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

COMMONWEALTH OF MASSACHUSETTS
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# EXECUTIVE SUMMARY

TEC, Inc. (TEC) has been retained by Capital Group Properties (the "Proponent") 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 Proponent 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 2,552,000 square foot (SF) industrial park, 96,100 SF of professional office, 57,400 SF of additional retail space (64,700 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 8,220 new vehicle trips during the average weekday, with 1,008 new vehicle trips (783 entering and 225 exiting) during the weekday morning peak hour and 1,022 new vehicle trips (388 entering and 634 exiting) during the weekday evening peak hour. On a typical Saturday, the development is anticipated to generate 4,626 new vehicle trips with 440 new vehicle trips (226 entering and 214 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 Proponent 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 Proponent 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 Proponent 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 "Proponent") 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 Proponent 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 2,552,000 square foot (SF) industrial park, 96,100 SF of professional office, 57,400 SF of additional retail space (30,700 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.

## 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:

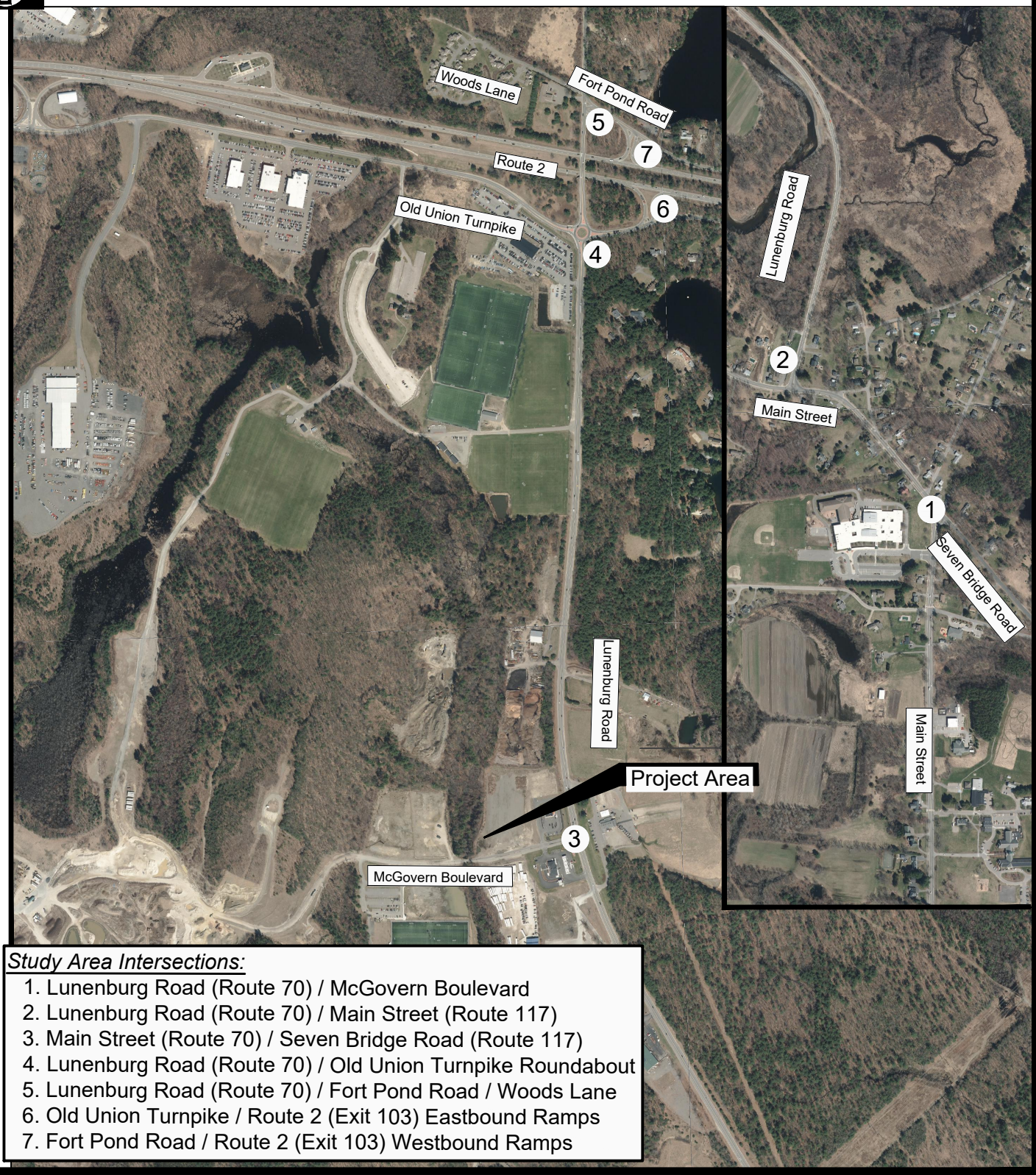
1. Main Street (Route 70/117) / Seven Bridge Road (Route 117) / Driveway
2. Main Street (Route 70/117) / Lunenburg Road (Route 70)
3. Lunenburg Road (Route 70) / McGovern Boulevard
4. Lunenburg Road (Route 70) / Old Union Turnpike
5. Lunenburg Road (Route 70) / Woods Lane / Fort Pond Road
6. Old Union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

1" = 1000'




*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
The Engineering Corp

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Andover, MA 01810

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## 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-feet 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**

| | Dates of Counts | |
|---|---|---|
| **Intersection** | **Weekday** | **Saturday** |
| 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**

| | | Weekday Morning Peak Hour | | | Weekday Evening Peak Hour | | |
|---|---|---|---|---|---|---|---|
| **Location** | **Weekday Traffic Volume[a]** | **Traffic Volume[b]** | **K Factor[c]** | **Directional Distribution[d]** | **Traffic Volume** | **K Factor** | **Directional Distribution** |
| 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 Lancaster[4] 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.

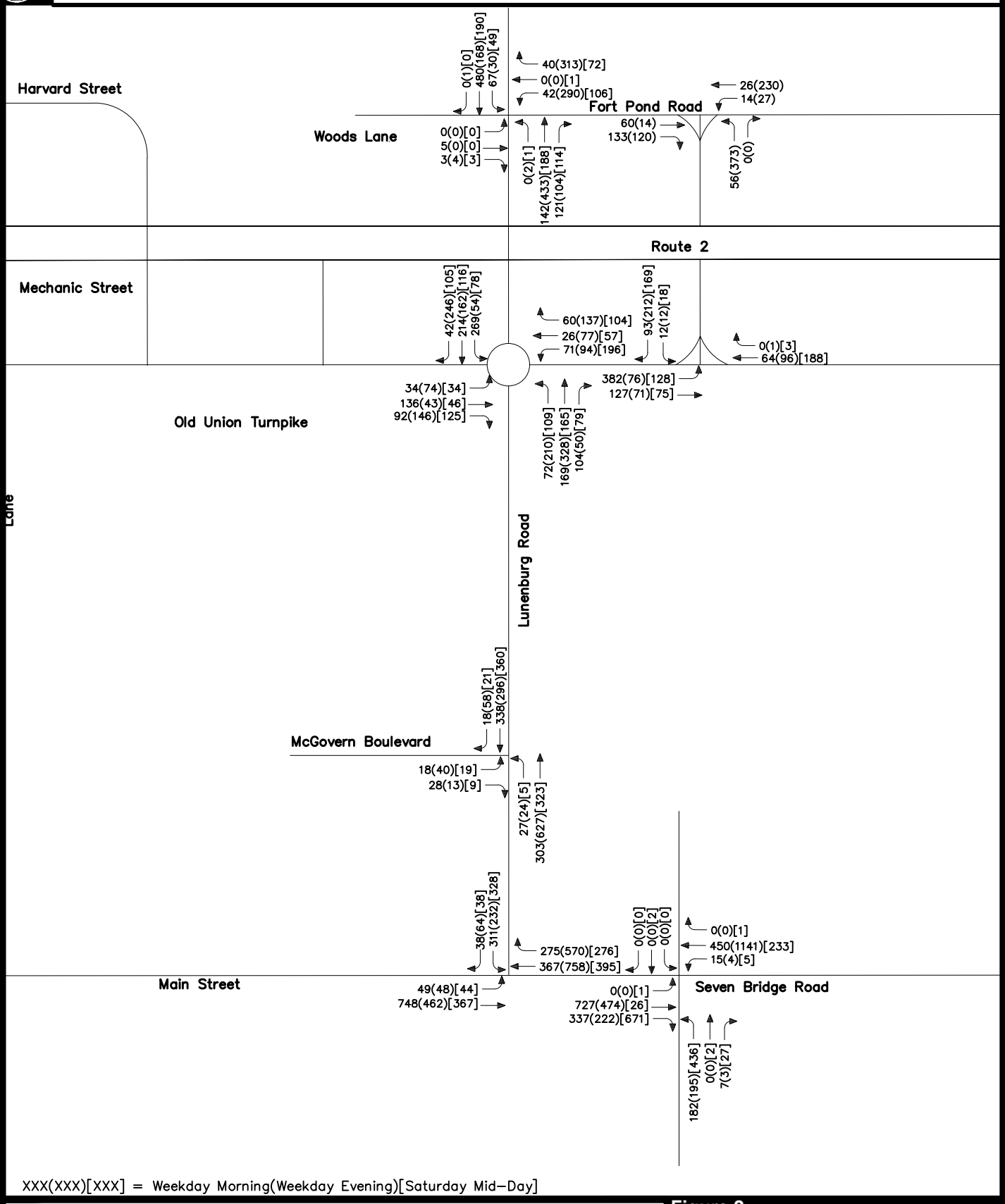
As noted, December 2018 counts are present in the study area and represent a condition in the past. To analyze a comparative existing condition at these intersection locations, 2018 traffic volumes were upwardly adjusted to reflect a 2019 condition. This was done by utilizing a 0.5 percent per year ambient 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 ANAYSIS 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




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

**Figure 2**

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

The Engineering Corp

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## 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** | **17** |
| **Annual Average** | | ***2.40*** | ***7.80*** | ***0.00*** | ***3.40*** |
| **Crash Rate (MEV):** | | ***0.30*** | ***0.94*** | ***0.00*** | ***0.50*** |
| **Significant:** | | **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** | **17** |
| **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** | **17** |
| **Severity:** | PDO | 10 | 31 | 0 | 13 |
| | Non-Fatal Injury | 2 | 8 | 0 | 3 |
| | Not Reported | 0 | 0 | 0 | 1 |
| | **TOTAL** | **12** | **39** | **0** | **17** |
| **Day of Week:** | Monday-Friday | 11 | 28 | 0 | 13 |
| | Saturday-Sunday | 1 | 11 | 0 | 4 |
| | **TOTAL** | **12** | **39** | **0** | **17** |
| **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** | **17** |

[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** | **1** |
| **Annual Average Crash Rate (MEV):** | | ***1.80*** ***0.34*** | ***1.00*** ***0.58*** | ***0.20*** ***0.07*** |
| **Significant:** | | **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, 2017[7]. 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: | | | |
| *Lunenburg Road northbound* | 52 MPH | 455 FT | > 700 FT |
| *Lunenburg Road southbound* | 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: | | | | |
| *North of McGovern Boulevard* | 55 MPH | 610 FT | 495 FT | > 700 FT |
| *South of McGovern Boulevard* | 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*

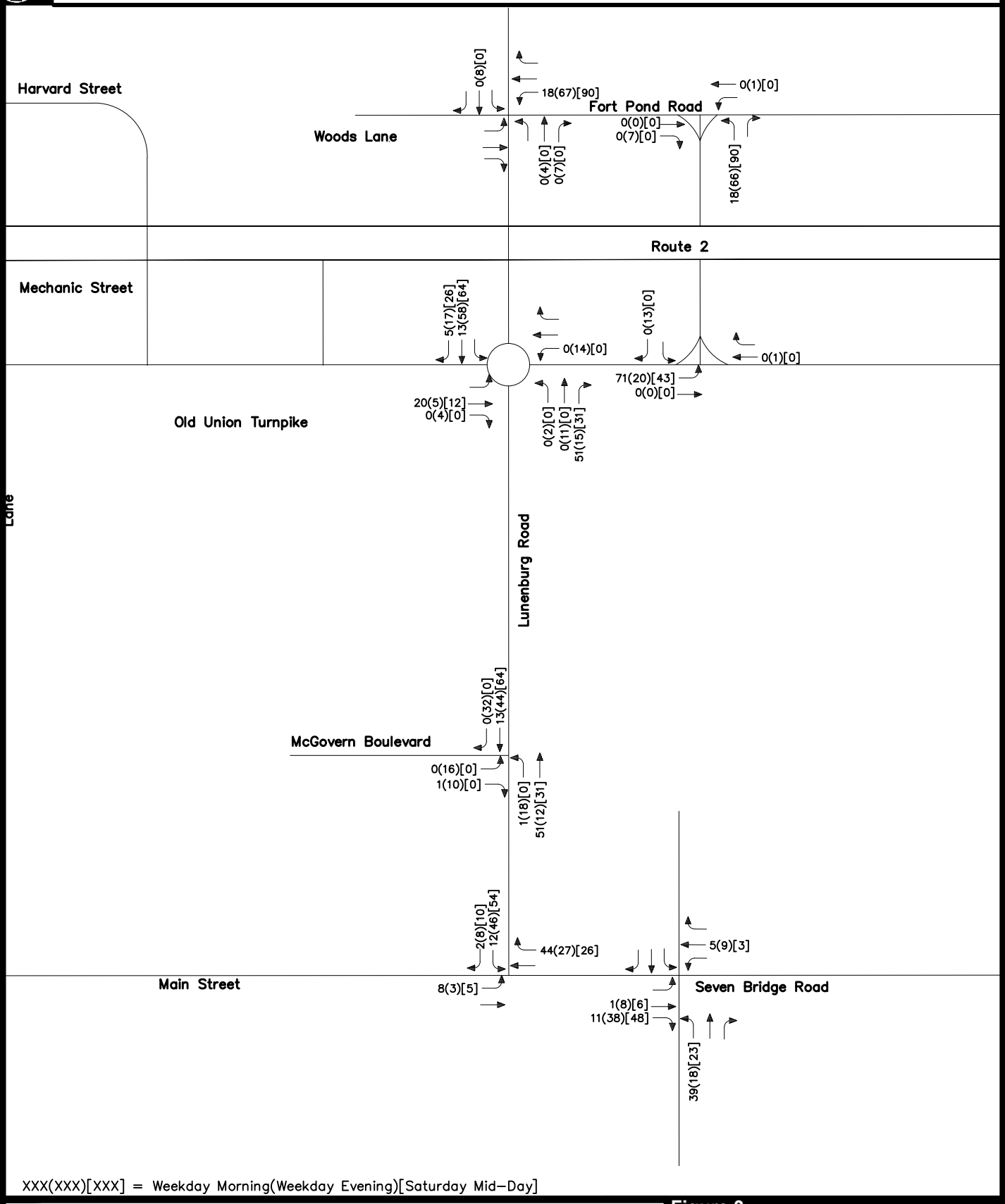
At the time of the weekday TMCs in December 2018, no outdoor activities were being hosted at the FC Stars outdoor soccer complex. To provide a conservative analysis, site-generated trips were estimated for the three (3) existing outdoor soccer fields and superimposed on the seasonally adjusted 2028 No-Build 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




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

**Figure 3**

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

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- 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 190[8] 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 2,552,000 SF industrial park, 96,100 SF of professional office, 57,400 SF of additional retail space (64,700 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 57,400 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 in which the average weekday peak hour trip estimates were based on 55,000 to 60,000 SF of retail uses, similar to the proposed project. 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

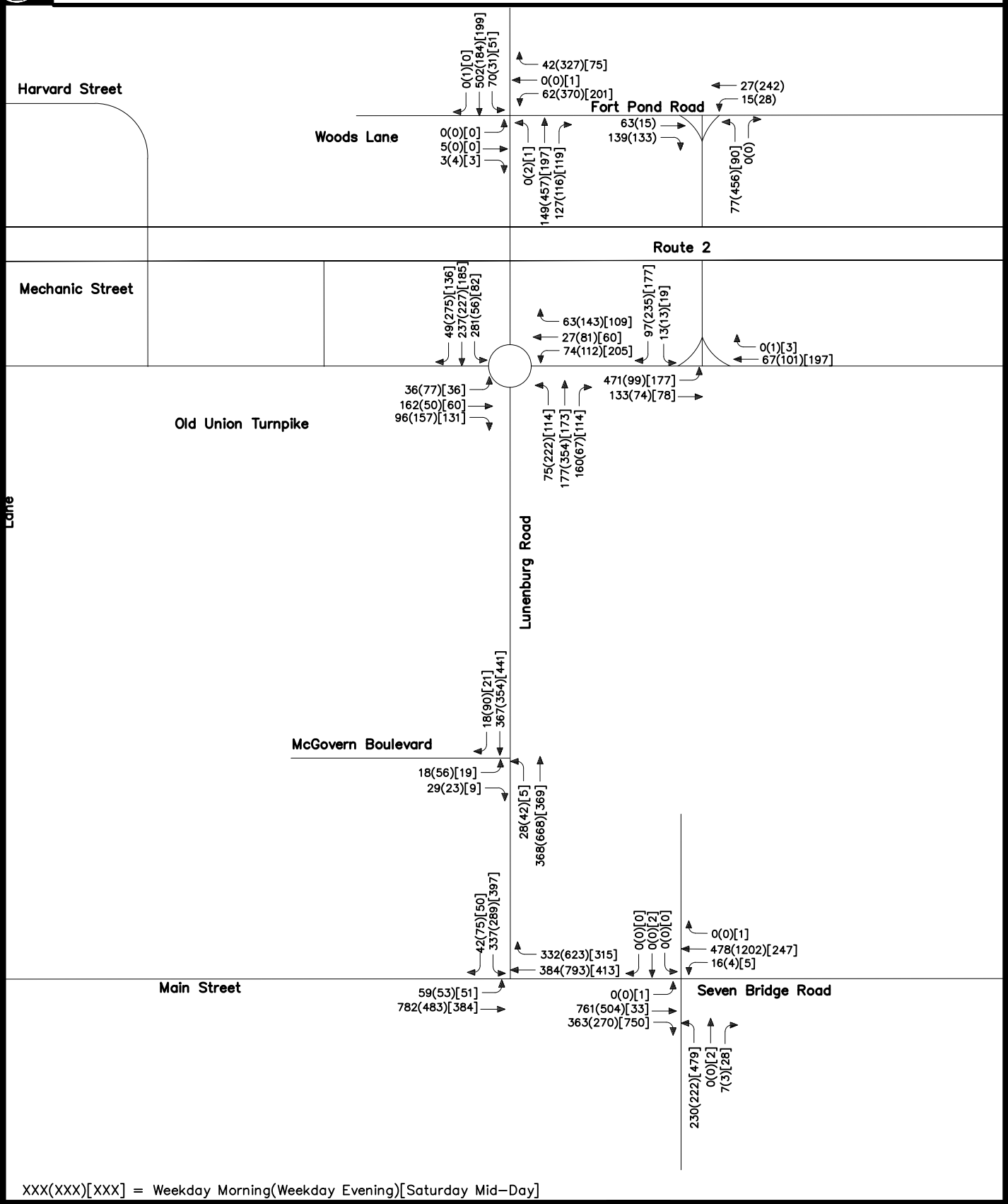


**Figure 4**

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

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*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 2,552,000 SF industrial park space. The Proponent 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 (374 trips entering and 100 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 Proponent 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 |
|---|---|---|---|---|---|---|
| *Weekday Daily* | | | | | | |
| IN | 1,831 | 1,183 | 408 | 468 | 1,083 | 4,973 |
| OUT | 1,831 | 1,183 | 408 | 468 | 1,083 | 4,973 |
| TOTAL | 3,662 | 2,366 | 816 | 936 | 2,166 | 9,946 |
| *Weekday Morning* | | | | | | |
| IN | 325 | 390 | 14 | 96 | 35 | 860 |
| OUT | 87 | 116 | 40 | 16 | 21 | 280 |
| TOTAL | 412 | 506 | 54 | 112 | 56 | 1,140 |
| *Weekday Morning (No Bldg A)* | | | | | | |
| IN | 325 | 16 | 14 | 96 | 35 | 486 |
| OUT | 87 | 16 | 40 | 16 | 21 | 180 |
| TOTAL | 412 | 32 | 54 | 112 | 56 | 666 |
| *Weekday Evening* | | | | | | |
| IN | 78 | 253 | 40 | 18 | 105 | 494 |
| OUT | 278 | 253 | 26 | 92 | 113 | 762 |
| TOTAL | 356 | 506 | 66 | 110 | 218 | 1,256 |
| *Weekday Evening (No Bldg A)* | | | | | | |
| IN | 78 | 16 | 40 | 18 | 105 | 257 |
| OUT | 278 | 16 | 26 | 92 | 113 | 525 |
| TOTAL | 356 | 32 | 66 | 110 | 218 | 782 |
| *Saturday Daily* | | | | | | |
| IN | 0 | 1,183 | 437 | 106 | 1,324 | 3,050 |
| OUT | 0 | 1,183 | 437 | 106 | 1,324 | 3,050 |
| TOTAL | 0 | 2,366 | 874 | 212 | 2,648 | 6,100 |
| *Saturday Midday* | | | | | | |
| IN | 0 | 100 | 34 | 27 | 134 | 295 |
| OUT | 0 | 100 | 36 | 23 | 124 | 283 |
| TOTAL | 0 | 200 | 70 | 50 | 258 | 578 |

## 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 |
|---|---|---|---|---|---|
| *Weekday Daily* | | | | | |
| IN | **4,973** | 421 | 208 | **234** | **4,110** |
| OUT | **4,973** | 421 | 208 | **234** | **4,110** |
| TOTAL | **9,946** | 842 | 416 | **468** | **8,220** |
| *Weekday Morning* | | | | | |
| IN | **860** | 31 | 42 | **4** | **783** |
| OUT | **280** | 31 | 20 | **4** | **225** |
| TOTAL | **1,140** | 62 | 62 | **8** | **1,008** |
| *Weekday Morning (No Bldg A)* | | | | | |
| IN | 486 | 29 | 42 | **4** | **411** |
| OUT | 180 | 29 | 20 | **4** | **127** |
| TOTAL | 666 | 58 | 62 | **8** | **538** |
| *Weekday Evening* | | | | | |
| IN | **494** | 57 | 20 | **29** | **388** |
| OUT | **762** | 57 | 42 | **29** | **634** |
| TOTAL | **1,256** | 114 | 62 | **58** | **1,022** |
| *Weekday Morning (No Bldg A)* | | | | | |
| IN | 257 | 57 | 20 | **29** | **151** |
| OUT | 525 | 57 | 42 | **29** | **397** |
| TOTAL | 782 | 114 | 62 | **58** | **548** |
| *Saturday Daily* | | | | | |
| IN | **3,050** | 432 | 12 | **293** | **2,313** |
| OUT | **3,050** | 432 | 12 | **293** | **2,313** |
| TOTAL | **6,100** | 864 | 24 | **586** | **4,626** |
| *Saturday Midday* | | | | | |
| IN | **295** | 38 | 2 | **29** | **226** |
| OUT | **283** | 38 | 2 | **29** | **214** |
| TOTAL | **578** | 76 | 4 | **58** | **440** |

[a] From Table 6

As shown in Table 7, the proposed mixed-use development is anticipated to generate 8,220 new vehicle trips during the average weekday, with 1,008 new vehicle trips (783 entering and 225 exiting) during the weekday morning peak hour and 1,022 new vehicle trips (388 entering and 634 exiting) during the weekday evening peak hour. On a typical Saturday, the development is anticipated to generate 4,626 new vehicle trips with 440 new vehicle trips (226 entering and 214 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 summaries 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) |
|---|---|---|
| *Weekday Daily* | **30%** | **13%** |
| # of Studies | (3) | (10) |
| *Weekday Morning* | **13%** | **13%** |
| # of Studies | (3) | (21) |
| *Weekday Evening* | **15%** | **7%** |
| # of Studies | (3) | (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 250 to 475 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% |
| Route 70 to/from south | 25% | 25% | 27% | 15% |
| **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

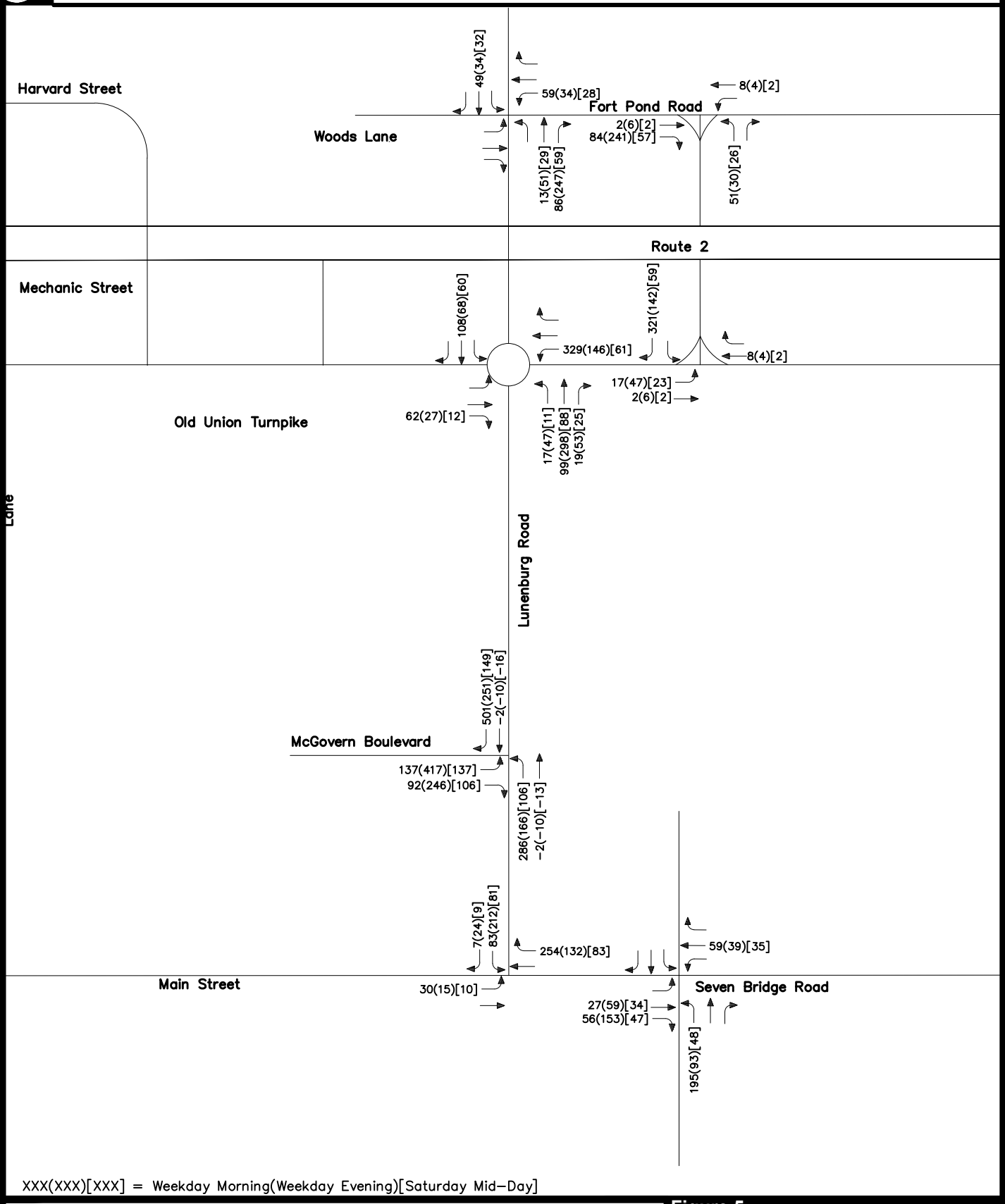


**Figure 5**

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

The Engineering Corp

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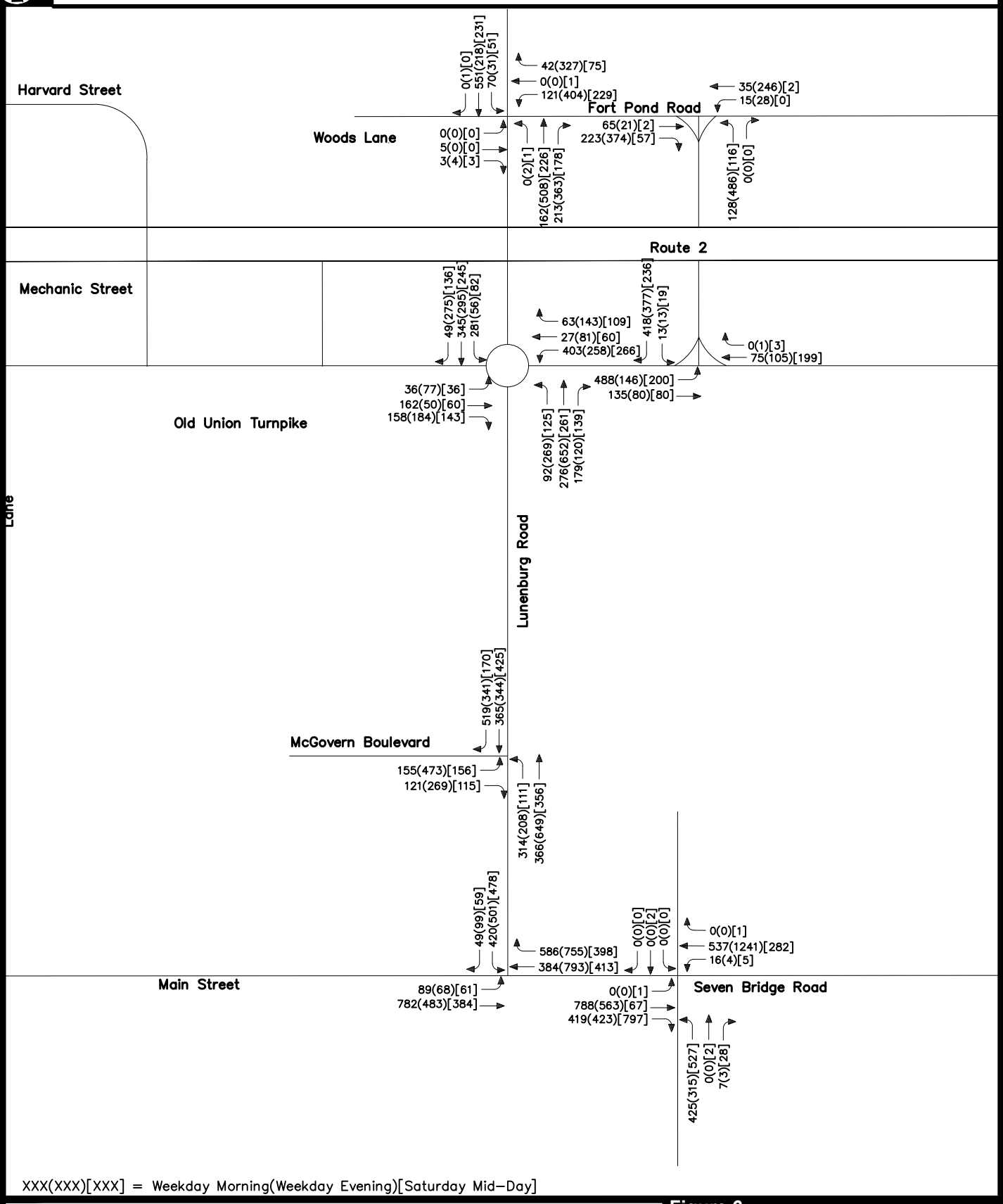


**Figure 6**

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

The Engineering Corp

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# 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 volumes 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 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 C 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 evening and Saturday midday peak hours. During the weekday morning peak hour, this level of delay is only expected to be marginally above the LOS E/F 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 E with a V/C ratio slightly above 1.00. This level of delay is only expected during this short time period of a typical weekday and/or typical Saturday and is dependent on the conservative level of site generated traffic allocated to the location; specifically on Saturday when much of the industrial park use is most likely to be closed. 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 volume-to-capacity (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 260-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 these 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. 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 F, slightly above the LOE E/F threshold, during the weekday evening peak hour. Although the ramp will operate at an elevate 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 320-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 V/C[a] | 2019 Existing Delay[b] | 2019 Existing LOS[c] | 2019 Existing Queue[d] | 2028 No-Build V/C | 2028 No-Build Delay | 2028 No-Build LOS | 2028 No-Build Queue | 2028 Build V/C | 2028 Build Delay | 2028 Build LOS | 2028 Build Queue | 2028 Build w/ Mitigation V/C | 2028 Build w/ Mitigation Delay | 2028 Build w/ Mitigation LOS | 2028 Build w/ Mitigation Queue |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Main Street / Seven Bridge Road / Shirley Road** | | | | | | | | | | | | | | | | |
| *Weekday Morning Peak Period* | | | | | | | | | | | | | | | | |
| Main Street EBL/T | - | - | - | - | 0.78 | 9.1 | A | 157/268 | 0.79 | 9.2 | A | 167/284 | 0.84 | 15.1 | B | 283/456 |
| Main Street EBR | - | - | - | - | 0.32 | 1.7 | A | <25/<25 | 0.36 | 1.7 | A | <25/<25 | 0.34 | 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 | 0.7 | 15.5 | B | <25/<25 | 0.09 | 23.2 | C | <25/<25 |
| Seven Bridge Road WBT/R | - | - | - | - | 0.49 | 6.3 | A | 74/122 | 0.54 | 6.6 | A | 87/141 | 0.57 | 9.7 | A | 147/230 |
| Main Street NB | 2.03 | 567.6 | F | 438 | 0.67 | 21.0 | C | 40/162 | 1.25 | 151.3 | F | 132/402 | 0.89 | 35.2 | D | 163/352 |
| Shirley Road SB | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Overall Intersection** | **-** | **-** | **-** | **-** | **0.50** | **8.5** | **A** | **-** | **0.59** | **35.2** | **D** | **-** | **0.59** | **15.2** | **B** | |
| *Weekday Evening Peak Period* | | | | | | | | | | | | | | | | |
| Main Street EBL/T | - | - | - | - | 0.39 | 4.6 | A | 88/152 | 0.44 | 5.4 | A | 121/178 | 0.46 | 6.9 | A | 150/221 |
| Main Street EBR | - | - | - | - | 0.20 | 0.9 | A | <25/<25 | 0.32 | 1.0 | A | <25/<25 | 0.31 | 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 | 7.6 | A | <25/<25 | 0.01 | 9.8 | A | <25/<25 |
| Seven Bridge Road WBT/R | - | - | - | - | 0.93 | 19.3 | B | 498/1020 | 0.96 | 27.0 | C | 644/1073 | 1.00 | 39.6 | D | 902/1162 |
| Main Street NB | 3.49 | 1264.6 | F | 555 | 0.85 | 49.9 | D | 90/170 | 1.11 | 122.9 | F | 157/318 | 0.91 | 63.8 | E | 158/279 |
| Shirley Road SB | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Overall Intersection** | **-** | **-** | **-** | **-** | **0.47** | **16.8** | **B** | **-** | **0.56** | **29.9** | **C** | **-** | **0.56** | **28.9** | **C** | **-** |
| *Saturday Midday Peak Period* | | | | | | | | | | | | | | | | |
| Main Street EBL/T | - | - | - | - | 0.04 | 6.3 | A | <25/<25 | 0.08 | 6.0 | A | <25/33 | 0.11 | 14.4 | B | <25/61 |
| Main Street EBR | - | - | - | - | 0.81 | 6.8 | A | <25/<25 | 0.83 | 7.5 | A | <25/<25 | 0.78 | 8.0 | 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 | 15.1 | B | <25/<25 |
| Seven Bridge Road WBT/R | - | - | - | - | 0.31 | 7.5 | A | 36/104 | 0.33 | 7.2 | A | 42/117 | 0.49 | 17.2 | B | 93/220 |
| Main Street NB | 1.63 | 331.9 | F | 845 | 1.75 | 368.5 | F | 96/371 | 2.05 | 507.9 | F | 137/428 | 0.89 | 25.0 | C | 150/366 |
| Shirley Road SB | 0.01 | 11.1 | B | <25 | 0.38 | 16.3 | B | <25/<25 | 0.38 | 44.9 | D | <25/<25 | 0.39 | 50.8 | D | <25/<25 |
| **Overall Intersection** | **-** | **-** | **-** | **-** | **0.48** | **125.8** | **F** | **-** | **0.51** | **170.3** | **F** | **-** | **0.56** | **15.3** | **B** | **-** |
| **Main Street / Lunenburg Road** | | | | | | | | | | | | | | | | |
| *Weekday Morning Peak Period* | | | | | | | | | | | | | | | | |
| Main Street EB | 0.06 | 9.2 | A | <25 | - | - | - | - | - | - | - | - | - | - | - | - |
| Main Street EBL | - | - | - | - | 0.15 | 8.2 | A | <25/<25 | 0.26 | 10.1 | B | <25/34 | 0.26 | 10.3 | B | <25/45 |
| Main Street EBT | - | - | - | - | 0.82 | 11.1 | B | 268/418 | 0.85 | 13.8 | B | 268/418 | 0.86 | 15.5 | B | 357/617 |
| Main Street WBT | - | - | - | - | 0.59 | 13.2 | B | 132/211 | 0.61 | 16.0 | B | 133/217 | 0.62 | 16.3 | B | 162/252 |
| Main Street WBR | - | - | - | - | 0.36 | 4.6 | A | <25/<25 | 0.61 | 6.1 | A | <25/<25 | 0.61 | 6.2 | A | <25/<25 |
| Lunenburg Road SBL | 2.73 | 855.4 | F | 768 | 0.85 | 22.2 | C | 133/359 | 0.91 | 36.2 | D | 179/475 | 0.89 | 25.3 | C | 221/389 |
| 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** | **-** | **0.60** | **16.1** | **B** | **-** | **0.60** | **14.8** | **B** | **-** |
| *Weekday Evening Peak Period* | | | | | | | | | | | | | | | | |
| 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 | 0.38 | 21.2 | C | <25/38 |
| Main Street EBT | - | - | - | - | 0.41 | 5.8 | A | 119/174 | 0.42 | 7.6 | A | 119/174 | 0.48 | 11.7 | B | 178/261 |
| Main Street WBT | - | - | - | - | 0.83 | 17.1 | B | 392/682 | 0.85 | 22.2 | C | 400/691 | 0.96 | 45.8 | D | 575/832 |
| Main Street WBR | - | - | - | - | 0.56 | 4.6 | A | <25/<25 | 0.65 | 5.5 | A | <25/43 | 0.64 | 5.4 | A | <25/52 |
| Lunenburg Road SBL | 2.79 | 909.5 | F | 590 | 0.87 | 37.1 | D | 164/340 | 1.25 | 163.0 | F | 406/678 | 0.94 | 51.1 | D | 315/540 |
| Lunenburg Road SBR | 0.26 | 23.8 | C | 25 | 0.19 | 21.5 | C | 30/68 | 0.22 | 22.6 | C | 40/86 | 0.17 | 19.5 | B | 36/69 |
| **Overall Intersection** | **-** | **-** | **-** | **-** | **0.55** | **13.9** | **B** | **-** | **0.63** | **40.9** | **D** | **-** | **0.63** | **27.8** | **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 V/C[a] | 2019 Existing Delay[b] | 2019 Existing LOS[c] | 2019 Existing Queue[d] | 2028 No-Build V/C | 2028 No-Build Delay | 2028 No-Build LOS | 2028 No-Build Queue | 2028 Build V/C | 2028 Build Delay | 2028 Build LOS | 2028 Build Queue | 2028 Build w/ Mitigation V/C | 2028 Build w/ Mitigation Delay | 2028 Build w/ Mitigation LOS | 2028 Build w/ Mitigation Queue |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Main Street / Lunenburg Road** | | | | | | | | | | | | | | | | |
| *Saturday Midday Peak Period* | | | | | | | | | | | | | | | | |
| Main Street EB | 0.05 | 9.3 | A | <25 | - | - | - | - | - | - | - | - | - | - | - | - |
| Main Street EBL | - | - | - | - | 0.15 | 9.0 | A | <25/<25 | 0.19 | 10.4 | B | <25/26 | 0.19 | 10.6 | B | <25/35 |
| Main Street EBT | - | - | - | - | 0.42 | 7.4 | A | 87/140 | 0.44 | 8.9 | A | 87/140 | 0.44 | 9.0 | A | 107/190 |
| Main Street WBT | - | - | - | - | 0.70 | 14.7 | B | 139/237 | 0.71 | 16.9 | B | 141/240 | 0.73 | 17.3 | B | 165/296 |
| Main Street WBR | - | - | - | - | 0.34 | 4.6 | A | <25/<25 | 0.41 | 4.8 | A | <25/<25 | 0.41 | 4.8 | A | <25/<25 |
| Lunenburg Road SBL | 1.45 | 263.5 | F | 498 | 0.85 | 18.9 | B | 132/334 | 0.89 | 28.3 | C | 171/431 | 0.88 | 18.5 | B | 189/407 |
| Lunenburg Road SBR | 0.08 | 12.3 | B | <25 | 0.10 | 10.4 | B | <25/31 | 0.10 | 10.3 | B | <25/35 | 0.10 | 10.1 | B | <25/34 |
| **Overall Intersection** | **-** | **-** | **-** | **-** | **0.43** | **11.7** | **B** | **-** | **0.46** | **15.1** | **B** | **-** | **0.46** | **12.6** | **B** | **-** |
| **Lunenburg Road / McGovern Boulevard** | | | | | | | | | | | | | | | | |
| *Weekday Morning Peak Period* | | | | | | | | | | | | | | | | |
| McGovern Boulevard EB | 0.11 | 13.7 | B | <25 | 0.12 | 14.7 | B | <25 | 5.71 | 2273.3 | F | 848 | - | - | - | - |
| McGovern Boulevard EBL | - | - | - | - | - | - | - | - | - | - | - | - | 0.65 | 22.1 | C | 50/122 |
| McGovern Boulevard EBR | - | - | - | - | - | - | - | - | - | - | - | - | 0.49 | 20.1 | C | <25/37 |
| Lunenburg Road NB | 0.03 | 8.2 | A | <25 | 0.03 | 8.3 | A | <25 | 0.48 | 14.8 | B | 65 | - | - | - | - |
| Lunenburg Road NBL | - | - | - | - | - | - | - | - | - | - | - | - | 0.66 | 11.0 | B | 50/110 |
| Lunenburg Road NBT | - | - | - | - | - | - | - | - | - | - | - | - | 0.37 | 5.1 | A | 61/106 |
| Lunenburg Road SBT | - | - | - | - | - | - | - | - | - | - | - | - | 0.59 | 14.3 | B | 116/200 |
| Lunenburg Road SBR | - | - | - | - | - | - | - | - | - | - | - | - | 0.72 | 11.2 | B | 40/102 |
| **Overall Intersection** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **0.56** | **12.1** | **B** | **-** |
| *Weekday Evening Peak Period* | | | | | | | | | | | | | | | | |
| McGovern Boulevard EB | 0.19 | 20.1 | C | <25 | 0.34 | 27.4 | D | 35 | 7.73 | 3109.9 | F | 2185 | - | - | - | - |
| McGovern Boulevard EBL | - | - | - | - | - | - | - | - | - | - | - | - | 0.84 | 23.3 | C | 152/317 |
| McGovern Boulevard EBR | - | - | - | - | - | - | - | - | - | - | - | - | 0.54 | 14.7 | B | <25/43 |
| Lunenburg Road NB | 0.02 | 8.1 | A | <25 | 0.04 | 8.4 | A | <25 | 0.24 | 10.3 | B | <25 | - | - | - | - |
| Lunenburg Road NBL | - | - | - | - | - | - | - | - | - | - | - | - | 0.53 | 12.5 | B | 41/77 |
| Lunenburg Road NBT | - | - | - | - | - | - | - | - | - | - | - | - | 0.76 | 12.9 | B | 177/298 |
| Lunenburg Road SBT | - | - | - | - | - | - | - | - | - | - | - | - | 0.75 | 19.7 | B | 110/190 |
| Lunenburg Road SBR | - | - | - | - | - | - | - | - | - | - | - | - | 0.38 | 5.8 | A | <25/<25 |
| **Overall Intersection** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **0.62** | **15.2** | **B** | **-** |
| *Saturday Midday Peak Period* | | | | | | | | | | | | | | | | |
| McGovern Boulevard EB | 0.08 | 16 | C | <25 | 0.08 | 15.5 | C | <25 | 1.22 | 173.5 | F | 360 | - | - | - | - |
| McGovern Boulevard EBL | - | - | - | - | - | - | - | - | - | - | - | - | 0.61 | 16.2 | C | 42/89 |
| McGovern Boulevard EBR | - | - | - | - | - | - | - | - | - | - | - | - | 0.51 | 15.4 | B | <25/31 |
| Lunenburg Road NB | 0.01 | 8.1 | A | <25 | 0.01 | 8.3 | A | <25 | 0.13 | 9.5 | A | <25 | - | - | - | - |
| Lunenburg Road NBL | - | - | - | - | - | - | - | - | - | - | - | - | 0.26 | 6.9 | A | <25/37 |
| Lunenburg Road NBT | - | - | - | - | - | - | - | - | - | - | - | - | 0.37 | 4.6 | A | 49/119 |
| Lunenburg Road SBT | - | - | - | - | - | - | - | - | - | - | - | - | 0.73 | 12.1 | B | 105/251 |
| Lunenburg Road SBR | - | - | - | - | - | - | - | - | - | - | - | - | 0.24 | 5.3 | A | <25/<25 |
| **Overall Intersection** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **0.42** | **9.5** | **A** | **-** |
| **Lunenburg Road / Old Union Turnpike** | | | | | | | | | | | | | | | | |
| *Weekday Morning Peak Period* | | | | | | | | | | | | | | | | |
| Old Union Turnpike EB | 0.37 | 9.7 | A | 45 | 0.44 | 11.3 | B | 57 | 0.90 | 54.4 | F | 246 | | | | |
| Old Union Turnpike WB | 0.18 | 5.7 | A | <25 | 0.19 | 5.9 | A | 19 | 0.66 | 16.7 | C | 141 | | | | |
| Lunenburg Road NB | 0.46 | 10.9 | B | 68 | 0.58 | 14.1 | B | 103 | 0.79 | 24.6 | C | 222 | | | | |
| Lunenburg Road SB | 0.50 | 9.1 | A | 75 | 0.54 | 9.9 | A | 88 | 0.99 | 55.6 | F | 416 | | | | |
| *Weekday Evening Peak Period* | | | | | | | | | | | | | No Mitigation Proposed | | | |
| Old Union Turnpike EB | 0.27 | 6.3 | A | 27 | 0.32 | 7.4 | A | 34 | 0.44 | 11.0 | B | 56 | | | | |
| Old Union Turnpike WB | 0.44 | 11.3 | B | 59 | 0.50 | 13.2 | B | 74 | 1.03 | 80.7 | F | 378 | | | | |
| Lunenburg Road NB | 0.52 | 9.1 | A | 79 | 0.58 | 10.3 | B | 97 | 0.93 | 32.3 | D | 396 | | | | |
| Lunenburg Road SB | 0.53 | 11.1 | B | 82 | 0.66 | 15.2 | C | 132 | 0.91 | 39.2 | E | 309 | | | | |

