

Proposed Mixed-Use Redevelopment

88 West Park Street
Lee, Massachusetts

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1

Introduction

Vanasse Hangen Brustlin, Inc. (VHB) has been retained by Benchmark Development to conduct a Transportation Impact Assessment (TIA) for a proposed mixed-use redevelopment to be located on the northern side of West Park Street in Lee, Massachusetts. The site is proposed to be situated between the Housatonic River and Main Street. VHB has evaluated existing traffic operations in the area, assessed the impacts of this development, and summarized the results in this report.

Project Description and Background

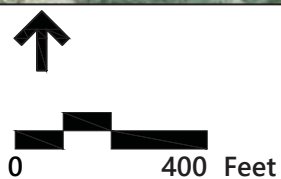
The Project site is located along West Park Street, the location of the former Price Chopper grocery store, which has been vacant for over two years in Lee, Massachusetts. The approximately 2.5-acre site is accessible via West Park Street, Main Street (Route 20), and Consolati Way. The property and associated existing building are bordered by the Housatonic River to the west and the Downtown district and municipal offices to the east.

The existing Price Chopper building will be demolished and developed into 64 apartment units under Phase 1 of the project. Phase 2 of the site development consists of constructing a building between Zabian's Jewelers and the Morgan House Restaurant and closing the existing entrance to the parking area from Main Street. The Phase 2 development will house 20 residential units and approximately 10,485 square-feet of commercial space.



The Site is proposed to have two full access points; one on West Park Street just east of the existing driveway, and the existing parking lot entrance on Consolati Way. These driveways are to be utilized as points of access and egress for all vehicles.

A site location map is provided in Figure 1. A draft site plan of the proposed development is included as part of the submittal. This transportation study analyzes the traffic impacts that can be expected by the proposed development.



Site Location Map
Lee Mixed-Use Development
88 West Park Street
Lee, Massachusetts

Figure 1



Study Methodology

This traffic study was conducted in three stages. The first stage involved an assessment of existing traffic conditions in the study area, and included an inventory of roadway geometrics and observations of traffic flow. In addition, daily and peak period traffic counts were collected in March 2020 with some counts utilized from an August 2018 study, and a safety review of the study area intersections was performed.

In the second stage of the study, future traffic conditions both with and without the project were estimated and analyzed. This study assessed specific travel demand forecasts for the project, and the estimated background growth unrelated to this project.

The third and final stage involved conducting traffic analyses to identify both existing and projected future roadway capacity and demand. From this information and other factors, the likely traffic impacts associated with the project can be determined. This analysis was used as the basis for determining if any resulting roadway improvements or measures would be required in support of the site-generated traffic.

Study Area

The study area includes those locations that are expected to be affected by this project. The roads and intersections included in the study area were selected based on VHB's knowledge of the traffic patterns in the area and from discussion with the Town of Lee. The specific study area encompasses the following intersections:

- West Park Street at Site Driveway and Bank Driveway (unsignalized);
- Main Street (Route 20) at Park Street (Route 20) (unsignalized);
- Main Street (Route 20) at Park Place and Zabian's Driveway (unsignalized); and
- Main Street (Route 20) at Consolati Way and Railroad Street (unsignalized).

An inventory of the existing conditions for the study intersection is provided in the following chapter.



2

Existing Conditions Assessment

Effective evaluation of the transportation impacts associated with the proposed development project requires a thorough understanding of the existing transportation system surrounding the project study area. A complete inventory of the existing transportation system was conducted, and is presented in this section. The analysis of existing transportation conditions is based on the existing network, roadway and intersection geometry, traffic control, existing traffic volumes, traffic safety, and pedestrian facilities.

Roadway Network

The principal roadways and intersections in the study area are described below.

Roadways

The description of the roadways includes the physical characteristics, geometric conditions, adjacent land uses, and current operating conditions.

West Park Street

West Park Street is minor collector roadway under local jurisdiction. West Park Street intersects with Main Street (Route 20) to the north and becomes Park Street (Route 20) to the east. West Park Street provides two travel lanes, one in each direction. Land use along West Park Street consists of a mix of residential and commercial uses. The Housatonic Railroad crosses West Park Street approximately 625 feet west of the intersection of West Park Street at Site



Driveway and Bank Driveway. The speed limit along West Park Street is 30 mph. West Park Street provides sidewalks on both sides of the roadway. On-street parking is not permitted on this roadway.

Park Street (Route 20)

Park Street (Route 20) is a principal arterial roadway under state jurisdiction in the vicinity of Main Street and runs through Lee in a primarily east/west direction. Park Street becomes Housatonic Street east of Park Plaza and West Park Street west of Main Street. Park Street provides two travel lanes, one in each direction with turning lanes provided at key intersections. Land use along Park Street consists of a mix of residential uses with some commercial. Park Street provides sidewalks on both sides of the roadway. The posted speed limit in this area is 25 mph.

Main Street (Route 20)

Main Street (Route 20) is a principal arterial roadway under local jurisdiction and runs through Lee in a primarily north/south direction. Main Street is the main thoroughfare for the Town of Lee and measures approximately 0.4 miles in length. Main Street provides two travel lanes, one in each direction. A combination of parallel and angled parking is available along both sides of the roadway to access shops and restaurants in this area. Land use along Main Street consists of primarily commercial uses. Main Street provides sidewalks on both sides of the roadway separated by a brick buffer or grassy area. The posted speed limit is 25 mph.

Park Place

Park Place is a local roadway under local jurisdiction and acts as a large aisle for municipal and church parking. Park Place is one-way northbound and connects Park Street with Main Street. Park Place provides angled parking on both sides of the street.

Railroad Street

Railroad Street is a local roadway under local jurisdiction and runs through Lee in a primarily north/south direction. Railroad Street connects Elm Street to the north with industrial and residential uses to the south and acts as a popular cut through from Main Street. Railroad Street provides two travel lanes, one in each direction. Land use along Railroad Street consists of primarily industrial with some residential uses. Railroad Street provides a sidewalk on the eastern side of the road.

Consolati Way

Consolati Way is a local roadway under local jurisdiction and runs through Lee in a primarily east/west direction. Consolati Way connects Route 20 to the east with Railroad Street and municipal parking to the north and west. Consolati Way provides two travel lanes, one in each direction. Land use along Consolati Way consists of commercial uses. Consolati Way provides sidewalks on the south side of the roadway up to the gazebo.



Intersections

The description of the intersections includes the physical characteristics, geometric conditions, and current operating conditions.

West Park Street at Site Driveway and Bank Driveway (unsignalized)

The Site Driveway and Bank Driveway intersect West Park Street from the north and south respectively to form a 4-legged unsignalized intersection. West Park Street consists of one general purpose lane that operates freely in each direction. The Bank Driveway provides one general purpose lane that operates as stop controlled. The Site Driveway is currently blocked off by six cement blocks to deter vehicles from using the driveway as a cut through to Main Street. Sidewalks are provided on both sides of all West Park Street. A crosswalk is provided across the westbound West Park Street approach of the intersection.

Main Street (Route 20) at Park Street (Route 20) (unsignalized)

Main Street (Route 20) intersects Park Street (Route 20) from the north to form a 3-legged unsignalized intersection. Park Street directional traffic at this intersection is separated by narrow brick medians approximately 65 feet in length. Park Street westbound approach provides one free-flowing exclusive right-turn lane and one stop-controlled through lane. Park Street eastbound provides a stop-controlled exclusive left-turn lane and through movement lane. The southbound Main Street approach consists of one general purpose lane and operates freely. Sidewalks are provided on the west side of Main Street and on both sides of the Park Street approaches. A crosswalk is provided on the eastbound leg of Park Street.

Main Street (Route 20) at Park Place and Zabian's Driveway (unsignalized)

Park Place and Zabian's Driveway intersect Main Street (Route 20) from the east and west respectively to form a 4-legged unsignalized intersection. The Main Street approaches of the intersection consists of one general purpose lane and operate freely. The Park Place approach operates as stop controlled and only allows right-turns out. The Zabian's Driveway approach operates as stop controlled and entering traffic is separated from exiting traffic by an island. Sidewalks are provided on both sides of Main Street. Crosswalks are present across all approaches of the intersection except for the northbound approach.

Main Street (Route 20) at Consolati Way (unsignalized)

Main Street (Route 20) is intersected by Consolati Way from the west to form a 3-legged unsignalized intersection. Each approach of the intersection consists of one general purpose lane. On-street angled parking exists on Main Street opposite the Consolati Way approach. This intersection is stop controlled on Consolati Way with Main Street operating freely. Consolati Way only allows for right-turns onto Main Street and the left-turn movement is prohibited. Sidewalks are provided on both sides of each approach. Crosswalks are provided on all approaches of the intersection except the southbound approach.



Consolati Way at Railroad Street (unsignalized)

Consolati Way is intersected by Railroad Street from the north to form a 3-legged unsignalized intersection. Each approach of the intersection consists of one general purpose lane. On-street parallel parking exists on Consolati Way opposite the Railroad Street approach. This intersection is stop controlled on Railroad Street with Consolati Way operating freely. The intersection of Consolati Way at Main Street is approximately 100-feet to the east of this intersection. Sidewalks are provided on both sides of each approach. No crosswalks are provided at this intersection.

Traffic Volumes

VHB conducted manual turning movement and classification (TMC) counts at the study area intersections during the typical weekday morning peak hours (7:00 – 9:00 AM), typical weekday evening peak hours (4:00 – 6:00 PM) and typical Saturday midday peak hours (11:00 AM – 2:00 PM). Included in these counts are passenger vehicles, heavy vehicles, buses, and pedestrians. These counts were conducted on March 5th through March 7th of 2020 and August 22nd through August 25th of 2018. Within these periods, the peak hours of the intersections generally occurred from 7:30 to 8:30 AM during a typical weekday morning, 4:00 PM to 5:00 PM during a typical weekday evening, and 11:30 AM to 12:30 PM during a typical Saturday midday.

It should be noted that traffic volumes were collected during the winter and summer months, which represents a high variability of traffic for the community of Lee. The Berkshires area towns, including the communities of Lee, Stockbridge, Lenox, and other surrounding towns, experience a considerable volume of tourists during the summer months, with much less traffic during the winter months. For this reason, traffic volumes that were collected were adjusted to reflect a yearly average traffic volume to remain conservative.

In addition to peak period traffic counts, a daily automatic traffic recorder (ATR) count was also conducted along Main Street (Route 20) and West Park Street in August of 2018 and February of 2020 respectively. The results of the ATR counts are summarized in Table 1. The results of the ATR show that a majority of the daily traffic along Route 20 occurs during the peak hours. The primary direction of travel along Main Street is southbound during the weekday morning, evening, and Saturday midday peak hours. Along West Park Street, the primary direction of travel is eastbound during the weekday morning and Saturday midday peak hours. Along Main Street (Route 20) the primary direction of travel is southbound during the weekday morning and Saturday midday peak hours. Speed data that was collected along Main Street (Route 20) and West Park Street indicate that the 85th percentile speed is 26 mph along Main Street and 34 mph along West Park Street, which are appropriate (within 10 mph of the posted speed limit) for these roadways given the posted speed limits.



Table 1 Existing Traffic Volume Summary

Location	<u>Daily</u>^a Weekday	<u>Weekday Morning Peak Hour</u>		<u>Weekday Evening Peak Hour</u>		<u>Saturday Midday Peak Hour</u>	
		Volume^b	K Factor^c	Volume	K Factor	Volume	K Factor
West Park Street west of Price Chopper Driveway	4,100	362	8.8%	423	10.3%	288	7.0%
Main Street (Route 20) south of School Street	14,817	982	6.6%	1,182	8.0%	1,109	7.5%

Source: Innovative Data LLC (ATR) counts conducted in August 2018 and March 2020

a average daily traffic (ADT) volume expressed in vehicles per day

b peak period traffic volumes expressed in vehicles per hour

c percent of daily traffic that occurs during the peak period

d directional distribution of peak period traffic

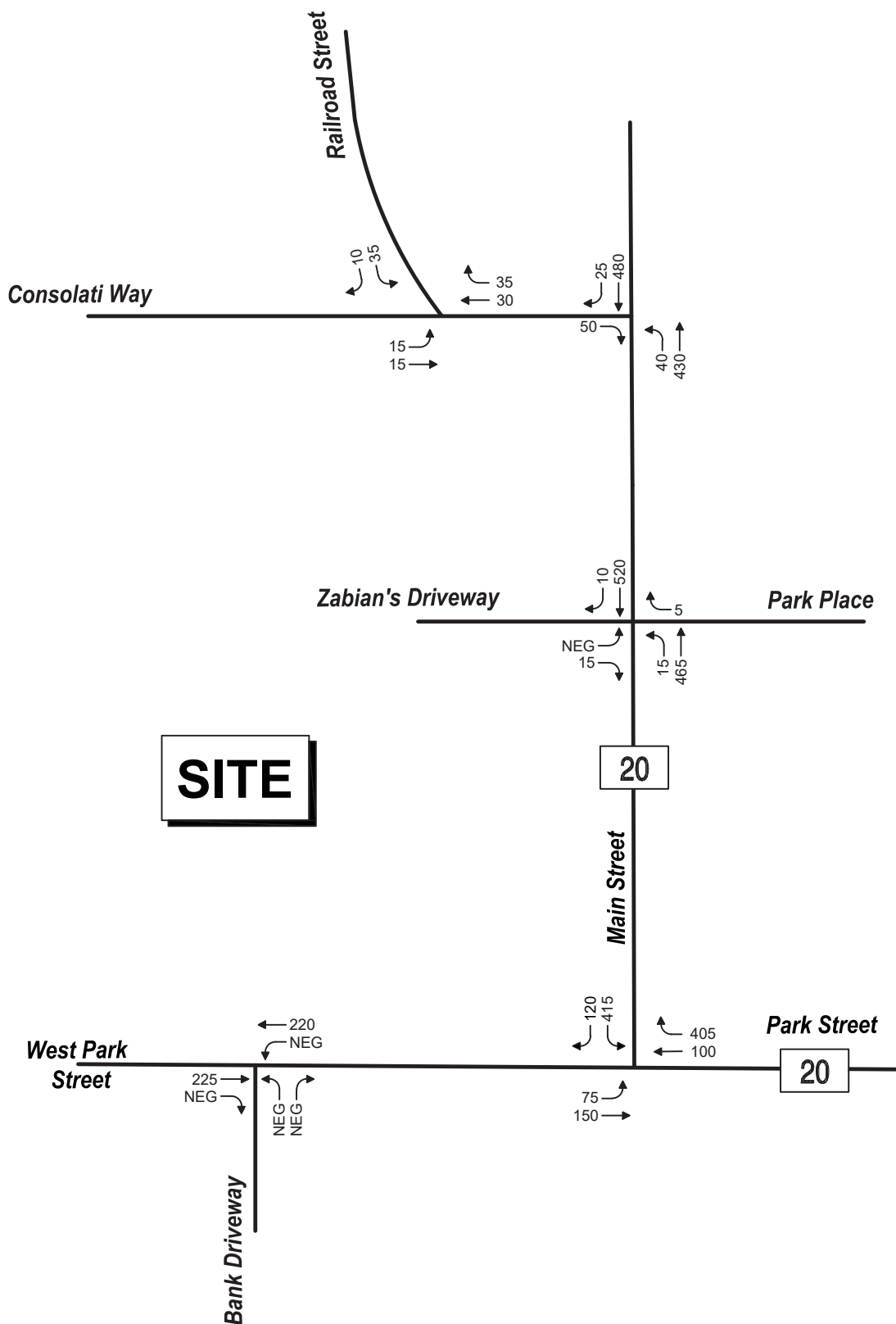
Note: peak hours do not necessarily coincide with the peak hours of the individual intersection turning movement counts



Seasonal Variation

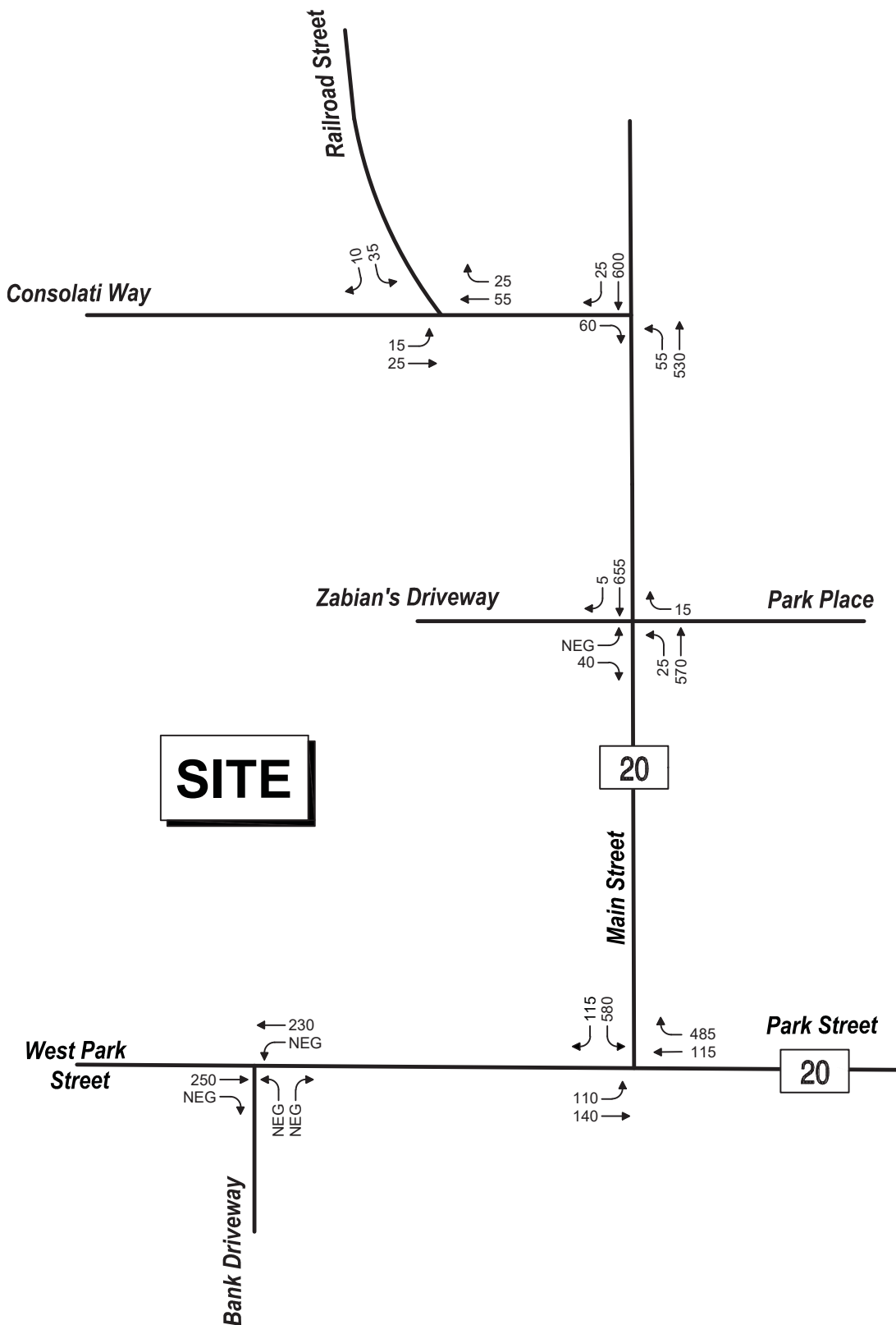
MassDOT historical traffic counts were reviewed to understand the seasonality of traffic count data collected in the months of February and August within the study area. Count Station AET01 was used to investigate the seasonality throughout the corridor. Data for seasonal variation of traffic volumes on the Massachusetts Turnpike Interstate 91 in Lee indicate that traffic counts in February are generally lower than during the average month. Traffic counts during the summer months are higher than the monthly average. Since the February count data were found to be lower than annual average conditions, and the August count data were found to be much higher than the annual average; the data was increased by a factor of approximately 1.06 for the February data and reduced by a factor of approximately 0.94 for the August data. The MassDOT traffic count data are included in Appendix B.

The 2020 Existing conditions weekday morning, evening, and Saturday midday peak hour traffic volume networks are summarized in Figures 2 through 4, respectively.



Mixed-Use Development
2020 Existing Conditions
Weekday Morning Peak Hour Traffic Volumes
Lee, Massachusetts

Figure 2



Legend

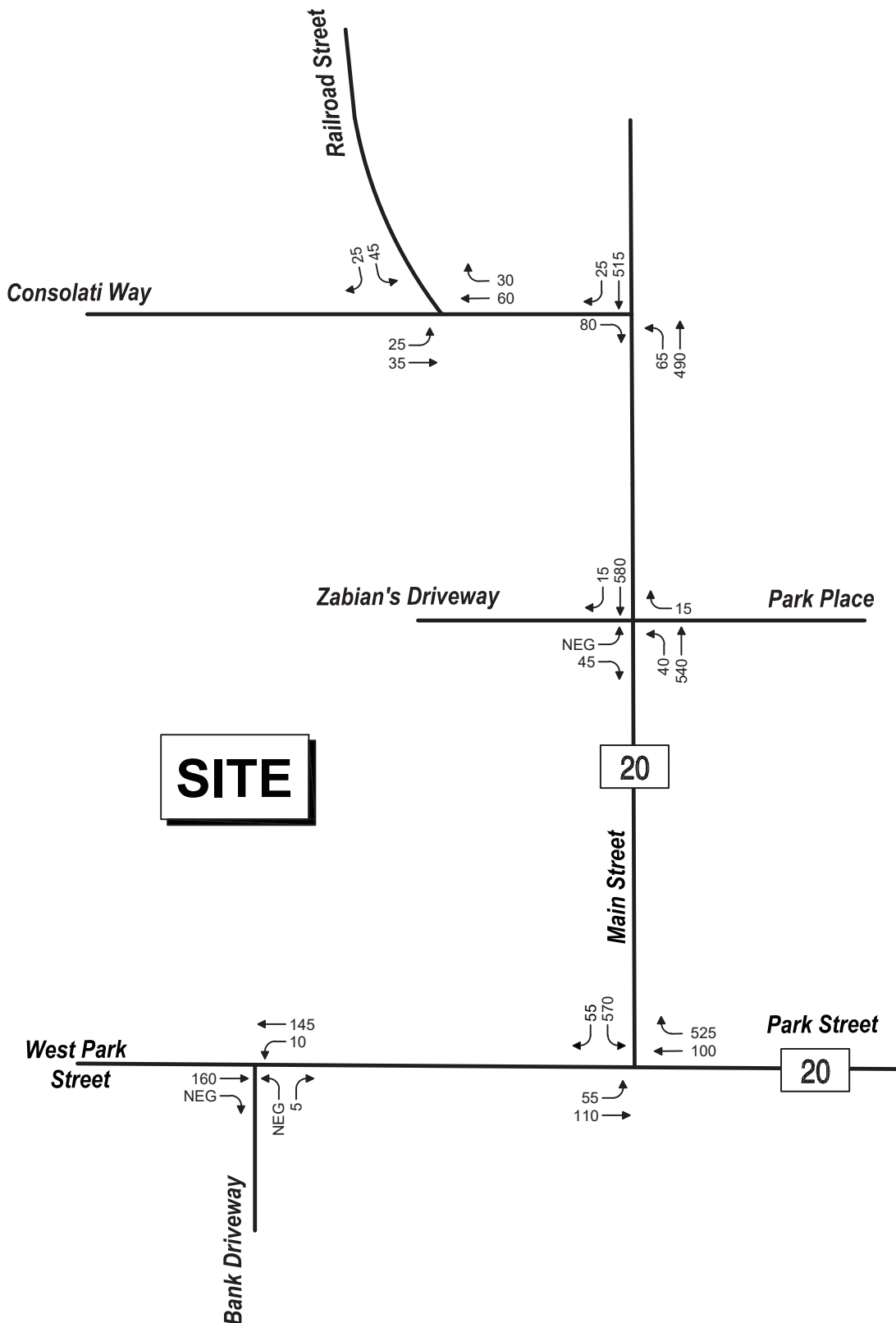
XX → Weekday Evening
Traffic Volume
NEG (Negligible)

NOT TO SCALE



Mixed-Use Development
2020 Existing Conditions
Weekday Evening Peak Hour Traffic Volumes
Lee, Massachusetts

Figure 3



Legend

XX → Saturday Midday
Traffic Volume
NEG (Negligible)

NOT TO SCALE



Mixed-Use Development
2020 Existing Conditions
Saturday Midday Peak Hour Traffic Volumes
Lee, Massachusetts

Figure 4





Safety Assessment

To identify crash trends and/or roadway deficiencies in the study area, crash data for the study area intersections were obtained from MassDOT for the most recently available five-year period (2013-2017), and are summarized in Table 2. MassDOT reports vehicle crashes with damage greater than \$1,000 or personal injury occurrences, which can give a good indication of safety. As the roadway infrastructure has not changed significantly since these data were collected, this information should provide a fair representation of the current incident experience in this area.

Table 2 Crash Summary

Intersection	2013-2017		MassDOT Crash Rate
	Total Crashes	Crash Rate	
West Park Street at Site Driveway and Bank Driveway	2	0.24	0.57
Main Street (Route 20) at Park Street (Route 20)	11	0.40	0.57
Main Street (Route 20) at Park Place and Zabian's Driveway	10	0.43	0.57
Main Street (Route 20) at Consolati Way	10	0.44	0.57
Consolati Way at Railroad Street	0	0.00	0.57

The 2018 MassDOT average crash rates for unsignalized intersections for District 1 (the MassDOT district designation for Lee) is 0.57. As seen in Table 2, the study area intersections have crash rates well below the District 1 average. The intersection of Main Street (Route 20) at Park Street (Route 20) was previously listed on the MassDOT Highway Safety Improvement Program (HSIP) top crash location list for the program years of 2012 through 2014 and 2013 through 2015. This was due to the intersections position as a major commuter route along Route 20 from the MassPike and from surrounding communities its position as a high crash location is not unusual compared to the other high crash locations in District 1. The most recent program years of 2014 through 2016 do not list this intersection as a high crash location.

3

Future Conditions

To determine the impacts of the future site-generated traffic volumes on the roadway network, traffic conditions were projected to a seven-year planning horizon, based on Executive Office of Environmental Affairs (EOEA)/Executive Office of Transportation (EOT) guidelines for preparation of a transportation impact assessment (TIA). Future traffic projections include regional background traffic growth and planned roadway improvements. Consideration of these factors resulted in the development of the 2027 No-Build traffic volumes. Anticipated Future Site-generated traffic volumes were then added to the 2027 No-Build traffic flow networks to reflect the 2027 Build scenario with the proposed development.

No-Build Traffic Volumes

Traffic growth on area roadways is a function of the expected land development, economic activity, and changes in demographics. A frequently used procedure is to estimate traffic that could be generated by planned new major developments, potentially affecting the project study area roadways. An alternative procedure is to estimate an overall area annual percentage increase and apply that increase to study area traffic volumes. For the purpose of this assessment, the latter methodology was utilized and is detailed further below.



Historic Growth

A review of available historic data indicated that annual daily traffic volumes in Lee have fluctuated over the last ten years. A local MassDOT continuous count station located on Route 20 shows that traffic volumes have fluctuated greatly over the most recent ten-year period. However, in order to account for any potential background developments that may be constructed in the vicinity of the study area, a conservative 2 percent per year growth rate was applied to the traffic volumes.

2027 No-Build Traffic Volumes

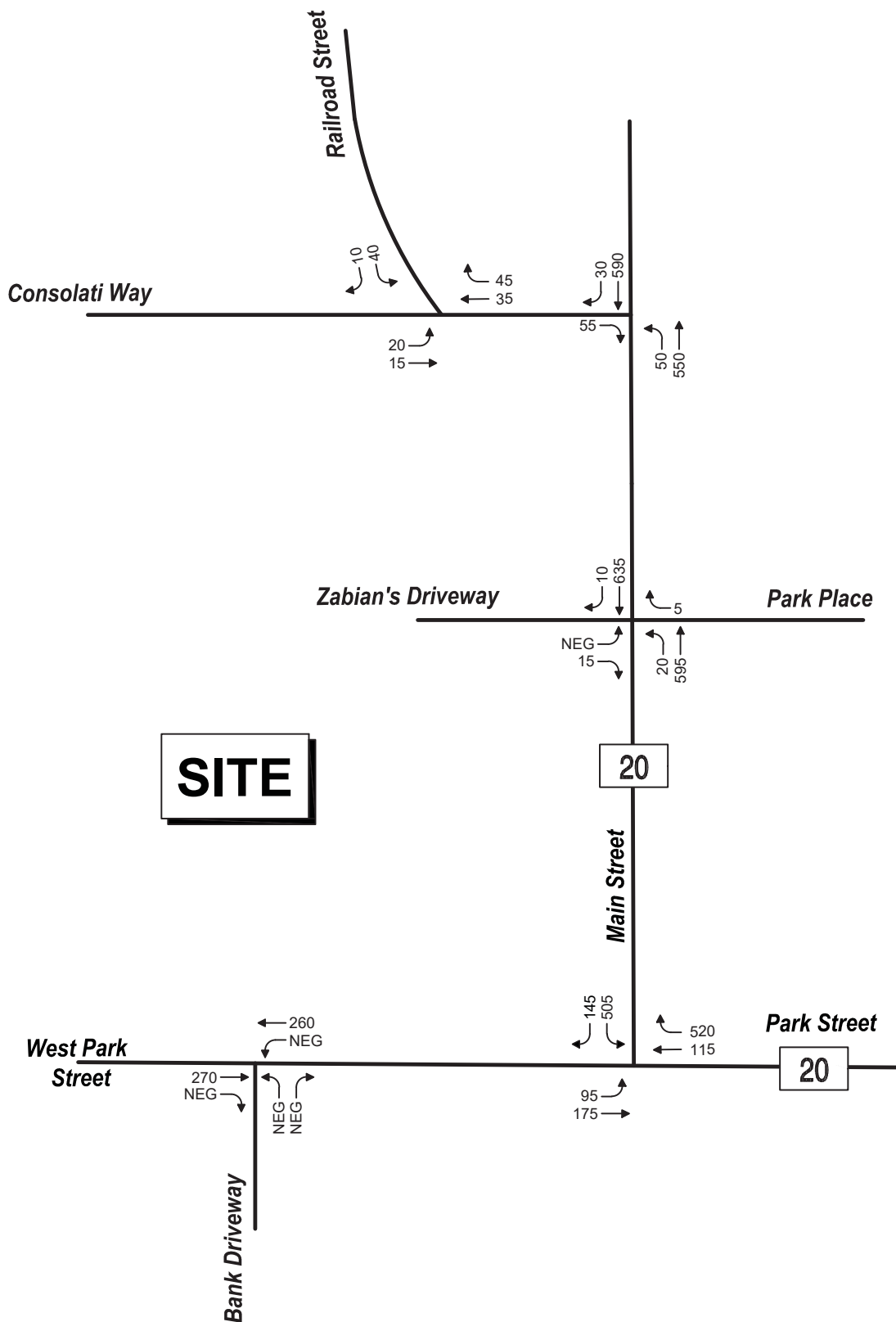
The 2 percent per year annual growth rate was applied to the 2020 Existing traffic volumes, to develop the projected 2027 No-Build (without the proposed project) weekday morning, weekday evening, and Saturday midday peak hour traffic volumes.

A planned development project has been identified at 73 West Center Street (Route 20). The Eagleville Mill development is mixed-use, including two apartment buildings, commercial space with various uses, a hotel, and other commercial and retail uses, broken down as follows:

- Mercantile building – the redevelopment of an existing building on site, the Mercantile building is proposed to consist primarily of commercial/retail type uses, and is approximately 8,500 SF.
- Riverfront Commercial building – this 8,000 SF building is proposed to consist of commercial/retail type uses.
- Hotel – a 72-room hotel is proposed to be located on the Site.
- Union Mill apartment building – this 37-unit apartment building is proposed to be connected to the adjacent Eagle Mill Market building.
- Eagle Mill Market building – this approximately 32,984 SF two-story building is proposed to be connected to the Union Mill apartment building. Uses within the building will consist of approximately 26,515 SF of public market/retail space and food hall, approximately 7,585 SF of general office space, a 4,953 SF restaurant with 70 seats, and a 1,516 SF brewery with 35 seats.
- Eagle Mill apartment building – this 43-unit apartment building is proposed to be located at the far eastern side of the property.

The Town of Lee was unable to be reached for comment on planned development projects, therefore, a healthy 2 percent per year growth rate was used to remain conservative and account for any potential planned development projects.

The 2027 No-Build weekday morning, evening, and Saturday midday peak hour traffic volumes can be seen in Figures 5 through 7.



Legend

XX → Weekday Morning
Traffic Volume
NEG (Negligible)

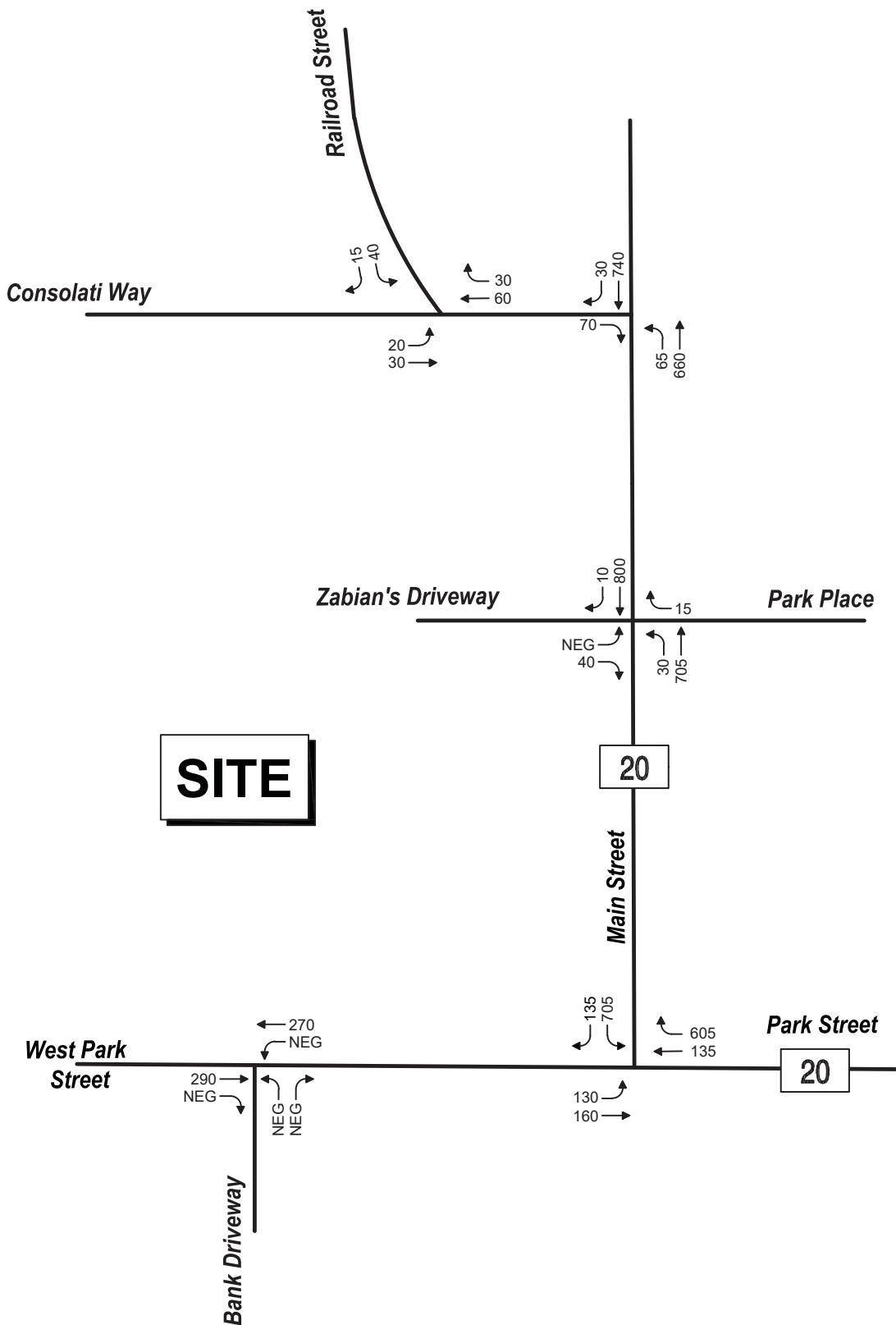
NOT TO SCALE



Mixed-Use Development
2027 No-Build Conditions
Weekday Morning Peak Hour Traffic Volumes
Lee, Massachusetts

Figure 5





Legend

XX → Weekday Evening
Traffic Volume
NEG (Negligible)

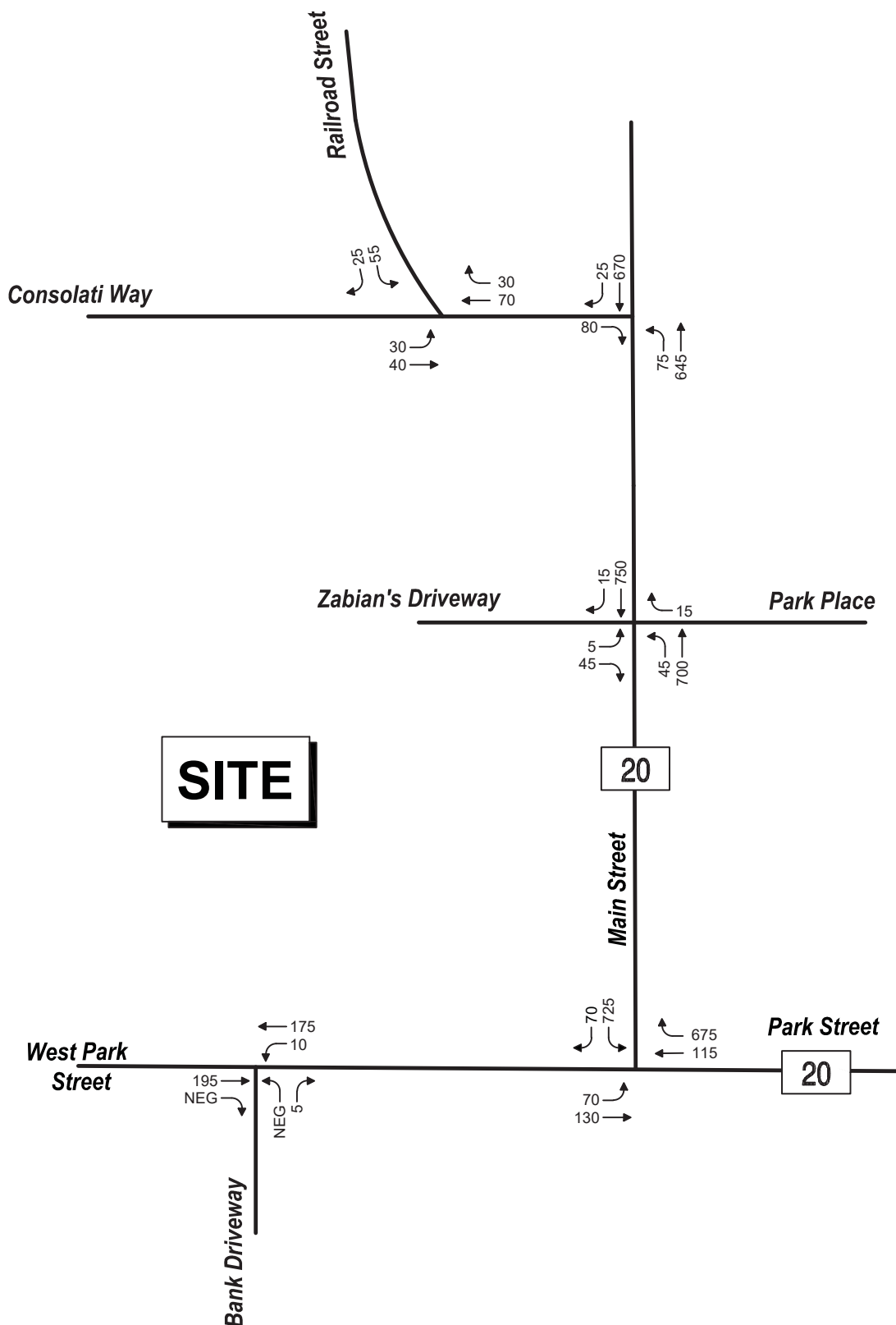
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Mixed-Use Development
2027 No-Build Conditions
Weekday Evening Peak Hour Traffic Volumes
Lee, Massachusetts

Figure 6





Legend

XX → Saturday Midday
Traffic Volume
NEG (Negligible)

NOT TO SCALE



Mixed-Use Development
2027 No-Build Conditions
Saturday Midday Peak Hour Traffic Volumes
Lee, Massachusetts

Figure 7





Build Condition

Build traffic volumes for study area roadways were determined by estimating site generated traffic volumes and distributing these volumes over the study area roadways.

Site Generated Traffic

In order to estimate the trip-generating characteristics for the proposed project, traffic projections can be derived from trip generation rates published by the Institute of Transportation Engineers (ITE) in their Trip Generation Manual, 10th Edition¹. ITE is the standard methodology used to project trips generated by this type of development, which is based on a number of observations at other, similar land uses throughout the United States. It was determined that the following land use codes should be utilized to estimate the site generated traffic:

- LUC 221 "Multi Family Housing (Mid-Rise)" was utilized to estimate trip generation associated with the proposed 84 apartment units (64 units for the proposed in the Phase 1 apartment building, and 20 units for the proposed Phase 2 apartment building).
- LUC 820 "Retail" was utilized to estimate trip generation associated with the general commercial space. The 10,485 SF commercial space in the Phase 2 building has the potential to include a number of potential retail uses.

The anticipated new total trip generation for the proposed multiuse development (including both Phase 1 and Phase 2) is summarized in Table 3.

As shown in Table 3, the total development is expected to generate approximately 40 (14 entering, 26 exiting) new vehicle trips during the weekday morning peak hour, approximately 139 (72 entering, 67 exiting) new vehicle trips are expected during the weekday evening peak hour, and approximately 146 (75 entering, 71 exiting) new vehicle trips are expected during the Saturday midday peak hour. This represents entirely new vehicles on the adjacent roadway network.

¹ Trip Generation; Tenth Edition; Institute of Transportation Engineers; Washington, D.C.; 2017.



Table 3 Site Generated Traffic Summary

Time Period	Apartments¹ (84 Units)	Commercial² (10,485 SF)	Total Gross Trips
<i>Daily</i>	456	1,298	1,754
<i>Weekday Morning Peak Hour^b</i>			
Enter	8	6	14
<u>Exit</u>	<u>22</u>	<u>4</u>	<u>26</u>
Total	30	10	40
<i>Weekday Evening Peak Hour^b</i>			
Enter	23	49	72
<u>Exit</u>	<u>14</u>	<u>53</u>	<u>67</u>
Total	37	102	139
<i>Saturday Midday Peak Hour^b</i>			
Enter	21	54	75
<u>Exit</u>	<u>21</u>	<u>50</u>	<u>71</u>
Total	42	104	146

Source: Trip Generation, 10th Edition; Institute of Transportation Engineers (ITE); Washington, D.C. (2017).

a vehicles per day

b vehicles per hour

1 Future trip generation based on LUC 221 (Multifamily Mid-rise) based on 84 Units

2 Future trip generation based on LUC 820 (Shopping Center) based on 10,485 SF



Trip Distribution

The anticipated distribution of the site generated traffic was determined by examining the population density of neighborhoods in Lee in relation to the site location, anticipating commuter traffic patterns in the area, and ease of access to the site.

It was assumed that site-generated traffic would be allocated across the major routes in the area based on the traffic percentages that are summarized in Table 4. A figure depicting the distribution patterns shown in Table 4 can be seen in the Appendix.

Table 4 Trip Distribution Summary

Roadway	Direction [From/To]	Site Generated Trip Distribution^a
Park Street	East	40%
West Park Street	West	10%
Main Street	North	40%
Railroad Street	North	10%
Total		100%

^a Based on a function of population densities, anticipated commuter traffic patterns, and ease of access to the Site



Proposed Site Access and Circulation

This Site is proposed to have two full access points; one on West Park Street, and one on Consolati Way. Site Drive 1 is proposed to be located across from the Bank Driveway entrance and shifted just east of the existing Price Chopper driveway to better align with the opposite Bank Driveway. Site Drive 2 is the existing driveway off of Consolati Way that is primarily used for the post office under existing conditions. No modifications to this driveway are proposed under the current project. All proposed site driveways and parking lot driveways will operate under stop control.

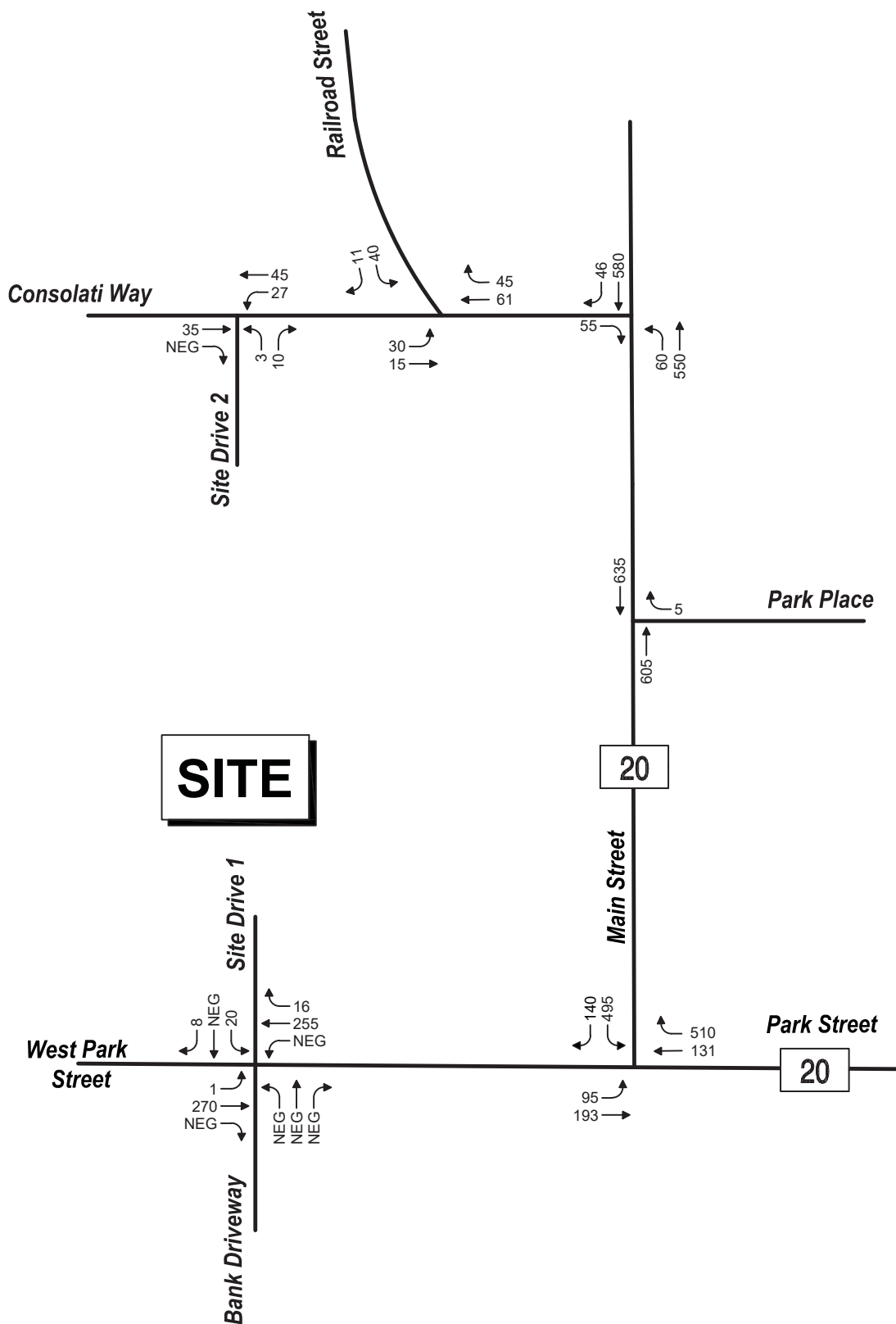
Parking will be available for residents and visitors along the sides of the buildings in surface lots. A total of 54 parking spaces are available for patrons and residents; 44 parking spaces associated with Phase 1 of the development, and 10 parking spaces associated with Phase 2 of the development. The existing Zabian's Driveway will be closed as this is the location for the Phase 2 building. Existing traffic in the parking lot for the surrounding shops and restaurants will be redirected to Site Driveways 1, 2, or on-street parking. On-site, pedestrian walkways are to be provided connecting parking areas with the building. Bicycle racks are proposed on the front face of the building outside of the retail space.

There is one bus route that services the area that would be available to patrons of the West Park Street development. The Berkshire Regional Transit Authority (BRTA) operates Route 2 with a stop at Park Street (Route 20) and Main Street (Route 20). Buses depart this stop on an hourly basis beginning at 7:15 AM and ending at 6:15 PM.

A reduced-size copy of the proposed site plan can be seen as part of the submittal package.

Build Conditions Traffic Volumes

The future site-generated volumes will be assigned to the roadway network according to the distribution and travel patterns previously described and combined with the 2027 No-Build traffic volumes to develop the 2027 Build peak hour networks. The 2027 Build weekday morning, evening, and Saturday midday peak hour networks can be seen in Figures 8 through 10, respectively.



