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# **Traffic Impact Study**

**Prepared For  
Polar Views, LLC**

**Located at**

**39 Lamartine Street  
Worcester, MA**



**August 2024**

TABLE OF CONTENTS

	<u>Page</u>
1) INTRODUCTION	3
Project Description	3
2) EXISTING CONDITIONS	5
Study Area Roadway Network	5
Traffic Volumes	7
Safety Concerns	9
Existing Conditions Summary	15
3) FUTURE CONDITIONS	16
Site Generated Traffic	16
Trip Distribution and Assignment	17
Site Access and Circulation	18
4) TRAFFIC OPERATIONS	23
Traffic Operations Measures	23
Existing Conditions	23
Future Conditions	24
5) FINDINGS	28
Conclusion & Recommendations	28

# 1

## INTRODUCTION

Polar Views, LLC, hereafter referred to as the applicant, is proposing the development of a parcel of land totaling 18,154 square feet (sf) to construct a six-story building housing a total of 36 apartment units and 1,581-sf of first floor retail. The proposed development is located behind 25 Meade Street, the Department of Inspectional Services offices in Worcester, Massachusetts. The applicant is proposing to evaluate the impact of this development on area roadway traffic and consider any improvements that may be necessary to make this development feasible and acceptable. This traffic study is prepared to make this evaluation. The purpose of this traffic study is to develop an understanding of existing traffic operations and concerns, forecast future site generated traffic, assess the adequacy of the existing roadway system to accommodate the proposed development into the future, and to identify and recommend appropriate mitigation strategies, should any be deemed necessary.

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### **Project Description**

The applicant proposes to develop an 18,154-sf parcel of land and construct a total of 36 apartment units and a 1,581-sf retail space on the first floor. This parcel of land is currently vacant with no structures on it. All units will be accessed via an underground entrance driveway from Meade Street and an at-grade garage entrance from Grosvenor Street. These driveways will provide access to all 40 proposed off-street parking spaces. The Meade Street driveway is 24 feet wide while the Grosvenor Street driveway is 28 feet wide, both of which are designed to provide two-way traffic circulation. Of the 40 parking spaces, 13 will be underground and the remaining 27 parking spaces will be at grade. Also, three parking spaces will be designed and designated as handicap parking spaces and strategically located near elevators and stairways within the parking areas. Finally, six of the ground level parking spaces will be equipped with Electric Vehicle (EV) charging devices.

The proposed site is in the Business, General (BG-3.0) zoning district and is currently vacant as its approximate location is shown in the aerial photograph in Figure 1.

Figure 1 - Proposed Apartment Building and Retail Development Site



## 2

# EXISTING CONDITIONS

Evaluation of the transportation impacts associated with the proposed mixed-use development project requires an understanding of the existing transportation system in the immediate vicinity of the site. Evaluating the existing study area streets operating conditions necessitates an examination of existing roadway traffic volumes, geometric features, and local community traffic-related issues. Each of these elements is described below.

### **Study Area Roadway Network**

In consultation with the city of Worcester Department of Transportation and Mobility (DTM), the study area for this traffic impact report has been defined to include the evaluation of the following intersections.

- Intersection of Lafayette Street and Grosvenor Street
- Intersection of Lafayette Street and Meade Street
- Intersection of Meade Street and Lamartine Street
- Intersection of Grosvenor Street and Lamartine Street
- Intersection of Lamartine Street, Lodi Street, Green Island Boulevard and Hermon Street

Additionally, per Worcester DTM, a total of eight Automatic Traffic Recorders (ATRs) were placed at the following locations.

- Across Hermon Street
- Across Lodi Street
- Across Lamartine Street east of Lodi Street
- Across Lamartine Street west of Lodi Street
- Across Green Island Boulevard
- Across Grosvenor Street
- Across Meade Street
- Across Lafayette Street

**Lamartine Street** is a two-way street with one travel lane in each direction. It intersects Quinsigamond Avenue at its terminus in a southwesterly direction and it intersects Millbury Street at its easterly end. It is flat and straight in the vicinity of the proposed site. The segment of Lamartine Street located between Quinsigamond Avenue and Green Island Boulevard that was recently reconstructed is 40 feet in width and it features bike lanes in both directions and on-street parking on the northeasterly side of the street. It is striped with double yellow center lines and its southwesterly approach at Quinsigamond Avenue is controlled by a fully actuated traffic signal system and its northeasterly approach at Green Island Boulevard is controlled by a stop sign. The section of Lamartine Street between Green Island Boulevard and Millbury

Street is 28 feet wide and was also recently reconstructed with new sidewalks and Americans with Disability Act (ADA) compliant handicap ramps. The north side of this section of Lamartine Street is posted with temporary no parking anytime signs, possibly for construction reasons. The approaches of this segment are also controlled by stop signs at Green Island Boulevard, Washington Street, Harding Street, and Millbury Street. This section is also striped with double yellow center lines. Finally, there are crosswalk markings across Lamartine Street at all its above-mentioned intersections. Land use along Lamartine Street is a combination of commercial and industrial uses.

**Meade Street** is a two-way street and traverses in the northerly and southerly directions. It has one lane of travel in each direction and its pavement width is 28 feet. It provides sidewalks on both sides of the street. It is 590 feet long and it intersects Lamartine Street to the north forming a “T” intersection and Lafayette Street to the south forming another “T” intersection. The land use on the southern half of the street is residential, consisting mostly of double and triple-deckers. The northerly half consists of the Worcester Department of Inspectional Services building on the west side and a parking lot serving that department as well as for Polar Park events on the east side. Presently, there are no on-street parking restrictions on Meade Street to accommodate the residential uses, except a dedicated handicap parking space in front of number 12 Meade Street, a 100-foot No Parking Anytime (NPA) on the west side of Meade Street from a point just north of the Worcester Inspectional Services Department building entrance in the northerly direction, and a distance of 250 feet NPA on the east side of the street from Lamartine Street southerly.

**Grosvenor Street** is also a two-way street with a pavement width of 28 feet. It also has sidewalks on both sides of the street. It runs parallel to Meade Street and is the same length at 590 feet. It intersects Lamartine Street to the north forming a “T” intersection and Lafayette Street to the south forming another “T” intersection. The land use consists of entirely residential double and triple-deckers, except the portion that abuts the Department of Inspectional Services. Presently, there are no on-street parking restrictions on Grosvenor Street to accommodate the residential uses, except for a dedicated handicap parking space in front of number 31 Grosvenor Street and one in front of number 46 Grosvenor Street.

**Intersection of Meade Street and Lamartine Street** is a three-legged intersection, and its northbound approach is controlled by a stop sign, although it appears that the stop sign is missing. Its approaches are 14 feet wide except for the northbound approach that widens to 23 feet at the stop bar. There is a crosswalk across the northbound approach of Meade Street that is supplemented with a stop bar. This crosswalk is equipped with HP ramps that include tactile surfaces.

**Intersection of Meade Street and Lafayette Street** is also a three-legged intersection, and its southbound approach is controlled by a stop sign. Its approaches are 14 feet in width and there is a crosswalk spanning across Meade Street that also has a stop bar. Again, this crosswalk is equipped with HP ramps that include tactile surfaces.

**Intersection of Lamartine Street, Green Island Boulevard, Hermon Street and Lodi Street** is a five-legged intersection located approximately 200 feet west of the Lamartine and Grosvenor Streets intersection. Of the five streets diverging at this intersection, Lodi Street is a one-way street traversing in the southerly direction, thus, for all intents and purposes, it operates as a four-legged

intersection. Its northeasterly and southwesterly approaches are 16 feet in width and feature a bike lane. The Lamartine Street approach is 14 feet, while the Hermon Street approach is 12 feet wide in addition to a 2-foot shoulder. All legs of this intersection are marked with crosswalks and associated HP ramps that include tactile surfaces. All legs of this intersection except the Lodi Street leg which is a one-way street in the southerly direction are controlled with stop signs and are marked with stop bars.

**Intersection of Grosvenor and Lamartine Streets** is a three-legged “T” intersection and its northbound approach, which is 14 feet wide, is controlled with a stop sign but the stop sign is missing. As stated herein above, Lamartine Street is a two-way street and on-street parking is allowed on the north side of the street. There is a crosswalk across Grosvenor Street supplemented with a stop bar.

**Intersection of Grosvenor and Lafayette Streets** is also a three legged “T” intersection and its southbound approach, which is 14 feet wide, is controlled by a stop sign, again it appears that the stop sign is missing. Lafayette Street is a one-way street in the easterly direction and its easterly Street approach is 15 feet wide with parking allowed on both sides of the street. There is a crosswalk across Grosvenor Street.

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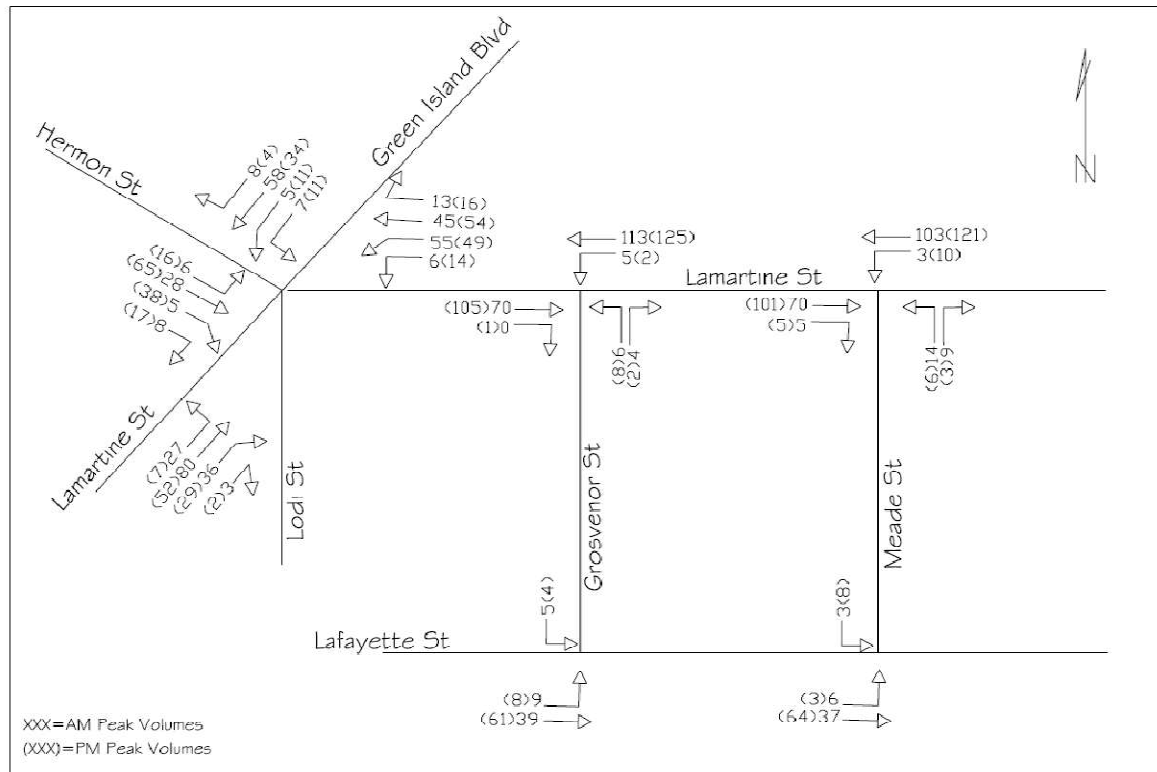
## Traffic Volumes

New peak hour turning movement counts (TMCs) were collected on Wednesday July 17<sup>th</sup> and Thursday July 18<sup>th</sup>, during two-hour periods between the hours of 7-9 AM and 4-6 PM commuter peak periods in order to identify the critical peak hour. The following Figure 2 shows the baseline peak hour traffic counts conducted on the above dates for all five intersections. This standard practice, which requires the evaluation of the intersections during critical peak traffic, is intended to help determine the traffic impacts of the proposed residential development on the area streets and their intersections under worst case scenario. Table 1 below shows the daily traffic, AM and PM peak hour traffic, average (Mean Speed), and 85<sup>th</sup> percentile speed at eight locations within the study area.

Table 1 Automatic Traffic Recorders Results

Street	Lamartine St E	Lamartine St S	Meade St	Green Island St	Grosvenor St	Hermon St	Lafayette St	Lodi St
ADT	3,902	3,271	129	2,472	235	1,111	889	289
AM Peak Vol	268	146	21	197	18	134	61	28
PM Peak Vol	310	256	16	218	32	185	65	33
Average Speed mph	20.6	29.5	13.5	21.8	15.6	21.5	19.2	15.2
85th% Speed mph	24	34	18	24	20	25	20	16

Figure 2 – Baseline Turning Movement Counts



The COVID-19 pandemic had caused a drop in vehicular traffic over the last few years. In April 2020, *massDOT* published the Guidance on Traffic Count Data and how to estimate existing and future traffic for counts taken after March 13, 2020. The procedure to adjust the TMCs to pre-COVID conditions requires the use of historical and seasonal data provided by the *massDOT*, to adjust for seasonal and historical changes, and then forecast the data to the existing year. The *massDOT* has provided updated guidance that no longer requires pandemic-related adjustment of traffic counts performed after March 2022 except in locations where the predominant land use consists of offices or other similar uses. Therefore, given the predominant land use in the study area is not of office use, traffic volumes traveling through these intersections were not adjusted.

The *massDOT* provides the latest (2019) seasonal adjustment factors. Based on the *massDOT* Traffic Volume and Classification, the streets within the study area are included in the group U4-U7 for Growth Factor and Seasonal Factor. To evaluate the potential for seasonal fluctuation of traffic volumes on roadways near the proposed site, weekday seasonal factors were obtained from the *massDOT* Statewide Traffic Data Collection. The review of the *massDOT* seasonal adjustment factors shows that roadways having similar characteristics to roadways within the study area (U4-U7) have a factor of 0.92 for traffic counts collected in the month of July. However, because this factor results in a reduction in the volumes, no adjustments were made in order to assess the worst-case scenario. Therefore, the TMCs were not adjusted by this factor. A copy of the *massDOT* seasonal adjustment factors is included in the Technical Appendix section of this



report. The baseline (year 2024) traffic volumes for the AM and PM peak periods are shown in Figure 2 above.

Typically, the PM peak period has the higher volumes, and is considered the critical peak. As is the case here, higher traffic volumes through the study area intersections also occur during the PM peak period.

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## Safety Concerns

**Sight Distances:** To evaluate the safety of traffic to and from the site via its driveways, sight distances were measured in the field and analyzed.

Sight distance is defined in the *massDOT* Project Development and Design Guide as the length of roadway ahead that is visible to road users. In most cases, specific sight distance measures apply to motor vehicles and bicyclists. There are two aspects of sight distance that apply to this case. They are:

- Stopping sight distance
- Intersection sight distance

The sight distances are related to the design speed (posted speed) of the roadway and are based on the standards of the American Association of State Highway and Transportation Officials (AASHTO) *A Policy on Geometric Design of Highways and Streets*, also referred to as the *Green Book*.

**Stopping Sight Distance** is further described in the *massDOT* Project Development and Design Guide as the distance necessary for a vehicle traveling at the design speed (posted speed) before reaching a stationary object in its path. The sight distance at every point along a roadway should be at least the stopping sight distance.

The sight distance for vehicles leaving the site via the Meade Street access driveway to the left (north) were measured in the field. The measured distance is from a point five feet back of a stop bar (approximately 15 feet from the street line) and 3.5 feet above grade to represent drivers' eye height to an object 3.5 feet above roadway grade. The field review of Meade Street showed that the available sight line to the left (north) for vehicles exiting the site driveway is 115 feet all the way to its intersection with Lamartine Street. The field review of Meade Street showed that the available sight line to the right (south) for vehicles exiting the site driveway is 390 feet. As stated earlier, there are no posted speed limit signs on Meade Street. Therefore, the statutory prima facie speed limit of 30 miles per hour applies to this street. Similarly, the sight distance for vehicles leaving the site via the Grosvenor Street access driveway was measured in the field. The field review of Grosvenor Street showed that the available sight line to the left (south) for vehicles exiting the site driveway is 250 feet. The field review of Grosvenor Street showed that the available sight line to the right (north) for vehicles exiting the site driveway is 125 feet all the way to its intersection with Lamartine Street. As stated earlier, there are no posted speed limit signs on Grosvenor Street. Therefore, the statutory prima facie speed limit of 30 miles per hour also applies to this street. The available sight distances for the site driveways are also shown visually in the following photographs.

Based on Basic Design Controls for roadway design, the Stopping Sight Distance is calculated using the formula  $d=(V*V)/(30*f)$ , plus the time required for perception and reaction by a driver (2.5 seconds). V is approach speed in mph, and  $f=0.28-0.35$ . The stopping sight distances are calculated and are provided in Exhibit 3-8 of the 2006 *massDOT* Project Development and Design Guide. A copy of this exhibit is presented in the Technical Appendix section of this report. Due to the less than 1% grade of either street, the required stopping sight distance for 30 mph is 200 feet for points south of the proposed site for both streets. The sight distance was also examined vertically. The following aerial photos in Figures 3 & 4 illustrate the profile of both streets in the vicinity of the proposed driveway.

It should be noted that the proposed driveways are 115-125 feet from the Lamartine Street intersections. Therefore, vehicles either arriving at (northbound) or approaching from (southbound) Lamartine Street must make a right or left turn maneuver at much lower speeds than the speed limit or from a stop. As a result, vehicles moving in either direction from all three streets are not expected to reach speeds higher than 10 mph. Due to the less than 1% grade of either street, the required stopping sight distance for 10 mph is less than 100 feet. As demonstrated herein above, the available sight distances are greater than the standard values for vehicles traveling at 10 mph passing the site driveways. Therefore, proper sight distances will be provided.

**Intersection Sight Distance** is explained by the *massDOT* Project Development and Design Guide as a sight distance at an intersection to allow drivers to perceive the presence of potentially conflicting vehicles. This should occur in sufficient time for a motorist to stop or adjust their speed, as appropriate, to avoid colliding in the intersection. Intersection sight distance also allows drivers of stopped vehicles with a sufficient view of the intersecting roadway to decide when to enter or cross the intersecting roadway. The AASHTO *Green Book* provides procedures to determine desirable intersection sight distances at intersections for various cases, one of which is Intersection Sight Triangle. Exhibit 3-11 of the *massDOT* Project Development and Design Guide demonstrates the sight distances needed based on Intersection Sight Triangle methodology. A copy of Exhibit 3-11 is included in the Technical Appendix section of this report. As shown in this exhibit, there are no values for such low speeds.

Again, it should be noted that vehicles turning from or approaching Lamartine Street must slow down to speeds lower than 10 mph or stop. It also should be noted that there are several nearby driveways at the same distance from Lamartine Street that serve large surface parking lots that generate much more traffic than the proposed site will. Two examples include Canal District Parking Lot at 156 Washington Street, and another located at 163 Washington Street.

In conclusion, driveways in an urban setting like the proposed site are not subjected to follow such standards specifically since these streets are short in length and on-street parking is allowed, thus not affording motorists the opportunity to reach the speed limit. As demonstrated in Table 1, the 85<sup>th</sup> percentile speed for these streets ranges between 18-24 mph.

Figure 3 – Meade Street profile at proposed driveway

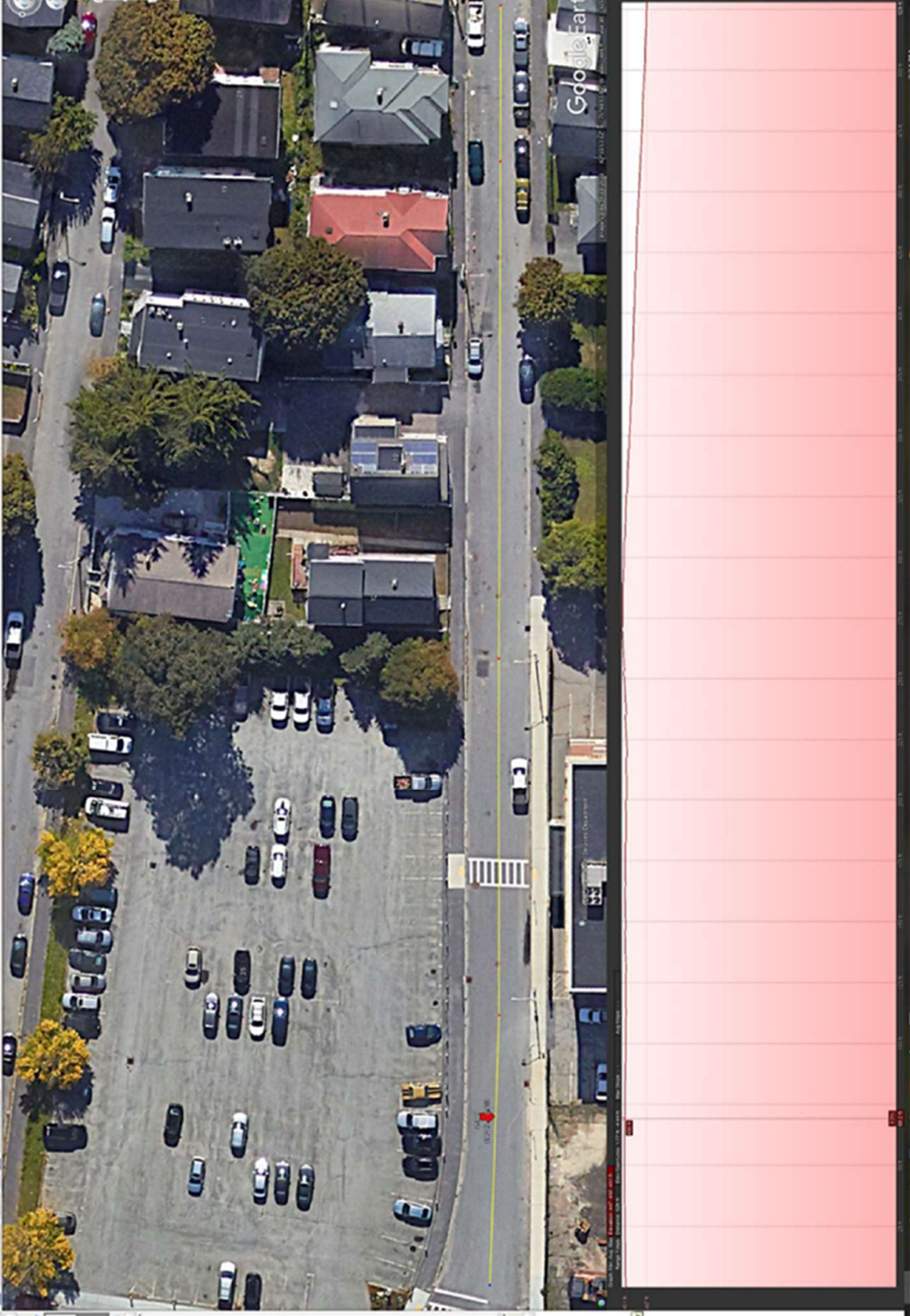
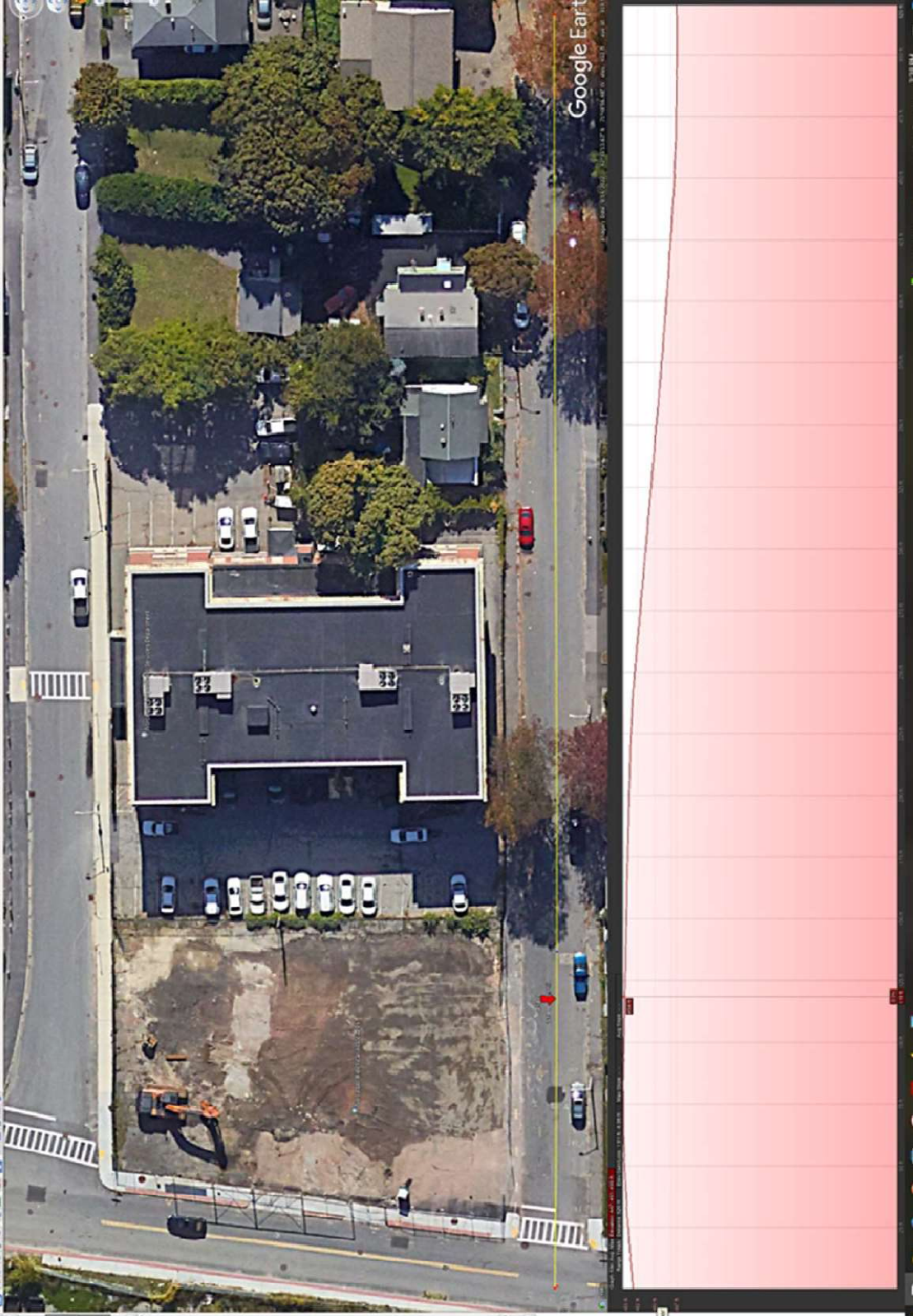


Figure 4 – Grosvenor Street profile at proposed driveway



Views from proposed Meade Street driveway looking to the left (north) and right (south)



Views from proposed Grosvenor Street driveway looking to the right (north) and left (south)



**Accidents:** The latest accident data compiled by the *massDOT* were obtained and reviewed for a five-year period of January 1, 2019-December 31, 2023. This review summarizes the total number of accidents that occurred at each of the five intersections within the study area during this period, and the summary is listed in Table 2, below. It is noted that a total of three accidents occurred during this period at the intersection of Lamartine Street, Hermon Street, Lodi Street and Green Island Boulevard, while a total of 2 accidents were reported during the same period for the intersection of Lafayette Street and Meade Street. None of the accidents at these two intersections involved injuries. Also, none of the accidents took place during peak traffic periods. The breakdown of all accidents at these two intersections is also presented below in Table 2. Finally, the remaining three intersections had no accidents reported during this five-year period.

