

Eagle Mill Redevelopment

West Center Street (Route 20)
Lee, Massachusetts

PREPARED FOR

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1

Introduction

Vanasse Hangen Brustlin, Inc. (VHB) has been retained by DEW Construction Corp to conduct a Transportation Impact Assessment (TIA) for a proposed mixed-use redevelopment, known as Eagle Mill Redevelopment, to be located on the northern side of West Center Street in Lee, Massachusetts. The site is proposed to be situated between the Housatonic River and the Housatonic Rail Road tracks. 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 Center Street, the location of the former Eagle Mill, a paper mill more recently known as Schweitzer-Mauduit International which closed in 2008 in Lee, Massachusetts. The approximately 6.1-acre site is a fully developed historic mill complex, dating back to the early 1800's which contains a 103,000 square foot main building and a 6,600 square foot machine shop building both accessed by a paved driveway. The property and buildings are bordered by the Housatonic River to the north, West Center Street and residential homes to the south and west and the Housatonic Railroad to the east. Additionally, the Eagle Mill property encompasses a 2.4-acre parcel of land located on the north side of the Housatonic River which is remains undeveloped.

The developer has current or pending agreements to purchase additional properties to potentially enlarge the Eagle Mill Redevelopment complex at a future point in time. These additional property acquisitions would allow for the construction of additional buildings, along



with required parking, utilities and stormwater management. These properties include the seven (7) properties along West Center Street which are a mix of single family, two-family and multi-family homes along with a business.

A large portion of the existing Eagle Mill building will be demolished, with the remaining portions to be renovated and restored for the planned redevelopment. The existing machine shop building will also be renovated and restored and is to remain on site. All other buildings existing on site and acquired properties will be demolished.

A previous redevelopment on this site was proposed in 2018 but was not constructed. This previous redevelopment program has been revised, and under the current proposal the Eagle Mill site will be redeveloped in two phases, which are described below:

Phase 1:

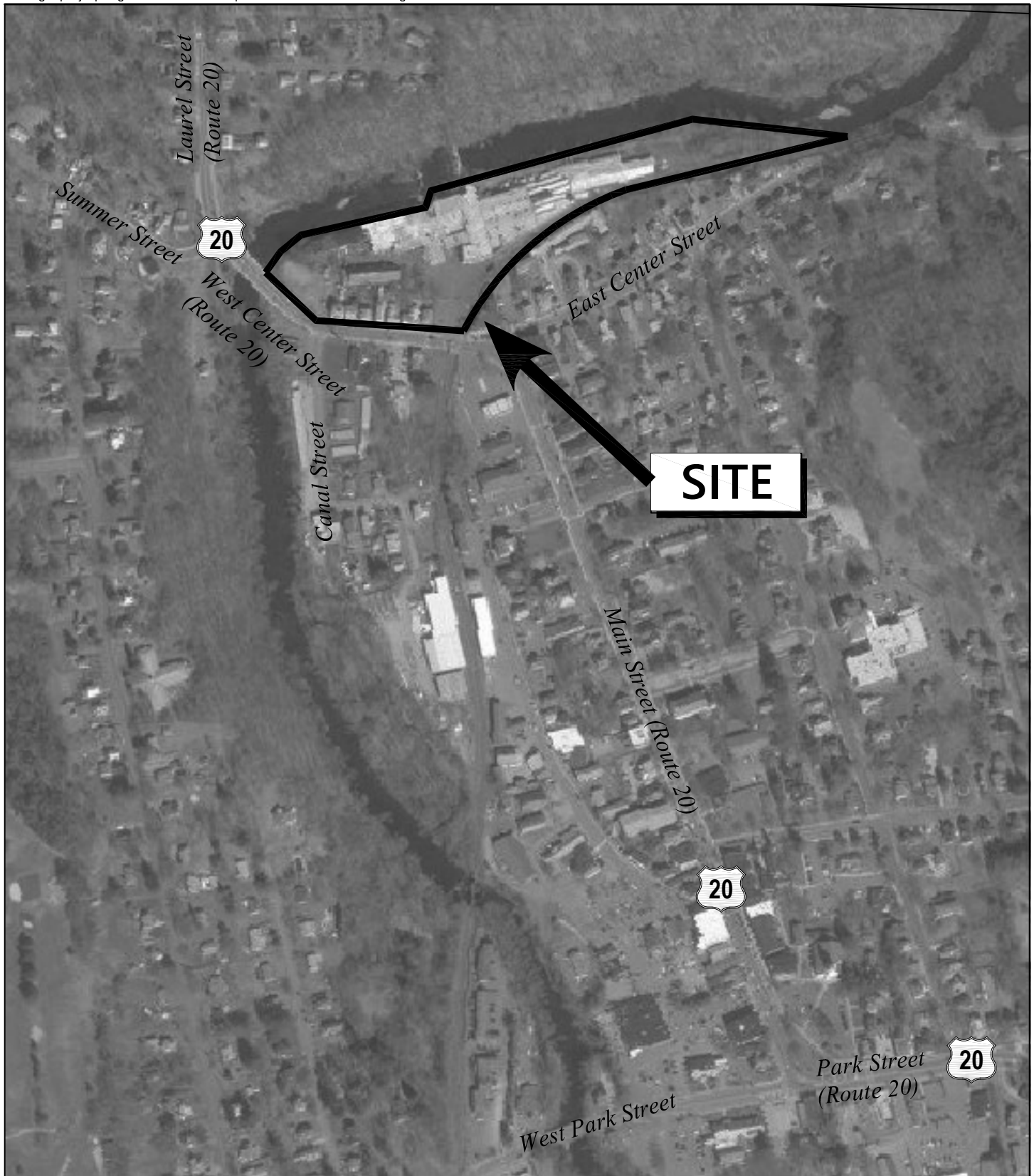
- Union Mill/Eagle Mill – these apartment buildings under Phase 1 contain a combined 55-units of mixed one-bedroom, two-bedroom, and studio style units.
- Machine Shop – this 5,800-retail space will also include 3,000 SF of general office space on the second floor.
- West End Condos – a 6-unit condominium development will be constructed under Phase 1.

Phase 2:

- New Eagle Housing – this apartment building under Phase 2 contains 43-units of mixed one-bedroom, two-bedroom, and studio style units.
- Center Street Mixed Use – this 4,100 SF retail space will be located on the first floor of a 24-unit apartment building housing a mix of unit styles.

The Site is proposed to have two full access points on West Center Street to be utilized as points of access and egress for all vehicles. Additional parking is to be provided on West Center Street as approximately 11 on-street parking spaces.

A site location map is provided in Figure 1. A draft site plan of the latest proposed development program is shown in the Appendix. This transportation study analyzes the traffic impacts that can be expected by the full build out of the proposed development program, including both phases.



Vanasse Hangen Brustlin, Inc.

Site Location Map

Figure 1

Eagle Mill Redevelopment

West Center Street (Route 20)
Lee, MA



0 400 Feet



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 August of 2018 and grown to reflect 2020 Existing conditions. An updated safety review of the study area intersections was performed in August 2020.

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 Center Street (Route 20) at Laurel Street (Route 20) and Summer Street (unsignalized);
- West Center Street (Route 20) at Canal Street (unsignalized);
- West Center Street (Route 20) at Main Street (Route 20) and East Center Street (unsignalized); and
- Main Street (Route 20) at Park Street (Route 20) (unsignalized).

An inventory of the existing conditions for the study intersections 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 Center Street/ Laurel Street (Route 20)

West Center Street (Route 20) is minor arterial roadway under local jurisdiction from Main Street to Canal Street and continues under state jurisdiction beyond Canal Street. West Center Street intersects with East Center Street and Main Street (Route 20) to the east and becomes Laurel Street (Route 20) to the west. West Center Street provides two travel lanes, one in each direction. Land use along West Center Street consists of a mix of residential and commercial



uses. The Housatonic Railroad crosses West Center Street approximately 75 feet west of the intersection of West Center Street at East Center Street and Main Street. West Center Street provides sidewalks on both sides of the roadway. On-street parallel parking is permitted on the north side of the roadway. The posted speed limit on this roadway is 25 mph.

Summer Street

Summer Street is a minor collector roadway under local jurisdiction and runs through Lee in a primarily east/west direction. Summer Street connects Route 20 to points further west, including the Town of Lenox. Summer Street provides two travel lanes, one in each direction. Land use along Summer Street consists of primarily residential uses. Summer Street provides sidewalks on both sides of the roadway in the vicinity of the intersection with Route 20, however, after the first 200 feet sidewalks continue only on the north side of the roadway. The posted speed limit in this area is 30 mph.

Canal Street

Canal Street is a local roadway under local jurisdiction and runs through Lee in a primarily north/south direction. Canal Street connects Route 20 to the north with industrial uses to the south. Canal Street provides two travel lanes, one in each direction. Land use along Canal Street consists of primarily industrial with some residential uses. Canal Street does not provide sidewalks.

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 South 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.