Legend

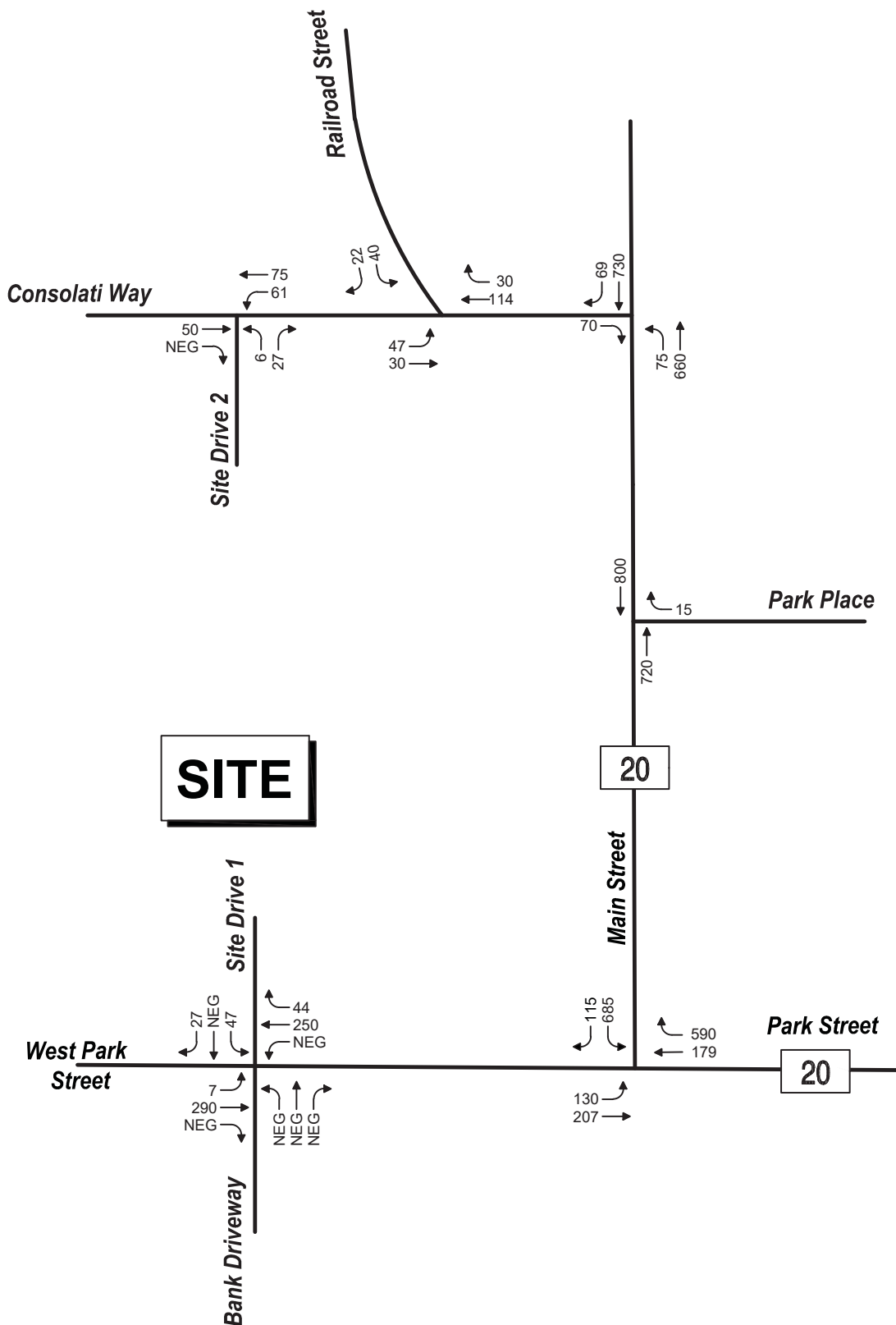
XX → Weekday Morning
Traffic Volume
NEG (Negligible)

NOT TO SCALE



Mixed-Use Development
2027 Build Conditions
Weekday Morning Peak Hour Traffic Volumes
Lee, Massachusetts

Figure 8



Legend

XX → Weekday Evening
Traffic Volume
NEG (Negligible)

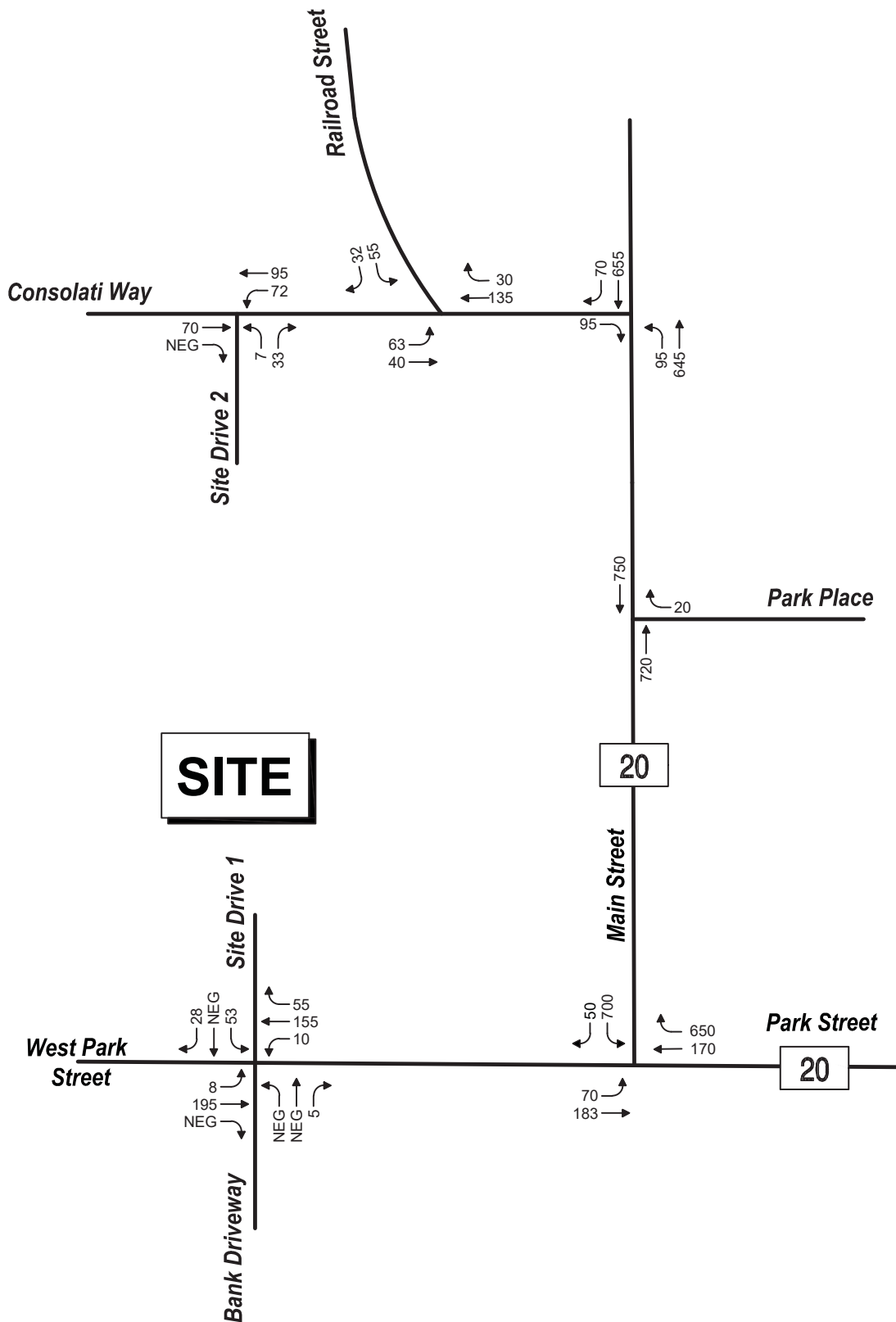
NOT TO SCALE



Mixed-Use Development
2027 Build Conditions
Weekday Evening Peak Hour Traffic Volumes
Lee, Massachusetts

Figure 9





Mixed-Use Development
2027 Build Conditions
Saturday Midday Peak Hour Traffic Volumes
Lee, Massachusetts

Figure 10

4

Traffic Operations Analysis

Measuring existing traffic volumes and projecting future traffic volumes quantifies traffic flow within the study area. To assess the roadway and intersection capacity, analyses were conducted with respect to existing traffic volume conditions. Capacity analyses provide an indication of how well the roadway facilities serve the traffic demands placed on them. The following sections describe the methodology used to evaluate the study area intersections and summarize the results of the analyses.

Level of Service and Delay Criteria

The evaluation criteria used to analyze area intersections in this traffic study are based on the 2000 Highway Capacity Manual (HCM). The term 'Level of service' (LOS) is used to denote the different operating conditions that occur on a given roadway segment under various traffic volume loads. It is a qualitative measure that considers a number of factors including roadway geometry, speed, travel delay and freedom to maneuver. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level-of-service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions.



In addition to LOS, two other measures of effectiveness (MOEs) are typically used to quantify the traffic operations at intersections; volume-to-capacity ratio (v/c) and delay (expressed in seconds per vehicle). For example, an existing v/c ratio of 0.9 for an intersection indicates that the intersection is operating at 90 percent of its available capacity. A delay of 15 seconds for a particular vehicular movement or approach indicates that vehicles on the movement or approach will experience an average additional travel time of 15 seconds. It should be noted that v/c and delay could have a range of values for a given LOS letter designation. Comparison of intersection capacity results therefore requires that, in addition to the LOS, the other MOEs should also be considered.

The level-of-service designations, which are based on delay, are reported differently for signalized and unsignalized intersections. For signalized intersections, the analysis considers the operation of all traffic entering the intersection and the LOS designation is for overall conditions at the intersection. For unsignalized intersections, however, the analysis assumes that traffic on the mainline is not affected by traffic on the side streets. Thus, the LOS designation is for the critical movement exiting the side street, which is generally the left turn out of the side street or site driveway. Table 5 shows the level of service criteria for both signalized intersections and unsignalized intersections.

It should be noted that the analytical methodologies typically used for the analysis of unsignalized intersections use conservative analysis parameters, such as long critical gaps. Actual field observations indicate that drivers on minor streets generally accept shorter gaps in traffic than those used in the analysis procedures and therefore experience less delay than reported by the analysis software. The analysis methodologies also do not fully take into account the beneficial grouping effects caused by nearby signalized intersections. The net effect of these analysis procedures is the over-estimation of calculated delays at unsignalized intersections in the study area. Cautious judgment should therefore be exercised when interpreting the capacity analysis results at unsignalized intersections.

Table 5 Level of Service Criteria

Level of Service	Signalized Intersection	Unsignalized Intersection
A	0 to 10 seconds	0 to 10 seconds
B	10 to 20 seconds	10 to 15 seconds
C	20 to 35 seconds	15 to 25 seconds
D	35 to 55 seconds	25 to 35 seconds
E	55 to 80 seconds	35 to 50 seconds
F	Greater than 80 seconds	Greater than 50 seconds

Source: 2000 Highway Capacity Manual Exhibits 16-2 and 17-2



Intersection Capacity Analysis

Unsignalized Intersection Capacity Analysis

Unsignalized intersection capacity analyses were conducted for the unsignalized intersection identified in the study area. Capacity analyses were conducted for 2020 Existing Conditions, the 2027 No-Build conditions (without the proposed development) and the 2027 Build conditions (with the development). The results of the analysis are shown in Table 6.

The unsignalized study area intersections currently operate with acceptable levels of service and delay and are expected to do so under proposed conditions with slight increases due to the addition of background and site generated traffic to the network. The exception to this is the intersection of Main Street (Route 20) at Park Street (Route 20) and West Park Street. This unsignalized intersection currently operates with poor levels of service and long delays and is expected to do so under proposed conditions. Although the proposed development traffic is not expected to have a significant impact on the performance of this intersection, potential improvements were investigated to improve the poor existing operating conditions. Alternative analysis of these potential improvements for this intersection are explored further in the following section.



Table 6 Unsignalized Intersection Capacity Analysis Summary

Location	Period	Movement	2020 Existing				2027 No-Build				2027 Build			
			Dem ^a	v/c ^b	Delay ^c	LOS ^d	Dem	v/c	Delay	LOS	Dem	v/c	Delay	LOS
Bank Driveway and Site Drive 1 at West Park Street	Weekday Morning	EB-LTR	225	0.17	0.0	-	270	0.17	0.0	-	271	0.00	0.0	A
		WB- LTR	220	0.00	0.0	-	260	0.00	0.0	-	271	0.00	0.0	-
		NB-LTR	0	0.00	0.0	A	0	0.00	0.0	A	0	0.00	0.0	A
		SB-LTR	-	-	-	-	-	-	-	-	28	0.06	12.9	B
	Weekday Evening	EB-LTR	250	0.16	0.0	-	290	0.18	0.0	-	297	0.01	0.3	A
		WB- LTR	230	0.00	0.0	-	270	0.00	0.0	-	294	0.00	0.0	-
		NB-LTR	0	0.00	0.0	A	0	0.00	0.0	A	0	0.00	0.0	A
		SB-LTR	-	-	-	-	-	-	-	-	74	0.17	14.1	B
Saturday Midday	EB-LTR	160	0.11	0.0	-	195	0.12	0.0	-	203	0.01	0.4	A	
	WB- LTR	155	0.01	0.5	A	185	0.01	0.5	A	220	0.01	0.4	A	
	NB-LTR	5	0.01	9.2	A	5	0.01	9.4	A	5	0.01	9.3	A	
	SB-LTR	-	-	-	-	-	-	-	-	81	0.15	12.2	B	

^a demand in vehicles per hour for unsignalized intersections; demand is calculated as the total vehicular volume from the critical side street approach

^b volume-to-capacity ratio for the critical movement

^c delay of critical approach only

^d level of service of the critical movement

NA driveway not analyzed under Existing and No-Build conditions

EB, WB Eastbound, westbound,

NB, SB Northbound, southbound

LR shared left/right-turn movements;

LTR shared left/through/right turn movements

L left-turn movement

LT shared left/through movement

NA movement not available under condition

Err due to excessive delay V/C ratio and/or delay cannot be calculated



Table 6 cont. Unsignalized Intersection Capacity Analysis Summary

Location	Period	Movement	2020 Existing				2027 No-Build				2027 Build			
			Dem ^a	v/c ^b	Delay ^c	LOS ^d	Dem	v/c	Delay	LOS	Dem	v/c	Delay	LOS
Main Street (Route 20) at Park Street (Route 20) & West Park Street	Weekday Morning	EB-L	75	10.51	Err	F	95	Err	Err	F	95	Err	Err	F
		EB-T	150	1.31	242.2	F	175	1.54	343.9	F	195	1.65	382.6	F
		WB-TR	505	0.94	35.6	E	635	1.27	158.0	F	641	1.46	240.1	F
		SB-LR	535	0.32	7.1	A	650	0.34	7.3	A	635	0.34	7.2	A
	Weekday Evening	EB-L	110	Err	Err	F	130	Err	Err	F	130	Err	Err	F
		EB-T	140	1.69	422.2	F	160	2.95	1029.7	F	207	3.46	Err	F
		WB-TR	600	1.58	298.5	F	740	3.28	Err	F	769	3.81	Err	F
		SB-LR	695	0.38	7.8	A	840	0.47	8.4	A	800	0.45	8.4	A
	Saturday MIDDAY	EB-L	55	16.06	Err	F	70	Err	Err	F	70	Err	Err	F
		EB-T	110	0.99	150.1	F	130	2.17	676.3	F	183	2.74	910.3	F
		WB-TR	625	0.97	34.0	D	790	2.54	724.0	F	820	3.26	Err	F
		SB-LR	625	0.36	8.0	A	795	0.46	8.6	A	750	0.44	8.6	A

^a demand in vehicles per hour for unsignalized intersections; demand is calculated as the total vehicular volume from the critical side street approach

^b volume-to-capacity ratio for the critical movement

^c delay of critical approach only

^d level of service of the critical movement

NA driveway not analyzed under Existing and No-Build conditions

EB, WB Eastbound, westbound,

NB, SB Northbound, southbound

LR shared left/right-turn movements;

LTR shared left/through/right turn movements

L left-turn movement

LT shared left/through movement

NA movement not available under condition

Err due to excessive delay V/C ratio and/or delay cannot be calculated



Table 6 cont. Unsignalized Intersection Capacity Analysis Summary

Location	Period	Movement	2020 Existing				2027 No-Build				2027 Build			
			Dem ^a	v/c ^b	Delay ^c	LOS ^d	Dem	v/c	Delay	LOS	Dem	v/c	Delay	LOS
Main Street (Route 20) at Park Place and Zabian's Driveway	Weekday Morning	EB-LR	15	0.06	16.2	C	15	0.07	16.5	C	-	-	-	-
		WB-R	5	0.01	11.7	B	5	0.02	12.7	B	5	0.02	12.8	B
		NB-LT	480	0.02	0.5	A	615	0.03	0.7	A	605	0.39	0.0	-
		SB-TR	530	0.40	0.0	-	645	0.41	0.0	-	635	0.41	0.0	-
	Weekday Evening	EB-LR	40	0.19	18.8	C	40	0.24	22.8	C	-	-	-	-
		WB-R	15	0.04	12.4	B	15	0.05	13.9	B	15	0.05	14.1	B
		NB-LT	595	0.03	0.8	A	735	0.04	1.1	A	720	0.44	0.0	-
		SB-TR	660	0.43	0.0	-	810	0.52	0.0	-	800	0.51	0.0	-
Saturday MIDDAY	EB-LR	45	0.17	17.4	C	50	0.16	21.9	C	-	-	-	-	
	WB-R	15	0.05	12.3	B	15	0.06	14.2	B	20	0.08	14.7	B	
	NB-LT	580	0.05	1.2	A	745	0.06	1.6	A	720	0.45	0.0	-	
	SB-TR	595	0.38	0.0	-	765	0.49	0.0	-	750	0.48	0.0	-	

^a demand in vehicles per hour for unsignalized intersections; demand is calculated as the total vehicular volume from the critical side street approach

^b volume-to-capacity ratio for the critical movement

^c delay of critical approach only

^d level of service of the critical movement

NA driveway not analyzed under Existing and No-Build conditions

EB, WB Eastbound, westbound,

NB, SB Northbound, southbound

LR shared left/right-turn movements;

LTR shared left/through/right turn movements

L left-turn movement

LT shared left/through movement

NA movement not available under condition

Err due to excessive delay V/C ratio and/or delay cannot be calculated



Table 6 cont. Unsignalized Intersection Capacity Analysis Summary

Location	Period	Movement	2020 Existing				2027 No-Build				2027 Build			
			Dem ^a	v/c ^b	Delay ^c	LOS ^d	Dem	v/c	Delay	LOS	Dem	v/c	Delay	LOS
Main Street (Route 20) at Consolati Way	Weekday Morning	EB-R	50	0.13	13.6	B	55	0.13	14.1	B	55	0.13	14.1	B
		NB-LT	470	0.05	1.3	A	600	0.06	1.6	A	610	0.07	1.9	A
		SB-TR	505	0.37	0.0	-	620	0.40	0.0	-	626	0.40	0.0	-
	Weekday Evening	EB-R	60	0.16	14.2	B	70	0.20	16.8	C	70	0.20	17.0	C
		NB-LT	585	0.06	1.6	A	720	0.08	2.0	A	735	0.10	2.6	A
		SB-TR	625	0.39	0.0	-	770	0.48	0.0	-	799	0.50	0.0	-
	Saturday Midday	EB-R	80	0.20	13.6	B	95	0.24	16.3	C	95	0.25	16.4	C
		NB-LT	555	0.07	1.8	A	720	0.09	2.3	A	740	0.12	3.0	A
		SB-TR	540	0.34	0.0	-	695	0.44	0.0	-	725	0.46	0.0	-

^a demand in vehicles per hour for unsignalized intersections; demand is calculated as the total vehicular volume from the critical side street approach

^b volume-to-capacity ratio for the critical movement

^c delay of critical approach only

^d level of service of the critical movement

NA driveway not analyzed under Existing and No-Build conditions

EB, WB Eastbound, westbound,

NB, SB Northbound, southbound

LR shared left/right-turn movements;

LTR shared left/through/right turn movements

L left-turn movement

LT shared left/through movement

NA movement not available under condition

Err due to excessive delay V/C ratio and/or delay cannot be calculated



Table 6 cont. Unsignalized Intersection Capacity Analysis Summary

Location	Period	Movement	2020 Existing				2027 No-Build				2027 Build			
			Dem ^a	v/c ^b	Delay ^c	LOS ^d	Dem	v/c	Delay	LOS	Dem	v/c	Delay	LOS
Railroad Street at Consolati Way	Weekday Morning	EB-LT	30	0.02	3.8	A	35	0.01	4.4	A	45	0.02	5.2	A
		WB-TR	65	0.04	0.0	-	80	0.05	0.0	-	106	0.07	0.0	-
		SB-LR	45	0.07	9.4	A	50	0.06	9.4	A	51	0.07	9.7	A
	Weekday Evening	EB-LT	40	0.02	2.9	A	50	0.01	3.0	A	77	0.04	4.7	A
		WB-TR	80	0.07	0.0	-	90	0.06	0.0	-	144	0.09	0.0	-
		SB-LR	45	0.07	9.7	A	55	0.07	9.5	A	62	0.09	10.2	B
	Saturday Midday	EB-LT	60	0.02	3.2	A	70	0.02	3.3	A	103	0.05	4.9	A
		WB-TR	90	0.07	0.0	-	100	0.06	0.0	-	165	0.11	0.0	-
		SB-LR	70	0.10	9.8	A	80	0.11	9.9	A	87	0.14	11.0	B

^a demand in vehicles per hour for unsignalized intersections; demand is calculated as the total vehicular volume from the critical side street approach

^b volume-to-capacity ratio for the critical movement

^c delay of critical approach only

^d level of service of the critical movement

NA driveway not analyzed under Existing and No-Build conditions

EB, WB Eastbound, westbound,

NB, SB Northbound, southbound

LR shared left/right-turn movements;

LTR shared left/through/right turn movements

L left-turn movement

LT shared left/through movement

NA movement not available under condition

Err due to excessive delay V/C ratio and/or delay cannot be calculated



Table 6 cont. Unsignalized Intersection Capacity Analysis Summary

Location	Period	Movement	2020 Existing			2027 No-Build			2027 Build		
			Dem ^a	v/c ^b	Delay ^c	LOS ^d	Dem	v/c	Delay	LOS	LOS
Site Drive 2 at Consolati Way	Weekday Morning	EB-TR	-	-	-	-	-	-	0.0	-	-
		WB-LT	-	-	-	-	-	-	2.8	A	A
		NB-LR	-	-	-	-	-	-	8.7	A	A
	Weekday Evening	EB-TR	-	-	-	-	-	-	0.0	-	-
		WB-LT	-	-	-	-	-	-	3.5	A	A
		NB-LR	-	-	-	-	-	-	9.0	A	A
	Saturday Midday	EB-TR	-	-	-	-	-	-	0.0	-	-
		WB-LT	-	-	-	-	-	-	3.5	A	A
		NB-LR	-	-	-	-	-	-	9.2	A	A

^a demand in vehicles per hour for unsignalized intersections; demand is calculated as the total vehicular volume from the critical side street approach

^b volume-to-capacity ratio for the critical movement

^c delay of critical approach only

^d level of service of the critical movement

NA driveway not analyzed under Existing and No-Build conditions

EB, WB Eastbound, westbound,

NB, SB Northbound, southbound

LR shared left/right-turn movements;

LTR shared left/through/right turn movements

L left-turn movement

LT shared left/through movement

NA movement not available under condition

Err due to excessive delay V/C ratio and/or delay cannot be calculated



Alternative Analysis

Alternative Analysis was conducted on the intersection of Main Street (Route 20) at Park Street (Route 20) and West Park Street due to the existing poor levels of service, lengthy delays, and safety concerns. As part of this analysis, two modifications to the intersection were investigated; construction of a roundabout and installation of a traffic signal at this location. Although the proposed development traffic is not expected to have a significant impact on the performance of this intersection, the below described potential improvements were investigated to improve the poor existing operating conditions.

A traffic signal warrant analysis was conducted confirm the need for a traffic signal at the study location. The methodology used to determine if traffic signal controls are warranted is based on the criteria set in the Manual on Uniform Traffic Control Devices (MUTCD)¹. There are nine warrants defined in the MUTCD. The MUTCD is the established standard for Warrant analyses. The Warrants consider the roadway geometry, traffic volume entering the intersection, and speeds. Specifically, the traffic projections were evaluated for following three volume-based Warrants.

- **Warrant 1 (Eight Hour Vehicular Volume)** – Warrant 1 is based on any eight hours of a day where the traffic entering the intersection reaches a threshold that warrants considering signal control.
- **Warrant 2 (Four Hour Vehicular Volume)** – Warrant 2 is for any four hours of a day.
- **Warrant 3 (Peak Hour)** – Warrant 3 is for the peak hour of any given day.

Table 7 presents the results of the three most commonly utilized warrants analysis completed for the study intersection. As these are existing traffic signals, all day turning movement counts were not collected to complete the 8-hour warrant analysis. The signal warrant worksheets are provided in the Appendix.

Table 7 Traffic Signal Warrants Analysis Summary

	Warrant 1^a Met	Warrant 2^b Met	Warrant 3^c Met
Main Street at Park Street and West Park Street	No ¹	Yes	Yes

¹Only four hours of volume gathered for all approaches

^a Eight-hour volume warrant

^b Four-hour volume warrant

^c Peak hour volume warrant

¹ Manual on Uniform Traffic Control Devices; Part 4 – Highway Traffic Signals; U.S. Department of Transportation/Federal Highway Administration; 2009 Edition.



There are six other warrants that the intersections likely do not meet. These are:

- **Warrant 4 -Pedestrian Volume:** Pedestrian volumes would need to exceed 107 persons per hour for four hours or 133 persons per hour for one hour to meet criteria for this warrant.
- **Warrant 5-School Crossing:** This warrant is not applicable to the project area.
- **Warrant 6 – Coordinated Signal System:** This warrant is not applicable to the project area, as there are no existing traffic signals in the vicinity of this intersection.
- **Warrant 7 – Crash Experience:** This warrant applies to locations where crash frequency and severity are the primary reasoning behind installing traffic signal equipment.
- **Warrant 8 – Roadway Network:** This warrant is not applicable to the project area.
- **Warrant 9 – Intersection Near a Grade Crossing:** There is no active at-grade rail crossing of the project area roadways.

The study area intersection does meet thresholds for installation of a traffic signal. Below is an analysis of intersection operations under a simple three phase traffic control device operating on a 60 second cycle length:



Table 8 Alternative Signalized Intersection Capacity Analysis Summary

Intersection	Lane Group	2027 Alternative Build Conditions				
		V/C ¹	Delay ²	LOS ³	50th ⁴	95th ⁵
Main Street (Rt 20) at Park Street (Rt 20)/West Park Street- Weekday Morning						
West Park Street	EB L	0.39	18.6	B	28	63
West Park Street	EB T	0.53	19.7	B	59	110
Park Street	WB T	0.38	18.3	B	38	78
Park Street	WB R	0.39	18.5	B	<20	65
Main Street	SB LR	0.66	10.3	B	110	292
	Overall	0.63	15.3	B	-	-
Main Street (Rt 20) at Park Street (Rt 20)/West Park Street- Weekday Evening						
West Park Street	EB L	0.52	19.8	B	40	85
West Park Street	EB T	0.50	18.9	B	63	115
Park Street	WB T	0.44	18.4	B	54	101
Park Street	WB R	0.41	18.3	B	<20	66
Main Street	SB LR	0.82	16.3	B	189	#491
	Overall	0.74	17.6	B	-	-
Main Street (Rt 20) at Park Street (Rt 20)/West Park Street- Saturday Midday						
West Park Street	EB L	0.22	13.3	B	<20	47
West Park Street	EB T	0.37	14.0	B	45	101
Park Street	WB T	0.36	13.9	B	42	96
Park Street	WB R	0.45	14.6	B	<20	71
Main Street	SB LR	0.82	14.7	B	152	#413
	Overall	0.69	14.4	B	-	-

1 V/C – Volume-to-capacity ratio

2 Delay – Control delay per vehicle

3 LOS – Level-of-Service

4 50th – 50th percentile queue length estimate, in feet

5 95th – 95th percentile queue length estimate, in feet

~ Volume exceeds capacity, queue is theoretically infinite

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

M Volume for 95th percentile queue is metered by upstream signal

NA movement not present under specified scenario

NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound; L = left-turn; T = through; R = right-turn

As shown in Table 8, the alternative analysis for installing a simple three-phase 60 second cycle length traffic control signal at this intersection drastically improves the proposed roadway network. However, remaining sensitive to the Town of Lee's historic nature, a traffic signal may not garner public support.

A second alternative would be to construct a mini-roundabout at this intersection to keep traffic flowing through the intersection without the aid of a signal. It should be noted that to fit a roundabout with appropriate clearance and lane widths, the geometry of the existing intersection may need to undergo modifications. Below is an analysis of intersection operations under a mini-roundabout design:



Table 9 Roundabout Alternative Unsignalized Intersection Capacity Analysis Summary

Location	Period	Movement	2027 Alternative Build			
			Dem ^a	v/c ^b	Delay ^c	LOS ^d
Main Street (Route 20) at Park Street (Route 20) & West Park Street	Weekday Morning	EB-TL	286	0.38	9.4	A
		WB-TR	657	0.56	4.9	A
		SB-LR	635	0.55	8.9	A
	Weekday Evening	EB-TL	338	0.55	13.9	B
		WB-TR	766	0.65	5.2	A
		SB-LR	810	0.71	10.1	B
	Saturday Midday	EB-TL	247	0.37	10.3	B
		WB-TR	821	0.62	4.6	A
		SB-LR	765	0.63	9.8	A

- a demand in vehicles per hour for unsignalized intersections; demand is calculated as the total vehicular volume from the critical side street approach
- b volume-to-capacity ratio for the critical movement
- c delay of critical approach only
- d level of service of the critical movement
- NA driveway not analyzed under Existing and No-Build conditions
- EB, WB Eastbound, westbound,
- NB, SB Northbound, southbound
- LR shared left/right-turn movements;
- LTR shared left/through/right turn movements
- L left-turn movement
- LT shared left/through movement
- NA movement not available under condition
- Err due to excessive delay V/C ratio and/or delay cannot be calculated

As shown in Table 9, the alternative analysis for constructing a mini-roundabout at this intersection improves the proposed roadway network and shows improved conditions over the installation of a traffic control signal. As previously mentioned, due to the existing roadway geometry, should the alternative of a mini-roundabout be considered geometric modifications may need to be investigated further. The concept plan for this alternative can be seen in Figure 11.

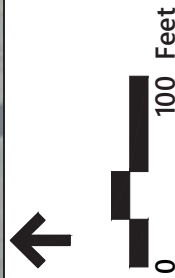
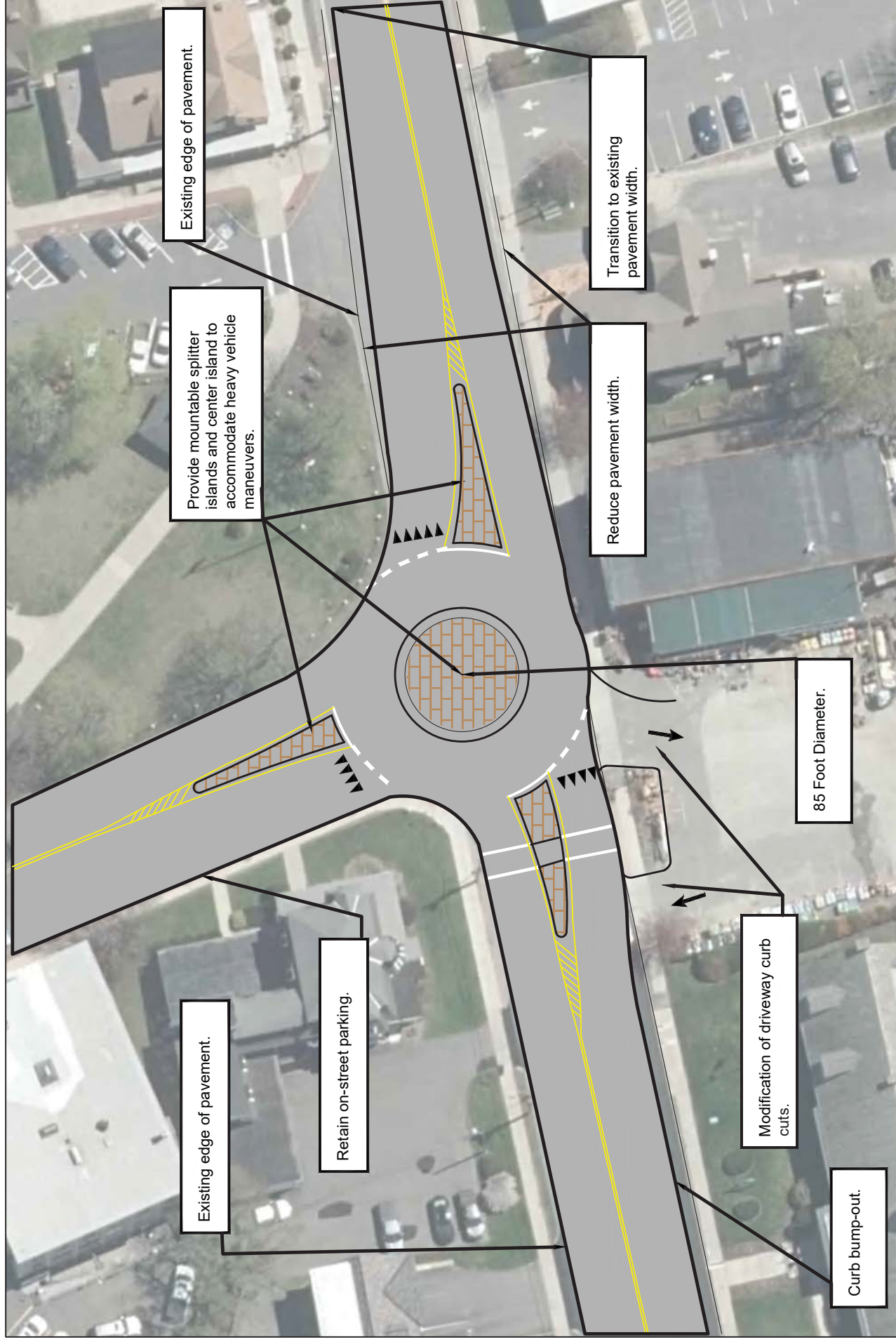


Figure 11

Concept: Mini-Roundabout
Main Street at Park Street
and West Park Street
Lee, MA

5

Conclusions

This study has been prepared to evaluate the traffic impacts associated with the proposed mixed-use redevelopment of the existing vacant Price Chopper, located at 88 West Park Street in Lee, Massachusetts. The approximately 2.5-acre site is accessible via West Park Street, Main Street (Route 20), and Consolati Way. The property and associated existing building are bordered by the Housatonic River to the west and the Downtown district and municipal offices to the east.

The existing Price Chopper building will be demolished and developed into 64 apartment units under Phase 1 of the project. Phase 2 of the site development consists of constructing a building between Zabian's Jewelers and the Morgan House Restaurant closing the existing entrance to the parking area. The Phase 2 development will house 20 residential units and approximately 10,485 square-feet of commercial space.

The Site is proposed to have two full access points; one on West Park Street, and one on Consolati Way. Site Drive 1 is proposed to be located across from the Bank Driveway entrance and shifted just east of the existing Price Chopper driveway. Site Drive 2 is the existing driveway off of Consolati Way that is primarily used for the post office under existing conditions. All proposed site driveways and parking lot driveways will operate under stop control.

Parking will be available for residents and visitors along the sides of the buildings in surface lots. A total of 54 parking spaces are available for patrons and residents; 44 parking spaces



associated with Phase 1 of the development, and 10 parking spaces associated with Phase 2 of the development. The existing Zabian's Driveway will be closed as this is the location for the Phase 2 building. Existing traffic in the parking lot for the surrounding shops and restaurants will be redirected to Site Driveways 1, 2, or on-street parking. On-site, pedestrian walkways are to be provided connecting parking areas with the building. Bicycle racks are proposed on the front face of the building outside of the retail space.

Traffic data was collected at study area intersections to represent 2020 Existing conditions. It should be noted that traffic volumes were collected during the winter and summer months, which represents a high variation in traffic for Lee, as the Berkshires area towns experience a considerable volume of tourists during the summer months and a low amount of traffic during the winter months. For this reason, traffic volumes were adjusted to reflect an "average month" by increasing the March collection data and reducing the August data.

In order to project traffic volumes to the future design year, a growth rate must be applied. A review of available historic data indicated that annual daily traffic volumes in Lee have fluctuated over the last ten years, and in some cases have decreased. A local MassDOT continuous count station located on Route 20 shows that traffic volumes have fluctuated vastly over the most recent ten-year period. However, in order to provide a conservative analysis for the future conditions, 2 percent per year growth rate was applied to the traffic volumes to represent future 2027 No-Build Conditions.

A planned development project has been identified at 73 West Center Street (Route 20). The Eagleville Mill development is mixed-use, including two apartment buildings, commercial space with various uses, a hotel, and other commercial and retail uses.

The Site is expected to generate approximately 40 (14 entering, 26 exiting) new vehicle trips during the weekday morning peak hour, approximately 139 (72 entering, 67 exiting) new vehicle trips are expected during the weekday evening peak hour, and approximately 146 (75 entering, 71 exiting) new vehicle trips are expected during the Saturday midday peak hour. This represents entirely new vehicles on the adjacent roadway network. The anticipated site generated traffic was added to the 2027 No-Build traffic networks to develop the 2027 Build conditions traffic networks. All scenarios were analyzed for comparison purposes.

The unsignalized study area intersections currently operate with acceptable levels of service and delay and are expected to do so under proposed conditions with slight increases due to the addition of background and site generated traffic to the network. The exception to this is the intersection of Main Street (Route 20) at Park Street (Route 20) and West Park Street. This unsignalized intersection currently operates with poor levels of service and long delays and is expected to continue to do so under proposed conditions. Although the proposed development traffic is not expected to have a significant impact on the performance of this intersection, potential improvements were investigated to improve the poor existing operating conditions.



In order to help mitigate the lengthy delays and poor levels of service, an Alternative Analysis of the intersection of Main Street (Route 20) at Park Street (Route 20) and Park Street was considered. This analysis indicated that modifying the intersection geometry into a mini-roundabout or installing a traffic control signal vastly improves the function of this intersection. Although the proposed development traffic is not expected to have a significant impact on the performance of this intersection, the above described potential improvements were investigated to improve the poor existing operating conditions.

It is therefore the conclusion of this Traffic Impact Assessment that the surrounding roadway network and unsignalized intersections can be expected to continue to operate under acceptable conditions, with the exception of Main Street at Park Street and West Park Street. The proposed development traffic is not expected to have a significant impact on the performance of the Main Street at Park Street and West Park Street. Further consideration of the outlined alternatives described herein to mitigate poor existing conditions are not required at this time as part of the proposed development plan. The traffic increases anticipated by the Lee Mixed-Use Redevelopment can be accommodated by the local roadways.



Appendix

Appendix No. & Title

Attachment A – Traffic Counts

Attachment B – Crash Data

Attachment C – Trip Generation & Distribution

Attachment D – Capacity Analyses

Attachment E – Traffic Signal Warrant Analysis

Attachment F – Alternative Capacity Analyses



Attachment A – Traffic Counts



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: Main Street (Route 20)
E / W: Consolati Way
City, State: Lee, Massachusetts
Client: VHB / J. Furman

File Name : AM Peak - Main @ Consolati
Site Code : 3
Start Date : 3/5/2020
Page No : 1

Groups Printed- Heavy Vehicles

	Main From North					From East					Main From South					Consolati From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	2	0	0	2	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	13
07:15 AM	0	8	0	0	8	0	0	0	0	0	0	8	0	0	8	1	0	0	0	1	17
07:30 AM	1	3	0	0	4	0	0	0	0	0	0	9	0	0	9	1	0	0	0	1	14
07:45 AM	0	6	0	0	6	0	0	0	0	0	0	6	0	0	6	1	0	0	0	1	13
Total	1	19	0	0	20	0	0	0	0	0	0	34	0	0	34	3	0	0	0	3	57
08:00 AM	0	8	0	0	8	0	0	0	0	0	0	6	1	0	7	0	0	0	0	0	15
08:15 AM	0	7	0	0	7	0	0	0	0	0	0	6	1	0	7	1	0	0	0	1	15
08:30 AM	0	4	0	0	4	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	13
08:45 AM	0	8	0	0	8	0	0	0	0	0	0	8	0	0	8	1	0	0	0	1	17
Total	0	27	0	0	27	0	0	0	0	0	0	29	2	0	31	2	0	0	0	2	60
Grand Total	1	46	0	0	47	0	0	0	0	0	0	63	2	0	65	5	0	0	0	5	117
Apprch %	2.1	97.9	0	0		0	0	0	0		0	96.9	3.1	0		100	0	0	0		
Total %	0.9	39.3	0	0	40.2	0	0	0	0	0	0	53.8	1.7	0	55.6	4.3	0	0	0	4.3	

	Main From North					From East					Main From South					Consolati From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	8	0	0	8	0	0	0	0	0	0	6	1	0	7	0	0	0	0	0	15
08:15 AM	0	7	0	0	7	0	0	0	0	0	0	6	1	0	7	1	0	0	0	1	15
08:30 AM	0	4	0	0	4	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	13
08:45 AM	0	8	0	0	8	0	0	0	0	0	0	8	0	0	8	1	0	0	0	1	17
Total Volume	0	27	0	0	27	0	0	0	0	0	0	29	2	0	31	2	0	0	0	2	60
% App. Total	0	100	0	0		0	0	0	0		0	93.5	6.5	0		100	0	0	0		
PHF	.000	.844	.000	.000	.844	.000	.000	.000	.000	.000	.000	.806	.500	.000	.861	.500	.000	.000	.000	.500	.882



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N / S: Main Street (Route 20)
E / W: Park Place & Zabian's
City, State: Lee, Massachusetts
Client: VHB / J. Furman

File Name : AM Peak - Main @ Park Place & Zabian's
Site Code : 2
Start Date : 3/5/2020
Page No : 1

Groups Printed- Heavy Vehicles

	Route 20 From North					Park Place From East					Route 20 From South					Zabian's From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	2	0	0	2	0	0	0	0	0	0	12	0	0	12	1	0	0	0	1	15
07:15 AM	1	8	0	0	9	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	17
07:30 AM	0	4	0	0	4	0	0	0	0	0	0	10	1	0	11	0	0	0	0	0	15
07:45 AM	0	9	0	0	9	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	15
Total	1	23	0	0	24	0	0	0	0	0	0	36	1	0	37	1	0	0	0	1	62
08:00 AM	0	11	0	0	11	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	20
08:15 AM	0	10	0	0	10	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	21
08:30 AM	0	3	0	0	3	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	11
08:45 AM	0	9	0	0	9	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	17
Total	0	33	0	0	33	0	0	0	0	0	0	36	0	0	36	0	0	0	0	0	69
Grand Total	1	56	0	0	57	0	0	0	0	0	0	72	1	0	73	1	0	0	0	1	131
Apprch %	1.8	98.2	0	0		0	0	0	0		0	98.6	1.4	0		100	0	0	0		
Total %	0.8	42.7	0	0	43.5	0	0	0	0	0	0	55	0.8	0	55.7	0.8	0	0	0	0.8	

	Route 20 From North					Park Place From East					Route 20 From South					Zabian's From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	4	0	0	4	0	0	0	0	0	0	10	1	0	11	0	0	0	0	0	15
07:45 AM	0	9	0	0	9	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	15
08:00 AM	0	11	0	0	11	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	20
08:15 AM	0	10	0	0	10	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	21
Total Volume	0	34	0	0	34	0	0	0	0	0	0	36	1	0	37	0	0	0	0	0	71
% App. Total	0	100	0	0		0	0	0	0		0	97.3	2.7	0		0	0	0	0		
PHF	.000	.773	.000	.000	.773	.000	.000	.000	.000	.000	.000	.818	.250	.000	.841	.000	.000	.000	.000	.000	.845



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N / S: Lee Bank
E / W: West Park Street
City, State: Lee, Massachusetts
Client: VHB / J. Furman

File Name : AM Peak - West Park @ Lee Bank
Site Code : 1
Start Date : 3/5/2020
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	From North					West Park From East					Lee Bank From South					West Park From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	0	30	0	1	31	46
07:15 AM	0	0	0	0	0	0	38	0	0	38	0	0	0	1	1	0	37	0	0	37	76
07:30 AM	0	0	0	0	0	0	51	0	0	51	0	0	0	0	0	0	64	0	0	64	115
07:45 AM	0	0	0	0	0	0	81	0	0	81	0	0	0	0	0	0	60	0	2	62	143
Total	0	0	0	0	0	0	185	0	0	185	0	0	0	1	1	0	191	0	3	194	380
08:00 AM	0	0	0	0	0	0	32	0	0	32	0	0	0	0	0	0	37	0	1	38	70
08:15 AM	0	0	0	0	0	0	40	0	0	40	0	0	0	0	0	0	43	0	0	43	83
08:30 AM	0	0	0	0	0	0	36	0	0	36	0	0	0	0	0	0	34	0	0	34	70
08:45 AM	0	0	0	0	0	0	33	0	0	33	0	0	0	0	0	0	31	0	1	32	65
Total	0	0	0	0	0	0	141	0	0	141	0	0	0	0	0	0	145	0	2	147	288
Grand Total	0	0	0	0	0	0	326	0	0	326	0	0	0	1	1	0	336	0	5	341	668
Apprch %	0	0	0	0	0	0	100	0	0	100	0	0	0	100	100	0	98.5	0	1.5		
Total %	0	0	0	0	0	0	48.8	0	0	48.8	0	0	0	0.1	0.1	0	50.3	0	0.7	51	
PCs and Peds	0	0	0	0	0	0	311	0	0	311	0	0	0	1	1	0	324	0	5	329	641
% PCs and Peds	0	0	0	0	0	0	95.4	0	0	95.4	0	0	0	100	100	0	96.4	0	100	96.5	96
Heavy Vehicles	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	0	12	0	0	12	27
% Heavy Vehicles	0	0	0	0	0	0	4.6	0	0	4.6	0	0	0	0	0	0	3.6	0	0	3.5	4
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	From North					West Park From East					Lee Bank From South					West Park From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:30 AM	0	0	0	0	0	0	51	0	0	51	0	0	0	0	0	0	64	0	0	64	115
07:45 AM	0	0	0	0	0	0	81	0	0	81	0	0	0	0	0	0	60	0	2	62	143
08:00 AM	0	0	0	0	0	0	32	0	0	32	0	0	0	0	0	0	37	0	1	38	70
08:15 AM	0	0	0	0	0	0	40	0	0	40	0	0	0	0	0	0	43	0	0	43	83
Total Volume	0	0	0	0	0	0	204	0	0	204	0	0	0	0	0	0	204	0	3	207	411
% App. Total	0	0	0	0	0	0	100	0	0	100	0	0	0	0	0	0	98.6	0	1.4		
PHF	.000	.000	.000	.000	.000	.000	.630	.000	.000	.630	.000	.000	.000	.000	.000	.000	.797	.000	.375	.809	.719
PCs and Peds	0	0	0	0	0	0	197	0	0	197	0	0	0	0	0	0	195	0	3	198	395
% PCs and Peds	0	0	0	0	0	0	96.6	0	0	96.6	0	0	0	0	0	0	95.6	0	100	95.7	96.1
Heavy Vehicles	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	9	0	0	9	16
% Heavy Vehicles	0	0	0	0	0	0	3.4	0	0	3.4	0	0	0	0	0	0	4.4	0	0	4.3	3.9
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 07:30 AM



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Belchertown, Massachusetts
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N / S: Lee Bank
E / W: West Park Street
City, State: Lee, Massachusetts
Client: VHB / J. Furman

File Name : AM Peak - West Park @ Lee Bank
Site Code : 1
Start Date : 3/5/2020
Page No : 1

Groups Printed- Heavy Vehicles

	From North					West Park From East					Lee Bank From South					West Park From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
07:15 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	4
07:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
07:45 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	8
Total	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	0	5	0	0	5	16
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
08:15 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
08:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
Total	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	7	0	0	7	11
Grand Total	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	0	12	0	0	12	27
Apprch %	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	100	0	0	0	0
Total %	0	0	0	0	0	0	55.6	0	0	55.6	0	0	0	0	0	0	44.4	0	0	44.4	0

	From North					West Park From East					Lee Bank From South					West Park From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
07:15 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	4
07:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
07:45 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	8
Total Volume	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	0	5	0	0	5	16
% App. Total	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	100	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.688	.000	.000	.688	.000	.000	.000	.000	.000	.000	.313	.000	.000	.313	.500

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Belchertown, Massachusetts

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N / S: Railroad Street
E / W: Consolati Way
City, State: Lee, Massachusetts
Client: VHB / J. Furman

File Name : AM Peak - Consolati @ Railroad

Site Code : 4

Start Date : 3/5/2020

Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

[illegible][illegible]



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N / S: Railroad Street
E / W: Consolati Way
City, State: Lee, Massachusetts
Client: VHB / J. Furman

File Name : AM Peak - Consolati @ Railroad
Site Code : 4
Start Date : 3/5/2020
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Railroad From North					Consolati From East					From South					Consolati From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
07:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	3
Total	0	0	3	0	3	1	0	0	0	1	0	0	0	0	0	0	0	2	0	2	6
08:00 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
08:15 AM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	2	0	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4
Grand Total	0	0	5	0	5	3	0	0	0	3	0	0	0	0	0	0	0	2	0	2	10
Approch %	0	0	100	0		100	0	0	0		0	0	0	0		0	0	100	0		
Total %	0	0	50	0	50	30	0	0	0	30	0	0	0	0	0	0	0	20	0	20	

	Railroad From North					Consolati From East					From South					Consolati From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
07:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	3
08:00 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
08:15 AM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	0	3	0	3	3	0	0	0	3	0	0	0	0	0	0	0	2	0	2	8
% App. Total	0	0	100	0		100	0	0	0		0	0	0	0		0	0	100	0		
PHF	.000	.000	.750	.000	.750	.750	.000	.000	.000	.750	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.667



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N / S: Main Street (Route 20)
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Client: VHB / J. Furman