Using the baseline turning movement counts compiled during traffic surveys of these five intersections, accident rates were calculated in accidents per million vehicles entering each intersection. Utilizing the *massDOT* prescribed methodology, the accident rates for these intersections were calculated and compared with the *massDOT*'s latest available rate of 0.61 for unsignalized intersections on roadways in District 3 of the *massDOT*, in which the City of Worcester

is located. A summary of the accident rates is also included in the following Table 2. A copy of the accident rate calculation sheets is included in the Technical Appendix section of this report. Also included in the Technical Appendix section of this report is a copy of the *massDOT* Average Crash Rates for signalized and unsignalized intersections throughout the Commonwealth of Massachusetts.

The above accident analysis indicates that the rate of accidents for the intersection of Lamartine Street, Hermon Street, Lodi Street and Green Island Boulevard is significantly lower than the *massDOT* rate of 0.61. However, the accident rate for the intersection of Lafayette Street and Meade Street is much higher than the *massDOT* average. Both accidents at this location were of angle type, suggesting potentially lack of sufficient sightline for vehicles making a left-turn maneuver from Meade Street onto Lafayette Street traffic possibly due to parked vehicles on the north side of Lafayette Street.

Table 2 - Vehicle Crash Summary for 5 Years (Jan 1, 2019-Dec 31, 2023)

	Lamartine Meade St	Lamartine Grosvenor	Lamartine Green Island	Lafayette Grosvenor	Lafayette Meade
Intersection	Unsignalized	Unsignalized	Unsignalized	Unsignalized	Unsignalized
Calculated Crash Rate	0	0	0.35	0	1.32
		massDOT Av Rate	0.61		
<b>Year</b>					
2019	0	0	1	0	0
2020	0	0	1	0	1
2021	0	0	0	0	0
2022	0	0	0	0	1
2023	0	0	1	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>2</b>
<b>Collision Type</b>					
Angle	0	0	2	0	2
Head-On	0	0	0	0	0
Rear-end	0	0	0	0	0
Sideswipe	0	0	0	0	0
Single Vehicle	0	0	1	0	0
Unknown	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>2</b>
<b>Severity</b>					
Fatal Injury	0	0	0	0	0
Non-Fatal Injury	0	0	0	0	0
Property Damage	0	0	3	0	2
<b>Total</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>2</b>
<b>Time of Day</b>					
7:00 AM to 9:00 AM	0	0	0	0	0
4:00 PM to 6:00 PM	0	0	0	0	0
Other Times	0	0	3	0	2
<b>Total</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>2</b>
<b>Pavement Conditions</b>					
Dry	0	0	1	0	2
Wet	0	0	1	0	0
Snow/Ice	0	0	1	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>2</b>

Source: massDOT Crash Portal Jan 1, 2023-Dec 31, 2023

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## **Existing Conditions Summary**

The proposed site consists of a vacant parcel of land located next to the Worcester Inspectional Services Department at 25 Meade Street. The applicant proposes to build a six-story building to house a total of 36 apartment units and a total of 40 off-street parking spaces, as well as 1,581 sf of retail space on the first floor of the proposed building. Of the 40 parking spaces, three will be designed and designated as van accessible handicap parking spaces. Also, six of the parking spaces will be for Electric Vehicles (EV) and equipped with charging devices. Finally, secure and weather protected bicycle parking is proposed for nine bicycles, as well as exterior bicycle racks which will accommodate 10 bicycles.

Lamartine Street can be characterized as a two-lane roadway with one travel lane in each direction along its entire length. The segment of Lamartine Street between Quinsigamond Avenue and Green Island Boulevard also provides bike lanes as well as on-street parking on one side of the street. The segment between Green Island Boulevard and Millbury Street, that the proposed site fronts on, is 28 feet wide and is posted with No Parking Anytime (NPA) signs on the south side and temporary NPA signs on the north side of the street. Sidewalks are provided on both sides of the entire length of Lamartine Street. It is a local street that serves many types of land uses, including industrial, office and residential properties.

The current land use designation for the site of the proposed development project is Business, General (BG-30), and is currently vacant.

# 3

## FUTURE CONDITIONS

Where possible, traffic volumes in the study area are projected to post-development levels. Projected traffic volumes include the existing traffic data obtained from the turning movement counts adjusted to represent the baseline, projected into the future year 2029 peak hours to reflect increases due to future area projects or background growth, and added to the new traffic expected to be generated by the proposed residential development site.

### Site-Generated Traffic

The magnitude of traffic volumes that will be generated by the proposed residential and retail development site was projected by using the latest *Trip Generation Manual* published by the Institute of Transportation Engineers (ITE).

Based on the ITE *Trip Generation Manual*, the rates at which the proposed land uses generate traffic vary depending upon the time of day. These rates were used to calculate the number of trips expected to be generated by the proposed residential and retail development during an average weekday morning and afternoon peak traffic periods. To obtain the most accurate forecast and to be consistent with the requirements of the *massDOT* procedures, when available, the values in the fitted curves in the *Trip Generation Manual* were used to forecast trips to and from the proposed mixed residential and retail site for daily, and AM & PM peak hours. The ITE trip generation charts are presented in the Technical Appendix section of this report. The resulting trips and their directional distribution for this site are shown in the following Table 3.

**TABLE 3**

ITE Trip Generation for 36 Units of Mid-Rise Apartments (LU 231) & 1,581 sf of Retail (LU 876)

36 Apartments ITE Land Use Code 231									
	Daily	%In	%Out	AM Pk	%In	%Out	PM Pk	%In	%Out
Rate-Trips/Unit	3.1*	50%	50%	0.2	39%	61%	0.28	44%	56%
Trips	117*	58	59	7	3	4	10	4	6
*Estimated based on massDOT K factor of 0.09									
1,581 sf Apparel Store ITE Land Use Code 876									
	Daily	%In	%Out	AM Pk	%In	%Out	PM Pk	%In	%Out
Rate-Trips/1,000 sf	12.4*	50%	50%	0.38	59%	41%	1.12	42%	58%
Trips	20*	10	10	1	1	0	2	1	1
*Estimated based on massDOT K factor of 0.09									
Grand Total Trips									
	137*	68	69	8	4	4	12	5	7
*Estimated based on massDOT K factor of 0.09									

As can be seen in the above Table 3, the total number of new trips expected to be generated by the proposed residential and retail development results in the highest traffic during afternoon peak period. In standard traffic engineering practice, the critical peak period trips are usually used to



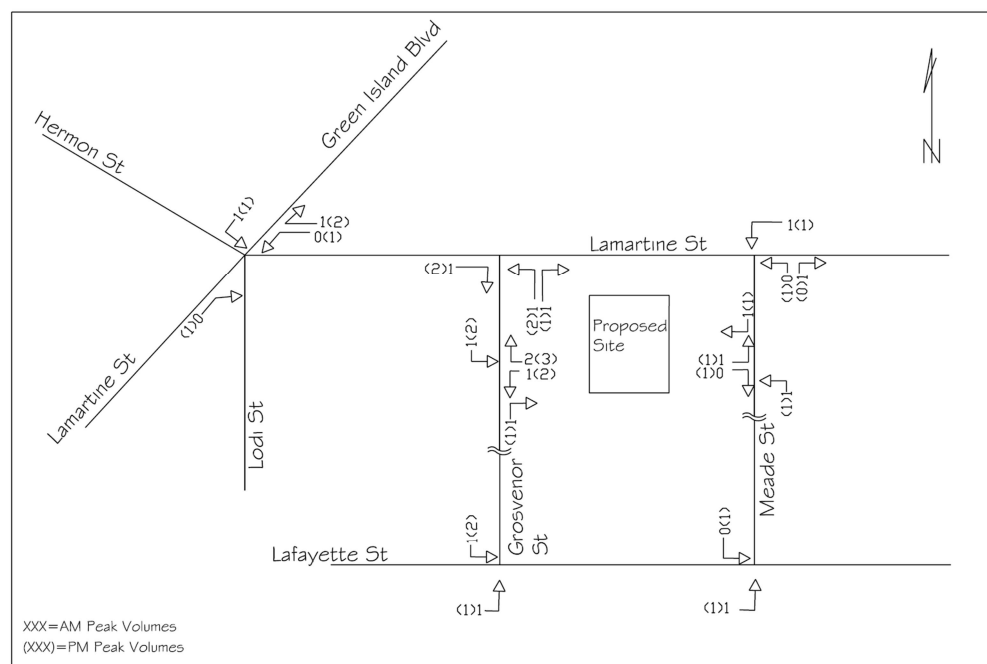
evaluate the worst-case scenario. Also, since the area intersections' traffic volumes are greatest during PM peak hour, the PM peak is the critical peak. Nonetheless, both peak traffic periods were evaluated for this development.

## Trip Distribution and Assignment

Because such factors as population density, land use, availability of major highways in the area, and other demographics that make up the traffic patterns within a community, the directional distribution of the projected site-generated trips to and from the proposed development site was based on the existing traffic patterns within the immediate vicinity of the site and based on the knowledge of local traffic patterns. The turning movement traffic counts for the intersections within the study area are good indicators of the traffic patterns in this area.

Using this information, the projected new site-generated trips from the above Table 3 are assigned to each approach of these intersections. As shown in Table 3 above, during AM peak period, a sum of four vehicles will be arriving at the proposed site and four vehicles will be departing from the site in the northerly and southerly directions from both driveways along Meade and Grosvenor Streets. During PM peak period, a total of five vehicles are expected to arrive and seven vehicles will depart from the proposed site driveways. Finally, a total of 68 vehicles will be arriving and 69 vehicles will be leaving from the proposed site during a 24-hour period on an average weekday. The following Figure 5 shows the above-mentioned distribution of trips associated with the proposed site along the streets in the study area and the site driveways.

Figure 5 - Trip Generation and Distribution



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## Site Access, Circulation and Parking

Site access and internal traffic circulation were evaluated as part of assessing the proposed residential and retail development. Access to the proposed site will be achieved through a driveway from Meade Street that connects to the underground garage and a second driveway from Grosvenor Street to access the at-grade garage. The proposed driveways will provide full access to all parking spaces in the underground and at-grade parking spaces. The underground access driveway will have a pavement width of 24 feet while the at-grade driveway will have a pavement width of 28 feet, both of which are designed to accommodate two-way traffic.

The magnitude of parking spaces that will be needed for the proposed residential development was projected by using the latest (6<sup>th</sup>) edition of the *Parking Generation Manual*, also published by the ITE. A copy of the relative page is included in the Appendix section of this report.

Based on the ITE *Parking Generation Manual*, the rates at which mid-rise multifamily residential developments generate demand for parking vary depending upon the location of the project. The demand for off-street parking is greatest for facilities located in suburban areas primarily due to the lack of public transportation and long distances from daily conveniences. Based on the ITE *Parking Generation manual*, the 85<sup>th</sup> percentile or peak period parking demand rate for mid-rise multifamily residential developments in dense multi-use urban areas not close to rail transit is 1.29 parking spaces per dwelling unit. However, the average parking demand is 0.93 parking spaces per dwelling unit. As stated earlier, a total of 40 parking spaces are proposed for this site. Thus, the proposed parking supply is calculated at 1.11 spaces per unit. The proposed number of parking spaces is 12% greater than the national average rate of 0.93 and 12% lower than the 85<sup>th</sup> percentile (peak) demand on a weekday. Given the Transportation Demand Management program highlighted below, it is anticipated the actual demand for off-street parking will be even lower than that of the ITE *Parking Generation manual* during 85<sup>th</sup> percentile (peak) demand.

Therefore, based on the above assessment, it is concluded that sufficient parking spaces will be provided.

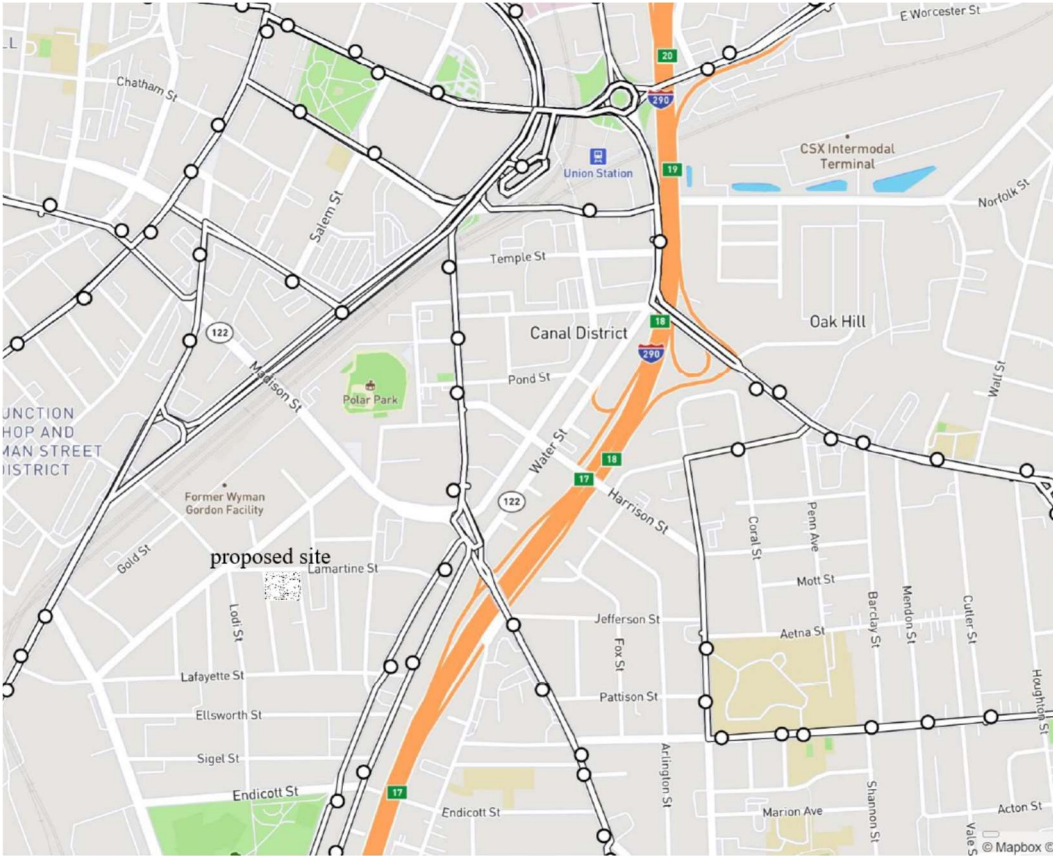
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## Transportation Demand Management

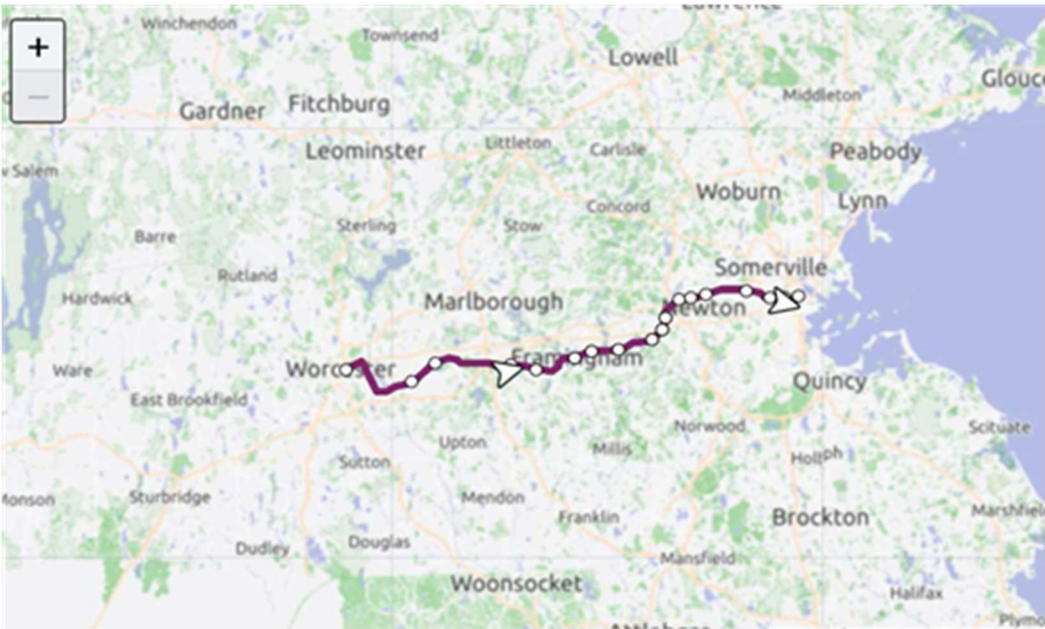
The proposed development at 39 Lamartine Street, which includes a total of 36 apartment units, will be benefiting from many City conveniences when it comes to different modes of transportation. The proposed site is located approximately a half mile from the Transportation Hub that provides access to all Worcester Regional Transit Authority (WRTA) bus routes, as well as Greyhound intercity buses. The Transportation Hub is also connected to Worcester Union Station at Washington Square that provides services via Amtrak and the MBTA to points east, including Boston. Thus, this TDM program is largely geared toward the use of these public transportation services and other modes such as pedestrian walkability, bicycling, etc. Therefore, it is suggested the consideration of advancement of the following improvements as a part of the Project, which are commensurate with the predicted impact of the Project on the transportation infrastructure and are focused on safety and encouraging the use of alternative modes of transportation instead of single-occupancy vehicles:

**Public Transportation** is a large component of this TDM program. There are WRTA bus stops located within 4-5 minutes of walking distance of the proposed site. Since this area is being developed with many new residential uses, this distance could be further reduced to less than a two-minute walk by providing additional bus stops on Green Island Boulevard. Therefore, WRTA should be consulted about establishing additional bus routes and stops in the general area of this and other future developments. These current bus stops that include WRTA Route 4 with 15-minute headways, two of which are located on Harding Street at Lafayette Street and Lamartine Street for inbound direction, and one is located on Millbury Street at Lafayette Street for outbound direction. Passengers can also take the inbound bus to the Transportation Hub and transfer to other routes in any direction. Alternatively, the residents of the proposed development could walk 10-13 minutes directly to the Transportation Hub or Union Station to transfer to other parts of the city or for commuting purposes particularly to points east, as far as the City of Boston by utilizing the MBTA train services. Therefore, the need for owning a motor vehicle and available off-street parking facilities is minimal. Also, to further discourage the use of personal vehicles, it is recommended that all information about the above-mentioned public transportation services such as maps of bus routes, bus and MBTA schedules, and fares should be made available to the future residents of the proposed site. Additionally, it is recommended that WRTA be consulted to provide a dynamic monitor, either inside or outside the building, that displays live information relative to available public transportation. Below is a bus route map that shows the existing bus stops in the vicinity of the proposed development as well as an MBTA map showing the stops along its route to Boston.

WRTA Bus Routes



MBTA Train Route



**Walkability** is considered a major part of Healthy Transportation mode and an advantage to the future residents of the proposed development, particularly since all streets to and from the proposed development site have sidewalks and proper handicap ramps. The proposed site is bound by Lamartine Street to the north, Meade Street to the east, Grosvenor to the west, and finally, the Worcester Department of Inspectional Services to the south. Lamartine Street leads to Harding and Millbury Streets in the easterly direction and to Green Island Boulevard and Hermon Street in the westerly direction. All the above-mentioned streets provide proper sidewalks and handicap ramps making travel on foot to many points of interest practicable. Therefore, no additional pedestrian accommodation is warranted, further minimizing the need for owning personal motor vehicles and the need for off-street parking facilities.

**Bicycling** is also considered a Healthy Transportation mode for the future residents of the proposed site, particularly since a number of the streets in close proximity of the proposed site feature dedicated bike lanes including Lamartine Street between Quinsigamond Avenue and Green Island Boulevard, Green Island Boulevard, Harding Street, and Millbury Street. Some other nearby streets that do not have dedicated bike lanes may also be candidates for being marked with Sharrow symbols to let motorists know they have to share the road with bicyclists. To further reduce the demand for motor vehicle ownership and on/off-street parking, the proposed site plan provides for a secure indoor bicycle parking facility. Additionally, it is recommended that an outdoor bicycle rack be provided to accommodate at least 6-8 bicycles.

**Accessible Parking** should be an important component of this TDM program as some residents will ultimately own personal motor vehicles that would need off-street parking accommodation. Although this demand will be significantly lower than in other locations with lower density and less accessibility to public transportation, they will require off-street parking. On-street parking should be made available for the retail portion of the proposed site as they are always used for short-term parking. Presently, there are no on-street parking restrictions on Meade Street, except a dedicated handicap parking space in front of number 12 Meade Street, a 100-foot distance on the west side of Meade Street from a point just north of the Worcester Inspectional Services Department entrance in the northerly direction, and 250 feet on the east side of the street from Lamartine Street southerly. Parking is not allowed on the south side of Lamartine Street. To accommodate the needs of the retail use component of this development, it is important to allow a 50-foot distance for short-term parking as shown on the site plan. This will require a petition to the City Council for a change in the existing ordinances for this section of Meade Street. Additionally, to better manage the available on-site parking and to further discourage the need for personal car ownership, the proponent may have to assign each space only to the few residents who may own a vehicle, or even charge a premium. Finally, during special events and for the purpose of moving in/out of these apartments, if on-street parking should be needed, a special consideration should be requested from the City DTM's Parking Control section.

**Ride-Sharing Mode** is a valuable form of transportation that could further reduce the need for personal vehicle ownership, and thus, reduce traffic on area streets as well as decrease the need for on and off-street parking facilities. On-street parking is currently available on most of all three streets bordering the proposed site. Therefore, ride-sharing vehicles can use the nearby on-street parking to pick up/drop off passengers, as they are only short-term parking. Ride-share vehicles can also use the internal off-street parking spaces if on-street parking should not be available. Consequently, no special parking space designation would be necessary.

**Work-at-Home** accommodation should be included within the proposed project. Although the COVID-19 pandemic has ended, a considerable portion of the workforce continues to work from home as both employers and employees have become accustomed to the practice of the work-at-home concept. Therefore, the work-at-home accommodation may take the form of providing a meeting space and potentially a business office in the common (lobby/lounge) area of the building with such amenities as available internet, a computer and a printer.

**Transportation Coordinator** can be an asset for the new residents of the proposed development. Therefore, a transportation coordinator is recommended. The coordinator who may also have other responsibilities, can coordinate all components of the above-mentioned TDM program such as providing the new residents with a welcome packet and information relative to public transportation, off-street parking arrangements, and bicycle storage.

In conclusion, given the location of the proposed site, the availability of a strong public transportation accommodation and the available walkable and cyclable streets, this project and other similar projects should have little or no impact on the area traffic.

## TRAFFIC OPERATIONS

Measuring existing traffic volumes and projecting future traffic volumes quantify traffic flow within the study area. To assess the quality of traffic flow, intersection capacity analyses were performed to assess existing baseline conditions and for projected future design year (2029) conditions with and without development of the proposed residential project. Intersection capacity analyses provide an indication of how well roadway facilities and their components serve the traffic demands placed upon them. This section includes potential on-site and off-site mitigation improvements should any be deemed necessary to minimize the impact of the proposed residential development on the area streets.

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### Traffic operations measures

Level of Service (LOS) analysis was performed to determine the quality of traffic flow throughout the study area using criteria based on the Highway Capacity Manual and its computer software.