[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 V/C[a] | 2019 Existing Delay[b] | 2019 Existing LOS[c] | 2019 Existing Queue[d] | 2028 No-Build V/C | 2028 No-Build Delay | 2028 No-Build LOS | 2028 No-Build Queue | 2028 Build V/C | 2028 Build Delay | 2028 Build LOS | 2028 Build Queue | 2028 Build w/ Mitigation V/C | 2028 Build w/ Mitigation Delay | 2028 Build w/ Mitigation LOS | 2028 Build w/ Mitigation Queue |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Lunenburg Road / Old Union Turnpike** | | | | | | | | | | | | | | | | |
| *Saturday Midday Peak Period* | | | | | | | | | | | | | | | | |
| Old Union Turnpike EB | 0.35 | 8.7 | A | 39 | 0.35 | 9.1 | A | 40 | 0.43 | 11.8 | B | 55 | | | | |
| Old Union Turnpike WB | 0.54 | 11.5 | B | 84 | 0.49 | 10.1 | B | 69 | 0.64 | 15.2 | C | 120 | | No Mitigation Proposed | | |
| Lunenburg Road NB | 0.44 | 8.1 | A | 58 | 0.44 | 8.1 | A | 58 | 0.57 | 10.6 | B | 97 | | | | |
| Lunenburg Road SB | 0.50 | 11.5 | B | 75 | 0.58 | 13.1 | B | 99 | 0.72 | 19.9 | C | 167 | | | | |
| **Lunenburg Road / Fort Pond Road / Woods Lane** | | | | | | | | | | | | | | | | |
| *Weekday Morning Peak Period* | | | | | | | | | | | | | | | | |
| Woods Lane EB | 0.02 | 15.1 | C | <25 | 0.02 | 15.5 | C | <25 | 0.03 | 16.4 | C | <25 | 0.34 | 26.9 | C | <25/<25 |
| Fort Pond Road WBL | 0.16 | 20.7 | C | <25 | 0.25 | 23.4 | C | 25 | 0.54 | 37.0 | E | 73 | 0.55 | 17.7 | B | 21/116 |
| 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 | 15.3 | 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 | 0.70 | 9.5 | A | 73/266 |
| **Overall Intersection** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **0.45** | **10.4** | **B** | **-** |
| *Weekday Evening Peak Period* | | | | | | | | | | | | | | | | |
| Woods Lane EB | 0.01 | 9.2 | A | <25 | 0.01 | 9.3 | A | <25 | 0.01 | 9.6 | A | <25 | 0.37 | 39.5 | D | <25/<25 |
| Fort Pond Road WBL | 1.08 | 112.6 | F | 320 | 1.47 | 263.1 | F | 588 | 1.87 | 442.2 | F | 803 | 0.80 | 19.8 | B | 100/261 |
| Fort Pond Road WBT/R | 0.62 | 20.8 | C | 105 | 0.67 | 23.3 | C | 123 | 0.72 | 27.7 | D | 145 | 0.70 | 16.5 | B | <25/57 |
| Lunenburg Road NB | 0.01 | 7.6 | A | <25 | 0.01 | 7.6 | A | <25 | 0.01 | 7.7 | A | <25 | 0.77 | 17.9 | B | 130/372 |
| Lunenburg Road SB | 0.03 | 8.7 | A | <25 | 0.04 | 8.8 | A | <25 | 0.04 | 9.0 | A | <25 | 0.39 | 11.9 | B | 56/160 |
| **Overall Intersection** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | | **-** | **-** | **-** | **-** | **0.65** | **17.1** | **B** | **-** |
| *Saturday Midday Peak Period* | | | | | | | | | | | | | | | | |
| Woods Lane EB | 0.01 | 9.4 | A | <25 | 0.01 | 9.5 | A | <25 | 0.01 | 9.7 | A | <25 | 0.36 | 35.0 | C | <25/<25 |
| Fort Pond Road WBL | 0.31 | 17.6 | C | 33 | 0.61 | 27.6 | D | 98 | 0.76 | 40.9 | E | 150 | 0.68 | 13.7 | B | 36/139 |
| Fort Pond Road WBT/R | 0.11 | 10.1 | B | <25 | 0.12 | 10.2 | B | <25 | 0.12 | 10.5 | B | <25 | 0.25 | 10.8 | B | <25/26 |
| Lunenburg Road NB | 0.01 | 7.7 | A | <25 | 0.01 | 7.7 | A | <25 | 0.01 | 7.8 | A | <25 | 0.39 | 9.3 | A | 31/110 |
| Lunenburg Road SB | 0.05 | 7.9 | A | <25 | 0.05 | 7.9 | A | <25 | 0.05 | 8.0 | A | <25 | 0.51 | 10.0 | B | 41/145 |
| **Overall Intersection** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **0.46** | **11.0** | **B** | **-** |
| **Old Union Turnpike / Route 2 EB Ramps** | | | | | | | | | | | | | | | | |
| *Weekday Morning Peak Period* | | | | | | | | | | | | | | | | |
| Old Union Turnpike EB | 0.27 | 8.3 | A | 28 | 0.34 | 8.6 | A | 38 | 0.35 | 8.7 | A | 40 | | | | |
| Route 2 Ramp SBL | 0.07 | 25.8 | D | <25 | 0.11 | 36.5 | E | <25 | 0.12 | 39.9 | E | <25 | | | | |
| Route 2 Ramp SBR | 0.11 | 9.2 | A | <25 | 0.11 | 9.2 | A | <25 | 0.47 | 12.2 | B | 65 | | | | |
| *Weekday Evening Peak Period* | | | | | | | | | | | | | | | | |
| Old Union Turnpike EB | 0.06 | 7.6 | A | <25 | 0.08 | 7.7 | A | <25 | 0.12 | 7.8 | A | <25 | | | | |
| Route 2 Ramp SBL | 0.02 | 11.3 | B | <25 | 0.03 | 12.1 | B | <25 | 0.04 | 13.7 | B | <25 | | No Mitigation Proposed | | |
| Route 2 Ramp SBR | 0.27 | 10.3 | B | 28 | 0.30 | 10.3 | B | 33 | 0.49 | 12.5 | B | 68 | | | | |
| *Saturday Midday Peak Period* | | | | | | | | | | | | | | | | |
| Old Union Turnpike EB | 0.18 | 8.7 | A | <25 | 0.16 | 8.4 | A | <25 | 0.19 | 8.5 | A | <25 | | | | |
| Route 2 Ramp SBL | 0.11 | 20.0 | C | <25 | 0.07 | 17.7 | C | <25 | 0.08 | 18.5 | C | <25 | | | | |
| Route 2 Ramp SBR | 0.38 | 13.0 | B | 45 | 0.26 | 11.1 | B | <25 | 0.35 | 11.9 | B | 40 | | | | |
| **Fort Pond Road / Route 2 WB Ramps** | | | | | | | | | | | | | | | | |
| *Weekday Morning Peak Period* | | | | | | | | | | | | | | | | |
| Fort Pond Road WB | 0.01 | 7.4 | A | <25 | 0.01 | 7.4 | A | <25 | 0.18 | 10.3 | B | <25 | | | | |
| Route 2 Ramp NBL | 0.08 | 9.6 | A | <25 | 0.10 | 9.8 | A | <25 | 0.01 | 7.4 | A | <25 | | | | |
| *Weekday Evening Peak Period* | | | | | | | | | | | | | | No Mitigation Proposed | | |
| 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 | 0.95 | 50.4 | F | 318 | | | | |

[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**

| | 2028 Build | | | |
|---|---|---|---|---|
| **Intersection / Lane Group** | **V/C** | **Delay** | **LOS** | **Queue** |
| **Lunenburg Road / Old Union Turnpike** | | | | |
| *Weekday Morning Peak Period* | | | | |
| Old Union Turnpike EB | 0.63 | 20.5 | C | 111 |
| Old Union Turnpike WB | 0.41 | 9.3 | A | 55 |
| Lunenburg Road NB | 0.67 | 17.7 | C | 146 |
| Lunenburg Road SB | 0.73 | 18.2 | C | 176 |
| *Weekday Evening Peak Period* | | | | |
| Old Union Turnpike EB | 0.35 | 8.5 | A | 40 |
| Old Union Turnpike WB | 0.71 | 24.6 | C | 146 |
| Lunenburg Road NB | 0.80 | 18.4 | C | 227 |
| Lunenburg Road SB | 0.76 | 21.0 | C | 187 |

[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 Proponent has proposed a comprehensive transportation mitigation program in the vicinity of the site to improve vehicular, bicycle, and pedestrian operations and safety. The Proponent 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 COMMITTMENTS

The Proponent 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 Proponent 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 Proponent 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 Proponent 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 Proponent 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 COIVD-19 pandemic. Therefore, prior to immediate building-occupancy, the Proponent 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 Proponent 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 Proponent 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 95$^{th}$ percentile queue (318-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 Proponent will construct a 5-foot sidewalk along each side of McGovern Boulevard to provide connectivity between land uses on the site and 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 Proponent 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 Proponent is committed to construct bicycle accommodations along McGovern Boulevard to provide connectivity between land uses on the site and 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 Proponent 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 Proponent will maintain 5-foot minimum shoulders to accommodate bicycle access along each side of Lunenburg Road within the limits of improvements. In addition, the Proponent 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 Proponent 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 the initial discussions, MART can accommodate adding additional services if demand is projected. Extension of service, if applicable, must be requested from the Town of Lancaster Board of Selectman with Proponent related contribution towards the service to a point where ridership builds up to fully justify the service. The Proponent will continue discussions with MART following submittal of the TIAS.

## 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 Proponent.

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 Proponent 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 Proponent has committed 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 Proponent 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 Proponent 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 Proponent 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 Proponent 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 Proponent 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 Proponent has commitment to research and provide a dynamic TDM program in order to reduce SOV trips to/from the site. At this time, the Proponent 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 Proponent 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.

*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 Proponent. 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;
- NuRide – The ETC will actively register employees with NuRide, as requested, to encourage ride-sharing 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 Proponent, 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;
- 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 Proponent 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 Proponent 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 Proponent 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 gage 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 2,552,000 square foot (SF) industrial park, 96,100 SF of professional office, 57,400 SF of additional retail space (64,700 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 at 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 greater improve operations and safety in the vicinity of Route 2;

- The proposed mixed-use redevelopment is anticipated to generate 8,220 new vehicle trips during the average weekday, with 1,008 new vehicle trips (783 entering and 225 exiting) during the weekday morning peak hour and 1,022 new vehicle trips (388 entering and 634 exiting) during the weekday evening peak hour. On a typical Saturday, the development is anticipated to generate 4,626 new vehicle trips with 440 new vehicle trips (226 entering and 214 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 C or better). Full traffic signal implementation will not be installed by the Proponent 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 his 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 260-feet, less than the link distance to the Route 2 WB Off-ramp. The interim traffic signal will not be installed by the Proponent 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 Proponent 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; and
- The Proponent 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 Proponent 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**

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

Class: **Cars and Heavy Vehicles (Combined)**

| | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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**

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

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

| | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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:

| 7:15 AM | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 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**

PRECISION DATA INDUSTRIES, LLC
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)**

| | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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:

| 7:15 AM | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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**

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

Class: **Cars**

| | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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:

| 7:15 AM | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 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**

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

Class: **Light Goods Vehicle**

| | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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:

| 7:15 AM | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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**

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

Class: **Buses**

| | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 7:15 AM | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 7:30 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 7:45 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 2 | 0 | 2 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 4 |
| 8:00 AM | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 |
| 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 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 |
| Grand Total | 0 | 4 | 0 | 4 | 2 | 0 | 0 | 2 | 0 | 1 | 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) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 7:15 AM | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 7:30 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 7:45 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 8:00 AM | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 |
| Total Volume | 0 | 3 | 0 | 3 | 2 | 0 | 0 | 2 | 0 | 1 | 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 | 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**

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

Class: **Single-Unit Trucks**

| | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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**

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

Class: **Articulated Trucks**

| | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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**
Class:

PRECISION DATA INDUSTRIES, LLC
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) from North | | | | | | Lunenburg Road (Route 70) from South | | | | | | McGovern Boulevard 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 | 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 | | |
| 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 | |
| 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) from North | | | | | | Lunenburg Road (Route 70) from South | | | | | | McGovern Boulevard 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 | 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 | | |
| 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**

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

Class: **Pedestrians**

| | Lunenburg Road (Route 70) from North | | | | | | Lunenburg Road (Route 70) from South | | | | | | McGovern Boulevard 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 | 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 | | |
| Total % | 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) from North | | | | | | Lunenburg Road (Route 70) from South | | | | | | McGovern Boulevard 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 | 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 | | |
| 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**

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

Class: **Cars and Heavy Vehicles (Combined)**

| | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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**

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

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

| | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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:

| 4:15 PM | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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**

PRECISION DATA INDUSTRIES, LLC
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)**

| | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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:

| 4:15 PM | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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**

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

Class: **Cars**

| | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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:

| 4:15 PM | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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**

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

Class: **Light Goods Vehicle**

| | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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:

| 4:00 PM | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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**

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

Class: **Buses**

| | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 4:00 PM | 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 | 1 |
| 4:30 PM | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| 4:45 PM | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 1 | 0 | 1 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 4 |
| 5:00 PM | 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 | 1 |
| 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 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Grand Total | 0 | 2 | 0 | 2 | 3 | 0 | 0 | 3 | 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 | |
| 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) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 4:00 PM | 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 | 1 |
| 4:30 PM | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| 4:45 PM | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 0 | 1 | 0 | 1 | 3 | 0 | 0 | 3 | 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 | 0.500 |
| Entering Leg | 0 | 1 | 0 | 1 | 3 | 0 | 0 | 3 | 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**

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

Class: **Single-Unit Trucks**

| | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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**

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

Class:

## Articulated Trucks

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

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

| 4:30 PM | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 4:30 PM | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 |
| 4:45 PM | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 |
| 5:00 PM | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 |
| 5:15 PM | 0 | 2 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 |
| Total Volume | 0 | 5 | 0 | 5 | 4 | 0 | 0 | 4 | 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 | 0.750 |
| Entering Leg | 0 | 5 | 0 | 5 | 4 | 0 | 0 | 4 | 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**

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

Class:

## Bicycles (on Roadway and Crosswalks)

| | Lunenburg Road (Route 70) from North | | | | | | Lunenburg Road (Route 70) from South | | | | | | McGovern Boulevard 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 | 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 | | |
| 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 | |
| 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) from North | | | | | | Lunenburg Road (Route 70) from South | | | | | | McGovern Boulevard 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 | 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 | | |
| 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**

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

Class: **Pedestrians**

| | Lunenburg Road (Route 70) from North | | | | | | Lunenburg Road (Route 70) from South | | | | | | McGovern Boulevard 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 | 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 | | |
| Total % | 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) from North | | | | | | Lunenburg Road (Route 70) from South | | | | | | McGovern Boulevard 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 | 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 | | |
| 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:

PRECISION DATA INDUSTRIES, LLC
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) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 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:

| 7:15 AM | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:15 AM | 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**

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

Class:

## Cars-Combined (Motorcycles, Cars, Light Goods)

| | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 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:

| 7:00 AM | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 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**

PRECISION DATA INDUSTRIES, LLC
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)**

| | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 1 | 0 | 1 | 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:

| 8:00 AM | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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**

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

Class:

## Cars

| | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 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:

| 7:00 AM | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 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 | | | | | 233 | | | | | 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:

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

## Light Goods Vehicle

| | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 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:

| 7:15 AM | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:15 AM | 0 | 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 | | | | | 54 | | | | | 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:

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

## Buses

| | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 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:

| 8:00 AM | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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**

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

Class: **Single-Unit Trucks**

| | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 1 | 0 | 1 | 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:

| 8:00 AM | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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**

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

Class:

## Articulated Trucks

| | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 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:

| 7:30 AM | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:30 AM | 0 | 0 | 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 | 0 | 9 | 0 | 9 | 4 | 8 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 24 |
| Exiting Leg | | | | | 4 | | | | | 12 | | | | | 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**

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

Class:

## Bicycles (on Roadway and Crosswalks)

| | Lunenburg Road (Route 70) from North | | | | | | | Main Street (Route 70/117) from East | | | | | | | Driveway from South | | | | | | | Main Street (Route 117) from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | 0 |

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

| 7:00 AM | Lunenburg Road (Route 70) from North | | | | | | | Main Street (Route 70/117) from East | | | | | | | Driveway from South | | | | | | | Main Street (Route 117) from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 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 | | |
| 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 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**

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

Class: **Pedestrians**

| | Lunenburg Road (Route 70) from North | | | | | | | Main Street (Route 70/117) from East | | | | | | | Driveway from South | | | | | | | Main Street (Route 117) from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 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 | 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 | 0 | |
| Exiting Leg Total | | | | | | | 0 | | | | | | | 0 | | | | | | | 3 | | | | | | | 0 | 3 |

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

| 7:00 AM | Lunenburg Road (Route 70) from North | | | | | | | Main Street (Route 70/117) from East | | | | | | | Driveway from South | | | | | | | Main Street (Route 117) from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 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 | 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 | 0.000 | 0.250 | 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 | 2 | 2 | 0 | 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:

PRECISION DATA INDUSTRIES, LLC
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) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

| 4:00 PM | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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**

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

Class:

## Cars-Combined (Motorcycles, Cars, Light Goods)

| | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

| 4:00 PM | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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**

PRECISION DATA INDUSTRIES, LLC
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)**

| | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

| 4:00 PM | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

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

## Cars

| | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

| 4:30 PM | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:30 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 | | | | | 531 | | | | | 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**

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

Class: **Light Goods Vehicle**

| | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

| 4:00 PM | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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**

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

Class: **Buses**

| | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

| 4:00 PM | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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**

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

Class:

## Single-Unit Trucks

| | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

| 4:15 PM | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:15 PM | 0 | 0 | 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:

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

## Articulated Trucks

| | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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 | | 20.0 | 80.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 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 | |
| Exiting Leg Total | | | | | 1 | | | | | 4 | | | | | 0 | | | | | 4 | 9 |

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

| 4:30 PM | Lunenburg Road (Route 70) from North | | | | | Main Street (Route 70/117) from East | | | | | Driveway from South | | | | | Main Street (Route 117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:30 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 | | 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 | 0.000 | 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**

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

Class:

## Bicycles (on Roadway and Crosswalks)

| | Lunenburg Road (Route 70) from North | | | | | | | Main Street (Route 70/117) from East | | | | | | | Driveway from South | | | | | | | Main Street (Route 117) from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 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:

| 4:00 PM | Lunenburg Road (Route 70) from North | | | | | | | Main Street (Route 70/117) from East | | | | | | | Driveway from South | | | | | | | Main Street (Route 117) from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Entering Leg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exiting Leg | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | 0 |
| Total | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | 0 |

PDI File #: **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:

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

## Pedestrians

| | Lunenburg Road (Route 70) from North | | | | | | | Main Street (Route 70/117) from East | | | | | | | Driveway from South | | | | | | | Main Street (Route 117) from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 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 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 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 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 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 | 100 | 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 | 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:

| 4:00 PM | Lunenburg Road (Route 70) from North | | | | | | | Main Street (Route 70/117) from East | | | | | | | Driveway from South | | | | | | | Main Street (Route 117) from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 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 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 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 | 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 | 0.000 | 0.000 | 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 | 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:

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

## Cars and Heavy Vehicles (Combined)

| | Shirley Road | | | | | Seven Bridge Road (Route 117) | | | | | Main Street (Route 70) | | | | | Main Street (Route 70/117) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 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:

| 7:00 AM | Shirley Road | | | | | Seven Bridge Road (Route 117) | | | | | Main Street (Route 70) | | | | | Main Street (Route 70/117) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 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**

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

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

| | Shirley Road | | | | | Seven Bridge Road (Route 117) | | | | | Main Street (Route 70) | | | | | Main Street (Route 70/117) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 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:

| 7:00 AM | Shirley Road | | | | | Seven Bridge Road (Route 117) | | | | | Main Street (Route 70) | | | | | Main Street (Route 70/117) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 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**

PRECISION DATA INDUSTRIES, LLC
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)**

| | Shirley Road from North | | | | | Seven Bridge Road (Route 117) from East | | | | | Main Street (Route 70) from South | | | | | Main Street (Route 70/117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 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:

| 8:00 AM | Shirley Road from North | | | | | Seven Bridge Road (Route 117) from East | | | | | Main Street (Route 70) from South | | | | | Main Street (Route 70/117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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**

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

Class:

## Cars

| | Shirley Road from North | | | | | Seven Bridge Road (Route 117) from East | | | | | Main Street (Route 70) from South | | | | | Main Street (Route 70/117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 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:

| 7:00 AM | Shirley Road from North | | | | | Seven Bridge Road (Route 117) from East | | | | | Main Street (Route 70) from South | | | | | Main Street (Route 70/117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 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 | | | | | 616 | | | | | 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**

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

Class:

## Light Goods Vehicle

| | Shirley Road from North | | | | | Seven Bridge Road (Route 117) from East | | | | | Main Street (Route 70) from South | | | | | Main Street (Route 70/117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 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:

| 7:00 AM | Shirley Road from North | | | | | Seven Bridge Road (Route 117) from East | | | | | Main Street (Route 70) from South | | | | | Main Street (Route 70/117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 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**

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

Class: **Buses**

| | Shirley Road | | | | | Seven Bridge Road (Route 117) | | | | | Main Street (Route 70) | | | | | Main Street (Route 70/117) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 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) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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 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 | | | | | 0 | | | | | 3 | | | | | 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**

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

Class: **Single-Unit Trucks**

| | Shirley Road | | | | | Seven Bridge Road (Route 117) | | | | | Main Street (Route 70) | | | | | Main Street (Route 70/117) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 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:

| 8:00 AM | Shirley Road | | | | | Seven Bridge Road (Route 117) | | | | | Main Street (Route 70) | | | | | Main Street (Route 70/117) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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 | 0 | 0 | 0 | 0 | 0 | 20 | 1 | 0 | 21 | 0 | 0 | 7 | 0 | 7 | 9 | 29 | 0 | 0 | 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:

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

## Articulated Trucks

| | Shirley Road from North | | | | | Seven Bridge Road (Route 117) from East | | | | | Main Street (Route 70) from South | | | | | Main Street (Route 70/117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 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 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 18.8 | 81.3 | 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:

| 7:30 AM | Shirley Road from North | | | | | Seven Bridge Road (Route 117) from East | | | | | Main Street (Route 70) from South | | | | | Main Street (Route 70/117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 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 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 15.4 | 84.6 | 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**

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

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

| | Shirley Road | | | | | | | Seven Bridge Road (Route 117) | | | | | | | Main Street (Route 70) | | | | | | | Main Street (Route 70/117) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | | | from East | | | | | | | from South | | | | | | | from West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | 0 |

Peak Hour Analysis from 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) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | | | from East | | | | | | | from South | | | | | | | from West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 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 | | |
| 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 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:

PRECISION DATA INDUSTRIES, LLC
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 70/117) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | | | from East | | | | | | | from South | | | | | | | from West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 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 | 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 | 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 | 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 | 0 | 0 | 0 | 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 | 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 | 2 | 0 | 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 | 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 | 2 | 0 | 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 | 0 | 0 | 0 | 2 | 3 | 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 | 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:

| 7:30 AM | Shirley Road | | | | | | | Seven Bridge Road (Route 117) | | | | | | | Main Street (Route 70) | | | | | | | Main Street (Route 70/117) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | | | from East | | | | | | | from South | | | | | | | from West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 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 | 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 | 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 | 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 | 0 | 0 | 0 | 2 | 2 | 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 | 0.000 | 0.000 | 0.000 | 0.250 | 0.250 | 0.500 | 0.500 |
| Entering Leg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 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:

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

## Cars and Heavy Vehicles (Combined)

| | Shirley Road | | | | | Seven Bridge Road (Route 117) | | | | | Main Street (Route 70) | | | | | Main Street (Route 70/117) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 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:

| 4:00 PM | Shirley Road | | | | | Seven Bridge Road (Route 117) | | | | | Main Street (Route 70) | | | | | Main Street (Route 70/117) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 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**

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

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

| | Shirley Road from North | | | | | Seven Bridge Road (Route 117) from East | | | | | Main Street (Route 70) from South | | | | | Main Street (Route 70/117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

| 4:00 PM | Shirley Road from North | | | | | Seven Bridge Road (Route 117) from East | | | | | Main Street (Route 70) from South | | | | | Main Street (Route 70/117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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 | | | | | 435 | | | | | 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**

PRECISION DATA INDUSTRIES, LLC
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)**

| | Shirley Road from North | | | | | Seven Bridge Road (Route 117) from East | | | | | Main Street (Route 70) from South | | | | | Main Street (Route 70/117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

| 4:00 PM | Shirley Road from North | | | | | Seven Bridge Road (Route 117) from East | | | | | Main Street (Route 70) from South | | | | | Main Street (Route 70/117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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**

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

Class: **Cars**

| | Shirley Road from North | | | | | Seven Bridge Road (Route 117) from East | | | | | Main Street (Route 70) from South | | | | | Main Street (Route 70/117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

| 4:45 PM | Shirley Road from North | | | | | Seven Bridge Road (Route 117) from East | | | | | Main Street (Route 70) from South | | | | | Main Street (Route 70/117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:45 PM | 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**

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

Class:

## Light Goods Vehicle

| | Shirley Road from North | | | | | Seven Bridge Road (Route 117) from East | | | | | Main Street (Route 70) from South | | | | | Main Street (Route 70/117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

| 4:00 PM | Shirley Road from North | | | | | Seven Bridge Road (Route 117) from East | | | | | Main Street (Route 70) from South | | | | | Main Street (Route 70/117) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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**

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

Class: **Buses**

| | Shirley Road | | | | | Seven Bridge Road (Route 117) | | | | | Main Street (Route 70) | | | | | Main Street (Route 70/117) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 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 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | 80.0 | 20.0 | 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:

| 4:00 PM | Shirley Road | | | | | Seven Bridge Road (Route 117) | | | | | Main Street (Route 70) | | | | | Main Street (Route 70/117) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 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 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | | 75.0 | 25.0 | 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**

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

Class:

## Single-Unit Trucks

| | Shirley Road | | | | | Seven Bridge Road (Route 117) | | | | | Main Street (Route 70) | | | | | Main Street (Route 70/117) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 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) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:15 PM | 0 | 0 | 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:

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

## Articulated Trucks

| | Shirley Road | | | | | Seven Bridge Road (Route 117) | | | | | Main Street (Route 70) | | | | | Main Street (Route 70/117) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 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 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 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:

| 4:30 PM | Shirley Road | | | | | Seven Bridge Road (Route 117) | | | | | Main Street (Route 70) | | | | | Main Street (Route 70/117) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:30 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 | 100.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 100.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.625 | 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**

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

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

| | Shirley Road | | | | | | | Seven Bridge Road (Route 117) | | | | | | | Main Street (Route 70) | | | | | | | Main Street (Route 70/117) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | | | from East | | | | | | | from South | | | | | | | from West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 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:

| 4:00 PM | Shirley Road | | | | | | | Seven Bridge Road (Route 117) | | | | | | | Main Street (Route 70) | | | | | | | Main Street (Route 70/117) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | | | from East | | | | | | | from South | | | | | | | from West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Entering Leg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exiting Leg | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | 0 |
| Total | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | 0 |

PDI File #: **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:

PRECISION DATA INDUSTRIES, LLC
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 70/117) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | | | from East | | | | | | | from South | | | | | | | from West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 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 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 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 | 0 | 0 | 0 | 2 | 0 | 2 | 2 |
| Approach % | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 100 | 0 | | |
| Total % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 100 | |
| Exiting Leg Total | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | | | | | | | 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) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | | | from East | | | | | | | from South | | | | | | | from West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 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 | 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 | 0 | 0 | 0 | 2 | 0 | 2 | 2 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 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 | 0 | 0 | 0 | 2 | 0 | 2 | 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**

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

Class: **Cars and Heavy Vehicles (Combined)**

| | Fort Pond Road from East | | | | Route 2 WB Ramps from South | | | | Fort Pond Road from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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:

| 7:00 AM | Fort Pond Road from East | | | | Route 2 WB Ramps from South | | | | Fort Pond Road from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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**

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

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

| | Fort Pond Road from East | | | | Route 2 WB Ramps from South | | | | Fort Pond Road from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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:

| 7:00 AM | Fort Pond Road from East | | | | Route 2 WB Ramps from South | | | | Fort Pond Road from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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**

PRECISION DATA INDUSTRIES, LLC
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)**

| | Fort Pond Road | | | | Route 2 WB Ramps | | | | Fort Pond Road | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from East | | | | from South | | | | from West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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:

| 8:00 AM | Fort Pond Road | | | | Route 2 WB Ramps | | | | Fort Pond Road | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from East | | | | from South | | | | from West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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**

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

Class: **Cars**

| | Fort Pond Road from East | | | | Route 2 WB Ramps from South | | | | Fort Pond Road from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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:

| 7:00 AM | Fort Pond Road from East | | | | Route 2 WB Ramps from South | | | | Fort Pond Road from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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**

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

Class: **Light Goods Vehicle**

| | Fort Pond Road from East | | | | Route 2 WB Ramps from South | | | | Fort Pond Road from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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:

| 7:00 AM | Fort Pond Road from East | | | | Route 2 WB Ramps from South | | | | Fort Pond Road from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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**

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

Class: **Buses**

| | Fort Pond Road | | | | Route 2 WB Ramps | | | | Fort Pond Road | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from East | | | | from South | | | | from West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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:

| 7:00 AM | Fort Pond Road | | | | Route 2 WB Ramps | | | | Fort Pond Road | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from East | | | | from South | | | | from West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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**

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

Class:

## Single-Unit Trucks

| | Fort Pond Road | | | | Route 2 WB Ramps | | | | Fort Pond Road | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from East | | | | from South | | | | from West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from East | | | | from South | | | | from West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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:

PRECISION DATA INDUSTRIES, LLC
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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from East | | | | from South | | | | from West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from East | | | | from South | | | | from West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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**
Class:

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

## Bicycles (on Roadway and Crosswalks)

| | Fort Pond Road | | | | | | Route 2 WB Ramps | | | | | | Fort Pond Road | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | 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 | | |
| 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 | |
| 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 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | 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 | | |
| 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:

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

## Pedestrians

| | Fort Pond Road | | | | | | Route 2 WB Ramps | | | | | | Fort Pond Road | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | 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 | | |
| Total % | 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 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | 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 | | |
| 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**

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

Class:

## Cars and Heavy Vehicles (Combined)

| | Fort Pond Road from East | | | | Route 2 WB Ramps from South | | | | Fort Pond Road from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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 from East | | | | Route 2 WB Ramps from South | | | | Fort Pond Road from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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**

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

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

| | Fort Pond Road from East | | | | Route 2 WB Ramps from South | | | | Fort Pond Road from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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:

| 5:00 PM | Fort Pond Road from East | | | | Route 2 WB Ramps from South | | | | Fort Pond Road from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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**

PRECISION DATA INDUSTRIES, LLC
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)**

| | Fort Pond Road | | | | Route 2 WB Ramps | | | | Fort Pond Road | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from East | | | | from South | | | | from West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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:

| 4:00 PM | Fort Pond Road | | | | Route 2 WB Ramps | | | | Fort Pond Road | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from East | | | | from South | | | | from West | | | | |
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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**

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

Class: **Cars**

| | Fort Pond Road from East | | | | Route 2 WB Ramps from South | | | | Fort Pond Road from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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:

| 5:00 PM | Fort Pond Road from East | | | | Route 2 WB Ramps from South | | | | Fort Pond Road from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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**

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

Class: **Light Goods Vehicle**

| | Fort Pond Road from East | | | | Route 2 WB Ramps from South | | | | Fort Pond Road from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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:

| 4:00 PM | Fort Pond Road from East | | | | Route 2 WB Ramps from South | | | | Fort Pond Road from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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:

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

## Buses

| | Fort Pond Road from East | | | | Route 2 WB Ramps from South | | | | Fort Pond Road from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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 from East | | | | Route 2 WB Ramps from South | | | | Fort Pond Road from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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 DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class:

## Single-Unit Trucks

| | Fort Pond Road from East | | | | Route 2 WB Ramps from South | | | | Fort Pond Road from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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 from East | | | | Route 2 WB Ramps from South | | | | Fort Pond Road from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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**

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

Class:

## Articulated Trucks

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

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

| 4:30 PM | Fort Pond Road from East | | | | Route 2 WB Ramps from South | | | | Fort Pond Road from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | 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 | 0 | 0 | 0 | 0 | 4 |
| Total Volume | 0 | 1 | 0 | 1 | 0 | 4 | 0 | 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 | 0.250 | 0.250 | 0.000 | 0.250 | 0.438 |
| Entering Leg | 0 | 1 | 0 | 1 | 0 | 4 | 0 | 4 | 1 | 1 | 0 | 2 | 7 |
| Exiting Leg | | | | 1 | | | | 2 | | | | 4 | 7 |
| Total | | | | 2 | | | | 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:

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

## Bicycles (on Roadway and Crosswalks)

| | Fort Pond Road | | | | | | Route 2 WB Ramps | | | | | | Fort Pond Road | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | 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 | | |
| 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 | |
| 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 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | 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 | | |
| 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:

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

## Pedestrians

| | Fort Pond Road from East | | | | | | Route 2 WB Ramps from South | | | | | | Fort Pond Road 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 | 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 | | |
| Total % | 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 from East | | | | | | Route 2 WB Ramps from South | | | | | | Fort Pond Road 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 | 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 | | |
| 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:

PRECISION DATA INDUSTRIES, LLC
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) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 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:

| 7:15 AM | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:15 AM | 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**

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

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

| | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 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:

| 7:15 AM | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:15 AM | 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 | 1152 |
| 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**

PRECISION DATA INDUSTRIES, LLC
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)**

| | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 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:

| 7:15 AM | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:15 AM | 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:

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

## Cars

| | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 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:

| 7:15 AM | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:15 AM | 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**

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

Class:

## Light Goods Vehicle

| | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 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:

| 7:15 AM | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:15 AM | 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:

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

## Buses

| | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 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 | 0 | 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:

| 7:00 AM | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 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**

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

Class: **Single-Unit Trucks**

| | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 0 | 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:

| 7:15 AM | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:15 AM | 0 | 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**

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

Class:

## Articulated Trucks

| | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 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 | 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 | 4 |
| 7:45 AM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 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 | 1 | 19 |
| 8:00 AM | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 1 | 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 | 2 |
| 8:30 AM | 1 | 0 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 2 | 1 | 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 | 3 |
| Total | 2 | 1 | 1 | 0 | 4 | 3 | 0 | 0 | 0 | 3 | 1 | 2 | 4 | 0 | 7 | 2 | 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 | 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 | | |
| 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 | |
| Exiting Leg Total | | | | | 8 | | | | | 8 | | | | | 10 | | | | | 9 | 35 |

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

| 7:15 AM | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:15 AM | 1 | 1 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 1 | 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 | 4 |
| 7:45 AM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 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 | 1 | 5 |
| Total Volume | 1 | 5 | 1 | 0 | 7 | 2 | 0 | 1 | 0 | 3 | 3 | 2 | 3 | 0 | 8 | 2 | 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 | | |
| 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 | 0.833 |
| Entering Leg | 1 | 5 | 1 | 0 | 7 | 2 | 0 | 1 | 0 | 3 | 3 | 2 | 3 | 0 | 8 | 2 | 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**

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

Class:

## Bicycles (on Roadway and Crosswalks)

| | Lunenburg Road (Route 70) from North | | | | | | | Old Union Turnpike from East | | | | | | | Lunenburg Road (Route 70) from South | | | | | | | Old Union Turnpike from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | 0 |

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

| 7:00 AM | Lunenburg Road (Route 70) from North | | | | | | | Old Union Turnpike from East | | | | | | | Lunenburg Road (Route 70) from South | | | | | | | Old Union Turnpike from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 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 | | |
| 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:

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

## Pedestrians

| | Lunenburg Road (Route 70) from North | | | | | | | Old Union Turnpike from East | | | | | | | Lunenburg Road (Route 70) from South | | | | | | | Old Union Turnpike from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Approach % | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Total % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Exiting Leg Total | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | 0 |

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

| 7:00 AM | Lunenburg Road (Route 70) from North | | | | | | | Old Union Turnpike from East | | | | | | | Lunenburg Road (Route 70) from South | | | | | | | Old Union Turnpike from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 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 | | |
| 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 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:

PRECISION DATA INDUSTRIES, LLC
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) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

| 5:00 PM | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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**

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

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

| | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

| 5:00 PM | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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**

PRECISION DATA INDUSTRIES, LLC
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)**

| | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

| 4:00 PM | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

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

## Cars

| | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

| 5:00 PM | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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**

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

Class:

## Light Goods Vehicle

| | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

| 4:00 PM | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

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

## Buses

| | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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 | 1 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| 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 | 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:

| 4:45 PM | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:45 PM | 0 | 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 | 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**

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

Class:

## Single-Unit Trucks

| | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

| 4:00 PM | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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**

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

Class:

## Articulated Trucks

| | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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 | 1 | 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:

| 4:30 PM | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:30 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**

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

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

| | Lunenburg Road (Route 70) from North | | | | | | | Old Union Turnpike from East | | | | | | | Lunenburg Road (Route 70) from South | | | | | | | Old Union Turnpike from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Grand 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 | 0 | 0 | 1 |
| 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 | 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 | 100.0 | 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 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 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) from North | | | | | | | Old Union Turnpike from East | | | | | | | Lunenburg Road (Route 70) from South | | | | | | | Old Union Turnpike from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 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 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| % 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 | 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 | 0.250 | 0.000 | 0.000 | 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 |
| Entering Leg | 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 | 0 | 0 | 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:

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

## Pedestrians

| | Lunenburg Road (Route 70) from North | | | | | | | Old Union Turnpike from East | | | | | | | Lunenburg Road (Route 70) from South | | | | | | | Old Union Turnpike from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Approach % | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Total % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Exiting Leg Total | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | 0 |

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

| 4:00 PM | Lunenburg Road (Route 70) from North | | | | | | | Old Union Turnpike from East | | | | | | | Lunenburg Road (Route 70) from South | | | | | | | Old Union Turnpike from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Entering Leg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exiting Leg | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | 0 |
| Total | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | 0 |

PDI File #: **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**

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

Class:

## Cars and Heavy Vehicles (Combined)

| | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 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:

| 7:00 AM | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 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**

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

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

| | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 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:

| 7:00 AM | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 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 | | | | | 153 | | | | | 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**

PRECISION DATA INDUSTRIES, LLC
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)**

| | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 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:

| 7:15 AM | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:15 AM | 0 | 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:

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

## Cars

| | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 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:

| 7:00 AM | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 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**

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

Class:

## Light Goods Vehicle

| | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 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) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 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**

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

Class:

## Buses

| | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 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 | | | | | 0 | 6 |

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

| 7:00 AM | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 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 | | | | | 0 | 5 |
| Total | | | | | 5 | | | | | 1 | | | | | 4 | | | | | 0 | 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**

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

Class:

## Single-Unit Trucks

| | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 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:

| 7:15 AM | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:15 AM | 0 | 2 | 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**
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PRECISION DATA INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

Class:

## Articulated Trucks

| | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:00 AM | 0 | 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:

| 7:45 AM | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| 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:

PRECISION DATA INDUSTRIES, LLC
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) from North | | | | | | | Fort Pond Road from East | | | | | | | Lunenburg Road (Route 70) from South | | | | | | | Woods Lane from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | 0 |

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

| 7:00 AM | Lunenburg Road (Route 70) from North | | | | | | | Fort Pond Road from East | | | | | | | Lunenburg Road (Route 70) from South | | | | | | | Woods Lane from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 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 | | |
| 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 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**

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

Class:

## Pedestrians

| | Lunenburg Road (Route 70) from North | | | | | | | Fort Pond Road from East | | | | | | | Lunenburg Road (Route 70) from South | | | | | | | Woods Lane from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Approach % | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Total % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Exiting Leg Total | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | 0 |

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

| 7:00 AM | Lunenburg Road (Route 70) from North | | | | | | | Fort Pond Road from East | | | | | | | Lunenburg Road (Route 70) from South | | | | | | | Woods Lane from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 7:00 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 | | |
| 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 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:

PRECISION DATA INDUSTRIES, LLC
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) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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**

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

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

| | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

| 5:00 PM | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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**

PRECISION DATA INDUSTRIES, LLC
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)**

| | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

| 4:00 PM | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

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

## Cars

| | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

| 5:00 PM | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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**

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

Class:

## Light Goods Vehicle

| | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

| 4:00 PM | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

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

## Buses

| | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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 | 1 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 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 | 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 | 2 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Grand Total | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 5 |
| 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 | |
| Exiting Leg Total | | | | | 3 | | | | | 2 | | | | | 0 | | | | | 0 | 5 |

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

| 4:00 PM | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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 | 1 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| % 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 | | | | | 0 | 3 |
| Total | | | | | 2 | | | | | 3 | | | | | 1 | | | | | 0 | 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**

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

Class: **Single-Unit Trucks**

| | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

| 4:00 PM | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

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

## Articulated Trucks

| | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:00 PM | 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:

| 4:30 PM | Lunenburg Road (Route 70) from North | | | | | Fort Pond Road from East | | | | | Lunenburg Road (Route 70) from South | | | | | Woods Lane from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 4:30 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**

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Class:

## Bicycles (on Roadway and Crosswalks)

| | Lunenburg Road (Route 70) from North | | | | | | | Fort Pond Road from East | | | | | | | Lunenburg Road (Route 70) from South | | | | | | | Woods Lane from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 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:

| 4:00 PM | Lunenburg Road (Route 70) from North | | | | | | | Fort Pond Road from East | | | | | | | Lunenburg Road (Route 70) from South | | | | | | | Woods Lane from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Entering Leg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exiting Leg | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | 0 |
| Total | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | 0 |

PDI File #: **186634 FF**
Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
Location: **E: Fort Pond Road W: Woods Lane**
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Client: **TEC/ L. Oltman**
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Class:

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Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Pedestrians

| | Lunenburg Road (Route 70) from North | | | | | | | Fort Pond Road from East | | | | | | | Lunenburg Road (Route 70) from South | | | | | | | Woods Lane from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Approach % | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Total % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Exiting Leg Total | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | 0 |

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

| 4:00 PM | Lunenburg Road (Route 70) from North | | | | | | | Fort Pond Road from East | | | | | | | Lunenburg Road (Route 70) from South | | | | | | | Woods Lane from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Entering Leg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exiting Leg | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | 0 |
| Total | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | 0 |

PDI File #: **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:

PRECISION DATA INDUSTRIES, LLC
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 | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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:

| 7:00 AM | Route 2 EB Ramps | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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**

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

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

| | Route 2 EB Ramps | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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**

PRECISION DATA INDUSTRIES, LLC
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 | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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**

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

Class: **Cars**

| | Route 2 EB Ramps | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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:

| 7:00 AM | Route 2 EB Ramps | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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**

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

Class: **Light Goods Vehicle**

| | Route 2 EB Ramps | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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:

| 7:00 AM | Route 2 EB Ramps | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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**

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

Class: **Buses**

| | Route 2 EB Ramps | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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**

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

Class: **Single-Unit Trucks**

| | Route 2 EB Ramps | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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:

PRECISION DATA INDUSTRIES, LLC
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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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:

| 7:00 AM | Route 2 EB Ramps | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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**

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

Class:

## Bicycles (on Roadway and Crosswalks)

| | Route 2 EB Ramps | | | | | | Old Union Turnpike | | | | | | Old Union Turnpike | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | 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 | | |
| 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 | |
| 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 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | 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 | | |
| 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**

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

Class:

## Pedestrians

| | Route 2 EB Ramps | | | | | | Old Union Turnpike | | | | | | Old Union Turnpike | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | 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 | | |
| Total % | 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 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | 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 | | |
| 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**

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

Class: **Cars and Heavy Vehicles (Combined)**

| | Route 2 EB Ramps | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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**

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

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

| | Route 2 EB Ramps | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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:

| 4:30 PM | Route 2 EB Ramps | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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**

PRECISION DATA INDUSTRIES, LLC
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 | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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:

| 4:00 PM | Route 2 EB Ramps | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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**

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

Class: **Cars**

| | Route 2 EB Ramps | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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:

| 4:30 PM | Route 2 EB Ramps | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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**

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

Class: **Light Goods Vehicle**

| | Route 2 EB Ramps | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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:

| 4:00 PM | Route 2 EB Ramps | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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**

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

Class: **Buses**

| | Route 2 EB Ramps | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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 | 0 | 0 | 0 | 0 |
| 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 | 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 | 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 | 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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 | 0 | 0 | 0 | 0 |
| 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 Volume | 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 |
| 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**

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

Class:

## Single-Unit Trucks

| | Route 2 EB Ramps | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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**

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

Class:

## Articulated Trucks

| | Route 2 EB Ramps | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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**

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

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

| | Route 2 EB Ramps | | | | | | Old Union Turnpike | | | | | | Old Union Turnpike | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | 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 | | |
| 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 | |
| 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 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | 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 | | |
| 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**

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

Class:

## Pedestrians

| | Route 2 EB Ramps | | | | | | Old Union Turnpike | | | | | | Old Union Turnpike | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | 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 | | |
| Total % | 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 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | 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 | | |
| 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:

PRECISION DATA INDUSTRIES, LLC
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) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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:

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

## Cars

| | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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:

| 11:15 AM | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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**

PRECISION DATA INDUSTRIES, LLC
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)**

| | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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:

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

## Buses

| | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 11:00 AM | 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 |
| 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 | 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 |
| 12:15 PM | 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 |
| 12:45 PM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Grand Total | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 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 | | | | 0 | 1 |

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

| 12:00 PM | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | Total |
| 12:00 PM | 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 |
| 12:30 PM | 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 | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 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 | | | | 0 | 1 |
| Total | | | | 1 | | | | 1 | | | | 0 | 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**

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

Class: **Single-Unit Trucks**

| | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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:

| 11:00 AM | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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**

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

Class: **Articulated Trucks**

| | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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 | | | | 0 | 10 |

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

| 11:00 AM | Lunenburg Road (Route 70) from North | | | | Lunenburg Road (Route 70) from South | | | | McGovern Boulevard from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Right | Left | U-Turn | Total | 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 | | | | 0 | 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**

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

Class:

## Bicycles (on Roadway and Crosswalks)

| | Lunenburg Road (Route 70) from North | | | | | | Lunenburg Road (Route 70) from South | | | | | | McGovern Boulevard 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 | 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) from North | | | | | | Lunenburg Road (Route 70) from South | | | | | | McGovern Boulevard 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 | 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:

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

## Pedestrians

| | Lunenburg Road (Route 70) from North | | | | | | Lunenburg Road (Route 70) from South | | | | | | McGovern Boulevard 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 | 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 | | |
| Total % | 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) from North | | | | | | Lunenburg Road (Route 70) from South | | | | | | McGovern Boulevard 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 | 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 | | |
| 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:

PRECISION DATA INDUSTRIES, LLC
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) from North | | | | Main Street (Route 70/117) from East | | | | Main Street (Route 117) from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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) from North | | | | Main Street (Route 70/117) from East | | | | Main Street (Route 117) from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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:

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

## Cars

| | Lunenburg Road (Route 70) | | | | Main Street (Route 70/117) | | | | Main Street (Route 117) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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:

| 11:15 AM | Lunenburg Road (Route 70) | | | | Main Street (Route 70/117) | | | | Main Street (Route 117) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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**

PRECISION DATA INDUSTRIES, LLC
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)**

| | Lunenburg Road (Route 70) from North | | | | Main Street (Route 70/117) from East | | | | Main Street (Route 117) from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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 |
| % 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 | 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) from North | | | | Main Street (Route 70/117) from East | | | | Main Street (Route 117) from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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:

PRECISION DATA INDUSTRIES, LLC
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) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Total |
| 11:00 AM | 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 |
| 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 | 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 |
| 12:15 PM | 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 |
| 12:45 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 | 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) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Total |
| 11:00 AM | 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 |
| 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 Volume | 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 |
| 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**

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

Class: **Single-Unit Trucks**

| | Lunenburg Road (Route 70) from North | | | | Main Street (Route 70/117) from East | | | | Main Street (Route 117) from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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) from North | | | | Main Street (Route 70/117) from East | | | | Main Street (Route 117) from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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:

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

## Articulated Trucks

| | Lunenburg Road (Route 70) from North | | | | Main Street (Route 70/117) from East | | | | Main Street (Route 117) from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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 | | | | 2 | 7 |

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

| 12:00 PM | Lunenburg Road (Route 70) from North | | | | Main Street (Route 70/117) from East | | | | Main Street (Route 117) from West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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 | | | | 1 | 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**
Class:

PRECISION DATA INDUSTRIES, LLC
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) | | | | | | Main Street (Route 70/117) | | | | | | Main Street (Route 117) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | Total |
| 11:00 AM | 1 | 0 | 0 | 0 | 0 | 1 | 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 |
| 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 | 1 | 0 | 0 | 0 | 0 | 1 | 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 |
| 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 | 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 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Grand Total | 1 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 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 | | |
| Total % | 33.3 | 33.3 | 0.0 | 0.0 | 0.0 | 66.7 | 33.3 | 0.0 | 0.0 | 0.0 | 0.0 | 33.3 | 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) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | Total |
| 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 | 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 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 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 | | |
| PHF | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.250 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 |
| Entering Leg | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Exiting Leg | | | | | | 1 | | | | | | 1 | | | | | | 0 | 2 |
| Total | | | | | | 2 | | | | | | 2 | | | | | | 0 | 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:

PRECISION DATA INDUSTRIES, LLC
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) | | | | | | Main Street (Route 117) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | 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 | | |
| Total % | 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) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | 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 | | |
| 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:

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

## Cars and Heavy Vehicles (Combined)

| | Shirley Road from North | | | | | Seven Bridge Road (Route 117) from East | | | | | Main Street (Route 70) from South | | | | | Main Street (Route 70) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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 from North | | | | | Seven Bridge Road (Route 117) from East | | | | | Main Street (Route 70) from South | | | | | Main Street (Route 70) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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**

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

Class: **Cars**

| | Shirley Road | | | | | Seven Bridge Road (Route 117) | | | | | Main Street (Route 70) | | | | | Main Street (Route 70) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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:

| 11:15 AM | Shirley Road | | | | | Seven Bridge Road (Route 117) | | | | | Main Street (Route 70) | | | | | Main Street (Route 70) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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**

PRECISION DATA INDUSTRIES, LLC
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)**

| | Shirley Road from North | | | | | Seven Bridge Road (Route 117) from East | | | | | Main Street (Route 70) from South | | | | | Main Street (Route 70) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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:

| 11:00 AM | Shirley Road from North | | | | | Seven Bridge Road (Route 117) from East | | | | | Main Street (Route 70) from South | | | | | Main Street (Route 70) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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: **Buses**

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

| | Shirley Road | | | | | Seven Bridge Road (Route 117) | | | | | Main Street (Route 70) | | | | | Main Street (Route 70) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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 | 1 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 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 |
| 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 | 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 | 0.0 | | 100.0 | 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 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | |
| Exiting Leg Total | | | | | 0 | | | | | 0 | | | | | 1 | | | | | 0 | 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) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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 | 1 | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 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 | | 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 | 0.250 | 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 | 1 | 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:

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

| | Shirley Road from North | | | | | Seven Bridge Road (Route 117) from East | | | | | Main Street (Route 70) from South | | | | | Main Street (Route 70) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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 | | | | | 0 | | | | | 4 | | | | | 20 | | | | | 22 | 46 |

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

| 11:00 AM | Shirley Road from North | | | | | Seven Bridge Road (Route 117) from East | | | | | Main Street (Route 70) from South | | | | | Main Street (Route 70) from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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 | | | | | 0 | | | | | 1 | | | | | 14 | | | | | 11 | 26 |
| Total | | | | | 0 | | | | | 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:

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

## Articulated Trucks

| | Shirley Road | | | | | Seven Bridge Road (Route 117) | | | | | Main Street (Route 70) | | | | | Main Street (Route 70) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | from East | | | | | from South | | | | | from West | | | | | |
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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:

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

## Bicycles (on Roadway and Crosswalks)

| | Shirley Road | | | | | | | Seven Bridge Road (Route 117) | | | | | | | Main Street (Route 70) | | | | | | | Main Street (Route 70) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | | | from East | | | | | | | from South | | | | | | | from West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 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 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 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 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| Approach % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total % | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 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 | 0.0 | 50.0 | |
| Exiting Leg Total | | | | | | | 0 | | | | | | | 0 | | | | | | | 1 | | | | | | | 1 | 2 |

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) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | | | from East | | | | | | | from South | | | | | | | from West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 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 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 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 | 100.0 | 0.0 | 0.0 | 0.0 | | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 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 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 | 0.500 |
| Entering Leg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| 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:

PRECISION DATA INDUSTRIES, LLC
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) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | | | from East | | | | | | | from South | | | | | | | from West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 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 | 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 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 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 | 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 | | |
| Total % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 100 | |
| Exiting Leg Total | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | | | | | | | 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) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | | | | from East | | | | | | | from South | | | | | | | from West | | | | | | | |
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 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 | 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 | 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 | 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 | | |
| 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 | 0.250 | 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 | 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:

PRECISION DATA INDUSTRIES, LLC
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) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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 | 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) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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 | 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:

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

## Cars

| | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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**

PRECISION DATA INDUSTRIES, LLC
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)**

| | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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:

| 11:00 AM | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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:

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

## Buses

| | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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 | |
| 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) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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:

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

| | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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:

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

## Articulated Trucks

| | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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:

| 11:30 AM | Lunenburg Road (Route 70) from North | | | | | Old Union Turnpike from East | | | | | Lunenburg Road (Route 70) from South | | | | | Old Union Turnpike from West | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Right | Thru | Left | U-Turn | Total | Total |
| 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**

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

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

| | Lunenburg Road (Route 70) from North | | | | | | | Old Union Turnpike from East | | | | | | | Lunenburg Road (Route 70) from South | | | | | | | Old Union Turnpike from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 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 | | |
| 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) from North | | | | | | | Old Union Turnpike from East | | | | | | | Lunenburg Road (Route 70) from South | | | | | | | Old Union Turnpike from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 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 | 1 | 0 | 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 | | |
| 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:

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

## Pedestrians

| | Lunenburg Road (Route 70) from North | | | | | | | Old Union Turnpike from East | | | | | | | Lunenburg Road (Route 70) from South | | | | | | | Old Union Turnpike from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 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 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Approach % | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Total % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Exiting Leg Total | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | | | | | | | 0 | 0 |

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

| 11:00 AM | Lunenburg Road (Route 70) from North | | | | | | | Old Union Turnpike from East | | | | | | | Lunenburg Road (Route 70) from South | | | | | | | Old Union Turnpike from West | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | U-Turn | CW-WB | CW-EB | Total | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | Total |
| 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 | | |
| 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 #: **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:

PRECISION DATA INDUSTRIES, LLC
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) from North | | | | | | Fort Pond Road from East | | | | | | Lunenburg Road (Route 70) from South | | | | | | Driveway from Southwest | | | | | | Woods Lane from West | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Bear Righ | Thru | Left | U-Turn | Total | Right | Thru | Bear Left | Left | U-Turn | Total | Right | Thru | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Bear Left | Hard Left | U-Turn | Total | Hard Righ | Right | Thru | Left | U-Turn | Total | 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 | 1 | 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 | 1 | 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 | 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 | 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 | 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 | 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 | 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 | 1 | 1 | 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 | 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 | 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 | 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 | | |
| 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 | 0.6 | |
| Exiting Leg Total | | | | | | 494 | | | | | | 291 | | | | | | 534 | | | | | | 4 | | | | | | 6 | 1329 |
| 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 | 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 | 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 | 100.0 | 94.9 |
| Exiting Leg Total | | | | | | 463 | | | | | | 281 | | | | | | 507 | | | | | | 4 | | | | | | 6 | 1261 |
| 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 | 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 | 5.1 |
| Exiting Leg Total | | | | | | 31 | | | | | | 10 | | | | | | 27 | | | | | | 0 | | | | | | 0 | 68 |

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

| 11:30 AM | Lunenburg Road (Route 70) from North | | | | | | Fort Pond Road from East | | | | | | Lunenburg Road (Route 70) from South | | | | | | Driveway from Southwest | | | | | | Woods Lane from West | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Bear Righ | Thru | Left | U-Turn | Total | Right | Thru | Bear Left | Left | U-Turn | Total | Right | Thru | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Bear Left | Hard Left | U-Turn | Total | Hard Righ | Right | Thru | Left | U-Turn | Total | 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 | 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 | 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 | 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 | 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 | 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 | | |
| PHF | 0.000 | 0.250 | 0.899 | 0.817 | 0.000 | 0.926 | 0.750 | 0.250 | 0.000 | 0.481 | 0.000 | 0.606 | 0.771 | 0.910 | 0.250 | 0.500 | 0.000 | 0.961 | 0.250 | 0.250 | 0.000 | 0.000 | 0.250 | 0.375 | 0.000 | 0.375 | 0.000 | 0.000 | 0.000 | 0.375 | 0.844 |
| 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 | 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 | 0.0 | 95.9 | 100.0 | 100.0 | 0.0 | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 | 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 | 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 | 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 | 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 | 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 | 3 | 716 |
| Cars Exiting Leg | | | | | | 239 | | | | | | 154 | | | | | | 279 | | | | | | 4 | | | | | | 2 | 678 |
| Heavy Exiting Leg | | | | | | 15 | | | | | | 7 | | | | | | 16 | | | | | | 0 | | | | | | 0 | 38 |
| Total Exiting Leg | | | | | | 254 | | | | | | 161 | | | | | | 295 | | | | | | 4 | | | | | | 2 | 716 |

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:

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

## Cars

| | Lunenburg Road (Route 70) from North | | | | | | Fort Pond Road from East | | | | | | Lunenburg Road (Route 70) from South | | | | | | Driveway from Southwest | | | | | | Woods Lane from West | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Bear Righ | Thru | Left | U-Turn | Total | Right | Thru | Bear Left | Left | U-Turn | Total | Right | Thru | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Bear Left | Hard Left | U-Turn | Total | Hard Righ | Right | Thru | Left | U-Turn | Total | 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 | 1 | 1 | 0 | 0 | 2 | 126 |
| 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 | 1 | 0 | 0 | 0 | 1 | 155 |
| 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 | 2 | 0 | 0 | 0 | 2 | 163 |
| 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 | 0 | 0 | 0 | 0 | 0 | 0 | 202 |
| 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 | 0 | 4 | 1 | 0 | 0 | 5 | 646 |
| 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 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 145 |
| 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 | 1 | 0 | 0 | 0 | 1 | 168 |
| 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 | 1 | 1 | 0 | 0 | 2 | 155 |
| 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 | 147 |
| Total | 0 | 0 | 174 | 42 | 0 | 216 | 73 | 0 | 0 | 63 | 0 | 136 | 90 | 165 | 3 | 1 | 0 | 259 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 1 | 0 | 0 | 3 | 615 |
| Grand Total | 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 | 8 | 1261 |
| Approach % | 0.0 | 0.2 | 80.0 | 19.7 | 0.0 | | 45.4 | 0.3 | 0.0 | 54.3 | 0.0 | | 36.4 | 62.1 | 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 | | |
| 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 | 0.1 | 0.2 | 0.0 | 0.5 | 0.2 | 0.0 | 0.0 | 0.6 | |
| Exiting Leg Total | | | | | | 463 | | | | | | 281 | | | | | | 507 | | | | | | 4 | | | | | | 6 | 1261 |

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

| 11:30 AM | Lunenburg Road (Route 70) from North | | | | | | Fort Pond Road from East | | | | | | Lunenburg Road (Route 70) from South | | | | | | Driveway from Southwest | | | | | | Woods Lane from West | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Bear Righ | Thru | Left | U-Turn | Total | Right | Thru | Bear Left | Left | U-Turn | Total | Right | Thru | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Bear Left | Hard Left | U-Turn | Total | Hard Righ | Right | Thru | Left | U-Turn | Total | 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 | 2 | 0 | 0 | 0 | 2 | 163 |
| 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 | 0 | 0 | 0 | 0 | 0 | 0 | 202 |
| 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 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 145 |
| 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 | 1 | 0 | 0 | 0 | 1 | 168 |
| Total Volume | 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 | 3 | 678 |
| % 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 | 100.0 | 0.0 | 0.0 | 0.0 | | |
| 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 | 0.839 |
| Entering 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 | 3 | 678 |
| Exiting Leg | | | | | | 239 | | | | | | 154 | | | | | | 279 | | | | | | 4 | | | | | | 2 | 678 |
| Total | | | | | | 460 | | | | | | 321 | | | | | | 563 | | | | | | 7 | | | | | | 5 | 1356 |

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:

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

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

| | Lunenburg Road (Route 70) from North | | | | | | Fort Pond Road from East | | | | | | Lunenburg Road (Route 70) from South | | | | | | Driveway from Southwest | | | | | | Woods Lane from West | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Bear Righ | Thru | Left | U-Turn | Total | Right | Thru | Bear Left | Left | U-Turn | Total | Right | Thru | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Bear Left | Hard Left | U-Turn | Total | Hard Righ | Right | Thru | Left | U-Turn | Total | Total |
| 11:00 AM | 0 | 0 | 4 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 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 | 13 |
| 11:30 AM | 0 | 0 | 3 | 0 | 0 | 3 | 2 | 0 | 0 | 1 | 0 | 3 | 1 | 4 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 11:45 AM | 0 | 0 | 3 | 2 | 0 | 5 | 2 | 0 | 0 | 2 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| Total | 0 | 0 | 13 | 3 | 0 | 16 | 9 | 0 | 0 | 3 | 0 | 12 | 4 | 12 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 |
| 12:00 PM | 0 | 0 | 2 | 1 | 0 | 3 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 12:15 PM | 0 | 0 | 4 | 1 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 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 | 2 |
| 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 | 5 |
| Total | 0 | 0 | 9 | 2 | 0 | 11 | 2 | 0 | 0 | 2 | 0 | 4 | 1 | 8 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| Grand Total | 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 | 68 |
| Approach % | 0.0 | 0.0 | 81.5 | 18.5 | 0.0 | | 68.8 | 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 | | |
| Total % | 0.0 | 0.0 | 32.4 | 7.4 | 0.0 | 39.7 | 16.2 | 0.0 | 0.0 | 7.4 | 0.0 | 23.5 | 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 | 0.0 | |
| Exiting Leg Total | | | | | | 31 | | | | | | 10 | | | | | | 27 | | | | | | 0 | | | | | | 0 | 68 |
| 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 |
| % 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 | 0.0 | 0.0 | 0.0 |
| Exiting Leg Total | | | | | | 0 | | | | | | 0 | | | | | | 0 | | | | | | 0 | | | | | | 0 | 0 |
| Single-Unit Trucks | 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 | 59 |
| % Single-Unit | 0.0 | 0.0 | 100.0 | 60.0 | 0.0 | 92.6 | 100.0 | 0.0 | 0.0 | 40.0 | 0.0 | 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 | 0.0 | 86.8 |
| Exiting Leg Total | | | | | | 30 | | | | | | 5 | | | | | | 24 | | | | | | 0 | | | | | | 0 | 59 |
| Articulated Trucks | 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 | 9 |
| % Articulated | 0.0 | 0.0 | 0.0 | 40.0 | 0.0 | 7.4 | 0.0 | 0.0 | 0.0 | 60.0 | 0.0 | 18.8 | 60.0 | 5.0 | 0.0 | 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 | 0.0 | 13.2 |
| Exiting Leg Total | | | | | | 1 | | | | | | 5 | | | | | | 3 | | | | | | 0 | | | | | | 0 | 9 |

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

| 11:00 AM | Lunenburg Road (Route 70) from North | | | | | | Fort Pond Road from East | | | | | | Lunenburg Road (Route 70) from South | | | | | | Driveway from Southwest | | | | | | Woods Lane from West | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Bear Righ | Thru | Left | U-Turn | Total | Right | Thru | Bear Left | Left | U-Turn | Total | Right | Thru | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Bear Left | Hard Left | U-Turn | Total | Hard Righ | Right | Thru | Left | U-Turn | Total | Total |
| 11:00 AM | 0 | 0 | 4 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 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 | 13 |
| 11:30 AM | 0 | 0 | 3 | 0 | 0 | 3 | 2 | 0 | 0 | 1 | 0 | 3 | 1 | 4 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 11:45 AM | 0 | 0 | 3 | 2 | 0 | 5 | 2 | 0 | 0 | 2 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| Total Volume | 0 | 0 | 13 | 3 | 0 | 16 | 9 | 0 | 0 | 3 | 0 | 12 | 4 | 12 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 |
| % Approach Total | 0.0 | 0.0 | 81.3 | 18.8 | 0.0 | | 75.0 | 0.0 | 0.0 | 25.0 | 0.0 | | 25.0 | 75.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| PHF | 0.000 | 0.000 | 0.813 | 0.375 | 0.000 | 0.800 | 0.563 | 0.000 | 0.000 | 0.375 | 0.000 | 0.750 | 0.500 | 0.600 | 0.000 | 0.000 | 0.000 | 0.800 | 0.000 | 0.000 | 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 | 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 | 0.0 | 0.0 | 0.0 |
| Single-Unit Trucks | 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 | 38 |
| Single-Unit % | 0.0 | 0.0 | 100.0 | 66.7 | 0.0 | 93.8 | 100.0 | 0.0 | 0.0 | 33.3 | 0.0 | 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 | 0.0 | 0.0 | 86.4 |
| Articulated Trucks | 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 | 6 |
| Articulated % | 0.0 | 0.0 | 0.0 | 33.3 | 0.0 | 6.3 | 0.0 | 0.0 | 0.0 | 66.7 | 0.0 | 16.7 | 50.0 | 8.3 | 0.0 | 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 | 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 | 0 | 0 | 0 |
| Single-Unit Trucks | 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 | 38 |
| Articulated Trucks | 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 | 6 |

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**

PRECISION DATA INDUSTRIES, LLC
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)**

| | Lunenburg Road (Route 70) from North | | | | | | Fort Pond Road from East | | | | | | Lunenburg Road (Route 70) from South | | | | | | Driveway from Southwest | | | | | | Woods Lane from West | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Bear Righ | Thru | Left | U-Turn | Total | Right | Thru | Bear Left | Left | U-Turn | Total | Right | Thru | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Bear Left | Hard Left | U-Turn | Total | Hard Righ | Right | Thru | Left | U-Turn | Total | Total |
| Total Entering Leg | 0 | 0 | 13 | 3 | 0 | 16 | 9 | 0 | 0 | 3 | 0 | 12 | 4 | 12 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 |
| Buses | | | | | | 0 | | | | | | 0 | | | | | | 0 | | | | | | 0 | | | | | | 0 | 0 |
| Single-Unit Trucks | | | | | | 20 | | | | | | 4 | | | | | | 14 | | | | | | 0 | | | | | | 0 | 38 |
| Articulated Trucks | | | | | | 1 | | | | | | 3 | | | | | | 2 | | | | | | 0 | | | | | | 0 | 6 |
| Total Exiting Leg | | | | | | 21 | | | | | | 7 | | | | | | 16 | | | | | | 0 | | | | | | 0 | 44 |

PDI File #: **197132 G**
Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
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City, State: **Lancaster, MA**
Client: **TEC/L. Oltman**
Site Code: **T0852.02**
Count Date: **Saturday, August 17, 2019**
Start Time: **11:00 AM**
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Class:

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

## Buses

| | Lunenburg Road (Route 70) from North | | | | | | Fort Pond Road from East | | | | | | Lunenburg Road (Route 70) from South | | | | | | Driveway from Southwest | | | | | | Woods Lane from West | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Bear Righ | Thru | Left | U-Turn | Total | Right | Thru | Bear Left | Left | U-Turn | Total | Right | Thru | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Bear Left | Hard Left | U-Turn | Total | Hard Righ | Right | Thru | Left | U-Turn | Total | 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 | | |
| 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 | 0.0 | |
| Exiting Leg Total | | | | | | 0 | | | | | | 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) from North | | | | | | Fort Pond Road from East | | | | | | Lunenburg Road (Route 70) from South | | | | | | Driveway from Southwest | | | | | | Woods Lane from West | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Bear Righ | Thru | Left | U-Turn | Total | Right | Thru | Bear Left | Left | U-Turn | Total | Right | Thru | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Bear Left | Hard Left | U-Turn | Total | Hard Righ | Right | Thru | Left | U-Turn | Total | 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| % 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 | | |
| 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 |
| 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 |
| Exiting Leg | | | | | | 0 | | | | | | 0 | | | | | | 0 | | | | | | 0 | | | | | | 0 | 0 |
| Total | | | | | | 0 | | | | | | 0 | | | | | | 0 | | | | | | 0 | | | | | | 0 | 0 |

PDI File #: **197132 G**
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Site Code: **T0852.02**
Count Date: **Saturday, August 17, 2019**
Start Time: **11:00 AM**
End Time: **1:00 PM**
Class:

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

| | Lunenburg Road (Route 70) from North | | | | | | Fort Pond Road from East | | | | | | Lunenburg Road (Route 70) from South | | | | | | Driveway from Southwest | | | | | | Woods Lane from West | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Bear Righ | Thru | Left | U-Turn | Total | Right | Thru | Bear Left | Left | U-Turn | Total | Right | Thru | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Bear Left | Hard Left | U-Turn | Total | Hard Righ | Right | Thru | Left | U-Turn | Total | 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 | 9 |
| 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 | 13 |
| 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 | 9 |
| 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 | 7 |
| 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 | 38 |
| 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 | 6 |
| 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 | 8 |
| 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 | 2 |
| 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 | 5 |
| 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 | 21 |
| 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 | 59 |
| Approach % | 0.0 | 0.0 | 88.0 | 12.0 | 0.0 | | 84.6 | 0.0 | 0.0 | 15.4 | 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 | | |
| 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 | |
| Exiting Leg Total | | | | | | 30 | | | | | | 5 | | | | | | 24 | | | | | | 0 | | | | | | 0 | 59 |

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

| 11:00 AM | Lunenburg Road (Route 70) from North | | | | | | Fort Pond Road from East | | | | | | Lunenburg Road (Route 70) from South | | | | | | Driveway from Southwest | | | | | | Woods Lane from West | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Bear Righ | Thru | Left | U-Turn | Total | Right | Thru | Bear Left | Left | U-Turn | Total | Right | Thru | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Bear Left | Hard Left | U-Turn | Total | Hard Righ | Right | Thru | Left | U-Turn | Total | 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 | 9 |
| 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 | 13 |
| 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 | 9 |
| 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 | 7 |
| 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 | 38 |
| % Approach Total | 0.0 | 0.0 | 86.7 | 13.3 | 0.0 | | 90.0 | 0.0 | 0.0 | 10.0 | 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 | | |
| 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 | 0.731 |
| 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 | 38 |
| Exiting Leg | | | | | | 20 | | | | | | 4 | | | | | | 14 | | | | | | 0 | | | | | | 0 | 38 |
| Total | | | | | | 35 | | | | | | 14 | | | | | | 27 | | | | | | 0 | | | | | | 0 | 76 |

PDI File #: **197132 G**
Location: **N: Lunenburg Road (Route 70) S: Lunenburg Road (Route 70)**
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Office: 508-875-0100 Fax: 508-875-0118
Email: datarequests@pdillc.com

## Articulated Trucks

| | Lunenburg Road (Route 70) from North | | | | | | Fort Pond Road from East | | | | | | Lunenburg Road (Route 70) from South | | | | | | Driveway from Southwest | | | | | | Woods Lane from West | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Bear Righ | Thru | Left | U-Turn | Total | Right | Thru | Bear Left | Left | U-Turn | Total | Right | Thru | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Bear Left | Hard Left | U-Turn | Total | Hard Righ | Right | Thru | Left | U-Turn | Total | 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 | 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 | 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 | 2 |
| 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 | 3 |
| 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 | 6 |
| 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 | 1 |
| 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 | 2 |
| 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 |
| 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 |
| 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 | 3 |
| 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 | 9 |
| Approach % | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 100.0 | 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 | | |
| 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 | |
| Exiting Leg Total | | | | | | 1 | | | | | | 5 | | | | | | 3 | | | | | | 0 | | | | | | 0 | 9 |

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

| 11:30 AM | Lunenburg Road (Route 70) from North | | | | | | Fort Pond Road from East | | | | | | Lunenburg Road (Route 70) from South | | | | | | Driveway from Southwest | | | | | | Woods Lane from West | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Bear Righ | Thru | Left | U-Turn | Total | Right | Thru | Bear Left | Left | U-Turn | Total | Right | Thru | Left | Hard Left | U-Turn | Total | Hard Righ | Bear Righ | Bear Left | Hard Left | U-Turn | Total | Hard Righ | Right | Thru | Left | U-Turn | Total | Total |
| 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 | 2 |
| 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 | 3 |
| 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 | 1 |
| 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 | 2 |
| 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 | 8 |
| % Approach Total | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 100.0 | 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 | | |
| 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 | 0.667 |
| Entering Leg | 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 | 8 |
| Exiting Leg | | | | | | 1 | | | | | | 4 | | | | | | 3 | | | | | | 0 | | | | | | 0 | 8 |
| Total | | | | | | 3 | | | | | | 7 | | | | | | 6 | | | | | | 0 | | | | | | 0 | 16 |

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:

PRECISION DATA INDUSTRIES, LLC
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) from North | | | | | | | | Fort Pond Road from East | | | | | | | | Lunenburg Road (Route 70) from South | | | | | | | | Driveway from Southwest | | | | | | | | Woods Lane from West | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Bear Righ | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Bear Left | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | Hard Left | U-Turn | CW-WB | CW-EB | Total | Hard Righ | Bear Righ | Bear Left | Hard Left | U-Turn | CW-NWB | CW-SEB | Total | Hard Righ | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | 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 |
| 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 |
| 11:30 AM | 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 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 | 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 | 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 |
| 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 |
| 12:45 PM | 0 | 0 | 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Grand Total | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 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 | 0 | 0 | 0 | 0 | 2 |
| 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 | 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 | | |
| Total % | 0.0 | 0.0 | 0.0 | 50.0 | 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 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Exiting Leg Total | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 0 | | | | | | | | 0 | | | | | | | | 0 | 2 |

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

| 11:00 AM | Lunenburg Road (Route 70) from North | | | | | | | | Fort Pond Road from East | | | | | | | | Lunenburg Road (Route 70) from South | | | | | | | | Driveway from Southwest | | | | | | | | Woods Lane from West | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Bear Righ | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Bear Left | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | Hard Left | U-Turn | CW-WB | CW-EB | Total | Hard Righ | Bear Righ | Bear Left | Hard Left | U-Turn | CW-NWB | CW-SEB | Total | Hard Righ | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | 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 |
| 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 |
| 11:30 AM | 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 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 | 0 | 0 | 0 | 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 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 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 | 0.250 | 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 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.250 |
| Entering Leg | 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Exiting Leg | | | | | | | | 0 | | | | | | | | 1 | | | | | | | | 0 | | | | | | | | 0 | | | | | | | | 0 | 1 |
| Total | | | | | | | | 1 | | | | | | | | 1 | | | | | | | | 0 | | | | | | | | 0 | | | | | | | | 0 | 2 |

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:

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

## Pedestrians

| | Lunenburg Road (Route 70) from North | | | | | | | | Fort Pond Road from East | | | | | | | | Lunenburg Road (Route 70) from South | | | | | | | | Driveway from Southwest | | | | | | | | Woods Lane from West | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Bear Righ | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Bear Left | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | Hard Left | U-Turn | CW-WB | CW-EB | Total | Hard Righ | Bear Righ | Bear Left | Hard Left | U-Turn | CW-NWB | CW-SEB | Total | Hard Righ | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 | |
| Total % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exiting Leg Total | | | | | | | | 0 | | | | | | | | 0 | | | | | | | | 0 | | | | | | | | 0 | | | | | | | | 0 | 0 |

Peak Hour Analysis from 11:00 AM to 01:00 PM begins at:

| 11:00 AM | Lunenburg Road (Route 70) from North | | | | | | | | Fort Pond Road from East | | | | | | | | Lunenburg Road (Route 70) from South | | | | | | | | Driveway from Southwest | | | | | | | | Woods Lane from West | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Bear Righ | Thru | Left | U-Turn | CW-EB | CW-WB | Total | Right | Thru | Bear Left | Left | U-Turn | CW-SB | CW-NB | Total | Right | Thru | Left | Hard Left | U-Turn | CW-WB | CW-EB | Total | Hard Righ | Bear Righ | Bear Left | Hard Left | U-Turn | CW-NWB | CW-SEB | Total | Hard Righ | Right | Thru | Left | U-Turn | CW-NB | CW-SB | Total | 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| % 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 | 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 | 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 |
| Exiting Leg | | | | | | | | 0 | | | | | | | | 0 | | | | | | | | 0 | | | | | | | | 0 | | | | | | | | 0 | 0 |
| Total | | | | | | | | 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**

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

Class: **Cars and Heavy Vehicles (Combined)**

| | Route 2 EB Ramps (Exit 35) | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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:

| 11:30 AM | Route 2 EB Ramps (Exit 35) | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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:

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

## Cars

| | Route 2 EB Ramps (Exit 35) | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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:

| 11:30 AM | Route 2 EB Ramps (Exit 35) | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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**

PRECISION DATA INDUSTRIES, LLC
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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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:

| 11:30 AM | Route 2 EB Ramps (Exit 35) | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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:

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

## Buses

| | Route 2 EB Ramps (Exit 35) | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Total |
| 11:00 AM | 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 |
| 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 | 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 |
| 12:15 PM | 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 |
| 12:45 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 | 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | Total |
| 11:00 AM | 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 |
| 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 Volume | 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 |
| 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**

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

Class: **Single-Unit Trucks**

| | Route 2 EB Ramps (Exit 35) | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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**

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

Class:

## Articulated Trucks

| | Route 2 EB Ramps (Exit 35) | | | | Old Union Turnpike | | | | Old Union Turnpike | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from North | | | | from East | | | | from West | | | | |
| | Right | Left | U-Turn | Total | Right | Thru | U-Turn | Total | Thru | Left | U-Turn | Total | 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**

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

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

| | Route 2 EB Ramps (Exit 35) | | | | | | Old Union Turnpike | | | | | | Old Union Turnpike | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | 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 | 1 | 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 | 1 | 2 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 2 |
| Approach % | 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 | | |
| 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 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | 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 | 1 | 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 | 1 | 2 |
| % Approach Total | 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 | | |
| 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 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 2 |
| Exiting Leg | | | | | | 0 | | | | | | 1 | | | | | | 1 | 2 |
| Total | | | | | | 0 | | | | | | 2 | | | | | | 2 | 4 |

# Appendix B

Automatic Traffic Recorder (ATR) Counts

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 Volume
Site Code: T0852

| Start | 12/18/18 | | 12/19/18 | | 12/20/18 | | 12/21/18 | | 12/22/18 | | 12/23/18 | | 12/24/18 | | Week Average | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | 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 | * | * | * | * | * | * | * | * | * | * | **344** | 292 |
| 02:00 | 314 | 358 | 363 | 382 | * | * | * | * | * | * | * | * | * | * | 338 | 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 | | 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

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 Volume
Site Code: T0852

| Start | SB | | | | NB | | | | Combined | | | | 12/18/18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | A.M. | | P.M. | | A.M. | | P.M. | | A.M. | | P.M. | | Tue |
| 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 | 07:15 | - | 02:45 | - | 07:15 | - | 03:45 | - | 07:15 | - | 03:15 | - | - - |
| Vol. | 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

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

| Start | SB | | | | NB | | | | Combined | | | | 12/19/18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | A.M. | | P.M. | | A.M. | | P.M. | | A.M. | | P.M. | | Wed |
| 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 | 17 | 64 | 304 | 2 | 22 | 82 | 302 | 9 | 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 | 06:30 | - | 04:00 | - | 07:15 | - | 04:15 | - | 07:15 | - | 04:00 | - | - - |
| Vol. | 377 | - | 381 | - | 347 | - | 649 | - | 712 | - | 1022 | - | - - |
| P.H.F. | 0.943 | | 0.850 | | 0.885 | | 0.912 | | 0.947 | | 0.964 | | |

PRECISION
D A T A
INDUSTRIES, LLC
46 Morton Street, Framingham, MA 01702
Office: 508-875-0100 Fax: 508-875-0118
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Lunenburg Road (Route 70)
north Kimball Farms
City, State: Lancaster, MA
Client: TEC / E. Oltman

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 |

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

Lunenburg Road (Route 70)
north Kimball Farms
City, State: Lancaster, MA
Client: TEC / E. Oltman

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

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

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 |

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

Lunenburg Road (Route 70)
north Kimball Farms
City, State: Lancaster, MA
Client: TEC / E. Oltman

186634 A Class
Site Code: T0852

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 |

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

Lunenburg Road (Route 70)
north Kimball Farms
City, State: Lancaster, MA
Client: TEC / E. Oltman

186634 A Speed
Site Code: T0852

SB

| Start Time | 1<br>14 | 15<br>19 | 20<br>24 | 25<br>29 | 30<br>34 | 35<br>39 | 40<br>44 | 45<br>49 | 50<br>54 | 55<br>59 | 60<br>64 | 65<br>69 | 70<br>9999 | Total | 85th<br>% ile | Ave<br>Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12/18/ 18 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 7 | 5 | 4 | 3 | 0 | 0 | 22 | 58 | 51 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 4 | 3 | 3 | 0 | 0 | 14 | 60 | 53 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 6 | 8 | 4 | 1 | 0 | 0 | 23 | 55 | 50 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 13 | 5 | 0 | 1 | 0 | 24 | 56 | 52 |
| 04:00 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 14 | 35 | 21 | 9 | **2** | 0 | 84 | 58 | 53 |
| 05:00 | **1** | 0 | 0 | 0 | 0 | 0 | 13 | 49 | 103 | 51 | 16 | 2 | 0 | 235 | 57 | 52 |
| 06:00 | 1 | 0 | 0 | 0 | 0 | 3 | 19 | 80 | 146 | **85** | **17** | 1 | 0 | **352** | 56 | 52 |
| 07:00 | 1 | 0 | 0 | 1 | 0 | 3 | 12 | 92 | **164** | 61 | 11 | 0 | **1** | 346 | 55 | 51 |
| 08:00 | 0 | **1** | 0 | 0 | 0 | 2 | **42** | 104 | 125 | 53 | 8 | 0 | 0 | 335 | 55 | 50 |
| 09:00 | 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% |

PRECISION DATA INDUSTRIES, LLC
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Lunenburg Road (Route 70)
north Kimball Farms
City, State: Lancaster, MA
Client: TEC / E. Oltman

186634 A Speed
Site Code: T0852

SB

| Start Time | 1 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 | 1 | 4 | 6 | 5 | 1 | 0 | 0 | 17 | 57 | 52 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 2 | 2 | 0 | 0 | 0 | 9 | 55 | 49 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 8 | 2 | 1 | 0 | 0 | 17 | 55 | 51 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 14 | 4 | 1 | 0 | 0 | 27 | 55 | 51 |
| 04:00 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 13 | 37 | 13 | 6 | 3 | 0 | 76 | 58 | 53 |
| 05:00 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 56 | 97 | 64 | 7 | **6** | 0 | 241 | 57 | 52 |
| 06:00 | 0 | 0 | 0 | 0 | 0 | 3 | 36 | 99 | **140** | **71** | 11 | 2 | 0 | **362** | 56 | 51 |
| 07:00 | 0 | 0 | 0 | **4** | 1 | 3 | 31 | 98 | 131 | 63 | **14** | 4 | **1** | 350 | 56 | 51 |
| 08:00 | 0 | 0 | 0 | 0 | 2 | 2 | 37 | **112** | 118 | 48 | 13 | 0 | 0 | 332 | 55 | 50 |
| 09:00 | 0 | 0 | 0 | 2 | 0 | 7 | 24 | 109 | 123 | 45 | 4 | 1 | 0 | 315 | 54 | 50 |
| 10:00 | 0 | 0 | **1** | 0 | **5** | 12 | 21 | 101 | 117 | 46 | 6 | 1 | 0 | 310 | 54 | 50 |
| 11:00 | **2** | 0 | 0 | 1 | 2 | **13** | **38** | 102 | 126 | 43 | 10 | 0 | 0 | 337 | 54 | 49 |
| 12 PM | 1 | 0 | 0 | **2** | 3 | 4 | 28 | 96 | 121 | 40 | 6 | **3** | 0 | 304 | 54 | 50 |
| 13:00 | 1 | 0 | 0 | 2 | 1 | 5 | 33 | 131 | 121 | **62** | **14** | 1 | 0 | 371 | 55 | 50 |
| 14:00 | **2** | **2** | **1** | 1 | **4** | **12** | 61 | 136 | 108 | 30 | 4 | 2 | 0 | 363 | 53 | 48 |
| 15:00 | 1 | 1 | 0 | 1 | 2 | 0 | 41 | 115 | **124** | 40 | 5 | 0 | **1** | 331 | 53 | 49 |
| 16:00 | 0 | 0 | 0 | 0 | 2 | 3 | 52 | 149 | 117 | 50 | 8 | 0 | 0 | **381** | 54 | 49 |
| 17:00 | 0 | 0 | 0 | 0 | 1 | 9 | **75** | **159** | 92 | 20 | 3 | 1 | 0 | 360 | 52 | 48 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 85 | 83 | 23 | 1 | 1 | 0 | 253 | 53 | 48 |
| 19:00 | 0 | 0 | 0 | 0 | 0 | 1 | 36 | 95 | 81 | 24 | 5 | 3 | 0 | 245 | 53 | 49 |
| 20:00 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 58 | 50 | 14 | 2 | 0 | 0 | 149 | 53 | 49 |
| 21:00 | 0 | 0 | 0 | 0 | 0 | 1 | 17 | 44 | 31 | 11 | 6 | 0 | 0 | 110 | 54 | 49 |
| 22:00 | 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% |

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

Lunenburg Road (Route 70)
north Kimball Farms
City, State: Lancaster, MA
Client: TEC / E. Oltman

186634 A Speed
Site Code: T0852

NB

| Start Time | 1 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 | 2 | 7 | 5 | 2 | 0 | 0 | 0 | 16 | 53 | 49 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 6 | 49 | 45 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 4 | 0 | 0 | **1** | 0 | 12 | 52 | 50 |
| 03:00 | 0 | 0 | 0 | **2** | 1 | 1 | 6 | 3 | 4 | 0 | 0 | 0 | 0 | 17 | 50 | 43 |
| 04:00 | 0 | 0 | 0 | 0 | 1 | 1 | 5 | 14 | 8 | 2 | 0 | 0 | 0 | 31 | 52 | 47 |
| 05:00 | 0 | 0 | 0 | 0 | 0 | 3 | 13 | 32 | 24 | 8 | 1 | 0 | 0 | 81 | 53 | 48 |
| 06:00 | 0 | 0 | 0 | 0 | **3** | 15 | 34 | 66 | 59 | 3 | 0 | 0 | 0 | 180 | 51 | 47 |
| 07:00 | 0 | 0 | 0 | 0 | 2 | **17** | **62** | **140** | 106 | 14 | 2 | 0 | 0 | **343** | 52 | 48 |
| 08:00 | 0 | 0 | **1** | 0 | 0 | 5 | 50 | 139 | **118** | **22** | 1 | 0 | 0 | 336 | 52 | 48 |
| 09:00 | 0 | 0 | 0 | 1 | 1 | 12 | 45 | 137 | 71 | 7 | 1 | 0 | 0 | 275 | 51 | 47 |
| 10:00 | 0 | 0 | 1 | 0 | 3 | 11 | 33 | 108 | 90 | 16 | 2 | 0 | 0 | 264 | 52 | 48 |
| 11:00 | 0 | 0 | 1 | 0 | 2 | 10 | 24 | 86 | 90 | 19 | **3** | 0 | 0 | 235 | 53 | 49 |
| 12 PM | 0 | 0 | **2** | **1** | 2 | 13 | 48 | 77 | 90 | 14 | 3 | 0 | 0 | 250 | 52 | 48 |
| 13:00 | 0 | **1** | 1 | 0 | **4** | 4 | 33 | 101 | 111 | 20 | 2 | 0 | 0 | 277 | 53 | 49 |
| 14:00 | 0 | 0 | 0 | 1 | 4 | 11 | 49 | 133 | **139** | 17 | **4** | 0 | 0 | 358 | 52 | 48 |
| 15:00 | 0 | 0 | 1 | 0 | 0 | 9 | 70 | **261** | 138 | **22** | 2 | **1** | 0 | 504 | 52 | 48 |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 24 | 140 | 235 | 117 | 11 | 1 | 0 | 0 | **528** | 51 | 47 |
| 17:00 | 0 | 0 | 0 | 0 | 2 | **47** | **170** | 243 | 58 | 5 | 2 | 0 | 0 | 527 | 48 | 45 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 8 | 113 | 162 | 57 | 4 | 2 | 0 | 0 | 346 | 49 | 46 |
| 19:00 | 0 | 0 | 0 | 0 | 0 | 7 | 31 | 95 | 51 | 10 | 2 | 0 | 0 | 196 | 52 | 48 |
| 20:00 | 0 | 0 | 0 | 0 | 1 | 5 | 29 | 79 | 52 | 7 | 2 | 0 | 0 | 175 | 52 | 48 |
| 21:00 | 0 | 0 | 0 | 0 | 0 | 6 | 22 | 50 | 36 | 6 | 1 | 0 | 0 | 121 | 52 | 48 |
| 22:00 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 24 | 22 | 5 | 1 | 0 | 0 | 58 | 53 | 50 |
| 23:00 | 0 | 0 | 0 | 0 | 0 | 3 | 8 | 17 | 10 | 7 | 0 | 0 | 0 | 45 | 54 | 48 |
| Total | 0 | 1 | 7 | 5 | 26 | 213 | 995 | 2218 | 1461 | 221 | 32 | 2 | 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% |

PRECISION DATA INDUSTRIES, LLC
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Lunenburg Road (Route 70)
north Kimball Farms
City, State: Lancaster, MA
Client: TEC / E. Oltman

186634 A Speed
Site Code: T0852

NB

| Start Time | 1 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

**STATION 34 - LANCASTER - RTE.2 - WEST OF RTE.70**

| 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 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

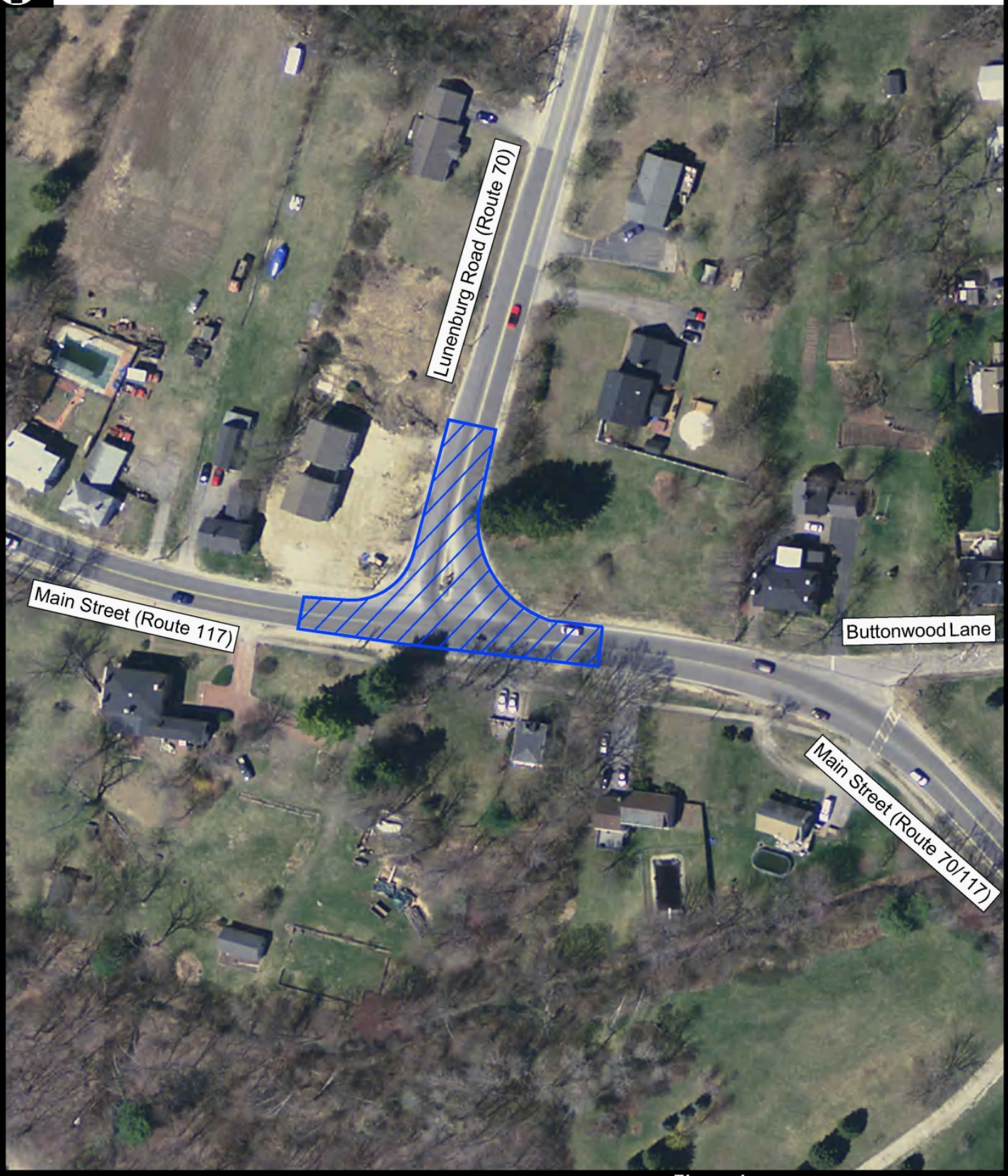



**Figure 1**

**Project Location Map & Study Area Intersections**

TEC

T:\T0698\CAD\Highway\Graphics\T0698_RSA__Locus Map.dwg 5/1/2017 4:34:54 PM

**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.

**Image 4: Guide signage heights below 7-foot minimum set by MUTCD standards**

*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.