East Center Street

East Center Street is a local roadway under local jurisdiction and runs through Lee in a primarily east/west direction. East Center Street connects Route 20 to the west with East Street to the east. East Center Street provides two travel lanes, one in each direction. Land use along East Center Street consists of residential uses. East Center Street provides sidewalks on both sides of the roadway. The posted speed limit on this roadway is 25 mph.

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 the west side of the roadway. The posted speed limit in this area is 25 mph.

Intersections

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

West Center Street (Route 20) at Laurel Street (Route 20) and Summer Street (unsignalized)

Summer Street intersects West Center Street (Route 20) and Laurel Street (Route 20) from the west to form a 3-legged unsignalized intersection. West Center Street and Laurel Street each consist of one general purpose lane that operates freely. Summer Street provides one general purpose lane in the eastbound direction that is stop controlled. Sidewalks are provided on both sides of all approaches. A crosswalk is provided across the Summer Street approach of the intersection; no pedestrian signal accommodations exist at this intersection.

West Center Street (Route 20) at Canal Street (unsignalized)

Canal Street intersects West Center Street (Route 20) from the south to form a 3-legged unsignalized intersection. Each approach of the intersection consists of one general purpose lane. The Canal Street approach is stop controlled while the West Center Street approaches operate freely. Sidewalks are provided on both sides of West Center Street. Crosswalks are present across the Canal Street approach and the westbound West Center Street approach; no pedestrian signal accommodations exist at this intersection.

West Center Street (Route 20) at Main Street (Route 20) and East Center Street (unsignalized)

East Center Street (Route 20) intersects Main Street (Route 20) and West Center Street from the east to form a 3-legged unsignalized intersection. Each approach of the intersection consists of one general purpose lane. On-street angled parking exists on West Center Street/East Center Street opposite the Main Street approach. This intersection is stop controlled on East Center Street with West Center Street and Main Street both operating freely. Sidewalks are provided on both sides of each approach. A crosswalk is provided on the westbound approach of East Center Street; no pedestrian signal accommodations exist at this intersection. The Housatonic Railroad crosses West Center Street approximately 75 feet west of the intersection of West Center Street at East Center Street and Main Street.

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; no pedestrian signal accommodations exist 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 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 12:00 to 1:00 PM during a typical Saturday midday. These volumes were grown by a factor of .012 to 0.06, depending on the classification of the roadway, in accordance MassDOT's April 2020 "Guidance on Traffic Count Data" to reflect August 2020 Existing Conditions.

It should be noted that traffic volumes were collected during the summer months, which represents a high traffic season 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. For this reason, it can be assumed that the traffic volumes collected will provide a conservative analysis later in this report, and that this volume of traffic is not expected to be experienced along Route 20 throughout the entire calendar year.

Due to the COVID-19 pandemic, traffic volumes beginning in March 2020 have been greatly reduced from the proceeding months. The August 2018 collected traffic data represents a conservative analysis for the area for a typical year, the 2018 volumes were grown to reflect existing conditions according to MassDOT's April 2020 "Guidance on Traffic Count Data". The 2020 Existing conditions weekday morning, evening, and Saturday midday peak hour traffic volume networks are summarized in Figures 2 through 4, respectively.

In addition to peak period traffic counts, a daily automatic traffic recorder (ATR) count was also conducted along Main Street (Route 20) and West Center Street (Route 20) in August of 2018. 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 Center Street, the primary direction of travel is eastbound during the weekday morning, evening, and Saturday midday peak hours. Speed data that was



collected along Main Street (Route 20) and West Center Street (Route 20) indicate that the 85th percentile speed is 26 mph along Main Street and 27 mph along West Center Street, which are appropriate for this roadway given the posted speed limit.



Table 1 Existing Traffic Volume Summary

Location	<u>Daily</u>^a	<u>Weekday Morning Peak Hour</u>			<u>Weekday Evening Peak Hour</u>			<u>Saturday Midday Peak Hour</u>		
	Weekday	Volume^b	K Factor^c	Dir. Dist.^d	Volume	K Factor	Dir. Dist.	Volume	K Factor	Dir. Dist.
West Center Street (Route 20) east of Canal Street	14,469	964	6.7%	55% EB	1174	8.1%	48% EB	1124	7.8%	49% EB
Main Street (Route 20) south of School Street	14,817	982	6.6%	56% SB	1182	8%	51% NB	1109	7.5%	50% SB

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

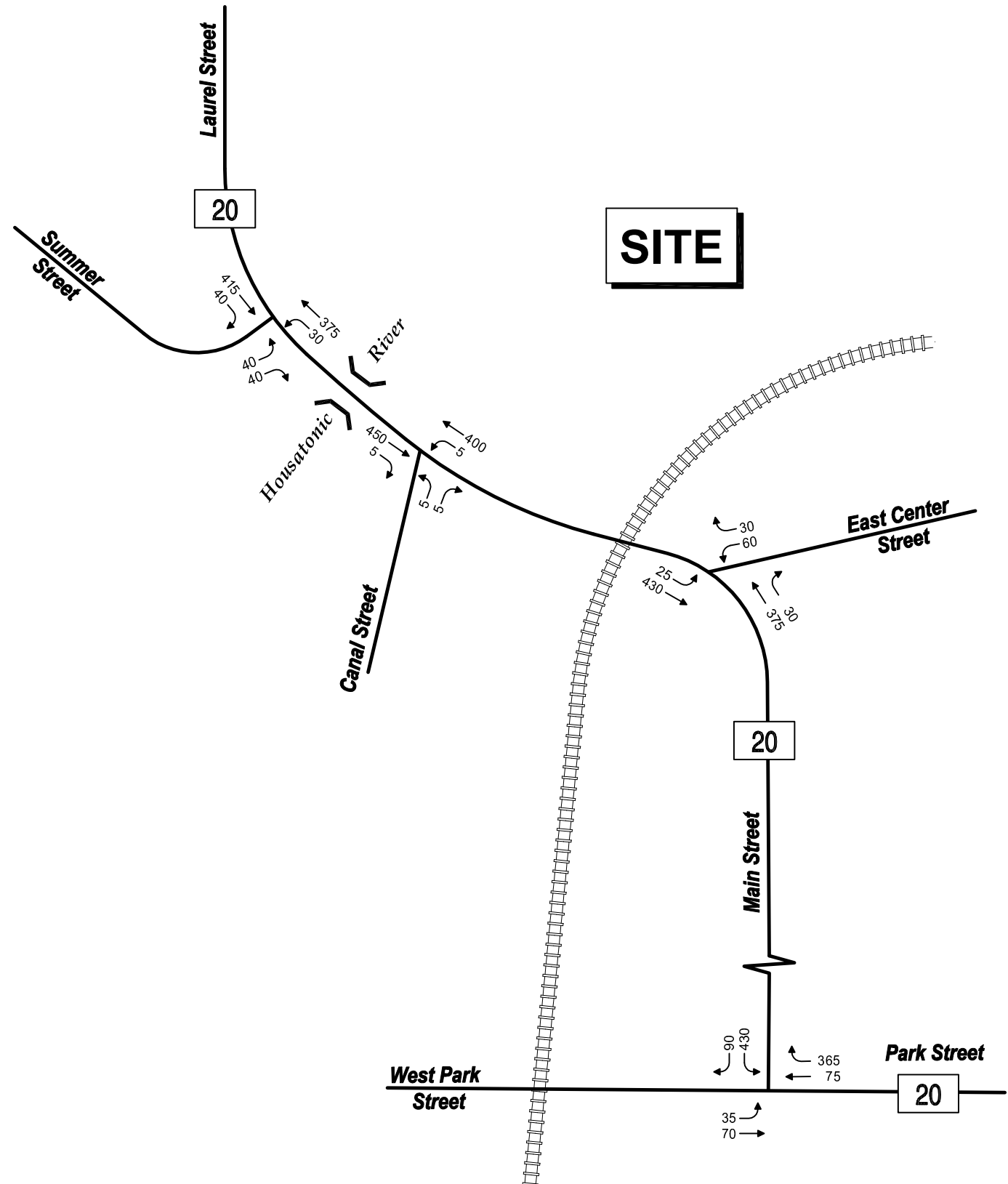
a average daily traffic (ADT) volume expressed in vehicles per day