The LOS designation shows how well roadways, and their components process traffic placed upon them. Like a report card, LOSs are given letter designations from “A” to “F”. LOS “A” represents the best operating conditions, while LOS “F” represents the worst. Typically, LOS “D” is considered acceptable during peak hour conditions, but LOS “E” may also be acceptable under some circumstances.

The LOS designation is reported differently for signalized and unsignalized intersections. For an unsignalized intersection, the Highway Capacity analysis assumes that through traffic on major roadways is not affected by traffic on side streets (streets with lower volumes and/or ones under stop sign control). Therefore, a LOS designation is typically calculated for the controlled movements (minor street approaches and major street left-turn movements). As described in the following paragraphs, capacity or LOS analyses were considered for year 2024 existing, year 2029 future no build, and year 2029 future build conditions for morning and evening peak hour periods at the above-mentioned intersections within the study area.

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### Existing Conditions

Intersection capacity analyses were performed for five intersections in the study area during morning and evening peak traffic periods. These intersections are considered the only locations in the vicinity of the proposed site that may be affected by the traffic expected to be generated by the proposed mixed-use development. All five intersections are unsignalized and are stop controlled.

The analysis concluded that LOS “A” is calculated for all controlled approaches of these intersections during both AM and PM peak periods and LOS “A” for the Intersection Capacity

Utilization during both peak periods. A summary of the intersection analyses results for existing conditions is shown below in Table 5.

## **Future Conditions**

Capacity analyses for the future year peak hour traffic operations were performed for the year 2029 volumes during both peak periods with and without the proposed mixed-use development project in place. A summary of the intersection analyses results for both future no-build and future build conditions is also shown below in Table 5.

As noted earlier in this report, based on the *massDOT* Traffic Volume and Classification data, area streets are included in group U4-U7 for the Growth Factor and Seasonal Factor. Based on roadways in group U4-U7, the yearly growth rate for this group of roadways is calculated at 2% per year. Therefore, an adjustment factor of 2% per year was used, and the collected TMCs were further increased by 10% to reflect adjusted volumes for the future year 2029. Additionally, the Worcester Planning & Regulatory Division was consulted to identify potential nearby future developments that may have an impact on the intersections within the study area. Five projects were identified, and their locations were considered too far from the proposed development, thus it was determined that their traffic didn't reach any of the intersections within the study area. However, the traffic from a 12-unit apartment residential development at 10 Grosvenor Street by Polar Views, LLC was taken into consideration. The following Table 4 shows the trip generation and distribution for the proposed site at 10 Grosvenor Street. The projected traffic volumes from this development were also added to the year 2029 volumes to represent future No Build conditions. Figure 6 shows the volumes for the future no-build conditions for the intersections in the study area.

Table 4 – Trip Generation and Distribution for 10 Grosvenor Street  
12 Apartments ITE Land Use Code 221

	Daily	%In	%Out	AM Pk	%In	%Out	PM Pk	%In	%Out
Rate-Trips/Unit	2.93	50%	50%	0.28	15%	85%	0.26	73%	27%
Trips	35	17	18	3	1	2	3	2	1

Build traffic volumes were determined by projecting site-generated traffic volumes and distributing those volumes over the intersections within the study area, and finally, adding them to the future no-build conditions volumes. The following Figure 7 shows future build conditions traffic volumes for these intersections.



Figure 6 – Turning Movement Counts, Future No Build Conditions

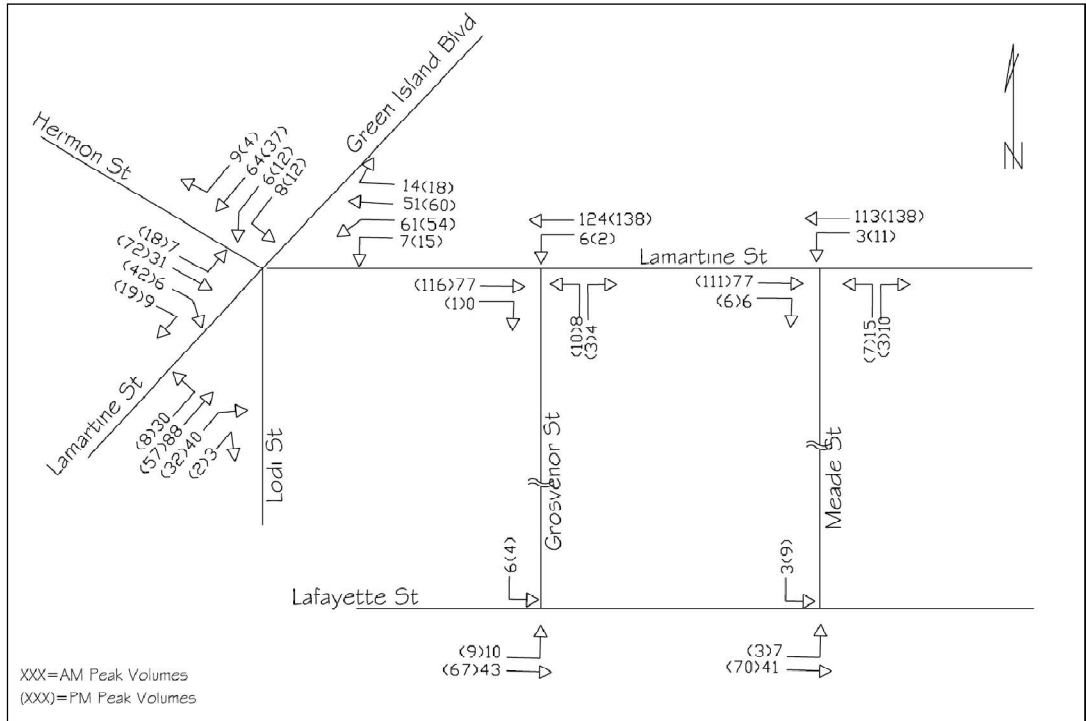
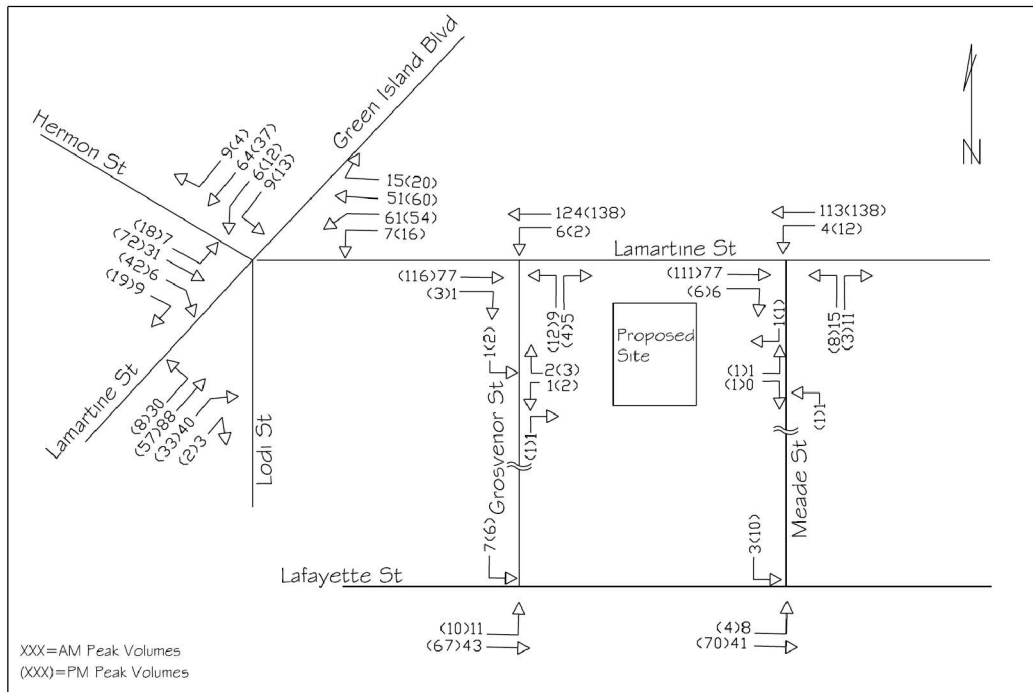


Figure 7 – Turning Movement Counts, Future Build Conditions



The intersection LOSs for the year 2029 no-build conditions were calculated for the controlled approaches of the intersections within the study area. It is expected the northbound approach of the intersection of Lamartine and Meade Streets will be operating at LOS “B” during evening peak period. All other controlled intersection approaches will continue to operate at LOS “A”. Finally, the Intersection Capacity Utilization will also remain at LOS “A” for all intersections.

To assess the potential traffic impact of the proposed development on these intersections, all traffic from the proposed development site was assigned to the approaches of these five intersections. This should result in the assessment of these intersections under the worst-case scenario. The above Figures 2, 6 and 7 show the volumes at these intersections for both the morning and evening peak hours under existing, future no-build, and future build conditions.

The intersection analyses for the year 2029 build conditions were performed for all five intersections. The analysis revealed that under future build conditions, all controlled approaches of these intersections will continue to operate at the same level as those under future no-build conditions and the same Intersection Capacity Utilization LOS “A” as under no-build conditions.

Again, the above-mentioned LOS “B” for the northbound approach of Meade Street at its intersection with Lamartine Street under future no-build and future build conditions is indicative of little or no delays of traffic at these intersections and represents little or no impact associated with the development of the proposed development project. A summary of intersection analyses for all five intersections is provided below in Table 5. The computer printouts of the above-mentioned analysis are included in the Technical Appendix of this report.

Table 5  
Level Of Service Analysis Results Summary

Intersection	AM Pe: Existing			Future No Build			Future Build		
	EB	WB	NB	EB	WB	NB	EB	WB	NB
Lamartine/Meade Sts	0.05	0.01	0.05	0.06	0.01	0.06	0.06	0.01	0.06
Vplume/Capacity	0	0.5	9.5	0	0.5	9.6	0	0.7	9.6
Approach Delay			A			A			A
LOS			A			A			A
Int Capacity Utilization LOS	A			A			A		
PM Peak									
	EB	WB	NB	EB	WB	NB	EB	WB	NB
Vplume/Capacity	0.08	0.01	0.03	0.09	0.01	0.04	0.09	0.01	0.04
Approach Delay	0	0.8	10	0	0.8	10.3	0	0.8	10.4
LOS			A			B			B
Int Capacity Utilization LOS	A			A			A		

Intersection	AM Pe: Existing			Future No Build			Future Build		
	EB	WB	NB	EB	WB	NB	EB	WB	NB
Lafayette/Meade Sts	0	0	0.01	0.01	0	0.01	0.01	0	0.01
Vplume/Capacity	1	0	8.9	1	0	8.9	1.2	0	8.9
Approach Delay			A			A			A
LOS			A			A			A
Int Capacity Utilization LOS	A			A			A		
PM Peak									
	EB	WB	NB	EB	WB	NB	EB	WB	NB
Vplume/Capacity	0	0	0.02	0	0	0.02	0	0	0.02
Approach Delay	0.3	0	9	0.3	0	9.1	0.4	0	9.1
LOS			A			A			A
Int Capacity Utilization LOS	A			A			A		

Intersection	AM Peak			Future No Build			Future Build		
	EB	WB	NB	EB	WB	NB	EB	WB	NB
Lamartine/Grosvenor Sts	0.04	0.01	0.02	0.05	0.01	0.02	0.05	0.01	0.03
Vplume/Capacity	0	0.7	9.3	0	0.7	9.5	0	0.7	9.5
Approach Delay			A			A			A
LOS			A			A			A
Int Capacity Utilization LOS	A			A			A		
PM Peak									
	EB	WB	NB	EB	WB	NB	EB	WB	NB
Lamartine/Grosvenor Sts	0.08	0	0.02	0.09	0	0.03	0.09	0	0.03
Vplume/Capacity	0	0.2	10	0	0.2	10.2	0	0.2	10.2
Approach Delay			A			B			B
LOS			A			B			B
Int Capacity Utilization LOS	A			A			A		

Intersection	AM Peak			Future No Build			Future Build		
	EB	WB	NB	EB	WB	NB	EB	WB	NB
Lafayette/Grosvenor Sts	0.01	0	0.01	0.01	0	0.01	0.01	0	0.01
Vplume/Capacity	1.4	0	8.9	1.4	0	9	1.5	0	9
Approach Delay			A			A			A
LOS			A			A			A
Int Capacity Utilization LOS	A			A			A		
PM Peak									
	EB	WB	NB	EB	WB	NB	EB	WB	NB
Lamartine/Grosvenor Sts	0.01	0	0.01	.01	0	0.01	0.01	0	0.01
Vplume/Capacity	1.3	0	9.1	1.4	0	9.2	1.5	0	9.2
Approach Delay			A			A			A
LOS			A			A			A
Int Capacity Utilization LOS	A			A			A		

Intersection	AM Pe: Existing				Future No Build				Future Build			
	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB
Lamartine/Hermon/Green Island	0.21	0.15	0.18	0.07	0.24	0.17	0.2	0.09	0.24	0.17	0.2	0.09
Vplume/Capacity	8.4	8.1	8.1	7.9	8.7	8.3	8.4	8.1	8.7	8.3	8.4	8.1
Approach Delay			A			A			A		A	
LOS			A			A			A		A	
Int Capacity Utilization LOS	A				A				A			
PM Peak												
	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB
Lamartine/Hermon/Green Island	0.14	0.13	0.2	0.23	0.16	0.14	0.23	0.26	0.16	0.15	0.23	0.26
Vplume/Capacity	8.2	8.1	8.2	8.7	8.5	8.2	8.5	9	8.5	8.3	8.5	9
Approach Delay			A			A			A		A	
LOS			A			A			A		A	
Int Capacity Utilization LOS	A				A				A			

# 5

## FINDINGS

This traffic study has been conducted to evaluate the potential traffic impacts associated with the proposed mixed-use residential and commercial development site located on the south side of Lamartine Street in the city of Worcester, Massachusetts. This study includes the evaluation of five intersections which are in close proximity of the site and are likely to be impacted by the proposed development project. Evaluation of these intersections, which were identified by consultation with Worcester DTM, and which is intended to identify capacity constraints was performed for existing, future no-build, and future build conditions. Future analyses have determined that the site-generated traffic volumes are not significant, and they can easily be accommodated with the existing roadways, their intersections, and the site driveways off Meade Street and Grosvenor Street. These analyses demonstrated that with the additional traffic volumes associated with the proposed development, the Intersection Capacity Utilization LOSs will stay the same as those of the existing and the future no build conditions LOS "A". The analysis concluded that the approaches of all five intersections are and will continue to operate at LOS "A" except the northbound approach of Meade Street at Lamartine Street which will be operating at LOS "B" under future no build and build conditions during afternoon peak period.

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### **Conclusion & Recommendations**

It is concluded that of the five intersections evaluated, the intersection of Lafayette Street and Meade Street which has had two accidents over a five-year period has experienced an accident rate greater than average for unsignalized intersections, and therefore, a remedy is warranted at this intersection. It is believed that the on-street parking on the north side of Lafayette Street at Meade Street may have contributed to these two accidents. The Intersection of Lafayette Street, Lodi Street, Hermon Street and Green Island Boulevard had an accident rate of 0.35 which is significantly lower than average for unsignalized intersections. The remaining three intersections had no accidents reported during this five-year period.

The available sight distances at the proposed driveways will allow motorists to safely enter and exit the flow of traffic on both Meade Street and Grosvenor Street.

The volumes of traffic associated with the proposed development are not considered significant, and therefore, the surrounding streets have ample capacity to safely serve the anticipated additional traffic. The level of service evaluation presented above is an indicator of the quality of traffic flow through the area. This evaluation indicates that no impact is expected from the proposed development and the LOS will not fall below "A" for all approaches of the intersections studied except for the northbound approach of Meade Street at Lamartine Street which will be operating at LOS "B" during PM peak period. Also, since there is no opportunity for landscaping along the property lines on either Lamartine Street, Meade Street or Grosvenor Street, the site distances are not expected to be impacted. To maintain optimum safety and efficiency, the following recommendations, most of which are identified in the Transportation

Demand Management program in this report, should be considered.

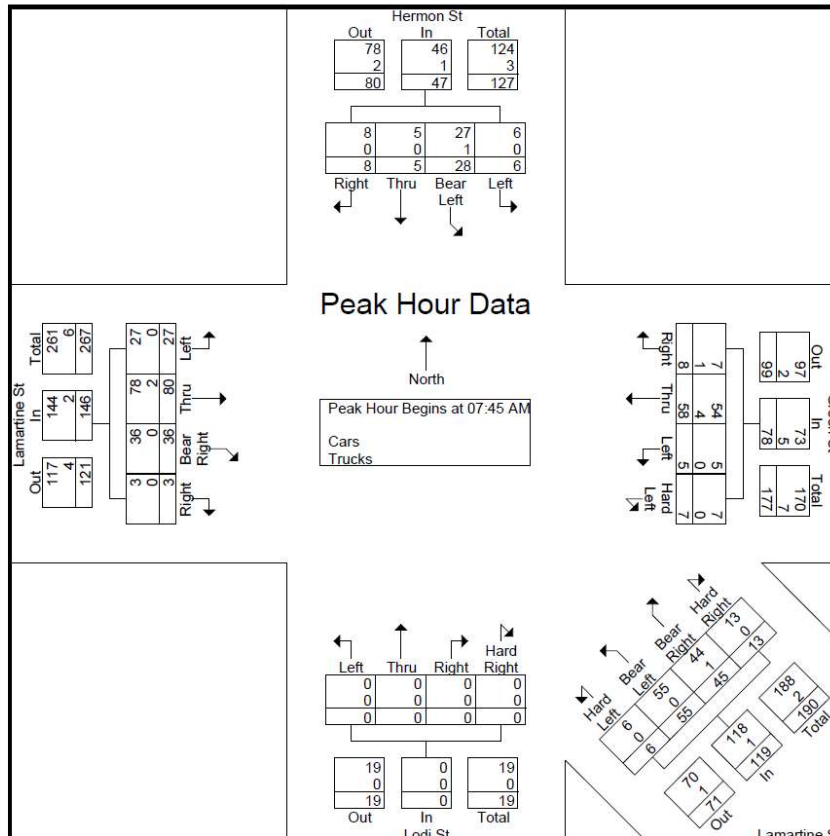
- It is recommended that the city of Worcester reinstall the missing stop signs mentioned in this report.
- It is recommended that on-street parking on the north side of Lafayette Street be prohibited from the Meade Street intersection westerly for 50 feet.
- Information regarding public transportation services should be made available to residents and include maps, schedules and fare information.
- A “welcome packet” should be provided to new residents providing the name and contact information for the transportation coordinator and detailing available public transportation services, bicycle and walking alternatives, and other commuting options.
- The proposed secure bicycle parking consisting of both weather-protected bicycle parking and exterior bicycle racks should be always maintained.
- Consult with the MWRTA to discuss options to establish transit service to the streets near the project site such as Green Island Boulevard and Lamartine Street.
- Work-at-home accommodation should be included within the Project and may take the form of meeting space and a business office in the common or lobby area.
- Assign a transportation coordinator or superintendent of the building for the proposed project who may also have other responsibilities to coordinate the TDM program.

## Technical Appendix

**Accurate Counts**  
978-664-2565

N/S Street : Hermon St / Lodi St  
E/W Street : Green St / Lamartine St  
City/State : Worcester, MA  
Weather : Clear / Cloudy

File Name : 20260001  
Site Code : 20260001  
Start Date : 7/17/2024  
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

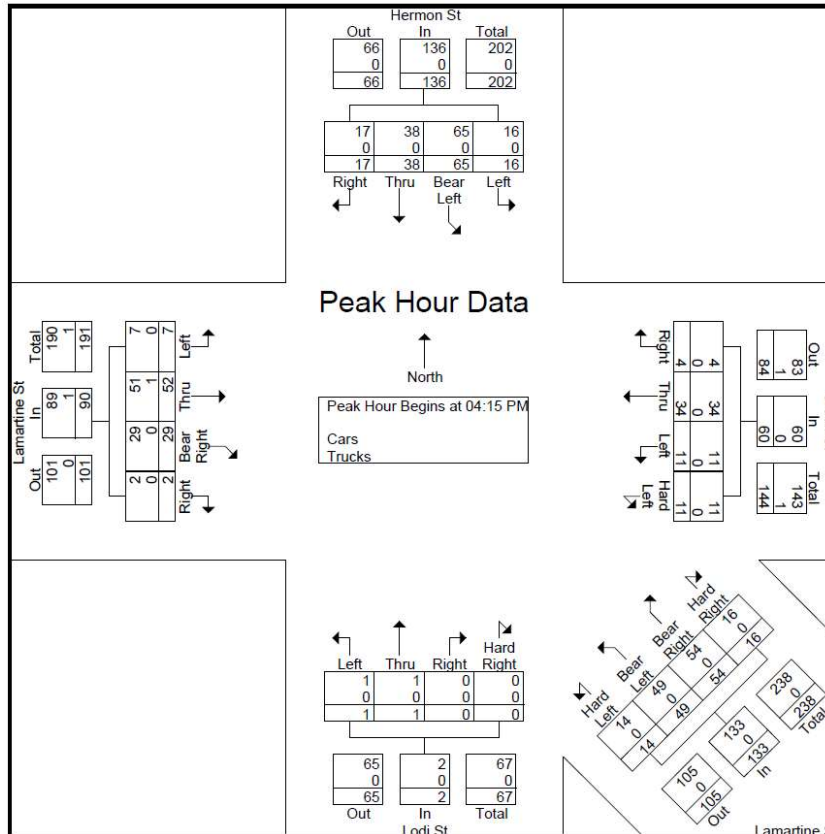
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+15 mins.	1	5	0	1	7	3	0	13	3	19	0	10	12	1	23	0	0	0	0	0	3	20	6	0	29
+30 mins.	3	8	3	2	16	0	4	14	3	21	1	19	11	4	35	0	0	0	0	0	9	21	9	3	42
+45 mins.	3	8	1	2	14	3	1	14	0	18	4	14	9	4	31	0	0	0	0	0	7	20	9	0	36
Total Volume	9	31	4	8	52	7	5	58	8	78	6	55	45	13	119	0	0	0	0	0	27	80	36	3	146
% App. Total	17.3	59.6	7.7	15.4		9	6.4	74.4	10.3		5	46.2	37.8	10.9		0	0	0	0	0	18.5	54.8	24.7	2.1	
PHF	.750	.775	.333	.667	.813	.583	.313	.853	.667	.929	.375	.724	.865	.813	.850	.000	.000	.000	.000	.000	.750	.952	.750	.250	.869
Cars	9	30	4	8	51	7	5	54	7	73	6	55	44	13	118	0	0	0	0	0	27	78	36	3	144
% Cars	10	96.	10	10	98.1	10	10	93.	87.	93.6	10	10	97.	10	99.2	0	0	0	0	0	10	97.	10	10	98.6
Trucks	0	1	0	0	1	0	0	4	1	5	0	0	1	0	1	0	0	0	0	0	0	2	0	0	2
% Trucks	0	3.2	0	0	1.9	0	0	6.9	12.5	6.4	0	0	2.2	0	0.8	0	0	0	0	0	0	2.5	0	0	1.4

**Accurate Counts**

978-664-2565

N/S Street : Hermon St / Lodi St  
E/W Street : Green St / Lamartine St  
City/State : Worcester, MA  
Weather : Clear / Cloudy

File Name : 20260001  
Site Code : 20260001  
Start Date : 7/17/2024  
Page No : 2



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Peak Hour for Each Approach Begins at:

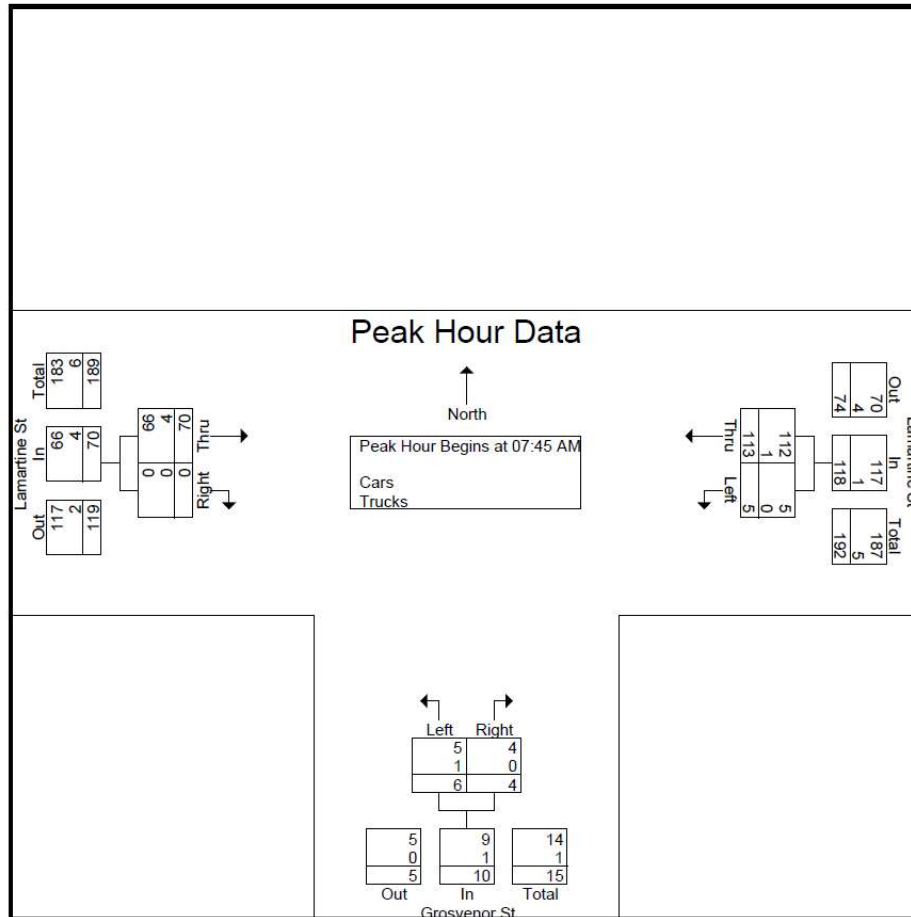
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+15 mins.	2	16	9	3	30	3	4	7	1	15	3	16	9	3	31	1	0	0	0	1	1	15	7	1	24
+30 mins.	1	16	9	5	31	4	4	8	2	18	3	8	13	5	29	0	0	0	0	0	2	15	5	1	23
+45 mins.	8	20	14	3	45	1	0	7	0	8	4	17	16	4	41	0	1	0	0	1	3	10	6	0	19
Total Volume	16	65	38	17	136	8	10	37	5	60	14	49	54	16	133	1	1	0	0	2	7	54	27	4	92
% App. Total	11.8	47.8	27.9	12.5		13.3	16.7	61.7	8.3		10.5	36.8	40.6	12		50	50	0	0		7.6	58.7	29.3	4.3	
PHF	.500	.813	.679	.708	.756	.500	.625	.617	.625	.789	.875	.721	.844	.800	.811	.250	.250	.000	.000	.500	.583	.900	.750	.500	.885
Cars	16	65	38	17	136	8	10	37	5	60	14	49	54	16	133	1	1	0	0	2	7	52	26	4	89
% Cars	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	0	0	100	100	96.	96.	10	96.7
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.7	3.7	0	3.3



