAFFIC IMPACT ANALYSIS RESULTS

Level-of-service analyses were conducted for the 2019 Existing, 2028 No-Build, 2028 Build, and 2028 Build with Mitigation Conditions for the study area intersections. The results of the intersection capacity analysis are summarized in Table 13. The capacity analysis worksheets are provided in Appendix L.

Main Street / Seven Bridge Road / Driveway

The intersection of Main Street / Seven Bridge Road / Driveway is to be reconstructed with a fully actuated traffic signal as part of a separate MassDOT project. The Main Street northbound movement at the intersection is anticipated to operate at LOS F during both the weekday morning, weekday evening, and Saturday midday peak hours with the projection of site generated traffic volumes. Improvements are recommended and proposed at this intersection as part of Capital Commerce Center project's off-site mitigation, which include optimizing traffic signal timings at the newly constructed traffic signals to accommodate the site-generated trips. With this mitigation, all roadway movements during the weekday morning and Saturday midday peak hours are expected to operate at acceptable levels of service (LOS D or better). During the weekday evening peak hour, the northbound approach will improve to operate at LOS E. In comparison, the approach will operate significantly better than existing conditions without the traffic signal in place. All other movements at this intersection during the weekday evening peak hour are expected to operate at acceptable levels of service (LOS D or better).

Main Street / Lunenburg Road

The intersection of Main Street / Lunenburg Road is to be reconstruction with a fully actuated traffic signal as part of a separate MassDOT project. The Lunenburg Road southbound movement at the intersection is anticipated to operate at LOS F during the weekday evening peak hour with the projection of site generated traffic volumes. Improvements are recommended and proposed at this intersection as part of Capital Commerce Center project's off-site mitigation, which include optimizing traffic signal timings at the newly constructed traffic signals to

accommodate the site-generated trips. With this mitigation, all roadway movements during the weekday morning, weekday evening, and Saturday midday peak hours are expected to operate at acceptable levels of service (LOS D or better).

Lunenburg Road / McGovern Boulevard

With the addition of site generated traffic and the existing geometric conditions in place, the McGovern Boulevard eastbound approach would operate at elevated levels-of-service. Improvements are recommended and proposed at this intersection as part of Capital Commerce Center project's off-site mitigation and will consist of full intersection reconstruction to provide turning lanes along Lunenburg Road, separate left-turn and right-turn lanes along McGovern Boulevard, and the installation of a traffic control signal. With these improvements, all movements during the weekday morning, weekday evening, and Saturday midday peak hours are expected to operate at acceptable levels of service (LOS B or better) with volume-to-capacity (V/C) ratios well below 1.00 which indicates that the intersection can accommodate the additional demand created by the site.

Lunenburg Road / Old Union Turnpike

Specific traffic operational improvements are not proposed at the intersection of Lunenburg Road / Old Union Turnpike. The intersection of Lunenburg Road / Old Union Turnpike was recently reconstructed as a roundabout in 2013 to provide reserve capacity. Under 2028 Build Conditions, several intersection movements are anticipated to operate at LOS E or F during the weekday morning or weekday evening peak hours. During the weekday morning peak hour, this level of delay is only expected to be marginally above the LOS D/E threshold with V/C ratios still below 1.00. During the weekday evening peak hour, the Old Union Turnpike westbound approach is anticipated to operate at LOS F (64.6 seconds of delay per vehicle) with a V/C ratio below 1.00. This level of delay is only expected during this short time period of a typical weekday and is dependent on the conservative level of site generated traffic allocated to the location. Although the roundabout is under Town control, MassDOT District 3 has noted that the roundabout is preferable to any enhanced mitigation at this location as:

- Traffic patterns through this roundabout are likely to change with the reconstruction of the Route 2 Interchange 103. This project, although not on the TIP, could be completed prior to full build-out of the Capital Commerce Center;
- Because of the heavy industrial nature of the site and the residential nature of the surroundings, an overwhelming number of vehicles in the area traverse the roundabout in only a short period of the typical day; including Saturday for the "lunch-time" midday peak. This would suggest that much of the remaining day the roundabout would operate well under capacity; and
- For the short-lived nature of possible congestion, the roundabout's limited conflict points render the geometry to be a safer condition as opposed to a standard unsignalized location or a signalized location.

There are no practical means to mitigate project related impacts at the intersection based on the short period of elevated levels-of-service. This includes expansion of the roundabout, which would impact wetland areas on the southeast corner, an existing drainage swale between the car

dealership and the roundabout on the southwest corner, and the grading on the northerly side of the roundabout with the existing drop-off to the Route 2 eastbound bore.

Lunenburg Road / Fort Pond Road / Woods Lane

Under both 2028 No-Build and Build Conditions, the Fort Pond Road westbound approach is anticipated to operate at elevated levels-of-service (LOS F) during the weekday evening peak hour and LOS E during the weekday morning and Saturday midday peak hours. This level of delay is only expected during this short time period of a typical weekday or Saturday and is specifically dependent on the conservative level of site generated traffic allocated to the location. All other movements at this intersection are anticipated to operate at acceptable levels of service (LOS D or better) with V/C ratios well below 1.00 which indicates that the intersection can accommodate the additional demand created by the site. With the construction of any of the five improvement alternatives identified by MassDOT as part of the future project, traffic operations and safety at the intersection are anticipated to greatly improve.

Although delay is anticipated to only occur during the minimal peak time periods, the level of delay and the length of queue are elevated. For instance, the queue along Fort Pond Road westbound is longer than the distance between the stop-line and the Route 2 WB Off-ramp, effectively extending the queue onto the ramp and potentially Route 2. Improvements are recommended and proposed at this intersection as part of Capital Commerce Center project's off-site mitigation and will consist installation of a temporary/interim fully actuated traffic signal. The existing geometry will be maintained. The scheduling of this installation is described in the Mitigation section of this TIAS. With these improvements, all movements at this intersection are expected to operate at acceptable levels of service (LOS D or better) with V/C ratios well below 1.00 which indicates that the intersection can accommodate the additional demand created by the site. Along the Fort Pond Road westbound approach, the queue is not anticipated to be greater than 245-feet and therefore will not extend past the Route 2 WB Off-ramp, thereby not exacerbating the queuing along the ramp.

Interchange improvements along Route 2 are expected to change the characteristics of the intersection; including potential intersection relocation, as part of a future MassDOT project. For the purposes of this TIAS, no alternative for improvement has been identified and therefore the No-Build and Build scenarios assume the existing geometry and intersection control.

Old Union Turnpike / Route 2 EB Ramps [Exit 103]

Specific traffic operational improvements are not proposed at the intersection of Old Union Turnpike / Route 2 EB Interchange 103 (formerly Interchange 35) Ramps; however, interchange improvements along Route 2 are expected to change the characteristics of the intersection as part of a future MassDOT project. All five interchange alternatives remove the Route 2 EB off-ramp movements and shift them to the west along either Old Union Turnpike or Route 70. These improvements are not scheduled on the state TIP and therefore cannot be anticipated for completion prior to the 2028 horizon year. For the purposes of this TIAS the No-Build and Build scenarios assume the existing geometry and intersection control. Under 2028 Build Conditions, all movements at the intersection are expected to operate at acceptable levels of service (LOS D or better) during all peak hour analysis scenarios except the southbound left-turn movement during the weekday morning peak hour. This movement operates with at LOS E, just over the

threshold for LOS D, and includes only 13 vehicles in the corresponding hour (1 car every 4 minutes). For all scenarios and movements, the queues will not extend in any significant length.

Fort Pond Road / Route 2 WB Ramps [Exit 103]

Interchange improvements along Route 2 are expected to change the characteristics of the Fort Pond Road / Route 2 WB Interchange 103 (formerly Interchange 35) Ramp intersection as part of a future MassDOT project. All five interchange alternatives modify the Route 2 WB ramps. Two (2) of the alternatives retain the Route 2 WB off-ramp condition along Fort Pond Road while moving the on-ramp condition to the west side of Route 70. These conditions would generally retain traffic operation conditions exiting the off-ramp. The other three (3) alternatives shift the on- and off-ramps into a diamond interchange pattern along Route 70, separating out the Fort Pond Road traffic volumes. These improvements are not scheduled on the state TIP and therefore cannot be anticipated for completion prior to the 2028 horizon year. For the purposes of this TIAS, the No-Build and Build scenarios assume the existing geometry and intersection control.

Under 2028 Build Conditions, all movements at the intersection are expected to operate at acceptable levels of service (LOS D or better) during all peak hour analysis scenarios with exception of the Route 2 off-ramp northbound left-turn movement, which will operate at LOS E during the weekday evening peak hour. Although the ramp will operate at an elevated level-of-service, the ramp approach will generally operate in a consistent manner as existing conditions as the additional traffic will also result in a more consistent flow of traffic. In addition, the installation of the temporary traffic signal at the intersection of Lunenburg Road / Fort Pond Road / Woods Lane will create new gaps in the traffic flow along Fort Pond resulting in quicker flow from the Route 2 off-ramp. Therefore, the delay along this approach is expected to be better than reported from the analysis software.

As discussed with MassDOT, there are no practical off-site mitigation alternatives for this approach that would result in a reduction of LOS. The level of impact from the project and the traffic volumes along the ramp do not warrant a change in control at the intersection. Geometric improvements are recommended and proposed at this location as part of Capital Commerce Center project's off-site mitigation and will include a commitment to extend the queue storage and deceleration lane along the Route 2 WB Off-Ramp to ensure project related traffic does not conflict with Route 2 mainline volumes. The projected 95th percentile queue along the ramp is anticipated to be 308-feet at full build-out. This mitigation does not alter the results of the capacity and queue analysis.

Table 13 – Intersection Capacity and Queue Analysis Summary

Intersection / Lane Group	2019 Existing				2028 No-Build				2028 Build				2028 Build w/ Mitigation			
	V/C ^a	Delay ^b	LOS ^c	Queue ^d	V/C	Delay	LOS	Queue	V/C	Delay	LOS	Queue	V/C	Delay	LOS	Queue
Main Street / Seven Bridge Road / Shirley Road																
<i>Weekday Morning Peak Period</i>																
Main Street EBL/T	-	-	-	-	0.78	9.1	A	157/268	0.79	9.2	A	166/283	0.83	14.2	B	281/453
Main Street EBR	-	-	-	-	0.32	1.7	A	<25/<25	0.36	1.7	A	<25/<25	0.35	1.4	A	<25/<25
Seven Bridge Road WB	0.02	9.4	A	<25	-	-	-	-	-	-	-	-	-	-	-	-
Seven Bridge Road WBL	-	-	-	-	0.07	14.8	B	<25/<25	0.07	15.4	B	<25/<25	0.09	22.1	C	<25/<25
Seven Bridge Road WBT/R	-	-	-	-	0.49	6.3	A	74/122	0.53	6.5	A	86/140	0.56	9.3	A	145/226
Main Street NB	2.03	567.6	F	438	0.67	21.0	C	40/162	1.19	129.6	F	107/374	0.88	32.1	C	151/328
Shirley Road SB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Overall Intersection	-	-	-	-	0.50	8.5	A	-	0.58	30.2	C	-	0.58	14.0	B	-
<i>Weekday Evening Peak Period</i>																
Main Street EBL/T	-	-	-	-	0.39	4.6	A	88/152	0.43	5.3	A	117/173	0.45	6.7	A	142/214
Main Street EBR	-	-	-	-	0.20	0.9	A	<25/<25	0.30	0.9	A	<25/<25	0.30	0.9	A	<25/<25
Seven Bridge Road WB	0.01	8.4	A	<25	-	-	-	-	-	-	-	-	-	-	-	-
Seven Bridge Road WBL	-	-	-	-	0.01	6.2	A	<25/<25	0.01	7.5	A	<25/<25	0.01	9.4	A	<25/<25
Seven Bridge Road WBT/R	-	-	-	-	0.93	19.3	B	498/1020	0.96	26.6	C	639/1067	0.99	37.4	D	886/1155
Main Street NB	3.49	1264.6	F	555	0.85	49.9	D	90/170	1.08	114.2	F	152/307	0.91	62.5	E	153/258
Shirley Road SB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Overall Intersection	-	-	-	-	0.47	16.8	B	-	0.55	28.6	C	-	0.55	27.8	C	-
<i>Saturday Midday Peak Period</i>																
Main Street EBL/T	-	-	-	-	0.04	6.3	A	<25/<25	0.07	6.1	A	<25/30	0.10	14.2	B	<25/56
Main Street EBR	-	-	-	-	0.81	6.8	A	<25/<25	0.83	7.4	A	<25/<25	0.78	7.8	A	<25/<25
Seven Bridge Road WB	0.01	7.3	A	<25	-	-	-	-	-	-	-	-	-	-	-	-
Seven Bridge Road WBL	-	-	-	-	0.01	6.5	A	<25/<25	0.01	6.4	A	<25/<25	0.02	14.9	B	<25/<25
Seven Bridge Road WBT/R	-	-	-	-	0.31	7.5	A	36/104	0.32	7.2	A	41/114	0.47	16.9	B	90/214
Main Street NB	1.63	331.9	F	845	1.75	368.5	F	96/371	2.02	492.0	F	119/421	0.89	24.8	C	145/361
Shirley Road SB	0.01	11.1	B	<25	0.38	16.3	B	<25/<25	0.38	44.6	D	<25/<25	0.39	50.7	D	<25/<25
Overall Intersection	-	-	-	-	0.48	125.8	F	-	0.51	166.1	F	-	0.55	15.1	B	-
Main Street / Lunenburg Road																
<i>Weekday Morning Peak Period</i>																
Main Street EB	0.06	9.2	A	<25	-	-	-	-	-	-	-	-	-	-	-	-
Main Street EBL	-	-	-	-	0.15	8.2	A	<25/<25	0.26	10.0	B	<25/33	0.26	10.2	B	<25/44
Main Street EBT	-	-	-	-	0.82	11.1	B	268/418	0.85	13.7	B	268/418	0.86	15.2	B	357/617
Main Street WBT	-	-	-	-	0.59	13.2	B	132/211	0.61	15.9	B	133/217	0.62	16.2	B	162/252
Main Street WBR	-	-	-	-	0.36	4.6	A	<25/<25	0.59	5.9	A	<25/<25	0.59	6.0	A	<25/<25
Lunenburg Road SBL	2.73	855.4	F	768	0.85	22.2	C	133/359	0.90	35.4	D	177/470	0.89	24.7	C	218/385
Lunenburg Road SBR	0.08	12.3	B	<25	0.09	12.3	B	<25/37	0.09	12.2	B	<25/41	0.09	11.9	B	<25/36
Overall Intersection	-	-	-	-	0.51	12.3	B	-	0.59	16.0	B	-	0.59	14.6	B	-
<i>Weekday Evening Peak Period</i>																
Main Street EB	0.10	13.2	B	<25	-	-	-	-	-	-	-	-	-	-	-	-
Main Street EBL	-	-	-	-	0.22	12.5	B	<25/<25	0.31	16.2	B	<25/25	0.37	20.3	C	<25/38
Main Street EBT	-	-	-	-	0.41	5.8	A	119/174	0.42	7.6	A	119/174	0.47	10.8	B	178/261
Main Street WBT	-	-	-	-	0.83	17.1	B	392/682	0.85	22.3	C	400/691	0.95	40.7	D	575/832
Main Street WBR	-	-	-	-	0.56	4.6	A	<25/<25	0.64	5.4	A	<25/41	0.63	5.4	A	<25/50
Lunenburg Road SBL	2.79	909.5	F	590	0.87	37.1	D	164/340	1.18	135.1	F	371/634	0.93	47.5	D	291/496
Lunenburg Road SBR	0.26	23.8	C	25	0.19	21.5	C	30/68	0.21	22.5	C	39/84	0.18	19.8	B	36/67
Overall Intersection	-	-	-	-	0.55	13.9	B	-	0.62	34.8	C	-	0.62	25.3	C	-

^a Volume-to-capacity ratio.

^b Delay expressed in seconds per vehicle (average)

^c Level of service.

^d 50th/95th Percentile Queue [95th Percentile Queue only for unsignalized intersections]

Table 13 – Intersection Capacity and Queue Analysis Summary (Continued)

Intersection / Lane Group	2019 Existing				2028 No-Build				2028 Build				2028 Build w/ Mitigation			
	V/C ^a	Delay ^b	LOS ^c	Queue ^d	V/C	Delay	LOS	Queue	V/C	Delay	LOS	Queue	V/C	Delay	LOS	Queue
Main Street / Lunenburg Road																
<i>Saturday Midday Peak Period</i>																
Main Street EB	0.05	9.3	A	<25	-	-	-	-	-	-	-	-	-	-	-	-
Main Street EBL	-	-	-	-	0.15	9.0	A	<25/<25	0.18	10.2	B	<25/25	0.18	10.3	B	<25/34
Main Street EBT	-	-	-	-	0.42	7.4	A	87/140	0.43	8.6	A	87/140	0.44	8.8	A	104/190
Main Street WBT	-	-	-	-	0.70	14.7	B	139/237	0.71	16.6	B	140/240	0.72	16.9	B	161/296
Main Street WBR	-	-	-	-	0.34	4.6	A	<25/<25	0.40	4.7	A	<25/<25	0.40	4.8	A	<25/<25
Lunenburg Road SBL	1.45	263.5	F	498	0.85	18.9	B	132/334	0.89	26.8	C	165/418	0.88	18.3	B	180/391
Lunenburg Road SBR	0.08	12.3	B	<25	0.10	10.4	B	<25/31	0.10	10.3	B	<25/34	0.10	10.1	B	<25/33
Overall Intersection	-	-	-	-	0.43	11.7	B	-	0.46	14.5	B	-	0.46	12.4	B	-
Lunenburg Road / McGovern Boulevard																
<i>Weekday Morning Peak Period</i>																
McGovern Boulevard EB	0.11	13.7	B	<25	0.12	14.7	B	<25	4.21	1567.1	F	768	-	-	-	-
McGovern Boulevard EBL	-	-	-	-	-	-	-	-	-	-	-	-	0.60	19.9	B	48/108
McGovern Boulevard EBR	-	-	-	-	-	-	-	-	-	-	-	-	0.46	18.4	B	<25/36
Lunenburg Road NB	0.03	8.2	A	<25	0.03	8.3	A	<25	0.42	13.4	B	53	-	-	-	-
Lunenburg Road NBL	-	-	-	-	-	-	-	-	-	-	-	-	0.62	10.2	B	45/86
Lunenburg Road NBT	-	-	-	-	-	-	-	-	-	-	-	-	0.38	5.4	A	61/106
Lunenburg Road SBT	-	-	-	-	-	-	-	-	-	-	-	-	0.63	14.6	B	116/201
Lunenburg Road SBR	-	-	-	-	-	-	-	-	-	-	-	-	0.66	9.5	A	27/69
Overall Intersection	-	-	-	-	-	-	-	-	-	-	-	-	0.54	11.3	B	-
<i>Weekday Evening Peak Period</i>																
McGovern Boulevard EB	0.19	20.1	C	<25	0.34	27.4	D	35	6.23	2430.6	F	1868	-	-	-	-
McGovern Boulevard EBL	-	-	-	-	-	-	-	-	-	-	-	-	0.81	19.7	B	128/262
McGovern Boulevard EBR	-	-	-	-	-	-	-	-	-	-	-	-	0.52	14.7	B	<25/41
Lunenburg Road NB	0.02	8.1	A	<25	0.04	8.4	A	<25	0.22	10.1	B	<25	-	-	-	-
Lunenburg Road NBL	-	-	-	-	-	-	-	-	-	-	-	-	0.46	11.1	B	38/71
Lunenburg Road NBT	-	-	-	-	-	-	-	-	-	-	-	-	0.74	11.3	B	179/303
Lunenburg Road SBT	-	-	-	-	-	-	-	-	-	-	-	-	0.74	18.1	B	111/193
Lunenburg Road SBR	-	-	-	-	-	-	-	-	-	-	-	-	0.37	5.9	A	<25/<25
Overall Intersection	-	-	-	-	-	-	-	-	-	-	-	-	0.60	13.5	B	-
<i>Saturday Midday Peak Period</i>																
McGovern Boulevard EB	0.08	16	C	<25	0.08	15.5	C	<25	0.99	96.4	F	243	-	-	-	-
McGovern Boulevard EBL	-	-	-	-	-	-	-	-	-	-	-	-	0.55	15.4	B	36/80
McGovern Boulevard EBR	-	-	-	-	-	-	-	-	-	-	-	-	0.43	14.6	B	<25/29
Lunenburg Road NB	0.01	8.1	A	<25	0.01	8.3	A	<25	0.11	9.3	A	<25	-	-	-	-
Lunenburg Road NBL	-	-	-	-	-	-	-	-	-	-	-	-	0.23	6.7	A	<25/31
Lunenburg Road NBT	-	-	-	-	-	-	-	-	-	-	-	-	0.38	4.6	A	498/115
Lunenburg Road SBT	-	-	-	-	-	-	-	-	-	-	-	-	0.73	11.8	B	104/231
Lunenburg Road SBR	-	-	-	-	-	-	-	-	-	-	-	-	0.21	5.1	A	<25/<25
Overall Intersection	-	-	-	-	-	-	-	-	-	-	-	-	0.40	9.2	A	-
Lunenburg Road / Old Union Turnpike																
<i>Weekday Morning Peak Period</i>																
Old Union Turnpike EB	0.37	9.7	A	45	0.44	11.3	B	57	0.81	39.1	E	195	No Mitigation Proposed			
Old Union Turnpike WB	0.18	5.7	A	<25	0.19	5.9	A	19	0.61	14.3	B	115				
Lunenburg Road NB	0.46	10.9	B	68	0.58	14.1	B	103	0.76	22.1	C	196				
Lunenburg Road SB	0.50	9.1	A	75	0.54	9.9	A	88	0.91	38.5	E	326				
<i>Weekday Evening Peak Period</i>																
Old Union Turnpike EB	0.27	6.3	A	27	0.32	7.4	A	34	0.43	10.7	B	54	No Mitigation Proposed			
Old Union Turnpike WB	0.44	11.3	B	59	0.50	13.2	B	74	0.98	64.6	F	332				
Lunenburg Road NB	0.52	9.1	A	79	0.58	10.3	B	97	0.89	26.0	D	328				
Lunenburg Road SB	0.53	11.1	B	82	0.66	15.2	C	132	0.88	35.4	E	286				

^a Volume-to-capacity ratio,
^b Delay expressed in seconds per vehicle (average)
^c Level of service,

^d 50th/95th Percentile Queue [95th Percentile Queue only for unsignalized intersections]

Table 13 – Intersection Capacity and Queue Analysis Summary (Continued)

Intersection / Lane Group	V/C ^a	2019 Existing			V/C	2028 No-Build			V/C	2028 Build			V/C	2028 Build w/ Mitigation				
		Delay ^b	LOS ^c	Queue ^d		Delay	LOS	Queue		Delay	LOS	Queue		Delay	LOS	Queue		
Lunenburg Road / Old Union Turnpike																		
<i>Saturday Midday Peak Period</i>																		
Old Union Turnpike EB	0.35	8.7	A	39	0.35	9.1	A	40	0.42	11.3	B	52	No Mitigation Proposed					
Old Union Turnpike WB	0.54	11.5	B	84	0.49	10.1	B	69	0.62	14.4	B	112						
Lunenburg Road NB	0.44	8.1	A	58	0.44	8.1	A	58	0.56	10.2	B	91						
Lunenburg Road SB	0.50	11.5	B	75	0.58	13.1	B	99	0.70	18.5	C	153						
Lunenburg Road / Fort Pond Road / Woods Lane																		
<i>Weekday Morning Peak Period</i>																		
Woods Lane EB	0.02	15.1	C	<25	0.02	15.5	C	<25	0.03	16.4	C	<25	0.34	26.8	C	<25/<25		
Fort Pond Road WBL	0.16	20.7	C	<25	0.25	23.4	C	25	0.50	34.8	D	65	0.53	17.4	B	19/108		
Fort Pond Road WBT/R	0.05	9.3	A	<25	0.05	9.4	A	<25	0.05	9.5	A	<25	0.20	15.2	B	<25/<25		
Lunenburg Road NB	0.00	0.0	A	<25	0.00	0.0	A	<25	0.00	0.0	A	<25	0.21	6.2	A	<25/54		
Lunenburg Road SB	0.05	7.6	A	<25	0.05	7.7	A	<25	0.05	7.7	A	<25	0.69	9.4	A	72/264		
Overall Intersection	-	-	-	-	-	-	-	-	-	-	-	-	0.45	10.2	B	-		
<i>Weekday Evening Peak Period</i>																		
Woods Lane EB	0.01	9.2	A	<25	0.01	9.3	A	<25	0.01	9.5	A	<25	0.37	39.2	D	<25/<25		
Fort Pond Road WBL	1.08	112.6	F	320	1.47	263.1	F	588	1.81	413.9	F	775	0.79	19.2	B	99/245		
Fort Pond Road WBT/R	0.62	20.8	C	105	0.67	23.3	C	123	0.71	26.8	D	140	0.70	16.3	A	<25/56		
Lunenburg Road NB	0.01	7.6	A	<25	0.01	7.6	A	<25	0.01	7.7	A	<25	0.76	17.4	B	126/362		
Lunenburg Road SB	0.03	8.7	A	<25	0.04	8.8	A	<25	0.04	8.9	A	<25	0.38	11.8	B	54/151		
Overall Intersection	-	-	-	-	-	-	-	-	-	-	-	-	0.65	16.8	B	-		
<i>Saturday Midday Peak Period</i>																		
Woods Lane EB	0.01	9.4	A	<25	0.01	9.5	A	<25	0.01	9.6	A	<25	0.36	34.9	C	<25/<25		
Fort Pond Road WBL	0.31	17.6	C	33	0.61	27.6	D	98	0.73	37.2	E	138	0.68	13.7	B	34/136		
Fort Pond Road WBT/R	0.11	10.1	B	<25	0.12	10.2	B	<25	0.12	10.4	B	<25	0.25	10.8	A	<25/26		
Lunenburg Road NB	0.01	7.7	A	<25	0.01	7.7	A	<25	0.01	7.7	A	<25	0.38	9.2	B	29/107		
Lunenburg Road SB	0.05	7.9	A	<25	0.05	7.9	A	<25	0.05	8.0	A	<25	0.49	9.8	A	39/142		
Overall Intersection	-	-	-	-	-	-	-	-	-	-	-	-	0.45	10.9	B	-		
Old Union Turnpike / Route 2 EB Ramps																		
<i>Weekday Morning Peak Period</i>																		
Old Union Turnpike EB	0.27	8.3	A	28	0.34	8.6	A	38	0.35	8.7	A	40	No Mitigation Proposed					
Route 2 Ramp SBL	0.07	25.8	D	<25	0.11	36.5	E	<25	0.12	39.5	E	<25						
Route 2 Ramp SBR	0.11	9.2	A	<25	0.11	9.2	A	<25	0.44	11.8	B	58						
<i>Weekday Evening Peak Period</i>																		
Old Union Turnpike EB	0.06	7.6	A	<25	0.08	7.7	A	<25	0.11	7.8	A	<25	No Mitigation Proposed					
Route 2 Ramp SBL	0.02	11.3	B	<25	0.03	12.1	B	<25	0.04	13.4	B	<25						
Route 2 Ramp SBR	0.27	10.3	B	28	0.30	10.3	B	33	0.48	12.4	B	65						
<i>Saturday Midday Peak Period</i>																		
Old Union Turnpike EB	0.18	8.7	A	<25	0.16	8.4	A	<25	0.18	8.5	A	<25	No Mitigation Proposed					
Route 2 Ramp SBL	0.11	20.0	C	<25	0.07	17.7	C	<25	0.08	18.4	C	<25						
Route 2 Ramp SBR	0.38	13.0	B	45	0.26	11.1	B	<25	0.34	11.8	B	38						
Fort Pond Road / Route 2 WB Ramps																		
<i>Weekday Morning Peak Period</i>																		
Fort Pond Road WB	0.01	7.4	A	<25	0.01	7.4	A	<25	0.17	10.2	B	<25	No Mitigation Proposed					
Route 2 Ramp NBL	0.08	9.6	A	<25	0.10	9.8	A	<25	0.01	7.4	A	<25						
<i>Weekday Evening Peak Period</i>																		
Fort Pond Road WB	0.02	7.4	A	<25	0.02	7.4	A	<25	0.02	7.4	A	<25						
Route 2 Ramp NBL	0.89	41.5	E	258	0.88	38.5	E	255	0.93	48.2	E	308						

^a Volume-to-capacity ratio,

^b Delay expressed in seconds per vehicle (average)

^c Level of service,

^d 50th/95th Percentile Queue [95th Percentile Queue only for unsignalized intersections]

OFF-PEAK SHIFT TIME TRAFFIC IMPACT ANALYSIS RESULTS

The stated business goals of the Building A perspective tenant are to not have their shift changes overlap with the general commuter peak hour along Lunenburg Road. The projections outlined within this TIAS assume a conservative (worst-case) scenario to present the overlapping of shift changes and commuter peak period during the weekday morning and evening peak hours. For the purposes of this TIAS, a sensitivity traffic impact analysis was conducted for the intersection of Lunenburg Road / Old Union Turnpike to depict the operations of the roundabout location under 2028 Build conditions without the specific shift change trip generation for Building A. Note that standard truck traffic to/from Building A is still included in this sensitivity analysis separate from employee related traffic. Table 14 provides a summary of the sensitivity analysis. Capacity and queue analysis worksheets for this scenario are provided in Appendix M.

Table 14 – Sensitivity Capacity and Queue Analysis Summary

<u>Intersection / Lane Group</u>	<u>V/C</u>	<u>2028 Build</u>		<u>Queue</u>
		<u>Delay</u>	<u>LOS</u>	
Lunenburg Road / Old Union Turnpike				
<i>Weekday Morning Peak Period</i>				
Old Union Turnpike EB	0.59	18.1	C	98
Old Union Turnpike WB	0.37	8.6	A	47
Lunenburg Road NB	0.67	17.4	C	142
Lunenburg Road SB	0.70	16.0	C	154
<i>Weekday Evening Peak Period</i>				
Old Union Turnpike EB	0.35	8.3	A	40
Old Union Turnpike WB	0.67	21.6	C	129
Lunenburg Road NB	0.75	15.9	C	189
Lunenburg Road SB	0.74	19.7	C	175

^a Volume-to-capacity ratio,

^b Delay expressed in seconds per vehicle (average)

^c Level of service,

^d 50th/95th Percentile Queue [95th Percentile Queue only for unsignalized intersections]

With the removal of Building A shift change volumes from the commuter peak hours, the intersection of Lunenburg Road / Old Union Turnpike is anticipated to operate at acceptable levels-of-service (LOS C or better) on all roundabout approaches. Note that any condition where the shift times move closer to the peak hour, the delay and queues would be expected to increase between the condition presented in Table 14 and the condition of overlapping shift times presented in Table 13.

VI. OFF-SITE MITIGATION

After evaluating the operations and safety of the study area roadways and intersections, the next step is to identify measures to improve the roadways and intersections based on existing and future deficiencies. The Project has impacts in the area immediately adjacent to the site and requires mitigation. The following section provides a summary of measures that are recommended to improve the existing and future operations and safety of the study area intersections. These recommended measures were noted in the previous capacity and queue analysis and complement improvements to be completed by MassDOT separate from this Project.

The Applicant has proposed a comprehensive transportation mitigation program in the vicinity of the site to improve vehicular, bicycle, and pedestrian operations and safety. The Applicant also seeks to significantly improve multi-modal accommodations for bicycles and pedestrians along McGovern Boulevard to service not only the Capital Commerce Center Project, but other existing and future developments in the vicinity of the Lunenburg Road intersection with McGovern Boulevard.

OFF-SITE COMMITMENTS

The Applicant is committed to the following off-site improvement measures to complement other improvement measures being implemented along the area roadways by the Town of Lancaster and MassDOT and mitigate the impact of site generated traffic volumes.

Intersection Improvements

The Applicant has committed to the following improvements at the intersection of Main Street / Seven Bridge Road:

- Modify traffic signal timings and parameters (traffic signal to be constructed as part of MassDOT Project No. 608779) post-occupancy (or at Master Plan occupancy milestone intervals) to accommodate the additional traffic flow from the Project site. The implementation of these improvements will be reviewed and coordinated with the Town of Lancaster, who will hold jurisdiction, at agreed upon occupancy thresholds.

The Applicant has committed to the following improvements at the intersection of Lunenburg Road / Main Street:

- Modify traffic signal timings and parameters (traffic signal to be constructed as part of MassDOT Project No. 608779) post-occupancy (or at Master Plan occupancy milestone intervals) to accommodate the additional traffic flow from the Project site. The implementation of these improvements will be reviewed and coordinated with

the Town of Lancaster who will hold jurisdiction, at agreed upon occupancy thresholds; and

- Implement short-term, low-cost improvement measures at the intersections which were not included or superseded as part of MassDOT Project No. 608779; including the installation of advance speed reduction signage (W3-5) along Lunenburg Road southbound. All other short-term / low-cost measures have been incorporated by the current MassDOT project.

The Applicant has committed to the following improvements at the intersection of Lunenburg Road / McGovern Boulevard:

- Construct a fully actuated traffic signal. Provide new demand-based vehicular and bicycle detection as part of the new traffic signal, as well as providing accommodations for emergency-vehicle pre-emption and a protected pedestrian crossing. The traffic signal at this location will be built in two stages:
 - Subsurface and foundational infrastructure for the traffic signal will be constructed prior to first occupancy and in conjunction with roadway improvements along both Lunenburg Road and McGovern Boulevard;
 - Traffic signal control and above-ground infrastructure for the traffic signal will be install prior to building occupancy of a perspective tenant where MUTCD Warrant #1 or Warrant #2 are realized;
- Widen McGovern Boulevard to provide two eastbound travel lanes including an exclusive left-turn lane and an exclusive right-turn lane;
- Widen the Lunenburg Road northbound approach to introduce an exclusive left-turn lane operating under protected-permitted signal phasing;
- Widen Lunenburg Road southbound approach to introduce an exclusive right-turn lane operating under permissive-overlap signal phasing;
- Provide ADA / AAB compliant pedestrian accommodations; including a crosswalk across McGovern Boulevard and Lunenburg Road, accessible ramps, and audio/vibratory pedestrian signal equipment;
- Construct new a 10-foot wide shared-use path along the westerly side of Lunenburg Road, north of McGovern Boulevard within the intersection limits including a pedestrian connection to Kimball Farm. Construct a 5-foot-wide sidewalk along the westerly side of Lunenburg Road, south of McGovern Boulevard within the intersection limits;
- Maintain 5-foot minimum shoulders to accommodate bicycle access along each side of Lunenburg Road; and
- Reconstruct private commercial driveways immediately north of McGovern Boulevard to accommodate the widened roadway.

Temporary Improvements (Lunenburg Road / Fort Pond Road / Woods Lane)

Sufficient traffic volume data was not available for the intersection of Lunenburg Road / Fort Pond Road / Woods Lane due to the onset of the COVID-19 pandemic to perform an 8-hour traffic

signal warrant analysis. Utilizing the peak hour traffic volumes from December 2018 at this location, the intersection would generally be expected to marginally meet only one traffic signal warrant, Warrant 2 – Four-Hour Volume, in an opening year condition without the Project. It is expected that the full build-out of the Master Plan will be completed over many years and will most likely not be completed prior to construction of MassDOT’s improvements at Route 2 Interchange 103 (formerly Interchange 35). Each alternative outlined by MassDOT would greatly enhance traffic operations and safety both with and without the Master Plan related traffic volumes.

The Applicant has committed to construct an interim / temporary traffic signal, without additional roadway widening, at the intersection of Lunenburg Road / Fort Pond Road / Woods Lane prior to an imminent building-occupancy where MUTCD Warrant #1 or Warrant #2 are met. The temporary traffic signal will be dependent on updated MUTCD traffic signal warrants post COVID-19 pandemic. Therefore, prior to immediate building-occupancy, the Applicant will reconduct traffic counts at the intersection (adjusted for COVID-19) for a typical weekday and add traffic to be generated by the immediate tenant. Upon credibly satisfying MUTCD Warrant #1 or Warrant #2, the Applicant will install the temporary/interim traffic signal. The interim traffic signal would generally consist of the following elements:

- Maintain existing geometric layout of the intersection approaches;
- Signal housings installed overhead utilizing span wire between utility poles (rated for loading);
- Installation of emergency vehicle pre-emption system;
- Installation of wire loop detectors on each approach within the pavement top-course; and
- Removal of all existing control signage; such as stop-signage on the Fort Pond Road and Woods Lane approaches.

This mitigation measure is meant to be an interim measure to mitigate both existing and future traffic operations prior to the improvements being evaluated by MassDOT at Interchange 103 (formerly Interchange 35). As the Master Plan build-out phasing is currently unknown, the level of traffic generated by the site will dictate when MUTCD traffic signal warrants are satisfied and will be evaluated at each perspective building occupancy stage.

Freeway Improvements

The Applicant has committed to construct improvements along the Route 2 WB On and Off-Ramps at Interchange 103 (formerly Interchange 35) as a temporary measure prior to full interchange reconstruction as part of an upcoming MassDOT Project. The construction will include the widening of pavement along the shoulder and marked deceleration lane for the Route 2 WB Off-Ramp in order to provide a consistent lane width and proper tapers to accommodate the 95th percentile queue (308-feet) for the stop-control movement along the ramp at Fort Pond Road. The construction will also include limited widening of pavement along the shoulder and marked acceleration area along the Route 2 WB On-Ramp based on the constraints of the Route 70 Bridge. Due to the bridge abutment conflict, the additional widening will extend approximately 375-feet and result in a 75-foot acceleration lane prior to the start of taper. The improvement will also modify the pavement markings on the Route 2 corridor to extend the taper to 720-feet.

Pedestrian Accommodations

The Applicant will construct a 5-foot sidewalk along each side of McGovern Boulevard between Lunenburg Road and the internal roundabout adjacent to Building A to provide connectivity between land uses on the site and to Lunenburg Road. This includes connectivity to the several retail parcels previously constructed (Dunkin Donuts and Mobil Station), future retail as programmed for the parcels on the west side of Lunenburg Road, and the existing Kimball Farm along the east side of Lunenburg Road. Additional pedestrian crossings will be provided across McGovern Boulevard within the site. Final layout of on-site pedestrian and bicycle accommodations, internal site circulation, and other on-site transportation networks will be designed following the Town process.

The Applicant has also committed to construct new 10-foot shared use path along the westerly side of Lunenburg Road north of McGovern Boulevard and a 5-foot sidewalk along the westerly side of Lunenburg Road south of McGovern Boulevard within the intersection reconstruction project limits, including a pedestrian connection to Kimball Farm under traffic signal control.

Bicycle Accommodations

The Applicant is committed to construct bicycle accommodations along McGovern Boulevard between Lunenburg Road and the internal roundabout adjacent to Building A to provide connectivity between land uses on the site and to Lunenburg Road. These bicycle accommodations will be in the form of 5-foot bicycle lanes and supplemented with MUTCD-compliant bicycle signage. In addition, bicycle racks will be provided on-site at various locations to promote the use of bicycle travel. Final layout of on-site pedestrian and bicycle accommodations, internal site circulation, and other on-site transportation networks will be designed following the Town process.

The Applicant is also committed to bicycle improvements along Lunenburg Road. The improvements along Lunenburg Road are generally short in nature and are along a high-speed arterial with wide shoulders. Within the reconstruction intersection zone, the Applicant will maintain 5-foot minimum shoulders to accommodate bicycle access along each side of Lunenburg Road within the limits of improvements. In addition, the Applicant has also committed to construct new 10-foot shared use path along the westerly side of Lunenburg Road north of McGovern Boulevard within the intersection reconstruction project limits to additionally facilitate bicycle travel.

Public Transportation Accommodations

The Applicant has reached out to MART on the feasibility of extending service along MART Bus Route 8 to/from its current terminus at Orchard Hill Park (Target / Kohl's). Orchard Hill Park is situated on the northerly side of Route 2 Interchange 102 approximately 2 miles from the proposed Capital Commerce Center. Based on these discussions, MART has approved bus service to the site. MART Bus Route 8 also connects to the Massachusetts Bay Transportation Authority (MBTA) Commuter Rail nearby via the Mall at Whitney Field. The North Leominster transit station (one stop away) provides daily commuter rail service to Boston, Cambridge, and Fitchburg, and fourteen other MBTA stations in between.

To extend MART Bus Route 8 to the Capital Commerce Center will cost (as a preliminary estimate) approximately \$110,000/year. The Commonwealth of Massachusetts will pay 50% of that amount, and the Town of Lancaster will be responsible for 50%, which is approximately \$55,000/year. The approximate cost of the Bus Shelter is about \$5,000 to \$10,000, depending on the design selected and approved by MART, and is the responsibility of the Capital Commerce Center. The cost structure for the public transportation connection is currently being coordinated with the Town of Lancaster and MART.

MART has recommended two bus stops and shelters within the site for a project of this size. Capital Commerce Center is currently aiming to propose these stops / shelters with one in the 40R District adjacent to the mixed-income, multi-family housing and one within the Industrial Commercial Overlay District near the largest distribution center (Building A).

Mitigation Implementation Thresholds

At this time, the project is in very early stages of phasing development and, therefore, the overall phasing sequence has not yet been determined. The Master Plan full build-out of each building will ultimately be dictated by market demand as individual tenants, buyers, or builders are identified and secured by the Applicant.

As the order of the Master Plan's build-out is dependent on market demand, certain portions of the mitigation for the Project are also intended to be phased to meet the demands of the site and surrounding community. The following section describes the order for construction of off-site transportation mitigation and a description of the methodology utilized to determine the process.

Main Street Traffic Signal Optimization & Lunenburg Road Signage

The optimization of signal timings to practical effect is dependent on specific construction milestones over the course of the Master Plan's full-build out. The Applicant has committed to coordinate with the Town of Lancaster to implement traffic signal timing optimization at the intersection of Main Street / Seven Bridge Road / Shirley Road and Main Street / Lunenburg Road at agreed upon construction milestones through post-occupancy. These milestones may be directly related to Town feedback on traffic operations during the full build-out period.

Prior to issuance of the first occupancy permit, the Applicant has committed to construct advance signage along Lunenburg Road southbound in advance of Main Street as identified in the previous RSA.

Lunenburg Road / McGovern Boulevard Intersection Improvements

Prior to issuance of the first occupancy permit, the Applicant has committed to construct all mitigation improvements at the intersection of Lunenburg Road / McGovern Boulevard with the exception of the above-ground traffic signal infrastructure. This includes all roadway widening for Lunenburg Road, the modified cross-section of McGovern Boulevard, turning lanes and bicycle accommodations, all sidewalks and accessible ramps, and all subsurface traffic signal components (conduits, handholes, and foundations). The Applicant has committed to construct and install the above-ground traffic signal infrastructure prior to an imminent building-occupancy where site generated trips reach a level where a minimum of *MUTCD* traffic signal warrants for Warrant #2 (four-hour traffic volumes) at met. As the Master Plan build-out phasing is currently

unknown, the level of traffic generated by the site will dictate when *MUTCD* traffic signal warrants are satisfied.

McGovern Boulevard

The Applicant has committed to reconstruct McGovern Boulevard from the existing FC Stars Soccer driveway connection to Lunenburg Road prior to issuance of the first occupancy permit. For other portions of the Master Plan west of this location, the Applicant is committed to construct each segment of McGovern Boulevard as needed based on building footprint location. Therefore, each new segment will advance further west into the Master Plan up to the site driveway location of the subject building prior to occupancy of said building.

Lunenburg Road / Fort Pond Road / Woods Lane

In the event that improvements at this location are not completed by MassDOT prior to full-occupancy of the development, the Applicant has committed to construct an interim / temporary traffic signal, without additional roadway widening, at the intersection of Lunenburg Road / Fort Pond Road / Woods Lane prior to an imminent building-occupancy where *MUTCD* traffic signal warrants are met as part of updated traffic volumes post COVID-19. As the Master Plan build-out phasing is currently unknown, the level of traffic generated by the site will dictate when *MUTCD* traffic signal warrants are satisfied and will be evaluated at each perspective building occupancy stage. The mitigation measure is meant to be an interim measure to mitigate both existing and future traffic operations prior to the improvements being evaluated by MassDOT at Interchange 103 (formerly Interchange 35). The interim traffic signal would generally consist of the following elements:

- Maintain existing geometric layout of the intersection approaches;
- Signal housings installed overhead utilizing span wire between utility poles (rated for loading);
- Installation of emergency vehicle pre-emption system;
- Installation of wire loop detectors on each approach within the pavement top-course; and
- Removal of all existing control signage; such as stop-signage on the Fort Pond Road and Woods Lane approaches.

Transportation Demand Management Measures

The Applicant has commitment to research and provide a dynamic TDM program in order to reduce SOV trips to/from the site. At this time, the Applicant is committed to provide the following TDM measures:

Parking Measures

- Preferential Parking - Provide preferential parking for rideshare, carpool, and hybrid vehicles at locations throughout the site's parking areas in close proximity to major entranceways. The designated spaces will be monitored to ensure that the license plates of those employees parking in the spots each day match the

registrations of participants. Employees will only be allowed to use these spaces on the days that they are carpooling;

- Electric Vehicle Stations – Provide electric vehicle (EV) charging stations at locations throughout the site's parking areas in close proximity to major entranceways.
- Provide Tractor-trailer Parking On-Site – The site will include parking spaces for tractor-trailers to be stored on-site. As an industrial park complex, this will minimize the need for tractor trailers, which create higher levels of emissions, to make additional site trips to/from a separate location to park when unneeded as part of the day-to-day commerce; and
- Reduced Parking Supply – The Applicant is committed to reducing the parking supply by providing minimal number of parking spaces below Town of Lancaster Zoning requirements to a level of the demand need only. The current parking layout provides a parking supply that is both below Town of Lancaster Zoning and ITE parking demand estimates.

Bicycle and Pedestrian Measures

- Pedestrian Signal Equipment – Install new pedestrian signal equipment at the intersection of Lunenburg Road / McGovern Boulevard;
- Sidewalk Connectivity - Provide connectivity of sidewalk infrastructure along McGovern Boulevard to land uses within the site and along Lunenburg Road within the construction limits;
- Bicycle Accommodations - Provide striping improvements for bicycle lanes along McGovern Boulevard and Lunenburg Road with complementary bike signs;
- ADA/AAB Compliance in Vicinity of Site - Provide ADA/AAB improvements at curb ramps near the site;
- Bicycle Racks - Provide secure, weather protected, long-term bicycle parking for employees at designated locations within the site. Provide bicycle racks for short-term users at several locations on-site; and
- Employee Shower Facilities - Coordinate with tenants to provide showers for employees who commute by walking or biking.

Public Transportation Measures

- Bus Service – The Applicant is coordinating with MART to extend Bus Route 8 into the site. The Applicant will construct bus shelters / stops at two locations within the project to facilitate public transportation usage.
- Maps / Schedules - Public transportation schedules with transit maps for Bus Route 8, the MBTA Commuter Rail, as well as for all nearby routes will be provided to each resident upon move-in and will be posted within each floor of the residential buildings. Schedules and maps will also be provided in the lobby and near doorways in all other on-site buildings.

Other Measures

- Employee Transportation Coordinator (ETC) – An ETC will be provided on-site to oversee, implement, monitor, and evaluate TDM measures, employed or funded by the Applicant. The ETC will be responsible for managing rideshare and carpool programs, as well as distributing information to employees to encourage alternative means of transportation. The ETC will be responsible for posting and distributing announcements, holding promotional events to encourage rideshare, bicycling, and walking;
- Marketing of Transportation Options and Benefits - A welcome packet for all tenants and employees will be distributed at move-in which includes information for all transportation related benefits, promotions, and local transportation options; including location of MART / MBTA stops, transit schedules, EV and carpool parking locations, and any other emerging new mobility locations;
- NuRide – The ETC will actively register employees with NuRide, as requested, to encourage ridesharing and “green” trips. The ETC, with NuRide, will develop an employee rideshare program to encourage employees to seek alternatives to driving to work alone;
- Vanpool and Carpool – The Applicant, and the ETC, will encourage vanpool and carpooling participation through marketing, events, and vanpool formation meetings. The ETC will implement a ride-matching program to assist employees in finding appropriate carpool matches. The ETC will contact employees to determine if they receive their match-lists, review the lists with them and see if they have contacted anyone on the list or would like assistance in contacting people;
- Guaranteed Ride Home Program – The ETC will be responsible for providing all employees who carpool, bicycle, or walk to work with an emergency ride home. This program eliminates the fear of being stranded on days that the employees are ridesharing or having to walk or bicycle in inclement weather conditions;
- On-Site Laundry Services - The Applicant will provide laundry services on-site to allow for the reduction of trips to/from the site of nearby laundromats;
- Flex Hours - Encourage tenants within the mixed-use development to provide flexible hours to employees;
- Direct Deposit for Employees - Encourage tenants within the mixed-use development to provide direct deposit to reduce employee trips to/from the site;
- Site Amenities – The site includes several on-site amenities; such as Dunkin Donuts, Mobil Gas Station, and other future retail space currently not constructed. This location will assist in reducing vehicular demand and increase multi-use trips, which include parking capacity sized to meet minimum local requirements without providing excessive parking;
- Promotional Events and Activities – The ETC will be responsible for organizing promotional events and activities to encourage rideshare and alternative transportation means. In addition, the ETC will distribute brochures to all new employees and residents during, and post posters and bulletins on various

subjects from carpooling to the Guaranteed Ride Home program throughout the site; and

- **Transportation Monitoring Program** – The Applicant is committed to implement a TMP, which is intended to monitor traffic operations and parking occupancy throughout the construction and for a period following completion of the Project. The scope of the EMP will be developed in coordination with MassDOT, and will include providing traffic counts, TDM compliance, and parking information to the MassDOT District 3 office and the Town of Lancaster.

Transportation Monitoring Program

The Applicant is committed to implementing a TMP, which is intended to monitor traffic operations, parking occupancy, public transportation utilization, and pedestrian / bicycle use for a period following completion of the Project. The TMP will include providing traffic count information to the MassDOT District 3 office and the Town of Lancaster for use of tracking site-generated trips. The intent of the monitoring program is to ensure that the Project impacts are consistent with those predicted in the Project's permitting process, evaluate the effectiveness of the TDM measures in meeting the mode share targets, and assess the need for additional off-site improvements or TDM measures.

The MassDOT / Town of Lancaster monitoring program will include evaluation of the following:

- Traffic operations at the intersections of:
 - Main Street / Lunenburg Road
 - Lunenburg Road / McGovern Boulevard
 - Lunenburg Road / Old Union Turnpike
 - Lunenburg Road / Fort Pond Road / Woods Lane
- Adequacy of the constructed parking supply; and
- Effectiveness of TDM measures

As part of the monitoring program, the Applicant will complete the following tasks annually for five years following occupancy of the proposed mixed-use development:

- Collect manual Turning Movement Counts (TMCs) during the weekday morning (7:00 AM to 9:00 AM) and weekday evening (4:00 to 6:00 PM) peak periods at the following intersections;
 - Main Street / Lunenburg Road
 - Lunenburg Road / McGovern Boulevard
 - Lunenburg Road / Old Union Turnpike
 - Lunenburg Road / Fort Pond Road / Woods Lane
- Collect ATR data for a continuous 72-hour period along Lunenburg Road and McGovern Boulevard;
- Collect parking demand counts during the peak parking demand periods for the weekday evening (4:00 to 6:00 PM) peak period;

- Complete an employee travel survey to gauge employee travel patterns and mode share;
- Compare the TMCs collected above with those projected within the TIAS for the Project to determine whether the total vehicles entering each intersection exceeds the volumes projected;
- Perform a capacity and queuing analysis using Synchro analysis software to evaluate the traffic operations at each of the intersections listed above and compare to the operations projected in the TIAS prepared for the Project;
- Assess whether additional mitigation is necessary at any of the study intersections and identify measures to improve operations and/or reduce vehicular traffic volumes. The need for mitigation will be conditioned upon exceeding the total projected traffic volume through an intersection by more than 10 percent or exceeding the projected overall intersection delay by more than 20 percent;
- Assess whether the constructed parking supply is adequate for the parking demand as observed; and
- Prepare a memorandum summarizing the results of the TMCs, ATRs, parking demand counts and the Synchro analysis for submission to MassDOT and the Town of Lancaster.

The monitoring program will occur on an annual basis beginning six months after issuance of the first occupancy permit and continuing for five years following full occupancy of the project. The monitoring program may be suspended at any time upon agreement with MassDOT and the Town of Lancaster that the Project has sufficiently provided evidence that the upper limits of vehicle delay and trip projection would not be feasibly satisfied. The monitoring program may also be suspended if five years have passed since the issuance of an occupancy permit for the project and will recommence should an additional occupancy permit be issued.

VII. CONCLUSION

TEC has examined the potential traffic impacts associated with the proposed Capital Commerce Center in Lancaster, Massachusetts on the study area roadways and intersections. The following is a summary of the results and conclusions of this effort:

- The existing site is currently occupied by an FC Stars outdoor soccer complex comprised of three (3) soccer fields, a 11,800 square foot (SF) J.B. Hunt Transport Services facility, a 2,300 SF Dunkin Donuts, a 5,000 SF Mobil gas station with convenience market, and the soil / gravel yard for Central Mass Sand & Gravel;
- The Project consists of redeveloping the existing site; but retaining the existing three (3) outdoor soccer fields, Dunkin Donuts, and Mobil Gas Station. The proposed mixed-use development program includes construction of a 2,484,400 square foot (SF) industrial park, 37,600 SF of professional office, 41,300 SF of additional retail space (48,600 SF total with existing Dunkin Donuts and Mobil), and 150 residential apartment units;
- The Project proposes to retain the access/egress to the site via McGovern Boulevard and the minor retail driveways for the existing Mobil Gas Station and Dunkin Donuts along Lunenburg Road. Individual minor driveways along Lunenburg Road, at the site frontage, will be constructed specifically for turning movements to/from on-site retail tenants similar to the existing Mobil Gas Station and Dunkin Donuts;
- The Route 2 Interchange 103 (formerly Interchange 35) and associated ramp network has experienced a significant number of crashes; however, an overwhelming majority of these crashes occurred on the freeway in the vicinity of the interchange with no effect or cause related to the surface intersection with Old Union Turnpike and Fort Pond Road. Individual crash reports were processed from the MassDOT Traffic and Safety Engineering Section for 2014 through 2018 in order to determine the crash history of the two surface intersections as part of the study area. An evaluation of these reports indicates that the surface intersections at the ramps are not HSIP-eligible;
- The intersection sight distance (ISD) and stopping sight distance (SSD) at the intersection of Lunenburg Road / McGovern Boulevard are well in excess of AASHTO minimum recommendations;
- Separate from the Project, MassDOT is currently evaluating alternatives for reconstruction of several Route 2 interchanges in Harvard and Lancaster, MA. Specifically, MassDOT is in the planning stages for reconstruction of Interchange 103 (formerly Interchange 35). These improvements are expected to greatly improve operations and safety in the vicinity of Route 2;

- The proposed mixed-use development is anticipated to generate 7,314 new vehicle trips during the average weekday, with 926 new vehicle trips (710 entering and 216 exiting) during the weekday morning peak hour and 916 new vehicle trips (363 entering and 553 exiting) during the weekday evening peak hour. On a typical Saturday the development is anticipated to generate 4,176 new vehicle trips with 378 new vehicle trips (193 entering and 185 exiting) during the Saturday midday peak hour;
- Based on both the signalized and unsignalized operating conditions on Lunenburg Road, the traffic volumes warrant the construction of a left-turn lane on the Lunenburg Road northbound approach at its intersection with McGovern Boulevard;
- Operational improvements are recommended and proposed at the intersection of Main Street / Seven Bridge Road / Driveway including re-timing of the new signal to accommodate the site-generated trips. With this mitigation, all roadway movements during the weekday morning and Saturday midday peak hours are expected to operate at acceptable levels of service (LOS D or better). The northbound approach will operate at LOS E during the weekday evening peak hour which is better than operations under existing conditions;
- Operational improvements are recommended and proposed at the intersection of Main Street / Lunenburg Road including re-timing of the new signal to accommodate the site-generated trips. With this mitigation, all roadway movements during the weekday morning and Saturday midday peak hours are expected to operate at acceptable levels of service (LOS D or better);
- Geometric and signalization improvements are recommended and proposed at the intersection of Lunenburg Road / McGovern Boulevard including slight widening to accommodate axillary turn-lanes and construction of a fully actuated traffic signal and providing an exclusive left-turn and right-turn lane on McGovern Boulevard. With this mitigation, all movements during the weekday morning, weekday evening, and Saturday midday peak hours are expected to operate at acceptable levels of service (LOS B or better). Full traffic signal implementation will not be installed by the Applicant until the level of site traffic is elevated to an MUTCD warranted condition during the stage construction;
- The intersection of Lunenburg Road / Old Union Turnpike was recently reconstructed as a roundabout in 2013 to provide a substantial amount of new reserve capacity. Under 2028 Build Conditions, several intersection movements are anticipated to operate at LOS E or F. This level of delay is only expected during this short time of a typical weekday and is dependent on the conservative level of site generated traffic allocated to the location. Specifically, if Building A shift changes overlap the commuter peak hour. Should shift changes not overlap, it is expected that each approach will operate at acceptable levels-of-service. There are no practical means to mitigate project related impacts on this approach based on the short period of elevated levels-of-service during the overlapping time period;

- Under both 2028 No-Build and Build Conditions, the Fort Pond Road westbound approach at Lunenburg Road is anticipated to operate at an elevated level-of-service during the weekday morning, weekday evening, and Saturday midday peak period at its intersection with Lunenburg Road. A temporary/interim traffic signal, utilizing the existing geometry, is recommended, and proposed at this intersection. With this mitigation, all movements at this intersection are expected to operate at acceptable levels of service (LOS D or better) with a Fort Pond Road westbound queue not anticipated to be greater than 245-feet, less than the link distance to the Route 2 WB Off-ramp. The interim traffic signal will not be installed by the Applicant until the level of site traffic is elevated to an MUTCD warranted condition during the staged construction;
- Under 2028 Build Conditions, all movements at the intersection of Fort Pond Road / Route 2 WB Exit 103 Ramps are expected to operate at acceptable levels of service (LOS D or better) during all peak hour analysis scenarios with exception of the Route 2 off-ramp left-turn movement which will operate at an elevated level-of-service during the weekday evening peak hour. Although the ramp will operate at an elevated level-of-service, the ramp approach will generally operate in a consistent manner to existing conditions as the additional traffic will also result in a more consistent flow of traffic. Geometric improvements are recommended and proposed at this location as part of Capital Commerce Center project's off-site mitigation and will include a commitment to extend the queue storage and deceleration lane along the Route 2 WB Off-Ramp to ensure project related traffic does not conflict with Route 2 mainline volumes. Additional acceleration area will also be provided along the Route 2 WB On-Ramp;
- The Applicant seeks to significantly improve accommodations for bicycles and pedestrians along Lunenburg Road and McGovern Boulevard to service not only the Capital Commence Center; but other existing developments in the vicinity;
- The Applicant is currently working with the Town of Lancaster and MART to provide service from MART Bus Route 8 to the site; including stops at potentially two locations along McGovern Boulevard; and

The Applicant has commitment to research and provide a dynamic and extensive TDM program in order to reduce SOV trips to/from the site and promote multi-modal travel. A full compilation of TDM measures have been identified and include provisions to reduce on-site parking, increase pedestrian and bicycle travel, promote transit use to/from the site, and decrease the impacts of vehicle emissions.

In conclusion, with implementation of the proposed improvements, the anticipated traffic generated by the Capital Commence Center Project can be safely and efficiently accommodated within the study area corridors and intersections upon implementation of off-site mitigation. The Applicant has committed to work cooperatively with the Town of Lancaster to implement the robust transportation mitigation program.

Appendix A

Turning Movement Counts (TMCs)

PDI File #: **186634 A**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars and Heavy Vehicles (Combined)

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
7:00 AM	8	78	0	86	49	7	1	57	5	2	0	7	150
7:15 AM	3	78	0	81	68	8	0	76	5	4	0	9	166
7:30 AM	3	72	0	75	85	7	0	92	13	6	0	19	186
7:45 AM	7	74	0	81	67	7	0	74	8	4	0	12	167
Total	21	302	0	323	269	29	1	299	31	16	0	47	669
8:00 AM	5	94	0	99	65	5	0	70	2	4	0	6	175
8:15 AM	3	50	0	53	67	7	0	74	2	3	0	5	132
8:30 AM	6	61	0	67	77	13	0	90	3	7	0	10	167
8:45 AM	5	67	0	72	54	5	0	59	5	6	0	11	142
Total	19	272	0	291	263	30	0	293	12	20	0	32	616
Grand Total	40	574	0	614	532	59	1	592	43	36	0	79	1285
Approach %	6.5	93.5	0.0		89.9	10.0	0.2		54.4	45.6	0.0		
Total %	3.1	44.7	0.0	47.8	41.4	4.6	0.1	46.1	3.3	2.8	0.0	6.1	
Exiting Leg Total				568				618				99	1285
Cars	33	544	0	577	479	53	1	533	38	28	0	66	1176
% Cars	82.5	94.8	0.0	94.0	90.0	89.8	100.0	90.0	88.4	77.8	0.0	83.5	91.5
Exiting Leg Total				507				583				86	1176
Heavy Vehicles	7	30	0	37	53	6	0	59	5	8	0	13	109
% Heavy Vehicles	17.5	5.2	0.0	6.0	10.0	10.2	0.0	10.0	11.6	22.2	0.0	16.5	8.5
Exiting Leg Total				61				35				13	109

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:15 AM	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
7:15 AM	3	78	0	81	68	8	0	76	5	4	0	9	166
7:30 AM	3	72	0	75	85	7	0	92	13	6	0	19	186
7:45 AM	7	74	0	81	67	7	0	74	8	4	0	12	167
8:00 AM	5	94	0	99	65	5	0	70	2	4	0	6	175
Total Volume	18	318	0	336	285	27	0	312	28	18	0	46	694
% Approach Total	5.4	94.6	0.0		91.3	8.7	0.0		60.9	39.1	0.0		
PHF	0.643	0.846	0.000	0.848	0.838	0.844	0.000	0.848	0.538	0.750	0.000	0.605	0.933
Cars	15	300	0	315	256	25	0	281	23	12	0	35	631
Cars %	83.3	94.3	0.0	93.8	89.8	92.6	0.0	90.1	82.1	66.7	0.0	76.1	90.9
Heavy Vehicles	3	18	0	21	29	2	0	31	5	6	0	11	63
Heavy Vehicles %	16.7	5.7	0.0	6.3	10.2	7.4	0.0	9.9	17.9	33.3	0.0	23.9	9.1
Cars Enter Leg	15	300	0	315	256	25	0	281	23	12	0	35	631
Heavy Enter Leg	3	18	0	21	29	2	0	31	5	6	0	11	63
Total Entering Leg	18	318	0	336	285	27	0	312	28	18	0	46	694
Cars Exiting Leg				268				323				40	631
Heavy Exiting Leg				35				23				5	63
Total Exiting Leg				303				346				45	694

PDI File #: **186634 A**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Class: **Cars-Combined (Motorcycles, Cars, Light Goods)**

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
7:00 AM	5	75	0	80	42	7	1	50	5	2	0	7	137
7:15 AM	2	75	0	77	59	6	0	65	4	3	0	7	149
7:30 AM	3	70	0	73	76	7	0	83	9	2	0	11	167
7:45 AM	6	70	0	76	64	7	0	71	8	4	0	12	159
Total	16	290	0	306	241	27	1	269	26	11	0	37	612
8:00 AM	4	85	0	89	57	5	0	62	2	3	0	5	156
8:15 AM	2	49	0	51	60	6	0	66	2	3	0	5	122
8:30 AM	6	56	0	62	72	13	0	85	3	6	0	9	156
8:45 AM	5	64	0	69	49	2	0	51	5	5	0	10	130
Total	17	254	0	271	238	26	0	264	12	17	0	29	564
Grand Total	33	544	0	577	479	53	1	533	38	28	0	66	1176
Approach %	5.7	94.3	0.0		89.9	9.9	0.2		57.6	42.4	0.0		
Total %	2.8	46.3	0.0	49.1	40.7	4.5	0.1	45.3	3.2	2.4	0.0	5.6	
Exiting Leg Total				507				583				86	1176

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
7:15 AM													
7:15 AM	2	75	0	77	59	6	0	65	4	3	0	7	149
7:30 AM	3	70	0	73	76	7	0	83	9	2	0	11	167
7:45 AM	6	70	0	76	64	7	0	71	8	4	0	12	159
8:00 AM	4	85	0	89	57	5	0	62	2	3	0	5	156
Total Volume	15	300	0	315	256	25	0	281	23	12	0	35	631
% Approach Total	4.8	95.2	0.0		91.1	8.9	0.0		65.7	34.3	0.0		
PHF	0.625	0.882	0.000	0.885	0.842	0.893	0.000	0.846	0.639	0.750	0.000	0.729	0.945
Entering Leg	15	300	0	315	256	25	0	281	23	12	0	35	631
Exiting Leg				268				323				40	631
Total				583				604				75	1262

PDI File #: **186634 A**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilc.com

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

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
7:00 AM	3	3	0	6	7	0	0	7	0	0	0	0	13
7:15 AM	1	3	0	4	9	2	0	11	1	1	0	2	17
7:30 AM	0	2	0	2	9	0	0	9	4	4	0	8	19
7:45 AM	1	4	0	5	3	0	0	3	0	0	0	0	8
Total	5	12	0	17	28	2	0	30	5	5	0	10	57
8:00 AM	1	9	0	10	8	0	0	8	0	1	0	1	19
8:15 AM	1	1	0	2	7	1	0	8	0	0	0	0	10
8:30 AM	0	5	0	5	5	0	0	5	0	1	0	1	11
8:45 AM	0	3	0	3	5	3	0	8	0	1	0	1	12
Total	2	18	0	20	25	4	0	29	0	3	0	3	52
Grand Total	7	30	0	37	53	6	0	59	5	8	0	13	109
Approach %	18.9	81.1	0.0		89.8	10.2	0.0		38.5	61.5	0.0		
Total %	6.4	27.5	0.0	33.9	48.6	5.5	0.0	54.1	4.6	7.3	0.0	11.9	
Exiting Leg Total				61				35				13	109
Buses	0	4	0	4	2	0	0	2	0	1	0	1	7
% Buses	0.0	13.3	0.0	10.8	3.8	0.0	0.0	3.4	0.0	12.5	0.0	7.7	6.4
Exiting Leg Total				3				4				0	7
Single-Unit Trucks	5	21	0	26	41	4	0	45	2	5	0	7	78
% Single-Unit	71.4	70.0	0.0	70.3	77.4	66.7	0.0	76.3	40.0	62.5	0.0	53.8	71.6
Exiting Leg Total				46				23				9	78
Articulated Trucks	2	5	0	7	10	2	0	12	3	2	0	5	24
% Articulated	28.6	16.7	0.0	18.9	18.9	33.3	0.0	20.3	60.0	25.0	0.0	38.5	22.0
Exiting Leg Total				12				8				4	24

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
7:15 AM	1	3	0	4	9	2	0	11	1	1	0	2	17
7:30 AM	0	2	0	2	9	0	0	9	4	4	0	8	19
7:45 AM	1	4	0	5	3	0	0	3	0	0	0	0	8
8:00 AM	1	9	0	10	8	0	0	8	0	1	0	1	19
Total Volume	3	18	0	21	29	2	0	31	5	6	0	11	63
% Approach Total	14.3	85.7	0.0		93.5	6.5	0.0		45.5	54.5	0.0		
PHF	0.750	0.500	0.000	0.525	0.806	0.250	0.000	0.705	0.313	0.375	0.000	0.344	0.829
Buses	0	3	0	3	2	0	0	2	0	1	0	1	6
Buses %	0.0	16.7	0.0	14.3	6.9	0.0	0.0	6.5	0.0	16.7	0.0	9.1	9.5
Single-Unit Trucks	1	10	0	11	22	2	0	24	2	4	0	6	41
Single-Unit %	33.3	55.6	0.0	52.4	75.9	100.0	0.0	77.4	40.0	66.7	0.0	54.5	65.1
Articulated Trucks	2	5	0	7	5	0	0	5	3	1	0	4	16
Articulated %	66.7	27.8	0.0	33.3	17.2	0.0	0.0	16.1	60.0	16.7	0.0	36.4	25.4
Buses	0	3	0	3	2	0	0	2	0	1	0	1	6
Single-Unit Trucks	1	10	0	11	22	2	0	24	2	4	0	6	41
Articulated Trucks	2	5	0	7	5	0	0	5	3	1	0	4	16
Total Entering Leg	3	18	0	21	29	2	0	31	5	6	0	11	63
Buses				3				3				0	6
Single-Unit Trucks				26				12				3	41
Articulated Trucks				6				8				2	16
Total Exiting Leg				35				23				5	63

PDI File #: **186634 A**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdillc.com

Cars

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
7:00 AM	5	65	0	70	41	6	1	48	3	2	0	5	123
7:15 AM	2	66	0	68	54	6	0	60	1	3	0	4	132
7:30 AM	3	55	0	58	70	5	0	75	8	2	0	10	143
7:45 AM	5	60	0	65	51	7	0	58	8	2	0	10	133
Total	15	246	0	261	216	24	1	241	20	9	0	29	531
8:00 AM	4	72	0	76	45	4	0	49	2	1	0	3	128
8:15 AM	2	43	0	45	56	5	0	61	2	3	0	5	111
8:30 AM	3	52	0	55	68	13	0	81	3	5	0	8	144
8:45 AM	4	62	0	66	46	2	0	48	5	5	0	10	124
Total	13	229	0	242	215	24	0	239	12	14	0	26	507
Grand Total	28	475	0	503	431	48	1	480	32	23	0	55	1038
Approach %	5.6	94.4	0.0		89.8	10.0	0.2		58.2	41.8	0.0		
Total %	2.7	45.8	0.0	48.5	41.5	4.6	0.1	46.2	3.1	2.2	0.0	5.3	
Exiting Leg Total				454				508				76	1038

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
7:15 AM													
7:15 AM	2	66	0	68	54	6	0	60	1	3	0	4	132
7:30 AM	3	55	0	58	70	5	0	75	8	2	0	10	143
7:45 AM	5	60	0	65	51	7	0	58	8	2	0	10	133
8:00 AM	4	72	0	76	45	4	0	49	2	1	0	3	128
Total Volume	14	253	0	267	220	22	0	242	19	8	0	27	536
% Approach Total	5.2	94.8	0.0		90.9	9.1	0.0		70.4	29.6	0.0		
PHF	0.700	0.878	0.000	0.878	0.786	0.786	0.000	0.807	0.594	0.667	0.000	0.675	0.937
Entering Leg	14	253	0	267	220	22	0	242	19	8	0	27	536
Exiting Leg				228				272				36	536
Total				495				514				63	1072

PDI File #: **186634 A**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Class: **Light Goods Vehicle**

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
7:00 AM	0	10	0	10	1	1	0	2	2	0	0	2	14
7:15 AM	0	9	0	9	5	0	0	5	3	0	0	3	17
7:30 AM	0	15	0	15	6	2	0	8	1	0	0	1	24
7:45 AM	1	10	0	11	13	0	0	13	0	2	0	2	26
Total	1	44	0	45	25	3	0	28	6	2	0	8	81
8:00 AM	0	13	0	13	12	1	0	13	0	2	0	2	28
8:15 AM	0	6	0	6	4	1	0	5	0	0	0	0	11
8:30 AM	3	4	0	7	4	0	0	4	0	1	0	1	12
8:45 AM	1	2	0	3	3	0	0	3	0	0	0	0	6
Total	4	25	0	29	23	2	0	25	0	3	0	3	57
Grand Total	5	69	0	74	48	5	0	53	6	5	0	11	138
Approach %	6.8	93.2	0.0		90.6	9.4	0.0		54.5	45.5	0.0		
Total %	3.6	50.0	0.0	53.6	34.8	3.6	0.0	38.4	4.3	3.6	0.0	8.0	
Exiting Leg Total				53				75				10	138

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
7:15 AM	0	9	0	9	5	0	0	5	3	0	0	3	17
7:30 AM	0	15	0	15	6	2	0	8	1	0	0	1	24
7:45 AM	1	10	0	11	13	0	0	13	0	2	0	2	26
8:00 AM	0	13	0	13	12	1	0	13	0	2	0	2	28
Total Volume	1	47	0	48	36	3	0	39	4	4	0	8	95
% Approach Total	2.1	97.9	0.0		92.3	7.7	0.0		50.0	50.0	0.0		
PHF	0.250	0.783	0.000	0.800	0.692	0.375	0.000	0.750	0.333	0.500	0.000	0.667	0.848
Entering Leg	1	47	0	48	36	3	0	39	4	4	0	8	95
Exiting Leg				40				51				4	95
Total				88				90				12	190

PDI File #: **186634 A**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Buses

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
7:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	1
7:45 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	0	2	0	2	2	0	0	2	0	0	0	0	0	4
8:00 AM	0	2	0	2	0	0	0	0	0	1	0	0	1	3
8:15 AM	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
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	2	0	0	0	0	0	1	0	0	1	3
Grand Total	0	4	0	4	2	0	0	2	0	1	0	0	1	7
Approach %	0.0	100.0	0.0		100.0	0.0	0.0		0.0	100.0	0.0			
Total %	0.0	57.1	0.0	57.1	28.6	0.0	0.0	28.6	0.0	14.3	0.0		14.3	
Exiting Leg Total				3				4					0	7

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:15 AM	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
7:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	1
7:45 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	1
8:00 AM	0	2	0	2	0	0	0	0	0	1	0	0	1	3
Total Volume	0	3	0	3	2	0	0	2	0	1	0	0	1	6
% Approach Total	0.0	100.0	0.0		100.0	0.0	0.0		0.0	100.0	0.0			
PHF	0.000	0.375	0.000	0.375	0.500	0.000	0.000	0.500	0.000	0.250	0.000	0.250	0.500	
Entering Leg	0	3	0	3	2	0	0	2	0	1	0	0	1	6
Exiting Leg				3				3					0	6
Total				6				5					1	12

PDI File #: **186634 A**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Single-Unit Trucks

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
7:00 AM	3	2	0	5	5	0	0	5	0	0	0	0	10
7:15 AM	1	1	0	2	8	2	0	10	0	1	0	1	13
7:30 AM	0	1	0	1	7	0	0	7	2	3	0	5	13
7:45 AM	0	3	0	3	1	0	0	1	0	0	0	0	4
Total	4	7	0	11	21	2	0	23	2	4	0	6	40
8:00 AM	0	5	0	5	6	0	0	6	0	0	0	0	11
8:15 AM	1	1	0	2	6	1	0	7	0	0	0	0	9
8:30 AM	0	5	0	5	4	0	0	4	0	0	0	0	9
8:45 AM	0	3	0	3	4	1	0	5	0	1	0	1	9
Total	1	14	0	15	20	2	0	22	0	1	0	1	38
Grand Total	5	21	0	26	41	4	0	45	2	5	0	7	78
Approach %	19.2	80.8	0.0		91.1	8.9	0.0		28.6	71.4	0.0		
Total %	6.4	26.9	0.0	33.3	52.6	5.1	0.0	57.7	2.6	6.4	0.0	9.0	
Exiting Leg Total				46				23				9	78

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:15 AM	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
7:15 AM	1	1	0	2	8	2	0	10	0	1	0	1	13
7:30 AM	0	1	0	1	7	0	0	7	2	3	0	5	13
7:45 AM	0	3	0	3	1	0	0	1	0	0	0	0	4
8:00 AM	0	5	0	5	6	0	0	6	0	0	0	0	11
Total Volume	1	10	0	11	22	2	0	24	2	4	0	6	41
% Approach Total	9.1	90.9	0.0		91.7	8.3	0.0		33.3	66.7	0.0		
PHF	0.250	0.500	0.000	0.550	0.688	0.250	0.000	0.600	0.250	0.333	0.000	0.300	0.788
Entering Leg	1	10	0	11	22	2	0	24	2	4	0	6	41
Exiting Leg				26				12				3	41
Total				37				36				9	82

PDI File #: **186634 A**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Articulated Trucks

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
7:00 AM	0	0	0	0	2	0	0	2	0	0	0	0	2
7:15 AM	0	1	0	1	1	0	0	1	1	0	0	1	3
7:30 AM	0	1	0	1	1	0	0	1	2	1	0	3	5
7:45 AM	1	1	0	2	1	0	0	1	0	0	0	0	3
Total	1	3	0	4	5	0	0	5	3	1	0	4	13
8:00 AM	1	2	0	3	2	0	0	2	0	0	0	0	5
8:15 AM	0	0	0	0	1	0	0	1	0	0	0	0	1
8:30 AM	0	0	0	0	1	0	0	1	0	1	0	1	2
8:45 AM	0	0	0	0	1	2	0	3	0	0	0	0	3
Total	1	2	0	3	5	2	0	7	0	1	0	1	11
Grand Total	2	5	0	7	10	2	0	12	3	2	0	5	24
Approach %	28.6	71.4	0.0		83.3	16.7	0.0		60.0	40.0	0.0		
Total %	8.3	20.8	0.0	29.2	41.7	8.3	0.0	50.0	12.5	8.3	0.0	20.8	
Exiting Leg Total				12				8				4	24

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:15 AM	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
7:15 AM	0	1	0	1	1	0	0	1	1	0	0	1	3
7:30 AM	0	1	0	1	1	0	0	1	2	1	0	3	5
7:45 AM	1	1	0	2	1	0	0	1	0	0	0	0	3
8:00 AM	1	2	0	3	2	0	0	2	0	0	0	0	5
Total Volume	2	5	0	7	5	0	0	5	3	1	0	4	16
% Approach Total	28.6	71.4	0.0		100.0	0.0	0.0		75.0	25.0	0.0		
PHF	0.500	0.625	0.000	0.583	0.625	0.000	0.000	0.625	0.375	0.250	0.000	0.333	0.800
Entering Leg	2	5	0	7	5	0	0	5	3	1	0	4	16
Exiting Leg				6				8				2	16
Total				13				13				6	32

PDI File #: **186634 A**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Bicycles (on Roadway and Crosswalks)

	Lunenburg Road (Route 70)						Lunenburg Road (Route 70)						McGovern Boulevard						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	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
7:30 AM	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
Total	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
8:15 AM	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
8:45 AM	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
Grand Total	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
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
Exiting Leg Total	0						0						0						0

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Lunenburg Road (Route 70)						Lunenburg Road (Route 70)						McGovern Boulevard						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	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
7:30 AM	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
Total Volume	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
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
Entering Leg	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
Total	0						0						0						0

PDI File #: **186634 A**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Pedestrians

	Lunenburg Road (Route 70)						Lunenburg Road (Route 70)						McGovern Boulevard						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	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
7:30 AM	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
Total	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
8:15 AM	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
8:45 AM	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
Grand Total	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
Total %	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

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Lunenburg Road (Route 70)						Lunenburg Road (Route 70)						McGovern Boulevard						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	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
7:30 AM	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
Total Volume	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	0.000
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
Entering Leg	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
Total	0						0						0						0

PDI File #: **186634 AA**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars and Heavy Vehicles (Combined)

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
4:00 PM	19	84	0	103	114	5	0	119	1	6	0	7	229
4:15 PM	30	66	0	96	137	11	0	148	4	15	0	19	263
4:30 PM	15	66	0	81	157	3	0	160	5	17	0	22	263
4:45 PM	6	68	0	74	161	3	0	164	3	5	0	8	246
Total	70	284	0	354	569	22	0	591	13	43	0	56	1001
5:00 PM	7	79	0	86	136	7	0	143	1	3	0	4	233
5:15 PM	6	76	0	82	144	4	0	148	3	1	0	4	234
5:30 PM	16	73	0	89	117	3	0	120	1	4	0	5	214
5:45 PM	33	52	0	85	111	12	0	123	3	16	0	19	227
Total	62	280	0	342	508	26	0	534	8	24	0	32	908
Grand Total	132	564	0	696	1077	48	0	1125	21	67	0	88	1909
Approach %	19.0	81.0	0.0		95.7	4.3	0.0		23.9	76.1	0.0		
Total %	6.9	29.5	0.0	36.5	56.4	2.5	0.0	58.9	1.1	3.5	0.0	4.6	
Exiting Leg Total				1144				585				180	1909
Cars	131	530	0	661	1058	48	0	1106	21	67	0	88	1855
% Cars	99.2	94.0	0.0	95.0	98.2	100.0	0.0	98.3	100.0	100.0	0.0	100.0	97.2
Exiting Leg Total				1125				551				179	1855
Heavy Vehicles	1	34	0	35	19	0	0	19	0	0	0	0	54
% Heavy Vehicles	0.8	6.0	0.0	5.0	1.8	0.0	0.0	1.7	0.0	0.0	0.0	0.0	2.8
Exiting Leg Total				19				34				1	54

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:15 PM	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
4:15 PM	30	66	0	96	137	11	0	148	4	15	0	19	263
4:30 PM	15	66	0	81	157	3	0	160	5	17	0	22	263
4:45 PM	6	68	0	74	161	3	0	164	3	5	0	8	246
5:00 PM	7	79	0	86	136	7	0	143	1	3	0	4	233
Total Volume	58	279	0	337	591	24	0	615	13	40	0	53	1005
% Approach Total	17.2	82.8	0.0		96.1	3.9	0.0		24.5	75.5	0.0		
PHF	0.483	0.883	0.000	0.878	0.918	0.545	0.000	0.938	0.650	0.588	0.000	0.602	0.955
Cars	58	261	0	319	577	24	0	601	13	40	0	53	973
Cars %	100.0	93.5	0.0	94.7	97.6	100.0	0.0	97.7	100.0	100.0	0.0	100.0	96.8
Heavy Vehicles	0	18	0	18	14	0	0	14	0	0	0	0	32
Heavy Vehicles %	0.0	6.5	0.0	5.3	2.4	0.0	0.0	2.3	0.0	0.0	0.0	0.0	3.2
Cars Enter Leg	58	261	0	319	577	24	0	601	13	40	0	53	973
Heavy Enter Leg	0	18	0	18	14	0	0	14	0	0	0	0	32
Total Entering Leg	58	279	0	337	591	24	0	615	13	40	0	53	1005
Cars Exiting Leg				617				274				82	973
Heavy Exiting Leg				14				18				0	32
Total Exiting Leg				631				292				82	1005

PDI File #: **186634 AA**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars-Combined (Motorcycles, Cars, Light Goods)

Class:

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
4:00 PM	18	79	0	97	111	5	0	116	1	6	0	7	220
4:15 PM	30	62	0	92	133	11	0	144	4	15	0	19	255
4:30 PM	15	61	0	76	153	3	0	156	5	17	0	22	254
4:45 PM	6	64	0	70	160	3	0	163	3	5	0	8	241
Total	69	266	0	335	557	22	0	579	13	43	0	56	970
5:00 PM	7	74	0	81	131	7	0	138	1	3	0	4	223
5:15 PM	6	70	0	76	143	4	0	147	3	1	0	4	227
5:30 PM	16	70	0	86	117	3	0	120	1	4	0	5	211
5:45 PM	33	50	0	83	110	12	0	122	3	16	0	19	224
Total	62	264	0	326	501	26	0	527	8	24	0	32	885
Grand Total	131	530	0	661	1058	48	0	1106	21	67	0	88	1855
Approach %	19.8	80.2	0.0		95.7	4.3	0.0		23.9	76.1	0.0		
Total %	7.1	28.6	0.0	35.6	57.0	2.6	0.0	59.6	1.1	3.6	0.0	4.7	
Exiting Leg Total				1125				551				179	1855

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
4:15 PM	30	62	0	92	133	11	0	144	4	15	0	19	255
4:30 PM	15	61	0	76	153	3	0	156	5	17	0	22	254
4:45 PM	6	64	0	70	160	3	0	163	3	5	0	8	241
5:00 PM	7	74	0	81	131	7	0	138	1	3	0	4	223
Total Volume	58	261	0	319	577	24	0	601	13	40	0	53	973
% Approach Total	18.2	81.8	0.0		96.0	4.0	0.0		24.5	75.5	0.0		
PHF	0.483	0.882	0.000	0.867	0.902	0.545	0.000	0.922	0.650	0.588	0.000	0.602	0.954
Entering Leg	58	261	0	319	577	24	0	601	13	40	0	53	973
Exiting Leg				617				274				82	973
Total				936				875				135	1946

PDI File #: **186634 AA**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

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

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
4:00 PM	1	5	0	6	3	0	0	3	0	0	0	0	9	
4:15 PM	0	4	0	4	4	0	0	4	0	0	0	0	8	
4:30 PM	0	5	0	5	4	0	0	4	0	0	0	0	9	
4:45 PM	0	4	0	4	1	0	0	1	0	0	0	0	5	
Total	1	18	0	19	12	0	0	12	0	0	0	0	31	
5:00 PM	0	5	0	5	5	0	0	5	0	0	0	0	10	
5:15 PM	0	6	0	6	1	0	0	1	0	0	0	0	7	
5:30 PM	0	3	0	3	0	0	0	0	0	0	0	0	3	
5:45 PM	0	2	0	2	1	0	0	1	0	0	0	0	3	
Total	0	16	0	16	7	0	0	7	0	0	0	0	23	
Grand Total	1	34	0	35	19	0	0	19	0	0	0	0	54	
Approach %	2.9	97.1	0.0		100.0	0.0	0.0		0.0	0.0	0.0			
Total %	1.9	63.0	0.0	64.8	35.2	0.0	0.0	35.2	0.0	0.0	0.0	0.0		
Exiting Leg Total				19				34					1	54
Buses	0	2	0	2	3	0	0	3	0	0	0	0	5	
% Buses	0.0	5.9	0.0	5.7	15.8	0.0	0.0	15.8	0.0	0.0	0.0	0.0	9.3	
Exiting Leg Total				3				2					0	5
Single-Unit Trucks	1	26	0	27	10	0	0	10	0	0	0	0	37	
% Single-Unit	100.0	76.5	0.0	77.1	52.6	0.0	0.0	52.6	0.0	0.0	0.0	0.0	68.5	
Exiting Leg Total				10				26					1	37
Articulated Trucks	0	6	0	6	6	0	0	6	0	0	0	0	12	
% Articulated	0.0	17.6	0.0	17.1	31.6	0.0	0.0	31.6	0.0	0.0	0.0	0.0	22.2	
Exiting Leg Total				6				6					0	12

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
4:15 PM	0	4	0	4	4	0	0	4	0	0	0	0	8	
4:30 PM	0	5	0	5	4	0	0	4	0	0	0	0	9	
4:45 PM	0	4	0	4	1	0	0	1	0	0	0	0	5	
5:00 PM	0	5	0	5	5	0	0	5	0	0	0	0	10	
Total Volume	0	18	0	18	14	0	0	14	0	0	0	0	32	
% Approach Total	0.0	100.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0			
PHF	0.000	0.900	0.000	0.900	0.700	0.000	0.000	0.700	0.000	0.000	0.000	0.000	0.800	
Buses	0	1	0	1	3	0	0	3	0	0	0	0	4	
Buses %	0.0	5.6	0.0	5.6	21.4	0.0	0.0	21.4	0.0	0.0	0.0	0.0	12.5	
Single-Unit Trucks	0	14	0	14	6	0	0	6	0	0	0	0	20	
Single-Unit %	0.0	77.8	0.0	77.8	42.9	0.0	0.0	42.9	0.0	0.0	0.0	0.0	62.5	
Articulated Trucks	0	3	0	3	5	0	0	5	0	0	0	0	8	
Articulated %	0.0	16.7	0.0	16.7	35.7	0.0	0.0	35.7	0.0	0.0	0.0	0.0	25.0	
Buses	0	1	0	1	3	0	0	3	0	0	0	0	4	
Single-Unit Trucks	0	14	0	14	6	0	0	6	0	0	0	0	20	
Articulated Trucks	0	3	0	3	5	0	0	5	0	0	0	0	8	
Total Entering Leg	0	18	0	18	14	0	0	14	0	0	0	0	32	
Buses				3				1					0	4
Single-Unit Trucks				6				14					0	20
Articulated Trucks				5				3					0	8
Total Exiting Leg				14				18					0	32

PDI File #: **186634 AA**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
4:00 PM	18	63	0	81	88	5	0	93	0	5	0	5	179
4:15 PM	25	52	0	77	117	7	0	124	4	13	0	17	218
4:30 PM	13	53	0	66	135	3	0	138	4	17	0	21	225
4:45 PM	4	55	0	59	141	1	0	142	2	4	0	6	207
Total	60	223	0	283	481	16	0	497	10	39	0	49	829
5:00 PM	6	68	0	74	115	7	0	122	1	2	0	3	199
5:15 PM	5	62	0	67	119	2	0	121	3	1	0	4	192
5:30 PM	15	59	0	74	103	2	0	105	0	3	0	3	182
5:45 PM	32	45	0	77	103	11	0	114	3	14	0	17	208
Total	58	234	0	292	440	22	0	462	7	20	0	27	781
Grand Total	118	457	0	575	921	38	0	959	17	59	0	76	1610
Approach %	20.5	79.5	0.0		96.0	4.0	0.0		22.4	77.6	0.0		
Total %	7.3	28.4	0.0	35.7	57.2	2.4	0.0	59.6	1.1	3.7	0.0	4.7	
Exiting Leg Total				980				474				156	1610

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
4:15 PM	25	52	0	77	117	7	0	124	4	13	0	17	218
4:30 PM	13	53	0	66	135	3	0	138	4	17	0	21	225
4:45 PM	4	55	0	59	141	1	0	142	2	4	0	6	207
5:00 PM	6	68	0	74	115	7	0	122	1	2	0	3	199
Total Volume	48	228	0	276	508	18	0	526	11	36	0	47	849
% Approach Total	17.4	82.6	0.0		96.6	3.4	0.0		23.4	76.6	0.0		
PHF	0.480	0.838	0.000	0.896	0.901	0.643	0.000	0.926	0.688	0.529	0.000	0.560	0.943
Entering Leg	48	228	0	276	508	18	0	526	11	36	0	47	849
Exiting Leg				544				239				66	849
Total				820				765				113	1698

PDI File #: **186634 AA**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Class:

Light Goods Vehicle

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
4:00 PM	0	16	0	16	23	0	0	23	1	1	0	2	41
4:15 PM	5	10	0	15	16	4	0	20	0	2	0	2	37
4:30 PM	2	8	0	10	18	0	0	18	1	0	0	1	29
4:45 PM	2	9	0	11	19	2	0	21	1	1	0	2	34
Total	9	43	0	52	76	6	0	82	3	4	0	7	141
5:00 PM	1	6	0	7	16	0	0	16	0	1	0	1	24
5:15 PM	1	8	0	9	24	2	0	26	0	0	0	0	35
5:30 PM	1	11	0	12	14	1	0	15	1	1	0	2	29
5:45 PM	1	5	0	6	7	1	0	8	0	2	0	2	16
Total	4	30	0	34	61	4	0	65	1	4	0	5	104
Grand Total	13	73	0	86	137	10	0	147	4	8	0	12	245
Approach %	15.1	84.9	0.0		93.2	6.8	0.0		33.3	66.7	0.0		
Total %	5.3	29.8	0.0	35.1	55.9	4.1	0.0	60.0	1.6	3.3	0.0	4.9	
Exiting Leg Total				145				77				23	245

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
4:00 PM	0	16	0	16	23	0	0	23	1	1	0	2	41
4:15 PM	5	10	0	15	16	4	0	20	0	2	0	2	37
4:30 PM	2	8	0	10	18	0	0	18	1	0	0	1	29
4:45 PM	2	9	0	11	19	2	0	21	1	1	0	2	34
Total Volume	9	43	0	52	76	6	0	82	3	4	0	7	141
% Approach Total	17.3	82.7	0.0		92.7	7.3	0.0		42.9	57.1	0.0		
PHF	0.450	0.672	0.000	0.813	0.826	0.375	0.000	0.891	0.750	0.500	0.000	0.875	0.860
Entering Leg	9	43	0	52	76	6	0	82	3	4	0	7	141
Exiting Leg				80				46				15	141
Total				132				128				22	282

PDI File #: **186634 AA**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdillc.com

Buses

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	1
4:30 PM	0	0	0	0	2	0	0	2	0	0	0	0	0	2
4:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	1	3	0	0	3	0	0	0	0	0	4
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	1
5:30 PM	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
Total	0	1	0	1	0	0	0	0	0	0	0	0	0	1
Grand Total	0	2	0	2	3	0	0	3	0	0	0	0	0	5
Approach %	0.0	100.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0			
Total %	0.0	40.0	0.0	40.0	60.0	0.0	0.0	60.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total				3				2					0	5

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	1
4:30 PM	0	0	0	0	2	0	0	2	0	0	0	0	0	2
4:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	1	3	0	0	3	0	0	0	0	0	4
% Approach Total	0.0	100.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0			
PHF	0.000	0.250	0.000	0.250	0.375	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.500
Entering Leg	0	1	0	1	3	0	0	3	0	0	0	0	0	4
Exiting Leg				3				1					0	4
Total				4				4					0	8

PDI File #: **186634 AA**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**



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Single-Unit Trucks

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
4:00 PM	1	5	0	6	3	0	0	3	0	0	0	0	9
4:15 PM	0	4	0	4	1	0	0	1	0	0	0	0	5
4:30 PM	0	4	0	4	1	0	0	1	0	0	0	0	5
4:45 PM	0	2	0	2	0	0	0	0	0	0	0	0	2
Total	1	15	0	16	5	0	0	5	0	0	0	0	21
5:00 PM	0	4	0	4	4	0	0	4	0	0	0	0	8
5:15 PM	0	3	0	3	0	0	0	0	0	0	0	0	3
5:30 PM	0	3	0	3	0	0	0	0	0	0	0	0	3
5:45 PM	0	1	0	1	1	0	0	1	0	0	0	0	2
Total	0	11	0	11	5	0	0	5	0	0	0	0	16
Grand Total	1	26	0	27	10	0	0	10	0	0	0	0	37
Approach %	3.7	96.3	0.0		100.0	0.0	0.0		0.0	0.0	0.0		
Total %	2.7	70.3	0.0	73.0	27.0	0.0	0.0	27.0	0.0	0.0	0.0	0.0	
Exiting Leg Total				10				26				1	37

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
4:00 PM	1	5	0	6	3	0	0	3	0	0	0	0	9
4:15 PM	0	4	0	4	1	0	0	1	0	0	0	0	5
4:30 PM	0	4	0	4	1	0	0	1	0	0	0	0	5
4:45 PM	0	2	0	2	0	0	0	0	0	0	0	0	2
Total Volume	1	15	0	16	5	0	0	5	0	0	0	0	21
% Approach Total	6.3	93.8	0.0		100.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.250	0.750	0.000	0.667	0.417	0.000	0.000	0.417	0.000	0.000	0.000	0.000	0.583
Entering Leg	1	15	0	16	5	0	0	5	0	0	0	0	21
Exiting Leg				5				15				1	21
Total				21				20				1	42

PDI File #: **186634 AA**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Articulated Trucks

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	2	0	0	2	0	0	0	0	0	2
4:30 PM	0	1	0	1	1	0	0	1	0	0	0	0	0	2
4:45 PM	0	1	0	1	1	0	0	1	0	0	0	0	0	2
Total	0	2	0	2	4	0	0	4	0	0	0	0	0	6
5:00 PM	0	1	0	1	1	0	0	1	0	0	0	0	0	2
5:15 PM	0	2	0	2	1	0	0	1	0	0	0	0	0	3
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	1
Total	0	4	0	4	2	0	0	2	0	0	0	0	0	6
Grand Total	0	6	0	6	6	0	0	6	0	0	0	0	0	12
Approach %	0.0	100.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0			
Total %	0.0	50.0	0.0	50.0	50.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total				6				6					0	12

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
4:30 PM	0	1	0	1	1	0	0	1	0	0	0	0	0	2
4:45 PM	0	1	0	1	1	0	0	1	0	0	0	0	0	2
5:00 PM	0	1	0	1	1	0	0	1	0	0	0	0	0	2
5:15 PM	0	2	0	2	1	0	0	1	0	0	0	0	0	3
Total Volume	0	5	0	5	4	0	0	4	0	0	0	0	0	9
% Approach Total	0.0	100.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0			
PHF	0.000	0.625	0.000	0.625	1.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.750
Entering Leg	0	5	0	5	4	0	0	4	0	0	0	0	0	9
Exiting Leg				4				5					0	9
Total				9				9					0	18

PDI File #: **186634 AA**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Bicycles (on Roadway and Crosswalks)

	Lunenburg Road (Route 70)						Lunenburg Road (Route 70)						McGovern Boulevard						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
4:00 PM	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
4:30 PM	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
Total	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
5:15 PM	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
5:45 PM	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
Grand Total	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
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
Exiting Leg Total	0						0						0						0

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Lunenburg Road (Route 70)						Lunenburg Road (Route 70)						McGovern Boulevard						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
4:00 PM	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
4:30 PM	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
Total Volume	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
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
Entering Leg	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
Total	0						0						0						0

PDI File #: **186634 AA**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Pedestrians

	Lunenburg Road (Route 70)						Lunenburg Road (Route 70)						McGovern Boulevard						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
4:00 PM	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
4:30 PM	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
Total	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
5:15 PM	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
5:45 PM	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
Grand Total	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
Total %	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

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Lunenburg Road (Route 70)						Lunenburg Road (Route 70)						McGovern Boulevard						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
4:00 PM	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
4:30 PM	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
Total Volume	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
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
Entering Leg	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
Total	0						0						0						0

PDI File #: **186634 B**
 Location: **N: Lunenburg Road (Route 70) S: Driveway**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars and Heavy Vehicles (Combined)

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
7:00 AM	5	0	71	0	76	46	50	0	0	96	0	0	0	0	0	0	206	7	0	213	385
7:15 AM	6	0	72	0	78	64	82	0	0	146	0	0	0	0	0	0	219	8	0	227	451
7:30 AM	8	0	71	0	79	81	98	0	0	179	0	0	0	0	0	0	166	15	0	181	439
7:45 AM	12	0	78	0	90	59	81	0	0	140	0	0	0	0	0	0	161	10	0	171	401
Total	31	0	292	0	323	250	311	0	0	561	0	0	0	0	0	0	752	40	0	792	1676
8:00 AM	10	0	72	0	82	55	85	0	0	140	0	0	0	0	0	0	158	13	0	171	393
8:15 AM	9	0	74	1	84	67	66	0	0	133	0	0	0	0	0	0	132	11	0	143	360
8:30 AM	2	0	60	0	62	73	92	0	0	165	0	0	0	0	0	0	112	6	0	118	345
8:45 AM	4	0	63	0	67	56	89	0	0	145	0	0	0	0	0	0	122	14	0	136	348
Total	25	0	269	1	295	251	332	0	0	583	0	0	0	0	0	0	524	44	0	568	1446
Grand Total	56	0	561	1	618	501	643	0	0	1144	0	0	0	0	0	0	1276	84	0	1360	3122
Approach %	9.1	0.0	90.8	0.2		43.8	56.2	0.0	0.0		0.0	0.0	0.0	0.0		0.0	93.8	6.2	0.0		
Total %	1.8	0.0	18.0	0.0	19.8	16.0	20.6	0.0	0.0	36.6	0.0	0.0	0.0	0.0	0.0	0.0	40.9	2.7	0.0	43.6	
Exiting Leg Total	586					1837					0					699					3122
Cars	53	0	527	1	581	469	579	0	0	1048	0	0	0	0	0	0	1228	83	0	1311	2940
% Cars	94.6	0.0	93.9	100.0	94.0	93.6	90.0	0.0	0.0	91.6	0.0	0.0	0.0	0.0	0.0	0.0	96.2	98.8	0.0	96.4	94.2
Exiting Leg Total	553					1755					0					632					2940
Heavy Vehicles	3	0	34	0	37	32	64	0	0	96	0	0	0	0	0	0	48	1	0	49	182
% Heavy Vehicles	5.4	0.0	6.1	0.0	6.0	6.4	10.0	0.0	0.0	8.4	0.0	0.0	0.0	0.0	0.0	0.0	3.8	1.2	0.0	3.6	5.8
Exiting Leg Total	33					82					0					67					182

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
7:15 AM	6	0	72	0	78	64	82	0	0	146	0	0	0	0	0	0	219	8	0	227	451
7:30 AM	8	0	71	0	79	81	98	0	0	179	0	0	0	0	0	0	166	15	0	181	439
7:45 AM	12	0	78	0	90	59	81	0	0	140	0	0	0	0	0	0	161	10	0	171	401
8:00 AM	10	0	72	0	82	55	85	0	0	140	0	0	0	0	0	0	158	13	0	171	393
Total Volume	36	0	293	0	329	259	346	0	0	605	0	0	0	0	0	0	704	46	0	750	1684
% Approach Total	10.9	0.0	89.1	0.0		42.8	57.2	0.0	0.0		0.0	0.0	0.0	0.0		0.0	93.9	6.1	0.0		
PHF	0.750	0.000	0.939	0.000	0.914	0.799	0.883	0.000	0.000	0.845	0.000	0.000	0.000	0.000	0.000	0.000	0.804	0.767	0.000	0.826	0.933
Cars	35	0	270	0	305	243	324	0	0	567	0	0	0	0	0	0	677	45	0	722	1594
Cars %	97.2	0.0	92.2	0.0	92.7	93.8	93.6	0.0	0.0	93.7	0.0	0.0	0.0	0.0	0.0	0.0	96.2	97.8	0.0	96.3	94.7
Heavy Vehicles	1	0	23	0	24	16	22	0	0	38	0	0	0	0	0	0	27	1	0	28	90
Heavy Vehicles %	2.8	0.0	7.8	0.0	7.3	6.2	6.4	0.0	0.0	6.3	0.0	0.0	0.0	0.0	0.0	0.0	3.8	2.2	0.0	3.7	5.3
Cars Enter Leg	35	0	270	0	305	243	324	0	0	567	0	0	0	0	0	0	677	45	0	722	1594
Heavy Enter Leg	1	0	23	0	24	16	22	0	0	38	0	0	0	0	0	0	27	1	0	28	90
Total Entering Leg	36	0	293	0	329	259	346	0	0	605	0	0	0	0	0	0	704	46	0	750	1684
Cars Exiting Leg	288					947					0					359					1594
Heavy Exiting Leg	17					50					0					23					90
Total Exiting Leg	305					997					0					382					1684

PDI File #: **186634 B**
 Location: **N: Lunenburg Road (Route 70) S: Driveway**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars-Combined (Motorcycles, Cars, Light Goods)

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
7:00 AM	5	0	70	0	75	44	45	0	0	89	0	0	0	0	0	0	203	7	0	210	374
7:15 AM	6	0	68	0	74	63	78	0	0	141	0	0	0	0	0	0	210	7	0	217	432
7:30 AM	8	0	64	0	72	73	88	0	0	161	0	0	0	0	0	0	161	15	0	176	409
7:45 AM	12	0	72	0	84	57	80	0	0	137	0	0	0	0	0	0	157	10	0	167	388
Total	31	0	274	0	305	237	291	0	0	528	0	0	0	0	0	0	731	39	0	770	1603
8:00 AM	9	0	66	0	75	50	78	0	0	128	0	0	0	0	0	0	149	13	0	162	365
8:15 AM	8	0	71	1	80	63	56	0	0	119	0	0	0	0	0	0	125	11	0	136	335
8:30 AM	1	0	55	0	56	71	79	0	0	150	0	0	0	0	0	0	106	6	0	112	318
8:45 AM	4	0	61	0	65	48	75	0	0	123	0	0	0	0	0	0	117	14	0	131	319
Total	22	0	253	1	276	232	288	0	0	520	0	0	0	0	0	0	497	44	0	541	1337
Grand Total	53	0	527	1	581	469	579	0	0	1048	0	0	0	0	0	0	1228	83	0	1311	2940
Approach %	9.1	0.0	90.7	0.2		44.8	55.2	0.0	0.0		0.0	0.0	0.0	0.0		0.0	93.7	6.3	0.0		
Total %	1.8	0.0	17.9	0.0	19.8	16.0	19.7	0.0	0.0	35.6	0.0	0.0	0.0	0.0	0.0	0.0	41.8	2.8	0.0	44.6	
Exiting Leg Total	553					1755					0					632					2940

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
7:00 AM	5	0	70	0	75	44	45	0	0	89	0	0	0	0	0	0	203	7	0	210	374
7:15 AM	6	0	68	0	74	63	78	0	0	141	0	0	0	0	0	0	210	7	0	217	432
7:30 AM	8	0	64	0	72	73	88	0	0	161	0	0	0	0	0	0	161	15	0	176	409
7:45 AM	12	0	72	0	84	57	80	0	0	137	0	0	0	0	0	0	157	10	0	167	388
Total Volume	31	0	274	0	305	237	291	0	0	528	0	0	0	0	0	0	731	39	0	770	1603
% Approach Total	10.2	0.0	89.8	0.0		44.9	55.1	0.0	0.0		0.0	0.0	0.0	0.0		0.0	94.9	5.1	0.0		
PHF	0.646	0.000	0.951	0.000	0.908	0.812	0.827	0.000	0.000	0.820	0.000	0.000	0.000	0.000	0.000	0.000	0.870	0.650	0.000	0.887	0.928
Entering Leg	31	0	274	0	305	237	291	0	0	528	0	0	0	0	0	0	731	39	0	770	1603
Exiting Leg	276					1005					0					322					1603
Total	581					1533					0					1092					3206

PDI File #: **186634 B**
 Location: **N: Lunenburg Road (Route 70) S: Driveway**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

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

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
7:00 AM	0	0	1	0	1	2	5	0	0	7	0	0	0	0	0	0	3	0	0	3	11
7:15 AM	0	0	4	0	4	1	4	0	0	5	0	0	0	0	0	0	9	1	0	10	19
7:30 AM	0	0	7	0	7	8	10	0	0	18	0	0	0	0	0	0	5	0	0	5	30
7:45 AM	0	0	6	0	6	2	1	0	0	3	0	0	0	0	0	0	4	0	0	4	13
Total	0	0	18	0	18	13	20	0	0	33	0	0	0	0	0	0	21	1	0	22	73
8:00 AM	1	0	6	0	7	5	7	0	0	12	0	0	0	0	0	0	9	0	0	9	28
8:15 AM	1	0	3	0	4	4	10	0	0	14	0	0	0	0	0	0	7	0	0	7	25
8:30 AM	1	0	5	0	6	2	13	0	0	15	0	0	0	0	0	0	6	0	0	6	27
8:45 AM	0	0	2	0	2	8	14	0	0	22	0	0	0	0	0	0	5	0	0	5	29
Total	3	0	16	0	19	19	44	0	0	63	0	0	0	0	0	0	27	0	0	27	109
Grand Total	3	0	34	0	37	32	64	0	0	96	0	0	0	0	0	0	48	1	0	49	182
Approach %	8.1	0.0	91.9	0.0		33.3	66.7	0.0	0.0		0.0	0.0	0.0	0.0		0.0	98.0	2.0	0.0		
Total %	1.6	0.0	18.7	0.0	20.3	17.6	35.2	0.0	0.0	52.7	0.0	0.0	0.0	0.0	0.0	0.0	26.4	0.5	0.0	26.9	
Exiting Leg Total	33					82					0					67					182
Buses	1	0	3	0	4	2	22	0	0	24	0	0	0	0	0	0	6	0	0	6	34
% Buses	33.3	0.0	8.8	0.0	10.8	6.3	34.4	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	12.5	0.0	0.0	12.2	18.7
Exiting Leg Total	2					9					0					23					34
Single-Unit Trucks	2	0	22	0	24	21	25	0	0	46	0	0	0	0	0	0	35	1	0	36	106
% Single-Unit	66.7	0.0	64.7	0.0	64.9	65.6	39.1	0.0	0.0	47.9	0.0	0.0	0.0	0.0	0.0	0.0	72.9	100.0	0.0	73.5	58.2
Exiting Leg Total	22					57					0					27					106
Articulated Trucks	0	0	9	0	9	9	17	0	0	26	0	0	0	0	0	0	7	0	0	7	42
% Articulated	0.0	0.0	26.5	0.0	24.3	28.1	26.6	0.0	0.0	27.1	0.0	0.0	0.0	0.0	0.0	0.0	14.6	0.0	0.0	14.3	23.1
Exiting Leg Total	9					16					0					17					42

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
8:00 AM	1	0	6	0	7	5	7	0	0	12	0	0	0	0	0	0	9	0	0	9	28
8:15 AM	1	0	3	0	4	4	10	0	0	14	0	0	0	0	0	0	7	0	0	7	25
8:30 AM	1	0	5	0	6	2	13	0	0	15	0	0	0	0	0	0	6	0	0	6	27
8:45 AM	0	0	2	0	2	8	14	0	0	22	0	0	0	0	0	0	5	0	0	5	29
Total Volume	3	0	16	0	19	19	44	0	0	63	0	0	0	0	0	0	27	0	0	27	109
% Approach Total	15.8	0.0	84.2	0.0		30.2	69.8	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.750	0.000	0.667	0.000	0.679	0.594	0.786	0.000	0.000	0.716	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.000	0.750	0.940
Buses	1	0	1	0	2	0	20	0	0	20	0	0	0	0	0	0	2	0	0	2	24
Buses %	33.3	0.0	6.3	0.0	10.5	0.0	45.5	0.0	0.0	31.7	0.0	0.0	0.0	0.0	0.0	0.0	7.4	0.0	0.0	7.4	22.0
Single-Unit Trucks	2	0	12	0	14	13	16	0	0	29	0	0	0	0	0	0	23	0	0	23	66
Single-Unit %	66.7	0.0	75.0	0.0	73.7	68.4	36.4	0.0	0.0	46.0	0.0	0.0	0.0	0.0	0.0	0.0	85.2	0.0	0.0	85.2	60.6
Articulated Trucks	0	0	3	0	3	6	8	0	0	14	0	0	0	0	0	0	2	0	0	2	19
Articulated %	0.0	0.0	18.8	0.0	15.8	31.6	18.2	0.0	0.0	22.2	0.0	0.0	0.0	0.0	0.0	0.0	7.4	0.0	0.0	7.4	17.4
Buses	1	0	1	0	2	0	20	0	0	20	0	0	0	0	0	0	2	0	0	2	24
Single-Unit Trucks	2	0	12	0	14	13	16	0	0	29	0	0	0	0	0	0	23	0	0	23	66
Articulated Trucks	0	0	3	0	3	6	8	0	0	14	0	0	0	0	0	0	2	0	0	2	19
Total Entering Leg	3	0	16	0	19	19	44	0	0	63	0	0	0	0	0	0	27	0	0	27	109
Buses	0					3					0					21					24
Single-Unit Trucks	13					35					0					18					66
Articulated Trucks	6					5					0					8					19
Total Exiting Leg	19					43					0					47					109

PDI File #: **186634 B**
 Location: **N: Lunenburg Road (Route 70) S: Driveway**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
7:00 AM	4	0	58	0	62	43	33	0	0	76	0	0	0	0	0	0	171	7	0	178	316
7:15 AM	6	0	59	0	65	55	68	0	0	123	0	0	0	0	0	0	193	6	0	199	387
7:30 AM	7	0	52	0	59	58	68	0	0	126	0	0	0	0	0	0	136	13	0	149	334
7:45 AM	10	0	61	0	71	43	72	0	0	115	0	0	0	0	0	0	137	8	0	145	331
Total	27	0	230	0	257	199	241	0	0	440	0	0	0	0	0	0	637	34	0	671	1368
8:00 AM	8	0	55	0	63	39	61	0	0	100	0	0	0	0	0	0	131	12	0	143	306
8:15 AM	6	0	62	1	69	57	46	0	0	103	0	0	0	0	0	0	111	10	0	121	293
8:30 AM	1	0	47	0	48	68	66	0	0	134	0	0	0	0	0	0	86	5	0	91	273
8:45 AM	4	0	53	0	57	42	64	0	0	106	0	0	0	0	0	0	98	13	0	111	274
Total	19	0	217	1	237	206	237	0	0	443	0	0	0	0	0	0	426	40	0	466	1146
Grand Total	46	0	447	1	494	405	478	0	0	883	0	0	0	0	0	0	1063	74	0	1137	2514
Approach %	9.3	0.0	90.5	0.2		45.9	54.1	0.0	0.0		0.0	0.0	0.0	0.0		0.0	93.5	6.5	0.0		
Total %	1.8	0.0	17.8	0.0	19.6	16.1	19.0	0.0	0.0	35.1	0.0	0.0	0.0	0.0	0.0	0.0	42.3	2.9	0.0	45.2	
Exiting Leg Total	480					1510					0					524					2514

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
7:00 AM	4	0	58	0	62	43	33	0	0	76	0	0	0	0	0	0	171	7	0	178	316
7:15 AM	6	0	59	0	65	55	68	0	0	123	0	0	0	0	0	0	193	6	0	199	387
7:30 AM	7	0	52	0	59	58	68	0	0	126	0	0	0	0	0	0	136	13	0	149	334
7:45 AM	10	0	61	0	71	43	72	0	0	115	0	0	0	0	0	0	137	8	0	145	331
Total Volume	27	0	230	0	257	199	241	0	0	440	0	0	0	0	0	0	637	34	0	671	1368
% Approach Total	10.5	0.0	89.5	0.0		45.2	54.8	0.0	0.0		0.0	0.0	0.0	0.0		0.0	94.9	5.1	0.0		
PHF	0.675	0.000	0.943	0.000	0.905	0.858	0.837	0.000	0.000	0.873	0.000	0.000	0.000	0.000	0.000	0.000	0.825	0.654	0.000	0.843	0.884
Entering Leg	27	0	230	0	257	199	241	0	0	440	0	0	0	0	0	0	637	34	0	671	1368
Exiting Leg						867					0					268					1368
Total	490					1307					0					939					2736

PDI File #: **186634 B**
 Location: **N: Lunenburg Road (Route 70) S: Driveway**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class: **Light Goods Vehicle**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Light Goods Vehicle

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
7:00 AM	1	0	12	0	13	1	12	0	0	13	0	0	0	0	0	0	32	0	0	32	58
7:15 AM	0	0	9	0	9	8	10	0	0	18	0	0	0	0	0	0	17	1	0	18	45
7:30 AM	1	0	12	0	13	15	20	0	0	35	0	0	0	0	0	0	25	2	0	27	75
7:45 AM	2	0	11	0	13	14	8	0	0	22	0	0	0	0	0	0	20	2	0	22	57
Total	4	0	44	0	48	38	50	0	0	88	0	0	0	0	0	0	94	5	0	99	235
8:00 AM	1	0	11	0	12	11	17	0	0	28	0	0	0	0	0	0	18	1	0	19	59
8:15 AM	2	0	9	0	11	6	10	0	0	16	0	0	0	0	0	0	14	1	0	15	42
8:30 AM	0	0	8	0	8	3	13	0	0	16	0	0	0	0	0	0	20	1	0	21	45
8:45 AM	0	0	8	0	8	6	11	0	0	17	0	0	0	0	0	0	19	1	0	20	45
Total	3	0	36	0	39	26	51	0	0	77	0	0	0	0	0	0	71	4	0	75	191
Grand Total	7	0	80	0	87	64	101	0	0	165	0	0	0	0	0	0	165	9	0	174	426
Approach %	8.0	0.0	92.0	0.0		38.8	61.2	0.0	0.0		0.0	0.0	0.0	0.0		0.0	94.8	5.2	0.0		
Total %	1.6	0.0	18.8	0.0	20.4	15.0	23.7	0.0	0.0	38.7	0.0	0.0	0.0	0.0	0.0	0.0	38.7	2.1	0.0	40.8	
Exiting Leg Total	73					245					0					108					426

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
7:15 AM	0	0	9	0	9	8	10	0	0	18	0	0	0	0	0	0	17	1	0	18	45
7:30 AM	1	0	12	0	13	15	20	0	0	35	0	0	0	0	0	0	25	2	0	27	75
7:45 AM	2	0	11	0	13	14	8	0	0	22	0	0	0	0	0	0	20	2	0	22	57
8:00 AM	1	0	11	0	12	11	17	0	0	28	0	0	0	0	0	0	18	1	0	19	59
Total Volume	4	0	43	0	47	48	55	0	0	103	0	0	0	0	0	0	80	6	0	86	236
% Approach Total	8.5	0.0	91.5	0.0		46.6	53.4	0.0	0.0		0.0	0.0	0.0	0.0		0.0	93.0	7.0	0.0		
PHF	0.500	0.000	0.896	0.000	0.904	0.800	0.688	0.000	0.000	0.736	0.000	0.000	0.000	0.000	0.000	0.000	0.800	0.750	0.000	0.796	0.787
Entering Leg	4	0	43	0	47	48	55	0	0	103	0	0	0	0	0	0	80	6	0	86	236
Exiting Leg						123					0					59					236
Total	101					226					0					145					472

PDI File #: **186634 B**
 Location: **N: Lunenburg Road (Route 70) S: Driveway**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Buses