b peak period traffic volumes expressed in vehicles per hour

c percent of daily traffic that occurs during the peak period

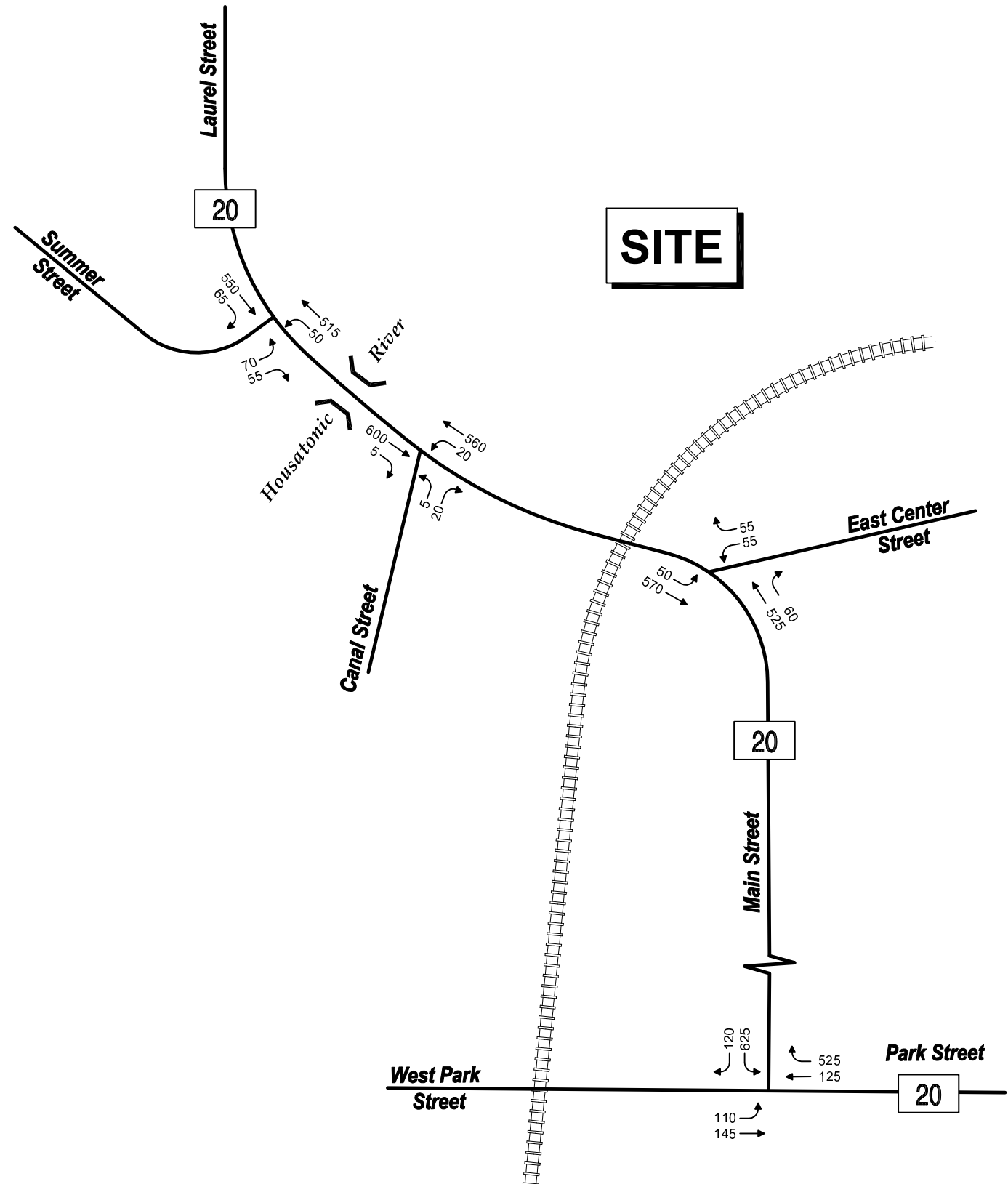
d directional distribution of peak period traffic

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



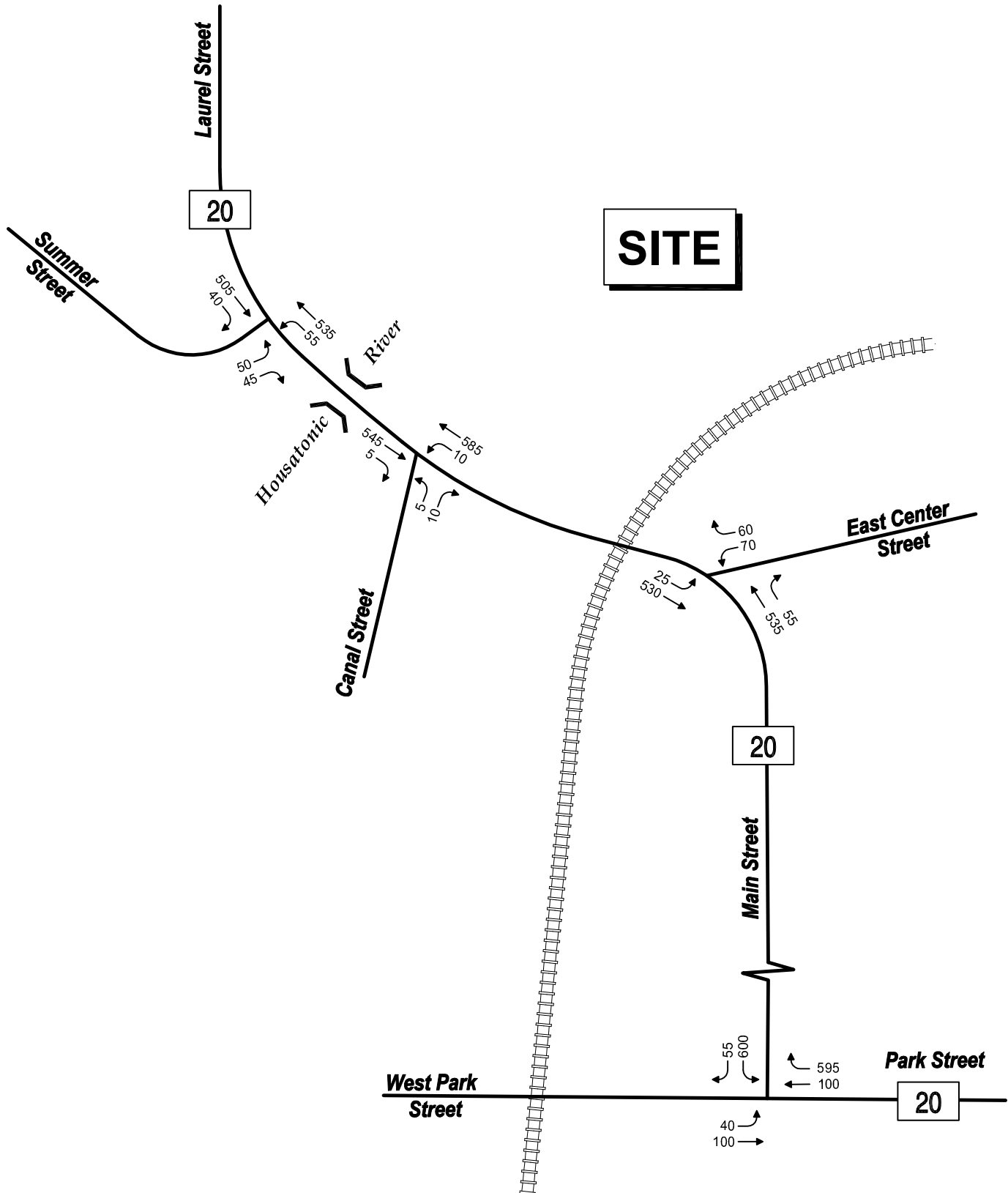
Eagle Mill Redevelopment
2020 Existing Conditions
Weekday Morning Peak Hour Traffic Volumes
Lee, Massachusetts

Figure 2



Eagle Mill Redevelopment
2020 Existing Conditions
Weekday Evening Peak Hour Traffic Volumes
Lee, Massachusetts

Figure 3



Eagle Mill Redevelopment
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 Total Crashes	Crash Rate	MassDOT Crash Rate
West Center Street (Route 20) and Laurel Street (Route 20) at Summer Street	5	0.17	0.57
West Center Street (Route 20) at Canal Street	5	0.18	0.57
West Center Street (Route 20) and East Center Street at Main Street (Route 20)	7	0.23	0.57
Main Street (Route 20) at Park Street (Route 20)	11	0.29	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 each have crash rates well below the District 1 average. The intersection of Main Street (Route 20) at Park Street (Route 20) was listed on the MassDOT Highway Safety Improvement Program (HSIP) top crash location list under the 2013-2015 study period. Due to this intersection's position as a major commuter route along Route 20 from the MassPike and from surrounding communities its position as a high crash location was not unusual compared to the other high crash locations in District 1. This intersection has since been removed from the HSIP listing under the 2014-2016 and 2015-2017 program years.

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, both methodologies were utilized and are 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 approximately 1 percent per year 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 1 percent per year growth rate was applied to the traffic volumes.