File Name : PM Peak - Main @ Consolati
Site Code : 3
Start Date : 3/5/2020
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Main From North					From East					Main From South					Consolati From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	6
04:15 PM	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	2	0	0	0	2	6
04:30 PM	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	7
04:45 PM	0	6	0	0	6	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	11
Total	0	16	0	0	16	0	0	0	0	0	0	12	0	0	12	2	0	0	0	2	30
05:00 PM	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	7
05:15 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	5
05:30 PM	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	7
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
Total	0	9	0	0	9	0	0	0	0	0	0	11	0	0	11	1	0	0	0	1	21
Grand Total	0	25	0	0	25	0	0	0	0	0	0	23	0	0	23	3	0	0	0	3	51
Apprch %	0	100	0	0		0	0	0	0		0	100	0	0		100	0	0	0		
Total %	0	49	0	0	49	0	0	0	0	0	0	45.1	0	0	45.1	5.9	0	0	0	5.9	

	Main From North					From East					Main From South					Consolati From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	2	0	0	0	2	6
04:30 PM	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	7
04:45 PM	0	6	0	0	6	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	11
05:00 PM	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	7
Total Volume	0	17	0	0	17	0	0	0	0	0	0	12	0	0	12	2	0	0	0	2	31
% App. Total	0	100	0	0		0	0	0	0		0	100	0	0		100	0	0	0		
PHF	.000	.708	.000	.000	.708	.000	.000	.000	.000	.000	.000	.600	.000	.000	.600	.250	.000	.000	.000	.250	.705

Innovative Data, LLC

P. O. Box 468

Belchertown, Massachusetts

InnovativeDataIc.com or 413.668.5094

N / S: Main Street (Route 20)
E / W: Park Place & Zabian's
City, State: Lee, Massachusetts
Client: VHB / J. Furman

File Name : PM Peak - Main @ Park Place & Zabian's
Site Code : 2
Start Date : 3/5/2020
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

[illegible][illegible]



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N / S: Main Street (Route 20)
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File Name : PM Peak - Main @ Park Place & Zabian's
Site Code : 2
Start Date : 3/5/2020
Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Main From North					Park Place From East					Main From South					Zabian's From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	9
04:15 PM	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	7
04:30 PM	0	5	0	0	5	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	10
04:45 PM	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	8
Total	0	19	0	0	19	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	34
05:00 PM	0	3	0	0	3	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	7
05:15 PM	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	6
05:30 PM	0	4	0	0	4	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	9
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
Total	0	11	0	0	11	0	0	0	0	0	0	13	1	0	14	0	0	0	0	0	25
Grand Total	0	30	0	0	30	0	0	0	0	0	0	28	1	0	29	0	0	0	0	0	59
Apprch %	0	100	0	0		0	0	0	0		0	96.6	3.4	0		0	0	0	0		
Total %	0	50.8	0	0	50.8	0	0	0	0	0	0	47.5	1.7	0	49.2	0	0	0	0	0	

	Main From North					Park Place From East					Main From South					Zabian's From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	9
04:15 PM	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	7
04:30 PM	0	5	0	0	5	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	10
04:45 PM	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	8
Total Volume	0	19	0	0	19	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	34
% App. Total	0	100	0	0		0	0	0	0		0	100	0	0		0	0	0	0		
PHF	.000	.950	.000	.000	.950	.000	.000	.000	.000	.000	.000	.750	.000	.000	.750	.000	.000	.000	.000	.000	.850



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N / S: Lee Bank
E / W: West Park Street
City, State: Lee, Massachusetts
Client: VHB / J. Furman

File Name : PM Peak - West Park @ Lee Bank
Site Code : 1
Start Date : 3/5/2020
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	From North					West Park From East					Lee Bank From South					West Park From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	59	0	0	59	0	0	0	0	0	0	35	0	5	40	99
04:15 PM	0	0	0	0	0	0	49	0	0	49	0	0	0	0	0	0	40	0	0	40	89
04:30 PM	0	0	0	0	0	0	35	0	0	35	0	0	0	0	0	0	42	0	1	43	78
04:45 PM	0	0	0	0	0	0	35	0	0	35	0	0	0	1	1	0	43	0	2	45	81
Total	0	0	0	0	0	0	178	0	0	178	0	0	0	1	1	0	160	0	8	168	347
05:00 PM	0	0	0	0	0	0	43	0	0	43	0	0	0	0	0	0	43	0	1	44	87
05:15 PM	0	0	0	0	0	0	36	0	0	36	0	0	0	0	0	0	37	0	2	39	75
05:30 PM	0	0	0	0	0	0	31	0	0	31	0	0	0	3	3	0	40	0	1	41	75
05:45 PM	0	0	0	0	0	0	28	0	0	28	0	0	0	0	0	0	44	0	0	44	72
Total	0	0	0	0	0	0	138	0	0	138	0	0	0	3	3	0	164	0	4	168	309
Grand Total	0	0	0	0	0	0	316	0	0	316	0	0	0	4	4	0	324	0	12	336	656
Apprch %	0	0	0	0	0	0	100	0	0	100	0	0	0	100	100	0	96.4	0	3.6		
Total %	0	0	0	0	0	0	48.2	0	0	48.2	0	0	0	0.6	0.6	0	49.4	0	1.8	51.2	
PCs and Peds	0	0	0	0	0	0	308	0	0	308	0	0	0	4	4	0	317	0	12	329	641
% PCs and Peds	0	0	0	0	0	0	97.5	0	0	97.5	0	0	0	100	100	0	97.8	0	100	97.9	97.7
Heavy Vehicles	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	7	0	0	7	15
% Heavy Vehicles	0	0	0	0	0	0	2.5	0	0	2.5	0	0	0	0	0	0	2.2	0	0	2.1	2.3
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	From North					West Park From East					Lee Bank From South					West Park From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	59	0	0	59	0	0	0	0	0	0	35	0	5	40	99
04:15 PM	0	0	0	0	0	0	49	0	0	49	0	0	0	0	0	0	40	0	0	40	89
04:30 PM	0	0	0	0	0	0	35	0	0	35	0	0	0	0	0	0	42	0	1	43	78
04:45 PM	0	0	0	0	0	0	35	0	0	35	0	0	0	1	1	0	43	0	2	45	81
Total Volume	0	0	0	0	0	0	178	0	0	178	0	0	0	1	1	0	160	0	8	168	347
% App. Total	0	0	0	0	0	0	100	0	0	100	0	0	0	100	100	0	95.2	0	4.8		
PHF	.000	.000	.000	.000	.000	.000	.754	.000	.000	.754	.000	.000	.000	.250	.250	.000	.930	.000	.400	.933	.876
PCs and Peds	0	0	0	0	0	0	172	0	0	172	0	0	0	1	1	0	155	0	8	163	336
% PCs and Peds	0	0	0	0	0	0	96.6	0	0	96.6	0	0	0	100	100	0	96.9	0	100	97.0	96.8
Heavy Vehicles	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	5	0	0	5	11
% Heavy Vehicles	0	0	0	0	0	0	3.4	0	0	3.4	0	0	0	0	0	0	3.1	0	0	3.0	3.2
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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



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N / S: Lee Bank
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Client: VHB / J. Furman

File Name : PM Peak - West Park @ Lee Bank
Site Code : 1
Start Date : 3/5/2020
Page No : 1

Groups Printed- Heavy Vehicles

	From North					West Park From East					Lee Bank From South					West Park From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
04:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
04:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	5	0	0	5	11
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
Grand Total	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	7	0	0	7	15
Apprch %	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
Total %	0	0	0	0	0	0	53.3	0	0	53.3	0	0	0	0	0	0	46.7	0	0	46.7	

	From North					West Park From East					Lee Bank From South					West Park From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
04:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
04:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	5	0	0	5	11
% App. Total	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	100	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.750	.000	.000	.750	.000	.000	.000	.000	.000	.000	.417	.000	.000	.417	.550



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N / S: Railroad Street
E / W: Consolati Way
City, State: Lee, Massachusetts
Client: VHB / J. Furman

File Name : PM Peak - Consolati @ Railroad
Site Code : 4
Start Date : 3/5/2020
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

Start Time	Railroad From North					Consolati From East					From South					Consolati From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	3	0	12	0	15	7	14	0	1	22	0	0	0	6	6	0	5	5	0	10	53
04:15 PM	2	0	12	0	14	4	24	0	1	29	0	0	0	0	0	0	9	7	1	17	60
04:30 PM	3	0	7	0	10	3	5	0	0	8	0	0	0	0	0	0	5	3	0	8	26
04:45 PM	2	0	4	0	6	10	8	0	0	18	0	0	0	0	0	0	5	1	0	6	30
Total	10	0	35	0	45	24	51	0	2	77	0	0	0	6	6	0	24	16	1	41	169
05:00 PM	2	0	5	0	7	8	6	0	0	14	0	0	0	3	3	0	4	5	0	9	33
05:15 PM	1	0	7	0	8	4	9	0	1	14	0	0	0	0	0	0	4	4	1	9	31
05:30 PM	1	0	2	0	3	10	8	0	0	18	0	0	0	0	0	0	1	11	0	12	33
05:45 PM	1	0	1	1	3	4	7	0	1	12	0	0	0	0	0	0	4	1	0	5	20
Total	5	0	15	1	21	26	30	0	2	58	0	0	0	3	3	0	13	21	1	35	117
Grand Total	15	0	50	1	66	50	81	0	4	135	0	0	0	9	9	0	37	37	2	76	286
Apprch %	22.7	0	75.8	1.5		37	60	0	3		0	0	0	100		0	48.7	48.7	2.6		
Total %	5.2	0	17.5	0.3	23.1	17.5	28.3	0	1.4	47.2	0	0	0	3.1	3.1	0	12.9	12.9	0.7	26.6	
PCs and Peds	15	0	48	0	63	49	81	0	4	134	0	0	0	9	9	0	37	36	1	74	280
% PCs and Peds	100	0	96	0	95.5	98	100	0	100	99.3	0	0	0	100	100	0	100	97.3	50	97.4	97.9
Heavy Vehicles	0	0	2	0	2	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	4
% Heavy Vehicles	0	0	4	0	3	2	0	0	0	0.7	0	0	0	0	0	0	0	2.7	0	1.3	1.4
Bicycles	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
% Bicycles	0	0	0	100	1.5	0	0	0	0	0	0	0	0	0	0	0	0	0	50	1.3	0.7

Start Time	Railroad From North					Consolati From East					From South					Consolati From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	3	0	12	0	15	7	14	0	1	22	0	0	0	6	6	0	5	5	0	10	53
04:15 PM	2	0	12	0	14	4	24	0	1	29	0	0	0	0	0	0	9	7	1	17	60
04:30 PM	3	0	7	0	10	3	5	0	0	8	0	0	0	0	0	0	5	3	0	8	26
04:45 PM	2	0	4	0	6	10	8	0	0	18	0	0	0	0	0	0	5	1	0	6	30
Total Volume	10	0	35	0	45	24	51	0	2	77	0	0	0	6	6	0	24	16	1	41	169
% App. Total	22.2	0	77.8	0		31.2	66.2	0	2.6		0	0	0	100		0	58.5	39	2.4		
PHF	.833	.000	.729	.000	.750	.600	.531	.000	.500	.664	.000	.000	.000	.250	.250	.000	.667	.571	.250	.603	.704
PCs and Peds	10	0	34	0	44	23	51	0	2	76	0	0	0	6	6	0	24	16	1	41	167
% PCs and Peds	100	0	97.1	0	97.8	95.8	100	0	100	98.7	0	0	0	100	100	0	100	100	100	100	98.8
Heavy Vehicles	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
% Heavy Vehicles	0	0	2.9	0	2.2	4.2	0	0	0	1.3	0	0	0	0	0	0	0	0	0	0	1.2
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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



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File Name : PM Peak - Consolati @ Railroad
Site Code : 4
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Groups Printed- Heavy Vehicles

Start Time	Railroad From North					Consolati From East					From South					Consolati From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
05:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
Grand Total	0	0	2	0	2	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	4
Apprch %	0	0	100	0		100	0	0	0		0	0	0	0		0	0	100	0		
Total %	0	0	50	0	50	25	0	0	0	25	0	0	0	0	0	0	0	25	0	25	

	Railroad From North					Consolati From East					From South					Consolati From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total Volume	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	3
% App. Total	0	0	100	0		100	0	0	0		0	0	0	0		0	0	100	0		
PHF	.000	.000	.250	.000	.250	.250	.000	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.375

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P. O. Box 468

Belchertown, Massachusetts

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N / S: Main Street (Route 20)

E / W: Consolati Way

City, State: Lee, Massachusetts

Client: VHB / J. Furman

File Name : Sat Peak - Main @ Consolati

Site Code : 3

Start Date : 3/7/2020

Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

[illegible][illegible]



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N / S: Main Street (Route 20)
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City, State: Lee, Massachusetts
Client: VHB / J. Furman

File Name : Sat Peak - Main @ Consolati
Site Code : 3
Start Date : 3/7/2020
Page No : 1

Groups Printed- Heavy Vehicles

	Main From North					From East					Main From South					Consolati From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
11:15 AM	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	7
11:30 AM	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	8
11:45 AM	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4
Total	0	13	0	0	13	0	0	0	0	0	0	8	0	0	8	1	0	0	0	1	22
12:00 PM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	3
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
12:45 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
Total	0	3	0	0	3	0	0	0	0	0	0	6	1	0	7	1	0	1	0	2	12
01:00 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
01:15 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	3
01:30 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
01:45 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Total	0	5	0	0	5	0	0	0	0	0	0	5	0	0	5	1	0	0	0	1	11
Grand Total	0	21	0	0	21	0	0	0	0	0	0	19	1	0	20	3	0	1	0	4	45
Apprch %	0	100	0	0		0	0	0	0		0	95	5	0		75	0	25	0		
Total %	0	46.7	0	0	46.7	0	0	0	0	0	0	42.2	2.2	0	44.4	6.7	0	2.2	0	8.9	

	Main From North					From East					Main From South					Consolati From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:15 AM																					
11:15 AM	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	7
11:30 AM	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	8
11:45 AM	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4
12:00 PM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4
Total Volume	0	13	0	0	13	0	0	0	0	0	0	9	0	0	9	1	0	0	0	1	23
% App. Total	0	100	0	0		0	0	0	0		0	100	0	0		100	0	0	0		
PHF	.000	.650	.000	.000	.650	.000	.000	.000	.000	.000	.000	.750	.000	.000	.750	.250	.000	.000	.000	.250	.719

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Belchertown, Massachusetts

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N / S: Main Street (Route 20)
E / W: Park Place & Zabian's
City, State: Lee, Massachusetts
Client: VHB / J. Furman

File Name : Sat Peak - Main @ Park Place & Zabian's

Site Code : 2

Start Date : 3/7/2020

Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

[illegible][illegible]



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N / S: Main Street (Route 20)
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City, State: Lee, Massachusetts
Client: VHB / J. Furman

File Name : Sat Peak - Main @ Park Place & Zabian's
Site Code : 2
Start Date : 3/7/2020
Page No : 1

Groups Printed- Heavy Vehicles

	Main From North					Park Place From East					Main From South					Zabian's From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4
11:15 AM	0	5	0	0	5	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	6
11:30 AM	0	7	0	0	7	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	10
11:45 AM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	2	0	0	0	2	5
Total	0	15	0	0	15	0	0	0	0	0	0	8	0	0	8	2	0	0	0	2	25
12:00 PM	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	6
12:15 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
12:45 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	6	0	0	6	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	14
01:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
01:15 PM	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4
01:30 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
01:45 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Total	0	7	0	0	7	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	11
Grand Total	0	28	0	0	28	0	0	0	0	0	0	20	0	0	20	2	0	0	0	2	50
Apprch %	0	100	0	0		0	0	0	0		0	100	0	0		100	0	0	0		
Total %	0	56	0	0	56	0	0	0	0	0	0	40	0	0	40	4	0	0	0	4	

	Main From North					Park Place From East					Main From South					Zabian's From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:15 AM																					
11:15 AM	0	5	0	0	5	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	6
11:30 AM	0	7	0	0	7	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	10
11:45 AM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	2	0	0	0	2	5
12:00 PM	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	6
Total Volume	0	16	0	0	16	0	0	0	0	0	0	9	0	0	9	2	0	0	0	2	27
% App. Total	0	100	0	0		0	0	0	0		0	100	0	0		100	0	0	0		
PHF	.000	.571	.000	.000	.571	.000	.000	.000	.000	.000	.000	.563	.000	.000	.563	.250	.000	.000	.000	.250	.675

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N / S: Lee Bank
E / W: West Park Street
City, State: Lee, Massachusetts
Client: VHB / J. Furman

File Name : Sat Peak - West Park @ Lee Bank

Site Code : 1

Start Date : 3/7/2020

Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

[illegible][illegible]



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N / S: Lee Bank
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Client: VHB / J. Furman

File Name : Sat Peak - West Park @ Lee Bank
Site Code : 1
Start Date : 3/7/2020
Page No : 1

Groups Printed- Heavy Vehicles

	From North					West Park From East					Lee Bank From South					West Park From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Apprch %	0	0	0	0		0	100	0	0		0	0	0	0		0	0	0	0		
Total %	0	0	0	0		0	100	0	0	100	0	0	0	0		0	0	0	0		

	From North					West Park From East					Lee Bank From South					West Park From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% App. Total	0	0	0	0		0	100	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 12:30 PM

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N / S: Railroad Street
E / W: Consolati Way
City, State: Lee, Massachusetts
Client: VHB / J. Furman

File Name : Sat Peak - Consolati @ Railroad

Site Code : 4

Start Date : 3/7/2020

Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

[illegible][illegible]



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N / S: Railroad Street
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City, State: Lee, Massachusetts
Client: VHB / J. Furman

File Name : Sat Peak - Consolati @ Railroad
Site Code : 4
Start Date : 3/7/2020
Page No : 1

Groups Printed- Heavy Vehicles

	Railroad From North					Consolati From East					From South					Consolati From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
11:15 AM	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	1	0	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
12:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	4
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	1	0	4	0	5	1	1	0	0	2	0	0	0	0	0	0	0	1	0	1	8
Apprch %	20	0	80	0		50	50	0	0		0	0	0	0		0	0	100	0		
Total %	12.5	0	50	0	62.5	12.5	12.5	0	0	25	0	0	0	0	0	0	0	12.5	0	12.5	

	Railroad From North					Consolati From East					From South					Consolati From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
12:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	4
% App. Total	0	0	100	0		0	100	0	0		0	0	0	0		0	0	100	0		
PHF	.000	.000	.500	.000	.500	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.500



Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

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Location: West Park Street

Location: West of Price Chopper Driveway

City, State: Lee, Massachusetts

Client: VHB / J. Furman

Start Time	05-Mar-20 Thu	Westbound		Eastbound		Combined		06-Mar Fri	Westbound		Eastbound		Combined	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00		0	33	4	48	4	81		0	37	2	49	2	86
12:15		1	37	2	49	3	86		3	48	0	59	3	107
12:30		1	30	1	35	2	65		1	38	0	41	1	79
12:45		0	36	0	28	0	64		2	56	2	29	4	85
01:00		1	35	0	40	1	75		0	43	0	40	0	83
01:15		0	31	0	36	0	67		0	43	1	43	1	86
01:30		0	33	2	37	2	70		0	43	1	36	1	79
01:45		0	39	0	50	0	89		0	36	2	41	2	77
02:00		1	35	0	37	1	72		0	30	0	41	0	71
02:15		0	38	1	44	1	82		0	43	0	38	0	81
02:30		1	51	0	47	1	98		2	68	0	36	2	104
02:45		0	44	1	40	1	84		0	52	0	59	0	111
03:00		1	48	1	53	2	101		1	40	2	67	3	107
03:15		0	45	1	50	1	95		1	62	1	39	2	101
03:30		1	55	0	50	1	105		0	53	1	51	1	104
03:45		2	36	2	54	4	90		3	44	0	60	3	104
04:00		3	47	1	34	4	81		0	37	3	46	3	83
04:15		0	48	1	35	1	83		1	38	3	44	4	82
04:30		2	44	0	43	2	87		0	58	1	50	1	108
04:45		2	40	2	40	4	80		7	48	2	59	9	107
05:00		4	45	2	39	6	84		1	44	3	46	4	90
05:15		5	35	5	39	10	74		9	41	8	51	17	92
05:30		10	32	10	43	20	75		12	51	9	44	21	95
05:45		12	27	13	41	25	68		15	38	15	49	30	87
06:00		16	40	17	23	33	63		11	41	13	22	24	63
06:15		11	32	17	36	28	68		11	30	12	25	23	55
06:30		23	26	15	20	38	46		21	29	30	29	51	58
06:45		24	22	33	22	57	44		19	16	32	23	51	39
07:00		14	25	33	24	47	49		32	15	27	20	59	35
07:15		36	15	34	12	70	27		35	21	40	14	75	35
07:30		41	12	62	9	103	21		44	22	55	15	99	37
07:45		70	21	55	7	125	28		56	11	54	16	110	27
08:00		23	15	43	13	66	28		32	17	40	14	72	31
08:15		36	6	43	10	79	16		33	12	48	14	81	26
08:30		38	19	33	12	71	31		44	15	38	17	82	32
08:45		29	8	36	15	65	23		35	16	46	10	81	26
09:00		31	12	38	12	69	24		33	13	34	8	67	21
09:15		35	10	30	8	65	18		31	17	27	10	58	27
09:30		36	15	28	9	64	24		31	17	40	16	71	33
09:45		29	11	43	3	72	14		41	26	43	13	84	39
10:00		39	5	39	9	78	14		35	18	34	11	69	29
10:15		27	3	42	5	69	8		29	13	30	12	59	25
10:30		35	7	27	2	62	9		35	12	32	11	67	23
10:45		36	9	38	8	74	17		39	10	40	7	79	17
11:00		35	4	32	1	67	5		39	5	49	11	88	16
11:15		36	5	44	4	80	9		37	5	43	3	80	8
11:30		39	1	38	5	77	6		44	5	41	6	85	11
11:45		29	0	37	3	66	3		49	5	42	4	91	9
Total		815	1267	906	1284	1721	2551		874	1482	946	1449	1820	2931
Day Total		2082		2190		4272			2356		2395		4751	
% Total		19.1%	29.7%	21.2%	30.1%				18.4%	31.2%	19.9%	30.5%		
Peak	-	07:15	02:45	07:30	03:00	07:30	03:00	-	11:00	02:30	07:30	03:00	07:30	02:30
Vol.	-	170	192	203	207	373	391	-	169	222	197	217	362	423
P.H.F.		0.607	0.873	0.819	0.958	0.746	0.931		0.754	0.816	0.895	0.810	0.823	0.953



Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDataLLC.com or 413.668.5094

Location: West Park Street

Location: West of Price Chopper Driveway

City, State: Lee, Massachusetts

Client: VHB / J. Furman

Start Time	07-Mar-20	Westbound		Eastbound		Combined		08-Mar Sun	Westbound		Eastbound		Combined		
	Sat	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	
12:00		4	38	2	33	6	71		0	*	0	*	0	*	
12:15		3	29	2	34	5	63		*	*	*	*	*	*	
12:30		3	32	5	33	8	65		*	*	*	*	*	*	
12:45		0	32	3	28	3	60		*	*	*	*	*	*	
01:00		2	42	6	40	8	82		*	*	*	*	*	*	
01:15		2	31	4	32	6	63		*	*	*	*	*	*	
01:30		2	27	1	21	3	48		*	*	*	*	*	*	
01:45		3	23	1	32	4	55		*	*	*	*	*	*	
02:00		3	38	1	27	4	65		*	*	*	*	*	*	
02:15		0	33	2	20	2	53		*	*	*	*	*	*	
02:30		4	25	2	24	6	49		*	*	*	*	*	*	
02:45		2	41	0	32	2	73		*	*	*	*	*	*	
03:00		0	23	2	23	2	46		*	*	*	*	*	*	
03:15		1	29	1	29	2	58		*	*	*	*	*	*	
03:30		0	27	0	32	0	59		*	*	*	*	*	*	
03:45		2	23	0	47	2	70		*	*	*	*	*	*	
04:00		0	22	1	33	1	55		*	*	*	*	*	*	
04:15		5	38	2	32	7	70		*	*	*	*	*	*	
04:30		2	19	2	37	4	56		*	*	*	*	*	*	
04:45		2	55	3	32	5	87		*	*	*	*	*	*	
05:00		1	33	1	38	2	71		*	*	*	*	*	*	
05:15		1	22	2	24	3	46		*	*	*	*	*	*	
05:30		4	16	1	32	5	48		*	*	*	*	*	*	
05:45		4	20	8	22	12	42		*	*	*	*	*	*	
06:00		3	31	7	20	10	51		*	*	*	*	*	*	
06:15		3	20	8	26	11	46		*	*	*	*	*	*	
06:30		9	13	11	20	20	33		*	*	*	*	*	*	
06:45		10	17	9	25	19	42		*	*	*	*	*	*	
07:00		14	18	17	11	31	29		*	*	*	*	*	*	
07:15		10	16	18	14	28	30		*	*	*	*	*	*	
07:30		12	10	13	16	25	26		*	*	*	*	*	*	
07:45		18	16	28	11	46	27		*	*	*	*	*	*	
08:00		20	15	23	18	43	33		*	*	*	*	*	*	
08:15		19	16	16	13	35	29		*	*	*	*	*	*	
08:30		14	9	22	9	36	18		*	*	*	*	*	*	
08:45		22	16	25	10	47	26		*	*	*	*	*	*	
09:00		20	12	36	9	56	21		*	*	*	*	*	*	
09:15		21	8	24	10	45	18		*	*	*	*	*	*	
09:30		28	19	28	7	56	26		*	*	*	*	*	*	
09:45		34	12	42	5	76	17		*	*	*	*	*	*	
10:00		24	5	27	8	51	13		*	*	*	*	*	*	
10:15		25	9	40	8	65	17		*	*	*	*	*	*	
10:30		26	11	45	7	71	18		*	*	*	*	*	*	
10:45		41	10	29	12	70	22		*	*	*	*	*	*	
11:00		33	5	40	13	73	18		*	*	*	*	*	*	
11:15		26	3	37	8	63	11		*	*	*	*	*	*	
11:30		38	6	42	8	80	14		*	*	*	*	*	*	
11:45		32	3	40	2	72	5		*	*	*	*	*	*	
Total		552	1018	679	1027	1231	2045		0	0	0	0	0	0	
Day Total		1570		1706		3276			0	0	0	0	0	0	
% Total		16.8%	31.1%	20.7%	31.3%				0.0%	0.0%	0.0%	0.0%			
Peak	-	10:45	04:15	11:00	03:45	11:00	04:15	-	-	-	-	-	-	-	
Vol.	-	138	145	159	149	288	284	-	-	-	-	-	-	-	
P.H.F.		0.841	0.659	0.883	0.793	0.900	0.816								
ADT	ADT 4,100	AADT 4,100													



Innovative Data, LLC
P.O. Pox 468
Belchertown, Massachusetts
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Location: West Park Street
Location: West of Price Chopper Driveway
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Client: VHB / J. Furman

Westbound		1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th	95th
Start	Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999		Percent	Percent
03/05/20		0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	44	44
01:00		0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	39	39
02:00		0	0	0	1	0	1	0	0	0	0	0	0	0	0	2	38	39
03:00		0	0	0	2	1	0	0	1	0	0	0	0	0	0	4	47	48
04:00		0	0	0	2	5	0	0	0	0	0	0	0	0	0	7	33	34
05:00		0	0	2	12	13	4	0	0	0	0	0	0	0	0	31	34	38
06:00		0	0	3	26	25	20	0	0	0	0	0	0	0	0	74	37	39
07:00		0	1	8	40	84	25	3	0	0	0	0	0	0	0	161	35	38
08:00		0	1	4	33	62	21	5	0	0	0	0	0	0	0	126	36	39
09:00		0	2	18	40	58	9	3	1	0	0	0	0	0	0	131	34	38
10:00		0	7	14	49	52	14	1	0	0	0	0	0	0	0	137	34	37
11:00		1	3	20	46	51	17	1	0	0	0	0	0	0	0	139	34	38
12 PM		0	1	16	39	66	13	1	0	0	0	0	0	0	0	136	34	37
13:00		0	2	15	60	48	12	1	0	0	0	0	0	0	0	138	34	37
14:00		0	1	17	59	66	20	5	0	0	0	0	0	0	0	168	34	39
15:00		0	3	17	53	84	26	1	0	0	0	0	0	0	0	184	34	38
16:00		0	2	14	63	80	19	1	0	0	0	0	0	0	0	179	34	37
17:00		2	0	14	38	61	23	1	0	0	0	0	0	0	0	139	35	38
18:00		1	4	10	46	42	16	0	1	0	0	0	0	0	0	120	34	38
19:00		0	0	4	19	43	7	0	0	0	0	0	0	0	0	73	34	37
20:00		0	0	3	18	20	7	0	0	0	0	0	0	0	0	48	34	38
21:00		0	0	3	21	15	8	1	0	0	0	0	0	0	0	48	36	39
22:00		0	0	4	4	14	0	2	0	0	0	0	0	0	0	24	34	41
23:00		0	1	1	4	4	0	0	0	0	0	0	0	0	0	10	33	34
Total		4	28	187	675	894	263	28	3	0	0	0	0	0	0	2082		
Percent		0.2%	1.3%	9.0%	32.4%	42.9%	12.6%	1.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak		11:00	10:00	11:00	10:00	07:00	07:00	08:00	03:00							07:00		
Vol.		1	7	20	49	84	25	5	1							161		
PM Peak		17:00	18:00	14:00	16:00	15:00	15:00	14:00	18:00							15:00		
Vol.		2	4	17	63	84	26	5	1							184		



Innovative Data, LLC
P.O. Pox 468
Belchertown, Massachusetts
InnovativeDataIc.com or 413.668.5094

Location: West Park Street
Location: West of Price Chopper Driveway
City, State: Lee, Massachusetts
Client: VHB / J. Furman

Westbound		1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th	95th
Start	Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999		Percent	Percent
03/06/20		0	0	1	0	3	0	2	0	0	0	0	0	0	0	6	42	44
01:00		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00		0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	34	34
03:00		0	0	0	1	3	1	0	0	0	0	0	0	0	0	5	36	38
04:00		0	0	1	3	2	2	0	0	0	0	0	0	0	0	8	37	38
05:00		0	1	3	15	11	7	0	0	0	0	0	0	0	0	37	36	38
06:00		0	2	5	18	30	6	1	0	0	0	0	0	0	0	62	34	38
07:00		0	4	5	56	72	25	5	0	0	0	0	0	0	0	167	35	39
08:00		1	0	8	55	68	11	1	0	0	0	0	0	0	0	144	34	37
09:00		2	0	13	47	51	22	0	1	0	0	0	0	0	0	136	35	38
10:00		1	5	22	59	29	20	1	1	0	0	0	0	0	0	138	35	38
11:00		2	8	25	51	48	30	5	0	0	0	0	0	0	0	169	36	39
12 PM		1	3	30	74	52	18	1	0	0	0	0	0	0	0	179	34	37
13:00		3	6	27	63	43	22	1	0	0	0	0	0	0	0	165	34	38
14:00		0	5	19	77	70	21	1	0	0	0	0	0	0	0	193	34	37
15:00		4	6	15	75	84	14	0	0	1	0	0	0	0	0	199	34	36
16:00		0	1	19	82	58	19	2	0	0	0	0	0	0	0	181	34	38
17:00		0	1	14	57	76	24	2	0	0	0	0	0	0	0	174	34	38
18:00		1	0	8	31	58	17	1	0	0	0	0	0	0	0	116	35	38
19:00		0	2	2	23	32	9	1	0	0	0	0	0	0	0	69	34	38
20:00		0	1	6	19	29	5	0	0	0	0	0	0	0	0	60	34	37
21:00		0	1	9	30	29	4	0	0	0	0	0	0	0	0	73	33	35
22:00		0	1	6	16	22	8	0	0	0	0	0	0	0	0	53	35	38
23:00		0	0	2	6	7	5	0	0	0	0	0	0	0	0	20	37	39
Total		15	47	240	858	879	290	24	2	1	0	0	0	0	0	2356		
Percent		0.6%	2.0%	10.2%	36.4%	37.3%	12.3%	1.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak		09:00	11:00	11:00	10:00	07:00	11:00	07:00	09:00							11:00		
Vol.		2	8	25	59	72	30	5	1							169		
PM Peak		15:00	13:00	12:00	16:00	15:00	17:00	16:00		15:00						15:00		
Vol.		4	6	30	82	84	24	2		1						199		



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Westbound		1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th	95th
Start	Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999		Percent	Percent
03/07/20		0	0	1	2	4	2	0	0	1	0	0	0	0	0	10	38	52
01:00		0	0	0	2	5	1	1	0	0	0	0	0	0	0	9	38	42
02:00		1	0	0	4	3	1	0	0	0	0	0	0	0	0	9	34	37
03:00		0	0	1	2	0	0	0	0	0	0	0	0	0	0	3	28	29
04:00		0	0	2	0	5	2	0	0	0	0	0	0	0	0	9	36	38
05:00		0	0	2	4	2	2	0	0	0	0	0	0	0	0	10	36	38
06:00		0	0	0	8	11	6	0	0	0	0	0	0	0	0	25	36	38
07:00		0	0	0	13	33	8	0	0	0	0	0	0	0	0	54	34	38
08:00		0	2	4	22	31	15	0	1	0	0	0	0	0	0	75	36	39
09:00		0	1	6	32	47	17	0	0	0	0	0	0	0	0	103	35	38
10:00		0	0	7	33	55	17	3	1	0	0	0	0	0	0	116	36	39
11:00		0	0	10	38	59	20	2	0	0	0	0	0	0	0	129	35	38
12 PM		1	0	7	40	65	18	0	0	0	0	0	0	0	0	131	34	38
13:00		0	2	7	43	47	19	4	1	0	0	0	0	0	0	123	36	39
14:00		0	0	6	43	62	25	1	0	0	0	0	0	0	0	137	36	38
15:00		0	0	2	37	40	20	3	0	0	0	0	0	0	0	102	36	39
16:00		0	4	19	38	59	10	4	0	0	0	0	0	0	0	134	34	38
17:00		0	0	7	32	38	14	0	0	0	0	0	0	0	0	91	35	38
18:00		0	1	11	22	35	12	0	0	0	0	0	0	0	0	81	34	38
19:00		0	1	3	14	31	9	2	0	0	0	0	0	0	0	60	36	39
20:00		0	0	5	19	27	4	1	0	0	0	0	0	0	0	56	34	37
21:00		0	0	1	22	21	5	2	0	0	0	0	0	0	0	51	34	39
22:00		1	1	3	4	19	7	0	0	0	0	0	0	0	0	35	36	38
23:00		0	0	1	8	5	3	0	0	0	0	0	0	0	0	17	35	38
Total		3	12	105	482	704	237	23	3	1	0	0	0	0	0	1570		
Percent		0.2%	0.8%	6.7%	30.7%	44.8%	15.1%	1.5%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak		02:00	08:00	11:00	11:00	11:00	11:00	10:00	08:00	00:00						11:00		
Vol.		1	2	10	38	59	20	3	1	1						129		
PM Peak		12:00	16:00	16:00	13:00	12:00	14:00	13:00	13:00							14:00		
Vol.		1	4	19	43	65	25	4	1							137		
Grand Total		22	87	532	2015	2477	790	75	8	2	0	0	0	0	0	6008		
Percent		0.4%	1.4%	8.9%	33.5%	41.2%	13.1%	1.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
Statistics		10 MPH Pace Speed : 26-35 MPH																
		Number in Pace : 4492																
		Percent in Pace : 74.8%																
		Number of Vehicles > 40 MPH : 85																
		Percent of Vehicles > 40 MPH : 1.4%																
		Mean Speed(Average) : 31 MPH																
		15th Percentile : 25 MPH																
		50th Percentile : 30 MPH																
		85th Percentile : 34 MPH																
		95th Percentile : 38 MPH																



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Client: VHB / J. Furman

Eastbound		1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th	95th
Start	Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999		Percent	Percent
03/05/20		0	0	1	3	3	0	0	0	0	0	0	0	0	0	7	33	34
01:00		0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	38	39
02:00		0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	38	39
03:00		0	1	0	2	1	0	0	0	0	0	0	0	0	0	4	32	34
04:00		0	0	0	3	1	0	0	0	0	0	0	0	0	0	4	32	33
05:00		0	0	3	14	11	1	1	0	0	0	0	0	0	0	30	33	37
06:00		0	0	10	25	33	14	0	0	0	0	0	0	0	0	82	35	38
07:00		0	1	6	43	104	29	1	0	0	0	0	0	0	0	184	35	38
08:00		1	7	13	49	64	19	2	0	0	0	0	0	0	0	155	34	38
09:00		0	4	24	48	50	11	2	0	0	0	0	0	0	0	139	34	37
10:00		2	3	24	51	55	11	0	0	0	0	0	0	0	0	146	34	36
11:00		0	2	32	74	38	5	0	0	0	0	0	0	0	0	151	32	34
12 PM		0	1	19	68	60	11	1	0	0	0	0	0	0	0	160	33	36
13:00		1	6	22	66	50	17	1	0	0	0	0	0	0	0	163	34	37
14:00		3	4	16	63	60	18	4	0	0	0	0	0	0	0	168	34	38
15:00		0	3	19	75	85	21	3	1	0	0	0	0	0	0	207	34	38
16:00		0	0	11	52	73	16	0	0	0	0	0	0	0	0	152	34	37
17:00		0	0	20	76	53	12	1	0	0	0	0	0	0	0	162	33	37
18:00		0	0	10	40	39	10	2	0	0	0	0	0	0	0	101	34	38
19:00		0	0	5	26	14	7	0	0	0	0	0	0	0	0	52	34	38
20:00		0	0	6	21	18	5	0	0	0	0	0	0	0	0	50	34	37
21:00		0	0	5	11	12	4	0	0	0	0	0	0	0	0	32	34	37
22:00		0	0	2	8	11	3	0	0	0	0	0	0	0	0	24	34	38
23:00		0	0	4	4	5	0	0	0	0	0	0	0	0	0	13	33	34
Total		7	32	252	822	842	216	18	1	0	0	0	0	0	0	2190		
Percent		0.3%	1.5%	11.5%	37.5%	38.4%	9.9%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak		10:00	08:00	11:00	11:00	07:00	07:00	08:00								07:00		
Vol.		2	7	32	74	104	29	2								184		
PM Peak		14:00	13:00	13:00	17:00	15:00	15:00	14:00	15:00							15:00		
Vol.		3	6	22	76	85	21	4	1							207		



Innovative Data, LLC
P.O. Pox 468
Belchertown, Massachusetts
InnovativeDataIc.com or 413.668.5094

Location: West Park Street
Location: West of Price Chopper Driveway
City, State: Lee, Massachusetts
Client: VHB / J. Furman

Eastbound		1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th	95th
Start	Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999		Percent	Percent
03/06/20		0	0	0	1	2	0	0	1	0	0	0	0	0	0	4	47	49
01:00		0	0	0	1	1	2	0	0	0	0	0	0	0	0	4	38	39
02:00		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00		0	0	0	1	1	1	1	0	0	0	0	0	0	0	4	42	44
04:00		0	1	0	1	6	1	0	0	0	0	0	0	0	0	9	34	37
05:00		0	0	5	10	15	3	2	0	0	0	0	0	0	0	35	34	40
06:00		1	2	6	25	36	16	1	0	0	0	0	0	0	0	87	36	38
07:00		0	0	3	48	82	36	7	0	0	0	0	0	0	0	176	37	39
08:00		0	6	17	58	58	27	6	0	0	0	0	0	0	0	172	36	39
09:00		0	5	14	58	48	17	1	1	0	0	0	0	0	0	144	34	38
10:00		0	1	20	61	44	8	2	0	0	0	0	0	0	0	136	33	36
11:00		2	5	29	75	51	12	1	0	0	0	0	0	0	0	175	33	36
12 PM		1	3	31	72	60	10	1	0	0	0	0	0	0	0	178	33	36
13:00		4	10	33	58	49	5	1	0	0	0	0	0	0	0	160	33	34
14:00		1	0	21	84	60	8	0	0	0	0	0	0	0	0	174	33	34
15:00		0	2	38	97	67	12	1	0	0	0	0	0	0	0	217	33	35
16:00		1	7	15	93	70	12	0	1	0	0	0	0	0	0	199	33	36
17:00		1	0	21	80	65	21	2	0	0	0	0	0	0	0	190	34	38
18:00		0	0	11	49	29	10	0	0	0	0	0	0	0	0	99	34	37
19:00		0	1	10	25	20	8	1	0	0	0	0	0	0	0	65	34	38
20:00		0	0	10	21	19	4	1	0	0	0	0	0	0	0	55	34	37
21:00		0	0	3	20	17	6	1	0	0	0	0	0	0	0	47	34	38
22:00		0	0	3	14	17	5	2	0	0	0	0	0	0	0	41	35	39
23:00		0	0	1	5	17	1	0	0	0	0	0	0	0	0	24	34	34
Total		11	43	291	957	834	225	31	3	0	0	0	0	0	0	2395		
Percent		0.5%	1.8%	12.2%	40.0%	34.8%	9.4%	1.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak		11:00	08:00	11:00	11:00	07:00	07:00	07:00	00:00							07:00		
Vol.		2	6	29	75	82	36	7	1							176		
PM Peak		13:00	13:00	15:00	15:00	16:00	17:00	17:00	16:00							15:00		
Vol.		4	10	38	97	70	21	2	1							217		



Innovative Data, LLC

P.O. Pox 468

Location: West Park Street

Location: West of Price Chopper Driveway

City, State: Lee, Massachusetts

Client: VHB / J. Furman

Belchertown, Massachusetts

InnovativeDataIc.com or 413.668.5094

Eastbound		1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th	95th
Start	Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999		Percent	Percent
03/07/20		0	1	1	3	7	0	0	0	0	0	0	0	0	0	12	33	34
01:00		0	0	0	2	9	1	0	0	0	0	0	0	0	0	0	12	34
02:00		0	0	1	2	2	0	0	0	0	0	0	0	0	0	5	33	34
03:00		0	1	0	0	2	0	0	0	0	0	0	0	0	0	3	33	34
04:00		0	2	2	2	2	0	0	0	0	0	0	0	0	0	8	32	34
05:00		0	0	0	6	4	2	0	0	0	0	0	0	0	0	12	35	38
06:00		0	0	1	13	18	3	0	0	0	0	0	0	0	0	35	34	37
07:00		0	0	4	21	28	16	7	0	0	0	0	0	0	0	76	38	42
08:00		0	1	3	22	45	13	2	0	0	0	0	0	0	0	86	35	39
09:00		1	0	8	43	52	21	5	0	0	0	0	0	0	0	130	36	39
10:00		0	1	7	54	52	24	3	0	0	0	0	0	0	0	141	36	39
11:00		0	0	17	54	66	20	2	0	0	0	0	0	0	0	159	34	38
12 PM		0	1	9	43	51	21	3	0	0	0	0	0	0	0	128	36	39
13:00		0	1	6	41	53	24	0	0	0	0	0	0	0	0	125	36	38
14:00		0	0	6	39	44	12	2	0	0	0	0	0	0	0	103	34	38
15:00		0	0	13	32	63	20	3	0	0	0	0	0	0	0	131	35	39
16:00		1	2	6	37	60	23	5	0	0	0	0	0	0	0	134	36	39
17:00		0	0	8	47	45	16	0	0	0	0	0	0	0	0	116	34	38
18:00		0	0	5	35	37	13	1	0	0	0	0	0	0	0	91	35	38
19:00		0	1	2	29	13	6	0	1	0	0	0	0	0	0	52	34	38
20:00		0	0	2	15	28	5	0	0	0	0	0	0	0	0	50	34	37
21:00		0	0	1	16	7	7	0	0	0	0	0	0	0	0	31	36	38
22:00		0	0	1	13	14	5	2	0	0	0	0	0	0	0	35	36	40
23:00		0	0	0	12	17	2	0	0	0	0	0	0	0	0	31	34	36
Total		2	11	103	581	719	254	35	1	0	0	0	0	0	0	1706		
Percent		0.1%	0.6%	6.0%	34.1%	42.1%	14.9%	2.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak		09:00	04:00	11:00	10:00	11:00	10:00	07:00								11:00		
Vol.		1	2	17	54	66	24	7								159		
PM Peak		16:00	16:00	15:00	17:00	15:00	13:00	16:00	19:00							16:00		
Vol.		1	2	13	47	63	24	5	1							134		
Grand Total		20	86	646	2360	2395	695	84	5	0	0	0	0	0	0	6291		
Percent		0.3%	1.4%	10.3%	37.5%	38.1%	11.0%	1.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

Statistics

10 MPH Pace Speed : 26-35 MPH
Number in Pace : 4755
Percent in Pace : 75.6%
Number of Vehicles > 40 MPH : 89
Percent of Vehicles > 40 MPH : 1.4%
Mean Speed(Average) : 31 MPH



Innovative Data, LLC
P.O. Box 468
Belchertown, Massachusetts
InnovativeDataIc.com or 413.668.5094

Location: West Park Street
Location: West of Price Chopper Driveway
City, State: Lee, Massachusetts
Client: VHB / J. Furman

Westbound, Eastbound																			
Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th	95th		
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999		Percent	Percent		
03/05/20	0	0	1	3	3	0	2	0	0	0	0	0	0	0	9	41	43		
01:00	0	0	0	0	1	2	0	0	0	0	0	0	0	0	3	38	39		
02:00	0	0	0	1	1	2	0	0	0	0	0	0	0	0	4	38	39		
03:00	0	1	0	4	2	0	0	1	0	0	0	0	0	0	8	34	48		
04:00	0	0	0	5	6	0	0	0	0	0	0	0	0	0	11	33	34		
05:00	0	0	5	26	24	5	1	0	0	0	0	0	0	0	61	34	37		
06:00	0	0	13	51	58	34	0	0	0	0	0	0	0	0	156	36	38		
07:00	0	2	14	83	188	54	4	0	0	0	0	0	0	0	345	35	38		
08:00	1	8	17	82	126	40	7	0	0	0	0	0	0	0	281	35	39		
09:00	0	6	42	88	108	20	5	1	0	0	0	0	0	0	270	34	38		
10:00	2	10	38	100	107	25	1	0	0	0	0	0	0	0	283	34	37		
11:00	1	5	52	120	89	22	1	0	0	0	0	0	0	0	290	33	36		
12 PM	0	2	35	107	126	24	2	0	0	0	0	0	0	0	296	34	37		
13:00	1	8	37	126	98	29	2	0	0	0	0	0	0	0	301	34	37		
14:00	3	5	33	122	126	38	9	0	0	0	0	0	0	0	336	34	38		
15:00	0	6	36	128	169	47	4	1	0	0	0	0	0	0	391	34	38		
16:00	0	2	25	115	153	35	1	0	0	0	0	0	0	0	331	34	37		
17:00	2	0	34	114	114	35	2	0	0	0	0	0	0	0	301	34	38		
18:00	1	4	20	86	81	26	2	1	0	0	0	0	0	0	221	34	38		
19:00	0	0	9	45	57	14	0	0	0	0	0	0	0	0	125	34	37		
20:00	0	0	9	39	38	12	0	0	0	0	0	0	0	0	98	34	37		
21:00	0	0	8	32	27	12	1	0	0	0	0	0	0	0	80	35	38		
22:00	0	0	6	12	25	3	2	0	0	0	0	0	0	0	48	34	39		
23:00	0	1	5	8	9	0	0	0	0	0	0	0	0	0	23	33	34		
Total	11	60	439	1497	1736	479	46	4	0	0	0	0	0	0	4272				
Percent	0.3%	1.4%	10.3%	35.0%	40.6%	11.2%	1.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%					
AM Peak	10:00	10:00	11:00	11:00	07:00	07:00	08:00	03:00							07:00				
Vol.	2	10	52	120	188	54	7	1							345				
PM Peak	14:00	13:00	13:00	15:00	15:00	15:00	14:00	15:00							15:00				
Vol.	3	8	37	128	169	47	9	1							391				



Innovative Data, LLC
P.O. Box 468
Belchertown, Massachusetts
InnovativeDataIc.com or 413.668.5094

Location: West Park Street
Location: West of Price Chopper Driveway
City, State: Lee, Massachusetts
Client: VHB / J. Furman

Westbound, Eastbound																			
Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th	95th		
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999		Percent	Percent		
03/06/20	0	0	1	1	5	0	2	1	0	0	0	0	0	0	10	43	47		
01:00	0	0	0	1	1	2	0	0	0	0	0	0	0	0	4	38	39		
02:00	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	34	34		
03:00	0	0	0	2	4	2	1	0	0	0	0	0	0	0	9	39	42		
04:00	0	1	1	4	8	3	0	0	0	0	0	0	0	0	17	35	38		
05:00	0	1	8	25	26	10	2	0	0	0	0	0	0	0	72	35	39		
06:00	1	4	11	43	66	22	2	0	0	0	0	0	0	0	149	35	38		
07:00	0	4	8	104	154	61	12	0	0	0	0	0	0	0	343	36	39		
08:00	1	6	25	113	126	38	7	0	0	0	0	0	0	0	316	34	38		
09:00	2	5	27	105	99	39	1	2	0	0	0	0	0	0	280	35	38		
10:00	1	6	42	120	73	28	3	1	0	0	0	0	0	0	274	34	38		
11:00	4	13	54	126	99	42	6	0	0	0	0	0	0	0	344	34	38		
12 PM	2	6	61	146	112	28	2	0	0	0	0	0	0	0	357	33	37		
13:00	7	16	60	121	92	27	2	0	0	0	0	0	0	0	325	33	37		
14:00	1	5	40	161	130	29	1	0	0	0	0	0	0	0	367	34	37		
15:00	4	8	53	172	151	26	1	0	1	0	0	0	0	0	416	33	36		
16:00	1	8	34	175	128	31	2	1	0	0	0	0	0	0	380	34	37		
17:00	1	1	35	137	141	45	4	0	0	0	0	0	0	0	364	34	38		
18:00	1	0	19	80	87	27	1	0	0	0	0	0	0	0	215	34	38		
19:00	0	3	12	48	52	17	2	0	0	0	0	0	0	0	134	34	38		
20:00	0	1	16	40	48	9	1	0	0	0	0	0	0	0	115	34	37		
21:00	0	1	12	50	46	10	1	0	0	0	0	0	0	0	120	34	37		
22:00	0	1	9	30	39	13	2	0	0	0	0	0	0	0	94	35	38		
23:00	0	0	3	11	24	6	0	0	0	0	0	0	0	0	44	34	38		
Total	26	90	531	1815	1713	515	55	5	1	0	0	0	0	0	4751				
Percent	0.5%	1.9%	11.2%	38.2%	36.1%	10.8%	1.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%					
AM Peak	11:00	11:00	11:00	11:00	07:00	07:00	07:00	09:00							11:00				
Vol.	4	13	54	126	154	61	12	2							344				
PM Peak	13:00	13:00	12:00	16:00	15:00	17:00	17:00	16:00	15:00						15:00				
Vol.	7	16	61	175	151	45	4	1	1						416				