*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 were 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 85$^{th}$ 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 |
| Sub-Standard Multi-Modal Accommodations | 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 |
| | 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 | Town |
| | 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 |
| Deteriorated or Sub-Standard Pavement Markings | 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 |
| | 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 |
| Deteriorated, Blocked, or Damaged Corridor Signage | Complete a full sign inventory along all three approaches to the Main Street / Lunenburg Road intersections. | Medium | Short-Term | Low | Town |
| | 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 | | 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 COUNT DATE : Dec-18

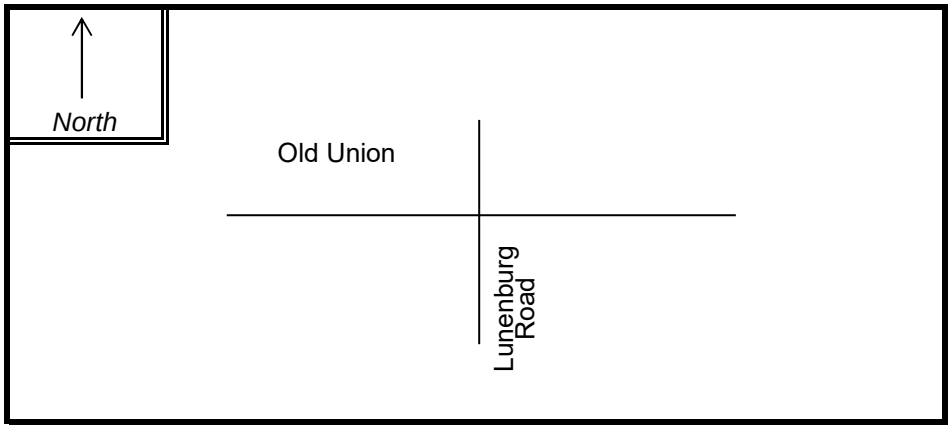
DISTRICT : 3 UNSIGNALIZED : **YES** SIGNALIZED : NO

**~ 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 : **0.093** INTERSECTION ADT ( **V** ) = TOTAL DAILY APPROACH VOLUME : **17,527**

TOTAL # OF CRASHES : 16 # OF YEARS : 5 AVERAGE # OF CRASHES PER YEAR ( **A** ) : **3.20**

**CRASH RATE CALCULATION :** **0.50** 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

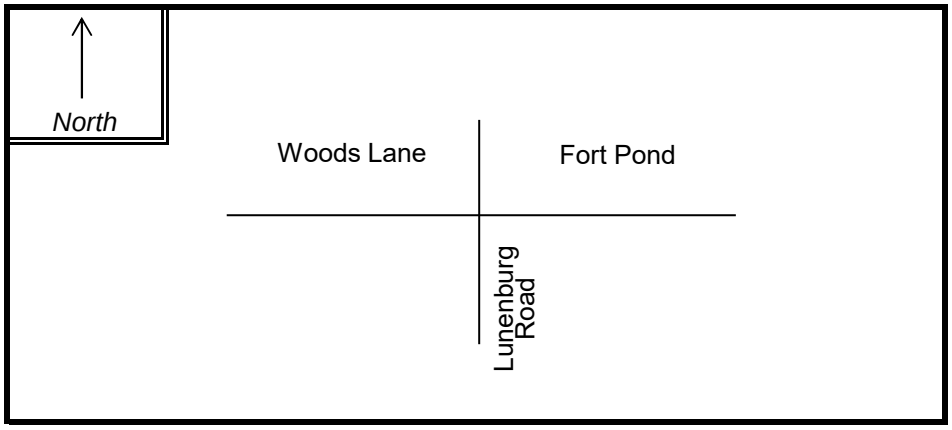
**~ INTERSECTION DATA ~**

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 : | **0.093** | INTERSECTION ADT ( **V** ) = TOTAL DAILY APPROACH VOLUME : | | | **14,527** |
| TOTAL # OF CRASHES : | 9 | # OF YEARS : | 5 | AVERAGE # OF CRASHES PER YEAR ( **A** ) : | **1.80** |

**CRASH RATE CALCULATION :** **0.34** 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 DA Dec-18

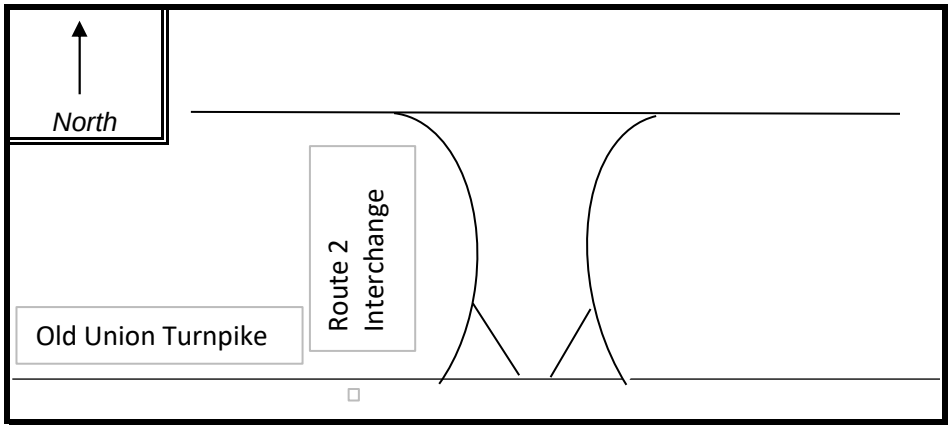
DISTRICT : 3 UNSIGNALIZED : Y SIGNALIZED : N

**~ 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 : **0.093** INTERSECTION ADT ( **V** ) = TOTAL DAILY APPROACH VOLUME : **4,688**

TOTAL # OF CRASHES : 5 # OF YEARS : 5 AVERAGE # OF CRASHES PER YEAR ( **A** ) : **1.00**

**CRASH RATE CALCULATION :** **0.58** 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 COUNT DA Dec-18

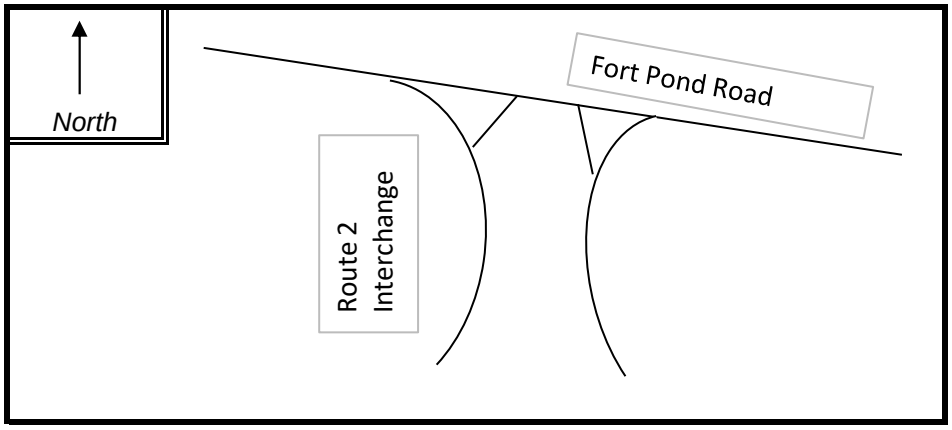
DISTRICT : 3 UNSIGNALIZED : Y SIGNALIZED : N

**~ 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 : **0.093**

INTERSECTION ADT ( **V** ) = TOTAL DAILY APPROACH VOLUME : **7,742**

TOTAL # OF CRASHES : 1

# OF YEARS : 5

AVERAGE # OF CRASHES PER YEAR ( **A** ) : **0.20**

**CRASH RATE CALCULATION :** **0.07**

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

146 Dascomb Road
Andover, MA 01810
978.794.1792
TheEngineeringCorp.com
*Create | Design | Innovate*

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.
*"**T**he **E**ngineering **C**orporation"*

Samuel W. Gregorio, PE, PTOE, $RSP_1$
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 = **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 = **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 = **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 = **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 = **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 = **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 = **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 = **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 = **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 = **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 = **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 = **474** vehicle trips
with 32% entering ( 152 vpd) and with 68% exiting ( 322 vpd)

**Trip Distribution Gravity Model**

Project: T0852 - Capital Commerce Center - lancaster, MA
Date: March 25, 2021
Analyst: TEC, Inc. / Justin Wadsworth
Source: United States Census Bureau, 5-Year ACS, 2009-2013

| | | | | | Major Route Entering / Exiting | | | | | | | | | | | Major Route Entering / Exiting | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Workplace State -County-MCD Name** | **Residence State -County-MCD Name** | **Count** | **% of Total Lancaster Workers** | **% of Distributed Workforce** | 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 | Shirley Road from north | MA-70 from south | Check |
| Lancaster Town Worcester Co. | Andover Town Essex Co. MA | 17 | 0.71% | 0.82% | 100% | | | | | | | | | 100% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% |
| Lancaster Town Worcester Co. | Ware Town Hampsire Co. MA | 23 | 0.96% | 1.11% | | 100% | | | | | | | | 100% | 0% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% |
| Lancaster Town Worcester Co. | Acton Middlesex Co. MA | 42 | 1.76% | 2.02% | 100% | | | | | | | | | 100% | 2% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 2% |
| Lancaster Town Worcester Co. | Ashby Town Middlsex Co. MA | 21 | 0.88% | 1.01% | | 67% | | | | | | 33% | | 100% | 0% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% |
| Lancaster Town Worcester Co. | Billerica Town Middlesex Co. MA | 17 | 0.71% | 0.82% | 100% | | | | | | | | | 100% | 1% | 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% | 1% |
| Lancaster Town Worcester Co. | Hudson Town Middlesex Co. MA | 36 | 1.51% | 1.73% | 100% | | | | | | | | | 100% | 2% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 2% |
| Lancaster Town Worcester Co. | Lowell City Middlsex Co. MA | 28 | 1.17% | 1.35% | 100% | | | | | | | | | 100% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% |
| Lancaster Town Worcester Co. | Stow Town Middlsex Co. MA | 18 | 0.75% | 0.87% | 100% | | | | | | | | | 100% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% |
| Lancaster Town Worcester Co. | Westford Town Middlesex Co. MA | 22 | 0.92% | 1.06% | 100% | | | | | | | | | 100% | 1% | 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% | 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% | 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% | 1% | 1% |
| Lancaster Town Worcester Co. | Clinton Town Worcester Co. MA | 293 | 12.26% | 14.10% | | 50% | | | | | | | 50% | 100% | 0% | 7% | 0% | 0% | 0% | 0% | 0% | 0% | 7% | 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% | 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% | 2% |
| Lancaster Town Worcester Co. | Holden Town Worcester Co. MA | 43 | 1.80% | 2.07% | | 75% | | | | | | | 25% | 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% | | | | 5% | 5% | 10% | 20% | 10% | 50% | 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% | 1% |
| Lancaster Town Worcester Co. | Leominster City Worcester Co. MA | 472 | 19.76% | 22.71% | | 67% | 33% | | | | | | | 100% | 0% | 15% | 7% | 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% | 0% | 4% |
| Lancaster Town Worcester Co. | Shrewbury Town Worcester Co. MA | 24 | 1.00% | 1.15% | | 100% | | | | | | | | 100% | 0% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% |
| Lancaster Town Worcester Co. | Sterling Town Worcester Co. MA | 66 | 2.76% | 3.18% | | 100% | | | | | | | | 100% | 0% | 3% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 3% |
| Lancaster Town Worcester Co. | Westborough Town Worcester Co. MA | 38 | 1.59% | 1.83% | 100% | | | | | | | | | 100% | 2% | 0% | 0% | 0% | 0% | 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% | 1% |
| **TOTAL** | | **2389** | **86.98%** | **100.00%** | | | | | | | | | | | **11.5%** | **50.7%** | **7.5%** | **0.8%** | **0.8%** | **1.7%** | **3.4%** | **6.2%** | **17.3%** | **100.0%** |
| | | | | | | | | | | | | | | **SAY** | **11%** | **51%** | **8%** | **1%** | **1%** | **2%** | **3%** | **6%** | **17%** | **100%** |

# **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 | % Distribution | | # New Trips | | Multi-Use Trips | | Total New | Total New | # Passby Trips | | # Primary Trips | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Avg. Rates | Fitted Curve | New Trips | IN | OUT | IN | OUT | IN | OUT | Pass-by Trips | Primary Trips | IN | OUT | IN | OUT |
| Weekday Daily | 4616 | 3662 | **3662** | 50% | 50% | 1831 | 1831 | 30 | 39 | 0 | **3593** | 0 | 0 | 1801 | 1792 |
| 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 Wareouse Storage***
Units: 1182 kSF

| | Total Trips | | Total | % Distribution | | # New Trips | | Multi-Use Trips | | Total New | Total New | # Passby Trips | | # Primary Trips | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Avg. Rates | Fitted Curve | New Trips | IN | OUT | IN | OUT | IN | OUT | Pass-by Trips | Primary Trips | IN | OUT | IN | OUT |
| Weekday Daily | | | **2366** | | | 1183 | 1183 | 19 | 25 | 0 | **2322** | 0 | 0 | 1164 | 1158 |
| Weekday AM PH | | | **506** | | | 390 | 116 | 4 | 9 | 0 | **493** | 0 | 0 | 386 | 107 |
| Weekday PM PH | | | **506** | | | 253 | 253 | 3 | 5 | 0 | **498** | 0 | 0 | 250 | 248 |
| Saturday Daily | | | **2366** | | | 1183 | 1183 | 51 | 68 | 0 | **2247** | 0 | 0 | 1132 | 1115 |
| Sat Midday PH | | | **200** | | | 100 | 100 | 5 | 7 | 0 | **188** | 0 | 0 | 95 | 93 |

***Office (LUC 710)***
Units: 96.1 kSF

| | Total Trips | | Total | % Distribution | | # New Trips | | Multi-Use Trips | | Total New | Total New | # Passby Trips | | # Primary Trips | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Avg. Rates | Fitted Curve | New Trips | IN | OUT | IN | OUT | IN | OUT | Pass-by Trips | Primary Trips | 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 Units

| | Total Trips | | Total | % Distribution | | # New Trips | | Multi-Use Trips | | Total New | Total New | # Passby Trips | | # Primary Trips | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Avg. Rates | Fitted Curve | New Trips | IN | OUT | IN | OUT | IN | OUT | Pass-by Trips | Primary Trips | 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 | 66 | 65 | **66** | 61% | 39% | 40 | 26 | 22 | 13 | 0 | **31** | 0 | 0 | 18 | 13 |
| Saturday Daily | 736 | 873 | **874** | 50% | 50% | 437 | 437 | 159 | 137 | 0 | **578** | 0 | 0 | 278 | 300 |
| Sat Midday PH | 66 | 70 | **70** | 49% | 51% | 34 | 36 | 9 | 9 | 0 | **52** | 0 | 0 | 25 | 27 |

***Mixed Retail (ITE LUC 820)***
Units: 57.4 KSF

| | Total Trips | | Total | % Distribution | | # New Trips | | Multi-Use Trips | | Total New | Total New | # Passby Trips | | # Primary Trips | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Avg. Rates | Fitted Curve | New Trips | IN | OUT | IN | OUT | IN | OUT | Pass-by Trips | Primary Trips | 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*** | ***Total Trips*** | | | ***Total New Trips*** | | ***Total Multi-Use Trips*** | | ***Total New*** | ***Total New*** | ***Total Pass-by Trips*** | | ***Total Primary Trips*** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ***In*** | ***Out*** | ***In*** | ***Out*** | ***Pass-by Trips*** | ***Primary Trips*** | ***In*** | ***Out*** | ***In*** | ***Out*** |
| Weekday Daily | **9546** | | | **4973** | **4973** | **421** | **421** | **468** | 8636 | **234** | **234** | **4318** | **4318** |
| Weekday AM Peak Hour | **1140** | | | **860** | **280** | **31** | **31** | **8** | **1070** | **4** | **4** | **825** | **245** |
| Weekday PM Peak Hour | **1256** | | | **494** | **762** | **57** | **57** | **58** | **1084** | **29** | **29** | **408** | **676** |
| Saturday Daily | **6100** | | | **3050** | **3050** | **432** | **432** | **586** | **4650** | **293** | **293** | **2325** | **2325** |
| Sat Midday Peak Hour | **578** | | | **295** | **283** | **38** | **38** | **58** | **444** | **29** | **29** | **228** | **216** |

### *Existing Development*

***Sand & Gravel | J.B. Hunt (Emperical + ITE LUC 130)***
Units:

| | Total Trips | | Total | % Distribution | | # New Trips | | Multi-Use Trips | | Total New | Total New | # Passby Trips | | # Primary Trips | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Avg. Rates | Fitted Curve | New Trips | IN | OUT | IN | OUT | IN | OUT | Pass-by Trips | Primary Trips | IN | OUT | IN | OUT |
| Weekday Daily | | | **416** | | | 208 | 208 | 0 | 0 | 0 | **416** | 0 | 0 | 208 | 208 |
| Weekday AM PH | | | **62** | | | 42 | 20 | 0 | 0 | 0 | **62** | 0 | 0 | 42 | 20 |
| Weekday PM PH | | | **62** | | | 20 | 42 | 0 | 0 | 0 | **62** | 0 | 0 | 20 | 42 |
| Saturday Daily | | | **24** | | | 12 | 12 | 0 | 0 | 0 | **24** | 0 | 0 | 12 | 12 |
| Sat Midday PH | | | **4** | | | 2 | 2 | 0 | 0 | 0 | **4** | 0 | 0 | 2 | 2 |

***Soccer Complex (ITE LUC 488)***
Units: 3 Fields

| | Total Trips | | Total | % Distribution | | # New Trips | | Multi-Use Trips | | Total New | Total New | # Passby Trips | | # Primary Trips | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Avg. Rates | Fitted Curve | New Trips | IN | OUT | IN | OUT | IN | OUT | Pass-by Trips | Primary Trips | 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** | 66% | 34% | 50 | 26 | 0 | 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 | % Distribution | | # New Trips | | Multi-Use Trips | | Total New | Total New | # Passby Trips | | # Primary Trips | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Avg. Rates | Fitted Curve | New Trips | IN | OUT | IN | OUT | IN | OUT | Pass-by Trips | Primary Trips | 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 | % Distribution | | # New Trips | | Multi-Use Trips | | Total New | Total New | # Passby Trips | | # Primary Trips | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Avg. Rates | Fitted Curve | New Trips | IN | OUT | IN | OUT | IN | OUT | Pass-by Trips | Primary Trips | 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 | 3500 | N/A | **3500** | 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*** | ***Total Trips*** | | | ***Total New Trips*** | | ***Total Multi-Use Trips*** | | ***Total New*** | ***Total New*** | ***Total Pass-by Trips*** | | ***Total Primary Trips*** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ***In*** | ***Out*** | ***In*** | ***Out*** | ***Pass-by Trips*** | ***Primary Trips*** | ***In*** | ***Out*** | ***In*** | ***Out*** |
| Weekday Daily | **6704** | | | **3352** | **3352** | **418** | **418** | **2846** | **3022** | **1423** | **1423** | **1511** | **1511** |
| Weekday AM Peak Hour | **690** | | | **358** | **332** | **21** | **21** | **338** | **310** | **169** | **169** | **168** | **142** |
| Weekday PM Peak Hour | **584** | | | **293** | **291** | **32** | **32** | **210** | **310** | **105** | **105** | **156** | **154** |
| Saturday Daily | **7040** | | | **3520** | **3520** | **463** | **463** | **2620** | **3494** | **1310** | **1310** | **1747** | **1747** |
| Sat Midday Peak Hour | **644** | | | **320** | **324** | **35** | **35** | **244** | **330** | **122** | **122** | **163** | **167** |

| ***POST SITE TRIPS*** | ***Total Trips*** | | | ***Total New Trips*** | | ***Total Multi-Use Trips*** | | ***Total New*** | ***Total New*** | ***Total Pass-by Trips*** | | ***Total Primary Trips*** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ***In*** | ***Out*** | ***In*** | ***Out*** | ***Pass-by Trips*** | ***Primary Trips*** | ***In*** | ***Out*** | ***In*** | ***Out*** |
| Weekday Daily | **16234** | | | **8117** | **8117** | **839** | **839** | **3314** | **11242** | **1657** | **1657** | **5621** | **5621** |
| Weekday AM Peak Hour | **1768** | | | **1176** | **592** | **52** | **52** | **346** | **1318** | **173** | **173** | **951** | **367** |
| Weekday PM Peak Hour | **1778** | | | **767** | **1011** | **89** | **89** | **268** | **1332** | **134** | **134** | **544** | **788** |
| Saturday Daily | **13116** | | | **6558** | **6558** | **895** | **895** | **3206** | **8120** | **1603** | **1603** | **4060** | **4060** |
| Sat Midday Peak Hour | **1218** | | | **613** | **605** | **73** | **73** | **302** | **770** | **151** | **151** | **389** | **381** |

| ***NET TRIP ASSESSMENT*** | ***Total Trips*** | | | ***Total New Trips*** | | ***Total Multi-Use Trips*** | | ***Total New*** | ***Total New*** | ***Total Pass-by Trips*** | | ***Total Primary Trips*** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ***In*** | ***Out*** | ***In*** | ***Out*** | ***Pass-by Trips*** | ***Primary Trips*** | ***In*** | ***Out*** | ***In*** | ***Out*** |
| Weekday Daily | **9530** | | | **4765** | **4765** | **421** | **421** | **468** | **8220** | **234** | **234** | **4110** | **4110** |
| Weekday AM Peak Hour | **1078** | | | **818** | **260** | **31** | **31** | **8** | **1008** | **4** | **4** | **783** | **225** |
| Weekday PM Peak Hour | **1194** | | | **474** | **720** | **57** | **57** | **58** | **1022** | **29** | **29** | **388** | **634** |
| Saturday Daily | **6076** | | | **3038** | **3038** | **432** | **432** | **586** | **4626** | **293** | **293** | **2313** | **2313** |
| Sat Midday Peak Hour | **574** | | | **293** | **281** | **38** | **38** | **58** | **440** | **29** | **29** | **226** | **214** |

## Trip Generation Estimate

| | |
|---|---|
| Project: | T0852 - Capital Commerce Center - Lancaster, MA |
| Date: | March 11, 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): 1370
Curve Method: Average

**AVERAGE WEEKDAY DAILY**

T = 3.37 * (X)
T = 3.37 * 1370.00
T = **4,616** vehicle trips
with 50% entering ( 2,308 vpd) and with 50% exiting ( 2,308 vpd)

**WEEKDAY MORNING PEAK HOUR**

T = 0.30 * (X)
T = 0.30 * 1370.00
T = **412** vehicle trips
with 79% entering ( 325 vpd) and with 21% exiting ( 87 vpd)

**WEEKDAY EVENING PEAK HOUR**

T = 0.26 * (X)
T = 0.26 * 1370.00
T = **356** vehicle trips
with 22% entering ( 78 vpd) and with 78% exiting ( 278 vpd)

**AVERAGE SATURDAY DAILY**

T = 2.54 * (X)
T = 2.54 * 1370.00
T = **3,480** vehicle trips
with 50% entering ( 1,740 vpd) and with 50% exiting ( 1,740 vpd)

**SATURDAY MIDDAY PEAK HOUR**

T = 0.44 * (X)
T = 0.44 * 1370.00
T = **602** vehicle trips
with 32% entering ( 193 vpd) and with 68% exiting ( 409 vpd)

## Trip Generation Estimate

| | |
|---|---|
| Project: | T0852 - Capital Commerce Center - Lancaster, MA |
| Date: | March 11, 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): | 1370 |
| Curve Method: | Fitted |

**AVERAGE WEEKDAY DAILY**

Ln(T) = 0.52 * Ln(X) + 4.45

Ln(T) = 0.52 * 7.22 + 4.45

T = **3,662** vehicle trips

with 50% entering ( 1,831 vpd) and with 50% exiting ( 1,831 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 = **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 = **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 = **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 = **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 = **66** vehicle trips
with 49% entering ( 32 vpd) and with 51% exiting ( 34 vpd)



TEC The Engineering Corp

## 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 = **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 = **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 = **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 = **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 = **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: | 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): 710 General Office Building

| | |
|---|---|
| Average Vehicle Trips Ends vs: | 1000 SF Gross Floor Area |
| Independent Variable (X): | 96.1 |
| Curve Method: | Average |

### AVERAGE WEEKDAY DAILY

T = 9.74 * (X)
T = 9.74 * 96.10
T = **936** vehicle trips
with 50% entering ( 468 vpd) and with 50% exiting ( 468 vpd)

### WEEKDAY MORNING PEAK HOUR

T = 1.16 * (X)
T = 1.16 * 96.10
T = **112** vehicle trips
with 86% entering ( 96 vpd) and with 14% exiting ( 16 vpd)

### WEEKDAY EVENING PEAK HOUR

T = 1.15 * (X)
T = 1.15 * 96.10
T = **110** vehicle trips
with 16% entering ( 18 vpd) and with 84% exiting ( 92 vpd)

### AVERAGE SATURDAY DAILY

T = 2.21 * (X)
T = 2.21 * 96.10
T = **212** vehicle trips
with 50% entering ( 106 vpd) and with 50% exiting ( 106 vpd)

### SATURDAY MIDDAY PEAK HOUR

T = 0.53 * (X)
T = 0.53 * 96.10
T = **50** vehicle trips
with 54% entering ( 27 vpd) and with 46% exiting ( 23 vpd)

### AVERAGE SUNDAY DAILY

T = 0.70 * (X)
T = 0.70 * 96.10
T = **68** vehicle trips
with 50% entering ( 34 vpd) and with 50% exiting ( 34 vpd)

### SUNDAY MIDDAY PEAK HOUR

T = 0.21 * (X)
T = 0.21 * 96.10
T = **20** vehicle trips
with 58% entering ( 12 vpd) and with 42% exiting ( 8 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): | 57.4 |
| Curve Method: | Average |

### AVERAGE WEEKDAY DAILY

T = 37.75 * (X)
T = 37.75 * 57.40
T = **2,166** vehicle trips
with 50% entering ( 1,083 vpd) and with 50% exiting ( 1,083 vpd)

### WEEKDAY MORNING PEAK HOUR

T = 0.96 * (X)
T = 0.96 * 57.40
T = **56** vehicle trips
with 62% entering ( 35 vpd) and with 38% exiting ( 21 vpd)

### WEEKDAY EVENING PEAK HOUR

T = 3.81 * (X)
T = 3.81 * 57.40
T = **218** vehicle trips
with 48% entering ( 105 vpd) and with 52% exiting ( 113 vpd)

### AVERAGE SATURDAY DAILY

T = 46.12 * (X)
T = 46.12 * 57.40
T = **2,648** vehicle trips
with 50% entering ( 1,324 vpd) and with 50% exiting ( 1,324 vpd)

### SATURDAY MIDDAY PEAK HOUR

T = 4.50 * (X)
T = 4.50 * 57.40
T = **258** vehicle trips
with 52% entering ( 134 vpd) and with 48% exiting ( 124 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 (Passenger Vehicles) | Exit (Passenger Vehicles) | Enter (Trucks) | Exit (Trucks) | Total |
|---|---|---|---|---|---|---|---|
| AM | 4:00 | 5:00 | 215 | 806 | | | 1021 |
| | 5:00 | 6:00 | **806** | **215** | **23** | **23** | 1067 |
| | 6:00 | 7:00 | 53 | 53 | | | 106 |
| | 7:00 | 8:00 | | | | | 0 |
| TOTAL: | | | 859 | 268 | 23 | 23 | 1173 |

| | | | Enter (Passenger Vehicles) | Exit (Passenger Vehicles) | Enter (Trucks) | Exit (Trucks) | Total |
|---|---|---|---|---|---|---|---|
| PM | 16:00 | 17:00 | 215 | 806 | | | 1021 |
| | 17:00 | 18:00 | **806** | **215** | **23** | **23** | 1067 |
| | 18:00 | 19:00 | 53 | 53 | | | 106 |
| | 19:00 | 20:00 | | | | | 0 |
| TOTAL: | | | 1074 | 1074 | 23 | 23 | 2194 |

| Daily: | | Enter | Exit | Total |
|---|---|---|---|---|
| | Trucks | 272 | 272 | 544 |
| | Passenger Vehicles | 2149 | 2149 | 4298 |
| | Total | 2421 | 2421 | 4842 |

Trip Generation - 1,182,000 SF  Off-Peak - Non Christmas Period

| | | | Enter (Passenger Vehicles) | Exit (Passenger Vehicles) | Enter (Trucks) | Exit (Trucks) | Total |
|---|---|---|---|---|---|---|---|
| AM | 4:00 | 5:00 | 100 | 374 | | | 474 |
| | **5:00** | **6:00** | **374** | **100** | **16** | **16** | **506** |
| | 6:00 | 7:00 | 25 | 25 | | | 50 |
| | 7:00 | 8:00 | | | | | 0 |
| TOTAL: | | | 499 | 499 | 16 | 16 | 1030 |

| | | | Enter (Passenger Vehicles) | Exit (Passenger Vehicles) | Enter (Trucks) | Exit (Trucks) | Total |
|---|---|---|---|---|---|---|---|
| PM | 16:00 | 17:00 | 100 | 374 | | | 474 |
| | 17:00 | 18:00 | **374** | **100** | **16** | **16** | **506** |
| | 18:00 | 19:00 | 25 | 25 | | | 50 |
| | 19:00 | 20:00 | | | | | 0 |
| TOTAL: | | | 499 | 499 | 16 | 16 | 1030 |

| Daily: | | Enter | Exit | Total |
|---|---|---|---|---|
| | Trucks | 185 | 185 | 370 |
| | Passenger Vehicles | 998 | 998 | 1996 |
| | Total | 1183 | 1183 | 2366 |

# 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

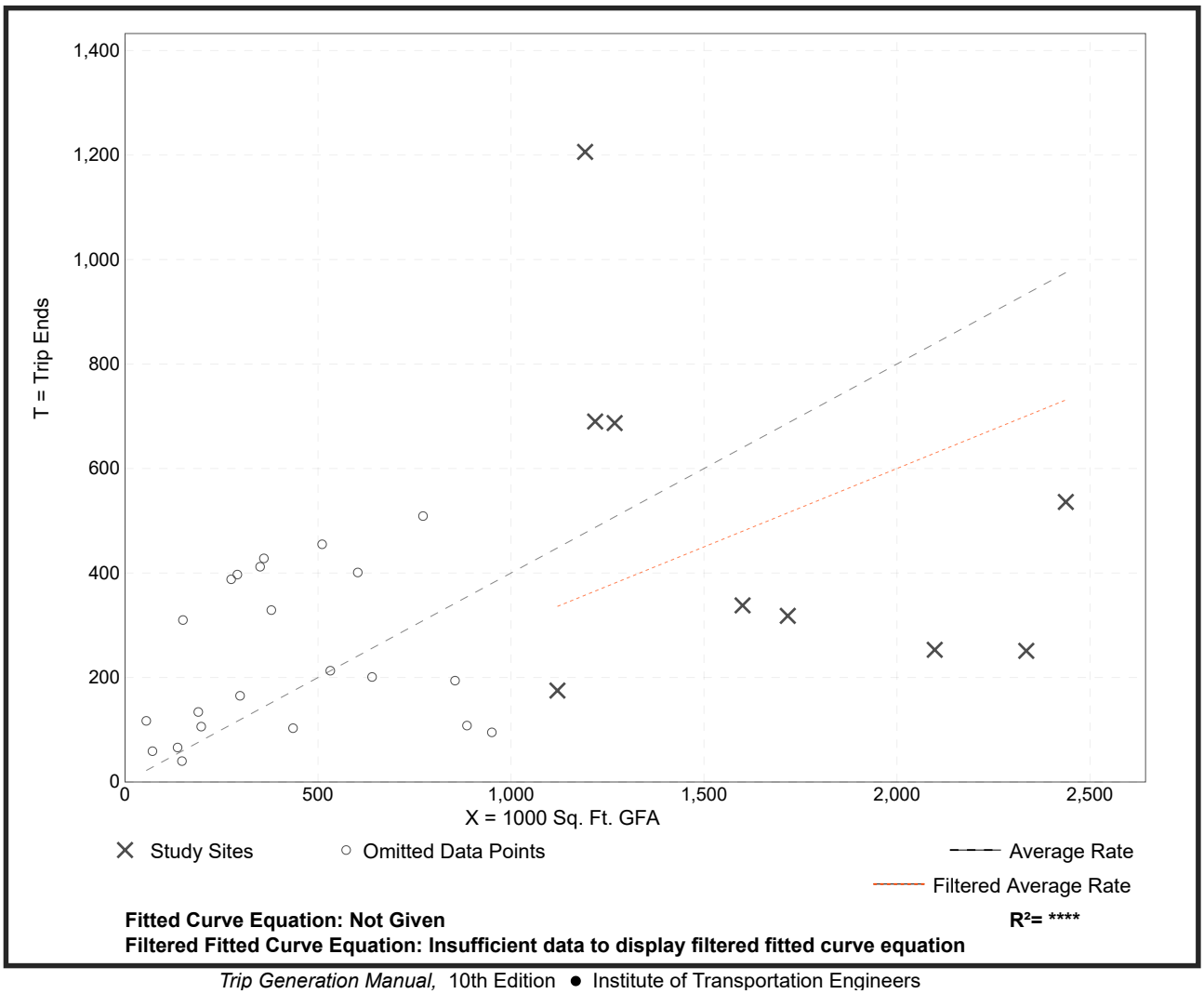
## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| 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***




**Fitted Curve Equation: Not Given**
**$R^2$= ****
**Filtered Fitted Curve Equation: Insufficient data to display filtered fitted curve equation**

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# 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

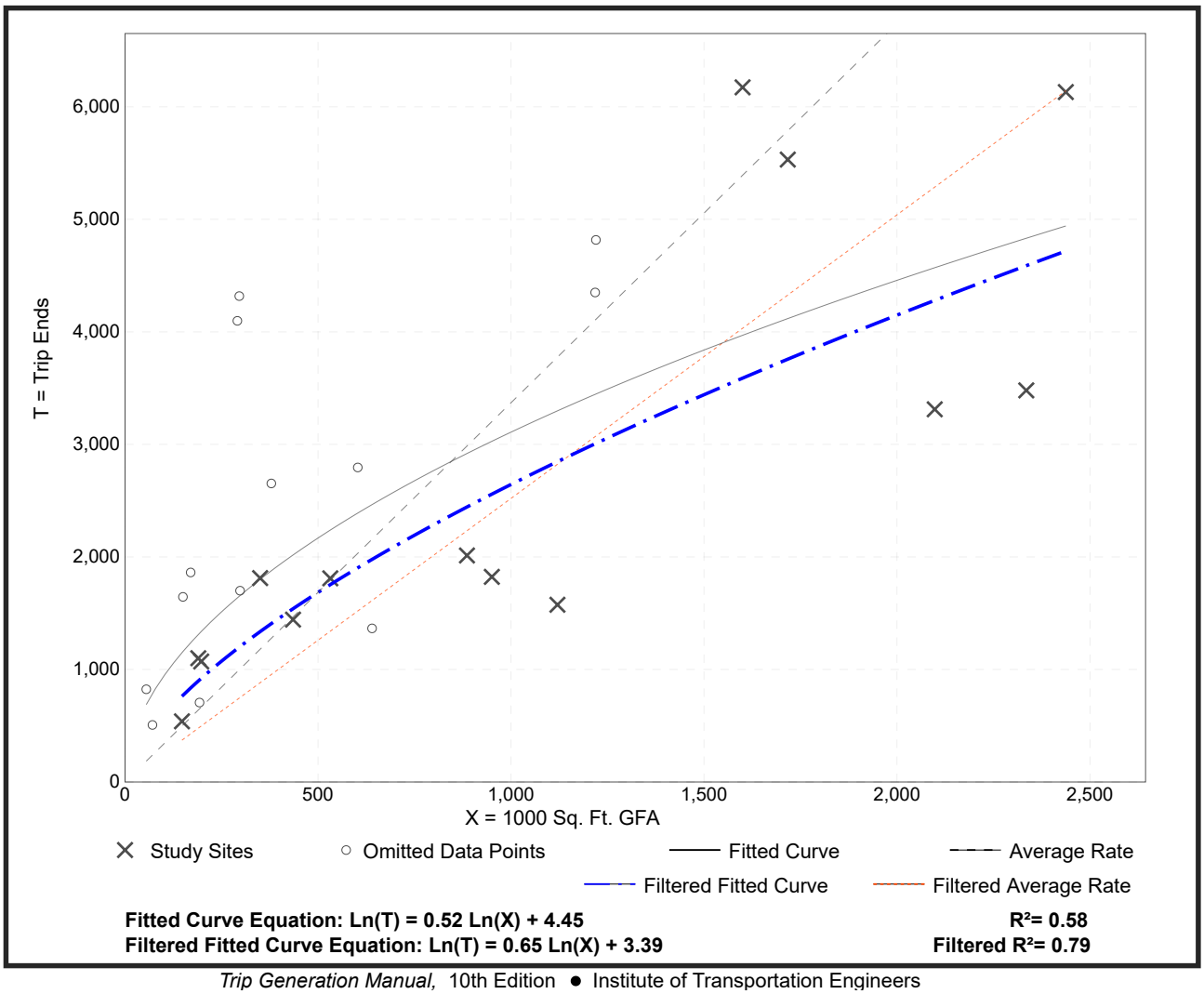
## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| 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***




**Fitted Curve Equation: Ln(T) = 0.52 Ln(X) + 4.45** **$R^2$= 0.58**
**Filtered Fitted Curve Equation: Ln(T) = 0.65 Ln(X) + 3.39** **Filtered $R^2$= 0.79**

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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

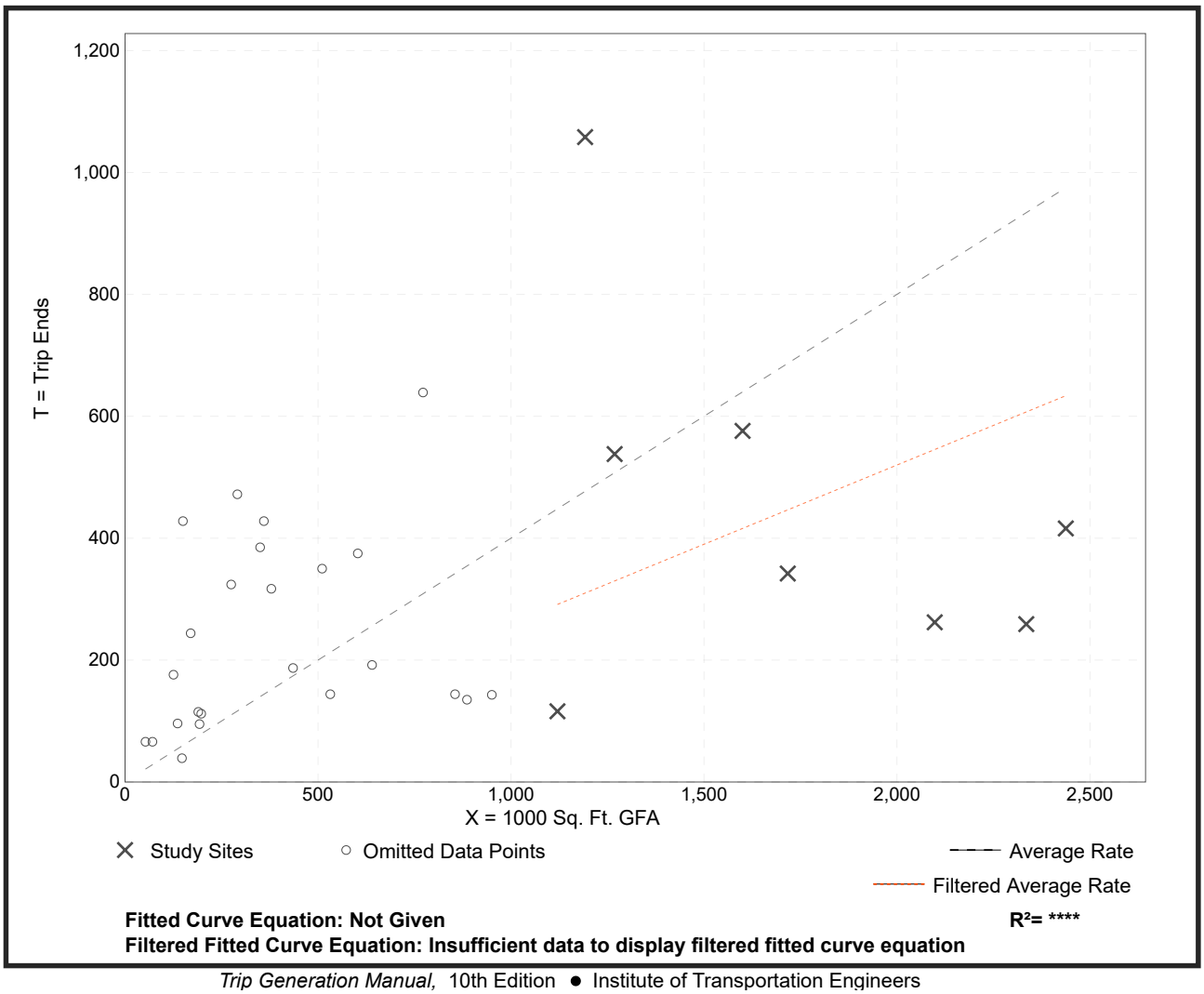
## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| 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***




**Fitted Curve Equation: Not Given**
**$R^2$= ****
**Filtered Fitted Curve Equation: Insufficient data to display filtered fitted curve equation**

*Trip Generation Manual,* 10th Edition ● Institute of Transportation Engineers

| 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 | *Weekday Daily* | | | | |
| | Enter | 3014 | 408 | 1083 | 468 |
| | Exit | 3014 | 408 | 1083 | 468 |
| | *Weekday AM* | | | | |
| | Enter | 715 | 14 | 35 | 96 |
| | Exit | 203 | 40 | 21 | 16 |
| | *Weekday PM* | | | | |
| | Enter | 331 | 40 | 105 | 18 |
| | Exit | 531 | 26 | 113 | 92 |
| | *Saturday Daily* | | | | |
| | Enter | 1183 | 437 | 1324 | 106 |
| | Exit | 1183 | 437 | 1324 | 106 |
| | *Saturday Midday* | | | | |
| | 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

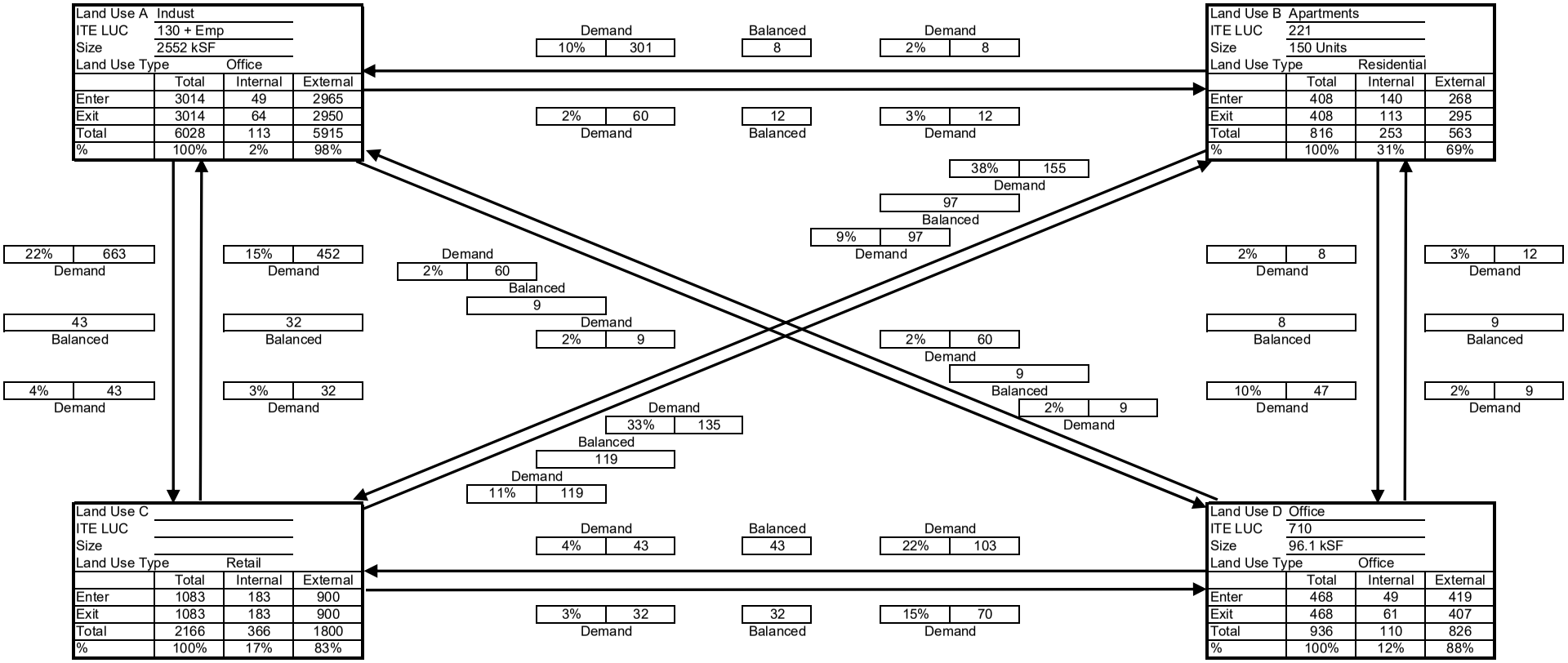
INSTRUCTIONS:

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 Wadsv
Date: 4/20/2021

Project Name: Capital Commerce Center - BUILD
Time Period: Weekday Daily

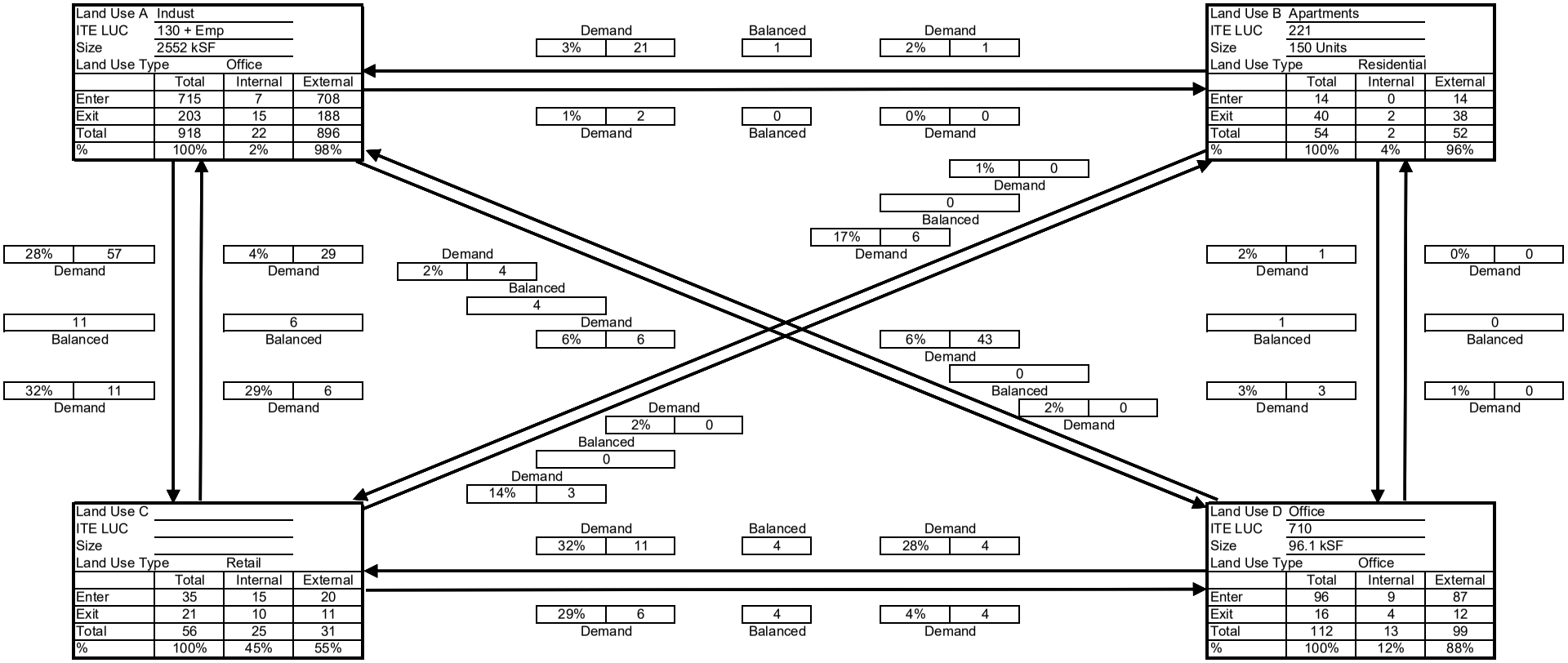



| Net External Trips for Multi-Use Development | | | | | | |
|---|---|---|---|---|---|---|
| Land Use | A | B | C | D | Total | |
| Enter | 2965 | 268 | 900 | 419 | 4552 | |
| Exit | 2950 | 295 | 900 | 407 | 4552 | |
| **Total External Trips** | **5915** | **563** | **1800** | **826** | **9104** | ***Internal Capture*** |
| Single-Use Trip Gen. Est. | 6028 | 816 | 2166 | 936 | 9946 | **8%** |
| **Net Internal Trips** | **113** | **253** | **366** | **110** | **842** | |