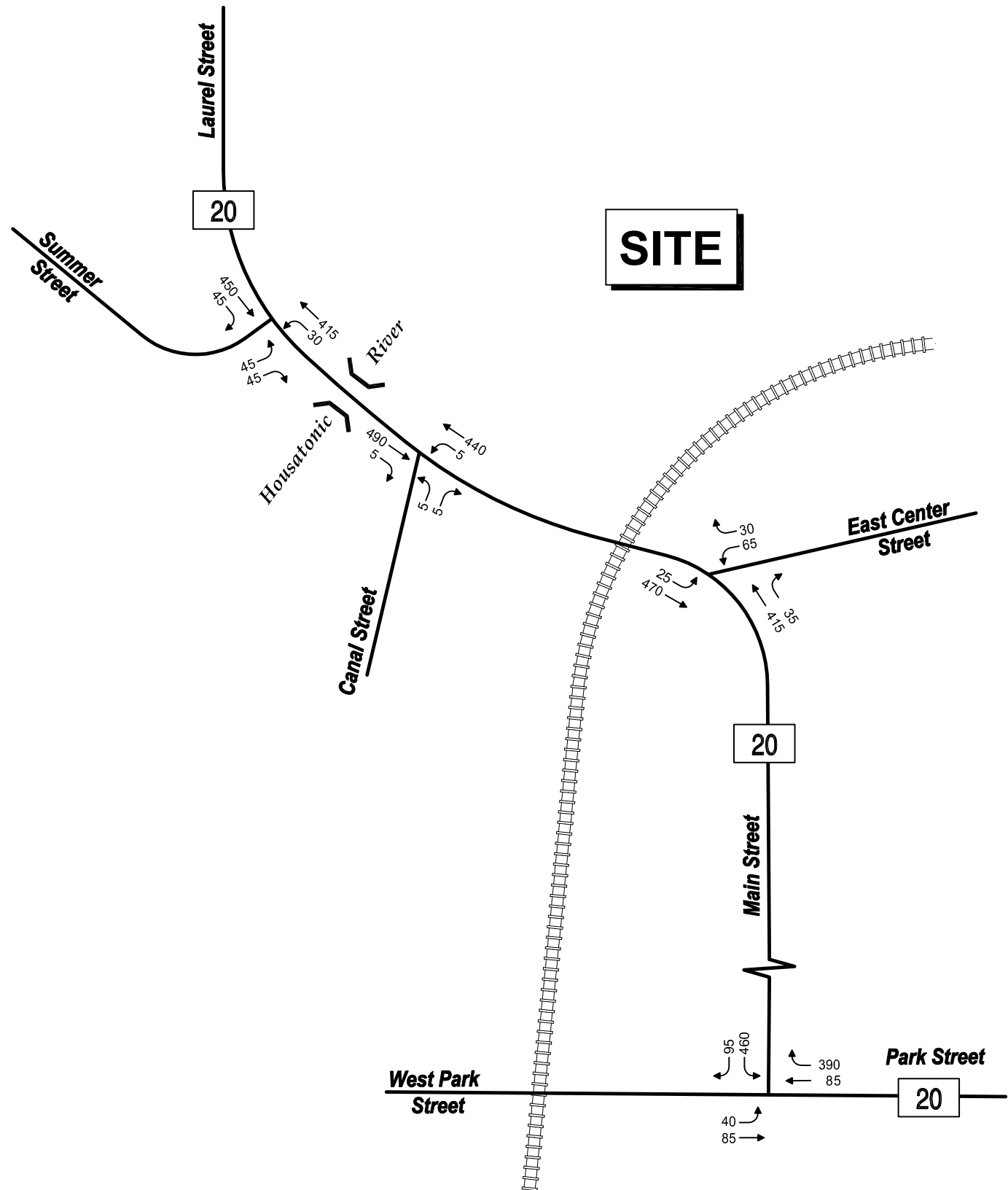
Background Projects

One planned background project was identified to be included in the future traffic analyses. The existing vacant Price Chopper building on West Park Street 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 trip distribution and ITE site generated traffic associated with this background development can be seen in the Appendix.

2027 No-Build Traffic Volumes

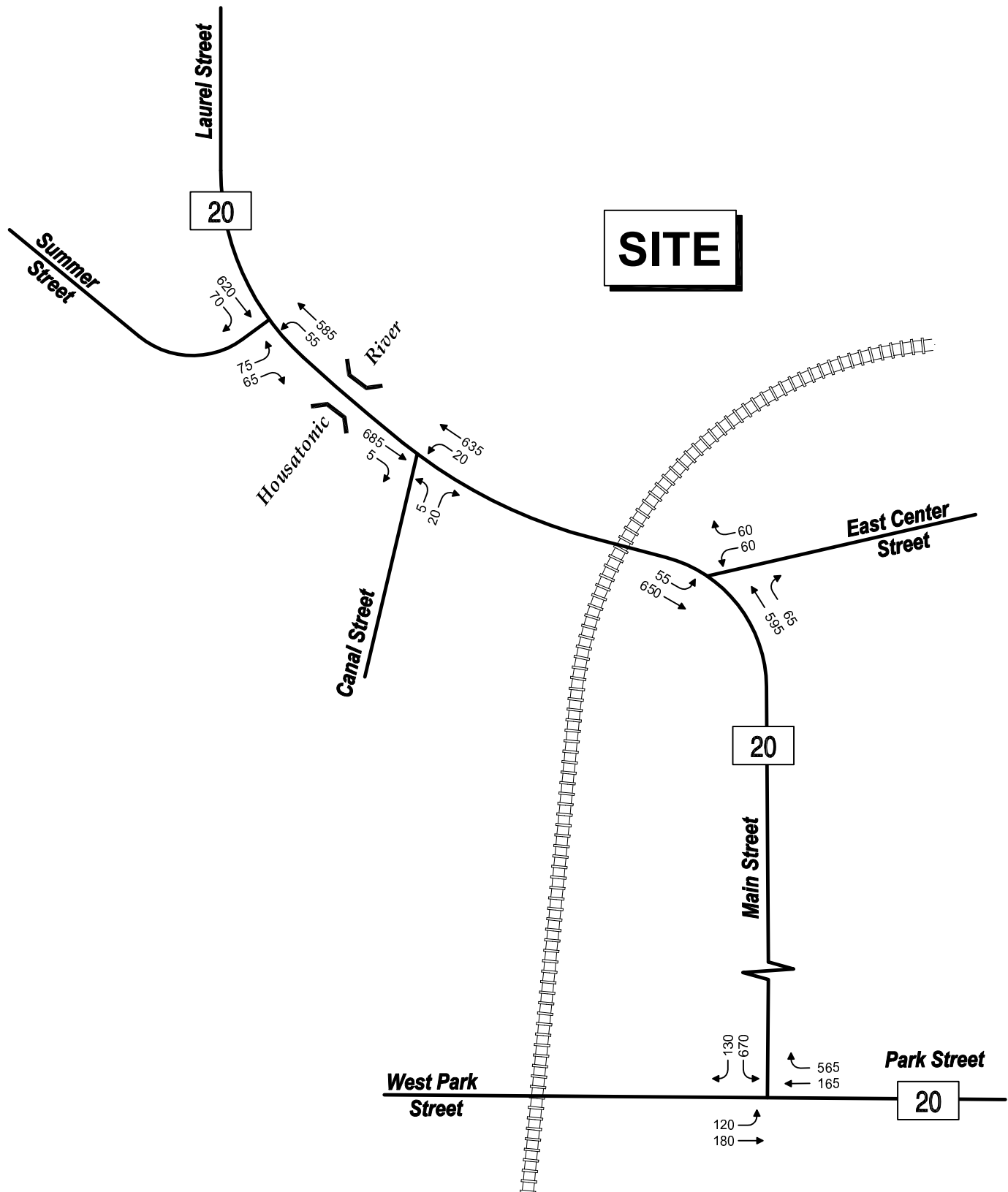
The 1 percent per year annual growth rate was applied to the 2020 Existing traffic volumes, and traffic volumes to be generated by the above-reference background project were added to develop the projected 2027 No-Build (without the proposed project) weekday morning, weekday evening, and Saturday midday peak hour traffic volumes. To remain conservative a healthy 1 percent per year growth rate was utilized.