**Accurate Counts**  
978-664-2565

N/S Street : Lamartine Street  
E/W Street : Grosvenor Street  
City/State : Worcester, MA  
Weather : Clear / Cloudy

File Name : 20260002  
Site Code : 20260002  
Start Date : 7/17/2024  
Page No : 2



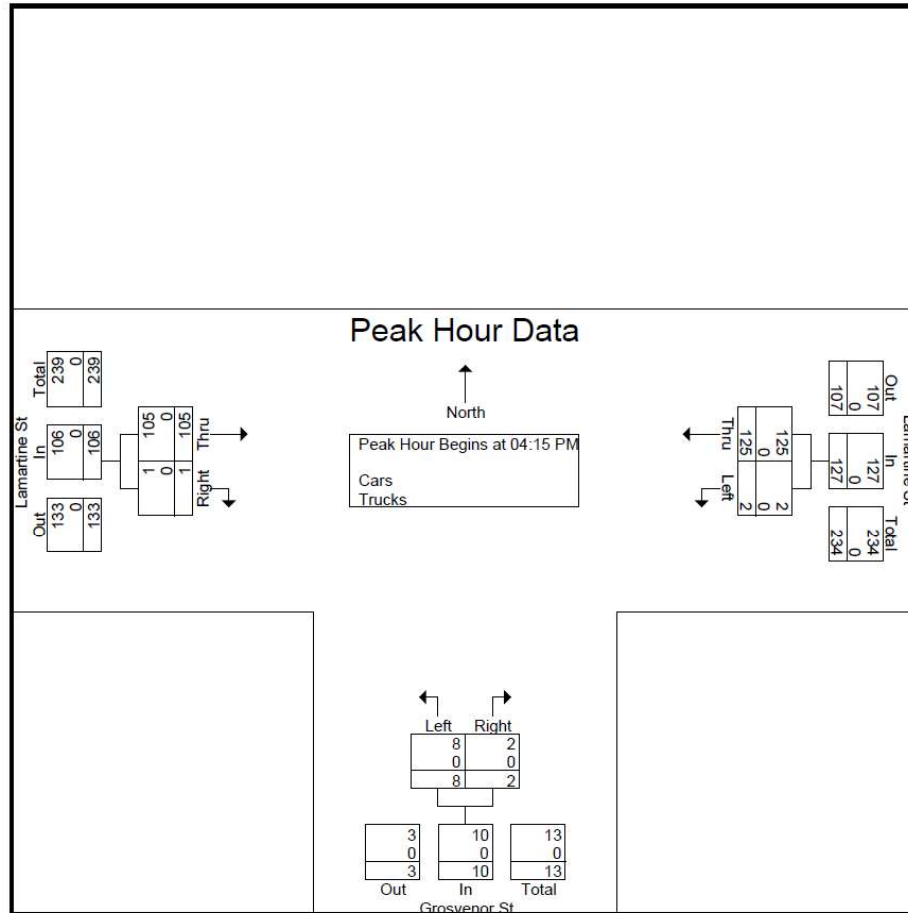
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

	07:45 AM			08:00 AM			07:45 AM		
+0 mins.	0	30	30	1	1	2	18	0	18
+15 mins.	1	21	22	2	1	3	19	0	19
+30 mins.	3	33	36	3	0	3	14	0	14
+45 mins.	1	29	30	3	2	5	19	0	19
Total Volume	5	113	118	9	4	13	70	0	70
% App. Total	4.2	95.8		69.2	30.8		100	0	
PHF	.417	.856	.819	.750	.500	.650	.921	.000	.921
Cars	5	112	117	8	4	12	66	0	66
% Cars	100	99.1	99.2	88.9	100	92.3	94.3	0	94.3
Trucks	0	1	1	1	0	1	4	0	4
% Trucks	0	0.9	0.8	11.1	0	7.7	5.7	0	5.7

**Accurate Counts**  
978-664-2565

N/S Street : Lamartine Street  
E/W Street : Grosvenor Street  
City/State : Worcester, MA  
Weather : Clear / Cloudy

File Name : 20260002  
Site Code : 20260002  
Start Date : 7/17/2024  
Page No : 2



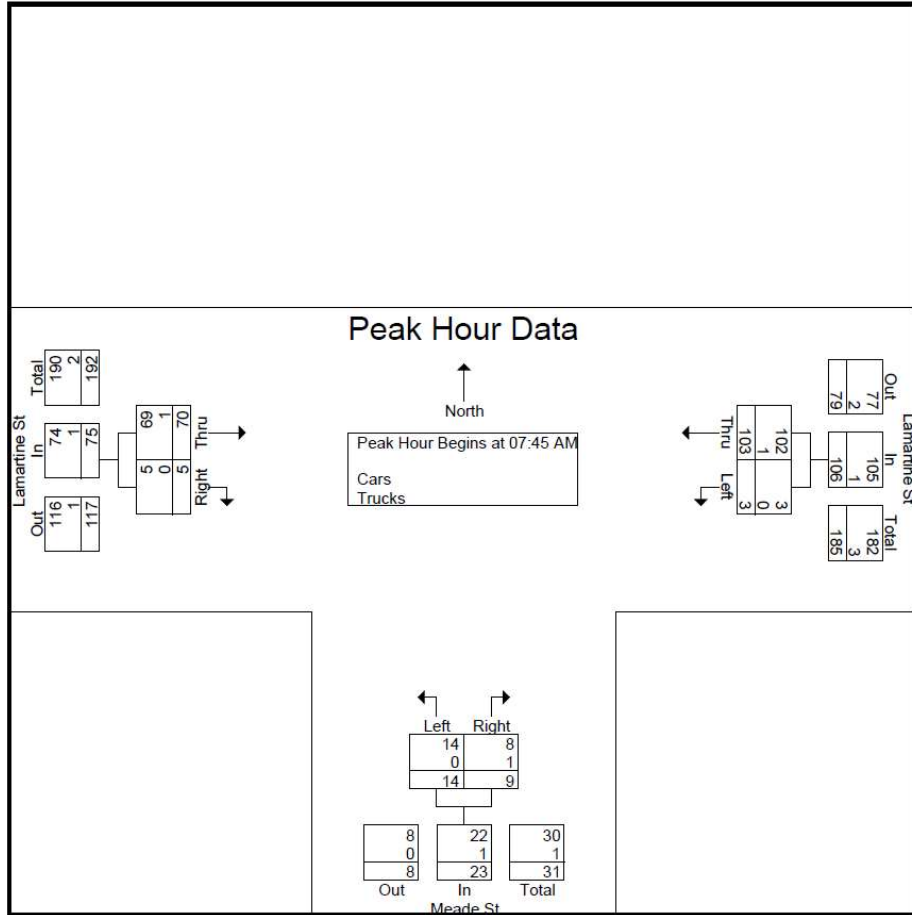
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

	04:15 PM			04:30 PM			04:15 PM		
+0 mins.	0	31	31	4	1	5	24	0	24
+15 mins.	0	28	28	1	0	1	25	0	25
+30 mins.	1	29	30	2	1	3	23	0	23
+45 mins.	1	37	38	3	0	3	33	1	34
Total Volume	2	125	127	10	2	12	105	1	106
% App. Total	1.6	98.4		83.3	16.7		99.1	0.9	
PHF	.500	.845	.836	.625	.500	.600	.795	.250	.779
Cars	2	125	127	10	2	12	105	1	106
% Cars	100	100	100	100	100	100	100	100	100
Trucks	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0

**Accurate Counts**  
978-664-2565

N/S Street : Meade Street  
E/W Street : Lamartine Street  
City/State : Worcester, MA  
Weather : Clear / Cloudy

File Name : 20260003  
Site Code : 20260003  
Start Date : 7/17/2024  
Page No : 2



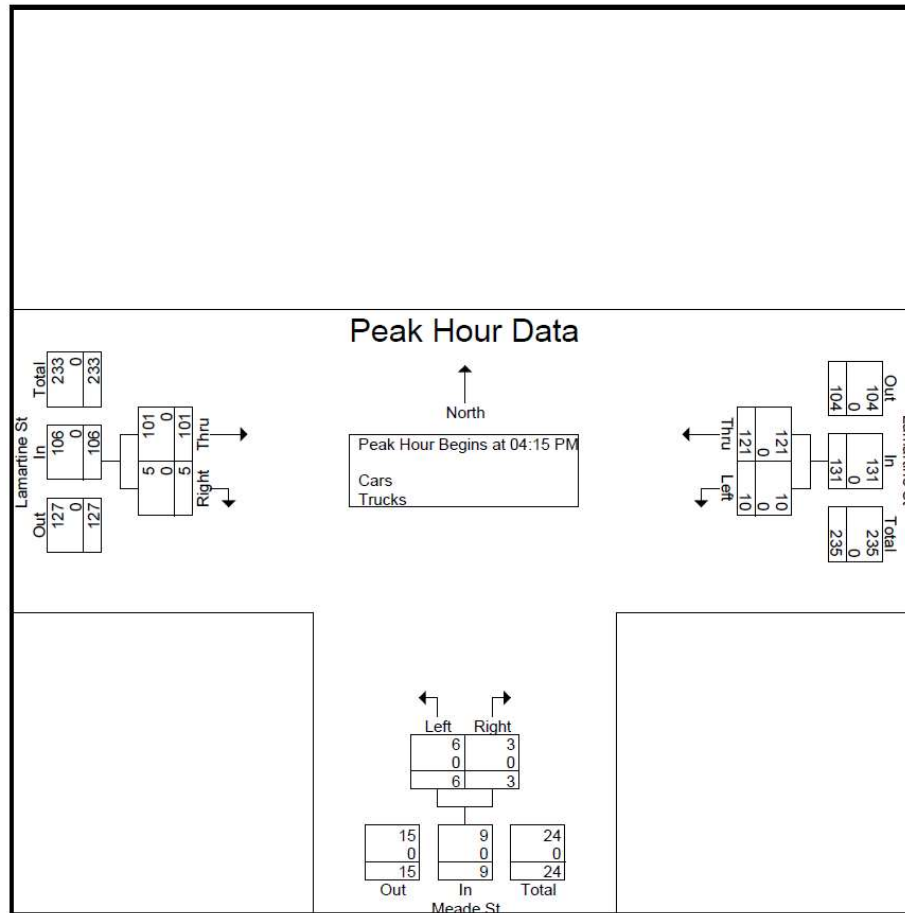
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

	07:45 AM			08:00 AM			07:45 AM		
+0 mins.	0	27	27	2	2	4	19	1	20
+15 mins.	1	21	22	7	1	8	20	1	21
+30 mins.	0	29	29	4	5	9	14	1	15
+45 mins.	2	26	28	2	8	10	17	2	19
Total Volume	3	103	106	15	16	31	70	5	75
% App. Total	2.8	97.2		48.4	51.6		93.3	6.7	
PHF	.375	.888	.914	.536	.500	.775	.875	.625	.893
Cars	3	102	105	15	15	30	69	5	74
% Cars	100	99	99.1	100	93.8	96.8	98.6	100	98.7
Trucks	0	1	1	0	1	1	1	0	1
% Trucks	0	1	0.9	0	6.2	3.2	1.4	0	1.3

**Accurate Counts**  
978-664-2565

N/S Street : Meade Street  
E/W Street : Lamartine Street  
City/State : Worcester, MA  
Weather : Clear / Cloudy

File Name : 20260003  
Site Code : 20260003  
Start Date : 7/17/2024  
Page No : 2



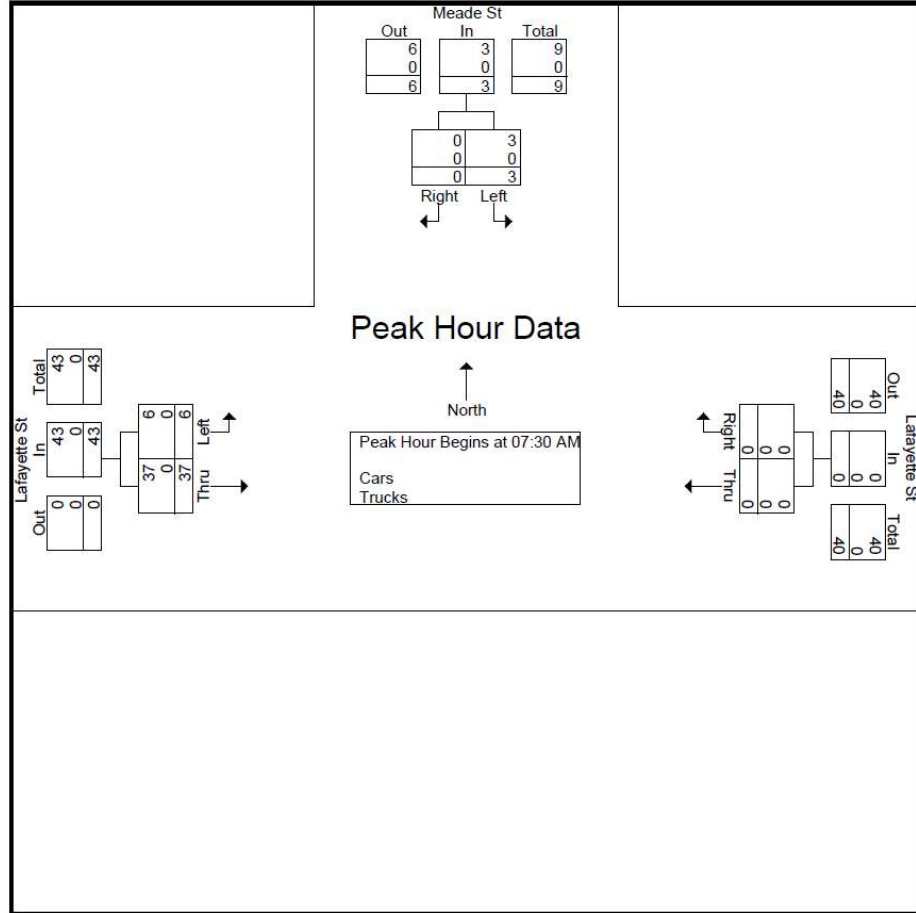
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

	04:00 PM			05:00 PM			04:15 PM		
+0 mins.	3	32	35	4	1	5	23	1	24
+15 mins.	4	31	35	0	0	0	25	1	26
+30 mins.	2	28	30	1	1	2	20	2	22
+45 mins.	3	29	32	1	3	4	33	1	34
Total Volume	12	120	132	6	5	11	101	5	106
% App. Total	9.1	90.9		54.5	45.5		95.3	4.7	
PHF	.750	.938	.943	.375	.417	.550	.765	.625	.779
Cars	12	120	132	6	5	11	101	5	106
% Cars	100	100	100	100	100	100	100	100	100
Trucks	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0

**Accurate Counts**  
978-664-2565

N/S Street : Meade Street  
E/W Street : Lafayette Street  
City/State : Worcester, MA  
Weather : Clear / Cloudy

File Name : 20260004  
Site Code : 20260004  
Start Date : 7/17/2024  
Page No : 2



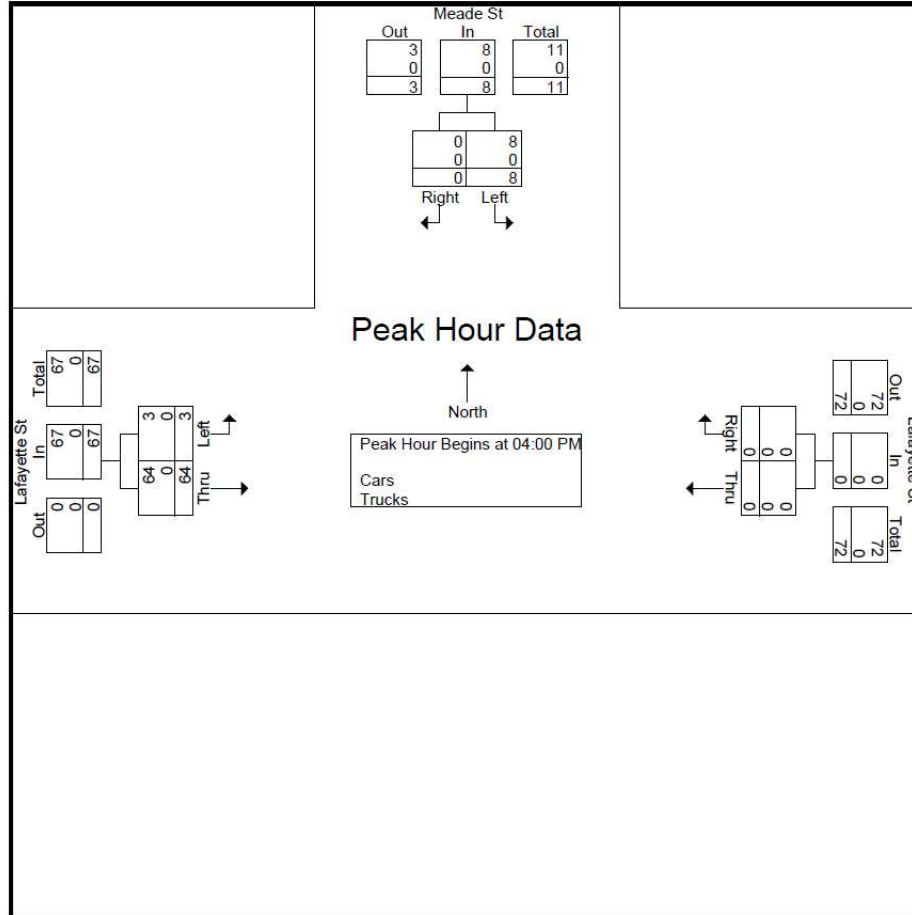
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			08:00 AM		
+0 mins.	1	0	1	0	0	0	3	9	12
+15 mins.	0	0	0	0	0	0	3	10	13
+30 mins.	3	0	3	0	0	0	2	5	7
+45 mins.	0	0	0	0	0	0	1	11	12
Total Volume	4	0	4	0	0	0	9	35	44
% App. Total	100	0		0	0		20.5	79.5	
PHF	.333	.000	.333	.000	.000	.000	.750	.795	.846
Cars	4	0	4	0	0	0	8	35	43
% Cars	100	0	100	0	0	0	88.9	100	97.7
Trucks	0	0	0	0	0	0	1	0	1
% Trucks	0	0	0	0	0	0	11.1	0	2.3

**Accurate Counts**  
978-664-2565

N/S Street : Meade Street  
E/W Street : Lafayette Street  
City/State : Worcester, MA  
Weather : Clear / Cloudy

File Name : 20260004  
Site Code : 20260004  
Start Date : 7/17/2024  
Page No : 2



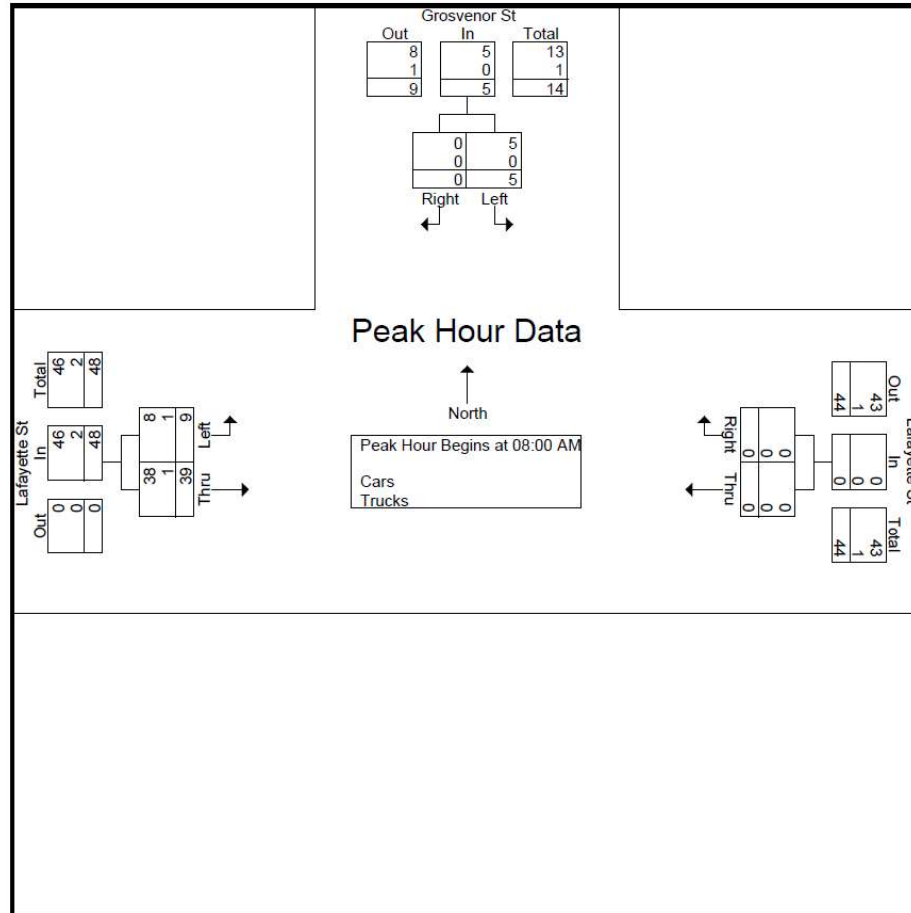
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	2	0	2	0	0	0	1	13	14
+15 mins.	0	0	0	0	0	0	1	15	16
+30 mins.	4	0	4	0	0	0	0	15	15
+45 mins.	2	0	2	0	0	0	1	21	22
Total Volume	8	0	8	0	0	0	3	64	67
% App. Total	100	0		0	0		4.5	95.5	
PHF	.500	.000	.500	.000	.000	.000	.750	.762	.761
Cars	8	0	8	0	0	0	3	64	67
% Cars	100	0	100	0	0	0	100	100	100
Trucks	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0

**Accurate Counts**  
978-664-2565

N/S Street : Grosvenor Street  
E/W Street : Lafayette Street  
City/State : Worcester, MA  
Weather : Clear / Cloudy

File Name : 20260005  
Site Code : 20260005  
Start Date : 7/17/2024  
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1  
Peak Hour for Each Approach Begins at:

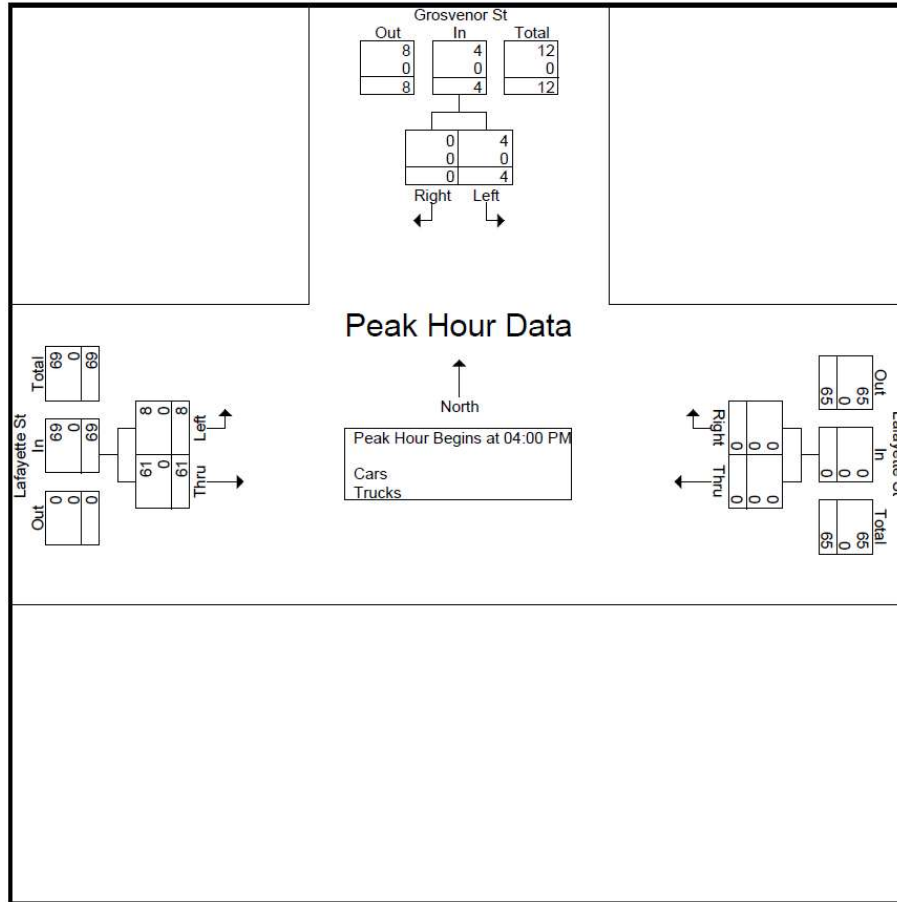
	08:00 AM			07:00 AM			08:00 AM		
+0 mins.	1	0	1	0	0	0	2	10	12
+15 mins.	2	0	2	0	0	0	3	13	16
+30 mins.	1	0	1	0	0	0	3	5	8
+45 mins.	1	0	1	0	0	0	1	11	12
Total Volume	5	0	5	0	0	0	9	39	48
% App. Total	100	0		0	0		18.8	81.2	
PHF	.625	.000	.625	.000	.000	.000	.750	.750	.750
Cars	5	0	5	0	0	0	8	38	46
% Cars	100	0	100	0	0	0	88.9	97.4	95.8
Trucks	0	0	0	0	0	0	1	1	2
% Trucks	0	0	0	0	0	0	11.1	2.6	4.2