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
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	2	0	2	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	5
7:30 AM	0	0	0	0	0	2	1	0	0	3	0	0	0	0	0	0	1	0	0	1	4
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	0	2	0	2	2	2	0	0	4	0	0	0	0	0	0	4	0	0	4	10
8:00 AM	1	0	1	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
8:15 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	5
8:30 AM	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	1	0	0	1	10
8:45 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	6
Total	1	0	1	0	2	0	20	0	0	20	0	0	0	0	0	0	2	0	0	2	24
Grand Total	1	0	3	0	4	2	22	0	0	24	0	0	0	0	0	0	6	0	0	6	34
Approach %	25.0	0.0	75.0	0.0		8.3	91.7	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
Total %	2.9	0.0	8.8	0.0	11.8	5.9	64.7	0.0	0.0	70.6	0.0	0.0	0.0	0.0	0.0	0.0	17.6	0.0	0.0	17.6	
Exiting Leg Total	2					9					0					23					34

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
8:00 AM	1	0	1	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
8:15 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	5
8:30 AM	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	1	0	0	1	10
8:45 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	6
Total Volume	1	0	1	0	2	0	20	0	0	20	0	0	0	0	0	0	2	0	0	2	24
% Approach Total	50.0	0.0	50.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.250	0.000	0.250	0.000	0.250	0.000	0.556	0.000	0.000	0.556	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500	0.600
Entering Leg	1	0	1	0	2	0	20	0	0	20	0	0	0	0	0	0	2	0	0	2	24
Exiting Leg	0					3					0					21					24
Total	2					23					0					23					48

PDI File #: **186634 B**
 Location: **N: Lunenburg Road (Route 70) S: Driveway**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Single-Unit Trucks

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
7:00 AM	0	0	1	0	1	2	2	0	0	4	0	0	0	0	0	0	2	0	0	2	7
7:15 AM	0	0	2	0	2	1	2	0	0	3	0	0	0	0	0	0	5	1	0	6	11
7:30 AM	0	0	3	0	3	5	5	0	0	10	0	0	0	0	0	0	2	0	0	2	15
7:45 AM	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	7
Total	0	0	10	0	10	8	9	0	0	17	0	0	0	0	0	0	12	1	0	13	40
8:00 AM	0	0	3	0	3	5	5	0	0	10	0	0	0	0	0	0	8	0	0	8	21
8:15 AM	1	0	2	0	3	3	4	0	0	7	0	0	0	0	0	0	6	0	0	6	16
8:30 AM	1	0	5	0	6	2	3	0	0	5	0	0	0	0	0	0	4	0	0	4	15
8:45 AM	0	0	2	0	2	3	4	0	0	7	0	0	0	0	0	0	5	0	0	5	14
Total	2	0	12	0	14	13	16	0	0	29	0	0	0	0	0	0	23	0	0	23	66
Grand Total	2	0	22	0	24	21	25	0	0	46	0	0	0	0	0	0	35	1	0	36	106
Approach %	8.3	0.0	91.7	0.0		45.7	54.3	0.0	0.0		0.0	0.0	0.0	0.0		0.0	97.2	2.8	0.0		
Total %	1.9	0.0	20.8	0.0	22.6	19.8	23.6	0.0	0.0	43.4	0.0	0.0	0.0	0.0	0.0	0.0	33.0	0.9	0.0	34.0	
Exiting Leg Total	22					57					0					27					106

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
8:00 AM	0	0	3	0	3	5	5	0	0	10	0	0	0	0	0	0	8	0	0	8	21
8:15 AM	1	0	2	0	3	3	4	0	0	7	0	0	0	0	0	0	6	0	0	6	16
8:30 AM	1	0	5	0	6	2	3	0	0	5	0	0	0	0	0	0	4	0	0	4	15
8:45 AM	0	0	2	0	2	3	4	0	0	7	0	0	0	0	0	0	5	0	0	5	14
Total Volume	2	0	12	0	14	13	16	0	0	29	0	0	0	0	0	0	23	0	0	23	66
% Approach Total	14.3	0.0	85.7	0.0		44.8	55.2	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.500	0.000	0.600	0.000	0.583	0.650	0.800	0.000	0.000	0.725	0.000	0.000	0.000	0.000	0.000	0.000	0.719	0.000	0.000	0.719	0.786
Entering Leg	2	0	12	0	14	13	16	0	0	29	0	0	0	0	0	0	23	0	0	23	66
Exiting Leg	13					35					0					18					66
Total	27					64					0					41					132

PDI File #: **186634 B**
 Location: **N: Lunenburg Road (Route 70) S: Driveway**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Articulated Trucks

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total	
	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		
7:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4	
7:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3	
7:30 AM	0	0	4	0	4	1	4	0	0	5	0	0	0	0	0	0	2	0	0	2	11	
7:45 AM	0	0	2	0	2	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	5	
Total	0	0	6	0	6	3	9	0	0	12	0	0	0	0	0	0	5	0	0	5	23	
8:00 AM	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	4	
8:15 AM	0	0	1	0	1	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	4	
8:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2	
8:45 AM	0	0	0	0	0	5	4	0	0	9	0	0	0	0	0	0	0	0	0	0	9	
Total	0	0	3	0	3	6	8	0	0	14	0	0	0	0	0	0	2	0	0	2	19	
Grand Total	0	0	9	0	9	9	17	0	0	26	0	0	0	0	0	0	7	0	0	7	42	
Approach %	0.0	0.0	100.0	0.0		34.6	65.4	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	21.4	0.0	21.4	21.4	40.5	0.0	0.0	61.9	0.0	0.0	0.0	0.0	0.0	0.0	16.7	0.0	0.0	16.7		
Exiting Leg Total						9					16					0					17	42

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total	
	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		
7:30 AM	0	0	4	0	4	1	4	0	0	5	0	0	0	0	0	0	2	0	0	2	11	
7:45 AM	0	0	2	0	2	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	5	
8:00 AM	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	4	
8:15 AM	0	0	1	0	1	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	4	
Total Volume	0	0	9	0	9	4	8	0	0	12	0	0	0	0	0	0	3	0	0	3	24	
% Approach Total	0.0	0.0	100.0	0.0		33.3	66.7	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	0.563	0.000	0.563	0.500	0.500	0.000	0.000	0.600	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.375	0.545	
Entering Leg	0					4					0					0					3	24
Exiting Leg	0					4					0					0					8	24
Total	13					24					0					11					48	

PDI File #: **186634 B**
 Location: **N: Lunenburg Road (Route 70) S: Driveway**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Bicycles (on Roadway and Crosswalks)

	Lunenburg Road (Route 70)							Main Street (Route 70/117)							Driveway							Main Street (Route 117)							Total
	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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	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 07:00 AM to 09:00 AM begins at:

7:00 AM	Lunenburg Road (Route 70)							Main Street (Route 70/117)							Driveway							Main Street (Route 117)							Total
	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	
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	
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	
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	
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	
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	
% 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	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	
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	
Exiting Leg	0							0							0							0							0
Total	0							0							0							0							0

PDI File #: **186634 B**
 Location: **N: Lunenburg Road (Route 70) S: Driveway**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdillc.com

Pedestrians

	Lunenburg Road (Route 70)							Main Street (Route 70/117)							Driveway							Main Street (Route 117)							Total
	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	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2
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	2	2	0	0	0	0	0	0	0	2
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	1	0	1	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	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	1	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	0	0	1	2	3	0	0	0	0	0	0	0	3
Approach %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33.3	66.7		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	33.3	66.7	100	0	0	0	0	0	0		
Exiting Leg Total	0							0							3							0							3

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)							Main Street (Route 70/117)							Driveway							Main Street (Route 117)							Total
	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	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2
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 Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2		0	0	0	0	0	0	0	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	100.0		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	0.250	0.250		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	0	0	2	2		0	0	0	0	0	0	2	
Exiting Leg	0							0							2							0							2
Total	0							0							4							0							4

PDI File #: **186634 BB**
 Location: **N: Lunenburg Road (Route 70) S: Driveway**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars and Heavy Vehicles (Combined)

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
4:00 PM	13	0	49	0	62	106	217	0	0	323	0	0	0	0	0	0	114	8	0	122	507
4:15 PM	18	0	54	0	72	150	187	0	0	337	0	0	0	0	0	0	111	11	0	122	531
4:30 PM	17	0	56	0	73	148	165	0	0	313	0	0	0	0	0	0	113	16	0	129	515
4:45 PM	13	0	60	0	73	133	145	0	0	278	0	0	0	0	0	0	98	10	0	108	459
Total	61	0	219	0	280	537	714	0	0	1251	0	0	0	0	0	0	436	45	0	481	2012
5:00 PM	21	0	56	0	77	123	156	0	0	279	0	0	0	0	0	0	105	9	0	114	470
5:15 PM	11	0	50	0	61	134	188	0	0	322	0	0	0	0	0	0	99	18	0	117	500
5:30 PM	22	0	69	0	91	111	173	0	0	284	0	0	0	0	0	0	96	3	0	99	474
5:45 PM	13	0	52	0	65	106	153	0	0	259	0	0	0	0	0	0	97	9	0	106	430
Total	67	0	227	0	294	474	670	0	0	1144	0	0	0	0	0	0	397	39	0	436	1874
Grand Total	128	0	446	0	574	1011	1384	0	0	2395	0	0	0	0	0	0	833	84	0	917	3886
Approach %	22.3	0.0	77.7	0.0		42.2	57.8	0.0	0.0		0.0	0.0	0.0	0.0		0.0	90.8	9.2	0.0		
Total %	3.3	0.0	11.5	0.0	14.8	26.0	35.6	0.0	0.0	61.6	0.0	0.0	0.0	0.0	0.0	0.0	21.4	2.2	0.0	23.6	
Exiting Leg Total	1095					1279					0					1512					3886
Cars	127	0	439	0	566	1003	1358	0	0	2361	0	0	0	0	0	0	806	84	0	890	3817
% Cars	99.2	0.0	98.4	0.0	98.6	99.2	98.1	0.0	0.0	98.6	0.0	0.0	0.0	0.0	0.0	0.0	96.8	100.0	0.0	97.1	98.2
Exiting Leg Total	1087					1245					0					1485					3817
Heavy Vehicles	1	0	7	0	8	8	26	0	0	34	0	0	0	0	0	0	27	0	0	27	69
% Heavy Vehicles	0.8	0.0	1.6	0.0	1.4	0.8	1.9	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	3.2	0.0	0.0	2.9	1.8
Exiting Leg Total	8					34					0					27					69

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
4:00 PM	13	0	49	0	62	106	217	0	0	323	0	0	0	0	0	0	114	8	0	122	507
4:15 PM	18	0	54	0	72	150	187	0	0	337	0	0	0	0	0	0	111	11	0	122	531
4:30 PM	17	0	56	0	73	148	165	0	0	313	0	0	0	0	0	0	113	16	0	129	515
4:45 PM	13	0	60	0	73	133	145	0	0	278	0	0	0	0	0	0	98	10	0	108	459
Total Volume	61	0	219	0	280	537	714	0	0	1251	0	0	0	0	0	0	436	45	0	481	2012
% Approach Total	21.8	0.0	78.2	0.0		42.9	57.1	0.0	0.0		0.0	0.0	0.0	0.0		0.0	90.6	9.4	0.0		
PHF	0.847	0.000	0.913	0.000	0.959	0.895	0.823	0.000	0.000	0.928	0.000	0.000	0.000	0.000	0.000	0.000	0.956	0.703	0.000	0.932	0.947
Cars	61	0	214	0	275	531	696	0	0	1227	0	0	0	0	0	0	421	45	0	466	1968
Cars %	100.0	0.0	97.7	0.0	98.2	98.9	97.5	0.0	0.0	98.1	0.0	0.0	0.0	0.0	0.0	0.0	96.6	100.0	0.0	96.9	97.8
Heavy Vehicles	0	0	5	0	5	6	18	0	0	24	0	0	0	0	0	0	15	0	0	15	44
Heavy Vehicles %	0.0	0.0	2.3	0.0	1.8	1.1	2.5	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.0	3.1	2.2
Cars Enter Leg	61	0	214	0	275	531	696	0	0	1227	0	0	0	0	0	0	421	45	0	466	1968
Heavy Enter Leg	0	0	5	0	5	6	18	0	0	24	0	0	0	0	0	0	15	0	0	15	44
Total Entering Leg	61	0	219	0	280	537	714	0	0	1251	0	0	0	0	0	0	436	45	0	481	2012
Cars Exiting Leg	576					635					0					757					1968
Heavy Exiting Leg	6					20					0					18					44
Total Exiting Leg	582					655					0					775					2012

PDI File #: **186634 BB**
 Location: **N: Lunenburg Road (Route 70) S: Driveway**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



Cars-Combined (Motorcycles, Cars, Light Goods)

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
4:00 PM	13	0	47	0	60	105	210	0	0	315	0	0	0	0	0	0	110	8	0	118	493
4:15 PM	18	0	54	0	72	150	183	0	0	333	0	0	0	0	0	0	109	11	0	120	525
4:30 PM	17	0	55	0	72	145	160	0	0	305	0	0	0	0	0	0	109	16	0	125	502
4:45 PM	13	0	58	0	71	131	143	0	0	274	0	0	0	0	0	0	93	10	0	103	448
Total	61	0	214	0	275	531	696	0	0	1227	0	0	0	0	0	0	421	45	0	466	1968
5:00 PM	21	0	55	0	76	122	154	0	0	276	0	0	0	0	0	0	101	9	0	110	462
5:15 PM	11	0	50	0	61	133	187	0	0	320	0	0	0	0	0	0	96	18	0	114	495
5:30 PM	21	0	69	0	90	111	171	0	0	282	0	0	0	0	0	0	93	3	0	96	468
5:45 PM	13	0	51	0	64	106	150	0	0	256	0	0	0	0	0	0	95	9	0	104	424
Total	66	0	225	0	291	472	662	0	0	1134	0	0	0	0	0	0	385	39	0	424	1849
Grand Total	127	0	439	0	566	1003	1358	0	0	2361	0	0	0	0	0	0	806	84	0	890	3817
Approach %	22.4	0.0	77.6	0.0		42.5	57.5	0.0	0.0		0.0	0.0	0.0	0.0		0.0	90.6	9.4	0.0		
Total %	3.3	0.0	11.5	0.0	14.8	26.3	35.6	0.0	0.0	61.9	0.0	0.0	0.0	0.0	0.0	0.0	21.1	2.2	0.0	23.3	
Exiting Leg Total	1087					1245					0					1485					3817

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
4:00 PM	13	0	47	0	60	105	210	0	0	315	0	0	0	0	0	0	110	8	0	118	493
4:15 PM	18	0	54	0	72	150	183	0	0	333	0	0	0	0	0	0	109	11	0	120	525
4:30 PM	17	0	55	0	72	145	160	0	0	305	0	0	0	0	0	0	109	16	0	125	502
4:45 PM	13	0	58	0	71	131	143	0	0	274	0	0	0	0	0	0	93	10	0	103	448
Total Volume	61	0	214	0	275	531	696	0	0	1227	0	0	0	0	0	0	421	45	0	466	1968
% Approach Total	22.2	0.0	77.8	0.0		43.3	56.7	0.0	0.0		0.0	0.0	0.0	0.0		0.0	90.3	9.7	0.0		
PHF	0.847	0.000	0.922	0.000	0.955	0.885	0.829	0.000	0.000	0.921	0.000	0.000	0.000	0.000	0.000	0.000	0.957	0.703	0.000	0.932	0.937
Entering Leg	61	0	214	0	275	531	696	0	0	1227	0	0	0	0	0	0	421	45	0	466	1968
Exiting Leg	576					635					0					757					1968
Total	851					1862					0					1223					3936

PDI File #: **186634 BB**
 Location: **N: Lunenburg Road (Route 70) S: Driveway**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

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

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
4:00 PM	0	0	2	0	2	1	7	0	0	8	0	0	0	0	0	0	4	0	0	4	14
4:15 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	6
4:30 PM	0	0	1	0	1	3	5	0	0	8	0	0	0	0	0	0	4	0	0	4	13
4:45 PM	0	0	2	0	2	2	2	0	0	4	0	0	0	0	0	0	5	0	0	5	11
Total	0	0	5	0	5	6	18	0	0	24	0	0	0	0	0	0	15	0	0	15	44
5:00 PM	0	0	1	0	1	1	2	0	0	3	0	0	0	0	0	0	4	0	0	4	8
5:15 PM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	3	0	0	3	5
5:30 PM	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	6
5:45 PM	0	0	1	0	1	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	6
Total	1	0	2	0	3	2	8	0	0	10	0	0	0	0	0	0	12	0	0	12	25
Grand Total	1	0	7	0	8	8	26	0	0	34	0	0	0	0	0	0	27	0	0	27	69
Approach %	12.5	0.0	87.5	0.0		23.5	76.5	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
Total %	1.4	0.0	10.1	0.0	11.6	11.6	37.7	0.0	0.0	49.3	0.0	0.0	0.0	0.0	0.0	0.0	39.1	0.0	0.0	39.1	
Exiting Leg Total	8					34					0					27					69
Buses	0	0	1	0	1	3	9	0	0	12	0	0	0	0	0	0	4	0	0	4	17
% Buses	0.0	0.0	14.3	0.0	12.5	37.5	34.6	0.0	0.0	35.3	0.0	0.0	0.0	0.0	0.0	0.0	14.8	0.0	0.0	14.8	24.6
Exiting Leg Total	3					5					0					9					17
Single-Unit Trucks	1	0	6	0	7	4	13	0	0	17	0	0	0	0	0	0	19	0	0	19	43
% Single-Unit	100.0	0.0	85.7	0.0	87.5	50.0	50.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	70.4	0.0	0.0	70.4	62.3
Exiting Leg Total	4					25					0					14					43
Articulated Trucks	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	0	4	0	0	4	9
% Articulated	0.0	0.0	0.0	0.0	0.0	12.5	15.4	0.0	0.0	14.7	0.0	0.0	0.0	0.0	0.0	0.0	14.8	0.0	0.0	14.8	13.0
Exiting Leg Total	1					4					0					4					9

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
4:00 PM	0	0	2	0	2	1	7	0	0	8	0	0	0	0	0	0	4	0	0	4	14
4:15 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	6
4:30 PM	0	0	1	0	1	3	5	0	0	8	0	0	0	0	0	0	4	0	0	4	13
4:45 PM	0	0	2	0	2	2	2	0	0	4	0	0	0	0	0	0	5	0	0	5	11
Total Volume	0	0	5	0	5	6	18	0	0	24	0	0	0	0	0	0	15	0	0	15	44
% Approach Total	0.0	0.0	100.0	0.0		25.0	75.0	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	0.625	0.000	0.625	0.500	0.643	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.000	0.750	0.786
Buses	0	0	1	0	1	3	7	0	0	10	0	0	0	0	0	0	3	0	0	3	14
Buses %	0.0	0.0	20.0	0.0	20.0	50.0	38.9	0.0	0.0	41.7	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	20.0	31.8
Single-Unit Trucks	0	0	4	0	4	3	8	0	0	11	0	0	0	0	0	0	9	0	0	9	24
Single-Unit %	0.0	0.0	80.0	0.0	80.0	50.0	44.4	0.0	0.0	45.8	0.0	0.0	0.0	0.0	0.0	0.0	60.0	0.0	0.0	60.0	54.5
Articulated Trucks	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	16.7	0.0	0.0	12.5	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	20.0	13.6
Buses	0	0	1	0	1	3	7	0	0	10	0	0	0	0	0	0	3	0	0	3	14
Single-Unit Trucks	0	0	4	0	4	3	8	0	0	11	0	0	0	0	0	0	9	0	0	9	24
Articulated Trucks	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
Total Entering Leg	0	0	5	0	5	6	18	0	0	24	0	0	0	0	0	0	15	0	0	15	44
Buses	3					4					0					7					14
Single-Unit Trucks	3					13					0					8					24
Articulated Trucks	0					3					0					3					6
Total Exiting Leg	6					20					0					18					44

PDI File #: **186634 BB**
 Location: **N: Lunenburg Road (Route 70) S: Driveway**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total					
	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						
4:00 PM	9	0	38	0	47	80	174	0	0	254	0	0	0	0	0	0	99	7	0	106	407					
4:15 PM	16	0	45	0	61	128	149	0	0	277	0	0	0	0	0	0	88	10	0	98	436					
4:30 PM	16	0	43	0	59	130	138	0	0	268	0	0	0	0	0	0	96	13	0	109	436					
4:45 PM	10	0	47	0	57	122	116	0	0	238	0	0	0	0	0	0	84	8	0	92	387					
Total	51	0	173	0	224	460	577	0	0	1037	0	0	0	0	0	0	367	38	0	405	1666					
5:00 PM	20	0	47	0	67	119	144	0	0	263	0	0	0	0	0	0	88	7	0	95	425					
5:15 PM	10	0	42	0	52	131	174	0	0	305	0	0	0	0	0	0	84	15	0	99	456					
5:30 PM	17	0	57	0	74	107	155	0	0	262	0	0	0	0	0	0	86	3	0	89	425					
5:45 PM	11	0	44	0	55	103	140	0	0	243	0	0	0	0	0	0	86	9	0	95	393					
Total	58	0	190	0	248	460	613	0	0	1073	0	0	0	0	0	0	344	34	0	378	1699					
Grand Total	109	0	363	0	472	920	1190	0	0	2110	0	0	0	0	0	0	711	72	0	783	3365					
Approach %	23.1	0.0	76.9	0.0		43.6	56.4	0.0	0.0		0.0	0.0	0.0	0.0		0.0	90.8	9.2	0.0							
Total %	3.2	0.0	10.8	0.0	14.0	27.3	35.4	0.0	0.0	62.7	0.0	0.0	0.0	0.0	0.0	0.0	21.1	2.1	0.0	23.3						
Exiting Leg Total						992					1074					0					1299					3365

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
4:30 PM	16	0	43	0	59	130	138	0	0	268	0	0	0	0	0	0	96	13	0	109	436
4:45 PM	10	0	47	0	57	122	116	0	0	238	0	0	0	0	0	0	84	8	0	92	387
5:00 PM	20	0	47	0	67	119	144	0	0	263	0	0	0	0	0	0	88	7	0	95	425
5:15 PM	10	0	42	0	52	131	174	0	0	305	0	0	0	0	0	0	84	15	0	99	456
Total Volume	56	0	179	0	235	502	572	0	0	1074	0	0	0	0	0	0	352	43	0	395	1704
% Approach Total	23.8	0.0	76.2	0.0		46.7	53.3	0.0	0.0		0.0	0.0	0.0	0.0		0.0	89.1	10.9	0.0		
PHF	0.700	0.000	0.952	0.000	0.877	0.958	0.822	0.000	0.000	0.880	0.000	0.000	0.000	0.000	0.000	0.000	0.917	0.717	0.000	0.906	0.934
Entering Leg	56	0	179	0	235	502	572	0	0	1074	0	0	0	0	0	0	352	43	0	395	1704
Exiting Leg						545					0					628					1704
Total	780					1605					0					1023					3408

PDI File #: **186634 BB**
 Location: **N: Lunenburg Road (Route 70) S: Driveway**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Light Goods Vehicle

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
4:00 PM	4	0	9	0	13	25	36	0	0	61	0	0	0	0	0	0	11	1	0	12	86
4:15 PM	2	0	9	0	11	22	34	0	0	56	0	0	0	0	0	0	21	1	0	22	89
4:30 PM	1	0	12	0	13	15	22	0	0	37	0	0	0	0	0	0	13	3	0	16	66
4:45 PM	3	0	11	0	14	9	27	0	0	36	0	0	0	0	0	0	9	2	0	11	61
Total	10	0	41	0	51	71	119	0	0	190	0	0	0	0	0	0	54	7	0	61	302
5:00 PM	1	0	8	0	9	3	10	0	0	13	0	0	0	0	0	0	13	2	0	15	37
5:15 PM	1	0	8	0	9	2	13	0	0	15	0	0	0	0	0	0	12	3	0	15	39
5:30 PM	4	0	12	0	16	4	16	0	0	20	0	0	0	0	0	0	7	0	0	7	43
5:45 PM	2	0	7	0	9	3	10	0	0	13	0	0	0	0	0	0	9	0	0	9	31
Total	8	0	35	0	43	12	49	0	0	61	0	0	0	0	0	0	41	5	0	46	150
Grand Total	18	0	76	0	94	83	168	0	0	251	0	0	0	0	0	0	95	12	0	107	452
Approach %	19.1	0.0	80.9	0.0		33.1	66.9	0.0	0.0		0.0	0.0	0.0	0.0		0.0	88.8	11.2	0.0		
Total %	4.0	0.0	16.8	0.0	20.8	18.4	37.2	0.0	0.0	55.5	0.0	0.0	0.0	0.0	0.0	0.0	21.0	2.7	0.0	23.7	
Exiting Leg Total	95					171					0					186					452

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
4:00 PM	4	0	9	0	13	25	36	0	0	61	0	0	0	0	0	0	11	1	0	12	86
4:15 PM	2	0	9	0	11	22	34	0	0	56	0	0	0	0	0	0	21	1	0	22	89
4:30 PM	1	0	12	0	13	15	22	0	0	37	0	0	0	0	0	0	13	3	0	16	66
4:45 PM	3	0	11	0	14	9	27	0	0	36	0	0	0	0	0	0	9	2	0	11	61
Total Volume	10	0	41	0	51	71	119	0	0	190	0	0	0	0	0	0	54	7	0	61	302
% Approach Total	19.6	0.0	80.4	0.0		37.4	62.6	0.0	0.0		0.0	0.0	0.0	0.0		0.0	88.5	11.5	0.0		
PHF	0.625	0.000	0.854	0.000	0.911	0.710	0.826	0.000	0.000	0.779	0.000	0.000	0.000	0.000	0.000	0.000	0.643	0.583	0.000	0.693	0.848
Entering Leg	10	0	41	0	51	71	119	0	0	190	0	0	0	0	0	0	54	7	0	61	302
Exiting Leg	78					95					0					129					302
Total	129					285					0					190					604

PDI File #: **186634 BB**
 Location: **N: Lunenburg Road (Route 70) S: Driveway**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Buses

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
4:00 PM	0	0	0	0	0	1	5	0	0	6	0	0	0	0	0	0	2	0	0	2	8
4:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
4:30 PM	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	1	0	1	3	7	0	0	10	0	0	0	0	0	0	3	0	0	3	14
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	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	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
Grand Total	0	0	1	0	1	3	9	0	0	12	0	0	0	0	0	0	4	0	0	4	17
Approach %	0.0	0.0	100.0	0.0		25.0	75.0	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	5.9	0.0	5.9	17.6	52.9	0.0	0.0	70.6	0.0	0.0	0.0	0.0	0.0	0.0	23.5	0.0	0.0	23.5	
Exiting Leg Total	3					5					0					9					17

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
4:00 PM	0	0	0	0	0	1	5	0	0	6	0	0	0	0	0	0	2	0	0	2	8
4:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
4:30 PM	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	1	0	1	3	7	0	0	10	0	0	0	0	0	0	3	0	0	3	14
% Approach Total	0.0	0.0	100.0	0.0		30.0	70.0	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	0.250	0.000	0.250	0.375	0.350	0.000	0.000	0.417	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.375	0.438
Entering Leg	0	0	1	0	1	3	7	0	0	10	0	0	0	0	0	0	3	0	0	3	14
Exiting Leg	3					4					0					7					14
Total	4					14					0					10					28

PDI File #: **186634 BB**
 Location: **N: Lunenburg Road (Route 70) S: Driveway**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Single-Unit Trucks

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total	
	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		
4:00 PM	0	0	2	0	2	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	5	
4:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3	
4:30 PM	0	0	1	0	1	1	3	0	0	4	0	0	0	0	0	0	4	0	0	4	9	
4:45 PM	0	0	1	0	1	2	1	0	0	3	0	0	0	0	0	0	3	0	0	3	7	
Total	0	0	4	0	4	3	8	0	0	11	0	0	0	0	0	0	9	0	0	9	24	
5:00 PM	0	0	1	0	1	1	1	0	0	2	0	0	0	0	0	0	4	0	0	4	7	
5:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2	
5:30 PM	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	5	
5:45 PM	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	5	
Total	1	0	2	0	3	1	5	0	0	6	0	0	0	0	0	0	10	0	0	10	19	
Grand Total	1	0	6	0	7	4	13	0	0	17	0	0	0	0	0	0	19	0	0	19	43	
Approach %	14.3	0.0	85.7	0.0		23.5	76.5	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0			
Total %	2.3	0.0	14.0	0.0	16.3	9.3	30.2	0.0	0.0	39.5	0.0	0.0	0.0	0.0	0.0	0.0	44.2	0.0	0.0	44.2		
Exiting Leg Total						4					25					0					14	43

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total	
	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		
4:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3	
4:30 PM	0	0	1	0	1	1	3	0	0	4	0	0	0	0	0	0	4	0	0	4	9	
4:45 PM	0	0	1	0	1	2	1	0	0	3	0	0	0	0	0	0	3	0	0	3	7	
5:00 PM	0	0	1	0	1	1	1	0	0	2	0	0	0	0	0	0	4	0	0	4	7	
Total Volume	0	0	3	0	3	4	7	0	0	11	0	0	0	0	0	0	12	0	0	12	26	
% Approach Total	0.0	0.0	100.0	0.0		36.4	63.6	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	0.750	0.000	0.750	0.500	0.583	0.000	0.000	0.688	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.000	0.750	0.722	
Entering Leg	0	0	3	0	3	4	7	0	0	11	0	0	0	0	0	0	12	0	0	12	26	
Exiting Leg						4					15					0					7	26
Total						7					26					0					19	52

PDI File #: **186634 BB**
 Location: **N: Lunenburg Road (Route 70) S: Driveway**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Articulated Trucks

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
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	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
Total	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
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	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	2
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	1	1	0	0	2	0	0	0	0	0	0	1	0	0	1	3
Grand Total	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	0	4	0	0	4	9
Approach %	0.0	0.0	0.0	0.0	0.0	20.0	80.0	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
Total %	0.0	0.0	0.0	0.0	0.0	11.1	44.4	0.0	0.0	55.6	0.0	0.0	0.0	0.0	0.0	0.0	44.4	0.0	0.0	44.4	0.0
Exiting Leg Total	1					4					0					4					9

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)					Main Street (Route 70/117)					Driveway					Main Street (Route 117)					Total
	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	
4:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
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	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	2
Total Volume	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	0	3	0	0	3	7
% Approach Total	0.0	0.0	0.0	0.0	0.0	25.0	75.0	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
PHF	0.000	0.000	0.000	0.000	0.000	0.250	0.375	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.375	0.583
Entering Leg	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	0	3	0	0	3	7
Exiting Leg	1					3					0					3					7
Total	1					7					0					6					14

PDI File #: **186634 BB**
 Location: **N: Lunenburg Road (Route 70) S: Driveway**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Bicycles (on Roadway and Crosswalks)

	Lunenburg Road (Route 70)							Main Street (Route 70/117)							Driveway							Main Street (Route 117)							Total
	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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	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 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)							Main Street (Route 70/117)							Driveway							Main Street (Route 117)							Total
	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	
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	
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	
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	
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	
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	
% 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	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	
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	
Exiting Leg	0							0							0							0							0
Total	0							0							0							0							0

PDI File #: 186634 BB
 Location: N: Lunenburg Road (Route 70) S: Driveway
 Location: E: Main Street (Route 70/117) W: Main Street (Route 117)
 City, State: Lancaster, MA
 Client: TEC/ L. Oltman
 Site Code: T0852
 Count Date: Wednesday, December 19, 2018
 Start Time: 4:00 PM
 End Time: 6:00 PM
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdillc.com

Pedestrians

	Lunenburg Road (Route 70)							Main Street (Route 70/117)							Driveway							Main Street (Route 117)							Total	
	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		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1
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	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	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	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1
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	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	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	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	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
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	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	100	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	100	0	100	0	0	0	0	0	0	0	
Exiting Leg Total	0							0							1							0	1							

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)							Main Street (Route 70/117)							Driveway							Main Street (Route 117)							Total	
	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		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1
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	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	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	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	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	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	0.000	0.000	0.250	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	0	0	0	1	0	1	0	0	0	0	0	0	0	1
Exiting Leg	0							0							1							0	1							
Total	0							0							2							0	2							

PDI File #: **186634 C**
 Location: **N: Shirley Road S: Main Street (Route 70)**
 Location: **E: Seven Bridge Road (Route 117) W: Main Street (Route 70/117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Cars and Heavy Vehicles (Combined)

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
7:00 AM	0	0	0	0	0	0	84	0	0	84	1	1	29	0	31	50	235	0	0	285	400
7:15 AM	0	0	1	0	1	0	102	3	0	105	1	0	37	0	38	96	196	1	0	293	437
7:30 AM	2	2	0	0	4	1	127	5	0	133	3	0	61	0	64	77	157	0	0	234	435
7:45 AM	0	1	1	0	2	1	98	1	0	100	1	0	34	0	35	82	159	1	0	242	379
Total	2	3	2	0	7	2	411	9	0	422	6	1	161	0	168	305	747	2	0	1054	1651
8:00 AM	0	1	0	0	1	0	97	5	0	102	2	0	40	0	42	58	171	0	0	229	374
8:15 AM	2	2	0	0	4	0	84	2	0	86	3	0	53	0	56	65	141	0	0	206	352
8:30 AM	0	1	0	0	1	0	112	2	0	114	3	0	48	0	51	49	127	0	0	176	342
8:45 AM	0	0	1	0	1	1	97	0	0	98	2	0	41	0	43	70	113	0	0	183	325
Total	2	4	1	0	7	1	390	9	0	400	10	0	182	0	192	242	552	0	0	794	1393
Grand Total	4	7	3	0	14	3	801	18	0	822	16	1	343	0	360	547	1299	2	0	1848	3044
Approach %	28.6	50.0	21.4	0.0		0.4	97.4	2.2	0.0		4.4	0.3	95.3	0.0		29.6	70.3	0.1	0.0		
Total %	0.1	0.2	0.1	0.0	0.5	0.1	26.3	0.6	0.0	27.0	0.5	0.0	11.3	0.0	11.8	18.0	42.7	0.1	0.0	60.7	
Exiting Leg Total	6					1318					572					1148					3044
Cars	4	6	3	0	13	3	725	17	0	745	16	1	320	0	337	526	1230	2	0	1758	2853
% Cars	100.0	85.7	100.0	0.0	92.9	100.0	90.5	94.4	0.0	90.6	100.0	100.0	93.3	0.0	93.6	96.2	94.7	100.0	0.0	95.1	93.7
Exiting Leg Total	6					1249					549					1049					2853
Heavy Vehicles	0	1	0	0	1	0	76	1	0	77	0	0	23	0	23	21	69	0	0	90	191
% Heavy Vehicles	0.0	14.3	0.0	0.0	7.1	0.0	9.5	5.6	0.0	9.4	0.0	0.0	6.7	0.0	6.4	3.8	5.3	0.0	0.0	4.9	6.3
Exiting Leg Total	0					69					23					99					191

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
7:00 AM	0	0	0	0	0	0	84	0	0	84	1	1	29	0	31	50	235	0	0	285	400
7:15 AM	0	0	1	0	1	0	102	3	0	105	1	0	37	0	38	96	196	1	0	293	437
7:30 AM	2	2	0	0	4	1	127	5	0	133	3	0	61	0	64	77	157	0	0	234	435
7:45 AM	0	1	1	0	2	1	98	1	0	100	1	0	34	0	35	82	159	1	0	242	379
Total Volume	2	3	2	0	7	2	411	9	0	422	6	1	161	0	168	305	747	2	0	1054	1651
% Approach Total	28.6	42.9	28.6	0.0		0.5	97.4	2.1	0.0		3.6	0.6	95.8	0.0		28.9	70.9	0.2	0.0		
PHF	0.250	0.375	0.500	0.000	0.438	0.500	0.809	0.450	0.000	0.793	0.500	0.250	0.660	0.000	0.656	0.794	0.795	0.500	0.000	0.899	0.945
Cars	2	3	2	0	7	2	382	9	0	393	6	1	153	0	160	296	711	2	0	1009	1569
Cars %	100.0	100.0	100.0	0.0	100.0	100.0	92.9	100.0	0.0	93.1	100.0	100.0	95.0	0.0	95.2	97.0	95.2	100.0	0.0	95.7	95.0
Heavy Vehicles	0	0	0	0	0	0	29	0	0	29	0	0	8	0	8	9	36	0	0	45	82
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	0.0	7.1	0.0	0.0	6.9	0.0	0.0	5.0	0.0	4.8	3.0	4.8	0.0	0.0	4.3	5.0
Cars Enter Leg	2	3	2	0	7	2	382	9	0	393	6	1	153	0	160	296	711	2	0	1009	1569
Heavy Enter Leg	0	0	0	0	0	0	29	0	0	29	0	0	8	0	8	9	36	0	0	45	82
Total Entering Leg	2	3	2	0	7	2	411	9	0	422	6	1	161	0	168	305	747	2	0	1054	1651
Cars Exiting Leg	5					719					308					537					1569
Heavy Exiting Leg	0					36					9					37					82
Total Exiting Leg	5					755					317					574					1651

PDI File #: **186634 C**
 Location: **N: Shirley Road S: Main Street (Route 70)**
 Location: **E: Seven Bridge Road (Route 117) W: Main Street (Route 70/117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Cars-Combined (Motorcycles, Cars, Light Goods)

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
7:00 AM	0	0	0	0	0	0	76	0	0	76	1	1	28	0	30	48	231	0	0	279	385
7:15 AM	0	0	1	0	1	0	98	3	0	101	1	0	35	0	36	92	187	1	0	280	418
7:30 AM	2	2	0	0	4	1	113	5	0	119	3	0	58	0	61	75	144	0	0	219	403
7:45 AM	0	1	1	0	2	1	95	1	0	97	1	0	32	0	33	81	149	1	0	231	363
Total	2	3	2	0	7	2	382	9	0	393	6	1	153	0	160	296	711	2	0	1009	1569
8:00 AM	0	1	0	0	1	0	91	5	0	96	2	0	35	0	37	56	159	0	0	215	349
8:15 AM	2	1	0	0	3	0	75	2	0	77	3	0	48	0	51	60	135	0	0	195	326
8:30 AM	0	1	0	0	1	0	99	1	0	100	3	0	45	0	48	47	118	0	0	165	314
8:45 AM	0	0	1	0	1	1	78	0	0	79	2	0	39	0	41	67	107	0	0	174	295
Total	2	3	1	0	6	1	343	8	0	352	10	0	167	0	177	230	519	0	0	749	1284
Grand Total	4	6	3	0	13	3	725	17	0	745	16	1	320	0	337	526	1230	2	0	1758	2853
Approach %	30.8	46.2	23.1	0.0		0.4	97.3	2.3	0.0		4.7	0.3	95.0	0.0		29.9	70.0	0.1	0.0		
Total %	0.1	0.2	0.1	0.0	0.5	0.1	25.4	0.6	0.0	26.1	0.6	0.0	11.2	0.0	11.8	18.4	43.1	0.1	0.0	61.6	
Exiting Leg Total	6					1249					549					1049					2853

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
7:00 AM	0	0	0	0	0	0	76	0	0	76	1	1	28	0	30	48	231	0	0	279	385
7:15 AM	0	0	1	0	1	0	98	3	0	101	1	0	35	0	36	92	187	1	0	280	418
7:30 AM	2	2	0	0	4	1	113	5	0	119	3	0	58	0	61	75	144	0	0	219	403
7:45 AM	0	1	1	0	2	1	95	1	0	97	1	0	32	0	33	81	149	1	0	231	363
Total Volume	2	3	2	0	7	2	382	9	0	393	6	1	153	0	160	296	711	2	0	1009	1569
% Approach Total	28.6	42.9	28.6	0.0		0.5	97.2	2.3	0.0		3.8	0.6	95.6	0.0		29.3	70.5	0.2	0.0		
PHF	0.250	0.375	0.500	0.000	0.438	0.500	0.845	0.450	0.000	0.826	0.500	0.250	0.659	0.000	0.656	0.804	0.769	0.500	0.000	0.901	0.938
Entering Leg	2	3	2	0	7	2	382	9	0	393	6	1	153	0	160	296	711	2	0	1009	1569
Exiting Leg	5					719					308					537					1569
Total	12					1112					468					1546					3138

PDI File #: **186634 C**
 Location: **N: Shirley Road S: Main Street (Route 70)**
 Location: **E: Seven Bridge Road (Route 117) W: Main Street (Route 70/117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**



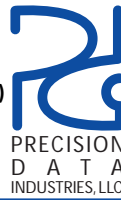
46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
7:00 AM	0	0	0	0	0	0	8	0	0	8	0	0	1	0	1	2	4	0	0	6	15
7:15 AM	0	0	0	0	0	0	4	0	0	4	0	0	2	0	2	4	9	0	0	13	19
7:30 AM	0	0	0	0	0	0	14	0	0	14	0	0	3	0	3	2	13	0	0	15	32
7:45 AM	0	0	0	0	0	0	3	0	0	3	0	0	2	0	2	1	10	0	0	11	16
Total	0	0	0	0	0	0	29	0	0	29	0	0	8	0	8	9	36	0	0	45	82
8:00 AM	0	0	0	0	0	0	6	0	0	6	0	0	5	0	5	2	12	0	0	14	25
8:15 AM	0	1	0	0	1	0	9	0	0	9	0	0	5	0	5	5	6	0	0	11	26
8:30 AM	0	0	0	0	0	0	13	1	0	14	0	0	3	0	3	2	9	0	0	11	28
8:45 AM	0	0	0	0	0	0	19	0	0	19	0	0	2	0	2	3	6	0	0	9	30
Total	0	1	0	0	1	0	47	1	0	48	0	0	15	0	15	12	33	0	0	45	109
Grand Total	0	1	0	0	1	0	76	1	0	77	0	0	23	0	23	21	69	0	0	90	191
Approach %	0.0	100.0	0.0	0.0		0.0	98.7	1.3	0.0		0.0	0.0	100.0	0.0		23.3	76.7	0.0	0.0		
Total %	0.0	0.5	0.0	0.0	0.5	0.0	39.8	0.5	0.0	40.3	0.0	0.0	12.0	0.0	12.0	11.0	36.1	0.0	0.0	47.1	
Exiting Leg Total	0					69					23					99					191
Buses	0	1	0	0	1	0	14	0	0	14	0	0	11	0	11	5	3	0	0	8	34
% Buses	0.0	100.0	0.0	0.0	100.0	0.0	18.4	0.0	0.0	18.2	0.0	0.0	47.8	0.0	47.8	23.8	4.3	0.0	0.0	8.9	17.8
Exiting Leg Total	0					3					6					25					34
Single-Unit Trucks	0	0	0	0	0	0	36	1	0	37	0	0	12	0	12	13	53	0	0	66	115
% Single-Unit	0.0	0.0	0.0	0.0	0.0	0.0	47.4	100.0	0.0	48.1	0.0	0.0	52.2	0.0	52.2	61.9	76.8	0.0	0.0	73.3	60.2
Exiting Leg Total	0					53					14					48					115
Articulated Trucks	0	0	0	0	0	0	26	0	0	26	0	0	0	0	0	3	13	0	0	16	42
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	34.2	0.0	0.0	33.8	0.0	0.0	0.0	0.0	0.0	14.3	18.8	0.0	0.0	17.8	22.0
Exiting Leg Total	0					13					3					26					42

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
8:00 AM	0	0	0	0	0	0	6	0	0	6	0	0	5	0	5	2	12	0	0	14	25
8:15 AM	0	1	0	0	1	0	9	0	0	9	0	0	5	0	5	5	6	0	0	11	26
8:30 AM	0	0	0	0	0	0	13	1	0	14	0	0	3	0	3	2	9	0	0	11	28
8:45 AM	0	0	0	0	0	0	19	0	0	19	0	0	2	0	2	3	6	0	0	9	30
Total Volume	0	1	0	0	1	0	47	1	0	48	0	0	15	0	15	12	33	0	0	45	109
% Approach Total	0.0	100.0	0.0	0.0		0.0	97.9	2.1	0.0		0.0	0.0	100.0	0.0		26.7	73.3	0.0	0.0		
PHF	0.000	0.250	0.000	0.000	0.250	0.000	0.618	0.250	0.000	0.632	0.000	0.000	0.750	0.000	0.750	0.600	0.688	0.000	0.000	0.804	0.908
Buses	0	1	0	0	1	0	13	0	0	13	0	0	8	0	8	2	0	0	0	2	24
Buses %	0.0	100.0	0.0	0.0	100.0	0.0	27.7	0.0	0.0	27.1	0.0	0.0	53.3	0.0	53.3	16.7	0.0	0.0	0.0	4.4	22.0
Single-Unit Trucks	0	0	0	0	0	0	20	1	0	21	0	0	7	0	7	9	29	0	0	38	66
Single-Unit %	0.0	0.0	0.0	0.0	0.0	0.0	42.6	100.0	0.0	43.8	0.0	0.0	46.7	0.0	46.7	75.0	87.9	0.0	0.0	84.4	60.6
Articulated Trucks	0	0	0	0	0	0	14	0	0	14	0	0	0	0	0	1	4	0	0	5	19
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	29.8	0.0	0.0	29.2	0.0	0.0	0.0	0.0	0.0	8.3	12.1	0.0	0.0	11.1	17.4
Buses	0	1	0	0	1	0	13	0	0	13	0	0	8	0	8	2	0	0	0	2	24
Single-Unit Trucks	0	0	0	0	0	0	20	1	0	21	0	0	7	0	7	9	29	0	0	38	66
Articulated Trucks	0	0	0	0	0	0	14	0	0	14	0	0	0	0	0	1	4	0	0	5	19
Total Entering Leg	0	1	0	0	1	0	47	1	0	48	0	0	15	0	15	12	33	0	0	45	109
Buses	0					0					3					21					24
Single-Unit Trucks	0					29					10					27					66
Articulated Trucks	0					4					1					14					19
Total Exiting Leg	0					33					14					62					109

PDI File #: **186634 C**
 Location: **N: Shirley Road S: Main Street (Route 70)**
 Location: **E: Seven Bridge Road (Route 117) W: Main Street (Route 70/117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total					
	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						
7:00 AM	0	0	0	0	0	0	57	0	0	57	0	0	26	0	26	43	193	0	0	236	319					
7:15 AM	0	0	0	0	0	0	84	3	0	87	1	0	30	0	31	87	170	1	0	258	376					
7:30 AM	1	2	0	0	3	0	86	5	0	91	3	0	45	0	48	69	115	0	0	184	326					
7:45 AM	0	1	1	0	2	1	82	1	0	84	1	0	26	0	27	68	132	1	0	201	314					
Total	1	3	1	0	5	1	309	9	0	319	5	0	127	0	132	267	610	2	0	879	1335					
8:00 AM	0	1	0	0	1	0	69	5	0	74	2	0	30	0	32	51	140	0	0	191	298					
8:15 AM	1	1	0	0	2	0	61	1	0	62	3	0	45	0	48	53	119	0	0	172	284					
8:30 AM	0	1	0	0	1	0	87	1	0	88	2	0	42	0	44	38	99	0	0	137	270					
8:45 AM	0	0	1	0	1	1	68	0	0	69	2	0	33	0	35	59	89	0	0	148	253					
Total	1	3	1	0	5	1	285	7	0	293	9	0	150	0	159	201	447	0	0	648	1105					
Grand Total	2	6	2	0	10	2	594	16	0	612	14	0	277	0	291	468	1057	2	0	1527	2440					
Approach %	20.0	60.0	20.0	0.0		0.3	97.1	2.6	0.0		4.8	0.0	95.2	0.0		30.6	69.2	0.1	0.0							
Total %	0.1	0.2	0.1	0.0	0.4	0.1	24.3	0.7	0.0	25.1	0.6	0.0	11.4	0.0	11.9	19.2	43.3	0.1	0.0	62.6						
Exiting Leg Total						4					1073					490					873					2440

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
7:00 AM	0	0	0	0	0	0	57	0	0	57	0	0	26	0	26	43	193	0	0	236	319
7:15 AM	0	0	0	0	0	0	84	3	0	87	1	0	30	0	31	87	170	1	0	258	376
7:30 AM	1	2	0	0	3	0	86	5	0	91	3	0	45	0	48	69	115	0	0	184	326
7:45 AM	0	1	1	0	2	1	82	1	0	84	1	0	26	0	27	68	132	1	0	201	314
Total Volume	1	3	1	0	5	1	309	9	0	319	5	0	127	0	132	267	610	2	0	879	1335
% Approach Total	20.0	60.0	20.0	0.0		0.3	96.9	2.8	0.0		3.8	0.0	96.2	0.0		30.4	69.4	0.2	0.0		
PHF	0.250	0.375	0.250	0.000	0.417	0.250	0.898	0.450	0.000	0.876	0.417	0.000	0.706	0.000	0.688	0.767	0.790	0.500	0.000	0.852	0.888
Entering Leg	1	3	1	0	5	1	309	9	0	319	5	0	127	0	132	267	610	2	0	879	1335
Exiting Leg						3					279					437					1335
Total	8					935					411					1316					2670

PDI File #: **186634 C**
 Location: **N: Shirley Road S: Main Street (Route 70)**
 Location: **E: Seven Bridge Road (Route 117) W: Main Street (Route 70/117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class: **Light Goods Vehicle**

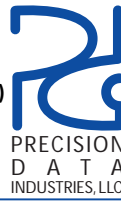


	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	19	0	0	19	1	1	2	0	4	5	38	0	0	43	66
7:15 AM	0	0	1	0	1	0	14	0	0	14	0	0	5	0	5	5	17	0	0	22	42
7:30 AM	1	0	0	0	1	1	27	0	0	28	0	0	13	0	13	6	29	0	0	35	77
7:45 AM	0	0	0	0	0	0	13	0	0	13	0	0	6	0	6	13	17	0	0	30	49
Total	1	0	1	0	2	1	73	0	0	74	1	1	26	0	28	29	101	0	0	130	234
8:00 AM	0	0	0	0	0	0	22	0	0	22	0	0	5	0	5	5	19	0	0	24	51
8:15 AM	1	0	0	0	1	0	14	1	0	15	0	0	3	0	3	7	16	0	0	23	42
8:30 AM	0	0	0	0	0	0	12	0	0	12	1	0	3	0	4	9	19	0	0	28	44
8:45 AM	0	0	0	0	0	0	10	0	0	10	0	0	6	0	6	8	18	0	0	26	42
Total	1	0	0	0	1	0	58	1	0	59	1	0	17	0	18	29	72	0	0	101	179
Grand Total	2	0	1	0	3	1	131	1	0	133	2	1	43	0	46	58	173	0	0	231	413
Approach %	66.7	0.0	33.3	0.0		0.8	98.5	0.8	0.0		4.3	2.2	93.5	0.0		25.1	74.9	0.0	0.0		
Total %	0.5	0.0	0.2	0.0	0.7	0.2	31.7	0.2	0.0	32.2	0.5	0.2	10.4	0.0	11.1	14.0	41.9	0.0	0.0	55.9	
Exiting Leg Total	2					176					59					176					413

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
7:00 AM	0	0	0	0	0	0	19	0	0	19	1	1	2	0	4	5	38	0	0	43	66
7:15 AM	0	0	1	0	1	0	14	0	0	14	0	0	5	0	5	5	17	0	0	22	42
7:30 AM	1	0	0	0	1	1	27	0	0	28	0	0	13	0	13	6	29	0	0	35	77
7:45 AM	0	0	0	0	0	0	13	0	0	13	0	0	6	0	6	13	17	0	0	30	49
Total Volume	1	0	1	0	2	1	73	0	0	74	1	1	26	0	28	29	101	0	0	130	234
% Approach Total	50.0	0.0	50.0	0.0		1.4	98.6	0.0	0.0		3.6	3.6	92.9	0.0		22.3	77.7	0.0	0.0		
PHF	0.250	0.000	0.250	0.000	0.500	0.250	0.676	0.000	0.000	0.661	0.250	0.250	0.500	0.000	0.538	0.558	0.664	0.000	0.000	0.756	0.760
Entering Leg	1	0	1	0	2	1	73	0	0	74	1	1	26	0	28	29	101	0	0	130	234
Exiting Leg	2					103					29					100					234
Total	4					177					57					230					468

PDI File #: **186634 C**
 Location: **N: Shirley Road S: Main Street (Route 70)**
 Location: **E: Seven Bridge Road (Route 117) W: Main Street (Route 70/117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

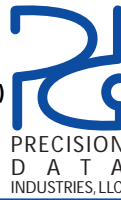
Buses

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
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	1	0	0	1	0	0	1	0	1	2	2	0	0	4	6
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	1	0	0	0	1	3
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	0	0	0	0	0	1	0	0	1	0	0	3	0	3	3	3	0	0	6	10
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
8:15 AM	0	1	0	0	1	0	1	0	0	1	0	0	4	0	4	1	0	0	0	1	7
8:30 AM	0	0	0	0	0	0	6	0	0	6	0	0	3	0	3	1	0	0	0	1	10
8:45 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	6
Total	0	1	0	0	1	0	13	0	0	13	0	0	8	0	8	2	0	0	0	2	24
Grand Total	0	1	0	0	1	0	14	0	0	14	0	0	11	0	11	5	3	0	0	8	34
Approach %	0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		62.5	37.5	0.0	0.0		
Total %	0.0	2.9	0.0	0.0	2.9	0.0	41.2	0.0	0.0	41.2	0.0	0.0	32.4	0.0	32.4	14.7	8.8	0.0	0.0	23.5	
Exiting Leg Total	0					3					6					25					34

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
8:15 AM	0	1	0	0	1	0	1	0	0	1	0	0	4	0	4	1	0	0	0	1	7
8:30 AM	0	0	0	0	0	0	6	0	0	6	0	0	3	0	3	1	0	0	0	1	10
8:45 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	6
Total Volume	0	1	0	0	1	0	13	0	0	13	0	0	8	0	8	2	0	0	0	2	24
% Approach Total	0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		100.0	0.0	0.0	0.0		
PHF	0.000	0.250	0.000	0.000	0.250	0.000	0.542	0.000	0.000	0.542	0.000	0.000	0.500	0.000	0.500	0.500	0.000	0.000	0.000	0.500	0.600
Entering Leg	0	1	0	0	1	0	13	0	0	13	0	0	8	0	8	2	0	0	0	2	24
Exiting Leg	0					3					6					21					24
Total	1					13					11					23					48

PDI File #: **186634 C**
 Location: **N: Shirley Road S: Main Street (Route 70)**
 Location: **E: Seven Bridge Road (Route 117) W: Main Street (Route 70/117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
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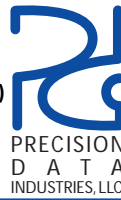
Single-Unit Trucks

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
7:00 AM	0	0	0	0	0	0	5	0	0	5	0	0	1	0	1	2	4	0	0	6	12
7:15 AM	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	1	6	0	0	7	10
7:30 AM	0	0	0	0	0	0	8	0	0	8	0	0	1	0	1	0	7	0	0	7	16
7:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	2	0	2	1	7	0	0	8	11
Total	0	0	0	0	0	0	16	0	0	16	0	0	5	0	5	4	24	0	0	28	49
8:00 AM	0	0	0	0	0	0	5	0	0	5	0	0	4	0	4	2	9	0	0	11	20
8:15 AM	0	0	0	0	0	0	5	0	0	5	0	0	1	0	1	3	6	0	0	9	15
8:30 AM	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	1	8	0	0	9	15
8:45 AM	0	0	0	0	0	0	5	0	0	5	0	0	2	0	2	3	6	0	0	9	16
Total	0	0	0	0	0	0	20	1	0	21	0	0	7	0	7	9	29	0	0	38	66
Grand Total	0	0	0	0	0	0	36	1	0	37	0	0	12	0	12	13	53	0	0	66	115
Approach %	0.0	0.0	0.0	0.0		0.0	97.3	2.7	0.0		0.0	0.0	100.0	0.0		19.7	80.3	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	31.3	0.9	0.0	32.2	0.0	0.0	10.4	0.0	10.4	11.3	46.1	0.0	0.0	57.4	
Exiting Leg Total	0					53					14					48					115

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
8:00 AM	0	0	0	0	0	0	5	0	0	5	0	0	4	0	4	2	9	0	0	11	20
8:15 AM	0	0	0	0	0	0	5	0	0	5	0	0	1	0	1	3	6	0	0	9	15
8:30 AM	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	1	8	0	0	9	15
8:45 AM	0	0	0	0	0	0	5	0	0	5	0	0	2	0	2	3	6	0	0	9	16
Total Volume	0	0	0	0	0	0	20	1	0	21	0	0	7	0	7	9	29	0	0	38	66
% Approach Total	0.0	0.0	0.0	0.0		0.0	95.2	4.8	0.0		0.0	0.0	100.0	0.0		23.7	76.3	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.250	0.000	0.875	0.000	0.000	0.438	0.000	0.438	0.750	0.806	0.000	0.000	0.864	0.825
Entering Leg	0					21					7					38					66
Exiting Leg	0					29					10					27					66
Total	0					50					17					65					132

PDI File #: **186634 C**
 Location: **N: Shirley Road S: Main Street (Route 70)**
 Location: **E: Seven Bridge Road (Route 117) W: Main Street (Route 70/117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Articulated Trucks

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
7:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
7:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	1	0	0	2	3
7:30 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	1	6	0	0	7	13
7:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
Total	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	2	9	0	0	11	23
8:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
8:15 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	1	0	0	0	1	4
8:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
8:45 AM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	0	0	0	0	8
Total	0	0	0	0	0	0	14	0	0	14	0	0	0	0	0	1	4	0	0	5	19
Grand Total	0	0	0	0	0	0	26	0	0	26	0	0	0	0	0	3	13	0	0	16	42
Approach %	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	18.8	81.3	0.0	0.0	0.0	
Total %	0.0	0.0	0.0	0.0	0.0	0.0	61.9	0.0	0.0	61.9	0.0	0.0	0.0	0.0	0.0	7.1	31.0	0.0	0.0	38.1	
Exiting Leg Total	0					13					3					26					42

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
7:30 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	1	6	0	0	7	13
7:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
8:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
8:15 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	1	0	0	0	1	4
Total Volume	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	2	11	0	0	13	25
% Approach Total	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	15.4	84.6	0.0	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	0.000	0.000	0.000	0.500	0.458	0.000	0.000	0.464	0.481
Entering Leg	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	2	11	0	0	13	25
Exiting Leg	0					11					2					12					25
Total	0					23					2					25					50

PDI File #: **186634 C**
 Location: **N: Shirley Road S: Main Street (Route 70)**
 Location: **E: Seven Bridge Road (Route 117) W: Main Street (Route 70/117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Bicycles (on Roadway and Crosswalks)

	Shirley Road							Seven Bridge Road (Route 117)							Main Street (Route 70)							Main Street (Route 70/117)							Total
	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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	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		
Exiting Leg Total	0							0							0							0							0

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Shirley Road							Seven Bridge Road (Route 117)							Main Street (Route 70)							Main Street (Route 70/117)							Total
	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	
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	
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	
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	
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	
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	
% 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	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	
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	
Exiting Leg	0							0							0							0							0
Total	0							0							0							0							0

PDI File #: 186634 C
 Location: N: Shirley Road S: Main Street (Route 70)
 Location: E: Seven Bridge Road (Route 117) W: Main Street (Route 70/117)
 City, State: Lancaster, MA
 Client: TEC/ L. Oltman
 Site Code: T0852
 Count Date: Wednesday, December 19, 2018
 Start Time: 7:00 AM
 End Time: 9:00 AM
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Pedestrians

	Shirley Road							Seven Bridge Road (Route 117)							Main Street (Route 70)							Main Street (Route 70/117)							Total
	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	
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	
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	1	1	1	1	
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	
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	2	2	2	2	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3	3	
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	
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	2	0	2	2	2	
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	
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	
Total	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	2	
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	5	5	5	5	
Approach %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	60					
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	60	100				
Exiting Leg Total	0							0							0							5							5

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Shirley Road							Seven Bridge Road (Route 117)							Main Street (Route 70)							Main Street (Route 70/117)							Total
	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	
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	
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	2	2	2	2	2	
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	
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	2	0	2	2	2	2	
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4	4	4	4	
% 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	50.0	50.0					
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	0.250	0.250	0.500	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	2	2	4	4	4	4		
Exiting Leg	0							0							0							4							4
Total	0							0							0							8							8

PDI File #: **186634 CC**
 Location: **N: Shirley Road S: Main Street (Route 70)**
 Location: **E: Seven Bridge Road (Route 117) W: Main Street (Route 70/117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



Cars and Heavy Vehicles (Combined)

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
4:00 PM	0	0	0	0	0	1	278	0	0	279	1	0	50	0	51	48	119	0	0	167	497
4:15 PM	0	0	0	0	0	0	294	2	0	296	0	0	44	0	44	63	102	0	0	165	505
4:30 PM	0	0	0	0	0	0	277	1	0	278	1	0	35	0	36	46	120	0	0	166	480
4:45 PM	1	0	0	0	1	0	225	1	0	226	1	0	55	0	56	52	106	1	0	159	442
Total	1	0	0	0	1	1	1074	4	0	1079	3	0	184	0	187	209	447	1	0	657	1924
5:00 PM	1	0	0	0	1	0	242	1	0	243	0	2	42	0	44	54	107	1	0	162	450
5:15 PM	1	2	0	0	3	3	280	0	0	283	1	0	40	0	41	38	107	1	0	146	473
5:30 PM	0	0	0	0	0	1	252	2	0	255	0	0	37	0	37	46	117	0	0	163	455
5:45 PM	0	0	0	0	0	0	208	0	0	208	0	0	45	0	45	50	98	1	0	149	402
Total	2	2	0	0	4	4	982	3	0	989	1	2	164	0	167	188	429	3	0	620	1780
Grand Total	3	2	0	0	5	5	2056	7	0	2068	4	2	348	0	354	397	876	4	0	1277	3704
Approach %	60.0	40.0	0.0	0.0		0.2	99.4	0.3	0.0		1.1	0.6	98.3	0.0		31.1	68.6	0.3	0.0		
Total %	0.1	0.1	0.0	0.0	0.1	0.1	55.5	0.2	0.0	55.8	0.1	0.1	9.4	0.0	9.6	10.7	23.7	0.1	0.0	34.5	
Exiting Leg Total	11					880					406					2407					3704
Cars	3	2	0	0	5	5	2021	7	0	2033	4	2	344	0	350	392	849	4	0	1245	3633
% Cars	100.0	100.0	0.0	0.0	100.0	100.0	98.3	100.0	0.0	98.3	100.0	100.0	98.9	0.0	98.9	98.7	96.9	100.0	0.0	97.5	98.1
Exiting Leg Total	11					853					401					2368					3633
Heavy Vehicles	0	0	0	0	0	0	35	0	0	35	0	0	4	0	4	5	27	0	0	32	71
% Heavy Vehicles	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	1.7	0.0	0.0	1.1	0.0	1.1	1.3	3.1	0.0	0.0	2.5	1.9
Exiting Leg Total	0					27					5					39					71

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
4:00 PM	0	0	0	0	0	1	278	0	0	279	1	0	50	0	51	48	119	0	0	167	497
4:15 PM	0	0	0	0	0	0	294	2	0	296	0	0	44	0	44	63	102	0	0	165	505
4:30 PM	0	0	0	0	0	0	277	1	0	278	1	0	35	0	36	46	120	0	0	166	480
4:45 PM	1	0	0	0	1	0	225	1	0	226	1	0	55	0	56	52	106	1	0	159	442
Total Volume	1	0	0	0	1	1	1074	4	0	1079	3	0	184	0	187	209	447	1	0	657	1924
% Approach Total	100.0	0.0	0.0	0.0		0.1	99.5	0.4	0.0		1.6	0.0	98.4	0.0		31.8	68.0	0.2	0.0		
PHF	0.250	0.000	0.000	0.000	0.250	0.250	0.913	0.500	0.000	0.911	0.750	0.000	0.836	0.000	0.835	0.829	0.931	0.250	0.000	0.984	0.952
Cars	1	0	0	0	1	1	1051	4	0	1056	3	0	181	0	184	205	432	1	0	638	1879
Cars %	100.0	0.0	0.0	0.0	100.0	100.0	97.9	100.0	0.0	97.9	100.0	0.0	98.4	0.0	98.4	98.1	96.6	100.0	0.0	97.1	97.7
Heavy Vehicles	0	0	0	0	0	0	23	0	0	23	0	0	3	0	3	4	15	0	0	19	45
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0	2.1	0.0	0.0	1.6	0.0	1.6	1.9	3.4	0.0	0.0	2.9	2.3
Cars Enter Leg	1	0	0	0	1	1	1051	4	0	1056	3	0	181	0	184	205	432	1	0	638	1879
Heavy Enter Leg	0	0	0	0	0	0	23	0	0	23	0	0	3	0	3	4	15	0	0	19	45
Total Entering Leg	1	0	0	0	1	1	1074	4	0	1079	3	0	184	0	187	209	447	1	0	657	1924
Cars Exiting Leg	2					435					209					1233					1879
Heavy Exiting Leg	0					15					4					26					45
Total Exiting Leg	2					450					213					1259					1924

PDI File #: **186634 CC**
 Location: **N: Shirley Road S: Main Street (Route 70)**
 Location: **E: Seven Bridge Road (Route 117) W: Main Street (Route 70/117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**



Cars-Combined (Motorcycles, Cars, Light Goods)

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
4:00 PM	0	0	0	0	0	1	268	0	0	269	1	0	50	0	51	46	115	0	0	161	481
4:15 PM	0	0	0	0	0	0	290	2	0	292	0	0	43	0	43	63	100	0	0	163	498
4:30 PM	0	0	0	0	0	0	270	1	0	271	1	0	35	0	36	45	116	0	0	161	468
4:45 PM	1	0	0	0	1	0	223	1	0	224	1	0	53	0	54	51	101	1	0	153	432
Total	1	0	0	0	1	1	1051	4	0	1056	3	0	181	0	184	205	432	1	0	638	1879
5:00 PM	1	0	0	0	1	0	235	1	0	236	0	2	42	0	44	54	102	1	0	157	438
5:15 PM	1	2	0	0	3	3	279	0	0	282	1	0	40	0	41	37	105	1	0	143	469
5:30 PM	0	0	0	0	0	1	251	2	0	254	0	0	37	0	37	46	114	0	0	160	451
5:45 PM	0	0	0	0	0	0	205	0	0	205	0	0	44	0	44	50	96	1	0	147	396
Total	2	2	0	0	4	4	970	3	0	977	1	2	163	0	166	187	417	3	0	607	1754
Grand Total	3	2	0	0	5	5	2021	7	0	2033	4	2	344	0	350	392	849	4	0	1245	3633
Approach %	60.0	40.0	0.0	0.0		0.2	99.4	0.3	0.0		1.1	0.6	98.3	0.0		31.5	68.2	0.3	0.0		
Total %	0.1	0.1	0.0	0.0	0.1	0.1	55.6	0.2	0.0	56.0	0.1	0.1	9.5	0.0	9.6	10.8	23.4	0.1	0.0	34.3	
Exiting Leg Total	11					853					401					2368					3633

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
4:00 PM	0	0	0	0	0	1	268	0	0	269	1	0	50	0	51	46	115	0	0	161	481
4:15 PM	0	0	0	0	0	0	290	2	0	292	0	0	43	0	43	63	100	0	0	163	498
4:30 PM	0	0	0	0	0	0	270	1	0	271	1	0	35	0	36	45	116	0	0	161	468
4:45 PM	1	0	0	0	1	0	223	1	0	224	1	0	53	0	54	51	101	1	0	153	432
Total Volume	1	0	0	0	1	1	1051	4	0	1056	3	0	181	0	184	205	432	1	0	638	1879
% Approach Total	100.0	0.0	0.0	0.0		0.1	99.5	0.4	0.0		1.6	0.0	98.4	0.0		32.1	67.7	0.2	0.0		
PHF	0.250	0.000	0.000	0.000	0.250	0.250	0.906	0.500	0.000	0.904	0.750	0.000	0.854	0.000	0.852	0.813	0.931	0.250	0.000	0.979	0.943
Entering Leg	1	0	0	0	1	1	1051	4	0	1056	3	0	181	0	184	205	432	1	0	638	1879
Exiting Leg						2					209					1233					1879
Total	3					1491					393					1871					3758

PDI File #: **186634 CC**
 Location: **N: Shirley Road S: Main Street (Route 70)**
 Location: **E: Seven Bridge Road (Route 117) W: Main Street (Route 70/117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**



46 Morton Street, Framingham, MA 01702
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 Email: datarequests@pdilic.com

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
4:00 PM	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	2	4	0	0	6	16
4:15 PM	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	0	2	0	0	2	7
4:30 PM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	1	4	0	0	5	12
4:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	2	0	2	1	5	0	0	6	10
Total	0	0	0	0	0	0	23	0	0	23	0	0	3	0	3	4	15	0	0	19	45
5:00 PM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	5	0	0	5	12
5:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	2	0	0	3	4
5:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
5:45 PM	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	0	2	0	0	2	6
Total	0	0	0	0	0	0	12	0	0	12	0	0	1	0	1	1	12	0	0	13	26
Grand Total	0	0	0	0	0	0	35	0	0	35	0	0	4	0	4	5	27	0	0	32	71
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		15.6	84.4	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	49.3	0.0	0.0	49.3	0.0	0.0	5.6	0.0	5.6	7.0	38.0	0.0	0.0	45.1	
Exiting Leg Total	0					27					5					39					71
Buses	0	0	0	0	0	0	12	0	0	12	0	0	1	0	1	4	1	0	0	5	18
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	34.3	0.0	0.0	34.3	0.0	0.0	25.0	0.0	25.0	80.0	3.7	0.0	0.0	15.6	25.4
Exiting Leg Total	0					1					4					13					18
Single-Unit Trucks	0	0	0	0	0	0	17	0	0	17	0	0	3	0	3	1	22	0	0	23	43
% Single-Unit	0.0	0.0	0.0	0.0	0.0	0.0	48.6	0.0	0.0	48.6	0.0	0.0	75.0	0.0	75.0	20.0	81.5	0.0	0.0	71.9	60.6
Exiting Leg Total	0					22					1					20					43
Articulated Trucks	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	4	0	0	4	10
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	17.1	0.0	0.0	17.1	0.0	0.0	0.0	0.0	0.0	0.0	14.8	0.0	0.0	12.5	14.1
Exiting Leg Total	0					4					0					6					10

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
4:00 PM	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	2	4	0	0	6	16
4:15 PM	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	0	2	0	0	2	7
4:30 PM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	1	4	0	0	5	12
4:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	2	0	2	1	5	0	0	6	10
Total Volume	0	0	0	0	0	0	23	0	0	23	0	0	3	0	3	4	15	0	0	19	45
% 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		21.1	78.9	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.575	0.000	0.000	0.575	0.000	0.000	0.375	0.000	0.375	0.500	0.750	0.000	0.000	0.792	0.703
Buses	0	0	0	0	0	0	9	0	0	9	0	0	1	0	1	3	1	0	0	4	14
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	39.1	0.0	0.0	39.1	0.0	0.0	33.3	0.0	33.3	75.0	6.7	0.0	0.0	21.1	31.1
Single-Unit Trucks	0	0	0	0	0	0	11	0	0	11	0	0	2	0	2	1	11	0	0	12	25
Single-Unit %	0.0	0.0	0.0	0.0	0.0	0.0	47.8	0.0	0.0	47.8	0.0	0.0	66.7	0.0	66.7	25.0	73.3	0.0	0.0	63.2	55.6
Articulated Trucks	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	13.0	0.0	0.0	13.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	15.8	13.3
Buses	0	0	0	0	0	0	9	0	0	9	0	0	1	0	1	3	1	0	0	4	14
Single-Unit Trucks	0	0	0	0	0	0	11	0	0	11	0	0	2	0	2	1	11	0	0	12	25
Articulated Trucks	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
Total Entering Leg	0	0	0	0	0	0	23	0	0	23	0	0	3	0	3	4	15	0	0	19	45
Buses	0					1					3					10					14
Single-Unit Trucks	0					11					1					13					25
Articulated Trucks	0					3					0					3					6
Total Exiting Leg	0					15					4					26					45

PDI File #: **186634 CC**
 Location: **N: Shirley Road S: Main Street (Route 70)**
 Location: **E: Seven Bridge Road (Route 117) W: Main Street (Route 70/117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



Cars

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total				
	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					
4:00 PM	0	0	0	0	0	1	218	0	0	219	1	0	45	0	46	43	100	0	0	143	408				
4:15 PM	0	0	0	0	0	0	240	0	0	240	0	0	39	0	39	55	83	0	0	138	417				
4:30 PM	0	0	0	0	0	0	232	1	0	233	1	0	32	0	33	41	97	0	0	138	404				
4:45 PM	1	0	0	0	1	0	211	1	0	212	1	0	46	0	47	49	87	0	0	136	396				
Total	1	0	0	0	1	1	901	2	0	904	3	0	162	0	165	188	367	0	0	555	1625				
5:00 PM	1	0	0	0	1	0	215	0	0	215	0	1	39	0	40	54	94	0	0	148	404				
5:15 PM	1	2	0	0	3	3	251	0	0	254	1	0	39	0	40	35	91	1	0	127	424				
5:30 PM	0	0	0	0	0	1	235	2	0	238	0	0	32	0	32	43	102	0	0	145	415				
5:45 PM	0	0	0	0	0	0	195	0	0	195	0	0	41	0	41	47	88	1	0	136	372				
Total	2	2	0	0	4	4	896	2	0	902	1	1	151	0	153	179	375	2	0	556	1615				
Grand Total	3	2	0	0	5	5	1797	4	0	1806	4	1	313	0	318	367	742	2	0	1111	3240				
Approach %	60.0	40.0	0.0	0.0		0.3	99.5	0.2	0.0		1.3	0.3	98.4	0.0		33.0	66.8	0.2	0.0						
Total %	0.1	0.1	0.0	0.0	0.2	0.2	55.5	0.1	0.0	55.7	0.1	0.0	9.7	0.0	9.8	11.3	22.9	0.1	0.0	34.3					
Exiting Leg Total						8						746						373						2113	3240

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total				
	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					
4:45 PM	1	0	0	0	1	0	211	1	0	212	1	0	46	0	47	49	87	0	0	136	396				
5:00 PM	1	0	0	0	1	0	215	0	0	215	0	1	39	0	40	54	94	0	0	148	404				
5:15 PM	1	2	0	0	3	3	251	0	0	254	1	0	39	0	40	35	91	1	0	127	424				
5:30 PM	0	0	0	0	0	1	235	2	0	238	0	0	32	0	32	43	102	0	0	145	415				
Total Volume	3	2	0	0	5	4	912	3	0	919	2	1	156	0	159	181	374	1	0	556	1639				
% Approach Total	60.0	40.0	0.0	0.0		0.4	99.2	0.3	0.0		1.3	0.6	98.1	0.0		32.6	67.3	0.2	0.0						
PHF	0.750	0.250	0.000	0.000	0.417	0.333	0.908	0.375	0.000	0.905	0.500	0.250	0.848	0.000	0.846	0.838	0.917	0.250	0.000	0.939	0.966				
Entering Leg	3	2	0	0	5	4	912	3	0	919	2	1	156	0	159	181	374	1	0	556	1639				
Exiting Leg						6						376						186						1071	1639
Total						11						1295						345						1627	3278

PDI File #: **186634 CC**
 Location: **N: Shirley Road S: Main Street (Route 70)**
 Location: **E: Seven Bridge Road (Route 117) W: Main Street (Route 70/117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



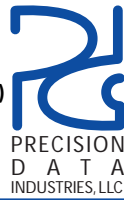
Light Goods Vehicle

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total				
	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					
4:00 PM	0	0	0	0	0	0	50	0	0	50	0	0	5	0	5	3	15	0	0	18	73				
4:15 PM	0	0	0	0	0	0	50	2	0	52	0	0	4	0	4	8	17	0	0	25	81				
4:30 PM	0	0	0	0	0	0	38	0	0	38	0	0	3	0	3	4	19	0	0	23	64				
4:45 PM	0	0	0	0	0	0	12	0	0	12	0	0	7	0	7	2	14	1	0	17	36				
Total	0	0	0	0	0	0	150	2	0	152	0	0	19	0	19	17	65	1	0	83	254				
5:00 PM	0	0	0	0	0	0	20	1	0	21	0	1	3	0	4	0	8	1	0	9	34				
5:15 PM	0	0	0	0	0	0	28	0	0	28	0	0	1	0	1	2	14	0	0	16	45				
5:30 PM	0	0	0	0	0	0	16	0	0	16	0	0	5	0	5	3	12	0	0	15	36				
5:45 PM	0	0	0	0	0	0	10	0	0	10	0	0	3	0	3	3	8	0	0	11	24				
Total	0	0	0	0	0	0	74	1	0	75	0	1	12	0	13	8	42	1	0	51	139				
Grand Total	0	0	0	0	0	0	224	3	0	227	0	1	31	0	32	25	107	2	0	134	393				
Approach %	0.0	0.0	0.0	0.0		0.0	98.7	1.3	0.0		0.0	3.1	96.9	0.0		18.7	79.9	1.5	0.0						
Total %	0.0	0.0	0.0	0.0	0.0	0.0	57.0	0.8	0.0	57.8	0.0	0.3	7.9	0.0	8.1	6.4	27.2	0.5	0.0	34.1					
Exiting Leg Total						3						107						28						255	393

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total				
	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					
4:00 PM	0	0	0	0	0	0	50	0	0	50	0	0	5	0	5	3	15	0	0	18	73				
4:15 PM	0	0	0	0	0	0	50	2	0	52	0	0	4	0	4	8	17	0	0	25	81				
4:30 PM	0	0	0	0	0	0	38	0	0	38	0	0	3	0	3	4	19	0	0	23	64				
4:45 PM	0	0	0	0	0	0	12	0	0	12	0	0	7	0	7	2	14	1	0	17	36				
Total Volume	0	0	0	0	0	0	150	2	0	152	0	0	19	0	19	17	65	1	0	83	254				
% Approach Total	0.0	0.0	0.0	0.0		0.0	98.7	1.3	0.0		0.0	0.0	100.0	0.0		20.5	78.3	1.2	0.0						
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.250	0.000	0.731	0.000	0.000	0.679	0.000	0.679	0.531	0.855	0.250	0.000	0.830	0.784				
Entering Leg	0	0	0	0	0	0	150	2	0	152	0	0	19	0	19	17	65	1	0	83	254				
Exiting Leg						1						65						19						169	254
Total						1						217						38						252	508

PDI File #: **186634 CC**
 Location: **N: Shirley Road S: Main Street (Route 70)**
 Location: **E: Seven Bridge Road (Route 117) W: Main Street (Route 70/117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

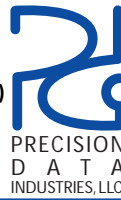
Buses

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
4:00 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	2	0	0	0	2	8
4:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	0	1	0	0	1	4
4:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total	0	0	0	0	0	0	9	0	0	9	0	0	1	0	1	3	1	0	0	4	14
5:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
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	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	1	0	0	0	1	4
Grand Total	0	0	0	0	0	0	12	0	0	12	0	0	1	0	1	4	1	0	0	5	18
Approach %	0.0	0.0	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	80.0	20.0	0.0	0.0	0.0	
Total %	0.0	0.0	0.0	0.0	0.0	0.0	66.7	0.0	0.0	66.7	0.0	0.0	5.6	0.0	5.6	22.2	5.6	0.0	0.0	27.8	
Exiting Leg Total	0					1					4					13					18

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
4:00 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	2	0	0	0	2	8
4:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	0	1	0	0	1	4
4:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total Volume	0	0	0	0	0	0	9	0	0	9	0	0	1	0	1	3	1	0	0	4	14
% Approach Total	0.0	0.0	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	75.0	25.0	0.0	0.0	0.0	
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.375	0.000	0.000	0.250	0.000	0.250	0.375	0.250	0.000	0.000	0.500	0.438
Entering Leg	0	0	0	0	0	0	9	0	0	9	0	0	1	0	1	3	1	0	0	4	14
Exiting Leg	0					1					3					10					14
Total	0					10					4					14					28

PDI File #: **186634 CC**
 Location: **N: Shirley Road S: Main Street (Route 70)**
 Location: **E: Seven Bridge Road (Route 117) W: Main Street (Route 70/117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Single-Unit Trucks

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
4:00 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	7
4:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
4:30 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	1	4	0	0	5	9
4:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	2	0	2	0	3	0	0	3	6
Total	0	0	0	0	0	0	11	0	0	11	0	0	2	0	2	1	11	0	0	12	25
5:00 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	5	0	0	5	8
5:15 PM	0	0	0	0	0	0	1	0	0	1	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	3	0	0	3	3
5:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	0	2	0	0	2	5
Total	0	0	0	0	0	0	6	0	0	6	0	0	1	0	1	0	11	0	0	11	18
Grand Total	0	0	0	0	0	0	17	0	0	17	0	0	3	0	3	1	22	0	0	23	43
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		4.3	95.7	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	39.5	0.0	0.0	39.5	0.0	0.0	7.0	0.0	7.0	2.3	51.2	0.0	0.0	53.5	
Exiting Leg Total	0					22					1					20					43

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:15 PM	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
4:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
4:30 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	1	4	0	0	5	9
4:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	2	0	2	0	3	0	0	3	6
5:00 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	5	0	0	5	8
Total Volume	0	0	0	0	0	0	10	0	0	10	0	0	2	0	2	1	13	0	0	14	26
% 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		7.1	92.9	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.000	0.625	0.000	0.000	0.250	0.000	0.250	0.250	0.650	0.000	0.000	0.700	0.722
Entering Leg	0	0	0	0	0	0	10	0	0	10	0	0	2	0	2	1	13	0	0	14	26
Exiting Leg	0					13					1					12					26
Total	0					23					3					26					52

PDI File #: **186634 CC**
 Location: **N: Shirley Road S: Main Street (Route 70)**
 Location: **E: Seven Bridge Road (Route 117) W: Main Street (Route 70/117)**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



Articulated Trucks

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
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	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
Total	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
5:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
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	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	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4
Grand Total	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	4	0	0	4	10
Approach %	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	100.0	0.0	0.0	0.0	
Total %	0.0	0.0	0.0	0.0	0.0	0.0	60.0	0.0	0.0	60.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0	0.0	0.0	40.0	
Exiting Leg Total	0					4					0					6					10

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70/117)					Total
	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	
4:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
5:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
5:15 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	5	0	0	5	0	0	0	0	0	0	3	0	0	3	8
% Approach Total	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	100.0	0.0	0.0	0.0	
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.375	0.667
Entering Leg	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	8
Exiting Leg	0					3					0					5					8
Total	0					8					0					8					16

PDI File #: 186634 CC
 Location: N: Shirley Road S: Main Street (Route 70)
 Location: E: Seven Bridge Road (Route 117) W: Main Street (Route 70/117)
 City, State: Lancaster, MA
 Client: TEC/ L. Oltman
 Site Code: T0852
 Count Date: Wednesday, December 19, 2018
 Start Time: 4:00 PM
 End Time: 6:00 PM
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Bicycles (on Roadway and Crosswalks)

	Shirley Road							Seven Bridge Road (Route 117)							Main Street (Route 70)							Main Street (Route 70/117)							Total
	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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	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 04:00 PM to 06:00 PM begins at:

	Shirley Road							Seven Bridge Road (Route 117)							Main Street (Route 70)							Main Street (Route 70/117)							Total
	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	
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	
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	
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	
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	
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	
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	
% 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	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	
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	
Exiting Leg	0							0							0							0							0
Total	0							0							0							0							0

PDI File #: 186634 CC
 Location: N: Shirley Road S: Main Street (Route 70)
 Location: E: Seven Bridge Road (Route 117) W: Main Street (Route 70/117)
 City, State: Lancaster, MA
 Client: TEC/ L. Oltman
 Site Code: T0852
 Count Date: Wednesday, December 19, 2018
 Start Time: 4:00 PM
 End Time: 6:00 PM
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Pedestrians

	Shirley Road							Seven Bridge Road (Route 117)							Main Street (Route 70)							Main Street (Route 70/117)							Total
	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	
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	
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	
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	
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	
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	
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	2	0	2	0	2	
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	
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	
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	
Total	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	0	2	
Grand Total	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	0	2		
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	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	100	0	100	0	100		
Exiting Leg Total	0							0							0							2							2

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:15 PM	Shirley Road							Seven Bridge Road (Route 117)							Main Street (Route 70)							Main Street (Route 70/117)							Total
	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	
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	
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	
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	
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	2	0	2	0	2	2	
Total Volume	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	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	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	0.250	0.000	0.250	0.000	0.250	0.250		
Entering Leg	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	0	2		
Exiting Leg	0							0							0							2							2
Total	0							0							0							4							4

PDI File #: **186634 D**
 Location: **S: Route 2 WB Ramps**
 Location: **E: Fort Pond Road W: Fort Pond Road**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars and Heavy Vehicles (Combined)

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	7	3	0	10	0	13	0	13	26	10	0	36	59
7:15 AM	4	1	0	5	0	13	0	13	32	11	0	43	61
7:30 AM	8	7	0	15	0	7	0	7	34	17	0	51	73
7:45 AM	6	2	0	8	0	20	0	20	30	17	0	47	75
Total	25	13	0	38	0	53	0	53	122	55	0	177	268
8:00 AM	6	2	0	8	0	14	0	14	23	5	0	28	50
8:15 AM	4	1	0	5	0	11	0	11	29	6	0	35	51
8:30 AM	5	3	0	8	0	18	0	18	35	3	0	38	64
8:45 AM	6	3	0	9	0	18	0	18	27	5	0	32	59
Total	21	9	0	30	0	61	0	61	114	19	0	133	224
Grand Total	46	22	0	68	0	114	0	114	236	74	0	310	492
Approach %	67.6	32.4	0.0		0.0	100.0	0.0		76.1	23.9	0.0		
Total %	9.3	4.5	0.0	13.8	0.0	23.2	0.0	23.2	48.0	15.0	0.0	63.0	
Exiting Leg Total				74				258				160	492
Cars	37	22	0	59	0	101	0	101	222	64	0	286	446
% Cars	80.4	100.0	0.0	86.8	0.0	88.6	0.0	88.6	94.1	86.5	0.0	92.3	90.7
Exiting Leg Total				64				244				138	446
Heavy Vehicles	9	0	0	9	0	13	0	13	14	10	0	24	46
% Heavy Vehicles	19.6	0.0	0.0	13.2	0.0	11.4	0.0	11.4	5.9	13.5	0.0	7.7	9.3
Exiting Leg Total				10				14				22	46

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	7	3	0	10	0	13	0	13	26	10	0	36	59
7:15 AM	4	1	0	5	0	13	0	13	32	11	0	43	61
7:30 AM	8	7	0	15	0	7	0	7	34	17	0	51	73
7:45 AM	6	2	0	8	0	20	0	20	30	17	0	47	75
Total Volume	25	13	0	38	0	53	0	53	122	55	0	177	268
% Approach Total	65.8	34.2	0.0		0.0	100.0	0.0		68.9	31.1	0.0		
PHF	0.781	0.464	0.000	0.633	0.000	0.663	0.000	0.663	0.897	0.809	0.000	0.868	0.893
Cars	22	13	0	35	0	49	0	49	119	48	0	167	251
Cars %	88.0	100.0	0.0	92.1	0.0	92.5	0.0	92.5	97.5	87.3	0.0	94.4	93.7
Heavy Vehicles	3	0	0	3	0	4	0	4	3	7	0	10	17
Heavy Vehicles %	12.0	0.0	0.0	7.9	0.0	7.5	0.0	7.5	2.5	12.7	0.0	5.6	6.3
Cars Enter Leg	22	13	0	35	0	49	0	49	119	48	0	167	251
Heavy Enter Leg	3	0	0	3	0	4	0	4	3	7	0	10	17
Total Entering Leg	25	13	0	38	0	53	0	53	122	55	0	177	268
Cars Exiting Leg				48				132				71	251
Heavy Exiting Leg				7				3				7	17
Total Exiting Leg				55				135				78	268

PDI File #: **186634 D**
 Location: **S: Route 2 WB Ramps**
 Location: **E: Fort Pond Road W: Fort Pond Road**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdillc.com

Cars-Combined (Motorcycles, Cars, Light Goods)

Class:

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	6	3	0	9	0	11	0	11	25	8	0	33	53
7:15 AM	4	1	0	5	0	12	0	12	31	9	0	40	57
7:30 AM	8	7	0	15	0	7	0	7	33	16	0	49	71
7:45 AM	4	2	0	6	0	19	0	19	30	15	0	45	70
Total	22	13	0	35	0	49	0	49	119	48	0	167	251
8:00 AM	3	2	0	5	0	13	0	13	19	4	0	23	41
8:15 AM	3	1	0	4	0	9	0	9	27	5	0	32	45
8:30 AM	3	3	0	6	0	14	0	14	33	3	0	36	56
8:45 AM	6	3	0	9	0	16	0	16	24	4	0	28	53
Total	15	9	0	24	0	52	0	52	103	16	0	119	195
Grand Total	37	22	0	59	0	101	0	101	222	64	0	286	446
Approach %	62.7	37.3	0.0		0.0	100.0	0.0		77.6	22.4	0.0		
Total %	8.3	4.9	0.0	13.2	0.0	22.6	0.0	22.6	49.8	14.3	0.0	64.1	
Exiting Leg Total				64				244				138	446

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	6	3	0	9	0	11	0	11	25	8	0	33	53
7:15 AM	4	1	0	5	0	12	0	12	31	9	0	40	57
7:30 AM	8	7	0	15	0	7	0	7	33	16	0	49	71
7:45 AM	4	2	0	6	0	19	0	19	30	15	0	45	70
Total Volume	22	13	0	35	0	49	0	49	119	48	0	167	251
% Approach Total	62.9	37.1	0.0		0.0	100.0	0.0		71.3	28.7	0.0		
PHF	0.688	0.464	0.000	0.583	0.000	0.645	0.000	0.645	0.902	0.750	0.000	0.852	0.884
Entering Leg	22	13	0	35	0	49	0	49	119	48	0	167	251
Exiting Leg				48				132				71	251
Total				83				181				238	502

PDI File #: **186634 D**
 Location: **S: Route 2 WB Ramps**
 Location: **E: Fort Pond Road W: Fort Pond Road**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilc.com

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

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	1	0	0	1	0	2	0	2	1	2	0	3	6
7:15 AM	0	0	0	0	0	1	0	1	1	2	0	3	4
7:30 AM	0	0	0	0	0	0	0	0	1	1	0	2	2
7:45 AM	2	0	0	2	0	1	0	1	0	2	0	2	5
Total	3	0	0	3	0	4	0	4	3	7	0	10	17
8:00 AM	3	0	0	3	0	1	0	1	4	1	0	5	9
8:15 AM	1	0	0	1	0	2	0	2	2	1	0	3	6
8:30 AM	2	0	0	2	0	4	0	4	2	0	0	2	8
8:45 AM	0	0	0	0	0	2	0	2	3	1	0	4	6
Total	6	0	0	6	0	9	0	9	11	3	0	14	29
Grand Total	9	0	0	9	0	13	0	13	14	10	0	24	46
Approach %	100.0	0.0	0.0		0.0	100.0	0.0		58.3	41.7	0.0		
Total %	19.6	0.0	0.0	19.6	0.0	28.3	0.0	28.3	30.4	21.7	0.0	52.2	
Exiting Leg Total	10				14				22				46
Buses	2	0	0	2	0	0	0	0	0	0	0	0	2
% Buses	22.2	0.0	0.0	22.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3
Exiting Leg Total	0				0				2				2
Single-Unit Trucks	4	0	0	4	0	8	0	8	12	7	0	19	31
% Single-Unit	44.4	0.0	0.0	44.4	0.0	61.5	0.0	61.5	85.7	70.0	0.0	79.2	67.4
Exiting Leg Total	7				12				12				31
Articulated Trucks	3	0	0	3	0	5	0	5	2	3	0	5	13
% Articulated	33.3	0.0	0.0	33.3	0.0	38.5	0.0	38.5	14.3	30.0	0.0	20.8	28.3
Exiting Leg Total	3				2				8				13

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
8:00 AM	3	0	0	3	0	1	0	1	4	1	0	5	9
8:15 AM	1	0	0	1	0	2	0	2	2	1	0	3	6
8:30 AM	2	0	0	2	0	4	0	4	2	0	0	2	8
8:45 AM	0	0	0	0	0	2	0	2	3	1	0	4	6
Total Volume	6	0	0	6	0	9	0	9	11	3	0	14	29
% Approach Total	100.0	0.0	0.0		0.0	100.0	0.0		78.6	21.4	0.0		
PHF	0.500	0.000	0.000	0.500	0.000	0.563	0.000	0.563	0.688	0.750	0.000	0.700	0.806
Buses	1	0	0	1	0	0	0	0	0	0	0	0	1
Buses %	16.7	0.0	0.0	16.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4
Single-Unit Trucks	4	0	0	4	0	5	0	5	9	1	0	10	19
Single-Unit %	66.7	0.0	0.0	66.7	0.0	55.6	0.0	55.6	81.8	33.3	0.0	71.4	65.5
Articulated Trucks	1	0	0	1	0	4	0	4	2	2	0	4	9
Articulated %	16.7	0.0	0.0	16.7	0.0	44.4	0.0	44.4	18.2	66.7	0.0	28.6	31.0
Buses	1	0	0	1	0	0	0	0	0	0	0	0	1
Single-Unit Trucks	4	0	0	4	0	5	0	5	9	1	0	10	19
Articulated Trucks	1	0	0	1	0	4	0	4	2	2	0	4	9
Total Entering Leg	6	0	0	6	0	9	0	9	11	3	0	14	29
Buses	0				0				1				1
Single-Unit Trucks	1				9				9				19
Articulated Trucks	2				2				5				9
Total Exiting Leg	3				11				15				29

PDI File #: **186634 D**
 Location: **S: Route 2 WB Ramps**
 Location: **E: Fort Pond Road W: Fort Pond Road**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdillc.com

Cars

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	6	3	0	9	0	7	0	7	22	6	0	28	44
7:15 AM	4	1	0	5	0	9	0	9	27	5	0	32	46
7:30 AM	8	5	0	13	0	5	0	5	26	11	0	37	55
7:45 AM	1	2	0	3	0	12	0	12	26	6	0	32	47
Total	19	11	0	30	0	33	0	33	101	28	0	129	192
8:00 AM	3	1	0	4	0	10	0	10	16	2	0	18	32
8:15 AM	3	1	0	4	0	5	0	5	24	4	0	28	37
8:30 AM	3	1	0	4	0	10	0	10	32	2	0	34	48
8:45 AM	5	0	0	5	0	10	0	10	20	2	0	22	37
Total	14	3	0	17	0	35	0	35	92	10	0	102	154
Grand Total	33	14	0	47	0	68	0	68	193	38	0	231	346
Approach %	70.2	29.8	0.0		0.0	100.0	0.0		83.5	16.5	0.0		
Total %	9.5	4.0	0.0	13.6	0.0	19.7	0.0	19.7	55.8	11.0	0.0	66.8	
Exiting Leg Total				38				207				101	346

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	6	3	0	9	0	7	0	7	22	6	0	28	44
7:15 AM	4	1	0	5	0	9	0	9	27	5	0	32	46
7:30 AM	8	5	0	13	0	5	0	5	26	11	0	37	55
7:45 AM	1	2	0	3	0	12	0	12	26	6	0	32	47
Total Volume	19	11	0	30	0	33	0	33	101	28	0	129	192
% Approach Total	63.3	36.7	0.0		0.0	100.0	0.0		78.3	21.7	0.0		
PHF	0.594	0.550	0.000	0.577	0.000	0.688	0.000	0.688	0.935	0.636	0.000	0.872	0.873
Entering Leg	19	11	0	30	0	33	0	33	101	28	0	129	192
Exiting Leg				28				112				52	192
Total				58				145				181	384

PDI File #: **186634 D**
 Location: **S: Route 2 WB Ramps**
 Location: **E: Fort Pond Road W: Fort Pond Road**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Class:

Light Goods Vehicle

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	4	0	4	3	2	0	5	9
7:15 AM	0	0	0	0	0	3	0	3	4	4	0	8	11
7:30 AM	0	2	0	2	0	2	0	2	7	5	0	12	16
7:45 AM	3	0	0	3	0	7	0	7	4	9	0	13	23
Total	3	2	0	5	0	16	0	16	18	20	0	38	59
8:00 AM	0	1	0	1	0	3	0	3	3	2	0	5	9
8:15 AM	0	0	0	0	0	4	0	4	3	1	0	4	8
8:30 AM	0	2	0	2	0	4	0	4	1	1	0	2	8
8:45 AM	1	3	0	4	0	6	0	6	4	2	0	6	16
Total	1	6	0	7	0	17	0	17	11	6	0	17	41
Grand Total	4	8	0	12	0	33	0	33	29	26	0	55	100
Approach %	33.3	66.7	0.0		0.0	100.0	0.0		52.7	47.3	0.0		
Total %	4.0	8.0	0.0	12.0	0.0	33.0	0.0	33.0	29.0	26.0	0.0	55.0	
Exiting Leg Total	26				37				37				100

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	4	0	4	3	2	0	5	9
7:15 AM	0	0	0	0	0	3	0	3	4	4	0	8	11
7:30 AM	0	2	0	2	0	2	0	2	7	5	0	12	16
7:45 AM	3	0	0	3	0	7	0	7	4	9	0	13	23
Total Volume	3	2	0	5	0	16	0	16	18	20	0	38	59
% Approach Total	60.0	40.0	0.0		0.0	100.0	0.0		47.4	52.6	0.0		
PHF	0.250	0.250	0.000	0.417	0.000	0.571	0.000	0.571	0.643	0.556	0.000	0.731	0.641
Entering Leg	3	2	0	5	0	16	0	16	18	20	0	38	59
Exiting Leg	20				20				19				59
Total	25				36				57				118

PDI File #: **186634 D**
 Location: **S: Route 2 WB Ramps**
 Location: **E: Fort Pond Road W: Fort Pond Road**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
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 Email: datarequests@pdilic.com

Buses

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
7:15 AM	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
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	1	0	0	0	0	0	0	0	0	1
8:00 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
8:15 AM	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
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	1	0	0	0	0	0	0	0	0	1
Grand Total	2	0	0	2	0	0	0	0	0	0	0	0	2
Approach %	100.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
Total %	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total				0				0				2	2

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
7:15 AM	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
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	1	0	0	1	0	0	0	0	0	0	0	0	1
% Approach Total	100.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	1	0	0	1	0	0	0	0	0	0	0	0	1
Exiting Leg				0				0				1	1
Total				1				0				1	2

PDI File #: **186634 D**
 Location: **S: Route 2 WB Ramps**
 Location: **E: Fort Pond Road W: Fort Pond Road**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
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Single-Unit Trucks

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	1	0	1	1	2	0	3	4
7:15 AM	0	0	0	0	0	1	0	1	1	2	0	3	4
7:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	1
7:45 AM	0	0	0	0	0	1	0	1	0	2	0	2	3
Total	0	0	0	0	0	3	0	3	3	6	0	9	12
8:00 AM	2	0	0	2	0	1	0	1	2	0	0	2	5
8:15 AM	1	0	0	1	0	1	0	1	2	0	0	2	4
8:30 AM	1	0	0	1	0	2	0	2	2	0	0	2	5
8:45 AM	0	0	0	0	0	1	0	1	3	1	0	4	5
Total	4	0	0	4	0	5	0	5	9	1	0	10	19
Grand Total	4	0	0	4	0	8	0	8	12	7	0	19	31
Approach %	100.0	0.0	0.0		0.0	100.0	0.0		63.2	36.8	0.0		
Total %	12.9	0.0	0.0	12.9	0.0	25.8	0.0	25.8	38.7	22.6	0.0	61.3	
Exiting Leg Total				7				12				12	31

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
8:00 AM	2	0	0	2	0	1	0	1	2	0	0	2	5
8:15 AM	1	0	0	1	0	1	0	1	2	0	0	2	4
8:30 AM	1	0	0	1	0	2	0	2	2	0	0	2	5
8:45 AM	0	0	0	0	0	1	0	1	3	1	0	4	5
Total Volume	4	0	0	4	0	5	0	5	9	1	0	10	19
% Approach Total	100.0	0.0	0.0		0.0	100.0	0.0		90.0	10.0	0.0		
PHF	0.500	0.000	0.000	0.500	0.000	0.625	0.000	0.625	0.750	0.250	0.000	0.625	0.950
Entering Leg	4	0	0	4	0	5	0	5	9	1	0	10	19
Exiting Leg				1				9				9	19
Total				5				14				19	38

PDI File #: **186634 D**
 Location: **S: Route 2 WB Ramps**
 Location: **E: Fort Pond Road W: Fort Pond Road**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdillc.com

Articulated Trucks

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
7:15 AM	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	1	0	1	1
7:45 AM	2	0	0	2	0	0	0	0	0	0	0	0	2
Total	2	0	0	2	0	1	0	1	0	1	0	1	4
8:00 AM	0	0	0	0	0	0	0	0	2	1	0	3	3
8:15 AM	0	0	0	0	0	1	0	1	0	1	0	1	2
8:30 AM	1	0	0	1	0	2	0	2	0	0	0	0	3
8:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	1	0	0	1	0	4	0	4	2	2	0	4	9
Grand Total	3	0	0	3	0	5	0	5	2	3	0	5	13
Approach %	100.0	0.0	0.0		0.0	100.0	0.0		40.0	60.0	0.0		
Total %	23.1	0.0	0.0	23.1	0.0	38.5	0.0	38.5	15.4	23.1	0.0	38.5	
Exiting Leg Total				3				2				8	13

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:45 AM	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:45 AM	2	0	0	2	0	0	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	2	1	0	3	3
8:15 AM	0	0	0	0	0	1	0	1	0	1	0	1	2
8:30 AM	1	0	0	1	0	2	0	2	0	0	0	0	3
Total Volume	3	0	0	3	0	3	0	3	2	2	0	4	10
% Approach Total	100.0	0.0	0.0		0.0	100.0	0.0		50.0	50.0	0.0		
PHF	0.375	0.000	0.000	0.375	0.000	0.375	0.000	0.375	0.250	0.500	0.000	0.333	0.833
Entering Leg	3	0	0	3	0	3	0	3	2	2	0	4	10
Exiting Leg				2				2				6	10
Total				5				5				10	20

PDI File #: **186634 D**
 Location: **S: Route 2 WB Ramps**
 Location: **E: Fort Pond Road W: Fort Pond Road**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Bicycles (on Roadway and Crosswalks)

	Fort Pond Road						Route 2 WB Ramps						Fort Pond Road						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	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
7:30 AM	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
Total	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
8:15 AM	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
8:45 AM	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
Grand Total	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
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
Exiting Leg Total	0						0						0						0

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Fort Pond Road						Route 2 WB Ramps						Fort Pond Road						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	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
7:30 AM	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
Total Volume	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
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
Entering Leg	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
Total	0						0						0						0

PDI File #: **186634 D**
 Location: **S: Route 2 WB Ramps**
 Location: **E: Fort Pond Road W: Fort Pond Road**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Pedestrians

	Fort Pond Road						Route 2 WB Ramps						Fort Pond Road						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	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
7:30 AM	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
Total	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
8:15 AM	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
8:45 AM	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
Grand Total	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
Total %	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

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Fort Pond Road						Route 2 WB Ramps						Fort Pond Road						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	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
7:30 AM	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
Total Volume	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
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
Entering Leg	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
Total	0						0						0						0

PDI File #: **186634 DD**
 Location: **S: Route 2 WB Ramps**
 Location: **E: Fort Pond Road W: Fort Pond Road**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars and Heavy Vehicles (Combined)

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	25	11	0	36	0	54	0	54	32	6	0	38	128
4:15 PM	28	8	0	36	0	58	0	58	49	5	0	54	148
4:30 PM	33	1	0	34	0	44	0	44	40	6	0	46	124
4:45 PM	25	5	0	30	0	57	0	57	41	2	0	43	130
Total	111	25	0	136	0	213	0	213	162	19	0	181	530
5:00 PM	25	10	0	35	0	53	0	53	34	5	0	39	127
5:15 PM	17	4	0	21	0	75	0	75	34	0	0	34	130
5:30 PM	66	5	0	71	0	121	0	121	19	5	0	24	216
5:45 PM	109	7	0	116	0	102	0	102	26	3	0	29	247
Total	217	26	0	243	0	351	0	351	113	13	0	126	720
Grand Total	328	51	0	379	0	564	0	564	275	32	0	307	1250
Approach %	86.5	13.5	0.0		0.0	100.0	0.0		89.6	10.4	0.0		
Total %	26.2	4.1	0.0	30.3	0.0	45.1	0.0	45.1	22.0	2.6	0.0	24.6	
Exiting Leg Total				32				326				892	1250
Cars	319	47	0	366	0	545	0	545	264	27	0	291	1202
% Cars	97.3	92.2	0.0	96.6	0.0	96.6	0.0	96.6	96.0	84.4	0.0	94.8	96.2
Exiting Leg Total				27				311				864	1202
Heavy Vehicles	9	4	0	13	0	19	0	19	11	5	0	16	48
% Heavy Vehicles	2.7	7.8	0.0	3.4	0.0	3.4	0.0	3.4	4.0	15.6	0.0	5.2	3.8
Exiting Leg Total				5				15				28	48

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
5:00 PM	25	10	0	35	0	53	0	53	34	5	0	39	127
5:15 PM	17	4	0	21	0	75	0	75	34	0	0	34	130
5:30 PM	66	5	0	71	0	121	0	121	19	5	0	24	216
5:45 PM	109	7	0	116	0	102	0	102	26	3	0	29	247
Total Volume	217	26	0	243	0	351	0	351	113	13	0	126	720
% Approach Total	89.3	10.7	0.0		0.0	100.0	0.0		89.7	10.3	0.0		
PHF	0.498	0.650	0.000	0.524	0.000	0.725	0.000	0.725	0.831	0.650	0.000	0.808	0.729
Cars	212	24	0	236	0	341	0	341	108	12	0	120	697
Cars %	97.7	92.3	0.0	97.1	0.0	97.2	0.0	97.2	95.6	92.3	0.0	95.2	96.8
Heavy Vehicles	5	2	0	7	0	10	0	10	5	1	0	6	23
Heavy Vehicles %	2.3	7.7	0.0	2.9	0.0	2.8	0.0	2.8	4.4	7.7	0.0	4.8	3.2
Cars Enter Leg	212	24	0	236	0	341	0	341	108	12	0	120	697
Heavy Enter Leg	5	2	0	7	0	10	0	10	5	1	0	6	23
Total Entering Leg	217	26	0	243	0	351	0	351	113	13	0	126	720
Cars Exiting Leg				12				132				553	697
Heavy Exiting Leg				1				7				15	23
Total Exiting Leg				13				139				568	720

PDI File #: **186634 DD**
 Location: **S: Route 2 WB Ramps**
 Location: **E: Fort Pond Road W: Fort Pond Road**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Class: **Cars-Combined (Motorcycles, Cars, Light Goods)**

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	24	11	0	35	0	49	0	49	28	5	0	33	117
4:15 PM	26	6	0	32	0	56	0	56	49	3	0	52	140
4:30 PM	32	1	0	33	0	43	0	43	38	5	0	43	119
4:45 PM	25	5	0	30	0	56	0	56	41	2	0	43	129
Total	107	23	0	130	0	204	0	204	156	15	0	171	505
5:00 PM	23	10	0	33	0	51	0	51	32	5	0	37	121
5:15 PM	17	2	0	19	0	70	0	70	34	0	0	34	123
5:30 PM	65	5	0	70	0	120	0	120	18	4	0	22	212
5:45 PM	107	7	0	114	0	100	0	100	24	3	0	27	241
Total	212	24	0	236	0	341	0	341	108	12	0	120	697
Grand Total	319	47	0	366	0	545	0	545	264	27	0	291	1202
Approach %	87.2	12.8	0.0		0.0	100.0	0.0		90.7	9.3	0.0		
Total %	26.5	3.9	0.0	30.4	0.0	45.3	0.0	45.3	22.0	2.2	0.0	24.2	
Exiting Leg Total				27				311				864	1202

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
5:00 PM	23	10	0	33	0	51	0	51	32	5	0	37	121
5:15 PM	17	2	0	19	0	70	0	70	34	0	0	34	123
5:30 PM	65	5	0	70	0	120	0	120	18	4	0	22	212
5:45 PM	107	7	0	114	0	100	0	100	24	3	0	27	241
Total Volume	212	24	0	236	0	341	0	341	108	12	0	120	697
% Approach Total	89.8	10.2	0.0		0.0	100.0	0.0		90.0	10.0	0.0		
PHF	0.495	0.600	0.000	0.518	0.000	0.710	0.000	0.710	0.794	0.600	0.000	0.811	0.723
Entering Leg	212	24	0	236	0	341	0	341	108	12	0	120	697
Exiting Leg				12				132				553	697
Total				248				473				673	1394

PDI File #: **186634 DD**
 Location: **S: Route 2 WB Ramps**
 Location: **E: Fort Pond Road W: Fort Pond Road**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**



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

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	1	0	0	1	0	5	0	5	4	1	0	5	11
4:15 PM	2	2	0	4	0	2	0	2	0	2	0	2	8
4:30 PM	1	0	0	1	0	1	0	1	2	1	0	3	5
4:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	4	2	0	6	0	9	0	9	6	4	0	10	25
5:00 PM	2	0	0	2	0	2	0	2	2	0	0	2	6
5:15 PM	0	2	0	2	0	5	0	5	0	0	0	0	7
5:30 PM	1	0	0	1	0	1	0	1	1	1	0	2	4
5:45 PM	2	0	0	2	0	2	0	2	2	0	0	2	6
Total	5	2	0	7	0	10	0	10	5	1	0	6	23
Grand Total	9	4	0	13	0	19	0	19	11	5	0	16	48
Approach %	69.2	30.8	0.0		0.0	100.0	0.0		68.8	31.3	0.0		
Total %	18.8	8.3	0.0	27.1	0.0	39.6	0.0	39.6	22.9	10.4	0.0	33.3	
Exiting Leg Total				5				15				28	48
Buses	1	0	0	1	0	1	0	1	1	1	0	2	4
% Buses	11.1	0.0	0.0	7.7	0.0	5.3	0.0	5.3	9.1	20.0	0.0	12.5	8.3
Exiting Leg Total				1				1				2	4
Single-Unit Trucks	8	2	0	10	0	13	0	13	6	2	0	8	31
% Single-Unit	88.9	50.0	0.0	76.9	0.0	68.4	0.0	68.4	54.5	40.0	0.0	50.0	64.6
Exiting Leg Total				2				8				21	31
Articulated Trucks	0	2	0	2	0	5	0	5	4	2	0	6	13
% Articulated	0.0	50.0	0.0	15.4	0.0	26.3	0.0	26.3	36.4	40.0	0.0	37.5	27.1
Exiting Leg Total				2				6				5	13

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	1	0	0	1	0	5	0	5	4	1	0	5	11
4:15 PM	2	2	0	4	0	2	0	2	0	2	0	2	8
4:30 PM	1	0	0	1	0	1	0	1	2	1	0	3	5
4:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total Volume	4	2	0	6	0	9	0	9	6	4	0	10	25
% Approach Total	66.7	33.3	0.0		0.0	100.0	0.0		60.0	40.0	0.0		
PHF	0.500	0.250	0.000	0.375	0.000	0.450	0.000	0.450	0.375	0.500	0.000	0.500	0.568
Buses	1	0	0	1	0	1	0	1	1	1	0	2	4
Buses %	25.0	0.0	0.0	16.7	0.0	11.1	0.0	11.1	16.7	25.0	0.0	20.0	16.0
Single-Unit Trucks	3	1	0	4	0	7	0	7	3	1	0	4	15
Single-Unit %	75.0	50.0	0.0	66.7	0.0	77.8	0.0	77.8	50.0	25.0	0.0	40.0	60.0
Articulated Trucks	0	1	0	1	0	1	0	1	2	2	0	4	6
Articulated %	0.0	50.0	0.0	16.7	0.0	11.1	0.0	11.1	33.3	50.0	0.0	40.0	24.0
Buses	1	0	0	1	0	1	0	1	1	1	0	2	4
Single-Unit Trucks	3	1	0	4	0	7	0	7	3	1	0	4	15
Articulated Trucks	0	1	0	1	0	1	0	1	2	2	0	4	6
Total Entering Leg	4	2	0	6	0	9	0	9	6	4	0	10	25
Buses				1				1				2	4
Single-Unit Trucks				1				4				10	15
Articulated Trucks				2				3				1	6
Total Exiting Leg				4				8				13	25

PDI File #: **186634 DD**
 Location: **S: Route 2 WB Ramps**
 Location: **E: Fort Pond Road W: Fort Pond Road**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdillc.com

Cars

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	20	10	0	30	0	37	0	37	19	3	0	22	89
4:15 PM	22	5	0	27	0	45	0	45	41	1	0	42	114
4:30 PM	30	1	0	31	0	32	0	32	30	5	0	35	98
4:45 PM	24	3	0	27	0	44	0	44	34	2	0	36	107
Total	96	19	0	115	0	158	0	158	124	11	0	135	408
5:00 PM	22	9	0	31	0	49	0	49	32	5	0	37	117
5:15 PM	16	2	0	18	0	62	0	62	34	0	0	34	114
5:30 PM	51	4	0	55	0	108	0	108	17	2	0	19	182
5:45 PM	96	6	0	102	0	87	0	87	21	3	0	24	213
Total	185	21	0	206	0	306	0	306	104	10	0	114	626
Grand Total	281	40	0	321	0	464	0	464	228	21	0	249	1034
Approach %	87.5	12.5	0.0		0.0	100.0	0.0		91.6	8.4	0.0		
Total %	27.2	3.9	0.0	31.0	0.0	44.9	0.0	44.9	22.1	2.0	0.0	24.1	
Exiting Leg Total				21				268				745	1034

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
5:00 PM	22	9	0	31	0	49	0	49	32	5	0	37	117
5:15 PM	16	2	0	18	0	62	0	62	34	0	0	34	114
5:30 PM	51	4	0	55	0	108	0	108	17	2	0	19	182
5:45 PM	96	6	0	102	0	87	0	87	21	3	0	24	213
Total Volume	185	21	0	206	0	306	0	306	104	10	0	114	626
% Approach Total	89.8	10.2	0.0		0.0	100.0	0.0		91.2	8.8	0.0		
PHF	0.482	0.583	0.000	0.505	0.000	0.708	0.000	0.708	0.765	0.500	0.000	0.770	0.735
Entering Leg	185	21	0	206	0	306	0	306	104	10	0	114	626
Exiting Leg				10				125				491	626
Total				216				431				605	1252

PDI File #: **186634 DD**
 Location: **S: Route 2 WB Ramps**
 Location: **E: Fort Pond Road W: Fort Pond Road**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Class:

Light Goods Vehicle

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	4	1	0	5	0	12	0	12	9	2	0	11	28
4:15 PM	4	1	0	5	0	11	0	11	8	2	0	10	26
4:30 PM	2	0	0	2	0	11	0	11	8	0	0	8	21
4:45 PM	1	2	0	3	0	12	0	12	7	0	0	7	22
Total	11	4	0	15	0	46	0	46	32	4	0	36	97
5:00 PM	1	1	0	2	0	2	0	2	0	0	0	0	4
5:15 PM	1	0	0	1	0	8	0	8	0	0	0	0	9
5:30 PM	14	1	0	15	0	12	0	12	1	2	0	3	30
5:45 PM	11	1	0	12	0	13	0	13	3	0	0	3	28
Total	27	3	0	30	0	35	0	35	4	2	0	6	71
Grand Total	38	7	0	45	0	81	0	81	36	6	0	42	168
Approach %	84.4	15.6	0.0		0.0	100.0	0.0		85.7	14.3	0.0		
Total %	22.6	4.2	0.0	26.8	0.0	48.2	0.0	48.2	21.4	3.6	0.0	25.0	
Exiting Leg Total				6				43				119	168

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	4	1	0	5	0	12	0	12	9	2	0	11	28
4:15 PM	4	1	0	5	0	11	0	11	8	2	0	10	26
4:30 PM	2	0	0	2	0	11	0	11	8	0	0	8	21
4:45 PM	1	2	0	3	0	12	0	12	7	0	0	7	22
Total Volume	11	4	0	15	0	46	0	46	32	4	0	36	97
% Approach Total	73.3	26.7	0.0		0.0	100.0	0.0		88.9	11.1	0.0		
PHF	0.688	0.500	0.000	0.750	0.000	0.958	0.000	0.958	0.889	0.500	0.000	0.818	0.866
Entering Leg	11	4	0	15	0	46	0	46	32	4	0	36	97
Exiting Leg				4				36				57	97
Total				19				82				93	194

PDI File #: **186634 DD**
 Location: **S: Route 2 WB Ramps**
 Location: **E: Fort Pond Road W: Fort Pond Road**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Buses