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



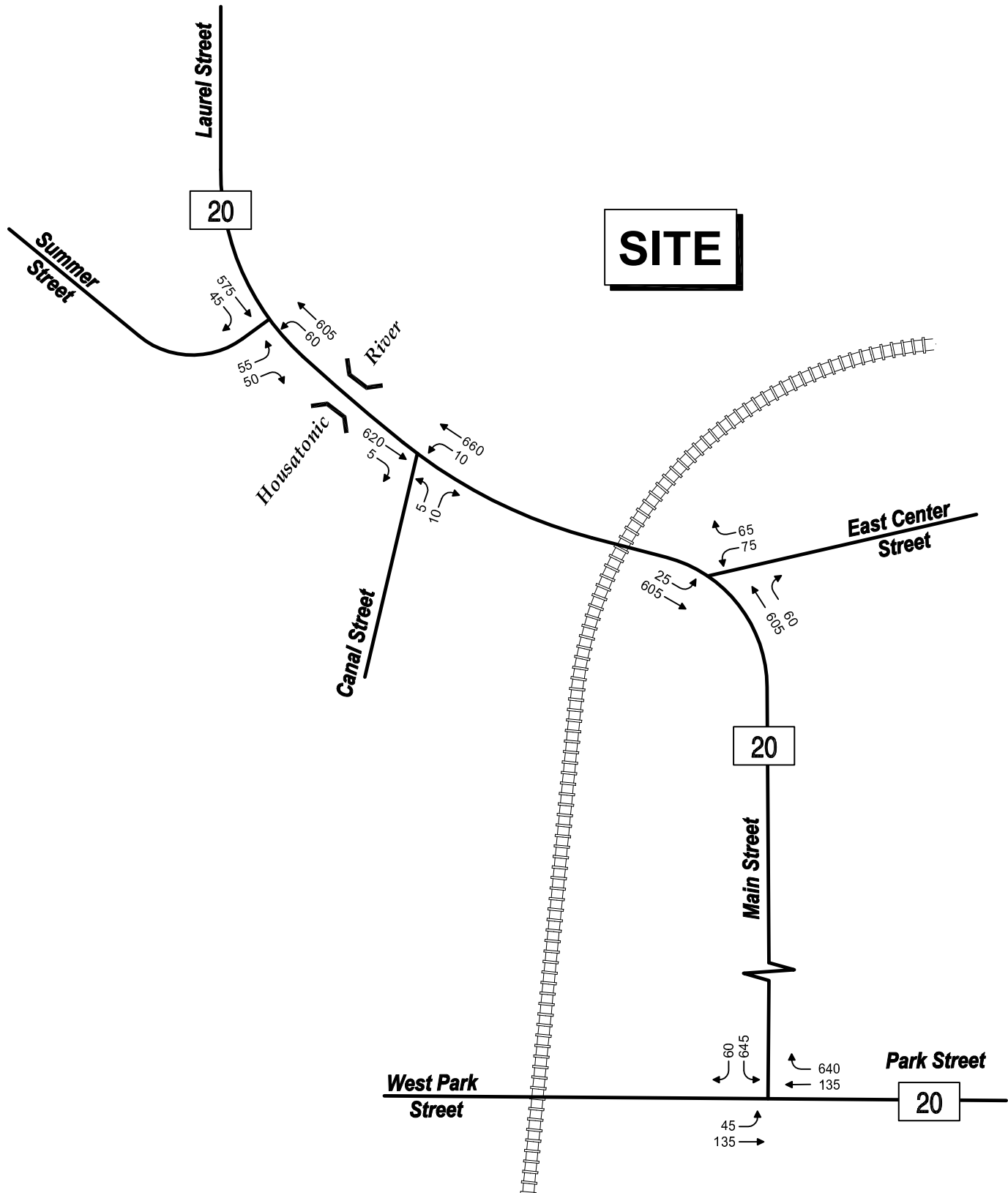
Eagle Mill Redevelopment
2027 No-Build Conditions
Weekday Morning Peak Hour Traffic Volumes
Lee, Massachusetts

Figure 5



Eagle Mill Redevelopment
2027 No-Build Conditions
Weekday Evening Peak Hour Traffic Volumes
Lee, Massachusetts

Figure 6



Eagle Mill Redevelopment
 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 for the existing uses on the proposed site:

- LUC 210 "Single Family Detached Housing" was utilized to estimate trip generation associated with the existing two single family homes located on West Center Street. These properties will be demolished to create the Center Street Mixed-Use building.
- LUC 220 "Multi Family Housing (Low-Rise)" was utilized to estimate trip generation for the existing approximately 11 units within multiple multifamily homes located on the northern side of West Center Street.
- LUC 820 "Retail" was utilized to estimate trip generation associated with the approximately 1,071 SF appliance store located on the northern side of West Center Street.

The existing trips to the site are comprised of the above existing residences and retail parcels that have been purchased for demolition to develop the community. These trips have been removed from the traffic network under 2027 Build Conditions. The trip generation table for the existing land uses can be found in the Appendix.

It was determined that the following land use codes should be utilized to estimate the site generated traffic:

- LUC 220 "Multi Family Housing (Low-Rise)" was utilized to estimate trip generation associated with the proposed 128 apartment units (Phase 1: 55 units for the proposed Union Mill/Eagle Mill apartment building, 6 units in the West End Condos, Phase 2: 43 units for the proposed New Eagle Housing building, 24 units for the Center Street Mixed Use building).
- LUC 710 "General Office Building" was utilized to estimate trip generation for the proposed 3,000 SF of office space to be located within the Machine Shop building under Phase 1.

▼
¹ [Trip Generation](#); Tenth Edition; Institute of Transportation Engineers; Washington, D.C.; 2017.



- LUC 820 “Retail” was utilized to estimate trip generation associated with the 5,800 SF portion of the Machine Shop building and approximately 4,100 SF of the Center Street building (totaling 9,900 SF), which will be designated for retail use. The Machine Shop is expected to be developed under Phase 1, while the Center Street building is expected to be completed under Phase 2.

The anticipated new total trip generation for the proposed multiuse development is summarized in Table 3.

Pass-By Trips

It should be noted that not all of the projected site traffic represents new vehicles on the adjacent roadway network. A portion of trip generation at retail and restaurant establishments is classified as “pass-by” traffic. Pass-by traffic consists primarily of vehicles already on the adjacent roadway that are attracted to a site when passing the site. The primary destination of this traffic is elsewhere and the primary trip will be resumed following a stop at the proposed development. For example, data presented in the Trip Generation Handbook² indicates that, on average, as much as 25 to 34 percent of the trips generated by retail are pass-by trips, or trips made by vehicles that are already on the adjacent roadway. For this particular development, only the proposed retail portion of the site would be expected to experience pass-by traffic.

Pass-by for the development was determined by using the methodology set by the EOEEA/EOT guidelines. The EOEEA/EOT guidelines allow for the application of a 25-percent pass-by rate for retail developments, which provides an overly conservative estimate when compared with actual published trip generation pass-by rates. However, ITE has conducted studies and allows for different pass-by rates depending on the type of site use. The pass-by rates utilized for the retail component of the development were 25% for the daily trips, 25% for the weekday morning peak hour, 34% for the weekday evening peak hour, and 26% for the Saturday midday peak hour.

Multi-Purpose Trips

When estimating site generated trips for a development similar to the one proposed, The Institute of Transportation Engineers Trip Generation Handbook allows for a multi-purpose trip generation reduction factor. A multi-purpose trip reduction factor can be applied to projects with various uses proposed within one development site, such as a mixed-use development proposing various retail components, office space, restaurants, hotels, residential space, etc. This factor can be applied to the total trip generation estimates for a development plan, assuming that some of the vehicles accessing the site might access more than one of the uses while they are there. For example, residents of the apartment buildings on site can visit the retail uses without traveling onto the surrounding road network. The basic ITE trip



² Trip Generation Handbook: 10th Edition; Institute of Transportation Engineers; Washington, D.C.; 2017.



generation land use codes do not account for this multi-purpose trip; they assume that each land use would be stand alone.

These multi-purpose trip reduction factors (or internal capture rates) can vary anywhere from a 5% to a 40% reduction in anticipated site generated trips, dependent on the site uses proposed. For the purpose of this particular analysis, a multi-purpose trip reduction factor was calculated using standard ITE methodologies and worksheets and applied per peak period to the site generated traffic estimates, in order to provide an accurate analysis for the Town of Lee. The respective rates that were calculated for the weekday morning, weekday evening, and Saturday midday peak periods are 2%, 23%, and 16%, respectively.

The Land Use Codes considered for reduction were 220 (Mid-Rise Residential), 710 (General Office Building), and 820 (Shopping Center),. These uses were utilized due to the existing data on reductions between these uses provided by the ITE Trip Generation Handbook.

As shown in Table 4, the total development is expected to generate approximately 188 (106 entering, 82 exiting) new vehicle trips during the weekday morning peak hour, approximately 94 (53 entering, 41 exiting) new vehicle trips are expected during the weekday evening peak hour, and approximately 118 (64 entering, 54 exiting) new vehicle trips are expected during the Saturday midday peak hour. This represents entirely new vehicles on the adjacent roadway network.



Table 3 Site Generated Traffic Summary-Raw LUC Data

Time Period	Apartments ¹ (128 Units)	Office ² (3,000 SF)	Commercial ³ (9,900 SF)	Total Gross Trips
<i>Daily</i>	926	36	1,248	2,210
<i>Weekday Morning Peak Hour^a</i>				
Enter	14	25	97	132
Exit	<u>46</u>	<u>4</u>	<u>60</u>	<u>110</u>
Total	60	29	157	246
<i>Weekday Evening Peak Hour^a</i>				
Enter	46	1	47	94
Exit	<u>27</u>	<u>3</u>	<u>51</u>	<u>81</u>
Total	73	4	98	175
<i>Saturday Midday Peak Hour^a</i>				
Enter	57	1	52	110
Exit	<u>48</u>	<u>1</u>	<u>48</u>	<u>97</u>
Total	105	2	100	207

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 220 (Multifamily Low-rise) based on 128 Units

2 Future trip generation based on LUC 710 (General Office Building) based on 3,000 SF

3 Future trip generation based on LUC 820 (Shopping Center) based on 9,900 SF



Table 4 Site Generated Traffic Summary- New Vehicle Trips

Time Period	Total Gross Trips ¹	Total Existing Trips ²	Reduced Trips ³	Pass-By Trips ⁴	Net New Trips
<i>Daily</i>	2,210	110	264	280	1,556
<i>Weekday Morning Peak Hour^b</i>					
Enter	132	3	3	24	106
Exit	<u>110</u>	<u>10</u>	<u>3</u>	<u>15</u>	<u>82</u>
Total	246	13	6	39	188
<i>Weekday Evening Peak Hour^b</i>					
Enter	94	8	20	13	53
Exit	<u>81</u>	<u>6</u>	<u>20</u>	<u>14</u>	<u>41</u>
Total	175	14	40	27	94
<i>Saturday Midday Peak Hour^b</i>					
Enter	110	18	17	11	64
Exit	<u>97</u>	<u>15</u>	<u>17</u>	<u>11</u>	<u>54</u>
Total	207	33	34	22	118

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

a vehicles per day

b vehicles per hour

1 Total trips generated by combined ITE Land Use Codes

2 Total trips generated by existing uses on parcels to be redeveloped (Table in Appendix)

3 Number of trips reduced through ITE Trip Reduction calculation, removed from network

4 Number of trips passing by the site calculated based off of ITE standard rates



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 5. A figure depicting the distribution patterns shown in Table 5 can be seen in the Appendix.