**Accurate Counts**

978-664-2565

N/S Street : Grosvenor Street  
E/W Street : Lafayette Street  
City/State : Worcester, MA  
Weather : Clear / Cloudy

File Name : 20260005  
Site Code : 20260005  
Start Date : 7/17/2024  
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:00 PM			04:00 PM			04:00 PM		
+0 mins.	1	0	1	0	0	0	3	14	17
+15 mins.	1	0	1	0	0	0	0	16	16
+30 mins.	1	0	1	0	0	0	4	12	16
+45 mins.	3	0	3	0	0	0	1	19	20
Total Volume	6	0	6	0	0	0	8	61	69
% App. Total	100	0		0	0		11.6	88.4	
PHF	.500	.000	.500	.000	.000	.000	.500	.803	.863
Cars	6	0	6	0	0	0	8	61	69
% Cars	100	0	100	0	0	0	100	100	100
Trucks	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0



Accurate Counts  
978-664-2565

Site Code: 20260001

Location : Hermon Street  
Location : North of Green Street  
City/State: Worcester, MA

Time	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Week Average	
	SB.	NB.	SB.	NB.	SB.	NB.	SB.	NB.	SB.	NB.	SB.	NB.	SB.	NB.	SB.	NB.
12:00 AM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1:00	*	14	*	14	*	14	*	14	*	14	*	14	*	14	*	14
2:00	*	11	*	11	*	10	*	6	*	9	*	6	*	9	*	8
3:00	*	8	*	8	*	5	*	2	*	2	*	2	*	2	*	8
4:00	*	3	*	3	*	3	*	8	*	5	*	5	*	5	*	4
5:00	*	8	*	8	*	10	*	6	*	11	*	6	*	10	*	4
6:00	*	20	*	26	*	26	*	19	*	22	*	22	*	24	*	20
7:00	*	41	*	32	*	36	*	34	*	34	*	36	*	33	*	30
8:00	*	48	*	45	*	44	*	40	*	44	*	44	*	44	*	44
9:00	*	53	*	70	*	70	*	44	*	59	*	44	*	64	*	48
10:00	*	60	*	57	*	47	*	48	*	47	*	48	*	52	*	54
11:00	*	34	*	29	*	69	*	33	*	33	*	33	*	31	*	52
12:00 PM	*	64	*	49	*	66	*	44	*	44	*	44	*	46	*	65
1:00	*	77	*	45	*	75	*	51	*	51	*	51	*	48	*	76
2:00	*	79	*	50	*	82	*	70	*	70	*	70	*	60	*	80
3:00	*	84	*	59	*	97	*	64	*	64	*	64	*	62	*	90
4:00	*	120	*	57	*	109	*	59	*	59	*	59	*	58	*	114
5:00	*	114	*	60	*	147	*	74	*	74	*	74	*	67	*	130
6:00	*	125	*	58	*	123	*	66	*	66	*	66	*	62	*	124
7:00	*	70	*	37	*	78	*	39	*	39	*	39	*	38	*	74
8:00	*	57	*	27	*	73	*	33	*	33	*	33	*	30	*	65
9:00	*	45	*	12	*	48	*	37	*	37	*	37	*	24	*	46
10:00	*	56	*	30	*	46	*	44	*	44	*	44	*	16	*	51
11:00	*	23	*	15	*	32	*	18	*	18	*	18	*	16	*	28
Total Day	0	1232	0	802	1297	891	1297	891	0	0	0	0	0	0	1262	845
AM Peak Volume	0	2034	0	800	2188	800	2188	800	0	0	0	0	0	0	1100	800
PM Peak Volume	0	64	0	70	69	59	69	59	0	0	0	0	0	0	65	64
Comb Total ADT	0	2034	0	870	2188	859	2188	859	0	0	0	0	0	0	1165	864

Accurate Counts  
978-664-2565

Location : Hermon Street  
Location : North of Green Street  
City/State: Worcester, MA  
Direction: Combined

Site Code: 20260001

7/18/2024	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	1	1	1	6	1	6	3	1	0	0	0	0	20
1:00	0	0	0	3	2	4	2	2	1	1	0	0	0	0	15
2:00	0	0	0	0	3	4	2	2	0	0	0	0	0	0	11
3:00	0	0	0	1	6	0	2	3	0	0	1	0	0	0	13
4:00	0	0	0	0	2	5	4	3	2	1	0	0	0	0	17
5:00	0	0	0	0	1	9	15	11	3	1	1	0	0	0	41
6:00	0	0	4	2	5	15	11	16	12	3	1	1	0	0	70
7:00	0	0	7	3	2	4	18	22	20	8	0	0	0	0	84
8:00	0	0	7	2	6	10	24	21	20	11	2	0	0	0	103
9:00	0	0	5	3	3	9	19	35	11	5	3	2	0	0	95
10:00	0	0	2	5	7	15	27	28	13	1	1	3	0	0	102
11:00	0	0	1	7	12	14	35	18	13	5	3	2	0	0	110
12:00 PM	0	0	0	3	8	18	34	29	23	8	1	2	0	0	126
1:00	0	0	3	1	4	17	40	37	27	16	5	1	0	1	152
2:00	0	0	4	11	12	18	44	36	24	9	3	0	0	0	161
3:00	0	0	3	7	14	16	40	45	25	14	4	0	0	0	168
4:00	0	0	5	8	16	14	43	60	53	15	5	1	1	0	221
5:00	0	0	4	6	12	20	27	53	38	18	6	2	2	1	189
6:00	0	0	0	0	2	12	26	36	25	8	5	2	1	0	117
7:00	0	0	1	0	3	4	22	21	34	16	4	0	1	0	106
8:00	0	0	0	0	5	2	14	31	19	9	3	0	2	0	85
9:00	0	0	2	2	1	7	24	29	17	6	1	0	1	0	90
10:00	0	0	0	0	5	8	15	8	9	3	2	0	0	0	50
11:00	0	0	1	0	4	5	13	7	6	5	1	0	0	0	42
<b>Total</b>	<b>0</b>	<b>0</b>	<b>50</b>	<b>65</b>	<b>136</b>	<b>236</b>	<b>502</b>	<b>559</b>	<b>398</b>	<b>164</b>	<b>52</b>	<b>16</b>	<b>8</b>	<b>2</b>	<b>2188</b>
			Percentile	15th	50th	85th	95th								
			Speed	15	20	25	28								
			Mean Speed (Average)	21.7											
			10 MPH Pace Speed	18-27											
			Number in Pace	1484											
			Percent in Pace	71.0%											
			Number > 21 MPH	1199											
			Percent > 21 MPH	54.8%											
<b>Grand Total</b>	<b>0</b>	<b>0</b>	<b>120</b>	<b>118</b>	<b>279</b>	<b>515</b>	<b>990</b>	<b>988</b>	<b>729</b>	<b>328</b>	<b>110</b>	<b>29</b>	<b>10</b>	<b>6</b>	<b>4222</b>
			Percentile	15th	50th	85th	95th								
			Speed	15	20	25	28								
			Mean Speed (Average)	21.5											
			10 MPH Pace Speed	18-27											
			Number in Pace	2866											
			Percent in Pace	69.0%											
			Number > 21 MPH	2200											
			Percent > 21 MPH	52.1%											

Accurate Counts  
978-664-2565

Site Code: 20260002

Location : Lamartine Street  
Location : West of Lodi Street  
City/State: Worcester, MA

Time	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Week Average	
	WB.	EB.	WB.	EB.	WB.	EB.	WB.	EB.	WB.	EB.	WB.	EB.	WB.	EB.	WB.	EB.
12:00 AM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1:00	*	*	*	*	24	19	19	12	*	*	*	*	*	*	*	22
2:00	*	*	*	*	20	8	19	15	*	*	*	*	*	*	*	20
3:00	*	*	*	*	15	12	6	6	*	*	*	*	*	*	*	10
4:00	*	*	*	*	5	10	12	7	*	*	*	*	*	*	*	8
5:00	*	*	*	*	12	20	21	18	*	*	*	*	*	*	*	16
6:00	*	*	*	*	37	43	30	40	*	*	*	*	*	*	*	34
7:00	*	*	*	*	56	75	51	78	*	*	*	*	*	*	*	54
8:00	*	*	*	*	80	127	83	95	*	*	*	*	*	*	*	82
9:00	*	*	*	*	114	132	104	128	*	*	*	*	*	*	*	109
10:00	*	*	*	*	85	101	79	92	*	*	*	*	*	*	*	82
11:00	*	*	*	*	100	85	92	77	*	*	*	*	*	*	*	96
12:00 PM	*	*	*	*	86	82	108	93	*	*	*	*	*	*	*	97
1:00	*	*	*	*	99	106	121	98	*	*	*	*	*	*	*	110
2:00	*	*	*	*	110	90	125	118	*	*	*	*	*	*	*	118
3:00	*	*	*	*	118	102	109	89	*	*	*	*	*	*	*	114
4:00	*	*	*	*	104	91	121	83	*	*	*	*	*	*	*	112
5:00	*	*	*	*	103	86	125	124	*	*	*	*	*	*	*	114
6:00	*	*	*	*	102	81	97	131	*	*	*	*	*	*	*	100
7:00	*	*	*	*	86	84	79	74	*	*	*	*	*	*	*	82
8:00	*	*	*	*	83	64	93	72	*	*	*	*	*	*	*	79
9:00	*	*	*	*	61	46	69	65	*	*	*	*	*	*	*	88
10:00	*	*	*	*	54	53	67	75	*	*	*	*	*	*	*	65
11:00	*	*	*	*	39	27	38	47	*	*	*	*	*	*	*	60
Total	0	0	0	0	1615	1568	1704	1655	0	0	0	0	0	0	0	1660
Day	0	0	0	0	3183	3359	3359	3359	0	0	0	0	0	0	0	3273
AM Peak					8:00	8:00	11:00	8:00								8:00
Volume					114	132	108	128								109
PM Peak					2:00	12:00 PM	1:00	5:00								1:00
Volume					118	106	125	131								118
Comb Total	0	0	0	0	3183	3359	3359	3359	0	0	0	0	0	0	0	3273
ADT	ADT: 3.271				ADT: 3.271											

Accurate Counts  
978-664-2565

Location : Lamartine Street  
Location : West of Lodi Street  
City/State: Worcester, MA  
Direction: Combined

Site Code: 20260002

7/18/2024	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	1	3	9	15	1	2	0	0	0	0	0	0	31
1:00	0	0	4	12	12	4	2	0	0	0	0	0	0	34
2:00	0	0	1	6	4	1	0	0	0	0	0	0	0	12
3:00	0	0	2	10	4	3	0	0	0	0	0	0	0	19
4:00	0	0	2	17	12	6	2	0	0	0	0	0	0	39
5:00	2	3	4	19	29	9	3	1	0	0	0	0	0	70
6:00	2	6	10	39	49	18	4	1	0	0	0	0	0	129
7:00	19	22	59	56	20	2	0	0	0	0	0	0	0	178
8:00	11	29	33	86	56	15	2	0	0	0	0	0	0	232
9:00	5	9	31	53	55	17	1	0	0	0	0	0	0	171
10:00	10	9	36	68	38	8	0	0	0	0	0	0	0	169
11:00	3	15	52	79	36	14	2	0	0	0	0	0	0	201
12:00 PM	4	14	36	81	61	20	3	0	0	0	0	0	0	219
1:00	16	26	64	81	51	5	0	0	0	0	0	0	0	243
2:00	22	33	69	49	20	5	0	0	0	0	0	0	0	198
3:00	0	4	23	48	89	32	8	0	0	0	0	0	0	204
4:00	6	5	33	56	94	42	7	6	0	0	0	0	0	249
5:00	1	9	18	59	90	40	10	1	0	0	0	0	0	228
6:00	0	2	10	38	57	36	8	2	0	0	0	0	0	153
7:00	0	0	10	55	68	28	2	2	0	0	0	0	0	165
8:00	4	13	13	39	46	16	3	0	0	0	0	0	0	134
9:00	0	6	14	57	45	16	2	2	0	0	0	0	0	142
10:00	1	0	10	35	28	6	4	1	0	0	0	0	0	85
11:00	0	5	7	17	18	6	0	1	0	0	0	0	0	54
Total	106	211	544	1069	997	350	65	17	0	0	0	0	0	3359
			Percentile	15th	50th	85th	95th							
			Speed	21	28	34	37							
			Mean Speed (Average)	28.9										
			10 MPH Pace Speed	26-35										
			Number in Pace	1968										
			Percent in Pace	61.0%										
			Number > 30 MPH	1429										
			Percent > 30 MPH	42.5%										
Grand Total	163	331	959	2062	2086	760	153	26	2	0	0	0	0	6542
Stats			Percentile	15th	50th	85th	95th							
			Speed	23	29	34	37							
			Mean Speed (Average)	29.5										
			10 MPH Pace Speed	26-35										
			Number in Pace	4113										
			Percent in Pace	63.0%										
			Number > 30 MPH	3027										
			Percent > 30 MPH	46.3%										

Accurate Counts  
978-664-2565

Site Code: 20260003

Location : Lamartine Street  
Location : East of Lodi Street  
City/State: Worcester, MA

Time	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Week Average	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
12:00 AM	*	*	*	*	17	38	8	25	*	*	*	*	*	*	12	32
1:00	*	*	*	*	9	24	9	26	*	*	*	*	*	*	9	25
2:00	*	*	*	*	10	21	6	5	*	*	*	*	*	*	8	13
3:00	*	*	*	*	9	7	8	18	*	*	*	*	*	*	8	12
4:00	*	*	*	*	8	16	9	21	*	*	*	*	*	*	8	18
5:00	*	*	*	*	22	31	18	40	*	*	*	*	*	*	20	36
6:00	*	*	*	*	56	81	59	81	*	*	*	*	*	*	58	81
7:00	*	*	*	*	71	137	55	114	*	*	*	*	*	*	63	126
8:00	*	*	*	*	68	196	73	150	*	*	*	*	*	*	70	173
9:00	*	*	*	*	62	137	69	160	*	*	*	*	*	*	66	148
10:00	*	*	*	*	72	165	82	140	*	*	*	*	*	*	77	152
11:00	*	*	*	*	65	137	66	156	*	*	*	*	*	*	66	146
12:00 PM	*	*	*	*	72	138	71	179	*	*	*	*	*	*	72	158
1:00	*	*	*	*	73	188	96	161	*	*	*	*	*	*	84	174
2:00	*	*	*	*	76	187	82	154	*	*	*	*	*	*	79	170
3:00	*	*	*	*	113	149	104	156	*	*	*	*	*	*	108	152
4:00	*	*	*	*	95	175	123	187	*	*	*	*	*	*	109	181
5:00	*	*	*	*	102	159	102	167	*	*	*	*	*	*	102	163
6:00	*	*	*	*	65	152	76	147	*	*	*	*	*	*	70	150
7:00	*	*	*	*	63	136	66	173	*	*	*	*	*	*	64	154
8:00	*	*	*	*	46	73	48	138	*	*	*	*	*	*	47	106
9:00	*	*	*	*	47	83	62	141	*	*	*	*	*	*	54	112
10:00	*	*	*	*	21	81	34	69	*	*	*	*	*	*	28	75
11:00	*	*	*	*	19	29	19	51	*	*	*	*	*	*	19	40
Total	0	0	0	0	1261	2540	1345	2659	0	0	0	0	0	0	1301	2597
Day	0	0	0	0	3801	4004	0	0	0	0	0	0	0	0	3898	3898
AM Peak Volume					10:00	8:00	10:00	9:00							10:00	8:00
PM Peak Volume					72	166	82	160							77	173
Comb Total ADT	0	0	0	0	3801	4004	0	0	0	0	0	0	0	0	3898	3898
					3:00	1:00	4:00	4:00							4:00	4:00
					113	188	123	187							109	181
					ADT: 3.902	ADT: 3.902	ADT: 3.902	ADT: 3.902								

Accurate Counts  
978-664-2565

Location : Lamartine Street  
Location : East of Lodi Street  
City/State: Worcester, MA  
Direction: Combined

Site Code: 20260003

7/18/2024	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	3	8	14	5	2	0	1	0	0	0	33
1:00	0	0	1	1	6	6	9	7	2	2	1	0	0	0	35
2:00	0	0	1	0	4	0	1	2	2	0	0	0	0	1	11
3:00	0	0	0	1	2	4	8	8	2	1	0	0	0	0	26
4:00	0	0	0	0	0	4	11	9	5	1	0	0	0	0	30
5:00	0	0	0	2	2	5	21	10	10	7	1	0	0	0	58
6:00	0	0	0	8	5	15	36	30	30	12	3	1	0	0	140
7:00	0	0	0	3	22	27	49	30	24	11	3	0	0	0	169
8:00	0	0	3	10	18	25	78	38	33	14	4	0	0	0	223
9:00	0	0	4	4	26	39	68	47	21	16	4	0	0	0	229
10:00	0	0	1	12	32	55	65	23	16	11	6	0	0	1	222
11:00	0	0	0	9	22	51	65	42	22	7	4	0	0	0	222
12:00 PM	0	0	3	14	31	57	76	33	22	7	6	0	1	0	250
1:00	0	0	7	4	22	45	80	38	35	18	7	1	0	0	257
2:00	0	0	7	16	22	39	69	52	19	9	3	0	0	0	236
3:00	0	0	3	2	24	33	81	55	46	13	2	1	0	0	260
4:00	0	0	1	6	26	53	81	70	39	24	9	0	0	1	310
5:00	0	0	3	7	19	32	82	54	41	23	5	1	1	1	269
6:00	0	0	4	4	21	41	67	32	28	21	3	0	1	1	223
7:00	0	0	1	3	17	36	81	56	30	10	2	2	1	0	239
8:00	0	0	1	3	22	39	63	27	18	8	3	2	0	0	186
9:00	0	0	0	3	32	30	68	36	19	12	2	1	0	0	203
10:00	0	0	3	1	12	21	20	25	13	5	1	1	1	0	103
11:00	0	0	2	2	9	19	14	10	7	4	3	0	0	0	70
<b>Total</b>	<b>0</b>	<b>0</b>	<b>45</b>	<b>115</b>	<b>399</b>	<b>684</b>	<b>1207</b>	<b>739</b>	<b>486</b>	<b>236</b>	<b>73</b>	<b>10</b>	<b>5</b>	<b>5</b>	<b>4004</b>
			Percentile	15th	50th	85th	95th								
			Speed	15	19	24	28								
			Mean Speed (Average)	20.6											
			10 MPH Pace Speed	16-25											
			Number in Pace	2692											
			Percent in Pace	70.0%											
			Number > 18 MPH	2761											
			Percent > 18 MPH	69.0%											
<b>Grand Total</b>	<b>0</b>	<b>0</b>	<b>100</b>	<b>224</b>	<b>798</b>	<b>1312</b>	<b>2303</b>	<b>1484</b>	<b>976</b>	<b>433</b>	<b>133</b>	<b>23</b>	<b>7</b>	<b>12</b>	<b>7805</b>
<b>Stats</b>			Percentile	15th	50th	85th	95th								
			Speed	15	19	24	27								
			Mean Speed (Average)	20.6											
			10 MPH Pace Speed	16-25											
			Number in Pace	5408											
			Percent in Pace	70.0%											
			Number > 18 MPH	5371											
			Percent > 18 MPH	68.8%											

Accurate Counts  
978-664-2565

Site Code: 20260004

Location : Green Street  
Location : East of Lodi Street  
City/State: Worcester, MA

Time	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Week Average	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
12:00 AM	*	*	*	*	16	16	14	17	*	*	*	*	*	*	15	16
1:00	*	*	8	18	8	18	10	13	*	*	*	*	*	*	9	16
2:00	*	*	9	13	9	13	4	4	*	*	*	*	*	*	6	8
3:00	*	*	6	7	6	7	6	7	*	*	*	*	*	*	6	7
4:00	*	*	13	10	13	10	9	18	*	*	*	*	*	*	11	14
5:00	*	*	31	48	31	48	37	31	*	*	*	*	*	*	34	40
6:00	*	*	63	48	63	48	54	50	*	*	*	*	*	*	58	49
7:00	*	*	86	51	86	51	66	48	*	*	*	*	*	*	76	50
8:00	*	*	107	90	107	90	97	78	*	*	*	*	*	*	102	84
9:00	*	*	73	88	73	88	67	57	*	*	*	*	*	*	70	62
10:00	*	*	63	82	63	82	80	65	*	*	*	*	*	*	72	74
11:00	*	*	65	76	65	76	85	100	*	*	*	*	*	*	75	88
12:00 PM	*	*	69	69	69	69	77	83	*	*	*	*	*	*	73	76
1:00	*	*	85	83	85	83	66	113	*	*	*	*	*	*	76	98
2:00	*	*	72	69	72	69	79	83	*	*	*	*	*	*	76	76
3:00	*	*	53	76	53	76	52	74	*	*	*	*	*	*	52	75
4:00	*	*	67	78	67	78	85	98	*	*	*	*	*	*	76	88
5:00	*	*	55	69	55	69	105	69	*	*	*	*	*	*	80	69
6:00	*	*	61	64	61	64	63	74	*	*	*	*	*	*	62	69
7:00	*	*	45	55	45	55	53	49	*	*	*	*	*	*	49	52
8:00	*	*	37	51	37	51	51	47	*	*	*	*	*	*	44	49
9:00	*	*	44	41	44	41	52	40	*	*	*	*	*	*	48	40
10:00	*	*	26	19	26	19	43	36	*	*	*	*	*	*	34	28
11:00	*	*	21	17	21	17	13	28	*	*	*	*	*	*	17	22
Total	0	0	1175	1218	1175	1218	1268	1282	0	0	0	0	0	0	1221	1250
Day	0	0	2393	2550	2393	2550	2550	11:00	0	0	0	0	0	0	2471	2471
AM Peak			8:00	8:00	8:00	8:00	8:00	11:00							8:00	11:00
Volume			107	97	107	97	100	100							102	88
PM Peak			1:00	1:00	1:00	1:00	500	1:00							5:00	1:00
Volume			85	83	85	83	105	113							80	68
Comb Total	0	0	2393	2550	2393	2550	2550	113	0	0	0	0	0	0	2471	2471
ADT	ADT: 2,472	ADT: 2,472	AADT: 2,472													

Accurate Counts  
978-664-2565

Location : Green Street  
Location : East of Lodi Street  
City/State: Worcester, MA  
Direction: Combined

Site Code: 20260004

7/18/2024	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	1	4	8	11	4	2	1	0	0	0	31
1:00	0	0	0	2	0	0	4	9	6	1	1	0	0	0	23
2:00	0	0	0	0	0	2	3	1	2	0	0	0	0	0	8
3:00	0	0	1	2	2	2	2	2	2	0	0	0	0	0	13
4:00	0	0	0	0	1	1	12	8	4	0	1	0	0	0	27
5:00	0	0	0	0	4	5	17	17	15	9	1	0	0	0	68
6:00	0	0	0	0	3	10	28	34	17	7	4	0	0	1	104
7:00	0	0	0	1	8	7	29	33	29	4	3	0	0	0	114
8:00	0	0	4	8	8	11	43	45	36	12	5	0	0	3	175
9:00	0	0	2	7	6	13	29	28	23	12	3	0	0	1	124
10:00	0	0	4	2	14	12	39	44	24	5	0	0	0	1	145
11:00	0	0	6	4	16	24	51	51	20	9	0	1	1	2	185
12:00 PM	0	0	0	4	13	20	41	44	25	9	2	1	0	1	160
1:00	0	0	5	7	15	34	49	36	26	6	1	0	0	0	179
2:00	0	0	1	3	6	25	47	41	29	8	1	1	0	0	162
3:00	0	0	2	3	11	11	30	34	27	5	2	1	0	0	126
4:00	0	0	0	1	14	33	48	38	35	11	3	0	0	0	183
5:00	0	0	0	1	12	23	38	40	38	15	4	1	1	1	174
6:00	0	0	1	0	9	8	40	28	30	17	3	1	0	0	137
7:00	0	0	2	0	5	12	19	28	25	9	2	0	0	0	102
8:00	0	0	0	0	6	10	24	25	21	8	4	0	0	0	98
9:00	0	0	0	0	4	8	32	33	10	5	0	0	0	0	92
10:00	0	0	0	1	8	11	26	19	8	6	0	0	0	0	79
11:00	0	0	0	3	3	5	16	9	3	2	0	0	0	0	41
Total	0	0	28	49	169	291	675	658	459	162	41	6	2	10	2550
			Percentile	15th	50th	85th	95th								
			Speed	16	20	24	28								
			Mean Speed (Average)	21.7											
			10 MPH Pace Speed	18-27											
			Number in Pace	1811											
			Percent in Pace	75.0%											
			Number > 21 MPH	1338											
			Percent > 21 MPH	52.5%											
Grand Total	0	0	39	81	311	562	1349	1287	859	338	79	18	3	17	4943
Stats			Percentile	15th	50th	85th	95th								
			Speed	16	20	24	28								
			Mean Speed (Average)	21.8											
			10 MPH Pace Speed	18-27											
			Number in Pace	3676											
			Percent in Pace	75.0%											
			Number > 21 MPH	2601											
			Percent > 21 MPH	52.6%											