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	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	1	0	1	1
4:30 PM	1	0	0	1	0	0	0	0	1	0	0	1	2
4:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	1	0	0	1	0	1	0	1	1	1	0	2	4
5:00 PM	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
5:30 PM	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
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	1	0	0	1	0	1	0	1	1	1	0	2	4
Approach %	100.0	0.0	0.0		0.0	100.0	0.0		50.0	50.0	0.0		
Total %	25.0	0.0	0.0	25.0	0.0	25.0	0.0	25.0	25.0	25.0	0.0	50.0	
Exiting Leg Total				1				1				2	4

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	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	1	0	1	1
4:30 PM	1	0	0	1	0	0	0	0	1	0	0	1	2
4:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total Volume	1	0	0	1	0	1	0	1	1	1	0	2	4
% Approach Total	100.0	0.0	0.0		0.0	100.0	0.0		50.0	50.0	0.0		
PHF	0.250	0.000	0.000	0.250	0.000	0.250	0.000	0.250	0.250	0.250	0.000	0.500	0.500
Entering Leg	1	0	0	1	0	1	0	1	1	1	0	2	4
Exiting Leg				1				1				2	4
Total				2				2				4	8

PDI File #: **186634 DD**
 Location: **S: Route 2 WB Ramps**
 Location: **E: Fort Pond Road W: Fort Pond Road**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**



**PRECISION
D A T A
INDUSTRIES, LLC**

46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdillc.com

Single-Unit Trucks

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	1	0	0	1	0	5	0	5	3	0	0	3	9
4:15 PM	2	1	0	3	0	2	0	2	0	1	0	1	6
4:30 PM	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
Total	3	1	0	4	0	7	0	7	3	1	0	4	15
5:00 PM	2	0	0	2	0	2	0	2	2	0	0	2	6
5:15 PM	0	1	0	1	0	2	0	2	0	0	0	0	3
5:30 PM	1	0	0	1	0	0	0	0	0	1	0	1	2
5:45 PM	2	0	0	2	0	2	0	2	1	0	0	1	5
Total	5	1	0	6	0	6	0	6	3	1	0	4	16
Grand Total	8	2	0	10	0	13	0	13	6	2	0	8	31
Approach %	80.0	20.0	0.0		0.0	100.0	0.0		75.0	25.0	0.0		
Total %	25.8	6.5	0.0	32.3	0.0	41.9	0.0	41.9	19.4	6.5	0.0	25.8	
Exiting Leg Total				2				8				21	31

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
5:00 PM	2	0	0	2	0	2	0	2	2	0	0	2	6
5:15 PM	0	1	0	1	0	2	0	2	0	0	0	0	3
5:30 PM	1	0	0	1	0	0	0	0	0	1	0	1	2
5:45 PM	2	0	0	2	0	2	0	2	1	0	0	1	5
Total Volume	5	1	0	6	0	6	0	6	3	1	0	4	16
% Approach Total	83.3	16.7	0.0		0.0	100.0	0.0		75.0	25.0	0.0		
PHF	0.625	0.250	0.000	0.750	0.000	0.750	0.000	0.750	0.375	0.250	0.000	0.500	0.667
Entering Leg	5	1	0	6	0	6	0	6	3	1	0	4	16
Exiting Leg				1				4				11	16
Total				7				10				15	32

PDI File #: **186634 DD**
 Location: **S: Route 2 WB Ramps**
 Location: **E: Fort Pond Road W: Fort Pond Road**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Articulated Trucks

	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total	
	from East				from South				from West					
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total		
4:00 PM	0	0	0	0	0	0	0	0	0	1	1	0	2	2
4:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	1	0	1	1	1	1	0	2	3
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	1	0	1	1	2	2	0	4	6
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	0	1	0	3	0	3	3	0	0	0	0	4
5:30 PM	0	0	0	0	0	1	0	1	1	1	0	0	1	2
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	1	0	1	0	4	0	4	4	2	0	0	2	7
Grand Total	0	2	0	2	0	5	0	5	5	4	2	0	6	13
Approach %	0.0	100.0	0.0		0.0	100.0	0.0			66.7	33.3	0.0		
Total %	0.0	15.4	0.0	15.4	0.0	38.5	0.0	38.5	38.5	30.8	15.4	0.0	46.2	
Exiting Leg Total				2				6	6				5	13

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:30 PM	Fort Pond Road				Route 2 WB Ramps				Fort Pond Road				Total	
	from East				from South				from West					
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total		
4:30 PM	0	0	0	0	0	1	0	1	1	1	0	2	3	
4:45 PM	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	
5:15 PM	0	1	0	1	0	3	0	3	3	0	0	0	4	
Total Volume	0	1	0	1	0	4	0	4	4	1	1	0	2	7
% Approach Total	0.0	100.0	0.0		0.0	100.0	0.0			50.0	50.0	0.0		
PHF	0.000	0.250	0.000	0.250	0.000	0.333	0.000	0.333	0.333	0.250	0.250	0.000	0.250	0.438
Entering Leg	0	1	0	1	0	4	0	4	4	1	1	0	2	7
Exiting Leg				1				2	2				4	7
Total				2				6	6				6	14

PDI File #: **186634 DD**
 Location: **S: Route 2 WB Ramps**
 Location: **E: Fort Pond Road W: Fort Pond Road**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Bicycles (on Roadway and Crosswalks)

	Fort Pond Road						Route 2 WB Ramps						Fort Pond Road						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
4:00 PM	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
4:30 PM	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
Total	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
5:15 PM	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
5:45 PM	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
Grand Total	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
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
Exiting Leg Total	0						0						0						0

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Fort Pond Road						Route 2 WB Ramps						Fort Pond Road						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
4:00 PM	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
4:30 PM	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
Total Volume	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
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
Entering Leg	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
Total	0						0						0						0

PDI File #: 186634 DD
 Location: S: Route 2 WB Ramps
 Location: E: Fort Pond Road W: Fort Pond Road
 City, State: Lancaster, MA
 Client: TEC/ L. Oltman
 Site Code: T0852
 Count Date: Wednesday, December 19, 2018
 Start Time: 4:00 PM
 End Time: 6:00 PM
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Pedestrians

	Fort Pond Road						Route 2 WB Ramps						Fort Pond Road						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
4:00 PM	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
4:30 PM	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
Total	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
5:15 PM	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
5:45 PM	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
Grand Total	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
Total %	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

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Fort Pond Road						Route 2 WB Ramps						Fort Pond Road						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
4:00 PM	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
4:30 PM	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
Total Volume	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	0.000
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
Entering Leg	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
Total	0						0						0						0

PDI File #: **186634 E**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars and Heavy Vehicles (Combined)

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
7:00 AM	7	52	64	0	123	14	9	28	0	51	25	22	14	0	61	20	24	6	0	50	285
7:15 AM	10	39	73	0	122	13	7	10	0	30	20	43	18	0	81	33	37	9	0	79	312
7:30 AM	11	55	60	0	126	12	6	11	0	29	28	56	18	0	102	16	32	5	0	53	310
7:45 AM	12	54	54	0	120	18	3	18	0	39	24	38	18	1	81	18	34	12	0	64	304
Total	40	200	251	0	491	57	25	67	0	149	97	159	68	1	325	87	127	32	0	246	1211
8:00 AM	17	65	46	0	128	13	5	27	0	45	22	30	28	0	80	25	20	10	1	56	309
8:15 AM	12	30	46	0	88	7	8	17	0	32	26	38	12	0	76	17	14	9	1	41	237
8:30 AM	11	31	25	0	67	14	12	23	0	49	24	39	29	0	92	17	8	5	0	30	238
8:45 AM	17	30	18	0	65	18	13	32	0	63	18	30	22	0	70	28	11	1	0	40	238
Total	57	156	135	0	348	52	38	99	0	189	90	137	91	0	318	87	53	25	2	167	1022
Grand Total	97	356	386	0	839	109	63	166	0	338	187	296	159	1	643	174	180	57	2	413	2233
Approach %	11.6	42.4	46.0	0.0		32.2	18.6	49.1	0.0		29.1	46.0	24.7	0.2		42.1	43.6	13.8	0.5		
Total %	4.3	15.9	17.3	0.0	37.6	4.9	2.8	7.4	0.0	15.1	8.4	13.3	7.1	0.0	28.8	7.8	8.1	2.6	0.1	18.5	
Exiting Leg Total					462					753					697					321	2233
Cars	90	336	373	0	799	93	63	155	0	311	159	275	149	1	584	167	176	54	2	399	2093
% Cars	92.8	94.4	96.6	0.0	95.2	85.3	100.0	93.4	0.0	92.0	85.0	92.9	93.7	100.0	90.8	96.0	97.8	94.7	100.0	96.6	93.7
Exiting Leg Total					422					708					659					304	2093
Heavy Vehicles	7	20	13	0	40	16	0	11	0	27	28	21	10	0	59	7	4	3	0	14	140
% Heavy Vehicles	7.2	5.6	3.4	0.0	4.8	14.7	0.0	6.6	0.0	8.0	15.0	7.1	6.3	0.0	9.2	4.0	2.2	5.3	0.0	3.4	6.3
Exiting Leg Total					40					45					38					17	140

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
7:15 AM	10	39	73	0	122	13	7	10	0	30	20	43	18	0	81	33	37	9	0	79	312
7:30 AM	11	55	60	0	126	12	6	11	0	29	28	56	18	0	102	16	32	5	0	53	310
7:45 AM	12	54	54	0	120	18	3	18	0	39	24	38	18	1	81	18	34	12	0	64	304
8:00 AM	17	65	46	0	128	13	5	27	0	45	22	30	28	0	80	25	20	10	1	56	309
Total Volume	50	213	233	0	496	56	21	66	0	143	94	167	82	1	344	92	123	36	1	252	1235
% Approach Total	10.1	42.9	47.0	0.0		39.2	14.7	46.2	0.0		27.3	48.5	23.8	0.3		36.5	48.8	14.3	0.4		
PHF	0.735	0.819	0.798	0.000	0.969	0.778	0.750	0.611	0.000	0.794	0.839	0.746	0.732	0.250	0.843	0.697	0.831	0.750	0.250	0.797	0.990
Cars	48	201	224	0	473	47	21	60	0	128	79	154	76	1	310	88	119	33	1	241	1152
Cars %	96.0	94.4	96.1	0.0	95.4	83.9	100.0	90.9	0.0	89.5	84.0	92.2	92.7	100.0	90.1	95.7	96.7	91.7	100.0	95.6	93.3
Heavy Vehicles	2	12	9	0	23	9	0	6	0	15	15	13	6	0	34	4	4	3	0	11	83
Heavy Vehicles %	4.0	5.6	3.9	0.0	4.6	16.1	0.0	9.1	0.0	10.5	16.0	7.8	7.3	0.0	9.9	4.3	3.3	8.3	0.0	4.4	6.7
Cars Enter Leg	48	201	224	0	473	47	21	60	0	128	79	154	76	1	310	88	119	33	1	241	1152
Heavy Enter Leg	2	12	9	0	23	9	0	6	0	15	15	13	6	0	34	4	4	3	0	11	83
Total Entering Leg	50	213	233	0	496	56	21	66	0	143	94	167	82	1	344	92	123	36	1	252	1235
Cars Exiting Leg					234					422					350					146	1152
Heavy Exiting Leg					25					28					22					8	83
Total Exiting Leg					259					450					372					154	1235

PDI File #: **186634 E**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Cars-Combined (Motorcycles, Cars, Light Goods)

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total					
	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						
7:00 AM	5	51	61	0	117	12	9	26	0	47	20	19	14	0	53	19	24	6	0	49	266					
7:15 AM	9	38	70	0	117	11	7	9	0	27	13	42	17	0	72	31	36	7	0	74	290					
7:30 AM	11	52	56	0	119	10	6	10	0	26	21	51	16	0	88	16	32	5	0	53	286					
7:45 AM	11	51	53	0	115	15	3	16	0	34	23	36	17	1	77	18	32	12	0	62	288					
Total	36	192	240	0	468	48	25	61	0	134	77	148	64	1	290	84	124	30	0	238	1130					
8:00 AM	17	60	45	0	122	11	5	25	0	41	22	25	26	0	73	23	19	9	1	52	288					
8:15 AM	11	28	46	0	85	7	8	16	0	31	22	37	12	0	71	17	14	9	1	41	228					
8:30 AM	9	27	24	0	60	12	12	23	0	47	20	37	28	0	85	16	8	5	0	29	221					
8:45 AM	17	29	18	0	64	15	13	30	0	58	18	28	19	0	65	27	11	1	0	39	226					
Total	54	144	133	0	331	45	38	94	0	177	82	127	85	0	294	83	52	24	2	161	963					
Grand Total	90	336	373	0	799	93	63	155	0	311	159	275	149	1	584	167	176	54	2	399	2093					
Approach %	11.3	42.1	46.7	0.0		29.9	20.3	49.8	0.0		27.2	47.1	25.5	0.2		41.9	44.1	13.5	0.5							
Total %	4.3	16.1	17.8	0.0	38.2	4.4	3.0	7.4	0.0	14.9	7.6	13.1	7.1	0.0	27.9	8.0	8.4	2.6	0.1	19.1						
Exiting Leg Total						422					708					659					304					2093

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
7:15 AM	9	38	70	0	117	11	7	9	0	27	13	42	17	0	72	31	36	7	0	74	290
7:30 AM	11	52	56	0	119	10	6	10	0	26	21	51	16	0	88	16	32	5	0	53	286
7:45 AM	11	51	53	0	115	15	3	16	0	34	23	36	17	1	77	18	32	12	0	62	288
8:00 AM	17	60	45	0	122	11	5	25	0	41	22	25	26	0	73	23	19	9	1	52	288
Total Volume	48	201	224	0	473	47	21	60	0	128	79	154	76	1	310	88	119	33	1	241	1152
% Approach Total	10.1	42.5	47.4	0.0		36.7	16.4	46.9	0.0		25.5	49.7	24.5	0.3		36.5	49.4	13.7	0.4		
PHF	0.706	0.838	0.800	0.000	0.969	0.783	0.750	0.600	0.000	0.780	0.859	0.755	0.731	0.250	0.881	0.710	0.826	0.688	0.250	0.814	0.993
Entering Leg	48	201	224	0	473	47	21	60	0	128	79	154	76	1	310	88	119	33	1	241	1152
Exiting Leg						234					422					350					146
Total	707					550					660					387					2304

PDI File #: **186634 E**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
7:00 AM	2	1	3	0	6	2	0	2	0	4	5	3	0	0	8	1	0	0	0	1	19
7:15 AM	1	1	3	0	5	2	0	1	0	3	7	1	1	0	9	2	1	2	0	5	22
7:30 AM	0	3	4	0	7	2	0	1	0	3	7	5	2	0	14	0	0	0	0	0	24
7:45 AM	1	3	1	0	5	3	0	2	0	5	1	2	1	0	4	0	2	0	0	2	16
Total	4	8	11	0	23	9	0	6	0	15	20	11	4	0	35	3	3	2	0	8	81
8:00 AM	0	5	1	0	6	2	0	2	0	4	0	5	2	0	7	2	1	1	0	4	21
8:15 AM	1	2	0	0	3	0	0	1	0	1	4	1	0	0	5	0	0	0	0	0	9
8:30 AM	2	4	1	0	7	2	0	0	0	2	4	2	1	0	7	1	0	0	0	1	17
8:45 AM	0	1	0	0	1	3	0	2	0	5	0	2	3	0	5	1	0	0	0	1	12
Total	3	12	2	0	17	7	0	5	0	12	8	10	6	0	24	4	1	1	0	6	59
Grand Total	7	20	13	0	40	16	0	11	0	27	28	21	10	0	59	7	4	3	0	14	140
Approach %	17.5	50.0	32.5	0.0		59.3	0.0	40.7	0.0		47.5	35.6	16.9	0.0		50.0	28.6	21.4	0.0		
Total %	5.0	14.3	9.3	0.0	28.6	11.4	0.0	7.9	0.0	19.3	20.0	15.0	7.1	0.0	42.1	5.0	2.9	2.1	0.0	10.0	
Exiting Leg Total	40					45					38					17					140
Buses	3	1	0	0	4	0	0	1	0	1	1	1	1	0	3	3	1	0	0	4	12
% Buses	42.9	5.0	0.0	0.0	10.0	0.0	0.0	9.1	0.0	3.7	3.6	4.8	10.0	0.0	5.1	42.9	25.0	0.0	0.0	28.6	8.6
Exiting Leg Total	1					2					5					4					12
Single-Unit Trucks	1	13	10	0	24	12	0	9	0	21	22	16	3	0	41	1	3	3	0	7	93
% Single-Unit	14.3	65.0	76.9	0.0	60.0	75.0	0.0	81.8	0.0	77.8	78.6	76.2	30.0	0.0	69.5	14.3	75.0	100.0	0.0	50.0	66.4
Exiting Leg Total	31					35					23					4					93
Articulated Trucks	3	6	3	0	12	4	0	1	0	5	5	4	6	0	15	3	0	0	0	3	35
% Articulated	42.9	30.0	23.1	0.0	30.0	25.0	0.0	9.1	0.0	18.5	17.9	19.0	60.0	0.0	25.4	42.9	0.0	0.0	0.0	21.4	25.0
Exiting Leg Total	8					8					10					9					35

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
7:15 AM	1	1	3	0	5	2	0	1	0	3	7	1	1	0	9	2	1	2	0	5	22
7:30 AM	0	3	4	0	7	2	0	1	0	3	7	5	2	0	14	0	0	0	0	0	24
7:45 AM	1	3	1	0	5	3	0	2	0	5	1	2	1	0	4	0	2	0	0	2	16
8:00 AM	0	5	1	0	6	2	0	2	0	4	0	5	2	0	7	2	1	1	0	4	21
Total Volume	2	12	9	0	23	9	0	6	0	15	15	13	6	0	34	4	4	3	0	11	83
% Approach Total	8.7	52.2	39.1	0.0		60.0	0.0	40.0	0.0		44.1	38.2	17.6	0.0		36.4	36.4	27.3	0.0		
PHF	0.500	0.600	0.563	0.000	0.821	0.750	0.000	0.750	0.000	0.750	0.536	0.650	0.750	0.000	0.607	0.500	0.500	0.375	0.000	0.550	0.865
Buses	1	1	0	0	2	0	0	1	0	1	1	1	1	0	3	2	1	0	0	3	9
Buses %	50.0	8.3	0.0	0.0	8.7	0.0	0.0	16.7	0.0	6.7	6.7	7.7	16.7	0.0	8.8	50.0	25.0	0.0	0.0	27.3	10.8
Single-Unit Trucks	0	6	8	0	14	7	0	4	0	11	11	10	2	0	23	0	3	3	0	6	54
Single-Unit %	0.0	50.0	88.9	0.0	60.9	77.8	0.0	66.7	0.0	73.3	73.3	76.9	33.3	0.0	67.6	0.0	75.0	100.0	0.0	54.5	65.1
Articulated Trucks	1	5	1	0	7	2	0	1	0	3	3	2	3	0	8	2	0	0	0	2	20
Articulated %	50.0	41.7	11.1	0.0	30.4	22.2	0.0	16.7	0.0	20.0	20.0	15.4	50.0	0.0	23.5	50.0	0.0	0.0	0.0	18.2	24.1
Buses	1	1	0	0	2	0	0	1	0	1	1	1	1	0	3	2	1	0	0	3	9
Single-Unit Trucks	0	6	8	0	14	7	0	4	0	11	11	10	2	0	23	0	3	3	0	6	54
Articulated Trucks	1	5	1	0	7	2	0	1	0	3	3	2	3	0	8	2	0	0	0	2	20
Total Entering Leg	2	12	9	0	23	9	0	6	0	15	15	13	6	0	34	4	4	3	0	11	83
Buses	1					2					4					2					9
Single-Unit Trucks	20					22					10					2					54
Articulated Trucks	4					4					8					4					20
Total Exiting Leg	25					28					22					8					83

PDI File #: **186634 E**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
7:00 AM	3	43	52	0	98	7	7	22	0	36	20	14	14	0	48	17	21	4	0	42	224
7:15 AM	7	32	59	0	98	8	4	6	0	18	10	37	15	0	62	27	30	6	0	63	241
7:30 AM	11	41	46	0	98	5	5	8	0	18	18	41	15	0	74	14	28	4	0	46	236
7:45 AM	9	43	46	0	98	13	1	13	0	27	20	26	11	1	58	17	28	9	0	54	237
Total	30	159	203	0	392	33	17	49	0	99	68	118	55	1	242	75	107	23	0	205	938
8:00 AM	14	47	36	0	97	10	4	22	0	36	16	21	20	0	57	18	15	8	0	41	231
8:15 AM	10	24	38	0	72	4	7	14	0	25	18	34	11	0	63	16	10	4	0	30	190
8:30 AM	5	22	20	0	47	9	12	20	0	41	19	35	25	0	79	13	7	4	0	24	191
8:45 AM	12	24	13	0	49	14	12	23	0	49	17	25	16	0	58	24	11	0	0	35	191
Total	41	117	107	0	265	37	35	79	0	151	70	115	72	0	257	71	43	16	0	130	803
Grand Total	71	276	310	0	657	70	52	128	0	250	138	233	127	1	499	146	150	39	0	335	1741
Approach %	10.8	42.0	47.2	0.0		28.0	20.8	51.2	0.0		27.7	46.7	25.5	0.2		43.6	44.8	11.6	0.0		
Total %	4.1	15.9	17.8	0.0	37.7	4.0	3.0	7.4	0.0	14.4	7.9	13.4	7.3	0.1	28.7	8.4	8.6	2.2	0.0	19.2	
Exiting Leg Total	342					598					551					250					1741

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
7:15 AM	7	32	59	0	98	8	4	6	0	18	10	37	15	0	62	27	30	6	0	63	241
7:30 AM	11	41	46	0	98	5	5	8	0	18	18	41	15	0	74	14	28	4	0	46	236
7:45 AM	9	43	46	0	98	13	1	13	0	27	20	26	11	1	58	17	28	9	0	54	237
8:00 AM	14	47	36	0	97	10	4	22	0	36	16	21	20	0	57	18	15	8	0	41	231
Total Volume	41	163	187	0	391	36	14	49	0	99	64	125	61	1	251	76	101	27	0	204	945
% Approach Total	10.5	41.7	47.8	0.0		36.4	14.1	49.5	0.0		25.5	49.8	24.3	0.4		37.3	49.5	13.2	0.0		
PHF	0.732	0.867	0.792	0.000	0.997	0.692	0.700	0.557	0.000	0.688	0.800	0.762	0.763	0.250	0.848	0.704	0.842	0.750	0.000	0.810	0.980
Entering Leg	41	163	187	0	391	36	14	49	0	99	64	125	61	1	251	76	101	27	0	204	945
Exiting Leg	188					352					289					116					945
Total	579					451					540					320					1890

PDI File #: **186634 E**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Light Goods Vehicle

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
7:00 AM	2	8	9	0	19	5	2	4	0	11	0	5	0	0	5	2	3	2	0	7	42
7:15 AM	2	6	11	0	19	3	3	3	0	9	3	5	2	0	10	4	6	1	0	11	49
7:30 AM	0	11	10	0	21	5	1	2	0	8	3	10	1	0	14	2	4	1	0	7	50
7:45 AM	2	8	7	0	17	2	2	3	0	7	3	10	6	0	19	1	4	3	0	8	51
Total	6	33	37	0	76	15	8	12	0	35	9	30	9	0	48	9	17	7	0	33	192
8:00 AM	3	13	9	0	25	1	1	3	0	5	6	4	6	0	16	5	4	1	1	11	57
8:15 AM	1	4	8	0	13	3	1	2	0	6	4	3	1	0	8	1	4	5	1	11	38
8:30 AM	4	5	4	0	13	3	0	3	0	6	1	2	3	0	6	3	1	1	0	5	30
8:45 AM	5	5	5	0	15	1	1	7	0	9	1	3	3	0	7	3	0	1	0	4	35
Total	13	27	26	0	66	8	3	15	0	26	12	12	13	0	37	12	9	8	2	31	160
Grand Total	19	60	63	0	142	23	11	27	0	61	21	42	22	0	85	21	26	15	2	64	352
Approach %	13.4	42.3	44.4	0.0		37.7	18.0	44.3	0.0		24.7	49.4	25.9	0.0		32.8	40.6	23.4	3.1		
Total %	5.4	17.0	17.9	0.0	40.3	6.5	3.1	7.7	0.0	17.3	6.0	11.9	6.3	0.0	24.1	6.0	7.4	4.3	0.6	18.2	
Exiting Leg Total	80					110					108					54					352

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
7:15 AM	2	6	11	0	19	3	3	3	0	9	3	5	2	0	10	4	6	1	0	11	49
7:30 AM	0	11	10	0	21	5	1	2	0	8	3	10	1	0	14	2	4	1	0	7	50
7:45 AM	2	8	7	0	17	2	2	3	0	7	3	10	6	0	19	1	4	3	0	8	51
8:00 AM	3	13	9	0	25	1	1	3	0	5	6	4	6	0	16	5	4	1	1	11	57
Total Volume	7	38	37	0	82	11	7	11	0	29	15	29	15	0	59	12	18	6	1	37	207
% Approach Total	8.5	46.3	45.1	0.0		37.9	24.1	37.9	0.0		25.4	49.2	25.4	0.0		32.4	48.6	16.2	2.7		
PHF	0.583	0.731	0.841	0.000	0.820	0.550	0.583	0.917	0.000	0.806	0.625	0.725	0.625	0.000	0.776	0.600	0.750	0.500	0.250	0.841	0.908
Entering Leg	7	38	37	0	82	11	7	11	0	29	15	29	15	0	59	12	18	6	1	37	207
Exiting Leg	46					70					61					30					207
Total	128					99					120					67					414

PDI File #: **186634 E**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Buses

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
7:00 AM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	3
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2
7:30 AM	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	2
7:45 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
Total	3	0	0	0	3	0	0	1	0	1	1	1	1	0	2	2	1	0	0	3	9
8:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	3
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	1	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	3
Grand Total	3	1	0	0	4	0	0	1	0	1	1	1	1	0	3	3	1	0	0	4	12
Approach %	75.0	25.0	0.0	0.0		0.0	0.0	100.0	0.0		33.3	33.3	33.3	0.0		75.0	25.0	0.0	0.0		
Total %	25.0	8.3	0.0	0.0	33.3	0.0	0.0	8.3	0.0	8.3	8.3	8.3	8.3	0.0	25.0	25.0	8.3	0.0	0.0	33.3	
Exiting Leg Total	1					2					5					4					12

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
7:00 AM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	3
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2
7:30 AM	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	2
7:45 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
Total Volume	3	0	0	0	3	0	0	1	0	1	1	1	0	0	2	2	1	0	0	3	9
% Approach Total	100.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0		50.0	50.0	0.0	0.0		66.7	33.3	0.0	0.0		
PHF	0.375	0.000	0.000	0.000	0.375	0.000	0.000	0.250	0.000	0.250	0.250	0.250	0.000	0.000	0.500	0.500	0.250	0.000	0.000	0.375	0.750
Entering Leg	3	0	0	0	3	0	0	1	0	1	1	1	0	0	2	2	1	0	0	3	9
Exiting Leg	1					2					3					3					9
Total	4					3					5					6					18

PDI File #: **186634 E**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Single-Unit Trucks

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
7:00 AM	0	0	2	0	2	2	0	2	0	4	4	2	0	0	6	0	0	0	0	0	12
7:15 AM	0	0	2	0	2	2	0	1	0	3	5	1	1	0	7	0	0	2	0	2	14
7:30 AM	0	2	4	0	6	1	0	0	0	1	6	4	1	0	11	0	0	0	0	0	18
7:45 AM	0	1	1	0	2	3	0	1	0	4	0	1	0	0	1	0	2	0	0	2	9
Total	0	3	9	0	12	8	0	4	0	12	15	8	2	0	25	0	2	2	0	4	53
8:00 AM	0	3	1	0	4	1	0	2	0	3	0	4	0	0	4	0	1	1	0	2	13
8:15 AM	0	2	0	0	2	0	0	1	0	1	4	0	0	0	4	0	0	0	0	0	7
8:30 AM	1	4	0	0	5	1	0	0	0	1	3	2	0	0	5	0	0	0	0	0	11
8:45 AM	0	1	0	0	1	2	0	2	0	4	0	2	1	0	3	1	0	0	0	1	9
Total	1	10	1	0	12	4	0	5	0	9	7	8	1	0	16	1	1	1	0	3	40
Grand Total	1	13	10	0	24	12	0	9	0	21	22	16	3	0	41	1	3	3	0	7	93
Approach %	4.2	54.2	41.7	0.0		57.1	0.0	42.9	0.0		53.7	39.0	7.3	0.0		14.3	42.9	42.9	0.0		
Total %	1.1	14.0	10.8	0.0	25.8	12.9	0.0	9.7	0.0	22.6	23.7	17.2	3.2	0.0	44.1	1.1	3.2	3.2	0.0	7.5	
Exiting Leg Total	31					35					23					4					93

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
7:15 AM	0	0	2	0	2	2	0	1	0	3	5	1	1	0	7	0	0	2	0	2	14
7:30 AM	0	2	4	0	6	1	0	0	0	1	6	4	1	0	11	0	0	0	0	0	18
7:45 AM	0	1	1	0	2	3	0	1	0	4	0	1	0	0	1	0	2	0	0	2	9
8:00 AM	0	3	1	0	4	1	0	2	0	3	0	4	0	0	4	0	1	1	0	2	13
Total Volume	0	6	8	0	14	7	0	4	0	11	11	10	2	0	23	0	3	3	0	6	54
% Approach Total	0.0	42.9	57.1	0.0		63.6	0.0	36.4	0.0		47.8	43.5	8.7	0.0		0.0	50.0	50.0	0.0		
PHF	0.000	0.500	0.500	0.000	0.583	0.583	0.000	0.500	0.000	0.688	0.458	0.625	0.500	0.000	0.523	0.000	0.375	0.375	0.000	0.750	0.750
Entering Leg	0	6	8	0	14	7	0	4	0	11	11	10	2	0	23	0	3	3	0	6	54
Exiting Leg	20					22					10					2					54
Total	34					33					33					8					108

PDI File #: **186634 E**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
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Articulated Trucks

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total					
	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						
7:00 AM	0	1	1	0	2	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	4
7:15 AM	1	1	1	0	3	0	0	0	0	0	2	0	0	0	2	1	0	0	0	0	0	0	0	0	1	6
7:30 AM	0	1	0	0	1	1	0	0	0	1	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	4
7:45 AM	0	2	0	0	2	0	0	1	0	1	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	5
Total	1	5	2	0	8	1	0	1	0	2	4	2	2	0	8	1	0	0	0	0	0	0	0	0	1	19
8:00 AM	0	1	0	0	1	1	0	0	0	1	0	1	1	0	2	1	0	0	0	0	0	0	0	0	1	5
8:15 AM	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
8:30 AM	1	0	1	0	2	1	0	0	0	1	1	0	1	0	2	1	0	0	0	0	0	0	0	0	1	6
8:45 AM	0	0	0	0	0	1	0	0	0	1	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	3
Total	2	1	1	0	4	3	0	0	0	3	1	2	4	0	7	2	0	0	0	0	0	0	0	0	2	16
Grand Total	3	6	3	0	12	4	0	1	0	5	5	4	6	0	15	3	0	0	0	3	0	0	0	0	3	35
Approach %	25.0	50.0	25.0	0.0		80.0	0.0	20.0	0.0		33.3	26.7	40.0	0.0		100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	8.6	17.1	8.6	0.0	34.3	11.4	0.0	2.9	0.0	14.3	14.3	11.4	17.1	0.0	42.9	8.6	0.0	0.0	0.0	8.6	0.0	0.0	0.0	0.0	8.6	
Exiting Leg Total	8					8					10					9					35					

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total					
	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						
7:15 AM	1	1	1	0	3	0	0	0	0	0	2	0	0	0	2	1	0	0	0	0	0	0	0	0	1	6
7:30 AM	0	1	0	0	1	1	0	0	0	1	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	4
7:45 AM	0	2	0	0	2	0	0	1	0	1	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	5
8:00 AM	0	1	0	0	1	1	0	0	0	1	0	1	1	0	2	1	0	0	0	0	0	0	0	0	1	5
Total Volume	1	5	1	0	7	2	0	1	0	3	3	2	3	0	8	2	0	0	0	2	0	0	0	0	2	20
% Approach Total	14.3	71.4	14.3	0.0		66.7	0.0	33.3	0.0		37.5	25.0	37.5	0.0		100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.250	0.625	0.250	0.000	0.583	0.500	0.000	0.250	0.000	0.750	0.375	0.500	0.750	0.000	1.000	0.500	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.833	
Entering Leg	1	5	1	0	7	2	0	1	0	3	3	2	3	0	8	2	0	0	0	2	0	0	0	0	2	20
Exiting Leg	4					4					8					4					20					
Total	11					7					16					6					40					

PDI File #: 186634 E
 Location: N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)
 Location: E: Old Union Turnpike W: Old Union Turnpike
 City, State: Lancaster, MA
 Client: TEC/ L. Oltman
 Site Code: T0852
 Count Date: Wednesday, December 19, 2018
 Start Time: 7:00 AM
 End Time: 9:00 AM
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Bicycles (on Roadway and Crosswalks)

	Lunenburg Road (Route 70)							Old Union Turnpike							Lunenburg Road (Route 70)							Old Union Turnpike							Total
	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	
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	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 07:00 AM to 09:00 AM begins at:

7:00 AM	Lunenburg Road (Route 70)							Old Union Turnpike							Lunenburg Road (Route 70)							Old Union Turnpike							Total
	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	
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 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	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 #: 186634 E
 Location: N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)
 Location: E: Old Union Turnpike W: Old Union Turnpike
 City, State: Lancaster, MA
 Client: TEC/ L. Oltman
 Site Code: T0852
 Count Date: Wednesday, December 19, 2018
 Start Time: 7:00 AM
 End Time: 9:00 AM
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdillc.com

Pedestrians

	Lunenburg Road (Route 70)							Old Union Turnpike							Lunenburg Road (Route 70)							Old Union Turnpike							Total
	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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)							Old Union Turnpike							Lunenburg Road (Route 70)							Old Union Turnpike							Total
	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	
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	
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	
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	
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	
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	
% 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	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	
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	
Exiting Leg	0							0							0							0							0
Total	0							0							0							0							0

PDI File #: **186634 EE**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdillc.com

Cars and Heavy Vehicles (Combined)

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
4:00 PM	42	46	20	0	108	27	19	31	0	77	17	63	54	0	134	28	11	8	0	47	366
4:15 PM	28	53	11	0	92	22	23	24	0	69	17	85	53	0	155	31	13	14	1	59	375
4:30 PM	33	30	12	0	75	27	20	28	0	75	18	99	60	0	177	22	14	9	0	45	372
4:45 PM	22	34	10	1	67	27	20	18	0	65	14	100	54	0	168	28	12	9	0	49	349
Total	125	163	53	1	342	103	82	101	0	286	66	347	221	0	634	109	50	40	1	200	1462
5:00 PM	19	30	15	0	64	39	19	28	0	86	12	90	44	0	146	46	16	20	1	83	379
5:15 PM	28	35	13	0	76	35	28	14	0	77	17	84	51	0	152	39	9	23	1	72	377
5:30 PM	70	45	11	0	126	31	13	24	0	68	10	69	51	0	130	22	11	16	2	51	375
5:45 PM	105	36	9	0	150	23	13	23	0	59	8	64	52	1	125	30	5	11	2	48	382
Total	222	146	48	0	416	128	73	89	0	290	47	307	198	1	553	137	41	70	6	254	1513
Grand Total	347	309	101	1	758	231	155	190	0	576	113	654	419	1	1187	246	91	110	7	454	2975
Approach %	45.8	40.8	13.3	0.1		40.1	26.9	33.0	0.0		9.5	55.1	35.3	0.1		54.2	20.0	24.2	1.5		
Total %	11.7	10.4	3.4	0.0	25.5	7.8	5.2	6.4	0.0	19.4	3.8	22.0	14.1	0.0	39.9	8.3	3.1	3.7	0.2	15.3	
Exiting Leg Total					996					305					746					928	2975
Cars	343	288	98	1	730	215	153	182	0	550	107	647	413	1	1168	242	90	110	7	449	2897
% Cars	98.8	93.2	97.0	100.0	96.3	93.1	98.7	95.8	0.0	95.5	94.7	98.9	98.6	100.0	98.4	98.4	98.9	100.0	100.0	98.9	97.4
Exiting Leg Total					973					295					713					916	2897
Heavy Vehicles	4	21	3	0	28	16	2	8	0	26	6	7	6	0	19	4	1	0	0	5	78
% Heavy Vehicles	1.2	6.8	3.0	0.0	3.7	6.9	1.3	4.2	0.0	4.5	5.3	1.1	1.4	0.0	1.6	1.6	1.1	0.0	0.0	1.1	2.6
Exiting Leg Total					23					10					33					12	78

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
5:00 PM	19	30	15	0	64	39	19	28	0	86	12	90	44	0	146	46	16	20	1	83	379
5:15 PM	28	35	13	0	76	35	28	14	0	77	17	84	51	0	152	39	9	23	1	72	377
5:30 PM	70	45	11	0	126	31	13	24	0	68	10	69	51	0	130	22	11	16	2	51	375
5:45 PM	105	36	9	0	150	23	13	23	0	59	8	64	52	1	125	30	5	11	2	48	382
Total Volume	222	146	48	0	416	128	73	89	0	290	47	307	198	1	553	137	41	70	6	254	1513
% Approach Total	53.4	35.1	11.5	0.0		44.1	25.2	30.7	0.0		8.5	55.5	35.8	0.2		53.9	16.1	27.6	2.4		
PHF	0.529	0.811	0.800	0.000	0.693	0.821	0.652	0.795	0.000	0.843	0.691	0.853	0.952	0.250	0.910	0.745	0.641	0.761	0.750	0.765	0.990
Cars	219	133	47	0	399	119	72	88	0	279	45	305	196	1	547	137	41	70	6	254	1479
Cars %	98.6	91.1	97.9	0.0	95.9	93.0	98.6	98.9	0.0	96.2	95.7	99.3	99.0	100.0	98.9	100.0	100.0	100.0	100.0	100.0	97.8
Heavy Vehicles	3	13	1	0	17	9	1	1	0	11	2	2	2	0	6	0	0	0	0	0	34
Heavy Vehicles %	1.4	8.9	2.1	0.0	4.1	7.0	1.4	1.1	0.0	3.8	4.3	0.7	1.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	2.2
Cars Enter Leg	219	133	47	0	399	119	72	88	0	279	45	305	196	1	547	137	41	70	6	254	1479
Heavy Enter Leg	3	13	1	0	17	9	1	1	0	11	2	2	2	0	6	0	0	0	0	0	34
Total Entering Leg	222	146	48	0	416	128	73	89	0	290	47	307	198	1	553	137	41	70	6	254	1513
Cars Exiting Leg					494					133					359					493	1479
Heavy Exiting Leg					11					3					14					6	34
Total Exiting Leg					505					136					373					499	1513

PDI File #: **186634 EE**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars-Combined (Motorcycles, Cars, Light Goods)

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total					
	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						
4:00 PM	42	42	19	0	103	24	19	29	0	72	17	61	53	0	131	28	10	8	0	46	352					
4:15 PM	28	51	11	0	90	21	22	23	0	66	14	84	52	0	150	30	13	14	1	58	364					
4:30 PM	33	29	11	0	73	24	20	25	0	69	17	98	59	0	174	21	14	9	0	44	360					
4:45 PM	21	33	10	1	65	27	20	17	0	64	14	99	53	0	166	26	12	9	0	47	342					
Total	124	155	51	1	331	96	81	94	0	271	62	342	217	0	621	105	49	40	1	195	1418					
5:00 PM	19	27	14	0	60	38	19	27	0	84	11	88	43	0	142	46	16	20	1	83	369					
5:15 PM	28	29	13	0	70	33	28	14	0	75	17	84	50	0	151	39	9	23	1	72	368					
5:30 PM	69	43	11	0	123	25	13	24	0	62	10	69	51	0	130	22	11	16	2	51	366					
5:45 PM	103	34	9	0	146	23	12	23	0	58	7	64	52	1	124	30	5	11	2	48	376					
Total	219	133	47	0	399	119	72	88	0	279	45	305	196	1	547	137	41	70	6	254	1479					
Grand Total	343	288	98	1	730	215	153	182	0	550	107	647	413	1	1168	242	90	110	7	449	2897					
Approach %	47.0	39.5	13.4	0.1		39.1	27.8	33.1	0.0		9.2	55.4	35.4	0.1		53.9	20.0	24.5	1.6							
Total %	11.8	9.9	3.4	0.0	25.2	7.4	5.3	6.3	0.0	19.0	3.7	22.3	14.3	0.0	40.3	8.4	3.1	3.8	0.2	15.5						
Exiting Leg Total						973					295					713					916					2897

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total					
	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						
5:00 PM	19	27	14	0	60	38	19	27	0	84	11	88	43	0	142	46	16	20	1	83	369					
5:15 PM	28	29	13	0	70	33	28	14	0	75	17	84	50	0	151	39	9	23	1	72	368					
5:30 PM	69	43	11	0	123	25	13	24	0	62	10	69	51	0	130	22	11	16	2	51	366					
5:45 PM	103	34	9	0	146	23	12	23	0	58	7	64	52	1	124	30	5	11	2	48	376					
Total Volume	219	133	47	0	399	119	72	88	0	279	45	305	196	1	547	137	41	70	6	254	1479					
% Approach Total	54.9	33.3	11.8	0.0		42.7	25.8	31.5	0.0		8.2	55.8	35.8	0.2		53.9	16.1	27.6	2.4							
PHF	0.532	0.773	0.839	0.000	0.683	0.783	0.643	0.815	0.000	0.830	0.662	0.866	0.942	0.250	0.906	0.745	0.641	0.761	0.750	0.765	0.983					
Entering Leg	219	133	47	0	399	119	72	88	0	279	45	305	196	1	547	137	41	70	6	254	1479					
Exiting Leg						494					133					359					493	1479				
Total						893					412					906					747					2958

PDI File #: **186634 EE**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
4:00 PM	0	4	1	0	5	3	0	2	0	5	0	2	1	0	3	0	1	0	0	1	14
4:15 PM	0	2	0	0	2	1	1	1	0	3	3	1	1	0	5	1	0	0	0	1	11
4:30 PM	0	1	1	0	2	3	0	3	0	6	1	1	1	0	3	1	0	0	0	1	12
4:45 PM	1	1	0	0	2	0	0	1	0	1	0	1	1	0	2	2	0	0	0	2	7
Total	1	8	2	0	11	7	1	7	0	15	4	5	4	0	13	4	1	0	0	5	44
5:00 PM	0	3	1	0	4	1	0	1	0	2	1	2	1	0	4	0	0	0	0	0	10
5:15 PM	0	6	0	0	6	2	0	0	0	2	0	0	1	0	1	0	0	0	0	0	9
5:30 PM	1	2	0	0	3	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	9
5:45 PM	2	2	0	0	4	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	6
Total	3	13	1	0	17	9	1	1	0	11	2	2	2	0	6	0	0	0	0	0	34
Grand Total	4	21	3	0	28	16	2	8	0	26	6	7	6	0	19	4	1	0	0	5	78
Approach %	14.3	75.0	10.7	0.0		61.5	7.7	30.8	0.0		31.6	36.8	31.6	0.0		80.0	20.0	0.0	0.0		
Total %	5.1	26.9	3.8	0.0	35.9	20.5	2.6	10.3	0.0	33.3	7.7	9.0	7.7	0.0	24.4	5.1	1.3	0.0	0.0	6.4	
Exiting Leg Total	23					10					33					12					78
Buses	1	1	0	0	2	7	0	0	0	7	0	1	2	0	3	0	0	0	0	0	12
% Buses	25.0	4.8	0.0	0.0	7.1	43.8	0.0	0.0	0.0	26.9	0.0	14.3	33.3	0.0	15.8	0.0	0.0	0.0	0.0	0.0	15.4
Exiting Leg Total	8					0					1					3					12
Single-Unit Trucks	2	16	2	0	20	5	2	7	0	14	3	6	2	0	11	3	1	0	0	4	49
% Single-Unit	50.0	76.2	66.7	0.0	71.4	31.3	100.0	87.5	0.0	53.8	50.0	85.7	33.3	0.0	57.9	75.0	100.0	0.0	0.0	80.0	62.8
Exiting Leg Total	11					6					26					6					49
Articulated Trucks	1	4	1	0	6	4	0	1	0	5	3	0	2	0	5	1	0	0	0	1	17
% Articulated	25.0	19.0	33.3	0.0	21.4	25.0	0.0	12.5	0.0	19.2	50.0	0.0	33.3	0.0	26.3	25.0	0.0	0.0	0.0	20.0	21.8
Exiting Leg Total	4					4					6					3					17

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
4:00 PM	0	4	1	0	5	3	0	2	0	5	0	2	1	0	3	0	1	0	0	1	14
4:15 PM	0	2	0	0	2	1	1	1	0	3	3	1	1	0	5	1	0	0	0	1	11
4:30 PM	0	1	1	0	2	3	0	3	0	6	1	1	1	0	3	1	0	0	0	1	12
4:45 PM	1	1	0	0	2	0	0	1	0	1	0	1	1	0	2	2	0	0	0	2	7
Total Volume	1	8	2	0	11	7	1	7	0	15	4	5	4	0	13	4	1	0	0	5	44
% Approach Total	9.1	72.7	18.2	0.0		46.7	6.7	46.7	0.0		30.8	38.5	30.8	0.0		80.0	20.0	0.0	0.0		
PHF	0.250	0.500	0.500	0.000	0.550	0.583	0.250	0.583	0.000	0.625	0.333	0.625	1.000	0.000	0.650	0.500	0.250	0.000	0.000	0.625	0.786
Buses	0	1	0	0	1	0	0	0	0	0	0	1	2	0	3	0	0	0	0	0	4
Buses %	0.0	12.5	0.0	0.0	9.1	0.0	0.0	0.0	0.0	0.0	0.0	20.0	50.0	0.0	23.1	0.0	0.0	0.0	0.0	0.0	9.1
Single-Unit Trucks	0	6	1	0	7	4	1	6	0	11	1	4	1	0	6	3	1	0	0	4	28
Single-Unit %	0.0	75.0	50.0	0.0	63.6	57.1	100.0	85.7	0.0	73.3	25.0	80.0	25.0	0.0	46.2	75.0	100.0	0.0	0.0	80.0	63.6
Articulated Trucks	1	1	1	0	3	3	0	1	0	4	3	0	1	0	4	1	0	0	0	1	12
Articulated %	100.0	12.5	50.0	0.0	27.3	42.9	0.0	14.3	0.0	26.7	75.0	0.0	25.0	0.0	30.8	25.0	0.0	0.0	0.0	20.0	27.3
Buses	0	1	0	0	1	0	0	0	0	0	0	1	2	0	3	0	0	0	0	0	4
Single-Unit Trucks	0	6	1	0	7	4	1	6	0	11	1	4	1	0	6	3	1	0	0	4	28
Articulated Trucks	1	1	1	0	3	3	0	1	0	4	3	0	1	0	4	1	0	0	0	1	12
Total Entering Leg	1	8	2	0	11	7	1	7	0	15	4	5	4	0	13	4	1	0	0	5	44
Buses	1					0					1					2					4
Single-Unit Trucks	8					3					15					2					28
Articulated Trucks	3					4					3					2					12
Total Exiting Leg	12					7					19					6					44

PDI File #: **186634 EE**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total					
	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						
4:00 PM	40	32	14	0	86	21	14	25	0	60	14	45	43	0	102	24	7	8	0	39	287					
4:15 PM	26	43	10	0	79	19	21	20	0	60	9	66	49	0	124	25	9	13	0	47	310					
4:30 PM	30	24	8	0	62	19	17	21	0	57	13	79	51	0	143	18	11	8	0	37	299					
4:45 PM	21	24	8	1	54	25	20	13	0	58	11	82	49	0	142	22	11	7	0	40	294					
Total	117	123	40	1	281	84	72	79	0	235	47	272	192	0	511	89	38	36	0	163	1190					
5:00 PM	19	22	12	0	53	36	18	23	0	77	6	78	39	0	123	40	13	16	1	70	323					
5:15 PM	27	22	11	0	60	32	27	12	0	71	16	73	43	0	132	33	8	17	1	59	322					
5:30 PM	68	33	9	0	110	23	11	21	0	55	8	62	47	0	117	20	10	12	2	44	326					
5:45 PM	103	29	8	0	140	21	10	21	0	52	7	59	50	1	117	30	5	7	2	44	353					
Total	217	106	40	0	363	112	66	77	0	255	37	272	179	1	489	123	36	52	6	217	1324					
Grand Total	334	229	80	1	644	196	138	156	0	490	84	544	371	1	1000	212	74	88	6	380	2514					
Approach %	51.9	35.6	12.4	0.2		40.0	28.2	31.8	0.0		8.4	54.4	37.1	0.1		55.8	19.5	23.2	1.6							
Total %	13.3	9.1	3.2	0.0	25.6	7.8	5.5	6.2	0.0	19.5	3.3	21.6	14.8	0.0	39.8	8.4	2.9	3.5	0.2	15.1						
Exiting Leg Total						829					238					598					849					2514

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total					
	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						
5:00 PM	19	22	12	0	53	36	18	23	0	77	6	78	39	0	123	40	13	16	1	70	323					
5:15 PM	27	22	11	0	60	32	27	12	0	71	16	73	43	0	132	33	8	17	1	59	322					
5:30 PM	68	33	9	0	110	23	11	21	0	55	8	62	47	0	117	20	10	12	2	44	326					
5:45 PM	103	29	8	0	140	21	10	21	0	52	7	59	50	1	117	30	5	7	2	44	353					
Total Volume	217	106	40	0	363	112	66	77	0	255	37	272	179	1	489	123	36	52	6	217	1324					
% Approach Total	59.8	29.2	11.0	0.0		43.9	25.9	30.2	0.0		7.6	55.6	36.6	0.2		56.7	16.6	24.0	2.8							
PHF	0.527	0.803	0.833	0.000	0.648	0.778	0.611	0.837	0.000	0.828	0.578	0.872	0.895	0.250	0.926	0.769	0.692	0.765	0.750	0.775	0.938					
Entering Leg	217	106	40	0	363	112	66	77	0	255	37	272	179	1	489	123	36	52	6	217	1324					
Exiting Leg						436					113					307					468					1324
Total						799					368					796					685					2648

PDI File #: **186634 EE**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Light Goods Vehicle

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
4:00 PM	2	10	5	0	17	3	5	4	0	12	3	16	10	0	29	4	3	0	0	7	65
4:15 PM	2	8	1	0	11	2	1	3	0	6	5	18	3	0	26	5	4	1	1	11	54
4:30 PM	3	5	3	0	11	5	3	4	0	12	4	19	8	0	31	3	3	1	0	7	61
4:45 PM	0	9	2	0	11	2	0	4	0	6	3	17	4	0	24	4	1	2	0	7	48
Total	7	32	11	0	50	12	9	15	0	36	15	70	25	0	110	16	11	4	1	32	228
5:00 PM	0	5	2	0	7	2	1	4	0	7	5	10	4	0	19	6	3	4	0	13	46
5:15 PM	1	7	2	0	10	1	1	2	0	4	1	11	7	0	19	6	1	6	0	13	46
5:30 PM	1	10	2	0	13	1	2	3	0	6	2	7	4	0	13	2	1	4	0	7	39
5:45 PM	0	5	1	0	6	2	2	2	0	6	0	5	2	0	7	0	0	4	0	4	23
Total	2	27	7	0	36	6	6	11	0	23	8	33	17	0	58	14	5	18	0	37	154
Grand Total	9	59	18	0	86	18	15	26	0	59	23	103	42	0	168	30	16	22	1	69	382
Approach %	10.5	68.6	20.9	0.0		30.5	25.4	44.1	0.0		13.7	61.3	25.0	0.0		43.5	23.2	31.9	1.4		
Total %	2.4	15.4	4.7	0.0	22.5	4.7	3.9	6.8	0.0	15.4	6.0	27.0	11.0	0.0	44.0	7.9	4.2	5.8	0.3	18.1	
Exiting Leg Total	143					57					115					67					382

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
4:00 PM	2	10	5	0	17	3	5	4	0	12	3	16	10	0	29	4	3	0	0	7	65
4:15 PM	2	8	1	0	11	2	1	3	0	6	5	18	3	0	26	5	4	1	1	11	54
4:30 PM	3	5	3	0	11	5	3	4	0	12	4	19	8	0	31	3	3	1	0	7	61
4:45 PM	0	9	2	0	11	2	0	4	0	6	3	17	4	0	24	4	1	2	0	7	48
Total Volume	7	32	11	0	50	12	9	15	0	36	15	70	25	0	110	16	11	4	1	32	228
% Approach Total	14.0	64.0	22.0	0.0		33.3	25.0	41.7	0.0		13.6	63.6	22.7	0.0		50.0	34.4	12.5	3.1		
PHF	0.583	0.800	0.550	0.000	0.735	0.600	0.450	0.938	0.000	0.750	0.750	0.921	0.625	0.000	0.887	0.800	0.688	0.500	0.250	0.727	0.877
Entering Leg	7	32	11	0	50	12	9	15	0	36	15	70	25	0	110	16	11	4	1	32	228
Exiting Leg	86					37					63					42					228
Total	136					73					173					74					456

PDI File #: **186634 EE**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Buses

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
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	1	0	1	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0
4:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	1	2	0	3	0	0	0	0	0	4
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	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	6
5:45 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	1	0	0	0	1	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	8
Grand Total	1	1	0	0	2	7	0	0	0	7	0	1	2	0	3	0	0	0	0	0	12
Approach %	50.0	50.0	0.0	0.0		100.0	0.0	0.0	0.0		0.0	33.3	66.7	0.0		0.0	0.0	0.0	0.0		
Total %	8.3	8.3	0.0	0.0	16.7	58.3	0.0	0.0	0.0	58.3	0.0	8.3	16.7	0.0	25.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	8					0					1					3					12

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
4:45 PM	0	1	0	0	1	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	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	6
Total Volume	0	1	0	0	1	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	8
% Approach Total	0.0	100.0	0.0	0.0		100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.250	0.000	0.000	0.250	0.292	0.000	0.000	0.000	0.292	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.333
Entering Leg	0	1	0	0	1	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	8
Exiting Leg	7					0					1					0					8
Total	8					7					1					0					16

PDI File #: **186634 EE**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Single-Unit Trucks

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
4:00 PM	0	4	1	0	5	2	0	2	0	4	0	2	1	0	3	0	1	0	0	1	13
4:15 PM	0	2	0	0	2	1	1	1	0	3	1	1	0	0	2	1	0	0	0	1	8
4:30 PM	0	0	0	0	0	1	0	3	0	4	0	0	0	0	0	1	0	0	0	1	5
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	2
Total	0	6	1	0	7	4	1	6	0	11	1	4	1	0	6	3	1	0	0	4	28
5:00 PM	0	3	1	0	4	0	0	1	0	1	1	2	1	0	4	0	0	0	0	0	9
5:15 PM	0	4	0	0	4	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5
5:30 PM	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:45 PM	1	1	0	0	2	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	4
Total	2	10	1	0	13	1	1	1	0	3	2	2	1	0	5	0	0	0	0	0	21
Grand Total	2	16	2	0	20	5	2	7	0	14	3	6	2	0	11	3	1	0	0	4	49
Approach %	10.0	80.0	10.0	0.0		35.7	14.3	50.0	0.0		27.3	54.5	18.2	0.0		75.0	25.0	0.0	0.0		
Total %	4.1	32.7	4.1	0.0	40.8	10.2	4.1	14.3	0.0	28.6	6.1	12.2	4.1	0.0	22.4	6.1	2.0	0.0	0.0	8.2	
Exiting Leg Total	11					6					26					6					49

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
4:00 PM	0	4	1	0	5	2	0	2	0	4	0	2	1	0	3	0	1	0	0	1	13
4:15 PM	0	2	0	0	2	1	1	1	0	3	1	1	0	0	2	1	0	0	0	1	8
4:30 PM	0	0	0	0	0	1	0	3	0	4	0	0	0	0	0	1	0	0	0	1	5
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	2
Total Volume	0	6	1	0	7	4	1	6	0	11	1	4	1	0	6	3	1	0	0	4	28
% Approach Total	0.0	85.7	14.3	0.0		36.4	9.1	54.5	0.0		16.7	66.7	16.7	0.0		75.0	25.0	0.0	0.0		
PHF	0.000	0.375	0.250	0.000	0.350	0.500	0.250	0.500	0.000	0.688	0.250	0.500	0.250	0.000	0.500	0.750	0.250	0.000	0.000	1.000	0.538
Entering Leg	0	6	1	0	7	4	1	6	0	11	1	4	1	0	6	3	1	0	0	4	28
Exiting Leg	8					3					15					2					28
Total	15					14					21					6					56

PDI File #: **186634 EE**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Articulated Trucks

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
4:00 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	2
4:30 PM	0	1	1	0	2	2	0	0	0	2	1	0	0	0	1	0	0	0	0	0	5
4:45 PM	1	0	0	0	1	0	0	1	0	1	0	0	1	0	1	1	0	0	0	0	4
Total	1	1	1	0	3	3	0	1	0	4	3	0	1	0	4	1	0	0	0	1	12
5:00 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	2	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	3
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	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	3	0	0	3	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	5
Grand Total	1	4	1	0	6	4	0	1	0	5	3	0	2	0	5	1	0	0	0	1	17
Approach %	16.7	66.7	16.7	0.0		80.0	0.0	20.0	0.0		60.0	0.0	40.0	0.0		100.0	0.0	0.0	0.0		
Total %	5.9	23.5	5.9	0.0	35.3	23.5	0.0	5.9	0.0	29.4	17.6	0.0	11.8	0.0	29.4	5.9	0.0	0.0	0.0	5.9	
Exiting Leg Total	4					4					6					3					17

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
4:30 PM	0	1	1	0	2	2	0	0	0	2	1	0	0	0	1	0	0	0	0	0	5
4:45 PM	1	0	0	0	1	0	0	1	0	1	0	0	1	0	1	1	0	0	0	1	4
5:00 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	2	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	3
Total Volume	1	3	1	0	5	3	0	1	0	4	1	0	2	0	3	1	0	0	0	1	13
% Approach Total	20.0	60.0	20.0	0.0		75.0	0.0	25.0	0.0		33.3	0.0	66.7	0.0		100.0	0.0	0.0	0.0		
PHF	0.250	0.375	0.250	0.000	0.625	0.375	0.000	0.250	0.000	0.500	0.250	0.000	0.500	0.000	0.750	0.250	0.000	0.000	0.000	0.250	0.650
Entering Leg	1	3	1	0	5	3	0	1	0	4	1	0	2	0	3	1	0	0	0	1	13
Exiting Leg	3					2					5					3					13
Total	8					6					8					4					26

PDI File #: 186634 EE
 Location: N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)
 Location: E: Old Union Turnpike W: Old Union Turnpike
 City, State: Lancaster, MA
 Client: TEC/ L. Oltman
 Site Code: T0852
 Count Date: Wednesday, December 19, 2018
 Start Time: 4:00 PM
 End Time: 6:00 PM
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Bicycles (on Roadway and Crosswalks)

	Lunenburg Road (Route 70)							Old Union Turnpike							Lunenburg Road (Route 70)							Old Union Turnpike							Total
	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	
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	
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	
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	
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	
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	
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	
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	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	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	
Total	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
Grand Total	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	1	1	
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	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	100.0	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	0.0	0.0	0.0	0.0	100.0	100.0	
Exiting Leg Total	1							0							0							0							1

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:30 PM	Lunenburg Road (Route 70)							Old Union Turnpike							Lunenburg Road (Route 70)							Old Union Turnpike							Total
	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	
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	
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	
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	
5:15 PM	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	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
% Approach Total	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	
PHF	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	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	
Entering Leg	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
Exiting Leg	1							0							0							0							1
Total	1							1							0							0							2

PDI File #: **186634 EE**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



Pedestrians

	Lunenburg Road (Route 70)							Old Union Turnpike							Lunenburg Road (Route 70)							Old Union Turnpike							Total
	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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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 04:00 PM to 06:00 PM begins at:

4:00 PM	Lunenburg Road (Route 70)							Old Union Turnpike							Lunenburg Road (Route 70)							Old Union Turnpike							Total
	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	
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	
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	
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	
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	
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	
% 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	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	
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	
Exiting Leg	0							0							0							0							0
Total	0							0							0							0							0

PDI File #: **186634 F**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Fort Pond Road W: Woods Lane**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars and Heavy Vehicles (Combined)

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
7:00 AM	0	117	21	0	138	10	0	10	0	20	15	27	0	0	42	2	0	0	0	2	202
7:15 AM	0	115	14	0	129	10	0	7	0	17	29	36	0	0	65	0	2	0	0	2	213
7:30 AM	0	118	18	0	136	5	0	9	0	14	34	34	0	0	68	1	2	0	0	3	221
7:45 AM	0	103	10	0	113	13	0	13	0	26	36	35	0	0	71	0	1	0	0	1	211
Total	0	453	63	0	516	38	0	39	0	77	114	132	0	0	246	3	5	0	0	8	847
8:00 AM	0	105	6	0	111	6	0	14	0	20	22	28	1	0	51	0	0	0	0	0	182
8:15 AM	0	77	15	0	92	10	0	5	0	15	20	33	0	0	53	0	0	0	0	0	160
8:30 AM	1	54	11	0	66	11	0	10	0	21	27	30	0	0	57	1	0	0	0	1	145
8:45 AM	0	50	7	0	57	11	0	15	0	26	25	22	2	0	49	0	0	0	0	0	132
Total	1	286	39	0	326	38	0	44	0	82	94	113	3	0	210	1	0	0	0	1	619
Grand Total	1	739	102	0	842	76	0	83	0	159	208	245	3	0	456	4	5	0	0	9	1466
Approach %	0.1	87.8	12.1	0.0		47.8	0.0	52.2	0.0		45.6	53.7	0.7	0.0		44.4	55.6	0.0	0.0		
Total %	0.1	50.4	7.0	0.0	57.4	5.2	0.0	5.7	0.0	10.8	14.2	16.7	0.2	0.0	31.1	0.3	0.3	0.0	0.0	0.6	
Exiting Leg Total	321					315					826					4					1466
Cars	1	710	98	0	809	65	0	71	0	136	189	224	3	0	416	4	5	0	0	9	1370
% Cars	100.0	96.1	96.1	0.0	96.1	85.5	0.0	85.5	0.0	85.5	90.9	91.4	100.0	0.0	91.2	100.0	100.0	0.0	0.0	100.0	93.5
Exiting Leg Total	289					292					785					4					1370
Heavy Vehicles	0	29	4	0	33	11	0	12	0	23	19	21	0	0	40	0	0	0	0	0	96
% Heavy Vehicles	0.0	3.9	3.9	0.0	3.9	14.5	0.0	14.5	0.0	14.5	9.1	8.6	0.0	0.0	8.8	0.0	0.0	0.0	0.0	0.0	6.5
Exiting Leg Total	32					23					41					0					96

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
7:00 AM	0	117	21	0	138	10	0	10	0	20	15	27	0	0	42	2	0	0	0	2	202
7:15 AM	0	115	14	0	129	10	0	7	0	17	29	36	0	0	65	0	2	0	0	2	213
7:30 AM	0	118	18	0	136	5	0	9	0	14	34	34	0	0	68	1	2	0	0	3	221
7:45 AM	0	103	10	0	113	13	0	13	0	26	36	35	0	0	71	0	1	0	0	1	211
Total Volume	0	453	63	0	516	38	0	39	0	77	114	132	0	0	246	3	5	0	0	8	847
% Approach Total	0.0	87.8	12.2	0.0		49.4	0.0	50.6	0.0		46.3	53.7	0.0	0.0		37.5	62.5	0.0	0.0		
PHF	0.000	0.960	0.750	0.000	0.935	0.731	0.000	0.750	0.000	0.740	0.792	0.917	0.000	0.000	0.866	0.375	0.625	0.000	0.000	0.667	0.958
Cars	0	433	62	0	495	34	0	35	0	69	105	119	0	0	224	3	5	0	0	8	796
Cars %	0.0	95.6	98.4	0.0	95.9	89.5	0.0	89.7	0.0	89.6	92.1	90.2	0.0	0.0	91.1	100.0	100.0	0.0	0.0	100.0	94.0
Heavy Vehicles	0	20	1	0	21	4	0	4	0	8	9	13	0	0	22	0	0	0	0	0	51
Heavy Vehicles %	0.0	4.4	1.6	0.0	4.1	10.5	0.0	10.3	0.0	10.4	7.9	9.8	0.0	0.0	8.9	0.0	0.0	0.0	0.0	0.0	6.0
Cars Enter Leg	0	433	62	0	495	34	0	35	0	69	105	119	0	0	224	3	5	0	0	8	796
Heavy Enter Leg	0	20	1	0	21	4	0	4	0	8	9	13	0	0	22	0	0	0	0	0	51
Total Entering Leg	0	453	63	0	516	38	0	39	0	77	114	132	0	0	246	3	5	0	0	8	847
Cars Exiting Leg	153					172					471					0					796
Heavy Exiting Leg	17					10					24					0					51
Total Exiting Leg	170					182					495					0					847

PDI File #: **186634 F**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Fort Pond Road W: Woods Lane**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars-Combined (Motorcycles, Cars, Light Goods)

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total	
	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		
7:00 AM	0	111	20	0	131	8	0	9	0	17	13	24	0	0	37	2	0	0	0	2	187	
7:15 AM	0	111	14	0	125	9	0	7	0	16	26	34	0	0	60	0	2	0	0	2	203	
7:30 AM	0	112	18	0	130	5	0	9	0	14	32	30	0	0	62	1	2	0	0	3	209	
7:45 AM	0	99	10	0	109	12	0	10	0	22	34	31	0	0	65	0	1	0	0	1	197	
Total	0	433	62	0	495	34	0	35	0	69	105	119	0	0	224	3	5	0	0	8	796	
8:00 AM	0	103	4	0	107	6	0	10	0	16	19	23	1	0	43	0	0	0	0	0	166	
8:15 AM	0	76	14	0	90	9	0	3	0	12	18	33	0	0	51	0	0	0	0	0	153	
8:30 AM	1	49	11	0	61	7	0	8	0	15	25	28	0	0	53	1	0	0	0	1	130	
8:45 AM	0	49	7	0	56	9	0	15	0	24	22	21	2	0	45	0	0	0	0	0	125	
Total	1	277	36	0	314	31	0	36	0	67	84	105	3	0	192	1	0	0	0	1	574	
Grand Total	1	710	98	0	809	65	0	71	0	136	189	224	3	0	416	4	5	0	0	9	1370	
Approach %	0.1	87.8	12.1	0.0		47.8	0.0	52.2	0.0		45.4	53.8	0.7	0.0		44.4	55.6	0.0	0.0			
Total %	0.1	51.8	7.2	0.0	59.1	4.7	0.0	5.2	0.0	9.9	13.8	16.4	0.2	0.0	30.4	0.3	0.4	0.0	0.0	0.7		
Exiting Leg Total						289					292					785					4	1370

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total	
	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		
7:00 AM	0	111	20	0	131	8	0	9	0	17	13	24	0	0	37	2	0	0	0	2	187	
7:15 AM	0	111	14	0	125	9	0	7	0	16	26	34	0	0	60	0	2	0	0	2	203	
7:30 AM	0	112	18	0	130	5	0	9	0	14	32	30	0	0	62	1	2	0	0	3	209	
7:45 AM	0	99	10	0	109	12	0	10	0	22	34	31	0	0	65	0	1	0	0	1	197	
Total Volume	0	433	62	0	495	34	0	35	0	69	105	119	0	0	224	3	5	0	0	8	796	
% Approach Total	0.0	87.5	12.5	0.0		49.3	0.0	50.7	0.0		46.9	53.1	0.0	0.0		37.5	62.5	0.0	0.0			
PHF	0.000	0.967	0.775	0.000	0.945	0.708	0.000	0.875	0.000	0.784	0.772	0.875	0.000	0.000	0.862	0.375	0.625	0.000	0.000	0.667	0.952	
Entering Leg	0	433	62	0	495	34	0	35	0	69	105	119	0	0	224	3	5	0	0	8	796	
Exiting Leg											172					471					0	796
Total	648					241					695					8					1592	

PDI File #: **186634 F**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Fort Pond Road W: Woods Lane**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
7:00 AM	0	6	1	0	7	2	0	1	0	3	2	3	0	0	5	0	0	0	0	0	15
7:15 AM	0	4	0	0	4	1	0	0	0	1	3	2	0	0	5	0	0	0	0	0	10
7:30 AM	0	6	0	0	6	0	0	0	0	0	2	4	0	0	6	0	0	0	0	0	12
7:45 AM	0	4	0	0	4	1	0	3	0	4	2	4	0	0	6	0	0	0	0	0	14
Total	0	20	1	0	21	4	0	4	0	8	9	13	0	0	22	0	0	0	0	0	51
8:00 AM	0	2	2	0	4	0	0	4	0	4	3	5	0	0	8	0	0	0	0	0	16
8:15 AM	0	1	1	0	2	1	0	2	0	3	2	0	0	0	2	0	0	0	0	0	7
8:30 AM	0	5	0	0	5	4	0	2	0	6	2	2	0	0	4	0	0	0	0	0	15
8:45 AM	0	1	0	0	1	2	0	0	0	2	3	1	0	0	4	0	0	0	0	0	7
Total	0	9	3	0	12	7	0	8	0	15	10	8	0	0	18	0	0	0	0	0	45
Grand Total	0	29	4	0	33	11	0	12	0	23	19	21	0	0	40	0	0	0	0	0	96
Approach %	0.0	87.9	12.1	0.0		47.8	0.0	52.2	0.0		47.5	52.5	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	30.2	4.2	0.0	34.4	11.5	0.0	12.5	0.0	24.0	19.8	21.9	0.0	0.0	41.7	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	32					23					41					0					96
Buses	0	3	0	0	3	1	0	1	0	2	0	1	0	0	1	0	0	0	0	0	6
% Buses	0.0	10.3	0.0	0.0	9.1	9.1	0.0	8.3	0.0	8.7	0.0	4.8	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	6.3
Exiting Leg Total	2					0					4					0					6
Single-Unit Trucks	0	21	3	0	24	7	0	6	0	13	15	16	0	0	31	0	0	0	0	0	68
% Single-Unit	0.0	72.4	75.0	0.0	72.7	63.6	0.0	50.0	0.0	56.5	78.9	76.2	0.0	0.0	77.5	0.0	0.0	0.0	0.0	0.0	70.8
Exiting Leg Total	23					18					27					0					68
Articulated Trucks	0	5	1	0	6	3	0	5	0	8	4	4	0	0	8	0	0	0	0	0	22
% Articulated	0.0	17.2	25.0	0.0	18.2	27.3	0.0	41.7	0.0	34.8	21.1	19.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	22.9
Exiting Leg Total	7					5					10					0					22

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
7:15 AM	0	4	0	0	4	1	0	0	0	1	3	2	0	0	5	0	0	0	0	0	10
7:30 AM	0	6	0	0	6	0	0	0	0	0	2	4	0	0	6	0	0	0	0	0	12
7:45 AM	0	4	0	0	4	1	0	3	0	4	2	4	0	0	6	0	0	0	0	0	14
8:00 AM	0	2	2	0	4	0	0	4	0	4	3	5	0	0	8	0	0	0	0	0	16
Total Volume	0	16	2	0	18	2	0	7	0	9	10	15	0	0	25	0	0	0	0	0	52
% Approach Total	0.0	88.9	11.1	0.0		22.2	0.0	77.8	0.0		40.0	60.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.667	0.250	0.000	0.750	0.500	0.000	0.438	0.000	0.563	0.833	0.750	0.000	0.000	0.781	0.000	0.000	0.000	0.000	0.000	0.813
Buses	0	1	0	0	1	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	3
Buses %	0.0	6.3	0.0	0.0	5.6	0.0	0.0	14.3	0.0	11.1	0.0	6.7	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	5.8
Single-Unit Trucks	0	11	1	0	12	2	0	4	0	6	7	13	0	0	20	0	0	0	0	0	38
Single-Unit %	0.0	68.8	50.0	0.0	66.7	100.0	0.0	57.1	0.0	66.7	70.0	86.7	0.0	0.0	80.0	0.0	0.0	0.0	0.0	0.0	73.1
Articulated Trucks	0	4	1	0	5	0	0	2	0	2	3	1	0	0	4	0	0	0	0	0	11
Articulated %	0.0	25.0	50.0	0.0	27.8	0.0	0.0	28.6	0.0	22.2	30.0	6.7	0.0	0.0	16.0	0.0	0.0	0.0	0.0	0.0	21.2
Buses	0	1	0	0	1	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	3
Single-Unit Trucks	0	11	1	0	12	2	0	4	0	6	7	13	0	0	20	0	0	0	0	0	38
Articulated Trucks	0	4	1	0	5	0	0	2	0	2	3	1	0	0	4	0	0	0	0	0	11
Total Entering Leg	0	16	2	0	18	2	0	7	0	9	10	15	0	0	25	0	0	0	0	0	52
Buses	1					0					2					0					3
Single-Unit Trucks	15					8					15					0					38
Articulated Trucks	1					4					6					0					11
Total Exiting Leg	17					12					23					0					52

PDI File #: **186634 F**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Fort Pond Road W: Woods Lane**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
7:00 AM	0	91	17	0	108	6	0	7	0	13	9	16	0	0	25	2	0	0	0	2	148
7:15 AM	0	93	11	0	104	7	0	6	0	13	21	25	0	0	46	0	2	0	0	2	165
7:30 AM	0	89	15	0	104	4	0	9	0	13	24	24	0	0	48	1	2	0	0	3	168
7:45 AM	0	91	5	0	96	9	0	5	0	14	27	26	0	0	53	0	0	0	0	0	163
Total	0	364	48	0	412	26	0	27	0	53	81	91	0	0	172	3	4	0	0	7	644
8:00 AM	0	78	3	0	81	5	0	8	0	13	14	20	1	0	35	0	0	0	0	0	129
8:15 AM	0	63	11	0	74	6	0	2	0	8	16	25	0	0	41	0	0	0	0	0	123
8:30 AM	1	39	9	0	49	5	0	6	0	11	25	20	0	0	45	1	0	0	0	1	106
8:45 AM	0	38	4	0	42	3	0	14	0	17	18	18	2	0	38	0	0	0	0	0	97
Total	1	218	27	0	246	19	0	30	0	49	73	83	3	0	159	1	0	0	0	1	455
Grand Total	1	582	75	0	658	45	0	57	0	102	154	174	3	0	331	4	4	0	0	8	1099
Approach %	0.2	88.4	11.4	0.0		44.1	0.0	55.9	0.0		46.5	52.6	0.9	0.0		50.0	50.0	0.0	0.0		
Total %	0.1	53.0	6.8	0.0	59.9	4.1	0.0	5.2	0.0	9.3	14.0	15.8	0.3	0.0	30.1	0.4	0.4	0.0	0.0	0.7	
Exiting Leg Total	219					233					643					4					1099

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
7:00 AM	0	91	17	0	108	6	0	7	0	13	9	16	0	0	25	2	0	0	0	2	148
7:15 AM	0	93	11	0	104	7	0	6	0	13	21	25	0	0	46	0	2	0	0	2	165
7:30 AM	0	89	15	0	104	4	0	9	0	13	24	24	0	0	48	1	2	0	0	3	168
7:45 AM	0	91	5	0	96	9	0	5	0	14	27	26	0	0	53	0	0	0	0	0	163
Total Volume	0	364	48	0	412	26	0	27	0	53	81	91	0	0	172	3	4	0	0	7	644
% Approach Total	0.0	88.3	11.7	0.0		49.1	0.0	50.9	0.0		47.1	52.9	0.0	0.0		42.9	57.1	0.0	0.0		
PHF	0.000	0.978	0.706	0.000	0.954	0.722	0.000	0.750	0.000	0.946	0.750	0.875	0.000	0.000	0.811	0.375	0.500	0.000	0.000	0.583	0.958
Entering Leg	0	364	48	0	412	26	0	27	0	53	81	91	0	0	172	3	4	0	0	7	644
Exiting Leg	117					133					394					0					644
Total	529					186					566					7					1288

PDI File #: **186634 F**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Fort Pond Road W: Woods Lane**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class: **Light Goods Vehicle**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Light Goods Vehicle

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
7:00 AM	0	20	3	0	23	2	0	2	0	4	4	8	0	0	12	0	0	0	0	0	39
7:15 AM	0	18	3	0	21	2	0	1	0	3	5	9	0	0	14	0	0	0	0	0	38
7:30 AM	0	23	3	0	26	1	0	0	0	1	8	6	0	0	14	0	0	0	0	0	41
7:45 AM	0	8	5	0	13	3	0	5	0	8	7	5	0	0	12	0	1	0	0	1	34
Total	0	69	14	0	83	8	0	8	0	16	24	28	0	0	52	0	1	0	0	1	152
8:00 AM	0	25	1	0	26	1	0	2	0	3	5	3	0	0	8	0	0	0	0	0	37
8:15 AM	0	13	3	0	16	3	0	1	0	4	2	8	0	0	10	0	0	0	0	0	30
8:30 AM	0	10	2	0	12	2	0	2	0	4	0	8	0	0	8	0	0	0	0	0	24
8:45 AM	0	11	3	0	14	6	0	1	0	7	4	3	0	0	7	0	0	0	0	0	28
Total	0	59	9	0	68	12	0	6	0	18	11	22	0	0	33	0	0	0	0	0	119
Grand Total	0	128	23	0	151	20	0	14	0	34	35	50	0	0	85	0	1	0	0	1	271
Approach %	0.0	84.8	15.2	0.0		58.8	0.0	41.2	0.0		41.2	58.8	0.0	0.0		0.0	100.0	0.0	0.0		
Total %	0.0	47.2	8.5	0.0	55.7	7.4	0.0	5.2	0.0	12.5	12.9	18.5	0.0	0.0	31.4	0.0	0.4	0.0	0.0	0.4	
Exiting Leg Total	70					59					142					0					271

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
7:00 AM	0	20	3	0	23	2	0	2	0	4	4	8	0	0	12	0	0	0	0	0	39
7:15 AM	0	18	3	0	21	2	0	1	0	3	5	9	0	0	14	0	0	0	0	0	38
7:30 AM	0	23	3	0	26	1	0	0	0	1	8	6	0	0	14	0	0	0	0	0	41
7:45 AM	0	8	5	0	13	3	0	5	0	8	7	5	0	0	12	0	1	0	0	1	34
Total Volume	0	69	14	0	83	8	0	8	0	16	24	28	0	0	52	0	1	0	0	1	152
% Approach Total	0.0	83.1	16.9	0.0		50.0	0.0	50.0	0.0		46.2	53.8	0.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.000	0.750	0.700	0.000	0.798	0.667	0.000	0.400	0.000	0.500	0.750	0.778	0.000	0.000	0.929	0.000	0.250	0.000	0.000	0.250	0.927
Entering Leg	0	69	14	0	83	8	0	8	0	16	24	28	0	0	52	0	1	0	0	1	152
Exiting Leg	36					39					77					0					152
Total	119					55					129					1					304

PDI File #: **186634 F**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Fort Pond Road W: Woods Lane**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Buses

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
7:00 AM	0	2	0	0	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
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	1	0	0	1	0	0	0	0	0	1
7:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	3	0	0	3	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	5
8:00 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
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	1	0	1	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	3	0	0	3	1	0	1	0	2	0	1	0	0	1	0	0	0	0	0	6
Approach %	0.0	100.0	0.0	0.0		50.0	0.0	50.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	50.0	0.0	0.0	50.0	16.7	0.0	16.7	0.0	33.3	0.0	16.7	0.0	0.0	16.7	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total						2					0					4					6

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
7:00 AM	0	2	0	0	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
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	1	0	0	1	0	0	0	0	0	1
7:45 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	3	0	0	3	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	5
% Approach Total	0.0	100.0	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	0.0		
PHF	0.000	0.375	0.000	0.000	0.375	0.250	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.417
Entering Leg	0	3	0	0	3	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	5
Exiting Leg						2					0					3					5
Total						5					1					4					10

PDI File #: **186634 F**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Fort Pond Road W: Woods Lane**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Single-Unit Trucks

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
7:00 AM	0	3	1	0	4	1	0	0	0	1	2	2	0	0	4	0	0	0	0	0	9
7:15 AM	0	2	0	0	2	1	0	0	0	1	3	2	0	0	5	0	0	0	0	0	8
7:30 AM	0	5	0	0	5	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	9
7:45 AM	0	3	0	0	3	1	0	1	0	2	2	3	0	0	5	0	0	0	0	0	10
Total	0	13	1	0	14	3	0	1	0	4	8	10	0	0	18	0	0	0	0	0	36
8:00 AM	0	1	1	0	2	0	0	3	0	3	1	5	0	0	6	0	0	0	0	0	11
8:15 AM	0	1	1	0	2	1	0	1	0	2	1	0	0	0	1	0	0	0	0	0	5
8:30 AM	0	5	0	0	5	2	0	1	0	3	2	1	0	0	3	0	0	0	0	0	11
8:45 AM	0	1	0	0	1	1	0	0	0	1	3	0	0	0	3	0	0	0	0	0	5
Total	0	8	2	0	10	4	0	5	0	9	7	6	0	0	13	0	0	0	0	0	32
Grand Total	0	21	3	0	24	7	0	6	0	13	15	16	0	0	31	0	0	0	0	0	68
Approach %	0.0	87.5	12.5	0.0		53.8	0.0	46.2	0.0		48.4	51.6	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	30.9	4.4	0.0	35.3	10.3	0.0	8.8	0.0	19.1	22.1	23.5	0.0	0.0	45.6	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	23					18					27					0					68

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
7:15 AM	0	2	0	0	2	1	0	0	0	1	3	2	0	0	5	0	0	0	0	0	8
7:30 AM	0	5	0	0	5	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	9
7:45 AM	0	3	0	0	3	1	0	1	0	2	2	3	0	0	5	0	0	0	0	0	10
8:00 AM	0	1	1	0	2	0	0	3	0	3	1	5	0	0	6	0	0	0	0	0	11
Total Volume	0	11	1	0	12	2	0	4	0	6	7	13	0	0	20	0	0	0	0	0	38
% Approach Total	0.0	91.7	8.3	0.0		33.3	0.0	66.7	0.0		35.0	65.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.550	0.250	0.000	0.600	0.500	0.000	0.333	0.000	0.500	0.583	0.650	0.000	0.000	0.833	0.000	0.000	0.000	0.000	0.000	0.864
Entering Leg	0	11	1	0	12	2	0	4	0	6	7	13	0	0	20	0	0	0	0	0	38
Exiting Leg	15					8					15					0					38
Total	27					14					35					0					76

PDI File #: **186634 F**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Fort Pond Road W: Woods Lane**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Articulated Trucks

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
7:00 AM	0	1	0	0	1	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	3
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	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
7:45 AM	0	0	0	0	0	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	3
Total	0	4	0	0	4	0	0	3	0	3	1	2	0	0	3	0	0	0	0	0	10
8:00 AM	0	1	1	0	2	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	4
8:15 AM	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	2
8:30 AM	0	0	0	0	0	2	0	1	0	3	0	1	0	0	1	0	0	0	0	0	4
8:45 AM	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	2
Total	0	1	1	0	2	3	0	2	0	5	3	2	0	0	5	0	0	0	0	0	12
Grand Total	0	5	1	0	6	3	0	5	0	8	4	4	0	0	8	0	0	0	0	0	22
Approach %	0.0	83.3	16.7	0.0		37.5	0.0	62.5	0.0		50.0	50.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	22.7	4.5	0.0	27.3	13.6	0.0	22.7	0.0	36.4	18.2	18.2	0.0	0.0	36.4	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	7					5					10					0					22

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
7:45 AM	0	0	0	0	0	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	3
7:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	4
8:00 AM	0	1	1	0	2	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	4
8:15 AM	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	2
8:30 AM	0	0	0	0	0	2	0	1	0	3	0	1	0	0	1	0	0	0	0	0	4
Total Volume	0	1	1	0	2	2	0	4	0	6	3	2	0	0	5	0	0	0	0	0	13
% Approach Total	0.0	50.0	50.0	0.0		33.3	0.0	66.7	0.0		60.0	40.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.250	0.250	0.000	0.250	0.250	0.000	0.500	0.000	0.500	0.375	0.500	0.000	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.813
Entering Leg	0	1	1	0	2	2	0	4	0	6	3	2	0	0	5	0	0	0	0	0	13
Exiting Leg	4					4					5					0					13
Total	6					10					10					0					26

PDI File #: **186634 F**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Fort Pond Road W: Woods Lane**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdillc.com

Bicycles (on Roadway and Crosswalks)

	Lunenburg Road (Route 70)							Fort Pond Road							Lunenburg Road (Route 70)							Woods Lane							Total
	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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	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 07:00 AM to 09:00 AM begins at:

	Lunenburg Road (Route 70)							Fort Pond Road							Lunenburg Road (Route 70)							Woods Lane							Total
	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	
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	
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	
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	
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	
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	
% 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	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	
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	
Exiting Leg	0							0							0							0							0
Total	0							0							0							0							0

PDI File #: **186634 F**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Fort Pond Road W: Woods Lane**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class: **Pedestrians**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Pedestrians

	Lunenburg Road (Route 70)							Fort Pond Road							Lunenburg Road (Route 70)							Woods Lane							Total
	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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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 07:00 AM to 09:00 AM begins at:

7:00 AM	Lunenburg Road (Route 70)							Fort Pond Road							Lunenburg Road (Route 70)							Woods Lane							Total
	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	
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	
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	
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	
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	
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	
% 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	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	
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	
Exiting Leg	0							0							0							0							0
Total	0							0							0							0							0

PDI File #: **186634 FF**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Fort Pond Road W: Woods Lane**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars and Heavy Vehicles (Combined)

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
4:00 PM	0	60	11	0	71	32	1	44	0	77	28	75	0	0	103	0	0	0	0	0	251
4:15 PM	0	50	13	0	63	46	1	41	0	88	43	78	0	0	121	1	0	0	0	1	273
4:30 PM	0	43	7	0	50	44	0	32	0	76	38	97	0	0	135	1	0	1	0	2	263
4:45 PM	0	38	3	0	41	55	0	28	0	83	40	96	0	0	136	0	0	0	0	0	260
Total	0	191	34	0	225	177	2	145	0	324	149	346	0	0	495	2	0	1	0	3	1047
5:00 PM	1	39	7	0	47	48	0	29	0	77	33	116	0	0	149	2	0	0	0	2	275
5:15 PM	0	38	6	0	44	49	0	37	0	86	28	113	1	0	142	1	0	0	0	1	273
5:30 PM	0	43	7	0	50	98	0	80	0	178	16	101	1	0	118	1	0	0	0	1	347
5:45 PM	0	38	8	0	46	91	0	119	0	210	20	78	0	0	98	0	0	0	0	0	354
Total	1	158	28	0	187	286	0	265	0	551	97	408	2	0	507	4	0	0	0	4	1249
Grand Total	1	349	62	0	412	463	2	410	0	875	246	754	2	0	1002	6	0	1	0	7	2296
Approach %	0.2	84.7	15.0	0.0		52.9	0.2	46.9	0.0		24.6	75.2	0.2	0.0		85.7	0.0	14.3	0.0		
Total %	0.0	15.2	2.7	0.0	17.9	20.2	0.1	17.9	0.0	38.1	10.7	32.8	0.1	0.0	43.6	0.3	0.0	0.0	0.0	0.3	
Exiting Leg Total	1218					308					765					5					2296
Cars	1	345	53	0	399	455	2	389	0	846	239	741	2	0	982	6	0	1	0	7	2234
% Cars	100.0	98.9	85.5	0.0	96.8	98.3	100.0	94.9	0.0	96.7	97.2	98.3	100.0	0.0	98.0	100.0	0.0	100.0	0.0	100.0	97.3
Exiting Leg Total	1197					292					740					5					2234
Heavy Vehicles	0	4	9	0	13	8	0	21	0	29	7	13	0	0	20	0	0	0	0	0	62
% Heavy Vehicles	0.0	1.1	14.5	0.0	3.2	1.7	0.0	5.1	0.0	3.3	2.8	1.7	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.7
Exiting Leg Total	21					16					25					0					62

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

5:00 PM	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
5:00 PM	1	39	7	0	47	48	0	29	0	77	33	116	0	0	149	2	0	0	0	2	275
5:15 PM	0	38	6	0	44	49	0	37	0	86	28	113	1	0	142	1	0	0	0	1	273
5:30 PM	0	43	7	0	50	98	0	80	0	178	16	101	1	0	118	1	0	0	0	1	347
5:45 PM	0	38	8	0	46	91	0	119	0	210	20	78	0	0	98	0	0	0	0	0	354
Total Volume	1	158	28	0	187	286	0	265	0	551	97	408	2	0	507	4	0	0	0	4	1249
% Approach Total	0.5	84.5	15.0	0.0		51.9	0.0	48.1	0.0		19.1	80.5	0.4	0.0		100.0	0.0	0.0	0.0		
PHF	0.250	0.919	0.875	0.000	0.935	0.730	0.000	0.557	0.000	0.656	0.735	0.879	0.500	0.000	0.851	0.500	0.000	0.000	0.000	0.500	0.882
Cars	1	157	24	0	182	283	0	252	0	535	95	402	2	0	499	4	0	0	0	4	1220
Cars %	100.0	99.4	85.7	0.0	97.3	99.0	0.0	95.1	0.0	97.1	97.9	98.5	100.0	0.0	98.4	100.0	0.0	0.0	0.0	100.0	97.7
Heavy Vehicles	0	1	4	0	5	3	0	13	0	16	2	6	0	0	8	0	0	0	0	0	29
Heavy Vehicles %	0.0	0.6	14.3	0.0	2.7	1.0	0.0	4.9	0.0	2.9	2.1	1.5	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	2.3
Cars Enter Leg	1	157	24	0	182	283	0	252	0	535	95	402	2	0	499	4	0	0	0	4	1220
Heavy Enter Leg	0	1	4	0	5	3	0	13	0	16	2	6	0	0	8	0	0	0	0	0	29
Total Entering Leg	1	158	28	0	187	286	0	265	0	551	97	408	2	0	507	4	0	0	0	4	1249
Cars Exiting Leg	685					119					413					3					1220
Heavy Exiting Leg	9					6					14					0					29
Total Exiting Leg	694					125					427					3					1249

PDI File #: **186634 FF**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Fort Pond Road W: Woods Lane**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars-Combined (Motorcycles, Cars, Light Goods)

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
4:00 PM	0	59	8	0	67	30	1	40	0	71	26	73	0	0	99	0	0	0	0	0	237
4:15 PM	0	50	12	0	62	44	1	39	0	84	42	77	0	0	119	1	0	0	0	1	266
4:30 PM	0	42	6	0	48	44	0	31	0	75	36	94	0	0	130	1	0	1	0	2	255
4:45 PM	0	37	3	0	40	54	0	27	0	81	40	95	0	0	135	0	0	0	0	0	256
Total	0	188	29	0	217	172	2	137	0	311	144	339	0	0	483	2	0	1	0	3	1014
5:00 PM	1	38	7	0	46	48	0	25	0	73	32	113	0	0	145	2	0	0	0	2	266
5:15 PM	0	38	6	0	44	48	0	32	0	80	28	112	1	0	141	1	0	0	0	1	266
5:30 PM	0	43	5	0	48	98	0	78	0	176	16	99	1	0	116	1	0	0	0	1	341
5:45 PM	0	38	6	0	44	89	0	117	0	206	19	78	0	0	97	0	0	0	0	0	347
Total	1	157	24	0	182	283	0	252	0	535	95	402	2	0	499	4	0	0	0	4	1220
Grand Total	1	345	53	0	399	455	2	389	0	846	239	741	2	0	982	6	0	1	0	7	2234
Approach %	0.3	86.5	13.3	0.0		53.8	0.2	46.0	0.0		24.3	75.5	0.2	0.0		85.7	0.0	14.3	0.0		
Total %	0.0	15.4	2.4	0.0	17.9	20.4	0.1	17.4	0.0	37.9	10.7	33.2	0.1	0.0	44.0	0.3	0.0	0.0	0.0	0.3	
Exiting Leg Total	1197					292					740					5					2234

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
5:00 PM	1	38	7	0	46	48	0	25	0	73	32	113	0	0	145	2	0	0	0	2	266
5:15 PM	0	38	6	0	44	48	0	32	0	80	28	112	1	0	141	1	0	0	0	1	266
5:30 PM	0	43	5	0	48	98	0	78	0	176	16	99	1	0	116	1	0	0	0	1	341
5:45 PM	0	38	6	0	44	89	0	117	0	206	19	78	0	0	97	0	0	0	0	0	347
Total Volume	1	157	24	0	182	283	0	252	0	535	95	402	2	0	499	4	0	0	0	4	1220
% Approach Total	0.5	86.3	13.2	0.0		52.9	0.0	47.1	0.0		19.0	80.6	0.4	0.0		100.0	0.0	0.0	0.0		
PHF	0.250	0.913	0.857	0.000	0.948	0.722	0.000	0.538	0.000	0.649	0.742	0.889	0.500	0.000	0.860	0.500	0.000	0.000	0.000	0.500	0.879
Entering Leg	1	157	24	0	182	283	0	252	0	535	95	402	2	0	499	4	0	0	0	4	1220
Exiting Leg	685					119					413					3					1220
Total	867					654					912					7					2440

PDI File #: **186634 FF**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Fort Pond Road W: Woods Lane**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

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

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
4:00 PM	0	1	3	0	4	2	0	4	0	6	2	2	0	0	4	0	0	0	0	0	14
4:15 PM	0	0	1	0	1	2	0	2	0	4	1	1	0	0	2	0	0	0	0	0	7
4:30 PM	0	1	1	0	2	0	0	1	0	1	2	3	0	0	5	0	0	0	0	0	8
4:45 PM	0	1	0	0	1	1	0	1	0	2	0	1	0	0	1	0	0	0	0	0	4
Total	0	3	5	0	8	5	0	8	0	13	5	7	0	0	12	0	0	0	0	0	33
5:00 PM	0	1	0	0	1	0	0	4	0	4	1	3	0	0	4	0	0	0	0	0	9
5:15 PM	0	0	0	0	0	1	0	5	0	6	0	1	0	0	1	0	0	0	0	0	7
5:30 PM	0	0	2	0	2	0	0	2	0	2	0	2	0	0	2	0	0	0	0	0	6
5:45 PM	0	0	2	0	2	2	0	2	0	4	1	0	0	0	1	0	0	0	0	0	7
Total	0	1	4	0	5	3	0	13	0	16	2	6	0	0	8	0	0	0	0	0	29
Grand Total	0	4	9	0	13	8	0	21	0	29	7	13	0	0	20	0	0	0	0	0	62
Approach %	0.0	30.8	69.2	0.0		27.6	0.0	72.4	0.0		35.0	65.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	6.5	14.5	0.0	21.0	12.9	0.0	33.9	0.0	46.8	11.3	21.0	0.0	0.0	32.3	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	21					16					25					0					62
Buses	0	0	1	0	1	2	0	0	0	2	1	1	0	0	2	0	0	0	0	0	5
% Buses	0.0	0.0	11.1	0.0	7.7	25.0	0.0	0.0	0.0	6.9	14.3	7.7	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	8.1
Exiting Leg Total	3					2					0					0					5
Single-Unit Trucks	0	2	4	0	6	5	0	17	0	22	4	9	0	0	13	0	0	0	0	0	41
% Single-Unit	0.0	50.0	44.4	0.0	46.2	62.5	0.0	81.0	0.0	75.9	57.1	69.2	0.0	0.0	65.0	0.0	0.0	0.0	0.0	0.0	66.1
Exiting Leg Total	14					8					19					0					41
Articulated Trucks	0	2	4	0	6	1	0	4	0	5	2	3	0	0	5	0	0	0	0	0	16
% Articulated	0.0	50.0	44.4	0.0	46.2	12.5	0.0	19.0	0.0	17.2	28.6	23.1	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	25.8
Exiting Leg Total	4					6					6					0					16

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
4:00 PM	0	1	3	0	4	2	0	4	0	6	2	2	0	0	4	0	0	0	0	0	14
4:15 PM	0	0	1	0	1	2	0	2	0	4	1	1	0	0	2	0	0	0	0	0	7
4:30 PM	0	1	1	0	2	0	0	1	0	1	2	3	0	0	5	0	0	0	0	0	8
4:45 PM	0	1	0	0	1	1	0	1	0	2	0	1	0	0	1	0	0	0	0	0	4
Total Volume	0	3	5	0	8	5	0	8	0	13	5	7	0	0	12	0	0	0	0	0	33
% Approach Total	0.0	37.5	62.5	0.0		38.5	0.0	61.5	0.0		41.7	58.3	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.750	0.417	0.000	0.500	0.625	0.000	0.500	0.000	0.542	0.625	0.583	0.000	0.000	0.600	0.000	0.000	0.000	0.000	0.000	0.589
Buses	0	0	0	0	0	2	0	0	0	2	1	0	0	0	1	0	0	0	0	0	3
Buses %	0.0	0.0	0.0	0.0	0.0	40.0	0.0	0.0	0.0	15.4	20.0	0.0	0.0	0.0	8.3	0.0	0.0	0.0	0.0	0.0	9.1
Single-Unit Trucks	0	1	3	0	4	3	0	7	0	10	2	6	0	0	8	0	0	0	0	0	22
Single-Unit %	0.0	33.3	60.0	0.0	50.0	60.0	0.0	87.5	0.0	76.9	40.0	85.7	0.0	0.0	66.7	0.0	0.0	0.0	0.0	0.0	66.7
Articulated Trucks	0	2	2	0	4	0	0	1	0	1	2	1	0	0	3	0	0	0	0	0	8
Articulated %	0.0	66.7	40.0	0.0	50.0	0.0	0.0	12.5	0.0	7.7	40.0	14.3	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	24.2
Buses	0	0	0	0	0	2	0	0	0	2	1	0	0	0	1	0	0	0	0	0	3
Single-Unit Trucks	0	1	3	0	4	3	0	7	0	10	2	6	0	0	8	0	0	0	0	0	22
Articulated Trucks	0	2	2	0	4	0	0	1	0	1	2	1	0	0	3	0	0	0	0	0	8
Total Entering Leg	0	3	5	0	8	5	0	8	0	13	5	7	0	0	12	0	0	0	0	0	33
Buses	2					1					0					0					3
Single-Unit Trucks	9					5					8					0					22
Articulated Trucks	1					4					3					0					8
Total Exiting Leg	12					10					11					0					33

PDI File #: **186634 FF**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Fort Pond Road W: Woods Lane**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
4:00 PM	0	45	6	0	51	23	1	35	0	59	16	58	0	0	74	0	0	0	0	0	184
4:15 PM	0	43	10	0	53	35	1	35	0	71	34	67	0	0	101	1	0	0	0	1	226
4:30 PM	0	33	4	0	37	35	0	29	0	64	31	73	0	0	104	1	0	1	0	2	207
4:45 PM	0	35	1	0	36	42	0	21	0	63	33	75	0	0	108	0	0	0	0	0	207
Total	0	156	21	0	177	135	2	120	0	257	114	273	0	0	387	2	0	1	0	3	824
5:00 PM	1	36	6	0	43	42	0	23	0	65	31	109	0	0	140	2	0	0	0	2	250
5:15 PM	0	36	6	0	42	41	0	29	0	70	27	107	1	0	135	1	0	0	0	1	248
5:30 PM	0	41	3	0	44	78	0	67	0	145	15	88	1	0	104	1	0	0	0	1	294
5:45 PM	0	37	5	0	42	69	0	111	0	180	19	75	0	0	94	0	0	0	0	0	316
Total	1	150	20	0	171	230	0	230	0	460	92	379	2	0	473	4	0	0	0	4	1108
Grand Total	1	306	41	0	348	365	2	350	0	717	206	652	2	0	860	6	0	1	0	7	1932
Approach %	0.3	87.9	11.8	0.0		50.9	0.3	48.8	0.0		24.0	75.8	0.2	0.0		85.7	0.0	14.3	0.0		
Total %	0.1	15.8	2.1	0.0	18.0	18.9	0.1	18.1	0.0	37.1	10.7	33.7	0.1	0.0	44.5	0.3	0.0	0.1	0.0	0.4	
Exiting Leg Total	1018					247					662					5					1932

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
5:00 PM	1	36	6	0	43	42	0	23	0	65	31	109	0	0	140	2	0	0	0	2	250
5:15 PM	0	36	6	0	42	41	0	29	0	70	27	107	1	0	135	1	0	0	0	1	248
5:30 PM	0	41	3	0	44	78	0	67	0	145	15	88	1	0	104	1	0	0	0	1	294
5:45 PM	0	37	5	0	42	69	0	111	0	180	19	75	0	0	94	0	0	0	0	0	316
Total Volume	1	150	20	0	171	230	0	230	0	460	92	379	2	0	473	4	0	0	0	4	1108
% Approach Total	0.6	87.7	11.7	0.0		50.0	0.0	50.0	0.0		19.5	80.1	0.4	0.0		100.0	0.0	0.0	0.0		
PHF	0.250	0.915	0.833	0.000	0.972	0.737	0.000	0.518	0.000	0.639	0.742	0.869	0.500	0.000	0.845	0.500	0.000	0.000	0.000	0.500	0.877
Entering Leg	1	150	20	0	171	230	0	230	0	460	92	379	2	0	473	4	0	0	0	4	1108
Exiting Leg	609					112					384					3					1108
Total	780					572					857					7					2216

PDI File #: **186634 FF**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Fort Pond Road W: Woods Lane**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class: **Light Goods Vehicle**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total	
	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		
4:00 PM	0	14	2	0	16	7	0	5	0	12	10	15	0	0	25	0	0	0	0	0	53	
4:15 PM	0	7	2	0	9	9	0	4	0	13	8	10	0	0	18	0	0	0	0	0	40	
4:30 PM	0	9	2	0	11	9	0	2	0	11	5	21	0	0	26	0	0	0	0	0	48	
4:45 PM	0	2	2	0	4	12	0	6	0	18	7	20	0	0	27	0	0	0	0	0	49	
Total	0	32	8	0	40	37	0	17	0	54	30	66	0	0	96	0	0	0	0	0	190	
5:00 PM	0	2	1	0	3	6	0	2	0	8	1	4	0	0	5	0	0	0	0	0	16	
5:15 PM	0	2	0	0	2	7	0	3	0	10	1	5	0	0	6	0	0	0	0	0	18	
5:30 PM	0	2	2	0	4	20	0	11	0	31	1	11	0	0	12	0	0	0	0	0	47	
5:45 PM	0	1	1	0	2	20	0	6	0	26	0	3	0	0	3	0	0	0	0	0	31	
Total	0	7	4	0	11	53	0	22	0	75	3	23	0	0	26	0	0	0	0	0	112	
Grand Total	0	39	12	0	51	90	0	39	0	129	33	89	0	0	122	0	0	0	0	0	302	
Approach %	0.0	76.5	23.5	0.0		69.8	0.0	30.2	0.0		27.0	73.0	0.0	0.0		0.0	0.0	0.0	0.0			
Total %	0.0	12.9	4.0	0.0	16.9	29.8	0.0	12.9	0.0	42.7	10.9	29.5	0.0	0.0	40.4	0.0	0.0	0.0	0.0	0.0		
Exiting Leg Total						179					45					78					0	302

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total	
	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		
4:00 PM	0	14	2	0	16	7	0	5	0	12	10	15	0	0	25	0	0	0	0	0	53	
4:15 PM	0	7	2	0	9	9	0	4	0	13	8	10	0	0	18	0	0	0	0	0	40	
4:30 PM	0	9	2	0	11	9	0	2	0	11	5	21	0	0	26	0	0	0	0	0	48	
4:45 PM	0	2	2	0	4	12	0	6	0	18	7	20	0	0	27	0	0	0	0	0	49	
Total Volume	0	32	8	0	40	37	0	17	0	54	30	66	0	0	96	0	0	0	0	0	190	
% Approach Total	0.0	80.0	20.0	0.0		68.5	0.0	31.5	0.0		31.3	68.8	0.0	0.0		0.0	0.0	0.0	0.0			
PHF	0.000	0.571	1.000	0.000	0.625	0.771	0.000	0.708	0.000	0.750	0.750	0.786	0.000	0.000	0.889	0.000	0.000	0.000	0.000	0.000	0.896	
Entering Leg	0	32	8	0	40	37	0	17	0	54	30	66	0	0	96	0	0	0	0	0	190	
Exiting Leg						103					38					49					0	190
Total						143					92					145					0	380

PDI File #: **186634 FF**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Fort Pond Road W: Woods Lane**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Buses

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
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	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	2	0	0	0	2	1	0	0	0	1	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	1	0	1	0	0	0	0	0	0	1	0	0	1	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	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
Grand Total	0	0	1	0	1	2	0	0	0	2	1	1	0	0	2	0	0	0	0	0	0
Approach %	0.0	0.0	100.0	0.0		100.0	0.0	0.0	0.0		50.0	50.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	0.0	20.0	0.0	20.0	40.0	0.0	0.0	0.0	40.0	20.0	20.0	0.0	0.0	40.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total						3						2						0	5		

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
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	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	2	0	0	0	2	1	0	0	0	1	0	0	0	0	0	0
% Approach Total	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		
PHF	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.500	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.750
Entering Leg	0	0	0	0	0	2	0	0	0	2	1	0	0	0	1	0	0	0	0	0	3
Exiting Leg						2						1						0	3		
Total						2						3						1	6		

PDI File #: **186634 FF**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Fort Pond Road W: Woods Lane**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Single-Unit Trucks

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
4:00 PM	0	1	2	0	3	2	0	4	0	6	1	2	0	0	3	0	0	0	0	0	12
4:15 PM	0	0	1	0	1	1	0	2	0	3	1	1	0	0	2	0	0	0	0	0	6
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	2
Total	0	1	3	0	4	3	0	7	0	10	2	6	0	0	8	0	0	0	0	0	22
5:00 PM	0	1	0	0	1	0	0	4	0	4	1	2	0	0	3	0	0	0	0	0	8
5:15 PM	0	0	0	0	0	0	0	3	0	3	0	1	0	0	1	0	0	0	0	0	4
5:30 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	1	0	1	2	0	2	0	4	1	0	0	0	1	0	0	0	0	0	6
Total	0	1	1	0	2	2	0	10	0	12	2	3	0	0	5	0	0	0	0	0	19
Grand Total	0	2	4	0	6	5	0	17	0	22	4	9	0	0	13	0	0	0	0	0	41
Approach %	0.0	33.3	66.7	0.0		22.7	0.0	77.3	0.0		30.8	69.2	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	4.9	9.8	0.0	14.6	12.2	0.0	41.5	0.0	53.7	9.8	22.0	0.0	0.0	31.7	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	14					8					19					0					41

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total
	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	
4:00 PM	0	1	2	0	3	2	0	4	0	6	1	2	0	0	3	0	0	0	0	0	12
4:15 PM	0	0	1	0	1	1	0	2	0	3	1	1	0	0	2	0	0	0	0	0	6
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	2
Total Volume	0	1	3	0	4	3	0	7	0	10	2	6	0	0	8	0	0	0	0	0	22
% Approach Total	0.0	25.0	75.0	0.0		30.0	0.0	70.0	0.0		25.0	75.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.250	0.375	0.000	0.333	0.375	0.000	0.438	0.000	0.417	0.500	0.750	0.000	0.000	0.667	0.000	0.000	0.000	0.000	0.000	0.458
Entering Leg	0	1	3	0	4	3	0	7	0	10	2	6	0	0	8	0	0	0	0	0	22
Exiting Leg	9					5					8					0					22
Total	13					15					16					0					44

PDI File #: **186634 FF**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Fort Pond Road W: Woods Lane**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Articulated Trucks

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total	
	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		
4:00 PM	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2	
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	1	1	0	2	0	0	1	0	1	1	1	0	0	2	0	0	0	0	0	5	
4:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Total	0	2	2	0	4	0	0	1	0	1	2	1	0	0	3	0	0	0	0	0	8	
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	1	0	2	0	3	0	0	0	0	0	0	0	0	0	0	3	
5:30 PM	0	0	1	0	1	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	3	
5:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Total	0	0	2	0	2	1	0	3	0	4	0	2	0	0	2	0	0	0	0	0	8	
Grand Total	0	2	4	0	6	1	0	4	0	5	2	3	0	0	5	0	0	0	0	0	16	
Approach %	0.0	33.3	66.7	0.0		20.0	0.0	80.0	0.0		40.0	60.0	0.0	0.0		0.0	0.0	0.0	0.0			
Total %	0.0	12.5	25.0	0.0	37.5	6.3	0.0	25.0	0.0	31.3	12.5	18.8	0.0	0.0	31.3	0.0	0.0	0.0	0.0	0.0		
Exiting Leg Total						4					6					6					0	16

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)					Fort Pond Road					Lunenburg Road (Route 70)					Woods Lane					Total	
	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		
4:30 PM	0	1	1	0	2	0	0	1	0	1	1	1	0	0	2	0	0	0	0	0	5	
4:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
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	1	0	2	0	3	0	0	0	0	0	0	0	0	0	0	3	
Total Volume	0	2	1	0	3	1	0	3	0	4	1	2	0	0	3	0	0	0	0	0	10	
% Approach Total	0.0	66.7	33.3	0.0		25.0	0.0	75.0	0.0		33.3	66.7	0.0	0.0		0.0	0.0	0.0	0.0			
PHF	0.000	0.500	0.250	0.000	0.375	0.250	0.000	0.375	0.000	0.333	0.250	0.500	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.500	
Entering Leg	0	2	1	0	3	1	0	3	0	4	1	2	0	0	3	0	0	0	0	0	10	
Exiting Leg						3					2					5					0	10
Total						6					6					8					0	20

PDI File #: **186634 FF**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Fort Pond Road W: Woods Lane**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



Bicycles (on Roadway and Crosswalks)

	Lunenburg Road (Route 70)							Fort Pond Road							Lunenburg Road (Route 70)							Woods Lane							Total
	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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	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 04:00 PM to 06:00 PM begins at:

	Lunenburg Road (Route 70)							Fort Pond Road							Lunenburg Road (Route 70)							Woods Lane							Total
	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	
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	
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	
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	
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	
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	
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	
% 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	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	
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	
Exiting Leg	0							0							0							0							0
Total	0							0							0							0							0

PDI File #: **186634 FF**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Fort Pond Road W: Woods Lane**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Pedestrians

	Lunenburg Road (Route 70)							Fort Pond Road							Lunenburg Road (Route 70)							Woods Lane							Total
	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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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	
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 04:00 PM to 06:00 PM begins at:

4:00 PM	Lunenburg Road (Route 70)							Fort Pond Road							Lunenburg Road (Route 70)							Woods Lane							Total
	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	
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	
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	
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	
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	
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	
% 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	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	
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	
Exiting Leg	0							0							0							0							0
Total	0							0							0							0							0

PDI File #: **186634 G**
 Location: **N: Route 2 EB Ramps**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars and Heavy Vehicles (Combined)

	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	27	4	0	31	0	23	0	23	26	91	0	117	171
7:15 AM	13	1	0	14	0	16	0	16	33	98	0	131	161
7:30 AM	20	4	1	25	0	11	0	11	30	90	0	120	156
7:45 AM	28	2	0	30	0	11	0	11	30	81	0	111	152
Total	88	11	1	100	0	61	0	61	119	360	0	479	640
8:00 AM	28	3	0	31	0	18	0	18	24	67	0	91	140
8:15 AM	19	2	0	21	0	13	0	13	21	63	0	84	118
8:30 AM	31	2	0	33	0	19	0	19	11	44	0	55	107
8:45 AM	48	3	0	51	1	18	0	19	10	38	0	48	118
Total	126	10	0	136	1	68	0	69	66	212	0	278	483
Grand Total	214	21	1	236	1	129	0	130	185	572	0	757	1123
Approach %	90.7	8.9	0.4		0.8	99.2	0.0		24.4	75.6	0.0		
Total %	19.1	1.9	0.1	21.0	0.1	11.5	0.0	11.6	16.5	50.9	0.0	67.4	
Exiting Leg Total				574				206				343	1123
Cars	186	21	1	208	1	127	0	128	180	532	0	712	1048
% Cars	86.9	100.0	100.0	88.1	100.0	98.4	0.0	98.5	97.3	93.0	0.0	94.1	93.3
Exiting Leg Total				534				201				313	1048
Heavy Vehicles	28	0	0	28	0	2	0	2	5	40	0	45	75
% Heavy Vehicles	13.1	0.0	0.0	11.9	0.0	1.6	0.0	1.5	2.7	7.0	0.0	5.9	6.7
Exiting Leg Total				40				5				30	75

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	27	4	0	31	0	23	0	23	26	91	0	117	171
7:15 AM	13	1	0	14	0	16	0	16	33	98	0	131	161
7:30 AM	20	4	1	25	0	11	0	11	30	90	0	120	156
7:45 AM	28	2	0	30	0	11	0	11	30	81	0	111	152
Total Volume	88	11	1	100	0	61	0	61	119	360	0	479	640
% Approach Total	88.0	11.0	1.0		0.0	100.0	0.0		24.8	75.2	0.0		
PHF	0.786	0.688	0.250	0.806	0.000	0.663	0.000	0.663	0.902	0.918	0.000	0.914	0.936
Cars	73	11	1	85	0	60	0	60	114	332	0	446	591
Cars %	83.0	100.0	100.0	85.0	0.0	98.4	0.0	98.4	95.8	92.2	0.0	93.1	92.3
Heavy Vehicles	15	0	0	15	0	1	0	1	5	28	0	33	49
Heavy Vehicles %	17.0	0.0	0.0	15.0	0.0	1.6	0.0	1.6	4.2	7.8	0.0	6.9	7.7
Cars Enter Leg	73	11	1	85	0	60	0	60	114	332	0	446	591
Heavy Enter Leg	15	0	0	15	0	1	0	1	5	28	0	33	49
Total Entering Leg	88	11	1	100	0	61	0	61	119	360	0	479	640
Cars Exiting Leg				333				125				133	591
Heavy Exiting Leg				28				5				16	49
Total Exiting Leg				361				130				149	640

PDI File #: **186634 G**
 Location: **N: Route 2 EB Ramps**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**



Cars-Combined (Motorcycles, Cars, Light Goods)

Class:

	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	23	4	0	27	0	22	0	22	25	85	0	110	159
7:15 AM	11	1	0	12	0	16	0	16	31	89	0	120	148
7:30 AM	15	4	1	20	0	11	0	11	30	79	0	109	140
7:45 AM	24	2	0	26	0	11	0	11	28	79	0	107	144
Total	73	11	1	85	0	60	0	60	114	332	0	446	591
8:00 AM	24	3	0	27	0	18	0	18	24	65	0	89	134
8:15 AM	17	2	0	19	0	13	0	13	21	59	0	80	112
8:30 AM	29	2	0	31	0	19	0	19	11	38	0	49	99
8:45 AM	43	3	0	46	1	17	0	18	10	38	0	48	112
Total	113	10	0	123	1	67	0	68	66	200	0	266	457
Grand Total	186	21	1	208	1	127	0	128	180	532	0	712	1048
Approach %	89.4	10.1	0.5		0.8	99.2	0.0		25.3	74.7	0.0		
Total %	17.7	2.0	0.1	19.8	0.1	12.1	0.0	12.2	17.2	50.8	0.0	67.9	
Exiting Leg Total				534				201				313	1048

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	23	4	0	27	0	22	0	22	25	85	0	110	159
7:15 AM	11	1	0	12	0	16	0	16	31	89	0	120	148
7:30 AM	15	4	1	20	0	11	0	11	30	79	0	109	140
7:45 AM	24	2	0	26	0	11	0	11	28	79	0	107	144
Total Volume	73	11	1	85	0	60	0	60	114	332	0	446	591
% Approach Total	85.9	12.9	1.2		0.0	100.0	0.0		25.6	74.4	0.0		
PHF	0.760	0.688	0.250	0.787	0.000	0.682	0.000	0.682	0.919	0.933	0.000	0.929	0.929
Entering Leg	73	11	1	85	0	60	0	60	114	332	0	446	591
Exiting Leg				333				125				133	591
Total				418				185				579	1182

PDI File #: **186634 G**
 Location: **N: Route 2 EB Ramps**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**