Table 5 Trip Distribution Summary

Roadway	Direction [From/To]	Site Generated Trip Distribution^a
Park Street	East	40%
West Park Street	West	5%
East Center Street	East	5%
Summer Street	West	5%
Laurel Street	North	45%
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 on West Center Street (Route 20). Site Drive 1 is proposed to be located across from the Canal Street entrance. Site Drive 1 is to be located approximately 300 feet east of Site Drive 2 and 50 feet west of the railroad crossing. All proposed site driveways will operate under stop control. At Site Drive 2, due to the proximity of the railroad crossing, additional signage is recommended for drivers exiting left to refrain from completing a left-turn maneuver when the rail crossing safety arm is down in place. It is recommended that an actuated R3-2a ("No Left Turn Across Tracks") be connected to the railroad crossing at Site Drive 2 to restrict the potential for exiting vehicles crossing the tracks when the gates are down.

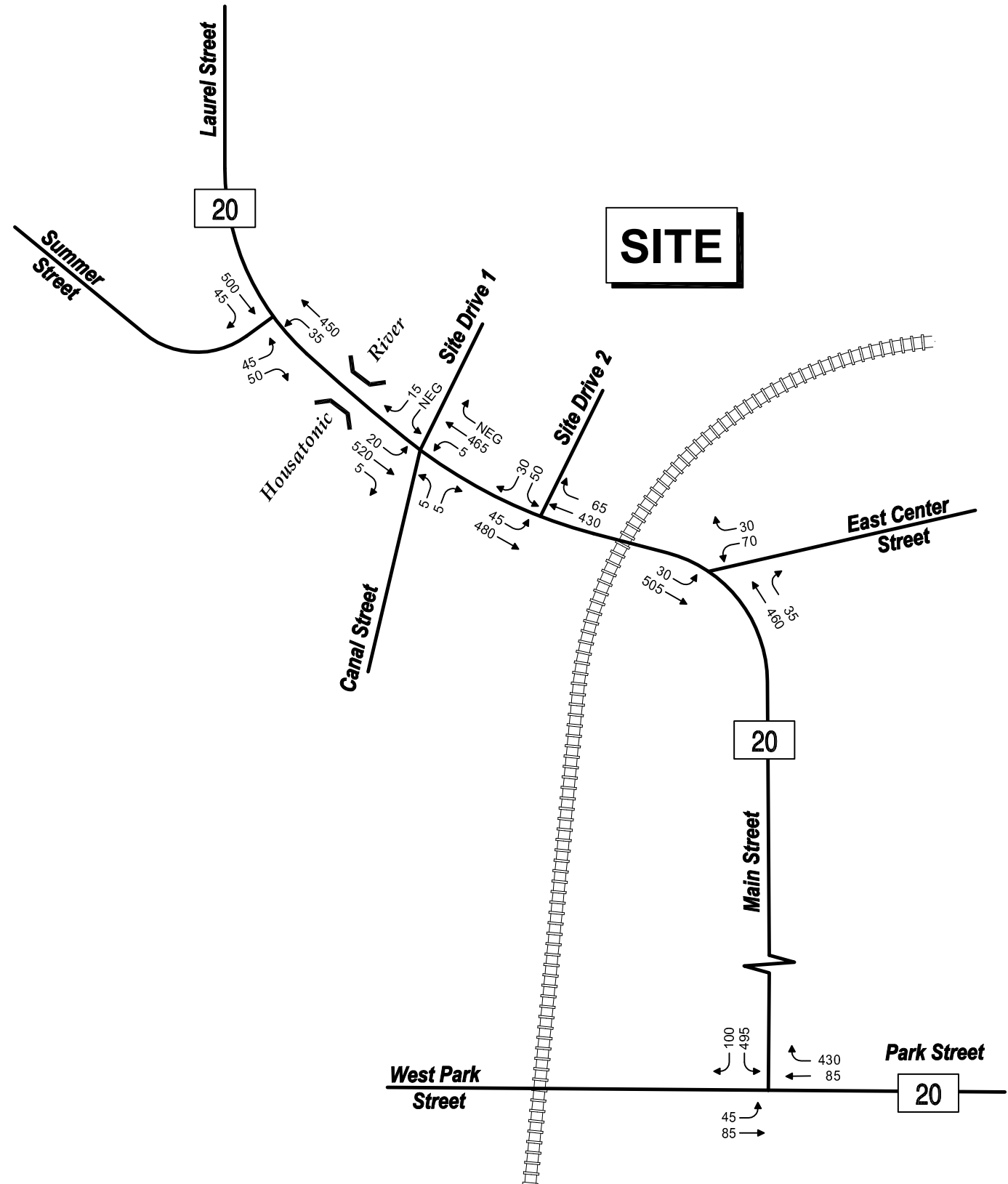
Some parking will be available for residents and visitors along the sides of the buildings, accessory parking will be provided on-street on West Center Street. A total of 174 parking spaces are available for patrons; 163 parking spaces located on-site, and 11 parking spaces off-site in the designated on-street parking on the north side of West Center Street. The existing pedestrian crosswalk across West Center Street (Route 20) is proposed to be refreshed at its existing location. Crosswalks are proposed at the Canal Street at West Center Street and Site Drive 1 intersection on the northbound Canal Street approach and the westbound West Center Street approach. 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 market and retail spaces.

There is one bus route that services the area that would be available to patrons of the Eagle Mill 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. This stop location is approximately 0.5 miles from the Site. A second stop is located at East Street and Center Street approximately 1 mile from the Site and retains the same 1-hour headway as the Park Street (Route 20) at Main Street (Route 20) stop.

A reduced-size copy of the proposed site plan can be seen in the Appendix.

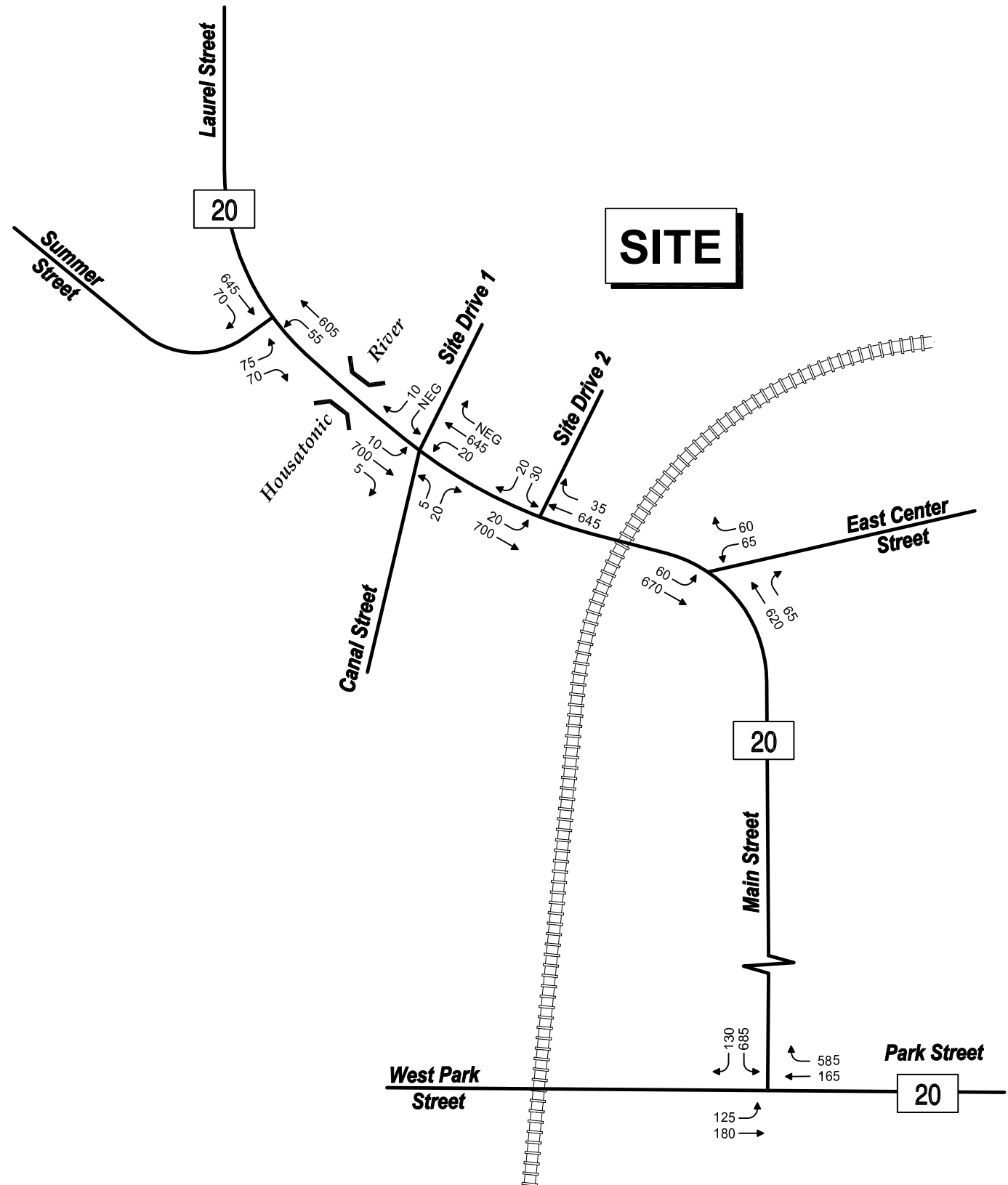
Build Conditions Traffic Volumes

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.