Accurate Counts  
978-664-2565

Location : Lodi Street  
 Location : South of Lamartine Street  
 City/State: Worcester, MA  
 Site Code: 20260005

Time	7/15/24	7/15/24	7/16/24	7/17/24	7/18/24	7/19/24	7/20/24	7/21/24	Average
	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon - Sun	
12:00 AM	*	*	*	1	0	*	*	*	0
1:00	*	*	*	4	1	*	*	*	2
2:00	*	*	*	2	2	*	*	*	2
3:00	*	*	*	2	1	*	*	*	2
4:00	*	*	*	1	1	*	*	*	1
5:00	*	*	*	7	4	*	*	*	6
6:00	*	*	*	8	12	*	*	*	10
7:00	*	*	*	17	14	*	*	*	16
8:00	*	*	*	20	9	*	*	*	14
9:00	*	*	*	28	21	*	*	*	24
10:00	*	*	*	22	16	*	*	*	19
11:00	*	*	*	19	19	*	*	*	19
12:00 PM	*	*	*	27	33	*	*	*	30
1:00	*	*	*	16	16	*	*	*	16
2:00	*	*	*	14	23	*	*	*	18
3:00	*	*	*	16	13	*	*	*	14
4:00	*	*	*	8	33	*	*	*	20
5:00	*	*	*	18	23	*	*	*	20
6:00	*	*	*	15	9	*	*	*	12
7:00	*	*	*	5	11	*	*	*	8
8:00	*	*	*	13	10	*	*	*	12
9:00	*	*	*	3	9	*	*	*	6
10:00	*	*	*	2	4	*	*	*	3
11:00	*	*	*	2	5	*	*	*	4
Total	0	0	270	289	0	0	0	278	278
Percent	0.0%	0.0%	48.3%	51.7%	0.0%	0.0%	0.0%	0.0%	
AM Peak Volume			9:00 28	9:00 21				9:00 24	
PM Peak Volume			12:00 PM 27	12:00 PM 33			12:00 PM 30		

Accurate Counts  
978-664-2565

Location : Lodi Street  
Location : South of Lamartine Street  
City/State: Worcester, MA  
Direction: SB,

Site Code: 20260005

7/18/2024	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
2:00	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
3:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
4:00	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
5:00	0	0	1	0	2	0	1	0	0	0	0	0	0	0	4
6:00	0	0	3	3	0	4	0	2	0	0	0	0	0	0	12
7:00	0	0	4	4	1	2	1	1	1	0	0	0	0	0	14
8:00	0	0	3	2	1	2	1	0	0	0	0	0	0	0	9
9:00	0	0	2	4	6	6	2	0	1	0	0	0	0	0	21
10:00	0	0	2	4	4	3	3	0	0	0	0	0	0	0	16
11:00	0	0	2	5	8	1	3	0	0	0	0	0	0	0	19
12:00 PM	0	0	5	5	12	6	2	1	0	0	1	0	0	1	33
1:00	0	0	3	3	4	3	2	0	1	0	0	0	0	0	16
2:00	0	0	2	5	8	3	2	1	0	0	1	0	0	1	23
3:00	0	0	2	0	6	2	2	1	0	0	0	0	0	0	13
4:00	0	0	6	6	5	7	1	2	1	0	0	0	2	3	33
5:00	0	0	2	5	10	2	3	0	1	0	0	0	0	0	23
6:00	0	0	1	2	0	1	4	1	0	0	0	0	0	0	9
7:00	0	0	3	2	3	0	0	0	0	0	0	0	2	1	11
8:00	0	0	2	2	2	1	1	0	0	0	0	0	0	2	10
9:00	0	0	0	0	3	4	0	0	0	0	0	0	0	2	9
10:00	0	0	1	0	0	1	2	0	0	0	0	0	0	0	4
11:00	0	0	1	0	2	0	1	1	0	0	0	0	0	0	5
<b>Total</b>	<b>0</b>	<b>0</b>	<b>45</b>	<b>52</b>	<b>80</b>	<b>49</b>	<b>32</b>	<b>10</b>	<b>5</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>10</b>	<b>289</b>

Percentile	15th	50th	85th	95th
Speed	8	13	16	20
Mean Speed (Average)	15.5			
10 MPH Pace Speed	8-17			
Number in Pace	194			
Percent in Pace	69.0%			
Number > 12 MPH	192			
Percent > 12 MPH	66.4%			

<b>Grand Total</b>	<b>0</b>	<b>0</b>	<b>90</b>	<b>123</b>	<b>131</b>	<b>99</b>	<b>61</b>	<b>17</b>	<b>7</b>	<b>3</b>	<b>4</b>	<b>0</b>	<b>5</b>	<b>19</b>	<b>559</b>
--------------------	----------	----------	-----------	------------	------------	-----------	-----------	-----------	----------	----------	----------	----------	----------	-----------	------------

Stats	Percentile	15th	50th	85th	95th
Speed		8	12	16	19
Mean Speed (Average)		15.2			
10 MPH Pace Speed		10-19			
Number in Pace		382			
Percent in Pace		69.0%			
Number > 12 MPH		346			
Percent > 12 MPH		61.9%			

Accurate Counts  
978-664-2565

Site Code: 20260006

Location : Grosvenor Street Between  
Lamartine Street and Lafayette Street  
City/State: Worcester, MA

Time	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Week Average	
	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	*	*	*	*	0	0	0	0	*	*	*	*	*	*	*	*
2:00	*	*	*	*	0	0	1	1	*	*	*	*	*	*	0	0
3:00	*	*	*	*	0	1	1	1	*	*	*	*	*	*	0	1
4:00	*	*	*	*	1	1	0	1	*	*	*	*	*	*	0	1
5:00	*	*	*	*	0	0	0	3	*	*	*	*	*	*	0	2
6:00	*	*	*	*	3	3	3	5	*	*	*	*	*	*	3	4
7:00	*	*	*	*	2	9	1	8	*	*	*	*	*	*	2	8
8:00	*	*	*	*	5	11	2	6	*	*	*	*	*	*	4	8
9:00	*	*	*	*	4	10	2	12	*	*	*	*	*	*	3	11
10:00	*	*	*	*	2	7	5	2	*	*	*	*	*	*	4	4
11:00	*	*	*	*	7	9	4	13	*	*	*	*	*	*	6	11
12:00 PM	*	*	*	*	1	6	3	8	*	*	*	*	*	*	2	7
1:00	*	*	*	*	5	7	5	12	*	*	*	*	*	*	5	10
2:00	*	*	*	*	11	9	4	14	*	*	*	*	*	*	8	12
3:00	*	*	*	*	0	10	4	8	*	*	*	*	*	*	2	9
4:00	*	*	*	*	1	8	3	15	*	*	*	*	*	*	2	12
5:00	*	*	*	*	8	11	5	13	*	*	*	*	*	*	6	12
6:00	*	*	*	*	11	14	6	11	*	*	*	*	*	*	8	12
7:00	*	*	*	*	6	7	12	20	*	*	*	*	*	*	9	14
8:00	*	*	*	*	1	4	4	10	*	*	*	*	*	*	2	7
9:00	*	*	*	*	4	8	3	5	*	*	*	*	*	*	4	6
10:00	*	*	*	*	2	5	2	6	*	*	*	*	*	*	2	6
11:00	*	*	*	*	1	3	0	4	*	*	*	*	*	*	0	4
Total	0	0	0	0	75	147	70	178	0	0	0	0	0	0	72	164
Day					222		248		0		0		0		236	
AM Peak					11:00		10:00		11:00						11:00	
Volume					7		5		13						6	
PM Peak					2:00		7:00		7:00						7:00	
Volume					11		20		20						9	
Comb Total	0		ADT: 235		222		248		0		0		0		236	
ADT			ADT: 235		ADT: 235											

Accurate Counts  
978-664-2565

Location : Grosvenor Street Between  
Location : Lamartine Street and Lafayette Street  
City/State: Worcester, MA  
Direction: Combined

Site Code: 20260006

7/18/2024	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
3:00	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
4:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
5:00	0	0	0	0	0	0	1	2	0	0	0	0	0	0	3
6:00	0	0	0	1	1	1	2	2	0	1	0	0	0	0	8
7:00	0	0	0	2	2	3	0	2	0	0	0	0	0	0	9
8:00	0	0	0	0	0	1	3	2	1	1	0	0	0	0	8
9:00	0	0	1	4	5	4	0	0	0	0	0	0	0	0	14
10:00	0	0	0	2	2	1	2	0	0	0	0	0	0	0	7
11:00	0	0	4	1	3	1	4	2	2	0	0	0	0	0	17
12:00 PM	0	0	0	2	1	3	3	1	1	0	0	0	0	0	11
1:00	0	0	3	4	2	2	3	2	0	1	0	0	0	0	17
2:00	0	0	0	4	4	3	4	3	0	0	0	0	0	0	18
3:00	0	0	1	2	3	4	1	1	0	0	0	0	0	0	12
4:00	0	0	1	3	5	5	4	0	0	0	0	0	0	0	18
5:00	0	0	1	2	2	5	5	2	1	0	0	0	0	0	18
6:00	0	0	2	1	3	4	4	1	2	0	0	0	0	0	17
7:00	0	0	14	5	3	3	4	1	2	0	0	0	0	0	32
8:00	0	0	0	4	4	1	4	1	0	0	0	0	0	0	14
9:00	0	0	3	0	1	3	0	1	0	0	0	0	0	0	8
10:00	0	0	1	3	2	2	0	0	0	0	0	0	0	0	8
11:00	0	0	0	1	0	2	0	0	1	0	0	0	0	0	4
<b>Total</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>41</b>	<b>44</b>	<b>48</b>	<b>46</b>	<b>23</b>	<b>10</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>248</b>
				Percentile	15th	50th	85th	95th							
				Speed	9	15	20	23							
				Mean Speed (Average)	15.5										
				10 MPH Pace Speed	13-22										
				Number in Pace	149										
				Percent in Pace	63.0%										
				Number > 15 MPH	130										
				Percent > 15 MPH	52.4%										
<b>Grand Total</b>	<b>0</b>	<b>0</b>	<b>57</b>	<b>77</b>	<b>84</b>	<b>94</b>	<b>95</b>	<b>43</b>	<b>17</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>470</b>
				Stats	Percentile	15th	50th	85th	95th						
				Speed	9	15	20	23							
				Mean Speed (Average)	15.6										
				10 MPH Pace Speed	13-22										
				Number in Pace	305										
				Percent in Pace	65.0%										
				Number > 15 MPH	252										
				Percent > 15 MPH	53.6%										

Accurate Counts  
978-664-2565

Site Code: 20260007

Location : Meade Street Between  
Location : Lamartine Street and Lafayette Street  
City/State: Worcester, MA

Time	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Week Average	
	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB
12:00 AM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1:00	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1
2:00	*	*	*	*	0	0	0	0	*	*	*	*	*	*	*	0
3:00	*	*	*	*	2	0	0	0	*	*	*	*	*	*	*	0
4:00	*	*	*	*	0	0	0	0	*	*	*	*	*	*	*	1
5:00	*	*	*	*	0	0	1	0	*	*	*	*	*	*	*	0
6:00	*	*	*	*	2	0	2	1	*	*	*	*	*	*	*	0
7:00	*	*	*	*	6	3	9	3	*	*	*	*	*	*	*	2
8:00	*	*	*	*	3	2	6	3	*	*	*	*	*	*	*	8
9:00	*	*	*	*	7	1	10	1	*	*	*	*	*	*	*	4
10:00	*	*	*	*	14	0	10	0	*	*	*	*	*	*	*	8
11:00	*	*	*	*	8	1	18	1	*	*	*	*	*	*	*	12
12:00 PM	*	*	*	*	11	3	6	1	*	*	*	*	*	*	*	13
1:00	*	*	*	*	5	2	10	0	*	*	*	*	*	*	*	8
2:00	*	*	*	*	8	0	11	1	*	*	*	*	*	*	*	10
3:00	*	*	*	*	9	0	15	1	*	*	*	*	*	*	*	12
4:00	*	*	*	*	4	0	4	0	*	*	*	*	*	*	*	4
5:00	*	*	*	*	3	0	3	0	*	*	*	*	*	*	*	3
6:00	*	*	*	*	2	0	6	0	*	*	*	*	*	*	*	4
7:00	*	*	*	*	4	0	6	0	*	*	*	*	*	*	*	4
8:00	*	*	*	*	1	0	7	0	*	*	*	*	*	*	*	5
9:00	*	*	*	*	1	0	3	0	*	*	*	*	*	*	*	4
10:00	*	*	*	*	3	0	1	0	*	*	*	*	*	*	*	2
11:00	*	*	*	*	5	0	4	0	*	*	*	*	*	*	*	2
Total	0	0	100	12	133	13	146	0	0	0	0	0	0	0	115	10
Day	0	0	112	146	112	146	146	0	0	0	0	0	0	0	125	125
AM Peak			10:00	7:00	11:00	7:00	11:00	7:00							11:00	7:00
Volume			14	3	18	3	18	3							13	3
PM Peak			12:00 PM	12:00 PM	3:00	12:00 PM	3:00	12:00 PM							3:00	12:00 PM
Volume			11	3	15	1	15	1							12	2
Comb Total	0	0	112	146	112	146	146	0	0	0	0	0	0	0	125	125
ADT			ADT: 129	ADT: 129	ADT: 129	ADT: 129	ADT: 129									

Accurate Counts  
978-664-2565

Location : Meade Street Between  
Location : Lamartine Street and Lafayette Street  
City/State: Worcester, MA  
Direction: Combined

Site Code: 20260007

7/18/2024	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:00	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
6:00	0	0	1	1	0	1	0	0	0	0	0	0	0	0	3
7:00	0	0	8	2	1	0	0	0	1	0	0	0	0	0	12
8:00	0	0	7	0	1	1	0	0	0	0	0	0	0	0	9
9:00	0	0	7	1	1	1	1	0	0	0	0	0	0	0	11
10:00	0	0	1	1	4	3	1	0	0	0	0	0	0	0	10
11:00	0	0	6	3	7	2	1	0	0	0	0	0	0	0	19
12:00 PM	0	0	2	0	1	0	3	1	0	0	0	0	0	0	7
1:00	0	0	3	1	1	1	4	0	0	0	0	0	0	0	10
2:00	0	0	1	4	4	1	2	0	0	0	0	0	0	0	12
3:00	0	0	7	2	3	2	2	0	0	0	0	0	0	0	16
4:00	0	0	1	1	0	2	1	0	0	0	0	0	0	0	5
5:00	0	0	0	0	2	0	1	0	0	0	0	0	0	0	3
6:00	0	0	0	0	1	3	0	1	0	1	0	0	0	0	6
7:00	0	0	0	0	0	2	3	1	0	0	0	0	0	0	6
8:00	0	0	0	0	3	1	2	0	1	0	0	0	0	0	7
9:00	0	0	1	0	1	1	0	0	0	0	0	0	0	0	3
10:00	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
11:00	0	0	0	0	1	1	1	1	0	0	0	0	0	0	4
<b>Total</b>	<b>0</b>	<b>0</b>	<b>45</b>	<b>16</b>	<b>31</b>	<b>22</b>	<b>24</b>	<b>5</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>146</b>
					Percentile	15th	50th	85th	95th						
					Speed	0	12	18	20						
					Mean Speed (Average)	13.5									
					10 MPH Pace Speed	7-16									
					Number in Pace	101									
					Percent in Pace	72.0%									
					Number > 12 MPH	85									
					Percent > 12 MPH	58.2%									
<b>Grand Total</b>	<b>0</b>	<b>0</b>	<b>72</b>	<b>37</b>	<b>58</b>	<b>34</b>	<b>44</b>	<b>9</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>258</b>
<b>Stats</b>					Percentile	15th	50th	85th	95th						
					Speed	0	12	18	20						
					Mean Speed (Average)	13.5									
					10 MPH Pace Speed	7-16									
					Number in Pace	185									
					Percent in Pace	73.0%									
					Number > 12 MPH	149									
					Percent > 12 MPH	57.8%									

Accurate Counts  
978-664-2565

Site Code: 20260008

Location : Lafayette Street Between  
Meade Street and Grosvenor Street  
City/State: Worcester, MA

Time	7/15/24	7/16/24	7/17/24	7/18/24	7/19/24	7/20/24	7/21/24	Average
	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon - Fri
12:00 AM	*	*	*	13	*	*	*	10
1:00	*	*	6	10	*	*	*	8
2:00	*	*	4	7	*	*	*	6
3:00	*	*	3	5	*	*	*	4
4:00	*	*	5	6	*	*	*	6
5:00	*	*	27	24	*	*	*	26
6:00	*	*	38	28	*	*	*	33
7:00	*	*	30	32	*	*	*	31
8:00	*	*	44	37	*	*	*	40
9:00	*	*	40	43	*	*	*	42
10:00	*	*	61	54	*	*	*	58
11:00	*	*	45	43	*	*	*	44
12:00 PM	*	*	38	61	*	*	*	50
1:00	*	*	61	51	*	*	*	56
2:00	*	*	47	54	*	*	*	50
3:00	*	*	60	49	*	*	*	54
4:00	*	*	65	55	*	*	*	60
5:00	*	*	51	56	*	*	*	54
6:00	*	*	51	59	*	*	*	55
7:00	*	*	45	53	*	*	*	49
8:00	*	*	32	50	*	*	*	41
9:00	*	*	31	42	*	*	*	36
10:00	*	*	28	32	*	*	*	30
11:00	*	*	12	25	*	*	*	18
Total	0	0	831	889	0	0	0	861
Percent	0.0%	0.0%	48.3%	51.7%	0.0%	0.0%	0.0%	
AM Peak			10:00	10:00				10:00
Volume			61	54				58
PM Peak			4:00	12:00 PM				4:00
Volume			65	61				60

Accurate Counts  
978-664-2565

Location : Lafayette Street Between  
Location : Meade Street and Grosvenor Street  
City/State: Worcester, MA  
Direction: EB,

Site Code: 20260008

7/18/2024	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	2	2	1	1	1	0	2	1	3	0	0	0	13
1:00	0	0	2	1	0	0	0	1	3	3	0	0	0	0	10
2:00	0	0	0	0	1	1	3	1	0	0	1	0	0	0	7
3:00	0	0	0	0	0	1	0	0	3	1	0	0	0	0	5
4:00	0	0	0	1	2	0	0	1	1	1	0	0	0	0	6
5:00	0	0	1	1	2	0	5	9	2	3	1	0	0	0	24
6:00	0	0	3	1	2	1	6	5	5	4	1	0	0	0	28
7:00	0	0	1	5	3	1	5	8	5	2	1	1	0	0	32
8:00	0	0	2	1	3	5	5	6	8	4	2	1	0	0	37
9:00	0	0	2	1	4	3	10	13	5	3	2	0	0	0	43
10:00	0	0	2	0	4	11	20	12	2	1	2	0	0	0	54
11:00	0	0	2	2	5	6	17	3	7	1	0	0	0	0	43
12:00 PM	0	0	6	6	5	9	19	10	3	3	0	0	0	0	61
1:00	0	0	3	1	4	3	18	13	5	2	0	1	1	0	51
2:00	0	0	1	1	3	5	13	14	11	5	0	1	0	0	54
3:00	0	0	4	1	7	8	12	11	4	1	1	0	0	0	49
4:00	0	0	3	1	5	7	14	15	6	2	2	0	0	0	55
5:00	0	0	4	5	10	3	10	12	8	2	0	1	1	0	56
6:00	0	0	3	5	6	9	16	7	7	2	2	1	0	1	59
7:00	0	0	0	1	5	5	16	10	11	4	1	0	0	0	53
8:00	0	0	2	4	6	7	9	13	7	1	1	0	0	0	50
9:00	0	0	4	0	4	3	15	8	2	1	3	0	1	1	42
10:00	0	0	4	2	3	2	7	6	5	0	1	2	0	0	32
11:00	0	0	1	0	2	1	6	7	2	3	2	0	0	1	25
Total	0	0	52	42	87	92	227	185	114	50	26	8	3	3	889
			Percentile	15th	50th	85th	95th								
			Speed	6	6	12	25								
			Mean Speed (Average)	20.4											
			10 MPH Pace Speed	17-26											
			Number in Pace	528											
			Percent in Pace	63.0%											
			Number > 15 MPH	708											
			Percent > 15 MPH	79.6%											
Grand Total	0	0	122	124	229	220	397	314	188	75	35	9	4	3	1720
Stats			Percentile	15th	50th	85th	95th								
			Speed	8	13	20	24								
			Mean Speed (Average)	19.2											
			10 MPH Pace Speed	16-25											
			Number in Pace	994											
			Percent in Pace	59.0%											
			Number > 15 MPH	1245											
			Percent > 15 MPH	72.4%											





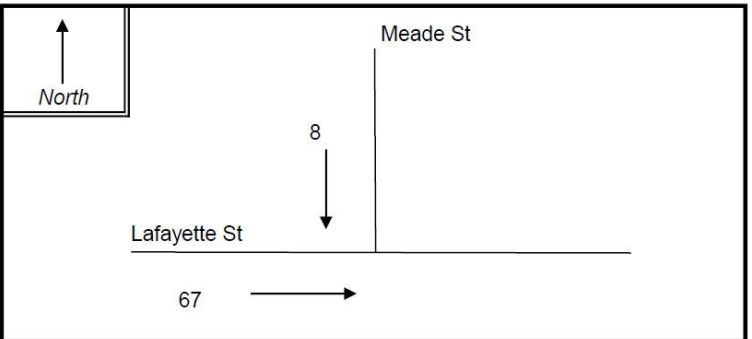
**INTERSECTION CRASH RATE WORKSHEET**

CITY/TOWN : Worcester                      COUNT DATE : Jul-24  
 DISTRICT : \_\_\_\_\_    UNSIGNALIZED :     SIGNALIZED :

**~ INTERSECTION DATA ~**

MAJOR STREET : Lafayette Street  
 MINOR STREET(S) : Meade Street

**INTERSECTION  
DIAGRAM**  
(Label Approaches)



**PEAK HOUR VOLUMES**

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume	
DIRECTION :	EB	WB	SB				
PEAK HOURLY VOLUMES (AM/PM) :	67	0	8			75	
" K " FACTOR :	0.090					INTERSECTION ADT ( V ) = TOTAL DAILY APPROACH VOLUME :	833
TOTAL # OF CRASHES :	2	# OF YEARS :	5	AVERAGE # OF CRASHES PER YEAR ( A ) :		0.40	

**CRASH RATE CALCULATION :**    **1.32**    RATE =  $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : Much higher than average of 0.61 for unsignalized intersections in Dist 3 of massDOT  
 Project Title & Date: 39 Lamartine Street residential development August 2024



**INTERSECTION CRASH RATE WORKSHEET**

CITY/TOWN : Worcester COUNT DATE : Jul-24

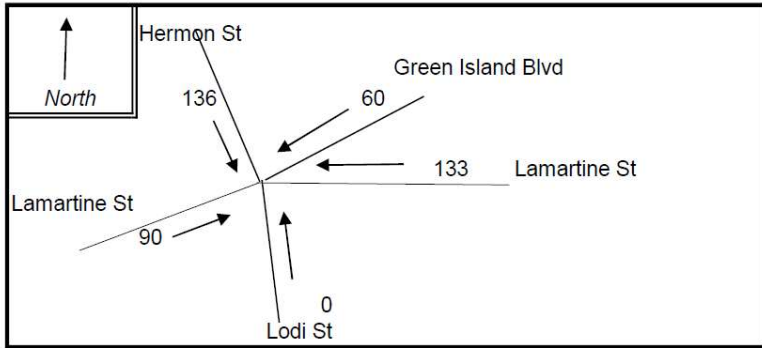
DISTRICT : \_\_\_\_\_ UNSIGNALIZED :  X SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Green Island Boulevard

MINOR STREET(S) : Lamartine Street

**INTERSECTION  
DIAGRAM**  
(Label Approaches)



**PEAK HOUR VOLUMES**

APPROACH :	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Total Peak Hourly Approach Volume</b>
DIRECTION :	NE	W	N	SW	S	
PEAK HOURLY VOLUMES (AM/PM) :	90	133	0	60	136	