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

	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	4	0	0	4	0	1	0	1	1	6	0	7	12
7:15 AM	2	0	0	2	0	0	0	0	2	9	0	11	13
7:30 AM	5	0	0	5	0	0	0	0	0	11	0	11	16
7:45 AM	4	0	0	4	0	0	0	0	2	2	0	4	8
Total	15	0	0	15	0	1	0	1	5	28	0	33	49
8:00 AM	4	0	0	4	0	0	0	0	0	2	0	2	6
8:15 AM	2	0	0	2	0	0	0	0	0	4	0	4	6
8:30 AM	2	0	0	2	0	0	0	0	0	6	0	6	8
8:45 AM	5	0	0	5	0	1	0	1	0	0	0	0	6
Total	13	0	0	13	0	1	0	1	0	12	0	12	26
Grand Total	28	0	0	28	0	2	0	2	5	40	0	45	75
Approach %	100.0	0.0	0.0		0.0	100.0	0.0		11.1	88.9	0.0		
Total %	37.3	0.0	0.0	37.3	0.0	2.7	0.0	2.7	6.7	53.3	0.0	60.0	
Exiting Leg Total				40				5				30	75
Buses	1	0	0	1	0	0	0	0	2	1	0	3	4
% Buses	3.6	0.0	0.0	3.6	0.0	0.0	0.0	0.0	40.0	2.5	0.0	6.7	5.3
Exiting Leg Total				1				2				1	4
Single-Unit Trucks	21	0	0	21	0	2	0	2	3	32	0	35	58
% Single-Unit	75.0	0.0	0.0	75.0	0.0	100.0	0.0	100.0	60.0	80.0	0.0	77.8	77.3
Exiting Leg Total				32				3				23	58
Articulated Trucks	6	0	0	6	0	0	0	0	0	7	0	7	13
% Articulated	21.4	0.0	0.0	21.4	0.0	0.0	0.0	0.0	0.0	17.5	0.0	15.6	17.3
Exiting Leg Total				7				0				6	13

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	4	0	0	4	0	1	0	1	1	6	0	7	12
7:15 AM	2	0	0	2	0	0	0	0	2	9	0	11	13
7:30 AM	5	0	0	5	0	0	0	0	0	11	0	11	16
7:45 AM	4	0	0	4	0	0	0	0	2	2	0	4	8
Total Volume	15	0	0	15	0	1	0	1	5	28	0	33	49
% Approach Total	100.0	0.0	0.0		0.0	100.0	0.0		15.2	84.8	0.0		
PHF	0.750	0.000	0.000	0.750	0.000	0.250	0.000	0.250	0.625	0.636	0.000	0.750	0.766
Buses	1	0	0	1	0	0	0	0	2	0	0	2	3
Buses %	6.7	0.0	0.0	6.7	0.0	0.0	0.0	0.0	40.0	0.0	0.0	6.1	6.1
Single-Unit Trucks	11	0	0	11	0	1	0	1	3	23	0	26	38
Single-Unit %	73.3	0.0	0.0	73.3	0.0	100.0	0.0	100.0	60.0	82.1	0.0	78.8	77.6
Articulated Trucks	3	0	0	3	0	0	0	0	0	5	0	5	8
Articulated %	20.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	17.9	0.0	15.2	16.3
Buses	1	0	0	1	0	0	0	0	2	0	0	2	3
Single-Unit Trucks	11	0	0	11	0	1	0	1	3	23	0	26	38
Articulated Trucks	3	0	0	3	0	0	0	0	0	5	0	5	8
Total Entering Leg	15	0	0	15	0	1	0	1	5	28	0	33	49
Buses				0				2				1	3
Single-Unit Trucks				23				3				12	38
Articulated Trucks				5				0				3	8
Total Exiting Leg				28				5				16	49

PDI File #: **186634 G**
 Location: **N: Route 2 EB Ramps**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Cars

	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	14	2	0	16	0	19	0	19	22	72	0	94	129
7:15 AM	5	1	0	6	0	10	0	10	26	74	0	100	116
7:30 AM	10	3	1	14	0	9	0	9	26	67	0	93	116
7:45 AM	20	2	0	22	0	8	0	8	22	73	0	95	125
Total	49	8	1	58	0	46	0	46	96	286	0	382	486
8:00 AM	22	3	0	25	0	15	0	15	20	51	0	71	111
8:15 AM	13	1	0	14	0	12	0	12	16	48	0	64	90
8:30 AM	25	2	0	27	0	18	0	18	10	33	0	43	88
8:45 AM	38	2	0	40	1	14	0	15	9	34	0	43	98
Total	98	8	0	106	1	59	0	60	55	166	0	221	387
Grand Total	147	16	1	164	1	105	0	106	151	452	0	603	873
Approach %	89.6	9.8	0.6		0.9	99.1	0.0		25.0	75.0	0.0		
Total %	16.8	1.8	0.1	18.8	0.1	12.0	0.0	12.1	17.3	51.8	0.0	69.1	
Exiting Leg Total				454				167				252	873

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	14	2	0	16	0	19	0	19	22	72	0	94	129
7:15 AM	5	1	0	6	0	10	0	10	26	74	0	100	116
7:30 AM	10	3	1	14	0	9	0	9	26	67	0	93	116
7:45 AM	20	2	0	22	0	8	0	8	22	73	0	95	125
Total Volume	49	8	1	58	0	46	0	46	96	286	0	382	486
% Approach Total	84.5	13.8	1.7		0.0	100.0	0.0		25.1	74.9	0.0		
PHF	0.613	0.667	0.250	0.659	0.000	0.605	0.000	0.605	0.923	0.966	0.000	0.955	0.942
Entering Leg	49	8	1	58	0	46	0	46	96	286	0	382	486
Exiting Leg				287				104				95	486
Total				345				150				477	972

PDI File #: **186634 G**
 Location: **N: Route 2 EB Ramps**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Class:

Light Goods Vehicle

	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	9	2	0	11	0	3	0	3	3	13	0	16	30
7:15 AM	6	0	0	6	0	6	0	6	5	15	0	20	32
7:30 AM	5	1	0	6	0	2	0	2	4	12	0	16	24
7:45 AM	4	0	0	4	0	3	0	3	6	6	0	12	19
Total	24	3	0	27	0	14	0	14	18	46	0	64	105
8:00 AM	2	0	0	2	0	3	0	3	4	14	0	18	23
8:15 AM	4	1	0	5	0	1	0	1	5	11	0	16	22
8:30 AM	4	0	0	4	0	1	0	1	1	5	0	6	11
8:45 AM	5	1	0	6	0	3	0	3	1	4	0	5	14
Total	15	2	0	17	0	8	0	8	11	34	0	45	70
Grand Total	39	5	0	44	0	22	0	22	29	80	0	109	175
Approach %	88.6	11.4	0.0		0.0	100.0	0.0		26.6	73.4	0.0		
Total %	22.3	2.9	0.0	25.1	0.0	12.6	0.0	12.6	16.6	45.7	0.0	62.3	
Exiting Leg Total				80				34				61	175

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	9	2	0	11	0	3	0	3	3	13	0	16	30
7:15 AM	6	0	0	6	0	6	0	6	5	15	0	20	32
7:30 AM	5	1	0	6	0	2	0	2	4	12	0	16	24
7:45 AM	4	0	0	4	0	3	0	3	6	6	0	12	19
Total Volume	24	3	0	27	0	14	0	14	18	46	0	64	105
% Approach Total	88.9	11.1	0.0		0.0	100.0	0.0		28.1	71.9	0.0		
PHF	0.667	0.375	0.000	0.614	0.000	0.583	0.000	0.583	0.750	0.767	0.000	0.800	0.820
Entering Leg	24	3	0	27	0	14	0	14	18	46	0	64	105
Exiting Leg				46				21				38	105
Total				73				35				102	210

PDI File #: **186634 G**
 Location: **N: Route 2 EB Ramps**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdillc.com

Buses

	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	1
7:30 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	1	0	0	1	0	0	0	0	2	0	0	2	3
8:00 AM	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
8:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	1	0	1	1
Grand Total	1	0	0	1	0	0	0	0	2	1	0	3	4
Approach %	100.0	0.0	0.0		0.0	0.0	0.0		66.7	33.3	0.0		
Total %	25.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	50.0	25.0	0.0	75.0	
Exiting Leg Total				1				2				1	4

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	1
7:30 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	1	0	0	1	1
Total Volume	1	0	0	1	0	0	0	0	2	0	0	2	3
% Approach Total	100.0	0.0	0.0		0.0	0.0	0.0		100.0	0.0	0.0		
PHF	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500	0.750
Entering Leg	1	0	0	1	0	0	0	0	2	0	0	2	3
Exiting Leg				0				2				1	3
Total				1				2				3	6

PDI File #: **186634 G**
 Location: **N: Route 2 EB Ramps**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Single-Unit Trucks

	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	4	0	0	4	0	1	0	1	1	5	0	6	11
7:15 AM	1	0	0	1	0	0	0	0	1	6	0	7	8
7:30 AM	3	0	0	3	0	0	0	0	0	10	0	10	13
7:45 AM	3	0	0	3	0	0	0	0	1	2	0	3	6
Total	11	0	0	11	0	1	0	1	3	23	0	26	38
8:00 AM	3	0	0	3	0	0	0	0	0	2	0	2	5
8:15 AM	2	0	0	2	0	0	0	0	0	4	0	4	6
8:30 AM	1	0	0	1	0	0	0	0	0	3	0	3	4
8:45 AM	4	0	0	4	0	1	0	1	0	0	0	0	5
Total	10	0	0	10	0	1	0	1	0	9	0	9	20
Grand Total	21	0	0	21	0	2	0	2	3	32	0	35	58
Approach %	100.0	0.0	0.0		0.0	100.0	0.0		8.6	91.4	0.0		
Total %	36.2	0.0	0.0	36.2	0.0	3.4	0.0	3.4	5.2	55.2	0.0	60.3	
Exiting Leg Total				32				3				23	58

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	4	0	0	4	0	1	0	1	1	5	0	6	11
7:15 AM	1	0	0	1	0	0	0	0	1	6	0	7	8
7:30 AM	3	0	0	3	0	0	0	0	0	10	0	10	13
7:45 AM	3	0	0	3	0	0	0	0	1	2	0	3	6
Total Volume	11	0	0	11	0	1	0	1	3	23	0	26	38
% Approach Total	100.0	0.0	0.0		0.0	100.0	0.0		11.5	88.5	0.0		
PHF	0.688	0.000	0.000	0.688	0.000	0.250	0.000	0.250	0.750	0.575	0.000	0.650	0.731
Entering Leg	11	0	0	11	0	1	0	1	3	23	0	26	38
Exiting Leg				23				3				12	38
Total				34				4				38	76

PDI File #: **186634 G**
 Location: **N: Route 2 EB Ramps**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Articulated Trucks

	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
7:15 AM	1	0	0	1	0	0	0	0	0	3	0	3	4
7:30 AM	1	0	0	1	0	0	0	0	0	1	0	1	2
7:45 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	3	0	0	3	0	0	0	0	0	5	0	5	8
8:00 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	1	0	0	1	0	0	0	0	0	2	0	2	3
8:45 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	3	0	0	3	0	0	0	0	0	2	0	2	5
Grand Total	6	0	0	6	0	0	0	0	0	7	0	7	13
Approach %	100.0	0.0	0.0		0.0	0.0	0.0		0.0	100.0	0.0		
Total %	46.2	0.0	0.0	46.2	0.0	0.0	0.0	0.0	0.0	53.8	0.0	53.8	
Exiting Leg Total				7				0				6	13

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
7:15 AM	1	0	0	1	0	0	0	0	0	3	0	3	4
7:30 AM	1	0	0	1	0	0	0	0	0	1	0	1	2
7:45 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
Total Volume	3	0	0	3	0	0	0	0	0	5	0	5	8
% Approach Total	100.0	0.0	0.0		0.0	0.0	0.0		0.0	100.0	0.0		
PHF	0.750	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.417	0.000	0.417	0.500
Entering Leg	3	0	0	3	0	0	0	0	0	5	0	5	8
Exiting Leg				5				0				3	8
Total				8				0				8	16

PDI File #: 186634 G
 Location: N: Route 2 EB Ramps
 Location: E: Old Union Turnpike W: Old Union Turnpike
 City, State: Lancaster, MA
 Client: TEC/ L. Oltman
 Site Code: T0852
 Count Date: Wednesday, December 19, 2018
 Start Time: 7:00 AM
 End Time: 9:00 AM
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Bicycles (on Roadway and Crosswalks)

	Route 2 EB Ramps						Old Union Turnpike						Old Union Turnpike						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	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
7:30 AM	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
Total	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
8:15 AM	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
8:45 AM	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
Grand Total	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
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
Exiting Leg Total	0						0						0						0

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Route 2 EB Ramps						Old Union Turnpike						Old Union Turnpike						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	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
7:30 AM	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
Total Volume	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
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
Entering Leg	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
Total	0						0						0						0

PDI File #: 186634 G
 Location: N: Route 2 EB Ramps
 Location: E: Old Union Turnpike W: Old Union Turnpike
 City, State: Lancaster, MA
 Client: TEC/ L. Oltman
 Site Code: T0852
 Count Date: Wednesday, December 19, 2018
 Start Time: 7:00 AM
 End Time: 9:00 AM
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Pedestrians

	Route 2 EB Ramps						Old Union Turnpike						Old Union Turnpike						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	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
7:30 AM	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
Total	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
8:15 AM	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
8:45 AM	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
Grand Total	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
Total %	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

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Route 2 EB Ramps						Old Union Turnpike						Old Union Turnpike						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	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
7:30 AM	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
Total Volume	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
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
Entering Leg	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
Total	0						0						0						0

PDI File #: **186634 GG**
 Location: **N: Route 2 EB Ramps**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



Cars and Heavy Vehicles (Combined)

	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:00 PM	48	6	0	54	1	31	0	32	22	27	0	49	135
4:15 PM	40	3	0	43	1	29	0	30	14	27	0	41	114
4:30 PM	50	3	0	53	0	21	0	21	24	21	0	45	119
4:45 PM	42	5	0	47	0	22	0	22	14	22	0	36	105
Total	180	17	0	197	2	103	0	105	74	97	0	171	473
5:00 PM	56	3	0	59	0	29	0	29	20	22	0	42	130
5:15 PM	53	3	0	56	1	27	0	28	24	15	0	39	123
5:30 PM	46	2	0	48	0	19	0	19	13	20	0	33	100
5:45 PM	43	3	0	46	0	15	0	15	9	13	0	22	83
Total	198	11	0	209	1	90	0	91	66	70	0	136	436
Grand Total	378	28	0	406	3	193	0	196	140	167	0	307	909
Approach %	93.1	6.9	0.0		1.5	98.5	0.0		45.6	54.4	0.0		
Total %	41.6	3.1	0.0	44.7	0.3	21.2	0.0	21.6	15.4	18.4	0.0	33.8	
Exiting Leg Total				170				168				571	909
Cars	361	28	0	389	3	189	0	192	137	157	0	294	875
% Cars	95.5	100.0	0.0	95.8	100.0	97.9	0.0	98.0	97.9	94.0	0.0	95.8	96.3
Exiting Leg Total				160				165				550	875
Heavy Vehicles	17	0	0	17	0	4	0	4	3	10	0	13	34
% Heavy Vehicles	4.5	0.0	0.0	4.2	0.0	2.1	0.0	2.0	2.1	6.0	0.0	4.2	3.7
Exiting Leg Total				10				3				21	34

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:30 PM	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:30 PM	50	3	0	53	0	21	0	21	24	21	0	45	119
4:45 PM	42	5	0	47	0	22	0	22	14	22	0	36	105
5:00 PM	56	3	0	59	0	29	0	29	20	22	0	42	130
5:15 PM	53	3	0	56	1	27	0	28	24	15	0	39	123
Total Volume	201	14	0	215	1	99	0	100	82	80	0	162	477
% Approach Total	93.5	6.5	0.0		1.0	99.0	0.0		50.6	49.4	0.0		
PHF	0.897	0.700	0.000	0.911	0.250	0.853	0.000	0.862	0.854	0.909	0.000	0.900	0.917
Cars	190	14	0	204	1	99	0	100	80	75	0	155	459
Cars %	94.5	100.0	0.0	94.9	100.0	100.0	0.0	100.0	97.6	93.8	0.0	95.7	96.2
Heavy Vehicles	11	0	0	11	0	0	0	0	2	5	0	7	18
Heavy Vehicles %	5.5	0.0	0.0	5.1	0.0	0.0	0.0	0.0	2.4	6.3	0.0	4.3	3.8
Cars Enter Leg	190	14	0	204	1	99	0	100	80	75	0	155	459
Heavy Enter Leg	11	0	0	11	0	0	0	0	2	5	0	7	18
Total Entering Leg	201	14	0	215	1	99	0	100	82	80	0	162	477
Cars Exiting Leg				76				94				289	459
Heavy Exiting Leg				5				2				11	18
Total Exiting Leg				81				96				300	477

PDI File #: **186634 GG**
 Location: **N: Route 2 EB Ramps**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**



Class: **Cars-Combined (Motorcycles, Cars, Light Goods)**

	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:00 PM	45	6	0	51	1	29	0	30	22	25	0	47	128
4:15 PM	38	3	0	41	1	28	0	29	14	24	0	38	108
4:30 PM	44	3	0	47	0	21	0	21	24	18	0	42	110
4:45 PM	41	5	0	46	0	22	0	22	14	22	0	36	104
Total	168	17	0	185	2	100	0	102	74	89	0	163	450
5:00 PM	54	3	0	57	0	29	0	29	19	20	0	39	125
5:15 PM	51	3	0	54	1	27	0	28	23	15	0	38	120
5:30 PM	45	2	0	47	0	19	0	19	13	20	0	33	99
5:45 PM	43	3	0	46	0	14	0	14	8	13	0	21	81
Total	193	11	0	204	1	89	0	90	63	68	0	131	425
Grand Total	361	28	0	389	3	189	0	192	137	157	0	294	875
Approach %	92.8	7.2	0.0		1.6	98.4	0.0		46.6	53.4	0.0		
Total %	41.3	3.2	0.0	44.5	0.3	21.6	0.0	21.9	15.7	17.9	0.0	33.6	
Exiting Leg Total				160				165				550	875

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:30 PM	44	3	0	47	0	21	0	21	24	18	0	42	110
4:45 PM	41	5	0	46	0	22	0	22	14	22	0	36	104
5:00 PM	54	3	0	57	0	29	0	29	19	20	0	39	125
5:15 PM	51	3	0	54	1	27	0	28	23	15	0	38	120
Total Volume	190	14	0	204	1	99	0	100	80	75	0	155	459
% Approach Total	93.1	6.9	0.0		1.0	99.0	0.0		51.6	48.4	0.0		
PHF	0.880	0.700	0.000	0.895	0.250	0.853	0.000	0.862	0.833	0.852	0.000	0.923	0.918
Entering Leg	190	14	0	204	1	99	0	100	80	75	0	155	459
Exiting Leg				76				94				289	459
Total				280				194				444	918

PDI File #: **186634 GG**
 Location: **N: Route 2 EB Ramps**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**



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

	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:00 PM	3	0	0	3	0	2	0	2	0	2	0	2	7
4:15 PM	2	0	0	2	0	1	0	1	0	3	0	3	6
4:30 PM	6	0	0	6	0	0	0	0	0	3	0	3	9
4:45 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	12	0	0	12	0	3	0	3	0	8	0	8	23
5:00 PM	2	0	0	2	0	0	0	0	1	2	0	3	5
5:15 PM	2	0	0	2	0	0	0	0	1	0	0	1	3
5:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	1	0	1	1	0	0	1	2
Total	5	0	0	5	0	1	0	1	3	2	0	5	11
Grand Total	17	0	0	17	0	4	0	4	3	10	0	13	34
Approach %	100.0	0.0	0.0		0.0	100.0	0.0		23.1	76.9	0.0		
Total %	50.0	0.0	0.0	50.0	0.0	11.8	0.0	11.8	8.8	29.4	0.0	38.2	
Exiting Leg Total				10				3				21	34
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total				0				0				0	0
Single-Unit Trucks	11	0	0	11	0	4	0	4	3	6	0	9	24
% Single-Unit	64.7	0.0	0.0	64.7	0.0	100.0	0.0	100.0	100.0	60.0	0.0	69.2	70.6
Exiting Leg Total				6				3				15	24
Articulated Trucks	6	0	0	6	0	0	0	0	0	4	0	4	10
% Articulated	35.3	0.0	0.0	35.3	0.0	0.0	0.0	0.0	0.0	40.0	0.0	30.8	29.4
Exiting Leg Total				4				0				6	10

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:00 PM	3	0	0	3	0	2	0	2	0	2	0	2	7
4:15 PM	2	0	0	2	0	1	0	1	0	3	0	3	6
4:30 PM	6	0	0	6	0	0	0	0	0	3	0	3	9
4:45 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
Total Volume	12	0	0	12	0	3	0	3	0	8	0	8	23
% Approach Total	100.0	0.0	0.0		0.0	100.0	0.0		0.0	100.0	0.0		
PHF	0.500	0.000	0.000	0.500	0.000	0.375	0.000	0.375	0.000	0.667	0.000	0.667	0.639
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Single-Unit Trucks	8	0	0	8	0	3	0	3	0	4	0	4	15
Single-Unit %	66.7	0.0	0.0	66.7	0.0	100.0	0.0	100.0	0.0	50.0	0.0	50.0	65.2
Articulated Trucks	4	0	0	4	0	0	0	0	0	4	0	4	8
Articulated %	33.3	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	50.0	0.0	50.0	34.8
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	8	0	0	8	0	3	0	3	0	4	0	4	15
Articulated Trucks	4	0	0	4	0	0	0	0	0	4	0	4	8
Total Entering Leg	12	0	0	12	0	3	0	3	0	8	0	8	23
Buses				0				0				0	0
Single-Unit Trucks				4				0				11	15
Articulated Trucks				4				0				4	8
Total Exiting Leg				8				0				15	23

PDI File #: **186634 GG**
 Location: **N: Route 2 EB Ramps**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



Cars

	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:00 PM	39	6	0	45	1	23	0	24	19	18	0	37	106
4:15 PM	33	2	0	35	1	26	0	27	9	20	0	29	91
4:30 PM	38	3	0	41	0	16	0	16	18	15	0	33	90
4:45 PM	38	5	0	43	0	19	0	19	12	19	0	31	93
Total	148	16	0	164	2	84	0	86	58	72	0	130	380
5:00 PM	54	2	0	56	0	21	0	21	13	19	0	32	109
5:15 PM	51	2	0	53	1	24	0	25	18	14	0	32	110
5:30 PM	43	1	0	44	0	14	0	14	8	19	0	27	85
5:45 PM	42	2	0	44	0	10	0	10	7	13	0	20	74
Total	190	7	0	197	1	69	0	70	46	65	0	111	378
Grand Total	338	23	0	361	3	153	0	156	104	137	0	241	758
Approach %	93.6	6.4	0.0		1.9	98.1	0.0		43.2	56.8	0.0		
Total %	44.6	3.0	0.0	47.6	0.4	20.2	0.0	20.6	13.7	18.1	0.0	31.8	
Exiting Leg Total				140				127				491	758

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:30 PM	38	3	0	41	0	16	0	16	18	15	0	33	90
4:45 PM	38	5	0	43	0	19	0	19	12	19	0	31	93
5:00 PM	54	2	0	56	0	21	0	21	13	19	0	32	109
5:15 PM	51	2	0	53	1	24	0	25	18	14	0	32	110
Total Volume	181	12	0	193	1	80	0	81	61	67	0	128	402
% Approach Total	93.8	6.2	0.0		1.2	98.8	0.0		47.7	52.3	0.0		
PHF	0.838	0.600	0.000	0.862	0.250	0.833	0.000	0.810	0.847	0.882	0.000	0.970	0.914
Entering Leg	181	12	0	193	1	80	0	81	61	67	0	128	402
Exiting Leg				68				73				261	402
Total				261				154				389	804

PDI File #: **186634 GG**
 Location: **N: Route 2 EB Ramps**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Class:

Light Goods Vehicle

	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:00 PM	6	0	0	6	0	6	0	6	3	7	0	10	22
4:15 PM	5	1	0	6	0	2	0	2	5	4	0	9	17
4:30 PM	6	0	0	6	0	5	0	5	6	3	0	9	20
4:45 PM	3	0	0	3	0	3	0	3	2	3	0	5	11
Total	20	1	0	21	0	16	0	16	16	17	0	33	70
5:00 PM	0	1	0	1	0	8	0	8	6	1	0	7	16
5:15 PM	0	1	0	1	0	3	0	3	5	1	0	6	10
5:30 PM	2	1	0	3	0	5	0	5	5	1	0	6	14
5:45 PM	1	1	0	2	0	4	0	4	1	0	0	1	7
Total	3	4	0	7	0	20	0	20	17	3	0	20	47
Grand Total	23	5	0	28	0	36	0	36	33	20	0	53	117
Approach %	82.1	17.9	0.0		0.0	100.0	0.0		62.3	37.7	0.0		
Total %	19.7	4.3	0.0	23.9	0.0	30.8	0.0	30.8	28.2	17.1	0.0	45.3	
Exiting Leg Total				20				38				59	117

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:00 PM	6	0	0	6	0	6	0	6	3	7	0	10	22
4:15 PM	5	1	0	6	0	2	0	2	5	4	0	9	17
4:30 PM	6	0	0	6	0	5	0	5	6	3	0	9	20
4:45 PM	3	0	0	3	0	3	0	3	2	3	0	5	11
Total Volume	20	1	0	21	0	16	0	16	16	17	0	33	70
% Approach Total	95.2	4.8	0.0		0.0	100.0	0.0		48.5	51.5	0.0		
PHF	0.833	0.250	0.000	0.875	0.000	0.667	0.000	0.667	0.667	0.607	0.000	0.825	0.795
Entering Leg	20	1	0	21	0	16	0	16	16	17	0	33	70
Exiting Leg				17				17				36	70
Total				38				33				69	140

PDI File #: **186634 GG**
 Location: **N: Route 2 EB Ramps**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdillc.com

Buses

	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total	
	from North				from East				from West					
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total		
4:00 PM	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
4:30 PM	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
Total	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
5:15 PM	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
5:45 PM	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
Grand Total	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			
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		
Exiting Leg Total	0				0				0				0	

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total	
	from North				from East				from West					
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total		
4:00 PM	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
4:30 PM	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
Total Volume	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			
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
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0				0				0				0	
Total	0				0				0				0	

PDI File #: **186634 GG**
 Location: **N: Route 2 EB Ramps**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Single-Unit Trucks

	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:00 PM	2	0	0	2	0	2	0	2	0	2	0	2	6
4:15 PM	2	0	0	2	0	1	0	1	0	1	0	1	4
4:30 PM	4	0	0	4	0	0	0	0	0	1	0	1	5
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	8	0	0	8	0	3	0	3	0	4	0	4	15
5:00 PM	1	0	0	1	0	0	0	0	1	2	0	3	4
5:15 PM	2	0	0	2	0	0	0	0	1	0	0	1	3
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	1	0	1	1	0	0	1	2
Total	3	0	0	3	0	1	0	1	3	2	0	5	9
Grand Total	11	0	0	11	0	4	0	4	3	6	0	9	24
Approach %	100.0	0.0	0.0		0.0	100.0	0.0		33.3	66.7	0.0		
Total %	45.8	0.0	0.0	45.8	0.0	16.7	0.0	16.7	12.5	25.0	0.0	37.5	
Exiting Leg Total				6				3				15	24

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:00 PM	2	0	0	2	0	2	0	2	0	2	0	2	6
4:15 PM	2	0	0	2	0	1	0	1	0	1	0	1	4
4:30 PM	4	0	0	4	0	0	0	0	0	1	0	1	5
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	8	0	0	8	0	3	0	3	0	4	0	4	15
% Approach Total	100.0	0.0	0.0		0.0	100.0	0.0		0.0	100.0	0.0		
PHF	0.500	0.000	0.000	0.500	0.000	0.375	0.000	0.375	0.000	0.500	0.000	0.500	0.625
Entering Leg	8	0	0	8	0	3	0	3	0	4	0	4	15
Exiting Leg				4				0				11	15
Total				12				3				15	30

PDI File #: **186634 GG**
 Location: **N: Route 2 EB Ramps**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdillc.com

Articulated Trucks

	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:00 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	2	0	2	2
4:30 PM	2	0	0	2	0	0	0	0	0	2	0	2	4
4:45 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	4	0	0	4	0	0	0	0	0	4	0	4	8
5:00 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	1	0	0	1	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
Total	2	0	0	2	0	0	0	0	0	0	0	0	2
Grand Total	6	0	0	6	0	0	0	0	0	4	0	4	10
Approach %	100.0	0.0	0.0		0.0	0.0	0.0		0.0	100.0	0.0		
Total %	60.0	0.0	0.0	60.0	0.0	0.0	0.0	0.0	0.0	40.0	0.0	40.0	
Exiting Leg Total				4				0				6	10

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Route 2 EB Ramps				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
4:00 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	2	0	2	2
4:30 PM	2	0	0	2	0	0	0	0	0	2	0	2	4
4:45 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
Total Volume	4	0	0	4	0	0	0	0	0	4	0	4	8
% Approach Total	100.0	0.0	0.0		0.0	0.0	0.0		0.0	100.0	0.0		
PHF	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.500	0.500
Entering Leg	4	0	0	4	0	0	0	0	0	4	0	4	8
Exiting Leg				4				0				4	8
Total				8				0				8	16

PDI File #: 186634 GG
 Location: N: Route 2 EB Ramps
 Location: E: Old Union Turnpike W: Old Union Turnpike
 City, State: Lancaster, MA
 Client: TEC/ L. Oltman
 Site Code: T0852
 Count Date: Wednesday, December 19, 2018
 Start Time: 4:00 PM
 End Time: 6:00 PM
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Bicycles (on Roadway and Crosswalks)

	Route 2 EB Ramps						Old Union Turnpike						Old Union Turnpike						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
4:00 PM	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
4:30 PM	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
Total	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
5:15 PM	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
5:45 PM	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
Grand Total	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
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
Exiting Leg Total	0						0						0						0

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Route 2 EB Ramps						Old Union Turnpike						Old Union Turnpike						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
4:00 PM	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
4:30 PM	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
Total Volume	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
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
Entering Leg	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
Total	0						0						0						0

PDI File #: **186634 GG**
 Location: **N: Route 2 EB Ramps**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/ L. Oltman**
 Site Code: **T0852**
 Count Date: **Wednesday, December 19, 2018**
 Start Time: **4:00 PM**
 End Time: **6:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Pedestrians

	Route 2 EB Ramps						Old Union Turnpike						Old Union Turnpike						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
4:00 PM	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
4:30 PM	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
Total	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
5:15 PM	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
5:45 PM	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
Grand Total	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
Total %	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

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Route 2 EB Ramps						Old Union Turnpike						Old Union Turnpike						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
4:00 PM	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
4:30 PM	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
Total Volume	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
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
Entering Leg	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
Total	0						0						0						0

PDI File #: **197132 C**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars and Heavy Vehicles (Combined)

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
11:00 AM	4	55	0	59	71	3	0	74	2	9	0	11	144
11:15 AM	4	67	0	71	94	1	0	95	3	4	0	7	173
11:30 AM	3	60	0	63	85	1	0	86	1	2	0	3	152
11:45 AM	6	101	0	107	73	2	0	75	3	6	0	9	191
Total	17	283	0	300	323	7	0	330	9	21	0	30	660
12:00 PM	8	132	0	140	71	1	0	72	2	7	0	9	221
12:15 PM	5	68	0	73	61	2	0	63	3	6	0	9	145
12:30 PM	5	59	0	64	52	1	0	53	1	4	0	5	122
12:45 PM	1	78	0	79	72	2	0	74	2	5	0	7	160
Total	19	337	0	356	256	6	0	262	8	22	0	30	648
Grand Total	36	620	0	656	579	13	0	592	17	43	0	60	1308
Approach %	5.5	94.5	0.0		97.8	2.2	0.0		28.3	71.7	0.0		
Total %	2.8	47.4	0.0	50.2	44.3	1.0	0.0	45.3	1.3	3.3	0.0	4.6	
Exiting Leg Total				622				637				49	1308
Cars	35	604	0	639	562	12	0	574	15	42	0	57	1270
% Cars	97.2	97.4	0.0	97.4	97.1	92.3	0.0	97.0	88.2	97.7	0.0	95.0	97.1
Exiting Leg Total				604				619				47	1270
Heavy Vehicles	1	16	0	17	17	1	0	18	2	1	0	3	38
% Heavy Vehicles	2.8	2.6	0.0	2.6	2.9	7.7	0.0	3.0	11.8	2.3	0.0	5.0	2.9
Exiting Leg Total				18				18				2	38

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

11:15 AM	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
11:15 AM	4	67	0	71	94	1	0	95	3	4	0	7	173
11:30 AM	3	60	0	63	85	1	0	86	1	2	0	3	152
11:45 AM	6	101	0	107	73	2	0	75	3	6	0	9	191
12:00 PM	8	132	0	140	71	1	0	72	2	7	0	9	221
Total Volume	21	360	0	381	323	5	0	328	9	19	0	28	737
% Approach Total	5.5	94.5	0.0		98.5	1.5	0.0		32.1	67.9	0.0		
PHF	0.656	0.682	0.000	0.680	0.859	0.625	0.000	0.863	0.750	0.679	0.000	0.778	0.834
Cars	20	354	0	374	315	5	0	320	8	18	0	26	720
Cars %	95.2	98.3	0.0	98.2	97.5	100.0	0.0	97.6	88.9	94.7	0.0	92.9	97.7
Heavy Vehicles	1	6	0	7	8	0	0	8	1	1	0	2	17
Heavy Vehicles %	4.8	1.7	0.0	1.8	2.5	0.0	0.0	2.4	11.1	5.3	0.0	7.1	2.3
Cars Enter Leg	20	354	0	374	315	5	0	320	8	18	0	26	720
Heavy Enter Leg	1	6	0	7	8	0	0	8	1	1	0	2	17
Total Entering Leg	21	360	0	381	323	5	0	328	9	19	0	28	737
Cars Exiting Leg				333				362				25	720
Heavy Exiting Leg				9				7				1	17
Total Exiting Leg				342				369				26	737

PDI File #: **197132 C**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



Cars

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
11:00 AM	4	51	0	55	67	2	0	69	1	9	0	10	134
11:15 AM	4	64	0	68	92	1	0	93	3	4	0	7	168
11:30 AM	2	60	0	62	82	1	0	83	1	2	0	3	148
11:45 AM	6	99	0	105	71	2	0	73	2	5	0	7	185
Total	16	274	0	290	312	6	0	318	7	20	0	27	635
12:00 PM	8	131	0	139	70	1	0	71	2	7	0	9	219
12:15 PM	5	65	0	70	59	2	0	61	3	6	0	9	140
12:30 PM	5	58	0	63	51	1	0	52	1	4	0	5	120
12:45 PM	1	76	0	77	70	2	0	72	2	5	0	7	156
Total	19	330	0	349	250	6	0	256	8	22	0	30	635
Grand Total	35	604	0	639	562	12	0	574	15	42	0	57	1270
Approach %	5.5	94.5	0.0		97.9	2.1	0.0		26.3	73.7	0.0		
Total %	2.8	47.6	0.0	50.3	44.3	0.9	0.0	45.2	1.2	3.3	0.0	4.5	
Exiting Leg Total				604				619				47	1270

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
11:15 AM	4	64	0	68	92	1	0	93	3	4	0	7	168
11:30 AM	2	60	0	62	82	1	0	83	1	2	0	3	148
11:45 AM	6	99	0	105	71	2	0	73	2	5	0	7	185
12:00 PM	8	131	0	139	70	1	0	71	2	7	0	9	219
Total Volume	20	354	0	374	315	5	0	320	8	18	0	26	720
% Approach Total	5.3	94.7	0.0		98.4	1.6	0.0		30.8	69.2	0.0		
PHF	0.625	0.676	0.000	0.673	0.856	0.625	0.000	0.860	0.667	0.643	0.000	0.722	0.822
Entering Leg	20	354	0	374	315	5	0	320	8	18	0	26	720
Exiting Leg				333				362				25	720
Total				707				682				51	1440

PDI File #: **197132 C**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

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

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
11:00 AM	0	4	0	4	4	1	0	5	1	0	0	1	10
11:15 AM	0	3	0	3	2	0	0	2	0	0	0	0	5
11:30 AM	1	0	0	1	3	0	0	3	0	0	0	0	4
11:45 AM	0	2	0	2	2	0	0	2	1	1	0	2	6
Total	1	9	0	10	11	1	0	12	2	1	0	3	25
12:00 PM	0	1	0	1	1	0	0	1	0	0	0	0	2
12:15 PM	0	3	0	3	2	0	0	2	0	0	0	0	5
12:30 PM	0	1	0	1	1	0	0	1	0	0	0	0	2
12:45 PM	0	2	0	2	2	0	0	2	0	0	0	0	4
Total	0	7	0	7	6	0	0	6	0	0	0	0	13
Grand Total	1	16	0	17	17	1	0	18	2	1	0	3	38
Approach %	5.9	94.1	0.0		94.4	5.6	0.0		66.7	33.3	0.0		
Total %	2.6	42.1	0.0	44.7	44.7	2.6	0.0	47.4	5.3	2.6	0.0	7.9	
Exiting Leg Total				18				18				2	38
Buses	0	0	0	0	1	0	0	1	0	0	0	0	1
% Buses	0.0	0.0	0.0	0.0	5.9	0.0	0.0	5.6	0.0	0.0	0.0	0.0	2.6
Exiting Leg Total				1				0				0	1
Single-Unit Trucks	1	10	0	11	12	1	0	13	2	1	0	3	27
% Single-Unit	100.0	62.5	0.0	64.7	70.6	100.0	0.0	72.2	100.0	100.0	0.0	100.0	71.1
Exiting Leg Total				13				12				2	27
Articulated Trucks	0	6	0	6	4	0	0	4	0	0	0	0	10
% Articulated	0.0	37.5	0.0	35.3	23.5	0.0	0.0	22.2	0.0	0.0	0.0	0.0	26.3
Exiting Leg Total				4				6				0	10

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

11:00 AM	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
11:00 AM	0	4	0	4	4	1	0	5	1	0	0	1	10
11:15 AM	0	3	0	3	2	0	0	2	0	0	0	0	5
11:30 AM	1	0	0	1	3	0	0	3	0	0	0	0	4
11:45 AM	0	2	0	2	2	0	0	2	1	1	0	2	6
Total Volume	1	9	0	10	11	1	0	12	2	1	0	3	25
% Approach Total	10.0	90.0	0.0		91.7	8.3	0.0		66.7	33.3	0.0		
PHF	0.250	0.563	0.000	0.625	0.688	0.250	0.000	0.600	0.500	0.250	0.000	0.375	0.625
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Single-Unit Trucks	1	6	0	7	7	1	0	8	2	1	0	3	18
Single-Unit %	100.0	66.7	0.0	70.0	63.6	100.0	0.0	66.7	100.0	100.0	0.0	100.0	72.0
Articulated Trucks	0	3	0	3	4	0	0	4	0	0	0	0	7
Articulated %	0.0	33.3	0.0	30.0	36.4	0.0	0.0	33.3	0.0	0.0	0.0	0.0	28.0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	1	6	0	7	7	1	0	8	2	1	0	3	18
Articulated Trucks	0	3	0	3	4	0	0	4	0	0	0	0	7
Total Entering Leg	1	9	0	10	11	1	0	12	2	1	0	3	25
Buses				0				0				0	0
Single-Unit Trucks				8				8				2	18
Articulated Trucks				4				3				0	7
Total Exiting Leg				12				11				2	25

PDI File #: **197132 C**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class: **Buses**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	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
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Grand Total	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Approach %	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	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0		
Exiting Leg Total				1				0						1

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

12:00 PM	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total Volume	0	0	0	0	1	0	0	1	0	0	0	0	0	1
% Approach Total	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	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000		0.250
Entering Leg	0	0	0	0	1	0	0	1	0	0	0	0		1
Exiting Leg				1				0						1
Total				1				1						2

PDI File #: **197132 C**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



Single-Unit Trucks

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
11:00 AM	0	3	0	3	2	1	0	3	1	0	0	1	7
11:15 AM	0	3	0	3	2	0	0	2	0	0	0	0	5
11:30 AM	1	0	0	1	1	0	0	1	0	0	0	0	2
11:45 AM	0	0	0	0	2	0	0	2	1	1	0	2	4
Total	1	6	0	7	7	1	0	8	2	1	0	3	18
12:00 PM	0	0	0	0	1	0	0	1	0	0	0	0	1
12:15 PM	0	2	0	2	2	0	0	2	0	0	0	0	4
12:30 PM	0	0	0	0	1	0	0	1	0	0	0	0	1
12:45 PM	0	2	0	2	1	0	0	1	0	0	0	0	3
Total	0	4	0	4	5	0	0	5	0	0	0	0	9
Grand Total	1	10	0	11	12	1	0	13	2	1	0	3	27
Approach %	9.1	90.9	0.0		92.3	7.7	0.0		66.7	33.3	0.0		
Total %	3.7	37.0	0.0	40.7	44.4	3.7	0.0	48.1	7.4	3.7	0.0	11.1	
Exiting Leg Total				13				12				2	27

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
11:00 AM	0	3	0	3	2	1	0	3	1	0	0	1	7
11:15 AM	0	3	0	3	2	0	0	2	0	0	0	0	5
11:30 AM	1	0	0	1	1	0	0	1	0	0	0	0	2
11:45 AM	0	0	0	0	2	0	0	2	1	1	0	2	4
Total Volume	1	6	0	7	7	1	0	8	2	1	0	3	18
% Approach Total	14.3	85.7	0.0		87.5	12.5	0.0		66.7	33.3	0.0		
PHF	0.250	0.500	0.000	0.583	0.875	0.250	0.000	0.667	0.500	0.250	0.000	0.375	0.643
Entering Leg	1	6	0	7	7	1	0	8	2	1	0	3	18
Exiting Leg				8				8				2	18
Total				15				16				5	36

PDI File #: **197132 C**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **W: McGovern Boulevard**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



Articulated Trucks

	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
11:00 AM	0	1	0	1	2	0	0	2	0	0	0	0	3
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	2	0	0	2	0	0	0	0	2
11:45 AM	0	2	0	2	0	0	0	0	0	0	0	0	2
Total	0	3	0	3	4	0	0	4	0	0	0	0	7
12:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	1
12:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	1
12:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	1
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	3	0	3	0	0	0	0	0	0	0	0	3
Grand Total	0	6	0	6	4	0	0	4	0	0	0	0	10
Approach %	0.0	100.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0		
Total %	0.0	60.0	0.0	60.0	40.0	0.0	0.0	40.0	0.0	0.0	0.0	0.0	
Exiting Leg Total				4				6					10

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

11:00 AM	Lunenburg Road (Route 70)				Lunenburg Road (Route 70)				McGovern Boulevard				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
11:00 AM	0	1	0	1	2	0	0	2	0	0	0	0	3
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	2	0	0	2	0	0	0	0	2
11:45 AM	0	2	0	2	0	0	0	0	0	0	0	0	2
Total Volume	0	3	0	3	4	0	0	4	0	0	0	0	7
% Approach Total	0.0	100.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.375	0.000	0.375	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.583
Entering Leg	0	3	0	3	4	0	0	4	0	0	0	0	7
Exiting Leg				4				3					7
Total				7				7				0	14

PDI File #: 197132 C
 Location: N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)
 Location: W: McGovern Boulevard
 City, State: Lancaster, MA
 Client: TEC/L. Oltman
 Site Code: T0852.02
 Count Date: Saturday, August 17, 2019
 Start Time: 11:00 AM
 End Time: 1:00 PM
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Bicycles (on Roadway and Crosswalks)

	Lunenburg Road (Route 70)						Lunenburg Road (Route 70)						McGovern Boulevard						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	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
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1
12:30 PM	0	1	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	2
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	1	2	0	0	0	0	2	0	0	0	0	0	0	3
Grand Total	0	1	0	0	0	1	2	0	0	0	0	2	0	0	0	0	0	0	3
Approach %	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	0.0	0.0		
Total %	0.0	33.3	0.0	0.0	0.0	33.3	66.7	0.0	0.0	0.0	0.0	66.7	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	2						1						0						3

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

11:45 AM	Lunenburg Road (Route 70)						Lunenburg Road (Route 70)						McGovern Boulevard						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1
12:30 PM	0	1	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	2
Total Volume	0	1	0	0	0	1	2	0	0	0	0	2	0	0	0	0	0	0	3
% Approach Total	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	0.0	0.0		
PHF	0.000	0.250	0.000	0.000	0.000	0.250	0.500	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.375
Entering Leg	0	1	0	0	0	1	2	0	0	0	0	2	0	0	0	0	0	0	3
Exiting Leg	2						1						0						3
Total	3						3						0						6

PDI File #: 197132 C
 Location: N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)
 Location: W: McGovern Boulevard
 City, State: Lancaster, MA
 Client: TEC/L. Oltman
 Site Code: T0852.02
 Count Date: Saturday, August 17, 2019
 Start Time: 11:00 AM
 End Time: 1:00 PM
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Pedestrians

	Lunenburg Road (Route 70)						Lunenburg Road (Route 70)						McGovern Boulevard						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	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
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	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
Grand Total	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
Total %	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

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

11:00 AM	Lunenburg Road (Route 70)						Lunenburg Road (Route 70)						McGovern Boulevard						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	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
% 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	0.000
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
Entering Leg	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
Total	0						0						0						0

PDI File #: **197132 D**
 Location: **N: Lunenburg Road (Route 70)**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



Cars and Heavy Vehicles (Combined)

	Lunenburg Road (Route 70)				Main Street (Route 70/117)				Main Street (Route 117)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
11:00 AM	5	41	0	46	81	95	0	176	81	10	0	91	313
11:15 AM	10	57	0	67	90	103	0	193	92	17	0	109	369
11:30 AM	9	54	0	63	56	94	0	150	92	15	0	107	320
11:45 AM	6	54	0	60	71	105	0	176	95	6	0	101	337
Total	30	206	0	236	298	397	0	695	360	48	0	408	1339
12:00 PM	13	163	0	176	59	93	0	152	88	6	0	94	422
12:15 PM	8	63	0	71	63	86	0	149	78	7	0	85	305
12:30 PM	9	59	0	68	48	110	0	158	99	7	0	106	332
12:45 PM	14	55	0	69	74	99	0	173	82	5	0	87	329
Total	44	340	0	384	244	388	0	632	347	25	0	372	1388
Grand Total	74	546	0	620	542	785	0	1327	707	73	0	780	2727
Approach %	11.9	88.1	0.0		40.8	59.2	0.0		90.6	9.4	0.0		
Total %	2.7	20.0	0.0	22.7	19.9	28.8	0.0	48.7	25.9	2.7	0.0	28.6	
Exiting Leg Total				615				1253				859	2727
Cars	74	535	0	609	530	771	0	1301	696	71	0	767	2677
% Cars	100.0	98.0	0.0	98.2	97.8	98.2	0.0	98.0	98.4	97.3	0.0	98.3	98.2
Exiting Leg Total				601				1231				845	2677
Heavy Vehicles	0	11	0	11	12	14	0	26	11	2	0	13	50
% Heavy Vehicles	0.0	2.0	0.0	1.8	2.2	1.8	0.0	2.0	1.6	2.7	0.0	1.7	1.8
Exiting Leg Total				14				22				14	50

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

11:15 AM	Lunenburg Road (Route 70)				Main Street (Route 70/117)				Main Street (Route 117)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
11:15 AM	10	57	0	67	90	103	0	193	92	17	0	109	369
11:30 AM	9	54	0	63	56	94	0	150	92	15	0	107	320
11:45 AM	6	54	0	60	71	105	0	176	95	6	0	101	337
12:00 PM	13	163	0	176	59	93	0	152	88	6	0	94	422
Total Volume	38	328	0	366	276	395	0	671	367	44	0	411	1448
% Approach Total	10.4	89.6	0.0		41.1	58.9	0.0		89.3	10.7	0.0		
PHF	0.731	0.503	0.000	0.520	0.767	0.940	0.000	0.869	0.966	0.647	0.000	0.943	0.858
Cars	38	322	0	360	272	389	0	661	364	43	0	407	1428
Cars %	100.0	98.2	0.0	98.4	98.6	98.5	0.0	98.5	99.2	97.7	0.0	99.0	98.6
Heavy Vehicles	0	6	0	6	4	6	0	10	3	1	0	4	20
Heavy Vehicles %	0.0	1.8	0.0	1.6	1.4	1.5	0.0	1.5	0.8	2.3	0.0	1.0	1.4
Cars Enter Leg	38	322	0	360	272	389	0	661	364	43	0	407	1428
Heavy Enter Leg	0	6	0	6	4	6	0	10	3	1	0	4	20
Total Entering Leg	38	328	0	366	276	395	0	671	367	44	0	411	1448
Cars Exiting Leg				315				686				427	1428
Heavy Exiting Leg				5				9				6	20
Total Exiting Leg				320				695				433	1448

PDI File #: **197132 D**
 Location: **N: Lunenburg Road (Route 70)**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



Cars

	Lunenburg Road (Route 70)				Main Street (Route 70/117)				Main Street (Route 117)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
11:00 AM	5	38	0	43	77	93	0	170	78	9	0	87	300
11:15 AM	10	54	0	64	89	101	0	190	92	16	0	108	362
11:30 AM	9	53	0	62	56	92	0	148	91	15	0	106	316
11:45 AM	6	53	0	59	70	103	0	173	93	6	0	99	331
Total	30	198	0	228	292	389	0	681	354	46	0	400	1309
12:00 PM	13	162	0	175	57	93	0	150	88	6	0	94	419
12:15 PM	8	62	0	70	62	83	0	145	76	7	0	83	298
12:30 PM	9	58	0	67	48	108	0	156	97	7	0	104	327
12:45 PM	14	55	0	69	71	98	0	169	81	5	0	86	324
Total	44	337	0	381	238	382	0	620	342	25	0	367	1368
Grand Total	74	535	0	609	530	771	0	1301	696	71	0	767	2677
Approach %	12.2	87.8	0.0		40.7	59.3	0.0		90.7	9.3	0.0		
Total %	2.8	20.0	0.0	22.7	19.8	28.8	0.0	48.6	26.0	2.7	0.0	28.7	
Exiting Leg Total				601				1231				845	2677

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

	Lunenburg Road (Route 70)				Main Street (Route 70/117)				Main Street (Route 117)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
11:15 AM	10	54	0	64	89	101	0	190	92	16	0	108	362
11:30 AM	9	53	0	62	56	92	0	148	91	15	0	106	316
11:45 AM	6	53	0	59	70	103	0	173	93	6	0	99	331
12:00 PM	13	162	0	175	57	93	0	150	88	6	0	94	419
Total Volume	38	322	0	360	272	389	0	661	364	43	0	407	1428
% Approach Total	10.6	89.4	0.0		41.1	58.9	0.0		89.4	10.6	0.0		
PHF	0.731	0.497	0.000	0.514	0.764	0.944	0.000	0.870	0.978	0.672	0.000	0.942	0.852
Entering Leg	38	322	0	360	272	389	0	661	364	43	0	407	1428
Exiting Leg				315				686				427	1428
Total				675				1347				834	2856

PDI File #: **197132 D**
 Location: **N: Lunenburg Road (Route 70)**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilc.com

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

	Lunenburg Road (Route 70)				Main Street (Route 70/117)				Main Street (Route 117)				Total	
	from North				from East				from West					
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total		
11:00 AM	0	3	0	3	4	2	0	6	3	1	0	4	13	
11:15 AM	0	3	0	3	1	2	0	3	0	1	0	1	7	
11:30 AM	0	1	0	1	0	2	0	2	1	0	0	1	4	
11:45 AM	0	1	0	1	1	2	0	3	2	0	0	2	6	
Total	0	8	0	8	6	8	0	14	6	2	0	8	30	
12:00 PM	0	1	0	1	2	0	0	2	0	0	0	0	3	
12:15 PM	0	1	0	1	1	3	0	4	2	0	0	2	7	
12:30 PM	0	1	0	1	0	2	0	2	2	0	0	2	5	
12:45 PM	0	0	0	0	3	1	0	4	1	0	0	1	5	
Total	0	3	0	3	6	6	0	12	5	0	0	5	20	
Grand Total	0	11	0	11	12	14	0	26	11	2	0	13	50	
Approach %	0.0	100.0	0.0		46.2	53.8	0.0		84.6	15.4	0.0			
Total %	0.0	22.0	0.0	22.0	24.0	28.0	0.0	52.0	22.0	4.0	0.0	26.0		
Exiting Leg Total				14				22					14	50
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total				0				0					0	0
Single-Unit Trucks	0	10	0	10	11	12	0	23	9	1	0	10	43	
% Single-Unit	0.0	90.9	0.0	90.9	91.7	85.7	0.0	88.5	81.8	50.0	0.0	76.9	86.0	
Exiting Leg Total				12				19				12	43	
Articulated Trucks	0	1	0	1	1	2	0	3	2	1	0	3	7	
% Articulated	0.0	9.1	0.0	9.1	8.3	14.3	0.0	11.5	18.2	50.0	0.0	23.1	14.0	
Exiting Leg Total				2				3				2	7	

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

11:00 AM	Lunenburg Road (Route 70)				Main Street (Route 70/117)				Main Street (Route 117)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
11:00 AM	0	3	0	3	4	2	0	6	3	1	0	4	13
11:15 AM	0	3	0	3	1	2	0	3	0	1	0	1	7
11:30 AM	0	1	0	1	0	2	0	2	1	0	0	1	4
11:45 AM	0	1	0	1	1	2	0	3	2	0	0	2	6
Total Volume	0	8	0	8	6	8	0	14	6	2	0	8	30
% Approach Total	0.0	100.0	0.0		42.9	57.1	0.0		75.0	25.0	0.0		
PHF	0.000	0.667	0.000	0.667	0.375	1.000	0.000	0.583	0.500	0.500	0.000	0.500	0.577
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Single-Unit Trucks	0	8	0	8	5	7	0	12	6	1	0	7	27
Single-Unit %	0.0	100.0	0.0	100.0	83.3	87.5	0.0	85.7	100.0	50.0	0.0	87.5	90.0
Articulated Trucks	0	0	0	0	1	1	0	2	0	1	0	1	3
Articulated %	0.0	0.0	0.0	0.0	16.7	12.5	0.0	14.3	0.0	50.0	0.0	12.5	10.0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	0	8	0	8	5	7	0	12	6	1	0	7	27
Articulated Trucks	0	0	0	0	1	1	0	2	0	1	0	1	3
Total Entering Leg	0	8	0	8	6	8	0	14	6	2	0	8	30
Buses				0				0				0	0
Single-Unit Trucks				6				14				7	27
Articulated Trucks				2				0				1	3
Total Exiting Leg				8				14				8	30

PDI File #: **197132 D**
 Location: **N: Lunenburg Road (Route 70)**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdillc.com

Buses

	Lunenburg Road (Route 70)				Main Street (Route 70/117)				Main Street (Route 117)				Total	
	from North				from East				from West					
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total		
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	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
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	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
Grand Total	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			
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		
Exiting Leg Total	0				0				0				0	

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

11:00 AM	Lunenburg Road (Route 70)				Main Street (Route 70/117)				Main Street (Route 117)				Total	
	from North				from East				from West					
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total		
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	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
% Approach Total	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
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0				0				0				0	
Total	0				0				0				0	

PDI File #: **197132 D**
 Location: **N: Lunenburg Road (Route 70)**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Single-Unit Trucks

	Lunenburg Road (Route 70)				Main Street (Route 70/117)				Main Street (Route 117)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
11:00 AM	0	3	0	3	3	2	0	5	3	1	0	4	12
11:15 AM	0	3	0	3	1	1	0	2	0	0	0	0	5
11:30 AM	0	1	0	1	0	2	0	2	1	0	0	1	4
11:45 AM	0	1	0	1	1	2	0	3	2	0	0	2	6
Total	0	8	0	8	5	7	0	12	6	1	0	7	27
12:00 PM	0	0	0	0	2	0	0	2	0	0	0	0	2
12:15 PM	0	1	0	1	1	3	0	4	1	0	0	1	6
12:30 PM	0	1	0	1	0	1	0	1	2	0	0	2	4
12:45 PM	0	0	0	0	3	1	0	4	0	0	0	0	4
Total	0	2	0	2	6	5	0	11	3	0	0	3	16
Grand Total	0	10	0	10	11	12	0	23	9	1	0	10	43
Approach %	0.0	100.0	0.0		47.8	52.2	0.0		90.0	10.0	0.0		
Total %	0.0	23.3	0.0	23.3	25.6	27.9	0.0	53.5	20.9	2.3	0.0	23.3	
Exiting Leg Total				12				19				12	43

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

11:00 AM	Lunenburg Road (Route 70)				Main Street (Route 70/117)				Main Street (Route 117)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
11:00 AM	0	3	0	3	3	2	0	5	3	1	0	4	12
11:15 AM	0	3	0	3	1	1	0	2	0	0	0	0	5
11:30 AM	0	1	0	1	0	2	0	2	1	0	0	1	4
11:45 AM	0	1	0	1	1	2	0	3	2	0	0	2	6
Total Volume	0	8	0	8	5	7	0	12	6	1	0	7	27
% Approach Total	0.0	100.0	0.0		41.7	58.3	0.0		85.7	14.3	0.0		
PHF	0.000	0.667	0.000	0.667	0.417	0.875	0.000	0.600	0.500	0.250	0.000	0.438	0.563
Entering Leg	0	8	0	8	5	7	0	12	6	1	0	7	27
Exiting Leg				6				14				7	27
Total				14				26				14	54

PDI File #: **197132 D**
 Location: **N: Lunenburg Road (Route 70)**
 Location: **E: Main Street (Route 70/117) W: Main Street (Route 117)**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdillc.com

Articulated Trucks

	Lunenburg Road (Route 70)				Main Street (Route 70/117)				Main Street (Route 117)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
11:00 AM	0	0	0	0	1	0	0	1	0	0	0	0	1
11:15 AM	0	0	0	0	0	1	0	1	0	1	0	1	2
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	0	2	0	1	0	1	3
12:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	1
12:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
12:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	1	0	1	0	1	0	1	2	0	0	2	4
Grand Total	0	1	0	1	1	2	0	3	2	1	0	3	7
Approach %	0.0	100.0	0.0		33.3	66.7	0.0		66.7	33.3	0.0		
Total %	0.0	14.3	0.0	14.3	14.3	28.6	0.0	42.9	28.6	14.3	0.0	42.9	
Exiting Leg Total					2				3				7

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

12:00 PM	Lunenburg Road (Route 70)				Main Street (Route 70/117)				Main Street (Route 117)				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
12:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	1
12:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
12:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	1
Total Volume	0	1	0	1	0	1	0	1	2	0	0	2	4
% Approach Total	0.0	100.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.250	0.000	0.250	0.000	0.250	0.000	0.250	0.500	0.000	0.000	0.500	1.000
Entering Leg	0	1	0	1	0	1	0	1	2	0	0	2	4
Exiting Leg					0				3				4
Total	1				4				3				8

PDI File #: 197132 D
 Location: N: Lunenburg Road (Route 70)
 Location: E: Main Street (Route 70/117) W: Main Street (Route 117)
 City, State: Lancaster, MA
 Client: TEC/L. Oltman
 Site Code: T0852.02
 Count Date: Saturday, August 17, 2019
 Start Time: 11:00 AM
 End Time: 1:00 PM



Bicycles (on Roadway and Crosswalks)

	Lunenburg Road (Route 70)							Main Street (Route 70/117)						Main Street (Route 117)						Total		
	from North							from East						from West								
	Right	Left	U-Turn	CW-EB	CW-WB	Total		Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total			
11:00 AM	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Grand Total	1	1	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Approach %	50.0	50.0	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	0.0	0.0	0.0	0.0	
Total %	33.3	33.3	0.0	0.0	0.0	66.7		33.3	0.0	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	1							1						1						3		

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

12:00 PM	Lunenburg Road (Route 70)							Main Street (Route 70/117)						Main Street (Route 117)						Total		
	from North							from East						from West								
	Right	Left	U-Turn	CW-EB	CW-WB	Total		Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total			
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	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	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Approach Total	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	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.000	0.250	0.000	0.000	0.000	0.250		0.250	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
Entering Leg	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Exiting Leg	1							1						1						2		
Total	2							2						2						4		

PDI File #: 197132 D
 Location: N: Lunenburg Road (Route 70)
 Location: E: Main Street (Route 70/117) W: Main Street (Route 117)
 City, State: Lancaster, MA
 Client: TEC/L. Oltman
 Site Code: T0852.02
 Count Date: Saturday, August 17, 2019
 Start Time: 11:00 AM
 End Time: 1:00 PM
 Class:



Pedestrians

	Lunenburg Road (Route 70)						Main Street (Route 70/117)						Main Street (Route 117)						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	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
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	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
Grand Total	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
Total %	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

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

11:00 AM	Lunenburg Road (Route 70)						Main Street (Route 70/117)						Main Street (Route 117)						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	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
% 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	0.000
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
Entering Leg	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
Total	0						0						0						0

PDI File #: **197132 E**
 Location: **N: Shirley Road S: Main Street (Route 70)**
 Location: **E: Seven Bridge Road (Route 117) W: Main Street (Route 70)**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars and Heavy Vehicles (Combined)

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70)					Total
	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	
11:00 AM	0	2	0	0	2	0	57	8	0	65	2	0	115	0	117	118	7	0	0	125	309
11:15 AM	0	1	0	0	1	1	68	2	0	71	2	1	118	1	122	150	4	0	0	154	348
11:30 AM	0	0	0	0	0	0	53	1	0	54	2	0	101	0	103	141	4	0	0	145	302
11:45 AM	0	1	0	0	1	0	65	1	0	66	11	0	112	0	123	136	8	0	0	144	334
Total	0	4	0	0	4	1	243	12	0	256	17	1	446	1	465	545	23	0	0	568	1293
12:00 PM	0	0	0	0	0	0	47	1	0	48	12	1	105	0	118	244	10	1	0	255	421
12:15 PM	0	1	0	0	1	0	16	1	0	17	2	0	135	0	137	135	4	0	0	139	294
12:30 PM	1	2	0	0	3	1	15	2	0	18	8	1	152	0	161	151	4	0	0	155	337
12:45 PM	1	0	0	0	1	0	29	2	0	31	4	4	149	0	157	130	4	0	0	134	323
Total	2	3	0	0	5	1	107	6	0	114	26	6	541	0	573	660	22	1	0	683	1375
Grand Total	2	7	0	0	9	2	350	18	0	370	43	7	987	1	1038	1205	45	1	0	1251	2668
Approach %	22.2	77.8	0.0	0.0		0.5	94.6	4.9	0.0		4.1	0.7	95.1	0.1		96.3	3.6	0.1	0.0		
Total %	0.1	0.3	0.0	0.0	0.3	0.1	13.1	0.7	0.0	13.9	1.6	0.3	37.0	0.0	38.9	45.2	1.7	0.0	0.0	46.9	
Exiting Leg Total	10					88					1231					1339					2668
Cars	2	7	0	0	9	2	348	18	0	368	41	7	964	1	1013	1182	43	1	0	1226	2616
% Cars	100.0	100.0	0.0	0.0	100.0	100.0	99.4	100.0	0.0	99.5	95.3	100.0	97.7	100.0	97.6	98.1	95.6	100.0	0.0	98.0	98.1
Exiting Leg Total	10					84					1208					1314					2616
Heavy Vehicles	0	0	0	0	0	0	2	0	0	2	2	0	23	0	25	23	2	0	0	25	52
% Heavy Vehicles	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.5	4.7	0.0	2.3	0.0	2.4	1.9	4.4	0.0	0.0	2.0	1.9
Exiting Leg Total	0					4					23					25					52

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

11:15 AM	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70)					Total
	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	
11:15 AM	0	1	0	0	1	1	68	2	0	71	2	1	118	1	122	150	4	0	0	154	348
11:30 AM	0	0	0	0	0	0	53	1	0	54	2	0	101	0	103	141	4	0	0	145	302
11:45 AM	0	1	0	0	1	0	65	1	0	66	11	0	112	0	123	136	8	0	0	144	334
12:00 PM	0	0	0	0	0	0	47	1	0	48	12	1	105	0	118	244	10	1	0	255	421
Total Volume	0	2	0	0	2	1	233	5	0	239	27	2	436	1	466	671	26	1	0	698	1405
% Approach Total	0.0	100.0	0.0	0.0		0.4	97.5	2.1	0.0		5.8	0.4	93.6	0.2		96.1	3.7	0.1	0.0		
PHF	0.000	0.500	0.000	0.000	0.500	0.250	0.857	0.625	0.000	0.842	0.563	0.500	0.924	0.250	0.947	0.688	0.650	0.250	0.000	0.684	0.834
Cars	0	2	0	0	2	1	231	5	0	237	27	2	428	1	458	661	25	1	0	687	1384
Cars %	0.0	100.0	0.0	0.0	100.0	100.0	99.1	100.0	0.0	99.2	100.0	100.0	98.2	100.0	98.3	98.5	96.2	100.0	0.0	98.4	98.5
Heavy Vehicles	0	0	0	0	0	0	2	0	0	2	0	0	8	0	8	10	1	0	0	11	21
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.8	0.0	0.0	1.8	0.0	1.7	1.5	3.8	0.0	0.0	1.6	1.5
Cars Enter Leg	0	2	0	0	2	1	231	5	0	237	27	2	428	1	458	661	25	1	0	687	1384
Heavy Enter Leg	0	0	0	0	0	0	2	0	0	2	0	0	8	0	8	10	1	0	0	11	21
Total Entering Leg	0	2	0	0	2	1	233	5	0	239	27	2	436	1	466	671	26	1	0	698	1405
Cars Exiting Leg	4					52					669					659					1384
Heavy Exiting Leg	0					1					10					10					21
Total Exiting Leg	4					53					679					669					1405

PDI File #: **197132 E**
 Location: **N: Shirley Road S: Main Street (Route 70)**
 Location: **E: Seven Bridge Road (Route 117) W: Main Street (Route 70)**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdillc.com

Cars

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70)					Total
	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	
11:00 AM	0	2	0	0	2	0	57	8	0	65	2	0	110	0	112	112	7	0	0	119	298
11:15 AM	0	1	0	0	1	1	67	2	0	70	2	1	116	1	120	146	4	0	0	150	341
11:30 AM	0	0	0	0	0	0	53	1	0	54	2	0	99	0	101	140	3	0	0	143	298
11:45 AM	0	1	0	0	1	0	64	1	0	65	11	0	110	0	121	132	8	0	0	140	327
Total	0	4	0	0	4	1	241	12	0	254	17	1	435	1	454	530	22	0	0	552	1264
12:00 PM	0	0	0	0	0	0	47	1	0	48	12	1	103	0	116	243	10	1	0	254	418
12:15 PM	0	1	0	0	1	0	16	1	0	17	1	0	131	0	132	133	4	0	0	137	287
12:30 PM	1	2	0	0	3	1	15	2	0	18	7	1	150	0	158	148	3	0	0	151	330
12:45 PM	1	0	0	0	1	0	29	2	0	31	4	4	145	0	153	128	4	0	0	132	317
Total	2	3	0	0	5	1	107	6	0	114	24	6	529	0	559	652	21	1	0	674	1352
Grand Total	2	7	0	0	9	2	348	18	0	368	41	7	964	1	1013	1182	43	1	0	1226	2616
Approach %	22.2	77.8	0.0	0.0		0.5	94.6	4.9	0.0		4.0	0.7	95.2	0.1		96.4	3.5	0.1	0.0		
Total %	0.1	0.3	0.0	0.0	0.3	0.1	13.3	0.7	0.0	14.1	1.6	0.3	36.9	0.0	38.7	45.2	1.6	0.0	0.0	46.9	
Exiting Leg Total	10					84					1208					1314					2616

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70)					Total
	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	
11:15 AM	0	1	0	0	1	1	67	2	0	70	2	1	116	1	120	146	4	0	0	150	341
11:30 AM	0	0	0	0	0	0	53	1	0	54	2	0	99	0	101	140	3	0	0	143	298
11:45 AM	0	1	0	0	1	0	64	1	0	65	11	0	110	0	121	132	8	0	0	140	327
12:00 PM	0	0	0	0	0	0	47	1	0	48	12	1	103	0	116	243	10	1	0	254	418
Total Volume	0	2	0	0	2	1	231	5	0	237	27	2	428	1	458	661	25	1	0	687	1384
% Approach Total	0.0	100.0	0.0	0.0		0.4	97.5	2.1	0.0		5.9	0.4	93.4	0.2		96.2	3.6	0.1	0.0		
PHF	0.000	0.500	0.000	0.000	0.500	0.250	0.862	0.625	0.000	0.846	0.563	0.500	0.922	0.250	0.946	0.680	0.625	0.250	0.000	0.676	0.828
Entering Leg	0	2	0	0	2	1	231	5	0	237	27	2	428	1	458	661	25	1	0	687	1384
Exiting Leg	4					52					669					659					1384
Total	6					289					1127					1346					2768

PDI File #: **197132 E**
 Location: **N: Shirley Road S: Main Street (Route 70)**
 Location: **E: Seven Bridge Road (Route 117) W: Main Street (Route 70)**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

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

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70)					Total
	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	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	6	0	0	0	6	11
11:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	2	0	2	4	0	0	0	4	7
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	1	1	0	0	2	4
11:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	2	0	2	4	0	0	0	4	7
Total	0	0	0	0	0	0	2	0	0	2	0	0	11	0	11	15	1	0	0	16	29
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	1	0	0	0	1	3
12:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	4	0	5	2	0	0	0	2	7
12:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	2	0	3	3	1	0	0	4	7
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	2	0	0	0	2	6
Total	0	0	0	0	0	0	0	0	0	0	2	0	12	0	14	8	1	0	0	9	23
Grand Total	0	0	0	0	0	0	2	0	0	2	2	0	23	0	25	23	2	0	0	25	52
Approach %	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		8.0	0.0	92.0	0.0		92.0	8.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	3.8	0.0	0.0	3.8	3.8	0.0	44.2	0.0	48.1	44.2	3.8	0.0	0.0	48.1	
Exiting Leg Total	0					4					23					25					52
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	0.0	0.0	0.0	4.0	1.9
Exiting Leg Total	0					0					1					0					1
Single-Unit Trucks	0	0	0	0	0	0	1	0	0	1	2	0	21	0	23	20	2	0	0	22	46
% Single-Unit	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	50.0	100.0	0.0	91.3	0.0	92.0	87.0	100.0	0.0	0.0	88.0	88.5
Exiting Leg Total	0					4					20					22					46
Articulated Trucks	0	0	0	0	0	0	1	0	0	1	0	0	2	0	2	2	0	0	0	2	5
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	50.0	0.0	0.0	8.7	0.0	8.0	8.7	0.0	0.0	0.0	8.0	9.6
Exiting Leg Total	0					0					2					3					5

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70)					Total
	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	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	6	0	0	0	6	11
11:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	2	0	2	4	0	0	0	4	7
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	1	1	0	0	2	4
11:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	2	0	2	4	0	0	0	4	7
Total Volume	0	0	0	0	0	0	2	0	0	2	0	0	11	0	11	15	1	0	0	16	29
% 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		93.8	6.3	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	0.550	0.000	0.550	0.625	0.250	0.000	0.000	0.667	0.659
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	0.0	0.0	0.0	6.3	3.4
Single-Unit Trucks	0	0	0	0	0	0	1	0	0	1	0	0	10	0	10	14	1	0	0	15	26
Single-Unit %	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	50.0	0.0	0.0	90.9	0.0	90.9	93.3	100.0	0.0	0.0	93.8	89.7
Articulated Trucks	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	2
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	50.0	0.0	0.0	9.1	0.0	9.1	0.0	0.0	0.0	0.0	0.0	6.9
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Single-Unit Trucks	0	0	0	0	0	0	1	0	0	1	0	0	10	0	10	14	1	0	0	15	26
Articulated Trucks	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	2
Total Entering Leg	0	0	0	0	0	0	2	0	0	2	0	0	11	0	11	15	1	0	0	16	29
Buses	0					0					1					0					1
Single-Unit Trucks	0					1					14					11					26
Articulated Trucks	0					0					0					2					2
Total Exiting Leg	0					1					15					13					29

PDI File #: **197132 E**
 Location: **N: Shirley Road S: Main Street (Route 70)**
 Location: **E: Seven Bridge Road (Route 117) W: Main Street (Route 70)**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Buses

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70)					Total
	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	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	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	0.0	100.0	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	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	100.0
Exiting Leg Total	0					0					1					0					1

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70)					Total
	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	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	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	0.0	100.0	0.0	0.0	0.0	0.0	100.0
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	0.250	0.000	0.000	0.000	0.250	0.250
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Exiting Leg	0					0					1					0					1
Total	0					0					1					1					2

PDI File #: **197132 E**
 Location: **N: Shirley Road S: Main Street (Route 70)**
 Location: **E: Seven Bridge Road (Route 117) W: Main Street (Route 70)**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Single-Unit Trucks

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70)					Total
	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	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	6	0	0	0	6	10
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	4	0	0	0	4	6
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	1	1	0	0	2	4
11:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	2	0	2	3	0	0	0	3	6
Total	0	0	0	0	0	0	1	0	0	1	0	0	10	0	10	14	1	0	0	15	26
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	1	0	0	0	1	3
12:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	4	0	5	1	0	0	0	1	6
12:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	3	1	0	0	4	6
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	1	0	0	0	1	5
Total	0	0	0	0	0	0	0	0	0	0	2	0	11	0	13	6	1	0	0	7	20
Grand Total	0	0	0	0	0	0	1	0	0	1	2	0	21	0	23	20	2	0	0	22	46
Approach %	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		8.7	0.0	91.3	0.0		90.9	9.1	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	2.2	4.3	0.0	45.7	0.0	50.0	43.5	4.3	0.0	0.0	47.8	
Exiting Leg Total						4					20					22					46

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

11:00 AM	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70)					Total
	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	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	6	0	0	0	6	10
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	4	0	0	0	4	6
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	1	1	0	0	2	4
11:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	2	0	2	3	0	0	0	3	6
Total Volume	0	0	0	0	0	0	1	0	0	1	0	0	10	0	10	14	1	0	0	15	26
% 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		93.3	6.7	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.625	0.000	0.625	0.583	0.250	0.000	0.000	0.625	0.650
Entering Leg	0	0	0	0	0	0	1	0	0	1	0	0	10	0	10	14	1	0	0	15	26
Exiting Leg						1					14					11					26
Total						2					24					26					52

PDI File #: **197132 E**
 Location: **N: Shirley Road S: Main Street (Route 70)**
 Location: **E: Seven Bridge Road (Route 117) W: Main Street (Route 70)**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Articulated Trucks

	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70)					Total
	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	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
11:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 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	1	0	0	1	0	0	1	0	1	0	0	0	0	0	2
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	2	3
Grand Total	0	0	0	0	0	0	1	0	0	1	0	0	2	0	2	2	0	0	0	2	5
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		100.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	20.0	0.0	0.0	40.0	0.0	40.0	40.0	0.0	0.0	0.0	40.0	
Exiting Leg Total	0					0					2					3					5

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

12:00 PM	Shirley Road					Seven Bridge Road (Route 117)					Main Street (Route 70)					Main Street (Route 70)					Total
	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	
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	2	3
% Approach Total	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0		100.0	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	0.250	0.000	0.250	0.500	0.000	0.000	0.000	0.500	0.750
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	2	3
Exiting Leg	0					0					2					1					3
Total	0					0					3					3					6

PDI File #: 197132 E
 Location: N: Shirley Road S: Main Street (Route 70)
 Location: E: Seven Bridge Road (Route 117) W: Main Street (Route 70)
 City, State: Lancaster, MA
 Client: TEC/L. Oltman
 Site Code: T0852.02
 Count Date: Saturday, August 17, 2019
 Start Time: 11:00 AM
 End Time: 1:00 PM
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Bicycles (on Roadway and Crosswalks)

	Shirley Road							Seven Bridge Road (Route 117)							Main Street (Route 70)							Main Street (Route 70)							Total
	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	
11:00 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	
11:15 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	
11:30 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	
11:45 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	
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	
12:00 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	
12:15 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	
12:30 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	
12:45 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	
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	
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	
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	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		
Exiting Leg Total	0							0							1							1							2

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

	Shirley Road							Seven Bridge Road (Route 117)							Main Street (Route 70)							Main Street (Route 70)							Total
	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	
12:00 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	
12:15 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	
12:30 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	
12:45 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	
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	
% 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	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		
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		
Exiting Leg	0							0							1							1							2
Total	0							0							2							2							4

PDI File #: 197132 E
 Location: N: Shirley Road S: Main Street (Route 70)
 Location: E: Seven Bridge Road (Route 117) W: Main Street (Route 70)
 City, State: Lancaster, MA
 Client: TEC/L. Oltman
 Site Code: T0852.02
 Count Date: Saturday, August 17, 2019
 Start Time: 11:00 AM
 End Time: 1:00 PM
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdillc.com

Pedestrians

	Shirley Road							Seven Bridge Road (Route 117)							Main Street (Route 70)							Main Street (Route 70)							Total
	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	
11:00 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	
11:15 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	
11:30 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	1	0	1	1	
11:45 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		
Total	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		
12:00 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		
12:15 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		
12:30 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		
12:45 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		
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		
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	1	0	1	1		
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	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	100	0	100	0			
Exiting Leg Total	0							0							0							1							1

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

11:00 AM	Shirley Road							Seven Bridge Road (Route 117)							Main Street (Route 70)							Main Street (Route 70)							Total
	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	
11:00 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		
11:15 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		
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1		
11:45 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		
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	1	0	1	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	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	0.250	0.000	0.250	0.250			
Entering Leg	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			
Exiting Leg	0							0							0							1							1
Total	0							0							0							2							2

PDI File #: **197132 F**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Cars and Heavy Vehicles (Combined)

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
11:00 AM	11	27	13	0	51	17	9	12	0	38	13	39	28	0	80	28	9	9	2	48	217
11:15 AM	12	28	12	0	52	28	8	18	0	54	30	49	29	0	108	30	9	8	2	49	263
11:30 AM	23	26	27	0	76	26	11	17	1	55	26	47	27	0	100	20	7	7	1	35	266
11:45 AM	46	26	20	1	93	28	17	133	0	178	22	43	27	0	92	27	10	4	0	41	404
Total	92	107	72	1	272	99	45	180	1	325	91	178	111	0	380	105	35	28	5	173	1150
12:00 PM	20	31	13	0	64	21	12	26	0	59	17	35	26	0	78	38	12	13	1	64	265
12:15 PM	16	33	17	0	66	29	17	20	0	66	13	40	29	0	82	40	17	10	0	67	281
12:30 PM	17	32	13	0	62	20	9	17	1	47	16	34	23	0	73	30	16	7	2	55	237
12:45 PM	16	37	19	0	72	23	11	19	0	53	23	28	25	0	76	36	7	9	0	52	253
Total	69	133	62	0	264	93	49	82	1	225	69	137	103	0	309	144	52	39	3	238	1036
Grand Total	161	240	134	1	536	192	94	262	2	550	160	315	214	0	689	249	87	67	8	411	2186
Approach %	30.0	44.8	25.0	0.2		34.9	17.1	47.6	0.4		23.2	45.7	31.1	0.0		60.6	21.2	16.3	1.9		
Total %	7.4	11.0	6.1	0.0	24.5	8.8	4.3	12.0	0.1	25.2	7.3	14.4	9.8	0.0	31.5	11.4	4.0	3.1	0.4	18.8	
Exiting Leg Total					575					383					751					477	2186
Cars	160	230	118	1	509	182	93	260	2	537	156	302	214	0	672	246	84	66	8	404	2122
% Cars	99.4	95.8	88.1	100.0	95.0	94.8	98.9	99.2	100.0	97.6	97.5	95.9	100.0	0.0	97.5	98.8	96.6	98.5	100.0	98.3	97.1
Exiting Leg Total					551					360					736					475	2122
Heavy Vehicles	1	10	16	0	27	10	1	2	0	13	4	13	0	0	17	3	3	1	0	7	64
% Heavy Vehicles	0.6	4.2	11.9	0.0	5.0	5.2	1.1	0.8	0.0	2.4	2.5	4.1	0.0	2.5	1.2	3.4	1.5	0.0	1.7	2.9	
Exiting Leg Total					24					23					15					2	64

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

11:30 AM	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
11:30 AM	23	26	27	0	76	26	11	17	1	55	26	47	27	0	100	20	7	7	1	35	266
11:45 AM	46	26	20	1	93	28	17	133	0	178	22	43	27	0	92	27	10	4	0	41	404
12:00 PM	20	31	13	0	64	21	12	26	0	59	17	35	26	0	78	38	12	13	1	64	265
12:15 PM	16	33	17	0	66	29	17	20	0	66	13	40	29	0	82	40	17	10	0	67	281
Total Volume	105	116	77	1	299	104	57	196	1	358	78	165	109	0	352	125	46	34	2	207	1216
% Approach Total	35.1	38.8	25.8	0.3		29.1	15.9	54.7	0.3		22.2	46.9	31.0	0.0		60.4	22.2	16.4	1.0		
PHF	0.571	0.879	0.713	0.250	0.804	0.897	0.838	0.368	0.250	0.503	0.750	0.878	0.940	0.000	0.880	0.781	0.676	0.654	0.500	0.772	0.752
Cars	104	112	66	1	283	98	57	194	1	350	74	159	109	0	342	123	45	34	2	204	1179
Cars %	99.0	96.6	85.7	100.0	94.6	94.2	100.0	99.0	100.0	97.8	94.9	96.4	100.0	0.0	97.2	98.4	97.8	100.0	100.0	98.6	97.0
Heavy Vehicles	1	4	11	0	16	6	0	2	0	8	4	6	0	0	10	2	1	0	0	3	37
Heavy Vehicles %	1.0	3.4	14.3	0.0	5.4	5.8	0.0	1.0	0.0	2.2	5.1	3.6	0.0	2.8	1.6	2.2	0.0	0.0	1.4	3.0	
Cars Enter Leg	104	112	66	1	283	98	57	194	1	350	74	159	109	0	342	123	45	34	2	204	1179
Heavy Enter Leg	1	4	11	0	16	6	0	2	0	8	4	6	0	0	10	2	1	0	0	3	37
Total Entering Leg	105	116	77	1	299	104	57	196	1	358	78	165	109	0	352	125	46	34	2	207	1216
Cars Exiting Leg					292					186					429					272	1179
Heavy Exiting Leg					12					16					8					1	37
Total Exiting Leg					304					202					437					273	1216

PDI File #: **197132 F**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdillc.com

Cars

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
11:00 AM	11	24	12	0	47	16	8	12	0	36	13	36	28	0	77	28	8	9	2	47	207
11:15 AM	12	26	11	0	49	26	8	18	0	52	30	47	29	0	106	30	8	7	2	47	254
11:30 AM	23	25	24	0	72	24	11	17	1	53	25	44	27	0	96	19	7	7	1	34	255
11:45 AM	46	25	17	1	89	28	17	132	0	177	21	42	27	0	90	27	10	4	0	41	397
Total	92	100	64	1	257	94	44	179	1	318	89	169	111	0	369	104	33	27	5	169	1113
12:00 PM	19	30	11	0	60	19	12	25	0	56	15	35	26	0	76	38	12	13	1	64	256
12:15 PM	16	32	14	0	62	27	17	20	0	64	13	38	29	0	80	39	16	10	0	65	271
12:30 PM	17	32	12	0	61	20	9	17	1	47	16	33	23	0	72	29	16	7	2	54	234
12:45 PM	16	36	17	0	69	22	11	19	0	52	23	27	25	0	75	36	7	9	0	52	248
Total	68	130	54	0	252	88	49	81	1	219	67	133	103	0	303	142	51	39	3	235	1009
Grand Total	160	230	118	1	509	182	93	260	2	537	156	302	214	0	672	246	84	66	8	404	2122
Approach %	31.4	45.2	23.2	0.2		33.9	17.3	48.4	0.4		23.2	44.9	31.8	0.0		60.9	20.8	16.3	2.0		
Total %	7.5	10.8	5.6	0.0	24.0	8.6	4.4	12.3	0.1	25.3	7.4	14.2	10.1	0.0	31.7	11.6	4.0	3.1	0.4	19.0	
Exiting Leg Total	551					360					736					475					2122

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

11:30 AM	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
11:30 AM	23	25	24	0	72	24	11	17	1	53	25	44	27	0	96	19	7	7	1	34	255
11:45 AM	46	25	17	1	89	28	17	132	0	177	21	42	27	0	90	27	10	4	0	41	397
12:00 PM	19	30	11	0	60	19	12	25	0	56	15	35	26	0	76	38	12	13	1	64	256
12:15 PM	16	32	14	0	62	27	17	20	0	64	13	38	29	0	80	39	16	10	0	65	271
Total Volume	104	112	66	1	283	98	57	194	1	350	74	159	109	0	342	123	45	34	2	204	1179
% Approach Total	36.7	39.6	23.3	0.4		28.0	16.3	55.4	0.3		21.6	46.5	31.9	0.0		60.3	22.1	16.7	1.0		
PHF	0.565	0.875	0.688	0.250	0.795	0.875	0.838	0.367	0.250	0.494	0.740	0.903	0.940	0.000	0.891	0.788	0.703	0.654	0.500	0.785	0.742
Entering Leg	104	112	66	1	283	98	57	194	1	350	74	159	109	0	342	123	45	34	2	204	1179
Exiting Leg	292					186					429					272					1179
Total	575					536					771					476					2358

PDI File #: **197132 F**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
11:00 AM	0	3	1	0	4	1	1	0	0	2	0	3	0	0	3	0	1	0	0	1	10
11:15 AM	0	2	1	0	3	2	0	0	0	2	0	2	0	0	2	0	1	1	0	2	9
11:30 AM	0	1	3	0	4	2	0	0	0	2	1	3	0	0	4	1	0	0	0	1	11
11:45 AM	0	1	3	0	4	0	0	1	0	1	1	1	0	0	2	0	0	0	0	0	7
Total	0	7	8	0	15	5	1	1	0	7	2	9	0	0	11	1	2	1	0	4	37
12:00 PM	1	1	2	0	4	2	0	1	0	3	2	0	0	0	2	0	0	0	0	0	9
12:15 PM	0	1	3	0	4	2	0	0	0	2	0	2	0	0	2	1	1	0	0	2	10
12:30 PM	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	3
12:45 PM	0	1	2	0	3	1	0	19	0	1	0	1	0	0	1	0	0	0	0	0	5
Total	1	3	8	0	12	5	0	1	0	6	2	4	0	0	6	2	1	0	0	3	27
Grand Total	1	10	16	0	27	10	1	2	0	13	4	13	0	0	17	3	3	1	0	7	64
Approach %	3.7	37.0	59.3	0.0		76.9	7.7	15.4	0.0		23.5	76.5	0.0	0.0		42.9	42.9	14.3	0.0		
Total %	1.6	15.6	25.0	0.0	42.2	15.6	1.6	3.1	0.0	20.3	6.3	20.3	0.0	0.0	26.6	4.7	4.7	1.6	0.0	10.9	
Exiting Leg Total	24					23					15					2					64
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
Single-Unit Trucks	1	8	16	0	25	5	0	0	0	5	3	10	0	0	13	2	0	1	0	3	46
% Single-Unit	100.0	80.0	100.0	0.0	92.6	50.0	0.0	0.0	0.0	38.5	75.0	76.9	0.0	0.0	76.5	66.7	0.0	100.0	0.0	42.9	71.9
Exiting Leg Total	16					19					10					1					46
Articulated Trucks	0	2	0	0	2	5	1	2	0	8	1	3	0	0	4	1	3	0	0	4	18
% Articulated	0.0	20.0	0.0	0.0	7.4	50.0	100.0	100.0	0.0	61.5	25.0	23.1	0.0	0.0	23.5	33.3	100.0	0.0	0.0	57.1	28.1
Exiting Leg Total	8					4					5					1					18

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
11:00 AM	0	3	1	0	4	1	1	0	0	2	0	3	0	0	3	0	1	0	0	1	10
11:15 AM	0	2	1	0	3	2	0	0	0	2	0	2	0	0	2	0	1	1	0	2	9
11:30 AM	0	1	3	0	4	2	0	0	0	2	1	3	0	0	4	1	0	0	0	1	11
11:45 AM	0	1	3	0	4	0	0	1	0	1	1	1	0	0	2	0	0	0	0	0	7
Total Volume	0	7	8	0	15	5	1	1	0	7	2	9	0	0	11	1	2	1	0	4	37
% Approach Total	0.0	46.7	53.3	0.0		71.4	14.3	14.3	0.0		18.2	81.8	0.0	0.0		25.0	50.0	25.0	0.0		
PHF	0.000	0.583	0.667	0.000	0.938	0.625	0.250	0.250	0.000	0.875	0.500	0.750	0.000	0.000	0.688	0.250	0.500	0.250	0.000	0.500	0.841
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Single-Unit Trucks	0	6	8	0	14	5	0	0	0	5	1	6	0	0	7	1	0	1	0	2	28
Single-Unit %	0.0	85.7	100.0	0.0	93.3	100.0	0.0	0.0	0.0	71.4	50.0	66.7	0.0	0.0	63.6	100.0	0.0	100.0	0.0	50.0	75.7
Articulated Trucks	0	1	0	0	1	0	1	1	0	2	1	3	0	0	4	0	2	0	0	2	9
Articulated %	0.0	14.3	0.0	0.0	6.7	0.0	100.0	100.0	0.0	28.6	50.0	33.3	0.0	0.0	36.4	0.0	100.0	0.0	0.0	50.0	24.3
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	0	6	8	0	14	5	0	0	0	5	1	6	0	0	7	1	0	1	0	2	28
Articulated Trucks	0	1	0	0	1	0	1	1	0	2	1	3	0	0	4	0	2	0	0	2	9
Total Entering Leg	0	7	8	0	15	5	1	1	0	7	2	9	0	0	11	1	2	1	0	4	37
Buses	0					0					0					0					0
Single-Unit Trucks	12					9					7					0					28
Articulated Trucks	3					3					2					1					9
Total Exiting Leg	15					12					9					1					37

PDI File #: **197132 F**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Buses

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 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
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	19	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	0.0
Exiting Leg Total	0					0					0					0					0

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

11:00 AM	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 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 #: **197132 F**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Single-Unit Trucks

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
11:00 AM	0	3	1	0	4	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	7
11:15 AM	0	2	1	0	3	2	0	0	0	2	0	2	0	0	2	0	0	1	0	1	8
11:30 AM	0	1	3	0	4	2	0	0	0	2	0	1	0	0	1	1	0	0	0	1	8
11:45 AM	0	0	3	0	3	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	5
Total	0	6	8	0	14	5	0	0	0	5	1	6	0	0	7	1	0	1	0	2	28
12:00 PM	1	0	2	0	3	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	5
12:15 PM	0	1	3	0	4	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	7
12:30 PM	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
12:45 PM	0	1	2	0	3	0	0	19	0	0	0	1	0	0	1	0	0	0	0	0	4
Total	1	2	8	0	11	0	0	0	0	0	2	4	0	0	6	1	0	0	0	1	18
Grand Total	1	8	16	0	25	5	0	0	0	5	3	10	0	0	13	2	0	1	0	3	46
Approach %	4.0	32.0	64.0	0.0		100.0	0.0	0.0	0.0		23.1	76.9	0.0	0.0		66.7	0.0	33.3	0.0		
Total %	2.2	17.4	34.8	0.0	54.3	10.9	0.0	0.0	0.0	10.9	6.5	21.7	0.0	0.0	28.3	4.3	0.0	2.2	0.0	6.5	
Exiting Leg Total	16					19					10					1					46

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

11:00 AM	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
11:00 AM	0	3	1	0	4	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	7
11:15 AM	0	2	1	0	3	2	0	0	0	2	0	2	0	0	2	0	0	1	0	1	8
11:30 AM	0	1	3	0	4	2	0	0	0	2	0	1	0	0	1	1	0	0	0	1	8
11:45 AM	0	0	3	0	3	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	5
Total Volume	0	6	8	0	14	5	0	0	0	5	1	6	0	0	7	1	0	1	0	2	28
% Approach Total	0.0	42.9	57.1	0.0		100.0	0.0	0.0	0.0		14.3	85.7	0.0	0.0		50.0	0.0	50.0	0.0		
PHF	0.000	0.500	0.667	0.000	0.875	0.625	0.000	0.000	0.000	0.625	0.250	0.750	0.000	0.000	0.875	0.250	0.000	0.250	0.000	0.500	0.875
Entering Leg	0	6	8	0	14	5	0	0	0	5	1	6	0	0	7	1	0	1	0	2	28
Exiting Leg	12					9					7					0					28
Total	26					14					14					2					56

PDI File #: **197132 F**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Articulated Trucks

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
11:00 AM	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	3
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
11:30 AM	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	3
11:45 AM	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
Total	0	1	0	0	1	0	1	1	0	2	1	3	0	0	4	0	2	0	0	2	9
12:00 PM	0	1	0	0	1	2	0	1	0	3	0	0	0	0	0	0	0	0	0	0	4
12:15 PM	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	1	0	0	1	3
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
12:45 PM	0	0	0	0	0	1	0	19	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	0	1	5	0	1	0	6	0	0	0	0	0	1	1	0	0	2	9
Grand Total	0	2	0	0	2	5	1	2	0	8	1	3	0	0	4	1	3	0	0	4	18
Approach %	0.0	100.0	0.0	0.0		62.5	12.5	25.0	0.0		25.0	75.0	0.0	0.0		25.0	75.0	0.0	0.0		
Total %	0.0	11.1	0.0	0.0	11.1	27.8	5.6	11.1	0.0	44.4	5.6	16.7	0.0	0.0	22.2	5.6	16.7	0.0	0.0	22.2	
Exiting Leg Total	8					4					5					1					18

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

	Lunenburg Road (Route 70)					Old Union Turnpike					Lunenburg Road (Route 70)					Old Union Turnpike					Total
	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	
11:30 AM	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	3
11:45 AM	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
12:00 PM	0	1	0	0	1	2	0	1	0	3	0	0	0	0	0	0	0	0	0	0	4
12:15 PM	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	1	0	0	1	3
Total Volume	0	2	0	0	2	4	0	2	0	6	1	2	0	0	3	0	1	0	0	1	12
% Approach Total	0.0	100.0	0.0	0.0		66.7	0.0	33.3	0.0		33.3	66.7	0.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.000	0.500	0.000	0.000	0.500	0.500	0.000	0.500	0.000	0.500	0.250	0.250	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.250	0.750
Entering Leg	0	2	0	0	2	4	0	2	0	6	1	2	0	0	3	0	1	0	0	1	12
Exiting Leg	6					2					4					0					12
Total	8					8					7					1					24

PDI File #: **197132 F**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Bicycles (on Roadway and Crosswalks)

	Lunenburg Road (Route 70)							Old Union Turnpike							Lunenburg Road (Route 70)							Old Union Turnpike							Total
	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	
11:00 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
11:15 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
11:30 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
11:45 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
12:00 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
12:15 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
12:30 PM	0	1	0	0	0	0	1	0	0	1	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	3
12:45 PM	0	0	0	0	0	0	0	19	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	0	1	0	0	0	0	1	0	0	1	0	0	0	1	1	1	0	0	0	0	2	0	0	0	0	0	0	0	4
Grand Total	0	1	0	0	0	0	1	0	0	1	0	0	0	1	1	1	0	0	0	0	2	0	0	0	0	0	0	0	4
Approach %	0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0	0.0		50.0	50.0	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	25.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	25.0	0.0	0.0	0.0	25.0	25.0	25.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	1							1							2							0							4

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

12:00 PM	Lunenburg Road (Route 70)							Old Union Turnpike							Lunenburg Road (Route 70)							Old Union Turnpike							Total
	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	
12:00 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
12:15 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
12:30 PM	0	1	0	0	0	0	1	0	0	1	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	3
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1
Total Volume	0	1	0	0	0	0	1	0	0	1	0	0	0	1	1	1	0	0	0	0	2	0	0	0	0	0	0	0	4
% Approach Total	0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0	0.0		50.0	50.0	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	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.250	0.250	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.333
Entering Leg	0	1	0	0	0	0	1	0	0	1	0	0	0	1	1	1	0	0	0	0	2	0	0	0	0	0	0	0	4
Exiting Leg	1							1							2							0							4
Total	2							2							4							0							8

PDI File #: **197132 F**
 Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Pedestrians

	Lunenburg Road (Route 70)							Old Union Turnpike							Lunenburg Road (Route 70)							Old Union Turnpike							Total
	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	
11:00 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	
11:15 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	
11:30 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	
11:45 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	
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	
12:00 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	
12:15 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	
12:30 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	
12:45 PM	0	0	0	0	0	0	0	19	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	19	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	19	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	
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 11:00 AM to 01:00 PM begins at:

11:00 AM	Lunenburg Road (Route 70)							Old Union Turnpike							Lunenburg Road (Route 70)							Old Union Turnpike							Total
	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	
11:00 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	
11:15 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	
11:30 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	
11:45 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	
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	
% 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	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	
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	
Exiting Leg	0							0							0							0							0
Total	0							0							0							0							0



**PRECISION
DATA
INDUSTRIES, LLC**

46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

PDI File #: 197132 G
Location: N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)
Location: E: Fort Pond Road W: Woods Lane SW: Driveway
City, State: Lancaster, MA
Client: TEC/L. Oltman
Site Code: T0852.02
Count Date: Saturday, August 17, 2019
Start Time: 11:00 AM
End Time: 1:00 PM

Cars and Heavy Vehicles (Combined)

	Lunenburg Road (Route 70)						Fort Pond Road						Lunenburg Road (Route 70)						Driveway						Woods Lane														
	from North			from East			from South			from Southwest			from South			from Southwest			from South			from West			from West														
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Bear Right	Bear Left	Hard Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total						
11:00 AM	0	0	39	6	0	45	19	0	0	10	0	29	26	32	1	0	1	60	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	1	0	0	2	136
11:15 AM	0	0	41	14	0	55	18	0	0	12	0	30	22	59	1	0	0	82	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	168
11:30 AM	0	0	52	10	0	62	13	0	0	22	0	35	24	50	0	1	0	75	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	2	174
11:45 AM	0	1	48	15	0	64	18	1	0	54	0	73	36	37	0	0	0	73	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	212
Total	0	1	180	45	0	226	68	1	0	98	0	167	108	178	2	1	1	290	1	1	0	0	0	2	0	4	1	0	0	0	0	0	0	4	1	0	0	5	690
12:00 PM	0	0	38	13	0	51	17	0	0	12	0	29	26	45	0	0	0	71	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	152
12:15 PM	0	0	49	11	0	60	24	0	0	16	0	40	25	50	1	1	0	77	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	178
12:30 PM	0	0	45	12	0	57	20	0	0	18	0	38	20	39	1	0	0	60	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	2	157
12:45 PM	0	0	51	8	0	59	14	0	0	19	0	33	20	39	1	0	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	152
Total	0	0	183	44	0	227	75	0	0	65	0	140	91	173	3	1	0	268	0	0	0	0	1	1	0	2	1	0	0	0	0	0	0	2	1	0	0	3	639
Grand Total	0	1	363	89	0	453	143	1	0	163	0	307	199	351	5	2	1	558	1	1	0	0	1	3	0	6	2	0	0	0	0	0	0	6	2	0	0	8	1329
Approach %	0.0	0.2	80.1	19.6	0.0		46.6	0.3	0.0	53.1	0.0		35.7	62.9	0.9	0.4	0.2		33.3	33.3	0.0	0.0	33.3		0.0	75.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	75.0	25.0	0.0	0.0	0.0	
Total%	0.0	0.1	27.3	6.7	0.0	34.1	10.8	0.1	0.0	12.3	0.0	23.1	15.0	26.4	0.4	0.2	0.1	42.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.5	0.2	0.0	0.0	0.0	0.0	0.6							
Exiting Leg Total	494																																						
Cars	0	1	341	84	0	426	132	1	0	158	0	291	194	331	5	2	1	533	1	1	0	0	1	3	0	6	2	0	0	0	0	0	0	6	2	0	0	8	1261
% Cars	0.0	100.0	93.9	94.4	0.0	94.0	92.3	100.0	0.0	96.9	0.0	94.8	97.5	94.3	100.0	100.0	95.5	100.0	100.0	0.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	100.0	94.9	
Exiting Leg Total	463																																						
Heavy Vehicles	0	0	22	5	0	27	11	0	0	5	0	16	5	20	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	68
% Heavy Vehicles	0.0	0.0	6.1	5.6	0.0	6.0	7.7	0.0	0.0	3.1	0.0	5.2	2.5	5.7	0.0	0.0	0.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1
Exiting Leg Total	31																																						

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

	Lunenburg Road (Route 70)						Fort Pond Road						Lunenburg Road (Route 70)						Driveway						Woods Lane														
	from North			from East			from South			from Southwest			from South			from Southwest			from South			from West			from West														
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Bear Right	Bear Left	Hard Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total						
11:30 AM	0	0	52	10	0	62	13	0	0	22	0	35	24	50	0	1	0	75	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	2	0	0	0	2	174
11:45 AM	0	1	48	15	0	64	18	1	0	54	0	73	36	37	0	0	0	73	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	212
12:00 PM	0	0	38	13	0	51	17	0	0	12	0	29	26	45	0	0	0	71	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	152
12:15 PM	0	0	49	11	0	60	24	0	0	16	0	40	25	50	1	1	0	77	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	1	178
Total Volume	0	1	187	49	0	237	72	1	0	104	0	177	111	182	1	2	0	296	1	1	0	0	1	3	0	3	0	0	0	0	0	3	0	3	0	0	0	3	716
% Approach Total	0.0	0.4	78.9	20.7	0.0		40.7	0.6	0.0	58.8	0.0		37.5	61.5	0.3	0.7	0.0		33.3	33.3	0.0	0.0	33.3		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	0.844
Cars	0	1	175	45	0	221	66	1	0	100	0	167	108	173	1	2	0	284	1	1	0	0	1	3	0	3	0	0	0	0	0	3	0	3	0	0	0	3	678
Cars %	0.0	100.0	93.6	91.8	0.0	93.2	91.7	100.0	0.0	96.2	0.0	94.4	97.3	95.1	100.0	100.0	95.9	100.0	100.0	0.0	0.0	100.0	100.0	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	100.0	94.7	
Heavy Vehicles	0	0	12	4	0	16	6	0	0	4	0	10	3	9	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38
Heavy Vehicles %	0.0	0.0	6.4	8.2	0.0	6.8	8.3	0.0	0.0	3.8	0.0	5.6	2.7	4.9	0.0	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3
Cars Enter Leg	0	1	175	45	0	221	66	1	0	100	0	167	108	173	1	2	0	284	1	1	0	0	1	3	0	3	0	0	0	0	0	3	0	3	0	0	0	3	678
Heavy Enter Leg	0	0	12	4	0	16	6	0	0	4	0	10	3	9	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38
Total Entering Leg	0	1	187	49	0	237	72	1	0	104	0	177	111	182	1	2	0	296	1	1	0	0	1	3	0	3	0	0	0	0	0	3	0	3	0	0	0	3	716
Cars Exiting Leg	239																																						
Heavy Exiting Leg	15																																						
Total Exiting Leg	254																																						



46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

PDI File #: 197132 G

Location: N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)

City, State: Lancaster, MA

Client: TEC/L. Oltman

Site Code: T0852.02

Count Date: Saturday, August 17, 2019

Start Time: 11:00 AM

End Time: 1:00 PM

Class: Cars

	Lunenburg Road (Route 70)												Fort Pond Road												Lunenburg Road (Route 70)												Driveway												Woods Lane											
	from North						from East						from South						from Southwest						from West																																			
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Bear Left	Left	U-Turn	Total	Hard Right	Bear Right	Thru	Left	U-Turn	Total	Hard Right	Bear Right	Thru	Left	U-Turn	Total	Hard Right	Bear Right	Thru	Left	U-Turn	Total																							
11:00 AM	0	0	35	6	0	41	18	0	0	10	0	28	24	29	1	0	1	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	1	1	0	0	2																		
11:15 AM	0	0	38	13	0	51	14	0	0	12	0	26	22	54	1	0	0	77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	1																		
11:30 AM	0	0	49	10	0	59	11	0	0	21	0	32	23	46	0	1	0	70	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0																		
11:45 AM	0	1	45	13	0	59	16	1	0	52	0	69	35	37	0	0	0	72	1	1	0	0	0	2	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0																		
Total	0	1	167	42	0	210	59	1	0	95	0	155	104	166	2	1	1	274	1	1	0	0	0	2	1	1	0	0	0	2	0	4	1	0	0	5	0	4	1	0	0	5																		
12:00 PM	0	0	36	12	0	48	16	0	0	11	0	27	26	43	0	0	0	69	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1																		
12:15 PM	0	0	45	10	0	55	23	0	0	16	0	39	24	47	1	1	0	73	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1																		
12:30 PM	0	0	44	12	0	56	20	0	0	18	0	38	20	38	1	0	0	59	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	1	0	0	0	2																		
12:45 PM	0	0	49	8	0	57	14	0	0	18	0	32	20	37	1	0	0	58	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	174	42	0	216	73	0	0	63	0	136	90	165	3	1	0	259	0	0	0	0	0	1	0	2	1	0	0	3	0	2	1	0	0	3	0	2	1	0	0	3																		
Grand Total	0	1	341	84	0	426	132	1	0	158	0	291	194	331	5	2	1	533	1	1	0	0	0	1	3	0	6	2	0	8	0	6	2	0	0	8	0.0	0.2	80.0	19.7	0.0	33.3	33.3	0.0	0.0	0.0	33.3	0.0	75.0	25.0	0.0	0.0	0.0							
Approach %	0.0	0.1	27.0	6.7	0.0	33.8	10.5	0.1	0.0	12.5	0.0	23.1	15.4	26.2	0.4	0.2	0.1	42.3	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.0	0.5	0.2	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0																								
Total %	0.0	0.1	27.0	6.7	0.0	33.8	10.5	0.1	0.0	12.5	0.0	23.1	15.4	26.2	0.4	0.2	0.1	42.3	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.0	0.5	0.2	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0																								
Exiting Leg Total													281													507													6	1261																				

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

	Lunenburg Road (Route 70)												Fort Pond Road												Lunenburg Road (Route 70)												Driveway												Woods Lane											
	from North						from East						from South						from Southwest						from West																																			
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Bear Left	Left	U-Turn	Total	Hard Right	Bear Right	Thru	Left	U-Turn	Total	Hard Right	Bear Right	Thru	Left	U-Turn	Total	Hard Right	Bear Right	Thru	Left	U-Turn	Total																							
11:30 AM	0	0	49	10	0	59	11	0	0	21	0	32	23	46	0	1	0	70	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	2	0	0	0	2																		
11:45 AM	0	1	45	13	0	59	16	1	0	52	0	69	35	37	0	0	0	72	1	1	0	0	0	2	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0																		
12:00 PM	0	0	36	12	0	48	16	0	0	11	0	27	26	43	0	0	0	69	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1																		
12:15 PM	0	0	45	10	0	55	23	0	0	16	0	39	24	47	1	1	0	73	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1																		
Total Volume	0	1	175	45	0	221	66	1	0	100	0	167	108	173	1	2	0	284	1	1	0	0	0	1	3	0	3	0	0	3	0	3	0	0	0	3	0	3	0	0	0	3																		
% Approach Total	0.0	0.5	79.2	20.4	0.0	39.5	0.6	0.0	59.9	0.0	38.0	60.9	0.4	0.7	0.0	33.3	33.3	0.0	0.0	33.3	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.375	0.000	0.000	0.000	0.375																						
PHF	0.000	0.250	0.893	0.865	0.000	0.936	0.717	0.250	0.000	0.481	0.000	0.605	0.771	0.920	0.250	0.500	0.000	0.973	0.250	0.250	0.000	0.000	0.250	0.375	0.000	0.375	0.000	0.000	0.000	0.375	0.000	0.375	0.000	0.000	0.000	0.375																								
Entering Leg	0	1	175	45	0	221	66	1	0	100	0	167	108	173	1	2	0	284	1	1	0	0	0	1	3	0	3	0	0	3	0	3	0	0	0	3	0	3	0	0	0	3																		
Exiting Leg													154													279													4	678																				
Total													460													563													7	1356																				



PRECISION
DATA
INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

PDI File #: 197132 G

Location: N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)

E: Fort Pond Road W: Woods Lane SW: Driveway

City, State: Lancaster, MA

Client: TEC/L. Oltman

Site Code: T0852.02

Count Date: Saturday, August 17, 2019

Start Time: 11:00 AM

End Time: 1:00 PM

Class:

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

	Lunenburg Road (Route 70)											Fort Pond Road											Lunenburg Road (Route 70)											Driveway											Woods Lane										
	from North					from East						from South						from Southwest						from West																															
	Right	Bear Right	Thru	Left	U-Turn	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Bear Right	Bear Left	Right	Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total																										
	0	0	0	0	0	4	1	0	0	0	1	2	3	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0																										
11:00 AM	0	0	4	0	0	4	1	0	0	0	1	2	3	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0																										
11:15 AM	0	0	3	1	0	4	4	0	0	0	4	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0																										
11:30 AM	0	0	3	0	0	3	2	0	0	1	3	4	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0																										
11:45 AM	0	0	3	2	0	5	2	0	0	2	4	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0																										
Total	0	0	13	3	0	16	9	0	0	3	12	4	12	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0																										
12:00 PM	0	0	2	1	0	3	1	0	0	1	2	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0																										
12:15 PM	0	0	4	1	0	5	1	0	0	0	1	1	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0																										
12:30 PM	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0																										
12:45 PM	0	0	2	0	0	2	0	0	0	1	1	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0																										
Total	0	0	9	2	0	11	2	0	0	2	4	1	8	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0																										
Grand Total	0	0	22	5	0	27	11	0	0	5	16	5	20	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0																										
Approach %	0.0	0.0	81.5	18.5	0.0	68.8	0.0	0.0	0.0	31.3	0.0	20.0	80.0	0.0	0.0	0.0	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	32.4	7.4	0.0	39.7	16.2	0.0	0.0	7.4	0.0	7.4	29.4	0.0	0.0	0.0	36.8	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						31					10						27						0					0																											
Buses	0	0	0	0	0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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																											
Single-Unit Trucks	0	0	22	3	0	25	11	0	0	2	13	2	19	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0																										
% Single-Unit	0.0	0.0	100.0	60.0	0.0	92.6	100.0	0.0	0.0	40.0	81.3	40.0	95.0	0.0	0.0	0.0	84.0	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						30					5						24						0					0																											
Articulated Trucks	0	0	0	2	0	2	0	0	0	3	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0																										
% Articulated	0.0	0.0	0.0	40.0	0.0	7.4	0.0	0.0	0.0	60.0	0.0	60.0	5.0	0.0	0.0	16.0	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						1					5						3						0					0																											

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

	Lunenburg Road (Route 70)											Fort Pond Road											Lunenburg Road (Route 70)											Driveway											Woods Lane										
	from North					from East						from South						from Southwest						from West																															
	Right	Bear Right	Thru	Left	U-Turn	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Bear Right	Bear Left	Right	Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total																										
	0	0	4	0	0 <td>4</td> <td>1</td> <td>0</td> <td>0</td> <td>0</td> <td>1</td> <td>2</td> <td>3</td> <td>0</td> <td>0</td> <td>0</td> <td>5</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td>	4	1	0	0	0	1	2	3	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0																										
11:00 AM	0	0	4	0	0	4	1	0	0	0	1	2	3	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0																										
11:15 AM	0	0	3	1	0	4	4	0	0	0	4	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0																										
11:30 AM	0	0	3	0	0	3	2	0	0	1	3	1	4	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0																										
11:45 AM	0	0	3	2	0	5	2	0	0	2	4	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0																										
Total Volume	0	0	13	3	0	16	9	0	0	3	12	4	12	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0																										
% Approach Total	0.0	0.0	81.3	18.8	0.0	80.0	56.3	0.000	0.000	0.375	0.000	0.500	75.0	0.0	0.0	0.0	0.800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.846																											
Buses	0	0	0	0	0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																											
Single-Unit Trucks	0	0	13	2	0	15	9	0	0	1	10	2	11	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	38																										
Single-Unit %	0.0	0.0	100.0	66.7	0.0	93.8	100.0	0.0	0.0	33.3	83.3	50.0	91.7	0.0	0.0	0.0	81.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	86.4																											
Articulated Trucks	0	0	0	1	0	1	0	0	0	2	2	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	6																										
Articulated %	0.0	0.0	0.0	33.3	0.0	6.3	0.0	0.0	0.0	66.7	0.0	50.0	8.3	0.0	0.0	18.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.6																												
Buses	0	0	0	0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																											
Single-Unit Trucks	0	0	13	2	0	15	9	0	0	1	10	2	11	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	38																										
Single-Unit %	0.0	0.0	100.0	66.7	0.0	93.8	100.0	0.0	0.0	33.3	83.3	50.0	91.7	0.0	0.0	0.0	81.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	86.4																											
Articulated Trucks	0	0	0	1	0	1	0	0	0	2	2	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	6																										
Articulated %	0.0	0.0	0.0	33.3	0.0	6.3	0.0	0.0	0.0	66.7	0.0	50.0	8.3	0.0	0.0	18.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.6																												
Buses	0	0	0	0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																											
Single-Unit Trucks	0	0	13	2	0	15	9	0	0	1	10	2	11	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	38																										
Single-Unit %	0.0	0.0	100.0	66.7	0.0	93.8	100.0	0.0	0.0	33.3	83.3	50.0	91.7	0.0	0.0	0.0	81.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	86.4																											
Articulated Trucks	0	0	0	1	0	1	0	0	0	2	2	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	6																										
Articulated %	0.0	0.0	0.0	33.3	0.0	6.3	0.0	0.0	0.0	66.7	0.0	50.0	8.3	0.0	0.0	18.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.6																												
Buses	0	0	0	0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																											



**PRECISION
DATA
INDUSTRIES, LLC**

46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

PDI File #: 197132 G
Location: N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)
City, State: Lancaster, MA
Client: TEC/L. Oltman
Site Code: T0852.02
Count Date: Saturday, August 17, 2019
Start Time: 11:00 AM
End Time: 1:00 PM

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

	Lunenburg Road (Route 70)										Driveway															
	from North					from East					from South					from Southwest					from West					
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Left	Bear Left	U-Turn	Total	Hard Right	Bear Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	
Total Entering Leg	0	0	13	3	0	16	9	0	0	0	12	4	12	0	0	0	0	0	16	0	0	0	0	0	0	44
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	
Articulated Trucks	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	
Total Exiting Leg	0	0	16	3	0	19	9	0	0	0	12	4	12	0	0	0	0	0	16	0	0	0	0	0	44	



PRECISION
DATA
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

PDI File #: 197132 G
Location: N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)
E: Fort Pond Road W: Woods Lane SW: Driveway
City, State: Lancaster, MA
Client: TEC/L. Oltman
Site Code: T0852.02
Count Date: Saturday, August 17, 2019
Start Time: 11:00 AM
End Time: 1:00 PM

Buses

	Lunenburg Road (Route 70)												Fort Pond Road												Lunenburg Road (Route 70)												Driveway												Woods Lane											
	from North						from East						from South						from Southwest						from West																																			
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total																															
11:00 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																															
11:15 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																															
11:30 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																															
11:45 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																															
12:00 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																															
12:15 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																															
12:30 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																															
12:45 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	0.0	0.0	0.0	0.0	0.0	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	0.0																															
Exiting Leg Total	0						0						0						0						0																																			

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

	Lunenburg Road (Route 70)												Fort Pond Road												Lunenburg Road (Route 70)												Driveway												Woods Lane											
	from North						from East						from South						from Southwest						from West																																			
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total																															
11:00 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																															
11:15 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																															
11:30 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																															
11:45 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	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	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																																			



PRECISION
DATA
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Single-Unit Trucks

PDI File #: 197132 G
Location: N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)
Location: E: Fort Pond Road W: Woods Lane SW: Driveway
City, State: Lancaster, MA
Client: TEC/L. Oltman
Site Code: T0852.02
Count Date: Saturday, August 17, 2019
Start Time: 11:00 AM
End Time: 1:00 PM

Class:

	Lunenburg Road (Route 70)												Fort Pond Road												Lunenburg Road (Route 70)												Driveway												Woods Lane											
	from North						from East						from South						from Southwest						from West						from Southwest						from West																							
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	U-Turn	Total																			
11:00 AM	0	0	4	0	0	4	1	0	0	0	0	1	1	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																		
11:15 AM	0	0	3	1	0	4	4	0	0	0	0	4	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																		
11:30 AM	0	0	3	0	0	3	2	0	0	1	0	3	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																		
11:45 AM	0	0	3	1	0	4	2	0	0	0	0	2	1	0	0	0	0	1	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	13	2	0	15	9	0	0	1	0	10	2	11	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																		
12:00 PM	0	0	2	1	0	3	1	0	0	0	0	1	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																		
12:15 PM	0	0	4	0	0	4	1	0	0	0	0	1	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																		
12:30 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																		
12:45 PM	0	0	2	0	0	2	0	0	0	1	0	1	0	2	0	0	0	2	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	9	1	0	10	2	0	0	1	0	3	0	8	0	0	0	8	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	22	3	0	25	11	0	0	2	0	13	2	19	0	0	0	21	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	88.0	12.0	0.0	0.0	84.6	0.0	0.0	15.4	0.0	0.0	9.5	90.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	37.3	5.1	0.0	42.4	18.6	0.0	0.0	3.4	0.0	22.0	3.4	32.2	0.0	0.0	0.0	35.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	30												5												24												0												59											