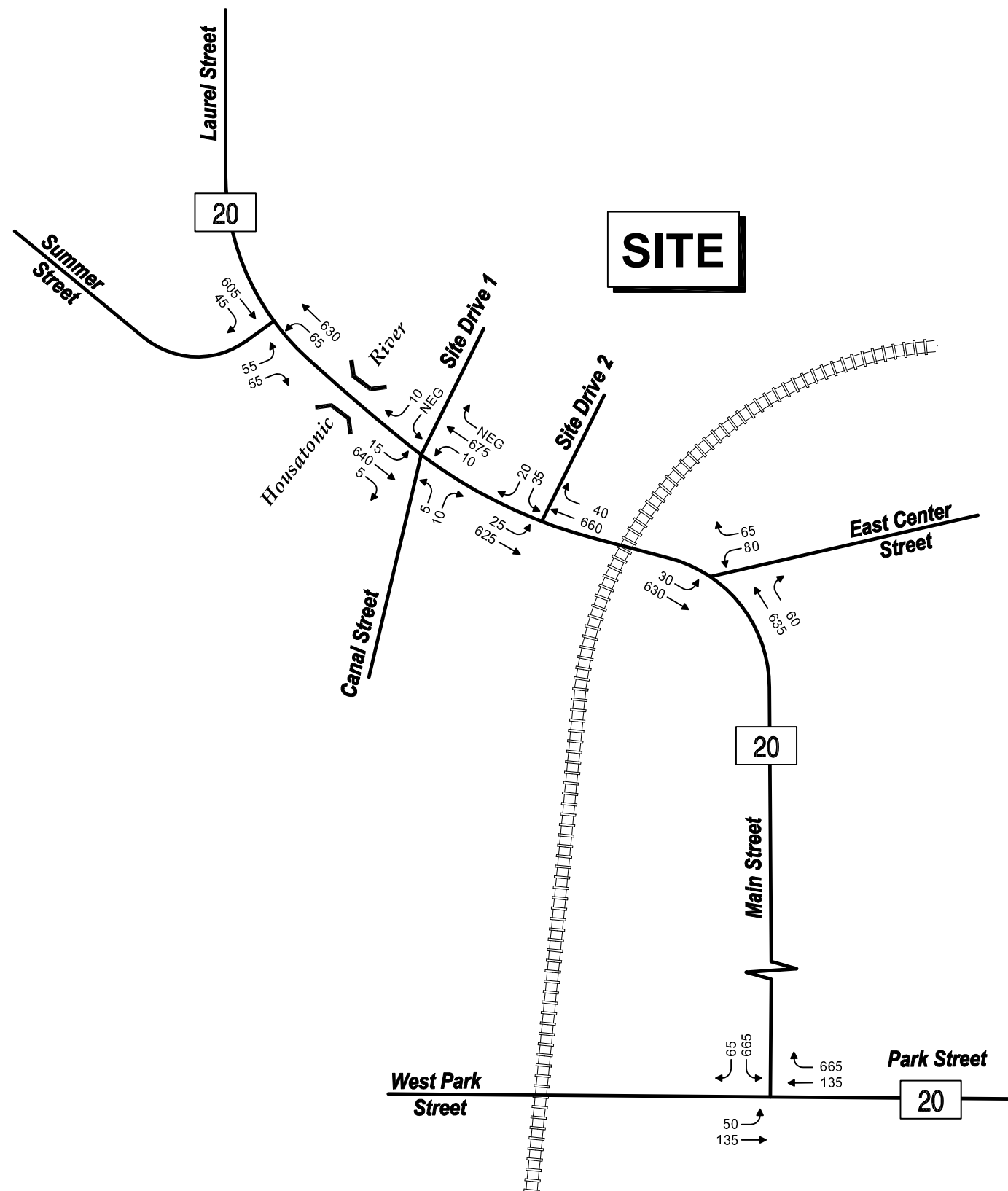
Eagle Mill Redevelopment
2027 Build Conditions
Weekday Morning Peak Hour Traffic Volumes
Lee, Massachusetts

Figure 8



Eagle Mill Redevelopment
2027 Build Conditions
Weekday Evening Peak Hour Traffic Volumes
Lee, Massachusetts

Figure 9



Eagle Mill Redevelopment
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 6 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 6 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 7.

The unsignalized study area intersections currently operate with long delays along certain side street approaches during the Existing conditions. These approaches are expected to continue operating with longer delays under the 2027 No-Build and Build conditions.

It should be noted that a LOS F along a minor approach to an unsignalized intersection is not uncommon, and does not impact the traffic flow on the mainline street. A LOS F in this scenario indicates a longer wait time for vehicles wishing to maneuver from the minor approach to the major street traffic stream. These vehicles must wait until an acceptable gap in the mainline traffic stream presents itself prior to making a safe maneuver. At unsignalized intersections located along commuter routes, this situation is not uncommon during the peak roadway hours.



Table 7 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
West Center Street (Route 20) at Laurel Street (Route 20) and Summer Street	Weekday Morning	EB-LR	80	0.26	18.1	C	90	0.28	19.5	C	95	0.33	22.2	C
		NB-LT	405	0.03	1.0	A	445	0.03	1.0	A	485	0.04	1.1	A
		SB-TR	455	0.30	0.0	-	495	0.32	0.0	-	545	0.35	0.0	-
	Weekday Evening	EB-LR	125	0.75	57.3	F	140	0.79	70.6	F	145	0.85	83.3	F
		NB-LT	565	0.06	1.6	A	640	0.07	1.8	A	660	0.07	1.8	A
		SB-TR	615	0.40	0.0	-	695	0.44	0.0	-	715	0.46	0.0	-
	Saturday Midday	EB-LR	95	0.41	27.9	D	105	0.55	42.1	E	110	0.62	50.2	F
		NB-LT	590	0.06	1.5	A	665	0.07	1.8	A	695	0.08	2.0	A
		SB-TR	545	0.36	0.0	-	620	0.40	0.0	-	650	0.42	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 7 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
West Center Street (Route 20) at Canal Street	Weekday Morning	EB-TR	455	0.33	0.0	-	495	0.32	0.0	-	545	0.02	0.6	A
		WB-LT	405	0.01	0.2	A	445	0.01	0.1	A	470	0.01	0.1	A
		NB-LR	10	0.05	16.0	C	10	0.03	15.4	C	10	0.04	19.5	C
		SB-LR	-	-	-	-	-	-	-	-	15	0.03	11.5	B
	Weekday Evening	EB-TR	605	0.40	0.0	-	690	0.44	0.0	-	715	0.01	0.3	A
		WB-LT	580	0.02	0.6	A	655	0.03	0.7	A	665	0.03	0.7	A
		NB-LR	25	0.09	16.7	C	25	0.09	18.1	C	25	0.11	21.4	C
		SB-LR	-	-	-	-	-	-	-	-	10	0.03	13.4	B
	Saturday Midday	EB-TR	550	0.36	0.0	-	625	0.40	0.0	-	660	0.02	0.5	A
		WB-LT	595	0.01	0.3	A	670	0.01	0.3	A	685	0.01	0.3	A
		NB-LR	15	0.06	16.9	C	15	0.06	18.6	C	15	0.08	23.6	C
		SB-LR	-	-	-	-	-	-	-	-	10	0.03	13.8	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 7 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
West Center Street (Route 20) at East Center Street and Main Street (Route 20)	Weekday Morning	WB-LR	90	0.35	23.2	C	95	0.34	22.9	C	100	0.41	27.9	D
		NB-TR	405	0.27	0.0	-	450	0.29	0.0	-	495	0.32	0.0	-
		SB-LT	455	0.03	0.8	A	495	0.03	0.7	A	535	0.03	0.9	A
	Weekday Evening	WB-LR	110	0.58	39.7	E	120	0.67	55.4	F	125	0.78	75.2	F
		NB-TR	585	0.39	0.0	-	660	0.42	0.0	-	685	0.44	0.0	-
		SB-LT	620	0.06	1.5	A	705	0.07	1.7	A	730	0.08	1.9	A
	Saturday Midday	WB-LR	130	0.60	37.5	E	140	0.70	53.5	F	154	0.81	73.4	F
		NB-TR	590	0.37	0.0	-	665	0.43	0.0	-	695	0.44	0.0	-
		SB-LT	555	0.03	0.8	A	630	0.03	0.8	A	660	0.04	1.0	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