# Multi-Use Trip Generation Calculation

Analyst: TEC, Inc. / Justin Wadsv
Date: 4/20/2021

Project Name: Capital Commerce Center - BUILD
Time Period: Weekday AM Peak Hour

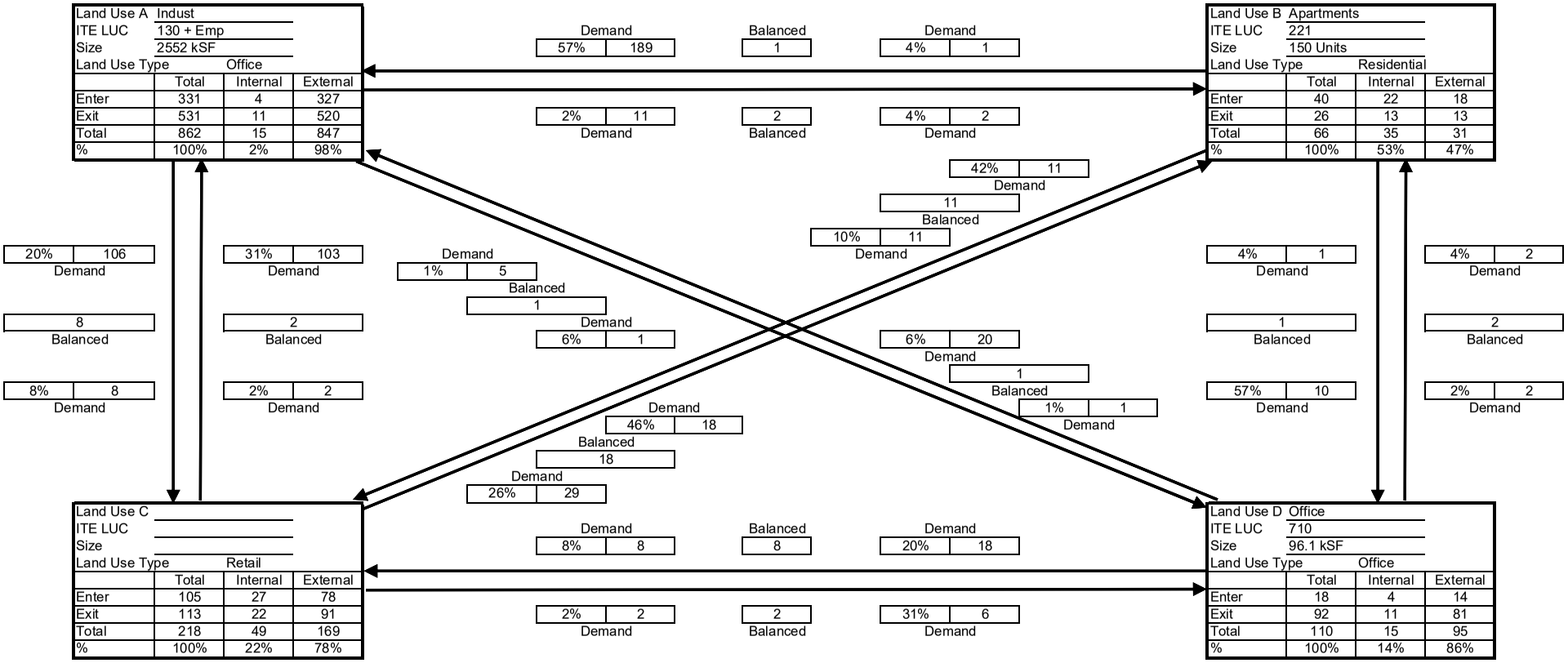



| Net External Trips for Multi-Use Development | | | | | | |
|---|---|---|---|---|---|---|
| Land Use | A | B | C | D | Total | |
| Enter | 708 | 14 | 20 | 87 | 829 | |
| Exit | 188 | 38 | 11 | 12 | 249 | |
| **Total External Trips** | **896** | **52** | **31** | **99** | **1078** | ***Internal Capture*** |
| Single-Use Trip Gen. Est. | 918 | 54 | 56 | 112 | 1140 | **5%** |
| **Net Internal Trips** | **22** | **2** | **25** | **13** | **62** | |

# Multi-Use Trip Generation Calculation

Analyst: TEC, Inc. / Justin Wadsv
Date: 4/20/2021

Project Name: Capital Commerce Center - BUILI
Time Period: Weekday PM Peak Hour

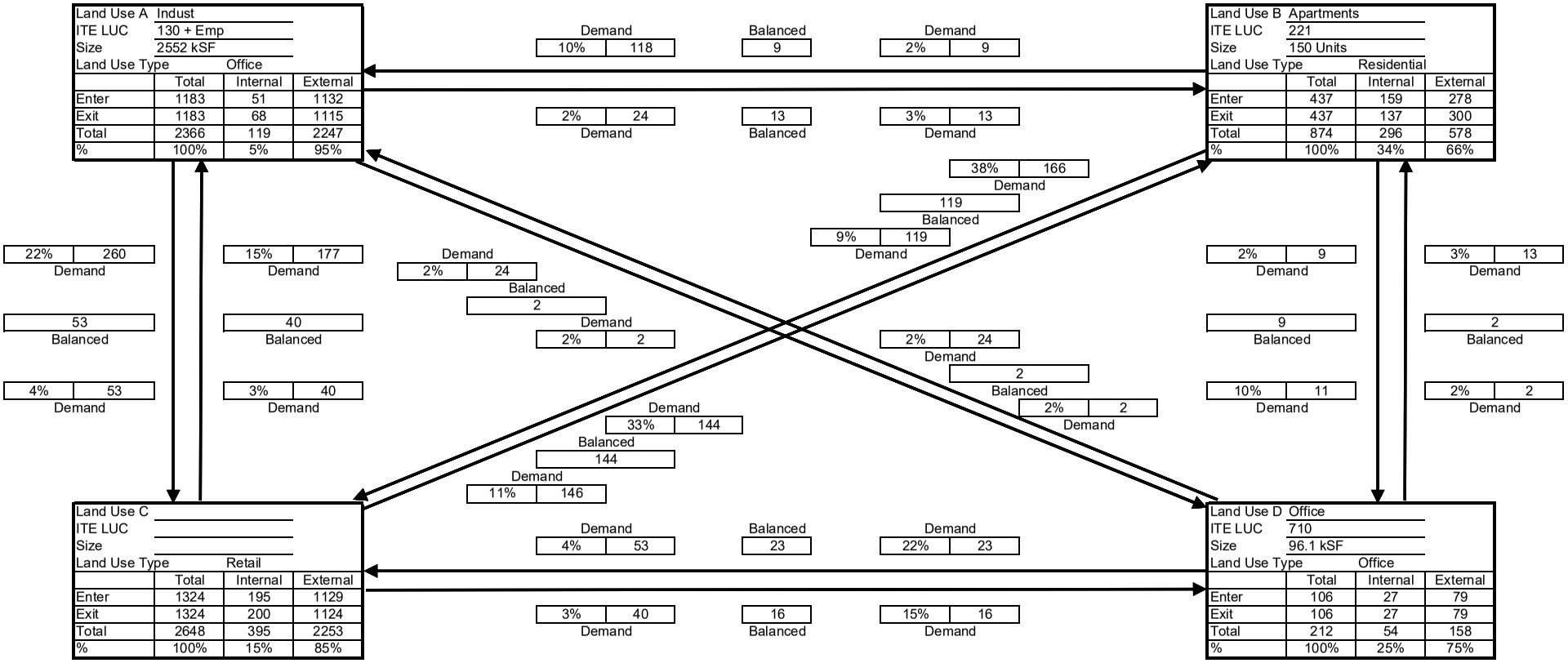



| Net External Trips for Multi-Use Development | | | | | | |
|---|---|---|---|---|---|---|
| Land Use | A | B | C | D | Total | |
| Enter | 327 | 18 | 78 | 14 | 437 | |
| Exit | 520 | 13 | 91 | 81 | 705 | |
| **Total External Trips** | **847** | **31** | **169** | **95** | **1142** | ***Internal Capture*** |
| Single-Use Trip Gen. Est. | 862 | 66 | 218 | 110 | 1256 | **9%** |
| **Net Internal Trips** | **15** | **35** | **49** | **15** | **114** | |

# Multi-Use Trip Generation Calculation

Analyst: TEC, Inc. / Justin Wadsv
Date: 4/20/2021

Project Name: Capital Commerce Center - BUILI
Time Period: Saturday Daily

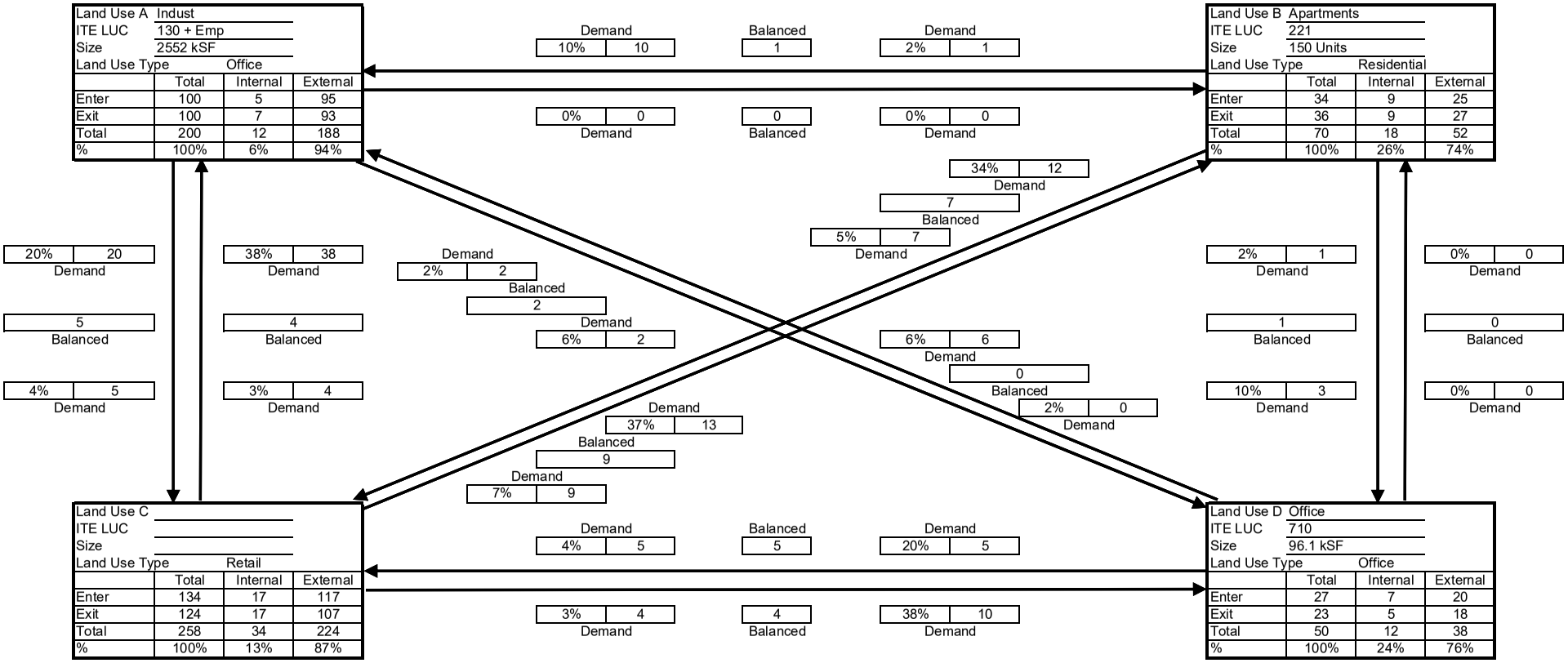



| Net External Trips for Multi-Use Development | | | | | | |
|---|---|---|---|---|---|---|
| Land Use | A | B | C | D | Total | |
| Enter | 1132 | 278 | 1129 | 79 | 2618 | |
| Exit | 1115 | 300 | 1124 | 79 | 2618 | |
| **Total External Trips** | **2247** | **578** | **2253** | **158** | **5236** | ***Internal Capture*** |
| Single-Use Trip Gen. Est. | 2366 | 874 | 2648 | 212 | 6100 | **14%** |
| **Net Internal Trips** | **119** | **296** | **395** | **54** | **864** | |

# Multi-Use Trip Generation Calculation

Analyst: TEC, Inc. / Justin Wadsv
Date: 4/20/2021

Project Name: Capital Commerce Center - BUILI
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** | ***Internal Capture*** |
| Single-Use Trip Gen. Est. | 200 | 70 | 258 | 50 | 578 | **13%** |
| **Net Internal Trips** | **12** | **18** | **34** | **12** | **76** | |

| 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.

## 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 = **58** 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 = **8** 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 = **8** 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 = **24** 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 = **4** 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 = **1,886** 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 = **204** 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 = **100** 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 = **2,302** 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 = **202** 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 = **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 = **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 = **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 = **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 = **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 = **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 = **320** vehicle trips
with 50% entering ( 160 vpd) and with 50% exiting ( 160 vpd)

# 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 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 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lancaster town Middlesex Co. MA | 8,055 | 1 | 1 | 8,055 | | | | 5% | 5% | 10% | 20% | 10% | 50% | 100% |
| Lunenburg town Worcester Co. MA | 11,312 | 0.5 | 0.5 | 2,828 | | | | | | | | 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% | | | 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% | | 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; Same distance to competition = 0.5; Closer to competion = 0.1

| Surrounding Community State-County-MCD Name | | 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 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lancaster town Middlesex Co. MA | | 0 | 0 | 0 | 403 | 403 | 806 | 1611 | 806 | 4028 | 8055 |
| Lunenburg town Worcester Co. MA | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2828 | 0 | 2828 |
| Shirley town Middlesex Co. MA | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7672 | 0 | 7672 |
| Leominster town Worcester Co. MA | | 0 | 1394 | 687 | 0 | 0 | 0 | 0 | 0 | 0 | 2081 |
| Harvard town Worcester Co. MA | | 5737 | 0 | 0 | 0 | 0 | 5737 | 0 | 0 | 0 | 11474 |
| Bolton town Worcester Co. MA | | 0 | 0 | 0 | 0 | 0 | 1321 | 0 | 0 | 0 | 1321 |
| Berlin town Hartford Co. CT | | 0 | 0 | 0 | 0 | 0 | 72 | 0 | 0 | 72 | 143 |
| Boylston town Worcester Co. MA | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 232 | 232 |
| Sterling town Worcester Co. MA | | 0 | 1562 | 0 | 0 | 0 | 0 | 195 | 0 | 195 | 1952 |
| Clinton town Worcester Co. MA | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1344 | 1344 |
| Boxborough town Middlesex Co. MA | | 1600 | 0 | 0 | 0 | 0 | 1600 | 0 | 0 | 0 | 3201 |
| **Total** | | **7337** | **2956** | **687** | **403** | **403** | **9535** | **1806** | **11306** | **5870** | **40301** |
| **Percentage** | | **18.2%** | **7.3%** | **1.7%** | **1.0%** | **1.0%** | **23.7%** | **4.5%** | **28.1%** | **14.6%** | **100%** |
| **Use** | | **18%** | **7%** | **2%** | **1%** | **1%** | **23%** | **5%** | **28%** | **15%** | **100%** |

**Trip Distribution Gravity Model - Residential**

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

| Residence State -County-MCD Name | Workplace State -County-MCD Name | Count | % of Total Lancaster Workers | % of Distributed Workforce | 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 | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lancaster Town Worcester Co. MA | Pittsfield City Berkshire Co. MA | 27 | 0.75% | 0.83% | | 100% | | | | | | | | 100% | 0% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% |
| Lancaster Town Worcester Co. MA | Andover Town Essex Co. MA | 31 | 0.86% | 0.95% | 75% | | | | | 25% | | | | 100% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% |
| Lancaster Town Worcester Co. MA | Danvers Town Essex Co. MA | 29 | 0.80% | 0.89% | 100% | | | | | | | | | 100% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% |
| Lancaster Town Worcester Co. MA | Holyoke City Hampden Co. MA | 48 | 1.33% | 1.47% | | 100% | | | | | | | | 100% | 0% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% |
| Lancaster Town Worcester Co. MA | Acton Town Middlesex Co. MA | 72 | 2.00% | 2.21% | 50% | | | | | 50% | | | | 100% | 1% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 0% | 2% |
| Lancaster Town Worcester Co. MA | Ayer Town Middlesex Co. MA | 29 | 0.80% | 0.89% | | | | | | | | 100% | | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 1% |
| Lancaster Town Worcester Co. MA | Concord Town Middlesex Co. MA | 42 | 1.16% | 1.29% | 100% | | | | | | | | | 100% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% |
| Lancaster Town Worcester Co. MA | Framingham Town Middlesex Co. MA | 56 | 1.55% | 1.72% | | | | | | 100% | | | | 100% | 0% | 0% | 0% | 0% | 0% | 2% | 0% | 0% | 0% | 2% |
| Lancaster Town Worcester Co. MA | Hudson Town Middlesex Co. MA | 39 | 1.08% | 1.20% | | | | | | 100% | | | | 100% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 0% | 1% |
| Lancaster Town Worcester Co. MA | Marlborough City Middlesex Co. MA | 202 | 5.60% | 6.20% | | | | | | 67% | | | 33% | 100% | 0% | 0% | 0% | 0% | 0% | 4% | 0% | 0% | 2% | 6% |
| Lancaster Town Worcester Co. MA | Shirley Town Middlesex Co. MA | 30 | 0.83% | 0.92% | | | | | | | | 100% | | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 1% |
| Lancaster Town Worcester Co. MA | Stow Town Middlsex Co. MA | 57 | 1.58% | 1.75% | 50% | | | | | 50% | | | | 100% | 1% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 0% | 2% |
| Lancaster Town Worcester Co. MA | Waltham City Middlsex Co. MA | 37 | 1.03% | 1.14% | 50% | | | | | 50% | | | | 100% | 1% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 0% | 1% |
| Lancaster Town Worcester Co. MA | Westford Town Middlesex Co. MA | 32 | 0.89% | 0.98% | 75% | | | | | 25% | | | | 100% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% |
| Lancaster Town Worcester Co. MA | Bellingham Town Norfolk Co. MA | 38 | 1.05% | 1.17% | | | | | | 100% | | | | 100% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 0% | 1% |
| Lancaster Town Worcester Co. MA | Franklin Town City Norfolk Co. MA | 29 | 0.80% | 0.89% | | | | | | 100% | | | | 100% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 0% | 1% |
| Lancaster Town Worcester Co. MA | Wellsely Town Norfolk Co. MA | 41 | 1.14% | 1.26% | 50% | | | | | 50% | | | | 100% | 1% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 0% | 1% |
| Lancaster Town Worcester Co. MA | Boston City Suffolk Co. MA | 113 | 3.13% | 3.47% | 100% | | | | | | | | | 100% | 3% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 3% |
| Lancaster Town Worcester Co. MA | Auburn Town Worcester Co. MA | 62 | 1.72% | 1.90% | | 100% | | | | | | | | 100% | 0% | 2% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 2% |
| Lancaster Town Worcester Co. MA | Bolton Town Worcester Co. MA | 264 | 7.32% | 8.11% | | | | | | 100% | | | | 100% | 0% | 0% | 0% | 0% | 0% | 8% | 0% | 0% | 0% | 8% |
| Lancaster Town Worcester Co. MA | Boylston Town Worcester Co. MA | 44 | 1.22% | 1.35% | | | | | | | | | 100% | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 1% |
| Lancaster Town Worcester Co. MA | Clinton Town Worcester Co. MA | 530 | 14.69% | 16.27% | | | | | | | | | 100% | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 16% | 16% |
| Lancaster Town Worcester Co. MA | Fitchburg City Worcester Co. MA | 85 | 2.36% | 2.61% | | 100% | | | | | | | | 100% | 0% | 3% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 3% |
| Lancaster Town Worcester Co. MA | Harvard Town Worcester Co. MA | 117 | 3.24% | 3.59% | 50% | | | | | 50% | | | | 100% | 2% | 0% | 0% | 0% | 0% | 2% | 0% | 0% | 0% | 4% |
| Lancaster Town Worcester Co. MA | Lancaster Town Woecester Co. MA | 351 | 9.73% | 10.78% | | | | 5% | 5% | 10% | 20% | 10% | 50% | 100% | 0% | 0% | 0% | 1% | 1% | 1% | 2% | 1% | 5% | 11% |
| Lancaster Town Worcester Co. MA | Leominster City Worcester Co. MA | 217 | 6.01% | 6.66% | | 67% | 33% | | | | | | | 100% | 0% | 4% | 2% | 0% | 0% | 0% | 0% | 0% | 0% | 7% |
| Lancaster Town Worcester Co. MA | Northborough Town Worcester Co. MA | 46 | 1.27% | 1.41% | | | | | | 50% | | | 50% | 100% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 1% | 1% |
| Lancaster Town Worcester Co. MA | Oxford Town Worcester Co. MA | 29 | 0.80% | 0.89% | | 100% | | | | | | | | 100% | 0% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% |
| Lancaster Town Worcester Co. MA | Shrewsbury Town Worcester Co. MA | 44 | 1.22% | 1.35% | | 33% | | | | 34% | | | 33% | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% |
| Lancaster Town Worcester Co. MA | Sterling Town Worcester Co. MA | 34 | 0.94% | 1.04% | | 80% | | | | | 10% | | 10% | 100% | 0% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% |
| Lancaster Town Worcester Co. MA | Westborough Town Worcester Co. MA | 131 | 3.63% | 4.02% | | | | | | 75% | | | 25% | 100% | 0% | 0% | 0% | 0% | 0% | 3% | 0% | 0% | 1% | 4% |
| Lancaster Town Worcester Co. MA | West Boylston Town Worcester Co. MA | 32 | 0.89% | 0.98% | | 50% | | | | | 50% | | | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% |
| Lancaster Town Worcester Co. MA | Worcester City Worcester Co. MA | 319 | 8.84% | 9.79% | | 100% | | | | | | | | 100% | 0% | 10% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 10% |
| **TOTAL** | | **3609** | **90.25%** | **100.00%** | | | | | | | | | | | **12.1%** | **23.7%** | **2.2%** | **0.5%** | **0.5%** | **28.0%** | **2.8%** | **2.9%** | **27.3%** | **100.0%** |
| | | | | | | | | | | | | | | **Say** | **12%** | **23%** | **2%** | **1%** | **1%** | **28%** | **3%** | **3%** | **27%** | **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

| | | | | | Major Route Entering / Exiting | | | | | | | | | | | Major Route Entering / Exiting | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Workplace State -County-MCD Name** | **Residence State -County-MCD Name** | **Count** | **% of Total Lancaster Workers** | **% of Distributed Workforce** | 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% | 1% |
| Lancaster Town Worcester Co. | Ware Town Hampsire Co. MA | 23 | 0.96% | 1.11% | | 100% | | | | | | | | 100% | 0% | 1% | 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% | 2% |
| Lancaster Town Worcester Co. | Ashby Town Middlsex Co. MA | 21 | 0.88% | 1.01% | | 67% | | | | | | 33% | | 100% | 0% | 1% | 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% | 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% | 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 Middlsex Co. MA | 28 | 1.17% | 1.35% | 75% | | | | | 25% | | | | 100% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% |
| Lancaster Town Worcester Co. | Stow Town Middlsex Co. MA | 18 | 0.75% | 0.87% | 50% | | | | | 50% | | | | 100% | 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% | 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% | 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% | 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% | 1% | 1% |
| Lancaster Town Worcester Co. | Clinton Town Worcester Co. MA | 293 | 12.26% | 14.10% | | | | | | | | | 100% | 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% | 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% | 2% |
| Lancaster Town Worcester Co. | Holden Town Worcester Co. MA | 43 | 1.80% | 2.07% | | 75% | | | | | | | 25% | 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% | | | | 5% | 5% | 10% | 20% | 10% | 50% | 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% | 1% |
| Lancaster Town Worcester Co. | Leominster City Worcester Co. MA | 472 | 19.76% | 22.71% | | 67% | 33% | | | | | | | 100% | 0% | 15% | 7% | 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% | 0% | 4% |
| Lancaster Town Worcester Co. | Shrewbury Town Worcester Co. MA | 24 | 1.00% | 1.15% | | 33% | | | | 34% | | | 33% | 100% | 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% | | 10% | 100% | 0% | 3% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 3% |
| Lancaster Town Worcester Co. | Westborough Town Worcester Co. MA | 38 | 1.59% | 1.83% | | | | | | 75% | | | 25% | 100% | 0% | 0% | 0% | 0% | 0% | 1% | 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% | 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%** |
| | | | | | | | | | | | | | | **SAY** | **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, Massachsuetts
Date: April 30, 2021
Analyst: TEC Inc. / Samuel W. Gregorio, PE, PTOE

**Roadway Speed =** 50

| Operating Speed | Opposing Volume | Advancing Motor Vehicle Volumes (veh/hr) | | | |
|---|---|---|---|---|---|
| | | 5% LT | 10% LT | 20% LT | 30% LT |
| 30 mph or less | 800 | 370 | 265 | 195 | 185 |
| | 600 | 460 | 345 | 250 | 225 |
| | 400 | 570 | 430 | 305 | 275 |
| | 200 | 720 | 530 | 390 | 335 |
| 40 mph | 800 | 330 | 240 | 180 | 160 |
| | 600 | 410 | 305 | 225 | 200 |
| | 400 | 510 | 380 | 275 | 245 |
| | 200 | 640 | 470 | 350 | 305 |
| | 100 | 720 | 515 | 390 | 340 |
| 50 mph | 800 | 280 | 210 | 165 | 135 |
| | 600 | 350 | 260 | 195 | 170 |
| | 400 | 430 | 320 | 240 | 210 |
| | 200 | 550 | 400 | 300 | 270 |
| | 100 | 615 | 445 | 335 | 295 |
| 60 mph | 800 | 230 | 170 | 125 | 115 |
| | 600 | 290 | 210 | 160 | 140 |
| | 400 | 365 | 270 | 200 | 175 |
| | 200 | 450 | 330 | 250 | 215 |
| | 100 | 505 | 370 | 275 | 240 |

**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

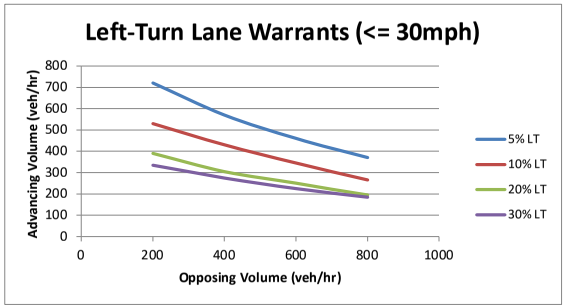
**Lunenburg Road at McGovern Boulevard**

Left-Turn Lane Warranted?

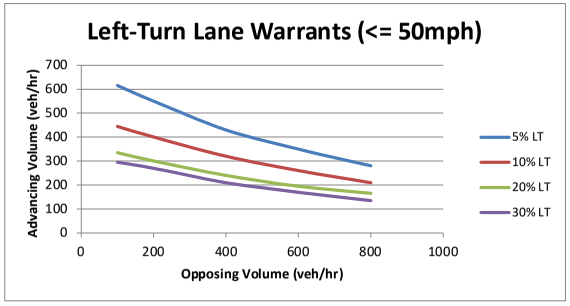
| | |
|---|---|
| Signalized | YES |
| Unsignalized | YES |

**Lunenburg Road at McGovern Boulevard**
2028 FUTURE YEAR w/ TRIP GEN DATA INPUT

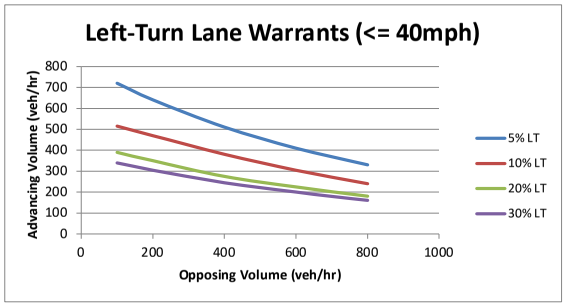
| Time | Advancing Route 70 NBL | Advancing Route 70 NB | % Left Turns | Opposing Route 70 SB | Warranted |
|---|---|---|---|---|---|
| 6-7 AM | | | #DIV/0! | | #DIV/0! |
| 7-8 AM | | | #DIV/0! | | #DIV/0! |
| **8-9 AM** | 314 | 695 | 45.2% | 487 | YES |
| 9-10 AM | | | #DIV/0! | | #DIV/0! |
| 10-11 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** | 208 | 890 | 23.4% | 701 | YES |
| 5-6 PM | | | #DIV/0! | | #DIV/0! |




5% LT y = 0.0004x^2 - 0.955x + 895
10% LT y = 0.0001x^2 - 0.565x + 637.5
20% LT y = 0.0002x^2 - 0.5075x + 482.5
30% LT y = 0.0001x^2 - 0.375x + 405




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




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

Project: Capital Commerce Center
Town: Lancaster, MA
TEC # T0852
Analyst: TEC / Samuel W. Gregorio, PE, PTOE
Location: McGovern Blvd @ Lunenburg Road

## RAW DATA INPUT

VOLUMES

| Time | Minor EBL | Minor WB | Major NB | Major SB |
|---|---|---|---|---|
| 6-7 AM | | | 180 | 352 |
| 7-8 AM | 16 | | 343 | 346 |
| 8-9 AM | 20 | | 336 | 335 |
| 9-10 AM | | | 275 | 295 |
| 10-11 AM | | | 264 | 281 |
| 11-12 PM | | | 235 | 307 |
| 12-1 PM | | | 250 | 273 |
| 1-2 PM | | | 277 | 318 |
| 2-3 PM | | | 358 | 314 |
| 3-4 PM | | | 504 | 343 |
| 4-5 PM | 43 | | 528 | 287 |
| 5-6 PM | 24 | | 527 | 261 |
| 6-7 PM | | | 346 | 226 |

## SEASONALLY ADJUSTED DATA

VOLUMES

| Time | Minor EBL | Minor WB | Major NB | Major SB |
|---|---|---|---|---|
| 6-7 AM | 0 | 0 | 190 | 372 |
| 7-8 AM | 17 | 0 | 362 | 365 |
| 8-9 AM | 21 | 0 | 355 | 354 |
| 9-10 AM | 0 | 0 | 290 | 312 |
| 10-11 AM | 0 | 0 | 279 | 297 |
| 11-12 PM | 0 | 0 | 248 | 324 |
| 12-1 PM | 0 | 0 | 264 | 288 |
| 1-2 PM | 0 | 0 | 293 | 336 |
| 2-3 PM | 0 | 0 | 378 | 332 |
| 3-4 PM | 0 | 0 | 532 | 362 |
| 4-5 PM | 45 | 0 | 558 | 303 |
| 5-6 PM | 25 | 0 | 557 | 276 |
| 6-7 PM | 0 | 0 | 365 | 239 |

## SITE-GENERATED DATA

VOLUMES

| Time | Minor EBL | Minor WB | Major NB | Major SB |
|---|---|---|---|---|
| 6-7 AM | 77 | 0 | 148 | 258 |
| 7-8 AM | 131 | 0 | 281 | 490 |
| 8-9 AM | 132 | 0 | 282 | 491 |
| 9-10 AM | 120 | 0 | 78 | 134 |
| 10-11 AM | 121 | 0 | 79 | 136 |
| 11-12 PM | 122 | 0 | 80 | 137 |
| 12-1 PM | 84 | 0 | 83 | 140 |
| 1-2 PM | 149 | 0 | 257 | 442 |
| 2-3 PM | 260 | 0 | 138 | 233 |
| 3-4 PM | 260 | 0 | 139 | 233 |
| 4-5 PM | 398 | 0 | 146 | 240 |
| 5-6 PM | 400 | 0 | 147 | 241 |
| 6-7 PM | 145 | 0 | 71 | 113 |

## EXISTING YEAR BUILD DATA

VOLUMES

| Time | Minor EBL | Minor WB | Major NB | Major SB |
|---|---|---|---|---|
| 6-7 AM | 77 | 0 | 338 | 630 |
| 7-8 AM | 148 | 0 | 643 | 855 |
| 8-9 AM | 153 | 0 | 637 | 845 |
| 9-10 AM | 120 | 0 | 368 | 446 |
| 10-11 AM | 121 | 0 | 358 | 433 |
| 11-12 PM | 122 | 0 | 328 | 461 |
| 12-1 PM | 84 | 0 | 347 | 428 |
| 1-2 PM | 149 | 0 | 550 | 778 |
| 2-3 PM | 260 | 0 | 516 | 565 |
| 3-4 PM | 260 | 0 | 671 | 595 |
| 4-5 PM | 443 | 0 | 704 | 543 |
| 5-6 PM | 425 | 0 | 704 | 517 |
| 6-7 PM | 145 | 0 | 436 | 352 |

Seasonal Adjustment: 5.6%

Assumptions:

## PERCENTAGE OF PEAK HOUR FOR SITE TRIPS (LUC 130 / 710)

| Time | Entering Traffic | Exiting Traffic | EBL Minor Exiting | NB Major Entering | SB Major Entering |
|---|---|---|---|---|---|
| 6-7 AM | 10.0% | 3.0% | 38.4% | 18.9% | 33.7% |
| 7-8 AM | 19.0% | 5.0% | 64.0% | 36.0% | 64.0% |
| 8-9 AM | 19.0% | 5.0% | 64.0% | 36.0% | 64.0% |
| 9-10 AM | 5.0% | 5.0% | 64.0% | 9.5% | 16.8% |
| 10-11 AM | 5.0% | 5.0% | 64.0% | 9.5% | 16.8% |
| 11-12 PM | 5.0% | 5.0% | 64.0% | 9.5% | 16.8% |
| 12-1 PM | 5.0% | 10.0% | 40.0% | 9.5% | 16.8% |
| 1-2 PM | 10.0% | 5.0% | 20.0% | 72.0% | 128.0% |
| 2-3 PM | 5.0% | 10.0% | 40.0% | 36.0% | 64.0% |
| 3-4 PM | 5.0% | 10.0% | 40.0% | 36.0% | 64.0% |
| 4-5 PM | 5.0% | 16.0% | 64.0% | 36.0% | 64.0% |
| 5-6 PM | 5.0% | 16.0% | 64.0% | 36.0% | 64.0% |
| 6-7 PM | 2.0% | 5.0% | 20.0% | 14.4% | 25.6% |

**AM Trip Generation Industrial**

| | |
|---|---|
| **Total Trips (in) =** | **753** |
| **Total Trips (out) =** | **180** |
| | ***933*** |

**PM Trip Generation Industrial**

| | |
|---|---|
| **Total Trips (in) =** | **321** |
| **Total Trips (out) =** | **559** |
| | ***880*** |

| Lunenburg Road @ McGovern Blvd |
|---|
| 64% Exiting Eastbound Left |
| 36% Entering Northbound Left |
| 64% Exiting Southbound Right |

## INDUSTRIAL PARK & OFFICE TRIPS

VOLUMES

| Time | Minor EBL | Minor WB | Major NB | Major SB |
|---|---|---|---|---|
| 6-7 AM | 69 | | 143 | 254 |
| 7-8 AM | 115 | | 271 | 482 |
| 8-9 AM | 115 | | 271 | 482 |
| 9-10 AM | 115 | | 71 | 127 |
| 10-11 AM | 115 | | 71 | 127 |
| 11-12 PM | 115 | | 71 | 127 |
| 12-1 PM | 72 | | 71 | 127 |
| 1-2 PM | 112 | | 231 | 411 |
| 2-3 PM | 224 | | 116 | 205 |
| 3-4 PM | 224 | | 116 | 205 |
| 4-5 PM | 358 | | 116 | 205 |
| 5-6 PM | 358 | | 116 | 205 |
| 6-7 PM | 112 | | 46 | 82 |

## PERCENTAGE OF PEAK HOUR FOR SITE TRIPS (LUC 820)

| Time | Entering Traffic | Exiting Traffic | EBL Minor Exiting | NB Major Entering | SB Major Entering |
|---|---|---|---|---|---|
| 6-7 AM | 0.8% | 0.3% | 1.9% | 4.1% | 5.4% |
| 7-8 AM | 2.0% | 0.9% | 5.8% | 10.2% | 13.6% |
| 8-9 AM | 3.1% | 1.2% | 7.7% | 15.9% | 21.0% |
| 9-10 AM | 5.5% | 2.0% | 12.8% | 28.2% | 37.3% |
| 10-11 AM | 7.0% | 4.3% | 27.5% | 35.8% | 47.5% |
| 11-12 PM | 8.4% | 6.2% | 39.7% | 43.0% | 57.0% |
| 12-1 PM | 9.4% | 8.3% | 53.2% | 48.1% | 63.8% |
| 1-2 PM | 8.2% | 8.6% | 55.1% | 42.0% | 55.6% |
| 2-3 PM | 7.7% | 8.9% | 57.0% | 39.4% | 52.3% |
| 3-4 PM | 7.8% | 8.8% | 56.4% | 39.9% | 52.9% |
| 4-5 PM | 8.0% | 8.9% | 57.0% | 41.0% | 54.3% |
| 5-6 PM | 8.4% | 9.2% | 58.9% | 43.0% | 57.0% |
| 6-7 PM | 8.0% | 7.5% | 48.0% | 41.0% | 54.3% |

Source: *ITE Trip Generation, 9th Edition*, LUC 820: Shopping Center [Table 1]

**AM Trip Generation Retail**

| | |
|---|---|
| **Total Trips (in) =** | **16** |
| **Total Trips (out) =** | **7** |
| | ***23*** |

**PM Trip Generation Retail**

| | |
|---|---|
| **Total Trips (in) =** | **49** |
| **Total Trips (out) =** | **62** |
| | ***111*** |

| Lunenburg Road @ McGovern Blvd |
|---|
| 57% Exiting Eastbound Left |
| 43% Entering Northbound Left |
| 57% Exiting Southbound Right |

## RETAIL PARK TRIPS

VOLUMES

| Time | Minor EBL | Minor WB | Major NB | Major SB |
|---|---|---|---|---|
| 6-7 AM | 0 | | 1 | 1 |
| 7-8 AM | 0 | | 2 | 2 |
| 8-9 AM | 1 | | 3 | 3 |
| 9-10 AM | 1 | | 5 | 6 |
| 10-11 AM | 2 | | 6 | 8 |
| 11-12 PM | 3 | | 7 | 9 |
| 12-1 PM | 4 | | 8 | 10 |
| 1-2 PM | 34 | | 21 | 27 |
| 2-3 PM | 35 | | 19 | 26 |
| 3-4 PM | 35 | | 20 | 26 |
| 4-5 PM | 35 | | 20 | 27 |
| 5-6 PM | 37 | | 21 | 28 |
| 6-7 PM | 30 | | 20 | 27 |

## PERCENTAGE OF PEAK HOUR FOR SITE TRIPS (LUC 221)

| Time | Entering Traffic | Exiting Traffic | EBL Minor Exiting | NB Major Entering | SB Major Entering |
|---|---|---|---|---|---|
| 6-7 AM | 50.0% | 50.0% | 21.0% | 29.0% | 21.0% |
| 7-8 AM | 100.0% | 100.0% | 42.0% | 58.0% | 42.0% |

**AM Trip Generation Housing**

| | |
|---|---|
| **Total Trips (in) =** | **14** |
| **Total Trips (out) =** | **38** |
| | ***52*** |

## HOUSING TRIPS

VOLUMES

| Time | Minor EBL | Minor WB | Major NB | Major SB |
|---|---|---|---|---|
| 6-7 AM | 8 | | 4 | 3 |
| 7-8 AM | 16 | | 8 | 6 |

Project: Capital Commerce Center
Town: Lancaster, MA
TEC # T0852
Analyst: TEC / Samuel W. Gregorio, PE, PTOE
Location: McGovern Blvd @ Lunenburg Road

| | | | | | |
|---|---|---|---|---|---|
| 8-9 AM | 100.0% | 100.0% | 42.0% | 58.0% | 42.0% |
| 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) =** | **18** |
| **Total Trips (out) =** | **13** |
| | ***31*** |

| Lunenburg Road @ McGovern Blvd |
|---|
| 42% Exiting Eastbound Left |
| 58% Entering Northbound Left |
| 42% Exiting Southbound Right |

| | | | |
|---|---|---|---|
| 8-9 AM | 16 | 8 | 6 |
| 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 | 5 | 4 |
| 2-3 PM | 1 | 3 | 2 |
| 3-4 PM | 1 | 3 | 2 |
| 4-5 PM | 5 | 10 | 8 |
| 5-6 PM | 5 | 10 | 8 |
| 6-7 PM | 3 | 5 | 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 | 968 | 1498 | 1482 | 814 | 791 | 789 | 775 | 1328 | 1081 | 1266 | 1247 | 1221 | 788 |
| Minor | 1 | 105 | 77 | 148 | 153 | 120 | 121 | 122 | 84 | 149 | 260 | 260 | 443 | 425 | 145 |
| | | Met? | NO | YES | YES | YES | YES | YES | NO | YES | YES | YES | YES | YES | YES |

**OR**

**Condition B: Interruption of Continuous Traffic**

**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 | 525 | 968 | 1498 | 1482 | 814 | 791 | 789 | 775 | 1328 | 1081 | 1266 | 1247 | 1221 | 788 |
| Minor | 1 | 53 | 77 | 148 | 153 | 120 | 121 | 122 | 84 | 149 | 260 | 260 | 443 | 425 | 145 |
| | | 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 | 968 | 1498 | 1482 | 814 | 791 | 789 | 775 | 1328 | 1081 | 1266 | 1247 | 1221 | 788 |
| Minor | 1 | 84 | 77 | 148 | 153 | 120 | 121 | 122 | 84 | 149 | 260 | 260 | 443 | 425 | 145 |
| | | Met? | NO | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES |

**AND**

**Condition B: Interruption of Continuous Traffic**

**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 | 420 | 968 | 1498 | 1482 | 814 | 791 | 789 | 775 | 1328 | 1081 | 1266 | 1247 | 1221 | 788 |
| Minor | 1 | 42 | 77 | 148 | 153 | 120 | 121 | 122 | 84 | 149 | 260 | 260 | 443 | 425 | 145 |
| | | 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 | 968 | 1498 | 1482 | 814 | 791 | 789 | 775 | 1328 | 1081 | 1266 | 1247 | 1221 | 788 |
| Minor | 1 | Figure 4C-2 | 77 | 148 | 153 | 120 | 121 | 122 | 84 | 149 | 260 | 260 | 443 | 425 | 145 |
| | | Met? | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES |

| Result: | YES |
|---|---|

## Warrants 3 to 8: Not Evaluated

Project: Capital Commerce Center
Town: Lancaster, MA
TEC # T0852
Analyst: TEC / Samuel W. Gregorio, PE, PTOE
Location: Lunenburg Road @ Fort Pond Road

## RAW DATA INPUT

VOLUMES

| Time | Minor WBL | Minor WB | Major NB | Major SB |
|---|---|---|---|---|
| 6-7 AM | | | | |
| 7-8 AM | 39 | | 246 | 516 |
| 8-9 AM | 44 | | 210 | 326 |
| 9-10 AM | | | | |
| 10-11 AM | | | | |
| 11-12 PM | | | | |
| 12-1 PM | | | | |
| 1-2 PM | | | | |
| 2-3 PM | | | | |
| 3-4 PM | | | | |
| 4-5 PM | 145 | | 495 | 225 |
| 5-6 PM | 265 | | 507 | 187 |
| 6-7 PM | | | | |

## SEASONALLY ADJUSTED DATA

VOLUMES

| Time | Minor WBL | Minor WB | Major NB | Major SB |
|---|---|---|---|---|
| 6-7 AM | 0 | 0 | 0 | 0 |
| 7-8 AM | 41 | 0 | 260 | 545 |
| 8-9 AM | 46 | 0 | 222 | 344 |
| 9-10 AM | 0 | 0 | 0 | 0 |
| 10-11 AM | 0 | 0 | 0 | 0 |
| 11-12 PM | 0 | 0 | 0 | 0 |
| 12-1 PM | 0 | 0 | 0 | 0 |
| 1-2 PM | 0 | 0 | 0 | 0 |
| 2-3 PM | 0 | 0 | 0 | 0 |
| 3-4 PM | 0 | 0 | 0 | 0 |
| 4-5 PM | 153 | 0 | 523 | 238 |
| 5-6 PM | 280 | 0 | 535 | 197 |
| 6-7 PM | 0 | 0 | 0 | 0 |

## SITE-GENERATED DATA

VOLUMES

| Time | Minor WBL | Minor WB | Major NB | Major SB |
|---|---|---|---|---|
| 6-7 AM | | | | |
| 7-8 AM | 57 | | 101 | 49 |
| 8-9 AM | 59 | | 102 | 51 |
| 9-10 AM | | | | |
| 10-11 AM | | | | |
| 11-12 PM | | | | |
| 12-1 PM | | | | |
| 1-2 PM | | | | |
| 2-3 PM | | | | |
| 3-4 PM | | | | |
| 4-5 PM | 33 | | 300 | 33 |
| 5-6 PM | 34 | | 300 | 34 |
| 6-7 PM | | | | |

## EXISTING YEAR BUILD DATA

VOLUMES

| Time | Minor WBL | Minor WB | Major NB | Major SB |
|---|---|---|---|---|
| 6-7 AM | 0 | 0 | 0 | 0 |
| 7-8 AM | 98 | 0 | 361 | 594 |
| 8-9 AM | 105 | 0 | 324 | 395 |
| 9-10 AM | 0 | 0 | 0 | 0 |
| 10-11 AM | 0 | 0 | 0 | 0 |
| 11-12 PM | 0 | 0 | 0 | 0 |
| 12-1 PM | 0 | 0 | 0 | 0 |
| 1-2 PM | 0 | 0 | 0 | 0 |
| 2-3 PM | 0 | 0 | 0 | 0 |
| 3-4 PM | 0 | 0 | 0 | 0 |
| 4-5 PM | 186 | 0 | 823 | 271 |
| 5-6 PM | 314 | 0 | 835 | 231 |
| 6-7 PM | 0 | 0 | 0 | 0 |

Seasonal Adjustment: 5.6%

Assumptions:

## PERCENTAGE OF PEAK HOUR FOR SITE TRIPS (LUC 130 / 710)

| Time | Entering Traffic | Exiting Traffic | WBL Minor Entering | NB Major Exiting | SB Major Entering |
|---|---|---|---|---|---|
| 6-7 AM | 10.0% | 3.0% | 3.7% | 25.8% | 3.2% |
| 7-8 AM | 19.0% | 5.0% | 7.0% | 49.0% | 6.0% |
| 8-9 AM | 19.0% | 5.0% | 7.0% | 49.0% | 6.0% |
| 9-10 AM | 5.0% | 5.0% | 1.8% | 12.9% | 1.6% |
| 10-11 AM | 5.0% | 5.0% | 1.8% | 12.9% | 1.6% |
| 11-12 PM | 5.0% | 5.0% | 1.8% | 12.9% | 1.6% |
| 12-1 PM | 5.0% | 10.0% | 7.0% | 12.9% | 1.6% |
| 1-2 PM | 10.0% | 5.0% | 14.0% | 98.0% | 12.0% |
| 2-3 PM | 5.0% | 10.0% | 7.0% | 49.0% | 6.0% |
| 3-4 PM | 5.0% | 10.0% | 7.0% | 49.0% | 6.0% |
| 4-5 PM | 5.0% | 16.0% | 7.0% | 49.0% | 6.0% |
| 5-6 PM | 5.0% | 16.0% | 7.0% | 49.0% | 6.0% |
| 6-7 PM | 2.0% | 5.0% | 2.8% | 19.6% | 2.4% |

**AM Trip Generation Industrial**
**Total Trips (in) =** 753
**Total Trips (out) =** 180
*933*

**PM Trip Generation Industrial**
**Total Trips (in) =** 321
**Total Trips (out) =** 559
*880*

| Lunenburg Road @ Fort Pond Road |
|---|
| 7% Entering Westbound Left |
| 43% Exiting Northbound Right |
| 6% Exiting Northbound Through |
| 6% Entering Southbound Through |

## INDUSTRIAL PARK & OFFICE TRIPS

VOLUMES

| Time | Minor WBL | Minor WB | Major NB | Major SB |
|---|---|---|---|---|
| 6-7 AM | | | | |
| 7-8 AM | 53 | | 88 | 45 |
| 8-9 AM | 53 | | 88 | 45 |
| 9-10 AM | | | | |
| 10-11 AM | | | | |
| 11-12 PM | | | | |
| 12-1 PM | | | | |
| 1-2 PM | | | | |
| 2-3 PM | | | | |
| 3-4 PM | | | | |
| 4-5 PM | 22 | | 274 | 19 |
| 5-6 PM | 22 | | 274 | 19 |
| 6-7 PM | | | | |

## PERCENTAGE OF PEAK HOUR FOR SITE TRIPS (LUC 820)

| Time | Entering Traffic | Exiting Traffic | WBL Minor Entering | NB Major Exiting | SB Major Entering |
|---|---|---|---|---|---|
| 6-7 AM | 0.8% | 0.3% | 1.9% | 1.2% | 2.7% |
| 7-8 AM | 2.0% | 0.9% | 4.8% | 3.5% | 6.7% |
| 8-9 AM | 3.1% | 1.2% | 7.4% | 4.7% | 10.3% |
| 9-10 AM | 5.5% | 2.0% | 13.1% | 7.8% | 18.3% |
| 10-11 AM | 7.0% | 4.3% | 16.6% | 16.8% | 23.3% |
| 11-12 PM | 8.4% | 6.2% | 20.0% | 24.3% | 28.0% |
| 12-1 PM | 9.4% | 8.3% | 22.3% | 32.5% | 31.3% |
| 1-2 PM | 8.2% | 8.6% | 19.5% | 33.7% | 27.3% |
| 2-3 PM | 7.7% | 8.9% | 18.3% | 34.8% | 25.7% |
| 3-4 PM | 7.8% | 8.8% | 18.5% | 34.4% | 26.0% |
| 4-5 PM | 8.0% | 8.9% | 19.0% | 34.8% | 26.7% |
| 5-6 PM | 8.4% | 9.2% | 20.0% | 36.0% | 28.0% |
| 6-7 PM | 8.0% | 7.5% | 19.0% | 29.3% | 26.7% |

Source: *ITE Trip Generation, 9th Edition*, LUC 820: Shopping Center [Table 1]

**AM Trip Generation Industrial**
**Total Trips (in) =** 16
**Total Trips (out) =** 7
*23*

**PM Trip Generation Industrial**
**Total Trips (in) =** 49
**Total Trips (out) =** 62
*111*

| Lunenburg Road @ Fort Pond Road |
|---|
| 19% Entering Westbound Left |
| 8% Exiting Northbound Right |
| 28% Exiting Northbound Through |
| 28% Entering Southbound Through |

## INDUSTRIAL PARK TRIPS

VOLUMES

| Time | Minor WBL | Minor WB | Major NB | Major SB |
|---|---|---|---|---|
| 6-7 AM | | | | |
| 7-8 AM | 2 | | 2 | 3 |
| 8-9 AM | 4 | | 3 | 5 |
| 9-10 AM | | | | |
| 10-11 AM | | | | |
| 11-12 PM | | | | |
| 12-1 PM | | | | |
| 1-2 PM | | | | |
| 2-3 PM | | | | |
| 3-4 PM | | | | |
| 4-5 PM | 9 | | 22 | 13 |
| 5-6 PM | 10 | | 22 | 14 |
| 6-7 PM | | | | |

## PERCENTAGE OF PEAK HOUR FOR SITE TRIPS (LUC 221)

| Time | Entering Traffic | Exiting Traffic | WBL Minor Entering | NB Major Exiting | SB Major Entering |
|---|---|---|---|---|---|
| 6-7 AM | 50.0% | 50.0% | 6.5% | 15.0% | 3.0% |
| 7-8 AM | 100.0% | 100.0% | 13.0% | 30.0% | 6.0% |

**AM Trip Generation Housing**
**Total Trips (in) =** 14
**Total Trips (out) =** 38
*52*

## HOUSING TRIPS

VOLUMES

| Time | Minor WBL | Minor WB | Major NB | Major SB |
|---|---|---|---|---|
| 6-7 AM | | | | |
| 7-8 AM | 2 | | 11 | 1 |

Project: Capital Commerce Center
Town: Lancaster, MA
TEC # T0852
Analyst: TEC / Samuel W. Gregorio, PE, PTOE
Location: Lunenburg Road @ Fort Pond Road

| | | | | | |
|---|---|---|---|---|---|
| 8-9 AM | 100.0% | 100.0% | 13.0% | 30.0% | 6.0% |
| 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) =** | **18** |
| **Total Trips (out) =** | **13** |
| | ***31*** |

| Lunenburg Road @ Fort Pond Road |
|---|
| 13% Entering Westbound Left |
| 24% Exiting Northbound Right |
| 6% Exiting Northbound Through |
| 6% Entering Southbound Through |

| | | | |
|---|---|---|---|
| 8-9 AM | 2 | 11 | 1 |
| 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 | 4 | 1 |
| 5-6 PM | 2 | 4 | 1 |
| 6-7 PM | | | |

Project: Capital Commerce Center
Town: Lancaster, MA
TEC # T0852
Analyst: TEC / Samuel W. Gregorio, PE, PTOE
Location: Lunenburg Road @ Fort Pond Road

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 | 955 | 719 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1094 | 1066 | 0 |
| Minor | 1 | 150 | 0 | 98 | 105 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 186 | 314 | 0 |
| | | Met? | 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 | 955 | 719 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1094 | 1066 | 0 |
| Minor | 1 | 75 | 0 | 98 | 105 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 186 | 314 | 0 |
| | | Met? | NO | YES | 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 | 955 | 719 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1094 | 1066 | 0 |
| Minor | 1 | 120 | 0 | 98 | 105 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 186 | 314 | 0 |
| | | Met? | 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 | 955 | 719 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1094 | 1066 | 0 |
| Minor | 1 | 60 | 0 | 98 | 105 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 186 | 314 | 0 |
| | | Met? | NO | YES | YES | 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 | 955 | 719 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1094 | 1066 | 0 |
| Minor | 1 | Figure 4C-2 | 0 | 98 | 105 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 186 | 314 | 0 |
| | | Met? | NO | YES | YES | NO | NO | NO | NO | NO | NO | NO | YES | YES | NO |

| Result: | YES |
|---|---|

## Warrants 3 to 8: Not Evaluated

# Appendix L

Intersection Capacity and Queue Analysis Worksheets

| 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

| 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 | 0 | 0 | 1488 | 1488 | 967 | 1310 | 1306 | 489 |
| Stage 1 | - | - | - | - | - | - | 967 | 967 | - | 521 | 521 | - |
| Stage 2 | - | - | - | - | - | - | 521 | 521 | - | 789 | 785 | - |
| Critical Hdwy | 4.1 | - | - | 4.1 | - | - | 7.17 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.17 | 5.5 | - | 6.1 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.17 | 5.5 | - | 6.1 | 5.5 | - |
| Follow-up Hdwy | 2.2 | - | - | 2.2 | - | - | 3.563 | 4 | 3.3 | 3.5 | 4 | 3.3 |
| Pot Cap-1 Maneuver | 1085 | - | - | 843 | - | - | ~ 100 | 125 | 311 | 137 | 161 | 583 |
| Stage 1 | - | - | - | - | - | - | 299 | 335 | - | 542 | 535 | - |
| Stage 2 | - | - | - | - | - | - | 529 | 535 | - | 387 | 407 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1085 | - | - | 843 | - | - | ~ 98 | 122 | 311 | 131 | 157 | 583 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | ~ 98 | 122 | - | 131 | 157 | - |
| Stage 1 | - | - | - | - | - | - | 299 | 335 | - | 542 | 521 | - |
| Stage 2 | - | - | - | - | - | - | 515 | 521 | - | 378 | 407 | - |

| 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

| 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

| 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 | 1460 | 546 |
| Stage 1 | - | - | - | - | 546 | - |
| Stage 2 | - | - | - | - | 914 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.48 | 6.23 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.48 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.48 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.572 | 3.327 |
| Pot Cap-1 Maneuver | 901 | - | - | - | ~ 138 | 536 |
| Stage 1 | - | - | - | - | 569 | - |
| Stage 2 | - | - | - | - | 381 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 901 | - | - | - | ~ 123 | 536 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 123 | - |
| Stage 1 | - | - | - | - | 508 | - |
| Stage 2 | - | - | - | - | 381 | - |

| 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

| 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 | - | - |

| 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 | |

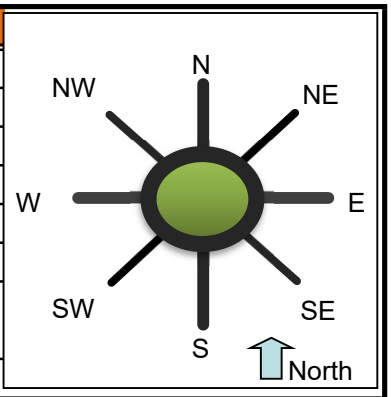
Intersection Summary

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) |
|---|---|---|---|---|---|---|---|---|---|
| | N (1), vph | | | 60 | | 169 | | 34 | |
| Exit | NE (2), vph | | | | | | | | |
| Legs | E (3), vph | 269 | | | | 104 | | 136 | |
| (TO) | 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

| 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

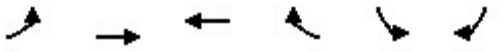
Intersection

| 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 | - | - |



| 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 |
|---|---|---|---|
| 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 |

| 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 | 67 |
| Stage 1 | - | - | - | - | 67 | - |
| Stage 2 | - | - | - | - | 61 | - |
| Critical Hdwy | - | - | 4.1 | - | 6.48 | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.48 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.48 | - |
| Follow-up Hdwy | - | - | 2.2 | - | 3.572 | 3.3 |
| Pot Cap-1 Maneuver | - | - | 1547 | - | 852 | 1002 |
| Stage 1 | - | - | - | - | 941 | - |
| Stage 2 | - | - | - | - | 947 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1547 | - | 843 | 1002 |
| 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 | - |

| 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

| 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 |

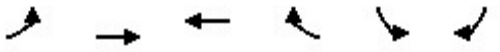
| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1206 | 0 | 0 | 502 | 0 | 0 | 1834 | 1834 | 620 | 1718 | 1716 | 1206 |
| Stage 1 | - | - | - | - | - | - | 620 | 620 | - | 1214 | 1214 | - |
| Stage 2 | - | - | - | - | - | - | 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



| 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 | 1695 | 1104 |
| Stage 1 | - | - | - | - | 1104 | - |
| Stage 2 | - | - | - | - | 591 | - |
| Critical Hdwy | 4.1 | - | - | - | 6.42 | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.2 | - | - | - | 3.518 | 3.3 |
| Pot Cap-1 Maneuver | 492 | - | - | - | ~ 102 | 259 |
| Stage 1 | - | - | - | - | 317 | - |
| Stage 2 | - | - | - | - | 553 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 492 | - | - | - | ~ 88 | 259 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 88 | - |
| Stage 1 | - | - | - | - | 272 | - |
| Stage 2 | - | - | - | - | 553 | - |

| 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

| 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 | | | | | | |
| 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 | - | - |

| 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 | |

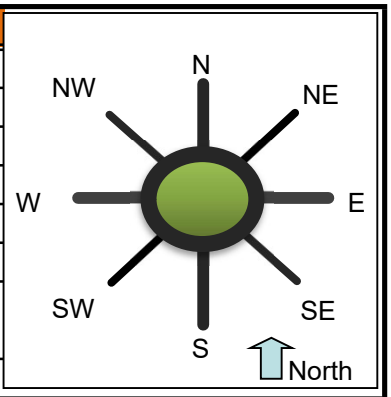
Intersection Summary

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) |
|---|---|---|---|---|---|---|---|---|---|
| | N (1), vph | | | 137 | | 328 | | 74 | |
| Exit | NE (2), vph | | | | | | | | |
| Legs | E (3), vph | 54 | | | | 50 | | 43 | |
| (TO) | 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* | | | | | | |

| 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

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

| 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 | 381 | 115 |
| Stage 1 | - | - | - | - | 115 | - |
| Stage 2 | - | - | - | - | 266 | - |
| 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 | 1468 | - | - | - | 625 | 935 |
| Stage 1 | - | - | - | - | 915 | - |
| Stage 2 | - | - | - | - | 783 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1468 | - | - | - | 585 | 935 |
| Mov Cap-2 Maneuver | - | - | - | - | 585 | - |
| Stage 1 | - | - | - | - | 856 | - |
| Stage 2 | - | - | - | - | 783 | - |

| 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 |

| 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 | 19 |
| Stage 1 | - | - | - | - | 19 | - |
| Stage 2 | - | - | - | - | 390 | - |
| Critical Hdwy | - | - | 4.18 | - | 6.43 | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.43 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.43 | - |
| Follow-up Hdwy | - | - | 2.272 | - | 3.527 | 3.3 |
| Pot Cap-1 Maneuver | - | - | 1559 | - | 597 | 1065 |
| Stage 1 | - | - | - | - | 1001 | - |
| Stage 2 | - | - | - | - | 682 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1559 | - | 580 | 1065 |
| 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 | - |

| 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

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

| 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 | | | | | | |
| 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 | 1040 | 562 |
| Stage 1 | - | - | - | - | 562 | - |
| Stage 2 | - | - | - | - | 478 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.3 |
| Pot Cap-1 Maneuver | 891 | - | - | - | ~ 255 | 530 |
| Stage 1 | - | - | - | - | 571 | - |
| Stage 2 | - | - | - | - | 624 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 891 | - | - | - | ~ 238 | 530 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 238 | - |
| Stage 1 | - | - | - | - | 533 | - |
| Stage 2 | - | - | - | - | 624 | - |

| 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

| 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 | | | | | | |
| 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 | - | - |

| 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 | |

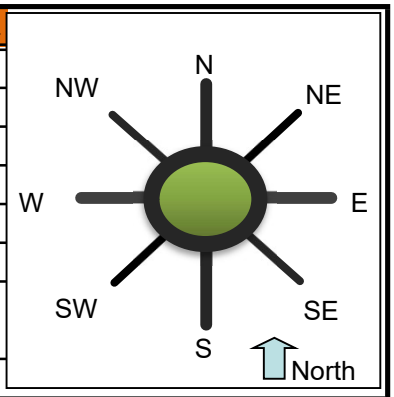
Intersection Summary

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) |
|---|---|---|---|---|---|---|---|---|---|
| | N (1), vph | | | 104 | | 165 | | 34 | |
| Exit | NE (2), vph | | | | | | | | |
| Legs | E (3), vph | 78 | | | | 79 | | 46 | |
| (TO) | 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* | | | | | | |

| 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 | - | - |

| 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 |

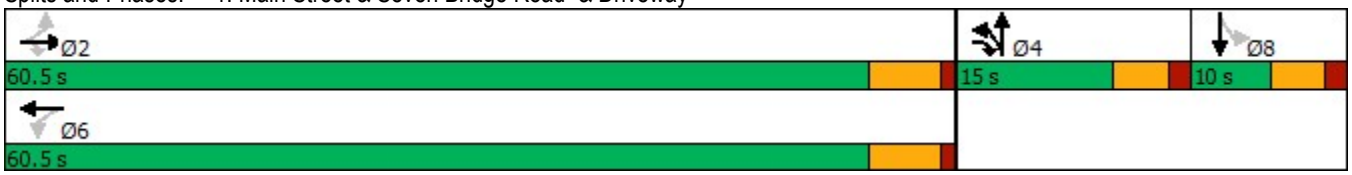
| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1193 | - | - | - | 270 | 725 |
| HCM Lane V/C Ratio | 0.176 | - | - | - | 0.109 | 0.382 |
| HCM Control Delay (s) | 8.7 | 0 | - | - | 20 | 13 |
| HCM Lane LOS | A | A | - | - | C | B |
| HCM 95th %tile Q(veh) | 0.6 | - | - | - | 0.4 | 1.8 |

| 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



| 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.

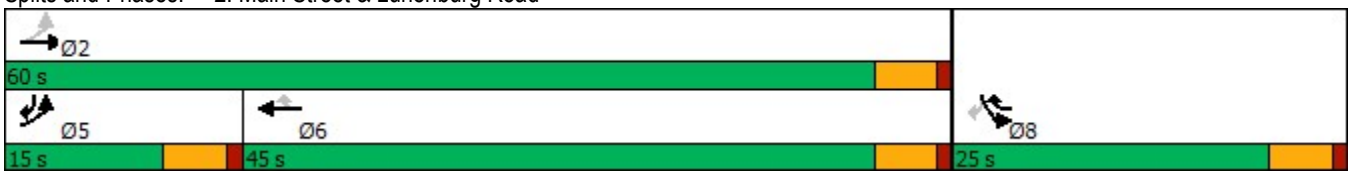
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 761 | 363 | 16 | 478 | 0 | 230 | 0 | 7 | 0 | 0 | 0 |
| Future Volume (veh/h) | 0 | 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(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 | 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 | | | | | | | | | |

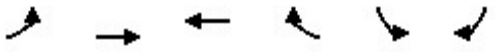
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 59 | 782 | 384 | 332 | 337 | 42 |
| Future Volume (vph) | 59 | 782 | 384 | 332 | 337 | 42 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| 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

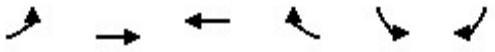




| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 63 | 841 | 413 | 357 | 362 | 45 |
| v/c Ratio | 0.14 | 0.85 | 0.55 | 0.28 | 0.78 | 0.06 |
| Control Delay | 7.0 | 21.8 | 18.1 | 0.8 | 39.3 | 14.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 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.



| 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 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 33.4 | | | 8.6 | 24.9 | 17.8 |
| 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 | | 21.2 | | | 2.9 | 11.3 | 12.4 |
| Green Ext Time (p_c), s | | 7.3 | | | 0.0 | 4.0 | 0.4 |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 6th Ctrl Delay | | 12.3 | |
| HCM 6th LOS | | B | |

| 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 | | | | | | |
| 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 | - | - |

| 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 | |

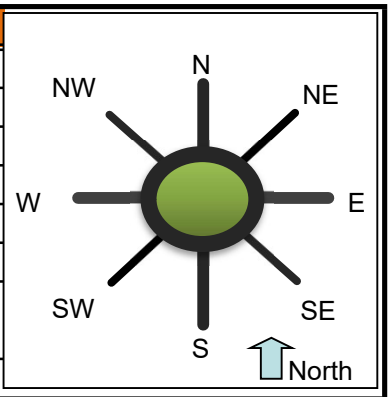
Intersection Summary

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) |
|---|---|---|---|---|---|---|---|---|---|
| | N (1), vph | | | 63 | | 177 | | 36 | |
| Exit | NE (2), vph | | | | | | | | |
| Legs | E (3), vph | 281 | | | | 160 | | 162 | |
| (TO) | 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

| 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 | - | - |

| 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 | 71 |
| Stage 1 | - | - | - | - | 71 | - |
| Stage 2 | - | - | - | - | 1143 | - |
| 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 | 1492 | - | - | - | 202 | 951 |
| Stage 1 | - | - | - | - | 957 | - |
| Stage 2 | - | - | - | - | 307 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1492 | - | - | - | 128 | 951 |
| 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 |

| 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 | 0 | 135 | 71 |
| Stage 1 | - | - | - | - | 71 | - |
| Stage 2 | - | - | - | - | 64 | - |
| Critical Hdwy | - | - | 4.1 | - | 6.48 | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.48 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.48 | - |
| Follow-up Hdwy | - | - | 2.2 | - | 3.572 | 3.3 |
| Pot Cap-1 Maneuver | - | - | 1542 | - | 845 | 997 |
| Stage 1 | - | - | - | - | 937 | - |
| Stage 2 | - | - | - | - | 944 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1542 | - | 836 | 997 |
| Mov Cap-2 Maneuver | - | - | - | - | 836 | - |
| Stage 1 | - | - | - | - | 937 | - |
| Stage 2 | - | - | - | - | 934 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 2.6 | 9.8 |
| HCM LOS | | | A |

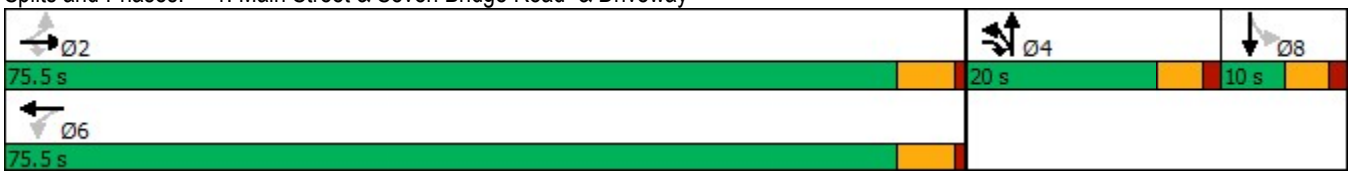
| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 836 | - | - | - | 1542 | - |
| HCM Lane V/C Ratio | 0.103 | - | - | - | 0.011 | - |
| HCM Control Delay (s) | 9.8 | 0 | - | - | 7.4 | 0 |
| HCM Lane LOS | A | A | - | - | A | A |
| HCM 95th %tile Q(veh) | 0.3 | - | - | - | 0 | - |

| 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



| 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.

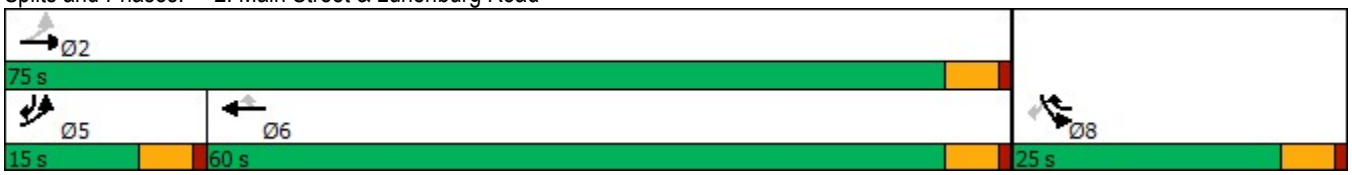
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 504 | 270 | 4 | 1202 | 0 | 222 | 0 | 3 | 0 | 0 | 0 |
| Future Volume (veh/h) | 0 | 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(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 | 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 | | | | | | | | | |

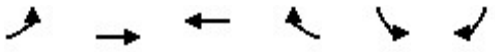
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 53 | 483 | 793 | 623 | 289 | 75 |
| Future Volume (vph) | 53 | 483 | 793 | 623 | 289 | 75 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| 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

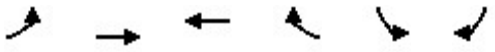




| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 56 | 508 | 835 | 656 | 304 | 79 |
| v/c Ratio | 0.21 | 0.44 | 0.88 | 0.47 | 0.79 | 0.13 |
| Control Delay | 6.6 | 8.1 | 29.9 | 1.3 | 50.9 | 22.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 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.



| 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 |

| 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 | - | - |

| 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 | |

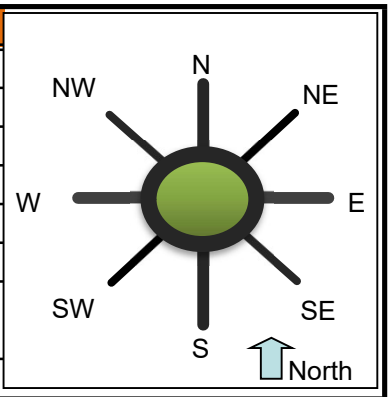
Intersection Summary

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 |




## Volumes

| | | Entry Legs (FROM) N (1) | NE (2) | E (3) | SE (4) | S (5) | SW (6) | W (7) | NW (8) |
|---|---|---|---|---|---|---|---|---|---|
| | N (1), vph | | | 143 | | 354 | | 77 | |
| Exit | NE (2), vph | | | | | | | | |
| Legs | E (3), vph | 56 | | | | 67 | | 50 | |
| (TO) | 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* | | | | | | |

| 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

| 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

| 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 |

| 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 | 0 | 369 | 18 |
| Stage 1 | - | - | - | - | 18 | - |
| Stage 2 | - | - | - | - | 351 | - |
| Critical Hdwy | - | - | 4.18 | - | 6.43 | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.43 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.43 | - |
| Follow-up Hdwy | - | - | 2.272 | - | 3.527 | 3.3 |
| Pot Cap-1 Maneuver | - | - | 1561 | - | 629 | 1066 |
| Stage 1 | - | - | - | - | 1002 | - |
| Stage 2 | - | - | - | - | 710 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1561 | - | 613 | 1066 |
| Mov Cap-2 Maneuver | - | - | - | - | 613 | - |
| Stage 1 | - | - | - | - | 1002 | - |
| Stage 2 | - | - | - | - | 692 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.8 | 38.5 |
| HCM LOS | | | E |

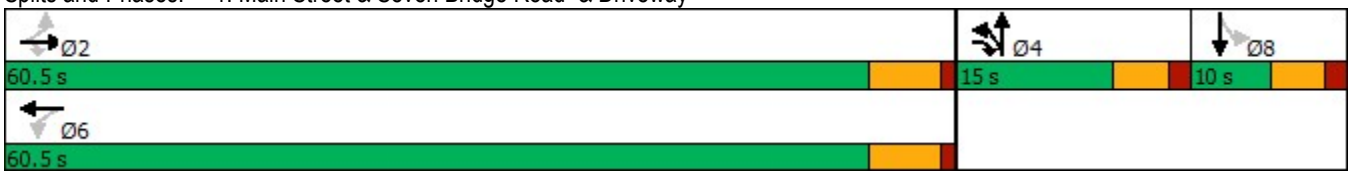
| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 613 | - | - | - | 1561 | - |
| HCM Lane V/C Ratio | 0.875 | - | - | - | 0.021 | - |
| HCM Control Delay (s) | 38.5 | 0 | - | - | 7.4 | 0 |
| HCM Lane LOS | E | A | - | - | A | A |
| HCM 95th %tile Q(veh) | 10.2 | - | - | - | 0.1 | - |

| 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



| 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.

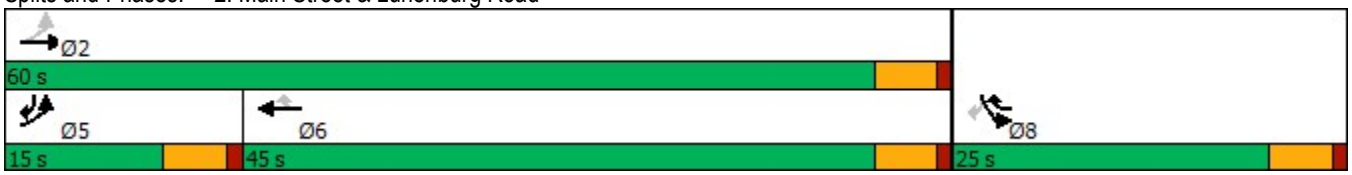
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 1 | 33 | 750 | 5 | 247 | 1 | 479 | 2 | 28 | 0 | 2 | 0 |
| Future Volume (veh/h) | 1 | 33 | 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(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 | 6.3 | 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 | | | | | | | | | |

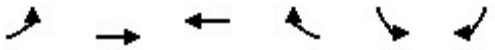
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 51 | 384 | 413 | 315 | 397 | 50 |
| Future Volume (vph) | 51 | 384 | 413 | 315 | 397 | 50 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| 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

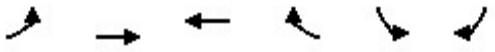




| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 54 | 404 | 435 | 332 | 418 | 53 |
| v/c Ratio | 0.16 | 0.47 | 0.74 | 0.26 | 0.70 | 0.06 |
| Control Delay | 8.1 | 11.5 | 26.7 | 0.9 | 28.4 | 9.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 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.



| 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 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 28.3 | | | 8.0 | 20.3 | 17.7 |
| 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 | | 8.2 | | | 2.8 | 11.3 | 12.2 |
| Green Ext Time (p_c), s | | 2.6 | | | 0.0 | 4.1 | 0.5 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 11.7 |
| HCM 6th LOS | B |

| 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 | - | - |

| 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 | |

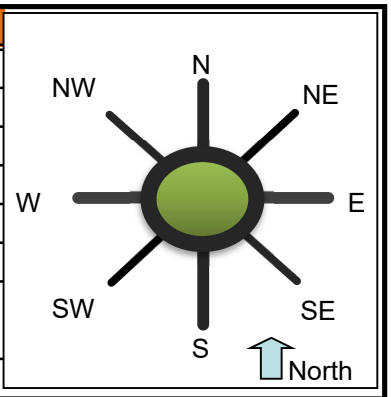
Intersection Summary

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) |
|---|---|---|---|---|---|---|---|---|---|
| | N (1), vph | | | 109 | | 173 | | 36 | |
| Exit | NE (2), vph | | | | | | | | |
| Legs | E (3), vph | 82 | | | | 114 | | 60 | |
| (TO) | 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* | | | | | | |

| 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

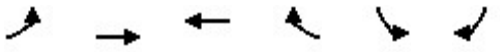
| Intersection | |
|---|---|
| Int Delay, s/veh | 8 |

| 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 | - | - |



| 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 | 232 |
| Stage 1 | - | - | - | - | 232 | - |
| Stage 2 | - | - | - | - | 508 | - |
| 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 | 1274 | - | - | - | 387 | 800 |
| Stage 1 | - | - | - | - | 811 | - |
| Stage 2 | - | - | - | - | 608 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1274 | - | - | - | 320 | 800 |
| 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 |

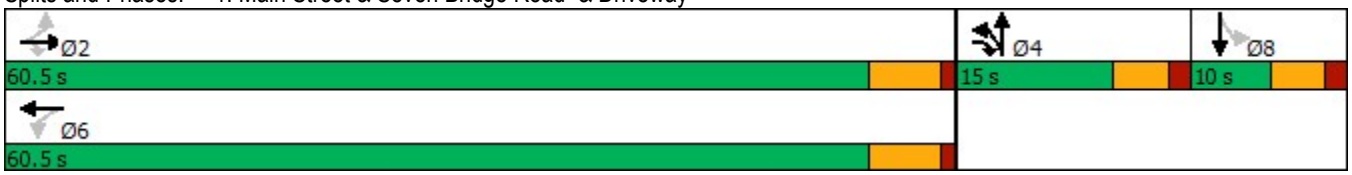
| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1274 | - | - | - | 320 | 800 |
| HCM Lane V/C Ratio | 0.163 | - | - | - | 0.07 | 0.26 |
| HCM Control Delay (s) | 8.4 | 0 | - | - | 17.1 | 11.1 |
| HCM Lane LOS | A | A | - | - | C | B |
| HCM 95th %tile Q(veh) | 0.6 | - | - | - | 0.2 | 1 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 788 | 419 | 16 | 537 | 0 | 425 | 0 | 7 | 0 | 0 | 0 |
| Future Volume (vph) | 0 | 788 | 419 | 16 | 537 | 0 | 425 | 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: 52.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Main Street & Seven Bridge Road & Driveway



| Lane Group | EBT | EBR | WBL | WBT | NBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 847 | 451 | 17 | 577 | 465 |
| v/c Ratio | 0.82 | 0.30 | 0.08 | 0.56 | 1.04 |
| Control Delay | 15.6 | 0.5 | 4.6 | 8.2 | 79.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 15.6 | 0.5 | 4.6 | 8.2 | 79.0 |
| Queue Length 50th (ft) | 167 | 0 | 2 | 87 | ~132 |
| Queue Length 95th (ft) | 284 | 0 | 7 | 141 | #402 |
| Internal Link Dist (ft) | 1370 | | | 920 | 920 |
| Turn Bay Length (ft) | | 115 | 50 | | |
| Base Capacity (vph) | 1650 | 1516 | 341 | 1650 | 445 |
| 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 | 1.04 |

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.

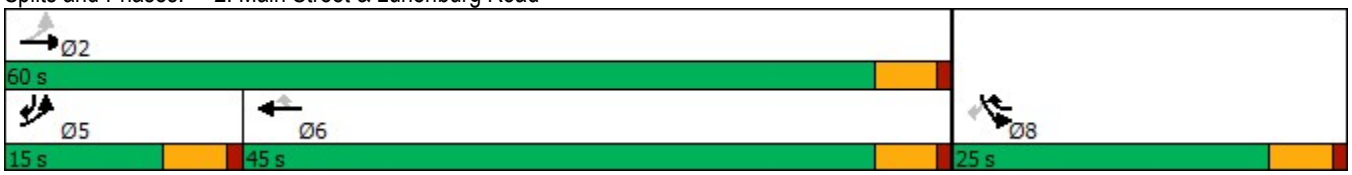
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 788 | 419 | 16 | 537 | 0 | 425 | 0 | 7 | 0 | 0 | 0 |
| Future Volume (veh/h) | 0 | 788 | 419 | 16 | 537 | 0 | 425 | 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 | 847 | 451 | 17 | 577 | 0 | 457 | 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 | 1073 | 1244 | 244 | 1073 | 0 | 367 | 0 | 6 | 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 | 431 | 1811 | 0 | 1846 | 0 | 32 | 0 | 1900 | 0 |
| Grp Volume(v), veh/h | 0 | 847 | 451 | 17 | 577 | 0 | 465 | 0 | 0 | 0 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1811 | 1572 | 431 | 1811 | 0 | 1878 | 0 | 0 | 0 | 1900 | 0 |
| Q Serve(g_s), s | 0.0 | 18.0 | 4.2 | 1.6 | 9.6 | 0.0 | 10.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 18.0 | 4.2 | 19.6 | 9.6 | 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 | 1073 | 1244 | 244 | 1073 | 0 | 373 | 0 | 0 | 0 | 4 | 0 |
| V/C Ratio(X) | 0.00 | 0.79 | 0.36 | 0.07 | 0.54 | 0.00 | 1.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 0 | 1980 | 2032 | 460 | 1980 | 0 | 373 | 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 | 20.2 | 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 | 131.1 | 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 | 17.4 | 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 | 15.5 | 6.6 | 0.0 | 151.3 | 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 | | 1298 | | | 594 | | | 465 | | | 0 | |
| Approach Delay, s/veh | | 6.6 | | | 6.8 | | | 151.3 | | | 0.0 | |
| Approach LOS | | A | | | A | | | F | | | | |
| Timer - Assigned Phs | | 2 | | 4 | | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 35.3 | | 15.0 | | 35.3 | | 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 | | 20.0 | | 12.0 | | 21.6 | | 0.0 | | | | |
| Green Ext Time (p_c), s | | 9.8 | | 0.0 | | 4.4 | | 0.0 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 35.2 | | | | | | | | | |
| HCM 6th LOS | | | D | | | | | | | | | |

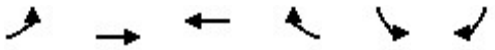
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 89 | 782 | 384 | 586 | 420 | 49 |
| Future Volume (vph) | 89 | 782 | 384 | 586 | 420 | 49 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| 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: 75
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Main Street & Lunenburg Road





| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 96 | 841 | 413 | 630 | 452 | 53 |
| v/c Ratio | 0.22 | 0.87 | 0.57 | 0.48 | 0.93 | 0.07 |
| Control Delay | 7.7 | 23.3 | 19.0 | 1.5 | 56.3 | 14.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 7.7 | 23.3 | 19.0 | 1.5 | 56.3 | 14.0 |
| Queue Length 50th (ft) | 17 | 268 | 133 | 0 | 179 | 11 |
| Queue Length 95th (ft) | 34 | 418 | 217 | 17 | #475 | 41 |
| Internal Link Dist (ft) | | 920 | 1370 | | 920 | |
| Turn Bay Length (ft) | 100 | | | 160 | | 240 |
| Base Capacity (vph) | 495 | 1447 | 1050 | 1314 | 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 | 0.48 | 0.93 | 0.07 |

Intersection Summary

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

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 89 | 782 | 384 | 586 | 420 | 49 |
| Future Volume (veh/h) | 89 | 782 | 384 | 586 | 420 | 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 | 96 | 841 | 413 | 630 | 452 | 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 | 992 | 680 | 1028 | 499 | 588 |
| 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 | 96 | 841 | 413 | 630 | 452 | 53 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1841 | 1811 | 1535 | 1697 | 1572 |
| Q Serve(g_s), s | 1.7 | 23.2 | 11.1 | 13.8 | 15.4 | 1.3 |
| Cycle Q Clear(g_c), s | 1.7 | 23.2 | 11.1 | 13.8 | 15.4 | 1.3 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 366 | 992 | 680 | 1028 | 499 | 588 |
| V/C Ratio(X) | 0.26 | 0.85 | 0.61 | 0.61 | 0.91 | 0.09 |
| Avail Cap(c_a), veh/h | 521 | 1690 | 1209 | 1476 | 566 | 650 |
| 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 | 10.0 | 11.7 | 15.1 | 5.5 | 20.3 | 12.1 |
| Incr Delay (d2), s/veh | 0.1 | 2.1 | 0.9 | 0.6 | 15.8 | 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 | 0.6 | 7.7 | 4.1 | 8.0 | 7.2 | 0.4 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 10.1 | 13.8 | 16.0 | 6.1 | 36.2 | 12.2 |
| LnGrp LOS | B | B | B | A | D | B |
| Approach Vol, veh/h | | 937 | 1043 | | 505 | |
| Approach Delay, s/veh | | 13.5 | 10.0 | | 33.6 | |
| Approach LOS | | B | B | | C | |

| Timer - Assigned Phs | | 2 | | | 5 | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 37.3 | | | 9.8 | 27.5 | 22.6 |
| 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 | | 25.2 | | | 3.7 | 15.8 | 17.4 |
| Green Ext Time (p_c), s | | 7.0 | | | 0.0 | 5.4 | 0.3 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 16.1 |
| HCM 6th LOS | B |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 155 | 121 | 314 | 366 | 365 | 519 |
| Future Volume (vph) | 155 | 121 | 314 | 366 | 365 | 519 |
| 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 | 343.5 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 155 | 121 | 314 | 366 | 365 | 519 |
| Future Vol, veh/h | 155 | 121 | 314 | 366 | 365 | 519 |
| 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 | 167 | 130 | 338 | 394 | 392 | 558 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1741 | 671 | 950 | 0 | - | 0 |
| Stage 1 | 671 | - | - | - | - | - |
| Stage 2 | 1070 | - | - | - | - | - |
| 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 | ~ 80 | 430 | 703 | - | - | - |
| Stage 1 | 455 | - | - | - | - | - |
| Stage 2 | 288 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | ~ 31 | 430 | 703 | - | - | - |
| Mov Cap-2 Maneuver | ~ 31 | - | - | - | - | - |
| Stage 1 | 175 | - | - | - | - | - |
| Stage 2 | 288 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, $ | 2273.3 | 6.8 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 703 | - | 52 | - | - |
| HCM Lane V/C Ratio | 0.48 | - | 5.707 | - | - |
| HCM Control Delay (s) | 14.8 | $ | 2273.3 | - | - |
| HCM Lane LOS | B | A | F | - | - |
| HCM 95th %tile Q(veh) | 2.6 | - | 33.9 | - | - |

Notes

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

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 36 | 162 | 158 | 403 | 27 | 63 | 92 | 276 | 179 | 281 | 345 | 49 |
| Future Volume (vph) | 36 | 162 | 158 | 403 | 27 | 63 | 92 | 276 | 179 | 281 | 345 | 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 | |

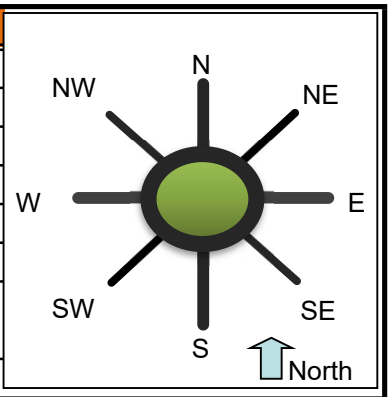
Intersection Summary

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 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) |
|---|---|---|---|---|---|---|---|---|---|
| | N (1), vph | | | 63 | | 285 | | 36 | |
| Exit | NE (2), vph | | | | | | | | |
| Legs | E (3), vph | 281 | | | | 184 | | 162 | |
| (TO) | SE (4), vph | | | | | | | | |
| | S (5), vph | 357 | | 408 | | | | 164 | |
| | SW (6), vph | | | | | | | | |
| | W (7), vph | 49 | | 27 | | 97 | | | |
| | NW (8), vph | | | | | | | | |
| Output | Total Vehicles | 687 | 0 | 498 | 0 | 566 | 0 | 362 | 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 | 326 | 0 | 38 | 0 |
| NE (2), pcu/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E (3), pcu/h | 302 | 0 | 0 | 0 | 210 | 0 | 172 | 0 |
| SE (4), pcu/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| S (5), pcu/h | 384 | 0 | 463 | 0 | 0 | 0 | 175 | 0 |
| SW (6), pcu/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W (7), pcu/h | 53 | 0 | 31 | 0 | 111 | 0 | 0 | 0 |
| NW (8), pcu/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry flow, pcu/h | 738 | 0 | 565 | 0 | 647 | 0 | 385 | 0 |
| Conflicting flow, pcu/h | 605 | 0 | 475 | 0 | 513 | 0 | 1149 | 0 |

## Results: Approach Measures of Effectiveness

| HCM 6th Edition | N | NE | E | SE | S | SW | W | NW |
|---|---|---|---|---|---|---|---|---|
| Entry Capacity, vph | 712 | NA | 772 | NA | 738 | NA | 414 | NA |
| Entry Flow Rates, vph | 705 | 0 | 513 | 0 | 584 | 0 | 373 | 0 |
| **V/C ratio** | **0.99** | | **0.66** | | **0.79** | | **0.90** | |
| **Control Delay, sec/pcu** | **55.6** | | **16.7** | | **24.6** | | **54.4** | |
| LOS | F | | C | | C | | F | |
| **Average Queue (ft)** | 272 | | 60 | | 100 | | 141 | |
| **95th % Queue (ft)** | **416** | | **141** | | **222** | | **246** | |

## Overall Intersection Measures of Effectiveness

| Int Control Delay (sec) | 37.9 | Int LOS | E | Max Approach V/C | 0.99 |
|---|---|---|---|---|---|

**Notes:** v 4.2

Unit Legend:
vph = vehicles per hour
PHF = peak hour factor
$F_{HV}$ = heavy vehicle factor
pcu = passenger car unit

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 5 | 3 | 121 | 0 | 42 | 0 | 162 | 213 | 70 | 551 | 0 |
| Future Volume (vph) | 0 | 5 | 3 | 121 | 0 | 42 | 0 | 162 | 213 | 70 | 551 | 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 4.8

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 5 | 3 | 121 | 0 | 42 | 0 | 162 | 213 | 70 | 551 | 0 |
| Future Vol, veh/h | 0 | 5 | 3 | 121 | 0 | 42 | 0 | 162 | 213 | 70 | 551 | 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 | 126 | 0 | 44 | 0 | 169 | 222 | 73 | 574 | 0 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 911 | 889 | 574 | 893 | 889 | 169 | 574 | 0 | 0 | 169 | 0 | 0 |
| Stage 1 | 720 | 720 | - | 169 | 169 | - | - | - | - | - | - | - |
| Stage 2 | 191 | 169 | - | 724 | 720 | - | - | - | - | - | - | - |
| 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 | 257 | 285 | 522 | 254 | 285 | 852 | 1009 | - | - | 1409 | - | - |
| Stage 1 | 422 | 435 | - | 814 | 763 | - | - | - | - | - | - | - |
| Stage 2 | 815 | 763 | - | 405 | 435 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 230 | 263 | 522 | 234 | 263 | 852 | 1009 | - | - | 1409 | - | - |
| Mov Cap-2 Maneuver | 230 | 263 | - | 234 | 263 | - | - | - | - | - | - | - |
| Stage 1 | 422 | 402 | - | 814 | 763 | - | - | - | - | - | - | - |
| Stage 2 | 773 | 763 | - | 367 | 402 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 16.4 | 29.9 | 0 | 0.9 |
| HCM LOS | C | D | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | WBLn2 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1009 | - | - | 323 | 234 | 852 | 1409 | - | - |
| HCM Lane V/C Ratio | - | - | - | 0.026 | 0.539 | 0.051 | 0.052 | - | - |
| HCM Control Delay (s) | 0 | - | - | 16.4 | 37 | 9.5 | 7.7 | 0 | - |
| HCM Lane LOS | A | - | - | C | E | A | A | A | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 2.9 | 0.2 | 0.2 | - | - |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 488 | 135 | 75 | 0 | 13 | 418 |
| Future Volume (vph) | 488 | 135 | 75 | 0 | 13 | 418 |
| 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 | 8.7 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 488 | 135 | 75 | 0 | 13 | 418 |
| Future Vol, veh/h | 488 | 135 | 75 | 0 | 13 | 418 |
| 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 | 519 | 144 | 80 | 0 | 14 | 445 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 80 | 0 | - | 0 | 1262 | 80 |
| Stage 1 | - | - | - | - | 80 | - |
| Stage 2 | - | - | - | - | 1182 | - |
| 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 | 1481 | - | - | - | 189 | 940 |
| Stage 1 | - | - | - | - | 948 | - |
| Stage 2 | - | - | - | - | 294 | - |
| Platoon blocked, % | | | - | - | - | |
| Mov Cap-1 Maneuver | 1481 | - | - | - | 117 | 940 |
| Mov Cap-2 Maneuver | - | - | - | - | 117 | - |
| Stage 1 | - | - | - | - | 587 | - |
| Stage 2 | - | - | - | - | 294 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 6.8 | 0 | 13 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1481 | - | - | - | 117 | 940 |
| HCM Lane V/C Ratio | 0.351 | - | - | - | 0.118 | 0.473 |
| HCM Control Delay (s) | 8.7 | 0 | - | - | 39.9 | 12.2 |
| HCM Lane LOS | A | A | - | - | E | B |
| HCM 95th %tile Q(veh) | 1.6 | - | - | - | 0.4 | 2.6 |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 65 | 223 | 15 | 35 | 128 | 0 |
| Future Volume (vph) | 65 | 223 | 15 | 35 | 128 | 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 | 3.1 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 65 | 223 | 15 | 35 | 128 | 0 |
| Future Vol, veh/h | 65 | 223 | 15 | 35 | 128 | 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 | 251 | 17 | 39 | 144 | 0 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 73 | 0 | 146 | 73 |
| Stage 1 | - | - | - | - | 73 | - |
| Stage 2 | - | - | - | - | 73 | - |
| Critical Hdwy | - | - | 4.1 | - | 6.48 | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.48 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.48 | - |
| Follow-up Hdwy | - | - | 2.2 | - | 3.572 | 3.3 |
| Pot Cap-1 Maneuver | - | - | 1540 | - | 832 | 995 |
| Stage 1 | - | - | - | - | 935 | - |
| Stage 2 | - | - | - | - | 935 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1540 | - | 823 | 995 |
| Mov Cap-2 Maneuver | - | - | - | - | 823 | - |
| Stage 1 | - | - | - | - | 935 | - |
| Stage 2 | - | - | - | - | 925 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 2.2 | 10.3 |
| HCM LOS | | | B |