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Location: West Park Street
Location: West of Price Chopper Driveway
City, State: Lee, Massachusetts
Client: VHB / J. Furman

Westbound, Eastbound		1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th	95th
Start	Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999		Percent	Percent
03/07/20	0	0	1	2	5	11	2	0	0	1	0	0	0	0	0	22	34	39
01:00	0	0	0	0	4	14	2	1	0	0	0	0	0	0	0	21	34	39
02:00	1	0	0	1	6	5	1	0	0	0	0	0	0	0	0	14	33	36
03:00	0	1	1	1	2	2	0	0	0	0	0	0	0	0	0	6	32	34
04:00	0	2	2	4	2	7	2	0	0	0	0	0	0	0	0	17	34	37
05:00	0	0	0	2	10	6	4	0	0	0	0	0	0	0	0	22	35	38
06:00	0	0	0	1	21	29	9	0	0	0	0	0	0	0	0	60	34	38
07:00	0	0	0	4	34	61	24	7	0	0	0	0	0	0	0	130	37	40
08:00	0	3	7	7	44	76	28	2	1	0	0	0	0	0	0	161	36	39
09:00	1	1	14	14	75	99	38	5	0	0	0	0	0	0	0	233	36	39
10:00	0	1	1	14	87	107	41	6	1	0	0	0	0	0	0	257	36	39
11:00	0	0	0	27	92	125	40	4	0	0	0	0	0	0	0	288	35	38
12 PM	1	1	16	83	83	116	39	3	0	0	0	0	0	0	0	259	35	38
13:00	0	3	13	84	84	100	43	4	1	0	0	0	0	0	0	248	36	39
14:00	0	0	12	82	69	106	37	3	0	0	0	0	0	0	0	240	35	38
15:00	0	0	0	15	69	103	40	6	0	0	0	0	0	0	0	233	36	39
16:00	1	6	25	75	75	119	33	9	0	0	0	0	0	0	0	268	35	39
17:00	0	0	0	15	79	83	30	0	0	0	0	0	0	0	0	207	34	38
18:00	0	1	18	16	57	72	25	1	0	0	0	0	0	0	0	172	35	38
19:00	0	2	5	43	44	44	15	2	1	0	0	0	0	0	0	112	35	39
20:00	0	0	7	34	55	55	9	1	0	0	0	0	0	0	0	106	34	37
21:00	0	0	0	2	38	28	12	2	0	0	0	0	0	0	0	82	35	39
22:00	1	1	4	4	17	33	12	2	0	0	0	0	0	0	0	70	36	39
23:00	0	0	1	1	20	22	5	0	0	0	0	0	0	0	0	48	34	37
Total	5	23	208	1063	1423	491	58	1.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3276		
Percent	0.2%	0.7%	6.3%	32.4%	43.4%	15.0%	1.8%	07:00	08:00	00:00								
AM Peak	02:00	08:00	11:00	11:00	11:00	11:00	10:00	07:00								11:00		
Vol.	1	3	27	92	125	41	7		1	1						288		
PM Peak	12:00	16:00	16:00	13:00	16:00	16:00	13:00	16:00	13:00							16:00		
Vol.	1	6	25	84	119	43	9		1							268		
Grand Total	42	173	1178	4375	4872	1485	159	1.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12299		
Percent	0.3%	1.4%	9.6%	35.6%	39.6%	12.1%	1.3%											

Statistics
10 MPH Pace Speed : 26-35 MPH
Number in Pace : 9247
Percent in Pace : 75.2%
Number of Vehicles > 40 MPH : 174
Percent of Vehicles > 40 MPH : 1.4%
Mean Speed(Average) : 31 MPH



Innovative Data, LLC
P.O. Pox 468
Belchertown, Massachusetts
InnovativeDataIc.com or 413.668.5094

Location: West Park Street
Location: West of Price Chopper Driveway
City, State: Lee, Massachusetts
Client: VHB / J. Furman

Westbound																
Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Classed	Not	Total
03/05/20	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
04:00	0	5	1	1	0	0	0	0	0	0	0	0	0	0	0	7
05:00	0	22	6	0	3	0	0	0	0	0	0	0	0	0	0	31
06:00	0	37	30	0	5	0	0	1	1	0	0	0	0	0	0	74
07:00	0	115	30	8	7	1	0	0	0	0	0	0	0	0	0	161
08:00	0	92	26	0	4	2	0	0	2	0	0	0	0	0	0	126
09:00	0	84	36	2	3	4	0	0	2	0	0	0	0	0	0	131
10:00	0	95	26	2	7	3	1	1	2	0	0	0	0	0	0	137
11:00	1	97	28	1	6	0	0	1	5	0	0	0	0	0	0	139
12 PM	0	97	28	0	7	3	0	0	1	0	0	0	0	0	0	136
13:00	1	94	27	1	8	2	0	0	5	0	0	0	0	0	0	138
14:00	0	117	37	4	4	3	0	0	3	0	0	0	0	0	0	168
15:00	0	144	34	3	3	0	0	0	0	0	0	0	0	0	0	184
16:00	0	135	32	1	9	0	0	1	1	0	0	0	0	0	0	179
17:00	0	116	16	0	4	1	0	0	0	0	0	0	0	0	0	139
18:00	0	102	15	0	2	0	0	0	1	0	0	0	0	0	0	120
19:00	0	62	10	0	1	0	0	0	0	0	0	0	0	0	0	73
20:00	0	41	7	0	0	0	0	0	0	0	0	0	0	0	0	48
21:00	0	41	5	0	1	0	0	0	1	0	0	0	0	0	0	48
22:00	0	21	2	0	1	0	0	0	0	0	0	0	0	0	0	24
23:00	0	7	2	0	1	0	0	0	0	0	0	0	0	0	0	10
Total	2	1530	401	23	76	19	1	4	24	0	0	0	0	0	2	2082
Percent	0.1%	73.5%	19.3%	1.1%	3.7%	0.9%	0.0%	0.2%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	
AM Peak	11:00	07:00	09:00	07:00	07:00	09:00	10:00	06:00	11:00							
Vol.	1	115	36	8	7	4	1	1	5							
PM Peak	13:00	15:00	14:00	14:00	16:00	12:00		16:00	13:00						17:00	
Vol.	1	144	37	4	9	3		1	5						2	



Location: West Park Street
Location: West of Price Chopper Driveway
City, State: Lee, Massachusetts
Client: VHB / J. Furman

Innovative Data, LLC

P.O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

Westbound															
Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Classed	Total
03/06/20	0	4	2	0	0	0	0	0	0	0	0	0	0	0	6
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
04:00	0	5	1	1	0	0	0	0	1	0	0	0	0	0	8
05:00	0	20	13	0	1	2	0	0	1	0	0	0	0	0	37
06:00	0	31	24	0	5	0	0	1	1	0	0	0	0	0	62
07:00	0	124	30	5	3	2	0	0	3	0	0	0	0	0	167
08:00	0	98	33	1	7	0	0	0	3	1	0	0	0	1	144
09:00	1	86	34	0	11	1	0	0	2	0	0	0	0	1	136
10:00	3	86	30	0	7	5	0	0	7	0	0	0	0	0	138
11:00	1	119	32	1	9	3	0	0	3	1	0	0	0	0	169
12 PM	1	129	27	2	5	3	0	4	8	0	0	0	0	0	179
13:00	3	119	30	0	3	3	0	1	5	1	0	0	0	0	165
14:00	0	149	29	3	5	2	0	1	4	0	0	0	0	0	193
15:00	1	144	40	3	6	1	0	0	3	0	0	0	0	1	199
16:00	1	147	29	0	3	0	0	1	0	0	0	0	0	0	181
17:00	1	139	28	0	6	0	0	0	0	0	0	0	0	0	174
18:00	1	95	18	0	1	0	0	0	0	0	0	0	0	1	116
19:00	0	59	8	0	2	0	0	0	0	0	0	0	0	0	69
20:00	0	52	6	0	2	0	0	0	0	0	0	0	0	0	60
21:00	1	60	9	0	3	0	0	0	0	0	0	0	0	0	73
22:00	0	45	6	0	2	0	0	0	0	0	0	0	0	0	53
23:00	0	16	2	0	2	0	0	0	0	0	0	0	0	0	20
Total	14	1732	433	16	83	22	0	8	41	3	0	0	0	4	2356
Percent	0.6%	73.5%	18.4%	0.7%	3.5%	0.9%	0.0%	0.3%	1.7%	0.1%	0.0%	0.0%	0.0%	0.2%	
AM Peak	10:00	07:00	09:00	07:00	09:00	10:00		06:00	10:00	08:00				08:00	
Vol.	3	124	34	5	11	5		1	7	1				1	
PM Peak	13:00	14:00	15:00	14:00	15:00	12:00		12:00	12:00	13:00				15:00	
Vol.	3	149	40	3	6	3		4	8	1				1	



Innovative Data, LLC

P.O. Pox 468

Location: West Park Street

Location: West of Price Chopper Driveway

City, State: Lee, Massachusetts

Client: VHB / J. Furman

Belchertown, Massachusetts

InnovativeDataIc.com or 413.668.5094

Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Classed	Not	Total
03/07/20	0	7	2	0	1	0	0	0	0	0	0	0	0	0	0	10
01:00	0	5	4	0	0	0	0	0	0	0	0	0	0	0	0	9
02:00	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	9
03:00	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	8	0	0	1	0	0	0	0	0	0	0	0	0	0	9
05:00	0	7	2	0	0	0	0	1	0	0	0	0	0	0	0	10
06:00	0	17	6	0	2	0	0	0	0	0	0	0	0	0	0	25
07:00	0	39	14	0	1	0	0	0	0	0	0	0	0	0	0	54
08:00	0	49	21	0	5	0	0	0	0	0	0	0	0	0	0	75
09:00	0	85	15	1	1	1	0	0	0	0	0	0	0	0	0	103
10:00	0	91	25	0	0	0	0	0	0	0	0	0	0	0	0	116
11:00	0	101	26	0	1	1	0	0	0	0	0	0	0	0	0	129
12 PM	2	104	22	0	3	0	0	0	0	0	0	0	0	0	0	131
13:00	0	98	23	0	2	0	0	0	0	0	0	0	0	0	0	123
14:00	1	115	19	0	2	0	0	0	0	0	0	0	0	0	0	137
15:00	1	82	17	0	2	0	0	0	0	0	0	0	0	0	0	102
16:00	1	109	22	0	2	0	0	0	0	0	0	0	0	0	0	134
17:00	0	73	16	0	1	1	0	0	0	0	0	0	0	0	0	91
18:00	0	64	17	0	0	0	0	0	0	0	0	0	0	0	0	81
19:00	0	50	8	0	2	0	0	0	0	0	0	0	0	0	0	60
20:00	0	48	7	0	1	0	0	0	0	0	0	0	0	0	0	56
21:00	0	48	3	0	0	0	0	0	0	0	0	0	0	0	0	51
22:00	0	31	3	0	1	0	0	0	0	0	0	0	0	0	0	35
23:00	0	14	3	0	0	0	0	0	0	0	0	0	0	0	0	17
Total	5	1255	277	1	28	3	0	1	0	0	0	0	0	0	0	1570
Percent	0.3%	79.9%	17.6%	0.1%	1.8%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		11:00	11:00	09:00	08:00	09:00		05:00								
Vol.		101	26	1	5	1		1								
PM Peak	12:00	14:00	13:00		12:00	17:00										
Vol.	2	115	23		3	1										

Grand Total	21	4517	1111	40	187	44	1	13	65	3	0	0	0	6	6008
Percent	0.3%	75.2%	18.5%	0.7%	3.1%	0.7%	0.0%	0.2%	1.1%	0.0%	0.0%	0.0%	0.0%	0.1%	



Location: West Park Street
City, State: West of Price Chopper Driveway
City, State: Lee, Massachusetts
Client: VHB / J. Furman

Innovative Data, LLC

P.O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classified	Total
03/05/20	0	5	1	0	1	0	0	0	0	0	0	0	0	0	7
01:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	2	1	1	0	0	0	0	0	0	0	0	0	0	4
04:00	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
05:00	0	19	10	0	1	0	0	0	0	0	0	0	0	0	30
06:00	0	45	31	0	6	0	0	0	0	0	0	0	0	0	82
07:00	0	140	36	2	5	0	0	1	0	0	0	0	0	0	184
08:00	2	108	32	3	7	1	1	0	1	0	0	0	0	0	155
09:00	0	92	33	2	10	0	0	0	2	0	0	0	0	0	139
10:00	2	111	26	1	3	0	0	0	2	1	0	0	0	0	146
11:00	0	106	32	2	7	1	0	0	3	0	0	0	0	0	151
12 PM	0	110	34	3	12	1	0	0	0	0	0	0	0	0	160
13:00	0	116	34	1	5	1	1	2	3	0	0	0	0	0	163
14:00	1	124	31	0	9	0	0	0	2	1	0	0	0	0	168
15:00	1	143	53	4	4	2	0	0	0	0	0	0	0	0	207
16:00	0	119	28	1	3	0	0	0	1	0	0	0	0	0	152
17:00	0	126	30	0	3	1	0	2	0	0	0	0	0	0	162
18:00	0	81	13	1	6	0	0	0	0	0	0	0	0	0	101
19:00	0	38	8	0	6	0	0	0	0	0	0	0	0	0	52
20:00	0	36	9	1	4	0	0	0	0	0	0	0	0	0	50
21:00	0	24	5	0	3	0	0	0	0	0	0	0	0	0	32
22:00	0	20	3	0	0	0	0	1	0	0	0	0	0	0	24
23:00	0	12	1	0	0	0	0	0	0	0	0	0	0	0	13
Total	6	1584	452	22	95	7	2	6	14	2	0	0	0	0	2190
Percent	0.3%	72.3%	20.6%	1.0%	4.3%	0.3%	0.1%	0.3%	0.6%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	07:00	07:00	08:00	09:00	08:00	08:00	07:00	11:00	10:00					
Vol.	2	140	36	3	10	1	1	1	3	1					
PM Peak	14:00	15:00	15:00	15:00	12:00	15:00	13:00	13:00	13:00	14:00					
Vol.	1	143	53	4	12	2	1	2	3	1					



Innovative Data, LLC
P.O. Pox 468
Belchertown, Massachusetts
InnovativeDataIc.com or 413.668.5094

Location: West Park Street
Location: West of Price Chopper Driveway
City, State: Lee, Massachusetts
Client: VHB / J. Furman

Eastbound															
Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Classed	Total
03/06/20	0	1	2	0	1	0	0	0	0	0	0	0	0	0	4
01:00	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
04:00	0	7	2	0	0	0	0	0	0	0	0	0	0	0	9
05:00	0	19	10	0	6	0	0	0	0	0	0	0	0	0	35
06:00	0	49	27	0	9	2	0	0	0	0	0	0	0	0	87
07:00	0	133	34	2	6	1	0	0	0	0	0	0	0	0	176
08:00	2	114	34	2	15	2	0	1	1	1	0	0	0	0	172
09:00	1	88	43	0	9	2	0	0	1	0	0	0	0	0	144
10:00	1	100	25	0	5	1	1	0	3	0	0	0	0	0	136
11:00	3	107	43	3	9	1	0	1	7	1	0	0	0	0	175
12 PM	2	120	39	1	8	2	0	1	3	1	0	0	0	1	178
13:00	3	102	29	2	12	4	1	0	6	1	0	0	0	0	160
14:00	1	123	35	0	9	1	0	0	4	0	0	0	0	1	174
15:00	0	152	45	2	14	2	0	0	2	0	0	0	0	0	217
16:00	2	151	34	0	8	2	0	1	0	0	0	0	0	1	199
17:00	0	142	34	0	11	0	0	0	1	0	0	0	0	2	190
18:00	0	78	16	0	4	1	0	0	0	0	0	0	0	0	99
19:00	0	53	10	0	2	0	0	0	0	0	0	0	0	0	65
20:00	0	44	10	0	1	0	0	0	0	0	0	0	0	0	55
21:00	0	33	8	0	6	0	0	0	0	0	0	0	0	0	47
22:00	0	37	3	0	1	0	0	0	0	0	0	0	0	0	41
23:00	0	20	2	0	2	0	0	0	0	0	0	0	0	0	24
Total	15	1680	486	12	138	21	2	4	28	4	0	0	0	5	2395
Percent	0.6%	70.1%	20.3%	0.5%	5.8%	0.9%	0.1%	0.2%	1.2%	0.2%	0.0%	0.0%	0.0%	0.2%	
AM Peak	11:00	07:00	09:00	11:00	08:00	06:00	10:00	08:00	11:00	08:00					
Vol.	3	133	43	3	15	2	1	1	7	1					
PM Peak	13:00	15:00	15:00	13:00	15:00	13:00	13:00	12:00	13:00	12:00				17:00	
Vol.	3	152	45	2	14	4	1	1	6	1				2	



Innovative Data, LLC

P.O. Pox 468

Location: West Park Street

Location: West of Price Chopper Driveway

City, State: Lee, Massachusetts

Client: VHB / J. Furman

Belchertown, Massachusetts

InnovativeDataIc.com or 413.668.5094

Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Classed	Not	Total
03/07/20	0	6	4	0	2	0	0	0	0	0	0	0	0	0	0	12
01:00	0	6	2	0	3	0	0	0	0	0	0	0	0	0	1	12
02:00	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	5
03:00	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	5	1	0	1	0	0	0	1	0	0	0	0	0	0	8
05:00	0	7	5	0	0	0	0	0	0	0	0	0	0	0	0	12
06:00	0	25	10	0	0	0	0	0	0	0	0	0	0	0	0	35
07:00	0	47	23	0	6	0	0	0	0	0	0	0	0	0	0	76
08:00	0	59	22	0	5	0	0	0	0	0	0	0	0	0	0	86
09:00	1	95	28	0	6	0	0	0	0	0	0	0	0	0	0	130
10:00	0	99	35	0	7	0	0	0	0	0	0	0	0	0	0	141
11:00	2	110	37	1	8	0	0	1	0	0	0	0	0	0	0	159
12 PM	0	97	23	0	7	1	0	0	0	0	0	0	0	0	0	128
13:00	1	96	24	0	4	0	0	0	0	0	0	0	0	0	0	125
14:00	1	80	20	0	1	0	0	1	0	0	0	0	0	0	0	103
15:00	0	101	27	0	3	0	0	0	0	0	0	0	0	0	0	131
16:00	1	104	25	0	4	0	0	0	0	0	0	0	0	0	0	134
17:00	0	96	16	0	4	0	0	0	0	0	0	0	0	0	0	116
18:00	0	70	17	0	4	0	0	0	0	0	0	0	0	0	0	91
19:00	0	37	9	0	6	0	0	0	0	0	0	0	0	0	0	52
20:00	0	41	7	0	2	0	0	0	0	0	0	0	0	0	0	50
21:00	0	28	2	0	1	0	0	0	0	0	0	0	0	0	0	31
22:00	0	31	3	0	1	0	0	0	0	0	0	0	0	0	0	35
23:00	0	23	7	0	1	0	0	0	0	0	0	0	0	0	0	31
Total	6	1269	349	1	76	1	0	2	1	0	0	0	0	0	1	1706
Percent	0.4%	74.4%	20.5%	0.1%	4.5%	0.1%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	
AM Peak	11:00	11:00	11:00	11:00	11:00			11:00	04:00							
Vol.	2	110	37	1	8			1	1						1	
PM Peak	13:00	16:00	15:00		12:00	12:00		14:00								
Vol.	1	104	27		7	1		1								
Grand Total	27	4533	1287	35	309	29	4	12	43	6	0	0	0	0	6	6291
Percent	0.4%	72.1%	20.5%	0.6%	4.9%	0.5%	0.1%	0.2%	0.7%	0.1%	0.0%	0.0%	0.0%	0.1%	0.1%	



Innovative Data, LLC
P.O. Pox 468
Belchertown, Massachusetts
InnovativeDataIc.com or 413.668.5094

Location: West Park Street
Location: West of Price Chopper Driveway
City, State: Lee, Massachusetts
Client: VHB / J. Furman

Westbound, Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Classed	Not	Total
03/05/20	0	6	2	0	1	0	0	0	0	0	0	0	0	0	0	9
01:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	4
03:00	0	6	1	1	0	0	0	0	0	0	0	0	0	0	0	8
04:00	0	8	2	1	0	0	0	0	0	0	0	0	0	0	0	11
05:00	0	41	16	0	4	0	0	0	0	0	0	0	0	0	0	61
06:00	0	82	61	0	11	0	0	1	1	0	0	0	0	0	0	156
07:00	0	255	66	10	12	1	0	1	0	0	0	0	0	0	0	345
08:00	2	200	58	3	11	3	1	0	3	0	0	0	0	0	0	281
09:00	0	176	69	4	13	4	0	0	4	0	0	0	0	0	0	270
10:00	2	206	52	3	10	3	1	1	4	1	0	0	0	0	0	283
11:00	1	203	60	3	13	1	0	1	8	0	0	0	0	0	0	290
12 PM	0	207	62	3	19	4	0	0	1	0	0	0	0	0	0	296
13:00	1	210	61	2	13	3	1	2	8	0	0	0	0	0	0	301
14:00	1	241	68	4	13	3	0	0	5	1	0	0	0	0	0	336
15:00	1	287	87	7	7	2	0	0	0	0	0	0	0	0	0	391
16:00	0	254	60	2	12	0	0	1	2	0	0	0	0	0	0	331
17:00	0	242	46	0	7	2	0	2	0	0	0	0	0	0	0	301
18:00	0	183	28	1	8	0	0	0	1	0	0	0	0	0	2	221
19:00	0	100	18	0	7	0	0	0	0	0	0	0	0	0	0	125
20:00	0	77	16	1	4	0	0	0	0	0	0	0	0	0	0	98
21:00	0	65	10	0	4	0	0	0	1	0	0	0	0	0	0	80
22:00	0	41	5	0	1	0	0	1	0	0	0	0	0	0	0	48
23:00	0	19	3	0	1	0	0	0	0	0	0	0	0	0	0	23
Total	8	3114	853	45	171	26	3	10	38	2	0	0	0	0	2	4272
Percent	0.2%	72.9%	20.0%	1.1%	4.0%	0.6%	0.1%	0.2%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	07:00	09:00	07:00	09:00	09:00	08:00	06:00	11:00	10:00						
Vol.	2	255	69	10	13	4	1	1	8	1						
PM Peak	13:00	15:00	15:00	15:00	12:00	12:00	13:00	13:00	13:00	14:00					17:00	
Vol.	1	287	87	7	19	4	1	2	8	1					2	



Innovative Data, LLC

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Location: West Park Street
Location: West of Price Chopper Driveway
City, State: Lee, Massachusetts
Client: VHB / J. Furman

Westbound, Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Classed	Not	Total
03/06/20	0	5	4	0	1	0	0	0	0	0	0	0	0	0	0	10
01:00	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
02:00	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	9
04:00	0	12	3	1	0	0	0	0	1	0	0	0	0	0	0	17
05:00	0	39	23	0	7	2	0	0	1	0	0	0	0	0	0	72
06:00	0	80	51	0	14	2	0	1	1	0	0	0	0	0	0	149
07:00	0	257	64	7	9	3	0	0	3	0	0	0	0	0	0	343
08:00	2	212	67	3	22	2	0	1	4	2	0	0	0	1	1	316
09:00	2	174	77	0	20	3	0	0	3	0	0	0	0	1	1	280
10:00	4	186	55	0	12	6	1	0	10	0	0	0	0	0	0	274
11:00	4	226	75	4	18	4	0	1	10	2	0	0	0	0	0	344
12 PM	3	249	66	3	13	5	0	5	11	1	0	0	0	1	1	357
13:00	6	221	59	2	15	7	1	1	11	2	0	0	0	0	0	325
14:00	1	272	64	3	14	3	0	1	8	0	0	0	0	1	1	367
15:00	1	296	85	5	20	3	0	0	5	0	0	0	0	1	1	416
16:00	3	298	63	0	11	2	0	2	0	0	0	0	0	1	1	380
17:00	1	281	62	0	17	0	0	0	1	0	0	0	0	2	2	364
18:00	1	173	34	0	5	1	0	0	0	0	0	0	0	1	1	215
19:00	0	112	18	0	4	0	0	0	0	0	0	0	0	0	0	134
20:00	0	96	16	0	3	0	0	0	0	0	0	0	0	0	0	115
21:00	1	93	17	0	9	0	0	0	0	0	0	0	0	0	0	120
22:00	0	82	9	0	3	0	0	0	0	0	0	0	0	0	0	94
23:00	0	36	4	0	4	0	0	0	0	0	0	0	0	0	0	44
Total	29	3412	919	28	221	43	2	12	69	7	0	0	0	9	9	4751
Percent	0.6%	71.8%	19.3%	0.6%	4.7%	0.9%	0.0%	0.3%	1.5%	0.1%	0.0%	0.0%	0.0%	0.2%	0.2%	
AM Peak	10:00	07:00	09:00	07:00	08:00	10:00	10:00	06:00	10:00	08:00				08:00		
Vol.	4	257	77	7	22	6	1	1	10	2				1		
PM Peak	13:00	16:00	15:00	15:00	15:00	13:00	13:00	12:00	12:00	13:00				17:00		
Vol.	6	298	85	5	20	7	1	5	11	2				2		



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InnovativeDataIc.com or 413.668.5094

Location: West Park Street
Location: West of Price Chopper Driveway
City, State: Lee, Massachusetts
Client: VHB / J. Furman

Westbound, Eastbound													
Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi
03/07/20	0	13	6	0	3	0	0	0	0	0	0	0	0
01:00	0	11	6	0	3	0	0	0	0	0	0	0	0
02:00	0	12	2	0	0	0	0	0	0	0	0	0	0
03:00	0	4	2	0	0	0	0	0	0	0	0	0	0
04:00	0	13	1	0	2	0	0	0	1	0	0	0	0
05:00	0	14	7	0	0	0	0	1	0	0	0	0	0
06:00	0	42	16	0	2	0	0	0	0	0	0	0	0
07:00	0	86	37	0	7	0	0	0	0	0	0	0	0
08:00	0	108	43	0	10	0	0	0	0	0	0	0	0
09:00	1	180	43	1	7	1	0	0	0	0	0	0	0
10:00	0	190	60	0	7	0	0	0	0	0	0	0	0
11:00	2	211	63	1	9	1	0	1	0	0	0	0	0
12 PM	2	201	45	0	10	1	0	0	0	0	0	0	0
13:00	1	194	47	0	6	0	0	0	0	0	0	0	0
14:00	2	195	39	0	3	0	0	1	0	0	0	0	0
15:00	1	183	44	0	5	0	0	0	0	0	0	0	0
16:00	2	213	47	0	6	0	0	0	0	0	0	0	0
17:00	0	169	32	0	5	1	0	0	0	0	0	0	0
18:00	0	134	34	0	4	0	0	0	0	0	0	0	0
19:00	0	87	17	0	8	0	0	0	0	0	0	0	0
20:00	0	89	14	0	3	0	0	0	0	0	0	0	0
21:00	0	76	5	0	1	0	0	0	0	0	0	0	0
22:00	0	62	6	0	2	0	0	0	0	0	0	0	0
23:00	0	37	10	0	1	0	0	0	0	0	0	0	0
Total	11	2524	626	2	104	4	0	3	1	0	0	0	0
Percent	0.3%	77.0%	19.1%	0.1%	3.2%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
AM Peak	11:00	11:00	11:00	09:00	08:00	09:00		05:00	04:00				
Vol.	2	211	63	1	10	1		1	1				
PM Peak	12:00	16:00	13:00		12:00	12:00		14:00					
Vol.	2	213	47		10	1		1					
Grand Total	48	9050	2398	75	496	73	5	25	108	9	0	0	0
Percent	0.4%	73.6%	19.5%	0.6%	4.0%	0.6%	0.0%	0.2%	0.9%	0.1%	0.0%	0.0%	0.1%



Innovative Data, LLC

PO Box 468
Belchertown, Massachusetts
Innovativedataallc.com or 1.413.668.5094

N / S: Main Street (Route 20)
E / W: Park (Route 20) & W. Park
City, State: Lee, Massachusetts
Client: VHB / J. Locke

File Name : AM Peak - Main @ Park & West Park
Site Code : 1
Start Date : 8/22/2018
Page No : 1

Groups Printed- Heavy Vehicles

	Main From North					Park From East					From South					West Park From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	1	0	8	0	9	11	0	0	0	11	0	0	0	0	0	0	2	2	0	4	24
07:15 AM	0	0	6	0	6	14	2	0	0	16	0	0	0	0	0	0	1	1	0	2	24
07:30 AM	0	0	5	0	5	17	1	0	0	18	0	0	0	0	0	0	1	1	0	2	25
07:45 AM	0	0	6	0	6	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	12
Total	1	0	25	0	26	48	3	0	0	51	0	0	0	0	0	0	4	4	0	8	85
08:00 AM	0	0	11	0	11	10	5	0	0	15	0	0	0	0	0	0	2	0	0	2	28
08:15 AM	1	0	8	0	9	13	0	0	0	13	0	0	0	0	0	0	2	0	0	2	24
08:30 AM	1	0	6	0	7	15	1	0	0	16	0	0	0	0	0	0	3	1	0	4	27
08:45 AM	2	0	10	0	12	6	1	0	0	7	0	0	0	0	0	0	1	0	0	1	20
Total	4	0	35	0	39	44	7	0	0	51	0	0	0	0	0	0	8	1	0	9	99
Grand Total	5	0	60	0	65	92	10	0	0	102	0	0	0	0	0	0	12	5	0	17	184
Apprch %	7.7	0	92.3	0		90.2	9.8	0	0		0	0	0	0		0	70.6	29.4	0		
Total %	2.7	0	32.6	0	35.3	50	5.4	0	0	55.4	0	0	0	0	0	0	6.5	2.7	0	9.2	

	Main From North					Park From East					From South					West Park From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	11	0	11	10	5	0	0	15	0	0	0	0	0	0	2	0	0	2	28
08:15 AM	1	0	8	0	9	13	0	0	0	13	0	0	0	0	0	0	2	0	0	2	24
08:30 AM	1	0	6	0	7	15	1	0	0	16	0	0	0	0	0	0	3	1	0	4	27
08:45 AM	2	0	10	0	12	6	1	0	0	7	0	0	0	0	0	0	1	0	0	1	20
Total Volume	4	0	35	0	39	44	7	0	0	51	0	0	0	0	0	0	8	1	0	9	99
% App. Total	10.3	0	89.7	0		86.3	13.7	0	0		0	0	0	0		0	88.9	11.1	0		
PHF	.500	.000	.795	.000	.813	.733	.350	.000	.000	.797	.000	.000	.000	.000	.000	.000	.667	.250	.000	.563	.884



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PO Box 468
Belchertown, Massachusetts
Innovativedatallc.com or 1.413.668.5094

N / S: Main Street (Route 20)
E / W: Park (Route 20) & W. Park
City, State: Lee, Massachusetts
Client: VHB / J. Locke

File Name : PM Peak - Main @ Park & West Park
Site Code : 1
Start Date : 8/22/2018
Page No : 1

Groups Printed- Heavy Vehicles

	Main From North					Park From East					From South					West Park From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	5	0	5	4	0	0	0	4	0	0	0	0	0	0	1	0	0	1	10
04:15 PM	0	0	10	0	10	2	1	0	0	3	0	0	0	0	0	0	1	0	0	1	14
04:30 PM	0	0	6	0	6	8	2	0	0	10	0	0	0	0	0	0	1	0	0	1	17
04:45 PM	0	0	5	0	5	2	0	0	0	2	0	0	0	0	0	0	1	1	0	2	9
Total	0	0	26	0	26	16	3	0	0	19	0	0	0	0	0	0	4	1	0	5	50
05:00 PM	0	0	6	0	6	3	0	0	0	3	0	0	0	0	0	0	0	1	0	1	10
05:15 PM	0	0	5	0	5	4	0	0	0	4	0	0	0	0	0	0	1	0	0	1	10
05:30 PM	3	0	4	0	7	5	1	0	0	6	0	0	0	0	0	0	1	0	0	1	14
05:45 PM	3	0	3	0	6	7	0	0	0	7	0	0	0	0	0	0	2	1	0	3	16
Total	6	0	18	0	24	19	1	0	0	20	0	0	0	0	0	0	4	2	0	6	50
Grand Total	6	0	44	0	50	35	4	0	0	39	0	0	0	0	0	0	8	3	0	11	100
Apprch %	12	0	88	0		89.7	10.3	0	0		0	0	0	0		0	72.7	27.3	0		
Total %	6	0	44	0	50	35	4	0	0	39	0	0	0	0	0	0	8	3	0	11	

	Main From North					Park From East					From South					West Park From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	5	0	5	4	0	0	0	4	0	0	0	0	0	0	1	0	0	1	10
04:15 PM	0	0	10	0	10	2	1	0	0	3	0	0	0	0	0	0	1	0	0	1	14
04:30 PM	0	0	6	0	6	8	2	0	0	10	0	0	0	0	0	0	1	0	0	1	17
04:45 PM	0	0	5	0	5	2	0	0	0	2	0	0	0	0	0	0	1	1	0	2	9
Total Volume	0	0	26	0	26	16	3	0	0	19	0	0	0	0	0	0	4	1	0	5	50
% App. Total	0	0	100	0		84.2	15.8	0	0		0	0	0	0		0	80	20	0		
PHF	.000	.000	.650	.000	.650	.500	.375	.000	.000	.475	.000	.000	.000	.000	.000	.000	1.00	.250	.000	.625	.735

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

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N / S: Main Street (Route 20)

E / W: Park (Route 20) & W. Park

City, State: Lee, Massachusetts

Client: VHB / J. Locke

File Name : Sat Peak - Main @ Park & West Park

Site Code : 1

Start Date : 8/25/2018

Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	Main From North					Park From East					From South					West Park From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	18	0	145	0	163	123	22	0	0	145	0	0	0	0	0	0	30	18	5	53	361
11:15 AM	18	0	132	0	150	137	20	0	0	157	0	0	0	0	0	0	32	10	3	45	352
11:30 AM	16	0	150	0	166	128	22	0	0	150	0	0	0	0	0	0	26	11	0	37	353
11:45 AM	18	0	142	0	160	135	29	0	0	164	0	0	0	0	0	0	27	13	1	41	365
Total	70	0	569	0	639	523	93	0	0	616	0	0	0	0	0	0	115	52	9	176	1431
12:00 PM	12	0	140	0	152	120	27	0	0	147	0	0	0	0	0	0	25	14	0	39	338
12:15 PM	10	0	153	0	163	152	23	0	0	175	0	0	0	0	0	0	24	11	1	36	374
12:30 PM	15	0	137	0	152	147	25	0	0	172	0	0	0	0	0	0	30	7	0	37	361
12:45 PM	13	0	133	0	146	139	21	0	0	160	0	0	0	0	0	0	22	7	0	29	335
Total	50	0	563	0	613	558	96	0	0	654	0	0	0	0	0	0	101	39	1	141	1408
01:00 PM	13	0	144	0	157	139	27	0	1	167	0	0	0	0	0	0	23	11	1	35	359
01:15 PM	10	0	135	0	145	106	16	0	0	122	0	0	0	0	0	0	24	12	4	40	307
01:30 PM	13	0	168	0	181	109	28	0	0	137	0	0	0	0	0	0	28	12	2	42	360
01:45 PM	19	0	131	0	150	126	26	0	0	152	0	0	0	0	0	0	25	9	8	42	344
Total	55	0	578	0	633	480	97	0	1	578	0	0	0	0	0	0	100	44	15	159	1370
Grand Total	175	0	1710	0	1885	1561	286	0	1	1848	0	0	0	0	0	0	316	135	25	476	4209
Apprch %	9.3	0	90.7	0		84.5	15.5	0	0.1		0	0	0	0		0	66.4	28.4	5.3		
Total %	4.2	0	40.6	0	44.8	37.1	6.8	0	0	43.9	0	0	0	0	0	0	7.5	3.2	0.6	11.3	
PCs and Peds	174	0	1679	0	1853	1525	284	0	1	1810	0	0	0	0	0	0	311	132	25	468	4131
% PCs and Peds	99.4	0	98.2	0	98.3	97.7	99.3	0	100	97.9	0	0	0	0	0	0	98.4	97.8	100	98.3	98.1
Heavy Vehicles	0	0	28	0	28	36	2	0	0	38	0	0	0	0	0	0	5	3	0	8	74
% Heavy Vehicles	0	0	1.6	0	1.5	2.3	0.7	0	0	2.1	0	0	0	0	0	0	1.6	2.2	0	1.7	1.8
Bicycles	1	0	3	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
% Bicycles	0.6	0	0.2	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1

[illegible]



Innovative Data, LLC

PO Box 468
Belchertown, Massachusetts
Innovativedataallc.com or 1.413.668.5094

N / S: Main Street (Route 20)
E / W: Park (Route 20) & W. Park
City, State: Lee, Massachusetts
Client: VHB / J. Locke

File Name : Sat Peak - Main @ Park & West Park
Site Code : 1
Start Date : 8/25/2018
Page No : 1

Groups Printed- Heavy Vehicles

	Main From North					Park From East					From South					West Park From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	0	0	1	0	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
11:15 AM	0	0	1	0	1	2	0	0	0	2	0	0	0	0	0	0	1	1	0	2	5
11:30 AM	0	0	2	0	2	3	1	0	0	4	0	0	0	0	0	0	1	0	0	1	7
11:45 AM	0	0	2	0	2	5	1	0	0	6	0	0	0	0	0	0	0	0	0	0	8
Total	0	0	6	0	6	12	2	0	0	14	0	0	0	0	0	0	2	1	0	3	23
12:00 PM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
12:15 PM	0	0	3	0	3	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	7
12:30 PM	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	1	1	0	2	8
12:45 PM	0	0	1	0	1	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	5
Total	0	0	5	0	5	15	0	0	0	15	0	0	0	0	0	0	1	1	0	2	22
01:00 PM	0	0	4	0	4	5	0	0	0	5	0	0	0	0	0	0	1	0	0	1	10
01:15 PM	0	0	4	0	4	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	6
01:30 PM	0	0	4	0	4	3	0	0	0	3	0	0	0	0	0	0	0	1	0	1	8
01:45 PM	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Total	0	0	17	0	17	9	0	0	0	9	0	0	0	0	0	0	2	1	0	3	29
Grand Total	0	0	28	0	28	36	2	0	0	38	0	0	0	0	0	0	5	3	0	8	74
Apprch %	0	0	100	0		94.7	5.3	0	0		0	0	0	0		0	62.5	37.5	0		
Total %	0	0	37.8	0	37.8	48.6	2.7	0	0	51.4	0	0	0	0	0	0	6.8	4.1	0	10.8	

	Main From North					Park From East					From South					West Park From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:15 PM																					
12:15 PM	0	0	3	0	3	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	7
12:30 PM	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	1	1	0	2	8
12:45 PM	0	0	1	0	1	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	5
01:00 PM	0	0	4	0	4	5	0	0	0	5	0	0	0	0	0	0	1	0	0	1	10
Total Volume	0	0	8	0	8	19	0	0	0	19	0	0	0	0	0	0	2	1	0	3	30
% App. Total	0	0	100	0		100	0	0	0		0	0	0	0		0	66.7	33.3	0		
PHF	.000	.000	.500	.000	.500	.792	.000	.000	.000	.792	.000	.000	.000	.000	.000	.000	.500	.250	.000	.375	.750



Location: Route 20 (Main Street)
 Location: South of School Street
 Location: Lee, Massachusetts
 Client: VHB / J. Locke

Innovative Data, LLC

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 Innovatedata LLC or 1.413.668.5094

Start Time	23-Aug-18 Thu	Southbound		Northbound		Combined		24-Aug-Fri	Southbound		Northbound		Combined	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00		11	149	9	110	20	259		13	120	21	146	34	266
12:15		9	141	15	112	24	253		7	136	11	122	18	258
12:30		2	126	6	134	8	260		9	142	6	115	15	257
12:45		9	148	9	86	18	234		6	129	18	122	24	251
01:00		5	148	8	116	13	264		6	121	6	109	12	230
01:15		2	126	6	118	8	244		5	156	3	108	8	264
01:30		6	123	3	124	9	247		6	121	5	156	11	277
01:45		5	121	6	123	11	244		6	133	5	118	11	251
02:00		2	132	3	121	5	253		10	120	6	114	16	234
02:15		8	111	4	129	12	240		3	159	6	148	9	307
02:30		1	144	4	103	5	247		7	141	6	116	13	257
02:45		4	146	6	111	10	257		7	144	7	132	14	276
03:00		2	134	8	129	10	263		1	145	6	136	7	281
03:15		6	152	5	108	11	260		2	134	1	143	3	277
03:30		2	152	5	133	7	285		8	137	3	160	11	297
03:45		4	150	4	120	8	270		10	149	6	153	16	302
04:00		9	152	8	154	17	306		14	151	7	146	21	297
04:15		8	152	6	130	14	282		9	148	3	138	12	286
04:30		17	135	2	131	19	266		13	137	8	148	21	285
04:45		18	140	12	111	30	251		25	145	9	146	34	291
05:00		23	113	10	139	33	252		23	143	16	157	39	300
05:15		27	141	10	134	37	275		25	147	20	136	45	283
05:30		41	128	26	127	67	255		33	133	20	126	53	259
05:45		48	148	37	121	85	269		40	120	42	132	82	252
06:00		59	101	48	92	107	193		33	104	38	134	71	238
06:15		64	97	57	113	121	210		69	95	61	132	130	227
06:30		86	94	69	101	155	195		68	90	64	126	132	216
06:45		90	89	81	86	171	175		71	98	73	116	144	214
07:00		70	77	68	88	138	165		85	90	68	128	153	218
07:15		74	72	86	111	160	183		91	73	65	110	156	183
07:30		79	90	87	95	166	185		88	95	98	79	186	174
07:45		118	67	82	97	200	164		110	80	68	109	178	189
08:00		108	58	114	70	222	128		105	93	80	104	185	197
08:15		111	66	91	70	202	136		110	72	78	104	188	176
08:30		99	49	121	65	220	114		116	60	85	84	201	144
08:45		120	59	106	77	226	136		122	51	88	87	210	138
09:00		107	46	96	63	203	109		141	49	105	94	246	143
09:15		125	50	94	80	219	130		121	49	108	96	229	145
09:30		117	61	103	72	220	133		145	45	80	91	225	136
09:45		117	41	110	35	227	76		137	48	99	74	236	122
10:00		120	29	94	54	214	83		110	67	92	73	202	140
10:15		129	29	93	61	222	90		132	107	87	68	219	175
10:30		102	32	109	38	211	70		132	115	104	59	236	174
10:45		120	46	97	36	217	82		128	64	115	34	243	98
11:00		136	55	91	31	227	86		132	35	113	30	245	65
11:15		142	17	103	24	245	41		130	27	103	33	233	60
11:30		125	12	109	14	234	26		130	17	112	17	242	34
11:45		135	14	104	12	239	26		155	13	107	23	262	36
Total		2822	4663	2425	4509	5247	9172		2949	4948	2332	5232	5281	10180
Day Total		7485		6934		14419			7897		7564		15461	
% Total		19.6%	32.3%	16.8%	31.3%				19.1%	32.0%	15.1%	33.8%		
Peak		11:00	03:15	08:00	03:30	11:00	03:30		11:00	02:15	10:45	03:15	11:00	03:30
Vol.		538	606	432	537	945	1143		547	589	443	602	982	1182
P.H.F.		0.947	0.997	0.893	0.872	0.964	0.934		0.882	0.926	0.963	0.941	0.937	0.978



Location: Route 20 (Main Street)
 Location: South of School Street
 Location: Lee, Massachusetts
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Start Time	25-Aug-18 Sat	Southbound		Northbound		Combined		26-Aug-Sun	Southbound		Northbound		Combined	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00		7	120	24	134	31	254		0	*	0	*	0	*
12:15		16	147	14	130	30	277		*	*	*	*	*	*
12:30		7	129	19	117	26	246		*	*	*	*	*	*
12:45		9	141	17	119	26	260		*	*	*	*	*	*
01:00		9	137	15	132	24	269		*	*	*	*	*	*
01:15		4	136	13	99	17	235		*	*	*	*	*	*
01:30		6	133	8	100	14	233		*	*	*	*	*	*
01:45		3	117	10	141	13	258		*	*	*	*	*	*
02:00		7	127	11	111	18	238		*	*	*	*	*	*
02:15		6	119	11	139	17	258		*	*	*	*	*	*
02:30		3	128	8	135	11	263		*	*	*	*	*	*
02:45		4	119	8	123	12	242		*	*	*	*	*	*
03:00		4	125	8	147	12	272		*	*	*	*	*	*
03:15		5	140	4	130	9	270		*	*	*	*	*	*
03:30		5	125	6	128	11	253		*	*	*	*	*	*
03:45		4	114	3	145	7	259		*	*	*	*	*	*
04:00		6	124	5	135	11	259		*	*	*	*	*	*
04:15		1	107	2	184	3	291		*	*	*	*	*	*
04:30		8	98	4	154	12	252		*	*	*	*	*	*
04:45		11	118	1	164	12	282		*	*	*	*	*	*
05:00		16	115	7	169	23	284		*	*	*	*	*	*
05:15		11	123	10	148	21	271		*	*	*	*	*	*
05:30		20	93	13	158	33	251		*	*	*	*	*	*
05:45		28	100	22	142	50	242		*	*	*	*	*	*
06:00		22	100	27	146	49	246		*	*	*	*	*	*
06:15		35	85	30	112	65	197		*	*	*	*	*	*
06:30		36	68	33	119	69	187		*	*	*	*	*	*
06:45		59	86	33	107	92	193		*	*	*	*	*	*
07:00		34	68	38	100	72	168		*	*	*	*	*	*
07:15		54	72	35	104	89	176		*	*	*	*	*	*
07:30		55	90	50	96	105	186		*	*	*	*	*	*
07:45		82	89	39	91	121	180		*	*	*	*	*	*
08:00		85	75	56	68	141	143		*	*	*	*	*	*
08:15		93	74	77	71	170	145		*	*	*	*	*	*
08:30		93	62	70	68	163	130		*	*	*	*	*	*
08:45		121	69	89	68	210	137		*	*	*	*	*	*
09:00		85	53	103	72	188	125		*	*	*	*	*	*
09:15		104	60	120	58	224	118		*	*	*	*	*	*
09:30		102	77	106	64	208	141		*	*	*	*	*	*
09:45		141	91	123	56	264	147		*	*	*	*	*	*
10:00		127	60	122	41	249	101		*	*	*	*	*	*
10:15		144	47	125	46	269	93		*	*	*	*	*	*
10:30		138	54	112	37	250	91		*	*	*	*	*	*
10:45		137	126	115	31	252	157		*	*	*	*	*	*
11:00		128	48	117	24	245	72		*	*	*	*	*	*
11:15		142	128	117	32	259	160		*	*	*	*	*	*
11:30		125	160	123	26	248	186		*	*	*	*	*	*
11:45		125	174	131	20	256	194		*	*	*	*	*	*
Total		2467	4951	2234	4941	4701	9892		0	0	0	0	0	0
Day Total		7418		7175		14593			0	0	0	0	0	0
% Total		16.9%	33.9%	15.3%	33.9%				0.0%	0.0%	0.0%	0.0%		
Peak		09:45	00:15	11:00	04:15	09:45	04:15							
Vol.		550	554	488	671	1032	1109							
P.H.F.		0.955	0.942	0.931	0.912	0.959	0.953							
ADT		ADT 14,817		AADT 14,817										

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Southbound		1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th	95th
Start	Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999		Percent	Percent
08/23/18	0	3	7	11	1	9	1	0	0	0	0	0	0	0	0	31	32	34
01:00	1	1	4	7	4	4	1	0	0	0	0	0	0	0	0	18	32	34
02:00	0	2	7	3	3	3	0	0	0	0	0	0	0	0	0	15	30	32
03:00	0	3	3	6	1	1	1	0	0	0	0	0	0	0	0	14	28	30
04:00	1	6	17	16	11	11	1	0	0	0	0	0	0	0	0	52	31	34
05:00	1	8	24	72	29	29	5	0	0	0	0	0	0	0	0	139	32	35
06:00	6	27	84	133	42	42	7	0	0	0	0	0	0	0	0	299	30	34
07:00	5	21	119	144	47	47	5	0	0	0	0	0	0	0	0	341	30	33
08:00	11	60	231	117	18	18	1	0	0	0	0	0	0	0	0	438	27	30
09:00	14	90	217	127	18	18	0	0	0	0	0	0	0	0	0	466	27	30
10:00	22	93	255	87	14	14	0	0	0	0	0	0	0	0	0	471	26	29
11:00	21	155	231	116	15	15	0	0	0	0	0	0	0	0	0	538	26	29
12 PM	53	228	214	65	4	4	0	0	0	0	0	0	0	0	0	564	24	27
13:00	31	172	234	71	10	10	0	0	0	0	0	0	0	0	0	518	25	28
14:00	48	192	222	68	3	3	0	0	0	0	0	0	0	0	0	533	24	27
15:00	19	110	303	136	18	18	2	0	0	0	0	0	0	0	0	588	27	30
16:00	32	121	276	131	19	19	0	0	0	0	0	0	0	0	0	579	26	29
17:00	6	97	290	123	14	14	0	0	0	0	0	0	0	0	0	530	27	29
18:00	14	85	194	78	9	9	1	0	0	0	0	0	0	0	0	381	26	29
19:00	30	82	138	51	3	3	2	0	0	0	0	0	0	0	0	306	25	28
20:00	5	46	126	46	9	9	0	0	0	0	0	0	0	0	0	232	26	30
21:00	3	22	85	73	14	14	0	1	0	0	0	0	0	0	0	198	29	31
22:00	2	10	46	58	17	17	1	2	0	0	0	0	0	0	0	136	30	33
23:00	0	14	27	40	14	14	1	2	0	0	0	0	0	0	0	98	30	33
Total	325	1648	3354	1779	345	345	29	5	0	0	0	0	0	0	0	7485		
Percent	4.3%	22.0%	44.8%	23.8%	4.6%	4.6%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	10:00	11:00	10:00	07:00	07:00	07:00	06:00									11:00		
Vol.	22	155	255	144	47	47	7									538		
PM Peak	12:00	12:00	15:00	15:00	16:00	16:00	15:00	22:00								15:00		
Vol.	53	228	303	136	19	19	2	2								588		