"K" FACTOR :  INTERSECTION ADT ( V ) = TOTAL DAILY APPROACH VOLUME :

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

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

Comments : Significantly lower than the average rate of 0.61 for unsignalized intersections in Dist 3 of massDOT

Project Title & Date : 39 Lamartine Street Residential Development August 2024



Number	Location	Date	Time	Severity Reported	Apparent Injury (O)	Vehicles	Injuries	Injuries	Angle	Prior to Crash	Crash Description	Vehicle Configuration	Road Surface Condition	Ambient Light	Weather Condition	At Roadway Intersection	Distance From Nearest Roadway Intersection	Distance From Nearest Milemarker	Distance From Nearest Exit	Distance From Nearest Landmark	Vulnerability User Type	X Coordinate	Y Coordinate		
4689948	WORCESTER	31-Jan-2019	12:08 PM	Not Reported	Not Applicable	2	0	0	0 Angle	V1: Travelling straight ahead / V2: Turning left	V1: Not Reported / V2: Not Reported	V1:(Collisi on with motor vehicle in traffic) / V1:(Light truck(van, mini-van, pickup, sport utility)) / V2:(Collisi on with motor vehicle in traffic)	Ice	Daylight	Clear/Clear	LAMARTINE STREET / LODI STREET	LAMARTINE STREET / LODI STREET						174995.8 1224996	889371.8 1258123	
4899565	WORCESTER	11-Feb-2020	6:20 AM	Property damage only (none injured)	No Apparent Injury (O)	1	0	0	0 Single vehicle crash	V1: Travelling straight ahead	V1: N	V1:(Collisi on with fence)	V1:(Passenger car)	Wet	Daylight	Rain	LAMARTINE STREET / LODI STREET	LAMARTINE STREET / LODI STREET						174995.8 122	889371.8 126
5253297	WORCESTER	06-Mar-2023	2:31 PM	Property damage only (none injured)	No Apparent Injury (O)	2	0	0	0 Angle	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: / V2:	V1:(Collisi on with motor car) / V2:(Passenger car) / V2:(Collisi on with motor vehicle in traffic)	V1:(Passenger car) / V2:(Passenger car)	Dry	Dark - lighted roadway	Clear	HERMON STREET / Rte	HERMON STREET / Rte						174995.8 122	889371.8 126
4905786	WORCESTER	27-Oct-2020	1:10 PM	Unknown	Not reported	4	0	0	0 Angle	V1: Turning left / V2: Travelling straight ahead / V3: Parked / V4: Parked	V1: Not Reported / V2: Not Reported / V3: Not Reported / V4: Not Reported	V1:(Collisi on with motor vehicle in traffic) / V2:(Light truck(van, mini-van, pickup, sport utility)) / V3:(Passenger car) / V4:(Light truck(van, mini-van, pickup, sport utility))	Dry	Daylight	Clear/Clear	MEADE STREET / LAFAYETTE STREET	MEADE STREET / LAFAYETTE STREET						175144.3 752	889191.2 501	
5123364	WORCESTER	07-May-2022	3:45 PM	Property damage only (none injured)	No Apparent Injury (O)	3	0	0	0 Angle	V1: Travelling straight ahead / V2: Travelling straight ahead / V3: Parked	V1: Not Reported / V2: Not Reported / V3: Not Reported	V1:(Collisi on with motor vehicle in traffic) / V2:(Passenger car) / V2:(Collisi on with motor vehicle in traffic) / V3:(Passenger car) / V3:(Collisi on with motor vehicle in traffic)	Dry	Daylight	Clear	LAFAYETTE STREET / MEADE STREET	LAFAYETTE STREET / MEADE STREET						175144.3 752	889191.2 501	

Massachusetts Highway Department  
 Statewide Traffic Data Collection  
 2019 Weekday Seasonal Factors

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

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

U = Urban  
 R = Rural

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

Recreational - East Group - Cape Cod (all towns) including the town of Plymouth south of Route 3A (stations 7014,7079,7080,7090,7091,7092,7093,7094,7095,7096,7097,7108 and 7178), Martha's Vineyard and Nantucket. Recreational - West Group - Continuous Stations 2 and 189 including stations 1066,1067,1083,1084,1085,1086,1087,1088,1089,1090,1091,1092,1093,1094,1095,1096,1097,1098,1099,1100,1101,1102,1103,1104,1105,1106,1107,1108,1113,1114,1116,2196,2197 and 2198.
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5/31/2020

## MassDOT Yearly Growth Rates

for data from 2014 to 2018

Growth Factors 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

### Average Crash Rates, per Million Entering Vehicles, by Intersection Type

(Based upon crash information queried on June 26, 2018)

Location	Signalized Intersections	Unsignalized Intersections
Statewide	0.78	0.57
District 1*	0.80*	0.44*
District 2	0.89	0.62
District 3	0.89	0.61
District 4	0.73	0.57
District 5	0.75	0.57
District 6	0.71	0.52

### Location Signalized Intersections

\* - District 1 should use Statewide Rates due to low sample total

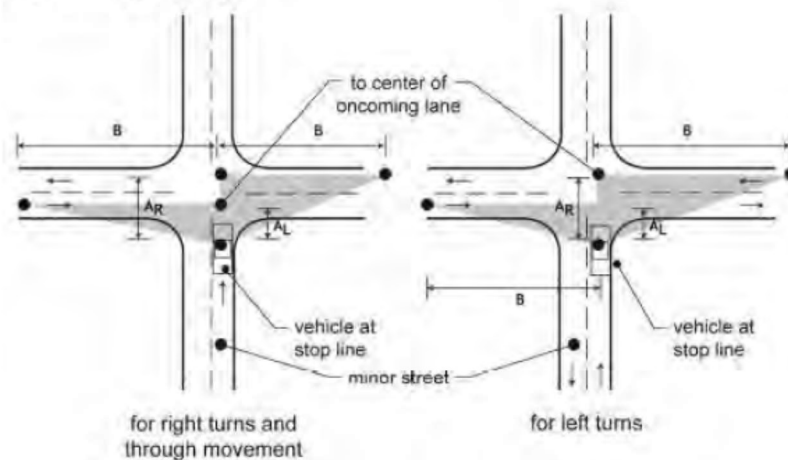
## Exhibit 3-8

### Motor Vehicle Stopping Sight Distances

Design Speed	Stopping Sight Distance (ft) by Percent Grade (%)						
	0	Downgrade			Upgrade		
		3	6	9	3	6	9
20	115	116	120	126	109	107	104
25	155	158	165	173	147	143	140
30	200	205	215	227	200	184	179
35	250	257	271	287	237	229	222
40	305	315	333	354	289	278	269
45	360	378	400	427	344	331	320
50	425	446	474	507	405	388	375
55	495	520	553	593	469	450	433
60	570	598	638	686	538	515	495
65	645	682	728	785	612	584	561
70	730	771	825	891	690	658	631
75	820	866	927	1003	772	736	704

Source: A Policy on Geometric Design of Streets and Highways, AASHTO, Washington DC, 2004. Chapter 3 Elements of Design

**Exhibit 3-11**  
**Sight Triangle Case B**  
**Departure Sight Triangles**



**Sight Triangle Legs: Case B – Stop Control on Cross Street**

Major Street Design Speed (mph)	Length of Sight Triangle Legs (feet)			
	Minor Street for Vehicles Approaching From Right (A <sub>R</sub> , feet)	Minor Street for Vehicles Approaching From Left (A <sub>L</sub> , feet)	Major Street For Left Turns (B, feet)	Major Street for Right Turns or Through (B, feet)
15	32.5	20.5	170	145
20	32.5	20.5	225	195
25	32.5	20.5	280	240
30	32.5	20.5	335	290
35	32.5	20.5	390	335
40	32.5	20.5	445	385
45	32.5	20.5	500	430
50	32.5	20.5	555	480
55	32.5	20.5	610	530
60	32.5	20.5	665	575
65	32.5	20.5	720	625
70	32.5	20.5	775	670
75	32.5	20.5	830	720

Sight triangle legs shown are for passenger car crossing or turning into a two-lane street, with grades (all approaches) 3 percent or less. For other grades and for other major street widths, recalculate using AASHTO *Green Book* formulas.

Source: *A Policy on Geometric Design of Streets and Highways*, AASHTO, Washington DC, 2004. Chapter 3 Elements of Design

Trip Generation

## Mid-Rise Residential with Ground-Floor Commercial GFA (1-25k) (231)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: Dense Multi-Use Urban

Number of Studies: 14

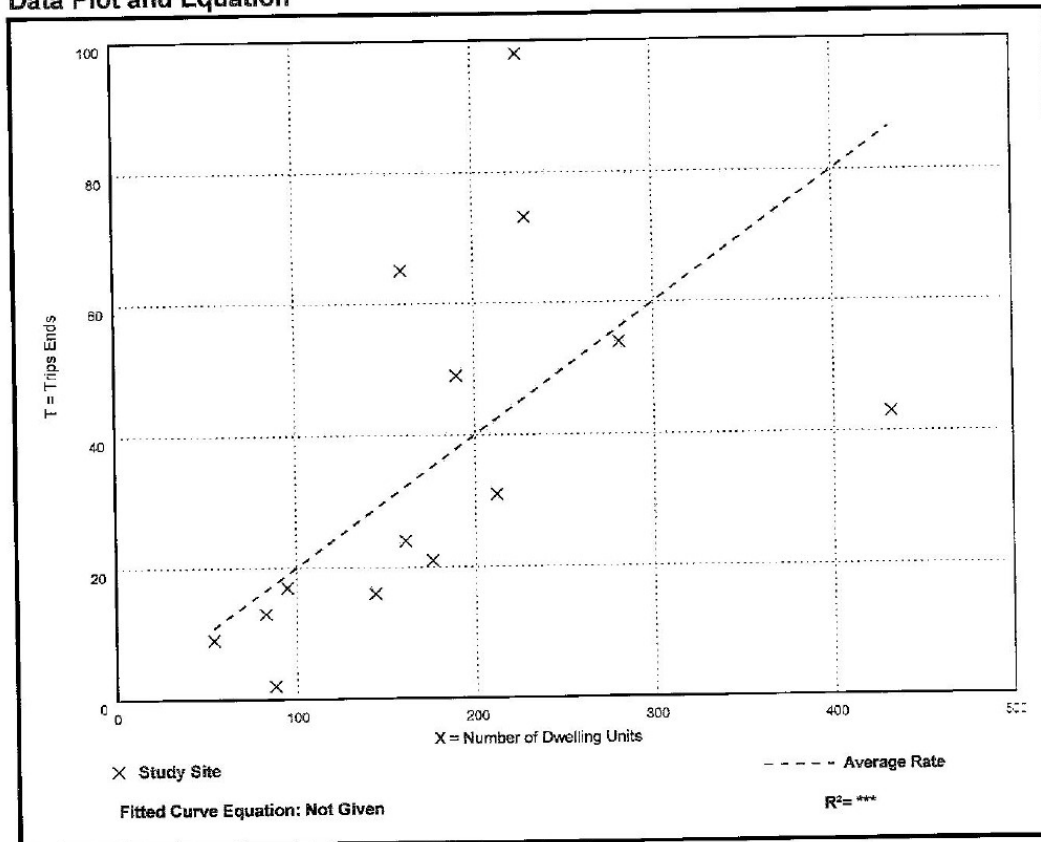
Avg. Num. of Dwelling Units: 181

Directional Distribution: 39% entering, 61% exiting

### Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.20	0.02 - 0.44	0.12

### Data Plot and Equation



## Mid-Rise Residential with Ground-Floor Commercial GFA (1-25k) (231)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: Dense Multi-Use Urban

Number of Studies: 5

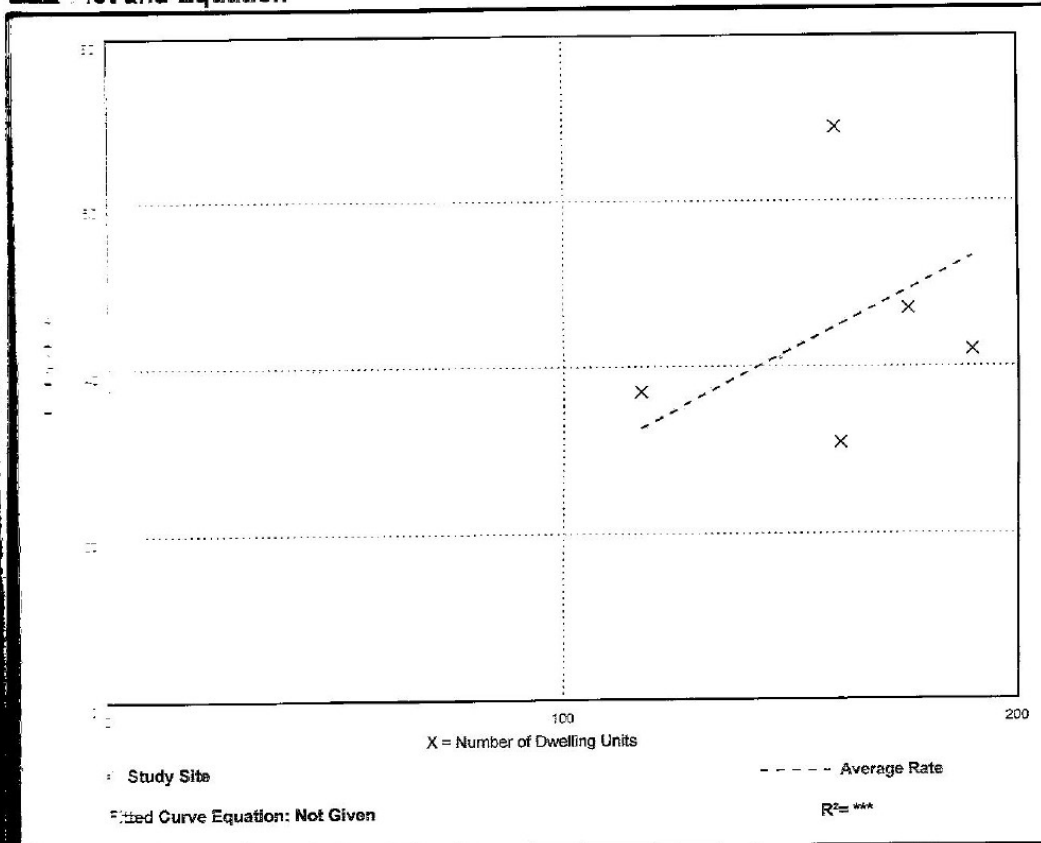
Avg. Num. of Dwelling Units: 161

Directional Distribution: 44% entering, 56% exiting

### Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.28	0.19 - 0.43	0.09

### Scatter Plot and Equation





# Apparel Store (876)

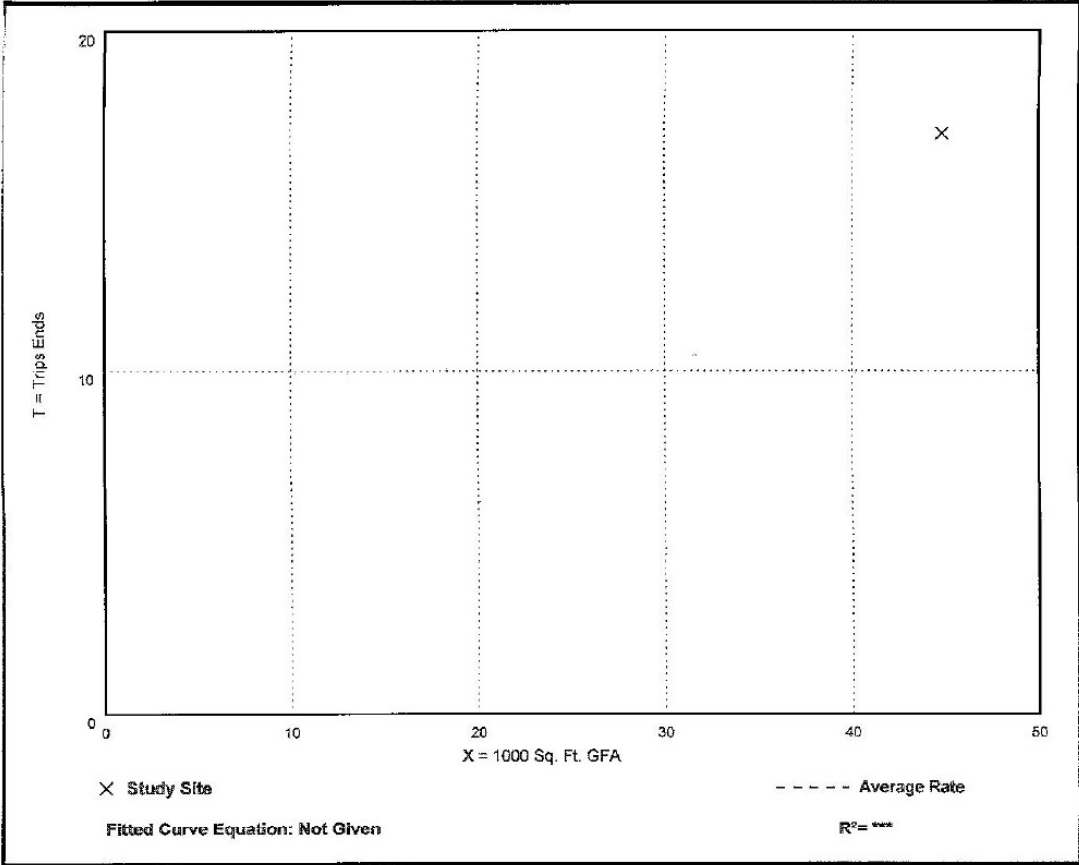
**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
 On a: **Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 7 and 9 a.m.**  
**Setting/Location: Dense Multi-Use Urban**  
 Number of Studies: 1  
 Avg. 1000 Sq. Ft. GFA: 45  
 Directional Distribution: 59% entering, 41% exiting

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

Average Rate	Range of Rates	Standard Deviation
0.38	0.38 - 0.38	***

**Data Plot and Equation**

*Caution – Small Sample Size*



## Apparel Store (876)

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: Dense Multi-Use Urban

Number of Studies: 1

Avg. 1000 Sq. Ft. GFA: 45

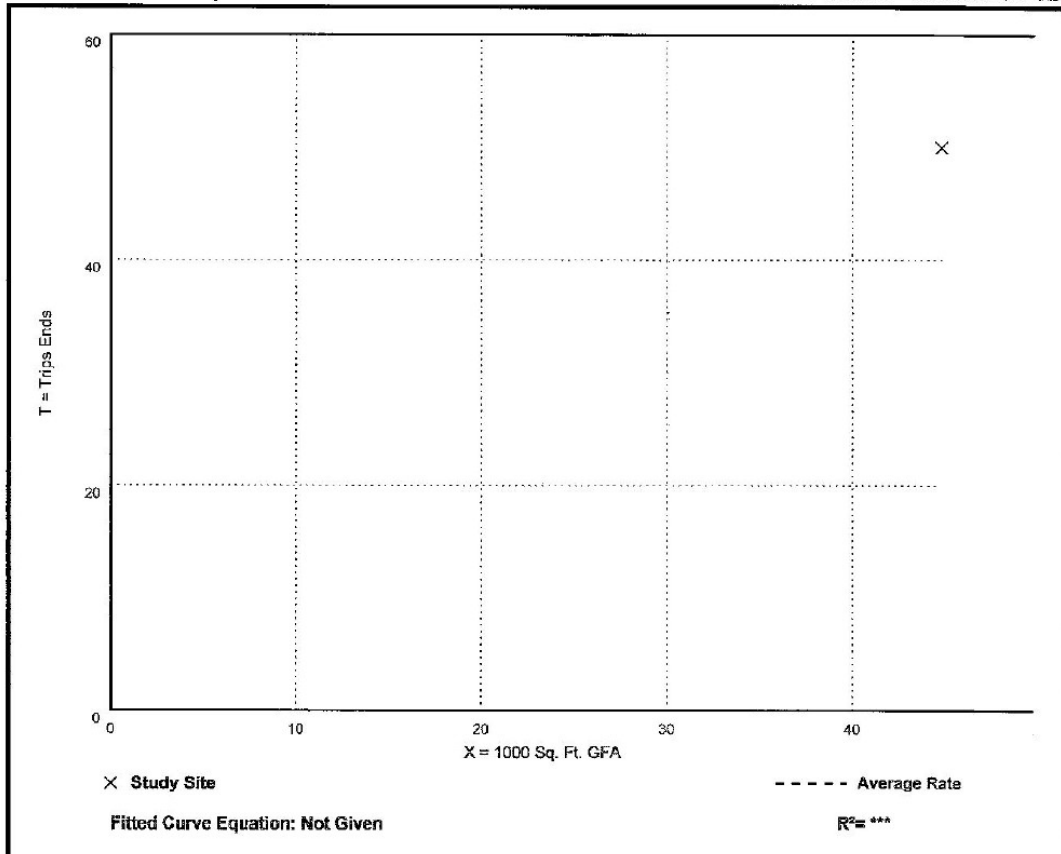
Directional Distribution: 42% entering, 58% exiting

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

Average Rate	Range of Rates	Standard Deviation
1.12	1.12 - 1.12	***

### Data Plot and Equation:

*Caution - Small Sample Size*



## Multifamily Housing - 2+ BR (Mid-Rise) Not Close to Rail Transit (221)

Peak Period Parking Demand vs: Dwelling Units

On a: Weekday (Monday - Friday)

Setting/Location: Dense Multi-Use Urban

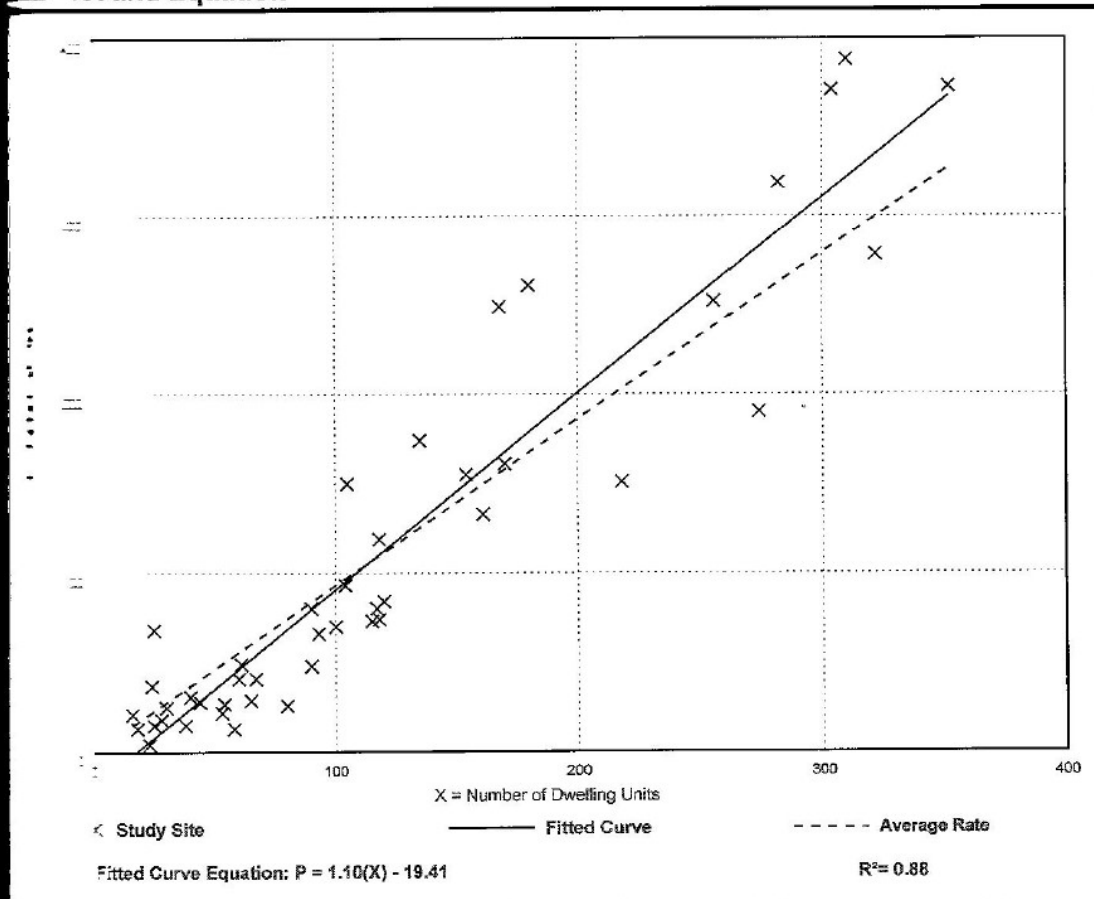
Number of Studies: 44

Avg. Num. of Dwelling Units: 120

### Period Parking Demand per Dwelling Unit

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.93	0.17 - 2.72	0.68 / 1.29	0.83 - 1.03	0.33 (36%)

### Plot and Equation



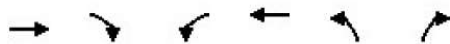
Intersection of Lamartine St & Meade St AM peak Existing Conditions

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶			↷	↶	↷
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	70	5	3	103	14	9
Peak Hour Factor	0.88	0.63	0.36	0.89	0.54	0.50
Hourly flow rate (veh/h)	80	8	8	116	26	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
vC, conflicting volume			87		216	84
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		97	98
cM capacity (veh/h)			1508		768	976
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	87	124	44			
Volume Left	0	8	26			
Volume Right	8	0	18			
cSH	1700	1508	841			
Volume to Capacity	0.05	0.01	0.05			
Queue Length (ft)	0	0	4			
Control Delay (s)	0.0	0.5	9.5			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.5	9.5			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			1.9			
Intersection Capacity Utilization			17.1%	ICU Level of Service	A	