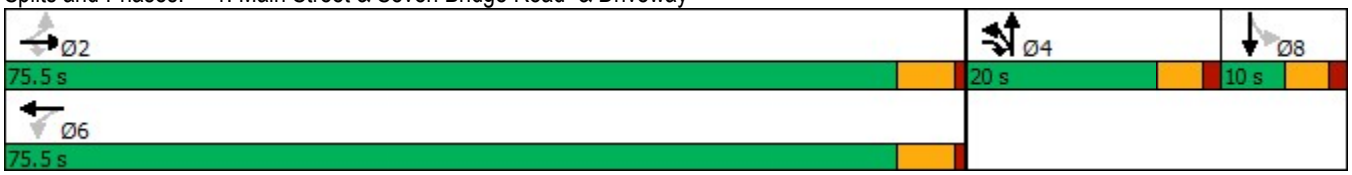
| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 823 | - | - | - | 1540 | - |
| HCM Lane V/C Ratio | 0.175 | - | - | - | 0.011 | - |
| HCM Control Delay (s) | 10.3 | 0 | - | - | 7.4 | 0 |
| HCM Lane LOS | B | A | - | - | A | A |
| HCM 95th %tile Q(veh) | 0.6 | - | - | - | 0 | - |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 563 | 423 | 4 | 1241 | 0 | 315 | 0 | 3 | 0 | 0 | 0 |
| Future Volume (vph) | 0 | 563 | 423 | 4 | 1241 | 0 | 315 | 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: 95.5
Natural Cycle: 140
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Main Street & Seven Bridge Road & Driveway



| Lane Group | EBT | EBR | WBL | WBT | NBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 593 | 445 | 4 | 1306 | 335 |
| v/c Ratio | 0.45 | 0.29 | 0.01 | 0.99 | 0.90 |
| Control Delay | 6.4 | 0.5 | 3.5 | 36.5 | 58.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 6.4 | 0.5 | 3.5 | 36.5 | 58.9 |
| Queue Length 50th (ft) | 121 | 0 | 1 | 644 | 157 |
| Queue Length 95th (ft) | 178 | 0 | 3 | #1073 | #318 |
| Internal Link Dist (ft) | 1370 | | | 920 | 920 |
| Turn Bay Length (ft) | | 115 | 50 | | |
| Base Capacity (vph) | 1306 | 1531 | 514 | 1320 | 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 | 0.45 | 0.29 | 0.01 | 0.99 | 0.90 |

Intersection Summary

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 563 | 423 | 4 | 1241 | 0 | 315 | 0 | 3 | 0 | 0 | 0 |
| Future Volume (veh/h) | 0 | 563 | 423 | 4 | 1241 | 0 | 315 | 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 | 593 | 445 | 4 | 1306 | 0 | 332 | 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 | 1348 | 1407 | 407 | 1359 | 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 | 552 | 1870 | 0 | 1863 | 0 | 17 | 0 | 1900 | 0 |
| Grp Volume(v), veh/h | 0 | 593 | 445 | 4 | 1306 | 0 | 335 | 0 | 0 | 0 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1856 | 1585 | 552 | 1870 | 0 | 1880 | 0 | 0 | 0 | 1900 | 0 |
| Q Serve(g_s), s | 0.0 | 12.0 | 4.1 | 0.3 | 59.0 | 0.0 | 15.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 12.0 | 4.1 | 12.3 | 59.0 | 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 | 1348 | 1407 | 407 | 1359 | 0 | 302 | 0 | 0 | 0 | 2 | 0 |
| V/C Ratio(X) | 0.00 | 0.44 | 0.32 | 0.01 | 0.96 | 0.00 | 1.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 0 | 1393 | 1445 | 421 | 1404 | 0 | 302 | 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(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 | 5.1 | 0.8 | 7.6 | 11.6 | 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 | 15.5 | 0.0 | 83.8 | 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 | 3.5 | 2.5 | 0.0 | 23.0 | 0.0 | 13.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 5.4 | 1.0 | 7.6 | 27.0 | 0.0 | 122.9 | 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 | | 1038 | | | 1310 | | | 335 | | | 0 | |
| Approach Delay, s/veh | | 3.5 | | | 27.0 | | | 122.9 | | | 0.0 | |
| Approach LOS | | A | | | C | | | F | | | | |
| Timer - Assigned Phs | | 2 | | 4 | | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 73.2 | | 20.0 | | 73.2 | | 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 | | 14.0 | | 17.0 | | 61.0 | | 0.0 | | | | |
| Green Ext Time (p_c), s | | 6.5 | | 0.0 | | 6.7 | | 0.0 | | | | |

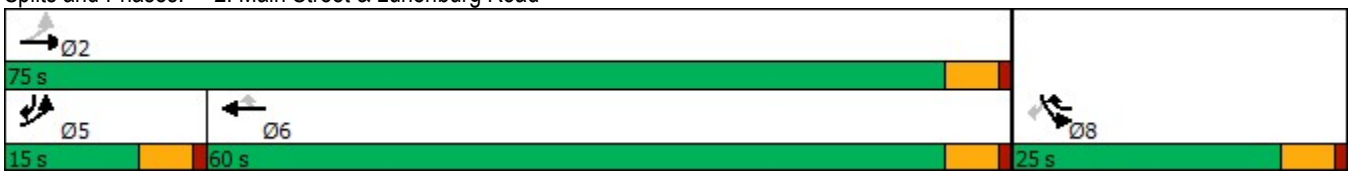
| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 29.9 |
| HCM 6th LOS | C |

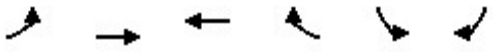
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 68 | 483 | 793 | 755 | 501 | 99 |
| Future Volume (vph) | 68 | 483 | 793 | 755 | 501 | 99 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| 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



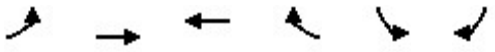


| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 72 | 508 | 835 | 795 | 527 | 104 |
| v/c Ratio | 0.28 | 0.44 | 0.89 | 0.57 | 1.29 | 0.17 |
| Control Delay | 7.7 | 8.5 | 31.8 | 2.3 | 179.1 | 22.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 7.7 | 8.5 | 31.8 | 2.3 | 179.1 | 22.4 |
| Queue Length 50th (ft) | 13 | 119 | 400 | 16 | ~406 | 40 |
| Queue Length 95th (ft) | 25 | 174 | #691 | 43 | #678 | 86 |
| 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 | 0.57 | 1.29 | 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.



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 68 | 483 | 793 | 755 | 501 | 99 |
| Future Volume (veh/h) | 68 | 483 | 793 | 755 | 501 | 99 |
| 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 | 795 | 527 | 104 |
| 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 | 234 | 1197 | 979 | 1221 | 422 | 474 |
| 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 | 795 | 527 | 104 |
| Grp Sat Flow(s),veh/h/ln | 1810 | 1856 | 1856 | 1598 | 1781 | 1610 |
| Q Serve(g_s), s | 1.4 | 11.3 | 32.6 | 19.7 | 20.0 | 4.1 |
| Cycle Q Clear(g_c), s | 1.4 | 11.3 | 32.6 | 19.7 | 20.0 | 4.1 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 234 | 1197 | 979 | 1221 | 422 | 474 |
| V/C Ratio(X) | 0.31 | 0.42 | 0.85 | 0.65 | 1.25 | 0.22 |
| Avail Cap(c_a), veh/h | 344 | 1537 | 1208 | 1418 | 422 | 474 |
| 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 | 4.7 | 32.2 | 22.5 |
| Incr Delay (d2), s/veh | 0.3 | 0.2 | 5.1 | 0.8 | 130.7 | 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 | 12.9 | 23.2 | 1.5 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 16.2 | 7.6 | 22.2 | 5.5 | 163.0 | 22.6 |
| LnGrp LOS | B | A | C | A | F | C |
| Approach Vol, veh/h | | 580 | 1630 | | 631 | |
| Approach Delay, s/veh | | 8.6 | 14.1 | | 139.8 | |
| Approach LOS | | A | B | | F | |

| Timer - Assigned Phs | | 2 | | | 5 | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 59.5 | | | 9.9 | 49.6 | 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 | 40.9 |
| HCM 6th LOS | D |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 473 | 269 | 208 | 649 | 344 | 341 |
| Future Volume (vph) | 473 | 269 | 208 | 649 | 344 | 341 |
| 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 | 1011.2 | | | | | |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 473 | 269 | 208 | 649 | 344 | 341 |
| Future Vol, veh/h | 473 | 269 | 208 | 649 | 344 | 341 |
| 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 | 493 | 280 | 217 | 676 | 358 | 355 |

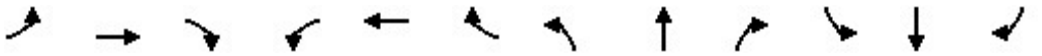
| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1646 | 536 | 713 | 0 | - | 0 |
| Stage 1 | 536 | - | - | - | - | - |
| Stage 2 | 1110 | - | - | - | - | - |
| Critical Hdwy | 6.4 | 6.2 | 4.1 | - | - | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.4 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | 2.2 | - | - | - |
| Pot Cap-1 Maneuver | ~ 111 | 549 | 896 | - | - | - |
| Stage 1 | 591 | - | - | - | - | - |
| Stage 2 | ~ 318 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | ~ 68 | 549 | 896 | - | - | - |
| Mov Cap-2 Maneuver | ~ 68 | - | - | - | - | - |
| Stage 1 | ~ 362 | - | - | - | - | - |
| Stage 2 | ~ 318 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, $ | 3109.9 | 2.5 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 896 | - | 100 | - | - |
| HCM Lane V/C Ratio | 0.242 | - | 7.729 | - | - |
| HCM Control Delay (s) | 10.3 | $ | 3109.9 | - | - |
| HCM Lane LOS | B | A | F | - | - |
| HCM 95th %tile Q(veh) | 0.9 | - | 87.4 | - | - |

Notes

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



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 77 | 50 | 184 | 258 | 81 | 143 | 269 | 652 | 120 | 56 | 295 | 275 |
| Future Volume (vph) | 77 | 50 | 184 | 258 | 81 | 143 | 269 | 652 | 120 | 56 | 295 | 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 | |

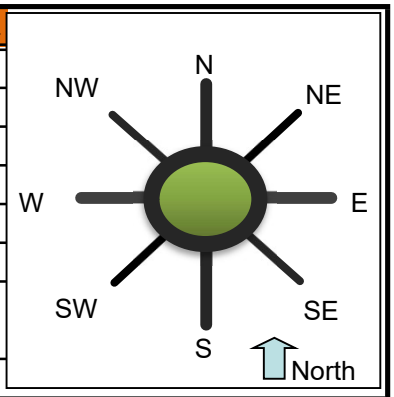
Intersection Summary

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 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) |
|---|---|---|---|---|---|---|---|---|---|
| | N (1), vph | | | 143 | | 652 | | 77 | |
| Exit | NE (2), vph | | | | | | | | |
| Legs | E (3), vph | 56 | | | | 120 | | 50 | |
| (TO) | SE (4), vph | | | | | | | | |
| | S (5), vph | 295 | | 258 | | | | 184 | |
| | SW (6), vph | | | | | | | | |
| | W (7), vph | 275 | | 81 | | 269 | | | |
| | NW (8), vph | | | | | | | | |
| Output | Total Vehicles | 626 | 0 | 482 | 0 | 1041 | 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 | 666 | 0 | 78 | 0 |
| NE (2), pcu/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E (3), pcu/h | 59 | 0 | 0 | 0 | 123 | 0 | 51 | 0 |
| SE (4), pcu/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| S (5), pcu/h | 310 | 0 | 271 | 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 | 275 | 0 | 0 | 0 |
| NW (8), pcu/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry flow, pcu/h | 658 | 0 | 505 | 0 | 1063 | 0 | 314 | 0 |
| Conflicting flow, pcu/h | 630 | 0 | 1018 | 0 | 187 | 0 | 640 | 0 |

## Results: Approach Measures of Effectiveness

| HCM 6th Edition | N | NE | E | SE | S | SW | W | NW |
|---|---|---|---|---|---|---|---|---|
| Entry Capacity, vph | 697 | NA | 471 | NA | 1128 | NA | 719 | NA |
| Entry Flow Rates, vph | 632 | 0 | 487 | 0 | 1052 | 0 | 314 | 0 |
| **V/C ratio** | **0.91** | | **1.03** | | **0.93** | | **0.44** | |
| **Control Delay, sec/pcu** | **39.2** | | **80.7** | | **32.3** | | **11.0** | |
| LOS | E | | F | | D | | B | |
| **Average Queue (ft)** | 172 | | 273 | | 236 | | 24 | |
| **95th % Queue (ft)** | **309** | | **378** | | **396** | | **56** | |

## Overall Intersection Measures of Effectiveness

| Int Control Delay (sec) | 40.8 | Int LOS | E | Max Approach V/C | 1.03 |
|---|---|---|---|---|---|

**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* | | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 4 | 404 | 0 | 327 | 2 | 508 | 363 | 31 | 218 | 1 |
| Future Volume (vph) | 0 | 0 | 4 | 404 | 0 | 327 | 2 | 508 | 363 | 31 | 218 | 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 101.2

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 4 | 404 | 0 | 327 | 2 | 508 | 363 | 31 | 218 | 1 |
| Future Vol, veh/h | 0 | 0 | 4 | 404 | 0 | 327 | 2 | 508 | 363 | 31 | 218 | 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 | 459 | 0 | 372 | 2 | 577 | 413 | 35 | 248 | 1 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1086 | 900 | 249 | 902 | 900 | 577 | 249 | 0 | 0 | 577 | 0 | 0 |
| Stage 1 | 319 | 319 | - | 581 | 581 | - | - | - | - | - | - | - |
| Stage 2 | 767 | 581 | - | 321 | 319 | - | - | - | - | - | - | - |
| 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 | 196 | 280 | 795 | ~ 255 | 280 | 518 | 1328 | - | - | 940 | - | - |
| Stage 1 | 697 | 657 | - | 494 | 503 | - | - | - | - | - | - | - |
| Stage 2 | 398 | 503 | - | 684 | 657 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 54 | 267 | 795 | ~ 245 | 267 | 518 | 1328 | - | - | 940 | - | - |
| Mov Cap-2 Maneuver | 54 | 267 | - | ~ 245 | 267 | - | - | - | - | - | - | - |
| Stage 1 | 694 | 629 | - | 492 | 501 | - | - | - | - | - | - | - |
| Stage 2 | 112 | 501 | - | 651 | 629 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 9.6 | 256.8 | 0 | 1.1 |
| HCM LOS | A | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | WBLn2 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1328 | - | - | 795 | 245 | 518 | 940 | - | - |
| HCM Lane V/C Ratio | 0.002 | - | - | 0.006 | 1.874 | 0.717 | 0.037 | - | - |
| HCM Control Delay (s) | 7.7 | 0 | - | 9.6 | $ 442.2 | 27.7 | 9 | 0 | - |
| HCM Lane LOS | A | A | - | A | F | D | A | A | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | 32.1 | 5.8 | 0.1 | - | - |

Notes

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

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 146 | 80 | 105 | 1 | 13 | 377 |
| Future Volume (vph) | 146 | 80 | 105 | 1 | 13 | 377 |
| 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 | 146 | 80 | 105 | 1 | 13 | 377 |
| Future Vol, veh/h | 146 | 80 | 105 | 1 | 13 | 377 |
| 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 | 174 | 95 | 125 | 1 | 15 | 449 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 125 | 0 | - | 0 | 568 | 125 |
| Stage 1 | - | - | - | - | 125 | - |
| Stage 2 | - | - | - | - | 443 | - |
| 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 | - | - | - | 488 | 923 |
| Stage 1 | - | - | - | - | 906 | - |
| Stage 2 | - | - | - | - | 651 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1455 | - | - | - | 427 | 923 |
| Mov Cap-2 Maneuver | - | - | - | - | 427 | - |
| Stage 1 | - | - | - | - | 792 | - |
| Stage 2 | - | - | - | - | 651 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 5 | 0 | 12.5 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1455 | - | - | - | 427 | 923 |
| HCM Lane V/C Ratio | 0.119 | - | - | - | 0.036 | 0.486 |
| HCM Control Delay (s) | 7.8 | 0 | - | - | 13.7 | 12.5 |
| HCM Lane LOS | A | A | - | - | B | B |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 0.1 | 2.7 |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 21 | 374 | 28 | 246 | 486 | 0 |
| Future Volume (vph) | 21 | 374 | 28 | 246 | 486 | 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 | 21.4 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 21 | 374 | 28 | 246 | 486 | 0 |
| Future Vol, veh/h | 21 | 374 | 28 | 246 | 486 | 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 | 25 | 440 | 33 | 289 | 572 | 0 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 25 | 0 | 380 | 25 |
| Stage 1 | - | - | - | - | 25 | - |
| Stage 2 | - | - | - | - | 355 | - |
| Critical Hdwy | - | - | 4.18 | - | 6.43 | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.43 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.43 | - |
| Follow-up Hdwy | - | - | 2.272 | - | 3.527 | 3.3 |
| Pot Cap-1 Maneuver | - | - | 1551 | - | 620 | 1057 |
| Stage 1 | - | - | - | - | 995 | - |
| Stage 2 | - | - | - | - | 707 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1551 | - | 605 | 1057 |
| Mov Cap-2 Maneuver | - | - | - | - | 605 | - |
| Stage 1 | - | - | - | - | 995 | - |
| Stage 2 | - | - | - | - | 689 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.8 | 50.4 |
| HCM LOS | | | F |

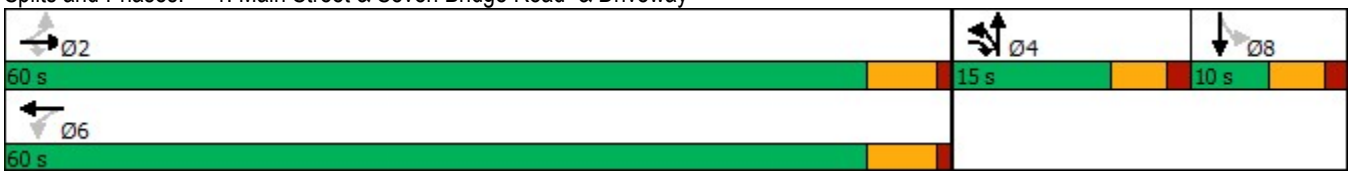
| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 605 | - | - | - | 1551 | - |
| HCM Lane V/C Ratio | 0.945 | - | - | - | 0.021 | - |
| HCM Control Delay (s) | 50.4 | 0 | - | - | 7.4 | 0 |
| HCM Lane LOS | F | A | - | - | A | A |
| HCM 95th %tile Q(veh) | 12.7 | - | - | - | 0.1 | - |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 1 | 67 | 797 | 5 | 282 | 1 | 527 | 2 | 28 | 0 | 2 | 0 |
| Future Volume (vph) | 1 | 67 | 797 | 5 | 282 | 1 | 527 | 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: 34.8
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Main Street & Seven Bridge Road & Driveway



| Lane Group | EBT | EBR | WBL | WBT | NBT | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 82 | 960 | 6 | 341 | 671 | 2 |
| v/c Ratio | 0.13 | 0.64 | 0.01 | 0.54 | 1.16 | 0.01 |
| Control Delay | 8.9 | 2.5 | 8.4 | 13.1 | 109.4 | 17.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 8.9 | 2.5 | 8.4 | 13.1 | 109.4 | 17.0 |
| Queue Length 50th (ft) | 9 | 0 | 1 | 42 | ~137 | 0 |
| Queue Length 95th (ft) | 33 | 14 | 6 | 117 | #428 | 5 |
| Internal Link Dist (ft) | 1370 | | | 920 | 920 | 120 |
| Turn Bay Length (ft) | | 115 | 50 | | | |
| Base Capacity (vph) | 1756 | 1496 | 1248 | 1819 | 579 | 282 |
| 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 | 0.05 | 0.64 | 0.00 | 0.19 | 1.16 | 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.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 1 | 67 | 797 | 5 | 282 | 1 | 527 | 2 | 28 | 0 | 2 | 0 |
| Future Volume (veh/h) | 1 | 67 | 797 | 5 | 282 | 1 | 527 | 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 | 81 | 960 | 6 | 340 | 1 | 635 | 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 | 65 | 1013 | 1151 | 418 | 1036 | 3 | 309 | 1 | 17 | 0 | 5 | 0 |
| Arrive On Green | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 | 0.17 | 0.17 | 0.17 | 0.00 | 0.00 | 0.00 |
| Sat Flow, veh/h | 2 | 1836 | 1585 | 551 | 1879 | 6 | 1770 | 6 | 95 | 0 | 1900 | 0 |
| Grp Volume(v), veh/h | 82 | 0 | 960 | 6 | 0 | 341 | 671 | 0 | 0 | 0 | 2 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1839 | 0 | 1585 | 551 | 0 | 1884 | 1870 | 0 | 0 | 0 | 1900 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 24.0 | 0.3 | 0.0 | 5.7 | 10.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Cycle Q Clear(g_c), s | 1.2 | 0.0 | 24.0 | 1.5 | 0.0 | 5.7 | 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 | 1078 | 0 | 1151 | 418 | 0 | 1039 | 327 | 0 | 0 | 0 | 5 | 0 |
| V/C Ratio(X) | 0.08 | 0.00 | 0.83 | 0.01 | 0.00 | 0.33 | 2.05 | 0.00 | 0.00 | 0.00 | 0.38 | 0.00 |
| Avail Cap(c_a), veh/h | 1809 | 0 | 1787 | 639 | 0 | 1795 | 327 | 0 | 0 | 0 | 166 | 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 | 6.0 | 0.0 | 5.4 | 6.4 | 0.0 | 7.0 | 23.6 | 0.0 | 0.0 | 0.0 | 28.5 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 2.1 | 0.0 | 0.0 | 0.2 | 484.3 | 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 | 0.4 | 0.0 | 10.5 | 0.0 | 0.0 | 1.7 | 47.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 6.0 | 0.0 | 7.5 | 6.4 | 0.0 | 7.2 | 507.9 | 0.0 | 0.0 | 0.0 | 44.9 | 0.0 |
| LnGrp LOS | A | A | A | A | A | A | F | A | A | A | D | A |
| Approach Vol, veh/h | | 1042 | | | 347 | | | 671 | | | 2 | |
| Approach Delay, s/veh | | 7.4 | | | 7.2 | | | 507.9 | | | 44.9 | |
| Approach LOS | | A | | | A | | | F | | | D | |

| Timer - Assigned Phs | | 2 | | 4 | | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 37.1 | | 15.0 | | 37.1 | | 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 | | 26.0 | | 12.0 | | 7.7 | | 2.1 | | | | |
| Green Ext Time (p_c), s | | 5.5 | | 0.0 | | 2.2 | | 0.0 | | | | |

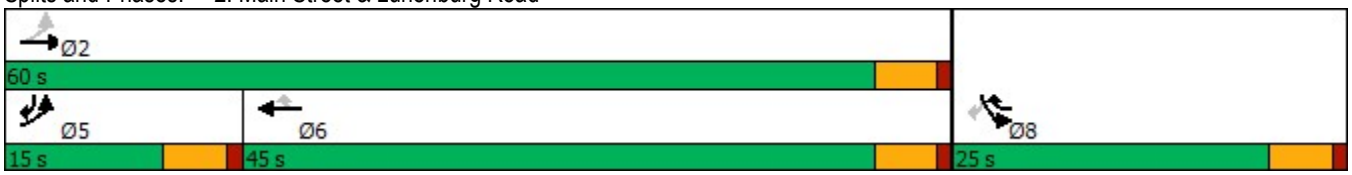
| Intersection Summary | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HCM 6th Ctrl Delay | | | 170.3 | | | | | | | | | |
| HCM 6th LOS | | | F | | | | | | | | | |

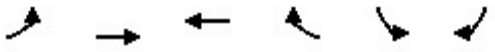
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 61 | 384 | 413 | 398 | 478 | 59 |
| Future Volume (vph) | 61 | 384 | 413 | 398 | 478 | 59 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| 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





| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 64 | 404 | 435 | 419 | 503 | 62 |
| v/c Ratio | 0.18 | 0.47 | 0.75 | 0.32 | 0.84 | 0.07 |
| Control Delay | 8.3 | 11.4 | 27.0 | 1.0 | 37.9 | 9.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 8.3 | 11.4 | 27.0 | 1.0 | 37.9 | 9.5 |
| Queue Length 50th (ft) | 11 | 87 | 141 | 0 | 171 | 10 |
| Queue Length 95th (ft) | 26 | 140 | 240 | 17 | #431 | 35 |
| Internal Link Dist (ft) | | 920 | 1370 | | 920 | |
| Turn Bay Length (ft) | 100 | | | 160 | | 240 |
| Base Capacity (vph) | 426 | 1625 | 1260 | 1304 | 598 | 955 |
| 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 | 0.35 | 0.32 | 0.84 | 0.06 |

Intersection Summary

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

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 61 | 384 | 413 | 398 | 478 | 59 |
| Future Volume (veh/h) | 61 | 384 | 413 | 398 | 478 | 59 |
| 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 | 64 | 404 | 435 | 419 | 503 | 62 |
| 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 | 342 | 929 | 612 | 1027 | 562 | 620 |
| Arrive On Green | 0.07 | 0.49 | 0.33 | 0.33 | 0.32 | 0.32 |
| Sat Flow, veh/h | 1781 | 1885 | 1870 | 1598 | 1781 | 1610 |
| Grp Volume(v), veh/h | 64 | 404 | 435 | 419 | 503 | 62 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1885 | 1870 | 1598 | 1781 | 1610 |
| Q Serve(g_s), s | 1.1 | 7.2 | 10.6 | 6.6 | 14.0 | 1.3 |
| Cycle Q Clear(g_c), s | 1.1 | 7.2 | 10.6 | 6.6 | 14.0 | 1.3 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 342 | 929 | 612 | 1027 | 562 | 620 |
| V/C Ratio(X) | 0.19 | 0.44 | 0.71 | 0.41 | 0.89 | 0.10 |
| Avail Cap(c_a), veh/h | 559 | 1987 | 1434 | 1729 | 683 | 729 |
| 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 | 10.3 | 8.5 | 15.4 | 4.5 | 17.0 | 10.3 |
| Incr Delay (d2), s/veh | 0.1 | 0.3 | 1.5 | 0.3 | 11.3 | 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 | 2.3 | 4.0 | 3.8 | 6.2 | 0.3 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 10.4 | 8.9 | 16.9 | 4.8 | 28.3 | 10.3 |
| LnGrp LOS | B | A | B | A | C | B |
| Approach Vol, veh/h | | 468 | 854 | | 565 | |
| Approach Delay, s/veh | | 9.1 | 11.0 | | 26.3 | |
| Approach LOS | | A | B | | C | |

| Timer - Assigned Phs | | 2 | | | 5 | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 30.7 | | | 8.6 | 22.1 | 21.5 |
| 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 | | 9.2 | | | 3.1 | 12.6 | 16.0 |
| Green Ext Time (p_c), s | | 2.6 | | | 0.0 | 4.4 | 0.4 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 15.1 |
| HCM 6th LOS | B |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 156 | 115 | 111 | 356 | 425 | 170 |
| Future Volume (vph) | 156 | 115 | 111 | 356 | 425 | 170 |
| 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 | 36.1 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 156 | 115 | 111 | 356 | 425 | 170 |
| Future Vol, veh/h | 156 | 115 | 111 | 356 | 425 | 170 |
| 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 | 170 | 125 | 121 | 387 | 462 | 185 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1184 | 555 | 647 | 0 | - | 0 |
| Stage 1 | 555 | - | - | - | - | - |
| Stage 2 | 629 | - | - | - | - | - |
| 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 | 206 | 526 | 924 | - | - | - |
| Stage 1 | 569 | - | - | - | - | - |
| Stage 2 | 526 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 172 | 526 | 924 | - | - | - |
| Mov Cap-2 Maneuver | 172 | - | - | - | - | - |
| Stage 1 | 474 | - | - | - | - | - |
| Stage 2 | 526 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 173.5 | 2.3 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 924 | - | 241 | - | - |
| HCM Lane V/C Ratio | 0.131 | - | 1.222 | - | - |
| HCM Control Delay (s) | 9.5 | 0 | 173.5 | - | - |
| HCM Lane LOS | A | A | F | - | - |
| HCM 95th %tile Q(veh) | 0.4 | - | 14.4 | - | - |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 36 | 60 | 143 | 266 | 60 | 109 | 125 | 261 | 139 | 82 | 245 | 136 |
| Future Volume (vph) | 36 | 60 | 143 | 266 | 60 | 109 | 125 | 261 | 139 | 82 | 245 | 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 | |

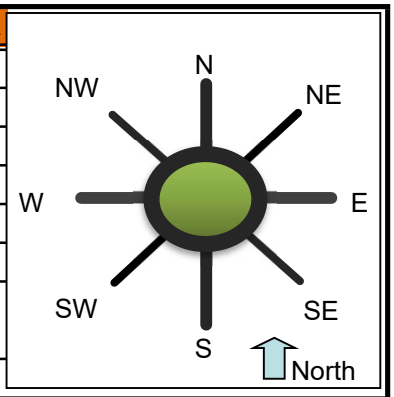
Intersection Summary

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 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) |
|---|---|---|---|---|---|---|---|---|---|
| | N (1), vph | | | 109 | | 261 | | 36 | |
| Exit | NE (2), vph | | | | | | | | |
| Legs | E (3), vph | 82 | | | | 139 | | 60 | |
| (TO) | SE (4), vph | | | | | | | | |
| | S (5), vph | 245 | | 266 | | | | 143 | |
| | SW (6), vph | | | | | | | | |
| | W (7), vph | 136 | | 60 | | 125 | | | |
| | NW (8), vph | | | | | | | | |
| Output | Total Vehicles | 463 | 0 | 435 | 0 | 525 | 0 | 239 | 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 | 316 | 0 | 43 | 0 |
| NE (2), pcu/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E (3), pcu/h | 102 | 0 | 0 | 0 | 168 | 0 | 71 | 0 |
| SE (4), pcu/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| S (5), pcu/h | 304 | 0 | 320 | 0 | 0 | 0 | 170 | 0 |
| SW (6), pcu/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W (7), pcu/h | 169 | 0 | 72 | 0 | 151 | 0 | 0 | 0 |
| NW (8), pcu/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry flow, pcu/h | 574 | 0 | 523 | 0 | 635 | 0 | 284 | 0 |
| Conflicting flow, pcu/h | 543 | 0 | 510 | 0 | 216 | 0 | 725 | 0 |

## Results: Approach Measures of Effectiveness

| HCM 6th Edition | N | NE | E | SE | S | SW | W | NW |
|---|---|---|---|---|---|---|---|---|
| Entry Capacity, vph | 753 | NA | 803 | NA | 1077 | NA | 653 | NA |
| Entry Flow Rates, vph | 545 | 0 | 512 | 0 | 618 | 0 | 281 | 0 |
| **V/C ratio** | **0.72** | | **0.64** | | **0.57** | | **0.43** | |
| **Control Delay, sec/pcu** | **19.9** | | **15.2** | | **10.6** | | **11.8** | |
| LOS | C | | C | | B | | B | |
| **Average Queue (ft)** | 75 | | 54 | | 45 | | 23 | |
| **95th % Queue (ft)** | **167** | | **120** | | **97** | | **55** | |

## Overall Intersection Measures of Effectiveness

| Int Control Delay (sec) | 14.6 | Int LOS | B | Max Approach V/C | 0.72 |
|---|---|---|---|---|---|

**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* | | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 3 | 229 | 1 | 75 | 1 | 226 | 178 | 51 | 231 | 0 |
| Future Volume (vph) | 0 | 0 | 3 | 229 | 1 | 75 | 1 | 226 | 178 | 51 | 231 | 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

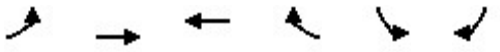
Area Type: Other
Control Type: Unsignalized

| Intersection | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Int Delay, s/veh | 10.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 3 | 229 | 1 | 75 | 1 | 226 | 178 | 51 | 231 | 0 |
| Future Vol, veh/h | 0 | 0 | 3 | 229 | 1 | 75 | 1 | 226 | 178 | 51 | 231 | 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 | 269 | 1 | 88 | 1 | 266 | 209 | 60 | 272 | 0 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 705 | 660 | 272 | 662 | 660 | 266 | 272 | 0 | 0 | 266 | 0 | 0 |
| Stage 1 | 392 | 392 | - | 268 | 268 | - | - | - | - | - | - | - |
| Stage 2 | 313 | 268 | - | 394 | 392 | - | - | - | - | - | - | - |
| 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 | 354 | 386 | 772 | 373 | 386 | 758 | 1303 | - | - | 1264 | - | - |
| Stage 1 | 637 | 610 | - | 733 | 691 | - | - | - | - | - | - | - |
| Stage 2 | 702 | 691 | - | 627 | 610 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 298 | 364 | 772 | 355 | 364 | 758 | 1303 | - | - | 1264 | - | - |
| Mov Cap-2 Maneuver | 298 | 364 | - | 355 | 364 | - | - | - | - | - | - | - |
| Stage 1 | 636 | 576 | - | 732 | 690 | - | - | - | - | - | - | - |
| Stage 2 | 619 | 690 | - | 589 | 576 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 9.7 | 33.3 | 0 | 1.4 |
| HCM LOS | A | D | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | WBLn2 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1303 | - | - | 772 | 355 | 747 | 1264 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | - | 0.005 | 0.759 | 0.12 | 0.047 | - | - |
| HCM Control Delay (s) | 7.8 | 0 | - | 9.7 | 40.9 | 10.5 | 8 | 0 | - |
| HCM Lane LOS | A | A | - | A | E | B | A | A | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | 6 | 0.4 | 0.1 | - | - |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 200 | 80 | 199 | 3 | 19 | 236 |
| Future Volume (vph) | 200 | 80 | 199 | 3 | 19 | 236 |
| 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 | 6.6 | | | | | |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 200 | 80 | 199 | 3 | 19 | 236 |
| Future Vol, veh/h | 200 | 80 | 199 | 3 | 19 | 236 |
| 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 | 235 | 94 | 234 | 4 | 22 | 278 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 234 | 0 | - | 0 | 798 | 234 |
| Stage 1 | - | - | - | - | 234 | - |
| Stage 2 | - | - | - | - | 564 | - |
| 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 | 1271 | - | - | - | 358 | 798 |
| Stage 1 | - | - | - | - | 810 | - |
| Stage 2 | - | - | - | - | 573 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1271 | - | - | - | 288 | 798 |
| Mov Cap-2 Maneuver | - | - | - | - | 288 | - |
| Stage 1 | - | - | - | - | 652 | - |
| Stage 2 | - | - | - | - | 573 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 6.1 | 0 | 12.4 |
| HCM LOS | | | B |

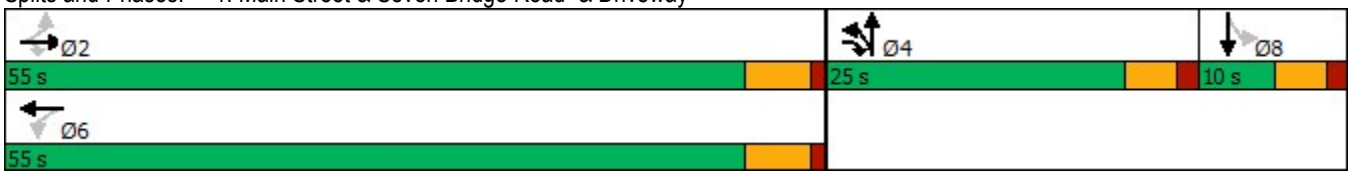
| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1271 | - | - | - | 288 | 798 |
| HCM Lane V/C Ratio | 0.185 | - | - | - | 0.078 | 0.348 |
| HCM Control Delay (s) | 8.5 | 0 | - | - | 18.5 | 11.9 |
| HCM Lane LOS | A | A | - | - | C | B |
| HCM 95th %tile Q(veh) | 0.7 | - | - | - | 0.3 | 1.6 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 788 | 419 | 16 | 537 | 0 | 425 | 0 | 7 | 0 | 0 | 0 |
| Future Volume (vph) | 0 | 788 | 419 | 16 | 537 | 0 | 425 | 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: 71
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Main Street & Seven Bridge Road & Driveway



| Lane Group | EBT | EBR | WBL | WBT | NBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 847 | 451 | 17 | 577 | 465 |
| v/c Ratio | 0.85 | 0.30 | 0.10 | 0.58 | 0.81 |
| Control Delay | 22.0 | 0.5 | 7.9 | 12.1 | 34.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 22.0 | 0.5 | 7.9 | 12.1 | 34.3 |
| Queue Length 50th (ft) | 283 | 0 | 3 | 147 | 163 |
| Queue Length 95th (ft) | 456 | 0 | 12 | 230 | #352 |
| Internal Link Dist (ft) | 1370 | | | 920 | 920 |
| Turn Bay Length (ft) | | 115 | 50 | | |
| Base Capacity (vph) | 1234 | 1512 | 213 | 1234 | 600 |
| 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 | 0.69 | 0.30 | 0.08 | 0.47 | 0.78 |

Intersection Summary

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

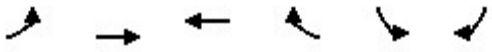
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 788 | 419 | 16 | 537 | 0 | 425 | 0 | 7 | 0 | 0 | 0 |
| Future Volume (veh/h) | 0 | 788 | 419 | 16 | 537 | 0 | 425 | 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 | 847 | 451 | 17 | 577 | 0 | 457 | 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 | 1007 | 1312 | 185 | 1007 | 0 | 514 | 0 | 9 | 0 | 3 | 0 |
| Arrive On Green | 0.00 | 0.56 | 0.56 | 0.56 | 0.56 | 0.00 | 0.28 | 0.00 | 0.28 | 0.00 | 0.00 | 0.00 |
| Sat Flow, veh/h | 0 | 1811 | 1572 | 431 | 1811 | 0 | 1846 | 0 | 32 | 0 | 1900 | 0 |
| Grp Volume(v), veh/h | 0 | 847 | 451 | 17 | 577 | 0 | 465 | 0 | 0 | 0 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1811 | 1572 | 431 | 1811 | 0 | 1878 | 0 | 0 | 0 | 1900 | 0 |
| Q Serve(g_s), s | 0.0 | 24.7 | 4.2 | 2.2 | 13.2 | 0.0 | 15.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 24.7 | 4.2 | 26.9 | 13.2 | 0.0 | 15.1 | 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 | 1007 | 1312 | 185 | 1007 | 0 | 523 | 0 | 0 | 0 | 3 | 0 |
| V/C Ratio(X) | 0.00 | 0.84 | 0.34 | 0.09 | 0.57 | 0.00 | 0.89 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 0 | 1414 | 1665 | 282 | 1414 | 0 | 592 | 0 | 0 | 0 | 150 | 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 | 11.7 | 1.2 | 23.0 | 9.2 | 0.0 | 21.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 3.4 | 0.2 | 0.2 | 0.5 | 0.0 | 13.3 | 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 | 8.4 | 3.0 | 0.2 | 4.1 | 0.0 | 7.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 15.1 | 1.4 | 23.2 | 9.7 | 0.0 | 35.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| LnGrp LOS | A | B | A | C | A | A | D | A | A | A | A | A |
| Approach Vol, veh/h | | 1298 | | | 594 | | | 465 | | | 0 | |
| Approach Delay, s/veh | | 10.3 | | | 10.1 | | | 35.2 | | | 0.0 | |
| Approach LOS | | B | | | B | | | D | | | | |
| Timer - Assigned Phs | | 2 | | 4 | | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 40.8 | | 22.6 | | 40.8 | | 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 | | 26.7 | | 17.1 | | 28.9 | | 0.0 | | | | |
| Green Ext Time (p_c), s | | 8.5 | | 0.6 | | 3.9 | | 0.0 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 15.2 | | | | | | | | | |
| HCM 6th LOS | | | B | | | | | | | | | |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 89 | 782 | 384 | 586 | 420 | 49 |
| Future Volume (vph) | 89 | 782 | 384 | 586 | 420 | 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: 74.6
Natural Cycle: 75
Control Type: Actuated-Uncoordinated

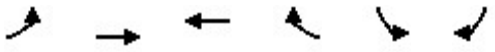
Splits and Phases: 2: Main Street & Lunenburg Road



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 96 | 841 | 413 | 630 | 452 | 53 |
| v/c Ratio | 0.23 | 0.89 | 0.56 | 0.47 | 0.87 | 0.07 |
| Control Delay | 10.4 | 29.1 | 21.3 | 1.4 | 43.9 | 13.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 10.4 | 29.1 | 21.3 | 1.4 | 43.9 | 13.0 |
| Queue Length 50th (ft) | 23 | 357 | 162 | 0 | 221 | 15 |
| Queue Length 95th (ft) | 45 | #617 | 252 | 14 | #389 | 36 |
| Internal Link Dist (ft) | | 920 | 1370 | | 920 | |
| Turn Bay Length (ft) | 100 | | | 160 | | 240 |
| Base Capacity (vph) | 418 | 1164 | 874 | 1352 | 634 | 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 | 0.47 | 0.71 | 0.07 |

Intersection Summary

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



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 89 | 782 | 384 | 586 | 420 | 49 |
| Future Volume (veh/h) | 89 | 782 | 384 | 586 | 420 | 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 | 96 | 841 | 413 | 630 | 452 | 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 | 363 | 982 | 668 | 1025 | 507 | 596 |
| 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 | 96 | 841 | 413 | 630 | 452 | 53 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1841 | 1811 | 1535 | 1697 | 1572 |
| Q Serve(g_s), s | 1.8 | 23.4 | 11.1 | 13.8 | 15.2 | 1.3 |
| Cycle Q Clear(g_c), s | 1.8 | 23.4 | 11.1 | 13.8 | 15.2 | 1.3 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 363 | 982 | 668 | 1025 | 507 | 596 |
| V/C Ratio(X) | 0.26 | 0.86 | 0.62 | 0.61 | 0.89 | 0.09 |
| Avail Cap(c_a), veh/h | 399 | 1454 | 1096 | 1387 | 799 | 866 |
| 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 | 11.9 | 15.3 | 5.6 | 19.9 | 11.9 |
| Incr Delay (d2), s/veh | 0.1 | 3.5 | 0.9 | 0.6 | 5.3 | 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 | 0.6 | 8.1 | 4.1 | 8.0 | 5.7 | 0.4 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 10.3 | 15.5 | 16.3 | 6.2 | 25.3 | 11.9 |
| LnGrp LOS | B | B | B | A | C | B |
| Approach Vol, veh/h | | 937 | 1043 | | 505 | |
| Approach Delay, s/veh | | 14.9 | 10.2 | | 23.9 | |
| Approach LOS | | B | B | | C | |

| Timer - Assigned Phs | | 2 | | | 5 | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 36.7 | | | 9.8 | 26.9 | 22.8 |
| 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 | | 25.4 | | | 3.8 | 15.8 | 17.2 |
| Green Ext Time (p_c), s | | 6.4 | | | 0.0 | 5.1 | 0.6 |

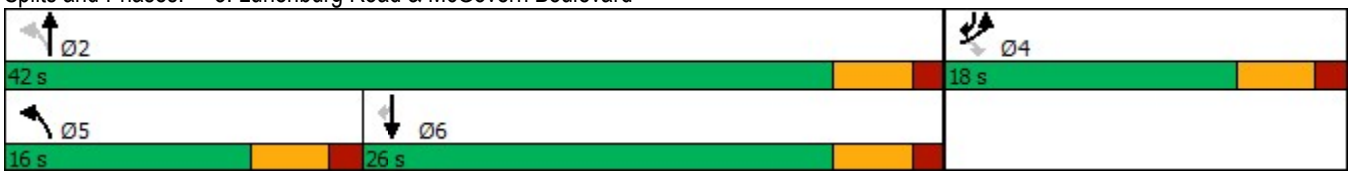
| Intersection Summary | | | |
|---|---|---|---|
| HCM 6th Ctrl Delay | | 14.8 | |
| HCM 6th LOS | | B | |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 155 | 121 | 314 | 366 | 365 | 519 |
| Future Volume (vph) | 155 | 121 | 314 | 366 | 365 | 519 |
| 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: 54
Natural Cycle: 55
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Lunenburg Road & McGovern Boulevard



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 167 | 130 | 338 | 394 | 392 | 558 |
| v/c Ratio | 0.58 | 0.33 | 0.67 | 0.40 | 0.75 | 0.61 |
| Control Delay | 30.1 | 7.3 | 13.7 | 7.2 | 26.9 | 6.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 30.1 | 7.3 | 13.7 | 7.2 | 26.9 | 6.2 |
| Queue Length 50th (ft) | 50 | 0 | 50 | 61 | 116 | 40 |
| Queue Length 95th (ft) | #122 | 37 | #110 | 106 | 200 | 102 |
| Internal Link Dist (ft) | 920 | | | 920 | 4220 | |
| Turn Bay Length (ft) | | | 200 | | | 200 |
| Base Capacity (vph) | 320 | 421 | 517 | 1160 | 683 | 948 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.52 | 0.31 | 0.65 | 0.34 | 0.57 | 0.59 |