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

	Lunenburg Road (Route 70)												Fort Pond Road												Lunenburg Road (Route 70)												Driveway												Woods Lane											
	from North						from East						from South						from Southwest						from West						from Southwest						from West																							
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	U-Turn	Total																			
11:00 AM	0	0	4	0	0	4	1	0	0	0	0	1	1	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																		
11:15 AM	0	0	3	1	0	4	4	0	0	0	0	4	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																		
11:30 AM	0	0	3	0	0	3	2	0	0	1	0	3	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																		
11:45 AM	0	0	3	1	0	4	2	0	0	0	0	2	1	0	0	0	0	1	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	13	2	0	15	9	0	0	1	0	10	2	11	0	0	0	13	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	86.7	13.3	0.0	0.0	90.0	0.0	0.0	10.0	0.0	0.0	15.4	84.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.813	0.500	0.000	0.938	0.563	0.000	0.000	0.250	0.000	0.625	0.500	0.550	0.000	0.000	0.000	0.650	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	0.731																							
Entering Leg	0	0	13	2	0	15	9	0	0	1	0	10	2	11	0	0	0	13	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	0	0	0	0	0	0	0	0	0	0	0	0	0	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	35												14												27												0												76											



**PRECISION
DATA
INDUSTRIES, LLC**

46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

197132 G
PDI File #:
N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)
Location:
E: Fort Pond Road W: Woods Lane SW: Driveway
City, State: Lancaster, MA
Client: TEC/L. Oltman
Site Code: T0852.02
Count Date: Saturday, August 17, 2019
Start Time: 11:00 AM
End Time: 1:00 PM

Articulated Trucks

	Lunenburg Road (Route 70)										Fort Pond Road										Lunenburg Road (Route 70)										Driveway										Woods Lane									
	from North					from East					from South					from Southwest					from West					from North					from East					from South					from Southwest					from West				
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	U-Turn	Total	Hard Right	Thru	Left	U-Turn	Total	Hard Right	Thru	Left	U-Turn	Total										
11:00 AM	0	0	0	0	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	0	0	0	0														
11:15 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	0	0	0	0	0	0	0														
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0														
11:45 AM	0	0	0	1	0	1	0	0	0	2	0	2	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	1	0	1	0	0	0	2	0	2	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0														
12:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0														
12:15 PM	0	0	0	1	0	1	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	0	0	0	0														
12:30 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	0	0	0	0	0	0	0														
12:45 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	0	0	0	0	0	0	0														
Total	0	0	0	1	0	1	0	0	0	1	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0														
Grand Total	0	0	0	2	0	2	0	0	0	3	0	3	3	1	0	0	0	4	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	100.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	75.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	22.2	0.0	22.2	0.0	0.0	0.0	33.3	0.0	33.3	33.3	11.1	0.0	0.0	0.0	44.4	0.0	0.0	0.0	0.0	0.0	0.0	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																																																		

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

	Lunenburg Road (Route 70)										Fort Pond Road										Lunenburg Road (Route 70)										Driveway										Woods Lane									
	from North					from East					from South					from Southwest					from West					from North					from East					from South					from Southwest					from West				
	Right	Bear Right	Thru	Left	U-Turn	Total	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Left	U-Turn	Total	Hard Right	Thru	Left	U-Turn	Total	Hard Right	Thru	Left	U-Turn	Total																
11:30 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	0	0	0	0	0	0	0														
11:45 AM	0	0	0	1	0	1	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0														
12:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0														
12:15 PM	0	0	0	1	0	1	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	0	0	0	0														
Total Volume	0	0	0	2	0	2	0	0	0	3	0	3	2	1	0	0	0	3	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	100.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	66.7	33.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.500	0.000	0.500	0.000	0.000	0.000	0.375	0.000	0.375	0.500	0.250	0.000	0.000	0.000	0.375	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																																																		
Exiting Leg																																																		
Total	0	0	0	2	0	2	0	0	0	3	0	3	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0														
Total																																																		



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdillc.com

PDI File #: 197132 G
 Location: N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)
 Location: E: Fort Pond Road W: Woods Lane SW: Driveway
 City, State: Lancaster, MA
 Client: TEC/L. Oltman
 Site Code: T0852.02
 Count Date: Saturday, August 17, 2019
 Start Time: 11:00 AM
 End Time: 1:00 PM
 Class:

Bicycles (on Roadway and Crosswalks)

	Lunenburg Road (Route 70)												Driveway												Woods Lane											
	from North						from East						from South						from Southwest						from West											
	Right	Beer Right	Thru	Left	U-Turn	Total	Right	Beer Left	Thru	Left	U-Turn	Total	Right	Beer Right	Thru	Left	U-Turn	Total	Right	Beer Left	Thru	Left	U-Turn	Total	Right	Beer Right	Thru	Left	U-Turn	Total						
11:00 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	0						
11:15 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	0						
11:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
11:45 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	0						
Total	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
12:00 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	0						
12:15 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	0						
12:30 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	0						
12:45 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	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						
Grand Total	0	0	0	1	0	0	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	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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												1												0												0

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

	Lunenburg Road (Route 70)												Driveway												Woods Lane											
	from North						from East						from South						from Southwest						from West											
	Right	Beer Right	Thru	Left	U-Turn	Total	Right	Beer Left	Thru	Left	U-Turn	Total	Right	Beer Right	Thru	Left	U-Turn	Total	Right	Beer Left	Thru	Left	U-Turn	Total	Right	Beer Right	Thru	Left	U-Turn	Total						
11:00 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	0						
11:15 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	0						
11:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
11:45 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	0						
Total Volume	0	0	0	1	0	0	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	0.000	0.000	0.000	0.250	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							
PHF												0.250												0.000												0.250
Entering Leg	0	0	0	1	0	0	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	0	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												1												0												0



PRECISION
DATA
INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

PDI File #: 197132 G
Location: N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)
Location: E: Fort Pond Road W: Woods Lane SW: Driveway
City, State: Lancaster, MA
Client: TEC/L. Oltman
Site Code: T0852.02
Count Date: Saturday, August 17, 2019
Start Time: 11:00 AM
End Time: 1:00 PM
Class: Pedestrians

	Lunenburg Road (Route 70)										Fort Pond Road										Lunenburg Road (Route 70)										Driveway										Woods Lane														
	from North					from East					from South					from Southwest					from West					from South					from Southwest					from West					from South					from Southwest					from West				
	Right	Beam Right	Thru	Left	U-Turn	CW-EB	CW-WB	CW-NB	Total	Right	Thru	Beam Left	Left	U-Turn	CW-SB	CW-WB	CW-EB	Total	Right	Thru	Left	Head Left	U-Turn	CW-WB	CW-EB	Total	Hand Right	Beam Right	Right	Beam Left	Left	U-Turn	CW-WB	CW-SB	CW-EB	Total	Hand Right	Beam Right	Right	Beam Left	Left	U-Turn	CW-WB	CW-SB	CW-EB	Total									
11:00 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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
11:15 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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
11:30 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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
11:45 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	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							
12:00 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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
12:15 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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
12:30 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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
12:45 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	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							
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	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							
Exiting Leg 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							

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

	Lunenburg Road (Route 70)										Fort Pond Road										Lunenburg Road (Route 70)										Driveway										Woods Lane														
	from North					from East					from South					from Southwest					from West					from South					from Southwest					from West					from South					from Southwest					from West				
	Right	Beam Right	Thru	Left	U-Turn	CW-EB	CW-WB	CW-NB	Total	Right	Thru	Beam Left	Left	U-Turn	CW-SB	CW-WB	CW-EB	Total	Right	Thru	Left	Head Left	U-Turn	CW-WB	CW-EB	Total	Hand Right	Beam Right	Right	Beam Left	Left	U-Turn	CW-WB	CW-SB	CW-EB	Total	Hand Right	Beam Right	Right	Beam Left	Left	U-Turn	CW-WB	CW-SB	CW-EB	Total									
11:00 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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
11:15 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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
11:30 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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
11:45 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	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
% Approach Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00													
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	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0											
Exiting 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	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											

197132 H

Location: **N: Route 2 EB Ramps (Exit 35)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdillc.com

Cars and Heavy Vehicles (Combined)

	Route 2 EB Ramps (Exit 35)				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
11:00 AM	28	2	0	30	0	12	0	12	10	27	0	37	79
11:15 AM	39	3	0	42	0	13	0	13	15	37	0	52	107
11:30 AM	38	2	0	40	2	17	0	19	17	44	0	61	120
11:45 AM	49	6	0	55	0	127	0	127	22	31	0	53	235
Total	154	13	0	167	2	169	0	171	64	139	0	203	541
12:00 PM	36	5	0	41	1	21	0	22	17	26	0	43	106
12:15 PM	43	5	0	48	0	20	0	20	19	27	0	46	114
12:30 PM	33	4	0	37	0	13	0	13	18	30	0	48	98
12:45 PM	40	4	0	44	0	15	0	15	12	36	0	48	107
Total	152	18	0	170	1	69	0	70	66	119	0	185	425
Grand Total	306	31	0	337	3	238	0	241	130	258	0	388	966
Approach %	90.8	9.2	0.0		1.2	98.8	0.0		33.5	66.5	0.0		
Total %	31.7	3.2	0.0	34.9	0.3	24.6	0.0	24.9	13.5	26.7	0.0	40.2	
Exiting Leg Total				261				161				544	966
Cars	293	31	0	324	3	238	0	241	129	235	0	364	929
% Cars	95.8	100.0	0.0	96.1	100.0	100.0	0.0	100.0	99.2	91.1	0.0	93.8	96.2
Exiting Leg Total				238				160				531	929
Heavy Vehicles	13	0	0	13	0	0	0	0	1	23	0	24	37
% Heavy Vehicles	4.2	0.0	0.0	3.9	0.0	0.0	0.0	0.0	0.8	8.9	0.0	6.2	3.8
Exiting Leg Total				23				1				13	37

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

	Route 2 EB Ramps (Exit 35)				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
11:30 AM	38	2	0	40	2	17	0	19	17	44	0	61	120
11:45 AM	49	6	0	55	0	127	0	127	22	31	0	53	235
12:00 PM	36	5	0	41	1	21	0	22	17	26	0	43	106
12:15 PM	43	5	0	48	0	20	0	20	19	27	0	46	114
Total Volume	166	18	0	184	3	185	0	188	75	128	0	203	575
% Approach Total	90.2	9.8	0.0		1.6	98.4	0.0		36.9	63.1	0.0		
PHF	0.847	0.750	0.000	0.836	0.375	0.364	0.000	0.370	0.852	0.727	0.000	0.832	0.612
Cars	158	18	0	176	3	185	0	188	74	111	0	185	549
Cars %	95.2	100.0	0.0	95.7	100.0	100.0	0.0	100.0	98.7	86.7	0.0	91.1	95.5
Heavy Vehicles	8	0	0	8	0	0	0	0	1	17	0	18	26
Heavy Vehicles %	4.8	0.0	0.0	4.3	0.0	0.0	0.0	0.0	1.3	13.3	0.0	8.9	4.5
Cars Enter Leg	158	18	0	176	3	185	0	188	74	111	0	185	549
Heavy Enter Leg	8	0	0	8	0	0	0	0	1	17	0	18	26
Total Entering Leg	166	18	0	184	3	185	0	188	75	128	0	203	575
Cars Exiting Leg				114				92				343	549
Heavy Exiting Leg				17				1				8	26
Total Exiting Leg				131				93				351	575

PDI File #: **197132 H**
 Location: **N: Route 2 EB Ramps (Exit 35)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



Cars

	Route 2 EB Ramps (Exit 35)				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
11:00 AM	26	2	0	28	0	12	0	12	10	25	0	35	75
11:15 AM	37	3	0	40	0	13	0	13	15	36	0	51	104
11:30 AM	36	2	0	38	2	17	0	19	17	39	0	56	113
11:45 AM	48	6	0	54	0	127	0	127	21	28	0	49	230
Total	147	13	0	160	2	169	0	171	63	128	0	191	522
12:00 PM	33	5	0	38	1	21	0	22	17	21	0	38	98
12:15 PM	41	5	0	46	0	20	0	20	19	23	0	42	108
12:30 PM	33	4	0	37	0	13	0	13	18	29	0	47	97
12:45 PM	39	4	0	43	0	15	0	15	12	34	0	46	104
Total	146	18	0	164	1	69	0	70	66	107	0	173	407
Grand Total	293	31	0	324	3	238	0	241	129	235	0	364	929
Approach %	90.4	9.6	0.0		1.2	98.8	0.0		35.4	64.6	0.0		
Total %	31.5	3.3	0.0	34.9	0.3	25.6	0.0	25.9	13.9	25.3	0.0	39.2	
Exiting Leg Total				238				160				531	929

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

	Route 2 EB Ramps (Exit 35)				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
11:30 AM	36	2	0	38	2	17	0	19	17	39	0	56	113
11:45 AM	48	6	0	54	0	127	0	127	21	28	0	49	230
12:00 PM	33	5	0	38	1	21	0	22	17	21	0	38	98
12:15 PM	41	5	0	46	0	20	0	20	19	23	0	42	108
Total Volume	158	18	0	176	3	185	0	188	74	111	0	185	549
% Approach Total	89.8	10.2	0.0		1.6	98.4	0.0		40.0	60.0	0.0		
PHF	0.823	0.750	0.000	0.815	0.375	0.364	0.000	0.370	0.881	0.712	0.000	0.826	0.597
Entering Leg	158	18	0	176	3	185	0	188	74	111	0	185	549
Exiting Leg				114				92				343	549
Total				290				280				528	1098

PDI File #: **197132 H**
 Location: **N: Route 2 EB Ramps (Exit 35)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdillc.com

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

	Route 2 EB Ramps (Exit 35)				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
11:00 AM	2	0	0	2	0	0	0	0	0	2	0	2	4
11:15 AM	2	0	0	2	0	0	0	0	0	1	0	1	3
11:30 AM	2	0	0	2	0	0	0	0	0	5	0	5	7
11:45 AM	1	0	0	1	0	0	0	0	1	3	0	4	5
Total	7	0	0	7	0	0	0	0	1	11	0	12	19
12:00 PM	3	0	0	3	0	0	0	0	0	5	0	5	8
12:15 PM	2	0	0	2	0	0	0	0	0	4	0	4	6
12:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
12:45 PM	1	0	0	1	0	0	0	0	0	2	0	2	3
Total	6	0	0	6	0	0	0	0	0	12	0	12	18
Grand Total	13	0	0	13	0	0	0	0	1	23	0	24	37
Approach %	100.0	0.0	0.0		0.0	0.0	0.0		4.2	95.8	0.0		
Total %	35.1	0.0	0.0	35.1	0.0	0.0	0.0	0.0	2.7	62.2	0.0	64.9	
Exiting Leg Total	23				1				13				37
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0
Single-Unit Trucks	9	0	0	9	0	0	0	0	1	19	0	20	29
% Single-Unit	69.2	0.0	0.0	69.2	0.0	0.0	0.0	0.0	100.0	82.6	0.0	83.3	78.4
Exiting Leg Total	19				1				9				29
Articulated Trucks	4	0	0	4	0	0	0	0	0	4	0	4	8
% Articulated	30.8	0.0	0.0	30.8	0.0	0.0	0.0	0.0	0.0	17.4	0.0	16.7	21.6
Exiting Leg Total	4				0				4				8

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

	Route 2 EB Ramps (Exit 35)				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
11:30 AM	2	0	0	2	0	0	0	0	0	5	0	5	7
11:45 AM	1	0	0	1	0	0	0	0	1	3	0	4	5
12:00 PM	3	0	0	3	0	0	0	0	0	5	0	5	8
12:15 PM	2	0	0	2	0	0	0	0	0	4	0	4	6
Total Volume	8	0	0	8	0	0	0	0	1	17	0	18	26
% Approach Total	100.0	0.0	0.0		0.0	0.0	0.0		5.6	94.4	0.0		
PHF	0.667	0.000	0.000	0.667	0.000	0.000	0.000	0.000	0.250	0.850	0.000	0.900	0.813
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Single-Unit Trucks	5	0	0	5	0	0	0	0	1	14	0	15	20
Single-Unit %	62.5	0.0	0.0	62.5	0.0	0.0	0.0	0.0	100.0	82.4	0.0	83.3	76.9
Articulated Trucks	3	0	0	3	0	0	0	0	0	3	0	3	6
Articulated %	37.5	0.0	0.0	37.5	0.0	0.0	0.0	0.0	0.0	17.6	0.0	16.7	23.1
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	5	0	0	5	0	0	0	0	1	14	0	15	20
Articulated Trucks	3	0	0	3	0	0	0	0	0	3	0	3	6
Total Entering Leg	8	0	0	8	0	0	0	0	1	17	0	18	26
Buses	0				0				0				0
Single-Unit Trucks	14				1				5				20
Articulated Trucks	3				0				3				6
Total Exiting Leg	17				1				8				26

PDI File #: **197132 H**
 Location: **N: Route 2 EB Ramps (Exit 35)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Buses

	Route 2 EB Ramps (Exit 35)				Old Union Turnpike				Old Union Turnpike				Total	
	from North				from East				from West					
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total		
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	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
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	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
Grand Total	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			
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		
Exiting Leg Total	0				0				0				0	

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

11:00 AM	Route 2 EB Ramps (Exit 35)				Old Union Turnpike				Old Union Turnpike				Total	
	from North				from East				from West					
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total		
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	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
% Approach Total	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
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0				0				0				0	
Total	0				0				0				0	

PDI File #: **197132 H**
 Location: **N: Route 2 EB Ramps (Exit 35)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**
 Class:



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Single-Unit Trucks

	Route 2 EB Ramps (Exit 35)				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
11:00 AM	1	0	0	1	0	0	0	0	0	1	0	1	2
11:15 AM	2	0	0	2	0	0	0	0	0	1	0	1	3
11:30 AM	2	0	0	2	0	0	0	0	0	3	0	3	5
11:45 AM	0	0	0	0	0	0	0	0	1	3	0	4	4
Total	5	0	0	5	0	0	0	0	1	8	0	9	14
12:00 PM	2	0	0	2	0	0	0	0	0	5	0	5	7
12:15 PM	1	0	0	1	0	0	0	0	0	3	0	3	4
12:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
12:45 PM	1	0	0	1	0	0	0	0	0	2	0	2	3
Total	4	0	0	4	0	0	0	0	0	11	0	11	15
Grand Total	9	0	0	9	0	0	0	0	1	19	0	20	29
Approach %	100.0	0.0	0.0		0.0	0.0	0.0		5.0	95.0	0.0		
Total %	31.0	0.0	0.0	31.0	0.0	0.0	0.0	0.0	3.4	65.5	0.0	69.0	
Exiting Leg Total				19				1				9	29

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

11:30 AM	Route 2 EB Ramps (Exit 35)				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
11:30 AM	2	0	0	2	0	0	0	0	0	3	0	3	5
11:45 AM	0	0	0	0	0	0	0	0	1	3	0	4	4
12:00 PM	2	0	0	2	0	0	0	0	0	5	0	5	7
12:15 PM	1	0	0	1	0	0	0	0	0	3	0	3	4
Total Volume	5	0	0	5	0	0	0	0	1	14	0	15	20
% Approach Total	100.0	0.0	0.0		0.0	0.0	0.0		6.7	93.3	0.0		
PHF	0.625	0.000	0.000	0.625	0.000	0.000	0.000	0.000	0.250	0.700	0.000	0.750	0.714
Entering Leg	5	0	0	5	0	0	0	0	1	14	0	15	20
Exiting Leg				14				1				5	20
Total				19				1				20	40

PDI File #: **197132 H**
 Location: **N: Route 2 EB Ramps (Exit 35)**
 Location: **E: Old Union Turnpike W: Old Union Turnpike**
 City, State: **Lancaster, MA**
 Client: **TEC/L. Oltman**
 Site Code: **T0852.02**
 Count Date: **Saturday, August 17, 2019**
 Start Time: **11:00 AM**
 End Time: **1:00 PM**



46 Morton Street, Framingham, MA 01702
 Office: 508-875-0100 Fax: 508-875-0118
 Email: datarequests@pdilic.com

Articulated Trucks

	Route 2 EB Ramps (Exit 35)				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
11:00 AM	1	0	0	1	0	0	0	0	0	1	0	1	2
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	2	0	2	2
11:45 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	2	0	0	2	0	0	0	0	0	3	0	3	5
12:00 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
12:15 PM	1	0	0	1	0	0	0	0	0	1	0	1	2
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	0	0	2	0	0	0	0	0	1	0	1	3
Grand Total	4	0	0	4	0	0	0	0	0	4	0	4	8
Approach %	100.0	0.0	0.0		0.0	0.0	0.0		0.0	100.0	0.0		
Total %	50.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	50.0	
Exiting Leg Total				4				0				4	8

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

11:30 AM	Route 2 EB Ramps (Exit 35)				Old Union Turnpike				Old Union Turnpike				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
11:30 AM	0	0	0	0	0	0	0	0	0	2	0	2	2
11:45 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
12:00 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
12:15 PM	1	0	0	1	0	0	0	0	0	1	0	1	2
Total Volume	3	0	0	3	0	0	0	0	0	3	0	3	6
% Approach Total	100.0	0.0	0.0		0.0	0.0	0.0		0.0	100.0	0.0		
PHF	0.750	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.375	0.750
Entering Leg	3	0	0	3	0	0	0	0	0	3	0	3	6
Exiting Leg				3				0				3	6
Total				6				0				6	12

PDI File #: 197132 H
 Location: N: Route 2 EB Ramps (Exit 35)
 Location: E: Old Union Turnpike W: Old Union Turnpike
 City, State: Lancaster, MA
 Client: TEC/L. Oltman
 Site Code: T0852.02
 Count Date: Saturday, August 17, 2019
 Start Time: 11:00 AM
 End Time: 1:00 PM



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Bicycles (on Roadway and Crosswalks)

	Route 2 EB Ramps (Exit 35)						Old Union Turnpike						Old Union Turnpike						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	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
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
12:30 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	2
Grand Total	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	2
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	
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	50.0	50.0	0.0	0.0	0.0	0.0	50.0	
Exiting Leg Total	0						1						1						2

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

11:45 AM	Route 2 EB Ramps (Exit 35)						Old Union Turnpike						Old Union Turnpike						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
12:30 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	2
% 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	
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.250	0.500
Entering Leg	0						1						1						2
Exiting Leg	0						1						1						2
Total	0						2						2						4

Appendix B

Automatic Traffic Recorder (ATR) Counts



PRECISION
DATA
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

186634 A Volume
Site Code: T0852

Lunenburg Road (Route 70)
north Kimball Farms
City, State: Lancaster, MA
Client: TEC / E. Oltman

Start Time	12/18/18		12/19/18		12/20/18		12/21/18		12/22/18		12/23/18		12/24/18		Week Average	
	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB
12:00 AM	22	16	17	22	*	*	*	*	*	*	*	*	*	*	20	19
01:00	14	6	9	12	*	*	*	*	*	*	*	*	*	*	12	9
02:00	23	12	17	8	*	*	*	*	*	*	*	*	*	*	20	10
03:00	24	17	27	15	*	*	*	*	*	*	*	*	*	*	26	16
04:00	84	31	76	35	*	*	*	*	*	*	*	*	*	*	80	33
05:00	235	81	241	78	*	*	*	*	*	*	*	*	*	*	238	80
06:00	352	180	362	177	*	*	*	*	*	*	*	*	*	*	357	178
07:00	346	343	350	328	*	*	*	*	*	*	*	*	*	*	348	336
08:00	335	336	332	319	*	*	*	*	*	*	*	*	*	*	334	328
09:00	295	275	315	285	*	*	*	*	*	*	*	*	*	*	305	280
10:00	281	264	310	271	*	*	*	*	*	*	*	*	*	*	296	268
11:00	307	235	337	282	*	*	*	*	*	*	*	*	*	*	322	258
12:00 PM	273	250	304	302	*	*	*	*	*	*	*	*	*	*	288	276
01:00	318	277	371	308	*	*	*	*	*	*	*	*	*	*	338	292
02:00	314	358	363	382	*	*	*	*	*	*	*	*	*	*	344	370
03:00	343	504	331	478	*	*	*	*	*	*	*	*	*	*	337	491
04:00	287	528	381	641	*	*	*	*	*	*	*	*	*	*	334	584
05:00	261	527	360	555	*	*	*	*	*	*	*	*	*	*	310	541
06:00	226	346	253	418	*	*	*	*	*	*	*	*	*	*	240	382
07:00	168	196	245	246	*	*	*	*	*	*	*	*	*	*	206	221
08:00	130	175	149	154	*	*	*	*	*	*	*	*	*	*	140	164
09:00	84	121	110	171	*	*	*	*	*	*	*	*	*	*	97	146
10:00	56	58	68	79	*	*	*	*	*	*	*	*	*	*	62	68
11:00	30	45	34	49	*	*	*	*	*	*	*	*	*	*	32	47
Total	4808	5181	5362	5615	0	0	0	0	0	0	0	0	0	0	5086	5397
Day	9989		10977		0	0	0	0	0	0	0	0	0	0	10483	
AM Peak	06:00	07:00	06:00	07:00	-	-	-	-	-	-	-	-	-	-	06:00	07:00
Vol.	352	343	362	328	-	-	-	-	-	-	-	-	-	-	357	336
PM Peak	15:00	16:00	16:00	16:00	-	-	-	-	-	-	-	-	-	-	13:00	16:00
Vol.	343	528	381	641	-	-	-	-	-	-	-	-	-	-	344	584

Lunenburg Road (Route 70)
north Kimball Farms
City, State: Lancaster, MA
Client: TEC / E. Oltman



46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

186634 A Volume
Site Code: T0852

Start Time	SB		NB		Combin ed		12/18/18 Tue
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	
12:00	7	67	7	55	14	122	
12:15	6	63	3	69	9	132	
12:30	3	71	1	53	4	124	
12:45	6	22 72	273 5	16 73	250 11	38 145	523
01:00	6	76	3	53	9	129	
01:15	3	82	1	83	4	165	
01:30	2	78	0	69	2	147	
01:45	3	14 82	318 2	6 72	277 5	20 154	595
02:00	4	76	5	68	9	144	
02:15	7	76	4	83	11	159	
02:30	5	77	1	96	6	173	
02:45	7	23 85	314 2	12 111	358 9	35 196	672
03:00	5	73	2	128	7	201	
03:15	4	95	8	135	12	230	
03:30	7	94	2	113	9	207	
03:45	8	24 81	343 5	17 128	504 13	41 209	847
04:00	10	67	4	137	14	204	
04:15	16	73	6	142	22	215	
04:30	26	74	12	124	38	198	
04:45	32	84 73	287 9	31 125	528 41	115 198	815
05:00	34	66	14	135	48	201	
05:15	43	67	21	114	64	181	
05:30	69	75	22	139	91	214	
05:45	89	235 53	261 24	81 139	527 113	316 192	788
06:00	101	60	28	96	129	156	
06:15	89	66	36	104	125	170	
06:30	81	51	62	86	143	137	
06:45	81	352 49	226 54	180 60	346 135	532 109	572
07:00	86	48	67	55	153	103	
07:15	89	44	77	56	166	100	
07:30	79	39	105	47	184	86	
07:45	92	346 37	168 94	343 38	196 186	689 75	364
08:00	107	34	81	47	188	81	
08:15	67	36	76	35	143	71	
08:30	77	33	89	53	166	86	
08:45	84	335 27	130 90	336 40	175 174	671 67	305
09:00	90	18	64	35	154	53	
09:15	64	17	71	38	135	55	
09:30	77	21	68	26	145	47	
09:45	64	295 28	84 72	275 22	121 136	570 50	205
10:00	72	26	64	17	136	43	
10:15	85	14	76	21	161	35	
10:30	51	9	66	11	117	20	
10:45	73	281 7	56 58	264 9	58 131	545 16	114
11:00	68	7	57	8	125	15	
11:15	67	13	50	13	117	26	
11:30	83	6	65	14	148	20	
11:45	89	307 4	30 63	235 10	45 152	542 14	75
Total	2318	2490	1796	3385	4114	5875	
Percent	56.3%	42.4%	43.7%	57.6%			
Day Total		4808		5181		9989	
Peak Vol.	07:15 367	- 347	- 357	- 531	- 724	- 850	- - -
P.H.F.	0.857	0.913	0.850	0.935	0.963	0.924	

Lunenburg Road (Route 70)
north Kimball Farms
City, State: Lancaster, MA
Client: TEC / E. Oltman



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186634 A Volume
Site Code: T0852

Start Time	SB		NB		Combin ed		12/19/18 Wed						
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.							
12:00	5	92	8	66	13	158							
12:15	4	82	6	88	10	170							
12:30	1	66	6	66	7	132							
12:45	7	64	2	22	82	302	39	146	606				
01:00	3	109	3	76	6	185							
01:15	4	86	3	74	7	160							
01:30	2	87	4	80	6	167							
01:45	0	9	89	371	2	12	78	308	2	21	167	679	
02:00	1	92	3	94	4	186							
02:15	5	92	1	88	6	180							
02:30	6	76	3	93	9	169							
02:45	5	17	103	363	1	8	107	382	6	25	210	745	
03:00	2	87	3	95	5	182							
03:15	7	79	3	131	10	210							
03:30	12	94	4	124	16	218							
03:45	6	27	71	331	5	15	128	478	11	42	199	809	
04:00	10	112	4	131	14	243							
04:15	10	101	10	155	20	256							
04:30	20	87	8	178	28	265							
04:45	36	76	81	381	13	35	177	641	49	111	258	1022	
05:00	38	95	15	139	53	234							
05:15	52	86	19	152	71	238							
05:30	62	91	16	133	78	224							
05:45	89	241	88	360	28	78	131	555	117	319	219	915	
06:00	80	70	25	154	105	224							
06:15	88	57	37	101	125	158							
06:30	94	62	47	86	141	148							
06:45	100	362	64	253	68	177	77	418	168	539	141	671	
07:00	93	73	61	49	154	122							
07:15	90	86	83	65	173	151							
07:30	80	39	98	87	178	126							
07:45	87	350	47	245	86	328	45	246	173	678	92	491	
08:00	108	44	80	39	188	83							
08:15	68	34	78	45	146	79							
08:30	74	34	94	41	168	75							
08:45	82	332	37	149	67	319	29	154	149	651	66	303	
09:00	78	39	90	47	168	86							
09:15	84	25	65	54	149	79							
09:30	72	20	69	35	141	55							
09:45	81	315	26	110	61	285	35	171	142	600	61	281	
10:00	64	25	62	22	126	47							
10:15	86	19	75	18	161	37							
10:30	71	16	60	24	131	40							
10:45	89	310	8	68	74	271	15	79	163	581	23	147	
11:00	79	17	70	9	149	26							
11:15	81	6	57	18	138	24							
11:30	92	7	77	14	169	21							
11:45	85	337	4	34	78	282	8	49	163	619	12	83	
Total	2393	2969	1832	3783	4225	6752							
Percent	56.6%	44.0%	43.4%	56.0%									
Day Total	5362		5615		10977								
Peak Vol.	06:30	-	04:00	-	07:15	-	04:15	-	07:15	-	04:00	-	-
P.H.F.	0.943	-	0.850	-	0.885	-	0.912	-	0.947	-	0.964	-	-

Lunenburg Road (Route 70)
north Kimball Farms
City, State: Lancaster, MA
Client: TEC / E. Oltman



PRECISION
D A T A
INDUSTRIES, LLC

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Email: datarequests@pdillc.com

186634 A Class
Site Code: T0852

SB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12/18/1														
8	1	16	3	0	0	1	0	1	0	0	0	0	0	22
01:00	0	6	3	1	4	0	0	0	0	0	0	0	0	14
02:00	1	9	3	2	3	5	0	0	0	0	0	0	0	23
03:00	0	16	6	0	2	0	0	0	0	0	0	0	0	24
04:00	0	61	16	0	6	1	0	0	0	0	0	0	0	84
05:00	1	154	59	1	14	1	1	1	2	1	0	0	0	235
06:00	1	225	85	1	28	5	0	2	4	1	0	0	0	352
07:00	1	261	65	2	11	3	0	2	1	0	0	0	0	346
08:00	2	240	61	5	13	3	3	4	4	0	0	0	0	335
09:00	0	211	60	2	14	3	1	0	4	0	0	0	0	295
10:00	1	201	51	3	12	7	3	0	3	0	0	0	0	281
11:00	0	207	63	1	17	7	2	4	6	0	0	0	0	307
12 PM	0	179	51	5	22	7	5	1	2	1	0	0	0	273
13:00	4	206	66	4	12	15	3	5	3	0	0	0	0	318
14:00	0	213	66	5	17	6	1	1	5	0	0	0	0	314
15:00	1	253	53	4	17	9	1	5	0	0	0	0	0	343
16:00	0	207	49	3	16	6	0	1	5	0	0	0	0	287
17:00	3	197	42	2	10	4	0	0	3	0	0	0	0	261
18:00	0	175	45	0	4	1	0	0	1	0	0	0	0	226
19:00	2	130	32	0	4	0	0	0	0	0	0	0	0	168
20:00	0	106	21	0	2	1	0	0	0	0	0	0	0	130
21:00	0	67	13	0	3	1	0	0	0	0	0	0	0	84
22:00	0	47	8	0	1	0	0	0	0	0	0	0	0	56
23:00	0	20	7	0	2	0	0	0	1	0	0	0	0	30
Total	18	3407	928	41	234	86	20	27	44	3	0	0	0	4808
Percent	0.4%	70.9%	19.3%	0.9%	4.9%	1.8%	0.4%	0.6%	0.9%	0.1%	0.0%	0.0%	0.0%	
AM Peak	08:00	07:00	06:00	08:00	06:00	10:00	08:00	08:00	11:00	05:00				06:00
Vol.	2	261	85	5	28	7	3	4	6	1				352
PM Peak	13:00	15:00	13:00	12:00	12:00	13:00	12:00	13:00	14:00	12:00				15:00
Vol.	4	253	66	5	22	15	5	5	5	1				343

Lunenburg Road (Route 70)
north Kimball Farms
City, State: Lancaster, MA
Client: TEC / E. Oltman



PRECISION
D A T A
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

186634 A Class
Site Code: T0852

SB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12/19/1														
8	0	13	3	0	0	1	0	0	0	0	0	0	0	17
01:00	0	4	1	0	3	1	0	0	0	0	0	0	0	9
02:00	0	10	3	2	1	1	0	0	0	0	0	0	0	17
03:00	0	17	5	0	1	3	0	0	1	0	0	0	0	27
04:00	0	53	17	0	5	0	0	1	0	0	0	0	0	76
05:00	1	154	58	0	19	2	1	2	4	0	0	0	0	241
06:00	0	234	85	3	27	3	0	5	5	0	0	0	0	362
07:00	0	269	61	3	8	3	0	1	4	1	0	0	0	350
08:00	1	248	49	6	18	4	3	1	2	0	0	0	0	332
09:00	0	225	55	1	20	6	1	1	6	0	0	0	0	315
10:00	0	218	57	2	17	2	3	2	9	0	0	0	0	310
11:00	1	236	63	0	20	3	2	2	10	0	0	0	0	337
12 PM	2	220	55	3	9	5	3	1	5	1	0	0	0	304
13:00	3	250	66	7	20	9	4	7	4	1	0	0	0	371
14:00	6	234	72	5	18	15	4	1	8	0	0	0	0	363
15:00	2	237	52	6	18	10	1	3	2	0	0	0	0	331
16:00	1	283	62	0	20	13	1	1	0	0	0	0	0	381
17:00	1	266	76	0	8	6	0	0	3	0	0	0	0	360
18:00	2	192	49	0	7	2	0	0	1	0	0	0	0	253
19:00	0	201	38	0	3	0	0	1	2	0	0	0	0	245
20:00	0	121	25	1	0	1	0	0	1	0	0	0	0	149
21:00	0	95	14	0	1	0	0	0	0	0	0	0	0	110
22:00	0	55	10	0	2	1	0	0	0	0	0	0	0	68
23:00	0	24	5	0	4	0	0	0	1	0	0	0	0	34
Total	20	3859	981	39	249	91	23	29	68	3	0	0	0	5362
Percent	0.4%	72.0%	18.3%	0.7%	4.6%	1.7%	0.4%	0.5%	1.3%	0.1%	0.0%	0.0%	0.0%	
AM Peak	05:00	07:00	06:00	08:00	06:00	09:00	08:00	06:00	11:00	07:00				06:00
Vol.	1	269	85	6	27	6	3	5	10	1				362
PM Peak	14:00	16:00	17:00	13:00	13:00	14:00	13:00	13:00	14:00	12:00				16:00
Vol.	6	283	76	7	20	15	4	7	8	1				381

Lunenburg Road (Route 70)
 north Kimball Farms
 City, State: Lancaster, MA
 Client: TEC / E. Oltman



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186634 A Class
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NB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12/18/1														
8	0	10	4	1	0	0	0	0	1	0	0	0	0	16
01:00	0	5	0	0	1	0	0	0	0	0	0	0	0	6
02:00	0	8	3	0	0	0	0	0	1	0	0	0	0	12
03:00	0	8	5	0	0	4	0	0	0	0	0	0	0	17
04:00	0	18	7	0	1	5	0	0	0	0	0	0	0	31
05:00	0	50	20	1	4	5	0	1	0	0	0	0	0	81
06:00	0	104	35	4	19	13	0	3	0	1	0	0	1	180
07:00	2	248	61	3	5	17	1	1	4	1	0	0	0	343
08:00	2	264	57	0	10	3	0	0	0	0	0	0	0	336
09:00	1	188	58	3	13	5	0	2	4	1	0	0	0	275
10:00	0	188	47	1	13	6	0	3	5	1	0	0	0	264
11:00	1	170	33	2	15	7	0	4	3	0	0	0	0	235
12 PM	1	178	39	6	11	8	0	2	5	0	0	0	0	250
13:00	2	194	46	2	15	9	1	3	4	1	0	0	0	277
14:00	1	265	61	4	17	6	0	2	2	0	0	0	0	358
15:00	1	378	98	3	16	5	2	1	0	0	0	0	0	504
16:00	3	392	109	1	15	0	0	6	2	0	0	0	0	528
17:00	1	440	68	2	13	2	0	1	0	0	0	0	0	527
18:00	0	301	35	1	9	0	0	0	0	0	0	0	0	346
19:00	0	165	26	0	3	1	0	1	0	0	0	0	0	196
20:00	0	148	21	1	5	0	0	0	0	0	0	0	0	175
21:00	0	108	11	0	2	0	0	0	0	0	0	0	0	121
22:00	0	50	6	0	1	1	0	0	0	0	0	0	0	58
23:00	0	39	6	0	0	0	0	0	0	0	0	0	0	45
Total	15	3919	856	35	188	97	4	30	31	5	0	0	1	5181
Percent	0.3%	75.6%	16.5%	0.7%	3.6%	1.9%	0.1%	0.6%	0.6%	0.1%	0.0%	0.0%	0.0%	
AM Peak	07:00	08:00	07:00	06:00	06:00	07:00	07:00	11:00	10:00	06:00			06:00	07:00
Vol.	2	264	61	4	19	17	1	4	5	1			1	343
PM Peak	16:00	17:00	16:00	12:00	14:00	13:00	15:00	16:00	12:00	13:00				16:00
Vol.	3	440	109	6	17	9	2	6	5	1				528

Lunenburg Road (Route 70)
 north Kimball Farms
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186634 A Class
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NB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12/19/1														
8	0	18	3	1	0	0	0	0	0	0	0	0	0	22
01:00	0	8	2	0	1	0	0	0	1	0	0	0	0	12
02:00	0	6	1	0	0	0	0	0	1	0	0	0	0	8
03:00	0	8	3	0	0	4	0	0	0	0	0	0	0	15
04:00	1	18	7	1	2	6	0	0	0	0	0	0	0	35
05:00	0	49	13	0	7	5	0	2	2	0	0	0	0	78
06:00	2	109	32	2	16	11	0	3	2	0	0	0	0	177
07:00	0	236	60	2	9	13	2	2	3	1	0	0	0	328
08:00	2	237	56	3	9	7	0	1	4	0	0	0	0	319
09:00	2	212	41	0	11	8	2	3	5	1	0	0	0	285
10:00	0	192	49	2	17	1	0	4	6	0	0	0	0	271
11:00	2	183	53	4	18	11	0	5	5	1	0	0	0	282
12 PM	1	219	42	2	20	7	0	3	8	0	0	0	0	302
13:00	1	246	37	3	13	5	0	0	3	0	0	0	0	308
14:00	1	283	59	5	17	11	0	2	4	0	0	0	0	382
15:00	0	359	97	3	12	5	0	0	2	0	0	0	0	478
16:00	1	508	105	0	23	2	0	1	1	0	0	0	0	641
17:00	1	462	78	0	11	1	0	2	0	0	0	0	0	555
18:00	2	350	58	0	7	0	0	0	1	0	0	0	0	418
19:00	1	210	32	0	2	0	0	1	0	0	0	0	0	246
20:00	0	134	19	1	0	0	0	0	0	0	0	0	0	154
21:00	0	145	22	0	4	0	0	0	0	0	0	0	0	171
22:00	0	67	10	0	2	0	0	0	0	0	0	0	0	79
23:00	0	40	8	0	0	0	0	0	1	0	0	0	0	49
Total	17	4299	887	29	201	97	4	29	49	3	0	0	0	5615
Percent	0.3%	76.6%	15.8%	0.5%	3.6%	1.7%	0.1%	0.5%	0.9%	0.1%	0.0%	0.0%	0.0%	
AM Peak	06:00	08:00	07:00	11:00	11:00	07:00	07:00	11:00	10:00	07:00				07:00
Vol.	2	237	60	4	18	13	2	5	6	1				328
PM Peak	18:00	16:00	16:00	14:00	16:00	14:00		12:00	12:00					16:00
Vol.	2	508	105	5	23	11		3	8					641

Lunenburg Road (Route 70)
north Kimball Farms
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186634 A Speed
Site Code: T0852

SB

Start Time	14	15	19	20	24	25	29	30	34	35	39	40	44	45	49	50	54	55	59	60	64	65	69	70	9999	Total	85th % ile	Ave Speed
12/18/18	0	0	0	0	0	0	0	0	3	0	7	5	4	3	0	0	0	0	0	0	0	0	0	0	0	22	58	51
01:00	0	0	0	0	0	0	0	0	0	0	3	1	6	8	4	1	0	0	0	0	0	0	0	0	0	14	60	53
02:00	0	0	0	0	0	0	0	0	3	1	6	8	4	1	0	0	0	0	0	0	0	0	0	0	0	23	55	50
03:00	0	0	0	0	0	0	0	0	1	1	3	13	5	0	1	0	0	0	0	0	0	0	0	0	0	24	56	52
04:00	0	0	0	0	0	1	0	2	14	35	21	9	2	0	84	58	53											
05:00	1	0	0	0	0	0	0	0	13	49	103	51	16	2	0	235	57	52										
06:00	1	0	0	0	0	0	3	19	80	146	85	17	1	0	352	56	52											
07:00	1	0	0	1	0	0	3	12	92	164	61	11	0	1	346	55	51											
08:00	0	1	0	0	0	0	2	42	104	125	53	8	0	0	335	55	50											
09:00	0	0	0	0	0	0	6	42	114	106	21	5	1	0	295	53	49											
10:00	0	0	2	0	1	14	30	99	89	35	10	0	1	281	54	49												
11:00	0	0	0	2	3	2	24	103	118	50	3	2	0	307	54	50												
12 PM	0	0	0	1	1	6	20	77	110	45	12	1	0	273	55	51												
13:00	0	1	0	2	4	19	23	88	120	50	10	1	0	318	55	50												
14:00	0	0	0	0	2	7	25	101	102	60	15	2	0	314	56	51												
15:00	0	0	2	0	3	6	38	116	126	40	11	1	0	343	54	50												
16:00	0	0	0	0	0	3	19	118	99	40	6	2	0	287	54	50												
17:00	1	0	0	0	0	6	39	102	89	23	1	0	0	261	53	49												
18:00	0	0	0	0	0	2	33	89	79	21	1	1	0	226	53	49												
19:00	0	0	0	0	0	2	13	57	62	27	7	0	0	168	55	51												
20:00	0	0	0	0	0	0	19	37	45	24	4	1	0	130	55	50												
21:00	0	0	0	0	0	1	6	25	36	9	5	1	1	84	55	51												
22:00	0	0	0	0	0	0	3	13	27	7	5	0	1	56	56	52												
23:00	0	0	0	0	0	0	0	6	13	8	3	0	0	30	58	53												
Total	4	2	4	6	15	89	427	1501	1824	747	166	19	4	4808														
%	0.1%	0.0%	0.1%	0.1%	0.3%	1.9%	8.9%	31.2%	37.9%	15.5%	3.5%	0.4%	0.1%															
AM Peak	05:00	08:00	10:00	11:00	11:00	10:00	08:00	09:00	07:00	06:00	06:00	04:00	07:00	06:00														
Vol.	1	1	2	2	3	14	42	114	164	85	17	2	1	352														
PM Peak	17:00	13:00	15:00	13:00	13:00	13:00	17:00	16:00	15:00	14:00	14:00	14:00	21:00	15:00														
Vol.	1	1	2	2	4	19	39	118	126	60	15	2	1	343														

Stats

15th Percentile : 44 MPH
50th Percentile : 49 MPH
85th Percentile : 55 MPH
95th Percentile : 58 MPH

Mean Speed(Average) : 50 MPH
10 MPH Pace Speed : 45-54 MPH
Number in Pace : 3325
Percent in Pace : 69.2%
Number of Vehicles > 50 MPH : 2395
Percent of Vehicles > 50 MPH : 49.8%

Lunenburg Road (Route 70)
 north Kimball Farms
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186634 A Speed
 Site Code: T0852

SB

Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th % ile	Ave Speed
12/19/18	14	19	24	29	34	39	44	49	54	59	64	69	9999			
01:00	0	0	0	0	0	0	1	4	6	5	1	0	0	17	57	52
02:00	0	0	0	0	0	0	0	4	2	2	0	0	0	9	55	49
03:00	0	0	0	0	0	0	3	3	8	2	1	0	0	17	55	51
04:00	0	0	0	0	1	0	3	5	14	4	1	0	0	27	55	51
05:00	0	0	0	0	0	0	3	13	37	13	6	3	0	76	58	53
06:00	0	0	0	0	0	3	11	56	97	64	7	6	0	241	57	52
07:00	0	0	0	4	1	3	36	99	140	71	11	2	0	362	56	51
08:00	0	0	0	4	1	3	31	98	131	63	14	4	1	350	56	51
09:00	0	0	0	0	2	2	37	112	118	48	13	0	0	332	55	50
10:00	0	0	0	2	0	7	24	109	123	45	4	1	0	315	54	50
11:00	0	0	1	0	5	12	21	101	117	46	6	1	0	310	54	50
12 PM	2	0	0	1	2	13	38	102	126	43	10	0	0	337	54	49
13:00	1	0	0	2	3	4	28	96	121	40	6	3	0	304	54	50
14:00	1	0	0	2	1	5	33	131	121	62	14	1	0	371	55	50
15:00	2	2	1	1	4	12	61	136	108	30	4	2	0	363	53	48
16:00	1	1	0	1	2	0	41	115	124	40	5	0	1	331	53	49
17:00	0	0	0	0	2	3	52	149	117	50	8	0	0	381	54	49
18:00	0	0	0	0	1	9	75	159	92	20	3	1	0	360	52	48
19:00	0	0	0	0	0	10	50	85	83	23	1	1	0	253	53	48
20:00	0	0	0	0	0	1	36	95	81	24	5	3	0	245	53	49
21:00	0	0	0	0	0	0	25	58	50	14	2	0	0	149	53	49
22:00	0	0	0	0	0	1	17	44	31	11	6	0	0	110	54	49
23:00	0	0	0	0	0	1	4	18	25	10	8	2	0	68	58	52
23:00	0	0	0	0	0	0	5	7	10	9	3	0	0	34	57	52
Total	7	3	2	13	24	87	635	1799	1882	739	139	30	2	5362		
%	0.1%	0.1%	0.0%	0.2%	0.4%	1.6%	11.8%	33.6%	35.1%	13.8%	2.6%	0.6%	0.0%			
AM Peak	11:00		10:00	07:00	10:00	11:00	11:00	08:00	06:00	06:00	07:00	05:00	07:00	06:00		
Vol.	2		1	4	5	13	38	112	140	71	14	6	1	362		
PM Peak	14:00	14:00	14:00	12:00	14:00	14:00	17:00	17:00	15:00	13:00	13:00	12:00	15:00	16:00		
Vol.	2	2	1	2	4	12	75	159	124	62	14	3	1	381		

Stats
 15th Percentile : 44 MPH
 50th Percentile : 49 MPH
 85th Percentile : 54 MPH
 95th Percentile : 58 MPH

Mean Speed(Average) : 50 MPH
 10 MPH Pace Speed : 45-54 MPH
 Number in Pace : 3681
 Percent in Pace : 68.6%
 Number of Vehicles > 50 MPH : 2416
 Percent of Vehicles > 50 MPH : 45.1%

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NB

Start Time	14	15	19	20	24	25	29	30	34	35	39	40	44	45	49	50	54	55	59	60	64	65	69	70	9999	Total	85th % ile	Ave Speed
12/18/18	0	0	0	0	0	0	0	0	0	0	0	2	7	5	2	0	0	0	0	0	0	0	0	0	0	16	53	49
01:00	0	0	0	0	0	0	0	0	0	1	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	6	49	45
02:00	0	0	0	0	0	0	0	0	0	0	0	7	4	0	0	0	0	0	0	0	0	1	0	0	12	52	50	
03:00	0	0	0	0	2	1	1	1	6	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	17	50	43	
04:00	0	0	0	0	0	1	1	5	14	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	31	52	47	
05:00	0	0	0	0	0	0	3	13	32	24	8	1	0	0	0	0	0	0	0	0	0	0	0	0	81	53	48	
06:00	0	0	0	0	0	3	15	34	66	59	3	0	0	0	0	0	0	0	0	0	0	0	0	0	180	51	47	
07:00	0	0	0	0	2	17	62	140	106	14	2	0	0	0	0	0	0	0	0	0	0	0	0	0	343	52	48	
08:00	0	0	1	0	0	5	50	139	118	22	1	0	0	0	0	0	0	0	0	0	0	0	0	0	336	52	48	
09:00	0	0	0	1	1	12	45	137	71	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	275	51	47	
10:00	0	0	1	0	3	11	33	108	90	16	2	0	0	0	0	0	0	0	0	0	0	0	0	0	264	52	48	
11:00	0	0	1	0	2	10	24	86	90	19	3	0	0	0	0	0	0	0	0	0	0	0	0	0	235	53	49	
12 PM	0	0	2	1	2	13	48	77	90	14	3	0	0	0	0	0	0	0	0	0	0	0	0	0	250	52	48	
13:00	0	1	1	0	4	4	33	101	111	20	2	0	0	0	0	0	0	0	0	0	0	0	0	0	277	53	49	
14:00	0	0	0	1	4	11	49	133	139	17	4	0	0	0	0	0	0	0	0	0	0	0	0	0	358	52	48	
15:00	0	0	1	0	0	9	70	261	138	22	2	1	0	0	0	0	0	0	0	0	0	0	0	0	504	52	48	
16:00	0	0	0	0	0	24	140	235	117	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	528	51	47	
17:00	0	0	0	0	2	47	170	243	58	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	527	48	45	
18:00	0	0	0	0	0	8	113	162	57	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	346	49	46	
19:00	0	0	0	0	0	7	31	95	51	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	196	52	48	
20:00	0	0	0	0	1	5	29	79	52	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	175	52	48	
21:00	0	0	0	0	0	6	22	50	36	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	121	52	48	
22:00	0	0	0	0	0	0	6	24	22	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	58	53	50	
23:00	0	0	0	0	0	3	8	17	10	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45	54	48	
Total	0	1	7	5	26	213	995	2218	1461	221	32	2	0	0	0	0	0	0	0	0	0	0	0	0	5181			
%	0.0%	0.0%	0.1%	0.1%	0.5%	4.1%	19.2%	42.8%	28.2%	4.3%	0.6%	0.0%	0.0%															
AM Peak			08:00	03:00	06:00	07:00	07:00	07:00	08:00	08:00	11:00	02:00														07:00		
Vol.			1	2	3	17	62	140	118	22	3	1														343		
PM Peak		13:00	12:00	12:00	13:00	17:00	17:00	15:00	14:00	15:00	14:00	15:00														16:00		
Vol.		1	2	1	4	47	170	261	139	22	4	1														528		

Stats
15th Percentile : 41 MPH
50th Percentile : 47 MPH
85th Percentile : 52 MPH
95th Percentile : 53 MPH

Mean Speed(Average) : 47 MPH
10 MPH Pace Speed : 45-54 MPH
Number in Pace : 3679
Percent in Pace : 71.0%
Number of Vehicles > 50 MPH : 1424
Percent of Vehicles > 50 MPH : 27.5%

Lunenburg Road (Route 70)
north Kimball Farms
City, State: Lancaster, MA
Client: TEC / E. Oltman



46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

186634 A Speed
Site Code: T0852

NB

Start Time	14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
12/19/18	0	0	0	0	0	0	0	9	8	3	1	1	0	22	56	52
01:00	0	0	0	0	0	2	2	6	1	1	0	0	0	12	49	46
02:00	0	0	0	0	0	1	0	3	3	1	0	0	0	8	53	49
03:00	0	0	0	0	1	0	3	6	4	1	0	0	0	15	52	47
04:00	0	0	0	0	0	5	2	10	16	2	0	0	0	35	52	48
05:00	0	0	0	0	1	3	10	32	26	5	1	0	0	78	52	48
06:00	0	0	0	1	0	9	42	68	48	7	0	2	0	177	52	47
07:00	0	0	3	3	3	15	75	121	99	9	0	0	0	328	51	47
08:00	0	0	0	1	1	8	44	148	96	16	5	0	0	319	52	48
09:00	0	0	0	1	3	7	43	124	87	16	3	1	0	285	52	48
10:00	0	0	0	1	6	2	33	99	113	13	2	2	0	271	52	49
11:00	0	1	0	0	3	19	38	115	85	20	1	0	0	282	52	48
12 PM	0	0	0	0	8	8	35	119	103	25	4	0	0	302	53	48
13:00	1	0	0	1	6	13	36	131	102	15	2	0	1	308	52	48
14:00	0	0	1	2	1	10	64	172	110	20	2	0	0	382	52	48
15:00	0	0	1	4	5	15	68	212	152	21	0	0	0	478	52	48
16:00	0	0	0	0	0	20	202	301	101	15	2	0	0	641	50	46
17:00	0	0	0	3	2	45	156	261	77	10	1	0	0	555	49	46
18:00	0	0	0	0	1	21	130	188	67	10	1	0	0	418	50	46
19:00	0	0	0	0	1	5	67	115	51	6	1	0	0	246	51	47
20:00	0	0	0	0	0	11	25	67	36	10	2	2	1	154	52	48
21:00	0	0	0	0	0	7	48	80	32	2	2	0	0	171	50	46
22:00	0	0	0	0	0	0	6	24	34	13	2	0	0	79	55	51
23:00	0	0	0	0	0	0	5	18	17	8	1	0	0	49	55	50
Total	1	1	5	17	42	226	1134	2429	1468	249	33	8	2	5615		
%	0.0%	0.0%	0.1%	0.3%	0.7%	4.0%	20.2%	43.3%	26.1%	4.4%	0.6%	0.1%	0.0%			
AM Peak		11:00	07:00	07:00	10:00	11:00	07:00	08:00	10:00	11:00	08:00	06:00		07:00		
Vol.		1	3	3	6	19	75	148	113	20	5	2		328		
PM Peak	13:00		14:00	15:00	12:00	17:00	16:00	16:00	15:00	12:00	12:00	20:00	13:00	16:00		
Vol.	1		1	4	8	45	202	301	152	25	4	2	1	641		

Stats
15th Percentile : 41 MPH
50th Percentile : 46 MPH
85th Percentile : 52 MPH
95th Percentile : 54 MPH

Mean Speed(Average) : 47 MPH
10 MPH Pace Speed : 45-54 MPH
Number in Pace : 3897
Percent in Pace : 69.4%
Number of Vehicles > 50 MPH : 1466
Percent of Vehicles > 50 MPH : 26.1%

Appendix C

Seasonal Adjustment Data

Seasonal Adjustment

Project: T0852 - Capital Commerce Center - Lancaster, Massachusetts
 Date: April 4, 2019
 Analyst: TEC, Inc. / Samuel W. Gregorio, PE, PTOE
 Source: MassDOT Permanent Count Station #34

YR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	April Seasonal Adjustment	December Seasonal Adjustment
16	48,359	54,181	55,218	56,581	58,854	60,613	58,377	60,920	57,668	58,375	57,216	53,307	56,639	0.1%	5.9%
17	51,048	50,853	53,637	54,355	56,934	59,006	56,546	59,116	57,559	58,141	55,096	52,436	55,394	1.9%	5.3%
Seasonal Average =														1.0%	5.6%



Appendix D

Road Safety Audit

ROAD SAFETY AUDIT

Main Street (Route 70 / Route 117) @
Lunenburg Road (Route 70)

Town of Lancaster

May 27, 2017

Prepared For:
Massachusetts Department of Transportation (MassDOT)
Highway Division – District 3



Town of Lancaster, Massachusetts



Prepared By:
TEC, Inc.
65 Glenn Street
Lawrence, MA 01843



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Background

The Town of Lancaster, Massachusetts is currently planning improvements along the Main Street corridor, specifically at the intersections with Lunenburg Road and Seven Bridge Road, to address existing operational and safety concerns. TEC, Inc. (TEC) has been retained by the Town of Lancaster to specifically evaluate the existing traffic safety characteristics at the intersection of Main Street (Route 70 / Route 117) / Lunenburg Road (Route 70), an intersection designated as a high crash location for the region.

Road Safety Audit Justification

In conjunction with the preliminary design (pre-25% Design) stage and Functional Design Report (FDR) for these improvements, TEC is submitting this Road Safety Audit (RSA) report for the intersection of Main Street / Lunenburg Road (Route 70) in Lancaster, Massachusetts. An RSA, as defined by the Federal Highway Administration (FHWA), is the *formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team*. The purpose of the RSA is to observe, identify, and report all safety issues and identify future opportunities for safety enhancement improvements for all roadway users. This includes identifying short-term, mid-term, and long-term safety improvements that can be implemented through general maintenance, immediate installation / removal, or could be potentially incorporated into future improvement projects.

The U.S. Congress enacted the “Safe, Accountable, Flexible, Efficient, Transportation Act - A Legacy for Users” (SAFETEA-LU) in August 2005. This act provides guidance and funding for the implementation of a State Highway Safety Improvement Program (HSIP). As part of this Program, all states are required to develop a Strategic Highway Safety Plan (SHSP). The Massachusetts Department of Transportation (MassDOT) guidelines require an RSA be conducted where HSIP-eligible crash clusters are present within the study area of a transportation improvement project prior to commencing or finalizing a 25% Design. An intersection is defined as HSIP-eligible if the intersection is within the top five (5) percent of clusters in its respective Regional Planning Commission (RPC) boundaries based on Equivalent Property Damage Only (EPDO). EPDO rates crashes based on the crash severity.

Based on the published MassDOT database, the intersection of Main Street / Lunenburg Road is designated as a 2012-2014 HSIP Crash Cluster.

Project Data

TEC of Lawrence, Massachusetts is the primary traffic safety investigation consultant in this RSA for the intersection of Main Street / Lunenburg Road in Lancaster, Massachusetts. The RSA meeting was conducted on Thursday, May 4, 2017 at 9:00 AM, with the pre- and post-audit meetings held in the auditorium at the Lancaster Town Hall, located at 695 Main Street in Lancaster, Massachusetts. A copy of the RSA agenda can be found in Appendix A. TEC also conducted various field visits to the audit location as part of its scoping and planning during the preliminary design stage.

As presented below in Table 1, the audit team consisted of a cross-section of state, regional, and local engineering, enforcement, maintenance, and emergency response professionals and was assembled in

conjunction with input from MassDOT’s Traffic Safety Management Unit. Contact information for all participating audit team members is provided in Appendix B.

Table 1: Participating Audit Team Members

Audit Team Member	Agency/Affiliation
Noreen Piazza	Lancaster Town Planner
Everett Moody	Lancaster Police Department
Courtney Manning	Lancaster Fire Department
Kevin Bartlett	Lancaster Department of Public Works
Sheri Bean	Montachusett Regional Planning Commission
George Snow	Montachusett Regional Planning Commission
Elsa Chan	MassDOT Traffic Safety
Christopher Falcos	MassDOT Traffic Safety
Connor Keating	MassDOT Traffic Safety
Lori Shattuck	MassDOT District 3
Lola Campbell	MassDOT District 3
Samuel Gregorio	TEC, Inc.
Douglas Halpert	TEC, Inc.

Audit participants were provided with materials to review prior to the audit meeting. The materials included a summary of crash data, collision diagrams (See Appendix), a summary of the type and severity of crashes, and traffic volume data. Participants were encouraged to visit the site prior to the audit and were urged to consider elements on MassDOT’s Safety Review Prompt List.

On the day of the audit, a pre-audit meeting was held to discuss the project’s background, the audit process, review the distributed materials, and discuss some of the issues that Team members had observed individually. The audit site walk consisted of field observations at the audit intersection. Handwritten notes and photographs documented the observations made by audit team members during the site walk. Following the audit site walk, a post-audit meeting was held where the Team confirmed the observations made in the field and offered solutions to enhance the safety of areas noted in the site walk and pre-audit meeting.

Project Location and Description

The RSA was conducted at the intersection of Main Street / Lunenburg Road in Lancaster, Massachusetts. A study area location map is provided in Figure 1. A detailed description of the study area roadways and intersections is provided below:

Existing Geometry and Infrastructure Summary

Main Street (Route 70 / Route 117)

Main Street, signed as MA State Route 117 west of the audit intersection and both MA State Route 70 and MA State Route 117 east of the audit intersection, is a two-lane, northwest-southeast urban principal arterial roadway under jurisdiction and maintained by the Town of Lancaster. The roadway is also designated as a National Highway System (NHS) roadway. Main Street provides connection between the City of Leominster to the west and the Town of Clinton to the south. In the vicinity of the audit area, Main Street is approximately 30 to 35 feet wide. Directional flow along Main Street is separated by a marked centerline. A posted speed limit of 30 miles per hour (mph) is present on the corridor; however MassDOT speed regulations indicate that Main Street is regulated at 40 mph in the vicinity of the intersection. A 20 mph speed for the school zone when signage is flashing is present to the east of the audit area. Land uses along Main Street generally include residential uses. A sidewalk is present along the southerly side of Main Street. There are no bicycle accommodations provided along Main Street.

Lunenburg Road (Route 70)

Lunenburg Road, signed as MA State Route 70, is a two-lane, north-south urban minor arterial roadway under jurisdiction and maintained by the Town of Lancaster. The roadway provides local connection between the Town of Lunenburg to the north and Main Street to the south. In the vicinity of the audit area, Lunenburg Road is approximately 40 feet wide. Directional flow along Lunenburg Road is separated by a marked centerline. A posted/regulated speed limit of 25 miles per hour (mph) is present along Lunenburg Road southbound approaching the intersection. Generally, the posted/regulated speed along the corridor is 45 mph to the north of the audit intersection. Land uses along Lunenburg Road generally include residential use. There are no sidewalks or bicycle accommodations provided along Lunenburg Road.

Intersection: Main Street (Route 70 / Route 117) / Lunenburg Road (Route 70)

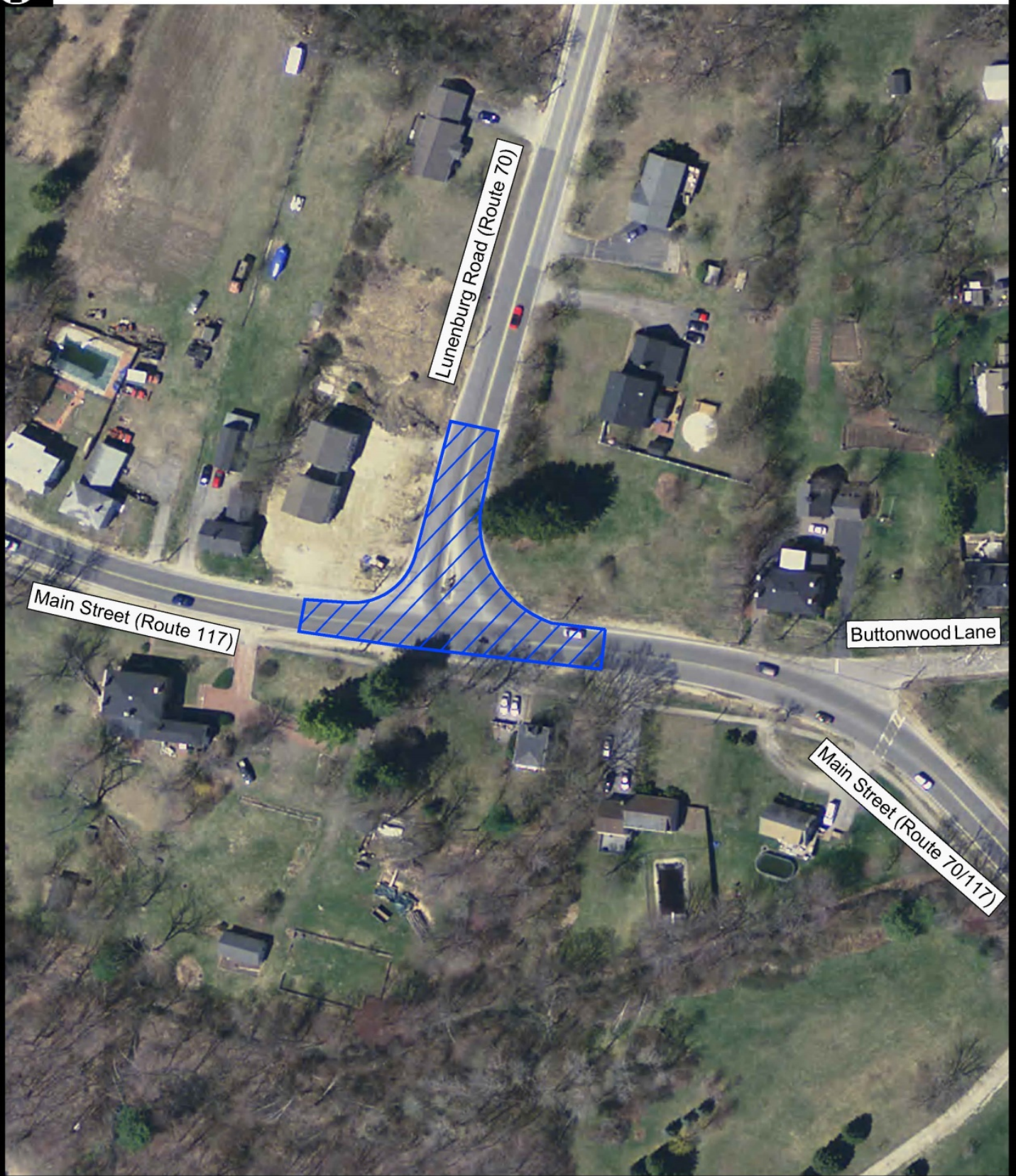
Lunenburg Road intersects Main Street to form a three-legged, unsignalized intersection. The Lunenburg Road southbound approach operates under STOP-control and consists of an exclusive left-turn lane and an exclusive right-turn lane with separation of directional flow separated by a marked double-yellow centerline and an approximately seven foot long raised median island at the intersection. The Main Street eastbound and westbound approaches operate under free-flow conditions and with each approach consisting of a single general-purpose lane. Directional flow along the roadway is separated by a marked centerline. Sidewalks are provided along the southerly side of Main Street. There are no crosswalks or bicycle accommodations provided at the intersection.



1" = 20'

Lunenburg Road (Route 70) at Main Street (Route 117) - Lancaster, Massachusetts

Road Safety Audit



T:\T0698\CAD\Highway\Graphics\T0698_RSA_Locus Map.dwg 5/1/2017 4:34:54 PM



Figure 1

Project Location Map & Study Area Intersections

Automatic Traffic Recorder Count Data

Automatic Traffic Recorder (ATR) counts were conducted by MassDOT on behalf of the Montachusett Regional Planning Commission (MRPC) on Main Street between Shirley Road and Lunenburg Road and on Lunenburg Road north of Main Street from Tuesday, December 1, 2015 to Wednesday, December 2, 2015 to record traffic volumes during a continuous 48-hour period. The counts were used to collect volume, speed, and vehicle classification information. A summary of the weekday ATR traffic data is presented in Table 2.

Table 2: Existing Traffic Volume Summary

Location	Weekday Traffic Volume ^a	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		Traffic Volume ^b	K Factor ^c	Directional Distribution ^d	Traffic Volume	K Factor	Directional Distribution
Route 117 (between Shirley Road and Lunenburg Road)	19,550	1,486	7.6%	65.3% EB	1,667	8.5%	66.0% WB
Route 70 (North of Route 117)	8,150	518	6.4%	66.6% SB	713	8.8%	60.6% NB

Main Street carries approximately 19,550 vehicles-per-day (vpd) on an average weekday between Shirley Road and Lunenburg Road. The majority of vehicles along Main Street are travelling eastbound in the weekday morning peak period and westbound during the weekday evening peak period. The directional distribution is almost split in reciprocal favor during the weekday morning and weekday evening peak hours, confirming heavy commuters travel to / from Interstate 495.

Lunenburg Road carries approximately 8,150 vehicles-per-day (vpd) on an average weekday. The majority of vehicles along Lunenburg Road are travelling southbound in the weekday morning peak period and northbound during the weekday evening peak period. Similar to Main Street, the directional distribution is almost split in reciprocal favor during the weekday morning and weekday evening peak hours, confirming heavy commuters travel to / from Interstate 495.

Speed Data

The ATR counts that were conducted from Tuesday, December 1, 2015 to Wednesday, December 2, 2015 included an evaluation of travel speeds for all vehicles during the course of the 48-hour period. This speed data indicated an 85th percentile speed along Main Street of 39 mph and 38 mph in the eastbound and westbound directions, respectively. The 85th percentile speeds along Main Street increase to 40 mph and 41 mph west of Lunenburg Road in the eastbound and westbound directions, respectively. This speed data also indicated an 85th percentile speed along Lunenburg Road is approximately 45 mph and 43 mph in the northbound and southbound directions, respectively. The data along Lunenburg Road was provided from a location further upstream along the roadway.

General Crash History

Crash data for the Main Street / Lunenburg Road intersection was compiled and analyzed for the most-recent consecutive five-year period (2012-2016) on file with the Town of Lancaster Police Department

and MassDOT. The motor vehicle crash data was reviewed to determine if any crash trends exist within the study area.

In addition to examining the number of crashes at the study area intersection, a crash rate was calculated to compare the occurrence of crashes to the volume of traffic passing through the intersection. The crash rate per million entering vehicles (MEV) was calculated using the evening peak-hour volumes from the TMCs, and the K-factor of 0.085 was obtained from ATR counts conducted along Main Street between Shirley Road and Lunenburg Road. The crash rates at the study area intersections were compared to the statewide and district-wide averages published by MassDOT in February 2016 to determine the significance of the crash occurrence. The statewide average for unsignalized intersections is 0.58 crashes per MEV and the District 3 average for unsignalized intersections is 0.65 crashes per MEV.

The crash rates per MEV for the Main Street / Lunenburg Road intersection is provided in Table 3.

Table 3: Crash Rates by Intersection

Intersection	Total Crashes	Crash Rate
Main Street / Lunenburg Road	39	0.94

The Main Street / Lunenburg Road intersection experienced an average of approximately eight (7.8) crashes per year over the five-year (2012-2016) study period, yielding a crash rate of 0.94 crashes per MEV, significantly above the statewide and District 3 averages for unsignalized intersections. Approximately 30 percent (12 of 39) of the crashes were rear-end crashes, 40 percent (15 of 39) were angled crashes, 25 percent (10 of 39) of the crashes were single vehicle crashes, and the remaining 5 percent (2 of 39) of the crashes were equally distributed amongst head-on and other/not reported crashes.

The reported ages of the drivers were polarized, with 66 percent under 21, between the ages of 21 and 30 and between 51 and 60, comprising over half of the motorists involved in the crashes. Of the reported crashes, 44 percent (17 of 39) were attributed to “inattention/distracted”, 21 percent (8 of 39) were “failure to yield right-of-way” or “other /not reported”.

There were nine (9) crashes reported to have occurred during wet and an additional 4 crashes in snow or ice covered roadway conditions. The pavement along the Lunenburg Road southbound approach is in poor condition with rutting and settling from heavy vehicles decelerating and coming to a stop just north of Main Street. During peak hours, vehicle queues along the southbound approach have been observed by audit participants to exceed 30 vehicles. It is likely that vehicle fluids are discharged over time while waiting in the queue. Combined with the lack of a crowned roadway to lead water efficiently to the catch basins, water likely mixes with vehicle oils and creates a slippery driving surface. Other key crash characteristics are highlighted in the following observations section.

Audit Observations and Potential Safety Enhancements

Pre- and post-RSA site walk meetings were held in the auditorium at the Town Hall, located at 695 Main Street in Lancaster, Massachusetts. The pre-audit meeting included brief introductions, an overview of the future design project and RSA process, and an overview of the safety characteristics of the Main Street / Lunenburg Road intersection. Each participant was asked to provide his or her concerns and comments related to the safety issues at the study area intersection. At the end of discussion about the intersection's deficiencies, the group participated in a site walk to observe. After the group's site walk concluded, the meeting was reconvened to discuss potential countermeasures for concerns raised during the morning session and site walk.

The RSA Team's field observations and discussions show that the Team has several general concerns about existing conditions at the study intersections which may negatively impact safety. Several of these concerns require further evaluation and design work to develop appropriate safety enhancements. More specific safety challenges located at the audit area intersections are also included.

Summary of Safety Concerns

The RSA Team identified the following safety issues at the Main Street / Lunenburg Road intersection prior to, during, and after the field visit:

- Driver frustration and bypassing behavior due to intersection queues;
- Deteriorated or sub-standard multi-modal accommodations;
- Deteriorated or sub-standard pavement markings;
- Deteriorated, blocked, or damaged corridor signage;
- Deteriorated or sub-standard drainage;
- Cell phone usage and distracted driving;
- Visibility;
- Lane departures; and
- Vehicle speeds.

The following section provides a detailed summary of the identified safety concerns and potential safety enhancements at the study intersections.

Safety Issue #1: Driver Frustration & Bypassing Behavior Due to Intersection Queues

Specific Observations:

The Main Street / Lunenburg Road intersection operates as an unsignalized intersection, inadequately accommodating the vehicle queues on the Lunenburg Road southbound approach which operates under STOP-control. Audit participants noted that Lunenburg Road is a major cut-through route, especially for

heavy vehicle trips which seek to by-pass US Route 2 for access to Interstate 495 to the east. Main Street was also noted as a major cut-through route for heavy vehicle trips which seek access between Interstate 190 to the west and Interstate 495 to the east. In addition to regional cut-through vehicles, audit participants noted that there are a number of local heavy construction companies which utilize the study area intersection for access to principal arterial roadways. As a result, there are a high percentage of heavy vehicles which, by nature, decelerate and accelerate at slower rates than passenger vehicles which may contribute to increased delays at the intersection which have been noted to reach approximately 30 vehicles or more during the peak hours.

Lunenburg Road Southbound – The extended queue during commute hours leads to driver frustration and may be contributing factors for the ten (10) rear-end crashes and sixteen (16) angle crashes involving a southbound vehicle. The queue results from drivers attempting to judge gaps in traffic that is usually insufficient to make turns out from the approach. Audit participants noted that additional crashes may go unrecorded as minor fender-benders may not result in more than \$1,000 worth of damage. Audit participants also noted that the long queue of vehicles attempting to make a left-turn onto Main Street results in vehicles making a right-turn instead and then making an illegal U-turn in a private driveway in order to head back in the eastbound direction. The Department has unsuccessfully sought grants for commercial vehicle enforcement which could reduce the number of heavy vehicles attempting to cut-through Lancaster. Traffic during peak hours is one of the few things helping to reduce the travel speeds along the approaches.



Image 1: Within the queue along Lunenburg Road southbound approach.

Main Street Eastbound – Audit participants noted that a roadway extension was constructed to allow Main Street eastbound vehicles to by-pass left-turning vehicles onto Lunenburg Road northbound. While the lanes are greater than 13 feet wide for the eastbound approach to the intersection, the extension of road is only passable if the first vehicle is encroaching into the oncoming lane. Some vehicles still do not utilize the bypass area resulting in queuing along the approach.

Potential Safety Enhancements:

1. Evaluate the installation of a fully actuated traffic signal to mitigate queuing and accommodate the roadway ADT. Evaluation should be checked against MUTCD signal warrants for traffic volume and safety.
2. Evaluate the installation of a roundabout to mitigate queuing.
3. Evaluate signal phasing opportunities (pending installation of a traffic signal) to include a Main Street eastbound protected left-turn phase.
4. Evaluate traffic calming measures, such as the narrowing of travel lanes, to reduce travel speed and increase gaps in Main Street traffic flow.
5. Evaluate turning lane warrants for dedicated left-turn lane for Main Street eastbound approach and improved storage length for Lunenburg Road southbound approach.

6. Evaluate extending the right-turn lane along the Lunenburg Road southbound approach to vehicles attempting to turn right are less likely to wait in a longer queue for left-turning vehicles.
7. Consider targeted enforcement by Lancaster Police for vehicles attempting to make a right-turn along Lunenburg Road southbound and then making an illegal U-turn in a private driveway in order to head back in the eastbound direction.
8. Consider further commercial vehicle enforcement for Lancaster Police to help reduce the number of heavy vehicles cutting through Lancaster.

Safety Issue #2: Sub-Standard Multi-Modal Accommodations

Specific Observations:

Pedestrian Accommodations – The sidewalk is provided along the southerly side of Main Street in poor to fair condition. The sidewalk is separate from the roadway by an approximately 3-foot grass buffer. The buffer does not provide any vertical separation as there is no curbing on either side of the roadway for any approach. A crossing guard is present at the nearby school crossing during the weekday morning peak period. There is a potential for increased pedestrian usage along Main Street to access the Rowlandson Elementary School, located south of the intersection, should enhancements for pedestrian accommodations be made. The reported crash data does not indicate any recent pedestrian related crashes.



Image 2: Variable width grass buffer with lack of vertical separation for sidewalk along southerly side of Main Street

Non-crosswalk Crossing – Audit participants noted that there are no crosswalks provided at the Main Street / Lunenburg Road intersection. Pedestrians are observed crossing Main Street south of the Lunenburg Road / Main Street intersection at the Buttonwood Lane / Main Street intersection at an existing crosswalk in order to access the sidewalks along the southwesterly side of Main Street. The existing crosswalk is located on a horizontal curve and lacks the appropriate advanced warning signage to alert approaching vehicles of a potential pedestrian in the crosswalk. There is also a lack of ADA/AAB compliant access ramps on either side of the crosswalk.

Bicycle Accommodations – Formalized bicycle accommodations are not provided along Main Street or Lunenburg Road. Audit participants noted that cyclists utilize Main Street for recreation and advanced cyclist events where they utilize the roadway over sidewalk. Some cyclists have been observed to ride side-by-side instead of single file which has historically resulted in vehicle delays. Lancaster Police are currently seeking a grant for targeted enforcement for cyclists. The reported crash data does not indicate any recent bicycle related crashes. Proposed multi-modal countermeasures should be considered for future improvements along the Main Street corridor.



Image 3: Lack of bicycle accommodations and sidewalk along northerly side of Main Street

Potential Safety Enhancements:

1. Conduct educational events or distribute pamphlets at the surrounding schools or notable pedestrian-heavy destinations to help promote walking safety. Use these events and pamphlets to discuss safe walking habits associated with both existing and any new pedestrian infrastructure along the corridor.
2. Consider constructing sidewalk along the northerly side of Main Street and along Lunenburg Road to improve connectivity for residents. This enhancement should be considered as part of a larger corridor improvement.
3. Construct Americans with Disabilities Act (ADA) / Architectural Access Board (AAB) compliant accessible curb ramps on the corners of the Main Street / Lunenburg Road intersection with a corresponding crosswalk between each ramp pair upon enhancements to sidewalk facilities. Providing defined crossing opportunities is anticipated to assist in relocating pedestrian crossing maneuvers to a more safe and defined location.
4. Consider adding shared-use lane markings (also referred to as “sharrow” bicycle markings) with associated signage along the Main Street and Lunenburg Road corridors to increase driver awareness of the shared-use nature of the roadways. This improvement should be considered as part of a larger corridor-wide improvement to provide connectivity for multi-modal usage.
5. Evaluate the potential to construct dedicated bicycle lanes along Main Street and Lunenburg Road corridors. Note that the construction of bicycle lanes may require the removal or relocation of grass buffer for sidewalk and require potential private property easements. This improvement should be considered as part of a larger corridor-wide improvement to provide connectivity for multi-modal usage.
6. Should a traffic signal or roundabout be considered, provide specific pedestrian crossing enhancements, such as pedestrian traffic signal phasing, countdown signals housings, MUTCD-compliant signage, ADA-compliant accessible pedestrian signals (APS), and push buttons.

7. Consider installation of crosswalks across Main Street, at the intersection with Lunenburg Road, pending the installation of sidewalk connectivity through the intersection.

Safety Issue #3: Deteriorated or Sub-Standard Pavement Markings

Specific Observations:

Lack of Lane Delineation – At present, lane delineation for turning lanes on the Lunenburg Road southbound approach is in poor condition. The exclusive right-turn lane was observed as having two edge lines which is confusing for drivers as to where the lane splits off from the exclusive left-turn lane. In addition, no lane delineation pavement markings, such as arrows, are provided along the Lunenburg Road southbound approach.

Stop Bar Location – The STOP bar located at the terminus of the Lunenburg Road southbound approach is highly faded. Audit participants noted that due to the high number of heavy vehicles, drivers will pull farther out into the intersection in an attempt to maintain their sight lines. The lack of sight lines may be the contributing factors for many rear-end crashes along the approach where vehicles following have assumed a vehicle is moving, but only “inching” forward to reset sight line visibility.

Faded Pavement Markings – Audit participants noted that many of the existing pavement markings along all approaches to the intersection are faded and difficult to see, particularly at night and during periods of solar glare. Poor pavement markings give the appearance of wide travel lanes which frequently leads to high travel speeds.

Potential Safety Enhancements:

1. Eliminate second edge line pavement markings along the Lunenburg Road Southbound approach corridor to eliminate lane confusion.
2. Apply arrow pavement markings to the Lunenburg Road southbound approach to delineate the turning movements in each striped lane. This countermeasure is currently being pursued by the Town DPW.
3. Consider relocating or staggering of STOP-bar for the left-turn and right-turn lanes along the Lunenburg Road southbound approach to improve sight lines. This countermeasure is currently being pursued by the Town DPW.
4. Reapply all existing pavement markings; including STOP bars, and centerlines; to improve motorist and pedestrian safety. This countermeasure is currently being pursued by the Town DPW.
5. Consider replacement of existing pavement markings with thermoplastic markings which will last longer against snow plow damage and improve visibility during inclement weather.

Safety Issue #4: Deteriorated, Blocked, or Damaged Corridor Signage

Specific Observations:

Faded, Damaged, and Non-compliant Signage – Audit participants noted that some of the existing signs along Main Street are faded, damaged, or not MUTCD-compliant which is detracting from their effectiveness.

Signage Height Placement – Audit participants noted damage to guide signage placed in the median island of the Lunenburg Road southbound approach. It was also noted that the signs had been hit before and then re-installed where the sign height was adjusted to avoid conflict with heavy vehicles.



Image 4: Guide signage heights below 7-foot minimum set by MUTCD standards

Object Marker Signage – A red object marker (OM4-1) sign was installed opposite the Lunenburg Road (Route 70) southbound approach in an effort to catch the headlights of oncoming vehicles. However, the sign height is less than the minimum required by the MUTCD and is located out of the general cone of vision for vehicles along the approach. This is similar to other signage in the vicinity of the intersection. The sign is to the extreme east of the opposing approach and does not convey the roadway terminus effectively. The property resident noted that it is not uncommon for vehicles to end up on his property as they were unaware of the terminus of the roadway. The crash data noted eight (8) single vehicle crashes where vehicles struck an object across Main Street opposite Lunenburg Road, which may be the result of no warning signage and an open opposing grass area where drivers may consider opportunities for a non-existing through movement. In addition, 6 of 8 single vehicle crashes in which objects opposite Lunenburg Road were struck occurred at night where the improper placement did not convey the geometry of the T-intersection.

Lack of Advanced Warning Signage – The posted speed limit along Lunenburg Road southbound drops from 45 mph to 25 mph approximately 450 feet north of the intersection. However, there are no advanced warning signs for the reduction in posted speed or other advance warning signage, such as an intersection ahead warning signage, along the southbound approach. Although not directly noted, some of the crashes involving a southbound vehicle may be a direct result on the lack of clarity in speed reduction and the lack of advance intersection warning.

Potential Safety Enhancements:

1. Complete a full sign inventory along all three approaches to the Main Street / Lunenburg Road intersections to determine accurate placement, condition, and possible replacement of existing signs.
2. Replace all existing signs along Lunenburg Road and Main Street that are currently faded, damaged, or non-compliant with new MUTCD-compliant signs to provide clear and concise regulatory and warning messages. Provide retro-reflective signs where necessary.

3. Evaluate the relocation of guide and regulatory signage from the median island of the Lunenburg Road southbound approach.
4. Adjust heights of existing signage to meet current MUTCD minimum height standard of 7-feet in urbanized areas.
5. Evaluate the relocation of existing signage which is not currently within the cone of vision for the intended drivers, utility poles, and other roadside structures that do not comply with current lateral offset standards.
6. Consider replacement on the red object marker (OM4-1) with a W1-7 dual arrow sign for improved visibility. Relocate position of sign to be directly opposing Lunenburg Road and positioned to impede the through path of travel. This countermeasure is currently being pursued by the Town DPW.
7. Consider installation of an advance intersection sign (W2-4) along Lunenburg Road southbound approach along with reduced speed warning signage (W3-5). This countermeasure is currently being pursued by the Town DPW.
8. Consider installation of dynamic speed signs or an advance speed reduction sign (W3-5) along Lunenburg Road southbound approach along with reduced speed warning signage.

Safety Issue #5: Deteriorated or Sub-Standard Drainage

Specific Observations:

Audit participants noted that due to the high percentage of heavy vehicles through this intersection, there are sections of pavement heaving where vehicles begin to decelerate by downshifting or compression release braking. The resulted heaving of the pavement creates difficulties with snow removal and drainage. Audit participants noted that while vehicles are in the long queue on Lunenburg Road southbound, there are likely leaking oils and other vehicle fluids escaping as the vehicles advance towards the intersection. This could contribute to the 33 percent of crashes which occurred under wet or snow/ice covered roadways, or even in crashes where deceleration may not have been noted.

Audit participants noted that there is no curbing provided along either side of all approaches to the intersection. The edge of roadway was noted to be predominately a sandy soil that requires street sweeping. There are two catch basins located along the southerly side of Main Street. However, they are not the lowest points of the roadway compared to resident gravel driveways. On the day of the audit, the catch basins were predominately full. Audit participants noted that catch basins throughout the town are cleared annually. It was also noted that the roadway was last repaved approximately 6-7 years ago.



Image 5: Sand buildup around existing catch basin along the southerly side of Main Street

Potential Safety Enhancements:

1. Consider installing vertical granite curbing along both sides of all approaches to define edge of roadway, reduce roadway erosion, and improve drainage. This would have an added benefit as a traffic calming measure.
2. Consider resurfacing all intersection approaches to achieve a 2% cross-slope for improved drainage of roadway runoff out of the travel lane.
3. Consider regrading of driveway aprons and center of intersection towards exiting catch basins. This countermeasure is currently being pursued by the Town DPW.

Safety Issue #6: Cell Phone Usage and Distracted Driving

Specific Observations:

Audit participants indicated that distracted driving due to cell phone usage is a serious problem in the vicinity of the audit area. Of the reported crashes within the audit area, 17 listed “inattention / distracted” as the main contributing factor. Although no specific crash report noted cell phone usage, audit participants noted that during general field observations and enforcement activities, it is not uncommon for a large number of drivers at the intersection to be using a cell phone while operating the vehicle. Current enforcement exists at the study area intersection during multiple hour blocks throughout the day.

Potential Safety Enhancements:

1. Increase police enforcement of cell phone usage and other distracted driving occurrences in the vicinity of the audit area.
2. Conduct educational events or distribute pamphlets at the surrounding schools and residents to help promote driving safety. Use these events and pamphlets to discuss the dangers of distracted driving, including texting while behind the wheel of a motor vehicle.

Safety Issue #7: Visibility

Specific Observations:

Truck and Passenger Vehicle Sight Lines – Audit participants noted that due to the high volume of heavy vehicles through the study area intersection, personal vehicles attempting to turn onto Main Street encroach into the intersection in an attempt to regain site lines past the blocking heavy vehicle. It was also noted that solar glare during the weekday morning peak period impedes drivers' visibility for Main Street eastbound traffic during certain times of the year. Guide and regulatory signage located in the raised median on the Lunenburg Road southbound approach limits sight distance of personal vehicles due to bottom sign's low mounting height. A percentage of the angled crashes at this intersection may be the result of temporarily impaired sight lines.



Image 6: Heavy vehicle attempting to exit Lunenburg Road approach

Roadway Lighting – The Town of Lancaster replaced all street luminaries within the last year; however there is only one present at the northeast corner of the intersection. While additional lighting could be beneficial for reducing nighttime crashes, there is awareness against light pollution for nearby residents. There were 26 crashes which occurred at dawn, dusk, or night hours for 2012-2016.

Potential Safety Enhancements:

1. Evaluate the installation of a fully actuated traffic signal to eliminate the need to encroach into the intersection to improve sight lines.
2. Should a traffic signal be considered, provide signal head backplates for solar glare with retro-reflective tape for nighttime visibility and louvers to limit the signal head visibility to within 20 degrees of the cone of visibility to reduce light pollution of surrounding residents.
3. Evaluate the installation of a roundabout to eliminate the need to encroach into the intersection to improve sight lines.
4. Consider installing new retro-reflective signage for improved visibility for existing signage which is faded or no longer compliant with current MUTCD standards.
5. Consider relocating or staggering of STOP-bar along the Lunenburg Road southbound approach to improve sight lines. This countermeasure is currently being pursued by the Town DPW.
6. Consider the installation of additional overhead lighting luminaries to increase the nighttime visibility at the intersection and its approaches.

Safety Issue #8: Lane Departure

Specific Observations:

Truck Lane Departures – Tire tracks through the soil are present on the northeast corner of the intersection where no curbing is present. Field observations showed heavy vehicles attempting wide turns from Main Street westbound to Lunenburg Road and from Lunenburg Road southbound to Main Street eastbound. The lane departures wheel path did not specifically result in any past crash history; however, the potential introduction of enhanced pedestrian and bicycle accommodations may be effected by the current wheel path of heavy vehicles.

Opposing Driveway Apron – Audit participants noted that the residential driveway apron present along the southerly side of Main Street opposing the Lunenburg Road southbound approach is a concern. As previously noted, no object marker sign or associated warning sign is placed immediately opposite Lunenburg Road. The property resident noted that it is not uncommon for vehicles to end up on his property as they were unaware of the terminus of the roadway. Current fixed object placement has been recorded as struck by vehicles multiple times from 2012-2016.

Objects off the Road – Eight (8) crashes during the study period at the intersection resulted in a vehicle striking a fixed object off the roadway including a combination of sign posts, utility poles, and fire hydrants.

Roadway Edge Drop-off – There is a culvert located under the driveway accessing #1357 Main Street housing units which has a drop-off swale parallel to Lunenburg Road approximately 2-foot deep. The swale presents a safety hazard because it is not protected by a guardrail and exceeds the MassDOT standard for the minimally accepted 1:4 foreslope grade. The crash reports did not indicate any particular crash occurrence where a lane departure vehicle entered the drainage swale.

Potential Safety Enhancements:

1. Redefine the intersection's northeast corner with granite curbing to separate the travel way from the adjacent property. Consider the installation of a raised truck apron to allow for wider truck turns but providing a traditional turning radius for passenger vehicles to lower speeds. This countermeasure is currently being pursued by the Town DPW.
2. Evaluate gates with reflective tape for secondary driveways and differentiated pavement materials to separate the intersection roadway and delineate where the Lunenburg Road southbound approach terminates.
3. Evaluate the relocation of existing object marker (OM4-1) signage which is not currently within the cone of vision for the intended drivers.
4. Consider replacement on the red object marker (OM4-1) with a W1-7 dual arrow sign for improved visibility. Relocate position of sign to be directly opposing Lunenburg Road and positioned to impede the through path of travel.
5. Consider applying reflector plaques on roadside utility poles and sign posts for improved visibility.

6. Install guardrail and/or vertical curbing along the west side of Lunenburg Road approaching the intersection to provide separation of vehicle traffic from the drainage swale on the edge of pavement without adversely affecting stormwater runoff.
7. Consider reconstruction of existing drainage swale with erosion resistant materials to prevent future roadway and drainage issues and conform to MassDOT roadside design guide standards.

Safety Issue #9: Vehicle Speeds

Specific Observations:

Audit participants expressed concerns over vehicle speeds within the audit area. The Police Department indicated that target speed enforcement has been conducted in the past due to resident complaints; however, the Police Department noted that the heavy vehicle congestion along Main Street helps in reducing vehicle speeds. Speed data obtained from ATR counts in the audit area indicate an 85th percentile speed at or above 40 mph, is in excess of the posted speed regulations. It was also noted that the Lunenburg Road southbound approach is graded down towards the intersection which attributes to higher speeds. Lancaster Police noted that tickets are being issued approximately three (3) per hour in a four-hour window throughout the day to discourage speeding and distracted driving with additional grants being sought. However, little improvement in driver behavior has been recognized.



Image 7: Wide turn radii for heavy vehicles leads to high turning speeds for personal vehicles

Audit participants noted that there was a lack of traffic calming along the Lunenburg Road southbound approach which could change the nature of the roadway and indicate to motorists that they are entering a reduced speed zone in addition to regulatory signage. Audit participants also noted that there was a lack of reduce speed warning signage, as previously noted, to highlight the reduction of speed limit from 45 mph to 25 mph along the Lunenburg Road southbound approach to the intersection. The intersection's wide geometry is required in order to facilitate heavy vehicles which require more room when executing turns. As a result, smaller vehicles are able to travel at higher rates of speed through turns. Despite the existing warning signage, enforcement, and traffic calming measures in place along the Main Street corridor, audit participants noted that excessive speed still occurs through the study area intersection.

Excessive speed was only noted as the contributing factor in one (1) crash within the study period; however, twelve (12) crashes within the audit area occurred during the nighttime hours when speeds are typically at their peak along the corridor.

The Town installed chevron signage, within the last year, along Main Street east of the study area intersection at Buttonwood Lane / Main Street and warning signage for a 30 mph speed limit around the roadway curve. This bend in the roadway had a fatal crash which occurred years prior to signage.

Potential Safety Enhancements:

1. Consider increased enforcement of speeding within the audit area outside of peak commuter congestion periods.
2. Consider strategic placement of dynamic message speed signs consistent with those already installed in the Town and advanced warning signage.
3. Consider narrowing travel lanes along Main Street and Lunenburg Road comply with the minimum for NHS and arterial roadways respectively to help reduce vehicle travel speeds down towards their regulated and posted limits.
4. Consider installation of vertical granite curbing and sidewalks along both sides of all approaches to provide vertical separation from the roadway and change the characteristic of a high speed location.
5. Redefine the intersection's northeast corner with granite curbing to separate the travel way from the adjacent property. Consider the installation of a raised truck apron to allow for wider truck turns but providing a traditional turning radius for passenger vehicles to lower speeds.
6. Consider installation of reduce speed flashers along Lunenburg Road southbound approach along with advanced warning signage in a location where light pollution will not adversely affect residents.

Summary of Road Safety Audit

Each improvement considered has been categorized as short-term, mid-term, or long-term. Additionally, a cost category has been assigned to each improvement based on the definitions shown in Table 4. Table 5 includes a summary of the potential safety enhancements. Safety benefit estimates are subjective, based on engineering experience and the relative percentage of crashes that may be reduced by the enhancement based on known and documented crash reduction factors (such as FHWA documented crash reduction factors).

Note that some costs are noted with two cost thresholds. This is included as some enhancements may require additional measures to ensure regulatory compliance. For instance, the targeted enforcement by Lancaster police for vehicles attempting to make an illegal U-turn may require short-term or mid-term sources depending on the timeline of planning through construction. In addition, some enhancements are defined to mitigate multiple safety issues. For those enhancements identified for multiple issues, such as the consideration of relocating or staggering of stop bar along the Lunenburg Road southbound approach to improve sight lines, the enhancement has only been listed once in Table 5.

Table 4: Estimated Time Frame and Costs Breakdown

Time Frame		Costs	
Short-Term	<1 Year	Low	<\$10,000
Mid-Term	1-3 Years	Medium	\$10,001-\$50,000
Long-Term	>3 Years	High	>\$50,000

Table 5: Potential Safety Enhancement Summary

Safety Issue	Potential Safety Enhancement	Safety Payoff	Time Frame	Cost	Responsible Party
Driver Frustration and Bypassing Behavior due to Intersection Queues	Evaluate the installation of a fully actuated traffic signal. Evaluation should be checked against MUTCD signal warrants for traffic volume and safety. [Also applies to Visibility Safety Issue].	High	Long-Term	High	Town
	Evaluate the installation of a roundabout. [Also applies to Visibility Safety Issue].	High	Long-Term	High	Town
	Evaluate signal phasing opportunities (pending installation of a traffic signal) to include a Main street eastbound protected left-turn phase.	Medium	Long-Term	Low	Town
	Evaluate turning lane warrants for dedicated left-turn lane for Main Street eastbound approach and improved storage length for Lunenburg Road southbound approach.	Medium	Long-Term	Medium	Town
	Evaluate extending the right-turn lane along the Lunenburg Road southbound approach	Low	Mid-Term	Low to Medium	Town
	Consider targeted enforcement by Lancaster Police for vehicles attempting to make a right-turn along Lunenburg Road southbound and then making an illegal U-turn in a private driveway.	Medium	Short-Term	Low to Medium	Town Police
	Consider further commercial vehicle enforcement for Lancaster Police.	Medium	Mid-Term	Low to Medium	Town Police
	Conduct educational events or distribute pamphlets at the surrounding schools or notable pedestrian-heavy destinations. [Also applies to Cell Phone Usage and Distracted Driving Safety Issue].	Medium	Short-Term	Low	Town
	Consider constructing sidewalk along the northerly side of Main Street and along Lunenburg Road.	High	Long-Term	High	Town
	Sub-Standard Multi-Modal Accommodations	Construct ADA / AAB compliant accessible curb ramps on the corners of the intersection with a corresponding crosswalk between each ramp pair upon enhancements to sidewalk facilities.	Medium	Long-Term	Medium
Consider adding shared-use lane markings with associated signage along the Main Street and Lunenburg Road corridors.		Low	Short-Term	Low	Town
Evaluate the potential to construct dedicated bicycle lanes along Main Street and Lunenburg Road corridors.		High	Long-Term	High	Town

Table 5 Continued: Potential Safety Enhancement Summary

Safety Issue	Potential Safety Enhancement	Safety Payoff	Time Frame	Cost	Jurisdiction
Deteriorated or Sub-Standard Multi-Modal Accommodations	Should a traffic signal be considered, provide pedestrian traffic signal operations including phasing and infrastructure, such as countdown signals with MUTCD compliant signage, ADA compliant APS, and push buttons.	High	Long-Term	Medium	Town
	Consider installation of crosswalks across Main Street, at the intersection with Lunenburg Road, pending the installation of sidewalk connectivity through the intersection.	High	Long-Term	Medium	Town
	Eliminate second edge line pavement markings along the Lunenburg Road Southbound approach corridor.	Low	Short-Term	Low	Town
	Apply arrow pavement markings to the Lunenburg Road southbound approach. This countermeasure is currently being pursued by the Town DPW.	Low	Short-Term	Low	Town
Deteriorated or Sub-Standard Pavement Markings	Consider relocating or staggering of STOP-bar for left-turn and right-turn lanes along the Lunenburg Road southbound approach. [Also applies to Visibility Safety Issue].	Medium	Short-Term	Low	Town
	Reapply all existing pavement markings; including STOP bars, and centerlines.	Medium	Short-Term	Low	Town
	Consider replacement of existing pavement markings with thermoplastic markings which will last longer against snow plow damage and improve visibility during inclement weather.	Medium	Mid-Term	High	Town
	Complete a full sign inventory along all three approaches to the Main Street / Lunenburg Road intersections.	Medium	Short-Term	Low	Town
Deteriorated, Blocked, or Damaged Corridor Signage	Replace all existing signs along Lunenburg Road and Main Street that are currently faded, damaged, or non-compliant with new MUTCD-compliant signs.	Medium	Short-Term	Medium	Town
	Evaluate the relocation of guide and regulatory signage from the median island of the Lunenburg Road southbound approach. [Also applies to Visibility and Lane Departure Safety Issue].	Low	Short-Term	Low	Town
	Adjust heights of existing signage to meet current MUTCD minimum height standard of 7-feet. [Also applies to Visibility Safety Issue].	Medium	Short-Term	Low	Town

Table 5 Continued: Potential Safety Enhancement Summary

Safety Issue	Potential Safety Enhancement	Safety Payoff	Time Frame	Cost	Jurisdiction
Deteriorated, Blocked, or Damaged Corridor Signage	Evaluate the relocation of existing signage which is not currently within the cone of vision for the intended drivers, utility poles, and other roadside structures that do not comply with current lateral offset standards. [Also applies to Visibility Safety Issue].	High	Short-Term	Low	Town
	Consider replacement on the red object marker (OM4-1) with a W1-7 dual arrow sign and relocate position. [Also applies to Visibility and Lane Departure Safety Issue].	Medium	Short-Term	Low	Town
Deteriorated, Blocked, or Damaged Corridor Signage	Consider installation of an advance intersection sign (W2-4) along Lunenburg Road southbound approach along with reduced speed warning signage (W3-5).	Medium	Short-Term	Low	Town
	Consider installation of dynamic speed signs consistent with those already installed in the Town or an advanced speed reduction sign (W3-5) along Lunenburg Road southbound approach along with reduced speed warning signage. [Also applies to Vehicle Speeds Safety Issue].	Medium	Short-Term	Medium	Town
Deteriorated or Sub-Standard Drainage	Consider installing vertical granite curbing along both sides of all approaches. [Also applies to Vehicle Speeds Safety Issue].	Medium	Long-Term	High	Town
	Consider resurfacing all intersection approaches to achieve a 2% cross-slope for improved drainage of roadway runoff out of the travel lane.	High	Mid-Term	High	Town
	Consider regrading of driveway aprons and center of intersection towards exiting catch basins.	Low	Mid-Term	Medium	Town
Cell Phone Usage and Distracted Driving	Increase police enforcement of cell phone usage while driving in the vicinity of the audit area.	Medium	Short-Term	Low	Town Police
	Conduct educational events or distribute pamphlets at the surrounding schools and residents to help promote driving safety regarding distracted driving.	Medium	Short-Term	Low	Town
Visibility	Evaluate the installation of a fully actuated traffic signal to eliminate the need to encroach into the intersection.	High	Long-Term	High	Town
	Should a traffic signal be considered, provide signal head backplates for solar glare with retro-reflective tape for improved visibility and louvers to limit the signal head visibility to within 20 degrees of the cone of visibility to reduce light pollution of surrounding residents.	Medium	Mid-Term	Low	Town

Table 5 Continued: Potential Safety Enhancement Summary

Safety Issue	Potential Safety Enhancement	Safety Payoff	Time Frame	Cost	Jurisdiction
Visibility	Consider installing new retro-reflective signage.	Medium	Short-Term	Medium	Town
	Consider the installation of additional overhead lighting luminaries at the intersection.	Medium	Short-Term	Medium	Town
Lane Departure	Redefine the intersection's northeast corner with granite curbing. Consider the installation of a raised truck apron for wider truck turns but providing a traditional turning radius for passenger vehicles.	Medium	Long-Term	Medium	Town
	Evaluate gates with reflective tape for secondary driveways and differentiated pavement materials.	Low	Short-Term	Low	Town
	Evaluate the relocation of existing object marker signage (OM4-1) signage which is not currently within the cone of vision for the intended drivers	High	Short-Term	Low	Town
	Consider applying reflector plaques on roadside utility poles and sign posts for improved visibility.	Low	Short-Term	Low	Town
	Install guardrail and/or curbing along the west side of Lunenburg Road approaching the intersection adjacent to drainage swale.	Medium	Mid-Term	Medium	Town
	Consider reconstruction of existing drainage swale with erosion resistant materials.	Low	Mid-Term	Low	Town
Vehicle Speeds	Consider increased enforcement of speeding within the audit area outside of peak commuter congestion periods.	Medium	On-Going	High	Town Police
	Consider narrowing travel lanes along Main Street and Lunenburg Road comply with the minimum for NHS and arterial roadways respectively. [Also applies to Driver Frustration and Bypassing Behavior due to Intersection Queues Safety Issue].	Medium	Mid-Term	Medium	Town
	Redefine the intersection's northeast corner with granite curbing to separate the travel way from the adjacent property. Consider the installation of a raised truck apron to allow for wider truck turns but providing a traditional turning radius for passenger vehicles.	High	Long-Term	High	Town
	Consider installation of reduce speed flashers along Lunenburg Road southbound approach along with advanced warning signage in a location where light pollution will not adversely affect residents	Medium	Short-Term	Medium	Town

Appendix E

Crash Data

Lunenburg Road at Old Union Turnpike
 Crash History 2015-2019

Crash Number	Crash Date	Crash Time	Crash Severity	Number of NonFatal Injuries	Number of Vehicles	Manner of Collision	Vehicle Travel Directions	Road Surface	Ambient Light	Weather Condition
4106522	01/03/2015	9:56 PM	Property damage only (none injured)	0	1	Single vehicle crash	V1: E	Snow	Dark - lighted roadway	Snow/Rain
4121405	10/22/2015	2:09 AM	Property damage only (none injured)	0	1	Single vehicle crash	V1: N	Dry	Dark - lighted roadway	Clear
4244498	06/24/2015	6:14 PM	Property damage only (none injured)	0	2	Rear-end	V1: S / V2: S	Dry	Daylight	Clear
4244504	05/18/2015	5:47 PM	Property damage only (none injured)	0	2	Unknown	V1: W / V2: W	Dry	Daylight	Clear/Other
4346116	03/05/2017	1:58 AM	Not Reported	0	1	Single vehicle crash	V1: E	Dry	Dark - lighted roadway	Clear
4424069	08/01/2017	3:46 PM	Property damage only (none injured)	0	2	Rear-end	V1: E / V2: N	Dry	Daylight	Clear/Unknown
4432282	09/19/2017	1:52 PM	Property damage only (none injured)	0	2	Rear-end	V1: S / V2: S	Wet	Daylight	Rain
4558370	06/23/2018	10:22 AM	Property damage only (none injured)	0	2	Angle	V1: W / V2: W	Dry	Daylight	Cloudy
4562509	06/27/2018	10:44 PM	Property damage only (none injured)	0	1	Single vehicle crash	V1: W	Dry	Dark - lighted roadway	Clear
4593039	08/27/2018	3:39 AM	Property damage only (none injured)	0	1	Single vehicle crash	V1: N	Dry	Dark - lighted roadway	Clear
4635788	11/27/2018	8:27 AM	Property damage only (none injured)	0	2	Rear-end	V1: N / V2: N	Wet	Daylight	Rain
4635799	11/12/2018	7:49 AM	Property damage only (none injured)	0	1	Single vehicle crash	V1: S	Dry	Daylight	Clear/Unknown
4663262	01/25/2019	8:47 PM	Property damage only (none injured)	0	1	Angle	V1: N	Dry	Dark - lighted roadway	Clear
4663264	01/29/2019	5:38 AM	Property damage only (none injured)	0	2	Angle	V1: S / V2: W	Dry	Dark - lighted roadway	Clear
4679697	02/12/2019	2:05 PM	Non-fatal injury	1	2	Rear-end	V1: N / V2: N	Snow	Daylight	Snow/Sleet, hail
4690778	03/28/2019	4:41 PM	Non-fatal injury	0	3	Sideswipe, opposite direction	V1: W / V2: N / V3: W	Dry	Daylight	Clear

Lunenburg Road at Forrt Pond Road
 Crash History 2015-2019

Crash Number	Crash Date	Crash Time	Crash Severity	Number of NonFatal Injuries	Number of Vehicles	Manner of Collision	Vehicle Travel Directions	Road Surface	Ambient Light	Weather Condition
4244505	05/23/2015	10:19 AM	Property damage only (none injured)	0	2	Angle	V1: W / V2: S	Dry	Daylight	Clear
4246376	07/17/2015	5:49 PM	Property damage only (none injured)	0	2	Rear-end	V1: W / V2: W	Dry	Daylight	Cloudy
4266938	09/24/2016	1:50 PM	Non-fatal injury	1	2	Head-on	V1: S / V2: N	Dry	Daylight	Clear/Other
4277345	10/24/2016	6:26 PM	Non-fatal injury	4	2	Angle	V1: W / V2: N	Dry	Dark - lighted roadway	Clear
4513073	02/28/2018	7:07 PM	Property damage only (none injured)	0	1	Sideswipe, opposite direction	V1: N	Dry	Dark - lighted roadway	Clear
4551076	06/06/2018	11:38 AM	Property damage only (none injured)	0	2	Angle	V2: S / V1: N	Dry	Daylight	Clear
4663268	02/03/2019	10:48 AM	Property damage only (none injured)	0	2	Angle	V1: N / V2: W	Dry	Daylight	Cloudy
4709542	05/26/2019	5:00 PM	Non-fatal injury	0	2	Angle	V1: W / V2: N	Dry	Daylight	Clear
4727615	07/03/2019	4:00 PM	Non-fatal injury	0	2	Angle	V1: W / V2: N	Dry	Daylight	Clear

Route 2 EB Interchange 35
 Crash History 2013-2016

Crash Number	Crash Date	Crash Time	Crash Severity	Number of NonFatal Injuries	Number of Vehicles	Manner of Collision	Vehicle Travel Directions	Road Surface	Ambient Light	Weather Condition
4144631	1/18/2016	8:40 PM	Non-fatal injury	1	1	Single vehicle crash	V1:S	Dry	Dark - roadway not lighted	Clear
4315685	11/30/2016	8:10 AM	Property damage only (none injured)	0	2	Rear-end	V1:E / V2:E	Dry	Daylight	Clear
4312114	12/17/2016	3:14 PM	Property damage only (none injured)	0	1	Single vehicle crash	V1:W	Wet	Daylight	Clear
4270556	10/19/2016	6:01 AM	Property damage only (none injured)	0	3	Rear-end	V1:E / V2:E / V3:E	Dry	Dark - roadway not lighted	Clear
4227784	7/26/2016	7:05 AM	Property damage only (none injured)	0	2	Rear-end	V1:E / V2:E	Dry	Daylight	Clear
4202386	6/5/2016	1:00 PM	Property damage only (none injured)	0	2	Rear-end	V1:E / V2:E	Dry	Daylight	Not Reported
4202315	5/17/2016	7:15 AM	Property damage only (none injured)	0	1	Single vehicle crash	V1:E	Dry	Daylight	Clear
4189258	5/8/2016	2:16 PM	Property damage only (none injured)	0	1	Single vehicle crash	V1:E	Dry	Daylight	Cloudy
4156508	2/21/2016	6:40 PM	Property damage only (none injured)	0	2	Sideswipe, same direction	V1:E / V2:E	Dry	Dark - roadway not lighted	Clear
4134193	1/8/2016	7:13 AM	Property damage only (none injured)	0	2	Rear-end	V1:E / V2:E	Dry	Daylight	Clear
4108565	11/2/2015	6:25 AM	Property damage only (none injured)	0	3	Rear-end	V1:E / V2:E / V3:E	Dry	Daylight	Clear
4102112	10/17/2015	3:26 PM	Non-fatal injury	1	2	Angle	V1:S / V2:W	Dry	Daylight	Clear
4100945	10/20/2015	6:40 AM	Property damage only (none injured)	0	2	Rear-end	V1:E / V2:E	Dry	Dawn	Not Reported
4067174	7/20/2015	6:58 AM	Property damage only (none injured)	0	2	Rear-end	V1:E / V2:E	Dry	Daylight	Clear
4024137	3/3/2015	8:15 AM	Non-fatal injury	3	2	Rear-end	V1:E / V2:E	Dry	Daylight	Clear
4017927	3/3/2015	8:10 AM	Property damage only (none injured)	0	2	Rear-end	V1:E / V2:E	Sand, mud, dirt, oil, gravel	Daylight	Clear
3950088	9/18/2014	6:45 AM	Property damage only (none injured)	0	3	Rear-end	V1:E / V2:E / V3:E	Dry	Daylight	Clear/Other
3950087	9/18/2014	6:40 AM	Property damage only (none injured)	0	2	Rear-end	V1:E / V2:E	Dry	Daylight	Clear
3949346	9/4/2014	7:20 AM	Property damage only (none injured)	0	2	Rear-end	V1:E / V2:E	Dry	Daylight	Clear/Other
3898351	7/31/2014	10:12 AM	Non-fatal injury	2	2	Rear-end	V1:E / V2:E	Dry	Daylight	Not Reported
3753010	4/4/2013	2:19 PM	Non-fatal injury	1	2	Rear-end	V1:E / V2:E	Dry	Daylight	Cloudy/Unknown
3753008	3/27/2013	2:27 PM	Property damage only (none injured)	0	2	Angle	V1:W / V2:S	Dry	Daylight	Clear/Unknown
3718391	12/7/2013	6:30 AM	Property damage only (none injured)	0	1	Single vehicle crash	V1:E	Dry	Dark - roadway not lighted	Clear
3660135	11/7/2013	9:15 AM	Property damage only (none injured)	0	2	Rear-end	V1:E / V2:E	Dry	Daylight	Not Reported
3641404	9/20/2013	4:45 PM	Property damage only (none injured)	0	2	Angle	V1:W / V2:S	Dry	Daylight	Clear
3641127	10/28/2013	7:55 AM	Property damage only (none injured)	0	2	Rear-end	V1:E / V2:E	Dry	Daylight	Clear/Other
3588445	9/9/2013	8:05 AM	Non-fatal injury	1	5	Rear-end	V1:E / V2:E / V3:E / V4:E / V5:E	Dry	Daylight	Not Reported
3576739	8/25/2013	9:00 PM	Property damage only (none injured)	0	1	Single vehicle crash	V1:E	Dry	Dark - roadway not lighted	Clear
3557038	8/7/2013	7:59 AM	Property damage only (none injured)	0	1	Single vehicle crash	V1:E	Dry	Daylight	Clear
3498390	7/2/2013	8:30 AM	Property damage only (none injured)	0	2	Rear-end	V1:E / V2:E	Dry	Daylight	Cloudy
3414296	4/24/2013	8:14 PM	Property damage only (none injured)	0	2	Rear-end	V1:E / V2:E	Dry	Dark - roadway not lighted	Clear
3396250	4/12/2013	3:10 PM	Property damage only (none injured)	0	2	Angle	V1:E / V2:E	Dry	Daylight	Clear
3388257	3/27/2013	5:53 PM	Non-fatal injury	1	1	Single vehicle crash	V1:E	Dry	Daylight	Clear
3363232	2/20/2013	6:10 PM	Property damage only (none injured)	0	1	Single vehicle crash	V1:E	Dry	Dark - roadway not lighted	Clear

Route 2 WB Interchange 35
 Crash History 2013-2016

Crash Number	Crash Date	Crash Time	Crash Severity	Number of NonFatal Injuries	Number of Vehicles	Manner of Collision	Vehicle Travel Directions	Road Surface	Ambient Light	Weather Condition
4144199	3/20/2014	8:10 AM	Non-fatal injury	1	1	Single vehicle crash	V1:E	Ice	Dawn	Cloudy/Rain
4133859	1/6/2016	5:45 PM	Property damage only (none injured)	0	2	Sideswipe, same direction	V1:W / V2:W	Dry	Dark - roadway not lighted	Clear
4432272	11/4/2016	4:40 PM	Property damage only (none injured)	0	2	Rear-end	V1:S / V2:S	Dry	Daylight	Cloudy
4267660	10/17/2016	7:30 AM	Property damage only (none injured)	0	3	Sideswipe, same direction	V1:W / V2:W / V3:W	Dry	Daylight	Clear
4014423	2/8/2015	9:27 AM	Property damage only (none injured)	0	2	Angle	V1:W / V2:W	Snow	Daylight	Cloudy/Snow
3975795	11/13/2014	11:07 AM	Property damage only (none injured)	0	3	Rear-end	V1:W / V2:W / V3:W	Dry	Daylight	Clear
3949347	9/11/2014	2:45 PM	Property damage only (none injured)	0	2	Rear-end	V1:W / V2:W	Dry	Daylight	Clear
3868090	6/14/2014	2:30 AM	Property damage only (none injured)	0	1	Single vehicle crash	V1:W	Dry	Dark - lighted roadway	Clear
3834444	5/28/2014	3:21 PM	Property damage only (none injured)	0	2	Rear-end	V1:W / V2:W	Dry	Daylight	Not Reported
3699067	12/11/2013	2:20 PM	Property damage only (none injured)	0	2	Rear-end	V1:W / V2:E	Dry	Daylight	Not Reported
3694817	12/8/2013	1:40 PM	Property damage only (none injured)	0	2	Rear-end	V1:W / V2:W	Dry	Daylight	Not Reported
3600116	9/17/2013	12:45 PM	Property damage only (none injured)	0	2	Rear-end	V1:W / V2:W	Dry	Daylight	Not Reported
3491254	6/10/2013	9:25 AM	Property damage only (none injured)	0	1	Single vehicle crash	V1:W	Dry	Daylight	Cloudy
3455652	5/26/2013	3:37 PM	Property damage only (none injured)	0	1	Single vehicle crash	V1:N	Dry	Daylight	Clear
3389777	4/6/2013	12:20 PM	Property damage only (none injured)	0	2	Rear-end	V1:W / V2:W	Dry	Daylight	Not Reported
4044519	5/18/2015	9:10 AM	Property damage only (none injured)	0	2	Rear-end	V1:W / V2:W	Dry	Daylight	Clear
4008624	2/8/2015	7:40 AM	Property damage only (none injured)	0	1	Single vehicle crash	V1:W	Snow	Daylight	Snow
4293238	11/26/2016	8:04 AM	Non-fatal injury	1	1	Single vehicle crash	V1:W	Dry	Daylight	Cloudy
4289178	11/17/2016	11:00 PM	Property damage only (none injured)	0	2	Sideswipe, same direction	V1:W / V2:W	Dry	Dark - roadway not lighted	Clear
4239086	8/9/2016	2:15 PM	Property damage only (none injured)	0	2	Rear-end	V1:W / V2:W	Dry	Daylight	Clear
4222078	6/24/2016	1:10 PM	Property damage only (none injured)	0	2	Rear-end	V1:W / V2:W	Dry	Daylight	Clear
4196504	5/25/2016	9:15 AM	Property damage only (none injured)	0	1	Single vehicle crash	V1:W	Dry	Daylight	Clear
4059540	6/22/2015	3:30 PM	Property damage only (none injured)	0	2	Rear-end	V1:W / V2:W	Dry	Daylight	Clear
4044512	5/8/2015	2:55 PM	Property damage only (none injured)	0	2	Rear-end	V1:W / V2:W	Dry	Daylight	Clear
3997833	1/12/2015	3:57 PM	Property damage only (none injured)	0	2	Rear-end	V1:W / V2:W	Dry	Daylight	Clear
3629136	9/30/2013	1:40 PM	Property damage only (none injured)	0	2	Rear-end	V1:W / V2:W	Dry	Daylight	Not Reported
4204009	5/30/2016	9:30 PM	Non-fatal injury	1	3	Single vehicle crash	V1:W / V2:W / V3:W	Dry	Dark - roadway not lighted	Clear

INTERSECTION CRASH RATE WORKSHEET

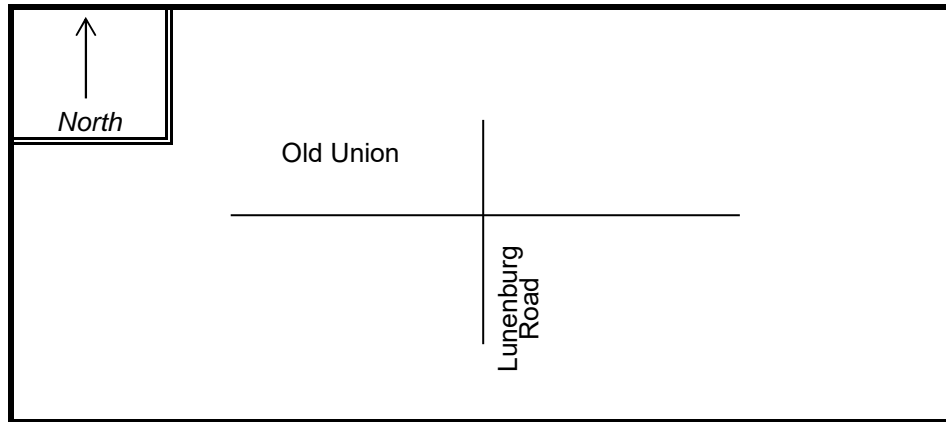
CITY/TOWN : Lancaster COUNTY : _____ COUNT DATE : Dec-18
 DISTRICT : 3 UNSIGNALIZED : YES NO SIGNALIZED : YES NO

~ INTERSECTION DATA ~

MAJOR STREET : Lunenburg Road (Route 70)

MINOR STREET(S) : Old Union Turnpike

**INTERSECTION
 DIAGRAM
 (Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (PM) :	264	310	591	465		1,630

"K" FACTOR : INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (A) :

CRASH RATE CALCULATION :

0.50

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

Comments : K Factor based on ATR counts along Lunenburg Road

Project Title & Date : Capital Commerce Center - Lancaster, MA

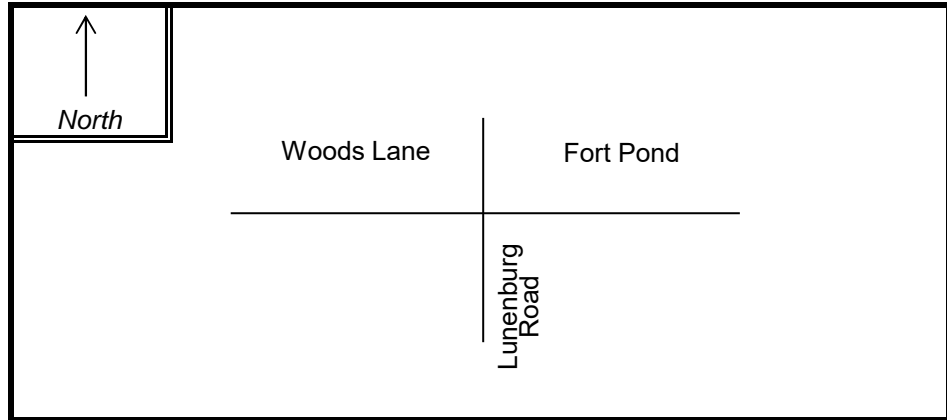
INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Lancaster COUNT DATE : Dec-18
 DISTRICT : 3 UNSIGNALIZED : **YES** SIGNALIZED : **NO**

~ INTERSECTION DATA ~

MAJOR STREET : Lunenburg Road (Route 70)
 MINOR STREET(S) : Fort Pond Road
Woods Lane

**INTERSECTION
 DIAGRAM
 (Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (PM) :	4	606	541	200		1,351

" K " FACTOR : INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (A) :

CRASH RATE CALCULATION :

0.34

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

Comments : K Factor based on ATR counts along Lunenburg Road

Project Title & Date : Capital Commerce Center - Lancaster, MA

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Lancaster COUNTY DATE : Dec-18

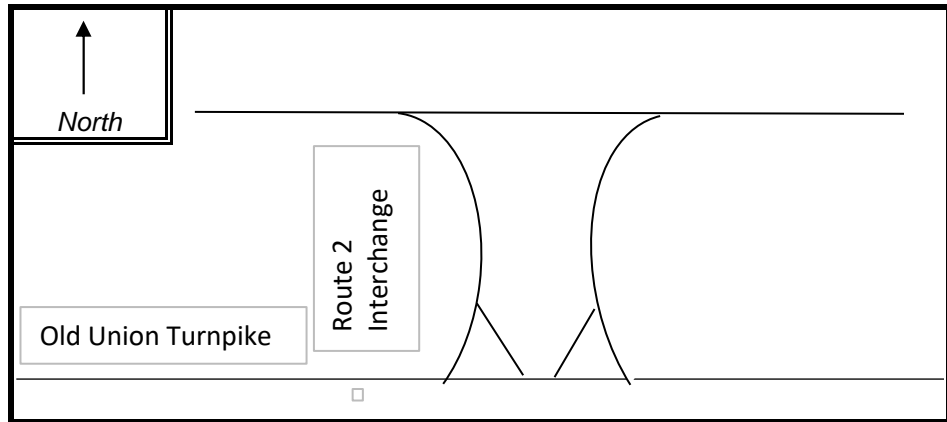
DISTRICT : 3 UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Old Union Turnpike

MINOR STREET(S) : Route 2 Interchange 35

**INTERSECTION
 DIAGRAM**
 (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	SB	NB		
PEAK HOURLY VOLUMES (AM/PM) :	136	91	209			436

"K" FACTOR : INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (A) :

CRASH RATE CALCULATION :

0.58

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

Comments : K factor based on ATR counts along Lunenburg

Project Title & Date : Capital Commerce Center - Lancaster, MA

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Lancaster COUNTY DATE : Dec-18

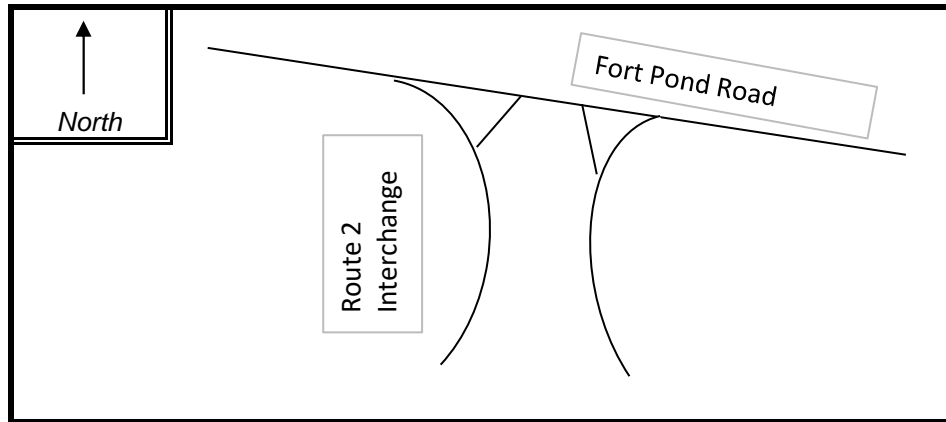
DISTRICT : 3 UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Fort Pond Road

MINOR STREET(S) : Route 2 Interchange 35

**INTERSECTION
 DIAGRAM**
 (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	126	243	351			720

" K " FACTOR : INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (A) :

CRASH RATE CALCULATION :

0.07

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

Comments : K factor based on ATR counts along Lunenburg

Project Title & Date : Capital Commerce Center - Lancaster, MA

Ms. Ana Fill, PE
Highway Safety Engineer
MassDOT – Highway Division
10 Park Plaza, Suite 7210
Boston, Massachusetts 02116

September 13, 2019

Ref. T0852.03

Re: Capital Commerce Center (EEA #16043) – Lancaster, Massachusetts
Supplemental Crash Data Summary – Route 2 Interchange 35 Ramps

Dear Ms. Fill:

On behalf of the Applicant, Capital Group Properties (the “Proponent”), TEC, Inc. (TEC) submitted a Traffic Impact, Access, and Parking Study (TIAPS) to the Massachusetts Environmental Policy Act (MEPA) office in conjunction with the Environmental Notification Form (ENF) for the proposed Capital Commerce Center (EEA #16043) in Lancaster, Massachusetts. Availability of the ENF for public review was published in *The Environmental Monitor* on June 10, 2019. The Secretary of the Executive Office of Energy and Environmental Affairs (EEA) issued a Certificate on the ENF on July 11, 2019 which included specific comments from the Massachusetts Department of Transportation (MassDOT).