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Southbound		1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th	95th
Start	Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999		Percent	Percent
08/24/18	0	1	20	12	5	1	0	0	0	0	0	0	0	0	0	35	28	30
01:00	0	2	8	8	5	0	0	0	0	0	0	0	0	0	0	23	31	33
02:00	0	1	9	11	4	1	1	0	1	0	0	0	0	0	0	27	31	33
03:00	1	2	7	5	6	0	0	0	0	0	0	0	0	0	0	21	32	34
04:00	2	4	14	24	14	2	2	0	1	0	0	0	0	0	0	61	32	34
05:00	2	9	22	53	31	3	3	1	0	0	0	0	0	0	0	121	32	35
06:00	4	26	66	106	34	4	4	1	0	0	0	0	0	0	0	241	30	34
07:00	16	78	171	92	16	16	1	0	0	0	0	0	0	0	0	374	27	30
08:00	5	50	198	168	31	17	1	0	0	0	0	0	0	0	0	453	28	31
09:00	23	137	250	126	7	7	1	0	0	0	0	0	0	0	0	544	26	29
10:00	19	108	283	75	17	17	0	0	0	0	0	0	0	0	0	502	25	29
11:00	42	232	228	43	2	2	0	0	0	0	0	0	0	0	0	547	23	26
12 PM	65	245	191	25	1	1	0	0	0	0	0	0	0	0	0	527	22	25
13:00	50	235	197	46	3	3	0	0	0	0	0	0	0	0	0	531	23	26
14:00	51	163	277	64	9	9	0	0	0	0	0	0	0	0	0	564	24	27
15:00	23	154	310	73	5	5	0	0	0	0	0	0	0	0	0	565	25	28
16:00	22	142	288	117	11	11	1	0	0	0	0	0	0	0	0	581	26	29
17:00	17	145	268	105	8	8	0	0	0	0	0	0	0	0	0	543	26	29
18:00	15	110	201	59	2	2	0	0	0	0	0	0	0	0	0	387	25	28
19:00	16	140	153	28	1	1	0	0	0	0	0	0	0	0	0	338	24	26
20:00	17	121	117	20	1	1	0	0	0	0	0	0	0	0	0	276	23	26
21:00	8	32	121	28	2	2	0	0	0	0	0	0	0	0	0	191	25	28
22:00	10	79	179	79	6	6	0	0	0	0	0	0	0	0	0	353	26	29
23:00	0	14	29	36	10	10	3	0	0	0	0	0	0	0	0	92	30	33
Total	408	2230	3607	1403	227	227	17	3	2	0	0	0	0	0	0	7897		
Percent	5.2%	28.2%	45.7%	17.8%	2.9%	2.9%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	11:00	10:00	08:00	06:00	06:00	06:00	00:00	02:00							11:00		
Vol.	42	232	283	168	34	34	4	1	1							547		
PM Peak	12:00	12:00	15:00	16:00	16:00	16:00	23:00									16:00		
Vol.	65	245	310	117	11	11	3									581		

Innovative Data, LLC

Location: Route 20 (Main Street)
Location: South of School Street
Location: Lee, Massachusetts
Client: VHB / J. Locke

PO Box 468
Belchertown, Massachusetts
Innovativedata LLC or 1.413.668.5094

Southbound		1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999				
08/25/18	2	7	11	16	2	1	0	0	0	0	0	0	0	0	0	39	28	30
01:00	1	1	7	7	5	1	0	0	0	0	0	0	0	0	0	22	32	34
02:00	0	2	8	9	1	0	0	0	0	0	0	0	0	0	0	20	28	30
03:00	0	1	8	5	4	0	0	0	0	0	0	0	0	0	0	18	31	33
04:00	1	2	8	13	2	0	0	0	0	0	0	0	0	0	0	26	29	30
05:00	0	3	17	40	14	1	0	0	0	0	0	0	0	0	0	75	31	34
06:00	1	10	38	68	32	1	1	0	0	0	0	0	0	0	0	152	31	34
07:00	1	18	83	95	28	0	0	0	0	0	0	0	0	0	0	225	30	32
08:00	5	49	152	157	27	2	0	0	0	0	0	0	0	0	0	392	29	31
09:00	17	83	197	111	24	0	0	0	0	0	0	0	0	0	0	432	27	30
10:00	38	185	239	76	8	0	0	0	0	0	0	0	0	0	0	546	25	28
11:00	24	172	258	57	9	0	0	0	0	0	0	0	0	0	0	520	24	28
12 PM	38	234	218	43	4	0	0	0	0	0	0	0	0	0	0	537	23	26
13:00	57	198	215	51	2	0	0	0	0	0	0	0	0	0	0	523	23	26
14:00	24	133	249	74	13	0	0	0	0	0	0	0	0	0	0	493	25	28
15:00	13	112	266	102	11	0	0	0	0	0	0	0	0	0	0	504	26	29
16:00	20	119	212	88	7	1	0	0	0	0	0	0	0	0	0	447	26	29
17:00	17	108	218	78	9	1	0	0	0	0	0	0	0	0	0	431	26	29
18:00	16	90	167	57	9	0	0	0	0	0	0	0	0	0	0	339	25	29
19:00	17	76	159	60	7	0	0	0	0	0	0	0	0	0	0	319	26	29
20:00	13	79	139	44	4	1	0	0	0	0	0	0	0	0	0	280	25	28
21:00	10	59	168	41	3	0	0	0	0	0	0	0	0	0	0	281	25	28
22:00	14	47	135	85	6	0	0	0	0	0	0	0	0	0	0	287	27	29
23:00	7	74	230	174	24	1	0	0	0	0	0	0	0	0	0	510	28	30
Total	336	1862	3402	1551	255	10	1	1	0	0	0	0	0	0	0	7418		
Percent	4.5%	25.1%	45.9%	20.9%	3.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	10:00	10:00	11:00	08:00	06:00	08:00	06:00	06:00	06:00							10:00		
Vol.	38	185	258	157	32	2	1	1								546		
PM Peak	13:00	12:00	15:00	23:00	23:00	16:00										12:00		
Vol.	57	234	266	174	24	1										537		
Total	1069	5740	10363	4733	827	56	9	3	0	0	0	0	0	0	0	22800		
Percent	4.7%	25.2%	45.5%	20.8%	3.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

Stats	10 MPH Pace Speed :	18-27 MPH
	Number in Pace :	13495
	Percent in Pace :	59.2%
	Number of Vehicles > 40 MPH :	15
	Percent of Vehicles > 40 MPH :	0.1%
	Mean Speed(Average) :	21 MPH

Innovative Data, LLC

Location: Route 20 (Main Street)
Location: South of School Street
Location: Lee, Massachusetts
Client: VHB / J. Locke

PO Box 468
Belchertown, Massachusetts
Innovatedata LLC or 1.413.668.5094

Northbound		1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999				
08/23/18	0	0	14	19	5	1	0	0	0	0	0	0	0	0	0	39	31	34
01:00	0	2	12	5	4	0	0	0	0	0	0	0	0	0	0	23	30	32
02:00	0	0	8	5	4	0	0	0	0	0	0	0	0	0	0	17	31	33
03:00	0	3	12	5	2	0	0	0	0	0	0	0	0	0	0	22	28	30
04:00	0	3	11	13	0	1	0	0	0	0	0	0	0	0	0	28	28	29
05:00	1	6	29	37	10	0	0	0	0	0	0	0	0	0	0	83	30	32
06:00	7	38	92	95	22	1	0	0	0	0	0	0	0	0	0	255	29	31
07:00	10	38	151	105	18	1	0	0	0	0	0	0	0	0	0	323	28	31
08:00	31	82	212	102	5	0	0	0	0	0	0	0	0	0	0	432	26	29
09:00	27	77	209	84	6	0	0	0	0	0	0	0	0	0	0	403	26	29
10:00	23	110	190	66	4	0	0	0	0	0	0	0	0	0	0	393	25	28
11:00	30	120	210	45	2	0	0	0	0	0	0	0	0	0	0	407	24	27
12 PM	17	207	184	34	0	0	0	0	0	0	0	0	0	0	0	442	23	26
13:00	46	192	200	39	4	0	0	0	0	0	0	0	0	0	0	481	23	26
14:00	31	211	189	31	2	0	0	0	0	0	0	0	0	0	0	464	23	26
15:00	17	103	265	98	7	0	0	0	0	0	0	0	0	0	0	490	26	29
16:00	27	160	235	97	7	0	0	0	0	0	0	0	0	0	0	526	25	28
17:00	31	141	269	73	6	1	0	0	0	0	0	0	0	0	0	521	25	28
18:00	35	113	209	29	6	0	0	0	0	0	0	0	0	0	0	392	24	27
19:00	38	135	171	45	2	0	0	0	0	0	0	0	0	0	0	391	24	27
20:00	19	87	142	31	3	0	0	0	0	0	0	0	0	0	0	282	24	27
21:00	8	59	129	49	5	0	0	0	0	0	0	0	0	0	0	250	26	29
22:00	1	27	102	56	3	0	0	0	0	0	0	0	0	0	0	189	27	29
23:00	1	7	47	24	2	0	0	0	0	0	0	0	0	0	0	81	27	29
Total	400	1921	3292	1187	129	5	0	0	0	0	0	0	0	0	0	6934		
Percent	5.8%	27.7%	47.5%	17.1%	1.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	11:00	08:00	07:00	06:00	00:00										08:00		
Vol.	31	120	212	105	22	1										432		
PM Peak	13:00	14:00	17:00	15:00	15:00	17:00										16:00		
Vol.	46	211	269	98	7	1										526		

Innovative Data, LLC

Location: Route 20 (Main Street)
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PO Box 468
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Northbound																			
Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent		
	15	20	25	30	35	40	45	50	55	60	65	70	75	999					
08/24/18	2	4	32	14	3	1	0	0	0	0	0	0	0	0	56	27	30		
01:00	1	0	11	4	3	0	0	0	0	0	0	0	0	0	19	30	32		
02:00	1	2	9	9	3	0	1	0	0	0	0	0	0	0	25	29	31		
03:00	0	1	7	7	1	0	0	0	0	0	0	0	0	0	16	29	30		
04:00	0	3	12	11	1	0	0	0	0	0	0	0	0	0	27	28	30		
05:00	1	14	46	31	4	2	0	0	0	0	0	0	0	0	98	28	31		
06:00	4	31	94	95	12	0	0	0	0	0	0	0	0	0	236	28	30		
07:00	15	64	139	65	16	0	0	0	0	0	0	0	0	0	299	27	30		
08:00	7	46	164	100	14	0	0	0	0	0	0	0	0	0	331	28	30		
09:00	43	89	183	74	3	0	0	0	0	0	0	0	0	0	392	25	28		
10:00	21	103	195	74	5	0	0	0	0	0	0	0	0	0	398	26	29		
11:00	48	166	182	38	1	0	0	0	0	0	0	0	0	0	435	23	26		
12 PM	62	241	178	23	1	0	0	0	0	0	0	0	0	0	505	22	25		
13:00	45	262	158	26	0	0	0	0	0	0	0	0	0	0	491	22	25		
14:00	26	152	269	59	4	0	0	0	0	0	0	0	0	0	510	24	27		
15:00	32	169	312	78	1	0	0	0	0	0	0	0	0	0	592	25	27		
16:00	31	143	297	102	5	0	0	0	0	0	0	0	0	0	578	25	28		
17:00	31	166	282	70	2	0	0	0	0	0	0	0	0	0	551	24	27		
18:00	40	160	251	52	5	0	0	0	0	0	0	0	0	0	508	24	27		
19:00	76	185	138	25	2	0	0	0	0	0	0	0	0	0	426	22	25		
20:00	44	212	112	10	1	0	0	0	0	0	0	0	0	0	379	21	24		
21:00	14	116	198	27	0	0	0	0	0	0	0	0	0	0	355	24	26		
22:00	6	63	121	39	5	0	0	0	0	0	0	0	0	0	234	25	29		
23:00	2	14	49	33	5	0	0	0	0	0	0	0	0	0	103	28	30		
Total	552	2406	3439	1066	97	3	1	0	0	0	0	0	0	0	7564				
Percent	7.3%	31.8%	45.5%	14.1%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%					
AM Peak	11:00	11:00	10:00	08:00	07:00	05:00	02:00								11:00				
Vol.	48	166	195	100	16	2	1								435				
PM Peak	19:00	13:00	15:00	16:00	16:00										15:00				
Vol.	76	262	312	102	5										592				

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Location: Route 20 (Main Street)
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Northbound		1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th	95th
Start	Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999		Percent	Percent
08/25/18	0	6	43	22	22	3	0	0	0	0	0	0	0	0	0	74	27	30
01:00	1	3	18	22	2	2	0	0	0	0	0	0	0	0	0	46	28	30
02:00	0	3	13	17	4	4	1	0	0	0	0	0	0	0	0	38	30	33
03:00	1	0	11	6	3	3	0	0	0	0	0	0	0	0	0	21	30	32
04:00	0	2	4	6	0	0	0	0	0	0	0	0	0	0	0	12	28	29
05:00	3	5	22	17	2	2	3	0	0	0	0	0	0	0	0	52	28	31
06:00	4	8	39	59	13	13	0	0	0	0	0	0	0	0	0	123	29	32
07:00	2	19	68	60	11	11	1	0	1	0	0	0	0	0	0	162	29	31
08:00	10	38	136	90	18	18	0	0	0	0	0	0	0	0	0	292	28	31
09:00	34	106	204	96	12	12	0	0	0	0	0	0	0	0	0	452	26	29
10:00	48	171	205	49	1	1	0	0	0	0	0	0	0	0	0	474	24	27
11:00	39	202	226	19	2	2	0	0	0	0	0	0	0	0	0	488	23	25
12 PM	36	206	230	27	1	1	0	0	0	0	0	0	0	0	0	500	23	25
13:00	35	190	223	23	1	1	0	0	0	0	0	0	0	0	0	472	23	25
14:00	33	157	247	67	4	4	0	0	0	0	0	0	0	0	0	508	25	28
15:00	32	164	270	81	3	3	0	0	0	0	0	0	0	0	0	550	25	28
16:00	35	210	306	83	3	3	0	0	0	0	0	0	0	0	0	637	24	27
17:00	50	250	253	63	1	1	0	0	0	0	0	0	0	0	0	617	24	26
18:00	21	161	240	58	4	4	0	0	0	0	0	0	0	0	0	484	24	27
19:00	14	70	233	65	8	8	0	1	0	0	0	0	0	0	0	391	26	29
20:00	24	90	141	20	0	0	0	0	0	0	0	0	0	0	0	275	24	26
21:00	8	98	121	20	3	3	0	0	0	0	0	0	0	0	0	250	24	26
22:00	1	19	96	38	1	1	0	0	0	0	0	0	0	0	0	155	26	29
23:00	2	13	48	35	4	4	0	0	0	0	0	0	0	0	0	102	28	30
Total	433	2191	3397	1043	104	104	5	1	1	0	0	0	0	0	0	7175		
Percent	6.0%	30.5%	47.3%	14.5%	1.4%	1.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	10:00	11:00	11:00	09:00	08:00	05:00			07:00							11:00		
Vol.	48	202	226	96	18	18	3		1							488		
PM Peak	17:00	17:00	16:00	16:00	19:00	19:00		19:00								16:00		
Vol.	50	250	306	83	8	8		1								637		
Total	1385	6518	10128	3296	330	330	13	2	1	0	0	0	0	0	0	21673		
Percent	6.4%	30.1%	46.7%	15.2%	1.5%	1.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

Stats	10 MPH Pace Speed :	17-26 MPH
	Number in Pace :	13005
	Percent in Pace :	60.0%
	Number of Vehicles > 40 MPH :	4
	Percent of Vehicles > 40 MPH :	0.0%
	Mean Speed(Average) :	20 MPH

Location: Route 20 (Main Street)
Location: South of School Street
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Belchertown, Massachusetts

Innovatedata LLC or 1.413.668.5094

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Innovative Data, LLC

Location: Route 20 (Main Street)
Location: South of School Street
Location: Lee, Massachusetts
Client: VHB / J. Locke

PO Box 468
Belchertown, Massachusetts
Innovativedata LLC or 1.413.668.5094

Southbound, Northbound																																
Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total		85th		Percent		95th		Percent									
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999																		
08/24/18	2	5	52	26	4	1	1	0	0	0	0	0	0	0	91	0	28	31	28	31	31	31	28	31	31	31	31	31				
01:00	1	2	19	12	8	0	0	0	0	0	0	0	0	0	42	0	42	31	42	31	34	34	42	31	34	34	34	34				
02:00	1	3	18	20	7	1	1	1	0	0	0	0	0	0	52	0	30	30	52	30	33	33	52	30	33	33	33	33				
03:00	1	3	14	12	7	0	0	0	0	0	0	0	0	0	37	0	37	31	37	31	34	34	37	31	34	34	34	34				
04:00	2	7	26	35	15	2	0	1	0	0	0	0	0	0	88	0	31	31	88	31	33	33	88	31	33	33	33	33				
05:00	3	23	68	84	35	5	1	0	0	0	0	0	0	0	219	0	30	30	219	30	34	34	219	30	34	34	34	34				
06:00	8	57	160	201	46	4	1	0	0	0	0	0	0	0	673	0	29	29	673	29	32	32	673	29	32	32	32	32				
07:00	31	142	310	157	32	1	0	0	0	0	0	0	0	0	936	0	28	28	936	28	31	31	936	28	31	31	31	31				
08:00	12	96	362	268	45	1	0	0	0	0	0	0	0	0	900	0	25	25	900	25	29	29	900	25	29	29	29	29				
09:00	66	226	433	200	10	1	0	0	0	0	0	0	0	0	982	0	23	23	982	23	26	26	982	23	26	26	26	26				
10:00	40	211	478	149	22	0	0	0	0	0	0	0	0	0	1032	0	23	23	1032	23	26	26	1032	23	26	26	26	26				
11:00	90	398	410	81	3	0	0	0	0	0	0	0	0	0	1074	0	25	25	1074	25	27	27	1074	25	27	27	27	27				
12 PM	127	486	369	48	2	0	0	0	0	0	0	0	0	0	1159	0	26	26	1159	26	29	29	1159	26	29	29	29	29				
13:00	95	497	355	72	3	0	0	0	0	0	0	0	0	0	1094	0	25	25	1094	25	28	28	1094	25	28	28	28	28				
14:00	77	315	546	123	13	0	0	0	0	0	0	0	0	0	895	0	24	24	895	24	27	27	895	24	27	27	27	27				
15:00	55	323	622	151	6	0	0	0	0	0	0	0	0	0	764	0	23	23	764	23	26	26	764	23	26	26	26	26				
16:00	53	285	585	219	16	1	0	0	0	0	0	0	0	0	655	0	22	22	655	22	25	25	655	22	25	25	25	25				
17:00	48	311	550	175	10	0	0	0	0	0	0	0	0	0	546	0	24	24	546	24	27	27	546	24	27	27	27	27				
18:00	55	270	452	111	7	0	0	0	0	0	0	0	0	0	587	0	26	26	587	26	29	29	587	26	29	29	29	29				
19:00	92	325	291	53	3	0	0	0	0	0	0	0	0	0	195	0	29	29	195	29	32	32	195	29	32	32	32	32				
20:00	61	333	229	30	2	0	0	0	0	0	0	0	0	0	15461	0	0	0	15461	0	0	0	15461	0	0	0	0	0				
21:00	22	148	319	55	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
22:00	16	142	300	118	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
23:00	2	28	78	69	15	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Total	960	4636	7046	2469	324	20	4	2	0	0	0	0	0	0	15461	0	0	0	15461	0	0	0	15461	0	0	0	0	0				
Percent	6.2%	30.0%	45.6%	16.0%	2.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%																		
AM Peak	11:00	11:00	10:00	08:00	06:00	05:00	00:00	02:00																								
Vol.	90	398	478	268	46	5	1	1																								
PM Peak	12:00	13:00	15:00	16:00	16:00	23:00																										
Vol.	127	497	622	219	16	3																										

Innovative Data, LLC

Location: Route 20 (Main Street)
Location: South of School Street
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PO Box 468
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Southbound, Northbound																	
Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th	95th
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999		Percent	Percent
08/25/18	2	13	54	38	5	1	0	0	0	0	0	0	0	0	113	28	30
01:00	2	4	25	29	7	1	0	0	0	0	0	0	0	0	68	29	32
02:00	0	5	21	26	5	1	0	0	0	0	0	0	0	0	58	29	32
03:00	1	1	19	11	7	0	0	0	0	0	0	0	0	0	39	31	34
04:00	1	4	12	19	2	0	0	0	0	0	0	0	0	0	38	28	30
05:00	3	8	39	57	16	4	0	0	0	0	0	0	0	0	127	30	34
06:00	5	18	77	127	45	1	1	1	0	0	0	0	0	0	275	30	33
07:00	3	37	151	155	39	1	0	1	0	0	0	0	0	0	387	29	32
08:00	15	87	288	247	45	2	0	0	0	0	0	0	0	0	684	28	31
09:00	51	189	401	207	36	0	0	0	0	0	0	0	0	0	884	27	30
10:00	86	356	444	125	9	0	0	0	0	0	0	0	0	0	1020	24	27
11:00	63	374	484	76	11	0	0	0	0	0	0	0	0	0	1008	24	26
12 PM	74	440	448	70	5	0	0	0	0	0	0	0	0	0	1037	23	26
13:00	92	388	438	74	3	0	0	0	0	0	0	0	0	0	995	23	26
14:00	57	290	496	141	17	0	0	0	0	0	0	0	0	0	1001	25	28
15:00	45	276	536	183	14	0	0	0	0	0	0	0	0	0	1054	25	28
16:00	55	329	518	171	10	1	0	0	0	0	0	0	0	0	1084	25	28
17:00	67	358	471	141	10	1	0	0	0	0	0	0	0	0	1048	24	28
18:00	37	251	407	115	13	0	0	0	0	0	0	0	0	0	823	25	28
19:00	31	146	392	125	15	0	1	0	0	0	0	0	0	0	710	26	29
20:00	37	169	280	64	4	1	0	0	0	0	0	0	0	0	555	24	27
21:00	18	157	289	61	6	0	0	0	0	0	0	0	0	0	531	25	28
22:00	15	66	231	123	7	0	0	0	0	0	0	0	0	0	442	27	29
23:00	9	87	278	209	28	1	0	0	0	0	0	0	0	0	612	28	30
Total	769	4053	6799	2594	359	15	2	2	0	0	0	0	0	0	14593		
Percent	5.3%	27.8%	46.6%	17.8%	2.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	10:00	11:00	11:00	08:00	06:00	05:00	06:00	06:00							10:00		
Vol.	86	374	484	247	45	4	1	1							1020		
PM Peak	13:00	12:00	15:00	23:00	23:00	16:00	19:00								16:00		
Vol.	92	440	536	209	28	1	1								1084		
Total	2454	12258	20491	8029	1157	69	11	4	0	0	0	0	0	0	44473		
Percent	5.5%	27.6%	46.1%	18.1%	2.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
15th Percentile : 13 MPH																	
50th Percentile : 20 MPH																	
85th Percentile : 26 MPH																	
95th Percentile : 29 MPH																	

Stats	10 MPH Pace Speed :	17-26 MPH
Number in Pace :	26404	
Percent in Pace :	59.4%	
Number of Vehicles > 40 MPH :	19	
Percent of Vehicles > 40 MPH :	0.0%	
Mean Speed(Average) :	20 MPH	

Innovative Data, LLC

Location: Route 20 (Main Street)
Location: South of School Street
Location: Lee, Massachusetts
Client: VHB / J. Locke

PO Box 468
Belchertown, Massachusetts
Innovatedata LLC or 1.413.668.5094

Southbound															
Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
08/23/18	0	22	3	1	1	0	0	0	4	0	0	0	0	0	31
01:00	0	9	3	0	3	0	0	1	2	0	0	0	0	0	18
02:00	0	7	3	1	4	0	0	0	0	0	0	0	0	0	15
03:00	1	7	1	1	1	1	0	0	2	0	0	0	0	0	14
04:00	1	26	12	2	6	2	0	1	2	0	0	0	0	0	52
05:00	0	67	30	3	33	2	0	0	4	0	0	0	0	0	139
06:00	2	149	59	5	68	3	0	3	7	3	0	0	0	0	299
07:00	8	221	57	4	40	5	0	1	5	0	0	0	0	0	341
08:00	4	335	54	5	32	4	0	1	2	0	0	0	0	1	438
09:00	4	323	74	9	35	3	0	3	11	2	1	0	0	1	466
10:00	15	353	54	8	19	6	0	5	9	1	0	0	0	1	471
11:00	8	395	68	4	37	12	0	4	6	0	0	0	1	3	538
12 PM	16	430	83	6	18	3	0	3	5	0	0	0	0	0	564
13:00	9	376	71	4	35	12	0	6	3	0	0	0	0	2	518
14:00	16	385	69	4	31	11	1	7	5	3	0	0	0	1	533
15:00	5	449	88	2	26	7	1	4	6	0	0	0	0	0	588
16:00	11	428	74	5	34	8	0	9	7	0	0	0	0	3	579
17:00	8	417	59	1	31	8	0	4	0	0	0	0	0	2	530
18:00	5	295	53	0	17	6	0	3	2	0	0	0	0	0	381
19:00	5	247	34	2	13	3	0	2	0	0	0	0	0	0	306
20:00	1	182	38	1	7	1	0	1	1	0	0	0	0	0	232
21:00	1	150	31	1	9	1	0	0	3	0	0	1	0	1	198
22:00	0	103	18	2	11	0	0	0	2	0	0	0	0	0	136
23:00	3	75	12	2	5	0	0	0	0	1	0	0	0	0	98
Total	123	5451	1048	73	516	98	2	58	88	10	1	1	1	15	7485
Percent	1.6%	72.8%	14.0%	1.0%	6.9%	1.3%	0.0%	0.8%	1.2%	0.1%	0.0%	0.0%	0.0%	0.2%	
AM Peak	10:00	11:00	09:00	09:00	06:00	11:00		10:00	09:00	06:00	09:00		11:00	11:00	
Vol.	15	395	74	9	68	12		5	11	3	1		1	3	
PM Peak	12:00	15:00	15:00	12:00	13:00	13:00	14:00	16:00	16:00	14:00		21:00		16:00	
Vol.	16	449	88	6	35	12	1	9	7	3		1		3	

Innovative Data, LLC

Location: Route 20 (Main Street)
Location: South of School Street
Location: Lee, Massachusetts
Client: VHB / J. Locke

PO Box 468
Belchertown, Massachusetts
Innovatedata LLC or 1.413.668.5094

Southbound															
Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
08/24/18	0	21	5	1	0	0	0	1	7	0	0	0	0	0	35
01:00	0	13	0	1	5	0	0	0	4	0	0	0	0	0	23
02:00	2	13	2	1	3	3	0	1	2	0	0	0	0	0	27
03:00	3	10	2	1	2	1	0	0	2	0	0	0	0	0	21
04:00	3	22	20	0	13	2	0	1	0	0	0	0	0	0	61
05:00	2	56	25	2	30	0	0	0	4	2	0	0	0	0	121
06:00	2	147	45	1	42	2	0	0	1	0	0	1	0	0	241
07:00	6	240	68	8	30	7	2	2	9	1	0	0	0	1	374
08:00	6	303	80	6	39	10	1	2	4	1	0	0	0	1	453
09:00	8	365	95	9	53	3	0	3	6	0	0	0	0	2	544
10:00	9	378	71	4	22	9	1	2	4	0	0	0	0	2	502
11:00	8	426	66	4	23	12	1	1	5	0	0	0	0	1	547
12 PM	10	394	69	7	26	11	0	4	3	0	0	0	0	3	527
13:00	13	376	78	9	28	13	1	1	9	0	0	0	0	3	531
14:00	5	416	80	2	33	12	0	7	6	1	0	0	0	2	564
15:00	7	444	79	5	21	3	0	2	3	0	0	0	0	1	565
16:00	14	435	84	4	29	7	1	1	3	0	0	0	0	3	581
17:00	6	442	56	0	30	6	0	0	2	0	0	0	0	1	543
18:00	7	317	44	1	10	4	0	0	3	0	0	0	0	1	387
19:00	1	279	39	1	10	4	0	1	1	0	0	0	0	2	338
20:00	4	206	41	0	15	5	0	2	3	0	0	0	0	0	276
21:00	2	152	27	0	4	2	0	2	1	0	0	1	0	0	191
22:00	1	301	42	0	6	2	0	0	1	0	0	0	0	0	353
23:00	3	62	17	1	6	1	0	1	1	0	0	0	0	0	92
Total	122	5818	1135	68	480	119	7	34	84	5	0	2	0	23	7897
Percent	1.5%	73.7%	14.4%	0.9%	6.1%	1.5%	0.1%	0.4%	1.1%	0.1%	0.0%	0.0%	0.0%	0.3%	
AM Peak	10:00	11:00	09:00	09:00	09:00	11:00	07:00	09:00	07:00	05:00		06:00		09:00	
Vol.	9	426	95	9	53	12	2	3	9	2		1		2	
PM Peak	16:00	15:00	16:00	13:00	14:00	13:00	13:00	14:00	13:00	14:00		21:00		12:00	
Vol.	14	444	84	9	33	13	1	7	9	1		1		3	

Innovative Data, LLC

Location: Route 20 (Main Street)
Location: South of School Street
Location: Lee, Massachusetts
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PO Box 468
Belchertown, Massachusetts
Innovatedata LLC or 1.413.668.5094

Southbound															
Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
08/25/18	2	31	3	1	1	0	0	0	1	0	0	0	0	0	39
01:00	0	17	1	0	3	0	0	0	1	0	0	0	0	0	22
02:00	0	15	1	1	0	0	0	2	0	1	0	0	0	0	20
03:00	1	10	1	1	1	2	0	1	1	0	0	0	0	0	18
04:00	0	16	5	1	3	1	0	0	0	0	0	0	0	0	26
05:00	1	47	12	0	12	1	0	0	2	0	0	0	0	0	75
06:00	1	86	31	3	23	2	0	2	3	1	0	0	0	0	152
07:00	1	155	46	2	19	2	0	0	0	0	0	0	0	0	225
08:00	5	259	75	5	41	1	0	2	3	0	1	0	0	0	392
09:00	9	319	70	5	21	5	0	0	2	0	0	0	0	1	432
10:00	5	405	93	3	26	3	0	1	3	1	0	0	0	6	546
11:00	7	423	59	1	18	6	0	1	3	0	0	0	0	2	520
12 PM	6	452	60	0	13	2	0	3	1	0	0	0	0	0	537
13:00	5	433	58	0	12	5	0	5	4	0	0	0	0	1	523
14:00	5	382	64	3	25	6	1	0	3	1	0	0	0	3	493
15:00	13	399	61	1	24	4	0	2	0	0	0	0	0	0	504
16:00	8	376	39	2	15	5	0	2	0	0	0	0	0	0	447
17:00	6	346	54	0	18	4	0	2	0	0	0	0	0	1	431
18:00	7	271	38	1	9	6	0	2	4	0	0	0	0	1	339
19:00	5	263	38	0	11	2	0	0	0	0	0	0	0	0	319
20:00	3	231	33	0	9	1	0	0	2	0	0	0	0	1	280
21:00	4	240	25	0	10	0	0	1	1	0	0	0	0	0	281
22:00	3	245	31	0	7	1	0	0	0	0	0	0	0	0	287
23:00	1	468	35	0	4	1	0	1	0	0	0	0	0	0	510
Total	98	5889	933	30	325	60	1	27	34	4	1	0	0	16	7418
Percent	1.3%	79.4%	12.6%	0.4%	4.4%	0.8%	0.0%	0.4%	0.5%	0.1%	0.0%	0.0%	0.0%	0.2%	
AM Peak	09:00	11:00	10:00	08:00	08:00	11:00		02:00	06:00	02:00	08:00			10:00	
Vol.	9	423	93	5	41	6		2	3	1	1			6	
PM Peak	15:00	23:00	14:00	14:00	14:00	14:00	14:00	13:00	13:00	14:00				14:00	
Vol.	13	468	64	3	25	6	1	5	4	1				3	
Grand Total	343	17158	3116	171	1321	277	10	119	206	19	2	3	1	54	22800
Percent	1.5%	75.3%	13.7%	0.8%	5.8%	1.2%	0.0%	0.5%	0.9%	0.1%	0.0%	0.0%	0.0%	0.2%	

Innovative Data, LLC

Location: Route 20 (Main Street)
Location: South of School Street
Location: Lee, Massachusetts
Client: VHB / J. Locke

PO Box 468
Belchertown, Massachusetts
Innovatedata LLC or 1.413.668.5094

Northbound															
Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
08/23/18	0	31	1	4	2	0	0	0	1	0	0	0	0	0	39
01:00	0	20	1	0	0	0	0	1	1	0	0	0	0	0	23
02:00	0	14	0	0	0	0	0	1	1	0	0	0	0	1	17
03:00	0	9	2	4	1	0	1	1	3	1	0	0	0	0	22
04:00	0	13	4	1	3	1	0	1	3	0	1	0	1	0	28
05:00	2	41	20	2	5	3	0	2	6	0	0	1	1	0	83
06:00	1	145	68	6	16	9	0	1	9	0	0	0	0	0	255
07:00	7	219	54	3	17	5	0	3	12	0	0	0	0	3	323
08:00	10	317	59	7	15	13	1	6	2	0	0	0	0	2	432
09:00	6	307	44	7	14	9	0	2	10	1	0	0	0	3	403
10:00	7	305	45	4	9	5	2	3	9	1	1	0	0	2	393
11:00	4	324	52	4	11	2	0	1	7	0	0	0	1	1	407
12 PM	12	354	44	3	11	8	0	0	6	0	0	0	0	4	442
13:00	9	390	51	2	12	5	1	0	3	1	0	0	0	6	481
14:00	7	383	42	1	14	1	0	6	7	0	0	1	0	2	464
15:00	8	396	58	1	16	3	0	2	4	0	0	0	0	2	490
16:00	7	438	59	1	13	1	0	4	3	0	0	0	0	0	526
17:00	7	452	44	5	5	0	0	0	3	1	0	0	1	3	521
18:00	9	332	37	1	7	1	0	0	1	0	0	0	0	4	392
19:00	6	350	33	0	0	1	0	0	0	0	0	0	1	0	391
20:00	3	246	28	3	2	0	0	0	0	0	0	0	0	0	282
21:00	2	223	17	2	2	0	0	1	2	0	0	0	0	1	250
22:00	2	158	24	1	2	1	0	0	1	0	0	0	0	0	189
23:00	1	68	8	0	0	1	0	0	3	0	0	0	0	0	81
Total	110	5535	795	62	177	69	5	36	97	5	2	2	5	34	6934
Percent	1.6%	79.8%	11.5%	0.9%	2.6%	1.0%	0.1%	0.5%	1.4%	0.1%	0.0%	0.0%	0.1%	0.5%	
AM Peak	08:00	11:00	06:00	08:00	07:00	08:00	10:00	08:00	07:00	03:00	04:00	05:00	04:00	07:00	
Vol.	10	324	68	7	17	13	2	6	12	1	1	1	1	3	
PM Peak	12:00	17:00	16:00	17:00	15:00	12:00	13:00	14:00	14:00	13:00		14:00	17:00	13:00	
Vol.	12	452	59	5	16	8	1	6	7	1		1	1	6	

Innovative Data, LLC

Location: Route 20 (Main Street)
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PO Box 468
Belchertown, Massachusetts
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Northbound															
Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
08/24/18	2	34	6	4	2	0	0	3	3	1	0	0	0	1	56
01:00	0	15	2	0	0	0	0	0	1	1	0	0	0	0	19
02:00	0	16	3	0	0	0	0	1	3	0	0	0	0	2	25
03:00	0	12	1	2	0	0	0	0	1	0	0	0	0	0	16
04:00	0	15	2	1	3	1	0	2	2	1	0	0	0	0	27
05:00	1	48	25	5	4	8	2	0	3	0	0	1	0	1	98
06:00	0	118	72	6	18	5	0	5	10	1	0	0	1	0	236
07:00	5	188	58	4	20	8	1	2	10	1	1	0	0	1	299
08:00	6	239	60	5	8	5	0	2	5	1	0	0	0	0	331
09:00	15	272	72	3	12	10	0	1	5	1	0	0	0	1	392
10:00	7	307	49	5	15	6	0	1	7	0	0	0	0	1	398
11:00	18	346	41	2	10	4	1	3	3	0	0	0	0	7	435
12 PM	15	422	44	1	9	5	1	3	3	0	0	0	0	2	505
13:00	13	419	24	3	11	6	2	3	6	0	0	0	0	4	491
14:00	4	440	51	0	7	4	0	1	2	0	0	0	0	1	510
15:00	10	504	55	2	10	5	0	2	2	1	0	0	0	1	592
16:00	4	501	56	3	6	4	0	2	0	0	0	0	1	1	578
17:00	10	483	45	1	8	1	1	0	2	0	0	0	0	0	551
18:00	9	453	32	0	10	3	0	0	0	0	0	0	0	1	508
19:00	9	367	35	1	5	1	1	1	0	1	0	0	0	5	426
20:00	11	316	38	0	6	3	0	2	0	0	0	0	0	3	379
21:00	4	317	20	0	5	3	2	0	2	0	0	0	0	2	355
22:00	3	210	16	0	1	1	0	1	1	0	0	0	0	1	234
23:00	2	90	6	1	0	1	0	2	0	0	0	0	0	1	103
Total	148	6132	813	49	170	84	11	37	71	9	1	1	2	36	7564
Percent	2.0%	81.1%	10.7%	0.6%	2.2%	1.1%	0.1%	0.5%	0.9%	0.1%	0.0%	0.0%	0.0%	0.5%	
AM Peak Vol.	11:00	11:00	06:00	06:00	07:00	09:00	05:00	06:00	06:00	00:00	07:00	05:00	06:00	11:00	
	18	346	72	6	20	10	2	5	10	1	1	1	1	7	
PM Peak Vol.	12:00	15:00	16:00	13:00	13:00	13:00	13:00	12:00	13:00	15:00			16:00	19:00	
	15	504	56	3	11	6	2	3	6	1			1	5	

Innovative Data, LLC

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Northbound															
Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
08/25/18	2	57	6	4	0	1	0	1	2	1	0	0	0	0	74
01:00	2	38	4	1	0	1	0	0	0	0	0	0	0	0	46
02:00	2	30	3	0	1	0	0	1	1	0	0	0	0	0	38
03:00	0	17	3	1	0	0	0	0	0	0	0	0	0	0	21
04:00	0	10	2	0	0	0	0	0	0	0	0	0	0	0	12
05:00	1	26	14	2	4	0	0	1	4	0	0	0	0	0	52
06:00	2	74	29	2	7	2	0	4	1	0	0	0	0	2	123
07:00	1	117	30	2	3	2	0	2	4	0	0	0	1	0	162
08:00	3	230	41	1	10	0	0	0	4	1	0	0	0	2	292
09:00	8	376	53	0	6	2	0	2	2	0	0	0	0	3	452
10:00	5	409	46	1	9	1	0	0	0	1	0	0	0	2	474
11:00	11	424	37	1	6	1	0	4	0	0	0	0	1	3	488
12 PM	10	446	32	4	2	0	0	2	1	1	0	0	1	1	500
13:00	11	416	34	3	6	0	0	2	0	0	0	0	0	0	472
14:00	5	456	37	1	5	0	0	0	3	0	0	0	0	1	508
15:00	8	496	38	0	6	1	0	0	0	0	0	0	0	1	550
16:00	6	581	39	1	6	0	0	0	1	0	0	0	0	3	637
17:00	4	563	35	2	7	2	0	2	0	0	0	0	0	2	617
18:00	8	452	20	0	2	0	0	0	1	0	0	0	0	1	484
19:00	9	344	32	0	5	0	0	0	1	0	0	0	0	0	391
20:00	6	237	25	1	4	1	0	1	0	0	0	0	0	0	275
21:00	6	220	20	1	0	1	0	2	0	0	0	0	0	0	250
22:00	2	140	11	0	1	0	0	0	1	0	0	0	0	0	155
23:00	0	94	4	1	1	1	0	0	1	0	0	0	0	0	102
Total	112	6253	595	29	91	16	0	24	27	4	0	0	3	21	7175
Percent	1.6%	87.1%	8.3%	0.4%	1.3%	0.2%	0.0%	0.3%	0.4%	0.1%	0.0%	0.0%	0.0%	0.3%	
AM Peak	11:00	11:00	09:00	00:00	08:00	06:00		06:00	05:00	00:00			07:00	09:00	
Vol.	11	424	53	4	10	2		4	4	1			1	3	
PM Peak	13:00	16:00	16:00	12:00	17:00	17:00		12:00	14:00	12:00			12:00	16:00	
Vol.	11	581	39	4	7	2		2	3	1			1	3	
Grand Total	370	17920	2203	140	438	169	16	97	195	18	3	3	10	91	21673
Percent	1.7%	82.7%	10.2%	0.6%	2.0%	0.8%	0.1%	0.4%	0.9%	0.1%	0.0%	0.0%	0.0%	0.4%	

Innovative Data, LLC

PO Box 468
Belchertown, Massachusetts
Innovatedata LLC or 1.413.668.5094

Location: Route 20 (Main Street)
Location: South of School Street
Location: Lee, Massachusetts
Client: VHB / J. Locke

Southbound, Northbound															
Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
08/23/18	0	53	4	5	3	0	0	0	5	0	0	0	0	0	70
01:00	0	29	4	0	3	0	0	2	3	0	0	0	0	0	41
02:00	0	21	3	1	4	0	0	1	1	0	0	0	0	1	32
03:00	1	16	3	5	2	1	1	1	5	1	0	0	0	0	36
04:00	1	39	16	3	9	3	0	2	5	0	1	0	1	0	80
05:00	2	108	50	5	38	5	0	2	10	0	0	1	1	0	222
06:00	3	294	127	11	84	12	0	4	16	3	0	0	0	0	554
07:00	15	440	111	7	57	10	0	4	17	0	0	0	0	3	664
08:00	14	652	113	12	47	17	1	7	4	0	0	0	0	3	870
09:00	10	630	118	16	49	12	0	5	21	3	1	0	0	4	869
10:00	22	658	99	12	28	11	2	8	18	2	1	0	0	3	864
11:00	12	719	120	8	48	14	0	5	13	0	0	0	2	4	945
12 PM	28	784	127	9	29	11	0	3	11	0	0	0	0	4	1006
13:00	18	766	122	6	47	17	1	7	6	1	0	0	0	8	999
14:00	23	768	111	5	45	12	1	13	12	3	0	1	0	3	997
15:00	13	845	146	3	42	10	1	6	10	0	0	0	0	2	1078
16:00	18	866	133	6	47	9	0	13	10	0	0	0	0	3	1105
17:00	15	869	103	6	36	8	0	4	3	1	0	0	1	5	1051
18:00	14	627	90	1	24	7	0	3	3	0	0	0	0	4	773
19:00	11	597	67	2	13	4	0	2	0	0	0	0	1	0	697
20:00	4	428	66	4	9	1	0	1	1	0	0	0	0	0	514
21:00	3	373	48	3	11	1	0	1	5	0	0	1	0	2	448
22:00	2	261	42	3	13	1	0	0	3	0	0	0	0	0	325
23:00	4	143	20	2	5	1	0	0	3	1	0	0	0	0	179
Total	233	10986	1843	135	693	167	7	94	185	15	3	3	6	49	14419
Percent	1.6%	76.2%	12.8%	0.9%	4.8%	1.2%	0.0%	0.7%	1.3%	0.1%	0.0%	0.0%	0.0%	0.3%	
AM Peak	10:00	11:00	06:00	09:00	06:00	08:00	10:00	10:00	09:00	06:00	04:00	05:00	11:00	09:00	
Vol.	22	719	127	16	84	17	2	8	21	3	1	1	2	4	
PM Peak	12:00	17:00	15:00	12:00	13:00	13:00	13:00	14:00	14:00	14:00	14:00	14:00	17:00	13:00	
Vol.	28	869	146	9	47	17	1	13	12	3	1	1	1	8	

Innovative Data, LLC

Location: Route 20 (Main Street)
Location: South of School Street
Location: Lee, Massachusetts
Client: VHB / J. Locke

PO Box 468
Belchertown, Massachusetts
Innovatedata LLC or 1.413.668.5094

Southbound, Northbound															
Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Classed	Total
08/24/18	2	55	11	5	2	0	0	4	10	1	0	0	0	1	91
01:00	0	28	2	1	5	0	0	0	5	1	0	0	0	0	42
02:00	2	29	5	1	3	3	0	2	5	0	0	0	0	2	52
03:00	3	22	3	3	2	1	0	0	3	0	0	0	0	0	37
04:00	3	37	22	1	16	3	0	3	2	1	0	0	0	0	88
05:00	3	104	50	7	34	8	2	0	7	2	0	1	0	1	219
06:00	2	265	117	7	60	7	0	5	11	1	0	1	1	0	477
07:00	11	428	126	12	50	15	3	4	19	2	1	0	0	2	673
08:00	12	542	140	11	47	15	1	4	9	2	0	0	0	1	784
09:00	23	637	167	12	65	13	0	4	11	1	0	0	0	3	936
10:00	16	685	120	9	37	15	1	3	11	0	0	0	0	3	900
11:00	26	772	107	6	33	16	2	4	8	0	0	0	0	8	982
12 PM	25	816	113	8	35	16	1	7	6	0	0	0	0	5	1032
13:00	26	795	102	12	39	19	3	4	15	0	0	0	0	7	1022
14:00	9	856	131	2	40	16	0	8	8	1	0	0	0	3	1074
15:00	17	948	134	7	31	8	0	4	5	1	0	0	0	2	1157
16:00	18	936	140	7	35	11	1	3	3	0	0	0	1	4	1159
17:00	16	925	101	1	38	7	1	0	4	0	0	0	0	1	1094
18:00	16	770	76	1	20	7	0	0	3	0	0	0	0	2	895
19:00	10	646	74	2	15	5	1	2	1	1	0	0	0	7	764
20:00	15	522	79	0	21	8	0	4	3	0	0	0	0	3	655
21:00	6	469	47	0	9	5	2	2	3	0	0	1	0	2	546
22:00	4	511	58	0	7	3	0	1	2	0	0	0	0	1	587
23:00	5	152	23	2	6	2	0	3	1	0	0	0	0	1	195
Total	270	11950	1948	117	650	203	18	71	155	14	1	3	2	59	15461
Percent	1.7%	77.3%	12.6%	0.8%	4.2%	1.3%	0.1%	0.5%	1.0%	0.1%	0.0%	0.0%	0.0%	0.4%	
AM Peak	11:00	11:00	09:00	07:00	09:00	11:00	07:00	06:00	07:00	05:00	07:00	05:00	06:00	11:00	
Vol.	26	772	167	12	65	16	3	5	19	2	1	1	1	8	
PM Peak	13:00	15:00	16:00	13:00	14:00	13:00	13:00	14:00	13:00	14:00		21:00	16:00	13:00	
Vol.	26	948	140	12	40	19	3	8	15	1		1	1	7	

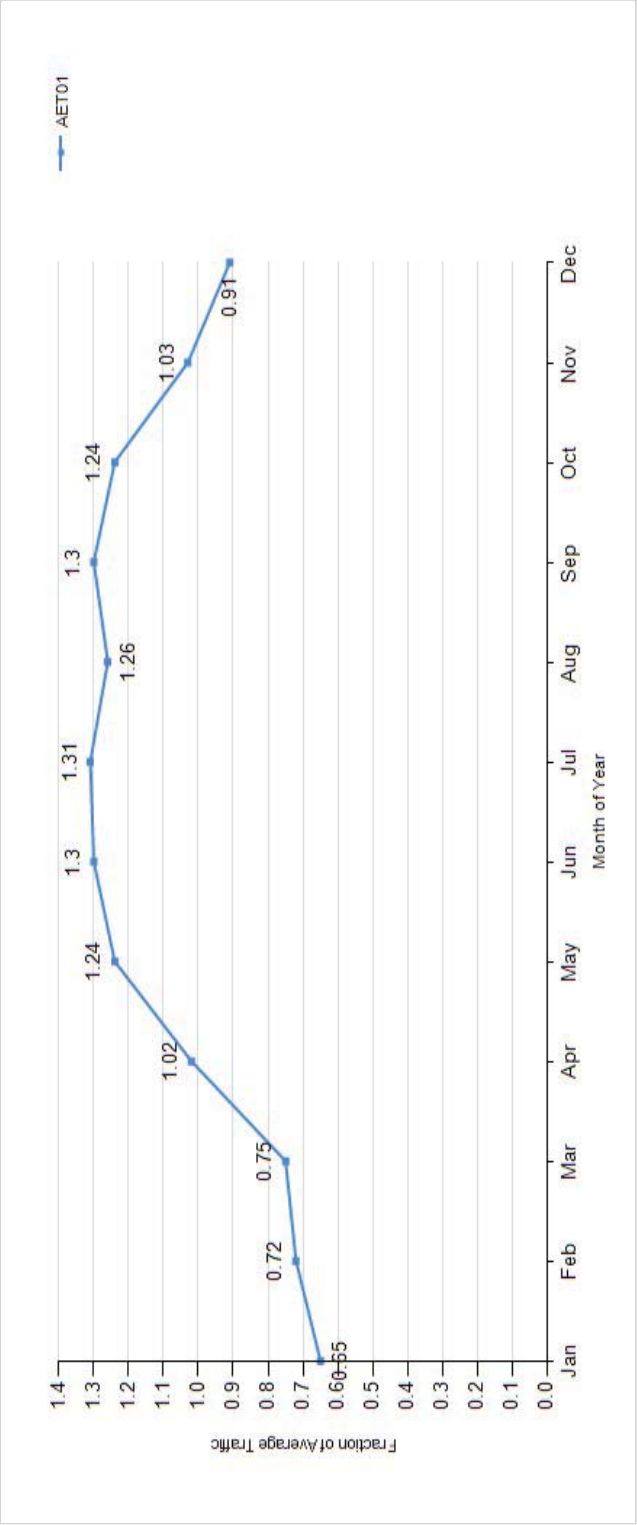
Innovative Data, LLC

Location: Route 20 (Main Street)
Location: South of School Street
Location: Lee, Massachusetts
Client: VHB / J. Locke