Intersection of Lamartine St & Meade St PM peak Existing Conditions

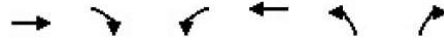
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶			↷	↷	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	101	5	10	121	6	3
Peak Hour Factor	0.77	0.63	0.75	0.94	0.34	0.42
Hourly flow rate (veh/h)	131	8	13	129	18	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage (veh)						
vC, conflicting volume			139		291	135
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		97	99
cM capacity (veh/h)			1444		694	914
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	139	142	25			
Volume Left	0	13	18			
Volume Right	8	0	7			
cSH	1700	1444	745			
Volume to Capacity	0.08	0.01	0.03			
Queue Length (ft)	0	1	3			
Control Delay (s)	0.0	0.8	10.0			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.8	10.0			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			1.2			
Intersection Capacity Utilization		18.7%		ICU Level of Service		A

Intersection of Lamartine St & Grosvenor St AM peak Existing Conditions



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	70	0	5	113	6	4
Peak Hour Factor	0.92	0.25	0.42	0.86	0.75	0.50
Hourly flow rate (veh/h)	76	0	12	131	8	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
vC, conflicting volume			76		231	76
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		99	99
cM capacity (veh/h)			1523		751	985
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	76	143	16			
Volume Left	0	12	8			
Volume Right	0	0	8			
cSH	1700	1523	852			
Volume to Capacity	0.04	0.01	0.02			
Queue Length (ft)	0	1	1			
Control Delay (s)	0.0	0.7	9.3			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.7	9.3			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			1.0			
Intersection Capacity Utilization			18.6%	ICU Level of Service	A	

Intersection of Lamartine St & Grosvenor St PM peak Existing Conditions



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	105	1	2	125	8	2
Peak Hour Factor	0.78	0.25	0.50	0.85	0.63	0.50
Hourly flow rate (veh/h)	135	4	4	147	13	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
vC, conflicting volume			139		292	137
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			1445		697	912
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	139	151	17			
Volume Left	0	4	13			
Volume Right	4	0	4			
cSH	1700	1445	739			
Volume to Capacity	0.08	0.00	0.02			
Queue Length (ft)	0	0	2			
Control Delay (s)	0.0	0.2	10.0			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.2	10.0			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			0.7			
Intersection Capacity Utilization		18.3%		ICU Level of Service	A	

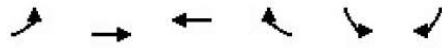
Intersection of Lafayette St & Meade St AM Peak Existing Conditions



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	6	37	0	0	3	0
Peak Hour Factor	0.85	0.80	0.92	0.92	0.33	0.33
Hourly flow rate (veh/h)	7	46	0	0	9	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage veh						
vC, conflicting volume	0				60	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1623				942	1085
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	53	0	9			
Volume Left	7	0	9			
Volume Right	0	0	0			
cSH	1623	1700	942			
Volume to Capacity	0.00	0.00	0.01			
Queue Length (ft)	0	0	1			
Control Delay (s)	1.0	0.0	8.9			
Lane LOS	A		A			
Approach Delay (s)	1.0	0.0	8.9			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			2.1			
Intersection Capacity Utilization		13.3%		ICU Level of Service		A



Intersection of Lafayette St & Meade St PM Peak Existing Conditions



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	3	64	0	0	8	0
Peak Hour Factor	0.75	0.76	0.92	0.92	0.50	0.33
Hourly flow rate (veh/h)	4	84	0	0	16	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
vC, conflicting volume	0				92	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	1623				906	1085

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	88	0	16
Volume Left	4	0	16
Volume Right	0	0	0
cSH	1623	1700	906
Volume to Capacity	0.00	0.00	0.02
Queue Length (ft)	0	0	1
Control Delay (s)	0.3	0.0	9.0
Lane LOS	A		A
Approach Delay (s)	0.3	0.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay		1.7	
Intersection Capacity Utilization	14.7%	ICU Level of Service	A

Intersection of Lafayette St & Grosvenor St AM Peak Existing Conditions

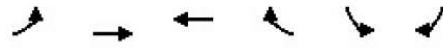


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	9	39	0	0	5	0
Peak Hour Factor	0.75	0.75	0.92	0.92	0.62	0.33
Hourly flow rate (veh/h)	12	52	0	0	8	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage (veh)						
vC, conflicting volume	0				76	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	100
cM capacity (veh/h)	1623				920	1085

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	64	0	8
Volume Left	12	0	8
Volume Right	0	0	0
cSH	1623	1700	920
Volume to Capacity	0.01	0.00	0.01
Queue Length (ft)	1	0	1
Control Delay (s)	1.4	0.0	8.9
Lane LOS	A		A
Approach Delay (s)	1.4	0.0	8.9
Approach LOS			A













Intersection Summary			
Average Delay		2.2	
Intersection Capacity Utilization		13.4%	ICU Level of Service A

Intersection of Lafayette St & Grosvenor St PM Peak Existing Conditions



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	8	61	0	0	4	0
Peak Hour Factor	0.50	0.80	0.92	0.92	0.50	0.33
Hourly flow rate (veh/h)	16	76	0	0	8	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
vC, conflicting volume	0				108	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	100
cM capacity (veh/h)	1623				880	1085
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>SB 1</b>			
Volume Total	92	0	8			
Volume Left	16	0	8			
Volume Right	0	0	0			
cSH	1623	1700	880			
Volume to Capacity	0.01	0.00	0.01			
Queue Length (ft)	1	0	1			
Control Delay (s)	1.3	0.0	9.1			
Lane LOS	A		A			
Approach Delay (s)	1.3	0.0	9.1			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			1.9			
Intersection Capacity Utilization		14.9%		ICU Level of Service		A

Intersection of Lamartine St, Hermon St, Lodi St & Green St AM Peak Existing Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (veh/h)	27	80	39	12	58	8	6	55	58	6	33	8
Peak Hour Factor	0.87	0.87	0.87	0.93	0.93	0.93	0.85	0.85	0.85	0.82	0.82	0.82
Hourly flow rate (veh/h)	31	92	45	13	62	9	7	65	68	7	40	10
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	168	84	140	57								
Volume Left (vph)	31	13	7	7								
Volume Right (vph)	45	9	68	10								
Hadj (s)	-0.1	0.0	-0.2	0.0								
Departure Headway (s)	4.3	4.6	4.3	4.6								
Degree Utilization, x	0.20	0.11	0.17	0.07								
Capacity (veh/h)	797	575	798	747								
Control Delay (s)	8.4	8.1	8.1	7.9								
Approach Delay (s)	8.4	8.1	8.1	7.9								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			8.2									
HCM Level of Service			A									
Intersection Capacity Utilization			30.9%		ICU Level of Service	A						

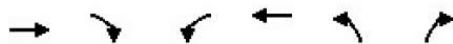
Intersection of Lamartine St, Ggreen Island Blvd, Lodi and Hermon Sts PM Peak  
Existing Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (veh/h)	7	52	31	22	34	4	14	49	70	16	103	17
Peak Hour Factor	0.89	0.89	0.89	0.79	0.79	0.79	0.81	0.81	0.81	0.76	0.76	0.76
Hourly flow rate (veh/h)	8	58	35	28	43	5	17	60	86	21	136	22
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	101	76	164	179								
Volume Left (vph)	8	28	17	21								
Volume Right (vph)	35	5	86	22								
Hadj (s)	-0.2	0.1	-0.3	0.0								
Departure Headway (s)	4.6	4.6	4.2	4.5								
Degree Utilization, x	0.13	0.10	0.19	0.22								
Capacity (veh/h)	730	574	810	778								
Control Delay (s)	8.2	8.1	8.2	8.7								
Approach Delay (s)	8.2	8.1	8.2	8.7								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay			8.4									
HCM Level of Service			A									
Intersection Capacity Utilization			25.7%		ICU Level of Service				A			

Intersection of Lamartine St & Meade St AM peak Future No Build Conditions

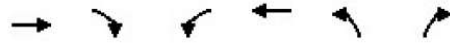
	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↘			↖	↘	↗
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	77	6	3	113	15	10
Peak Hour Factor	0.88	0.63	0.36	0.89	0.54	0.50
Hourly flow rate (veh/h)	88	10	8	127	28	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
vC, conflicting volume			97		236	92
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		96	98
cM capacity (veh/h)			1496		748	965
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>			
Volume Total	97	135	48			
Volume Left	0	8	28			
Volume Right	10	0	20			
cSH	1700	1496	826			
Volume to Capacity	0.06	0.01	0.06			
Queue Length (ft)	0	0	5			
Control Delay (s)	0.0	0.5	9.6			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.5	9.6			
Approach LOS		A	A			
<b>Intersection Summary</b>						
Average Delay			1.9			
Intersection Capacity Utilization		17.8%		ICU Level of Service	A	

Intersection of Lamartine St & Meade St PM peak Future No Build Conditions



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔		↔
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	111	6	11	138	7	3
Peak Hour Factor	0.77	0.63	0.75	0.94	0.34	0.42
Hourly flow rate (veh/h)	144	10	15	147	21	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
vC, conflicting volume			154		325	149
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		97	99
cM capacity (veh/h)			1427		662	898
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	154	161	28			
Volume Left	0	15	21			
Volume Right	10	0	7			
cSH	1700	1427	710			
Volume to Capacity	0.09	0.01	0.04			
Queue Length (ft)	0	1	3			
Control Delay (s)	0.0	0.8	10.3			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.8	10.3			
Approach LOS			B			
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			20.2%	ICU Level of Service	A	

Intersection of Lamartine St & Grosvenor St AM peak Future No Build Conditions



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	77	0	6	124	8	4
Peak Hour Factor	0.92	0.25	0.42	0.86	0.75	0.50
Hourly flow rate (veh/h)	84	0	14	144	11	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
vC, conflicting volume			84		256	84
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		99	99
cM capacity (veh/h)			1513		725	976
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	84	158	19			
Volume Left	0	14	11			
Volume Right	0	0	8			
cSH	1700	1513	815			
Volume to Capacity	0.05	0.01	0.02			
Queue Length (ft)	0	1	2			
Control Delay (s)	0.0	0.7	9.5			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.7	9.5			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			1.1			
Intersection Capacity Utilization			20.0%	ICU Level of Service	A	



Intersection of Lamartine St & Grosvenor St PM peak Future No Build Conditions

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔		↔
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	116	1	2	138	10	3
Peak Hour Factor	0.78	0.25	0.50	0.85	0.63	0.50
Hourly flow rate (veh/h)	149	4	4	162	16	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
vC, conflicting volume			153		321	151
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	99
cM capacity (veh/h)			1428		671	896
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	153	166	22			
Volume Left	0	4	16			
Volume Right	4	0	6			
cSH	1700	1428	720			
Volume to Capacity	0.09	0.00	0.03			
Queue Length (ft)	0	0	2			
Control Delay (s)	0.0	0.2	10.2			
Lane LOS			A	B		
Approach Delay (s)	0.0	0.2	10.2			
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay			0.8			
Intersection Capacity Utilization			19.2%	ICU Level of Service	A	

Intersection of Lafayette St & Meade St AM Peak Future No Build Conditions

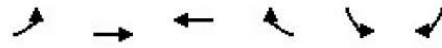


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	7	41	0	0	3	0
Peak Hour Factor	0.85	0.80	0.92	0.92	0.33	0.33
Hourly flow rate (veh/h)	8	51	0	0	9	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
vC, conflicting volume	0				68	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	100
cM capacity (veh/h)	1623				932	1085

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	59	0	9
Volume Left	8	0	9
Volume Right	0	0	0
cSH	1623	1700	932
Volume to Capacity	0.01	0.00	0.01
Queue Length (ft)	0	0	1
Control Delay (s)	1.0	0.0	8.9
Lane LOS	A		A
Approach Delay (s)	1.0	0.0	8.9
Approach LOS			A

Intersection Summary			
Average Delay		2.1	
Intersection Capacity Utilization	13.3%	ICU Level of Service	A

Intersection of Lafayette St & Meade St PM Peak Future No Build Conditions



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	3	70	0	0	9	0
Peak Hour Factor	0.75	0.76	0.92	0.92	0.50	0.33
Hourly flow rate (veh/h)	4	92	0	0	18	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
vC, conflicting volume	0				100	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	1623				896	1085
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>SB 1</b>			
Volume Total	96	0	18			
Volume Left	4	0	18			
Volume Right	0	0	0			
cSH	1623	1700	896			
Volume to Capacity	0.00	0.00	0.02			
Queue Length (ft)	0	0	2			
Control Delay (s)	0.3	0.0	9.1			
Lane LOS	A		A			
Approach Delay (s)	0.3	0.0	9.1			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			1.7			
Intersection Capacity Utilization		15.1%		ICU Level of Service		A

Intersection of Lafayette St & Grosvenor St AM Peak Future No Build Conditions



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	10	43	0	0	6	0
Peak Hour Factor	0.75	0.75	0.92	0.92	0.62	0.33
Hourly flow rate (veh/h)	13	57	0	0	10	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage (veh)						
vC, conflicting volume	0				84	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	100
cM capacity (veh/h)	1623				910	1085
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>SB 1</b>			
Volume Total	71	0	10			
Volume Left	13	0	10			
Volume Right	0	0	0			
cSH	1623	1700	910			
Volume to Capacity	0.01	0.00	0.01			
Queue Length (ft)	1	0	1			
Control Delay (s)	1.4	0.0	9.0			
Lane LOS	A		A			
Approach Delay (s)	1.4	0.0	9.0			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			2.3			
Intersection Capacity Utilization			13.8%	ICU Level of Service	A	

Intersection of Lafayette St & Grosvenor St PM Peak Future No Build Conditions



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	9	67	0	0	4	0
Peak Hour Factor	0.50	0.80	0.92	0.92	0.50	0.33
Hourly flow rate (veh/h)	18	84	0	0	8	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
vC, conflicting volume	0				120	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	100
cM capacity (veh/h)	1623				866	1085

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	102	0	8
Volume Left	18	0	8
Volume Right	0	0	0
cSH	1623	1700	866
Volume to Capacity	0.01	0.00	0.01
Queue Length (ft)	1	0	1
Control Delay (s)	1.4	0.0	9.2
Lane LOS	A		A
Approach Delay (s)	1.4	0.0	9.2
Approach LOS			A













Intersection Summary			
Average Delay		1.9	
Intersection Capacity Utilization	15.4%	ICU Level of Service	A

Intersection of Lamartine St, Hermon St, Lodi St & Green St AM Peak Future No Build Condition



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (veh/h)	30	88	43	14	64	9	7	61	65	7	37	9
Peak Hour Factor	0.87	0.87	0.87	0.93	0.93	0.93	0.85	0.85	0.85	0.82	0.82	0.82
Hourly flow rate (veh/h)	34	101	49	15	69	10	8	72	76	9	45	11
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	185	94	156	65								
Volume Left (vph)	34	15	8	9								
Volume Right (vph)	49	10	76	11								
Hadj (s)	-0.1	0.0	-0.2	0.0								
Departure Headway (s)	4.4	4.7	4.3	4.7								
Degree Utilization, x	0.23	0.12	0.19	0.08								
Capacity (veh/h)	772	568	781	730								
Control Delay (s)	8.7	8.3	8.4	8.1								
Approach Delay (s)	8.7	8.3	8.4	8.1								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			8.4									
HCM Level of Service			A									
Intersection Capacity Utilization			33.4%	ICU Level of Service	A							

Intersection of Lamartine St, Ggreen Island Blvd, Lodi and Hermon Sts PM Peak  
Future No Build Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
												
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (veh/h)	8	57	34	24	37	4	15	54	78	18	114	19
Peak Hour Factor	0.89	0.89	0.89	0.79	0.79	0.79	0.81	0.81	0.81	0.76	0.76	0.76
Hourly flow rate (veh/h)	9	64	38	30	47	5	19	67	96	24	150	25
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	111	82	181	199								
Volume Left (vph)	9	30	19	24								
Volume Right (vph)	38	5	96	25								
Hadj (s)	-0.2	0.1	-0.3	0.0								
Departure Headway (s)	4.7	4.7	4.3	4.5								
Degree Utilization, x	0.14	0.11	0.22	0.25								
Capacity (veh/h)	712	568	795	765								
Control Delay (s)	8.5	8.2	8.5	9.0								
Approach Delay (s)	8.5	8.2	8.5	9.0								
Approach LOS	A	A	A	A								
<b>Intersection Summary</b>												
Delay			8.6									
HCM Level of Service			A									
Intersection Capacity Utilization			28.9%	ICU Level of Service	A							

Intersection of Lamartine St & Meade St AM peak Future Build Conditions

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔		↔
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	77	6	4	113	15	11
Peak Hour Factor	0.88	0.63	0.36	0.89	0.54	0.50
Hourly flow rate (veh/h)	88	10	11	127	28	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
vC, conflicting volume			97		241	92
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		96	98
cM capacity (veh/h)			1496		741	965
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	97	138	50			
Volume Left	0	11	28			
Volume Right	10	0	22			
cSH	1700	1496	826			
Volume to Capacity	0.06	0.01	0.06			
Queue Length (ft)	0	1	5			
Control Delay (s)	0.0	0.7	9.6			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.7	9.6			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			2.0			
Intersection Capacity Utilization			18.2%	ICU Level of Service	A	



Intersection of Lamartine St & Meade St PM peak Future Build Conditions



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	111	6	12	138	8	3
Peak Hour Factor	0.77	0.63	0.75	0.94	0.34	0.42
Hourly flow rate (veh/h)	144	10	16	147	24	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage veh						
vC, conflicting volume			154		328	149
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		96	99
cM capacity (veh/h)			1427		659	898
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	154	163	31			
Volume Left	0	16	24			
Volume Right	10	0	7			
cSH	1700	1427	703			
Volume to Capacity	0.09	0.01	0.04			
Queue Length (ft)	0	1	3			
Control Delay (s)	0.0	0.8	10.4			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.8	10.4			
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay			1.3			
Intersection Capacity Utilization		20.5%		ICU Level of Service		A

Intersection of Lamartine St & Grosvenor St AM peak Future Build Conditions



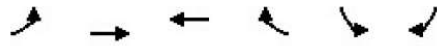
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔		↔
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	77	1	6	124	9	5
Peak Hour Factor	0.92	0.25	0.42	0.86	0.75	0.50
Hourly flow rate (veh/h)	84	4	14	144	12	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
vC, conflicting volume				88	258	86
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)				4.1	6.4	6.2
tC, 2 stage (s)						
tF (s)				2.2	3.5	3.3
p0 queue free %				99	98	99
cM capacity (veh/h)				1508	723	973
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	88	158	22			
Volume Left	0	14	12			
Volume Right	4	0	10			
cSH	1700	1508	819			
Volume to Capacity	0.05	0.01	0.03			
Queue Length (ft)	0	1	2			
Control Delay (s)	0.0	0.7	9.5			
Lane LOS			A			A
Approach Delay (s)	0.0	0.7	9.5			
Approach LOS				A		
<b>Intersection Summary</b>						
Average Delay				1.2		
Intersection Capacity Utilization	20.0%		ICU Level of Service		A	

Intersection of Lamartine St & Grosvenor St PM peak Future Build Conditions



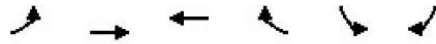
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔		↔
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	116	3	2	138	12	4
Peak Hour Factor	0.78	0.25	0.50	0.85	0.63	0.50
Hourly flow rate (veh/h)	149	12	4	162	19	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
vC, conflicting volume			161		325	155
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	99
cM capacity (veh/h)			1418		667	891
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	161	166	27			
Volume Left	0	4	19			
Volume Right	12	0	8			
cSH	1700	1418	721			
Volume to Capacity	0.09	0.00	0.04			
Queue Length (ft)	0	0	3			
Control Delay (s)	0.0	0.2	10.2			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.2	10.2			
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay			0.9			
Intersection Capacity Utilization			19.2%	ICU Level of Service	A	

Intersection of Lafayette St & Meade St AM Peak Future Build Conditions



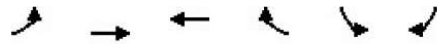
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	8	41	0	0	3	0
Peak Hour Factor	0.85	0.80	0.92	0.92	0.33	0.33
Hourly flow rate (veh/h)	9	51	0	0	9	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage veh						
vC, conflicting volume	0				70	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	100
cM capacity (veh/h)	1623				929	1085
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	61	0	9			
Volume Left	9	0	9			
Volume Right	0	0	0			
cSH	1623	1700	929			
Volume to Capacity	0.01	0.00	0.01			
Queue Length (ft)	0	0	1			
Control Delay (s)	1.2	0.0	8.9			
Lane LOS	A		A			
Approach Delay (s)	1.2	0.0	8.9			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			2.2			
Intersection Capacity Utilization		13.3%		ICU Level of Service	A	

Intersection of Lafayette St & Meade St PM Peak Future Build Conditions



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	4	70	0	0	10	0
Peak Hour Factor	0.75	0.76	0.92	0.92	0.50	0.33
Hourly flow rate (veh/h)	5	92	0	0	20	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage (veh)						
vC, conflicting volume	0				103	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	1623				892	1085
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>SB 1</b>			
Volume Total	97	0	20			
Volume Left	5	0	20			
Volume Right	0	0	0			
cSH	1623	1700	892			
Volume to Capacity	0.00	0.00	0.02			
Queue Length (ft)	0	0	2			
Control Delay (s)	0.4	0.0	9.1			
Lane LOS	A		A			
Approach Delay (s)	0.4	0.0	9.1			
Approach LOS			A			
<b>Intersection Summary</b>						
Average Delay			1.9			
Intersection Capacity Utilization		15.1%		ICU Level of Service	A	

Intersection of Lafayette St & Grosvenor St AM Peak Future Build Conditions

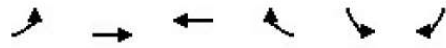


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	11	43	0	0	7	0
Peak Hour Factor	0.75	0.75	0.92	0.92	0.62	0.33
Hourly flow rate (veh/h)	15	57	0	0	11	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage (veh)						
vC, conflicting volume	0				87	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	100
cM capacity (veh/h)	1623				906	1085

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	72	0	11
Volume Left	15	0	11
Volume Right	0	0	0
cSH	1623	1700	906
Volume to Capacity	0.01	0.00	0.01
Queue Length (ft)	1	0	1
Control Delay (s)	1.5	0.0	9.0
Lane LOS	A		A
Approach Delay (s)	1.5	0.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay		2.5	
Intersection Capacity Utilization	13.8%	ICU Level of Service	A

Intersection of Lafayette St & Grosvenor St PM Peak Future Build Conditions



















Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	10	67	0	0	6	0
Peak Hour Factor	0.50	0.80	0.92	0.92	0.50	0.33
Hourly flow rate (veh/h)	20	84	0	0	12	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage (veh)						
vC, conflicting volume	0				124	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	100
cM capacity (veh/h)	1623				861	1085

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	104	0	12
Volume Left	20	0	12
Volume Right	0	0	0
cSH	1623	1700	861
Volume to Capacity	0.01	0.00	0.01
Queue Length (ft)	1	0	1
Control Delay (s)	1.5	0.0	9.2
Lane LOS	A		A
Approach Delay (s)	1.5	0.0	9.2
Approach LOS			A

















Intersection Summary			
Average Delay		2.3	
Intersection Capacity Utilization	15.5%	ICU Level of Service	A

Intersection of Lamartine St, Hermon St, Lodi St & Green St AM Peak Future Build Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (veh/h)	30	88	43	15	64	9	7	61	66	7	37	9
Peak Hour Factor	0.87	0.87	0.87	0.93	0.93	0.93	0.85	0.85	0.85	0.82	0.82	0.82
Hourly flow rate (veh/h)	34	101	49	16	69	10	8	72	78	9	45	11
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	185	95	158	65								
Volume Left (vph)	34	16	8	9								
Volume Right (vph)	49	10	78	11								
Hadj (s)	-0.1	0.0	-0.3	0.0								
Departure Headway (s)	4.4	4.7	4.3	4.7								
Degree Utilization, x	0.23	0.12	0.19	0.08								
Capacity (veh/h)	771	567	781	729								
Control Delay (s)	8.7	8.3	8.4	8.1								
Approach Delay (s)	8.7	8.3	8.4	8.1								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			8.4									
HCM Level of Service			A									
Intersection Capacity Utilization			33.5%		ICU Level of Service							A



Intersection of Lamartine St, Ggreen Island Blvd, Lodi and Hermon Sts PM Peak  
Future Build Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (veh/h)	8	57	35	25	37	4	16	54	80	18	114	19
Peak Hour Factor	0.89	0.89	0.89	0.79	0.79	0.79	0.81	0.81	0.81	0.76	0.76	0.76
Hourly flow rate (veh/h)	9	64	39	32	47	5	20	67	99	24	150	25
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	112	84	185	199								
Volume Left (vph)	9	32	20	24								
Volume Right (vph)	39	5	99	25								
Hadj (s)	-0.2	0.1	-0.3	0.0								
Departure Headway (s)	4.7	4.7	4.3	4.5								
Degree Utilization, x	0.15	0.11	0.22	0.25								
Capacity (veh/h)	711	566	794	763								
Control Delay (s)	8.5	8.3	8.5	9.0								
Approach Delay (s)	8.5	8.3	8.5	9.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			8.7									
HCM Level of Service			A									
Intersection Capacity Utilization			29.0%	ICU Level of Service	A							