The TIAPS included a traffic study area that included the surface intersection of the Route 2 Interchange 35 with Fort Pond Road and Old Union Turnpike. Based on the MassDOT online crash cluster database, the Route 2 Interchange 35 was considered 2015 Highway Safety Improvement Plan (HSIP) eligible (current crash years of HSIP-eligibility at time of analysis). Subsequent of the analyses provided as part of the TIAPS, MassDOT had issued an updated 2016 HSIP crash cluster listing which removes the Route 2 Interchange 35 as a designated high crash location. Upon discussions with MassDOT on September 5, 2019, TEC was directed to provide documentation that the surface intersection of the Route 2 Interchange 35 with Fort Pond Road and Old Union Turnpike were in fact not HSIP-eligible.

Many freeway interchanges across the Commonwealth are noted as HSIP-eligible locations; however, this is generally the result of crashes being geocoded on the center of the nearest or corresponding interchange, as opposed to the specific crash location along a freeway segment, along the ramps, or other location along or in the vicinity of the interchange. Although the vicinity of the interchange does experience a large number of crashes, the MassDOT Crash Portal does not denote a high crash total at the surface intersection of Fort Pond Road and Old Union Turnpike with the Route 2 ramps.

The TIAPS identified that TEC was currently in the process obtaining individual crash reports from the MassDOT Traffic and Safety Engineering Section for 2014 through 2018 in order to determine the crash history of the two surface intersections as part of the study area. TEC obtained electronic versions of all crash reports from the MassDOT Traffic and Safety Engineering Section on April 25, 2019. TEC has since reviewed each crash report documented by MassDOT. The following is a summary of TEC’s findings.

Crash Data Review

The objective of obtaining all crash reports for the Route 2 Interchange 35 was to determine if the surface intersection of Route 2 EB Ramps / Old Union Turnpike and Route 2 WB Ramps / Fort Pond Road were themselves HSIP-eligible, external of the entire interchange. Therefore, all crashes that in the vicinity of Interchange 35 were examined to determine which crashes occurred along the Interchange 35 Off-Ramps; and more specifically, which crashes occurred at the study area surface intersection.

Route 2 EB Ramps / Old Union Turnpike

The crash reports indicate that only five (5) reported crashes occurred along the Route 2 EB Interchange 35 Ramps / Old Turnpike Road intersection during the five-year study period (1.0 crashes per year on average). This also included any crash that was more than half-way along the ramp or any crash that was deemed as intersection related, such as rear-ending a queued vehicle due to congestion from the stop-sign at Old Union Turnpike. It does not include vehicles in crashes related to the freeway merge or diverge. Table 1 provides a summary of the crashes that occurred along the surface intersection of the Route 2 Interchange 35 / Old Union Turnpike during the five-year study period.

Table 1 – Summary of Route 2 EB Interchange 35 Crashes – Surface Intersection Only

Year	Crash #	Date	EPDO	Location
2015	PW201530300915	10-17-2015	21	Route 2 EB Ramp at Old Union Turnpike
2017	PW201723302813	07-09-2017	21	Route 2 EB Ramp at Old Union Turnpike
2018	PW201807201109	03-09-2018	21	Route 2 EB Ramp at Old Union Turnpike
2018	PW201811300765	04-13-2018	1	Route 2 EB Ramp at Old Union Turnpike
2018	PW201819101786	06-27-2018	1	Route 2 EB Ramp at Old Union Turnpike
				2014-2016 3-YR EPDO Total = 21
				2015-2017 3-YR EPDO Total = 42
				2017-2018 3-YR EPDO Total = 44

Based upon the crash report data, the intersection does not meet the threshold for 2016 HSIP eligibility (EPDO \geq 92) for the Montachusett Regional Planning Commission. Therefore, a Road Safety Audit (RSA) is not required for this ramp intersection location.

Route 2 WB Ramps / Fort Pond Road

The crash reports indicate that only one (1) reported crashes occurred along the Route 2 WB Interchange 35 Ramps / Fort Pond Road intersection during the five-year study period (0.2 crashes per year on average). This also included any crash that was more than half-way along the ramp or any crash that was deemed as intersection related, such as rear-ending a queued vehicle due to congestion from the stop-sign at Fort Pond Road. It does not include vehicles in crashes related to the freeway merge or diverge. Table 2 provides a summary of the crashes that occurred along the surface intersection of the Route 2 Interchange 35 / Fort Pond Road during the five-year study period.

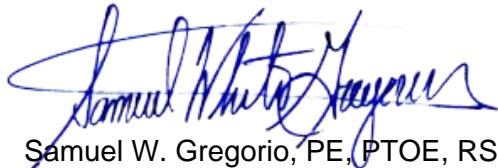
Table 2 – Summary of Route 2 WB Interchange 35 Crashes – Surface Intersection Only

Year	Crash #	Date	EPDO	Location
2018	PS201821900291	07-23-2018	21	Route 2 WB Ramp at Fort Pond Road
				2014-2016 3-YR EPDO Total = 0
				2015-2017 3-YR EPDO Total = 0
				2017-2018 3-YR EPDO Total = 21

Based upon the crash report data, the intersection does not meet the threshold for 2016 HSIP eligibility (EPDO \geq 92) for the Montachusett Regional Planning Commission. Therefore, an RSA is not required for this ramp intersection location.

TEC respectfully requests that MassDOT Traffic and Safety Engineering commence with its review of the DEIR with no requirement of a Road Safety Audit at the interchange location. Please do not hesitate to contact me directly if you have any questions concerning our summary at 978-794-1792. Thank you for your consideration.

Sincerely,
TEC, Inc.
"The Engineering Corporation"



Samuel W. Gregorio, PE, PTOE, RSP₁
Senior Design Engineer – Transportation Planning & ITS

Attachments
A –Crash Data and Reports

Appendix F

Ambient Growth Rate Data

MassDOT Yearly Growth Rates

for data from 2014 to 2018

Growth Group	Grow 2014 to 2015	Grow 2015 to 2016	Grow 2016 to 2017	Grow 2017 to 2018	Grow 2018 to 2019
R1	0	0.023	0.004	0.018	0.016
R2	0.05	0.068	0.004	0.014	0.014
R3	-0.038	0.002	0.008	0.011	0.06
R4-7	-0.01	0.003	0.001	0.011	0.012
Rec - East		0.032	0.02	0.041	0.025
Rec - West		0.051	-0.008	0.029	0
U1-Boston	0.061	0.07	-0.003	0.012	0.006
U1-Essex	0.024	0.025	0.007	0.014	0.011
U1-Southeast	0.05	0.062	0.021	0.014	0
U1-West	0.03	-0.027	0.02	0.028	0.013
U1-Worcester	0.042	0.005	0.018	0.01	0.01
U2	0.04	0.048	0.008	0.01	0.02
U3	0.011	0.013	0.011	0.014	0.004
U4-7	0.023	0.062	0.017	0.003	-0.004

updated 5/1/2020

Appendix G

Specific Developments by Others

Trip Generation Estimate - Existing

Project: T0852 - Capital Commerce Center - Lancaster, MA
 Date: April 5, 2019
 Analyst: TEC, Inc. / Samuel W. Gregorio, PE, PTOE
 Source: Institute of Transportation Engineers - Trip Generation, 10th Edition

ITE Land Use Code (LUC): 488 Soccer Complex

Average Vehicle Trips Ends vs:	Fields
Independent Variable (X):	3
Curve Method:	Fitted

WEEKDAY EVENING PEAK HOUR

$T = 13.92 * (X) + 35.13$
 $T = 13.92 * 3.00 + 35.13$
 $T = \boxed{76}$ vehicle trips
 with 66% entering (50 vpd) and with 34% exiting (26 vpd)

SATURDAY MIDDAY PEAK HOUR

$\ln T = 0.96 * \ln(X) + 3.72$
 $\ln T = 0.96 * 1.10 + 3.72$
 $T = \boxed{118}$ vehicle trips
 with 48% entering (57 vpd) and with 52% exiting (61 vpd)

Trip Generation Estimate - Existing

Project: T0852 - Capital Commerce Center - Lancaster, MA
 Date: April 5, 2019
 Analyst: TEC, Inc. / Samuel W. Gregorio, PE, PTOE
 Source: Institute of Transportation Engineers - Trip Generation, 10th Edition

ITE Land Use Code (LUC): 488 Soccer Complex

Average Vehicle Trips Ends vs: Fields
 Independent Variable (X): 3
 Curve Method: Average

AVERAGE WEEKDAY DAILY

$T = 71.33 * (X)$
 $T = 71.33 * 3.00$
 $T = \boxed{214}$ vehicle trips
 with 50% entering (107 vpd) and with 50% exiting (107 vpd)

WEEKDAY MORNING PEAK HOUR

$T = 0.99 * (X)$
 $T = 0.99 * 3.00$
 $T = \boxed{2}$ vehicle trips
 with 61% entering (1 vpd) and with 39% exiting (1 vpd)

WEEKDAY EVENING PEAK HOUR

$T = 16.43 * (X)$
 $T = 16.43 * 3.00$
 $T = \boxed{50}$ vehicle trips
 with 66% entering (33 vpd) and with 34% exiting (17 vpd)

AVERAGE SATURDAY DAILY

$T = 404.88 * (X)$
 $T = 404.88 * 3.00$
 $T = \boxed{1,214}$ vehicle trips
 with 50% entering (607 vpd) and with 50% exiting (607 vpd)

SATURDAY MIDDAY PEAK HOUR

$T = 30.34 * (X)$
 $T = 30.34 * 3.00$
 $T = \boxed{92}$ vehicle trips
 with 48% entering (44 vpd) and with 52% exiting (48 vpd)

Trip Generation Estimate

Project: T0852 - Capital Commerce Center - Ft. Pond Development Gen
Date: March 25, 2021
Analyst: TEC, Inc. / Justin Wadsworth
Source: Institute of Transportation Engineers - Trip Generation, 10th Edition

ITE Land Use Code (LUC): 130 Industrial Park

Average Vehicle Trips Ends vs: 1000 SF Gross Floor Area
Independent Variable (X): 1078
Curve Method: Average

AVERAGE WEEKDAY DAILY

$T = 3.37 * (X)$
 $T = 3.37 * 1078.00$
 $T = \boxed{3,632}$ vehicle trips
with 50% entering (1,816 vpd) and with 50% exiting (1,816 vpd)

WEEKDAY MORNING PEAK HOUR

$T = 0.30 * (X)$
 $T = 0.30 * 1078.00$
 $T = \boxed{324}$ vehicle trips
with 79% entering (256 vpd) and with 21% exiting (68 vpd)

WEEKDAY EVENING PEAK HOUR

$T = 0.26 * (X)$
 $T = 0.26 * 1078.00$
 $T = \boxed{280}$ vehicle trips
with 22% entering (62 vpd) and with 78% exiting (218 vpd)

AVERAGE SATURDAY DAILY

$T = 2.54 * (X)$
 $T = 2.54 * 1078.00$
 $T = \boxed{2,738}$ vehicle trips
with 50% entering (1,369 vpd) and with 50% exiting (1,369 vpd)

SATURDAY MIDDAY PEAK HOUR

$T = 0.44 * (X)$
 $T = 0.44 * 1078.00$
 $T = \boxed{474}$ vehicle trips
with 32% entering (152 vpd) and with 68% exiting (322 vpd)

Appendix H

Trip Generation Calculations

Trip Generation Assessment - Preferred Alternative (Res)

Project: Capital Commerce Center - Lancaster, MA
 Date: April 20, 2021
 Analyst: TEC, Inc. / Samuel W. Gregorio, PE, PTOE, RSP
 Source: Institute of Transportation Engineers - Trip Generation - 10th Ed.

Proposed Development

Industrial Park (ITE LUC 130)															
Units: 1370 kSF															
	Total Trips		Total New Trips	% Distribution		# New Trips		Multi-Use Trips		Total New Pass-by Trips	Total New Primary Trips	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve		IN	OUT	IN	OUT	IN	OUT			IN	OUT	IN	OUT
Weekday Daily	416	362	362	50%	50%	1831	1831	30	39	0	3533	0	0	1801	1732
Weekday AM PH	412	N/A	412	79%	21%	325	87	3	6	0	403	0	0	322	81
Weekday PM PH	356	N/A	356	22%	78%	78	278	1	6	0	349	0	0	77	272
Saturday Daily															
Sat Midday PH															

High-Cube Warehouse Storage															
Units: 1182 kSF															
	Total Trips		Total New Trips	% Distribution		# New Trips		Multi-Use Trips		Total New Pass-by Trips	Total New Primary Trips	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve		IN	OUT	IN	OUT	IN	OUT			IN	OUT	IN	OUT
Weekday Daily	506		2366			1183	1183	25	0	0	2322	0	0	1164	1158
Weekday AM PH	506		506			390	116	4	9	0	493	0	0	386	107
Weekday PM PH	506		506			253	253	3	5	0	498	0	0	250	248
Saturday Daily	2366		2366			1183	1183	51	68	0	2247	0	0	1132	1115
Sat Midday PH	200		200			100	100	5	7	0	188	0	0	95	93

Office (LUC 710)															
Units: 96.1 kSF															
	Total Trips		Total New Trips	% Distribution		# New Trips		Multi-Use Trips		Total New Pass-by Trips	Total New Primary Trips	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve		IN	OUT	IN	OUT	IN	OUT			IN	OUT	IN	OUT
Weekday Daily	936	N/A	936	50%	50%	468	468	49	61	0	826	0	0	419	407
Weekday AM PH	112	N/A	112	86%	14%	96	16	9	4	0	99	0	0	87	12
Weekday PM PH	110	N/A	110	16%	84%	18	92	4	11	0	95	0	0	14	81
Saturday Daily	212	N/A	212	50%	50%	106	106	27	27	0	158	0	0	79	79
Sat Midday PH	50	N/A	50	54%	46%	27	23	7	5	0	38	0	0	20	18

Apartments (LUC 221)															
Units: 150															
	Total Trips		Total New Trips	% Distribution		# New Trips		Multi-Use Trips		Total New Pass-by Trips	Total New Primary Trips	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve		IN	OUT	IN	OUT	IN	OUT			IN	OUT	IN	OUT
Weekday Daily	816	816	816	50%	50%	408	408	140	113	0	563	0	0	268	295
Weekday AM PH	54	51	54	26%	74%	14	40	0	2	0	52	0	0	14	38
Weekday PM PH	65	65	65	61%	39%	40	26	22	13	0	31	0	0	18	13
Saturday Daily	736	873	736	50%	50%	437	437	159	137	0	678	0	0	278	300
Sat Midday PH	66	70	66	49%	51%	34	36	9	9	0	52	0	0	25	27

Mixed Retail (ITE LUC 820)															
Units: 57.4 kSF															
	Total Trips		Total New Trips	% Distribution		# New Trips		Multi-Use Trips		Total New Pass-by Trips	Total New Primary Trips	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve		IN	OUT	IN	OUT	IN	OUT			IN	OUT	IN	OUT
Weekday Daily	2166	N/A	2166	50%	50%	1083	1083	183	183	468	1332	234	234	666	666
Weekday AM PH	56	N/A	56	62%	38%	35	21	15	10	8	23	4	4	16	7
Weekday PM PH	218	N/A	218	48%	52%	105	113	27	22	58	111	29	29	49	62
Saturday Daily	2648	N/A	2648	50%	50%	1324	1324	195	200	586	1667	293	293	836	831
Sat Midday PH	258	N/A	258	52%	48%	134	124	17	17	58	166	29	29	88	78

TOTAL NEW DEVELOPMENT															
Units: 150															
	Total Trips		Total New Trips	% Distribution		# New Trips		Multi-Use Trips		Total New Pass-by Trips	Total New Primary Trips	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve		IN	OUT	IN	OUT	IN	OUT			IN	OUT	IN	OUT
Weekday Daily	9946		9946			4973	4973	421	421	468	8636	234	234	4318	4318
Weekday AM Peak Hour	1140		1140			80	280	31	31	8	1070	4	4	325	245
Weekday PM Peak Hour	1256		1256			494	762	57	57	58	1084	29	29	408	676
Saturday Daily	6100		6100			3050	3050	432	432	586	4650	293	293	2325	2325
Sat Midday Peak Hour	578		578			295	283	38	38	58	444	29	29	228	216

Existing Development

Sand & Gravel (J.B. Hunt (Empirical) + ITE LUC 130)															
Units: 1															
	Total Trips		Total New Trips	% Distribution		# New Trips		Multi-Use Trips		Total New Pass-by Trips	Total New Primary Trips	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve		IN	OUT	IN	OUT	IN	OUT			IN	OUT	IN	OUT
Weekday Daily	416		416			208	208	0	0	0	416	0	0	208	208
Weekday AM PH	62		62			42	20	0	0	0	62	0	0	42	20
Weekday PM PH	62		62			20	42	0	0	0	62	0	0	20	42
Saturday Daily	24		24			12	12	0	0	0	24	0	0	12	12
Sat Midday PH	4		4			2	2	0	0	0	4	0	0	2	2

Soccer Complex (ITE LUC 488)															
Units: 3 Fields															
	Total Trips		Total New Trips	% Distribution		# New Trips		Multi-Use Trips		Total New Pass-by Trips	Total New Primary Trips	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve		IN	OUT	IN	OUT	IN	OUT			IN	OUT	IN	OUT
Weekday Daily	214	N/A	214	50%	50%	107	107	0	0	0	214	0	0	107	107
Weekday AM PH	2	N/A	2	61%	39%	1	1	0	0	0	2	0	0	1	1
Weekday PM PH	50	76	76	68%	32%	50	26	3	0	0	76	0	0	50	26
Saturday Daily	1214	N/A	1214	50%	50%	607	607	0	0	0	1214	0	0	607	607
Sat Midday PH	92	118	118	48%	52%	57	61	0	0	0	118	0	0	57	61

Coffee/Donut Shop with DT (ITE LUC 937)															
Units: 2.3 kSF															
	Total Trips		Total New Trips	% Distribution		# New Trips		Multi-Use Trips		Total New Pass-by Trips	Total New Primary Trips	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve		IN	OUT	IN	OUT	IN	OUT			IN	OUT	IN	OUT
Weekday Daily	1886	N/A	1886	50%	50%	943	943	244	174	734	734	367	367	332	402
Weekday AM PH	204	N/A	204	51%	49%	104	100	13	8	90	93	45	45	46	47
Weekday PM PH	100	N/A	100	50%	50%	50	50	13	19	34	34	17	17	20	14
Saturday Daily	2302	N/A	2302	50%	50%	1151	1151	250	213	920	919	460	460	441	478
Sat Midday PH	202	N/A	202	50%	50%	101	101	16	19	84	83	42	42	43	40

Assumed 49% pass-by rate for weekday AM and 50% pass-by rate for all others (Trip Generation Handbook, 3rd Edition - LUC 934).

Convenience Market & Gas Station (ITE LUC 960)															
Units: 5 kSF															
	Total Trips		Total New Trips	% Distribution		# New Trips		Multi-Use Trips		Total New Pass-by Trips	Total New Primary Trips	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve		IN	OUT	IN	OUT	IN	OUT			IN	OUT	IN	OUT
Weekday Daily	4188	N/A	4188	50%	50%	2094	2094	174	244	2112	1658	1056	1056	864	794
Weekday AM PH	416	422	422	50%	50%	211	211	8	13	248	153	124	124	79	74
Weekday PM PH	346	N/A	346	50%	50%	173	173	19	13	176	138	88	88	66	72
Saturday Daily	3600	N/A	3600	50%	50%	1750	1750	213	250	1700	1337	850	850	687	650
Sat Midday PH	320	320	320	50%	50%	160	160	19	16	160	125	80	80	61	64

Assumed 62% pass-by rate for weekday AM, 56% pass-by rate for all others (Trip Generation Handbook, 3rd Edition).

EXISTING DEVELOPMENT															
Units: 1															
	Total Trips		Total New Trips	% Distribution		# New Trips		Multi-Use Trips		Total New Pass-by Trips	Total New Primary Trips	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve		IN	OUT	IN	OUT	IN	OUT			IN	OUT	IN	OUT
Weekday Daily	6704		6704			3352	3352	416	416	2846	3022	1423	1423	1511	1511
Weekday AM Peak Hour	690		690			358	332	21	21	338	310	169	169	168	142
Weekday PM Peak Hour	584		584			293	291	32	32	210	310	105	105	156	154
Saturday Daily	7040		7040			3520	3520	463	463	2620	3484	1310	1310	1747	1747
Sat Midday Peak Hour	644		644			320	324	35	35	244	330	122	122	163	167

POST SITE TRIPS															
Units: 1															
	Total Trips		Total New Trips	% Distribution		# New Trips		Multi-Use Trips		Total New Pass-by Trips	Total New Primary Trips	# Passby Trips		# Primary Trips	
	Avg. Rates	Fitted Curve		IN	OUT	IN	OUT	IN	OUT			IN	OUT	IN	OUT
Weekday Daily	16234		16234			8117	8117	839	839	3314	11242	1657	1657	5621	5621
Weekday AM Peak Hour	1768		1768			1176	992	52	52	346	1316	173	173	951	367
Weekday PM Peak Hour	1778		1778			767	1011	89	89	268	1332				

Existing Land Uses

Trip Generation Estimate - Existing Use

Project: T0852 - Capital Commerce Center - Lancaster, MA
Date: April 5, 2019
Analyst: TEC, Inc. / Samuel W. Gregorio, PE, PTOE
Source: Institute of Transportation Engineers - Trip Generation, 10th Edition

ITE Land Use Code (LUC): 110 General Light Industrial

Average Vehicle Trips Ends vs. 1000 SF Gross Floor Area
Independent Variable (X): 11.8
Curve Method: Average

AVERAGE WEEKDAY DAILY

$$T = 4.96 * (X)$$

$$T = 4.96 * 11.80$$

$$T = \boxed{58} \text{ vehicle trips}$$

with 50% entering (29 vpd) and with 50% exiting (29 vpd)

WEEKDAY MORNING PEAK HOUR

$$T = 0.70 * (X)$$

$$T = 0.70 * 11.80$$

$$T = \boxed{8} \text{ vehicle trips}$$

with 88% entering (7 vpd) and with 12% exiting (1 vpd)

WEEKDAY EVENING PEAK HOUR

$$T = 0.63 * (X)$$

$$T = 0.63 * 11.80$$

$$T = \boxed{8} \text{ vehicle trips}$$

with 13% entering (1 vpd) and with 87% exiting (7 vpd)

AVERAGE SATURDAY DAILY

$$T = 1.99 * (X)$$

$$T = 1.99 * 11.80$$

$$T = \boxed{24} \text{ vehicle trips}$$

with 50% entering (12 vpd) and with 50% exiting (12 vpd)

SATURDAY MIDDAY PEAK HOUR

$$T = 0.41 * (X)$$

$$T = 0.41 * 11.80$$

$$T = \boxed{4} \text{ vehicle trips}$$

with 47% entering (2 vpd) and with 53% exiting (2 vpd)

Trip Generation Estimate - Existing Use

Project: T0852 - Capital Commerce Center - Lancaster, MA
Date: April 5, 2019
Analyst: TEC, Inc. / Samuel W. Gregorio, PE, PTOE
Source: Institute of Transportation Engineers - Trip Generation, 10th Edition

ITE Land Use Code (LUC): 937 Coffee/Donut Shop with Drive-Through Window

Average Vehicle Trips Ends vs: 1000 SF Gross Floor Area
Independent Variable (X): 2.3
Curve Method: Average

AVERAGE WEEKDAY DAILY

$$T = 820.38 * (X)$$

$$T = 820.38 * 2.30$$

$$T = \boxed{1,886} \text{ vehicle trips}$$

with 50% entering (943 vpd) and with 50% exiting (943 vpd)

WEEKDAY MORNING PEAK HOUR

$$T = 88.99 * (X)$$

$$T = 88.99 * 2.30$$

$$T = \boxed{204} \text{ vehicle trips}$$

with 51% entering (104 vpd) and with 49% exiting (100 vpd)

WEEKDAY EVENING PEAK HOUR

$$T = 43.38 * (X)$$

$$T = 43.38 * 2.30$$

$$T = \boxed{100} \text{ vehicle trips}$$

with 50% entering (50 vpd) and with 50% exiting (50 vpd)

AVERAGE SATURDAY DAILY (Interpolated from LUC 936)

$$T = 1001.16 * (X)$$

$$T = 1001.16 * 2.30$$

$$T = \boxed{2,302} \text{ vehicle trips}$$

with 50% entering (1,151 vpd) and with 50% exiting (1,151 vpd)

SATURDAY MIDDAY PEAK HOUR

$$T = 87.70 * (X)$$

$$T = 87.70 * 2.30$$

$$T = \boxed{202} \text{ vehicle trips}$$

with 50% entering (101 vpd) and with 50% exiting (101 vpd)

Trip Generation Estimate - Existing Use

Project: T0852 - Capital Commerce Center - Lancaster, MA
Date: April 5, 2019
Analyst: TEC, Inc. / Samuel W. Gregorio, PE, PTOE
Source: Institute of Transportation Engineers - Trip Generation, 10th Edition

ITE Land Use Code (LUC): 960 Super Convenience Market / Gas Stati

Average Vehicle Trips Ends vs: 1000 SF Gross Floor Area
Independent Variable (X): 5
Curve Method: Fitted

WEEKDAY MORNING PEAK HOUR

$T = 137.38 * (X) + -264.53$
 $T = 137.38 * 5.00 + -264.53$
 $T = \boxed{422}$ vehicle trips
with 50% entering (211 vpd) and with 50% exiting (211 vpd)

SATURDAY MIDDAY PEAK HOUR

$T = 104.71 * (X) + -204.23$
 $T = 104.71 * 5.00 + -204.23$
 $T = \boxed{320}$ vehicle trips
with 50% entering (160 vpd) and with 50% exiting (160 vpd)

Trip Generation Estimate - Existing Use

Project: T0852 - Capital Commerce Center - Lancaster, MA
Date: April 5, 2019
Analyst: TEC, Inc. / Samuel W. Gregorio, PE, PTOE
Source: Institute of Transportation Engineers - Trip Generation, 10th Edition

ITE Land Use Code (LUC): 960 Super Convenience Market / Gas Stati

Average Vehicle Trips Ends vs: 1000 SF Gross Floor Area
Independent Variable (X): 5
Curve Method: Average

AVERAGE WEEKDAY DAILY

$T = 837.58 * (X)$
 $T = 837.58 * 5.00$
 $T = \boxed{4,188}$ vehicle trips
with 50% entering (2,094 vpd) and with 50% exiting (2,094 vpd)

WEEKDAY MORNING PEAK HOUR

$T = 83.14 * (X)$
 $T = 83.14 * 5.00$
 $T = \boxed{416}$ vehicle trips
with 50% entering (208 vpd) and with 50% exiting (208 vpd)

WEEKDAY EVENING PEAK HOUR

$T = 69.28 * (X)$
 $T = 69.28 * 5.00$
 $T = \boxed{346}$ vehicle trips
with 50% entering (173 vpd) and with 50% exiting (173 vpd)

AVERAGE SATURDAY DAILY

$T = 700.00 * (X)$
 $T = 700.00 * 5.00$
 $T = \boxed{3,500}$ vehicle trips
with 50% entering (1,750 vpd) and with 50% exiting (1,750 vpd)

SATURDAY MIDDAY PEAK HOUR

$T = 63.80 * (X)$
 $T = 63.80 * 5.00$
 $T = \boxed{320}$ vehicle trips
with 50% entering (160 vpd) and with 50% exiting (160 vpd)

Proposed Land Uses

Trip Generation Estimate

Project: T0852 - Capital Commerce Center - Lancaster, MA
Date: July 23, 2021
Analyst: TEC, Inc.
Source: Institute of Transportation Engineers - Trip Generation, 10th Edition

ITE Land Use Code (LUC): 130 Industrial Park

Average Vehicle Trips Ends vs: 1000 SF Gross Floor Area
Independent Variable (X): 1302.4
Curve Method: Average

AVERAGE WEEKDAY DAILY

$T = 3.37 * (X)$
 $T = 3.37 * 1302.40$
 $T = \boxed{4,390}$ vehicle trips
with 50% entering (2,195 vpd) and with 50% exiting (2,195 vpd)

WEEKDAY MORNING PEAK HOUR

$T = 0.30 * (X)$
 $T = 0.30 * 1302.40$
 $T = \boxed{390}$ vehicle trips
with 79% entering (308 vpd) and with 21% exiting (82 vpd)

WEEKDAY EVENING PEAK HOUR

$T = 0.26 * (X)$
 $T = 0.26 * 1302.40$
 $T = \boxed{338}$ vehicle trips
with 22% entering (74 vpd) and with 78% exiting (264 vpd)

AVERAGE SATURDAY DAILY

$T = 2.54 * (X)$
 $T = 2.54 * 1302.40$
 $T = \boxed{3,308}$ vehicle trips
with 50% entering (1,654 vpd) and with 50% exiting (1,654 vpd)

SATURDAY MIDDAY PEAK HOUR

$T = 0.44 * (X)$
 $T = 0.44 * 1302.40$
 $T = \boxed{574}$ vehicle trips
with 32% entering (184 vpd) and with 68% exiting (390 vpd)

Trip Generation Estimate

Project: T0852 - Capital Commerce Center - Lancaster, MA
Date: July 23, 2021
Analyst: TEC, Inc.
Source: Institute of Transportation Engineers - Trip Generation, 10th Edition

ITE Land Use Code (LUC): 130 Industrial Park

Average Vehicle Trips Ends vs: 1000 SF Gross Floor Area
Independent Variable (X): 1302.4
Curve Method: Fitted

AVERAGE WEEKDAY DAILY

$$\ln(T) = 0.52 * \ln(X) + 4.45$$

$$\ln(T) = 0.52 * 7.17 + 4.45$$

$$T = \boxed{3,566} \text{ vehicle trips}$$

with 50% entering (1,783 vpd) and with 50% exiting (1,783 vpd)

Trip Generation Estimate

Project: T0852.04 - Capital Commerce Center - Lancaster, MA
Date: April 19, 2021
Analyst: TEC, Inc. / Samuel W. Gregorio, PE, PTOE
Source: Institute of Transportation Engineers - Trip Generation, 10th Edition

ITE Land Use Code (LUC): 221 Multifamily Housing (Mid-Rise)

Average Vehicle Trips Ends vs: Dwelling Units
Independent Variable (X): 150
Curve Method: Average

AVERAGE WEEKDAY DAILY

$T = 5.44 * (X)$
 $T = 5.44 * 150$
 $T = \boxed{816}$ vehicle trips
with 50% entering (408 vpd) and with 50% exiting (408 vpd)

WEEKDAY MORNING PEAK HOUR

$T = 0.36 * (X)$
 $T = 0.36 * 150$
 $T = \boxed{54}$ vehicle trips
with 26% entering (14 vpd) and with 74% exiting (40 vpd)

WEEKDAY EVENING PEAK HOUR

$T = 0.44 * (X)$
 $T = 0.44 * 150$
 $T = \boxed{66}$ vehicle trips
with 61% entering (40 vpd) and with 39% exiting (26 vpd)

AVERAGE SATURDAY DAILY

$T = 4.91 * (X)$
 $T = 4.91 * 150$
 $T = \boxed{736}$ vehicle trips
with 50% entering (368 vpd) and with 50% exiting (368 vpd)

SATURDAY MIDDAY PEAK HOUR

$T = 0.44 * (X)$
 $T = 0.44 * 150$
 $T = \boxed{66}$ vehicle trips
with 49% entering (32 vpd) and with 51% exiting (34 vpd)

Trip Generation Estimate

Project: T0852.04 - Capital Commerce Center - Lancaster, MA
 Date: April 19, 2021
 Analyst: TEC, Inc. / Samuel W. Gregorio, PE, PTOE
 Source: Institute of Transportation Engineers - Trip Generation, 10th Edition

ITE Land Use Code (LUC): 221 Multifamily Housing (Mid-Rise)

Average Vehicle Trips Ends vs: Dwelling Units
 Independent Variable (X): 150
 Curve Method: Fitted

AVERAGE WEEKDAY DAILY

$T = 5.45 * (X) + -1.75$
 $T = 5.45 * 150 + -1.75$
 $T = \boxed{816}$ vehicle trips
 with 50% entering (408 vpd) and with 50% exiting (408 vpd)

WEEKDAY MORNING PEAK HOUR

$\ln(T) = 0.98 * \ln(X) + -0.98$
 $\ln(T) = 0.98 * 5.01 + -0.98$
 $T = \boxed{51}$ vehicle trips
 with 26% entering (13 vpd) and with 74% exiting (38 vpd)

WEEKDAY EVENING PEAK HOUR

$\ln(T) = 0.96 * \ln(X) + -0.63$
 $\ln(T) = 0.96 * 5.01 + -0.63$
 $T = \boxed{65}$ vehicle trips
 with 61% entering (40 vpd) and with 39% exiting (25 vpd)

AVERAGE SATURDAY DAILY

$T = 3.04 * (X) + 417.11$
 $T = 3.04 * 150 + 417.11$
 $T = \boxed{873}$ vehicle trips
 with 50% entering (437 vpd) and with 50% exiting (436 vpd)

SATURDAY MIDDAY PEAK HOUR

$T = 0.42 * (X) + 6.73$
 $T = 0.42 * 150 + 6.73$
 $T = \boxed{70}$ vehicle trips
 with 49% entering (34 vpd) and with 51% exiting (36 vpd)

Trip Generation Estimate

Project: T0852 - Capital Commerce Center - Lancaster, MA
Date: July 23, 2021
Analyst: TEC, Inc.
Source: Institute of Transportation Engineers - Trip Generation, 10th Edition

ITE Land Use Code (LUC): 710 General Office Building

Average Vehicle Trips Ends vs: 1000 SF Gross Floor Area
Independent Variable (X): 37.6
Curve Method: Average

AVERAGE WEEKDAY DAILY

$T = 9.74 * (X)$
 $T = 9.74 * 37.60$
 $T = \boxed{366}$ vehicle trips
with 50% entering (183 vpd) and with 50% exiting (183 vpd)

WEEKDAY MORNING PEAK HOUR

$T = 1.16 * (X)$
 $T = 1.16 * 37.60$
 $T = \boxed{44}$ vehicle trips
with 86% entering (38 vpd) and with 14% exiting (6 vpd)

WEEKDAY EVENING PEAK HOUR

$T = 1.15 * (X)$
 $T = 1.15 * 37.60$
 $T = \boxed{44}$ vehicle trips
with 16% entering (7 vpd) and with 84% exiting (37 vpd)

AVERAGE SATURDAY DAILY

$T = 2.21 * (X)$
 $T = 2.21 * 37.60$
 $T = \boxed{84}$ vehicle trips
with 50% entering (42 vpd) and with 50% exiting (42 vpd)

SATURDAY MIDDAY PEAK HOUR

$T = 0.53 * (X)$
 $T = 0.53 * 37.60$
 $T = \boxed{20}$ vehicle trips
with 54% entering (11 vpd) and with 46% exiting (9 vpd)

AVERAGE SUNDAY DAILY

$T = 0.70 * (X)$
 $T = 0.70 * 37.60$
 $T = \boxed{26}$ vehicle trips
with 50% entering (13 vpd) and with 50% exiting (13 vpd)

SUNDAY MIDDAY PEAK HOUR

$T = 0.21 * (X)$
 $T = 0.21 * 37.60$
 $T = \boxed{8}$ vehicle trips
with 58% entering (5 vpd) and with 42% exiting (3 vpd)

Trip Generation Estimate

Project: T0852 - Capital Commerce Center - Lancaster, MA
Date: April 5, 2019
Analyst: TEC, Inc. / Samuel W. Gregorio, PE, PTOE
Source: Institute of Transportation Engineers - Trip Generation, 10th Edition

ITE Land Use Code (LUC): 820 Shopping Center

Average Vehicle Trips Ends vs: 1000 SF Gross Leasable Area
Independent Variable (X): 41.3
Curve Method: Average

AVERAGE WEEKDAY DAILY

$T = 37.75 * (X)$
 $T = 37.75 * 41.30$
 $T = \boxed{1,560}$ vehicle trips
with 50% entering (780 vpd) and with 50% exiting (780 vpd)

WEEKDAY MORNING PEAK HOUR

$T = 0.96 * (X)$
 $T = 0.96 * 41.30$
 $T = \boxed{40}$ vehicle trips
with 62% entering (25 vpd) and with 38% exiting (15 vpd)

WEEKDAY EVENING PEAK HOUR

$T = 3.81 * (X)$
 $T = 3.81 * 41.30$
 $T = \boxed{158}$ vehicle trips
with 48% entering (76 vpd) and with 52% exiting (82 vpd)

AVERAGE SATURDAY DAILY

$T = 46.12 * (X)$
 $T = 46.12 * 41.30$
 $T = \boxed{1,904}$ vehicle trips
with 50% entering (952 vpd) and with 50% exiting (952 vpd)

SATURDAY MIDDAY PEAK HOUR

$T = 4.50 * (X)$
 $T = 4.50 * 41.30$
 $T = \boxed{186}$ vehicle trips
with 52% entering (97 vpd) and with 48% exiting (89 vpd)

Building A Tenant

Lancaster, MA - Capital Commerce Center

Trip Generation - 1,182,000 SF Peak Period - Christmas Period
T0852.04

21-Apr-21

	Enter		Exit		Total
	(Passenger Vehicles)	(Trucks)	(Passenger Vehicles)	(Trucks)	
AM	215	806	215	23	1021
4:00	5:00	806	215	23	1067
5:00	6:00	53	53	106	0
6:00	7:00				
7:00	8:00				
TOTAL:	859	268	23	23	1173

Trip Generation - 1,182,000 SF Off-Peak - Non Christmas Period

	Enter		Exit		Total
	(Passenger Vehicles)	(Trucks)	(Passenger Vehicles)	(Trucks)	
AM	100	374	100	16	474
4:00	5:00	374	100	16	506
5:00	6:00	25	25	50	0
6:00	7:00				
7:00	8:00				
TOTAL:	499	499	16	16	1030

	Enter		Exit		Total
	(Passenger Vehicles)	(Trucks)	(Passenger Vehicles)	(Trucks)	
PM	215	806	215	23	1021
16:00	17:00	806	215	23	1067
17:00	18:00	53	53	106	0
18:00	19:00				
19:00	20:00				
TOTAL:	1074	1074	23	23	2194

	Enter		Exit		Total
	(Passenger Vehicles)	(Trucks)	(Passenger Vehicles)	(Trucks)	
Daily:	272	544	272	370	185
Trucks	2149	4298	2149	1996	998
Passenger Vehicles	2421	4842	1183	2366	1183
Total					

	Enter		Exit		Total
	(Passenger Vehicles)	(Trucks)	(Passenger Vehicles)	(Trucks)	
PM	100	374	100	16	474
16:00	17:00	374	100	16	506
17:00	18:00	25	25	50	0
18:00	19:00				
19:00	20:00				
TOTAL:	499	499	16	16	1030

Industrial Park – ITE Adjustment Data

Industrial Park (130)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 9 out of 31
 Avg. 1000 Sq. Ft. GFA: 1665
 Directional Distribution: 79% entering , 21% exiting

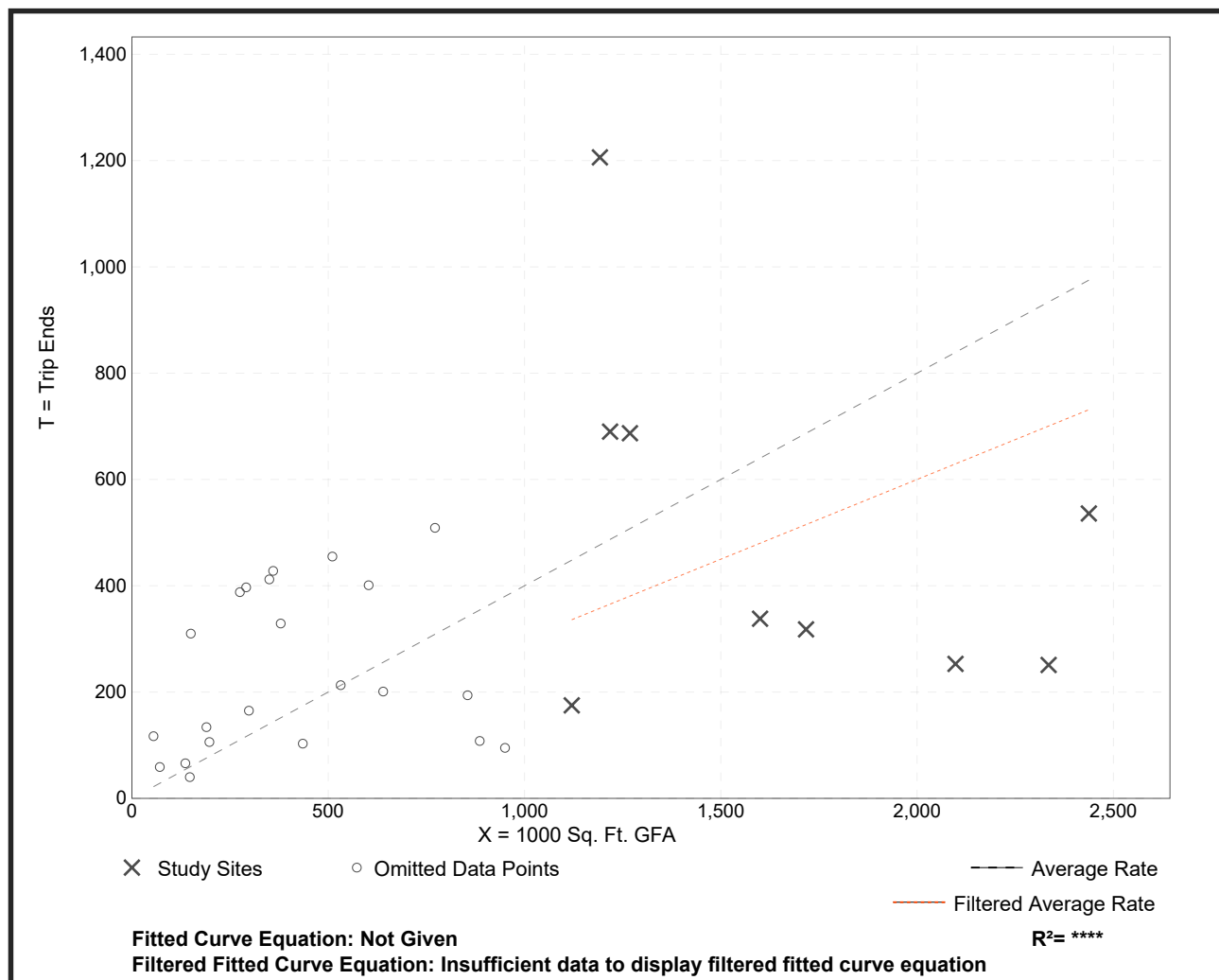
Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.30	0.11 - 1.01	0.27

Data Filtered By: [IV Value: 1000-2437.44]

Data Plot and Equation

Caution – Filtered Data Set



Trip Generation Manual, 10th Edition • Institute of Transportation Engineers

Industrial Park (130)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 14 out of 27
Avg. 1000 Sq. Ft. GFA: 1071
Directional Distribution: 50% entering , 50% exiting

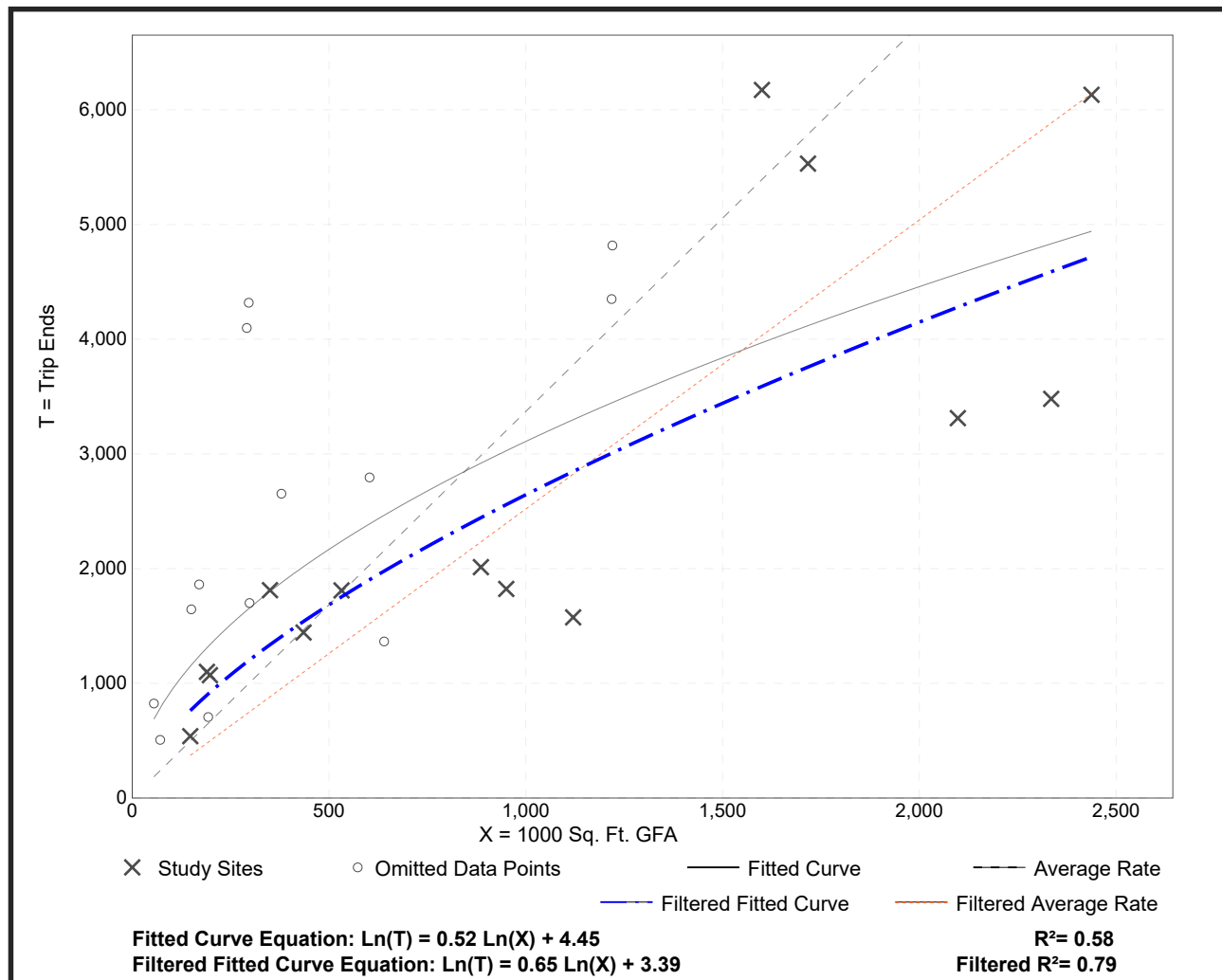
Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
2.52	1.41 - 5.80	1.10

Data Filtered By: [Region: UnitedStates]

Data Plot and Equation

Caution – Filtered Data Set



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Industrial Park (130)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 8 out of 32
 Avg. 1000 Sq. Ft. GFA: 1721
 Directional Distribution: 22% entering , 78% exiting

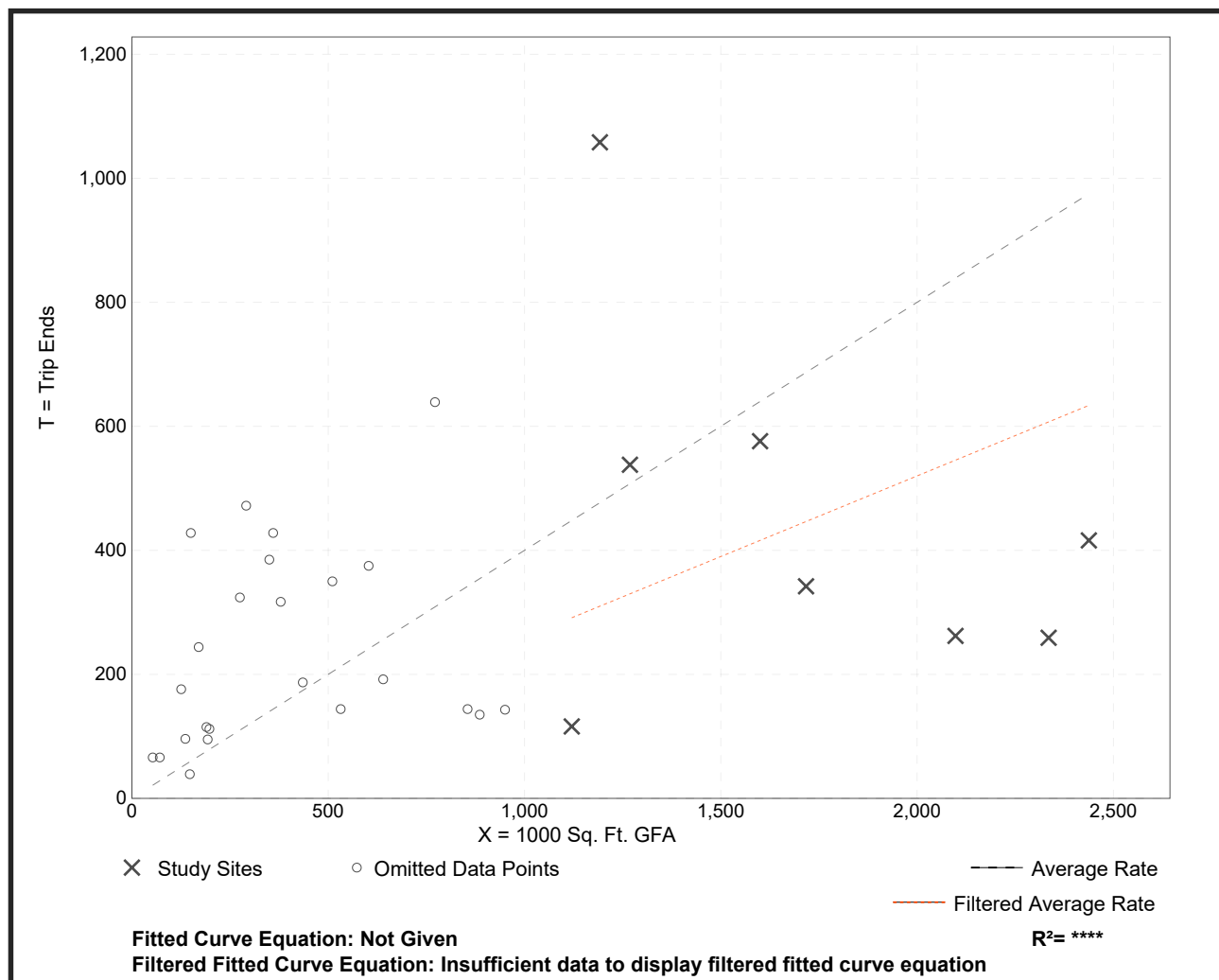
Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.26	0.10 - 0.89	0.23

Data Filtered By: [IV Value: 1000-2437.44]

Data Plot and Equation

Caution – Filtered Data Set



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Shared Trip Calculations

Land Use Description	Land Use	A	B	C	D
	Land Use Name	Indust	Apartments	Retail	Office
	Land Use Type	Office	Residential	Retail	Office
	ITE LUC	130 + Emp	221	820	710
	Size	2552 kSF	150 Units	57.4 kSF	96.1 kSF
New Trips	<i>Weekday Daily</i>				
	Enter	3014	408	1083	468
	Exit	3014	408	1083	468
	<i>Weekday AM</i>				
	Enter	715	14	35	96
	Exit	203	40	21	16
	<i>Weekday PM</i>				
	Enter	331	40	105	18
	Exit	531	26	113	92
	<i>Saturday Daily</i>				
	Enter	1183	437	1324	106
	Exit	1183	437	1324	106
	<i>Saturday Midday</i>				
	Enter	100	34	134	27
	Exit	100	36	124	23

Project Name: Capital Commerce Center - BUILD

Analyst: TEC, Inc. / Justin Wadsworth

Date: 4/20/2021

KEY: Entry Cells

INSTRUCTIONS:

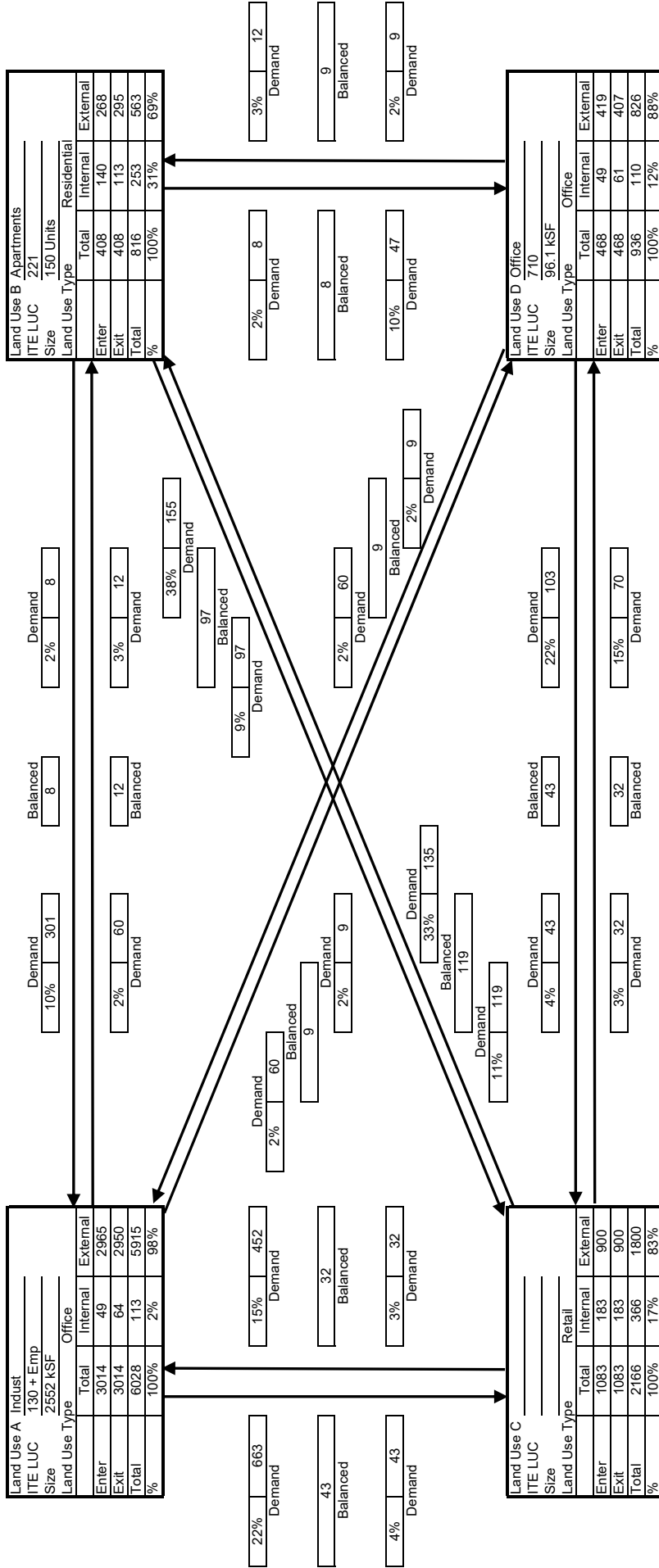
- 1.) Enter the Land Use Name for each land use in table above.
- 2.) Select from the drop down menu in the table above which Land Use Type to use.
- 3.) Enter the ITE LUC for each land use in the table above.
- 4.) Enter the Size of each land use in the table above.
- 5.) Fill in the NEW TRIPS for each land use in the table above (Note: This is the total of primary and pass-by trips).
- 6.) Enter the Project Name above.
- 7.) Enter you initials for the Analyst above.
- 8.) Enter the Date above.
- 9.)

Print the Multi-Use Trip Generation Calculation Sheet for each time period.

Multi-Use Trip Generation Calculation

Analyst: TEC, Inc. / Justin Wadsky
Date: 4/20/2021

Project Name: Capital Commerce Center - BULL
Time Period: Weekday Daily



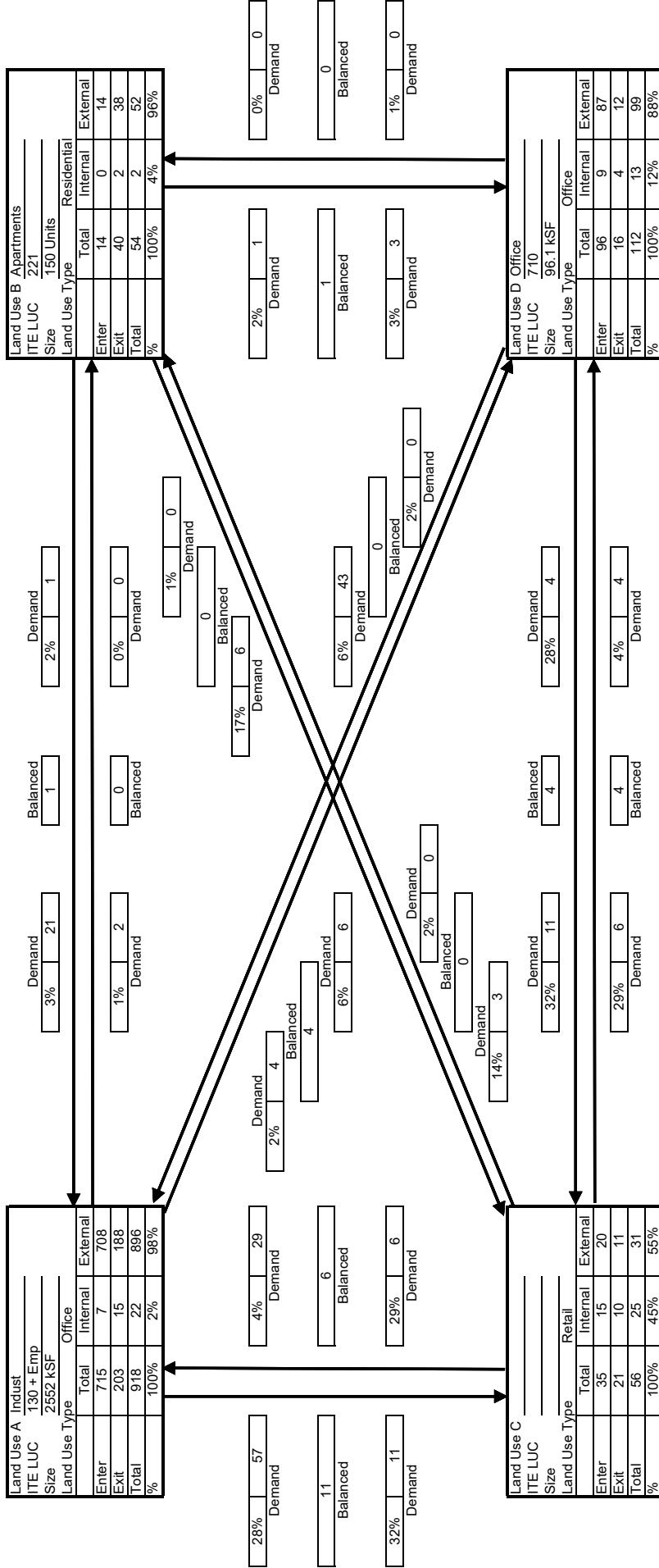
Net External Trips for Multi-Use Development					
Land Use	A	B	C	D	Total
Enter	2965	268	900	419	4552
Exit	2950	295	900	407	4552
Total External Trips	5915	563	1800	826	9104
Single-Use Trip Gen. Est.	6028	816	2166	936	9946
Net Internal Trips	113	253	366	110	842
					8%



Multi-Use Trip Generation Calculation

Analyst: TEC, Inc. / Justin Wadsky
 Date: 4/20/2021

Project Name: Capital Commerce Center - BULL
 Time Period: Weekday AM Peak Hour



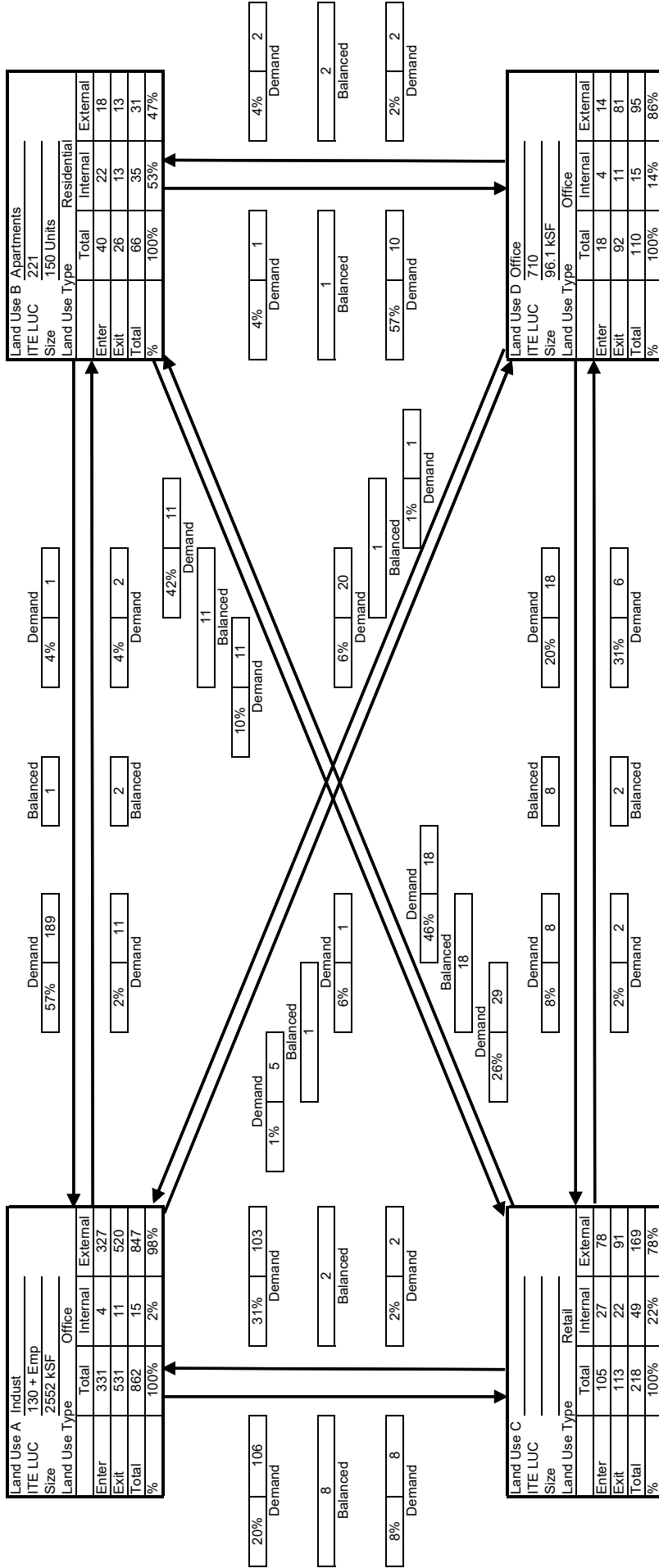
Net External Trips for Multi-Use Development					
Land Use	A	B	C	D	Total
Enter	14	20	87	829	
Exit	188	38	11	12	249
Total External Trips	896	52	31	99	1078
Single-Use Trip Gen. Est.	918	54	56	112	1140
Net Internal Trips	22	2	25	13	62
					5%



Multi-Use Trip Generation Calculation

Analyst: TEC, Inc. / Justin Wadsvy
Date: 4/20/2021

Project Name: Capital Commerce Center - BULL
Time Period: Weekday PM Peak Hour



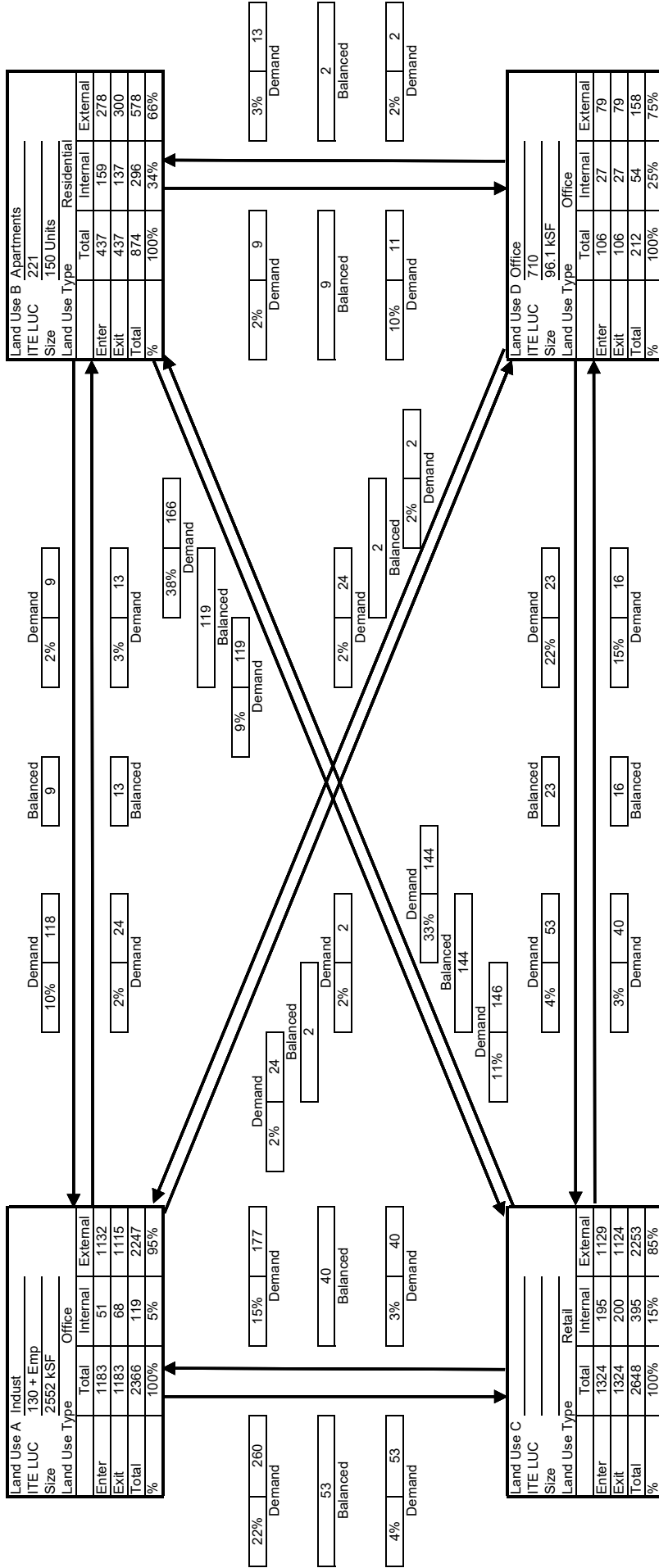
Net External Trips for Multi-Use Development					
Land Use	A	B	C	D	Total
Enter	18	78	14	437	
Exit	520	13	91	81	705
Total External Trips	847	31	169	95	1142
Single-Use Trip Gen. Est.	862	66	218	110	1256
Net Internal Trips	15	35	49	15	114
					9%



Multi-Use Trip Generation Calculation

Analyst: TEC, Inc. / Justin Wadsvy
 Date: 4/20/2021

Project Name: Capital Commerce Center - BULL
 Time Period: Saturday Daily



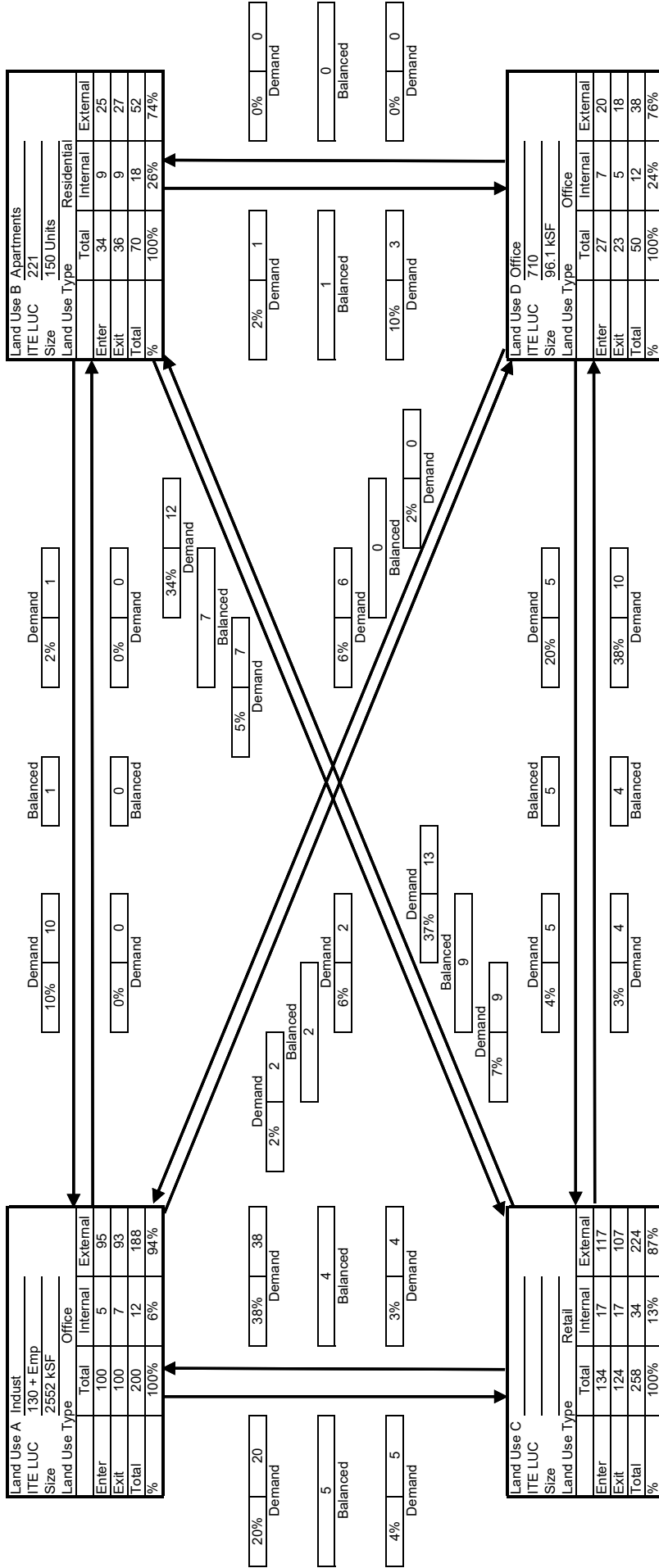
Net External Trips for Multi-Use Development					
Land Use	A	B	C	D	Total
Enter	1132	278	1129	79	2618
Exit	1115	300	1124	79	2618
Total External Trips	2247	578	2253	158	5236
Single-Use Trip Gen. Est.	2366	874	2648	212	6100
Net Internal Trips	119	296	395	54	864
Internal Capture					14%



Multi-Use Trip Generation Calculation

Analyst: TEC, Inc. / Justin Wadsvy
 Date: 4/20/2021

Project Name: Capital Commerce Center - BULL
 Time Period: Saturday Midday



Net External Trips for Multi-Use Development

Land Use	A	B	C	D	Total
Enter	95	25	117	20	257
Exit	93	27	107	18	245
Total External Trips	188	52	224	38	502
Single-Use Trip Gen. Est.	200	70	258	50	578
Net Internal Trips	12	18	34	12	76
Internal Capture	13%				



From	To	Weekday Midday Peak Hour	Weekday AM Peak Hour	Weekday PM Peak Hour	Weekday Daily
None	Office	0%	0%	0%	0%
None	None	0%	0%	0%	0%
None	Hotel	0%	0%	0%	0%
None	Restaurant	0%	0%	0%	0%
None	Retail	0%	0%	0%	0%
None	Residential	0%	0%	0%	0%
Office	Office	2%	2%	1%	2%
Office	None	0%	0%	0%	0%
Office	Hotel	0%	0%	0%	0%
Office	Restaurant	20%	63%	4%	22%
Office	Retail	20%	28%	20%	22%
Office	Residential	0%	1%	2%	2%
Hotel	Office	20%	75%	0%	20%
Hotel	None	0%	0%	0%	0%
Hotel	Hotel	0%	0%	0%	0%
Hotel	Restaurant	20%	9%	68%	20%
Hotel	Retail	15%	14%	16%	15%
Hotel	Residential	0%	0%	2%	0%
Restaurant	Office	20%	31%	3%	15%
Restaurant	None	0%	0%	0%	0%
Restaurant	Hotel	5%	3%	7%	5%
Restaurant	Restaurant	0%	0%	0%	0%
Restaurant	Retail	20%	14%	41%	20%
Restaurant	Residential	10%	4%	18%	10%
Retail	Office	3%	29%	2%	3%
Retail	None	0%	0%	0%	0%
Retail	Hotel	2%	0%	5%	2%
Retail	Restaurant	21%	13%	29%	21%
Retail	Retail	29%	20%	20%	30%
Retail	Residential	7%	14%	26%	11%
Residential	Office	2%	2%	4%	2%
Residential	None	0%	0%	0%	0%
Residential	Hotel	0%	0%	3%	0%
Residential	Restaurant	20%	20%	21%	20%
Residential	Retail	34%	1%	42%	38%
Residential	Residential	0%	0%	0%	0%

Note: Weekday Midday and Weekday Daily shared trip percentages were obtained from the Trip Generation Handbook 2nd Edition unless otherwise noted. Green highlighted numbers are interpolated from other data. No data is provided for blue highlighted numbers but some shared use is reasonable. All other data obtained from Trip Generation Handbook 3rd Edition.

To	From	Weekday Midday Peak Hour	Weekday AM Peak Hour	Weekday PM Peak Hour	Weekday Daily
Office	Office	6%	6%	6%	2%
Office	None	0%	0%	0%	0%
Office	Hotel	1%	3%	0%	1%
Office	Restaurant	15%	14%	30%	15%
Office	Retail	38%	4%	31%	15%
Office	Residential	10%	3%	57%	10%
Hotel	Office	0%	0%	0%	0%
Hotel	None	0%	0%	0%	0%
Hotel	Hotel	0%	0%	0%	0%
Hotel	Restaurant	10%	4%	71%	10%
Hotel	Retail	5%	0%	17%	5%
Hotel	Residential	5%	0%	12%	5%
Restaurant	Office	5%	23%	2%	5%
Restaurant	None	0%	0%	0%	0%
Restaurant	Hotel	5%	6%	5%	5%
Restaurant	Restaurant	0%	0%	0%	0%
Restaurant	Retail	31%	50%	29%	28%
Restaurant	Residential	10%	20%	14%	10%
Retail	Office	4%	32%	8%	4%
Retail	None	0%	0%	0%	0%
Retail	Hotel	2%	4%	2%	2%
Retail	Restaurant	30%	8%	50%	25%
Retail	Retail	31%	20%	20%	28%
Retail	Residential	5%	17%	10%	9%
Residential	Office	0%	0%	4%	3%
Residential	None	0%	0%	0%	0%
Residential	Hotel	0%	0%	0%	0%
Residential	Restaurant	10%	5%	16%	10%
Residential	Retail	37%	2%	46%	33%
Residential	Residential	0%	0%	0%	0%
None	None	0%	0%	0%	0%
None	Office	0%	0%	0%	0%
None	Hotel	0%	0%	0%	0%
None	Restaurant	0%	0%	0%	0%
None	Retail	0%	0%	0%	0%
None	Residential	0%	0%	0%	0%

Note: Weekday Midday and Weekday Daily shared trip percentages were obtained from the Trip Generation Handbook 2nd Edition unless otherwise noted. Green highlighted numbers are interpolated from other data. No data is provided for blue highlighted numbers but some shared use is reasonable. All other data obtained from Trip Generation Handbook 3rd Edition.

Appendix I

Trip Distribution Calculations

Trip Distribution Gravity Model - Retail

Project: T0852 - Capital Commerce Center - Lancaster, MA
 Date: April 8, 2019
 Analyst: TEC, Inc / Danah Hamzeh
 Source: U.S. Census Data - 2017, Estimated Population by Residence State-County

Surrounding Community State-County-MCD Name	Population	Distance (Travel Time)	Competing Opportunity	Adjusted Population	MA-2 from		Mechanic		Fort Pond		Old Union		MA-70 from		TOTAL
					east	west	Street from West	Street from East	Road from East	Trpk from East	east	west	north	south	
Lancaster town Middlesex Co. MA	8,055	1	1	8,055					5%				10%	50%	100%
Lunenburg town Worcester Co. MA	11,312	0.5	0.5	2,828						5%			100%		100%
Shirley town Middlesex Co. MA	7,672	1	1	7,672									100%		100%
Leominster town Worcester Co. MA	41,615	0.5	0.1	2,081		67%	33%								100%
Harvard town Worcester Co. MA	22,947	0.5	1	11,474	50%								50%		100%
Bolton town Worcester Co. MA	5,283	0.5	0.5	1,321									100%		100%
Berlin town Hartford Co. CT	2,866	0.5	0.1	143										50%	100%
Boylston town Worcester Co. MA	4,634	0.5	0.1	232										100%	100%
Sterling town Worcester Co. MA	7,808	0.5	0.5	1,952	80%							10%			100%
Clinton town Worcester Co. MA	13,435	1	0.1	1,344										100%	100%
Boxborough town Middlesex Co. MA	6,401	0.5	1	3,201	50%								50%		100%
Use															

- Notes:
- 1.) 7.5-mile gravity model
 - 2.) Distance Factors: 0-15 min. = 1.0; 15-30 min = 0.5; +30min = 0.25
 - 3.) Competing Opportunities Factors: Little-No Competition = 1.0; Closer to competition = 0.5; Closer to competition = 0.1

Surrounding Community State-County-MCD Name	MA-2 from		Mechanic		Fort Pond		Old Union		MA-117 from		MA-70 from		Total
	east	west	Street from West	Street from East	Road from East	Trpk from East	east	west	north	south			
Lancaster town Middlesex Co. MA	0	0	0	0	403	403	806	1611	806	4028	0	8055	
Lunenburg town Worcester Co. MA	0	0	0	0	0	0	0	0	2828	0	0	2828	
Shirley town Middlesex Co. MA	0	0	0	0	0	0	0	0	7672	0	0	7672	
Leominster town Worcester Co. MA	0	1394	687	0	0	0	0	0	0	0	0	2081	
Harvard town Worcester Co. MA	5737	0	0	0	0	0	5737	0	0	0	0	11474	
Bolton town Worcester Co. MA	0	0	0	0	0	0	1321	0	0	0	0	1321	
Berlin town Hartford Co. CT	0	0	0	0	0	0	72	0	0	72	0	143	
Boylston town Worcester Co. MA	0	0	0	0	0	0	0	0	0	232	0	232	
Sterling town Worcester Co. MA	0	1562	0	0	0	0	195	0	0	195	0	1952	
Clinton town Worcester Co. MA	0	0	0	0	0	0	0	0	0	1344	0	1344	
Boxborough town Middlesex Co. MA	1600	0	0	0	0	0	1600	0	0	0	0	3201	
Total	7337	2956	687	687	403	403	9535	1806	11306	5870	5870	40301	
Percentage	18.2%	7.3%	1.7%	1.7%	1.0%	1.0%	23.7%	4.5%	28.1%	14.6%	14.6%	100%	
Use	18%	7%	2%	2%	1%	1%	23%	5%	28%	15%	15%	100%	



Trip Distribution Gravity Model - Industrial & Office

Project: T0852 - Capital Commerce Center - Lancaster, MA
 Date: April 12, 2019
 Analyst: TEC, Inc. / Danah Hamzeh
 Source: United States Census Bureau, 5-Year ACS, 2009-2013

Workplace State -County-MCD Name	Residence State -County-MCD Name	Count	% of Total Lancaster Workers	% of Distributed Workforce	Major Route Entering / Exiting										Major Route Entering / Exiting																			
					MA-2 from east	MA-2 from west	Mechanic Street from West	Fort Pond Road from East	Old Union Trpk from East	MA-117 from east	MA-117 from west	MA-70 from north	MA-70 from south	Check	MA-2 from east	MA-2 from west	Mechanic Street from West	Fort Pond Road from East	Old Union Trpk from East	MA-117 from east	MA-117 from west	MA-70 from north	MA-70 from south	Check										
Lancaster Town Worcester Co. Andover Town Essex Co. MA		17	0.71%	0.82%	75%						25%					100%						1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%
Lancaster Town Worcester Co. Ware Town Hampshire Co. MA		23	0.96%	1.11%		100%										100%						0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	
Lancaster Town Worcester Co. Acton Middlesex Co. MA		42	1.76%	2.02%	75%						25%					100%						2%	0%	0%	0%	0%	1%	0%	0%	0%	0%	2%		
Lancaster Town Worcester Co. Ashby Town Middlesex Co. MA		21	0.88%	1.01%			67%							33%		100%						0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%		
Lancaster Town Worcester Co. Billerica Town Middlesex Co. MA		17	0.71%	0.82%	75%						25%					100%						1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%		
Lancaster Town Worcester Co. Groton Town Middlesex Co. MA		21	0.88%	1.01%	100%											100%						1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%		
Lancaster Town Worcester Co. Hudson Town Middlesex Co. MA		36	1.51%	1.73%	25%						75%					100%						0%	0%	0%	0%	0%	1%	0%	0%	0%	2%			
Lancaster Town Worcester Co. Lowell City Middlesex Co. MA		28	1.17%	1.35%	75%						25%					100%						1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%		
Lancaster Town Worcester Co. Stow Town Middlesex Co. MA		18	0.75%	0.87%	50%						50%					100%						0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%		
Lancaster Town Worcester Co. Westford Town Middlesex Co. MA		22	0.92%	1.06%	75%						25%					100%						1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%		
Lancaster Town Worcester Co. Ashburnham Town Worcester Co. MA		20	0.84%	0.96%			100%									100%						0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%		
Lancaster Town Worcester Co. Barre Town Worcester Co. MA		40	1.67%	1.92%			100%									100%						0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	2%		
Lancaster Town Worcester Co. Boylston Town Worcester Co. MA		27	1.13%	1.30%										100%		100%						0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%		
Lancaster Town Worcester Co. Clinton Town Worcester Co. MA		293	12.26%	14.10%												100%						0%	0%	0%	0%	0%	0%	0%	0%	14%	14%			
Lancaster Town Worcester Co. Fitchburg City Worcester Co. MA		289	12.10%	13.91%			100%									100%						0%	14%	0%	0%	0%	0%	0%	0%	0%	0%	14%		
Lancaster Town Worcester Co. Gardner City Worcester Co. MA		40	1.67%	1.92%			100%									100%						0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	2%		
Lancaster Town Worcester Co. Holden Town Worcester Co. MA		43	1.80%	2.07%			75%									100%						0%	2%	0%	0%	0%	0%	0%	0%	1%	2%			
Lancaster Town Worcester Co. Lancaster Town Worcester Co. MA		351	14.69%	16.89%												100%						0%	0%	0%	1%	1%	2%	3%	2%	8%	17%			
Lancaster Town Worcester Co. Leicester Town Worcester Co. MA		26	1.09%	1.25%			100%									100%						0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%		
Lancaster Town Worcester Co. Leominster City Worcester Co. MA		472	19.76%	22.71%			67%									100%						0%	15%	7%	0%	0%	0%	0%	0%	0%	0%	23%		
Lancaster Town Worcester Co. Lunenburg Town Worcester Co. MA		87	3.64%	4.19%										100%		100%						0%	0%	0%	0%	0%	0%	0%	4%	4%	4%			
Lancaster Town Worcester Co. Shrewsbury Town Worcester Co. MA		24	1.00%	1.15%			33%						34%			100%						0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%		
Lancaster Town Worcester Co. Sterling Town Worcester Co. MA		66	2.76%	3.18%			80%						10%			100%						0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	3%		
Lancaster Town Worcester Co. Westborough Town Worcester Co. MA		38	1.59%	1.83%									75%			100%						0%	0%	0%	0%	1%	0%	0%	0%	0%	2%			
Lancaster Town Worcester Co. Winchendon Town Worcester Co. MA		17	0.71%	0.82%			100%									100%						0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%		
TOTAL		2389	86.98%	100.00%																		6.4%	42.3%	7.5%	0.8%	0.8%	6.7%	3.7%	6.2%	25.5%	100.0%			
																						6%	42%	8%	1%	1%	7%	4%	6%	25%	100%			

Appendix J

PDDG Left-Turn Warrant Analysis

Left-Turn Lane Volume Warrants

Project: T0852 - Capital Commerce Center - Lancaster, Massachusetts
 Date: July 25, 2021
 Analyst: TEC Inc. / Samuel W. Gregorio, PE, PTOE

Operating Speed	Opposing Volume	Advancing Motor Vehicle Volumes (veh/hr)		
		5% LT	10% LT	30% LT
30 mph or less	800	370	265	195
	600	460	345	250
	400	570	430	305
	200	720	530	390
40 mph	800	330	240	180
	600	410	305	225
	400	510	380	275
	200	640	470	350
	100	720	515	390
50 mph	800	280	210	165
	600	350	260	195
	400	430	320	240
	200	550	400	300
	100	615	445	335
60 mph	800	230	170	125
	600	290	210	160
	400	365	270	200
	200	450	330	250
	100	505	370	275

Signalized Intersections:

Left-Turn Lane Configuration	Minimum Turn Volume
Single exclusive left-turn lane	100 veh/hr
Dual exclusive left-turn lane	300 veh/hr

Source: Massachusetts Highway Department Design Manual, 2006 Edition, Exhibit 6-23
 Source: AASHTO A Policy on Geometric Design of Highways and Streets, 2011 6th Edition, Table 9-23

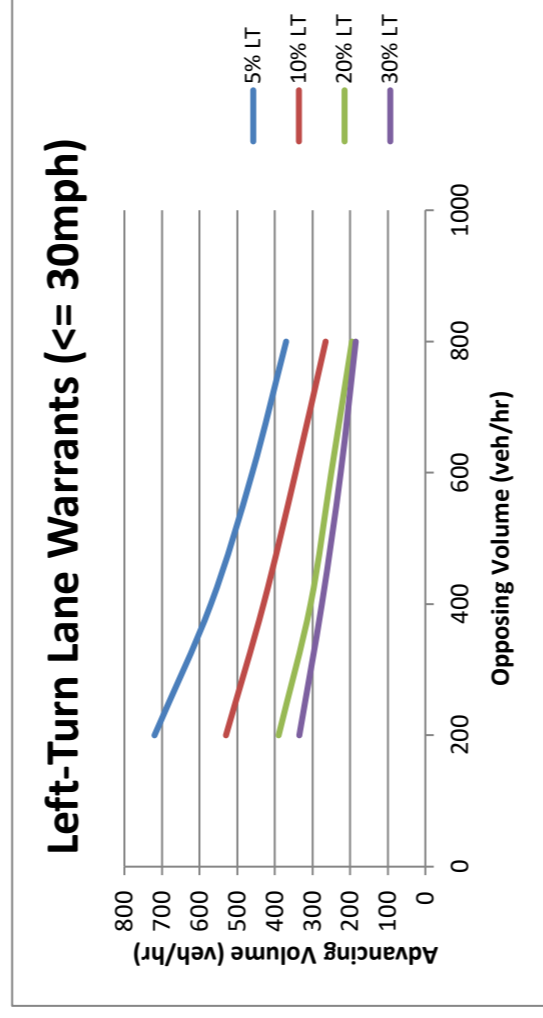
Lunenburg Road at McGovern Boulevard

Left-Turn Lane Warranted?	Signalized	YES
	Unsignalized	YES

Roadway Speed = **50**

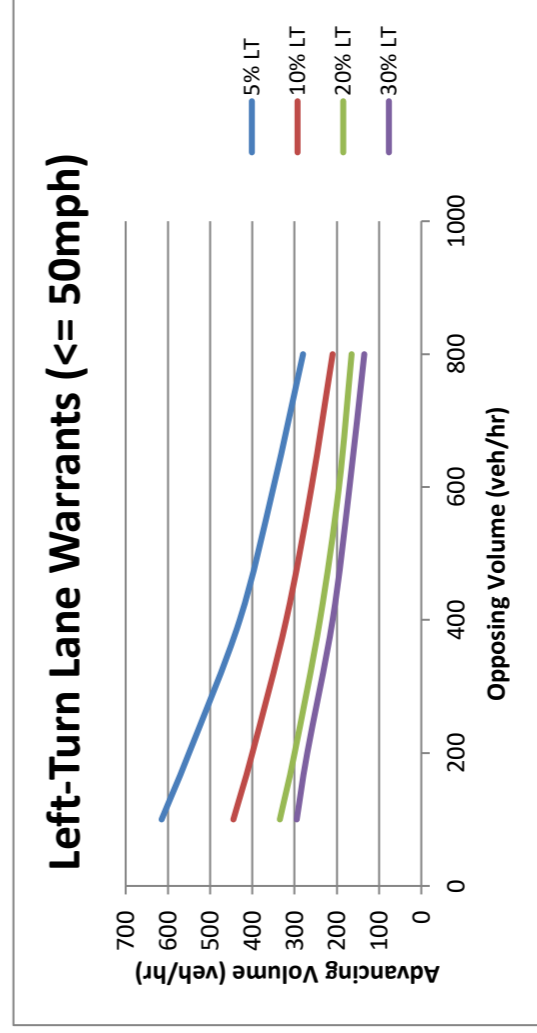
Lunenburg Road at McGovern Boulevard						
2028 FUTURE YEAR w/ TRIP GEN DATA INPUT						
Time	Advancing			Opposing		
	Route 70 NBL	Route 70 NB	% Left Turns	Route 70 SB	Route 70 SB	Warranted
6-7 AM			#DIV/0!			#DIV/0!
7-8 AM			#DIV/0!			#DIV/0!
8-9 AM	289	655	44.1%	466	YES	YES
9-10 AM			#DIV/0!			#DIV/0!
10-11 AM			#DIV/0!			#DIV/0!
11-12 PM			#DIV/0!			#DIV/0!
12-1 PM			#DIV/0!			#DIV/0!
1-2 PM			#DIV/0!			#DIV/0!
2-3 PM			#DIV/0!			#DIV/0!
3-4 PM			#DIV/0!			#DIV/0!
4-5 PM	192	890	21.6%	670	YES	YES
5-6 PM			#DIV/0!			#DIV/0!