PO Box 468
Belchertown, Massachusetts
Innovatedata LLC or 1.413.668.5094

Southbound, Northbound															
Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
08/25/18	4	88	9	5	1	1	0	1	3	1	0	0	0	0	113
01:00	2	55	5	1	3	1	0	0	1	0	0	0	0	0	68
02:00	2	45	4	1	1	0	0	3	1	1	0	0	0	0	58
03:00	1	27	4	2	1	2	0	1	1	0	0	0	0	0	39
04:00	0	26	7	1	3	1	0	0	0	0	0	0	0	0	38
05:00	2	73	26	2	16	1	0	1	6	0	0	0	0	0	127
06:00	3	160	60	5	30	4	0	6	4	1	0	0	0	2	275
07:00	2	272	76	4	22	4	0	2	4	0	0	0	1	0	387
08:00	8	489	116	6	51	1	0	2	7	1	1	0	0	2	684
09:00	17	695	123	5	27	7	0	2	4	0	0	0	0	4	884
10:00	10	814	139	4	35	4	0	1	3	2	0	0	0	8	1020
11:00	18	847	96	2	24	7	0	5	3	0	0	0	1	5	1008
12 PM	16	898	92	4	15	2	0	5	2	1	0	0	1	1	1037
13:00	16	849	92	3	18	5	0	7	4	0	0	0	0	1	995
14:00	10	838	101	4	30	6	1	0	6	1	0	0	0	4	1001
15:00	21	895	99	1	30	5	0	2	0	0	0	0	0	1	1054
16:00	14	957	78	3	21	5	0	2	1	0	0	0	0	3	1084
17:00	10	909	89	2	25	6	0	4	0	0	0	0	0	3	1048
18:00	15	723	58	1	11	6	0	2	5	0	0	0	0	2	823
19:00	14	607	70	0	16	2	0	0	1	0	0	0	0	0	710
20:00	9	468	58	1	13	2	0	1	2	0	0	0	0	1	555
21:00	10	460	45	1	10	1	0	3	1	0	0	0	0	0	531
22:00	5	385	42	0	8	1	0	0	1	0	0	0	0	0	442
23:00	1	562	39	1	5	2	0	1	1	0	0	0	0	0	612
Total	210	12142	1528	59	416	76	1	51	61	8	1	0	3	37	14593
Percent	1.4%	83.2%	10.5%	0.4%	2.9%	0.5%	0.0%	0.3%	0.4%	0.1%	0.0%	0.0%	0.0%	0.3%	
AM Peak	11:00	11:00	10:00	08:00	08:00	09:00		06:00	08:00	10:00	08:00		07:00	10:00	
Vol.	18	847	139	6	51	7		6	7	2	1		1	8	
PM Peak	15:00	16:00	14:00	12:00	14:00	14:00	14:00	13:00	14:00	12:00			12:00	14:00	
Vol.	21	957	101	4	30	6	1	7	6	1			1	4	
Grand Total	713	35078	5319	311	1759	446	26	216	401	37	5	6	11	145	44473
Percent	1.6%	78.9%	12.0%	0.7%	4.0%	1.0%	0.1%	0.5%	0.9%	0.1%	0.0%	0.0%	0.0%	0.3%	

Traffic Pattern by Month for 1/1/2018 - 12/31/2018
Criteria: Location ID = AET01



Ave Mon
0.65
0.72
0.75
1.02
1.24
1.3
1.31
1.26
1.3
1.24
1.03
0.91

1.060833 Average Month=April/November-ish



Attachment B – Crash Data

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Lee, MA COUNT DATE : 3/5/2020

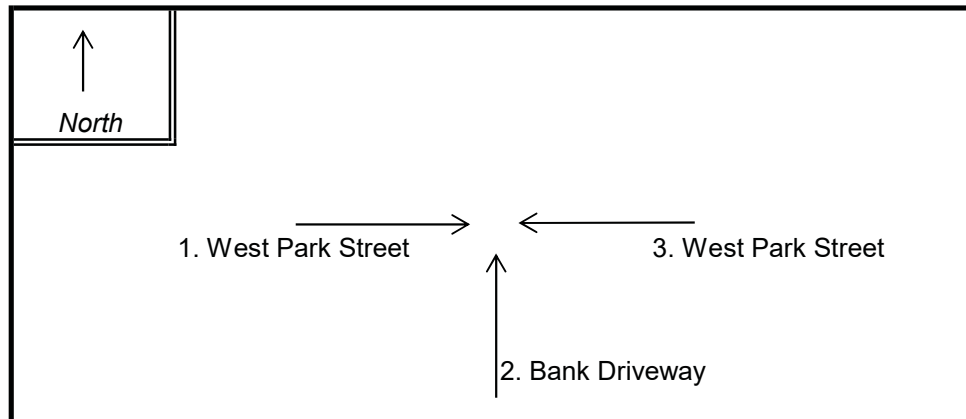
DISTRICT : 1 UNSIGNALIZED : ☒ X SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : West Park Street

MINOR STREET(S) : Bank Driveway

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	NB	WB			
PEAK HOURLY VOLUMES (AM/PM) :	250	0	230			480

"K" FACTOR :

0.103

INTERSECTION ADT (V) = TOTAL DAILY
APPROACH VOLUME :

4,660

TOTAL # OF CRASHES :

2

OF
YEARS :

5

AVERAGE # OF
CRASHES PER YEAR (A) :

0.40

CRASH RATE CALCULATION :

0.24

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

Comments : _____

Project Title & Date: _____

Crash Data 2013-2017: West Park Street at Bank and Price Chopper Driveway

Crash Number	City Town	Crash Date	Crash Severity	Crash Time	Light Conditions	Manner of Collision	Road Surface Condition	Weather Conditions
3753238	LEE	02/21/2014	Property damage only (none injured)	5:31 PM	Dark - roadway not lighted	Angle	Wet	Rain Sleet, hail (freezing rain or drizzle)/Blowing sand, snow
4019836	LEE	02/02/2015	Property damage only (none injured)	2:22 PM	Daylight	Angle	Snow	

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Lee, MA COUNT DATE : 3/5/2020

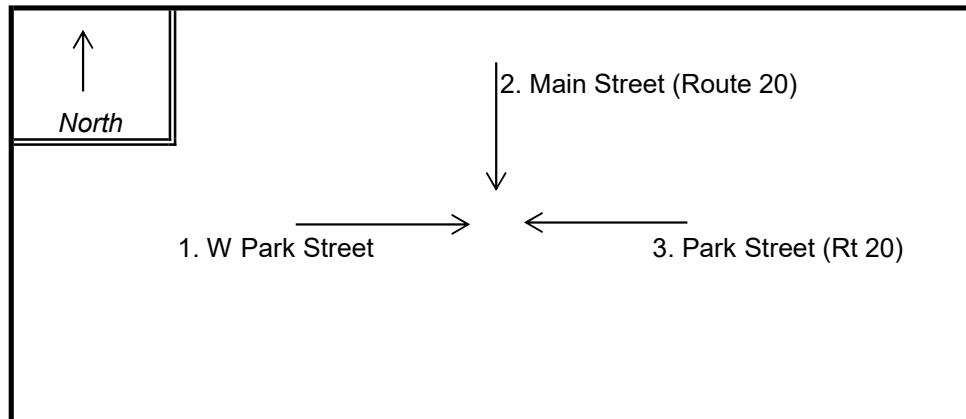
DISTRICT : 1 UNSIGNALIZED : ☒ X SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Route 20 (Main Street and Park Street)

MINOR STREET(S) : West Park 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) :	250	600	695			1,545

"K" FACTOR :

0.103

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

15,000

TOTAL # OF CRASHES :

11

OF YEARS :

5

AVERAGE # OF CRASHES PER YEAR (A) :

2.20

CRASH RATE CALCULATION :

0.40

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

Comments : _____

Project Title & Date: _____

Crash Data 2013-2017: Main Street at West Park Street and Park Street

Crash Number	City/Town	Crash Date	Crash Severity	Crash Time	Light Conditions	Manner of Collision	Road Surface Condition	Weather Conditions
3737682	LEE	01/10/2014	Property damage only (none injured)	6:20 AM	Dawn	Single vehicle crash	Snow	Snow/Sleet, hail (freezing rain or drizzle)
3738358	LEE	02/28/2013	Non-fatal injury	10:00 AM	Daylight	Angle	Wet	Rain
3741334	LEE	03/13/2013	Property damage only (none injured)	9:24 AM	Daylight	Angle	Dry	Clear
3786154	LEE	03/14/2014	Property damage only (none injured)	8:28 PM	Dark - lighted roadway	Head-on	Dry	Clear
3870305	LEE	06/25/2014	Property damage only (none injured)	9:14 AM	Daylight	Angle	Dry	Clear
3980447	LEE	11/28/2014	Non-fatal injury	1:08 PM	Daylight	Rear-end	Dry	Clear
3981730	LEE	11/01/2014	Property damage only (none injured)	10:05 AM	Daylight	Single vehicle crash	Dry	Cloudy
3992837	LEE	12/16/2014	Property damage only (none injured)	2:17 PM	Daylight	Rear-end	Dry	Cloudy
4068846	LEE	07/03/2015	Non-fatal injury	3:30 PM	Daylight	Single vehicle crash	Dry	Clear
4156382	LEE	02/14/2016	Property damage only (none injured)	10:00 AM	Daylight	Single vehicle crash	Dry	Clear
4455720	LEE	10/06/2017	Property damage only (none injured)	5:54 PM	Daylight	Single vehicle crash	Dry	Clear

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Lee, MA COUNT DATE : 8/22/2018

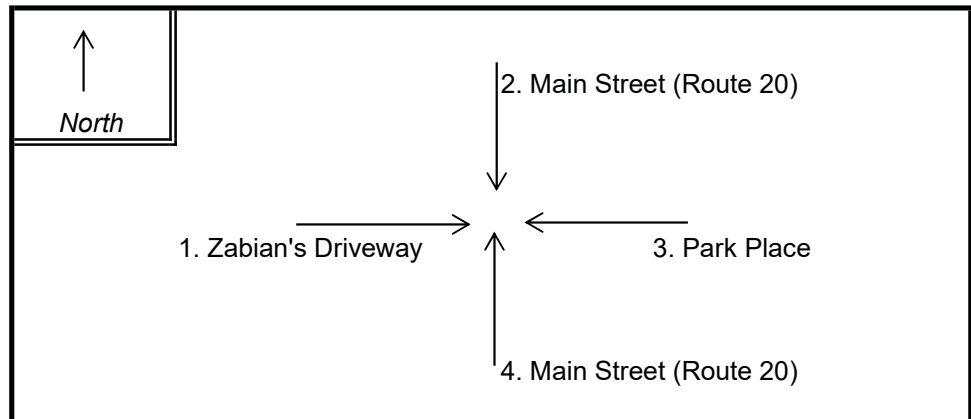
DISTRICT : 1 UNSIGNALIZED : ☒ SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Route 20 (Main Street)

MINOR STREET(S) : Park Place/Zabian's Driveway

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	SB	WB	NB		
PEAK HOURLY VOLUMES (AM/PM) :	40	660	15	595		1,310

" K " FACTOR :

0.103

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

12,718

TOTAL # OF CRASHES :

10

OF
YEARS :

5

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

2.00

CRASH RATE CALCULATION :

0.43

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

Comments : _____

Project Title & Date: _____

Crash Data 2013-2017: Main Street at Park Place and Driveway

Crash Number	City	Town Name	Crash Date	Crash Severity	Crash Time	Light Conditions	Manner of Collision	Road Surface Condition	Weather Conditions
3870303	LEE		06/13/2014	Property damage only (none injured)	8:17 PM	Daylight	Single vehicle crash	Dry	Clear
3955772	LEE		09/27/2014	Property damage only (none injured)	1:38 PM	Daylight	Rear-end	Dry	Clear
4040843	LEE		04/24/2015	Property damage only (none injured)	11:42 AM	Daylight	Rear-end	Dry	Cloudy
4040846	LEE		04/01/2015	Property damage only (none injured)	9:18 AM	Daylight	Angle	Dry	Clear
4068844	LEE		07/01/2015	Property damage only (none injured)	6:13 PM	Daylight	Angle	Wet	Cloudy
4081797	LEE		08/10/2015	Property damage only (none injured)	11:00 AM	Daylight	Rear-end	Dry	Clear
4117930	LEE		11/11/2015	Property damage only (none injured)	7:58 PM	Dark - lighted roadway	Rear-end	Wet	Rain
4411524	LEE		07/22/2017	Property damage only (none injured)	10:10 AM	Daylight	Angle	Dry	Cloudy
4455406	LEE		10/04/2017	Property damage only (none injured)	9:07 AM	Daylight	Rear-end	Dry	Clear
4468931	LEE		11/03/2017	Property damage only (none injured)	6:46 AM	Dark - lighted roadway	Single vehicle crash	Dry	Cloudy

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Lee, MA COUNT DATE : 8/22/2018

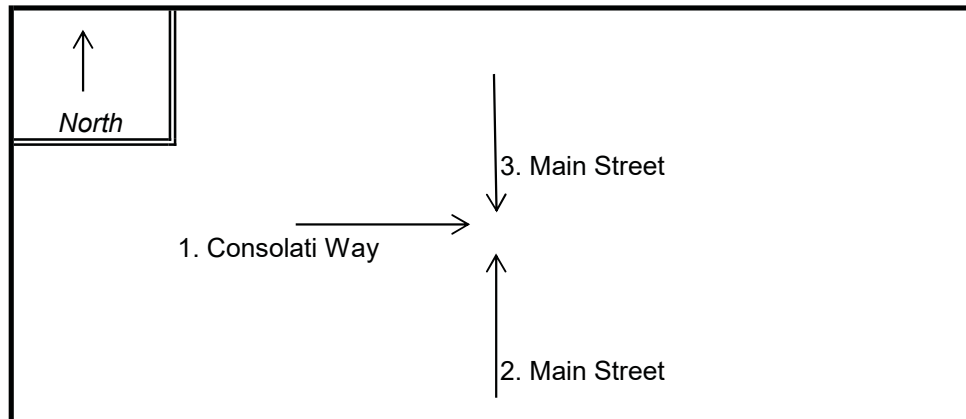
DISTRICT : 1 UNSIGNALIZED : ☒ X SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Route 20 (Main Street)

MINOR STREET(S) : Consolati Way

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	NB	SB			
PEAK HOURLY VOLUMES (AM/PM) :	60	585	625			1,270

"K" FACTOR : **0.103** INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME : **12,330**

TOTAL # OF CRASHES : **10** # OF YEARS : **5** AVERAGE # OF CRASHES PER YEAR (A) : **2.00**

CRASH RATE CALCULATION :

0.44

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

Comments : _____

Project Title & Date: _____

Crash Data 2013-2017: Main Street at Consolati Way

Crash Number	City	Town Name	Crash Date	Crash Severity	Crash Time	Light Conditions	Manner of Collision	Road Surface Condition	Weather Conditions
3737780	LEE		11/29/2013	Property damage only (none injured)	7:53 AM	Daylight	Rear-end	Dry	Clear
3740075	LEE		02/08/2013	Property damage only (none injured)	4:05 PM	Daylight	Angle	Snow	Snow/Clear
3741344	LEE		09/03/2013	Non-fatal injury	5:05 PM	Daylight	Rear-end	Dry	Clear
3922184	LEE		07/07/2014	Property damage only (none injured)	2:01 PM	Daylight	Angle	Dry	Clear
3943743	LEE		08/30/2014	Property damage only (none injured)	11:55 AM	Daylight	Rear-end	Dry	Clear
4040842	LEE		04/20/2015	Property damage only (none injured)	3:07 PM	Daylight	Rear-end	Wet	Rain/Cloudy
4112436	LEE		10/08/2015	Non-fatal injury	3:20 PM	Daylight	Single vehicle crash	Dry	Clear
4144938	LEE		01/20/2016	Property damage only (none injured)	10:32 AM	Daylight	Single vehicle crash	Dry	Clear
4229031	LEE		07/14/2016	Non-fatal injury	3:40 PM	Daylight	Angle	Dry	Clear
4242735	LEE		08/08/2016	Property damage only (none injured)	3:42 PM	Daylight	Sideswipe, same direction	Dry	Clear

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Lee, MA COUNT DATE : 3/5/2020

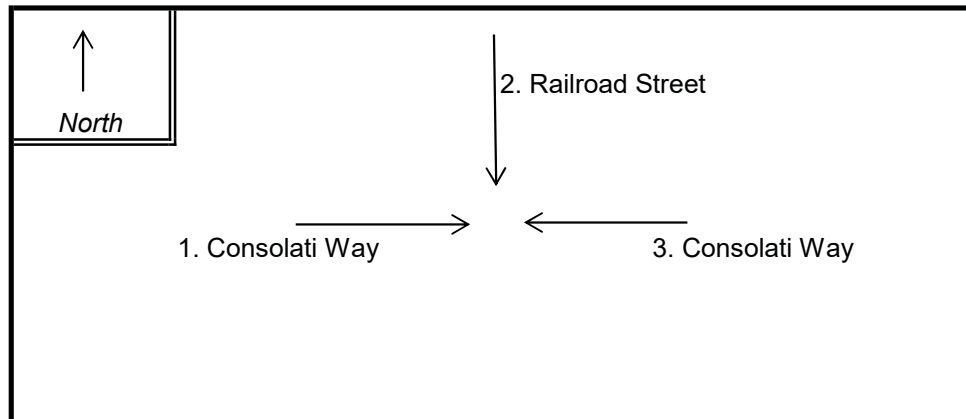
DISTRICT : 1 UNSIGNALIZED : ☒ X SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Consolati Way

MINOR STREET(S) : Railroad 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) :	40	80	45			165

"K" FACTOR :

0.103

INTERSECTION ADT (V) = TOTAL DAILY
APPROACH VOLUME :

1,602

TOTAL # OF CRASHES :

0

OF
YEARS :

5

AVERAGE # OF
CRASHES PER YEAR (A) :

0.00

CRASH RATE CALCULATION :

0.00

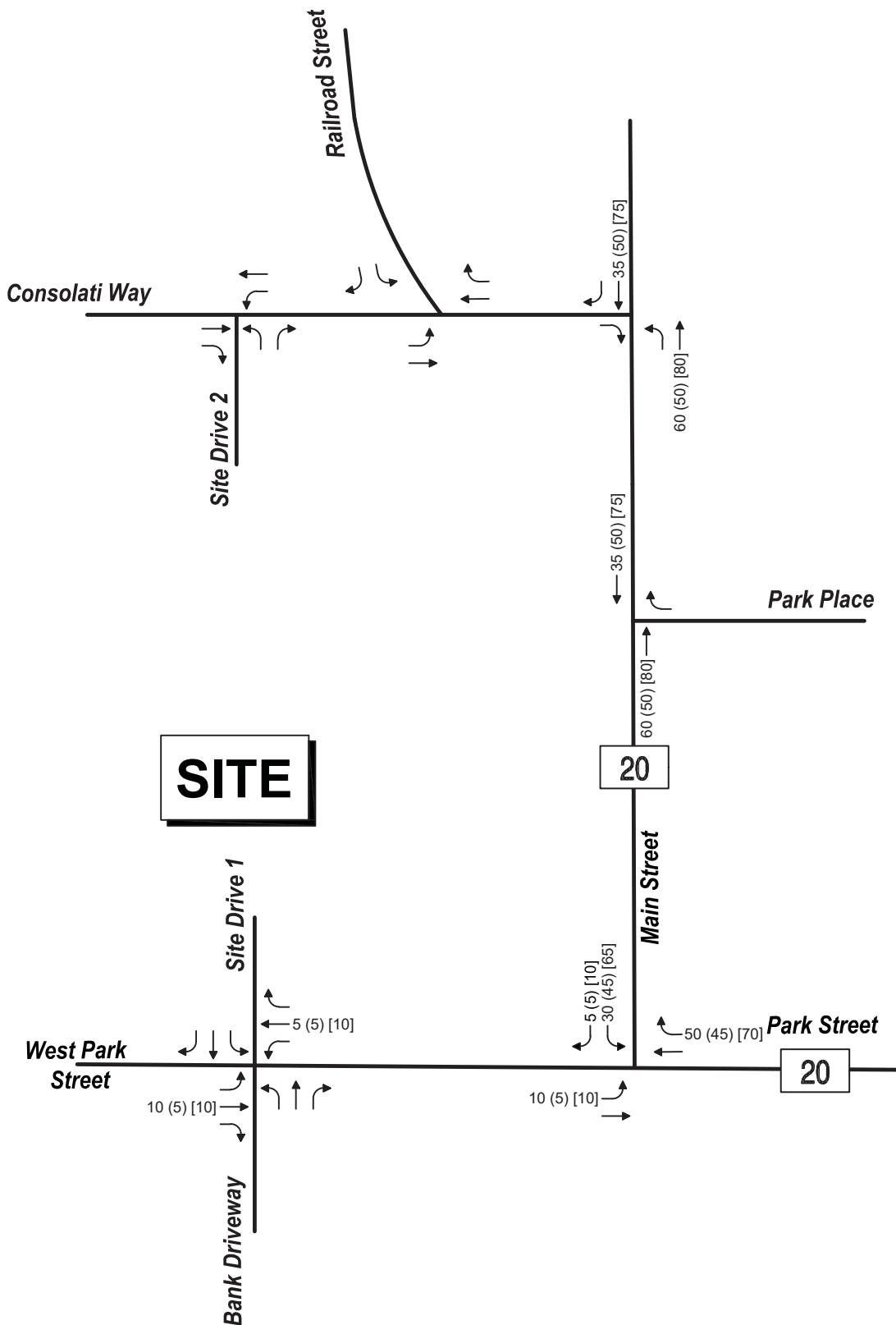
$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : _____

Project Title & Date: _____

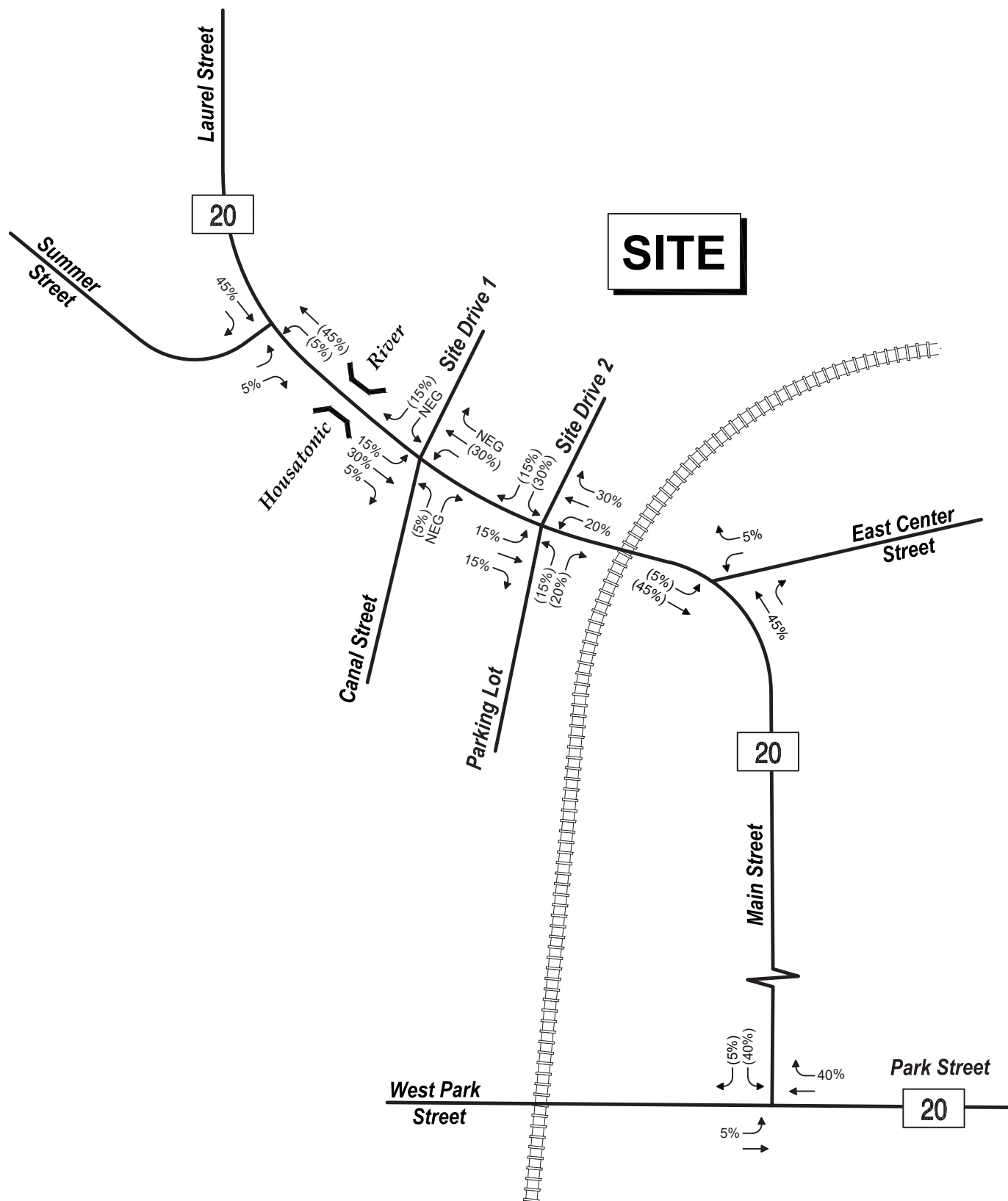


Attachment C – Trip Generation & Distribution



Mixed- Use Development
 Site Generated Traffic
 Background Project
 Lee, Massachusetts

Figure



Legend:
 Entering Trips by %
 (Exiting Trips by %)



Eagle Mill Redevelopment
 Trip Distribution

Lee, Massachusetts

Figure

TRIP GENERATION INPUTS

Land Use	Size	Units
Residential	80	units
Office	36.4	ksf
Shop/Retail	36.4	ksf
Restaurant	4.95	ksf
Brewery	1.5	ksf
Hotel	72	rooms

TRIP GENERATION SUMMARY

LUC SIZE	221 80	Residential ¹ Internal Capture ^a	Net New	445 8	Office ² Internal Capture ^a	Net New	820 36.4	Retail ³ Internal Capture ^a	Pass-by ^a	Net New	932 5.0	Restaurant ⁴ Internal Capture ^a	Pass-by ^a	Net New	Brewery 970 1.5	Hotel 310 72	Total Gross Trips	Total New Trips	Total Pass-by Trips	Total Internal Capture	Internal Capture Percentage
Weekday Daily																					
Enter	217	104	113	62	17	45	1512	179	336	997	278	114	40	124	35	193	2,297	1,507	376	414	
Exit	217	102	110	62	26	36	1512	159	336	1,017	278	122	40	116	35	193	2,287	1,507	376	414	
Total	434	211	223	124	43	81	3024	338	672	2,014	556	236	80	240	70	386	4,584	3,014	752	828	25%
Weekday Morning Peak Hour																					
Enter	7	-	7	12	2	10	105	4	25	76	27	13	4	10	2	18	171	123	29	19	
Exit	21	4	17	2	2	-	65	8	15	42	22	5	4	13	1	13	124	86	19	19	
Total	28	4	24	14	4	10	170	12	40	118	49	18	8	23	3	31	295	209	48	38	15%
Weekday Evening Peak Hour																					
Enter	21	13	8	6	4	2	123	16	36	71	30	13	6	11	5	14	199	111	42	46	
Exit	14	10	4	13	4	9	134	21	32	74	18	11	4	3	6	14	199	110	43	46	
Total	35	23	12	19	8	11	257	37	75	145	48	24	10	14	11	28	398	221	85	92	26%
Saturday Midday Peak Hour																					
Enter	20	12	8	2	2	-	145	20	33	92	28	12	4	12	31	30	256	173	37	46	
Exit	21	13	8	2	-	2	134	18	30	86	27	15	3	9	35	24	243	164	33	46	
Total	41	25	16	4	2	2	279	38	63	178	55	27	7	21	66	54	499	337	70	92	26%

1 Trip generation estimate based on ITE LUC 221 (Mid-Rise Residential), using regression equation

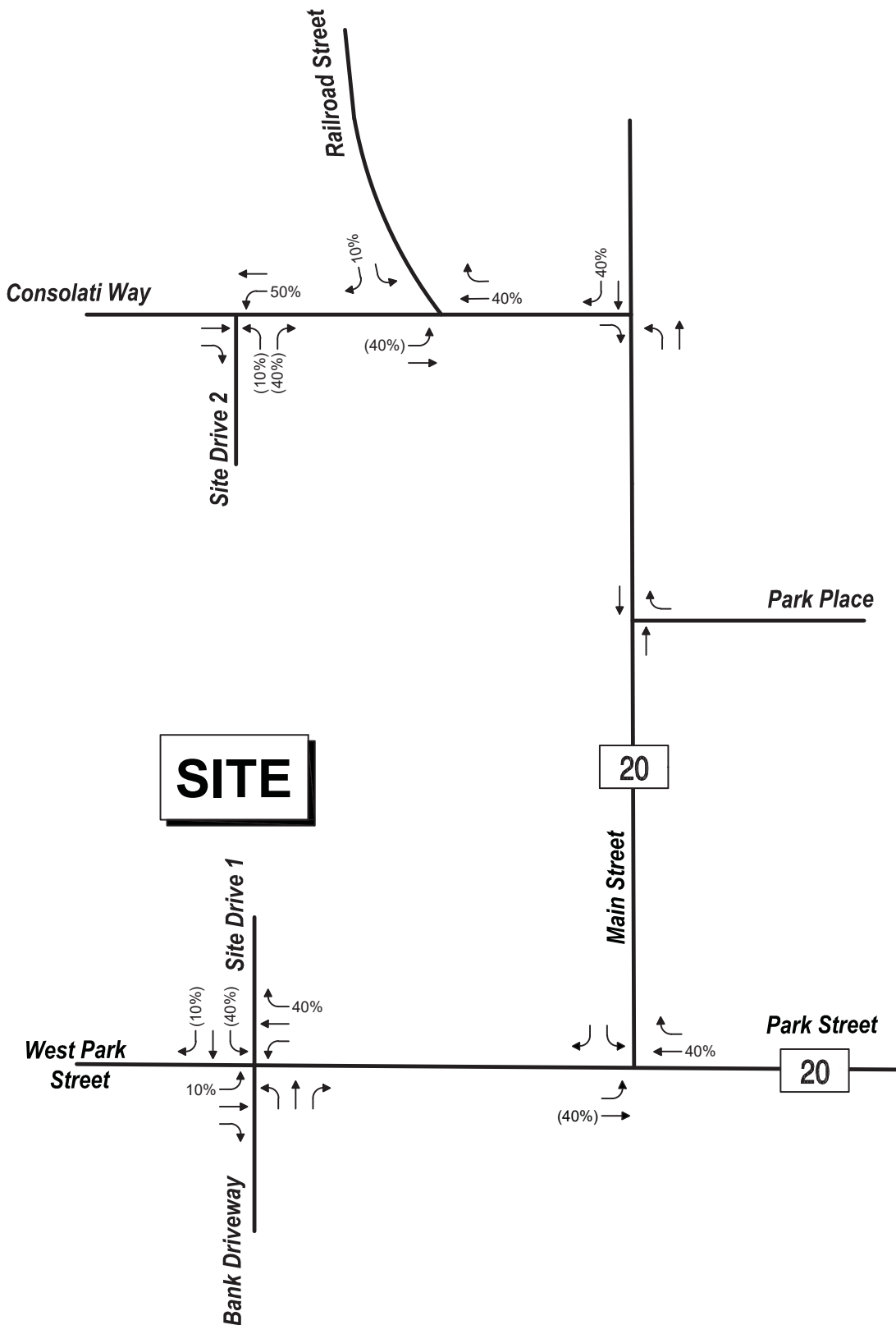
2 Trip generation estimate based on ITE LUC 712 (Small Office Space), using average equation for Weekday Daily, Morning, and PM, using LUC 710 (General Office) for Saturday Midday

3 Trip generation estimate based on ITE LUC 820 (Retail), using average rates

4 Trip generation estimate based on ITE LUC 932 (High-Turnover (Sit-Down) Restaurant), using average rates

5 Internal capture rates for weekday morning and weekday evening based on NCHRP Report 884 and for weekday daily based on ITE Trip Generation Handbook 2nd Edition. Saturday midday rates assumed to be the same as weekday evening rates and Saturday daily rates assumed to be the same as weekday daily.

6 Pass-by rates based on ITE data, assumed to be 25% where no data is available.



Legend:
 Entering Trips by %
 (Exiting Trips by %)



Mixed-Use Development
 Trip Distribution

Lee, Massachusetts

Figure

Multifamily Housing (Mid-Rise) (221)

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: General Urban/Suburban

Number of Studies: 53

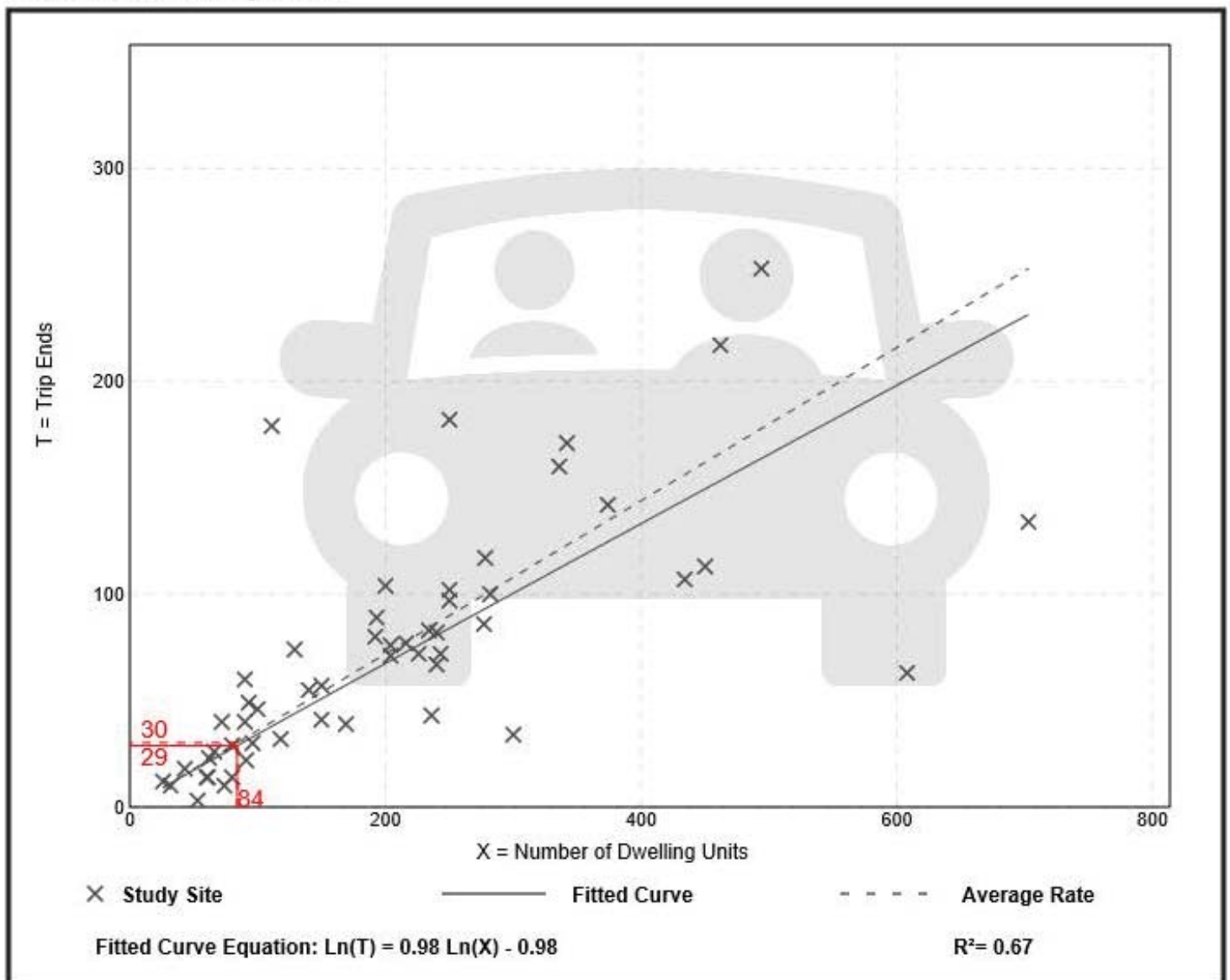
Avg. Num. of Dwelling Units: 207

Directional Distribution: 26% entering, 74% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.36	0.06 - 1.61	0.19

Data Plot and Equation



Multifamily Housing (Mid-Rise) (221)

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: General Urban/Suburban

Number of Studies: 60

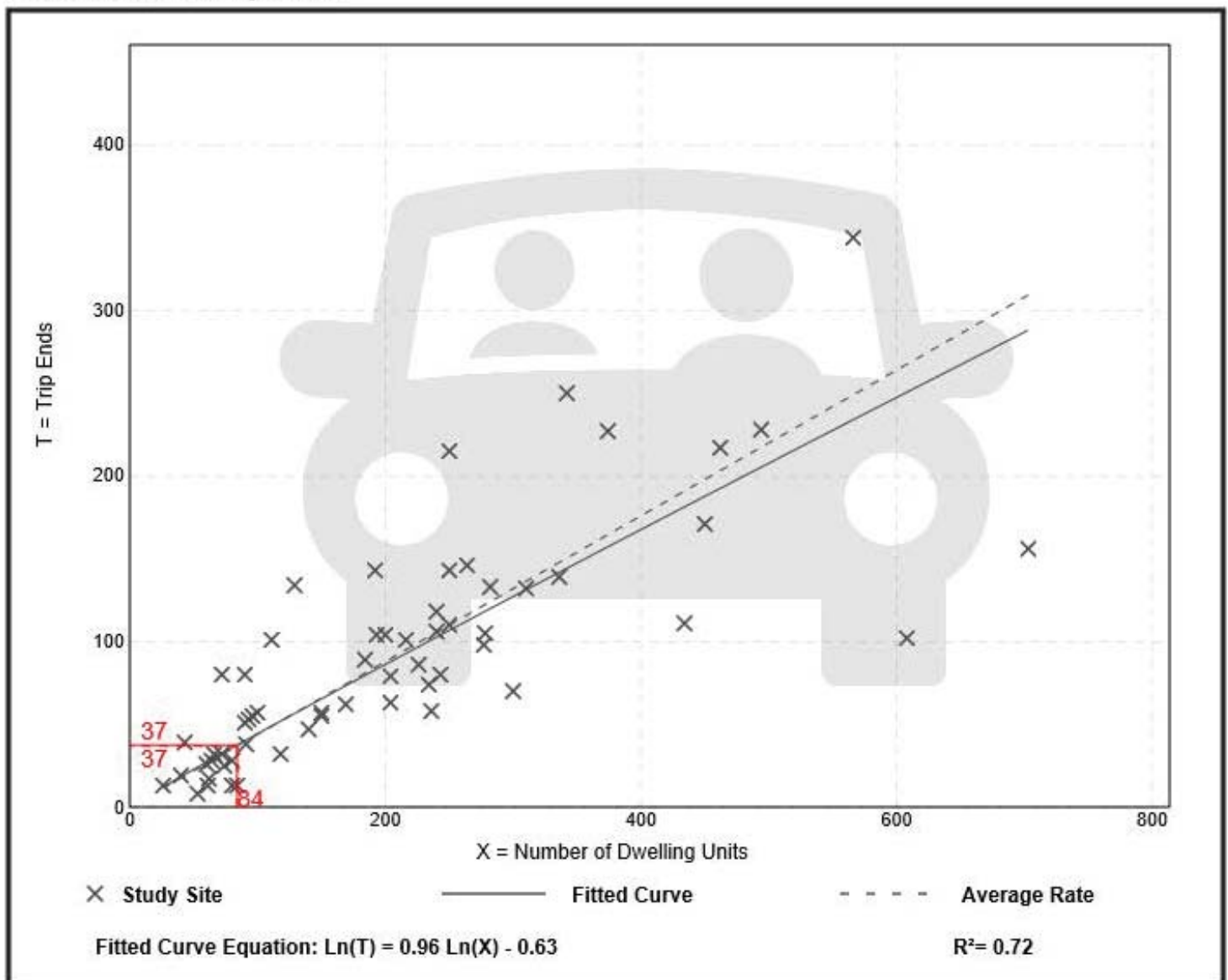
Avg. Num. of Dwelling Units: 208

Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.44	0.15 - 1.11	0.19

Data Plot and Equation



Multifamily Housing (Mid-Rise)

(221)

Vehicle Trip Ends vs: Dwelling Units

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 8

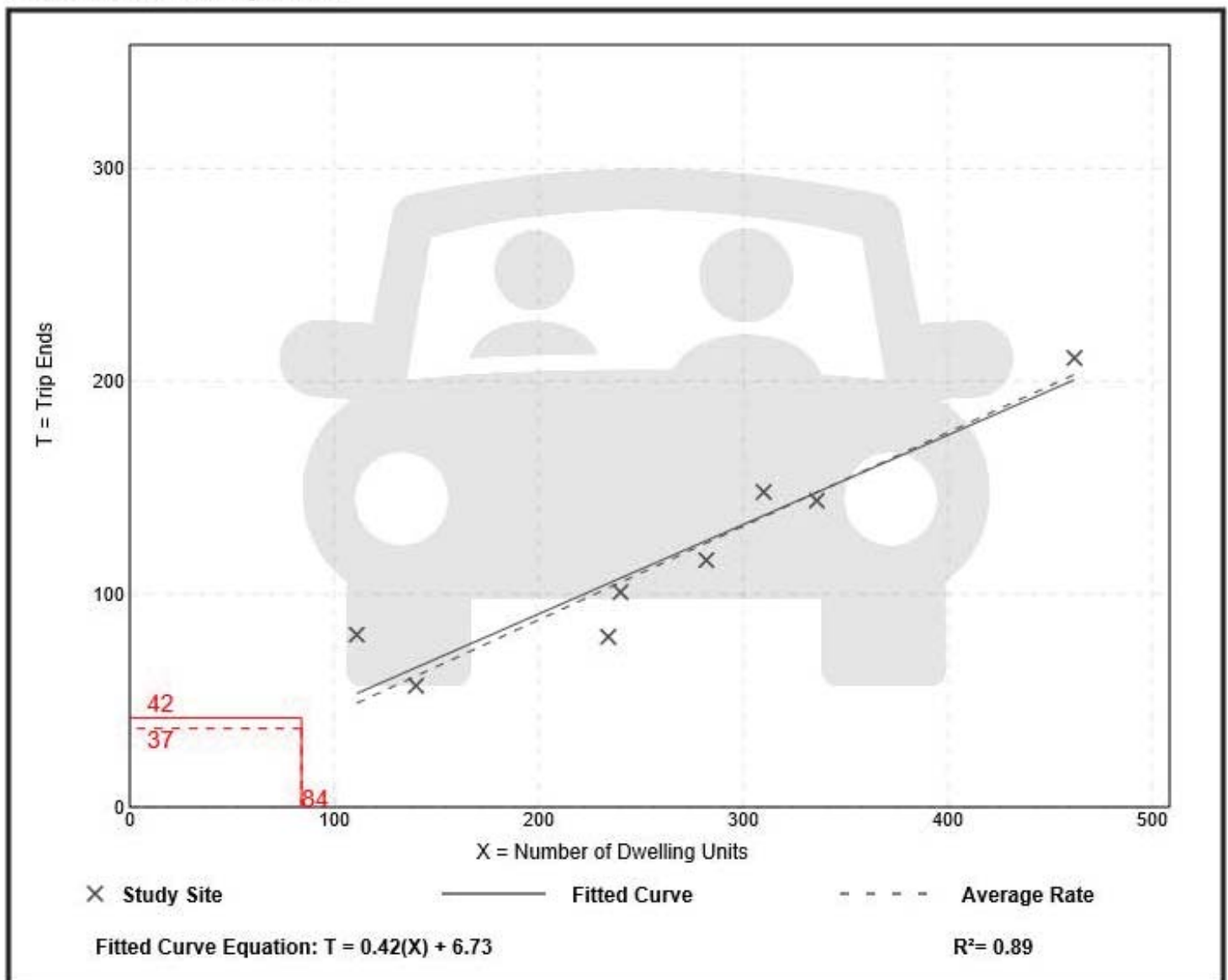
Avg. Num. of Dwelling Units: 264

Directional Distribution: 49% entering, 51% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.44	0.34 - 0.73	0.08

Data Plot and Equation



Multifamily Housing (Mid-Rise) (221)

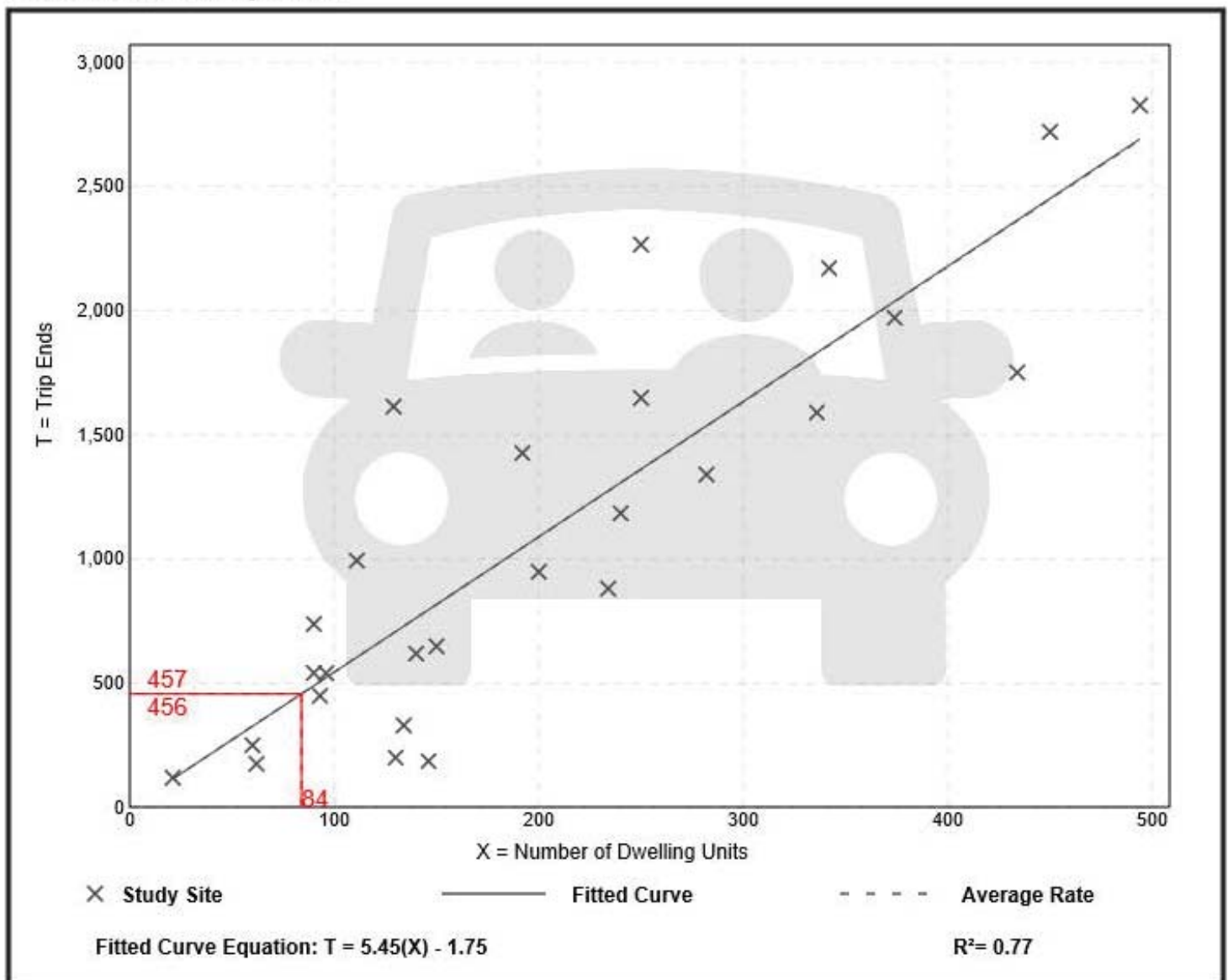
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 27
Avg. Num. of Dwelling Units: 205
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
5.44	1.27 - 12.50	2.03

Data Plot and Equation



Shopping Center (820)