Intersection Summary

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

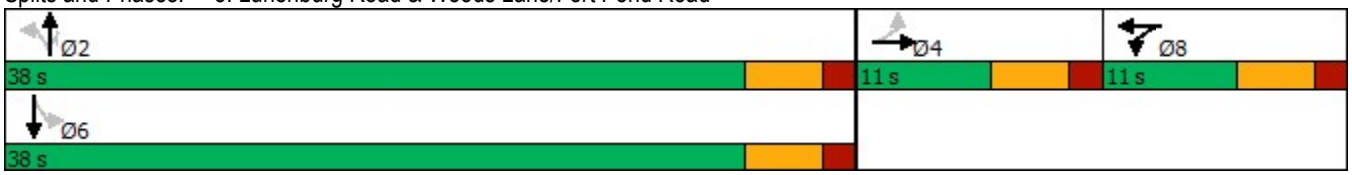
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 155 | 121 | 314 | 366 | 365 | 519 |
| Future Volume (veh/h) | 155 | 121 | 314 | 366 | 365 | 519 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 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 | 167 | 130 | 338 | 394 | 392 | 558 |
| 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 | 257 | 264 | 509 | 1078 | 661 | 777 |
| Arrive On Green | 0.19 | 0.19 | 0.15 | 0.62 | 0.37 | 0.37 |
| Sat Flow, veh/h | 1344 | 1384 | 1711 | 1752 | 1811 | 1397 |
| Grp Volume(v), veh/h | 167 | 130 | 338 | 394 | 392 | 558 |
| Grp Sat Flow(s),veh/h/ln | 1344 | 1384 | 1711 | 1752 | 1811 | 1397 |
| Q Serve(g_s), s | 5.9 | 4.3 | 5.6 | 5.8 | 9.1 | 15.2 |
| Cycle Q Clear(g_c), s | 5.9 | 4.3 | 5.6 | 5.8 | 9.1 | 15.2 |
| Prop In Lane | 1.00 | 1.00 | 1.00 | | | 1.00 |
| Lane Grp Cap(c), veh/h | 257 | 264 | 509 | 1078 | 661 | 777 |
| V/C Ratio(X) | 0.65 | 0.49 | 0.66 | 0.37 | 0.59 | 0.72 |
| Avail Cap(c_a), veh/h | 338 | 349 | 612 | 1256 | 737 | 835 |
| 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 | 19.3 | 18.6 | 9.0 | 4.9 | 13.3 | 8.5 |
| Incr Delay (d2), s/veh | 2.8 | 1.4 | 2.1 | 0.2 | 1.0 | 2.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.9 | 0.1 | 1.4 | 0.9 | 2.8 | 5.5 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 22.1 | 20.1 | 11.0 | 5.1 | 14.3 | 11.2 |
| LnGrp LOS | C | C | B | A | B | B |
| Approach Vol, veh/h | 297 | | | 732 | 950 | |
| Approach Delay, s/veh | 21.2 | | | 7.8 | 12.5 | |
| Approach LOS | C | | | A | B | |
| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 |
| Phs Duration (G+Y+Rc), s | | 36.8 | | 14.9 | 12.9 | 23.9 |
| 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+I1), s | | 7.8 | | 7.9 | 7.6 | 17.2 |
| Green Ext Time (p_c), s | | 2.2 | | 0.4 | 0.3 | 1.6 |
| Intersection Summary | | | | | | |
| HCM 6th Ctrl Delay | | | 12.1 | | | |
| HCM 6th LOS | | | B | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 5 | 3 | 121 | 0 | 42 | 0 | 162 | 213 | 70 | 551 | 0 |
| Future Volume (vph) | 0 | 5 | 3 | 121 | 0 | 42 | 0 | 162 | 213 | 70 | 551 | 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: 40.7
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Lunenburg Road & Woods Lane/Fort Pond Road



| Lane Group | EBT | WBL | WBT | NBT | NBR | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 8 | 126 | 44 | 169 | 222 | 647 |
| v/c Ratio | 0.03 | 0.44 | 0.05 | 0.15 | 0.22 | 0.59 |
| Control Delay | 17.4 | 26.7 | 0.1 | 5.4 | 1.7 | 9.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 17.4 | 26.7 | 0.1 | 5.4 | 1.7 | 9.5 |
| Queue Length 50th (ft) | 1 | 21 | 0 | 13 | 0 | 73 |
| Queue Length 95th (ft) | 13 | #116 | 0 | 54 | 24 | 266 |
| Internal Link Dist (ft) | 420 | | 340 | 795 | | 920 |
| Turn Bay Length (ft) | | 65 | | | 55 | |
| Base Capacity (vph) | 320 | 289 | 925 | 1395 | 1244 | 1403 |
| 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 | 0.44 | 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.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 5 | 3 | 121 | 0 | 42 | 0 | 162 | 213 | 70 | 551 | 0 |
| Future Volume (veh/h) | 0 | 5 | 3 | 121 | 0 | 42 | 0 | 162 | 213 | 70 | 551 | 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 | 126 | 0 | 44 | 0 | 169 | 0 | 73 | 574 | 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 | 227 | 0 | 219 | 0 | 815 | | 162 | 767 | 0 |
| Arrive On Green | 0.00 | 0.01 | 0.01 | 0.13 | 0.00 | 0.13 | 0.00 | 0.47 | 0.00 | 0.47 | 0.47 | 0.00 |
| Sat Flow, veh/h | 0 | 1157 | 694 | 1735 | 0 | 1675 | 0 | 1752 | 1510 | 124 | 1650 | 0 |
| Grp Volume(v), veh/h | 0 | 0 | 8 | 126 | 0 | 44 | 0 | 169 | 0 | 647 | 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 | 2.6 | 0.0 | 0.9 | 0.0 | 2.2 | 0.0 | 5.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 0.2 | 2.6 | 0.0 | 0.9 | 0.0 | 2.2 | 0.0 | 11.6 | 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 | 227 | 0 | 219 | 0 | 815 | | 930 | 0 | 0 |
| V/C Ratio(X) | 0.00 | 0.00 | 0.34 | 0.55 | 0.00 | 0.20 | 0.00 | 0.21 | | 0.70 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 0 | 0 | 290 | 272 | 0 | 262 | 0 | 1508 | | 1616 | 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 | 18.8 | 15.6 | 0.0 | 14.9 | 0.0 | 6.1 | 0.0 | 8.5 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 8.2 | 2.1 | 0.0 | 0.4 | 0.0 | 0.1 | 0.0 | 1.0 | 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 | 0.0 | 0.1 | 1.0 | 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 | 26.9 | 17.7 | 0.0 | 15.3 | 0.0 | 6.2 | 0.0 | 9.5 | 0.0 | 0.0 |
| LnGrp LOS | A | A | C | B | A | B | A | A | | A | A | A |
| Approach Vol, veh/h | | 8 | | | 170 | | | 169 | A | | 647 | |
| Approach Delay, s/veh | | 26.9 | | | 17.1 | | | 6.2 | | | 9.5 | |
| Approach LOS | | C | | | B | | | A | | | A | |
| Timer - Assigned Phs | | 2 | | 4 | | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 22.8 | | 5.5 | | 22.8 | | 10.0 | | | | |
| 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 | | 13.6 | | 4.6 | | | | |
| Green Ext Time (p_c), s | | 0.9 | | 0.0 | | 4.3 | | 0.1 | | | | |

Intersection Summary

| | |
|---|---|
| HCM 6th Ctrl Delay | 10.4 |
| HCM 6th LOS | B |

Notes

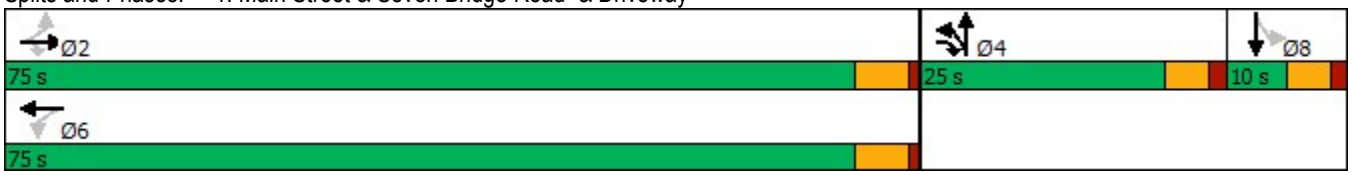
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 563 | 423 | 4 | 1241 | 0 | 315 | 0 | 3 | 0 | 0 | 0 |
| Future Volume (vph) | 0 | 563 | 423 | 4 | 1241 | 0 | 315 | 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: 97.5
Natural Cycle: 140
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Main Street & Seven Bridge Road & Driveway



| Lane Group | EBT | EBR | WBL | WBT | NBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 593 | 445 | 4 | 1306 | 335 |
| v/c Ratio | 0.47 | 0.29 | 0.01 | 1.02 | 0.82 |
| Control Delay | 7.8 | 0.5 | 4.8 | 45.8 | 46.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 7.8 | 0.5 | 4.8 | 45.8 | 46.9 |
| Queue Length 50th (ft) | 150 | 0 | 1 | ~902 | 158 |
| Queue Length 95th (ft) | 221 | 0 | 4 | #1162 | #279 |
| Internal Link Dist (ft) | 1370 | | | 920 | 920 |
| Turn Bay Length (ft) | | 115 | 50 | | |
| Base Capacity (vph) | 1272 | 1517 | 492 | 1285 | 459 |
| 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 | 0.47 | 0.29 | 0.01 | 1.02 | 0.73 |

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.

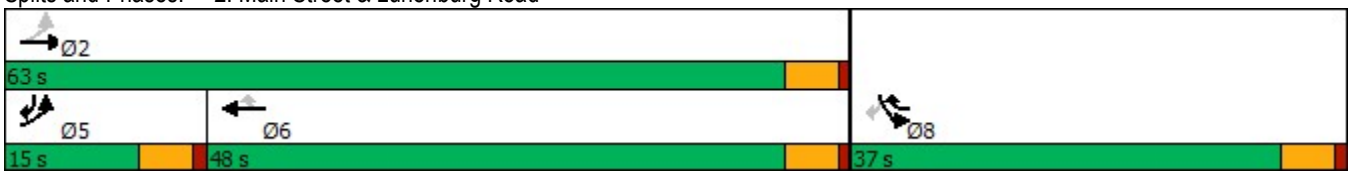
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 563 | 423 | 4 | 1241 | 0 | 315 | 0 | 3 | 0 | 0 | 0 |
| Future Volume (veh/h) | 0 | 563 | 423 | 4 | 1241 | 0 | 315 | 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 | 593 | 445 | 4 | 1306 | 0 | 332 | 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 | 1297 | 1418 | 380 | 1307 | 0 | 364 | 0 | 3 | 0 | 2 | 0 |
| Arrive On Green | 0.00 | 0.70 | 0.70 | 0.70 | 0.70 | 0.00 | 0.20 | 0.00 | 0.20 | 0.00 | 0.00 | 0.00 |
| Sat Flow, veh/h | 0 | 1856 | 1585 | 552 | 1870 | 0 | 1863 | 0 | 17 | 0 | 1900 | 0 |
| Grp Volume(v), veh/h | 0 | 593 | 445 | 4 | 1306 | 0 | 335 | 0 | 0 | 0 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1856 | 1585 | 552 | 1870 | 0 | 1880 | 0 | 0 | 0 | 1900 | 0 |
| Q Serve(g_s), s | 0.0 | 14.1 | 4.1 | 0.3 | 69.3 | 0.0 | 17.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 14.1 | 4.1 | 14.4 | 69.3 | 0.0 | 17.3 | 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 | 1297 | 1418 | 380 | 1307 | 0 | 368 | 0 | 0 | 0 | 2 | 0 |
| V/C Ratio(X) | 0.00 | 0.46 | 0.31 | 0.01 | 1.00 | 0.00 | 0.91 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 0 | 1297 | 1418 | 380 | 1307 | 0 | 378 | 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 | 6.6 | 0.8 | 9.8 | 14.9 | 0.0 | 39.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.3 | 0.1 | 0.0 | 24.7 | 0.0 | 24.6 | 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 | 4.6 | 3.3 | 0.0 | 31.6 | 0.0 | 10.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 6.9 | 0.9 | 9.8 | 39.6 | 0.0 | 63.8 | 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 | | 1038 | | | 1310 | | | 335 | | | 0 | |
| Approach Delay, s/veh | | 4.3 | | | 39.5 | | | 63.8 | | | 0.0 | |
| Approach LOS | | A | | | D | | | E | | | | |
| Timer - Assigned Phs | | 2 | | 4 | | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 75.0 | | 24.4 | | 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 | | 16.1 | | 19.3 | | 71.3 | | 0.0 | | | | |
| Green Ext Time (p_c), s | | 6.5 | | 0.1 | | 0.0 | | 0.0 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 28.9 | | | | | | | | | |
| HCM 6th LOS | | | C | | | | | | | | | |

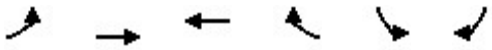
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 68 | 483 | 793 | 755 | 501 | 99 |
| Future Volume (vph) | 68 | 483 | 793 | 755 | 501 | 99 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| 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: 97.1
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Main Street & Lunenburg Road



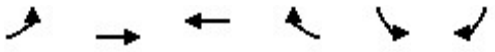


| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 72 | 508 | 835 | 795 | 527 | 104 |
| v/c Ratio | 0.34 | 0.50 | 1.06 | 0.58 | 0.95 | 0.15 |
| Control Delay | 13.7 | 14.5 | 76.6 | 2.6 | 62.4 | 16.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 13.7 | 14.5 | 76.6 | 2.6 | 62.4 | 16.0 |
| Queue Length 50th (ft) | 19 | 178 | ~575 | 22 | 315 | 36 |
| Queue Length 95th (ft) | 38 | 261 | #832 | 52 | #540 | 69 |
| Internal Link Dist (ft) | | 920 | 1370 | | 920 | |
| Turn Bay Length (ft) | 100 | | | 160 | | 240 |
| Base Capacity (vph) | 251 | 1066 | 790 | 1374 | 564 | 745 |
| 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 | 0.29 | 0.48 | 1.06 | 0.58 | 0.93 | 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.



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 68 | 483 | 793 | 755 | 501 | 99 |
| Future Volume (veh/h) | 68 | 483 | 793 | 755 | 501 | 99 |
| 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 | 795 | 527 | 104 |
| 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 | 188 | 1069 | 866 | 1249 | 561 | 595 |
| Arrive On Green | 0.05 | 0.58 | 0.47 | 0.47 | 0.31 | 0.31 |
| Sat Flow, veh/h | 1810 | 1856 | 1856 | 1598 | 1781 | 1610 |
| Grp Volume(v), veh/h | 72 | 508 | 835 | 795 | 527 | 104 |
| Grp Sat Flow(s),veh/h/ln | 1810 | 1856 | 1856 | 1598 | 1781 | 1610 |
| Q Serve(g_s), s | 1.7 | 14.7 | 40.0 | 19.9 | 26.4 | 4.0 |
| Cycle Q Clear(g_c), s | 1.7 | 14.7 | 40.0 | 19.9 | 26.4 | 4.0 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 188 | 1069 | 866 | 1249 | 561 | 595 |
| V/C Ratio(X) | 0.38 | 0.48 | 0.96 | 0.64 | 0.94 | 0.17 |
| Avail Cap(c_a), veh/h | 285 | 1173 | 870 | 1252 | 621 | 650 |
| 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 | 20.7 | 11.3 | 23.7 | 4.4 | 30.6 | 19.5 |
| Incr Delay (d2), s/veh | 0.5 | 0.3 | 22.1 | 1.1 | 20.6 | 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 | 0.7 | 5.5 | 21.3 | 17.0 | 13.6 | 1.4 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 21.2 | 11.7 | 45.8 | 5.4 | 51.1 | 19.5 |
| LnGrp LOS | C | B | D | A | D | B |
| Approach Vol, veh/h | | 580 | 1630 | | 631 | |
| Approach Delay, s/veh | | 12.9 | 26.1 | | 45.9 | |
| Approach LOS | | B | C | | D | |

| Timer - Assigned Phs | | 2 | | | 5 | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 57.8 | | | 10.0 | 47.8 | 33.9 |
| 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 | | 16.7 | | | 3.7 | 42.0 | 28.4 |
| Green Ext Time (p_c), s | | 3.5 | | | 0.0 | 0.8 | 0.5 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 27.8 |
| HCM 6th LOS | C |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 473 | 269 | 208 | 649 | 344 | 341 |
| Future Volume (vph) | 473 | 269 | 208 | 649 | 344 | 341 |
| 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: 55.4
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Lunenburg Road & McGovern Boulevard

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 493 | 280 | 217 | 676 | 358 | 355 |
| v/c Ratio | 0.84 | 0.39 | 0.56 | 0.76 | 0.74 | 0.30 |
| Control Delay | 33.8 | 4.2 | 14.9 | 18.9 | 28.3 | 1.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 33.8 | 4.2 | 14.9 | 18.9 | 28.3 | 1.2 |
| Queue Length 50th (ft) | 152 | 0 | 41 | 177 | 110 | 3 |
| Queue Length 95th (ft) | #317 | 43 | 77 | 298 | 190 | 19 |
| Internal Link Dist (ft) | 920 | | | 920 | 4220 | |
| Turn Bay Length (ft) | | | 200 | | | 200 |
| Base Capacity (vph) | 638 | 748 | 390 | 1004 | 601 | 1232 |
| 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 | 0.77 | 0.37 | 0.56 | 0.67 | 0.60 | 0.29 |

Intersection Summary

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

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 473 | 269 | 208 | 649 | 344 | 341 |
| Future Volume (veh/h) | 473 | 269 | 208 | 649 | 344 | 341 |
| 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 | 493 | 280 | 217 | 676 | 358 | 355 |
| 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 | 584 | 519 | 412 | 892 | 475 | 942 |
| Arrive On Green | 0.32 | 0.32 | 0.11 | 0.48 | 0.26 | 0.26 |
| Sat Flow, veh/h | 1810 | 1610 | 1810 | 1870 | 1811 | 1610 |
| Grp Volume(v), veh/h | 493 | 280 | 217 | 676 | 358 | 355 |
| Grp Sat Flow(s),veh/h/ln | 1810 | 1610 | 1810 | 1870 | 1811 | 1610 |
| Q Serve(g_s), s | 12.7 | 7.1 | 4.0 | 14.8 | 9.1 | 5.9 |
| Cycle Q Clear(g_c), s | 12.7 | 7.1 | 4.0 | 14.8 | 9.1 | 5.9 |
| Prop In Lane | 1.00 | 1.00 | 1.00 | | | 1.00 |
| Lane Grp Cap(c), veh/h | 584 | 519 | 412 | 892 | 475 | 942 |
| V/C Ratio(X) | 0.84 | 0.54 | 0.53 | 0.76 | 0.75 | 0.38 |
| Avail Cap(c_a), veh/h | 725 | 645 | 422 | 1143 | 690 | 1133 |
| 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 | 15.7 | 13.9 | 11.4 | 10.7 | 16.9 | 5.5 |
| Incr Delay (d2), s/veh | 7.5 | 0.9 | 1.2 | 2.2 | 2.8 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 5.6 | 6.6 | 1.2 | 4.2 | 3.2 | 3.0 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 23.3 | 14.7 | 12.5 | 12.9 | 19.7 | 5.8 |
| LnGrp LOS | C | B | B | B | B | A |
| Approach Vol, veh/h | 773 | | | 893 | 713 | |
| Approach Delay, s/veh | 20.2 | | | 12.8 | 12.7 | |
| Approach LOS | C | | | B | B | |
| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 |
| Phs Duration (G+Y+Rc), s | | 28.8 | | 21.1 | 10.7 | 18.1 |
| 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 | | 16.8 | | 14.7 | 6.0 | 11.1 |
| Green Ext Time (p_c), s | | 3.4 | | 1.4 | 0.0 | 2.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 15.2 |
| HCM 6th LOS | B |

Notes

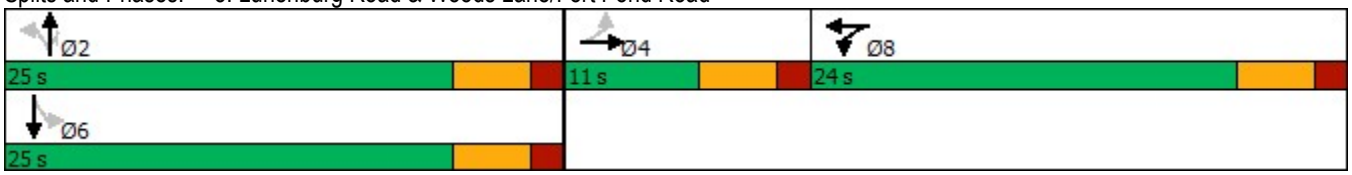
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 4 | 404 | 0 | 327 | 2 | 508 | 363 | 31 | 218 | 1 |
| Future Volume (vph) | 0 | 0 | 4 | 404 | 0 | 327 | 2 | 508 | 363 | 31 | 218 | 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: 48
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Lunenburg Road & Woods Lane/Fort Pond Road



| Lane Group | EBT | WBL | WBT | NBT | NBR | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 5 | 459 | 372 | 579 | 413 | 284 |
| v/c Ratio | 0.01 | 0.70 | 0.45 | 0.77 | 0.55 | 0.53 |
| Control Delay | 0.0 | 21.9 | 4.7 | 24.3 | 9.8 | 17.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 0.0 | 21.9 | 4.7 | 24.3 | 9.8 | 17.5 |
| Queue Length 50th (ft) | 0 | 100 | 6 | 130 | 37 | 56 |
| Queue Length 95th (ft) | 0 | #261 | 57 | #372 | 135 | #160 |
| Internal Link Dist (ft) | 420 | | 340 | 795 | | 920 |
| Turn Bay Length (ft) | | 65 | | | 55 | |
| Base Capacity (vph) | 493 | 788 | 933 | 773 | 769 | 553 |
| 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 | 0.58 | 0.40 | 0.75 | 0.54 | 0.51 |

Intersection Summary

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 4 | 404 | 0 | 327 | 2 | 508 | 363 | 31 | 218 | 1 |
| Future Volume (veh/h) | 0 | 0 | 4 | 404 | 0 | 327 | 2 | 508 | 363 | 31 | 218 | 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 | 459 | 0 | 372 | 2 | 577 | 0 | 35 | 248 | 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 | 576 | 0 | 533 | 76 | 674 | | 125 | 600 | 2 |
| Arrive On Green | 0.00 | 0.00 | 0.01 | 0.32 | 0.00 | 0.32 | 0.36 | 0.36 | 0.00 | 0.36 | 0.36 | 0.36 |
| Sat Flow, veh/h | 0 | 0 | 1675 | 1809 | 0 | 1675 | 1 | 1883 | 1585 | 112 | 1678 | 6 |
| Grp Volume(v), veh/h | 0 | 0 | 5 | 459 | 0 | 372 | 579 | 0 | 0 | 284 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 0 | 0 | 1675 | 1809 | 0 | 1675 | 1884 | 0 | 1585 | 1796 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.1 | 11.0 | 0.0 | 9.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 0.1 | 11.0 | 0.0 | 9.3 | 13.5 | 0.0 | 0.0 | 5.4 | 0.0 | 0.0 |
| Prop In Lane | 0.00 | | 1.00 | 1.00 | | 1.00 | 0.00 | | 1.00 | 0.12 | | 0.00 |
| Lane Grp Cap(c), veh/h | 0 | 0 | 14 | 576 | 0 | 533 | 750 | 0 | | 728 | 0 | 0 |
| V/C Ratio(X) | 0.00 | 0.00 | 0.37 | 0.80 | 0.00 | 0.70 | 0.77 | 0.00 | | 0.39 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 0 | 0 | 211 | 723 | 0 | 669 | 869 | 0 | | 831 | 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 | 23.5 | 14.8 | 0.0 | 14.2 | 14.1 | 0.0 | 0.0 | 11.5 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 16.0 | 5.0 | 0.0 | 2.3 | 3.7 | 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 | 4.4 | 0.0 | 3.2 | 5.3 | 0.0 | 0.0 | 1.9 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 0.0 | 39.5 | 19.8 | 0.0 | 16.5 | 17.9 | 0.0 | 0.0 | 11.9 | 0.0 | 0.0 |
| LnGrp LOS | A | A | D | B | A | B | B | A | | B | A | A |
| Approach Vol, veh/h | | 5 | | | 831 | | | 579 | A | | 284 | |
| Approach Delay, s/veh | | 39.5 | | | 18.3 | | | 17.9 | | | 11.9 | |
| Approach LOS | | D | | | B | | | B | | | B | |
| Timer - Assigned Phs | | 2 | | 4 | | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 22.0 | | 5.4 | | 22.0 | | 20.1 | | | | |
| 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 | | 15.5 | | 2.1 | | 7.4 | | 13.0 | | | | |
| Green Ext Time (p_c), s | | 1.5 | | 0.0 | | 1.3 | | 2.1 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 17.1 |
| HCM 6th LOS | B |

Notes

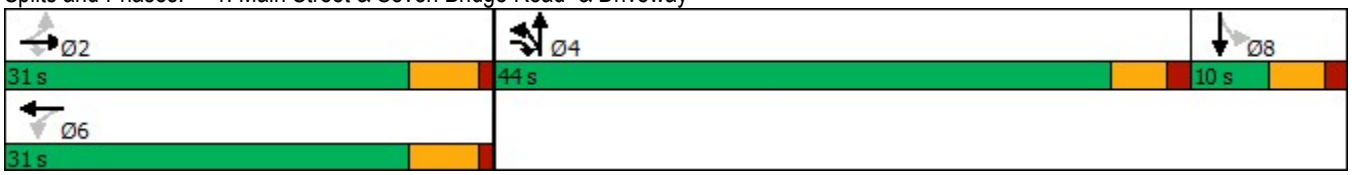
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 1 | 67 | 797 | 5 | 282 | 1 | 527 | 2 | 28 | 0 | 2 | 0 |
| Future Volume (vph) | 1 | 67 | 797 | 5 | 282 | 1 | 527 | 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: 57.5
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Main Street & Seven Bridge Road & Driveway



| Lane Group | EBT | EBR | WBL | WBT | NBT | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 82 | 960 | 6 | 341 | 671 | 2 |
| v/c Ratio | 0.16 | 0.64 | 0.02 | 0.63 | 0.72 | 0.01 |
| Control Delay | 18.8 | 2.2 | 18.6 | 25.8 | 18.0 | 34.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 18.8 | 2.2 | 18.6 | 25.8 | 18.0 | 34.0 |
| Queue Length 50th (ft) | 19 | 0 | 1 | 93 | 150 | 1 |
| Queue Length 95th (ft) | 61 | 8 | 10 | 220 | 366 | 7 |
| Internal Link Dist (ft) | 1370 | | | 920 | 920 | 120 |
| Turn Bay Length (ft) | | 115 | 50 | | | |
| Base Capacity (vph) | 852 | 1508 | 604 | 881 | 1406 | 180 |
| 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 | 0.10 | 0.64 | 0.01 | 0.39 | 0.48 | 0.01 |

Intersection Summary

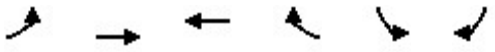
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 1 | 67 | 797 | 5 | 282 | 1 | 527 | 2 | 28 | 0 | 2 | 0 |
| Future Volume (veh/h) | 1 | 67 | 797 | 5 | 282 | 1 | 527 | 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 | 81 | 960 | 6 | 340 | 1 | 635 | 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 | 680 | 1224 | 292 | 696 | 2 | 711 | 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 | 1836 | 1585 | 551 | 1879 | 6 | 1770 | 6 | 95 | 0 | 1900 | 0 |
| Grp Volume(v), veh/h | 82 | 0 | 960 | 6 | 0 | 341 | 671 | 0 | 0 | 0 | 2 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1838 | 0 | 1585 | 551 | 0 | 1884 | 1870 | 0 | 0 | 0 | 1900 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 24.1 | 0.5 | 0.0 | 9.6 | 23.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Cycle Q Clear(g_c), s | 2.0 | 0.0 | 24.1 | 2.5 | 0.0 | 9.6 | 23.0 | 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 | 734 | 0 | 1224 | 292 | 0 | 698 | 752 | 0 | 0 | 0 | 5 | 0 |
| V/C Ratio(X) | 0.11 | 0.00 | 0.78 | 0.02 | 0.00 | 0.49 | 0.89 | 0.00 | 0.00 | 0.00 | 0.39 | 0.00 |
| Avail Cap(c_a), veh/h | 734 | 0 | 1224 | 292 | 0 | 698 | 1059 | 0 | 0 | 0 | 138 | 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 | 14.3 | 0.0 | 4.5 | 15.1 | 0.0 | 16.7 | 19.2 | 0.0 | 0.0 | 0.0 | 34.3 | 0.0 |
| Incr Delay (d2), s/veh | 0.1 | 0.0 | 3.4 | 0.0 | 0.0 | 0.5 | 5.8 | 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 | 0.8 | 0.0 | 16.5 | 0.1 | 0.0 | 3.8 | 9.9 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 14.4 | 0.0 | 8.0 | 15.1 | 0.0 | 17.2 | 25.0 | 0.0 | 0.0 | 0.0 | 50.8 | 0.0 |
| LnGrp LOS | B | A | A | B | A | B | C | A | A | A | D | A |
| Approach Vol, veh/h | | 1042 | | | 347 | | | 671 | | | 2 | |
| Approach Delay, s/veh | | 8.5 | | | 17.2 | | | 25.0 | | | 50.8 | |
| Approach LOS | | A | | | B | | | C | | | D | |
| Timer - Assigned Phs | | 2 | | 4 | | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 31.0 | | 32.7 | | 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 | | 26.1 | | 25.0 | | 11.6 | | 2.1 | | | | |
| Green Ext Time (p_c), s | | 0.0 | | 2.6 | | 1.7 | | 0.0 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 15.3 | | | | | | | | | |
| HCM 6th LOS | | | B | | | | | | | | | |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 61 | 384 | 413 | 398 | 478 | 59 |
| Future Volume (vph) | 61 | 384 | 413 | 398 | 478 | 59 |
| 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: 65.1
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

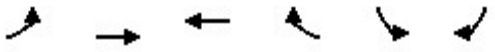
Splits and Phases: 2: Main Street & Lunenburg Road



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 64 | 404 | 435 | 419 | 503 | 62 |
| v/c Ratio | 0.18 | 0.48 | 0.74 | 0.32 | 0.81 | 0.07 |
| Control Delay | 11.1 | 14.1 | 29.8 | 0.9 | 33.2 | 9.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 11.1 | 14.1 | 29.8 | 0.9 | 33.2 | 9.2 |
| Queue Length 50th (ft) | 14 | 107 | 165 | 0 | 189 | 12 |
| Queue Length 95th (ft) | 35 | 190 | 296 | 16 | #407 | 34 |
| Internal Link Dist (ft) | | 920 | 1370 | | 920 | |
| Turn Bay Length (ft) | 100 | | | 160 | | 240 |
| Base Capacity (vph) | 421 | 1275 | 930 | 1360 | 884 | 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 | 0.32 | 0.47 | 0.31 | 0.57 | 0.06 |

Intersection Summary

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



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 61 | 384 | 413 | 398 | 478 | 59 |
| Future Volume (veh/h) | 61 | 384 | 413 | 398 | 478 | 59 |
| 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 | 64 | 404 | 435 | 419 | 503 | 62 |
| 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 | 337 | 918 | 600 | 1024 | 571 | 628 |
| Arrive On Green | 0.07 | 0.49 | 0.32 | 0.32 | 0.32 | 0.32 |
| Sat Flow, veh/h | 1781 | 1885 | 1870 | 1598 | 1781 | 1610 |
| Grp Volume(v), veh/h | 64 | 404 | 435 | 419 | 503 | 62 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1885 | 1870 | 1598 | 1781 | 1610 |
| Q Serve(g_s), s | 1.1 | 7.3 | 10.7 | 6.6 | 13.9 | 1.3 |
| Cycle Q Clear(g_c), s | 1.1 | 7.3 | 10.7 | 6.6 | 13.9 | 1.3 |
| Prop In Lane | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 337 | 918 | 600 | 1024 | 571 | 628 |
| V/C Ratio(X) | 0.19 | 0.44 | 0.73 | 0.41 | 0.88 | 0.10 |
| Avail Cap(c_a), veh/h | 557 | 1636 | 1082 | 1436 | 1030 | 1044 |
| 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 | 10.5 | 8.7 | 15.6 | 4.5 | 16.7 | 10.0 |
| 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 | 2.3 | 4.1 | 3.9 | 4.6 | 0.3 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 10.6 | 9.0 | 17.3 | 4.8 | 18.5 | 10.1 |
| LnGrp LOS | B | A | B | A | B | B |
| Approach Vol, veh/h | | 468 | 854 | | 565 | |
| Approach Delay, s/veh | | 9.2 | 11.2 | | 17.6 | |
| Approach LOS | | A | B | | B | |

| Timer - Assigned Phs | | 2 | | | 5 | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 30.2 | | | 8.6 | 21.6 | 21.6 |
| Change Period (Y+Rc), s | | 5.0 | | | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | | 45.0 | | | 10.0 | 30.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | | 9.3 | | | 3.1 | 12.7 | 15.9 |
| Green Ext Time (p_c), s | | 2.6 | | | 0.0 | 4.0 | 0.7 |

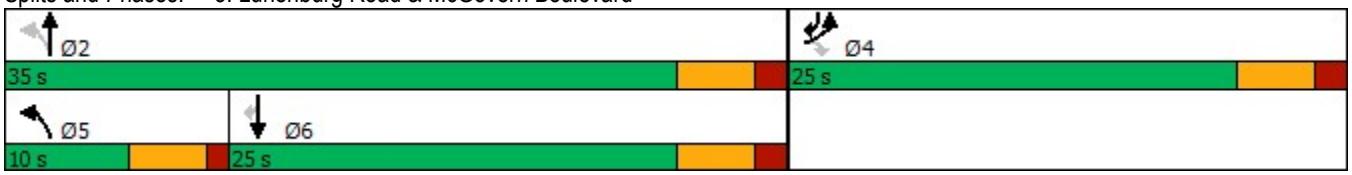
| Intersection Summary | | | |
|---|---|---|---|
| HCM 6th Ctrl Delay | | 12.6 | |
| HCM 6th LOS | | B | |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 156 | 115 | 111 | 356 | 425 | 170 |
| Future Volume (vph) | 156 | 115 | 111 | 356 | 425 | 170 |
| 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: 46.2
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Lunenburg Road & McGovern Boulevard



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 170 | 125 | 121 | 387 | 462 | 185 |
| v/c Ratio | 0.46 | 0.29 | 0.28 | 0.39 | 0.66 | 0.16 |
| Control Delay | 20.9 | 5.9 | 7.1 | 7.8 | 19.3 | 0.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 20.9 | 5.9 | 7.1 | 7.8 | 19.3 | 0.8 |
| Queue Length 50th (ft) | 42 | 0 | 13 | 49 | 105 | 0 |
| Queue Length 95th (ft) | 89 | 31 | 37 | 119 | #251 | 10 |
| Internal Link Dist (ft) | 920 | | | 920 | 4220 | |
| Turn Bay Length (ft) | | | 200 | | | 200 |
| Base Capacity (vph) | 744 | 735 | 425 | 1198 | 806 | 1351 |
| 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 | 0.17 | 0.28 | 0.32 | 0.57 | 0.14 |

Intersection Summary

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

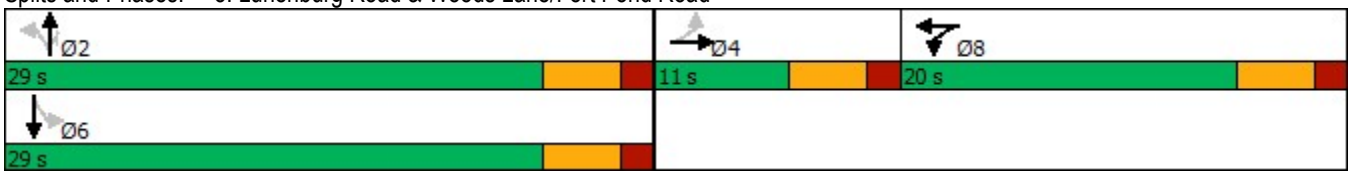
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 156 | 115 | 111 | 356 | 425 | 170 |
| Future Volume (veh/h) | 156 | 115 | 111 | 356 | 425 | 170 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 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 | 170 | 125 | 121 | 387 | 462 | 185 |
| 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 | 278 | 247 | 463 | 1041 | 632 | 770 |
| Arrive On Green | 0.16 | 0.16 | 0.10 | 0.56 | 0.34 | 0.34 |
| Sat Flow, veh/h | 1739 | 1547 | 1739 | 1856 | 1870 | 1547 |
| Grp Volume(v), veh/h | 170 | 125 | 121 | 387 | 462 | 185 |
| Grp Sat Flow(s),veh/h/ln | 1739 | 1547 | 1739 | 1856 | 1870 | 1547 |
| Q Serve(g_s), s | 3.3 | 2.6 | 1.4 | 4.1 | 7.8 | 2.4 |
| Cycle Q Clear(g_c), s | 3.3 | 2.6 | 1.4 | 4.1 | 7.8 | 2.4 |
| Prop In Lane | 1.00 | 1.00 | 1.00 | | | 1.00 |
| Lane Grp Cap(c), veh/h | 278 | 247 | 463 | 1041 | 632 | 770 |
| V/C Ratio(X) | 0.61 | 0.51 | 0.26 | 0.37 | 0.73 | 0.24 |
| Avail Cap(c_a), veh/h | 971 | 864 | 560 | 1555 | 1045 | 1111 |
| 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 | 14.0 | 13.8 | 6.6 | 4.4 | 10.4 | 5.1 |
| Incr Delay (d2), s/veh | 2.2 | 1.6 | 0.3 | 0.2 | 1.7 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.2 | 0.1 | 0.2 | 0.3 | 2.0 | 0.6 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 16.2 | 15.4 | 6.9 | 4.6 | 12.1 | 5.3 |
| LnGrp LOS | B | B | A | A | B | A |
| Approach Vol, veh/h | 295 | | | 508 | 647 | |
| Approach Delay, s/veh | 15.8 | | | 5.1 | 10.1 | |
| Approach LOS | B | | | A | B | |
| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 |
| Phs Duration (G+Y+Rc), s | | 25.1 | | 10.7 | 8.0 | 17.1 |
| 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 | | 5.3 | 3.4 | 9.8 |
| Green Ext Time (p_c), s | | 2.0 | | 0.8 | 0.1 | 2.3 |
| Intersection Summary | | | | | | |
| HCM 6th Ctrl Delay | | | 9.5 | | | |
| HCM 6th LOS | | | A | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 3 | 229 | 1 | 75 | 1 | 226 | 178 | 51 | 231 | 0 |
| Future Volume (vph) | 0 | 0 | 3 | 229 | 1 | 75 | 1 | 226 | 178 | 51 | 231 | 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: 38.6
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Lunenburg Road & Woods Lane/Fort Pond Road



| Lane Group | EBT | WBL | WBT | NBT | NBR | SBT |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 4 | 269 | 89 | 267 | 209 | 332 |
| v/c Ratio | 0.01 | 0.50 | 0.17 | 0.37 | 0.28 | 0.52 |
| Control Delay | 0.0 | 16.7 | 5.4 | 11.0 | 3.1 | 13.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 0.0 | 16.7 | 5.4 | 11.0 | 3.1 | 13.4 |
| Queue Length 50th (ft) | 0 | 36 | 0 | 31 | 0 | 41 |
| Queue Length 95th (ft) | 0 | 139 | 26 | 110 | 28 | 145 |
| Internal Link Dist (ft) | 420 | | 420 | 795 | | 920 |
| Turn Bay Length (ft) | | 65 | | | 55 | |
| Base Capacity (vph) | 628 | 814 | 755 | 1157 | 1074 | 1024 |
| 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 | 0.33 | 0.12 | 0.23 | 0.19 | 0.32 |

Intersection Summary

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 3 | 229 | 1 | 75 | 1 | 226 | 178 | 51 | 231 | 0 |
| Future Volume (veh/h) | 0 | 0 | 3 | 229 | 1 | 75 | 1 | 226 | 178 | 51 | 231 | 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 | 269 | 1 | 88 | 1 | 266 | 0 | 60 | 272 | 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 | 394 | 4 | 358 | 113 | 567 | | 190 | 467 | 0 |
| Arrive On Green | 0.00 | 0.00 | 0.01 | 0.22 | 0.22 | 0.22 | 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 | 187 | 1500 | 0 |
| Grp Volume(v), veh/h | 0 | 0 | 4 | 269 | 0 | 89 | 267 | 0 | 0 | 332 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 0 | 0 | 1675 | 1823 | 0 | 1677 | 1825 | 0 | 1572 | 1688 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.1 | 4.4 | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 | 1.4 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 0.1 | 4.4 | 0.0 | 1.4 | 3.8 | 0.0 | 0.0 | 5.2 | 0.0 | 0.0 |
| Prop In Lane | 0.00 | | 1.00 | 1.00 | | 0.99 | 0.00 | | 1.00 | 0.18 | | 0.00 |
| Lane Grp Cap(c), veh/h | 0 | 0 | 11 | 394 | 0 | 362 | 680 | 0 | | 657 | 0 | 0 |
| V/C Ratio(X) | 0.00 | 0.00 | 0.36 | 0.68 | 0.00 | 0.25 | 0.39 | 0.00 | | 0.51 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 0 | 0 | 312 | 851 | 0 | 783 | 1473 | 0 | | 1359 | 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 | 15.9 | 11.6 | 0.0 | 10.4 | 8.9 | 0.0 | 0.0 | 9.4 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 19.1 | 2.1 | 0.0 | 0.3 | 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 | 1.5 | 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 | 35.0 | 13.7 | 0.0 | 10.8 | 9.3 | 0.0 | 0.0 | 10.0 | 0.0 | 0.0 |
| LnGrp LOS | A | A | C | B | A | B | A | A | | A | A | A |
| Approach Vol, veh/h | | 4 | | | 358 | | | 267 | A | | 332 | |
| Approach Delay, s/veh | | 35.0 | | | 13.0 | | | 9.3 | | | 10.0 | |
| 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 | | 11.9 | | | | |
| 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 | | 5.8 | | 2.1 | | 7.2 | | 6.4 | | | | |
| Green Ext Time (p_c), s | | 1.3 | | 0.0 | | 1.8 | | 0.9 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 11.0 |
| HCM 6th LOS | B |

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

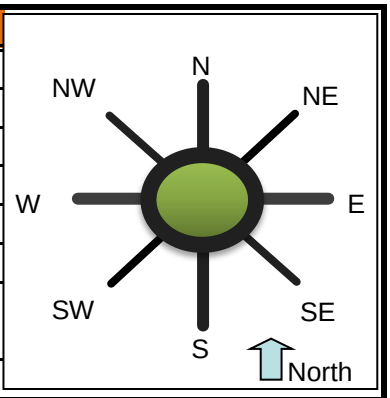
# Appendix M

Sensitivity Capacity and Queue Analysis Worksheets

## General & Site Information

v 4.2

| | |
|---|---|
| Analyst: | Justin Wadsworth |
| Agency/Co: | TEC, Inc. |
| Date: | 5/4/2021 |
| 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) |
|---|---|---|---|---|---|---|---|---|---|
| | N (1), vph | | | 63 | | 228 | | 36 | |
| Exit | NE (2), vph | | | | | | | | |
| Legs | E (3), vph | 281 | | | | 172 | | 162 | |
| (TO) | SE (4), vph | | | | | | | | |
| | S (5), vph | 297 | | 242 | | | | 128 | |
| | SW (6), vph | | | | | | | | |
| | W (7), vph | 49 | | 27 | | 83 | | | |
| | NW (8), vph | | | | | | | | |
| Output | Total Vehicles | 627 | 0 | 332 | 0 | 483 | 0 | 326 | 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 | 260 | 0 | 38 | 0 |
| NE (2), pcu/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E (3), pcu/h | 302 | 0 | 0 | 0 | 196 | 0 | 172 | 0 |
| SE (4), pcu/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| S (5), pcu/h | 319 | 0 | 275 | 0 | 0 | 0 | 136 | 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 | 674 | 0 | 377 | 0 | 552 | 0 | 347 | 0 |
| Conflicting flow, pcu/h | 400 | 0 | 394 | 0 | 513 | 0 | 896 | 0 |

## Results: Approach Measures of Effectiveness

| HCM 6th Edition | N | NE | E | SE | S | SW | W | NW |
|---|---|---|---|---|---|---|---|---|
| Entry Capacity, vph | 877 | NA | 839 | NA | 738 | NA | 536 | NA |
| Entry Flow Rates, vph | 644 | 0 | 342 | 0 | 498 | 0 | 336 | 0 |
| **V/C ratio** | **0.73** | | **0.41** | | **0.67** | | **0.63** | |
| **Control Delay, sec/pcu** | **18.2** | | **9.3** | | **17.7** | | **20.5** | |
| LOS | C | | A | | C | | C | |
| **Average Queue (ft)** | 81 | | 22 | | 61 | | 48 | |
| **95th % Queue (ft)** | **176** | | **55** | | **146** | | **111** | |

## Overall Intersection Measures of Effectiveness

| Int Control Delay (sec) | 16.8 | Int LOS | C | Max Approach V/C | 0.73 |
|---|---|---|---|---|---|

**Notes:** v 4.2

Unit Legend:
vph = vehicles per hour
PHF = peak hour factor
$F_{HV}$ = heavy vehicle factor
pcu = passenger car unit

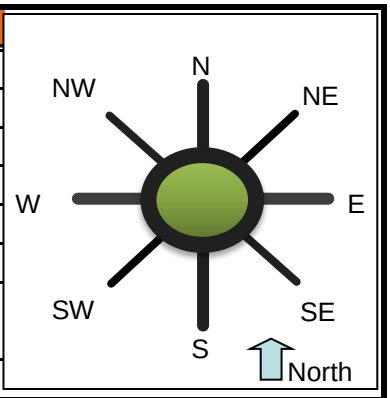
## Bypass Lane Merge Point Analysis (if applicable)

| 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: | Justin Wadsworth |
| 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) |
| | N (1), vph | | | 143 | | 536 | | 77 | |
| Exit | NE (2), vph | | | | | | | | |
| Legs | E (3), vph | 56 | | | | 104 | | 50 | |
| (TO) | SE (4), vph | | | | | | | | |
| | S (5), vph | 264 | | 155 | | | | 164 | |
| | SW (6), vph | | | | | | | | |
| | W (7), vph | 275 | | 81 | | 250 | | | |
| | NW (8), vph | | | | | | | | |
| Output | Total Vehicles | 595 | 0 | 379 | 0 | 890 | 0 | 291 | 0 |

## Volume Characteristics

| 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

| Entry/Conflicting Flows | N | NE | E | SE | S | SW | W | NW |
|---|---|---|---|---|---|---|---|---|
| Flow to Leg # N (1), pcu/h | 0 | 0 | 150 | 0 | 547 | 0 | 78 | 0 |
| NE (2), pcu/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E (3), pcu/h | 59 | 0 | 0 | 0 | 106 | 0 | 51 | 0 |
| SE (4), pcu/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| S (5), pcu/h | 278 | 0 | 163 | 0 | 0 | 0 | 166 | 0 |
| SW (6), pcu/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W (7), pcu/h | 289 | 0 | 85 | 0 | 255 | 0 | 0 | 0 |
| NW (8), pcu/h | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Entry flow, pcu/h | 626 | 0 | 397 | 0 | 909 | 0 | 294 | 0 |
| Conflicting flow, pcu/h | 503 | 0 | 880 | 0 | 187 | 0 | 499 | 0 |

## Results: Approach Measures of Effectiveness

| HCM 6th Edition | N | NE | E | SE | S | SW | W | NW |
|---|---|---|---|---|---|---|---|---|
| Entry Capacity, vph | 794 | NA | 542 | NA | 1128 | NA | 830 | NA |
| Entry Flow Rates, vph | 601 | 0 | 383 | 0 | 899 | 0 | 294 | 0 |
| **V/C ratio** | **0.76** | | **0.71** | | **0.80** | | **0.35** | |
| **Control Delay, sec/pcu** | **21.0** | | **24.6** | | **18.4** | | **8.5** | |
| LOS | C | | C | | C | | A | |
| **Average Queue (ft)** | 88 | | 65 | | 115 | | 17 | |
| **95th % Queue (ft)** | **187** | | **146** | | **227** | | **40** | |

## Overall Intersection Measures of Effectiveness

| Int Control Delay (sec) | 18.8 | Int LOS | C | Max Approach V/C | 0.80 |
|---|---|---|---|---|---|

**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* | | | | | | |