Left-Turn Lane Warrants (<= 30mph)



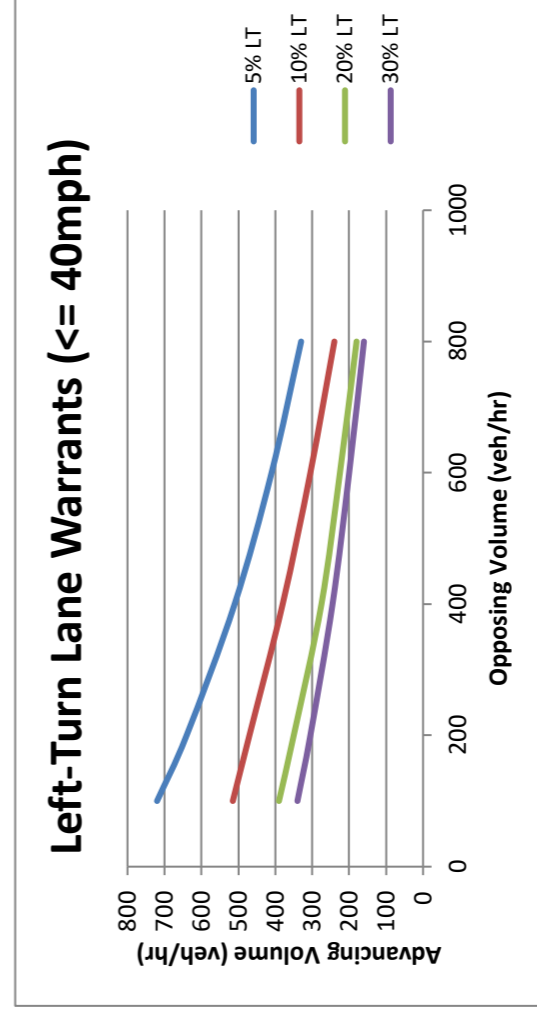
5% LT $y = 0.0004x^2 - 0.955x + 895$
 10% LT $y = 0.0001x^2 - 0.566x + 637.5$
 20% LT $y = 0.0002x^2 - 0.5075x + 482.5$
 30% LT $y = 0.0001x^2 - 0.375x + 405$

Left-Turn Lane Warrants (<= 50mph)



5% LT $y = 0.0003x^2 - 0.7581x + 687.65$
 10% LT $y = 0.0002x^2 - 0.5068x + 493.54$
 20% LT $y = 0.0002x^2 - 0.4095x + 374.26$
 30% LT $y = 0.0001x^2 - 0.3425x + 329.9$

Left-Turn Lane Warrants (<= 40mph)



5% LT $y = 0.0003x^2 - 0.8622x + 800.98$
 10% LT $y = 0.0001x^2 - 0.5196x + 566.57$
 20% LT $y = 0.0002x^2 - 0.4669x + 434.85$
 30% LT $y = 0.0001x^2 - 0.3784x + 375.77$

Appendix K

MUTCD Signal Warrant Analysis



RAW DATA INPUT

Time	Minor		Major	
	EBL	WB	NB	SB
6-7 AM	16	20	180	352
7-8 AM	16	20	343	346
8-9 AM	20	20	336	335
9-10 AM	20	20	275	295
10-11 AM	24	24	264	281
11-12 PM	24	24	235	307
12-1 PM	24	24	250	273
1-2 PM	24	24	277	318
2-3 PM	24	24	358	314
3-4 PM	24	24	504	343
4-5 PM	24	24	528	287
5-6 PM	24	24	527	261
6-7 PM	24	24	346	226

SEASONALLY ADJUSTED DATA

Time	Minor		Major	
	EBL	WB	NB	SB
6-7 AM	17	21	190	372
7-8 AM	21	21	362	365
8-9 AM	21	21	355	354
9-10 AM	21	21	290	312
10-11 AM	21	21	279	297
11-12 PM	21	21	248	324
12-1 PM	21	21	264	288
1-2 PM	21	21	293	336
2-3 PM	21	21	378	332
3-4 PM	21	21	532	362
4-5 PM	21	21	558	303
5-6 PM	21	21	557	276
6-7 PM	21	21	365	239

SITE-GENERATED DATA

Time	Minor		Major	
	EBL	WB	NB	SB
6-7 AM	74	0	134	234
7-8 AM	126	0	255	446
8-9 AM	126	0	256	447
9-10 AM	115	0	70	120
10-11 AM	116	0	71	122
11-12 PM	116	0	72	123
12-1 PM	80	0	75	126
1-2 PM	124	0	243	418
2-3 PM	224	0	128	218
3-4 PM	224	0	128	218
4-5 PM	348	0	137	225
5-6 PM	349	0	137	226
6-7 PM	121	0	65	103

EXISTING YEAR-BUILD DATA

Time	Minor		Major	
	EBL	WB	NB	SB
6-7 AM	74	0	324	606
7-8 AM	143	0	617	811
8-9 AM	147	0	611	801
9-10 AM	115	0	360	432
10-11 AM	116	0	350	419
11-12 PM	116	0	320	447
12-1 PM	80	0	339	414
1-2 PM	124	0	536	754
2-3 PM	224	0	506	550
3-4 PM	224	0	660	580
4-5 PM	393	0	695	528
5-6 PM	374	0	694	502
6-7 PM	121	0	430	342

Seasonal Adjustment: 5.6%

Assumptions:

PERCENTAGE OF PEAK HOUR FOR SITE TRIPS (LUC 130 / 710)

Time	EBL		Minor		Major		SB	
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting
6-7 AM	10.0%	38.4%	18.9%	64.0%	33.7%	64.0%	33.7%	64.0%
7-8 AM	19.0%	64.0%	36.0%	64.0%	64.0%	64.0%	64.0%	64.0%
8-9 AM	19.0%	64.0%	36.0%	64.0%	64.0%	64.0%	64.0%	64.0%
9-10 AM	5.0%	64.0%	9.5%	64.0%	16.8%	64.0%	16.8%	64.0%
10-11 AM	5.0%	64.0%	9.5%	64.0%	16.8%	64.0%	16.8%	64.0%
11-12 PM	5.0%	64.0%	9.5%	64.0%	16.8%	64.0%	16.8%	64.0%
12-1 PM	5.0%	40.0%	9.5%	40.0%	16.8%	40.0%	16.8%	40.0%
1-2 PM	10.0%	20.0%	20.0%	20.0%	72.0%	20.0%	128.0%	20.0%
2-3 PM	5.0%	40.0%	36.0%	40.0%	64.0%	40.0%	64.0%	40.0%
3-4 PM	5.0%	40.0%	36.0%	40.0%	64.0%	40.0%	64.0%	40.0%
4-5 PM	5.0%	64.0%	36.0%	64.0%	64.0%	64.0%	64.0%	64.0%
5-6 PM	5.0%	64.0%	36.0%	64.0%	64.0%	64.0%	64.0%	64.0%
6-7 PM	2.0%	20.0%	14.4%	20.0%	25.6%	20.0%	25.6%	20.0%

INDUSTRIAL PARK & OFFICE TRIPS

Time	Minor		Major	
	EBL	WB	NB	SB
6-7 AM	66	130	230	394
7-8 AM	110	246	438	197
8-9 AM	110	246	438	197
9-10 AM	110	65	115	197
10-11 AM	110	65	115	197
11-12 PM	110	65	115	197
12-1 PM	69	65	115	197
1-2 PM	99	222	394	79
2-3 PM	199	111	197	44
3-4 PM	199	111	197	44
4-5 PM	318	111	197	44
5-6 PM	318	111	197	44
6-7 PM	99	44	79	44

AM Trip Generation Industrial

Total Trips (in) = 684
 Total Trips (out) = 172
 856

PM Trip Generation Industrial

Total Trips (in) = 308
 Total Trips (out) = 497
 805

Lunenburg Road @ McGovern Blvd
 64% Exiting Eastbound Left
 36% Entering Northbound Left
 64% Exiting Southbound Right

PERCENTAGE OF PEAK HOUR FOR SITE TRIPS (LUC 820)

Time	EBL		Minor		Major		SB	
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting
6-7 AM	0.8%	1.9%	4.1%	5.4%	5.4%	5.4%	5.4%	5.4%
7-8 AM	2.0%	5.8%	10.2%	13.6%	13.6%	13.6%	13.6%	13.6%
8-9 AM	3.1%	7.7%	15.9%	21.0%	21.0%	21.0%	21.0%	21.0%
9-10 AM	5.5%	12.8%	28.2%	37.3%	37.3%	37.3%	37.3%	37.3%
10-11 AM	7.0%	27.5%	35.8%	47.5%	47.5%	47.5%	47.5%	47.5%
11-12 PM	8.4%	39.7%	43.0%	57.0%	57.0%	57.0%	57.0%	57.0%
12-1 PM	9.4%	53.2%	48.1%	63.8%	63.8%	63.8%	63.8%	63.8%
1-2 PM	8.2%	55.1%	42.0%	55.6%	55.6%	55.6%	55.6%	55.6%
2-3 PM	7.7%	57.0%	39.4%	52.3%	52.3%	52.3%	52.3%	52.3%
3-4 PM	7.8%	56.4%	39.9%	52.9%	52.9%	52.9%	52.9%	52.9%
4-5 PM	8.0%	57.0%	41.0%	54.3%	54.3%	54.3%	54.3%	54.3%
5-6 PM	8.4%	58.9%	43.0%	57.0%	57.0%	57.0%	57.0%	57.0%
6-7 PM	8.0%	48.0%	41.0%	54.3%	54.3%	54.3%	54.3%	54.3%

Source: ITE Trip Generation, 9th Edition, LUC 820: Shopping Center [Table 1]

RETAIL PARK TRIPS

Time	Minor		Major	
	EBL	WB	NB	SB
6-7 AM	0	0	0	1
7-8 AM	0	0	1	2
8-9 AM	0	0	2	3
9-10 AM	1	3	3	4
10-11 AM	2	4	4	6
11-12 PM	2	5	5	7
12-1 PM	3	6	6	8
1-2 PM	22	15	15	20
2-3 PM	23	14	14	19
3-4 PM	23	14	14	19
4-5 PM	23	15	15	20
5-6 PM	24	15	15	21
6-7 PM	19	15	15	20

AM Trip Generation Retail

Total Trips (in) = 12
 Total Trips (out) = 6
 18

PM Trip Generation Retail

Total Trips (in) = 36
 Total Trips (out) = 40
 76

Lunenburg Road @ McGovern Blvd
 57% Exiting Eastbound Left
 43% Entering Northbound Left
 57% Exiting Southbound Right

PERCENTAGE OF PEAK HOUR FOR SITE TRIPS (LUC 221)

Time	EBL		Minor		Major		SB	
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting
6-7 AM	50.0%	21.0%	29.0%	21.0%	21.0%	21.0%	21.0%	21.0%
7-8 AM	100.0%	42.0%	58.0%	42.0%	42.0%	42.0%	42.0%	42.0%
8-9 AM	100.0%	42.0%	58.0%	42.0%	42.0%	42.0%	42.0%	42.0%

AM Trip Generation Housing

Total Trips (in) = 14
 Total Trips (out) = 38
 52

HOUSING TRIPS

Time	Minor		Major	
	EBL	WB	NB	SB
6-7 AM	8	4	4	3
7-8 AM	16	8	8	6
8-9 AM	16	8	8	6

Project: Capital Commerce Center
 Town: Lancaster, MA
 TEC # T0852
 Analyst: TEC / Samuel W. Gregorio, PE, PTOE
 Location: McGovern Blvd @ Lunenburg Road



9-10 AM	25.0%	25.0%	10.5%	14.5%	10.5%
10-11 AM	25.0%	25.0%	10.5%	14.5%	10.5%
11-12 PM	25.0%	25.0%	10.5%	14.5%	10.5%
12-1 PM	50.0%	50.0%	21.0%	29.0%	21.0%
1-2 PM	50.0%	50.0%	21.0%	29.0%	21.0%
2-3 PM	25.0%	25.0%	10.5%	14.5%	10.5%
3-4 PM	25.0%	25.0%	10.5%	14.5%	10.5%
4-5 PM	100.0%	100.0%	42.0%	58.0%	42.0%
5-6 PM	100.0%	100.0%	42.0%	58.0%	42.0%
6-7 PM	50.0%	50.0%	21.0%	29.0%	21.0%

PM Trip Generation Housing

Total Trips (in) = 19

Total Trips (out) = 16

35

Lunenburg Road @ McGovern Blvd	
42% Exiting Eastbound Left	
58% Entering Northbound Left	
42% Exiting Southbound Right	

9-10 AM	4	2	1
10-11 AM	4	2	1
11-12 PM	4	2	1
12-1 PM	8	4	3
1-2 PM	3	6	4
2-3 PM	2	3	2
3-4 PM	2	3	2
4-5 PM	7	11	8
5-6 PM	7	11	8
6-7 PM	3	6	4

Project: Capital Commerce Center
 Town: Lancaster, MA
 TEC # T0852
 Analyst: TEC / Samuel W. Gregorio, PE, PTOE
 Location: McGovern Blvd @ Lunenburg Road



85th Percentile > 40 mph? **OR** Population <10,000 people? **Y**

Warrant 1 - One of the Following Conditions Must Be Met for any 8 hours of an average day (Table 4C-1)

Individual Option:

Condition A: Minimum Vehicular Volume 70%

Street	Lanes	Minimum Volume	ATR Data													
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM	
Major	1	350	930	1428	1412	792	769	767	753	1290	1056	1240	1223	1196	772	
Minor	1	105	74	143	147	115	116	116	80	124	224	224	393	374	121	
	Met?		NO	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	

OR

Condition B: Interruption of Continuous Traffic

Street	Lanes	Minimum Volume	ATR Data													
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM	
Major	1	525	930	1428	1412	792	769	767	753	1290	1056	1240	1223	1196	772	
Minor	1	53	74	143	147	115	116	116	80	124	224	224	393	374	121	
	Met?		YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	

Result: **YES**

Combination Option:

Condition A: Minimum Vehicular Volume 56%

Street	Lanes	Minimum Volume	ATR Data													
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM	
Major	1	280	930	1428	1412	792	769	767	753	1290	1056	1240	1223	1196	772	
Minor	1	84	74	143	147	115	116	116	80	124	224	224	393	374	121	
	Met?		NO	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	

AND

Condition B: Interruption of Continuous Traffic

Street	Lanes	Minimum Volume	ATR Data													
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM	
Major	1	420	930	1428	1412	792	769	767	753	1290	1056	1240	1223	1196	772	
Minor	1	42	74	143	147	115	116	116	80	124	224	224	393	374	121	
	Met?		YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	

Result: **YES**

Project: Capital Commerce Center
 Town: Lancaster, MA
 TEC # T0852
 Analyst: TEC / Samuel W. Gregorio, PE, PTOE
 Location: McGovern Blvd @ Lunenburg Road



Warrant 2 - Four-Hour Vehicular Volume (must be met for any 4 hours of an average day)

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	1	Figure 4C-2 930	1428	1412	1412	792	769	767	753	1290	1056	1240	1223	1196	772
Minor	1	Figure 4C-2 74	143	147	115	116	116	80	124	224	224	224	393	374	121
		Met?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Result: YES

Warrants 3 to 8: Not Evaluated



RAW DATA INPUT

Time	Minor		Major		Major SB
	WBL	WB	NB	WB	
6-7 AM	39	44	246	210	516
7-8 AM	44	44	246	210	516
8-9 AM	44	44	246	210	516
9-10 AM	44	44	246	210	516
10-11 AM	44	44	246	210	516
11-12 PM	44	44	246	210	516
12-1 PM	44	44	246	210	516
1-2 PM	44	44	246	210	516
2-3 PM	44	44	246	210	516
3-4 PM	44	44	246	210	516
4-5 PM	145	145	495	495	225
5-6 PM	265	265	507	507	187
6-7 PM	265	265	507	507	187

SEASONALLY ADJUSTED DATA

Time	Minor		Major		Major SB
	WBL	WB	NB	WB	
6-7 AM	0	0	0	0	0
7-8 AM	41	41	260	222	545
8-9 AM	46	46	222	222	344
9-10 AM	0	0	0	0	0
10-11 AM	0	0	0	0	0
11-12 PM	0	0	0	0	0
12-1 PM	0	0	0	0	0
1-2 PM	0	0	0	0	0
2-3 PM	0	0	0	0	0
3-4 PM	0	0	0	0	0
4-5 PM	153	153	523	535	238
5-6 PM	280	280	535	535	197
6-7 PM	0	0	0	0	0

SITE-GENERATED DATA

Time	Minor		Major		Major SB
	WBL	WB	NB	WB	
6-7 AM	52	52	96	96	44
7-8 AM	53	53	97	97	46
8-9 AM	0	0	0	0	0
9-10 AM	0	0	0	0	0
10-11 AM	0	0	0	0	0
11-12 PM	0	0	0	0	0
12-1 PM	0	0	0	0	0
1-2 PM	0	0	0	0	0
2-3 PM	0	0	0	0	0
3-4 PM	0	0	0	0	0
4-5 PM	31	31	263	263	29
5-6 PM	31	31	263	263	29
6-7 PM	0	0	0	0	0

EXISTING YEAR-BUILD DATA

Time	Minor		Major		Major SB
	WBL	WB	NB	WB	
6-7 AM	0	0	0	0	0
7-8 AM	93	93	356	356	589
8-9 AM	99	99	319	319	390
9-10 AM	0	0	0	0	0
10-11 AM	0	0	0	0	0
11-12 PM	0	0	0	0	0
12-1 PM	0	0	0	0	0
1-2 PM	0	0	0	0	0
2-3 PM	0	0	0	0	0
3-4 PM	0	0	0	0	0
4-5 PM	184	184	786	786	267
5-6 PM	311	311	798	798	226
6-7 PM	0	0	0	0	0

Seasonal Adjustment: 5.6%

Assumptions:

PERCENTAGE OF PEAK HOUR FOR SITE TRIPS (LUC 130 / 710)

Time	WBL		Minor		Major		SB	
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting
6-7 AM	10.0%	3.7%	10.0%	25.8%	3.2%	3.2%	3.2%	3.2%
7-8 AM	19.0%	7.0%	19.0%	49.0%	6.0%	6.0%	6.0%	6.0%
8-9 AM	19.0%	7.0%	19.0%	49.0%	6.0%	6.0%	6.0%	6.0%
9-10 AM	5.0%	1.8%	5.0%	12.9%	1.6%	1.6%	1.6%	1.6%
10-11 AM	5.0%	1.8%	5.0%	12.9%	1.6%	1.6%	1.6%	1.6%
11-12 PM	5.0%	1.8%	5.0%	12.9%	1.6%	1.6%	1.6%	1.6%
12-1 PM	5.0%	1.8%	5.0%	12.9%	1.6%	1.6%	1.6%	1.6%
1-2 PM	10.0%	3.7%	10.0%	25.8%	3.2%	3.2%	3.2%	3.2%
2-3 PM	5.0%	1.8%	5.0%	12.9%	1.6%	1.6%	1.6%	1.6%
3-4 PM	5.0%	1.8%	5.0%	12.9%	1.6%	1.6%	1.6%	1.6%
4-5 PM	5.0%	1.8%	5.0%	12.9%	1.6%	1.6%	1.6%	1.6%
5-6 PM	5.0%	1.8%	5.0%	12.9%	1.6%	1.6%	1.6%	1.6%
6-7 PM	2.0%	0.7%	2.0%	4.9%	0.4%	0.4%	0.4%	0.4%

INDUSTRIAL PARK & OFFICE TRIPS

Time	Minor		Major		Major SB
	WBL	WB	NB	WB	
6-7 AM	48	48	84	84	41
7-8 AM	48	48	84	84	41
8-9 AM	0	0	0	0	0
9-10 AM	0	0	0	0	0
10-11 AM	0	0	0	0	0
11-12 PM	0	0	0	0	0
12-1 PM	0	0	0	0	0
1-2 PM	0	0	0	0	0
2-3 PM	0	0	0	0	0
3-4 PM	0	0	0	0	0
4-5 PM	22	22	244	244	18
5-6 PM	22	22	244	244	18
6-7 PM	0	0	0	0	0

AM Trip Generation Industrial

Total Trips (in) = 684
 Total Trips (out) = 172
 856

PM Trip Generation Industrial

Total Trips (in) = 308
 Total Trips (out) = 497
 805

Lunenburg Road @ Fort Pond Road
 7% Entering Westbound Left
 43% Exiting Northbound Right
 6% Exiting Northbound Through
 6% Entering Southbound Through

PERCENTAGE OF PEAK HOUR FOR SITE TRIPS (LUC 820)

Time	WBL		Minor		Major		SB	
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting
6-7 AM	0.8%	0.3%	1.9%	1.2%	2.7%	2.7%	2.7%	2.7%
7-8 AM	2.0%	0.9%	4.8%	3.5%	6.7%	6.7%	6.7%	6.7%
8-9 AM	3.1%	1.2%	7.4%	4.7%	10.3%	10.3%	10.3%	10.3%
9-10 AM	5.5%	2.0%	13.1%	7.8%	18.3%	18.3%	18.3%	18.3%
10-11 AM	7.0%	4.3%	16.6%	16.8%	23.3%	23.3%	23.3%	23.3%
11-12 PM	8.4%	6.2%	20.0%	24.3%	28.0%	28.0%	28.0%	28.0%
12-1 PM	9.4%	8.3%	22.3%	32.5%	31.3%	31.3%	31.3%	31.3%
1-2 PM	8.2%	8.6%	19.5%	33.7%	27.3%	27.3%	27.3%	27.3%
2-3 PM	7.7%	8.9%	18.3%	34.8%	25.7%	25.7%	25.7%	25.7%
3-4 PM	7.8%	8.8%	18.5%	34.4%	26.0%	26.0%	26.0%	26.0%
4-5 PM	8.0%	8.9%	19.0%	34.8%	26.7%	26.7%	26.7%	26.7%
5-6 PM	8.4%	9.2%	20.0%	36.0%	28.0%	28.0%	28.0%	28.0%
6-7 PM	8.0%	7.5%	19.0%	29.3%	26.7%	26.7%	26.7%	26.7%

Source: ITE Trip Generation, 9th Edition, LUC 820: Shopping Center [Table 1]

INDUSTRIAL PARK TRIPS

Time	Minor		Major		Major SB
	WBL	WB	NB	WB	
6-7 AM	2	2	1	1	2
7-8 AM	3	3	2	2	4
8-9 AM	0	0	0	0	0
9-10 AM	0	0	0	0	0
10-11 AM	0	0	0	0	0
11-12 PM	0	0	0	0	0
12-1 PM	0	0	0	0	0
1-2 PM	0	0	0	0	0
2-3 PM	0	0	0	0	0
3-4 PM	0	0	0	0	0
4-5 PM	7	7	14	14	10
5-6 PM	7	7	14	14	10
6-7 PM	0	0	0	0	0

AM Trip Generation Industrial

Total Trips (in) = 12
 Total Trips (out) = 6
 18

PM Trip Generation Industrial

Total Trips (in) = 36
 Total Trips (out) = 40
 76

Lunenburg Road @ Fort Pond Road
 19% Entering Westbound Left
 8% Exiting Northbound Right
 28% Exiting Northbound Through
 28% Entering Southbound Through

PERCENTAGE OF PEAK HOUR FOR SITE TRIPS (LUC 221)

Time	WBL		Minor		Major		SB	
	Entering	Exiting	Entering	Exiting	Entering	Exiting	Entering	Exiting
6-7 AM	50.0%	50.0%	6.5%	15.0%	3.0%	3.0%	3.0%	3.0%
7-8 AM	100.0%	100.0%	13.0%	30.0%	6.0%	6.0%	6.0%	6.0%
8-9 AM	100.0%	100.0%	13.0%	30.0%	6.0%	6.0%	6.0%	6.0%

AM Trip Generation Housing

Total Trips (in) = 14
 Total Trips (out) = 38
 52

Project: Capital Commerce Center
 Town: Lancaster, MA
 TEC # T0852
 Analyst: TEC / Samuel W. Gregorio, PE, PTOE
 Location: Lunenburg Road @ Fort Pond Road



9-10 AM	25.0%	25.0%	3.3%	7.5%	1.5%
10-11 AM	25.0%	25.0%	3.3%	7.5%	1.5%
11-12 PM	25.0%	25.0%	3.3%	7.5%	1.5%
12-1 PM	50.0%	50.0%	6.5%	15.0%	3.0%
1-2 PM	50.0%	50.0%	6.5%	15.0%	3.0%
2-3 PM	25.0%	25.0%	3.3%	7.5%	1.5%
3-4 PM	25.0%	25.0%	3.3%	7.5%	1.5%
4-5 PM	100.0%	100.0%	13.0%	30.0%	6.0%
5-6 PM	100.0%	100.0%	13.0%	30.0%	6.0%
6-7 PM	50.0%	50.0%	6.5%	15.0%	3.0%

PM Trip Generation Housing

Total Trips (in) = 19

Total Trips (out) = 16

35

9-10 AM	
10-11 AM	
11-12 PM	
12-1 PM	
1-2 PM	
2-3 PM	
3-4 PM	
4-5 PM	2
5-6 PM	2
6-7 PM	

Lunenburg Road @ Fort Pond Road	
13% Entering Westbound Left	
24% Exiting Northbound Right	
6% Exiting Northbound Through	
6% Entering Southbound Through	

2	5	1
2	5	1



85th Percentile > 40 mph? **OR** Population < 10,000 people? **N**

Warrant 1 - One of the Following Conditions Must Be Met for any 8 hours of an average day (Table 4C-1)

Individual Option:

Condition A: Minimum Vehicular Volume 100%

Street	Lanes	Minimum Volume	ATR Data														
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM		
Major	1	500	0	945	709	0	0	0	0	0	0	0	0	0	1053	1024	0
Minor	1	150	0	93	99	0	0	0	0	0	0	0	0	0	184	311	0
Met?			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO

OR

Condition B: Interruption of Continuous Traffic

100%

Street	Lanes	Minimum Volume	ATR Data														
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM		
Major	1	750	0	945	709	0	0	0	0	0	0	0	0	0	1053	1024	0
Minor	1	75	0	93	99	0	0	0	0	0	0	0	0	0	184	311	0
Met?			NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO

Result: **NO**

Combination Option:

Condition A: Minimum Vehicular Volume 80%

46 11

Street	Lanes	Minimum Volume	ATR Data														
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM		
Major	1	400	0	945	709	0	0	0	0	0	0	0	0	0	1053	1024	0
Minor	1	120	0	93	99	0	0	0	0	0	0	0	0	0	184	311	0
Met?			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO

AND

Condition B: Interruption of Continuous Traffic

80%

Street	Lanes	Minimum Volume	ATR Data														
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM		
Major	1	600	0	945	709	0	0	0	0	0	0	0	0	0	1053	1024	0
Minor	1	60	0	93	99	0	0	0	0	0	0	0	0	0	184	311	0
Met?			NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	NO

Result: **NO**

Project: Capital Commerce Center
 Town: Lancaster, MA
 TEC # T0852
 Analyst: TEC / Samuel W. Gregorio, PE, PTOE
 Location: Lunenburg Road @ Fort Pond Road



Warrant 2 - Four-Hour Vehicular Volume (must be met for any 4 hours of an average day)

Street	Lanes	Minimum Volume	ATR Data														
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM		
Major	1	Figure 4C-2	0	945	709	0	0	0	0	0	0	0	0	0	1053	1024	0
Minor	1	Figure 4C-2	0	93	99	0	0	0	0	0	0	0	0	184	311	0	
		Met?	NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES	YES	NO

Result: YES

Warrants 3 to 8: Not Evaluated

















Appendix L

Intersection Capacity and Queue Analysis Worksheets

2019 Base Year

Lanes, Volumes, Timings
 1: Main Street & Seven Bridge Road & Shirley Road

2019 Existing Conditions
 Weekday Morning

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	730	338	15	455	0	184	0	7	0	0	0
Future Volume (vph)	0	730	338	15	455	0	184	0	7	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	14	14	14	12	13	12	13	12	12	12
Link Speed (mph)		35			35			35			30	
Link Distance (ft)		1450			1000			1000			200	
Travel Time (s)		28.2			19.5			19.5			4.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	6%	3%	0%	6%	0%	7%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

HCM 6th TWSC
 1: Main Street & Seven Bridge Road & Shirley Road

2019 Existing Conditions
 Weekday Morning

Intersection

Int Delay, s/veh	62.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	730	338	15	455	0	184	0	7	0	0	0
Future Vol, veh/h	0	730	338	15	455	0	184	0	7	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	6	3	0	6	0	7	0	0	0	0	0
Mvmt Flow	0	785	363	16	489	0	198	0	8	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	489	0	0	785
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.1	-	-	4.1
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.2
Pot Cap-1 Maneuver	1085	-	-	843
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1085	-	-	843
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	\$ 567.6	0
HCM LOS			F	A











Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	101	1085	-	-	843	-	-	-
HCM Lane V/C Ratio	2.033	-	-	-	0.019	-	-	-
HCM Control Delay (s)	\$ 567.6	0	-	-	9.4	0	-	0
HCM Lane LOS	F	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	17.5	0	-	-	0.1	-	-	-

Notes

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

Lanes, Volumes, Timings
 2: Main Street & Lunenburg Road

2019 Existing Conditions
 Weekday Morning

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	49	751	369	277	312	38
Future Volume (vph)	49	751	369	277	312	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	15	15	15	15
Storage Length (ft)	0			0	0	80
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Link Speed (mph)		35	35		45	
Link Distance (ft)		1000	1450		1000	
Travel Time (s)		19.5	28.2		15.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	4%	6%	6%	8%	3%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

HCM 6th TWSC
2: Main Street & Lunenburg Road

2019 Existing Conditions
Weekday Morning

Intersection

Int Delay, s/veh 149.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Vol, veh/h	49	751	369	277	312	38
Future Vol, veh/h	49	751	369	277	312	38
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	80
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	4	6	6	8	3
Mvmt Flow	53	808	397	298	335	41

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	695	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	901	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	901	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	\$ 763.9
HCM LOS			F










Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	901	-	-	-	123	536
HCM Lane V/C Ratio	0.058	-	-	-	2.728	0.076
HCM Control Delay (s)	9.2	0	-	-	\$ 855.4	12.3
HCM Lane LOS	A	A	-	-	F	B
HCM 95th %tile Q(veh)	0.2	-	-	-	30.7	0.2

Notes

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

Lanes, Volumes, Timings
 3: Lunenburg Road & McGovern Boulevard

2019 Existing Conditions
 Weekday Morning

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	18	28	27	304	339	18
Future Volume (vph)	18	28	27	304	339	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	12	12	12	12
Link Speed (mph)	30			50	50	
Link Distance (ft)	1000			1000	4300	
Travel Time (s)	22.7			13.6	58.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	33%	18%	7%	10%	6%	17%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	28	27	304	339	18
Future Vol, veh/h	18	28	27	304	339	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	33	18	7	10	6	17
Mvmt Flow	19	30	29	327	365	19

















Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	760	375	384	0	0
Stage 1	375	-	-	-	-
Stage 2	385	-	-	-	-
Critical Hdwy	6.73	6.38	4.17	-	-
Critical Hdwy Stg 1	5.73	-	-	-	-
Critical Hdwy Stg 2	5.73	-	-	-	-
Follow-up Hdwy	3.797	3.462	2.263	-	-
Pot Cap-1 Maneuver	333	637	1148	-	-
Stage 1	632	-	-	-	-
Stage 2	625	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	323	637	1148	-	-
Mov Cap-2 Maneuver	323	-	-	-	-
Stage 1	612	-	-	-	-
Stage 2	625	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.7	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1148	-	461	-	-
HCM Lane V/C Ratio	0.025	-	0.107	-	-
HCM Control Delay (s)	8.2	0	13.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Lanes, Volumes, Timings
4: Lunenburg Road & Old Union Turnpike

2019 Existing Conditions
Weekday Morning

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	137	93	72	26	61	73	170	104	270	216	42
Future Volume (vph)	34	137	93	72	26	61	73	170	104	270	216	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	14	16	16	16	14	14	14	15	15	15
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		999			500			4300			875	
Travel Time (s)		22.7			11.4			97.7			19.9	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	6%	2%	3%	9%	0%	16%	6%	7%	21%	4%	4%	10%
Shared Lane Traffic (%)												
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

Area Type: Other
Control Type: Roundabout

General & Site Information		v 4.2
Analyst:	Justin Wadsworth	
Agency/Co:	TEC, Inc.	
Date:	5/4/2021	
Project or PI#:	T0852.04	
Year, Peak Hour:	2019 AM Existing	
County/District:		
Intersection Name:	Lunenburg Rd (Rt. 70) / Old Union Turnpike Road	

		Volumes							
		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			60		169		34	
	NE (2), vph								
	E (3), vph	269				104		136	
	SE (4), vph								
	S (5), vph	214		71				92	
	SW (6), vph								
	W (7), vph	42		26		72			
	NW (8), vph								
Output	Total Vehicles	525	0	157	0	345	0	262	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	95.3%	100.0%	90.0%	100.0%	89.2%	100.0%	96.8%	100.0%
% Heavy Vehicles	4.7%	0.0%	10.0%	0.0%	10.8%	0.0%	3.3%	0.0%
% Bicycle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.97	0.95	0.97	0.95	0.97	0.95	0.97	0.95
F _{HV}	0.955	1.000	0.909	1.000	0.903	1.000	0.969	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	68	0	193	0	36	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	289	0	0	0	119	0	145	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	230	0	81	0	0	0	98	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	45	0	29	0	82	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	564	0	178	0	394	0	279	0
Conflicting flow, pcu/h	192	0	311	0	470	0	600	0

Results: Approach Measures of Effectiveness								
HCM 6th Edition	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	1084	NA	913	NA	771	NA	725	NA
Entry Flow Rates, vph	539	0	162	0	356	0	270	0
V/C ratio	0.50		0.18		0.46		0.37	
Control Delay, sec/pcu	9.1		5.7		10.9		9.7	
LOS	A		A		B		A	
Average Queue (ft)	34		6		27		18	
95th % Queue (ft)	75		18		68		45	

Overall Intersection Measures of Effectiveness					
Int Control Delay (sec)	9.3	Int LOS	A	Max Approach V/C	0.50

Notes:

v 4.2

Unit Legend:

vph = vehicles per hour



















PHF = peak hour factor

F_{HV} = heavy vehicle factor

pcu = passenger car unit

Lanes, Volumes, Timings
5: Lunenburg Road & Woods Lane/Fort Pond Road

2019 Existing Conditions
Weekday Morning

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	3	42	0	41	0	144	121	68	483	0
Future Volume (vph)	0	5	3	42	0	41	0	144	121	68	483	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16	11	11	11	11	11	11
Storage Length (ft)	0		0	65		0	0		55	0		0
Storage Lanes	0		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		30			35			35				35
Link Distance (ft)		500			420			875				1000
Travel Time (s)		11.4			8.2			17.0				19.5
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	10%	0%	11%	0%	10%	8%	2%	4%	0%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

HCM 6th TWSC
 5: Lunenburg Road & Woods Lane/Fort Pond Road

2019 Existing Conditions
 Weekday Morning

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔	↔		↔	
Traffic Vol, veh/h	0	5	3	42	0	41	0	144	121	68	483	0
Future Vol, veh/h	0	5	3	42	0	41	0	144	121	68	483	0
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	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	65	-	-	-	-	55	-	-	-
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, %	0	0	0	10	0	11	0	10	8	2	4	0
Mvmt Flow	0	5	3	44	0	43	0	150	126	71	503	0












Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	817	795	503	799	795	150	503	0	0	150	0	0
Stage 1	645	645	-	150	150	-	-	-	-	-	-	-
Stage 2	172	150	-	649	645	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.2	6.5	6.31	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.2	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.2	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.59	4	3.399	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	298	323	573	294	323	873	1072	-	-	1431	-	-
Stage 1	464	471	-	834	777	-	-	-	-	-	-	-
Stage 2	835	777	-	445	471	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	268	301	573	273	301	873	1072	-	-	1431	-	-
Mov Cap-2 Maneuver	268	301	-	273	301	-	-	-	-	-	-	-
Stage 1	464	439	-	834	777	-	-	-	-	-	-	-
Stage 2	794	777	-	407	439	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	15.1		15.1		0			0.9		
HCM LOS	C		C							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1072	-	-	366	273	873	1431	-	-
HCM Lane V/C Ratio	-	-	-	0.023	0.16	0.049	0.049	-	-
HCM Control Delay (s)	0	-	-	15.1	20.7	9.3	7.6	0	-
HCM Lane LOS	A	-	-	C	C	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.6	0.2	0.2	-	-

Lanes, Volumes, Timings
 6: Old Union Turnpike & Route 2 EB Ramps

2019 Existing Conditions
 Weekday Morning

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	384	127	65	0	12	94
Future Volume (vph)	384	127	65	0	12	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	16	16	16
Storage Length (ft)	0			60	0	75
Storage Lanes	0			1	1	1
Taper Length (ft)	25				25	
Link Speed (mph)		40	40		30	
Link Distance (ft)		500	500		300	
Travel Time (s)		8.5	8.5		6.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	8%	4%	2%	0%	0%	17%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Int Delay, s/veh 6.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations		↔	↑	↗	↖	↗
Traffic Vol, veh/h	384	127	65	0	12	94
Future Vol, veh/h	384	127	65	0	12	94
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	-	-	-	60	0	75
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	8	4	2	0	0	17
Mvmt Flow	409	135	69	0	13	100

Major/Minor	Major1	Major2	Minor2
-------------	--------	--------	--------

Conflicting Flow All	69	0	0	1022	69
Stage 1	-	-	-	69	-
Stage 2	-	-	-	953	-
Critical Hdwy	4.18	-	-	6.4	6.37
Critical Hdwy Stg 1	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	5.4	-
Follow-up Hdwy	2.272	-	-	3.5	3.453
Pot Cap-1 Maneuver	1495	-	-	264	954
Stage 1	-	-	-	959	-
Stage 2	-	-	-	378	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1495	-	-	186	954
Mov Cap-2 Maneuver	-	-	-	186	-
Stage 1	-	-	-	675	-
Stage 2	-	-	-	378	-

Approach	EB	WB	SB
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










HCM Control Delay, s	6.2	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
-----------------------	-----	-----	-----	-----	-------	-------

Capacity (veh/h)	1495	-	-	-	186	954
HCM Lane V/C Ratio	0.273	-	-	-	0.069	0.105
HCM Control Delay (s)	8.3	0	-	-	25.8	9.2
HCM Lane LOS	A	A	-	-	D	A
HCM 95th %tile Q(veh)	1.1	-	-	-	0.2	0.3

Lanes, Volumes, Timings
7: Route 2 WB Ramps & Fort Pond Road

2019 Existing Conditions
Weekday Morning

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	60	134	14	26	57	0
Future Volume (vph)	60	134	14	26	57	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	16	13	13	16	16
Storage Length (ft)		75	0		0	60
Storage Lanes		1	0		1	1
Taper Length (ft)			25		25	
Link Speed (mph)	35			35	30	
Link Distance (ft)	420			500	300	
Travel Time (s)	8.2			9.7	6.8	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	13%	2%	0%	12%	8%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection

Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑		↑	↑	↑
Traffic Vol, veh/h	60	134	14	26	57	0
Future Vol, veh/h	60	134	14	26	57	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Stop
Storage Length	-	75	-	-	0	60
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	13	2	0	12	8	0
Mvmt Flow	67	151	16	29	64	0

















Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	67	0	128
Stage 1	-	-	-	-	67
Stage 2	-	-	-	-	61
Critical Hdwy	-	-	4.1	-	6.48
Critical Hdwy Stg 1	-	-	-	-	5.48
Critical Hdwy Stg 2	-	-	-	-	5.48
Follow-up Hdwy	-	-	2.2	-	3.572
Pot Cap-1 Maneuver	-	-	1547	-	852
Stage 1	-	-	-	-	941
Stage 2	-	-	-	-	947
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1547	-	843
Mov Cap-2 Maneuver	-	-	-	-	843
Stage 1	-	-	-	-	941
Stage 2	-	-	-	-	937

Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	843	-	-	-	1547	-
HCM Lane V/C Ratio	0.076	-	-	-	0.01	-
HCM Control Delay (s)	9.6	0	-	-	7.4	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0	-

Lanes, Volumes, Timings
 1: Main Street & Seven Bridge Road & Driveway

2019 Existing Conditions
 Weekday Evening

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	477	223	4	1146	0	196	0	3	0	0	0
Future Volume (vph)	0	477	223	4	1146	0	196	0	3	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	14	14	14	12	13	12	13	12	12	12
Link Speed (mph)		35			35			35			30	
Link Distance (ft)		1450			1000			1000			200	
Travel Time (s)		28.2			19.5			19.5			4.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	3%	2%	0%	2%	0%	2%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

HCM 6th TWSC
1: Main Street & Seven Bridge Road & Driveway

2019 Existing Conditions
Weekday Evening

Intersection

Int Delay, s/veh	122.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	477	223	4	1146	0	196	0	3	0	0	0
Future Vol, veh/h	0	477	223	4	1146	0	196	0	3	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	3	2	0	2	0	2	0	0	0	0	0
Mvmt Flow	0	502	235	4	1206	0	206	0	3	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1206	0	0	502	0	0	1834	1834	620	1718	1716	1206
Stage 1	-	-	-	-	-	-	620	620	-	1214	1214	-
Stage 2	-	-	-	-	-	-	1214	1214	-	504	502	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.12	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.518	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	586	-	-	1073	-	-	~ 59	77	492	71	91	226
Stage 1	-	-	-	-	-	-	476	483	-	224	257	-
Stage 2	-	-	-	-	-	-	222	257	-	554	545	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	586	-	-	1073	-	-	~ 59	76	492	70	90	226
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 59	76	-	70	90	-
Stage 1	-	-	-	-	-	-	476	483	-	224	254	-
Stage 2	-	-	-	-	-	-	220	254	-	550	545	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	\$ 1264.6	0
HCM LOS			F	A











Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	60	586	-	-	1073	-	-	-
HCM Lane V/C Ratio	3.491	-	-	-	0.004	-	-	-
HCM Control Delay (s)	\$ 1264.6	0	-	-	8.4	0	-	0
HCM Lane LOS	F	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	22.2	0	-	-	0	-	-	-

Notes

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

Lanes, Volumes, Timings
 2: Main Street & Lunenburg Road

2019 Existing Conditions
 Weekday Evening

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	48	465	762	573	233	65
Future Volume (vph)	48	465	762	573	233	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	15	15	15	15
Storage Length (ft)	0			0	0	80
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Link Speed (mph)		35	35		45	
Link Distance (ft)		1000	1450		1000	
Travel Time (s)		19.5	28.2		15.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	3%	3%	1%	2%	0%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Int Delay, s/veh 99.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Vol, veh/h	48	465	762	573	233	65
Future Vol, veh/h	48	465	762	573	233	65
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	80
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	3	3	1	2	0
Mvmt Flow	51	489	802	603	245	68

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1405	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.1	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.2	-	-
Pot Cap-1 Maneuver	492	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	492	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	\$ 716.3
HCM LOS			F










Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	492	-	-	-	88	259
HCM Lane V/C Ratio	0.103	-	-	-	2.787	0.264
HCM Control Delay (s)	13.2	0	-	-	\$ 909.5	23.8
HCM Lane LOS	B	A	-	-	F	C
HCM 95th %tile Q(veh)	0.3	-	-	-	23.6	1

Notes

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

Lanes, Volumes, Timings
 3: Lunenburg Road & McGovern Boulevard

2019 Existing Conditions
 Weekday Evening

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	40	13	24	630	298	58
Future Volume (vph)	40	13	24	630	298	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	12	12	12	12
Link Speed (mph)	30			50	50	
Link Distance (ft)	1000			1000	4300	
Travel Time (s)	22.7			13.6	58.6	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	2%	6%	0%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Vol, veh/h	40	13	24	630	298	58
Future Vol, veh/h	40	13	24	630	298	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	2	6	0
Mvmt Flow	42	14	25	656	310	60

















Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1046	340	370	0	0
Stage 1	340	-	-	-	-
Stage 2	706	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	255	707	1200	-	-
Stage 1	725	-	-	-	-
Stage 2	493	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	247	707	1200	-	-
Mov Cap-2 Maneuver	247	-	-	-	-
Stage 1	701	-	-	-	-
Stage 2	493	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.1	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1200	-	294	-	-
HCM Lane V/C Ratio	0.021	-	0.188	-	-
HCM Control Delay (s)	8.1	0	20.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	-	-

Lanes, Volumes, Timings
4: Lunenburg Road & Old Union Turnpike

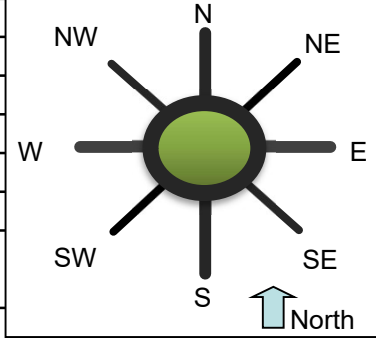
2019 Existing Conditions
Weekday Evening

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	43	146	95	78	137	211	329	51	54	163	248
Future Volume (vph)	75	43	146	95	78	137	211	329	51	54	163	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	14	16	16	16	14	14	14	15	15	15
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		999			500			4300			875	
Travel Time (s)		22.7			11.4			97.7			19.9	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	0%	0%	1%	1%	7%	1%	1%	4%	2%	9%	1%
Shared Lane Traffic (%)												
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

Area Type: Other
Control Type: Roundabout

General & Site Information		v 4.2
Analyst:	Justin Wadsworth	
Agency/Co:	TEC, Inc.	
Date:	5/4/2021	
Project or PI#:	T0852.04	
Year, Peak Hour:	2019 PM Existing	
County/District:		
Intersection Name:	Lunenburg Rd (Rt. 70) / Old Union Turnpike Road	



Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			137		328		74	
	NE (2), vph								
	E (3), vph	54				50		43	
	SE (4), vph								
	S (5), vph	162		94				146	
	SW (6), vph								
	W (7), vph	246		77		210			
	NW (8), vph								
Output	Total Vehicles	462	0	308	0	588	0	263	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	95.9%	100.0%	96.2%	100.0%	98.9%	100.0%	100.0%	100.0%
% Heavy Vehicles	4.1%	0.0%	3.8%	0.0%	1.1%	0.0%	0.0%	0.0%
% Bicycle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.99	0.95	0.99	0.95	0.99	0.95	0.99	0.95
F _{HV}	0.961	1.000	0.963	1.000	0.989	1.000	1.000	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	144	0	335	0	75	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	57	0	0	0	51	0	43	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	170	0	99	0	0	0	147	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	259	0	81	0	214	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	486	0	323	0	600	0	266	0
Conflicting flow, pcu/h	394	0	624	0	175	0	326	0

Results: Approach Measures of Effectiveness								
HCM 6th Edition	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	887	NA	703	NA	1142	NA	990	NA
Entry Flow Rates, vph	467	0	311	0	594	0	266	0
V/C ratio	0.53		0.44		0.52		0.27	
Control Delay, sec/pcu	11.1		11.3		9.1		6.3	
LOS	B		B		A		A	
Average Queue (ft)	36		24		38		12	
95th % Queue (ft)	82		59		79		27	

Overall Intersection Measures of Effectiveness						
Int Control Delay (sec)	9.6		Int LOS	A	Max Approach V/C	0.53

Notes: v 4.2



















Unit Legend:
 vph = vehicles per hour
 PHF = peak hour factor
 F_{HV} = heavy vehicle factor
 pcu = passenger car unit

Bypass Lane Merge Point Analysis (if applicable)

Bypass Characteristics	Bypass #1	Bypass #2	Bypass #3	Bypass #4	Bypass #5	Bypass #6
Select Entry Leg from Bypass (FROM)						
Select Exit Leg for Bypass (TO)						
Does the bypass have a dedicated receiving lane?						
Volumes						
Right Turn Volume removed from Entry Leg						
Volume Characteristics (for entry leg)						
PHF						
F _{HV}						
F _{ped}						
NOTE: Volume Characteristics for Exit Leg are already taken into account						
Entry/Conflicting Flows						
Entry Flow, pcu/hr						
Conflicting Flow, pcu/hr						
Bypass Lane Results (HCM 6th Edition)						
Entry Capacity of Bypass, vph						
Flow Rates of Exiting Traffic, vph						
V/C ratio						
Control Delay, s/veh						
LOS						
95th % Queue (veh)						
95th % Queue (ft)						
Approach w/Bypass Delay, s/veh						
Approach w/Bypass LOS						

Lanes, Volumes, Timings
 5: Lunenburg Road & Woods Lane/Fort Pond Road

2019 Existing Conditions
 Weekday Evening

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	4	292	0	314	2	435	104	30	169	1
Future Volume (vph)	0	0	4	292	0	314	2	435	104	30	169	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16	11	11	11	11	11	11
Storage Length (ft)	0		0	65		0	0		55	0		0
Storage Lanes	0		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		30			35			35				35
Link Distance (ft)		500			420			875				1000
Travel Time (s)		11.4			8.2			17.0				19.5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	0%	5%	0%	1%	0%	1%	2%	14%	1%	0%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

HCM 6th TWSC
 5: Lunenburg Road & Woods Lane/Fort Pond Road

2019 Existing Conditions
 Weekday Evening

Intersection												
Int Delay, s/veh	29.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔	↔		↔	
Traffic Vol, veh/h	0	0	4	292	0	314	2	435	104	30	169	1
Future Vol, veh/h	0	0	4	292	0	314	2	435	104	30	169	1
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	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	65	-	-	-	-	55	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	5	0	1	0	1	2	14	1	0
Mvmt Flow	0	0	5	332	0	357	2	494	118	34	192	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	938	759	193	761	759	494	193	0	0	494	0	0
Stage 1	261	261	-	498	498	-	-	-	-	-	-	-
Stage 2	677	498	-	263	261	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.15	6.5	6.21	4.1	-	-	4.24	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.15	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.15	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.545	4	3.309	2.2	-	-	2.326	-	-
Pot Cap-1 Maneuver	247	338	854	~318	338	577	1392	-	-	1010	-	-
Stage 1	748	696	-	549	548	-	-	-	-	-	-	-
Stage 2	446	548	-	736	696	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	91	324	854	~307	324	577	1392	-	-	1010	-	-
Mov Cap-2 Maneuver	91	324	-	~307	324	-	-	-	-	-	-	-
Stage 1	747	670	-	548	547	-	-	-	-	-	-	-
Stage 2	170	547	-	704	670	-	-	-	-	-	-	-












Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	65	0	1.3
HCM LOS	A	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1392	-	-	854	307	577	1010	-	-
HCM Lane V/C Ratio	0.002	-	-	0.005	1.081	0.618	0.034	-	-
HCM Control Delay (s)	7.6	0	-	9.2	112.6	20.8	8.7	0	-
HCM Lane LOS	A	A	-	A	F	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	12.8	4.2	0.1	-	-

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

Lanes, Volumes, Timings
6: Old Union Turnpike & Route 2 EB Ramps

2019 Existing Conditions
Weekday Evening

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	76	72	97	1	12	213
Future Volume (vph)	76	72	97	1	12	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	16	16	16
Storage Length (ft)	0			60	0	75
Storage Lanes	0			1	1	1
Taper Length (ft)	25				25	
Link Speed (mph)		40	40		30	
Link Distance (ft)		500	500		300	
Travel Time (s)		8.5	8.5		6.8	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	3%	5%	1%	0%	0%	3%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection

Int Delay, s/veh 6.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↑	↗	↖	↗
Traffic Vol, veh/h	76	72	97	1	12	213
Future Vol, veh/h	76	72	97	1	12	213
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	-	-	-	60	0	75
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	3	5	1	0	0	3
Mvmt Flow	90	86	115	1	14	254












Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	115	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.13	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.227	-	-
Pot Cap-1 Maneuver	1468	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1468	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	3.9	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1468	-	-	-	585	935
HCM Lane V/C Ratio	0.062	-	-	-	0.024	0.271
HCM Control Delay (s)	7.6	0	-	-	11.3	10.3
HCM Lane LOS	A	A	-	-	B	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.1	1.1

Lanes, Volumes, Timings
 7: Route 2 WB Ramps & Fort Pond Road

2019 Existing Conditions
 Weekday Evening

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	14	120	27	231	375	0
Future Volume (vph)	14	120	27	231	375	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	16	13	13	16	16
Storage Length (ft)		75	0		0	60
Storage Lanes		1	0		1	1
Taper Length (ft)			25		25	
Link Speed (mph)	35			35	30	
Link Distance (ft)	420			500	300	
Travel Time (s)	8.2			9.7	6.8	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Heavy Vehicles (%)	8%	4%	8%	2%	3%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Int Delay, s/veh	20.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑		↑	↑	↑
Traffic Vol, veh/h	14	120	27	231	375	0
Future Vol, veh/h	14	120	27	231	375	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Stop
Storage Length	-	75	-	-	0	60
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	8	4	8	2	3	0
Mvmt Flow	19	164	37	316	514	0

















Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	19	0	409
Stage 1	-	-	-	-	19
Stage 2	-	-	-	-	390
Critical Hdwy	-	-	4.18	-	6.43
Critical Hdwy Stg 1	-	-	-	-	5.43
Critical Hdwy Stg 2	-	-	-	-	5.43
Follow-up Hdwy	-	-	2.272	-	3.527
Pot Cap-1 Maneuver	-	-	1559	-	597
Stage 1	-	-	-	-	1001
Stage 2	-	-	-	-	682
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1559	-	580
Mov Cap-2 Maneuver	-	-	-	-	580
Stage 1	-	-	-	-	1001
Stage 2	-	-	-	-	662

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	41.5
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	580	-	-	-	1559	-
HCM Lane V/C Ratio	0.886	-	-	-	0.024	-
HCM Control Delay (s)	41.5	0	-	-	7.4	0
HCM Lane LOS	E	A	-	-	A	A
HCM 95th %tile Q(veh)	10.3	-	-	-	0.1	-

Lanes, Volumes, Timings
 1: Main Street & Seven Bridge Road & Shirley Road

2019 Existing Conditions
 Saturday MIDDAY

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	26	678	5	233	1	436	2	27	0	2	0
Future Volume (vph)	1	26	678	5	233	1	436	2	27	0	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	14	14	14	12	13	12	13	12	12	12
Link Speed (mph)		35			35			35			30	
Link Distance (ft)		1450			1000			1000			200	
Travel Time (s)		28.2			19.5			19.5			4.5	
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
Heavy Vehicles (%)	0%	4%	2%	0%	1%	0%	2%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

HCM 6th TWSC
 1: Main Street & Seven Bridge Road & Shirley Road

2019 Existing Conditions
 Saturday MIDDAY

Intersection

Int Delay, s/veh	109.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	1	26	678	5	233	1	436	2	27	0	2	0
Future Vol, veh/h	1	26	678	5	233	1	436	2	27	0	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	0	4	2	0	1	0	2	0	0	0	0	0
Mvmt Flow	1	31	817	6	281	1	525	2	33	0	2	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	282	0	0	31	0	0	737	736	440	345	327	282
Stage 1	-	-	-	-	-	-	442	442	-	294	294	-
Stage 2	-	-	-	-	-	-	295	294	-	51	33	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.12	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.518	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1292	-	-	1595	-	-	~334	349	621	613	595	762
Stage 1	-	-	-	-	-	-	594	580	-	719	673	-
Stage 2	-	-	-	-	-	-	713	673	-	967	872	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1292	-	-	1595	-	-	~331	347	621	575	591	762
Mov Cap-2 Maneuver	-	-	-	-	-	-	~331	347	-	575	591	-
Stage 1	-	-	-	-	-	-	593	579	-	718	670	-
Stage 2	-	-	-	-	-	-	708	670	-	911	870	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.2			\$ 331.9			11.1		
HCM LOS							F			B		











Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	340	1292	-	-	1595	-	-	591
HCM Lane V/C Ratio	1.648	0.001	-	-	0.004	-	-	0.004
HCM Control Delay (s)	\$ 331.9	7.8	0	-	7.3	0	-	11.1
HCM Lane LOS	F	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	33.8	0	-	-	0	-	-	0

Notes

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

Lanes, Volumes, Timings
 2: Main Street & Lunenburg Road

2019 Existing Conditions
 Saturday MIDDAY

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	44	367	395	276	328	38
Future Volume (vph)	44	367	395	276	328	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	15	15	15	15
Storage Length (ft)	0			0	0	80
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Link Speed (mph)		35	35		45	
Link Distance (ft)		1000	1450		1000	
Travel Time (s)		19.5	28.2		15.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	1%	2%	1%	2%	0%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Int Delay, s/veh 60.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		4	1		1	1
Traffic Vol, veh/h	44	367	395	276	328	38
Future Vol, veh/h	44	367	395	276	328	38
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	80
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	1	2	1	2	0
Mvmt Flow	46	386	416	291	345	40

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	707	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	891	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	891	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	237.4
HCM LOS			F










Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	891	-	-	-	238	530
HCM Lane V/C Ratio	0.052	-	-	-	1.451	0.075
HCM Control Delay (s)	9.3	0	-	-	263.5	12.3
HCM Lane LOS	A	A	-	-	F	B
HCM 95th %tile Q(veh)	0.2	-	-	-	19.9	0.2

Notes

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

Lanes, Volumes, Timings
 3: Lunenburg Road & McGovern Boulevard

2019 Existing Conditions
 Saturday MIDDAY

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	19	9	5	384	458	21
Future Volume (vph)	19	9	5	384	458	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	12	12	12	12
Link Speed (mph)	30			50	50	
Link Distance (ft)	1000			1000	4300	
Travel Time (s)	22.7			13.6	58.6	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	11%	0%	3%	2%	5%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	TT			TT	TT	
Traffic Vol, veh/h	19	9	5	384	458	21
Future Vol, veh/h	19	9	5	384	458	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	5	11	0	3	2	5
Mvmt Flow	20	9	5	400	477	22

















Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	898	488	499	0	-	0
Stage 1	488	-	-	-	-	-
Stage 2	410	-	-	-	-	-
Critical Hdwy	6.45	6.31	4.1	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.399	2.2	-	-	-
Pot Cap-1 Maneuver	306	562	1075	-	-	-
Stage 1	611	-	-	-	-	-
Stage 2	664	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	304	562	1075	-	-	-
Mov Cap-2 Maneuver	304	-	-	-	-	-
Stage 1	607	-	-	-	-	-
Stage 2	664	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1075	-	357	-	-
HCM Lane V/C Ratio	0.005	-	0.082	-	-
HCM Control Delay (s)	8.4	0	16	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Lanes, Volumes, Timings
 4: Lunenburg Road & Old Union Turnpike

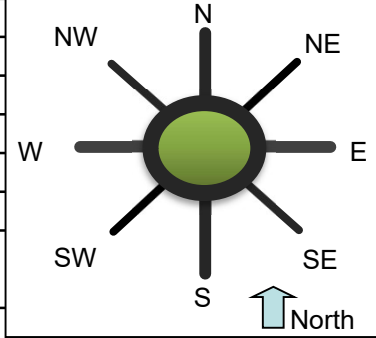
2019 Existing Conditions
 Saturday MIDDAY

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	46	125	196	57	104	109	165	79	78	116	105
Future Volume (vph)	34	46	125	196	57	104	109	165	79	78	116	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	14	16	16	16	14	14	14	15	15	15
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		999			500			4300			875	
Travel Time (s)		22.7			11.4			97.7			19.9	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	2%	2%	1%	0%	6%	0%	4%	5%	14%	3%	1%
Shared Lane Traffic (%)												
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

Area Type: Other
 Control Type: Roundabout

General & Site Information		v 4.2
Analyst:	Justin Wadsworth	
Agency/Co:	TEC, Inc.	
Date:	5/4/2021	
Project or PI#:	T0852.04	
Year, Peak Hour:	2019 SAT Existing	
County/District:		
Intersection Name:	Lunenburg Rd (Rt. 70) / Old Union Turnpike Road	



Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			104		165		34	
	NE (2), vph								
	E (3), vph	78				79		46	
	SE (4), vph								
	S (5), vph	116		196				125	
	SW (6), vph								
	W (7), vph	105		57		109			
	NW (8), vph								
Output	Total Vehicles	299	0	357	0	353	0	205	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	94.6%	100.0%	97.8%	100.0%	97.2%	100.0%	99.1%	100.0%
% Heavy Vehicles	5.4%	0.0%	2.2%	0.0%	2.8%	0.0%	0.9%	0.0%
% Bicycle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.75	0.95	0.75	0.95	0.75	0.95	0.75	0.95
F _{HV}	0.949	1.000	0.978	1.000	0.973	1.000	0.991	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	141	0	226	0	46	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	109	0	0	0	108	0	62	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	163	0	266	0	0	0	168	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	147	0	77	0	149	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	419	0	485	0	483	0	275	0
Conflicting flow, pcu/h	493	0	420	0	217	0	538	0

Results: Approach Measures of Effectiveness								
HCM 6th Edition	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	792	NA	879	NA	1076	NA	790	NA
Entry Flow Rates, vph	398	0	475	0	469	0	273	0
V/C ratio	0.50		0.54		0.44		0.35	
Control Delay, sec/pcu	11.5		11.5		8.1		8.7	
LOS	B		B		A		A	
Average Queue (ft)	32		38		26		16	
95th % Queue (ft)	75		84		58		39	

Overall Intersection Measures of Effectiveness					
Int Control Delay (sec)	10.0	Int LOS	B	Max Approach V/C	0.54

Notes: v 4.2



















Unit Legend:
 vph = vehicles per hour
 PHF = peak hour factor
 F_{HV} = heavy vehicle factor
 pcu = passenger car unit

Bypass Lane Merge Point Analysis (if applicable)

Bypass Characteristics	Bypass #1	Bypass #2	Bypass #3	Bypass #4	Bypass #5	Bypass #6
Select Entry Leg from Bypass (FROM)						
Select Exit Leg for Bypass (TO)						
Does the bypass have a dedicated receiving lane?						
Volumes						
Right Turn Volume removed from Entry Leg						
Volume Characteristics (for entry leg)						
PHF						
F _{HV}						
F _{ped}						
NOTE: Volume Characteristics for Exit Leg are already taken into account						
Entry/Conflicting Flows						
Entry Flow, pcu/hr						
Conflicting Flow, pcu/hr						
Bypass Lane Results (HCM 6th Edition)						
Entry Capacity of Bypass, vph						
Flow Rates of Exiting Traffic, vph						
V/C ratio						
Control Delay, s/veh						
LOS						
95th % Queue (veh)						
95th % Queue (ft)						
Approach w/Bypass Delay, s/veh						
Approach w/Bypass LOS						

Lanes, Volumes, Timings
 5: Lunenburg Road & Woods Lane/Fort Pond Road

2019 Existing Conditions
 Saturday MIDDAY

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	3	106	1	72	1	188	114	49	190	0
Future Volume (vph)	0	0	3	106	1	72	1	188	114	49	190	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16	11	11	11	11	11	11
Storage Length (ft)	0		0	65		0	0		55	0		0
Storage Lanes	0		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		500			500			875			1000	
Travel Time (s)		11.4			9.7			17.0			19.5	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	0%	0%	0%	4%	0%	8%	0%	5%	3%	8%	6%	0%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕	↕		↕	
Traffic Vol, veh/h	0	0	3	106	1	72	1	188	114	49	190	0
Future Vol, veh/h	0	0	3	106	1	72	1	188	114	49	190	0
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	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	65	-	-	-	-	55	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	4	0	8	0	5	3	8	6	0
Mvmt Flow	0	0	4	126	1	86	1	224	136	58	226	0












Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	612	568	226	570	568	224	226	0	0	224	0	0
Stage 1	342	342	-	226	226	-	-	-	-	-	-	-
Stage 2	270	226	-	344	342	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.14	6.5	6.28	4.1	-	-	4.18	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.14	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.14	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.536	4	3.372	2.2	-	-	2.272	-	-
Pot Cap-1 Maneuver	408	435	818	429	435	801	1354	-	-	1310	-	-
Stage 1	677	642	-	772	721	-	-	-	-	-	-	-
Stage 2	740	721	-	667	642	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	349	412	818	410	412	801	1354	-	-	1310	-	-
Mov Cap-2 Maneuver	349	412	-	410	412	-	-	-	-	-	-	-
Stage 1	676	609	-	771	720	-	-	-	-	-	-	-
Stage 2	659	720	-	630	609	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s	9.4		14.5			0			1.6		
HCM LOS	A		B								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1354	-	-	818	410	791	1310	-	-
HCM Lane V/C Ratio	0.001	-	-	0.004	0.308	0.11	0.045	-	-
HCM Control Delay (s)	7.7	0	-	9.4	17.6	10.1	7.9	0	-
HCM Lane LOS	A	A	-	A	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	1.3	0.4	0.1	-	-

Lanes, Volumes, Timings
 6: Old Union Turnpike & Route 2 EB Ramps

2019 Existing Conditions
 Saturday MIDDAY

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	128	75	188	3	18	169
Future Volume (vph)	128	75	188	3	18	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	16	16	16
Storage Length (ft)	0			60	0	75
Storage Lanes	0			1	1	1
Taper Length (ft)	25				25	
Link Speed (mph)		40	40		30	
Link Distance (ft)		500	500		300	
Travel Time (s)		8.5	8.5		6.8	
Peak Hour Factor	0.61	0.61	0.61	0.61	0.61	0.61
Heavy Vehicles (%)	13%	1%	0%	0%	0%	5%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Int Delay, s/veh	6.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↑	↔	↔	↔
Traffic Vol, veh/h	128	75	188	3	18	169
Future Vol, veh/h	128	75	188	3	18	169
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	-	-	-	60	0	75
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	61	61	61	61	61	61
Heavy Vehicles, %	13	1	0	0	0	5
Mvmt Flow	210	123	308	5	30	277

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	308	0	0	851	308
Stage 1	-	-	-	308	-
Stage 2	-	-	-	543	-
Critical Hdwy	4.23	-	-	6.4	6.25
Critical Hdwy Stg 1	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	5.4	-
Follow-up Hdwy	2.317	-	-	3.5	3.345
Pot Cap-1 Maneuver	1193	-	-	333	725
Stage 1	-	-	-	750	-
Stage 2	-	-	-	586	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1193	-	-	270	725
Mov Cap-2 Maneuver	-	-	-	270	-
Stage 1	-	-	-	608	-
Stage 2	-	-	-	586	-

Approach	EB	WB	SB
HCM Control Delay, s	5.5	0	13.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1193	-	-	-	270	725
HCM Lane V/C Ratio	0.176	-	-	-	0.109	0.382
HCM Control Delay (s)	8.7	0	-	-	20	13
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0.6	-	-	-	0.4	1.8

2028 No-Build Condition

Lanes, Volumes, Timings
1: Main Street & Seven Bridge Road & Driveway

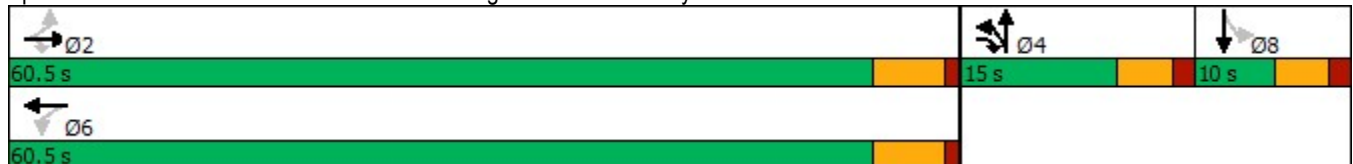
2028 No-Build Conditions
Weekday Morning

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	761	363	16	478	0	230	0	7	0	0	0
Future Volume (vph)	0	761	363	16	478	0	230	0	7	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	11	11	13	13	13	12	12	12
Storage Length (ft)	0		115	50		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35				30
Link Distance (ft)		1450			1000			1000				200
Travel Time (s)		28.2			19.5			19.5				4.5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	6%	3%	0%	6%	0%	7%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type		NA	pm+ov	Perm	NA		Split	NA				
Protected Phases		2	4		6		4	4				8
Permitted Phases	2		2	6						8		
Detector Phase	2	2	4	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0		5.0	5.0	
Minimum Split (s)	15.5	15.5	15.0	15.5	15.5		15.0	15.0		10.0	10.0	
Total Split (s)	60.5	60.5	15.0	60.5	60.5		15.0	15.0		10.0	10.0	
Total Split (%)	70.8%	70.8%	17.5%	70.8%	70.8%		17.5%	17.5%		11.7%	11.7%	
Maximum Green (s)	55.0	55.0	10.0	55.0	55.0		10.0	10.0		5.0	5.0	
Yellow Time (s)	4.5	4.5	3.5	4.5	4.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.5	1.0	1.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.5	5.0	5.5	5.5			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0		2.0	2.0		0.2	0.2	
Recall Mode	Min	Min	None	Min	Min		None	None		None	None	

Intersection Summary

Area Type: Other
 Cycle Length: 85.5
 Actuated Cycle Length: 50.4
 Natural Cycle: 65
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Main Street & Seven Bridge Road & Driveway



Queues

2028 No-Build Conditions

1: Main Street & Seven Bridge Road & Driveway

Weekday Morning

	→	↘	↙	←	↑
Lane Group	EBT	EBR	WBL	WBT	NBT
Lane Group Flow (vph)	818	390	17	514	255
v/c Ratio	0.82	0.26	0.08	0.51	0.59
Control Delay	15.5	0.4	4.7	7.8	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.5	0.4	4.7	7.8	21.4
Queue Length 50th (ft)	157	0	2	74	40
Queue Length 95th (ft)	268	0	7	122	#162
Internal Link Dist (ft)	1370			920	920
Turn Bay Length (ft)		115	50		
Base Capacity (vph)	1676	1516	365	1676	434
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.49	0.26	0.05	0.31	0.59

Intersection Summary

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

HCM 6th Signalized Intersection Summary
 1: Main Street & Seven Bridge Road & Driveway

2028 No-Build Conditions
 Weekday Morning

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	761	363	16	478	0	230	0	7	0	0	0
Future Volume (veh/h)	0	761	363	16	478	0	230	0	7	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1811	1856	1900	1811	1900	1868	1976	1976	1900	1900	1900
Adj Flow Rate, veh/h	0	818	390	17	514	0	247	0	8	0	0	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	6	3	0	6	0	7	0	0	0	0	0
Cap, veh/h	0	1047	1227	259	1047	0	367	0	12	0	4	0
Arrive On Green	0.00	0.58	0.58	0.58	0.58	0.00	0.20	0.00	0.20	0.00	0.00	0.00
Sat Flow, veh/h	0	1811	1572	470	1811	0	1816	0	59	0	1900	0
Grp Volume(v), veh/h	0	818	390	17	514	0	255	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1811	1572	470	1811	0	1875	0	0	0	1900	0
Q Serve(g_s), s	0.0	16.6	3.5	1.4	8.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	16.6	3.5	18.0	8.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00	0.97		0.03	0.00		0.00
Lane Grp Cap(c), veh/h	0	1047	1227	259	1047	0	379	0	0	0	4	0
V/C Ratio(X)	0.00	0.78	0.32	0.07	0.49	0.00	0.67	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	2085	2129	528	2085	0	392	0	0	0	199	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.8	1.5	14.7	5.9	0.0	17.6	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.3	0.1	0.1	0.4	0.0	3.4	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.1	1.3	0.1	1.9	0.0	2.6	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	9.1	1.7	14.8	6.3	0.0	21.0	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	C	A	A	A	A	A
Approach Vol, veh/h		1208			531			255				0
Approach Delay, s/veh		6.7			6.6			21.0				0.0
Approach LOS		A			A			C				
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		33.1		14.7		33.1		0.0				
Change Period (Y+Rc), s		5.5		5.0		5.5		5.0				
Max Green Setting (Gmax), s		55.0		10.0		55.0		5.0				
Max Q Clear Time (g_c+I1), s		18.6		8.0		20.0		0.0				
Green Ext Time (p_c), s		9.0		0.2		3.8		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			8.5									
HCM 6th LOS			A									

Lanes, Volumes, Timings
2: Main Street & Lunenburg Road

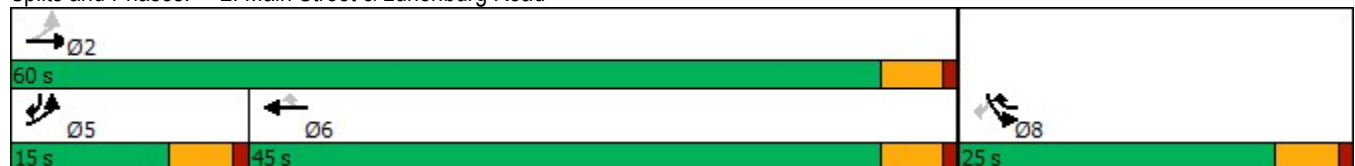
2028 No-Build Conditions
Weekday Morning

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	59	782	384	332	337	42
Future Volume (vph)	59	782	384	332	337	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Storage Length (ft)	100			160	0	240
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Right Turn on Red				Yes		No
Link Speed (mph)		35	35		45	
Link Distance (ft)		1000	1450		1000	
Travel Time (s)		19.5	28.2		15.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	4%	6%	6%	8%	3%
Shared Lane Traffic (%)						
Turn Type	pm+pt	NA	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	6	8	8	5
Permitted Phases	2			6		8
Detector Phase	5	2	6	8	8	5
Switch Phase						
Minimum Initial (s)	6.0	10.0	10.0	10.0	10.0	6.0
Minimum Split (s)	11.0	15.0	15.0	15.0	15.0	11.0
Total Split (s)	15.0	60.0	45.0	25.0	25.0	15.0
Total Split (%)	17.6%	70.6%	52.9%	29.4%	29.4%	17.6%
Maximum Green (s)	10.0	55.0	40.0	20.0	20.0	10.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Vehicle Extension (s)	2.0	3.0	3.0	2.0	2.0	2.0
Recall Mode	None	Min	Min	None	None	None

Intersection Summary







Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 67.1
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Main Street & Lunenburg Road



Queues
2: Main Street & Lunenburg Road

2028 No-Build Conditions
Weekday Morning













						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	63	841	413	357	362	45
v/c Ratio	0.14	0.85	0.55	0.28	0.78	0.06
Control Delay	7.0	21.8	18.1	0.8	39.3	14.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	21.8	18.1	0.8	39.3	14.4
Queue Length 50th (ft)	11	268	132	0	133	10
Queue Length 95th (ft)	24	418	211	12	#359	37
Internal Link Dist (ft)		920	1370		920	
Turn Bay Length (ft)	100			160		240
Base Capacity (vph)	514	1449	1086	1270	500	787
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	0.12	0.58	0.38	0.28	0.72	0.06

Intersection Summary

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










HCM 6th Signalized Intersection Summary
 2: Main Street & Lunenburg Road

2028 No-Build Conditions
 Weekday Morning

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	59	782	384	332	337	42
Future Volume (veh/h)	59	782	384	332	337	42
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1841	1811	1811	1781	1856
Adj Flow Rate, veh/h	63	841	413	357	362	45
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	4	6	6	8	3
Cap, veh/h	409	1022	703	979	424	502
Arrive On Green	0.07	0.56	0.39	0.39	0.25	0.25
Sat Flow, veh/h	1781	1841	1811	1535	1697	1572
Grp Volume(v), veh/h	63	841	413	357	362	45
Grp Sat Flow(s),veh/h/ln	1781	1841	1811	1535	1697	1572
Q Serve(g_s), s	0.9	19.2	9.3	5.6	10.4	1.0
Cycle Q Clear(g_c), s	0.9	19.2	9.3	5.6	10.4	1.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	409	1022	703	979	424	502
V/C Ratio(X)	0.15	0.82	0.59	0.36	0.85	0.09
Avail Cap(c_a), veh/h	633	1976	1414	1582	662	723
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.1	9.3	12.4	4.4	18.3	12.2
Incr Delay (d2), s/veh	0.1	1.7	0.8	0.2	3.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.5	3.1	2.7	3.7	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.2	11.1	13.2	4.6	22.2	12.3
LnGrp LOS	A	B	B	A	C	B
Approach Vol, veh/h		904	770		407	
Approach Delay, s/veh		10.9	9.2		21.1	
Approach LOS		B	A		C	
Timer - Assigned Phs		2			5	6
Phs Duration (G+Y+Rc), s		33.4			8.6	24.9
Change Period (Y+Rc), s		5.0			5.0	5.0
Max Green Setting (Gmax), s		55.0			10.0	40.0
Max Q Clear Time (g_c+I1), s		21.2			2.9	11.3
Green Ext Time (p_c), s		7.3			0.0	4.0
Intersection Summary						
HCM 6th Ctrl Delay			12.3			
HCM 6th LOS			B			

Lanes, Volumes, Timings
 3: Lunenburg Road & McGovern Boulevard

2028 No-Build Conditions
 Weekday Morning

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	18	29	28	368	367	18
Future Volume (vph)	18	29	28	368	367	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	12	12	12	12
Link Speed (mph)	30			50	50	
Link Distance (ft)	1000			1000	4300	
Travel Time (s)	22.7			13.6	58.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	33%	18%	7%	10%	6%	17%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Vol, veh/h	18	29	28	368	367	18
Future Vol, veh/h	18	29	28	368	367	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	33	18	7	10	6	17
Mvmt Flow	19	31	30	396	395	19

















Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	861	405	414	0	-	0
Stage 1	405	-	-	-	-	-
Stage 2	456	-	-	-	-	-
Critical Hdwy	6.73	6.38	4.17	-	-	-
Critical Hdwy Stg 1	5.73	-	-	-	-	-
Critical Hdwy Stg 2	5.73	-	-	-	-	-
Follow-up Hdwy	3.797	3.462	2.263	-	-	-
Pot Cap-1 Maneuver	289	612	1119	-	-	-
Stage 1	611	-	-	-	-	-
Stage 2	578	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	279	612	1119	-	-	-
Mov Cap-2 Maneuver	279	-	-	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	578	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.7	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1119	-	420	-	-
HCM Lane V/C Ratio	0.027	-	0.12	-	-
HCM Control Delay (s)	8.3	0	14.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Lanes, Volumes, Timings
4: Lunenburg Road & Old Union Turnpike

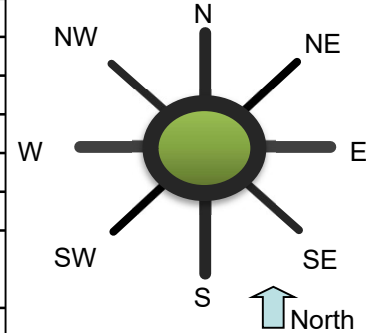
2028 No-Build Conditions
Weekday Morning

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	162	96	74	27	63	75	177	160	281	237	49
Future Volume (vph)	36	162	96	74	27	63	75	177	160	281	237	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	14	16	16	16	14	14	14	15	15	15
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		999			500			4300			875	
Travel Time (s)		22.7			11.4			97.7			19.9	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	6%	2%	3%	9%	0%	16%	6%	7%	21%	4%	4%	10%
Shared Lane Traffic (%)												
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

Area Type: Other
Control Type: Roundabout

General & Site Information		v 4.2
Analyst:	Justin Wadsworth	
Agency/Co:	TEC, Inc.	
Date:	5/4/2021	
Project or PI#:	T0852.04	
Year, Peak Hour:	2028 AM No-Build	
County/District:		
Intersection Name:	Lunenburg Rd (Rt. 70) / Old Union Turnpike Road	



Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			63		177		36	
	NE (2), vph								
	E (3), vph	281				160		162	
	SE (4), vph								
	S (5), vph	237		74				96	
	SW (6), vph								
	W (7), vph	49		27		75			
	NW (8), vph								
Output	Total Vehicles	567	0	164	0	412	0	294	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	95.3%	100.0%	90.0%	100.0%	89.2%	100.0%	96.8%	100.0%
% Heavy Vehicles	4.7%	0.0%	10.0%	0.0%	10.8%	0.0%	3.3%	0.0%
% Bicycle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.97	0.95	0.97	0.95	0.97	0.95	0.97	0.95
F _{HV}	0.955	1.000	0.909	1.000	0.903	1.000	0.969	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	71	0	202	0	38	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	302	0	0	0	183	0	172	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	255	0	84	0	0	0	102	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	53	0	31	0	86	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	609	0	186	0	471	0	313	0
Conflicting flow, pcu/h	200	0	326	0	513	0	641	0

Results: Approach Measures of Effectiveness								
HCM 6th Edition	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	1075	NA	899	NA	738	NA	695	NA
Entry Flow Rates, vph	582	0	169	0	425	0	303	0
V/C ratio	0.54		0.19		0.58		0.44	
Control Delay, sec/pcu	9.9		5.9		14.1		11.3	
LOS	A		A		B		B	
Average Queue (ft)	40		7		42		24	
95th % Queue (ft)	88		19		103		57	

Overall Intersection Measures of Effectiveness					
Int Control Delay (sec)	11.0	Int LOS	B	Max Approach V/C	0.58

Notes:

v 4.2

Unit Legend:

vph = vehicles per hour



















PHF = peak hour factor

F_{HV} = heavy vehicle factor

pcu = passenger car unit

Lanes, Volumes, Timings
5: Lunenburg Road & Woods Lane/Fort Pond Road

2028 No-Build Conditions
Weekday Morning

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	3	62	0	42	0	149	127	70	502	0
Future Volume (vph)	0	5	3	62	0	42	0	149	127	70	502	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16	11	11	11	11	11	11
Storage Length (ft)	0		0	65		0	0		55	0		0
Storage Lanes	0		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		500			420			875			1000	
Travel Time (s)		11.4			8.2			17.0			19.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	10%	0%	11%	0%	10%	8%	2%	4%	0%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔	↔		↔	
Traffic Vol, veh/h	0	5	3	62	0	42	0	149	127	70	502	0
Future Vol, veh/h	0	5	3	62	0	42	0	149	127	70	502	0
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	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	65	-	-	-	-	55	-	-	-
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, %	0	0	0	10	0	11	0	10	8	2	4	0
Mvmt Flow	0	5	3	65	0	44	0	155	132	73	523	0












Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	846	824	523	828	824	155	523	0	0	155	0	0
Stage 1	669	669	-	155	155	-	-	-	-	-	-	-
Stage 2	177	155	-	673	669	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.2	6.5	6.31	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.2	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.2	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.59	4	3.399	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	284	310	558	281	310	868	1054	-	-	1425	-	-
Stage 1	450	459	-	829	773	-	-	-	-	-	-	-
Stage 2	829	773	-	432	459	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	255	288	558	260	288	868	1054	-	-	1425	-	-
Mov Cap-2 Maneuver	255	288	-	260	288	-	-	-	-	-	-	-
Stage 1	450	426	-	829	773	-	-	-	-	-	-	-
Stage 2	787	773	-	394	426	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	15.5		17.7		0			0.9		
HCM LOS	C		C							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1054	-	-	352	260	868	1425	-	-
HCM Lane V/C Ratio	-	-	-	0.024	0.248	0.05	0.051	-	-
HCM Control Delay (s)	0	-	-	15.5	23.4	9.4	7.7	0	-
HCM Lane LOS	A	-	-	C	C	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	1	0.2	0.2	-	-

Lanes, Volumes, Timings
 6: Old Union Turnpike & Route 2 EB Ramps

2028 No-Build Conditions
 Weekday Morning

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	471	133	67	0	13	97
Future Volume (vph)	471	133	67	0	13	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	16	16	16
Storage Length (ft)	0			60	0	75
Storage Lanes	0			1	1	1
Taper Length (ft)	25				25	
Link Speed (mph)		40	40		30	
Link Distance (ft)		500	500		300	
Travel Time (s)		8.5	8.5		6.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	8%	4%	2%	0%	0%	17%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Int Delay, s/veh	6.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕	↕	↕	↕
Traffic Vol, veh/h	471	133	67	0	13	97
Future Vol, veh/h	471	133	67	0	13	97
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	-	-	-	60	0	75
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	8	4	2	0	0	17
Mvmt Flow	501	141	71	0	14	103












Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	71	0	-	0	1214
Stage 1	-	-	-	-	71
Stage 2	-	-	-	-	1143
Critical Hdwy	4.18	-	-	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	2.272	-	-	-	3.5
Pot Cap-1 Maneuver	1492	-	-	-	202
Stage 1	-	-	-	-	957
Stage 2	-	-	-	-	307
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1492	-	-	-	128
Mov Cap-2 Maneuver	-	-	-	-	128
Stage 1	-	-	-	-	609
Stage 2	-	-	-	-	307

Approach	EB	WB	SB
HCM Control Delay, s	6.7	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1492	-	-	-	128	951
HCM Lane V/C Ratio	0.336	-	-	-	0.108	0.109
HCM Control Delay (s)	8.6	0	-	-	36.5	9.2
HCM Lane LOS	A	A	-	-	E	A
HCM 95th %tile Q(veh)	1.5	-	-	-	0.4	0.4

Lanes, Volumes, Timings
 7: Route 2 WB Ramps & Fort Pond Road

2028 No-Build Conditions
 Weekday Morning

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	63	139	15	27	77	0
Future Volume (vph)	63	139	15	27	77	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	16	13	13	16	16
Storage Length (ft)		75	0		0	60
Storage Lanes		1	0		1	1
Taper Length (ft)			25		25	
Link Speed (mph)	35			35	30	
Link Distance (ft)	420			500	300	
Travel Time (s)	8.2			9.7	6.8	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	13%	2%	0%	12%	8%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Int Delay, s/veh 2.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑		↓	↓	↑
Traffic Vol, veh/h	63	139	15	27	77	0
Future Vol, veh/h	63	139	15	27	77	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Stop
Storage Length	-	75	-	-	0	60
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	13	2	0	12	8	0
Mvmt Flow	71	156	17	30	87	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	71
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	1542
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1542
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	836	-	-	-	1542	-
HCM Lane V/C Ratio	0.103	-	-	-	0.011	-
HCM Control Delay (s)	9.8	0	-	-	7.4	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	-	0	-

Lanes, Volumes, Timings
1: Main Street & Seven Bridge Road & Driveway

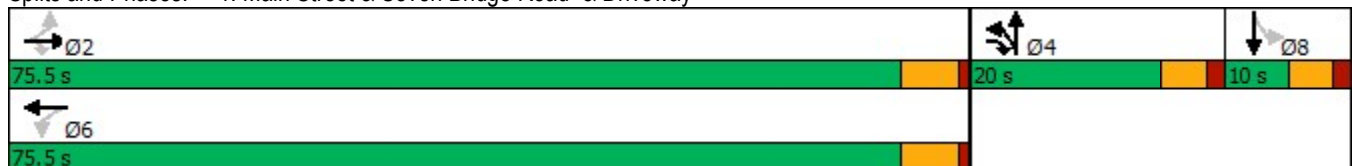
2028 No-Build Conditions
Weekday Evening

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	504	270	4	1202	0	222	0	3	0	0	0
Future Volume (vph)	0	504	270	4	1202	0	222	0	3	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	11	11	15	15	15	12	12	12
Storage Length (ft)	0		115	50		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35				30
Link Distance (ft)		1450			1000			1000				200
Travel Time (s)		28.2			19.5			19.5				4.5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	3%	2%	0%	2%	0%	2%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type		NA	pm+ov	Perm	NA		Split	NA				
Protected Phases		2	4		6		4	4				8
Permitted Phases	2		2	6						8		
Detector Phase	2	2	4	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0		5.0	5.0	
Minimum Split (s)	15.5	15.5	15.0	15.5	15.5		15.0	15.0		10.0	10.0	
Total Split (s)	75.5	75.5	20.0	75.5	75.5		20.0	20.0		10.0	10.0	
Total Split (%)	71.6%	71.6%	19.0%	71.6%	71.6%		19.0%	19.0%		9.5%	9.5%	
Maximum Green (s)	70.0	70.0	15.0	70.0	70.0		15.0	15.0		5.0	5.0	
Yellow Time (s)	4.5	4.5	3.5	4.5	4.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.5	1.0	1.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.5	5.0	5.5	5.5			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min	None	Min	Min		None	None		None	None	

Intersection Summary

Area Type: Other
 Cycle Length: 105.5
 Actuated Cycle Length: 92.9
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Main Street & Seven Bridge Road & Driveway



Queues

2028 No-Build Conditions

1: Main Street & Seven Bridge Road & Driveway

Weekday Evening

	→	↘	↙	←	↑
Lane Group	EBT	EBR	WBL	WBT	NBT
Lane Group Flow (vph)	531	284	4	1265	237
v/c Ratio	0.40	0.19	0.01	0.93	0.73
Control Delay	5.3	0.3	3.5	24.6	39.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	5.3	0.3	3.5	24.6	39.1
Queue Length 50th (ft)	88	0	0	498	90
Queue Length 95th (ft)	152	0	3	#1020	170
Internal Link Dist (ft)	1370			920	920
Turn Bay Length (ft)		115	50		
Base Capacity (vph)	1343	1512	586	1357	380
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.40	0.19	0.01	0.93	0.62

Intersection Summary

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













HCM 6th Signalized Intersection Summary
 1: Main Street & Seven Bridge Road & Driveway

2028 No-Build Conditions
 Weekday Evening

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	504	270	4	1202	0	222	0	3	0	0	0
Future Volume (veh/h)	0	504	270	4	1202	0	222	0	3	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1856	1870	1900	1870	1900	1945	1976	1976	1900	1900	1900
Adj Flow Rate, veh/h	0	531	284	4	1265	0	234	0	3	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	3	2	0	2	0	2	0	0	0	0	0
Cap, veh/h	0	1352	1390	506	1363	0	275	0	4	0	2	0
Arrive On Green	0.00	0.73	0.73	0.73	0.73	0.00	0.15	0.00	0.15	0.00	0.00	0.00
Sat Flow, veh/h	0	1856	1585	681	1870	0	1855	0	24	0	1900	0
Grp Volume(v), veh/h	0	531	284	4	1265	0	237	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1856	1585	681	1870	0	1879	0	0	0	1900	0
Q Serve(g_s), s	0.0	9.3	2.3	0.2	48.4	0.0	10.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	9.3	2.3	9.5	48.4	0.0	10.5	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00	0.99		0.01	0.00		0.00
Lane Grp Cap(c), veh/h	0	1352	1390	506	1363	0	279	0	0	0	2	0
V/C Ratio(X)	0.00	0.39	0.20	0.01	0.93	0.00	0.85	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1523	1536	569	1535	0	331	0	0	0	111	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	4.4	0.8	6.2	9.7	0.0	35.4	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.1	0.0	9.5	0.0	14.5	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.5	1.2	0.0	16.6	0.0	5.8	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	4.6	0.9	6.2	19.3	0.0	49.9	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	A	A	A	A	B	A	D	A	A	A	A	A
Approach Vol, veh/h		815			1269			237				0
Approach Delay, s/veh		3.3			19.2			49.9				0.0
Approach LOS		A			B			D				
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		67.6		17.6		67.6		0.0				
Change Period (Y+Rc), s		5.5		5.0		5.5		5.0				
Max Green Setting (Gmax), s		70.0		15.0		70.0		5.0				
Max Q Clear Time (g_c+I1), s		11.3		12.5		50.4		0.0				
Green Ext Time (p_c), s		4.9		0.2		11.8		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			16.8									
HCM 6th LOS			B									

Lanes, Volumes, Timings
2: Main Street & Lunenburg Road

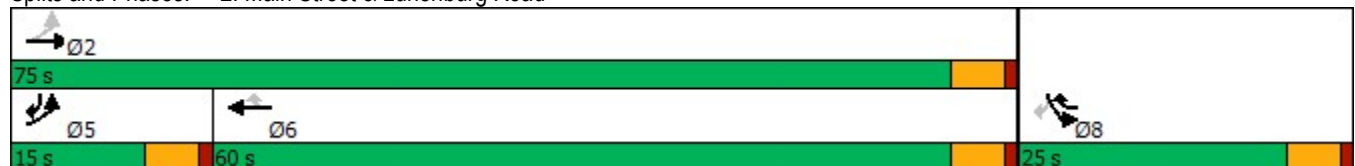
2028 No-Build Conditions
Weekday Evening

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	53	483	793	623	289	75
Future Volume (vph)	53	483	793	623	289	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Storage Length (ft)	100			160	0	240
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Right Turn on Red				Yes		No
Link Speed (mph)		35	35		45	
Link Distance (ft)		1000	1450		1000	
Travel Time (s)		19.5	28.2		15.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	3%	3%	1%	2%	0%
Shared Lane Traffic (%)						
Turn Type	pm+pt	NA	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	6	8	8	5
Permitted Phases	2			6		8
Detector Phase	5	2	6	8	8	5
Switch Phase						
Minimum Initial (s)	6.0	10.0	10.0	10.0	10.0	6.0
Minimum Split (s)	11.0	15.0	15.0	15.0	15.0	11.0
Total Split (s)	15.0	75.0	60.0	25.0	25.0	15.0
Total Split (%)	15.0%	75.0%	60.0%	25.0%	25.0%	15.0%
Maximum Green (s)	10.0	70.0	55.0	20.0	20.0	10.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Vehicle Extension (s)	2.0	3.0	3.0	2.0	2.0	2.0
Recall Mode	None	Min	Min	None	None	None

Intersection Summary







Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 82.4
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Main Street & Lunenburg Road



Queues
2: Main Street & Lunenburg Road

2028 No-Build Conditions
Weekday Evening

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	56	508	835	656	304	79
v/c Ratio	0.21	0.44	0.88	0.47	0.79	0.13
Control Delay	6.6	8.1	29.9	1.3	50.9	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.6	8.1	29.9	1.3	50.9	22.2
Queue Length 50th (ft)	10	119	392	0	164	30
Queue Length 95th (ft)	21	174	#682	17	#340	68
Internal Link Dist (ft)		920	1370		920	
Turn Bay Length (ft)	100			160		240
Base Capacity (vph)	334	1453	1218	1413	453	661
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	0.17	0.35	0.69	0.46	0.67	0.12













Intersection Summary

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

HCM 6th Signalized Intersection Summary










2: Main Street & Lunenburg Road

2028 No-Build Conditions
Weekday Evening

							
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	53	483	793	623	289	75	
Future Volume (veh/h)	53	483	793	623	289	75	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1900	1856	1856	1885	1870	1900	
Adj Flow Rate, veh/h	56	508	835	656	304	79	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Percent Heavy Veh, %	0	3	3	1	2	0	
Cap, veh/h	259	1235	1004	1179	351	407	
Arrive On Green	0.06	0.67	0.54	0.54	0.20	0.20	
Sat Flow, veh/h	1810	1856	1856	1598	1781	1610	
Grp Volume(v), veh/h	56	508	835	656	304	79	
Grp Sat Flow(s),veh/h/ln	1810	1856	1856	1598	1781	1610	
Q Serve(g_s), s	0.9	9.2	27.3	13.3	12.0	2.8	
Cycle Q Clear(g_c), s	0.9	9.2	27.3	13.3	12.0	2.8	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	259	1235	1004	1179	351	407	
V/C Ratio(X)	0.22	0.41	0.83	0.56	0.87	0.19	
Avail Cap(c_a), veh/h	407	1784	1401	1521	489	532	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	12.3	5.6	13.9	4.2	28.3	21.4	
Incr Delay (d2), s/veh	0.2	0.2	3.1	0.4	8.8	0.1	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.3	2.6	10.3	7.0	5.5	1.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	12.5	5.8	17.1	4.6	37.1	21.5	
LnGrp LOS	B	A	B	A	D	C	
Approach Vol, veh/h		564	1491		383		
Approach Delay, s/veh		6.5	11.6		33.9		
Approach LOS		A	B		C		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		53.5			9.1	44.4	19.4
Change Period (Y+Rc), s		5.0			5.0	5.0	5.0
Max Green Setting (Gmax), s		70.0			10.0	55.0	20.0
Max Q Clear Time (g_c+I1), s		11.2			2.9	29.3	14.0
Green Ext Time (p_c), s		3.6			0.0	10.1	0.3
Intersection Summary							
HCM 6th Ctrl Delay			13.9				
HCM 6th LOS			B				

Lanes, Volumes, Timings
 3: Lunenburg Road & McGovern Boulevard

2028 No-Build Conditions
 Weekday Evening

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	56	23	42	668	354	90
Future Volume (vph)	56	23	42	668	354	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	12	12	12	12
Link Speed (mph)	30			50	50	
Link Distance (ft)	1000			1000	4300	
Travel Time (s)	22.7			13.6	58.6	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	2%	6%	0%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Int Delay, s/veh	2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	56	23	42	668	354	90
Future Vol, veh/h	56	23	42	668	354	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	2	6	0
Mvmt Flow	58	24	44	696	369	94

















Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1200	416	463	0	0
Stage 1	416	-	-	-	-
Stage 2	784	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	206	641	1109	-	-
Stage 1	670	-	-	-	-
Stage 2	453	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	193	641	1109	-	-
Mov Cap-2 Maneuver	193	-	-	-	-
Stage 1	626	-	-	-	-
Stage 2	453	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	27.4	0.5	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1109	-	242	-	-
HCM Lane V/C Ratio	0.039	-	0.34	-	-
HCM Control Delay (s)	8.4	0	27.4	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.1	-	1.4	-	-

Lanes, Volumes, Timings
4: Lunenburg Road & Old Union Turnpike

2028 No-Build Conditions
Weekday Evening

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	50	157	112	81	143	222	354	67	56	227	275
Future Volume (vph)	77	50	157	112	81	143	222	354	67	56	227	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	14	16	16	16	14	14	14	15	15	15
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		999			500			4300			875	
Travel Time (s)		22.7			11.4			97.7			19.9	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	0%	0%	1%	1%	7%	1%	1%	4%	2%	9%	1%
Shared Lane Traffic (%)												
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

Area Type: Other
Control Type: Roundabout

General & Site Information		v 4.2
Analyst:	Justin Wadsworth	
Agency/Co:	TEC, Inc.	
Date:	5/4/2021	
Project or PI#:	T0852.04	
Year, Peak Hour:	2028 PM No-Build	
County/District:		
Intersection Name:	Lunenburg Rd (Rt. 70) / Old Union Turnpike Road	

		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			143		354		77	
	NE (2), vph								
	E (3), vph	56				67		50	
	SE (4), vph								
	S (5), vph	227		112				157	
	SW (6), vph								
	W (7), vph	275		81		222			
	NW (8), vph								
Output	Total Vehicles	558	0	336	0	643	0	284	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	95.9%	100.0%	96.2%	100.0%	98.9%	100.0%	100.0%	100.0%
% Heavy Vehicles	4.1%	0.0%	3.8%	0.0%	1.1%	0.0%	0.0%	0.0%
% Bicycle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.99	0.95	0.99	0.95	0.99	0.95	0.99	0.95
F _{HV}	0.961	1.000	0.963	1.000	0.989	1.000	1.000	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	150	0	362	0	78	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	59	0	0	0	68	0	51	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	239	0	117	0	0	0	159	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	289	0	85	0	227	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	587	0	352	0	657	0	287	0
Conflicting flow, pcu/h	429	0	666	0	187	0	415	0

Results: Approach Measures of Effectiveness								
HCM 6th Edition	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	856	NA	674	NA	1128	NA	904	NA
Entry Flow Rates, vph	564	0	339	0	649	0	287	0
V/C ratio	0.66		0.50		0.58		0.32	
Control Delay, sec/pcu	15.2		13.2		10.3		7.4	
LOS	C		B		B		A	
Average Queue (ft)	60		31		47		15	
95th % Queue (ft)	132		74		97		34	

Overall Intersection Measures of Effectiveness					
Int Control Delay (sec)	11.9	Int LOS	B	Max Approach V/C	0.66

Notes: v 4.2



















Unit Legend:
vph = vehicles per hour
PHF = peak hour factor
F_{HV} = heavy vehicle factor
pcu = passenger car unit

Bypass Lane Merge Point Analysis (if applicable)

Bypass Characteristics	Bypass #1	Bypass #2	Bypass #3	Bypass #4	Bypass #5	Bypass #6
Select Entry Leg from Bypass (FROM)						
Select Exit Leg for Bypass (TO)						
Does the bypass have a dedicated receiving lane?						
Volumes						
Right Turn Volume removed from Entry Leg						
Volume Characteristics (for entry leg)						
PHF						
F _{HV}						
F _{ped}						
NOTE: Volume Characteristics for Exit Leg are already taken into account						
Entry/Conflicting Flows						
Entry Flow, pcu/hr						
Conflicting Flow, pcu/hr						
Bypass Lane Results (HCM 6th Edition)						
Entry Capacity of Bypass, vph						
Flow Rates of Exiting Traffic, vph						
V/C ratio						
Control Delay, s/veh						
LOS						
95th % Queue (veh)						
95th % Queue (ft)						
Approach w/Bypass Delay, s/veh						
Approach w/Bypass LOS						

Lanes, Volumes, Timings
5: Lunenburg Road & Woods Lane/Fort Pond Road

2028 No-Build Conditions
Weekday Evening

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	4	370	0	327	2	457	116	31	184	1
Future Volume (vph)	0	0	4	370	0	327	2	457	116	31	184	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16	11	11	11	11	11	11
Storage Length (ft)	0		0	65		0	0		55	0		0
Storage Lanes	0		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		30			35			35				35
Link Distance (ft)		500			420			875				1000
Travel Time (s)		11.4			8.2			17.0				19.5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	0%	5%	0%	1%	0%	1%	2%	14%	1%	0%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection												
Int Delay, s/veh	70.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔	↔		↔	
Traffic Vol, veh/h	0	0	4	370	0	327	2	457	116	31	184	1
Future Vol, veh/h	0	0	4	370	0	327	2	457	116	31	184	1
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	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	65	-	-	-	-	55	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	5	0	1	0	1	2	14	1	0
Mvmt Flow	0	0	5	420	0	372	2	519	132	35	209	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	989	803	210	805	803	519	210	0	0	519	0	0
Stage 1	280	280	-	523	523	-	-	-	-	-	-	-
Stage 2	709	523	-	282	280	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.15	6.5	6.21	4.1	-	-	4.24	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.15	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.15	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.545	4	3.309	2.2	-	-	2.326	-	-
Pot Cap-1 Maneuver	228	319	835	~297	319	559	1373	-	-	989	-	-
Stage 1	731	683	-	532	534	-	-	-	-	-	-	-
Stage 2	428	534	-	718	683	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	74	306	835	~286	306	559	1373	-	-	989	-	-
Mov Cap-2 Maneuver	74	306	-	~286	306	-	-	-	-	-	-	-
Stage 1	730	656	-	531	533	-	-	-	-	-	-	-
Stage 2	143	533	-	686	656	-	-	-	-	-	-	-












Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.3		150.6		0		1.3	
HCM LOS	A		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1373	-	-	835	286	559	989	-	-
HCM Lane V/C Ratio	0.002	-	-	0.005	1.47	0.665	0.036	-	-
HCM Control Delay (s)	7.6	0	-	9.3	263.1	23.3	8.8	0	-
HCM Lane LOS	A	A	-	A	F	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	23.5	4.9	0.1	-	-

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

Lanes, Volumes, Timings
6: Old Union Turnpike & Route 2 EB Ramps

2028 No-Build Conditions
Weekday Evening

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	99	74	101	1	13	235
Future Volume (vph)	99	74	101	1	13	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	16	16	16
Storage Length (ft)	0			60	0	75
Storage Lanes	0			1	1	1
Taper Length (ft)	25				25	
Link Speed (mph)		40	40		30	
Link Distance (ft)		500	500		300	
Travel Time (s)		8.5	8.5		6.8	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	3%	5%	1%	0%	0%	3%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

HCM 6th TWSC
6: Old Union Turnpike & Route 2 EB Ramps

2028 No-Build Conditions
Weekday Evening

Intersection

Int Delay, s/veh	6.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↑	↗	↖	↗
Traffic Vol, veh/h	99	74	101	1	13	235
Future Vol, veh/h	99	74	101	1	13	235
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	-	-	-	60	0	75
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	3	5	1	0	0	3
Mvmt Flow	118	88	120	1	15	280












Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	120	0	-	0	444 120
Stage 1	-	-	-	-	120 -
Stage 2	-	-	-	-	324 -
Critical Hdwy	4.13	-	-	-	6.4 6.23
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.227	-	-	-	3.5 3.327
Pot Cap-1 Maneuver	1462	-	-	-	575 929
Stage 1	-	-	-	-	910 -
Stage 2	-	-	-	-	738 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1462	-	-	-	526 929
Mov Cap-2 Maneuver	-	-	-	-	526 -
Stage 1	-	-	-	-	833 -
Stage 2	-	-	-	-	738 -

Approach	EB	WB	SB
HCM Control Delay, s	4.4	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1462	-	-	-	526	929
HCM Lane V/C Ratio	0.081	-	-	-	0.029	0.301
HCM Control Delay (s)	7.7	0	-	-	12.1	10.5
HCM Lane LOS	A	A	-	-	B	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.1	1.3

Lanes, Volumes, Timings
 7: Route 2 WB Ramps & Fort Pond Road

2028 No-Build Conditions
 Weekday Evening

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	15	133	28	242	456	0
Future Volume (vph)	15	133	28	242	456	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	16	13	13	16	16
Storage Length (ft)		75	0		0	60
Storage Lanes		1	0		1	1
Taper Length (ft)			25		25	
Link Speed (mph)	35			35	30	
Link Distance (ft)	420			500	300	
Travel Time (s)	8.2			9.7	6.8	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	8%	4%	8%	2%	3%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Int Delay, s/veh 20.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗		↖	↖	↗
Traffic Vol, veh/h	15	133	28	242	456	0
Future Vol, veh/h	15	133	28	242	456	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Stop
Storage Length	-	75	-	-	0	60
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	8	4	8	2	3	0
Mvmt Flow	18	156	33	285	536	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	18
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.18
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.272
Pot Cap-1 Maneuver	-	-	1561
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1561
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	38.5
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	613	-	-	-	1561	-
HCM Lane V/C Ratio	0.875	-	-	-	0.021	-
HCM Control Delay (s)	38.5	0	-	-	7.4	0
HCM Lane LOS	E	A	-	-	A	A
HCM 95th %tile Q(veh)	10.2	-	-	-	0.1	-

Lanes, Volumes, Timings
1: Main Street & Seven Bridge Road & Driveway

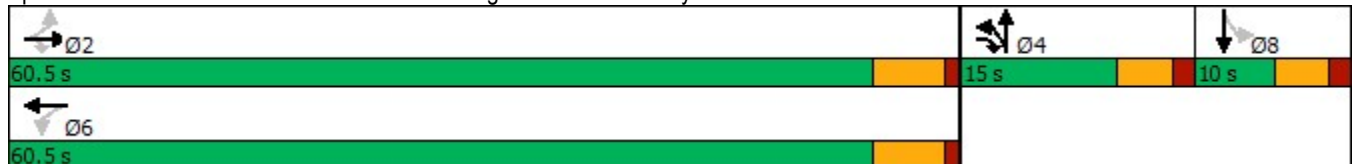
2028 No-Build Conditions
Saturday MIDDAY

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	33	750	5	247	1	479	2	28	0	2	0
Future Volume (vph)	1	33	750	5	247	1	479	2	28	0	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	11	11	13	13	13	12	12	12
Storage Length (ft)	0		115	50		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35				30
Link Distance (ft)		1450			1000			1000				200
Travel Time (s)		28.2			19.5			19.5				4.5
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
Heavy Vehicles (%)	0%	4%	2%	0%	1%	0%	2%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type	Perm	NA	pm+ov	Perm	NA		Split	NA				NA
Protected Phases		2	4		6		4	4				8
Permitted Phases	2		2	6						8		
Detector Phase	2	2	4	6	6		4	4		8		8
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0		5.0		5.0
Minimum Split (s)	15.5	15.5	15.0	15.5	15.5		15.0	15.0		10.0		10.0
Total Split (s)	60.5	60.5	15.0	60.5	60.5		15.0	15.0		10.0		10.0
Total Split (%)	70.8%	70.8%	17.5%	70.8%	70.8%		17.5%	17.5%		11.7%		11.7%
Maximum Green (s)	55.0	55.0	10.0	55.0	55.0		10.0	10.0		5.0		5.0
Yellow Time (s)	4.5	4.5	3.5	4.5	4.5		3.5	3.5		3.5		3.5
All-Red Time (s)	1.0	1.0	1.5	1.0	1.0		1.5	1.5		1.5		1.5
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0				0.0
Total Lost Time (s)		5.5	5.0	5.5	5.5			5.0				5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0		2.0	2.0		0.2		0.2
Recall Mode	Min	Min	None	Min	Min		None	None		None		None

Intersection Summary

Area Type: Other
 Cycle Length: 85.5
 Actuated Cycle Length: 33.9
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Main Street & Seven Bridge Road & Driveway



Queues
 1: Main Street & Seven Bridge Road & Driveway

2028 No-Build Conditions
 Saturday MIDDAY

	→	↘	↙	←	↑	↓
Lane Group	EBT	EBR	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	41	904	6	299	613	2
v/c Ratio	0.07	0.61	0.01	0.49	1.10	0.01
Control Delay	9.0	2.2	8.8	12.8	89.6	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.0	2.2	8.8	12.8	89.6	16.0
Queue Length 50th (ft)	4	0	1	36	~96	0
Queue Length 95th (ft)	20	15	6	104	#371	5
Internal Link Dist (ft)	1370			920	920	120
Turn Bay Length (ft)		115	50			
Base Capacity (vph)	1748	1491	1295	1817	555	287
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	0.02	0.61	0.00	0.16	1.10	0.01

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.













HCM 6th Signalized Intersection Summary
 1: Main Street & Seven Bridge Road & Driveway

2028 No-Build Conditions
 Saturday Midday

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	33	750	5	247	1	479	2	28	0	2	0
Future Volume (veh/h)	1	33	750	5	247	1	479	2	28	0	2	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1841	1870	1900	1885	1900	1945	1976	1976	1900	1900	1900
Adj Flow Rate, veh/h	1	40	904	6	298	1	577	2	34	0	2	0
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
Percent Heavy Veh, %	0	4	2	0	1	0	2	0	0	0	0	0
Cap, veh/h	73	947	1119	441	973	3	331	1	19	0	5	0
Arrive On Green	0.52	0.52	0.52	0.52	0.52	0.52	0.19	0.19	0.19	0.00	0.00	0.00
Sat Flow, veh/h	7	1828	1585	603	1878	6	1760	6	104	0	1900	0
Grp Volume(v), veh/h	41	0	904	6	0	299	613	0	0	0	2	0
Grp Sat Flow(s),veh/h/ln	1835	0	1585	603	0	1884	1869	0	0	0	1900	0
Q Serve(g_s), s	0.0	0.0	20.8	0.3	0.0	4.8	10.0	0.0	0.0	0.0	0.1	0.0
Cycle Q Clear(g_c), s	0.6	0.0	20.8	0.8	0.0	4.8	10.0	0.0	0.0	0.0	0.1	0.0
Prop In Lane	0.02		1.00	1.00		0.00	0.94		0.06	0.00		0.00
Lane Grp Cap(c), veh/h	1020	0	1119	441	0	976	351	0	0	0	5	0
V/C Ratio(X)	0.04	0.00	0.81	0.01	0.00	0.31	1.75	0.00	0.00	0.00	0.38	0.00
Avail Cap(c_a), veh/h	1952	0	1936	752	0	1947	351	0	0	0	179	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	6.3	0.0	5.4	6.5	0.0	7.3	21.6	0.0	0.0	0.0	26.5	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.4	0.0	0.0	0.2	346.9	0.0	0.0	0.0	16.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	8.9	0.0	0.0	1.5	37.7	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.3	0.0	6.8	6.5	0.0	7.5	368.5	0.0	0.0	0.0	42.8	0.0
LnGrp LOS	A	A	A	A	A	A	F	A	A	A	D	A
Approach Vol, veh/h		945			305			613			2	
Approach Delay, s/veh		6.8			7.5			368.5			42.8	
Approach LOS		A			A			F			D	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		33.1		15.0		33.1		5.1				
Change Period (Y+Rc), s		5.5		5.0		5.5		5.0				
Max Green Setting (Gmax), s		55.0		10.0		55.0		5.0				
Max Q Clear Time (g_c+I1), s		22.8		12.0		6.8		2.1				
Green Ext Time (p_c), s		4.8		0.0		1.9		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			125.8									
HCM 6th LOS			F									

Lanes, Volumes, Timings
2: Main Street & Lunenburg Road

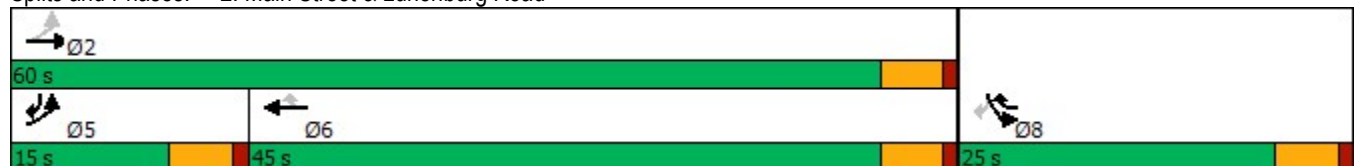
2028 No-Build Conditions
Saturday MIDDAY

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	51	384	413	315	397	50
Future Volume (vph)	51	384	413	315	397	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Storage Length (ft)	100			160	0	240
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Right Turn on Red				Yes		No
Link Speed (mph)		35	35		45	
Link Distance (ft)		1000	1450		1000	
Travel Time (s)		19.5	28.2		15.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	1%	2%	1%	2%	0%
Shared Lane Traffic (%)						
Turn Type	pm+pt	NA	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	6	8	8	5
Permitted Phases	2			6		8
Detector Phase	5	2	6	8	8	5
Switch Phase						
Minimum Initial (s)	6.0	10.0	10.0	10.0	10.0	6.0
Minimum Split (s)	11.0	15.0	15.0	15.0	15.0	11.0
Total Split (s)	15.0	60.0	45.0	25.0	25.0	15.0
Total Split (%)	17.6%	70.6%	52.9%	29.4%	29.4%	17.6%
Maximum Green (s)	10.0	55.0	40.0	20.0	20.0	10.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Vehicle Extension (s)	2.0	3.0	3.0	2.0	2.0	2.0
Recall Mode	None	Min	Min	None	None	None

Intersection Summary







Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 59
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Main Street & Lunenburg Road



Queues
2: Main Street & Lunenburg Road

2028 No-Build Conditions
Saturday MIDDAY

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	54	404	435	332	418	53
v/c Ratio	0.16	0.47	0.74	0.26	0.70	0.06
Control Delay	8.1	11.5	26.7	0.9	28.4	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.1	11.5	26.7	0.9	28.4	9.5
Queue Length 50th (ft)	9	87	139	0	132	9
Queue Length 95th (ft)	22	140	237	15	#334	31
Internal Link Dist (ft)		920	1370		920	
Turn Bay Length (ft)	100			160		240
Base Capacity (vph)	427	1631	1265	1289	601	959
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	0.13	0.25	0.34	0.26	0.70	0.06













Intersection Summary

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

HCM 6th Signalized Intersection Summary










2: Main Street & Lunenburg Road

2028 No-Build Conditions
Saturday Midday

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	51	384	413	315	397	50
Future Volume (veh/h)	51	384	413	315	397	50
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1885	1870	1885	1870	1900
Adj Flow Rate, veh/h	54	404	435	332	418	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	1	2	1	2	0
Cap, veh/h	364	956	624	973	491	548
Arrive On Green	0.07	0.51	0.33	0.33	0.28	0.28
Sat Flow, veh/h	1781	1885	1870	1598	1781	1610
Grp Volume(v), veh/h	54	404	435	332	418	53
Grp Sat Flow(s),veh/h/ln	1781	1885	1870	1598	1781	1610
Q Serve(g_s), s	0.8	6.2	9.3	4.7	10.2	1.0
Cycle Q Clear(g_c), s	0.8	6.2	9.3	4.7	10.2	1.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	364	956	624	973	491	548
V/C Ratio(X)	0.15	0.42	0.70	0.34	0.85	0.10
Avail Cap(c_a), veh/h	636	2253	1626	1829	774	804
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.9	7.1	13.3	4.4	15.8	10.3
Incr Delay (d2), s/veh	0.1	0.3	1.4	0.2	3.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.7	3.3	2.3	3.5	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	9.0	7.4	14.7	4.6	18.9	10.4
LnGrp LOS	A	A	B	A	B	B
Approach Vol, veh/h		458	767		471	
Approach Delay, s/veh		7.6	10.4		17.9	
Approach LOS		A	B		B	
Timer - Assigned Phs		2			5	6
Phs Duration (G+Y+Rc), s		28.3			8.0	20.3
Change Period (Y+Rc), s		5.0			5.0	5.0
Max Green Setting (Gmax), s		55.0			10.0	40.0
Max Q Clear Time (g_c+I1), s		8.2			2.8	11.3
Green Ext Time (p_c), s		2.6			0.0	4.1
Intersection Summary						
HCM 6th Ctrl Delay			11.7			
HCM 6th LOS			B			

Lanes, Volumes, Timings
 3: Lunenburg Road & McGovern Boulevard

2028 No-Build Conditions
 Saturday MIDDAY

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	19	9	5	369	441	21
Future Volume (vph)	19	9	5	369	441	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	12	12	12	12
Link Speed (mph)	30			50	50	
Link Distance (ft)	1000			1000	4300	
Travel Time (s)	22.7			13.6	58.6	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	11%	0%	3%	2%	5%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	9	5	369	441	21
Future Vol, veh/h	19	9	5	369	441	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	5	11	0	3	2	5
Mvmt Flow	20	9	5	384	459	22

















Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	864	470	481	0	-	0
Stage 1	470	-	-	-	-	-
Stage 2	394	-	-	-	-	-
Critical Hdwy	6.45	6.31	4.1	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.399	2.2	-	-	-
Pot Cap-1 Maneuver	321	575	1092	-	-	-
Stage 1	623	-	-	-	-	-
Stage 2	675	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	319	575	1092	-	-	-
Mov Cap-2 Maneuver	319	-	-	-	-	-
Stage 1	619	-	-	-	-	-
Stage 2	675	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.5	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1092	-	372	-	-
HCM Lane V/C Ratio	0.005	-	0.078	-	-
HCM Control Delay (s)	8.3	0	15.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Lanes, Volumes, Timings
4: Lunenburg Road & Old Union Turnpike

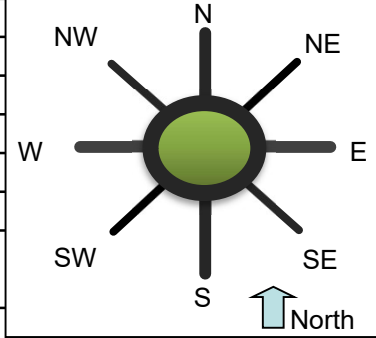
2028 No-Build Conditions
Saturday MIDDAY

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	60	131	205	60	109	114	173	114	82	185	136
Future Volume (vph)	36	60	131	205	60	109	114	173	114	82	185	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	14	16	16	16	14	14	14	15	15	15
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		999			500			4300			875	
Travel Time (s)		22.7			11.4			97.7			19.9	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	0%	2%	2%	1%	0%	6%	0%	4%	5%	14%	3%	1%
Shared Lane Traffic (%)												
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

Area Type: Other
Control Type: Roundabout

General & Site Information		v 4.2
Analyst:	Justin Wadsworth	
Agency/Co:	TEC, Inc.	
Date:	5/4/2021	
Project or PI#:	T0852.04	
Year, Peak Hour:	2028 SAT No-Build	
County/District:		
Intersection Name:	Lunenburg Rd (Rt. 70) / Old Union Turnpike Road	



Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			109		173		36	
	NE (2), vph								
	E (3), vph	82				114		60	
	SE (4), vph								
	S (5), vph	185		205				131	
	SW (6), vph								
	W (7), vph	136		60		114			
	NW (8), vph								
Output	Total Vehicles	403	0	374	0	401	0	227	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	94.6%	100.0%	97.8%	100.0%	97.2%	100.0%	99.1%	100.0%
% Heavy Vehicles	5.4%	0.0%	2.2%	0.0%	2.8%	0.0%	0.9%	0.0%
% Bicycle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.85	0.95	0.85	0.95	0.85	0.95	0.85	0.95
F _{HV}	0.949	1.000	0.978	1.000	0.973	1.000	0.991	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	131	0	209	0	43	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	102	0	0	0	138	0	71	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	229	0	247	0	0	0	156	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	169	0	72	0	138	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	500	0	450	0	485	0	269	0
Conflicting flow, pcu/h	457	0	390	0	216	0	578	0

Results: Approach Measures of Effectiveness								
HCM 6th Edition	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	822	NA	907	NA	1077	NA	759	NA
Entry Flow Rates, vph	474	0	440	0	472	0	267	0
V/C ratio	0.58		0.49		0.44		0.35	
Control Delay, sec/pcu	13.1		10.1		8.1		9.1	
LOS	B		B		A		A	
Average Queue (ft)	43		31		27		17	
95th % Queue (ft)	99		69		58		40	

Overall Intersection Measures of Effectiveness					
Int Control Delay (sec)	10.2	Int LOS	B	Max Approach V/C	0.58

Notes: v 4.2



















Unit Legend:
 vph = vehicles per hour
 PHF = peak hour factor
 F_{HV} = heavy vehicle factor
 pcu = passenger car unit

Bypass Lane Merge Point Analysis (if applicable)

Bypass Characteristics	Bypass #1	Bypass #2	Bypass #3	Bypass #4	Bypass #5	Bypass #6
Select Entry Leg from Bypass (FROM)						
Select Exit Leg for Bypass (TO)						
Does the bypass have a dedicated receiving lane?						
Volumes						
Right Turn Volume removed from Entry Leg						
Volume Characteristics (for entry leg)						
PHF						
F _{HV}						
F _{ped}						
NOTE: Volume Characteristics for Exit Leg are already taken into account						
Entry/Conflicting Flows						
Entry Flow, pcu/hr						
Conflicting Flow, pcu/hr						
Bypass Lane Results (HCM 6th Edition)						
Entry Capacity of Bypass, vph						
Flow Rates of Exiting Traffic, vph						
V/C ratio						
Control Delay, s/veh						
LOS						
95th % Queue (veh)						
95th % Queue (ft)						
Approach w/Bypass Delay, s/veh						
Approach w/Bypass LOS						

Lanes, Volumes, Timings
5: Lunenburg Road & Woods Lane/Fort Pond Road

2028 No-Build Conditions
Saturday MIDDAY

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	3	201	1	75	1	197	119	51	199	0
Future Volume (vph)	0	0	3	201	1	75	1	197	119	51	199	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16	11	11	11	11	11	11
Storage Length (ft)	0		0	65		0	0		55	0		0
Storage Lanes	0		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		500			500			875			1000	
Travel Time (s)		11.4			9.7			17.0			19.5	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	0%	0%	0%	4%	0%	8%	0%	5%	3%	8%	6%	0%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection

Int Delay, s/veh	8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕	↕		↕	
Traffic Vol, veh/h	0	0	3	201	1	75	1	197	119	51	199	0
Future Vol, veh/h	0	0	3	201	1	75	1	197	119	51	199	0
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	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	65	-	-	-	-	55	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	4	0	8	0	5	3	8	6	0
Mvmt Flow	0	0	4	239	1	89	1	235	142	61	237	0












Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	641	596	237	598	596	235	237	0	0	235	0	0
Stage 1	359	359	-	237	237	-	-	-	-	-	-	-
Stage 2	282	237	-	361	359	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.14	6.5	6.28	4.1	-	-	4.18	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.14	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.14	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.536	4	3.372	2.2	-	-	2.272	-	-
Pot Cap-1 Maneuver	390	420	807	411	420	789	1342	-	-	1298	-	-
Stage 1	663	631	-	762	713	-	-	-	-	-	-	-
Stage 2	729	713	-	653	631	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	331	397	807	392	397	789	1342	-	-	1298	-	-
Mov Cap-2 Maneuver	331	397	-	392	397	-	-	-	-	-	-	-
Stage 1	662	597	-	761	712	-	-	-	-	-	-	-
Stage 2	645	712	-	615	597	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s	9.5		22.8			0			1.6		
HCM LOS	A		C								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1342	-	-	807	392	779	1298	-	-
HCM Lane V/C Ratio	0.001	-	-	0.004	0.61	0.116	0.047	-	-
HCM Control Delay (s)	7.7	0	-	9.5	27.6	10.2	7.9	0	-
HCM Lane LOS	A	A	-	A	D	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	3.9	0.4	0.1	-	-

Lanes, Volumes, Timings
6: Old Union Turnpike & Route 2 EB Ramps

2028 No-Build Conditions
Saturday MIDDAY

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	177	78	197	3	19	177
Future Volume (vph)	177	78	197	3	19	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	16	16	16
Storage Length (ft)	0			60	0	75
Storage Lanes	0			1	1	1
Taper Length (ft)	25				25	
Link Speed (mph)		40	40		30	
Link Distance (ft)		500	500		300	
Travel Time (s)		8.5	8.5		6.8	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	13%	1%	0%	0%	0%	5%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection

Int Delay, s/veh	5.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↑	↔	↔	↔
Traffic Vol, veh/h	177	78	197	3	19	177
Future Vol, veh/h	177	78	197	3	19	177
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	-	-	-	60	0	75
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	13	1	0	0	0	5
Mvmt Flow	208	92	232	4	22	208

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	232	0	-	0	740
Stage 1	-	-	-	-	232
Stage 2	-	-	-	-	508
Critical Hdwy	4.23	-	-	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	2.317	-	-	-	3.5
Pot Cap-1 Maneuver	1274	-	-	-	387
Stage 1	-	-	-	-	811
Stage 2	-	-	-	-	608
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1274	-	-	-	320
Mov Cap-2 Maneuver	-	-	-	-	320
Stage 1	-	-	-	-	672
Stage 2	-	-	-	-	608

Approach	EB	WB	SB
HCM Control Delay, s	5.8	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1274	-	-	-	320	800
HCM Lane V/C Ratio	0.163	-	-	-	0.07	0.26
HCM Control Delay (s)	8.4	0	-	-	17.1	11.1
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0.6	-	-	-	0.2	1

2028 Build Condition

Lanes, Volumes, Timings
1: Main Street & Seven Bridge Road & Driveway

2028 Build Conditions
Weekday Morning

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	785	419	16	531	0	407	0	7	0	0	0
Future Volume (vph)	0	785	419	16	531	0	407	0	7	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	11	11	15	15	15	12	12	12
Storage Length (ft)	0		115	50		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35				30
Link Distance (ft)		1450			1000			1000				200
Travel Time (s)		28.2			19.5			19.5				4.5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	6%	3%	0%	6%	0%	7%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type		NA	pm+ov	Perm	NA		Split	NA				
Protected Phases		2	4		6		4	4				8
Permitted Phases	2		2	6						8		
Detector Phase	2	2	4	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0		5.0	5.0	
Minimum Split (s)	15.5	15.5	15.0	15.5	15.5		15.0	15.0		10.0	10.0	
Total Split (s)	60.5	60.5	15.0	60.5	60.5		15.0	15.0		10.0	10.0	
Total Split (%)	70.8%	70.8%	17.5%	70.8%	70.8%		17.5%	17.5%		11.7%	11.7%	
Maximum Green (s)	55.0	55.0	10.0	55.0	55.0		10.0	10.0		5.0	5.0	
Yellow Time (s)	4.5	4.5	3.5	4.5	4.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.5	1.0	1.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.5	5.0	5.5	5.5			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0		2.0	2.0		0.2	0.2	
Recall Mode	Min	Min	None	Min	Min		None	None		None	None	

Intersection Summary

Area Type: Other
 Cycle Length: 85.5
 Actuated Cycle Length: 52.1
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Main Street & Seven Bridge Road & Driveway



Queues
 1: Main Street & Seven Bridge Road & Driveway

2028 Build Conditions
 Weekday Morning

	→	↘	↙	←	↑
Lane Group	EBT	EBR	WBL	WBT	NBT
Lane Group Flow (vph)	844	451	17	571	446
v/c Ratio	0.82	0.30	0.08	0.56	1.00
Control Delay	15.7	0.5	4.6	8.2	66.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.7	0.5	4.6	8.2	66.1
Queue Length 50th (ft)	166	0	2	86	~107
Queue Length 95th (ft)	283	0	7	140	#374
Internal Link Dist (ft)	1370			920	920
Turn Bay Length (ft)		115	50		
Base Capacity (vph)	1655	1516	342	1655	447
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.51	0.30	0.05	0.35	1.00

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 1: Main Street & Seven Bridge Road & Driveway

2028 Build Conditions
 Weekday Morning

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	785	419	16	531	0	407	0	7	0	0	0
Future Volume (veh/h)	0	785	419	16	531	0	407	0	7	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1811	1856	1900	1811	1900	1868	1976	1976	1900	1900	1900
Adj Flow Rate, veh/h	0	844	451	17	571	0	438	0	8	0	0	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	6	3	0	6	0	7	0	0	0	0	0
Cap, veh/h	0	1071	1243	245	1071	0	368	0	7	0	4	0
Arrive On Green	0.00	0.59	0.59	0.59	0.59	0.00	0.20	0.00	0.20	0.00	0.00	0.00
Sat Flow, veh/h	0	1811	1572	433	1811	0	1844	0	34	0	1900	0
Grp Volume(v), veh/h	0	844	451	17	571	0	446	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1811	1572	433	1811	0	1878	0	0	0	1900	0
Q Serve(g_s), s	0.0	17.9	4.2	1.6	9.4	0.0	10.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	17.9	4.2	19.5	9.4	0.0	10.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00	0.98		0.02	0.00		0.00
Lane Grp Cap(c), veh/h	0	1071	1243	245	1071	0	374	0	0	0	4	0
V/C Ratio(X)	0.00	0.79	0.36	0.07	0.53	0.00	1.19	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1986	2038	464	1986	0	374	0	0	0	189	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.8	1.5	15.3	6.1	0.0	20.1	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.3	0.2	0.1	0.4	0.0	109.5	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.5	1.7	0.1	2.3	0.0	15.2	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	9.2	1.7	15.4	6.5	0.0	129.6	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	F	A	A	A	A	A
Approach Vol, veh/h		1295			588			446				0
Approach Delay, s/veh		6.6			6.8			129.6				0.0
Approach LOS		A			A			F				
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		35.1		15.0		35.1		0.0				
Change Period (Y+Rc), s		5.5		5.0		5.5		5.0				
Max Green Setting (Gmax), s		55.0		10.0		55.0		5.0				
Max Q Clear Time (g_c+I1), s		19.9		12.0		21.5		0.0				
Green Ext Time (p_c), s		9.8		0.0		4.4		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				30.2								
HCM 6th LOS				C								

Lanes, Volumes, Timings
2: Main Street & Lunenburg Road

2028 Build Conditions
Weekday Morning

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	88	782	384	562	417	49
Future Volume (vph)	88	782	384	562	417	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Storage Length (ft)	100			160	0	240
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Right Turn on Red				Yes		No
Link Speed (mph)		35	35		45	
Link Distance (ft)		1000	1450		1000	
Travel Time (s)		19.5	28.2		15.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	4%	6%	6%	8%	3%
Shared Lane Traffic (%)						
Turn Type	pm+pt	NA	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	6	8	8	5
Permitted Phases	2			6		8
Detector Phase	5	2	6	8	8	5
Switch Phase						
Minimum Initial (s)	6.0	10.0	10.0	10.0	10.0	6.0
Minimum Split (s)	11.0	15.0	15.0	15.0	15.0	11.0
Total Split (s)	15.0	60.0	45.0	25.0	25.0	15.0
Total Split (%)	17.6%	70.6%	52.9%	29.4%	29.4%	17.6%
Maximum Green (s)	10.0	55.0	40.0	20.0	20.0	10.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Vehicle Extension (s)	2.0	3.0	3.0	2.0	2.0	2.0
Recall Mode	None	Min	Min	None	None	None

Intersection Summary







Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 68.3
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Main Street & Lunenburg Road



Queues
2: Main Street & Lunenburg Road

2028 Build Conditions
Weekday Morning













						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	95	841	413	604	448	53
v/c Ratio	0.22	0.87	0.57	0.46	0.92	0.07
Control Delay	7.7	23.3	19.0	1.4	54.9	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.7	23.3	19.0	1.4	54.9	14.0
Queue Length 50th (ft)	17	268	133	0	177	11
Queue Length 95th (ft)	33	418	217	17	#470	41
Internal Link Dist (ft)		920	1370		920	
Turn Bay Length (ft)	100			160		240
Base Capacity (vph)	495	1447	1050	1309	485	797
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	0.19	0.58	0.39	0.46	0.92	0.07