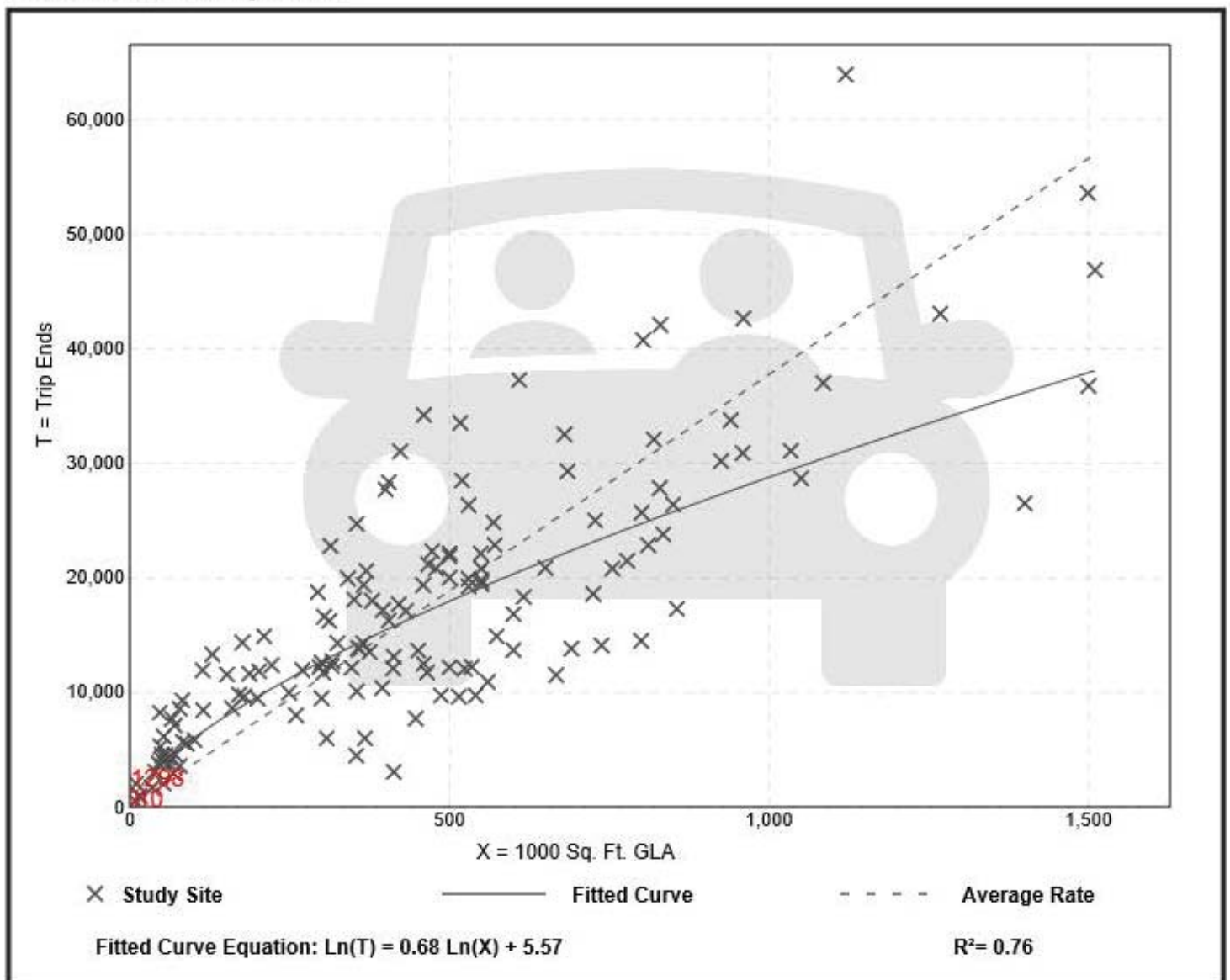
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 147
Avg. 1000 Sq. Ft. GLA: 453
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
37.75	7.42 - 207.98	16.41

Data Plot and Equation



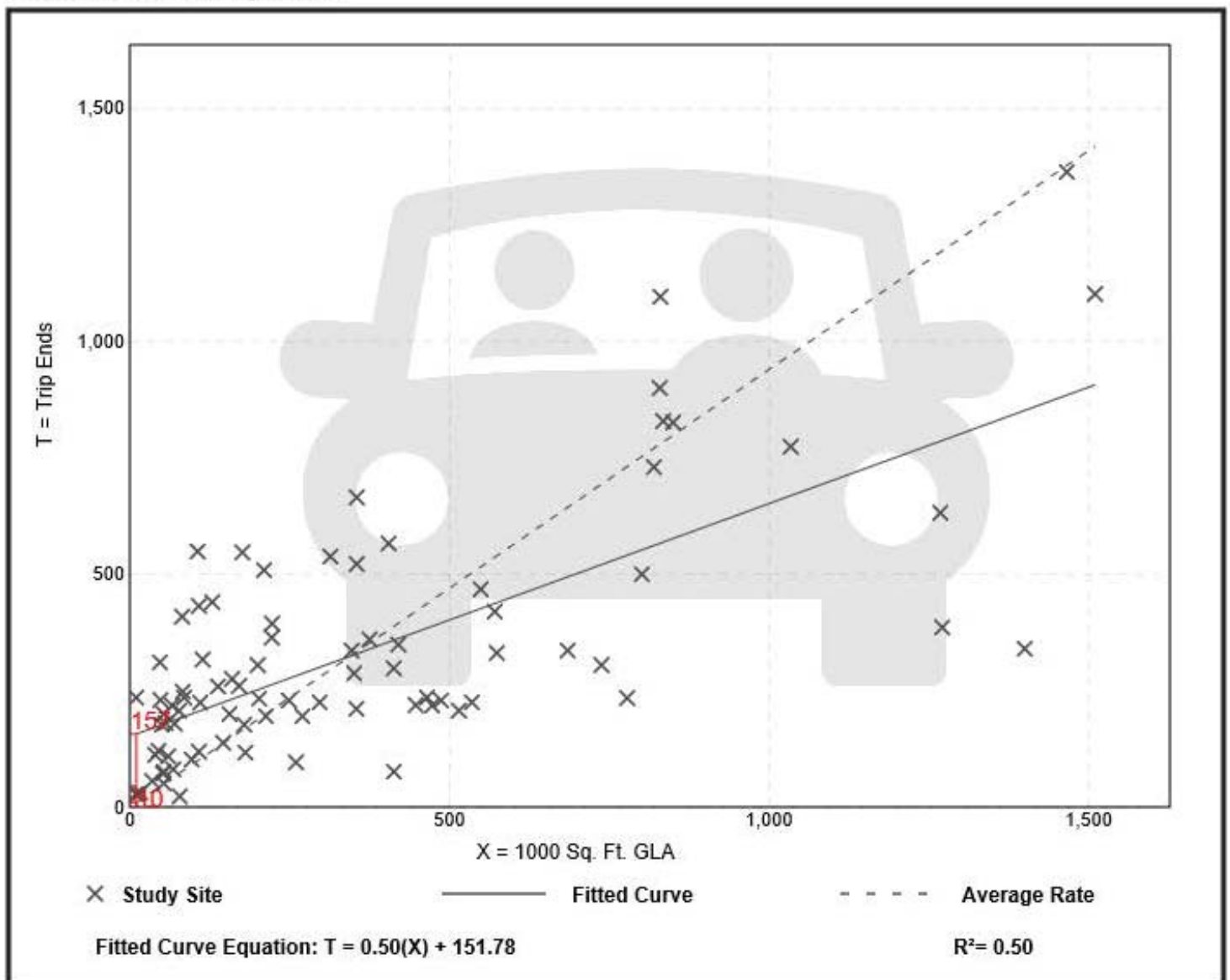
Shopping Center (820)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 84
 Avg. 1000 Sq. Ft. GLA: 351
 Directional Distribution: 62% entering, 38% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
0.94	0.18 - 23.74	0.87

Data Plot and Equation



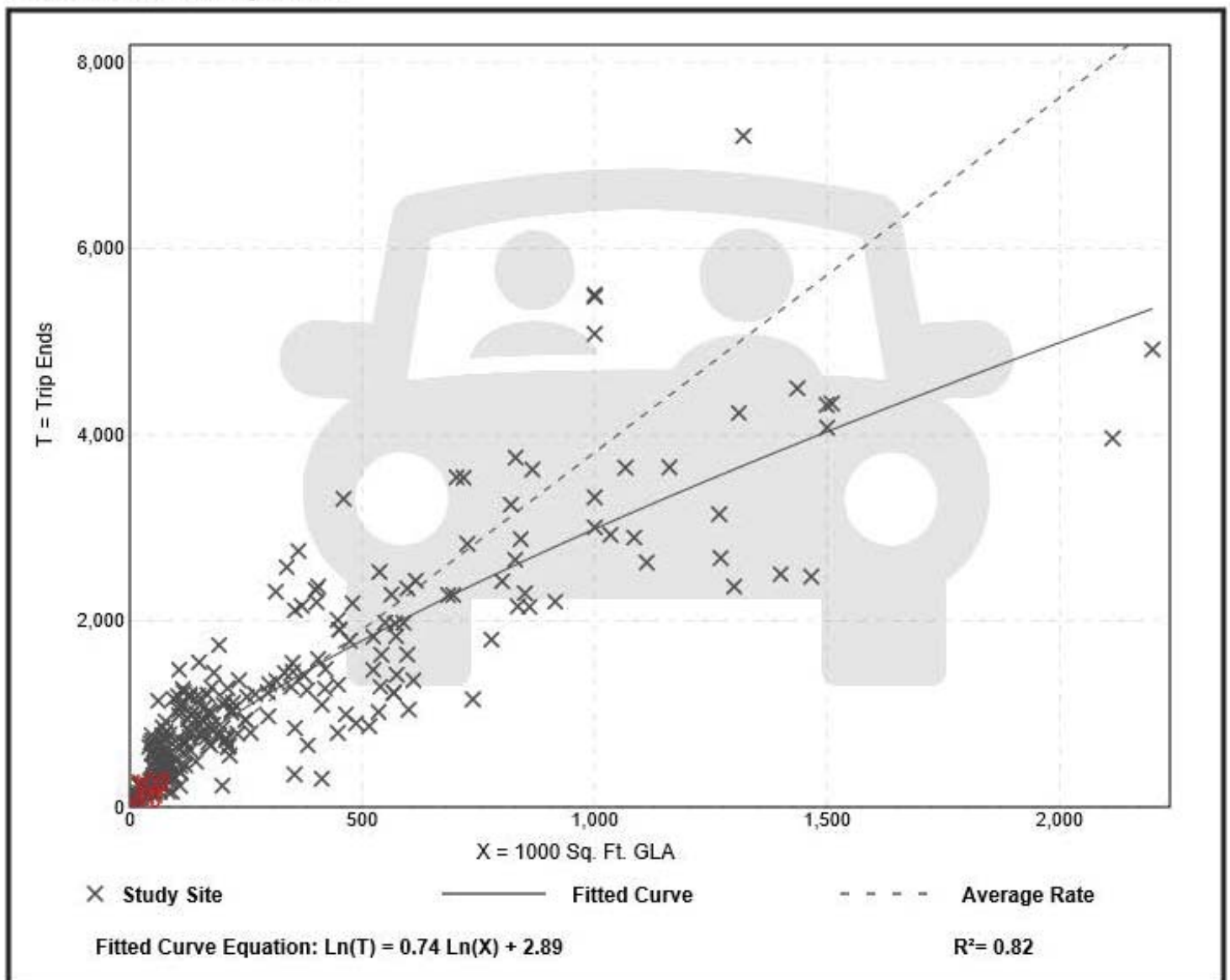
Shopping Center (820)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 261
 Avg. 1000 Sq. Ft. GLA: 327
 Directional Distribution: 48% entering, 52% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
3.81	0.74 - 18.69	2.04

Data Plot and Equation



Shopping Center (820)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 119

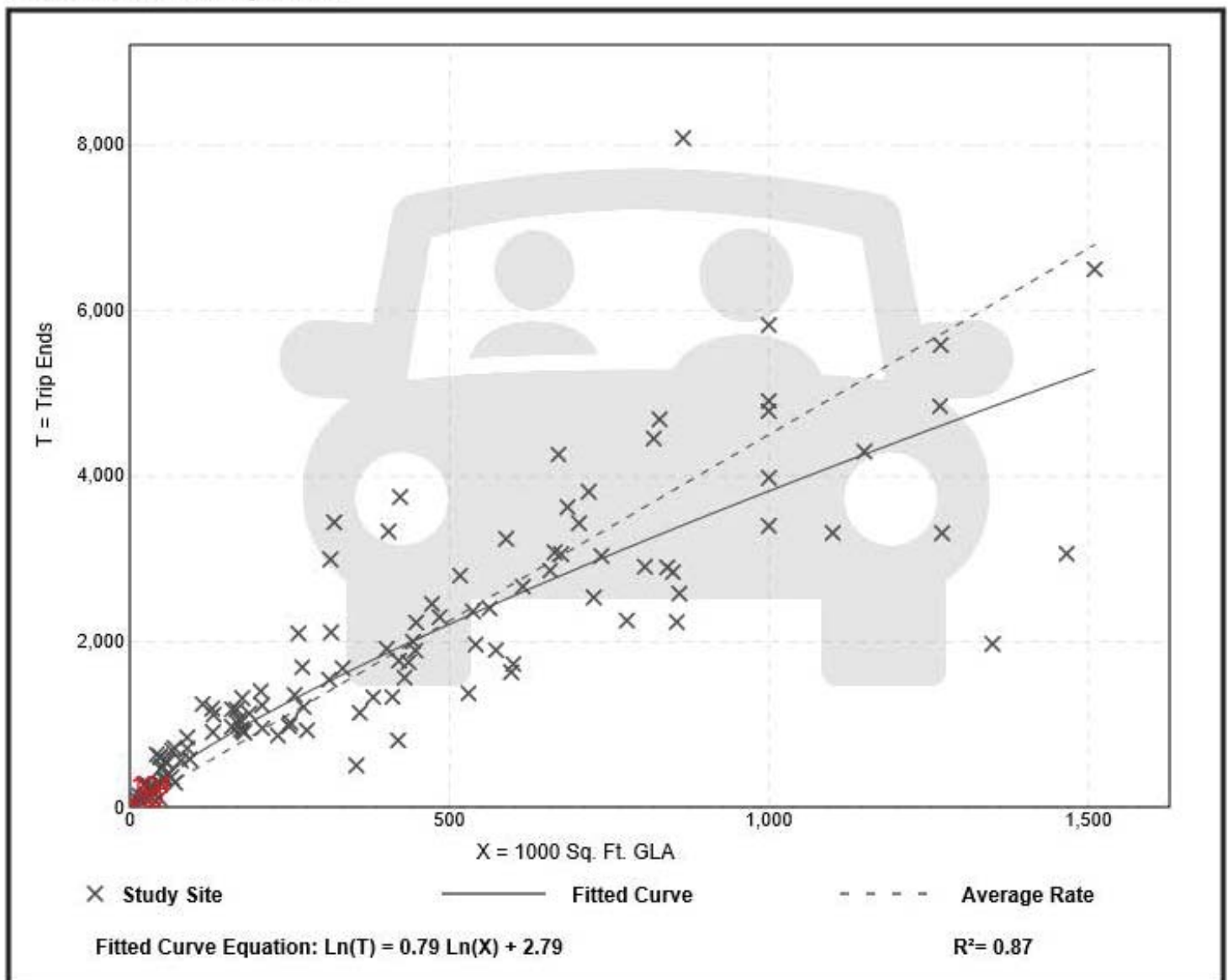
Avg. 1000 Sq. Ft. GLA: 416

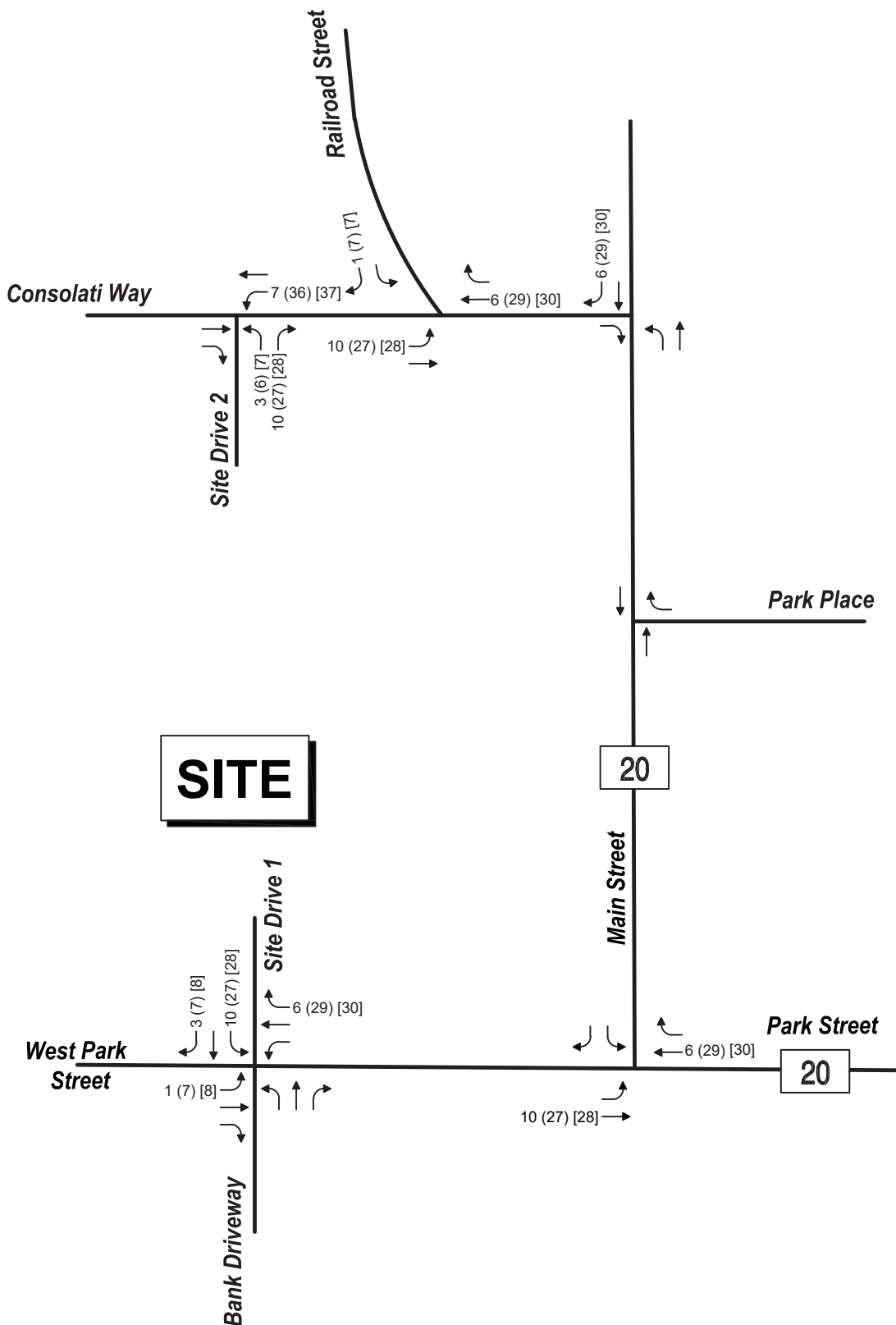
Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
4.50	1.42 - 15.10	1.88

Data Plot and Equation





Legend

XX → Traffic Volume



Mixed-Use Development
Site Generated Traffic
AM (PM) [SAT]
Lee, Massachusetts

Figure



Figure



Attachment D – Capacity Analyses

HCM Unsignalized Intersection Capacity Analysis

1: Bank Driveway & West Park St

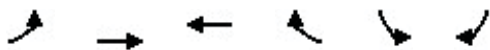
2020 Existing Conditions
Weekday Morning Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	225	0	0	220	0	0
Future Volume (Veh/h)	225	0	0	220	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.63	0.63	0.92	0.92
Hourly flow rate (vph)	281	0	0	349	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			281		630	281
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			281		630	281
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		100	100
cM capacity (veh/h)			1276		446	758
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	281	349	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1276	1700			
Volume to Capacity	0.17	0.00	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS						
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS						
Intersection Summary						
Average Delay						
			0.0			
Intersection Capacity Utilization			15.2%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

2: West Park St/Park St & Main St (Rt 20)

2020 Existing Conditions
Weekday Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	75	150	100	405	415	120
Future Volume (Veh/h)	75	150	100	405	415	120
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.83	0.83	0.88	0.88	0.80	0.80
Hourly flow rate (vph)	90	181	114	460	519	150
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)				6		
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1400	1113	1188	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1400	1113	1188	0	0	
tC, single (s)	7.2	6.6	6.6	6.3	4.2	
tC, 2 stage (s)						
tF (s)	3.6	4.1	4.1	3.4	2.3	
p0 queue free %	0	0	6	56	68	
cM capacity (veh/h)	9	138	121	1054	1597	
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	90	181	574	669		
Volume Left	90	0	0	519		
Volume Right	0	0	460	150		
cSH	9	138	610	1597		
Volume to Capacity	10.51	1.31	0.94	0.32		
Queue Length 95th (ft)	Err	283	315	36		
Control Delay (s)	Err	242.2	35.6	7.1		
Lane LOS	F	F	E	A		
Approach Delay (s)	3482.4		35.6	7.1		
Approach LOS	F		E			
Intersection Summary						
Average Delay			640.0			
Intersection Capacity Utilization			47.8%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Main St (Rt 20) & Zabian's Driveway/Park Pl

2020 Existing Conditions
Weekday Morning Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	15	0	0	5	15	465	0	0	520	10
Future Volume (Veh/h)	0	0	15	0	0	5	15	465	0	0	520	10
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.67	0.67	0.67	0.63	0.63	0.63	0.86	0.86	0.86	0.78	0.78	0.78
Hourly flow rate (vph)	0	0	22	0	0	8	17	541	0	0	667	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)	1											
Median type	None								None			
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1256	1248	674	1260	1255	541	680			541		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1256	1248	674	1260	1255	541	680			541		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	100	100	95	100	100	99	98			100		
cM capacity (veh/h)	145	171	458	140	170	545	880			1003		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	22	8	558	680								
Volume Left	0	0	17	0								
Volume Right	22	8	0	13								
cSH	344	545	880	1700								
Volume to Capacity	0.06	0.01	0.02	0.40								
Queue Length 95th (ft)	5	1	1	0								
Control Delay (s)	16.2	11.7	0.5	0.0								
Lane LOS	C	B	A									
Approach Delay (s)	16.2	11.7	0.5	0.0								
Approach LOS	C	B										
Intersection Summary												
Average Delay	0.6											
Intersection Capacity Utilization	39.9%			ICU Level of Service					A			
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

4: Main St (Rt 20) & Consolati Way

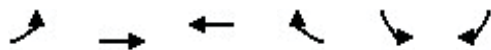
2020 Existing Conditions
Weekday Morning Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	50	40	430	480	25
Future Volume (Veh/h)	0	50	40	430	480	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.90	0.90	0.80	0.80
Hourly flow rate (vph)	0	62	44	478	600	31
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1182	616	631			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1182	616	631			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.3			
p0 queue free %	100	87	95			
cM capacity (veh/h)	195	482	928			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	62	522	631			
Volume Left	0	44	0			
Volume Right	62	0	31			
cSH	482	928	1700			
Volume to Capacity	0.13	0.05	0.37			
Queue Length 95th (ft)	11	4	0			
Control Delay (s)	13.6	1.3	0.0			
Lane LOS	B	A				
Approach Delay (s)	13.6	1.3	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay		1.3				
Intersection Capacity Utilization		58.3%		ICU Level of Service		B
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

5: Consolati Way & Railroad St

2020 Existing Conditions
Weekday Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	15	30	35	35	10
Future Volume (Veh/h)	15	15	30	35	35	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.65	0.65	0.87	0.87	0.73	0.73
Hourly flow rate (vph)	23	23	34	40	48	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	74				123	54
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	74				123	54
tC, single (s)	4.2				6.5	6.3
tC, 2 stage (s)						
tF (s)	2.3				3.6	3.4
p0 queue free %	98				94	99
cM capacity (veh/h)	1488				845	996
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	46	74	62			
Volume Left	23	0	48			
Volume Right	0	40	14			
cSH	1488	1700	875			
Volume to Capacity	0.02	0.04	0.07			
Queue Length 95th (ft)	1	0	6			
Control Delay (s)	3.8	0.0	9.4			
Lane LOS	A		A			
Approach Delay (s)	3.8	0.0	9.4			
Approach LOS			A			
Intersection Summary						
Average Delay			4.2			
Intersection Capacity Utilization			18.3%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: Bank Driveway & West Park St

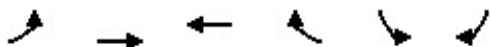
2020 Existing Conditions
Weekday Evening Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	250	0	0	230	0	0
Future Volume (Veh/h)	250	0	0	230	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.75	0.75	0.92	0.92
Hourly flow rate (vph)	269	0	0	307	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			269		576	269
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			269		576	269
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		100	100
cM capacity (veh/h)			1289		479	770
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	269	307	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1289	1700			
Volume to Capacity	0.16	0.00	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS			A			
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			16.5%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

2: West Park St/Park St & Main St (Rt 20)

2020 Existing Conditions
Weekday Evening Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	110	140	115	485	580	115
Future Volume (Veh/h)	110	140	115	485	580	115
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.83	0.83	0.91	0.91	0.94	0.94
Hourly flow rate (vph)	133	169	126	533	617	122
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)				6		
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1624	1295	1356	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1624	1295	1356	0	0	
tC, single (s)	7.1	6.5	6.5	6.2	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.2	
p0 queue free %	0	0	0	51	62	
cM capacity (veh/h)	0	100	92	1082	1610	
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	133	169	659	739		
Volume Left	133	0	0	617		
Volume Right	0	0	533	122		
cSH	0	100	416	1610		
Volume to Capacity	Err	1.69	1.58	0.38		
Queue Length 95th (ft)	Err	334	927	46		
Control Delay (s)	Err	422.2	298.5	7.8		
Lane LOS	F	F	F	A		
Approach Delay (s)	Err		298.5	7.8		
Approach LOS	F		F			
Intersection Summary						
Average Delay			Err			
Intersection Capacity Utilization			58.6%	ICU Level of Service		B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Main St (Rt 20) & Zabian's Driveway/Park Pl

2020 Existing Conditions
Weekday Evening Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	40	0	0	15	25	570	0	0	655	5
Future Volume (Veh/h)	0	0	40	0	0	15	25	570	0	0	655	5
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.65	0.65	0.65	0.71	0.71	0.71	0.96	0.96	0.96	0.91	0.91	0.91
Hourly flow rate (vph)	0	0	62	0	0	21	26	594	0	0	720	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)	1											
Median type	None								None			
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1390	1368	722	1400	1371	594	725			594		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1390	1368	722	1400	1371	594	725			594		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	86	100	100	96	97			100		
cM capacity (veh/h)	113	144	430	100	143	509	873			977		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	62	21	620	725								
Volume Left	0	0	26	0								
Volume Right	62	21	0	5								
cSH	322	509	873	1700								
Volume to Capacity	0.19	0.04	0.03	0.43								
Queue Length 95th (ft)	17	3	2	0								
Control Delay (s)	18.8	12.4	0.8	0.0								
Lane LOS	C	B	A									
Approach Delay (s)	18.8	12.4	0.8	0.0								
Approach LOS	C	B										
Intersection Summary												
Average Delay	1.3											
Intersection Capacity Utilization	53.6%			ICU Level of Service			A					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

4: Main St (Rt 20) & Consolati Way

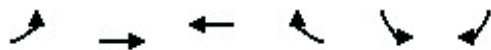
2020 Existing Conditions
Weekday Evening Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	60	55	530	600	25
Future Volume (Veh/h)	0	60	55	530	600	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.95	0.95	0.94	0.94
Hourly flow rate (vph)	0	73	58	558	638	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1326	652	665			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1326	652	665			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	84	94			
cM capacity (veh/h)	159	465	919			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	73	616	665			
Volume Left	0	58	0			
Volume Right	73	0	27			
cSH	465	919	1700			
Volume to Capacity	0.16	0.06	0.39			
Queue Length 95th (ft)	14	5	0			
Control Delay (s)	14.2	1.6	0.0			
Lane LOS	B	A				
Approach Delay (s)	14.2	1.6	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay		1.5				
Intersection Capacity Utilization		70.7%		ICU Level of Service		C
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

5: Consolati Way & Railroad St

2020 Existing Conditions
Weekday Evening Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	25	55	25	35	10
Future Volume (Veh/h)	15	25	55	25	35	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.63	0.63	0.67	0.67	0.75	0.75
Hourly flow rate (vph)	24	40	82	37	47	13
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	119				188	100
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	119				188	100
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				94	99
cM capacity (veh/h)	1482				792	960
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	64	119	60			
Volume Left	24	0	47			
Volume Right	0	37	13			
cSH	1482	1700	823			
Volume to Capacity	0.02	0.07	0.07			
Queue Length 95th (ft)	1	0	6			
Control Delay (s)	2.9	0.0	9.7			
Lane LOS	A		A			
Approach Delay (s)	2.9	0.0	9.7			
Approach LOS			A			
Intersection Summary						
Average Delay			3.2			
Intersection Capacity Utilization		18.8%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

1: Bank Driveway & West Park St

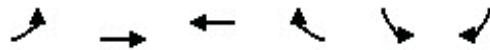
2020 Existing Conditions
Saturday MIDDAY Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	160	0	10	145	0	5
Future Volume (Veh/h)	160	0	10	145	0	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.87	0.87	0.58	0.58
Hourly flow rate (vph)	180	0	11	167	0	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			180		369	180
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			180		369	180
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		100	99
cM capacity (veh/h)			1408		630	868
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	180	178	9			
Volume Left	0	11	0			
Volume Right	0	0	9			
cSH	1700	1408	868			
Volume to Capacity	0.11	0.01	0.01			
Queue Length 95th (ft)	0	1	1			
Control Delay (s)	0.0	0.5	9.2			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.5	9.2			
Approach LOS			A			
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			25.8%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

2: West Park St/Park St & Main St (Rt 20)

2020 Existing Conditions
Saturday Midday Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	55	110	100	525	570	55
Future Volume (Veh/h)	55	110	100	525	570	55
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.91	0.91	0.97	0.97
Hourly flow rate (vph)	59	117	110	577	588	57
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)				6		
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1548	1204	1233	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1548	1204	1233	0	0	
tC, single (s)	7.1	6.5	6.5	6.2	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.2	
p0 queue free %	0	1	3	47	64	
cM capacity (veh/h)	4	118	113	1085	1630	
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	59	117	687	645		
Volume Left	59	0	0	588		
Volume Right	0	0	577	57		
cSH	4	118	706	1630		
Volume to Capacity	16.06	0.99	0.97	0.36		
Queue Length 95th (ft)	Err	164	373	42		
Control Delay (s)	Err	150.1	34.0	8.0		
Lane LOS	F	F	D	A		
Approach Delay (s)	3451.7		34.0	8.0		
Approach LOS	F		D			
Intersection Summary						
Average Delay			421.7			
Intersection Capacity Utilization			51.3%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Main St (Rt 20) & Zabian's Driveway/Park Pl

2020 Existing Conditions
Saturday Midday Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	45	0	0	15	40	540	0	0	580	15
Future Volume (Veh/h)	0	0	45	0	0	15	40	540	0	0	580	15
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.75	0.75	0.75	0.58	0.58	0.58	0.94	0.94	0.94	0.91	0.91	0.91
Hourly flow rate (vph)	0	0	60	0	0	26	43	574	0	0	637	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)	1											
Median type							None			None		
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1331	1305	645	1335	1313	574	653				574	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1331	1305	645	1335	1313	574	653				574	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	100	100	87	100	100	95	95				100	
cM capacity (veh/h)	119	151	467	111	152	522	934				994	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	60	26	617	653								
Volume Left	0	0	43	0								
Volume Right	60	26	0	16								
cSH	350	522	934	1700								
Volume to Capacity	0.17	0.05	0.05	0.38								
Queue Length 95th (ft)	15	4	4	0								
Control Delay (s)	17.4	12.3	1.2	0.0								
Lane LOS	C	B	A									
Approach Delay (s)	17.4	12.3	1.2	0.0								
Approach LOS	C	B										
Intersection Summary												
Average Delay				1.6								
Intersection Capacity Utilization				64.7%	ICU Level of Service			C				
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

4: Main St (Rt 20) & Consolati Way

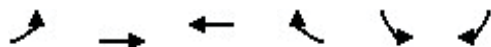
2020 Existing Conditions
Saturday Midday Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	80	65	490	515	25
Future Volume (Veh/h)	0	80	65	490	515	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.94	0.94	0.93	0.93
Hourly flow rate (vph)	0	104	69	521	554	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1226	568	581			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1226	568	581			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	80	93			
cM capacity (veh/h)	184	525	993			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	104	590	581			
Volume Left	0	69	0			
Volume Right	104	0	27			
cSH	525	993	1700			
Volume to Capacity	0.20	0.07	0.34			
Queue Length 95th (ft)	18	6	0			
Control Delay (s)	13.6	1.8	0.0			
Lane LOS	B	A				
Approach Delay (s)	13.6	1.8	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay		2.0				
Intersection Capacity Utilization		64.7%		ICU Level of Service		C
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

5: Consolati Way & Railroad St

2020 Existing Conditions
Saturday Midday Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	35	60	30	45	25
Future Volume (Veh/h)	25	35	60	30	45	25
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.80	0.80	0.84	0.84
Hourly flow rate (vph)	29	41	75	38	54	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	113				193	94
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	113				193	94
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				93	97
cM capacity (veh/h)	1489				780	963
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	70	113	84			
Volume Left	29	0	54			
Volume Right	0	38	30			
cSH	1489	1700	837			
Volume to Capacity	0.02	0.07	0.10			
Queue Length 95th (ft)	1	0	8			
Control Delay (s)	3.2	0.0	9.8			
Lane LOS	A		A			
Approach Delay (s)	3.2	0.0	9.8			
Approach LOS			A			
Intersection Summary						
Average Delay			3.9			
Intersection Capacity Utilization			20.6%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: Bank Driveway & West Park St

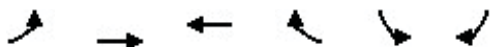
2027 No-Build Conditions
Weekday Morning Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	270	0	0	260	0	0
Future Volume (Veh/h)	270	0	0	260	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	293	0	0	283	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			293		576	293
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			293		576	293
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		100	100
cM capacity (veh/h)			1263		479	746
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	293	283	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1263	1700			
Volume to Capacity	0.17	0.00	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS						
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS						
Intersection Summary						
Average Delay						
			0.0			
Intersection Capacity Utilization			17.5%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

2: West Park St/Park St & Main St (Rt 20)

2027 No-Build Conditions
Weekday Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	95	175	115	520	505	145
Future Volume (Veh/h)	95	175	115	520	505	145
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	103	190	125	565	549	158
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)				6		
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1522	1177	1256	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1522	1177	1256	0	0	
tC, single (s)	7.2	6.6	6.6	6.3	4.2	
tC, 2 stage (s)						
tF (s)	3.6	4.1	4.1	3.4	2.3	
p0 queue free %	0	0	0	46	66	
cM capacity (veh/h)	0	123	107	1054	1597	
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	103	190	690	707		
Volume Left	103	0	0	549		
Volume Right	0	0	565	158		
cSH	0	123	544	1597		
Volume to Capacity	Err	1.54	1.27	0.34		
Queue Length 95th (ft)	Err	340	690	39		
Control Delay (s)	Err	343.9	158.0	7.3		
Lane LOS	F	F	F	A		
Approach Delay (s)	Err		158.0	7.3		
Approach LOS	F		F			
Intersection Summary						
Average Delay			Err			
Intersection Capacity Utilization			55.4%	ICU Level of Service		B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Main St (Rt 20) & Zabian's Driveway/Park Pl

2027 No-Build Conditions
Weekday Morning Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	15	0	0	5	20	595	0	0	635	10
Future Volume (Veh/h)	0	0	15	0	0	5	20	595	0	0	635	10
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.67	0.67	0.67	0.63	0.63	0.63	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	22	0	0	8	22	647	0	0	690	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)	1											
Median type	None								None			
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1394	1386	696	1398	1392	647	701			647		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1394	1386	696	1398	1392	647	701			647		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	100	100	95	100	100	98	97			100		
cM capacity (veh/h)	116	141	445	111	140	475	864			915		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	22	8	669	701								
Volume Left	0	0	22	0								
Volume Right	22	8	0	11								
cSH	334	475	864	1700								
Volume to Capacity	0.07	0.02	0.03	0.41								
Queue Length 95th (ft)	5	1	2	0								
Control Delay (s)	16.5	12.7	0.7	0.0								
Lane LOS	C	B	A									
Approach Delay (s)	16.5	12.7	0.7	0.0								
Approach LOS	C	B										
Intersection Summary												
Average Delay	0.7											
Intersection Capacity Utilization	50.8%			ICU Level of Service					A			
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

4: Main St (Rt 20) & Consolati Way

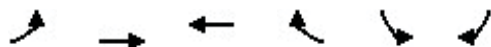
2027 No-Build Conditions

Weekday Morning Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	55	50	550	590	30
Future Volume (Veh/h)	0	55	50	550	590	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	60	54	598	641	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1364	658	674			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1364	658	674			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.3			
p0 queue free %	100	87	94			
cM capacity (veh/h)	149	456	894			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	60	652	674			
Volume Left	0	54	0			
Volume Right	60	0	33			
cSH	456	894	1700			
Volume to Capacity	0.13	0.06	0.40			
Queue Length 95th (ft)	11	5	0			
Control Delay (s)	14.1	1.6	0.0			
Lane LOS	B	A				
Approach Delay (s)	14.1	1.6	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay		1.3				
Intersection Capacity Utilization		71.2%		ICU Level of Service		C
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis 5: Consolati Way & Railroad St

2027 No-Build Conditions
Weekday Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	15	35	45	40	10
Future Volume (Veh/h)	20	15	35	45	40	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	16	38	49	43	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	87				122	62
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	87				122	62
tC, single (s)	4.2				6.5	6.3
tC, 2 stage (s)						
tF (s)	2.3				3.6	3.4
p0 queue free %	99				95	99
cM capacity (veh/h)	1472				846	986
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	38	87	54			
Volume Left	22	0	43			
Volume Right	0	49	11			
cSH	1472	1700	871			
Volume to Capacity	0.01	0.05	0.06			
Queue Length 95th (ft)	1	0	5			
Control Delay (s)	4.4	0.0	9.4			
Lane LOS	A		A			
Approach Delay (s)	4.4	0.0	9.4			
Approach LOS			A			
Intersection Summary						
Average Delay			3.8			
Intersection Capacity Utilization		18.6%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

1: Bank Driveway & West Park St

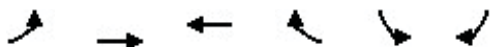
2027 No-Build Conditions
Weekday Evening Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	290	0	0	270	0	0
Future Volume (Veh/h)	290	0	0	270	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	312	0	0	293	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			312		605	312
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			312		605	312
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		100	100
cM capacity (veh/h)			1243		461	728
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	312	293	0			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1243	1700			
Volume to Capacity	0.18	0.00	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS			A			
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			18.6%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

2: West Park St/Park St & Main St (Rt 20)

2027 No-Build Conditions
Weekday Evening Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	130	160	135	605	705	135
Future Volume (Veh/h)	130	160	135	605	705	135
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.94	0.94
Hourly flow rate (vph)	141	174	147	658	750	144
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)				6		
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1974	1572	1644	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1974	1572	1644	0	0	
tC, single (s)	7.1	6.5	6.5	6.2	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.2	
p0 queue free %	0	0	0	39	53	
cM capacity (veh/h)	0	59	53	1082	1610	
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	141	174	805	894		
Volume Left	141	0	0	750		
Volume Right	0	0	658	144		
cSH	0	59	245	1610		
Volume to Capacity	Err	2.95	3.28	0.47		
Queue Length 95th (ft)	Err	450	Err	64		
Control Delay (s)	Err	1029.7	Err	8.4		
Lane LOS	F	F	F	A		
Approach Delay (s)	Err		Err	8.4		
Approach LOS	F		F			
Intersection Summary						
Average Delay			Err			
Intersection Capacity Utilization			71.6%	ICU Level of Service		C
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Main St (Rt 20) & Zabian's Driveway/Park Pl

2027 No-Build Conditions
Weekday Evening Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	40	0	0	15	30	705	0	0	800	10
Future Volume (Veh/h)	0	0	40	0	0	15	30	705	0	0	800	10
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.65	0.65	0.65	0.71	0.71	0.71	0.96	0.96	0.96	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	62	0	0	21	31	734	0	0	870	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)	1											
Median type	None								None			
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1692	1672	876	1702	1677	734	881			734		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1692	1672	876	1702	1677	734	881			734		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	82	100	100	95	96			100		
cM capacity (veh/h)	69	93	351	58	92	423	763			866		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	62	21	765	881								
Volume Left	0	0	31	0								
Volume Right	62	21	0	11								
cSH	263	423	763	1700								
Volume to Capacity	0.24	0.05	0.04	0.52								
Queue Length 95th (ft)	22	4	3	0								
Control Delay (s)	22.8	13.9	1.1	0.0								
Lane LOS	C	B	A									
Approach Delay (s)	22.8	13.9	1.1	0.0								
Approach LOS	C	B										
Intersection Summary												
Average Delay	1.5											
Intersection Capacity Utilization	64.8%			ICU Level of Service			C					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

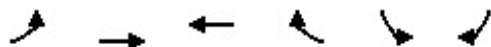
4: Main St (Rt 20) & Consolati Way

2027 No-Build Conditions
Weekday Evening Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	70	60	660	740	30
Future Volume (Veh/h)	0	70	60	660	740	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.95	0.95	0.94	0.94
Hourly flow rate (vph)	0	76	63	695	787	32
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1624	803	819			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1624	803	819			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	80	92			
cM capacity (veh/h)	103	380	805			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	76	758	819			
Volume Left	0	63	0			
Volume Right	76	0	32			
cSH	380	805	1700			
Volume to Capacity	0.20	0.08	0.48			
Queue Length 95th (ft)	18	6	0			
Control Delay (s)	16.8	2.0	0.0			
Lane LOS	C	A				
Approach Delay (s)	16.8	2.0	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay		1.7				
Intersection Capacity Utilization		85.5%		ICU Level of Service		E
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis 5: Consolati Way & Railroad St

2027 No-Build Conditions
Weekday Evening Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	30	60	30	40	15
Future Volume (Veh/h)	20	30	60	30	40	15
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	33	65	33	43	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	98				158	82
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	98				158	82
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				95	98
cM capacity (veh/h)	1508				825	984
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	55	98	59			
Volume Left	22	0	43			
Volume Right	0	33	16			
cSH	1508	1700	863			
Volume to Capacity	0.01	0.06	0.07			
Queue Length 95th (ft)	1	0	5			
Control Delay (s)	3.0	0.0	9.5			
Lane LOS	A		A			
Approach Delay (s)	3.0	0.0	9.5			
Approach LOS			A			
Intersection Summary						
Average Delay			3.4			
Intersection Capacity Utilization		19.4%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

1: Bank Driveway & West Park St

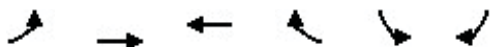
2027 No-Build Conditions
Saturday Midday Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	195	0	10	175	0	5
Future Volume (Veh/h)	195	0	10	175	0	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.58	0.58
Hourly flow rate (vph)	212	0	11	190	0	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			212		424	212
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			212		424	212
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		100	99
cM capacity (veh/h)			1370		586	833
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	212	201	9			
Volume Left	0	11	0			
Volume Right	0	0	9			
cSH	1700	1370	833			
Volume to Capacity	0.12	0.01	0.01			
Queue Length 95th (ft)	0	1	1			
Control Delay (s)	0.0	0.5	9.4			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.5	9.4			
Approach LOS			A			
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			27.4%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

2: West Park St/Park St & Main St (Rt 20)

2027 No-Build Conditions
Saturday Midday Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	130	115	675	725	70
Future Volume (Veh/h)	70	130	115	675	725	70
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.92	0.92	0.97	0.97
Hourly flow rate (vph)	74	138	125	734	747	72
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)				6		
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1960	1530	1566	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1960	1530	1566	0	0	
tC, single (s)	7.1	6.5	6.5	6.2	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.2	
p0 queue free %	0	0	0	32	54	
cM capacity (veh/h)	0	64	60	1085	1630	
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	74	138	859	819		
Volume Left	74	0	0	747		
Volume Right	0	0	734	72		
cSH	0	64	339	1630		
Volume to Capacity	Err	2.17	2.54	0.46		
Queue Length 95th (ft)	Err	330	1741	62		
Control Delay (s)	Err	676.3	724.0	8.6		
Lane LOS	F	F	F	A		
Approach Delay (s)	Err		724.0	8.6		
Approach LOS	F		F			
Intersection Summary						
Average Delay			Err			
Intersection Capacity Utilization			61.6%	ICU Level of Service		B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Main St (Rt 20) & Zabian's Driveway/Park Pl

2027 No-Build Conditions
Saturday Midday Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	0	45	0	0	15	45	700	0	0	750	15
Future Volume (Veh/h)	5	0	45	0	0	15	45	700	0	0	750	15
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.75	0.75	0.75	0.58	0.58	0.58	0.94	0.94	0.94	0.92	0.92	0.92
Hourly flow rate (vph)	7	0	60	0	0	26	48	745	0	0	815	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1690	1664	823	1694	1672	745	831			745		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1690	1664	823	1694	1672	745	831			745		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	100	84	100	100	94	94			100		
cM capacity (veh/h)	65	90	369	59	91	417	801			858		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	67	26	793	831								
Volume Left	7	0	48	0								
Volume Right	60	26	0	16								
cSH	412	417	801	1700								
Volume to Capacity	0.16	0.06	0.06	0.49								
Queue Length 95th (ft)	14	5	5	0								
Control Delay (s)	21.9	14.2	1.6	0.0								
Lane LOS	C	B	A									
Approach Delay (s)	21.9	14.2	1.6	0.0								
Approach LOS	C	B										
Intersection Summary												
Average Delay												
Intersection Capacity Utilization												
Analysis Period (min)												

HCM Unsignalized Intersection Capacity Analysis

4: Main St (Rt 20) & Consolati Way

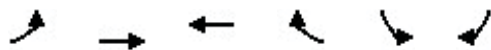
2027 No-Build Conditions
Saturday Midday Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	95	75	645	670	25
Future Volume (Veh/h)	0	95	75	645	670	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.94	0.94	0.93	0.93
Hourly flow rate (vph)	0	103	80	686	720	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1580	734	747			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1580	734	747			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	76	91			
cM capacity (veh/h)	110	422	861			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	103	766	747			
Volume Left	0	80	0			
Volume Right	103	0	27			
cSH	422	861	1700			
Volume to Capacity	0.24	0.09	0.44			
Queue Length 95th (ft)	24	8	0			
Control Delay (s)	16.3	2.3	0.0			
Lane LOS	C	A				
Approach Delay (s)	16.3	2.3	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay		2.1				
Intersection Capacity Utilization		81.5%		ICU Level of Service		D
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

5: Consolati Way & Railroad St

2027 No-Build Conditions
Saturday Midday Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	40	70	30	55	25
Future Volume (Veh/h)	30	40	70	30	55	25
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	43	76	33	60	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	109				202	92
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	109				202	92
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				92	97
cM capacity (veh/h)	1494				770	965
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	76	109	87			
Volume Left	33	0	60			
Volume Right	0	33	27			
cSH	1494	1700	821			
Volume to Capacity	0.02	0.06	0.11			
Queue Length 95th (ft)	2	0	9			
Control Delay (s)	3.3	0.0	9.9			
Lane LOS	A		A			
Approach Delay (s)	3.3	0.0	9.9			
Approach LOS			A			
Intersection Summary						
Average Delay			4.1			
Intersection Capacity Utilization			21.7%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: Bank Driveway/Site Drive 1 & West Park St

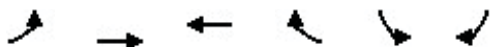
2027 Build Conditions
Weekday Morning Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	270	0	0	255	16	0	0	0	20	0	8
Future Volume (Veh/h)	1	270	0	0	255	16	0	0	0	20	0	8
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	293	0	0	277	17	0	0	0	22	0	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	294			293			590	589	293	580	580	286
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	294			293			590	589	293	580	580	286
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	95	100	99
cM capacity (veh/h)	1268			1263			414	420	746	425	425	754
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	294	294	0	31								
Volume Left	1	0	0	22								
Volume Right	0	17	0	9								
cSH	1268	1263	1700	487								
Volume to Capacity	0.00	0.00	0.00	0.06								
Queue Length 95th (ft)	0	0	0	5								
Control Delay (s)	0.0	0.0	0.0	12.9								
Lane LOS	A		A	B								
Approach Delay (s)	0.0	0.0	0.0	12.9								
Approach LOS			A	B								
Intersection Summary												
Average Delay			0.7									
Intersection Capacity Utilization			25.0%	ICU Level of Service					A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

2: West Park St/Park St & Main St (Rt 20)

2027 Build Conditions
Weekday Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	95	195	131	510	495	140
Future Volume (Veh/h)	95	195	131	510	495	140
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	103	212	142	554	538	152
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)				6		
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1500	1152	1228	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1500	1152	1228	0	0	
tC, single (s)	7.2	6.6	6.6	6.3	4.2	
tC, 2 stage (s)						
tF (s)	3.6	4.1	4.1	3.4	2.3	
p0 queue free %	0	0	0	47	66	
cM capacity (veh/h)	0	129	112	1054	1597	
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	103	212	696	690		
Volume Left	103	0	0	538		
Volume Right	0	0	554	152		
cSH	0	129	478	1597		
Volume to Capacity	Err	1.65	1.46	0.34		
Queue Length 95th (ft)	Err	388	870	38		
Control Delay (s)	Err	382.6	240.1	7.2		
Lane LOS	F	F	F	A		
Approach Delay (s)	Err		240.1	7.2		
Approach LOS	F		F			
Intersection Summary						
Average Delay			Err			
Intersection Capacity Utilization			58.1%	ICU Level of Service		B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Main St (Rt 20) & Park Pl

2027 Build Conditions
Weekday Morning Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	5	605	0	0	635
Future Volume (Veh/h)	0	5	605	0	0	635
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.63	0.63	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	8	658	0	0	690
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1348	658			658	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1348	658			658	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	100	98			100	
cM capacity (veh/h)	168	468			906	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	8	658	690			
Volume Left	0	0	0			
Volume Right	8	0	0			
cSH	468	1700	1700			
Volume to Capacity	0.02	0.39	0.41			
Queue Length 95th (ft)	1	0	0			
Control Delay (s)	12.8	0.0	0.0			
Lane LOS	B					
Approach Delay (s)	12.8	0.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay		0.1				
Intersection Capacity Utilization		41.8%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