Intersection Summary

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










HCM 6th Signalized Intersection Summary
2: Main Street & Lunenburg Road

2028 Build Conditions
Weekday Morning

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	88	782	384	562	417	49
Future Volume (veh/h)	88	782	384	562	417	49
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1841	1811	1811	1781	1856
Adj Flow Rate, veh/h	95	841	413	604	448	53
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	4	6	6	8	3
Cap, veh/h	369	993	680	1025	496	585
Arrive On Green	0.08	0.54	0.38	0.38	0.29	0.29
Sat Flow, veh/h	1781	1841	1811	1535	1697	1572
Grp Volume(v), veh/h	95	841	413	604	448	53
Grp Sat Flow(s),veh/h/ln	1781	1841	1811	1535	1697	1572
Q Serve(g_s), s	1.7	23.0	11.0	12.8	15.1	1.3
Cycle Q Clear(g_c), s	1.7	23.0	11.0	12.8	15.1	1.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	369	993	680	1025	496	585
V/C Ratio(X)	0.26	0.85	0.61	0.59	0.90	0.09
Avail Cap(c_a), veh/h	526	1702	1218	1481	570	654
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.9	11.6	15.0	5.4	20.2	12.1
Incr Delay (d2), s/veh	0.1	2.1	0.9	0.5	15.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	7.5	4.0	7.3	7.1	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.0	13.7	15.9	5.9	35.4	12.2
LnGrp LOS	B	B	B	A	D	B
Approach Vol, veh/h		936	1017		501	
Approach Delay, s/veh		13.3	10.0		33.0	
Approach LOS		B	A		C	
Timer - Assigned Phs		2			5	6
Phs Duration (G+Y+Rc), s		37.1			9.8	27.3
Change Period (Y+Rc), s		5.0			5.0	5.0
Max Green Setting (Gmax), s		55.0			10.0	40.0
Max Q Clear Time (g_c+1), s		25.0			3.7	14.8
Green Ext Time (p_c), s		7.1			0.0	5.3
Green Ext Time (p_c), s						0.3
Intersection Summary						
HCM 6th Ctrl Delay			16.0			
HCM 6th LOS			B			

Lanes, Volumes, Timings
 3: Lunenburg Road & McGovern Boulevard

2028 Build Conditions
 Weekday Morning

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	149	117	289	366	366	470
Future Volume (vph)	149	117	289	366	366	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	12	12	12	12
Link Speed (mph)	30			50	50	
Link Distance (ft)	1000			1000	4300	
Travel Time (s)	22.7			13.6	58.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	33%	18%	7%	10%	6%	17%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Int Delay, s/veh	239.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			4	4	
Traffic Vol, veh/h	149	117	289	366	366	470
Future Vol, veh/h	149	117	289	366	366	470
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	33	18	7	10	6	17
Mvmt Flow	160	126	311	394	394	505

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1663	647	899	0	0
Stage 1	647	-	-	-	-
Stage 2	1016	-	-	-	-
Critical Hdwy	6.73	6.38	4.17	-	-
Critical Hdwy Stg 1	5.73	-	-	-	-
Critical Hdwy Stg 2	5.73	-	-	-	-
Follow-up Hdwy	3.797	3.462	2.263	-	-
Pot Cap-1 Maneuver	~ 90	444	735	-	-
Stage 1	467	-	-	-	-
Stage 2	307	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	~ 41	444	735	-	-
Mov Cap-2 Maneuver	~ 41	-	-	-	-
Stage 1	214	-	-	-	-
Stage 2	307	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, \$	1567.1	5.9	0
HCM LOS	F		

















Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	735	-	68	-	-
HCM Lane V/C Ratio	0.423	-	4.206	-	-
HCM Control Delay (s)	13.4	\$	1567.1	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	2.1	-	30.7	-	-

Notes

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

Lanes, Volumes, Timings
4: Lunenburg Road & Old Union Turnpike

2028 Build Conditions
Weekday Morning

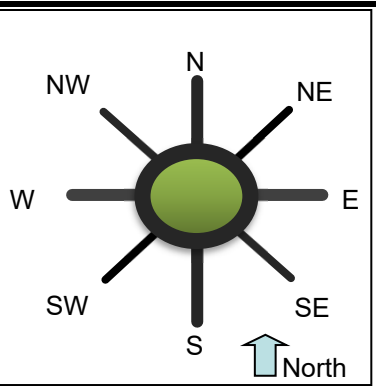
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	162	151	374	27	63	91	272	178	281	333	49
Future Volume (vph)	36	162	151	374	27	63	91	272	178	281	333	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	14	16	16	16	14	14	14	15	15	15
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		999			500			4300			875	
Travel Time (s)		22.7			11.4			97.7			19.9	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	6%	2%	3%	9%	0%	16%	6%	7%	21%	4%	4%	10%
Shared Lane Traffic (%)												
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

Area Type: Other
Control Type: Roundabout

General & Site Information v 4.2

Analyst:	Samuel W. Gregorio
Agency/Co:	TEC, Inc.
Date:	7/23/2021
Project or PI#:	T0852.04
Year, Peak Hour:	2028 AM Build
County/District:	
Intersection Name:	Lunenburg Rd (Rt. 70) / Old Union Turnpike Road



Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			63		272		36	
	NE (2), vph								
	E (3), vph	281				178		162	
	SE (4), vph								
	S (5), vph	333		374				151	
	SW (6), vph								
	W (7), vph	49		27		91			
	NW (8), vph								
Output	Total Vehicles	663	0	464	0	541	0	349	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	95.3%	100.0%	89.9%	100.0%	89.2%	100.0%	96.8%	100.0%
% Heavy Vehicles	4.7%	0.0%	10.1%	0.0%	10.8%	0.0%	3.3%	0.0%
% Bicycle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.97	0.95	0.97	0.95	0.97	0.95	0.97	0.95
F _{HV}	0.955	1.000	0.908	1.000	0.903	1.000	0.969	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	72	0	311	0	38	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	302	0	0	0	203	0	172	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	358	0	425	0	0	0	161	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	53	0	31	0	104	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	713	0	527	0	618	0	371	0
Conflicting flow, pcu/h	559	0	453	0	513	0	1084	0

Results: Approach Measures of Effectiveness								
HCM 6th Edition	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	745	NA	790	NA	738	NA	442	NA
Entry Flow Rates, vph	681	0	478	0	558	0	360	0
V/C ratio	0.91		0.61		0.76		0.81	
Control Delay, sec/pcu	38.5		14.3		22.1		39.1	
LOS	E		B		C		E	
Average Queue (ft)	182		48		86		98	
95th % Queue (ft)	326		115		196		195	

Overall Intersection Measures of Effectiveness					
Int Control Delay (sec)	28.6	Int LOS	D	Max Approach V/C	0.91

Notes:

v 4.2

Unit Legend:

vph = vehicles per hour



















PHF = peak hour factor

F_{HV} = heavy vehicle factor

pcu = passenger car unit

Lanes, Volumes, Timings
5: Lunenburg Road & Woods Lane/Fort Pond Road

2028 Build Conditions
Weekday Morning

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	3	114	0	42	0	162	209	70	546	0
Future Volume (vph)	0	5	3	114	0	42	0	162	209	70	546	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16	11	11	11	11	11	11
Storage Length (ft)	0		0	65		0	0		55	0		0
Storage Lanes	0		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		500			420			875			1000	
Travel Time (s)		11.4			8.2			17.0			19.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	10%	0%	11%	0%	10%	8%	2%	4%	0%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

HCM 6th TWSC
 5: Lunenburg Road & Woods Lane/Fort Pond Road

2028 Build Conditions
 Weekday Morning

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕	↕		↕	
Traffic Vol, veh/h	0	5	3	114	0	42	0	162	209	70	546	0
Future Vol, veh/h	0	5	3	114	0	42	0	162	209	70	546	0
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	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	65	-	-	-	-	55	-	-	-
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, %	0	0	0	10	0	11	0	10	8	2	4	0
Mvmt Flow	0	5	3	119	0	44	0	169	218	73	569	0












Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	906	884	569	888	884	169	569	0	0	169	0	0
Stage 1	715	715	-	169	169	-	-	-	-	-	-	-
Stage 2	191	169	-	719	715	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.2	6.5	6.31	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.2	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.2	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.59	4	3.399	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	259	286	525	256	286	852	1013	-	-	1409	-	-
Stage 1	425	438	-	814	763	-	-	-	-	-	-	-
Stage 2	815	763	-	407	438	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	232	264	525	236	264	852	1013	-	-	1409	-	-
Mov Cap-2 Maneuver	232	264	-	236	264	-	-	-	-	-	-	-
Stage 1	425	405	-	814	763	-	-	-	-	-	-	-
Stage 2	773	763	-	369	405	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.4	28	0	0.9
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1013	-	-	324	236	852	1409	-	-
HCM Lane V/C Ratio	-	-	-	0.026	0.503	0.051	0.052	-	-
HCM Control Delay (s)	0	-	-	16.4	34.8	9.5	7.7	0	-
HCM Lane LOS	A	-	-	C	D	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	2.6	0.2	0.2	-	-

Lanes, Volumes, Timings
 6: Old Union Turnpike & Route 2 EB Ramps

2028 Build Conditions
 Weekday Morning

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	487	135	74	0	13	390
Future Volume (vph)	487	135	74	0	13	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	16	16	16
Storage Length (ft)	0			60	0	75
Storage Lanes	0			1	1	1
Taper Length (ft)	25				25	
Link Speed (mph)		40	40		30	
Link Distance (ft)		500	500		300	
Travel Time (s)		8.5	8.5		6.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	8%	4%	2%	0%	0%	17%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Int Delay, s/veh	8.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↑	↗	↖	↗
Traffic Vol, veh/h	487	135	74	0	13	390
Future Vol, veh/h	487	135	74	0	13	390
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	-	-	-	60	0	75
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	8	4	2	0	0	17
Mvmt Flow	518	144	79	0	14	415












Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	79	0	-	0	1259
Stage 1	-	-	-	-	79
Stage 2	-	-	-	-	1180
Critical Hdwy	4.18	-	-	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	2.272	-	-	-	3.5
Pot Cap-1 Maneuver	1482	-	-	-	190
Stage 1	-	-	-	-	949
Stage 2	-	-	-	-	295
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1482	-	-	-	118
Mov Cap-2 Maneuver	-	-	-	-	118
Stage 1	-	-	-	-	588
Stage 2	-	-	-	-	295

Approach	EB	WB	SB
HCM Control Delay, s	6.8	0	12.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1482	-	-	-	118	941
HCM Lane V/C Ratio	0.35	-	-	-	0.117	0.441
HCM Control Delay (s)	8.7	0	-	-	39.5	11.8
HCM Lane LOS	A	A	-	-	E	B
HCM 95th %tile Q(veh)	1.6	-	-	-	0.4	2.3

Lanes, Volumes, Timings
 7: Route 2 WB Ramps & Fort Pond Road

2028 Build Conditions
 Weekday Morning

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	65	219	15	34	122	0
Future Volume (vph)	65	219	15	34	122	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	16	13	13	16	16
Storage Length (ft)		75	0		0	60
Storage Lanes		1	0		1	1
Taper Length (ft)			25		25	
Link Speed (mph)	35			35	30	
Link Distance (ft)	420			500	300	
Travel Time (s)	8.2			9.7	6.8	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	13%	2%	0%	12%	8%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Int Delay, s/veh	3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑		↑	↑	↑
Traffic Vol, veh/h	65	219	15	34	122	0
Future Vol, veh/h	65	219	15	34	122	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Stop
Storage Length	-	75	-	-	0	60
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	13	2	0	12	8	0
Mvmt Flow	73	246	17	38	137	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	73	0	145
Stage 1	-	-	-	-	73
Stage 2	-	-	-	-	72
Critical Hdwy	-	-	4.1	-	6.48
Critical Hdwy Stg 1	-	-	-	-	5.48
Critical Hdwy Stg 2	-	-	-	-	5.48
Follow-up Hdwy	-	-	2.2	-	3.572
Pot Cap-1 Maneuver	-	-	1540	-	834
Stage 1	-	-	-	-	935
Stage 2	-	-	-	-	936
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1540	-	825
Mov Cap-2 Maneuver	-	-	-	-	825
Stage 1	-	-	-	-	935
Stage 2	-	-	-	-	926

Approach	EB	WB	NB
HCM Control Delay, s	0	2.3	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	825	-	-	-	1540	-
HCM Lane V/C Ratio	0.166	-	-	-	0.011	-
HCM Control Delay (s)	10.2	0	-	-	7.4	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	-	0	-

Lanes, Volumes, Timings
1: Main Street & Seven Bridge Road & Driveway

2028 Build Conditions
Weekday Evening

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	553	405	4	1237	0	309	0	3	0	0	0
Future Volume (vph)	0	553	405	4	1237	0	309	0	3	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	11	11	15	15	15	12	12	12
Storage Length (ft)	0		115	50		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35				30
Link Distance (ft)		1450			1000			1000				200
Travel Time (s)		28.2			19.5			19.5				4.5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	3%	2%	0%	2%	0%	2%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type		NA	pm+ov	Perm	NA		Split	NA				
Protected Phases		2	4		6		4	4				8
Permitted Phases	2		2	6						8		
Detector Phase	2	2	4	6	6		4	4		8		8
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0		5.0	5.0	
Minimum Split (s)	15.5	15.5	15.0	15.5	15.5		15.0	15.0		10.0	10.0	
Total Split (s)	75.5	75.5	20.0	75.5	75.5		20.0	20.0		10.0	10.0	
Total Split (%)	71.6%	71.6%	19.0%	71.6%	71.6%		19.0%	19.0%		9.5%	9.5%	
Maximum Green (s)	70.0	70.0	15.0	70.0	70.0		15.0	15.0		5.0	5.0	
Yellow Time (s)	4.5	4.5	3.5	4.5	4.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.5	1.0	1.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.5	5.0	5.5	5.5			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min	None	Min	Min		None	None		None	None	

Intersection Summary

Area Type: Other
 Cycle Length: 105.5
 Actuated Cycle Length: 95.3
 Natural Cycle: 130
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Main Street & Seven Bridge Road & Driveway



Queues

2028 Build Conditions

1: Main Street & Seven Bridge Road & Driveway

Weekday Evening

	→	↘	↙	←	↑
Lane Group	EBT	EBR	WBL	WBT	NBT
Lane Group Flow (vph)	582	426	4	1302	328
v/c Ratio	0.44	0.28	0.01	0.98	0.89
Control Delay	6.3	0.5	3.5	35.3	57.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	6.3	0.5	3.5	35.3	57.1
Queue Length 50th (ft)	117	0	1	639	152
Queue Length 95th (ft)	173	0	3	#1067	#307
Internal Link Dist (ft)	1370			920	920
Turn Bay Length (ft)		115	50		
Base Capacity (vph)	1309	1521	525	1322	372
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.44	0.28	0.01	0.98	0.88

Intersection Summary

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













HCM 6th Signalized Intersection Summary
 1: Main Street & Seven Bridge Road & Driveway

2028 Build Conditions
 Weekday Evening

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	553	405	4	1237	0	309	0	3	0	0	0
Future Volume (veh/h)	0	553	405	4	1237	0	309	0	3	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1856	1870	1900	1870	1900	1945	1976	1976	1900	1900	1900
Adj Flow Rate, veh/h	0	582	426	4	1302	0	325	0	3	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	3	2	0	2	0	2	0	0	0	0	0
Cap, veh/h	0	1347	1406	418	1357	0	300	0	3	0	2	0
Arrive On Green	0.00	0.73	0.73	0.73	0.73	0.00	0.16	0.00	0.16	0.00	0.00	0.00
Sat Flow, veh/h	0	1856	1585	568	1870	0	1863	0	17	0	1900	0
Grp Volume(v), veh/h	0	582	426	4	1302	0	328	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1856	1585	568	1870	0	1880	0	0	0	1900	0
Q Serve(g_s), s	0.0	11.7	3.9	0.3	58.4	0.0	15.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	11.7	3.9	11.9	58.4	0.0	15.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00	0.99		0.01	0.00		0.00
Lane Grp Cap(c), veh/h	0	1347	1406	418	1357	0	303	0	0	0	2	0
V/C Ratio(X)	0.00	0.43	0.30	0.01	0.96	0.00	1.08	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1397	1449	434	1408	0	303	0	0	0	102	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	5.1	0.8	7.5	11.5	0.0	39.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.1	0.0	15.1	0.0	75.2	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.4	2.4	0.0	22.7	0.0	13.0	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	5.3	0.9	7.5	26.6	0.0	114.2	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	A	A	A	A	C	A	F	A	A	A	A	A
Approach Vol, veh/h		1008			1306			328				0
Approach Delay, s/veh		3.5			26.5			114.2				0.0
Approach LOS		A			C			F				
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		73.0		20.0		73.0		0.0				
Change Period (Y+Rc), s		5.5		5.0		5.5		5.0				
Max Green Setting (Gmax), s		70.0		15.0		70.0		5.0				
Max Q Clear Time (g_c+I1), s		13.7		17.0		60.4		0.0				
Green Ext Time (p_c), s		6.3		0.0		7.1		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			28.6									
HCM 6th LOS			C									

Lanes, Volumes, Timings
2: Main Street & Lunenburg Road

2028 Build Conditions
Weekday Evening

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	68	483	793	745	473	97
Future Volume (vph)	68	483	793	745	473	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Storage Length (ft)	100			160	0	240
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Right Turn on Red				Yes		No
Link Speed (mph)		35	35		45	
Link Distance (ft)		1000	1450		1000	
Travel Time (s)		19.5	28.2		15.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	3%	3%	1%	2%	0%
Shared Lane Traffic (%)						
Turn Type	pm+pt	NA	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	6	8	8	5
Permitted Phases	2			6		8
Detector Phase	5	2	6	8	8	5
Switch Phase						
Minimum Initial (s)	6.0	10.0	10.0	10.0	10.0	6.0
Minimum Split (s)	11.0	15.0	15.0	15.0	15.0	11.0
Total Split (s)	15.0	75.0	60.0	25.0	25.0	15.0
Total Split (%)	15.0%	75.0%	60.0%	25.0%	25.0%	15.0%
Maximum Green (s)	10.0	70.0	55.0	20.0	20.0	10.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Vehicle Extension (s)	2.0	3.0	3.0	2.0	2.0	2.0
Recall Mode	None	Min	Min	None	None	None

Intersection Summary







Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 86.4
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Main Street & Lunenburg Road



Queues
2: Main Street & Lunenburg Road

2028 Build Conditions
Weekday Evening













						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	72	508	835	784	498	102
v/c Ratio	0.28	0.44	0.89	0.56	1.22	0.17
Control Delay	7.7	8.5	31.8	2.2	151.5	22.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.7	8.5	31.8	2.2	151.5	22.3
Queue Length 50th (ft)	13	119	400	15	~371	39
Queue Length 95th (ft)	25	174	#691	41	#634	84
Internal Link Dist (ft)		920	1370		920	
Turn Bay Length (ft)	100			160		240
Base Capacity (vph)	304	1439	1173	1400	409	653
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	0.24	0.35	0.71	0.56	1.22	0.16

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.










HCM 6th Signalized Intersection Summary
2: Main Street & Lunenburg Road

2028 Build Conditions
Weekday Evening

							
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	68	483	793	745	473	97	
Future Volume (veh/h)	68	483	793	745	473	97	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1900	1856	1856	1885	1870	1900	
Adj Flow Rate, veh/h	72	508	835	784	498	102	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Percent Heavy Veh, %	0	3	3	1	2	0	
Cap, veh/h	235	1196	979	1221	422	475	
Arrive On Green	0.06	0.64	0.53	0.53	0.24	0.24	
Sat Flow, veh/h	1810	1856	1856	1598	1781	1610	
Grp Volume(v), veh/h	72	508	835	784	498	102	
Grp Sat Flow(s),veh/h/ln	1810	1856	1856	1598	1781	1610	
Q Serve(g_s), s	1.4	11.3	32.6	19.2	20.0	4.0	
Cycle Q Clear(g_c), s	1.4	11.3	32.6	19.2	20.0	4.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	235	1196	979	1221	422	475	
V/C Ratio(X)	0.31	0.42	0.85	0.64	1.18	0.21	
Avail Cap(c_a), veh/h	344	1539	1209	1420	422	475	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	15.9	7.3	17.1	4.6	32.2	22.4	
Incr Delay (d2), s/veh	0.3	0.2	5.1	0.8	102.9	0.1	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.6	3.7	13.5	12.5	20.0	1.4	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	16.2	7.6	22.3	5.4	135.1	22.5	
LnGrp LOS	B	A	C	A	F	C	
Approach Vol, veh/h		580	1619		600		
Approach Delay, s/veh		8.6	14.1		116.0		
Approach LOS		A	B		F		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		59.4			9.9	49.5	25.0
Change Period (Y+Rc), s		5.0			5.0	5.0	5.0
Max Green Setting (Gmax), s		70.0			10.0	55.0	20.0
Max Q Clear Time (g_c+I1), s		13.3			3.4	34.6	22.0
Green Ext Time (p_c), s		3.6			0.0	9.9	0.0
Intersection Summary							
HCM 6th Ctrl Delay			34.8				
HCM 6th LOS			C				

Lanes, Volumes, Timings
 3: Lunenburg Road & McGovern Boulevard

2028 Build Conditions
 Weekday Evening

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	416	236	192	655	347	323
Future Volume (vph)	416	236	192	655	347	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	12	12	12	12
Link Speed (mph)	30			50	50	
Link Distance (ft)	1000			1000	4300	
Travel Time (s)	22.7			13.6	58.6	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	2%	6%	0%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Int Delay, s/veh 731.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			4	4	
Traffic Vol, veh/h	416	236	192	655	347	323
Future Vol, veh/h	416	236	192	655	347	323
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	2	6	0
Mvmt Flow	433	246	200	682	361	336

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	1611	529	697	0	0
Stage 1	529	-	-	-	-
Stage 2	1082	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	~ 116	554	909	-	-
Stage 1	595	-	-	-	-
Stage 2	~ 328	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	~ 75	554	909	-	-
Mov Cap-2 Maneuver	~ 75	-	-	-	-
Stage 1	~ 384	-	-	-	-
Stage 2	~ 328	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, \$	2430.6	2.3	0
HCM LOS	F		

















Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	909	-	109	-	-
HCM Lane V/C Ratio	0.22	-	6.231	-	-
HCM Control Delay (s)	10.1	\$	2430.6	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0.8	-	74.7	-	-

Notes

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

Lanes, Volumes, Timings
 4: Lunenburg Road & Old Union Turnpike

2028 Build Conditions
 Weekday Evening

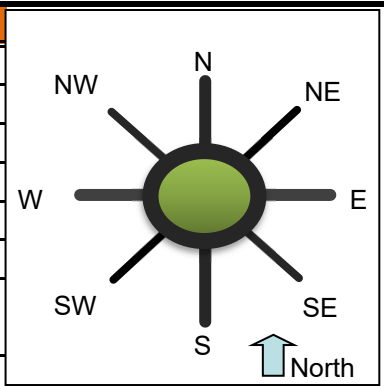
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	50	184	252	81	143	264	616	110	56	286	275
Future Volume (vph)	77	50	184	252	81	143	264	616	110	56	286	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	14	16	16	16	14	14	14	15	15	15
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		999			500			4300			875	
Travel Time (s)		22.7			11.4			97.7			19.9	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	0%	0%	1%	1%	7%	1%	1%	4%	2%	9%	1%
Shared Lane Traffic (%)												
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

Area Type: Other
 Control Type: Roundabout

General & Site Information v 4.2

Analyst:	Samuel W. Gregorio
Agency/Co:	TEC, Inc.
Date:	7/23/2021
Project or PI#:	T0852.04
Year, Peak Hour:	2028 PM Build
County/District:	
Intersection Name:	Lunenburg Rd (Rt. 70) / Old Union Turnpike Road



Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			143		616		77	
	NE (2), vph								
	E (3), vph	56				110		50	
	SE (4), vph								
	S (5), vph	286		252				184	
	SW (6), vph								
	W (7), vph	275		81		264			
	NW (8), vph								
Output	Total Vehicles	617	0	476	0	990	0	311	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	95.9%	100.0%	96.2%	100.0%	98.9%	100.0%	100.0%	100.0%
% Heavy Vehicles	4.1%	0.0%	3.8%	0.0%	1.1%	0.0%	0.0%	0.0%
% Bicycle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.99	0.95	0.99	0.95	0.99	0.95	0.99	0.95
F _{HV}	0.961	1.000	0.963	1.000	0.989	1.000	1.000	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	150	0	629	0	78	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	59	0	0	0	112	0	51	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	301	0	264	0	0	0	186	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	289	0	85	0	270	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	649	0	499	0	1011	0	314	0
Conflicting flow, pcu/h	619	0	976	0	187	0	624	0

Results: Approach Measures of Effectiveness								
HCM 6th Edition	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	705	NA	491	NA	1128	NA	730	NA
Entry Flow Rates, vph	623	0	481	0	1000	0	314	0
V/C ratio	0.88		0.98		0.89		0.43	
Control Delay, sec/pcu	35.4		64.6		26.0		10.7	
LOS	E		F		D		B	
Average Queue (ft)	153		216		181		23	
95th % Queue (ft)	286		332		328		54	

Overall Intersection Measures of Effectiveness						
Int Control Delay (sec)	34.1		Int LOS	D	Max Approach V/C	0.98

Notes: v 4.2



















Unit Legend:
 vph = vehicles per hour
 PHF = peak hour factor
 F_{HV} = heavy vehicle factor
 pcu = passenger car unit

Bypass Lane Merge Point Analysis (if applicable)

Bypass Characteristics	Bypass #1	Bypass #2	Bypass #3	Bypass #4	Bypass #5	Bypass #6
Select Entry Leg from Bypass (FROM)						
Select Exit Leg for Bypass (TO)						
Does the bypass have a dedicated receiving lane?						
Volumes						
Right Turn Volume removed from Entry Leg						
Volume Characteristics (for entry leg)						
PHF						
F _{HV}						
F _{ped}						
NOTE: Volume Characteristics for Exit Leg are already taken into account						
Entry/Conflicting Flows						
Entry Flow, pcu/hr						
Conflicting Flow, pcu/hr						
Bypass Lane Results (HCM 6th Edition)						
Entry Capacity of Bypass, vph						
Flow Rates of Exiting Traffic, vph						
V/C ratio						
Control Delay, s/veh						
LOS						
95th % Queue (veh)						
95th % Queue (ft)						
Approach w/Bypass Delay, s/veh						
Approach w/Bypass LOS						

Lanes, Volumes, Timings
 5: Lunenburg Road & Woods Lane/Fort Pond Road

2028 Build Conditions
 Weekday Evening

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	4	400	0	327	2	499	336	31	213	1
Future Volume (vph)	0	0	4	400	0	327	2	499	336	31	213	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16	11	11	11	11	11	11
Storage Length (ft)	0		0	65		0	0		55	0		0
Storage Lanes	0		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		30			35			35				35
Link Distance (ft)		500			420			875				1000
Travel Time (s)		11.4			8.2			17.0				19.5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	0%	5%	0%	1%	0%	1%	2%	14%	1%	0%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

HCM 6th TWSC
 5: Lunenburg Road & Woods Lane/Fort Pond Road

2028 Build Conditions
 Weekday Evening

Intersection												
Int Delay, s/veh	96.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕	↕		↕	
Traffic Vol, veh/h	0	0	4	400	0	327	2	499	336	31	213	1
Future Vol, veh/h	0	0	4	400	0	327	2	499	336	31	213	1
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	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	65	-	-	-	-	55	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	5	0	1	0	1	2	14	1	0
Mvmt Flow	0	0	5	455	0	372	2	567	382	35	242	1

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	1070	884	243	886	884	567	243	0	0	567	0	0
Stage 1	313	313	-	571	571	-	-	-	-	-	-	-
Stage 2	757	571	-	315	313	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.15	6.5	6.21	4.1	-	-	4.24	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.15	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.15	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.545	4	3.309	2.2	-	-	2.326	-	-
Pot Cap-1 Maneuver	201	286	801	~262	286	525	1335	-	-	948	-	-
Stage 1	702	661	-	501	508	-	-	-	-	-	-	-
Stage 2	403	508	-	690	661	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	57	273	801	~251	273	525	1335	-	-	948	-	-
Mov Cap-2 Maneuver	57	273	-	~251	273	-	-	-	-	-	-	-
Stage 1	700	633	-	499	506	-	-	-	-	-	-	-
Stage 2	117	506	-	657	633	-	-	-	-	-	-	-












Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	239.8	0	1.1
HCM LOS	A	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1335	-	-	801	251	525	948	-	-
HCM Lane V/C Ratio	0.002	-	-	0.006	1.811	0.708	0.037	-	-
HCM Control Delay (s)	7.7	0	-	9.5	413.9	26.8	8.9	0	-
HCM Lane LOS	A	A	-	A	F	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	31	5.6	0.1	-	-

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

Lanes, Volumes, Timings
 6: Old Union Turnpike & Route 2 EB Ramps

2028 Build Conditions
 Weekday Evening

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	138	78	105	1	13	371
Future Volume (vph)	138	78	105	1	13	371
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	16	16	16
Storage Length (ft)	0			60	0	75
Storage Lanes	0			1	1	1
Taper Length (ft)	25				25	
Link Speed (mph)		40	40		30	
Link Distance (ft)		500	500		300	
Travel Time (s)		8.5	8.5		6.8	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	3%	5%	1%	0%	0%	3%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Int Delay, s/veh	8.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕	↕	↕	↕
Traffic Vol, veh/h	138	78	105	1	13	371
Future Vol, veh/h	138	78	105	1	13	371
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	-	-	-	60	0	75
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	3	5	1	0	0	3
Mvmt Flow	164	93	125	1	15	442












Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	125	0	-	0	546 125
Stage 1	-	-	-	-	125 -
Stage 2	-	-	-	-	421 -
Critical Hdwy	4.13	-	-	-	6.4 6.23
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.227	-	-	-	3.5 3.327
Pot Cap-1 Maneuver	1455	-	-	-	502 923
Stage 1	-	-	-	-	906 -
Stage 2	-	-	-	-	667 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1455	-	-	-	442 923
Mov Cap-2 Maneuver	-	-	-	-	442 -
Stage 1	-	-	-	-	798 -
Stage 2	-	-	-	-	667 -

Approach	EB	WB	SB
HCM Control Delay, s	5	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1455	-	-	-	442	923
HCM Lane V/C Ratio	0.113	-	-	-	0.035	0.479
HCM Control Delay (s)	7.8	0	-	-	13.4	12.4
HCM Lane LOS	A	A	-	-	B	B
HCM 95th %tile Q(veh)	0.4	-	-	-	0.1	2.6

Lanes, Volumes, Timings
 7: Route 2 WB Ramps & Fort Pond Road

2028 Build Conditions
 Weekday Evening

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	19	349	28	246	482	0
Future Volume (vph)	19	349	28	246	482	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	16	13	13	16	16
Storage Length (ft)		75	0		0	60
Storage Lanes		1	0		1	1
Taper Length (ft)			25		25	
Link Speed (mph)	35			35	30	
Link Distance (ft)	420			500	300	
Travel Time (s)	8.2			9.7	6.8	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	8%	4%	8%	2%	3%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Int Delay, s/veh 20.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑		↑	↑	↑
Traffic Vol, veh/h	19	349	28	246	482	0
Future Vol, veh/h	19	349	28	246	482	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Stop
Storage Length	-	75	-	-	0	60
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	8	4	8	2	3	0
Mvmt Flow	22	411	33	289	567	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	22
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.18
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.272
Pot Cap-1 Maneuver	-	-	1555
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1555
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	48.2
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	607	-	-	-	1555	-
HCM Lane V/C Ratio	0.934	-	-	-	0.021	-
HCM Control Delay (s)	48.2	0	-	-	7.4	0
HCM Lane LOS	E	A	-	-	A	A
HCM 95th %tile Q(veh)	12.3	-	-	-	0.1	-

Lanes, Volumes, Timings
1: Main Street & Seven Bridge Road & Driveway

2028 Build Conditions
Saturday MIDDAY

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	61	791	5	275	1	523	2	28	0	2	0
Future Volume (vph)	1	61	791	5	275	1	523	2	28	0	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	11	11	15	15	15	12	12	12
Storage Length (ft)	0		115	50		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35				30
Link Distance (ft)		1450			1000			1000				200
Travel Time (s)		28.2			19.5			19.5				4.5
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
Heavy Vehicles (%)	0%	4%	2%	0%	1%	0%	2%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type	Perm	NA	pm+ov	Perm	NA		Split	NA				NA
Protected Phases		2	4		6		4	4				8
Permitted Phases	2		2	6						8		
Detector Phase	2	2	4	6	6		4	4		8		8
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0		5.0		5.0
Minimum Split (s)	15.5	15.5	15.0	15.5	15.5		15.0	15.0		10.0		10.0
Total Split (s)	60.0	60.0	15.0	60.0	60.0		15.0	15.0		10.0		10.0
Total Split (%)	70.6%	70.6%	17.6%	70.6%	70.6%		17.6%	17.6%		11.8%		11.8%
Maximum Green (s)	54.5	54.5	10.0	54.5	54.5		10.0	10.0		5.0		5.0
Yellow Time (s)	4.5	4.5	3.5	4.5	4.5		3.5	3.5		3.5		3.5
All-Red Time (s)	1.0	1.0	1.5	1.0	1.0		1.5	1.5		1.5		1.5
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0				0.0
Total Lost Time (s)		5.5	5.0	5.5	5.5			5.0				5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0		2.0	2.0		0.2		0.2
Recall Mode	Min	Min	None	Min	Min		None	None		None		None

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 34.7
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Main Street & Seven Bridge Road & Driveway



Queues
1: Main Street & Seven Bridge Road & Driveway

2028 Build Conditions
Saturday MIDDAY

	→	↘	↙	←	↑	↓
Lane Group	EBT	EBR	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	74	953	6	332	666	2
v/c Ratio	0.12	0.64	0.01	0.53	1.14	0.01
Control Delay	8.9	2.5	8.4	13.0	104.1	16.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.9	2.5	8.4	13.0	104.1	16.5
Queue Length 50th (ft)	8	0	1	41	~119	0
Queue Length 95th (ft)	30	15	6	114	#421	5
Internal Link Dist (ft)	1370			920	920	120
Turn Bay Length (ft)		115	50			
Base Capacity (vph)	1756	1495	1257	1819	582	283
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	0.04	0.64	0.00	0.18	1.14	0.01

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 1: Main Street & Seven Bridge Road & Driveway

2028 Build Conditions
 Saturday Midday

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	61	791	5	275	1	523	2	28	0	2	0
Future Volume (veh/h)	1	61	791	5	275	1	523	2	28	0	2	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1841	1870	1900	1885	1900	1945	1976	1976	1900	1900	1900
Adj Flow Rate, veh/h	1	73	953	6	331	1	630	2	34	0	2	0
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
Percent Heavy Veh, %	0	4	2	0	1	0	2	0	0	0	0	0
Cap, veh/h	66	1005	1147	422	1028	3	312	1	17	0	5	0
Arrive On Green	0.55	0.55	0.55	0.55	0.55	0.55	0.18	0.18	0.18	0.00	0.00	0.00
Sat Flow, veh/h	3	1836	1585	558	1878	6	1769	6	95	0	1900	0
Grp Volume(v), veh/h	74	0	953	6	0	332	666	0	0	0	2	0
Grp Sat Flow(s),veh/h/ln	1839	0	1585	558	0	1884	1870	0	0	0	1900	0
Q Serve(g_s), s	0.0	0.0	23.6	0.3	0.0	5.5	10.0	0.0	0.0	0.0	0.1	0.0
Cycle Q Clear(g_c), s	1.1	0.0	23.6	1.4	0.0	5.5	10.0	0.0	0.0	0.0	0.1	0.0
Prop In Lane	0.01		1.00	1.00		0.00	0.95		0.05	0.00		0.00
Lane Grp Cap(c), veh/h	1071	0	1147	422	0	1031	330	0	0	0	5	0
V/C Ratio(X)	0.07	0.00	0.83	0.01	0.00	0.32	2.02	0.00	0.00	0.00	0.38	0.00
Avail Cap(c_a), veh/h	1825	0	1804	653	0	1812	330	0	0	0	168	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	6.1	0.0	5.4	6.4	0.0	7.0	23.3	0.0	0.0	0.0	28.2	0.0
Incr Delay (d2), s/veh	0.0	0.0	2.0	0.0	0.0	0.2	468.6	0.0	0.0	0.0	16.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	10.2	0.0	0.0	1.7	46.9	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.1	0.0	7.4	6.4	0.0	7.2	492.0	0.0	0.0	0.0	44.6	0.0
LnGrp LOS	A	A	A	A	A	A	F	A	A	A	D	A
Approach Vol, veh/h		1027			338			666			2	
Approach Delay, s/veh		7.3			7.2			492.0			44.6	
Approach LOS		A			A			F			D	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		36.5		15.0		36.5		5.2				
Change Period (Y+Rc), s		5.5		5.0		5.5		5.0				
Max Green Setting (Gmax), s		54.5		10.0		54.5		5.0				
Max Q Clear Time (g_c+I1), s		25.6		12.0		7.5		2.1				
Green Ext Time (p_c), s		5.4		0.0		2.2		0.0				

Intersection Summary

HCM 6th Ctrl Delay	166.1
HCM 6th LOS	F

Lanes, Volumes, Timings
2: Main Street & Lunenburg Road

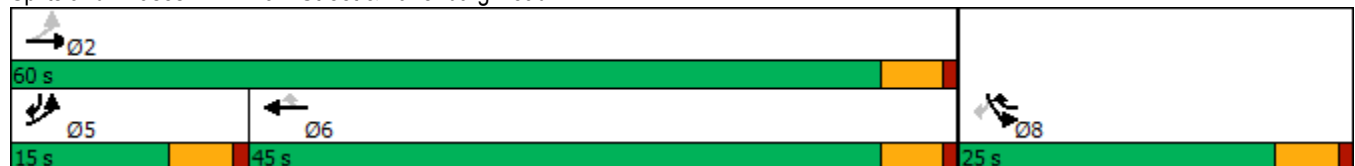
2028 Build Conditions
Saturday MIDDAY

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	59	384	413	387	466	57
Future Volume (vph)	59	384	413	387	466	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Storage Length (ft)	100			160	0	240
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Right Turn on Red				Yes		No
Link Speed (mph)		35	35		45	
Link Distance (ft)		1000	1450		1000	
Travel Time (s)		19.5	28.2		15.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	1%	2%	1%	2%	0%
Shared Lane Traffic (%)						
Turn Type	pm+pt	NA	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	6	8	8	5
Permitted Phases	2			6		8
Detector Phase	5	2	6	8	8	5
Switch Phase						
Minimum Initial (s)	6.0	10.0	10.0	10.0	10.0	6.0
Minimum Split (s)	11.0	15.0	15.0	15.0	15.0	11.0
Total Split (s)	15.0	60.0	45.0	25.0	25.0	15.0
Total Split (%)	17.6%	70.6%	52.9%	29.4%	29.4%	17.6%
Maximum Green (s)	10.0	55.0	40.0	20.0	20.0	10.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Vehicle Extension (s)	2.0	3.0	3.0	2.0	2.0	2.0
Recall Mode	None	Min	Min	None	None	None

Intersection Summary







Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 59.3
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Main Street & Lunenburg Road



Queues
2: Main Street & Lunenburg Road

2028 Build Conditions
Saturday MIDDAY













						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	62	404	435	407	491	60
v/c Ratio	0.18	0.47	0.74	0.31	0.82	0.07
Control Delay	8.3	11.4	26.9	1.0	36.0	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.3	11.4	26.9	1.0	36.0	9.5
Queue Length 50th (ft)	11	87	140	0	165	10
Queue Length 95th (ft)	25	140	240	17	#418	34
Internal Link Dist (ft)		920	1370		920	
Turn Bay Length (ft)	100			160		240
Base Capacity (vph)	426	1626	1261	1303	599	956
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	0.15	0.25	0.34	0.31	0.82	0.06

Intersection Summary

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










HCM 6th Signalized Intersection Summary
 2: Main Street & Lunenburg Road

2028 Build Conditions
 Saturday Midday

							
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	59	384	413	387	466	57	
Future Volume (veh/h)	59	384	413	387	466	57	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1885	1870	1885	1870	1900	
Adj Flow Rate, veh/h	62	404	435	407	491	60	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Percent Heavy Veh, %	2	1	2	1	2	0	
Cap, veh/h	344	932	614	1020	553	610	
Arrive On Green	0.07	0.49	0.33	0.33	0.31	0.31	
Sat Flow, veh/h	1781	1885	1870	1598	1781	1610	
Grp Volume(v), veh/h	62	404	435	407	491	60	
Grp Sat Flow(s),veh/h/ln	1781	1885	1870	1598	1781	1610	
Q Serve(g_s), s	1.0	7.1	10.4	6.3	13.4	1.2	
Cycle Q Clear(g_c), s	1.0	7.1	10.4	6.3	13.4	1.2	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	344	932	614	1020	553	610	
V/C Ratio(X)	0.18	0.43	0.71	0.40	0.89	0.10	
Avail Cap(c_a), veh/h	570	2024	1461	1743	696	739	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	10.1	8.3	15.1	4.5	16.8	10.3	
Incr Delay (d2), s/veh	0.1	0.3	1.5	0.3	9.9	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.3	2.2	3.9	3.6	5.8	0.3	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	10.2	8.6	16.6	4.7	26.8	10.3	
LnGrp LOS	B	A	B	A	C	B	
Approach Vol, veh/h		466	842		551		
Approach Delay, s/veh		8.9	10.9		25.0		
Approach LOS		A	B		C		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		30.3			8.5	21.8	20.9
Change Period (Y+Rc), s		5.0			5.0	5.0	5.0
Max Green Setting (Gmax), s		55.0			10.0	40.0	20.0
Max Q Clear Time (g_c+I1), s		9.1			3.0	12.4	15.4
Green Ext Time (p_c), s		2.6			0.0	4.4	0.5
Intersection Summary							
HCM 6th Ctrl Delay			14.5				
HCM 6th LOS			B				

Lanes, Volumes, Timings
 3: Lunenburg Road & McGovern Boulevard

2028 Build Conditions
 Saturday MIDDAY

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	138	96	95	359	430	145
Future Volume (vph)	138	96	95	359	430	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	12	12	12	12
Link Speed (mph)	30			50	50	
Link Distance (ft)	1000			1000	4300	
Travel Time (s)	22.7			13.6	58.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	3%	2%	5%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Int Delay, s/veh	18.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	138	96	95	359	430	145
Future Vol, veh/h	138	96	95	359	430	145
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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, %	5	5	5	3	2	5
Mvmt Flow	150	104	103	390	467	158

















Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1142	546	625	0	0
Stage 1	546	-	-	-	-
Stage 2	596	-	-	-	-
Critical Hdwy	6.45	6.25	4.15	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.245	-	-
Pot Cap-1 Maneuver	219	532	942	-	-
Stage 1	574	-	-	-	-
Stage 2	545	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	188	532	942	-	-
Mov Cap-2 Maneuver	188	-	-	-	-
Stage 1	494	-	-	-	-
Stage 2	545	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	96.9	1.9	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	942	-	256	-	-
HCM Lane V/C Ratio	0.11	-	0.994	-	-
HCM Control Delay (s)	9.3	0	96.9	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.4	-	9.7	-	-

Lanes, Volumes, Timings
4: Lunenburg Road & Old Union Turnpike

2028 Build Conditions
Saturday MIDDAY

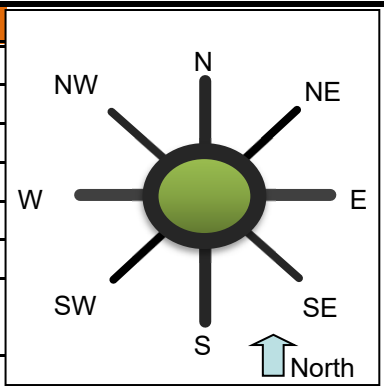
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	60	141	260	60	109	124	250	136	82	233	136
Future Volume (vph)	36	60	141	260	60	109	124	250	136	82	233	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	14	16	16	16	14	14	14	15	15	15
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		999			500			4300			875	
Travel Time (s)		22.7			11.4			97.7			19.9	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	0%	2%	2%	1%	0%	6%	0%	4%	5%	14%	3%	1%
Shared Lane Traffic (%)												
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

Area Type: Other
Control Type: Roundabout

General & Site Information v 4.2

Analyst:	Samuel W. Gregorio
Agency/Co:	TEC, Inc.
Date:	7/23/2021
Project or PI#:	T0852.04
Year, Peak Hour:	2028 SAT Build
County/District:	
Intersection Name:	Lunenburg Rd (Rt. 70) / Old Union Turnpike Road



Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			109		250		36	
	NE (2), vph								
	E (3), vph	82				136		60	
	SE (4), vph								
	S (5), vph	233		260				141	
	SW (6), vph								
	W (7), vph	136		60		124			
	NW (8), vph								
Output	Total Vehicles	451	0	429	0	510	0	237	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	94.6%	100.0%	97.8%	100.0%	97.2%	100.0%	99.1%	100.0%
% Heavy Vehicles	5.4%	0.0%	2.2%	0.0%	2.8%	0.0%	0.9%	0.0%
% Bicycle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.85	0.95	0.85	0.95	0.85	0.95	0.85	0.95
F _{HV}	0.949	1.000	0.978	1.000	0.973	1.000	0.991	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	131	0	302	0	43	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	102	0	0	0	164	0	71	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	289	0	313	0	0	0	167	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	169	0	72	0	150	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	559	0	516	0	617	0	281	0
Conflicting flow, pcu/h	535	0	495	0	216	0	703	0

Results: Approach Measures of Effectiveness								
HCM 6th Edition	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	759	NA	815	NA	1077	NA	668	NA
Entry Flow Rates, vph	531	0	505	0	600	0	279	0
V/C ratio	0.70		0.62		0.56		0.42	
Control Delay, sec/pcu	18.5		14.4		10.2		11.3	
LOS	C		B		B		B	
Average Queue (ft)	68		51		43		22	
95th % Queue (ft)	153		112		91		52	

Overall Intersection Measures of Effectiveness					
Int Control Delay (sec)	13.8	Int LOS	B	Max Approach V/C	0.70

Notes: v 4.2



















Unit Legend:
 vph = vehicles per hour
 PHF = peak hour factor
 F_{HV} = heavy vehicle factor
 pcu = passenger car unit

Bypass Lane Merge Point Analysis (if applicable)

Bypass Characteristics	Bypass #1	Bypass #2	Bypass #3	Bypass #4	Bypass #5	Bypass #6
Select Entry Leg from Bypass (FROM)						
Select Exit Leg for Bypass (TO)						
Does the bypass have a dedicated receiving lane?						
Volumes						
Right Turn Volume removed from Entry Leg						
Volume Characteristics (for entry leg)						
PHF						
F _{HV}						
F _{ped}						
NOTE: Volume Characteristics for Exit Leg are already taken into account						
Entry/Conflicting Flows						
Entry Flow, pcu/hr						
Conflicting Flow, pcu/hr						
Bypass Lane Results (HCM 6th Edition)						
Entry Capacity of Bypass, vph						
Flow Rates of Exiting Traffic, vph						
V/C ratio						
Control Delay, s/veh						
LOS						
95th % Queue (veh)						
95th % Queue (ft)						
Approach w/Bypass Delay, s/veh						
Approach w/Bypass LOS						

Lanes, Volumes, Timings
 5: Lunenburg Road & Woods Lane/Fort Pond Road

2028 Build Conditions
 Saturday MIDDAY

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	3	224	1	75	1	220	173	51	224	0
Future Volume (vph)	0	0	3	224	1	75	1	220	173	51	224	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16	11	11	11	11	11	11
Storage Length (ft)	0		0	65		0	0		55	0		0
Storage Lanes	0		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		500			500			875			1000	
Travel Time (s)		11.4			9.7			17.0			19.5	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	0%	0%	0%	4%	0%	8%	0%	5%	3%	8%	6%	0%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection												
Int Delay, s/veh	9.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔	↔		↔	
Traffic Vol, veh/h	0	0	3	224	1	75	1	220	173	51	224	0
Future Vol, veh/h	0	0	3	224	1	75	1	220	173	51	224	0
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	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	65	-	-	-	-	55	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	4	0	8	0	5	3	8	6	0
Mvmt Flow	0	0	4	264	1	88	1	259	204	60	264	0












Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	690	645	264	647	645	259	264	0	0	259	0	0
Stage 1	384	384	-	261	261	-	-	-	-	-	-	-
Stage 2	306	261	-	386	384	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.14	6.5	6.28	4.1	-	-	4.18	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.14	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.14	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.536	4	3.372	2.2	-	-	2.272	-	-
Pot Cap-1 Maneuver	362	393	780	381	393	765	1312	-	-	1271	-	-
Stage 1	643	615	-	740	696	-	-	-	-	-	-	-
Stage 2	708	696	-	633	615	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	306	371	780	363	371	765	1312	-	-	1271	-	-
Mov Cap-2 Maneuver	306	371	-	363	371	-	-	-	-	-	-	-
Stage 1	642	581	-	739	695	-	-	-	-	-	-	-
Stage 2	625	695	-	595	581	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.6	30.4	0	1.5
HCM LOS	A	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1312	-	-	780	363	754	1271	-	-
HCM Lane V/C Ratio	0.001	-	-	0.005	0.726	0.119	0.047	-	-
HCM Control Delay (s)	7.7	0	-	9.6	37.2	10.4	8	0	-
HCM Lane LOS	A	A	-	A	E	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	5.5	0.4	0.1	-	-

Lanes, Volumes, Timings
 6: Old Union Turnpike & Route 2 EB Ramps

2028 Build Conditions
 Saturday MIDDAY

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	197	80	199	3	19	230
Future Volume (vph)	197	80	199	3	19	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	13	16	16	16
Storage Length (ft)	0			60	0	75
Storage Lanes	0			1	1	1
Taper Length (ft)	25				25	
Link Speed (mph)		40	40		30	
Link Distance (ft)		500	500		300	
Travel Time (s)		8.5	8.5		6.8	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	13%	1%	0%	0%	0%	5%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Int Delay, s/veh	6.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↑	↗	↖	↗
Traffic Vol, veh/h	197	80	199	3	19	230
Future Vol, veh/h	197	80	199	3	19	230
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	-	-	-	60	0	75
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	13	1	0	0	0	5
Mvmt Flow	232	94	234	4	22	271

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	234	0	-	0	792
Stage 1	-	-	-	-	234
Stage 2	-	-	-	-	558
Critical Hdwy	4.23	-	-	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	2,317	-	-	-	3,345
Pot Cap-1 Maneuver	1271	-	-	-	361
Stage 1	-	-	-	-	810
Stage 2	-	-	-	-	577
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1271	-	-	-	291
Mov Cap-2 Maneuver	-	-	-	-	291
Stage 1	-	-	-	-	654
Stage 2	-	-	-	-	577

Approach	EB	WB	SB
HCM Control Delay, s	6	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1271	-	-	-	291	798
HCM Lane V/C Ratio	0.182	-	-	-	0.077	0.339
HCM Control Delay (s)	8.5	0	-	-	18.4	11.8
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0.7	-	-	-	0.2	1.5

2028 Build with Mitigation Condition

Lanes, Volumes, Timings
1: Main Street & Seven Bridge Road & Driveway

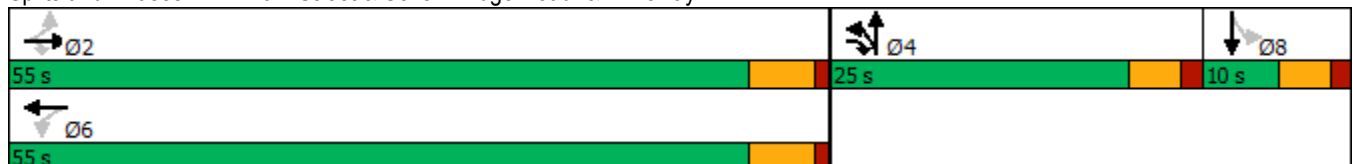
2028 Build w/ Mitigation Conditions
Weekday Morning

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	785	419	16	531	0	407	0	7	0	0	0
Future Volume (vph)	0	785	419	16	531	0	407	0	7	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	11	11	15	15	15	12	12	12
Storage Length (ft)	0		115	50		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35				30
Link Distance (ft)		1450			1000			1000				200
Travel Time (s)		28.2			19.5			19.5				4.5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	6%	3%	0%	6%	0%	7%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type		NA	pm+ov	Perm	NA		Split	NA				
Protected Phases		2	4		6		4	4				8
Permitted Phases	2		2	6						8		
Detector Phase	2	2	4	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0		5.0	5.0	
Minimum Split (s)	15.5	15.5	15.0	15.5	15.5		15.0	15.0		10.0	10.0	
Total Split (s)	55.0	55.0	25.0	55.0	55.0		25.0	25.0		10.0	10.0	
Total Split (%)	61.1%	61.1%	27.8%	61.1%	61.1%		27.8%	27.8%		11.1%	11.1%	
Maximum Green (s)	49.5	49.5	20.0	49.5	49.5		20.0	20.0		5.0	5.0	
Yellow Time (s)	4.5	4.5	3.5	4.5	4.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.5	1.0	1.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.5	5.0	5.5	5.5			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0		2.0	2.0		0.2	0.2	
Recall Mode	Min	Min	None	Min	Min		None	None		None	None	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 70
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Main Street & Seven Bridge Road & Driveway



Queues

2028 Build w/ Mitigation Conditions

1: Main Street & Seven Bridge Road & Driveway

Weekday Morning

	→	↘	↙	←	↑
Lane Group	EBT	EBR	WBL	WBT	NBT
Lane Group Flow (vph)	844	451	17	571	446
v/c Ratio	0.84	0.30	0.10	0.57	0.79
Control Delay	21.6	0.5	7.9	11.8	32.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.6	0.5	7.9	11.8	32.5
Queue Length 50th (ft)	281	0	3	145	151
Queue Length 95th (ft)	453	0	12	226	#328
Internal Link Dist (ft)	1370			920	920
Turn Bay Length (ft)		115	50		
Base Capacity (vph)	1265	1516	222	1265	613
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.67	0.30	0.08	0.45	0.73

Intersection Summary

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

HCM 6th Signalized Intersection Summary
 1: Main Street & Seven Bridge Road & Driveway

2028 Build w/ Mitigation Conditions
 Weekday Morning

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	785	419	16	531	0	407	0	7	0	0	0
Future Volume (veh/h)	0	785	419	16	531	0	407	0	7	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1811	1856	1900	1811	1900	1868	1976	1976	1900	1900	1900
Adj Flow Rate, veh/h	0	844	451	17	571	0	438	0	8	0	0	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	6	3	0	6	0	7	0	0	0	0	0
Cap, veh/h	0	1011	1304	192	1011	0	500	0	9	0	3	0
Arrive On Green	0.00	0.56	0.56	0.56	0.56	0.00	0.27	0.00	0.27	0.00	0.00	0.00
Sat Flow, veh/h	0	1811	1572	433	1811	0	1844	0	34	0	1900	0
Grp Volume(v), veh/h	0	844	451	17	571	0	446	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1811	1572	433	1811	0	1878	0	0	0	1900	0
Q Serve(g_s), s	0.0	23.7	4.2	2.1	12.5	0.0	14.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	23.7	4.2	25.8	12.5	0.0	14.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00	0.98		0.02	0.00		0.00
Lane Grp Cap(c), veh/h	0	1011	1304	192	1011	0	509	0	0	0	3	0
V/C Ratio(X)	0.00	0.83	0.35	0.09	0.56	0.00	0.88	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1456	1691	298	1456	0	610	0	0	0	154	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	11.2	1.3	21.9	8.8	0.0	21.4	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.9	0.2	0.2	0.5	0.0	10.6	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.8	2.9	0.2	3.8	0.0	7.0	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	14.2	1.4	22.1	9.3	0.0	32.1	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	A	B	A	C	A	A	C	A	A	A	A	A
Approach Vol, veh/h		1295			588			446				0
Approach Delay, s/veh		9.7			9.6			32.1				0.0
Approach LOS		A			A			C				
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		39.9		21.7		39.9		0.0				
Change Period (Y+Rc), s		5.5		5.0		5.5		5.0				
Max Green Setting (Gmax), s		49.5		20.0		49.5		5.0				
Max Q Clear Time (g_c+I1), s		25.7		16.0		27.8		0.0				
Green Ext Time (p_c), s		8.6		0.7		4.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			14.0									
HCM 6th LOS			B									

Lanes, Volumes, Timings
2: Main Street & Lunenburg Road

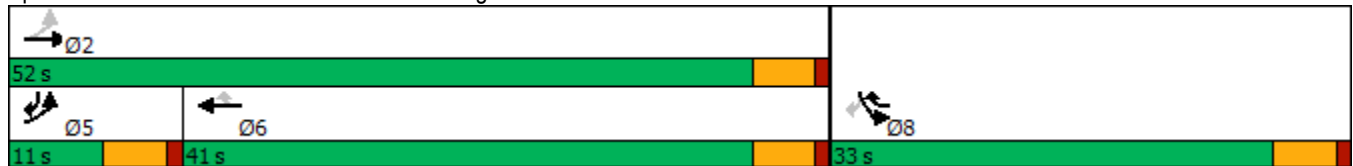
2028 Build w/ Mitigation Conditions
Weekday Morning

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	88	782	384	562	417	49
Future Volume (vph)	88	782	384	562	417	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Storage Length (ft)	100			160	0	240
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Right Turn on Red				Yes		No
Link Speed (mph)		35	35		45	
Link Distance (ft)		1000	1450		1000	
Travel Time (s)		19.5	28.2		15.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	4%	6%	6%	8%	3%
Shared Lane Traffic (%)						
Turn Type	pm+pt	NA	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	6	8	8	5
Permitted Phases	2			6		8
Detector Phase	5	2	6	8	8	5
Switch Phase						
Minimum Initial (s)	6.0	10.0	10.0	10.0	10.0	6.0
Minimum Split (s)	11.0	15.0	15.0	15.0	15.0	11.0
Total Split (s)	11.0	52.0	41.0	33.0	33.0	11.0
Total Split (%)	12.9%	61.2%	48.2%	38.8%	38.8%	12.9%
Maximum Green (s)	6.0	47.0	36.0	28.0	28.0	6.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Vehicle Extension (s)	2.0	3.0	3.0	2.0	2.0	2.0
Recall Mode	None	Min	Min	None	None	None

Intersection Summary







Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 74.3
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Main Street & Lunenburg Road



Queues
2: Main Street & Lunenburg Road

2028 Build w/ Mitigation Conditions
Weekday Morning













						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	95	841	413	604	448	53
v/c Ratio	0.23	0.89	0.56	0.45	0.86	0.07
Control Delay	10.3	29.0	21.2	1.3	43.4	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.3	29.0	21.2	1.3	43.4	13.0
Queue Length 50th (ft)	22	357	162	0	218	15
Queue Length 95th (ft)	44	#617	252	14	#385	36
Internal Link Dist (ft)		920	1370		920	
Turn Bay Length (ft)	100			160		240
Base Capacity (vph)	419	1170	879	1349	638	723
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	0.23	0.72	0.47	0.45	0.70	0.07

Intersection Summary

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

HCM 6th Signalized Intersection Summary
 2: Main Street & Lunenburg Road

2028 Build w/ Mitigation Conditions
 Weekday Morning

							
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	88	782	384	562	417	49	
Future Volume (veh/h)	88	782	384	562	417	49	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1841	1811	1811	1781	1856	
Adj Flow Rate, veh/h	95	841	413	604	448	53	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Percent Heavy Veh, %	2	4	6	6	8	3	
Cap, veh/h	366	983	668	1022	503	593	
Arrive On Green	0.08	0.53	0.37	0.37	0.30	0.30	
Sat Flow, veh/h	1781	1841	1811	1535	1697	1572	
Grp Volume(v), veh/h	95	841	413	604	448	53	
Grp Sat Flow(s),veh/h/ln	1781	1841	1811	1535	1697	1572	
Q Serve(g_s), s	1.7	23.1	11.0	12.8	14.9	1.3	
Cycle Q Clear(g_c), s	1.7	23.1	11.0	12.8	14.9	1.3	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	366	983	668	1022	503	593	
V/C Ratio(X)	0.26	0.86	0.62	0.59	0.89	0.09	
Avail Cap(c_a), veh/h	404	1465	1104	1391	805	872	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	10.1	11.8	15.2	5.4	19.8	11.9	
Incr Delay (d2), s/veh	0.1	3.4	0.9	0.5	4.9	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.5	8.0	4.1	7.4	5.5	0.4	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	10.2	15.2	16.2	6.0	24.7	11.9	
LnGrp LOS	B	B	B	A	C	B	
Approach Vol, veh/h		936	1017		501		
Approach Delay, s/veh		14.7	10.1		23.4		
Approach LOS		B	B		C		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		36.5			9.7	26.8	22.5
Change Period (Y+Rc), s		5.0			5.0	5.0	5.0
Max Green Setting (Gmax), s		47.0			6.0	36.0	28.0
Max Q Clear Time (g_c+I1), s		25.1			3.7	14.8	16.9
Green Ext Time (p_c), s		6.4			0.0	5.0	0.6
Intersection Summary							
HCM 6th Ctrl Delay			14.6				
HCM 6th LOS			B				

Lanes, Volumes, Timings
3: Lunenburg Road & McGovern Boulevard

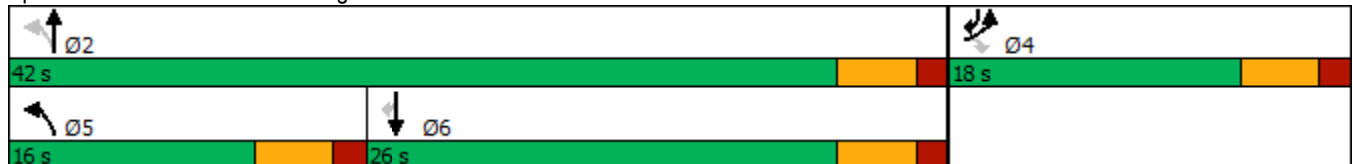
2028 Build w/ Mitigation Conditions
Weekday Morning

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	149	117	289	366	366	470
Future Volume (vph)	149	117	289	366	366	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Storage Length (ft)	0	0	200			200
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			50	50	
Link Distance (ft)	1000			1000	4300	
Travel Time (s)	22.7			13.6	58.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	33%	18%	7%	10%	6%	17%
Shared Lane Traffic (%)						
Turn Type	Prot	Perm	pm+pt	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	4
Switch Phase						
Minimum Initial (s)	10.0	10.0	6.0	10.0	6.0	10.0
Minimum Split (s)	15.0	15.0	11.0	15.0	11.0	15.0
Total Split (s)	18.0	18.0	16.0	42.0	26.0	18.0
Total Split (%)	30.0%	30.0%	26.7%	70.0%	43.3%	30.0%
Maximum Green (s)	13.0	13.0	11.0	37.0	21.0	13.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	Min	Min	None

Intersection Summary







Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 53.9
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Lunenburg Road & McGovern Boulevard



Queues
3: Lunenburg Road & McGovern Boulevard

2028 Build w/ Mitigation Conditions
Weekday Morning













						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	160	126	311	394	394	505
v/c Ratio	0.56	0.33	0.62	0.40	0.75	0.54
Control Delay	28.9	7.4	11.6	7.2	27.0	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	7.4	11.6	7.2	27.0	4.7
Queue Length 50th (ft)	48	0	45	61	116	27
Queue Length 95th (ft)	#108	36	86	106	201	69
Internal Link Dist (ft)	920			920	4220	
Turn Bay Length (ft)			200			200
Base Capacity (vph)	321	419	516	1164	685	960
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	0.50	0.30	0.60	0.34	0.58	0.53

Intersection Summary

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

HCM 6th Signalized Intersection Summary
 3: Lunenburg Road & McGovern Boulevard

2028 Build w/ Mitigation Conditions
 Weekday Morning

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	149	117	289	366	366	470
Future Volume (veh/h)	149	117	289	366	366	470
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1411	1633	1796	1752	1811	1648
Adj Flow Rate, veh/h	160	126	311	394	394	505
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	33	18	7	10	6	17
Cap, veh/h	269	277	499	1044	625	761
Arrive On Green	0.20	0.20	0.15	0.60	0.34	0.34
Sat Flow, veh/h	1344	1384	1711	1752	1811	1397
Grp Volume(v), veh/h	160	126	311	394	394	505
Grp Sat Flow(s),veh/h/ln	1344	1384	1711	1752	1811	1397
Q Serve(g_s), s	5.3	3.9	5.1	5.7	8.9	12.6
Cycle Q Clear(g_c), s	5.3	3.9	5.1	5.7	8.9	12.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	269	277	499	1044	625	761
V/C Ratio(X)	0.60	0.46	0.62	0.38	0.63	0.66
Avail Cap(c_a), veh/h	357	367	628	1323	776	878
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.8	17.3	8.9	5.2	13.4	8.0
Incr Delay (d2), s/veh	2.1	1.2	1.3	0.2	1.1	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	3.2	1.1	0.9	2.8	4.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.9	18.4	10.2	5.4	14.6	9.5
LnGrp LOS	B	B	B	A	B	A
Approach Vol, veh/h	286			705	899	
Approach Delay, s/veh	19.3			7.5	11.7	
Approach LOS	B			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		34.2		14.8	12.3	21.9
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s		37.0		13.0	11.0	21.0
Max Q Clear Time (g_c+1), s		7.7		7.3	7.1	14.6
Green Ext Time (p_c), s		2.2		0.5	0.3	2.3
Intersection Summary						
HCM 6th Ctrl Delay			11.3			
HCM 6th LOS			B			

Lanes, Volumes, Timings
5: Lunenburg Road & Woods Lane/Fort Pond Road

2028 Build w/ Mitigation Conditions
Weekday Morning

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	5	3	114	0	42	0	162	209	70	546	0
Future Volume (vph)	0	5	3	114	0	42	0	162	209	70	546	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16	11	11	11	11	11	11
Storage Length (ft)	0		0	65		0	0		55	0		0
Storage Lanes	0		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		500			420			875			1000	
Travel Time (s)		11.4			8.2			17.0			19.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	10%	0%	11%	0%	10%	8%	2%	4%	0%
Shared Lane Traffic (%)												
Turn Type		NA		Split	NA			NA	Perm	Perm	NA	
Protected Phases		4		8	8			2			6	
Permitted Phases	4						2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	11.0	11.0		11.0	11.0		38.0	38.0	38.0	38.0	38.0	
Total Split (%)	18.3%	18.3%		18.3%	18.3%		63.3%	63.3%	63.3%	63.3%	63.3%	
Maximum Green (s)	6.0	6.0		6.0	6.0		33.0	33.0	33.0	33.0	33.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	

Intersection Summary







Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 40.9
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Lunenburg Road & Woods Lane/Fort Pond Road



Queues
5: Lunenburg Road & Woods Lane/Fort Pond Road

2028 Build w/ Mitigation Conditions
Weekday Morning

						
Lane Group	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	8	119	44	169	218	642
v/c Ratio	0.03	0.41	0.05	0.15	0.21	0.58
Control Delay	17.2	25.9	0.1	5.4	1.7	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.2	25.9	0.1	5.4	1.7	9.4
Queue Length 50th (ft)	1	19	0	13	0	72
Queue Length 95th (ft)	13	#108	0	54	24	264
Internal Link Dist (ft)	420		340	795		920
Turn Bay Length (ft)		65			55	
Base Capacity (vph)	319	288	924	1389	1240	1396
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	0.03	0.41	0.05	0.12	0.18	0.46

Intersection Summary

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

HCM 6th Signalized Intersection Summary
 5: Lunenburg Road & Woods Lane/Fort Pond Road

2028 Build w/ Mitigation Conditions
 Weekday Morning

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	5	3	114	0	42	0	162	209	70	546	0
Future Volume (veh/h)	0	5	3	114	0	42	0	162	209	70	546	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1976	1976	1976	1822	1976	1806	1900	1752	1781	1870	1841	1900
Adj Flow Rate, veh/h	0	5	3	119	0	44	0	169	0	73	569	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	10	0	11	0	10	8	2	4	0
Cap, veh/h	0	15	9	225	0	217	0	811		163	764	0
Arrive On Green	0.00	0.01	0.01	0.13	0.00	0.13	0.00	0.46	0.00	0.46	0.46	0.00
Sat Flow, veh/h	0	1157	694	1735	0	1675	0	1752	1510	125	1649	0
Grp Volume(v), veh/h	0	0	8	119	0	44	0	169	0	642	0	0
Grp Sat Flow(s),veh/h/ln	0	0	1851	1735	0	1675	0	1752	1510	1774	0	0
Q Serve(g_s), s	0.0	0.0	0.2	2.4	0.0	0.9	0.0	2.2	0.0	4.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.2	2.4	0.0	0.9	0.0	2.2	0.0	11.4	0.0	0.0
Prop In Lane	0.00		0.37	1.00		1.00	0.00		1.00	0.11		0.00
Lane Grp Cap(c), veh/h	0	0	24	225	0	217	0	811		927	0	0
V/C Ratio(X)	0.00	0.00	0.34	0.53	0.00	0.20	0.00	0.21		0.69	0.00	0.00
Avail Cap(c_a), veh/h	0	0	292	274	0	264	0	1520		1629	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	18.6	15.5	0.0	14.8	0.0	6.1	0.0	8.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	8.2	1.9	0.0	0.5	0.0	0.1	0.0	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.1	0.9	0.0	0.3	0.0	0.5	0.0	2.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	26.8	17.4	0.0	15.2	0.0	6.2	0.0	9.4	0.0	0.0
LnGrp LOS	A	A	C	B	A	B	A	A		A	A	A
Approach Vol, veh/h		8			163			169	A		642	
Approach Delay, s/veh		26.8			16.8			6.2			9.4	
Approach LOS		C			B			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		22.6		5.5		22.6		9.9				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		33.0		6.0		33.0		6.0				
Max Q Clear Time (g_c+I1), s		4.2		2.2		13.4		4.4				
Green Ext Time (p_c), s		0.9		0.0		4.2		0.1				

Intersection Summary

HCM 6th Ctrl Delay	10.2
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
1: Main Street & Seven Bridge Road & Driveway

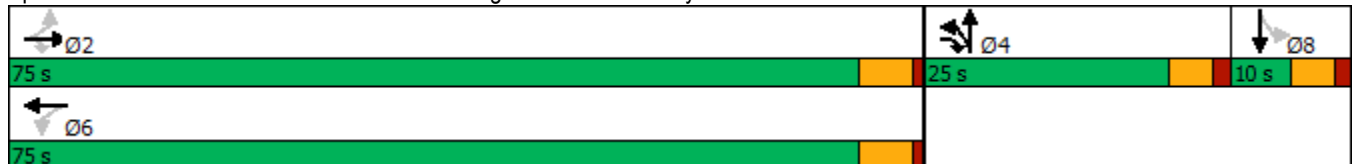
2028 Build w/ Mitigation Conditions
Weekday Evening

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	553	405	4	1237	0	309	0	3	0	0	0
Future Volume (vph)	0	553	405	4	1237	0	309	0	3	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	11	11	15	15	15	12	12	12
Storage Length (ft)	0		115	50		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35				30
Link Distance (ft)		1450			1000			1000				200
Travel Time (s)		28.2			19.5			19.5				4.5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	3%	2%	0%	2%	0%	2%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type		NA	pm+ov	Perm	NA		Split	NA				
Protected Phases		2	4		6		4	4				8
Permitted Phases	2		2	6						8		
Detector Phase	2	2	4	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0		5.0	5.0	
Minimum Split (s)	15.5	15.5	15.0	15.5	15.5		15.0	15.0		10.0	10.0	
Total Split (s)	75.0	75.0	25.0	75.0	75.0		25.0	25.0		10.0	10.0	
Total Split (%)	68.2%	68.2%	22.7%	68.2%	68.2%		22.7%	22.7%		9.1%	9.1%	
Maximum Green (s)	69.5	69.5	20.0	69.5	69.5		20.0	20.0		5.0	5.0	
Yellow Time (s)	4.5	4.5	3.5	4.5	4.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.5	1.0	1.0		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.5	5.0	5.5	5.5			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min	None	Min	Min		None	None		None	None	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 97.2
 Natural Cycle: 130
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Main Street & Seven Bridge Road & Driveway



Queues
1: Main Street & Seven Bridge Road & Driveway

2028 Build w/ Mitigation Conditions
Weekday Evening

	→	↘	↙	←	↑
Lane Group	EBT	EBR	WBL	WBT	NBT
Lane Group Flow (vph)	582	426	4	1302	328
v/c Ratio	0.46	0.28	0.01	1.01	0.81
Control Delay	7.6	0.5	4.8	43.9	46.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	7.6	0.5	4.8	43.9	46.1
Queue Length 50th (ft)	142	0	1	~886	153
Queue Length 95th (ft)	214	0	4	#1155	#258
Internal Link Dist (ft)	1370			920	920
Turn Bay Length (ft)		115	50		
Base Capacity (vph)	1276	1519	502	1289	460
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.46	0.28	0.01	1.01	0.71

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
 1: Main Street & Seven Bridge Road & Driveway

2028 Build w/ Mitigation Conditions
 Weekday Evening

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	553	405	4	1237	0	309	0	3	0	0	0
Future Volume (veh/h)	0	553	405	4	1237	0	309	0	3	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1856	1870	1900	1870	1900	1945	1976	1976	1900	1900	1900
Adj Flow Rate, veh/h	0	582	426	4	1302	0	325	0	3	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	3	2	0	2	0	2	0	0	0	0	0
Cap, veh/h	0	1302	1417	394	1312	0	358	0	3	0	2	0
Arrive On Green	0.00	0.70	0.70	0.70	0.70	0.00	0.19	0.00	0.19	0.00	0.00	0.00
Sat Flow, veh/h	0	1856	1585	568	1870	0	1863	0	17	0	1900	0
Grp Volume(v), veh/h	0	582	426	4	1302	0	328	0	0	0	0	0
Grp Sat Flow(s),veh/h/ln	0	1856	1585	568	1870	0	1880	0	0	0	1900	0
Q Serve(g_s), s	0.0	13.5	3.9	0.3	67.7	0.0	16.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	13.5	3.9	13.8	67.7	0.0	16.9	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00	0.99		0.01	0.00		0.00
Lane Grp Cap(c), veh/h	0	1302	1417	394	1312	0	362	0	0	0	2	0
V/C Ratio(X)	0.00	0.45	0.30	0.01	0.99	0.00	0.91	0.00	0.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	0	1302	1417	394	1312	0	380	0	0	0	96	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	6.4	0.8	9.4	14.5	0.0	39.1	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.1	0.0	22.9	0.0	23.4	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.4	3.0	0.0	30.2	0.0	9.9	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	6.7	0.9	9.4	37.4	0.0	62.5	0.0	0.0	0.0	0.0	0.0
LnGrp LOS	A	A	A	A	D	A	E	A	A	A	A	A
Approach Vol, veh/h		1008			1306			328				0
Approach Delay, s/veh		4.2			37.3			62.5				0.0
Approach LOS		A			D			E				
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		75.0		24.1		75.0		0.0				
Change Period (Y+Rc), s		5.5		5.0		5.5		5.0				
Max Green Setting (Gmax), s		69.5		20.0		69.5		5.0				
Max Q Clear Time (g_c+I1), s		15.5		18.9		69.7		0.0				
Green Ext Time (p_c), s		6.3		0.2		0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	27.8
HCM 6th LOS	C

Lanes, Volumes, Timings
2: Main Street & Lunenburg Road

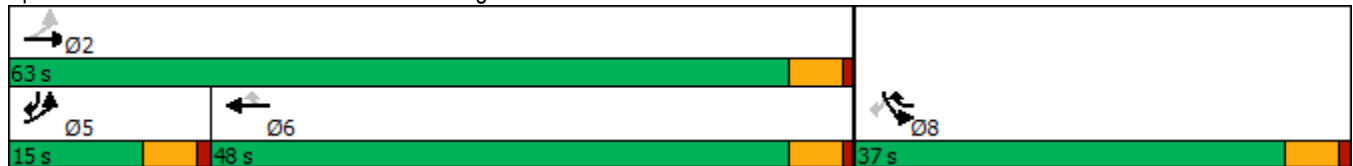
2028 Build w/ Mitigation Conditions
Weekday Evening

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	68	483	793	745	473	97
Future Volume (vph)	68	483	793	745	473	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Storage Length (ft)	100			160	0	240
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Right Turn on Red				Yes		No
Link Speed (mph)		35	35		45	
Link Distance (ft)		1000	1450		1000	
Travel Time (s)		19.5	28.2		15.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	3%	3%	1%	2%	0%
Shared Lane Traffic (%)						
Turn Type	pm+pt	NA	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	6	8	8	5
Permitted Phases	2			6		8
Detector Phase	5	2	6	8	8	5
Switch Phase						
Minimum Initial (s)	6.0	10.0	10.0	10.0	10.0	6.0
Minimum Split (s)	11.0	15.0	15.0	15.0	15.0	11.0
Total Split (s)	15.0	63.0	48.0	37.0	37.0	15.0
Total Split (%)	15.0%	63.0%	48.0%	37.0%	37.0%	15.0%
Maximum Green (s)	10.0	58.0	43.0	32.0	32.0	10.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Vehicle Extension (s)	2.0	3.0	3.0	2.0	2.0	2.0
Recall Mode	None	Min	Min	None	None	None

Intersection Summary







Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 95.9
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Main Street & Lunenburg Road



Queues
2: Main Street & Lunenburg Road

2028 Build w/ Mitigation Conditions
Weekday Evening













						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	72	508	835	784	498	102
v/c Ratio	0.33	0.49	1.04	0.57	0.93	0.15
Control Delay	13.6	14.1	71.9	2.5	57.7	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.6	14.1	71.9	2.5	57.7	16.1
Queue Length 50th (ft)	19	178	~575	20	291	36
Queue Length 95th (ft)	38	261	#832	50	#496	67
Internal Link Dist (ft)		920	1370		920	
Turn Bay Length (ft)	100			160		240
Base Capacity (vph)	254	1080	801	1385	572	734
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	0.28	0.47	1.04	0.57	0.87	0.14

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
2: Main Street & Lunenburg Road

2028 Build w/ Mitigation Conditions
Weekday Evening

							
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	68	483	793	745	473	97	
Future Volume (veh/h)	68	483	793	745	473	97	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1900	1856	1856	1885	1870	1900	
Adj Flow Rate, veh/h	72	508	835	784	498	102	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	
Percent Heavy Veh, %	0	3	3	1	2	0	
Cap, veh/h	197	1090	882	1239	535	574	
Arrive On Green	0.06	0.59	0.48	0.48	0.30	0.30	
Sat Flow, veh/h	1810	1856	1856	1598	1781	1610	
Grp Volume(v), veh/h	72	508	835	784	498	102	
Grp Sat Flow(s),veh/h/ln	1810	1856	1856	1598	1781	1610	
Q Serve(g_s), s	1.6	13.9	38.3	19.3	24.2	3.9	
Cycle Q Clear(g_c), s	1.6	13.9	38.3	19.3	24.2	3.9	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	197	1090	882	1239	535	574	
V/C Ratio(X)	0.37	0.47	0.95	0.63	0.93	0.18	
Avail Cap(c_a), veh/h	298	1208	895	1251	640	668	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	19.9	10.4	22.3	4.4	30.3	19.7	
Incr Delay (d2), s/veh	0.4	0.3	18.4	1.0	17.2	0.1	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.7	5.1	19.5	15.6	12.1	1.4	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	20.3	10.8	40.7	5.4	47.5	19.8	
LnGrp LOS	C	B	D	A	D	B	
Approach Vol, veh/h		580	1619		600		
Approach Delay, s/veh		11.9	23.6		42.8		
Approach LOS		B	C		D		
Timer - Assigned Phs		2			5	6	8
Phs Duration (G+Y+Rc), s		57.3			10.0	47.3	31.8
Change Period (Y+Rc), s		5.0			5.0	5.0	5.0
Max Green Setting (Gmax), s		58.0			10.0	43.0	32.0
Max Q Clear Time (g_c+I1), s		15.9			3.6	40.3	26.2
Green Ext Time (p_c), s		3.5			0.0	2.1	0.6
Intersection Summary							
HCM 6th Ctrl Delay			25.3				
HCM 6th LOS			C				

Lanes, Volumes, Timings
3: Lunenburg Road & McGovern Boulevard

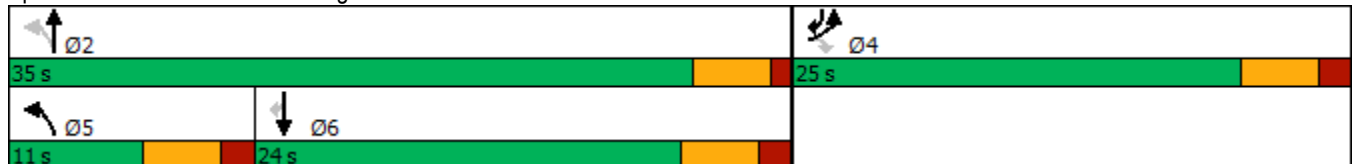
2028 Build w/ Mitigation Conditions
Weekday Evening

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	416	236	192	655	347	323
Future Volume (vph)	416	236	192	655	347	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Storage Length (ft)	0	0	200			200
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			50	50	
Link Distance (ft)	1000			1000	4300	
Travel Time (s)	22.7			13.6	58.6	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	2%	6%	0%
Shared Lane Traffic (%)						
Turn Type	Prot	Perm	pm+pt	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	4
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0	6.0
Minimum Split (s)	11.0	11.0	11.0	14.5	15.0	11.0
Total Split (s)	25.0	25.0	11.0	35.0	24.0	25.0
Total Split (%)	41.7%	41.7%	18.3%	58.3%	40.0%	41.7%
Maximum Green (s)	20.0	20.0	6.0	30.5	19.0	20.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	1.5	1.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.5	5.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	Min	Min	None

Intersection Summary







Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 52.5
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Lunenburg Road & McGovern Boulevard



Queues
3: Lunenburg Road & McGovern Boulevard

2028 Build w/ Mitigation Conditions
Weekday Evening













						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	433	246	200	682	361	336
v/c Ratio	0.75	0.36	0.49	0.79	0.67	0.26
Control Delay	26.8	4.2	12.9	19.9	24.3	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.8	4.2	12.9	19.9	24.3	0.9
Queue Length 50th (ft)	128	0	38	179	111	0
Queue Length 95th (ft)	#262	41	71	303	193	14
Internal Link Dist (ft)	920			920	4220	
Turn Bay Length (ft)			200			200
Base Capacity (vph)	696	771	410	1096	657	1303
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	0.62	0.32	0.49	0.62	0.55	0.26

Intersection Summary

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

HCM 6th Signalized Intersection Summary
 3: Lunenburg Road & McGovern Boulevard

2028 Build w/ Mitigation Conditions
 Weekday Evening

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	416	236	192	655	347	323
Future Volume (veh/h)	416	236	192	655	347	323
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	1811	1900
Adj Flow Rate, veh/h	433	246	200	682	361	336
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	2	6	0
Cap, veh/h	536	477	431	920	486	909
Arrive On Green	0.30	0.30	0.12	0.49	0.27	0.27
Sat Flow, veh/h	1810	1610	1810	1870	1811	1610
Grp Volume(v), veh/h	433	246	200	682	361	336
Grp Sat Flow(s),veh/h/ln	1810	1610	1810	1870	1811	1610
Q Serve(g_s), s	10.5	6.0	3.4	13.8	8.6	5.4
Cycle Q Clear(g_c), s	10.5	6.0	3.4	13.8	8.6	5.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	536	477	431	920	486	909
V/C Ratio(X)	0.81	0.52	0.46	0.74	0.74	0.37
Avail Cap(c_a), veh/h	767	682	448	1209	729	1125
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.4	13.8	10.3	9.6	15.8	5.7
Incr Delay (d2), s/veh	4.3	0.9	0.8	1.7	2.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	5.6	0.9	3.5	2.9	2.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.7	14.7	11.1	11.3	18.1	5.9
LnGrp LOS	B	B	B	B	B	A
Approach Vol, veh/h	679			882	697	
Approach Delay, s/veh	17.8			11.3	12.2	
Approach LOS	B			B	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		28.2		19.0	10.6	17.7
Change Period (Y+Rc), s		* 5		5.0	5.0	5.0
Max Green Setting (Gmax), s		* 31		20.0	6.0	19.0
Max Q Clear Time (g_c+I1), s		15.8		12.5	5.4	10.6
Green Ext Time (p_c), s		3.6		1.5	0.0	2.1

Intersection Summary

HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings
5: Lunenburg Road & Woods Lane/Fort Pond Road

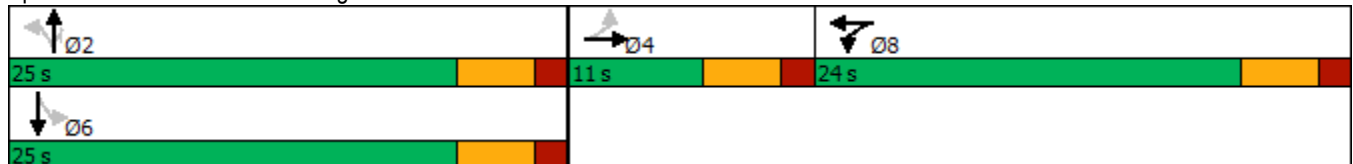
2028 Build w/ Mitigation Conditions
Weekday Evening

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	4	400	0	327	2	499	336	31	213	1
Future Volume (vph)	0	0	4	400	0	327	2	499	336	31	213	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16	11	11	11	11	11	11
Storage Length (ft)	0		0	65		0	0		55	0		0
Storage Lanes	0		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		500			420			875			1000	
Travel Time (s)		11.4			8.2			17.0			19.5	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	0%	5%	0%	1%	0%	1%	2%	14%	1%	0%
Shared Lane Traffic (%)												
Turn Type		NA		Split	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4		8	8			2			6	
Permitted Phases	4						2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	11.0	11.0		24.0	24.0		25.0	25.0	25.0	25.0	25.0	
Total Split (%)	18.3%	18.3%		40.0%	40.0%		41.7%	41.7%	41.7%	41.7%	41.7%	
Maximum Green (s)	6.0	6.0		19.0	19.0		20.0	20.0	20.0	20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	

Intersection Summary







Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 47.7
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Lunenburg Road & Woods Lane/Fort Pond Road



Queues
5: Lunenburg Road & Woods Lane/Fort Pond Road

2028 Build w/ Mitigation Conditions
Weekday Evening

						
Lane Group	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	5	455	372	569	382	278
v/c Ratio	0.01	0.69	0.44	0.76	0.51	0.51
Control Delay	0.0	21.5	4.6	23.8	9.3	16.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	0.0	21.5	4.6	23.8	9.3	16.8
Queue Length 50th (ft)	0	99	5	126	33	54
Queue Length 95th (ft)	0	#245	56	#362	122	151
Internal Link Dist (ft)	420		340	795		920
Turn Bay Length (ft)		65			55	
Base Capacity (vph)	500	795	940	780	768	567
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	0.01	0.57	0.40	0.73	0.50	0.49

Intersection Summary

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

HCM 6th Signalized Intersection Summary
 5: Lunenburg Road & Woods Lane/Fort Pond Road

2028 Build w/ Mitigation Conditions
 Weekday Evening

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	4	400	0	327	2	499	336	31	213	1
Future Volume (veh/h)	0	0	4	400	0	327	2	499	336	31	213	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1976	1976	1976	1899	1976	1961	1900	1885	1870	1693	1885	1900
Adj Flow Rate, veh/h	0	0	5	455	0	372	2	567	0	35	242	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	5	0	1	0	1	2	14	1	0
Cap, veh/h	0	0	14	575	0	533	77	668		127	595	2
Arrive On Green	0.00	0.00	0.01	0.32	0.00	0.32	0.35	0.35	0.00	0.35	0.35	0.35
Sat Flow, veh/h	0	0	1675	1809	0	1675	1	1883	1585	115	1677	6
Grp Volume(v), veh/h	0	0	5	455	0	372	569	0	0	278	0	0
Grp Sat Flow(s),veh/h/ln	0	0	1675	1809	0	1675	1884	0	1585	1799	0	0
Q Serve(g_s), s	0.0	0.0	0.1	10.8	0.0	9.2	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.1	10.8	0.0	9.2	13.1	0.0	0.0	5.2	0.0	0.0
Prop In Lane	0.00		1.00	1.00		1.00	0.00		1.00	0.13		0.00
Lane Grp Cap(c), veh/h	0	0	14	575	0	533	745	0		724	0	0
V/C Ratio(X)	0.00	0.00	0.37	0.79	0.00	0.70	0.76	0.00		0.38	0.00	0.00
Avail Cap(c_a), veh/h	0	0	214	731	0	677	879	0		840	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	23.2	14.6	0.0	14.0	14.0	0.0	0.0	11.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	16.0	4.6	0.0	2.3	3.4	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.1	4.3	0.0	3.1	5.0	0.0	0.0	1.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	39.2	19.2	0.0	16.3	17.4	0.0	0.0	11.8	0.0	0.0
LnGrp LOS	A	A	D	B	A	B	B	A		B	A	A
Approach Vol, veh/h		5			827			569	A		278	
Approach Delay, s/veh		39.2			17.9			17.4			11.8	
Approach LOS		D			B			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		21.7		5.4		21.7		19.9				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		20.0		6.0		20.0		19.0				
Max Q Clear Time (g_c+I1), s		15.1		2.1		7.2		12.8				
Green Ext Time (p_c), s		1.6		0.0		1.3		2.2				

Intersection Summary

HCM 6th Ctrl Delay	16.8
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
1: Main Street & Seven Bridge Road & Driveway

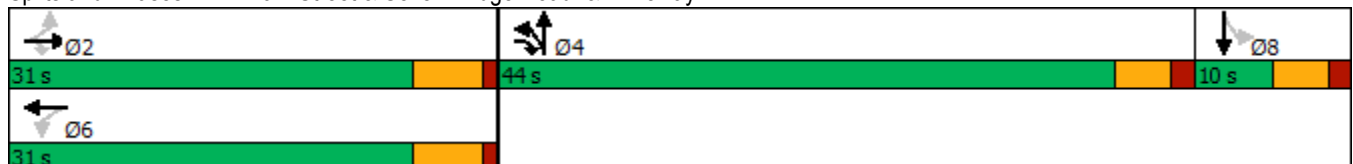
2028 Build w/ Mitigation Conditions
Saturday MIDDAY

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	61	791	5	275	1	523	2	28	0	2	0
Future Volume (vph)	1	61	791	5	275	1	523	2	28	0	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	11	11	15	15	15	12	12	12
Storage Length (ft)	0		115	50		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35				30
Link Distance (ft)		1450			1000			1000				200
Travel Time (s)		28.2			19.5			19.5				4.5
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
Heavy Vehicles (%)	0%	4%	2%	0%	1%	0%	2%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type	Perm	NA	pm+ov	Perm	NA		Split	NA				NA
Protected Phases		2	4		6		4	4				8
Permitted Phases	2		2	6						8		
Detector Phase	2	2	4	6	6		4	4		8		8
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0		5.0		5.0
Minimum Split (s)	15.5	15.5	15.0	15.5	15.5		15.0	15.0		10.0		10.0
Total Split (s)	31.0	31.0	44.0	31.0	31.0		44.0	44.0		10.0		10.0
Total Split (%)	36.5%	36.5%	51.8%	36.5%	36.5%		51.8%	51.8%		11.8%		11.8%
Maximum Green (s)	25.5	25.5	39.0	25.5	25.5		39.0	39.0		5.0		5.0
Yellow Time (s)	4.5	4.5	3.5	4.5	4.5		3.5	3.5		3.5		3.5
All-Red Time (s)	1.0	1.0	1.5	1.0	1.0		1.5	1.5		1.5		1.5
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0				0.0
Total Lost Time (s)		5.5	5.0	5.5	5.5			5.0				5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	2.0	3.0	3.0		2.0	2.0		0.2		0.2
Recall Mode	Min	Min	None	Min	Min		None	None		None		None

Intersection Summary







Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 57
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Main Street & Seven Bridge Road & Driveway



Queues



















1: Main Street & Seven Bridge Road & Driveway

						
Lane Group	EBT	EBR	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	74	953	6	332	666	2
v/c Ratio	0.14	0.63	0.02	0.62	0.71	0.01
Control Delay	18.7	2.1	18.6	25.4	17.8	33.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.7	2.1	18.6	25.4	17.8	33.5
Queue Length 50th (ft)	17	0	1	90	145	1
Queue Length 95th (ft)	56	8	10	214	361	7
Internal Link Dist (ft)	1370			920	920	120
Turn Bay Length (ft)		115	50			
Base Capacity (vph)	859	1509	614	889	1417	182
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	0.09	0.63	0.01	0.37	0.47	0.01
Intersection Summary						

HCM 6th Signalized Intersection Summary
 1: Main Street & Seven Bridge Road & Driveway

2028 Build w/ Mitigation Conditions

Saturday Midday

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	61	791	5	275	1	523	2	28	0	2	0
Future Volume (veh/h)	1	61	791	5	275	1	523	2	28	0	2	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1841	1870	1900	1885	1900	1945	1976	1976	1900	1900	1900
Adj Flow Rate, veh/h	1	73	953	6	331	1	630	2	34	0	2	0
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
Percent Heavy Veh, %	0	4	2	0	1	0	2	0	0	0	0	0
Cap, veh/h	54	682	1223	298	698	2	707	2	38	0	5	0
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.40	0.40	0.40	0.00	0.00	0.00
Sat Flow, veh/h	3	1835	1585	558	1878	6	1769	6	95	0	1900	0
Grp Volume(v), veh/h	74	0	953	6	0	332	666	0	0	0	2	0
Grp Sat Flow(s),veh/h/ln	1838	0	1585	558	0	1884	1870	0	0	0	1900	0
Q Serve(g_s), s	0.0	0.0	23.7	0.5	0.0	9.2	22.8	0.0	0.0	0.0	0.1	0.0
Cycle Q Clear(g_c), s	1.8	0.0	23.7	2.3	0.0	9.2	22.8	0.0	0.0	0.0	0.1	0.0
Prop In Lane	0.01		1.00	1.00		0.00	0.95		0.05	0.00		0.00
Lane Grp Cap(c), veh/h	737	0	1223	298	0	701	747	0	0	0	5	0
V/C Ratio(X)	0.10	0.00	0.78	0.02	0.00	0.47	0.89	0.00	0.00	0.00	0.39	0.00
Avail Cap(c_a), veh/h	737	0	1223	298	0	701	1064	0	0	0	139	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	14.1	0.0	4.5	14.9	0.0	16.4	19.2	0.0	0.0	0.0	34.1	0.0
Incr Delay (d2), s/veh	0.1	0.0	3.3	0.0	0.0	0.5	5.5	0.0	0.0	0.0	16.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	16.3	0.1	0.0	3.7	9.8	0.0	0.0	0.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.2	0.0	7.8	14.9	0.0	16.9	24.8	0.0	0.0	0.0	50.7	0.0
LnGrp LOS	B	A	A	B	A	B	C	A	A	A	D	A
Approach Vol, veh/h		1027			338			666				2
Approach Delay, s/veh		8.3			16.9			24.8				50.7
Approach LOS		A			B			C				D
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		31.0		32.4		31.0		5.2				
Change Period (Y+Rc), s		5.5		5.0		5.5		5.0				
Max Green Setting (Gmax), s		25.5		39.0		25.5		5.0				
Max Q Clear Time (g_c+I1), s		25.7		24.8		11.2		2.1				
Green Ext Time (p_c), s		0.0		2.6		1.6		0.0				

Intersection Summary

HCM 6th Ctrl Delay	15.1
HCM 6th LOS	B

Lanes, Volumes, Timings
2: Main Street & Lunenburg Road

2028 Build w/ Mitigation Conditions

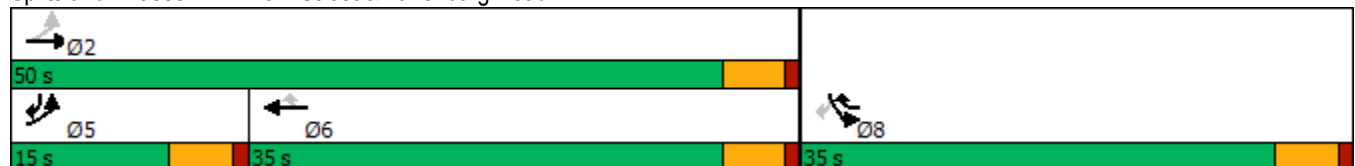
Saturday MIDDAY

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	59	384	413	387	466	57
Future Volume (vph)	59	384	413	387	466	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Storage Length (ft)	100			160	0	240
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Right Turn on Red				Yes		No
Link Speed (mph)		35	35		45	
Link Distance (ft)		1000	1450		1000	
Travel Time (s)		19.5	28.2		15.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	1%	2%	1%	2%	0%
Shared Lane Traffic (%)						
Turn Type	pm+pt	NA	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	6	8	8	5
Permitted Phases	2			6		8
Detector Phase	5	2	6	8	8	5
Switch Phase						
Minimum Initial (s)	6.0	10.0	10.0	10.0	10.0	6.0
Minimum Split (s)	11.0	15.0	15.0	15.0	15.0	11.0
Total Split (s)	15.0	50.0	35.0	35.0	35.0	15.0
Total Split (%)	17.6%	58.8%	41.2%	41.2%	41.2%	17.6%
Maximum Green (s)	10.0	45.0	30.0	30.0	30.0	10.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Vehicle Extension (s)	2.0	3.0	3.0	2.0	2.0	2.0
Recall Mode	None	Min	Min	None	None	None

Intersection Summary







Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 64.4
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Main Street & Lunenburg Road



Queues
2: Main Street & Lunenburg Road

2028 Build w/ Mitigation Conditions
Saturday MIDDAY













						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	62	404	435	407	491	60
v/c Ratio	0.18	0.48	0.73	0.31	0.80	0.07
Control Delay	11.0	13.9	29.5	0.9	32.3	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.0	13.9	29.5	0.9	32.3	9.2
Queue Length 50th (ft)	13	104	161	0	180	11
Queue Length 95th (ft)	34	190	296	16	#391	33
Internal Link Dist (ft)		920	1370		920	
Turn Bay Length (ft)	100			160		240
Base Capacity (vph)	425	1285	944	1368	897	969
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	0.15	0.31	0.46	0.30	0.55	0.06

Intersection Summary

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

HCM 6th Signalized Intersection Summary
2: Main Street & Lunenburg Road

2028 Build w/ Mitigation Conditions
Saturday Midday

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	59	384	413	387	466	57
Future Volume (veh/h)	59	384	413	387	466	57
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1885	1870	1885	1870	1900
Adj Flow Rate, veh/h	62	404	435	407	491	60
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	1	2	1	2	0
Cap, veh/h	340	922	602	1017	560	617
Arrive On Green	0.07	0.49	0.32	0.32	0.31	0.31
Sat Flow, veh/h	1781	1885	1870	1598	1781	1610
Grp Volume(v), veh/h	62	404	435	407	491	60
Grp Sat Flow(s),veh/h/ln	1781	1885	1870	1598	1781	1610
Q Serve(g_s), s	1.0	7.1	10.5	6.3	13.3	1.2
Cycle Q Clear(g_c), s	1.0	7.1	10.5	6.3	13.3	1.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	340	922	602	1017	560	617
V/C Ratio(X)	0.18	0.44	0.72	0.40	0.88	0.10
Avail Cap(c_a), veh/h	568	1667	1103	1444	1050	1060
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.2	8.5	15.2	4.5	16.5	10.1
Incr Delay (d2), s/veh	0.1	0.3	1.7	0.3	1.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.2	4.0	3.6	4.4	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.3	8.8	16.9	4.8	18.3	10.1
LnGrp LOS	B	A	B	A	B	B
Approach Vol, veh/h		466	842		551	
Approach Delay, s/veh		9.0	11.0		17.4	
Approach LOS		A	B		B	
Timer - Assigned Phs		2			5	6
Phs Duration (G+Y+Rc), s		29.9			8.5	21.4
Change Period (Y+Rc), s		5.0			5.0	5.0
Max Green Setting (Gmax), s		45.0			10.0	30.0
Max Q Clear Time (g_c+I1), s		9.1			3.0	12.5
Green Ext Time (p_c), s		2.6			0.0	3.9
Green Ext Time (p_c), s						0.7
Intersection Summary						
HCM 6th Ctrl Delay			12.4			
HCM 6th LOS			B			

Lanes, Volumes, Timings
3: Lunenburg Road & McGovern Boulevard

2028 Build w/ Mitigation Conditions

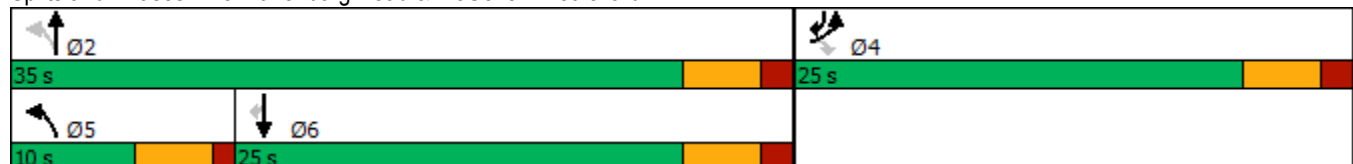
Saturday MIDDAY

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	138	96	95	359	430	145
Future Volume (vph)	138	96	95	359	430	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Storage Length (ft)	0	0	200			200
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			50	50	
Link Distance (ft)	1000			1000	4300	
Travel Time (s)	22.7			13.6	58.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	3%	2%	5%
Shared Lane Traffic (%)						
Turn Type	Prot	Perm	pm+pt	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	4
Switch Phase						
Minimum Initial (s)	6.0	6.0	5.0	10.0	10.0	6.0
Minimum Split (s)	11.0	11.0	9.5	15.0	15.0	11.0
Total Split (s)	25.0	25.0	10.0	35.0	25.0	25.0
Total Split (%)	41.7%	41.7%	16.7%	58.3%	41.7%	41.7%
Maximum Green (s)	20.0	20.0	5.5	30.0	20.0	20.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.5	1.5	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.5	5.0	5.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	Min	Min	None

Intersection Summary







Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 45.2
 Natural Cycle: 45
 Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Lunenburg Road & McGovern Boulevard



Queues
3: Lunenburg Road & McGovern Boulevard

2028 Build w/ Mitigation Conditions
Saturday MIDDAY

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	150	104	103	390	467	158
v/c Ratio	0.42	0.26	0.21	0.33	0.53	0.14
Control Delay	20.5	6.2	6.0	6.7	15.9	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.5	6.2	6.0	6.7	15.9	0.8
Queue Length 50th (ft)	36	0	10	48	104	0
Queue Length 95th (ft)	80	29	31	115	#231	9
Internal Link Dist (ft)	920			920	4220	
Turn Bay Length (ft)			200			200
Base Capacity (vph)	769	744	498	1238	954	1361
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	0.20	0.14	0.21	0.32	0.49	0.12

Intersection Summary













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

HCM 6th Signalized Intersection Summary

3: Lunenburg Road & McGovern Boulevard

2028 Build w/ Mitigation Conditions

Saturday MIDDAY

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	138	96	95	359	430	145
Future Volume (veh/h)	138	96	95	359	430	145
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1856	1870	1826
Adj Flow Rate, veh/h	150	104	103	390	467	158
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	3	2	5
Cap, veh/h	272	242	457	1037	637	769
Arrive On Green	0.16	0.16	0.09	0.56	0.34	0.34
Sat Flow, veh/h	1739	1547	1739	1856	1870	1547
Grp Volume(v), veh/h	150	104	103	390	467	158
Grp Sat Flow(s),veh/h/ln	1739	1547	1739	1856	1870	1547
Q Serve(g_s), s	2.8	2.1	1.1	4.1	7.7	2.0
Cycle Q Clear(g_c), s	2.8	2.1	1.1	4.1	7.7	2.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	272	242	457	1037	637	769
V/C Ratio(X)	0.55	0.43	0.23	0.38	0.73	0.21
Avail Cap(c_a), veh/h	990	881	572	1584	1064	1123
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.7	13.4	6.4	4.3	10.2	4.9
Incr Delay (d2), s/veh	1.7	1.2	0.2	0.2	1.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.1	0.2	0.3	1.9	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.4	14.6	6.7	4.6	11.8	5.1
LnGrp LOS	B	B	A	A	B	A
Approach Vol, veh/h	254			493	625	
Approach Delay, s/veh	15.1			5.0	10.1	
Approach LOS	B			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		24.6		10.5	7.7	17.0
Change Period (Y+Rc), s		5.0		5.0	4.5	5.0
Max Green Setting (Gmax), s		30.0		20.0	5.5	20.0
Max Q Clear Time (g_c+I1), s		6.1		4.8	3.1	9.7
Green Ext Time (p_c), s		2.0		0.7	0.0	2.3
Intersection Summary						
HCM 6th Ctrl Delay			9.2			
HCM 6th LOS			A			

Lanes, Volumes, Timings
5: Lunenburg Road & Woods Lane/Fort Pond Road

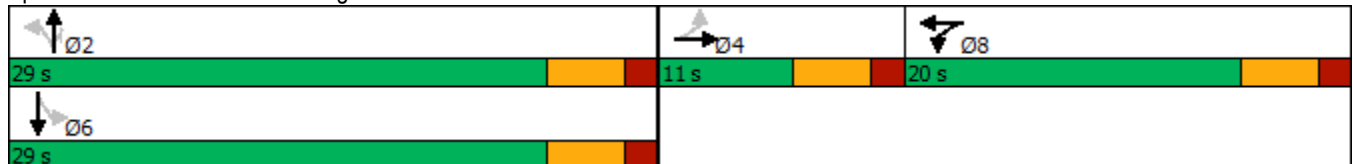
2028 Build w/ Mitigation Conditions
Saturday MIDDAY

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	3	224	1	75	1	220	173	51	224	0
Future Volume (vph)	0	0	3	224	1	75	1	220	173	51	224	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	16	16	11	11	11	11	11	11
Storage Length (ft)	0		0	65		0	0		55	0		0
Storage Lanes	0		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			35			35			35	
Link Distance (ft)		500			500			875			1000	
Travel Time (s)		11.4			9.7			17.0			19.5	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	0%	0%	0%	4%	0%	8%	0%	5%	3%	8%	6%	0%
Shared Lane Traffic (%)												
Turn Type		NA		Split	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4		8	8			2			6	
Permitted Phases	4						2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	11.0	11.0		20.0	20.0		29.0	29.0	29.0	29.0	29.0	
Total Split (%)	18.3%	18.3%		33.3%	33.3%		48.3%	48.3%	48.3%	48.3%	48.3%	
Maximum Green (s)	6.0	6.0		15.0	15.0		24.0	24.0	24.0	24.0	24.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 38.5
 Natural Cycle: 50
 Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Lunenburg Road & Woods Lane/Fort Pond Road









Queues

2028 Build w/ Mitigation Conditions

5: Lunenburg Road & Woods Lane/Fort Pond Road

Saturday MIDDAY

						
Lane Group	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	4	264	89	260	204	324
v/c Ratio	0.01	0.49	0.17	0.36	0.27	0.51
Control Delay	0.0	16.6	5.4	10.9	3.1	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	0.0	16.6	5.4	10.9	3.1	13.2
Queue Length 50th (ft)	0	34	0	29	0	39
Queue Length 95th (ft)	0	136	26	107	28	142
Internal Link Dist (ft)	420		420	795		920
Turn Bay Length (ft)		65			55	
Base Capacity (vph)	637	817	757	1162	1076	1026
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	0.01	0.32	0.12	0.22	0.19	0.32
Intersection Summary						

HCM 6th Signalized Intersection Summary
 5: Lunenburg Road & Woods Lane/Fort Pond Road

2028 Build w/ Mitigation Conditions

Saturday Midday

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	3	224	1	75	1	220	173	51	224	0
Future Volume (veh/h)	0	0	3	224	1	75	1	220	173	51	224	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1976	1976	1976	1914	1976	1853	1900	1826	1856	1781	1811	1900
Adj Flow Rate, veh/h	0	0	4	264	1	88	1	259	0	60	264	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	4	0	8	0	5	3	8	6	0
Cap, veh/h	0	0	11	389	4	353	113	569		193	466	0
Arrive On Green	0.00	0.00	0.01	0.21	0.21	0.21	0.31	0.31	0.00	0.31	0.31	0.00
Sat Flow, veh/h	0	0	1675	1823	19	1659	2	1823	1572	191	1493	0
Grp Volume(v), veh/h	0	0	4	264	0	89	260	0	0	324	0	0
Grp Sat Flow(s),veh/h/ln	0	0	1675	1823	0	1677	1825	0	1572	1684	0	0
Q Serve(g_s), s	0.0	0.0	0.1	4.3	0.0	1.4	0.0	0.0	0.0	1.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.1	4.3	0.0	1.4	3.7	0.0	0.0	5.0	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.99	0.00		1.00	0.19		0.00
Lane Grp Cap(c), veh/h	0	0	11	389	0	357	682	0		659	0	0
V/C Ratio(X)	0.00	0.00	0.36	0.68	0.00	0.25	0.38	0.00		0.49	0.00	0.00
Avail Cap(c_a), veh/h	0	0	314	854	0	785	1478	0		1363	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	15.8	11.6	0.0	10.5	8.8	0.0	0.0	9.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	19.1	2.1	0.0	0.4	0.4	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.1	1.4	0.0	0.4	1.0	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	34.9	13.7	0.0	10.8	9.2	0.0	0.0	9.8	0.0	0.0
LnGrp LOS	A	A	C	B	A	B	A	A		A	A	A
Approach Vol, veh/h		4			353			260	A		324	
Approach Delay, s/veh		34.9			13.0			9.2			9.8	
Approach LOS		C			B			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.0		5.2		15.0		11.8				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		24.0		6.0		24.0		15.0				
Max Q Clear Time (g_c+I1), s		5.7		2.1		7.0		6.3				
Green Ext Time (p_c), s		1.3		0.0		1.7		0.9				

Intersection Summary

HCM 6th Ctrl Delay	10.9
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Appendix M

Sensitivity Capacity and Queue Analysis Worksheets

General & Site Information		v 4.2
Analyst:	Samuel W. Gregorio	
Agency/Co:	TEC, Inc.	
Date:	7/27/2021	
Project or PI#:	T0852.04	
Year, Peak Hour:	2028 AM Build	
County/District:		
Intersection Name:	Lunenburg Rd (Rt. 70) / Old Union Turnpike Road	

		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			63		223		36	
	NE (2), vph								
	E (3), vph	281				171		162	
	SE (4), vph								
	S (5), vph	286		212				123	
	SW (6), vph								
	W (7), vph	49		27		83			
	NW (8), vph								
Output	Total Vehicles	616	0	302	0	477	0	321	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	95.3%	100.0%	89.9%	100.0%	89.2%	100.0%	96.8%	100.0%
% Heavy Vehicles	4.7%	0.0%	10.1%	0.0%	10.8%	0.0%	3.3%	0.0%
% Bicycle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.97	0.95	0.97	0.95	0.97	0.95	0.97	0.95
F _{HV}	0.955	1.000	0.908	1.000	0.903	1.000	0.969	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	72	0	255	0	38	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	302	0	0	0	195	0	172	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	307	0	241	0	0	0	131	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	53	0	31	0	95	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	662	0	343	0	545	0	342	0
Conflicting flow, pcu/h	366	0	388	0	513	0	850	0

Results: Approach Measures of Effectiveness								
HCM 6th Edition	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	908	NA	844	NA	738	NA	562	NA
Entry Flow Rates, vph	632	0	311	0	492	0	331	0
V/C ratio	0.70		0.37		0.67		0.59	
Control Delay, sec/pcu	16.0		8.6		17.4		18.1	
LOS	C		A		C		C	
Average Queue (ft)	70		19		59		42	
95th % Queue (ft)	154		47		142		98	

Overall Intersection Measures of Effectiveness					
Int Control Delay (sec)	15.5	Int LOS	C	Max Approach V/C	0.70

Notes: v 4.2

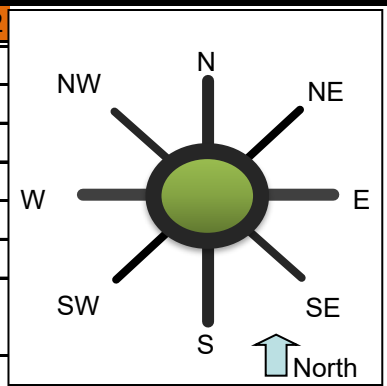
Unit Legend:
 vph = vehicles per hour
 PHF = peak hour factor
 F_{HV} = heavy vehicle factor
 pcu = passenger car unit

Bypass Lane Merge Point Analysis (if applicable)

Bypass Characteristics	Bypass #1	Bypass #2	Bypass #3	Bypass #4	Bypass #5	Bypass #6
Select Entry Leg from Bypass (FROM)						
Select Exit Leg for Bypass (TO)						
Does the bypass have a dedicated receiving lane?						
Volumes						
Right Turn Volume removed from Entry Leg						
Volume Characteristics (for entry leg)						
PHF						
F _{HV}						
F _{ped}						
NOTE: Volume Characteristics for Exit Leg are already taken into account						
Entry/Conflicting Flows						
Entry Flow, pcu/hr						
Conflicting Flow, pcu/hr						
Bypass Lane Results (HCM 6th Edition)						
Entry Capacity of Bypass, vph						
Flow Rates of Exiting Traffic, vph						
V/C ratio						
Control Delay, s/veh						
LOS						
95th % Queue (veh)						
95th % Queue (ft)						
Approach w/Bypass Delay, s/veh						
Approach w/Bypass LOS						

General & Site Information v 4.2

Analyst:	Samuel W. Gregorio
Agency/Co:	TEC, Inc.
Date:	5/4/2021
Project or PI#:	T0852.04
Year, Peak Hour:	2028 PM Build
County/District:	
Intersection Name:	Lunenburg Rd (Rt. 70) / Old Union Turnpike Road



Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			143		500		77	
	NE (2), vph								
	E (3), vph	56				94		50	
	SE (4), vph								
	S (5), vph	255		150				165	
	SW (6), vph								
	W (7), vph	275		81		245			
	NW (8), vph								
Output	Total Vehicles	586	0	374	0	839	0	292	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	95.9%	100.0%	96.2%	100.0%	98.9%	100.0%	100.0%	100.0%
% Heavy Vehicles	4.1%	0.0%	3.8%	0.0%	1.1%	0.0%	0.0%	0.0%
% Bicycle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.99	0.95	0.99	0.95	0.99	0.95	0.99	0.95
F _{HV}	0.961	1.000	0.963	1.000	0.989	1.000	1.000	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	150	0	511	0	78	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	59	0	0	0	96	0	51	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	268	0	157	0	0	0	167	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	289	0	85	0	250	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	616	0	392	0	857	0	295	0
Conflicting flow, pcu/h	492	0	839	0	187	0	484	0

Results: Approach Measures of Effectiveness								
HCM 6th Edition	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	802	NA	565	NA	1128	NA	842	NA
Entry Flow Rates, vph	592	0	378	0	847	0	295	0
V/C ratio	0.74		0.67		0.75		0.35	
Control Delay, sec/pcu	19.7		21.6		15.9		8.3	
LOS	C		C		C		A	
Average Queue (ft)	81		57		93		17	
95th % Queue (ft)	175		129		189		40	

Overall Intersection Measures of Effectiveness					
Int Control Delay (sec)	16.9	Int LOS	C	Max Approach V/C	0.75

Notes: v 4.2

Unit Legend:
 vph = vehicles per hour
 PHF = peak hour factor
 F_{HV} = heavy vehicle factor
 pcu = passenger car unit

Bypass Lane Merge Point Analysis (if applicable)

Bypass Characteristics	Bypass #1	Bypass #2	Bypass #3	Bypass #4	Bypass #5	Bypass #6
Select Entry Leg from Bypass (FROM)						
Select Exit Leg for Bypass (TO)						
Does the bypass have a dedicated receiving lane?						
Volumes						
Right Turn Volume removed from Entry Leg						
Volume Characteristics (for entry leg)						
PHF						
F _{HV}						
F _{ped}						
NOTE: Volume Characteristics for Exit Leg are already taken into account						
Entry/Conflicting Flows						
Entry Flow, pcu/hr						
Conflicting Flow, pcu/hr						
Bypass Lane Results (HCM 6th Edition)						
Entry Capacity of Bypass, vph						
Flow Rates of Exiting Traffic, vph						
V/C ratio						
Control Delay, s/veh						
LOS						
95th % Queue (veh)						
95th % Queue (ft)						
Approach w/Bypass Delay, s/veh						
Approach w/Bypass LOS						