4: Main St (Rt 20) & Consolati Way

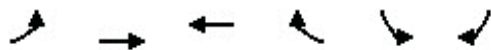
2027 Build Conditions
Weekday Morning Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	55	60	550	580	46
Future Volume (Veh/h)	0	55	60	550	580	46
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	60	65	598	630	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1383	655	680			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1383	655	680			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.3			
p0 queue free %	100	87	93			
cM capacity (veh/h)	143	457	889			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	60	663	680			
Volume Left	0	65	0			
Volume Right	60	0	50			
cSH	457	889	1700			
Volume to Capacity	0.13	0.07	0.40			
Queue Length 95th (ft)	11	6	0			
Control Delay (s)	14.1	1.9	0.0			
Lane LOS	B	A				
Approach Delay (s)	14.1	1.9	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay		1.5				
Intersection Capacity Utilization		72.2%		ICU Level of Service		C
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

5: Consolati Way & Railroad St

2027 Build Conditions
Weekday Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	15	61	45	40	11
Future Volume (Veh/h)	30	15	61	45	40	11
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	16	66	49	43	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	115				172	90
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	115				172	90
tC, single (s)	4.2				6.5	6.3
tC, 2 stage (s)						
tF (s)	2.3				3.6	3.4
p0 queue free %	98				95	99
cM capacity (veh/h)	1437				785	951
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	49	115	55			
Volume Left	33	0	43			
Volume Right	0	49	12			
cSH	1437	1700	816			
Volume to Capacity	0.02	0.07	0.07			
Queue Length 95th (ft)	2	0	5			
Control Delay (s)	5.2	0.0	9.7			
Lane LOS	A		A			
Approach Delay (s)	5.2	0.0	9.7			
Approach LOS			A			
Intersection Summary						
Average Delay			3.6			
Intersection Capacity Utilization			19.1%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

6: Site Drive 2 & Consolati Way

2027 Build Conditions
Weekday Morning Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Volume (veh/h)	35	0	27	45	3	10
Future Volume (Veh/h)	35	0	27	45	3	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	0	29	49	3	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			38		145	38
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			38		145	38
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	99
cM capacity (veh/h)			1572		832	1034
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	38	78	14			
Volume Left	0	29	3			
Volume Right	0	0	11			
cSH	1700	1572	983			
Volume to Capacity	0.02	0.02	0.01			
Queue Length 95th (ft)	0	1	1			
Control Delay (s)	0.0	2.8	8.7			
Lane LOS		A	A			
Approach Delay (s)	0.0	2.8	8.7			
Approach LOS			A			
Intersection Summary						
Average Delay			2.6			
Intersection Capacity Utilization			20.5%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: Bank Driveway/Site Drive 1 & West Park St

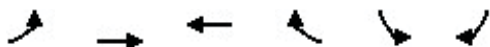
2027 Build Conditions
Weekday Evening Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	290	0	0	250	44	0	0	0	47	0	27
Future Volume (Veh/h)	7	290	0	0	250	44	0	0	0	47	0	27
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	312	0	0	272	48	0	0	0	51	0	29
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	320			312			653	648	312	624	624	296
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	320			312			653	648	312	624	624	296
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	87	100	96
cM capacity (veh/h)	1240			1243			364	387	728	396	399	743
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	320	320	0	80								
Volume Left	8	0	0	51								
Volume Right	0	48	0	29								
cSH	1240	1243	1700	477								
Volume to Capacity	0.01	0.00	0.00	0.17								
Queue Length 95th (ft)	0	0	0	15								
Control Delay (s)	0.3	0.0	0.0	14.1								
Lane LOS	A		A	B								
Approach Delay (s)	0.3	0.0	0.0	14.1								
Approach LOS			A	B								
Intersection Summary												
Average Delay			1.7									
Intersection Capacity Utilization			31.8%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

2: West Park St/Park St & Main St (Rt 20)

2027 Build Conditions
Weekday Evening Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	130	207	179	590	685	115
Future Volume (Veh/h)	130	207	179	590	685	115
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.94	0.94
Hourly flow rate (vph)	141	225	195	641	729	122
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)				6		
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1937	1519	1580	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1937	1519	1580	0	0	
tC, single (s)	7.1	6.5	6.5	6.2	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.2	
p0 queue free %	0	0	0	41	55	
cM capacity (veh/h)	0	65	59	1082	1610	
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	141	225	836	851		
Volume Left	141	0	0	729		
Volume Right	0	0	641	122		
cSH	0	65	219	1610		
Volume to Capacity	Err	3.46	3.81	0.45		
Queue Length 95th (ft)	Err	Err	Err	61		
Control Delay (s)	Err	Err	Err	8.4		
Lane LOS	F	F	F	A		
Approach Delay (s)	Err		Err	8.4		
Approach LOS	F		F			
Intersection Summary						
Average Delay			Err			
Intersection Capacity Utilization			71.6%		ICU Level of Service	C
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Main St (Rt 20) & Park Pl

2027 Build Conditions
Weekday Evening Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	15	720	0	0	800
Future Volume (Veh/h)	0	15	720	0	0	800
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.71	0.71	0.96	0.96	0.92	0.92
Hourly flow rate (vph)	0	21	750	0	0	870
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1620	750			750	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1620	750			750	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	95			100	
cM capacity (veh/h)	115	415			855	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	21	750	870			
Volume Left	0	0	0			
Volume Right	21	0	0			
cSH	415	1700	1700			
Volume to Capacity	0.05	0.44	0.51			
Queue Length 95th (ft)	4	0	0			
Control Delay (s)	14.1	0.0	0.0			
Lane LOS	B					
Approach Delay (s)	14.1	0.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay		0.2				
Intersection Capacity Utilization		47.9%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

4: Main St (Rt 20) & Consolati Way

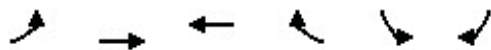
2027 Build Conditions
Weekday Evening Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	70	75	660	730	69
Future Volume (Veh/h)	0	70	75	660	730	69
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.95	0.95	0.94	0.94
Hourly flow rate (vph)	0	76	79	695	777	73
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1666	814	850			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1666	814	850			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	80	90			
cM capacity (veh/h)	94	375	784			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	76	774	850			
Volume Left	0	79	0			
Volume Right	76	0	73			
cSH	375	784	1700			
Volume to Capacity	0.20	0.10	0.50			
Queue Length 95th (ft)	19	8	0			
Control Delay (s)	17.0	2.6	0.0			
Lane LOS	C	A				
Approach Delay (s)	17.0	2.6	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay		1.9				
Intersection Capacity Utilization		88.2%		ICU Level of Service	E	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

5: Consolati Way & Railroad St

2027 Build Conditions
Weekday Evening Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	47	30	114	30	40	22
Future Volume (Veh/h)	47	30	114	30	40	22
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	51	33	124	33	43	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	157				276	140
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	157				276	140
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				94	97
cM capacity (veh/h)	1435				693	913
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	84	157	67			
Volume Left	51	0	43			
Volume Right	0	33	24			
cSH	1435	1700	758			
Volume to Capacity	0.04	0.09	0.09			
Queue Length 95th (ft)	3	0	7			
Control Delay (s)	4.7	0.0	10.2			
Lane LOS	A		B			
Approach Delay (s)	4.7	0.0	10.2			
Approach LOS			B			
Intersection Summary						
Average Delay			3.5			
Intersection Capacity Utilization		25.6%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

6: Site Drive 2 & Consolati Way

2027 Build Conditions
Weekday Evening Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Volume (veh/h)	50	0	61	75	6	27
Future Volume (Veh/h)	50	0	61	75	6	27
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	0	66	82	7	29
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			54		268	54
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			54		268	54
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		99	97
cM capacity (veh/h)			1551		691	1013
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	54	148	36			
Volume Left	0	66	7			
Volume Right	0	0	29			
cSH	1700	1551	929			
Volume to Capacity	0.03	0.04	0.04			
Queue Length 95th (ft)	0	3	3			
Control Delay (s)	0.0	3.5	9.0			
Lane LOS		A	A			
Approach Delay (s)	0.0	3.5	9.0			
Approach LOS			A			
Intersection Summary						
Average Delay			3.5			
Intersection Capacity Utilization			24.0%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: Bank Driveway/Site Drive 1 & West Park St

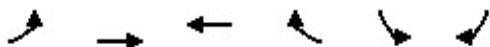
2027 Build Conditions
Saturday Midday Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	195	0	10	155	55	0	0	5	53	0	28
Future Volume (Veh/h)	8	195	0	10	155	55	0	0	5	53	0	28
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	212	0	11	168	60	0	0	5	58	0	30
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	228			212			480	480	212	455	450	198
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	228			212			480	480	212	455	450	198
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			100	100	99	89	100	96
cM capacity (veh/h)	1340			1370			476	478	833	507	497	843
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	221	239	5	88								
Volume Left	9	11	0	58								
Volume Right	0	60	5	30								
cSH	1340	1370	833	586								
Volume to Capacity	0.01	0.01	0.01	0.15								
Queue Length 95th (ft)	1	1	0	13								
Control Delay (s)	0.4	0.4	9.3	12.2								
Lane LOS	A	A	A	B								
Approach Delay (s)	0.4	0.4	9.3	12.2								
Approach LOS			A	B								
Intersection Summary												
Average Delay			2.4									
Intersection Capacity Utilization			33.4%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

2: West Park St/Park St & Main St (Rt 20)

2027 Build Conditions
Saturday Midday Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	183	170	650	700	50
Future Volume (Veh/h)	70	183	170	650	700	50
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.92	0.92	0.97	0.97
Hourly flow rate (vph)	74	195	185	707	722	52
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)				6		
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1916	1470	1496	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1916	1470	1496	0	0	
tC, single (s)	7.1	6.5	6.5	6.2	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.2	
p0 queue free %	0	0	0	35	56	
cM capacity (veh/h)	0	71	68	1085	1630	
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	74	195	892	774		
Volume Left	74	0	0	722		
Volume Right	0	0	707	52		
cSH	0	71	274	1630		
Volume to Capacity	Err	2.74	3.26	0.44		
Queue Length 95th (ft)	Err	482	Err	58		
Control Delay (s)	Err	910.3	Err	8.6		
Lane LOS	F	F	F	A		
Approach Delay (s)	Err		Err	8.6		
Approach LOS	F		F			
Intersection Summary						
Average Delay			Err			
Intersection Capacity Utilization			64.6%	ICU Level of Service		C
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Main St (Rt 20) & Park Pl

2027 Build Conditions
Saturday Midday Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	20	720	0	0	750
Future Volume (Veh/h)	0	20	720	0	0	750
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.58	0.58	0.94	0.94	0.92	0.92
Hourly flow rate (vph)	0	34	766	0	0	815
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1581	766			766	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1581	766			766	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	92			100	
cM capacity (veh/h)	121	406			843	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	34	766	815			
Volume Left	0	0	0			
Volume Right	34	0	0			
cSH	406	1700	1700			
Volume to Capacity	0.08	0.45	0.48			
Queue Length 95th (ft)	7	0	0			
Control Delay (s)	14.7	0.0	0.0			
Lane LOS	B					
Approach Delay (s)	14.7	0.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			47.9%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

4: Main St (Rt 20) & Consolati Way

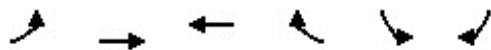
2027 Build Conditions
Saturday Midday Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	95	95	645	655	70
Future Volume (Veh/h)	0	95	95	645	655	70
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.94	0.94	0.93	0.93
Hourly flow rate (vph)	0	103	101	686	704	75
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1630	742	779			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1630	742	779			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	75	88			
cM capacity (veh/h)	99	418	838			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	103	787	779			
Volume Left	0	101	0			
Volume Right	103	0	75			
cSH	418	838	1700			
Volume to Capacity	0.25	0.12	0.46			
Queue Length 95th (ft)	24	10	0			
Control Delay (s)	16.4	3.0	0.0			
Lane LOS	C	A				
Approach Delay (s)	16.4	3.0	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay		2.4				
Intersection Capacity Utilization		84.6%		ICU Level of Service	E	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

5: Consolati Way & Railroad St

2027 Build Conditions
Saturday Midday Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	63	40	135	30	55	32
Future Volume (Veh/h)	63	40	135	30	55	32
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	68	43	147	33	60	35
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	180				342	164
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	180				342	164
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				90	96
cM capacity (veh/h)	1408				622	881
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	111	180	95			
Volume Left	68	0	60			
Volume Right	0	33	35			
cSH	1408	1700	698			
Volume to Capacity	0.05	0.11	0.14			
Queue Length 95th (ft)	4	0	12			
Control Delay (s)	4.9	0.0	11.0			
Lane LOS	A		B			
Approach Delay (s)	4.9	0.0	11.0			
Approach LOS			B			
Intersection Summary						
Average Delay			4.1			
Intersection Capacity Utilization			29.5%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

6: Site Drive 2 & Consolati Way

2027 Build Conditions
Saturday Midday Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Volume (veh/h)	70	0	72	95	7	33
Future Volume (Veh/h)	70	0	72	95	7	33
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	0	78	103	8	36
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			76		335	76
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			76		335	76
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		99	96
cM capacity (veh/h)			1523		626	985
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	76	181	44			
Volume Left	0	78	8			
Volume Right	0	0	36			
cSH	1700	1523	892			
Volume to Capacity	0.04	0.05	0.05			
Queue Length 95th (ft)	0	4	4			
Control Delay (s)	0.0	3.5	9.2			
Lane LOS		A	A			
Approach Delay (s)	0.0	3.5	9.2			
Approach LOS			A			
Intersection Summary						
Average Delay			3.4			
Intersection Capacity Utilization			25.6%	ICU Level of Service		A
Analysis Period (min)			15			



Attachment E – Traffic Signal Warrant Analysis

2009 MUTCD

TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

Intersection: **Main Street (Rt 20) at West Park Street and Park Street (Route 20)**

Major Street Direction: ▼

Year: **2018** Condition: **Existing**

Operating speed on major roadway: **25** mph

Number of approaches: **3**

Required approach volumes

Warrant 1 EIGHT-HOUR VEHICULAR VOLUME		Minimum*	Adjusted Minimum**
Warrant 1A MINIMUM VEHICULAR VOLUME (8 hours of day)			
Major Street :	1 Lane(s) on each approach	500	500
Minor Street :	1 Lane(s) on each approach	150	150
Warrant 1B INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day)			
Major Street :	1 Lane(s) on each approach	750	750
Minor Street :	1 Lane(s) on each approach	75	75
80 PERCENT SATISFACTION OF WARRANT 1A AND WARRANT 1B		Warrant 1A	Warrant 1B
Major Street :	1 Lane(s) on each approach	400	600
Minor Street :	1 Lane(s) on each approach	120	60

Warrant 2 FOUR HOUR VEHICULAR VOLUME

Major Street : 1 Lane(s) on each approach
Minor Street : 1 Lane(s) on each approach

If "verify" indicated, see Figure 4C-1 or 4C-2.
25 = accuracy of regression equations

Warrant 3 PEAK HOUR VOLUME

Major Street : 1 Lane(s) on each approach
Minor Street : 1 Lane(s) on each approach

If "verify" indicated, see Figure 4C-3 or 4C-4.
25 = accuracy of regression equations

Hour	Entering Vol. Minor Road+	Entering Vol. on Major Road		Tot. Ent. Vol. On Major Rd	Meets the following volume-based warrants?				
		Eastbound	Westbound		1A	1B	80%(1A&1B)	2	3
6:00 - 7:00 AM				0	No	No	No	No	No
7:00 - 8:00 AM	409	88	343	431	No	No	No	Yes	No
8:00 - 9:00 AM	456	149	450	599	Yes	No	No	Yes	Yes
9:00 - 10:00 AM				0	No	No	No	No	No
10:00 - 11:00 AM				0	No	No	No	No	No
11:00 - 12:00 AM				0	No	No	No	No	No
12:00 - 1:00 PM				0	No	No	No	No	No
1:00 - 2:00 PM				0	No	No	No	No	No
2:00 - 3:00 PM				0	No	No	No	No	No
3:00 - 4:00 PM				0	No	No	No	No	No
4:00 - 5:00 PM	707	257	614	871	Yes	Yes	Yes	Yes	Yes
5:00 - 6:00 PM	560	220	574	794	Yes	Yes	Yes	Yes	Yes
6:00 - 7:00 PM				0	No	No	No	No	No
					No	No	No	Yes	Yes
					Warrants Met?			2	3
								Yes	Yes

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

NON-VOLUME-BASED WARRANTS

Warrant 4, Minimum Pedestrian Volume:

Peak Four Hour Pedestrian Volumes:
(non-concurrent)

No
0
0
0

Warrant 5, School Crossing:

See MUTCD for details.

Warrant 7, Crash Experience:

No

Warrant 6, Coordinated Signal System:

See MUTCD for details.

of accidents "correctable by
signalization" occurring in the last 12 months:

Warrant 8, Roadway Network:

See MUTCD for details.

Source: *Manual on Uniform Traffic Control Devices (MUTCD); 2009 Edition [2009]*



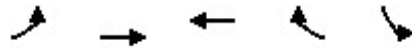
Attachment F – Alternative Capacity Analyses

Queues

2: West Park St/Park St & Main St (Rt 20)

2027 Alternative Build Condition

Weekday Morning Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations					
Traffic Volume (vph)	95	195	131	510	495
Future Volume (vph)	95	195	131	510	495
Lane Group Flow (vph)	103	212	142	554	690
Turn Type	Perm	NA	NA	Perm	Prot
Protected Phases		4	8		6
Permitted Phases	4			8	
Detector Phase	4	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5
Total Split (s)	23.0	23.0	23.0	23.0	37.0
Total Split (%)	38.3%	38.3%	38.3%	38.3%	61.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	None	None	Max
v/c Ratio	0.39	0.53	0.38	0.74	0.67
Control Delay	21.7	23.2	20.3	8.8	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.7	23.2	20.3	8.8	11.9
Queue Length 50th (ft)	28	59	38	0	110
Queue Length 95th (ft)	63	110	78	65	292
Internal Link Dist (ft)		302	420		204
Turn Bay Length (ft)	55			140	
Base Capacity (vph)	413	620	582	857	1032
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.25	0.34	0.24	0.65	0.67

Intersection Summary

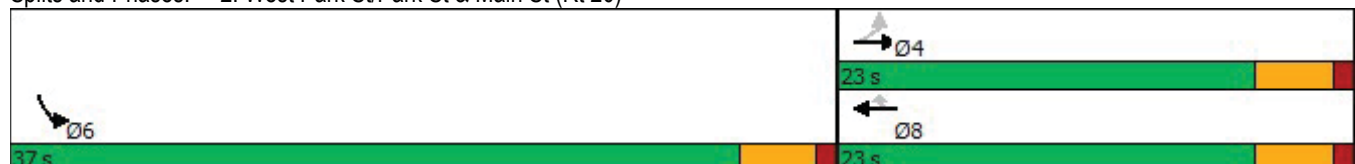
Cycle Length: 60

Actuated Cycle Length: 53.7

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

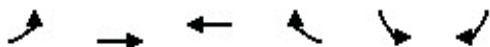
Splits and Phases: 2: West Park St/Park St & Main St (Rt 20)



HCM Signalized Intersection Capacity Analysis

2: West Park St/Park St & Main St (Rt 20)

2027 Alternative Build Condition
Weekday Morning Peak Hour



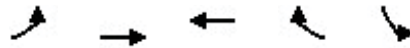
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	95	195	131	510	495	140
Future Volume (vph)	95	195	131	510	495	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.97	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1703	1792	1681	1429	1674	
Flt Permitted	0.67	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1195	1792	1681	1429	1674	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	212	142	554	538	152
RTOR Reduction (vph)	0	0	0	430	14	0
Lane Group Flow (vph)	103	212	142	124	676	0
Heavy Vehicles (%)	6%	6%	13%	13%	6%	6%
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)	12.0	12.0	12.0	12.0	32.7	
Effective Green, g (s)	12.0	12.0	12.0	12.0	32.7	
Actuated g/C Ratio	0.22	0.22	0.22	0.22	0.61	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	267	400	375	319	1019	
v/s Ratio Prot		c0.12	0.08		c0.40	
v/s Ratio Perm	0.09			0.09		
v/c Ratio	0.39	0.53	0.38	0.39	0.66	
Uniform Delay, d1	17.7	18.4	17.7	17.7	6.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9	1.4	0.6	0.8	3.4	
Delay (s)	18.6	19.7	18.3	18.5	10.3	
Level of Service	B	B	B	B	B	
Approach Delay (s)		19.4	18.5		10.3	
Approach LOS		B	B		B	
Intersection Summary						
HCM 2000 Control Delay			15.3		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.63			
Actuated Cycle Length (s)			53.7		Sum of lost time (s)	9.0
Intersection Capacity Utilization			59.4%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Queues

2: West Park St/Park St & Main St (Rt 20)

2027 Alternative Build Condition

Weekday Evening Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations					
Traffic Volume (vph)	130	207	179	590	685
Future Volume (vph)	130	207	179	590	685
Lane Group Flow (vph)	141	225	195	641	851
Turn Type	Perm	NA	NA	Perm	Prot
Protected Phases		4	8		6
Permitted Phases	4			8	
Detector Phase	4	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5
Total Split (s)	23.0	23.0	23.0	23.0	37.0
Total Split (%)	38.3%	38.3%	38.3%	38.3%	61.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	None	None	Max
v/c Ratio	0.52	0.50	0.44	0.74	0.82
Control Delay	25.1	21.8	20.6	7.9	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	25.1	21.8	20.6	7.9	19.5
Queue Length 50th (ft)	40	63	54	0	189
Queue Length 95th (ft)	85	115	101	66	#491
Internal Link Dist (ft)		302	420		204
Turn Bay Length (ft)	55			140	
Base Capacity (vph)	384	631	625	955	1032
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.37	0.36	0.31	0.67	0.82

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 54.9

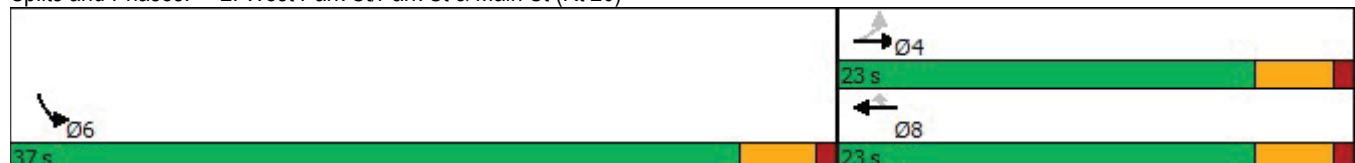
Natural Cycle: 60

Control Type: Actuated-Uncoordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

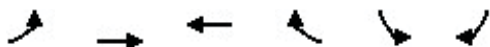
Splits and Phases: 2: West Park St/Park St & Main St (Rt 20)



HCM Signalized Intersection Capacity Analysis

2: West Park St/Park St & Main St (Rt 20)

2027 Alternative Build Condition
Weekday Evening Peak Hour



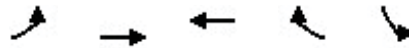
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	130	207	179	590	685	115
Future Volume (vph)	130	207	179	590	685	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.98	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1770	1863	1845	1568	1718	
Flt Permitted	0.61	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1132	1863	1845	1568	1718	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.94	0.94
Adj. Flow (vph)	141	225	195	641	729	122
RTOR Reduction (vph)	0	0	0	487	9	0
Lane Group Flow (vph)	141	225	195	154	842	0
Heavy Vehicles (%)	2%	2%	3%	3%	4%	4%
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)	13.2	13.2	13.2	13.2	32.7	
Effective Green, g (s)	13.2	13.2	13.2	13.2	32.7	
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.60	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	272	447	443	377	1023	
v/s Ratio Prot		0.12	0.11		c0.49	
v/s Ratio Perm	c0.12			0.10		
v/c Ratio	0.52	0.50	0.44	0.41	0.82	
Uniform Delay, d1	18.1	18.0	17.7	17.6	8.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.7	0.9	0.7	0.7	7.5	
Delay (s)	19.8	18.9	18.4	18.3	16.3	
Level of Service	B	B	B	B	B	
Approach Delay (s)		19.2	18.3		16.3	
Approach LOS		B	B		B	
Intersection Summary						
HCM 2000 Control Delay			17.6		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.74			
Actuated Cycle Length (s)			54.9		Sum of lost time (s)	9.0
Intersection Capacity Utilization			72.8%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

Queues

2: West Park St/Park St & Main St (Rt 20)

2027 Alternative Build Condition

Saturday Midday Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations					
Traffic Volume (vph)	70	183	170	650	700
Future Volume (vph)	70	183	170	650	700
Lane Group Flow (vph)	74	195	185	707	774
Turn Type	Perm	NA	NA	Perm	Prot
Protected Phases		4	8		6
Permitted Phases	4			8	
Detector Phase	4	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5
Total Split (s)	23.0	23.0	23.0	23.0	37.0
Total Split (%)	38.3%	38.3%	38.3%	38.3%	61.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	None	None	Min
v/c Ratio	0.22	0.38	0.36	0.75	0.83
Control Delay	17.0	17.7	17.6	7.4	19.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.0	17.7	17.6	7.4	19.7
Queue Length 50th (ft)	16	45	42	0	152
Queue Length 95th (ft)	47	101	96	71	#413
Internal Link Dist (ft)		302	420		204
Turn Bay Length (ft)	55			140	
Base Capacity (vph)	506	790	782	1075	1287
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.15	0.25	0.24	0.66	0.60

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 47.1

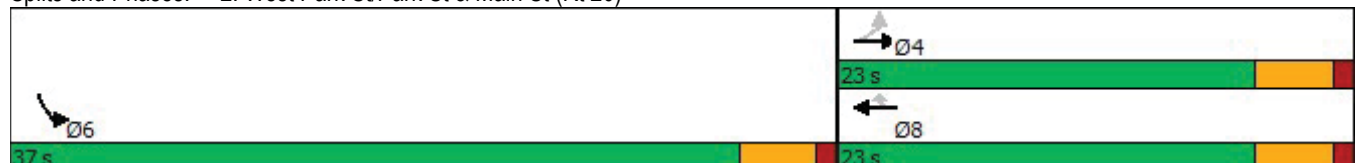
Natural Cycle: 60

Control Type: Actuated-Uncoordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

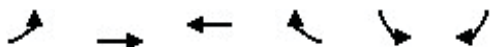
Splits and Phases: 2: West Park St/Park St & Main St (Rt 20)



HCM Signalized Intersection Capacity Analysis

2: West Park St/Park St & Main St (Rt 20)

2027 Alternative Build Condition
Saturday Midday Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	70	183	170	650	700	50
Future Volume (vph)	70	183	170	650	700	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.99	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1787	1881	1863	1583	1781	
Flt Permitted	0.64	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	1206	1881	1863	1583	1781	
Peak-hour factor, PHF	0.94	0.94	0.92	0.92	0.97	0.97
Adj. Flow (vph)	74	195	185	707	722	52
RTOR Reduction (vph)	0	0	0	511	4	0
Lane Group Flow (vph)	74	195	185	196	770	0
Heavy Vehicles (%)	1%	1%	2%	2%	1%	1%
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)	12.9	12.9	12.9	12.9	24.6	
Effective Green, g (s)	12.9	12.9	12.9	12.9	24.6	
Actuated g/C Ratio	0.28	0.28	0.28	0.28	0.53	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	334	521	516	439	942	
v/s Ratio Prot		0.10	0.10		c0.43	
v/s Ratio Perm	0.06			c0.12		
v/c Ratio	0.22	0.37	0.36	0.45	0.82	
Uniform Delay, d1	12.9	13.5	13.5	13.9	9.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	0.5	0.4	0.7	5.6	
Delay (s)	13.3	14.0	13.9	14.6	14.7	
Level of Service	B	B	B	B	B	
Approach Delay (s)		13.8	14.4		14.7	
Approach LOS		B	B		B	
Intersection Summary						
HCM 2000 Control Delay			14.4		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.69			
Actuated Cycle Length (s)			46.5		Sum of lost time (s)	9.0
Intersection Capacity Utilization			66.2%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

INTERSECTION SUMMARY

 **Site: 101 [Main St at Park St/West Park St- AM]**

New Site
Roundabout

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Travel Speed (Average)	52.7 km/h	52.7 km/h
Travel Distance (Total)	1757.2 veh-km/h	2108.7 pers-km/h
Travel Time (Total)	33.3 veh-h/h	40.0 pers-h/h
Demand Flows (Total)	1702 veh/h	2043 pers/h
Percent Heavy Vehicles (Demand)	8.9 %	
Degree of Saturation	0.547	
Practical Spare Capacity	55.4 %	
Effective Intersection Capacity	3113 veh/h	
Control Delay (Total)	3.48 veh-h/h	4.18 pers-h/h
Control Delay (Average)	7.4 sec	7.4 sec
Control Delay (Worst Lane)	9.4 sec	
Control Delay (Worst Movement)	12.6 sec	12.6 sec
Geometric Delay (Average)	5.8 sec	
Stop-Line Delay (Average)	1.5 sec	
Idling Time (Average)	0.1 sec	
Intersection Level of Service (LOS)	LOS A	
95% Back of Queue - Vehicles (Worst Lane)	5.2 veh	
95% Back of Queue - Distance (Worst Lane)	40.3 m	
Queue Storage Ratio (Worst Lane)	0.03	
Total Effective Stops	1031 veh/h	1238 pers/h
Effective Stop Rate	0.61 per veh	0.61 per pers
Proportion Queued	0.55	0.55
Performance Index	58.7	58.7
Cost (Total)	1064.09 \$/h	1064.09 \$/h
Fuel Consumption (Total)	206.7 L/h	
Carbon Dioxide (Total)	495.7 kg/h	
Hydrocarbons (Total)	0.039 kg/h	
Carbon Monoxide (Total)	0.501 kg/h	
NOx (Total)	1.514 kg/h	

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Intersection LOS value for Vehicles is based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	817,044 veh/y	980,452 pers/y
Delay	1,672 veh-h/y	2,006 pers-h/y
Effective Stops	495,023 veh/y	594,028 pers/y
Travel Distance	843,462 veh-km/y	1,012,154 pers-km/y
Travel Time	16,003 veh-h/y	19,203 pers-h/y
Cost	510,762 \$/y	510,762 \$/y
Fuel Consumption	99,239 L/y	
Carbon Dioxide	237,914 kg/y	
Hydrocarbons	19 kg/y	
Carbon Monoxide	241 kg/y	
NOx	727 kg/y	

MOVEMENT SUMMARY

 **Site: 101 [Main St at Park St/West Park St- AM]**

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Park Street											
5	T1	142	13.0	0.543	5.1	LOS A	5.2	40.3	0.48	0.50	54.9
6	R2	554	13.0	0.543	4.9	LOS A	5.2	40.3	0.48	0.50	53.5
Approach		697	13.0	0.543	4.9	LOS A	5.2	40.3	0.48	0.50	53.8
North: Main Street											
7	L2	538	6.0	0.547	10.0	LOS A	4.8	35.1	0.52	0.62	52.2
9	R2	152	6.0	0.547	5.1	LOS A	4.8	35.1	0.52	0.62	51.1
Approach		690	6.0	0.547	8.9	LOS A	4.8	35.1	0.52	0.62	51.9
West: West Park Street											
10	L2	103	6.0	0.383	12.6	LOS B	2.6	19.2	0.75	0.79	52.1
11	T1	212	6.0	0.383	7.9	LOS A	2.6	19.2	0.75	0.79	52.2
Approach		315	6.0	0.383	9.4	LOS A	2.6	19.2	0.75	0.79	52.2
All Vehicles		1702	8.9	0.547	7.4	LOS A	5.2	40.3	0.55	0.61	52.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

LANE SUMMARY

 **Site: 101 [Main St at Park St/West Park St- AM]**

New Site
Roundabout

Lane Use and Performance													
	Demand Flows			Deg.	Lane	Average	Level of	95% Back of Queue		Lane	Lane	Cap.	Prob.
	Total	HV	Cap.	Satn	Util.	Delay	Service	Veh	Dist	Config	Length	Adj.	Block.
	veh/h	%	veh/h	v/c	%	sec			m		m	%	%
East: Park Street													
Lane 1 ^d	697	13.0	1284	0.543	100	4.9	LOS A	5.2	40.3	Full	500	0.0	0.0
Approach	697	13.0		0.543		4.9	LOS A	5.2	40.3				
North: Main Street													
Lane 1 ^d	690	6.0	1262	0.547	100	8.9	LOS A	4.8	35.1	Full	500	0.0	0.0
Approach	690	6.0		0.547		8.9	LOS A	4.8	35.1				
West: West Park Street													
Lane 1 ^d	315	6.0	824	0.383	100	9.4	LOS A	2.6	19.2	Full	500	0.0	0.0
Approach	315	6.0		0.383		9.4	LOS A	2.6	19.2				
Intersection	1702	8.9		0.547		7.4	LOS A	5.2	40.3				

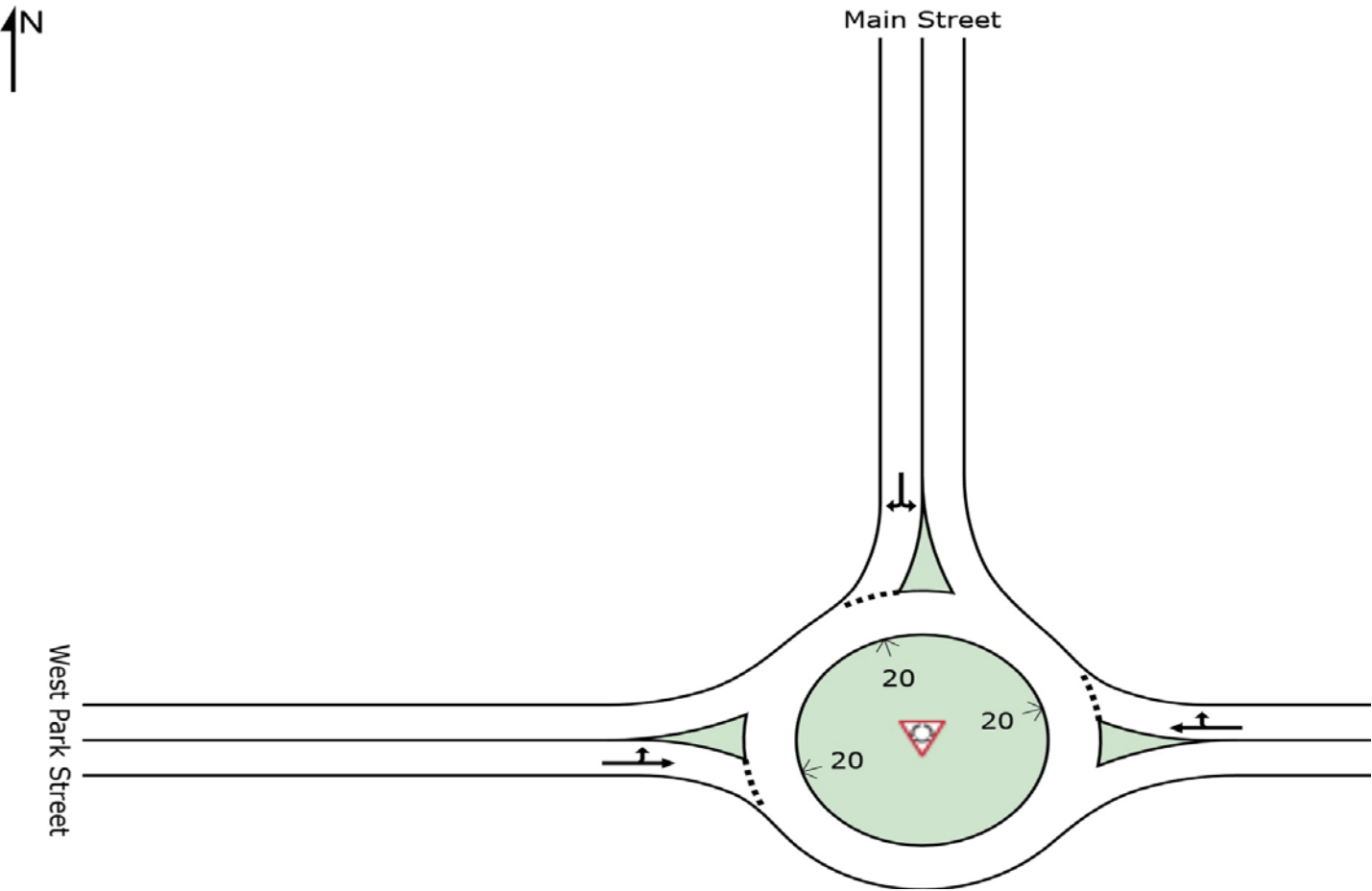
Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

SITE LAYOUT

 Site: 101 [Main St at Park St/West Park St- AM]

New Site
Roundabout



INTERSECTION SUMMARY

 **Site: 101 [Main St at Park St/W Park St- PM]**

New Site
Roundabout

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Travel Speed (Average)	51.7 km/h	51.7 km/h
Travel Distance (Total)	2123.1 veh-km/h	2547.8 pers-km/h
Travel Time (Total)	41.0 veh-h/h	49.3 pers-h/h
Demand Flows (Total)	2053 veh/h	2464 pers/h
Percent Heavy Vehicles (Demand)	3.2 %	
Degree of Saturation	0.703	
Practical Spare Capacity	20.9 %	
Effective Intersection Capacity	2921 veh/h	
Control Delay (Total)	5.07 veh-h/h	6.09 pers-h/h
Control Delay (Average)	8.9 sec	8.9 sec
Control Delay (Worst Lane)	14.2 sec	
Control Delay (Worst Movement)	17.0 sec	17.0 sec
Geometric Delay (Average)	6.0 sec	
Stop-Line Delay (Average)	2.9 sec	
Idling Time (Average)	0.4 sec	
Intersection Level of Service (LOS)	LOS A	
95% Back of Queue - Vehicles (Worst Lane)	8.0 veh	
95% Back of Queue - Distance (Worst Lane)	57.6 m	
Queue Storage Ratio (Worst Lane)	0.05	
Total Effective Stops	1421 veh/h	1705 pers/h
Effective Stop Rate	0.69 per veh	0.69 per pers
Proportion Queued	0.74	0.74
Performance Index	81.4	81.4
Cost (Total)	1267.07 \$/h	1267.07 \$/h
Fuel Consumption (Total)	208.8 L/h	
Carbon Dioxide (Total)	494.8 kg/h	
Hydrocarbons (Total)	0.041 kg/h	
Carbon Monoxide (Total)	0.542 kg/h	
NOx (Total)	0.782 kg/h	

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Intersection LOS value for Vehicles is based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	985,554 veh/y	1,182,665 pers/y
Delay	2,436 veh-h/y	2,923 pers-h/y
Effective Stops	681,844 veh/y	818,213 pers/y
Travel Distance	1,019,101 veh-km/y	1,222,921 pers-km/y
Travel Time	19,703 veh-h/y	23,644 pers-h/y
Cost	608,194 \$/y	608,194 \$/y
Fuel Consumption	100,244 L/y	
Carbon Dioxide	237,514 kg/y	
Hydrocarbons	20 kg/y	
Carbon Monoxide	260 kg/y	
NOx	375 kg/y	

MOVEMENT SUMMARY



Site: 101 [Main St at Park St/W Park St- PM]

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Park St											
5	T1	195	3.0	0.651	5.4	LOS A	7.4	52.9	0.64	0.56	54.5
6	R2	641	3.0	0.651	5.2	LOS A	7.4	52.9	0.64	0.56	53.2
Approach		836	3.0	0.651	5.2	LOS A	7.4	52.9	0.64	0.56	53.5
North: Main St											
7	L2	729	4.0	0.703	10.9	LOS B	8.0	57.6	0.74	0.68	51.3
9	R2	122	4.0	0.703	6.1	LOS A	8.0	57.6	0.74	0.68	50.3
Approach		851	4.0	0.703	10.2	LOS B	8.0	57.6	0.74	0.68	51.2
West: West Park St											
10	L2	141	2.0	0.558	17.0	LOS B	5.2	37.2	0.95	1.03	49.3
11	T1	225	2.0	0.558	12.4	LOS B	5.2	37.2	0.95	1.03	49.4
Approach		366	2.0	0.558	14.2	LOS B	5.2	37.2	0.95	1.03	49.3
All Vehicles		2053	3.2	0.703	8.9	LOS A	8.0	57.6	0.74	0.69	51.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

LANE SUMMARY

 **Site: 101 [Main St at Park St/W Park St- PM]**

New Site
Roundabout

Lane Use and Performance													
	Demand Flows			Deg.	Lane	Average	Level of	95% Back of Queue		Lane	Lane	Cap.	Prob.
	Total	HV	Cap.	Satn	Util.	Delay	Service	Veh	Dist	Config	Length	Adj.	Block.
	veh/h	%	veh/h	v/c	%	sec			m		m	%	%
East: Park St													
Lane 1 ^d	836	3.0	1285	0.651	100	5.2	LOS A	7.4	52.9	Full	500	0.0	0.0
Approach	836	3.0		0.651		5.2	LOS A	7.4	52.9				
North: Main St													
Lane 1 ^d	851	4.0	1211	0.703	100	10.2	LOS B	8.0	57.6	Full	500	0.0	0.0
Approach	851	4.0		0.703		10.2	LOS B	8.0	57.6				
West: West Park St													
Lane 1 ^d	366	2.0	657	0.558	100	14.2	LOS B	5.2	37.2	Full	500	0.0	0.0
Approach	366	2.0		0.558		14.2	LOS B	5.2	37.2				
Intersection	2053	3.2		0.703		8.9	LOS A	8.0	57.6				

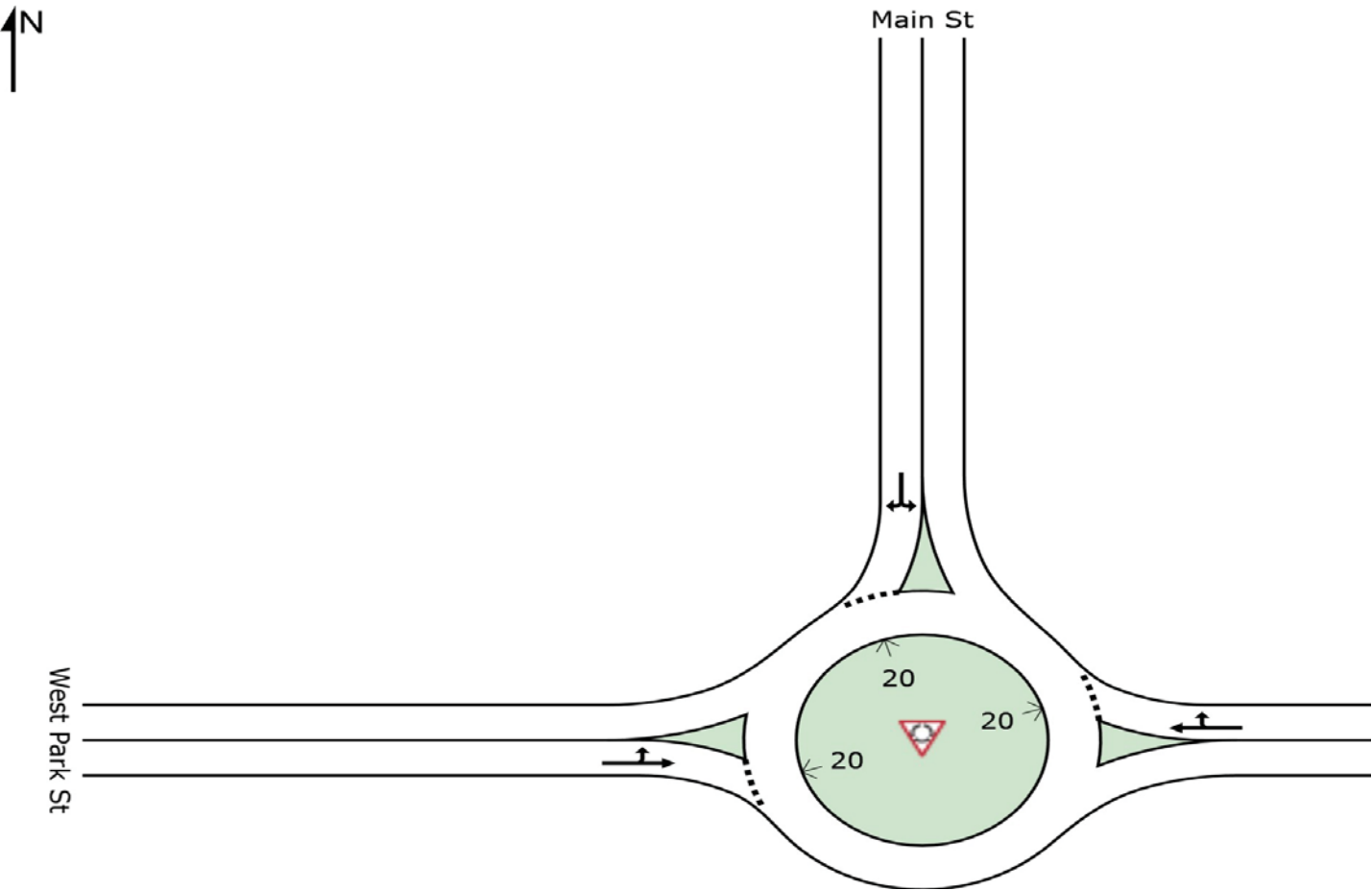
Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

SITE LAYOUT

 Site: 101 [Main St at Park St/W Park St- PM]

New Site
Roundabout



INTERSECTION SUMMARY

 **Site: 101 [Main St at Park St/W Park St- Sat]**

New Site
Roundabout

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Travel Speed (Average)	52.7 km/h	52.7 km/h
Travel Distance (Total)	1998.3 veh-km/h	2397.9 pers-km/h
Travel Time (Total)	37.9 veh-h/h	45.5 pers-h/h
Demand Flows (Total)	1934 veh/h	2320 pers/h
Percent Heavy Vehicles (Demand)	1.5 %	
Degree of Saturation	0.618	
Practical Spare Capacity	37.5 %	
Effective Intersection Capacity	3129 veh/h	
Control Delay (Total)	4.05 veh-h/h	4.86 pers-h/h
Control Delay (Average)	7.5 sec	7.5 sec
Control Delay (Worst Lane)	10.5 sec	
Control Delay (Worst Movement)	13.8 sec	13.8 sec
Geometric Delay (Average)	5.9 sec	
Stop-Line Delay (Average)	1.6 sec	
Idling Time (Average)	0.1 sec	
Intersection Level of Service (LOS)	LOS A	
95% Back of Queue - Vehicles (Worst Lane)	7.2 veh	
95% Back of Queue - Distance (Worst Lane)	51.2 m	
Queue Storage Ratio (Worst Lane)	0.04	
Total Effective Stops	1160 veh/h	1392 pers/h
Effective Stop Rate	0.60 per veh	0.60 per pers
Proportion Queued	0.57	0.57
Performance Index	69.1	69.1
Cost (Total)	1124.39 \$/h	1124.39 \$/h
Fuel Consumption (Total)	178.0 L/h	
Carbon Dioxide (Total)	419.9 kg/h	
Hydrocarbons (Total)	0.035 kg/h	
Carbon Monoxide (Total)	0.477 kg/h	
NOx (Total)	0.387 kg/h	

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Intersection LOS value for Vehicles is based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	928,152 veh/y	1,113,782 pers/y
Delay	1,946 veh-h/y	2,335 pers-h/y
Effective Stops	556,742 veh/y	668,091 pers/y
Travel Distance	959,173 veh-km/y	1,151,008 pers-km/y
Travel Time	18,197 veh-h/y	21,837 pers-h/y
Cost	539,707 \$/y	539,707 \$/y
Fuel Consumption	85,435 L/y	
Carbon Dioxide	201,560 kg/y	
Hydrocarbons	17 kg/y	
Carbon Monoxide	229 kg/y	
NOx	186 kg/y	

MOVEMENT SUMMARY

 **Site: 101 [Main St at Park St/W Park St- Sat]**

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Park St											
5	T1	185	2.0	0.618	4.7	LOS A	7.2	51.2	0.45	0.47	55.2
6	R2	707	2.0	0.618	4.5	LOS A	7.2	51.2	0.45	0.47	53.9
Approach		891	2.0	0.618	4.6	LOS A	7.2	51.2	0.45	0.47	54.2
North: Main St											
7	L2	722	1.0	0.618	10.3	LOS B	5.8	40.9	0.61	0.66	51.5
9	R2	52	1.0	0.618	5.4	LOS A	5.8	40.9	0.61	0.66	50.4
Approach		773	1.0	0.618	10.0	LOS A	5.8	40.9	0.61	0.66	51.4
West: W Park St											
10	L2	74	1.0	0.385	13.8	LOS B	2.8	19.5	0.85	0.86	51.9
11	T1	195	1.0	0.385	9.2	LOS A	2.8	19.5	0.85	0.86	51.9
Approach		269	1.0	0.385	10.5	LOS B	2.8	19.5	0.85	0.86	51.9
All Vehicles		1934	1.5	0.618	7.5	LOS A	7.2	51.2	0.57	0.60	52.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

LANE SUMMARY

 **Site: 101 [Main St at Park St/W Park St- Sat]**

New Site
Roundabout

Lane Use and Performance													
	Demand Flows			Deg.	Lane	Average	Level of	95% Back of Queue		Lane	Lane	Cap.	Prob.
	Total	HV	Cap.	Satn	Util.	Delay	Service	Veh	Dist	Config	Length	Adj.	Block.
	veh/h	%	veh/h	v/c	%	sec			m		m	%	%
East: Park St													
Lane 1 ^d	891	2.0	1442	0.618	100	4.6	LOS A	7.2	51.2	Full	500	0.0	0.0
Approach	891	2.0		0.618		4.6	LOS A	7.2	51.2				
North: Main St													
Lane 1 ^d	773	1.0	1252	0.618	100	10.0	LOS A	5.8	40.9	Full	500	0.0	0.0
Approach	773	1.0		0.618		10.0	LOS A	5.8	40.9				
West: W Park St													
Lane 1 ^d	269	1.0	700	0.385	100	10.5	LOS B	2.8	19.5	Full	500	0.0	0.0
Approach	269	1.0		0.385		10.5	LOS B	2.8	19.5				
Intersection	1934	1.5		0.618		7.5	LOS A	7.2	51.2				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

SITE LAYOUT

 **Site: 101 [Main St at Park St/W Park St- Sat]**

New Site
Roundabout