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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 7 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	35	0.81	>100	F	40	1.46	>100	F	45	2.70	>100	F
		EB-T	70	0.47	41.7	E	85	0.60	59.3	F	85	0.70	79.1	F
		WB-TR	440	0.47	16.2	C	475	0.66	21.4	C	515	0.77	25.3	D
		SB-LR	520	0.29	7.2	A	555	0.32	7.4	A	595	0.34	7.6	A
	Weekday Evening	EB-L	110	Err	Err	F	120	Err	Err	F	125	Err	Err	F
		EB-T	145	2.13	>100	F	180	3.04	Err	F	180	3.26	Err	F
		WB-TR	650	2.16	>100	F	730	3.58	Err	F	750	3.82	Err	F
		SB-LR	745	0.41	8.0	A	800	0.45	8.3	A	815	0.46	8.4	A
	Saturday Midday	EB-L	40	Err	Err	F	45	Err	Err	F	50	Err	Err	F
		EB-T	100	1.05	>100	F	135	1.92	>100	F	135	2.10	>100	F
		WB-TR	695	1.14	>100	F	775	2.49	>100	F	800	2.73	>100	F
		SB-LR	655	0.38	8.1	A	705	0.43	8.4	A	730	0.44	8.5	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

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



Table 7 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
Site Drive 2 at West Center Street (Route 20)	Weekday Morning	EB-LT	-	-	-	-	-	-	-	-	525	0.05	1.3	A
		WB-TR	-	-	-	-	-	-	-	-	495	0.32	0.0	-
		SB-LR	-	-	-	-	-	-	-	-	80	0.25	21.2	C
	Weekday Evening	EB-LT	-	-	-	-	-	-	-	-	720	0.03	0.7	A
		WB-TR	-	-	-	-	-	-	-	-	680	0.43	0.0	-
		SB-LR	-	-	-	-	-	-	-	-	50	0.26	31.5	D
	Saturday Midday	EB-LT	-	-	-	-	-	-	-	-	650	0.03	0.8	A
		WB-TR	-	-	-	-	-	-	-	-	700	0.45	0.0	-
		SB-LR	-	-	-	-	-	-	-	-	55	0.28	31.5	D

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

5

Conclusions

This study has been prepared to evaluate the traffic impacts associated with the proposed mixed-use redevelopment of Eagle Mill, located at 73 West Center Street, which was the location of the former Schweitzer-Mauduit International Paper Mill which closed in 2008 in Lee, Massachusetts. The parcel is approximately 6-acres including off-site parking areas for the development on the southern side of West Center Street adjacent to Canal Street. The majority of buildings existing on site will be demolished, excluding the proposed Machine Shop building, which will be redeveloped to remain on site.

The proposed development is mixed-use, including three apartment buildings, a condominium building, and two commercial spaces with various uses broken down as follows:

Phase 1:

- Union Mill/Eagle Mill – these apartment buildings under Phase 1 contain a combined 55-units of mixed one-bedroom, two-bedroom, and studio style units.
- Machine Shop – this 5,800-retail space will also include 3,000 SF of general office space on the second floor.
- West End Condos – a 6-unit condominium development will be constructed under Phase 1.



Phase 2:

- New Eagle Housing – this apartment building under Phase 2 contains 43-units of mixed one-bedroom, two-bedroom, and studio style units.
- Center Street Mixed Use – this 4,100 SF retail space will be located on the first floor of a 24-unit apartment building housing a mix of unit styles.

The Site is proposed to have two full access points along West Center Street (Route 20) to be utilized as a point of access and egress. A total of 163 parking spaces are provided on site with approximately 11 parking spaces available on-street abutting the site. Ample parking is provided for patrons, residents, and guests. At Site Drive 2, due to the proximity of the railroad crossing, additional signage is recommended for drivers exiting left to refrain from completing a left-turn maneuver when the rail crossing safety arm is down in place. It is recommended that an actuated R3-2a ("No Left Turn Across Tracks) be connected to the railroad crossing at Site Drive 2 to restrict the potential for exiting vehicles crossing the tracks when the gates are down.

Traffic data was collected in August 2018 at study area intersections and grown by MassDOT approved factors to represent 2020 Existing conditions. It should be noted that traffic volumes were collected during the summer months, which represents a high traffic season for Lee, as the Berkshires area towns experience a considerable volume of tourists during the summer months. For this reason, it can be assumed that the traffic volumes collected provided a conservative analysis, and that this volume of traffic is not expected to be experienced along Route 20 throughout the entire calendar year.

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 approximately 1 percent per year over the most recent ten-year period. However, in order to provide a conservative analysis for the future conditions, 1 percent per year growth rate was applied to the traffic volumes to represent future 2027 No-Build Conditions.

The Site is expected to generate approximately 188 (106 entering, 82 exiting) new vehicle trips during the weekday morning peak hour, approximately 94 (53 entering, 41 exiting) new vehicle trips are expected during the weekday evening peak hour, and approximately 118 (64 entering, 54 exiting) new vehicle trips are expected during the Saturday midday peak hour. This represents entirely new vehicles on the adjacent roadway network and accounts for internal capture, pass-by trips, existing trips, and proposed background projects. The nature and goal of mixed-use development projects is to serve multiple needs of visitors when they access the site. 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 capacity analyses that were conducted show that the unsignalized intersections surrounding the proposed Eagle Mill Redevelopment already carry a significant amount of traffic during the roadway peak hours, as the roadways serve primarily as commuter routes between the MassPike (I-90) to the south and the community of Pittsfield to the north, and on the weekends serve a significant amount of tourist vehicles. A number of the unsignalized intersections in the study area have a stop-controlled side street movement that operates with a poor LOS under the existing conditions. This poor LOS indicates that the side street vehicles experience delays as they attempt to maneuver into the traffic stream on Route 20. It should be noted that the main line traffic on Route 20 operates with free-flow conditions, and does not experience delay or poor levels of service. Due to the side streets of the unsignalized intersections in the study area having poor LOS during the existing conditions, it is expected that these side street approaches will continue to operate with poor LOS in the future conditions as well, both with and without the proposed Eagle Mill Redevelopment operational.

In order to help mitigate the amount of single-occupant vehicle traffic accessing this site, Transportation Demand Management (TDM) techniques were considered, as follows:

Transportation Demand Management

Transportation Demand Management (TDM) programs aim to decrease single-occupant vehicle travel, resulting in fewer vehicle trips and minimizing traffic impacts on the roadway system during the peak periods. They can help reduce traffic congestion, vehicle miles traveled, on-site parking demands, and vehicle emissions. The following described the TDM measures that will be considered for the Site:

- Bicycle racks are proposed on site for any employees or patrons that wish to ride their bicycle to the Site;
- Pedestrian connectivity from the adjacent roadways serving the site to the front doors of buildings;
- The Proponent is committed to working with the Berkshire Regional Transit Authority (BRTA) to determine if this Site is an appropriate location for a transit stop; and
- Consider incorporating the Site as a part of the Berkshire Bike Path route.

It is worth restating that the very nature and primary goal of a mixed-use development project is to serve the local community while minimizing vehicle trips to the site by providing multiple uses that patrons can access with a single vehicle trip. With the anticipated TDM measures that can be implemented, and the shared-use trips expected by Site patrons, it is VHB's opinion that the analyses presented within this report is a conservative estimation of the amount of traffic expected to be generated by the proposed Site.

It is therefore the conclusion of this Traffic Impact Assessment that while the surrounding roadway network and unsignalized intersections can be expected to continue experiencing delays on side street approaches, the traffic increases anticipated by the Eagle Mill



Redevelopment can be accommodated by the local roadways. Furthermore, the Transportation Demand Management techniques described herein will be implemented to further minimize impacts.



Appendix

Appendix No. & Title

Appendix A – Traffic Counts

Appendix B – Proposed Site Plan

Appendix C – Crash Data

Appendix D – Trip Generation & Distribution

Appendix E – Capacity Analyses



Attachment A – Traffic Counts

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

Innovativedata LLC 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- 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
07:00 AM	10	0	63	0	73	59	6	0	0	65	0	0	0	0	0	0	15	12	0	27	165
07:15 AM	18	0	69	0	87	79	16	0	0	95	0	0	0	0	0	0	8	8	0	16	198
07:30 AM	18	0	78	0	96	71	19	0	0	90	0	0	0	0	0	0	14	8	0	22	208
07:45 AM	29	0	124	0	153	72	21	0	0	93	0	0	0	0	0	0	15	8	0	23	269
Total	75	0	334	0	409	281	62	0	0	343	0	0	0	0	0	0	52	36	0	88	840
08:00 AM	17	1	103	0	121	98	19	0	0	117	0	0	0	0	0	0	18	14	0	32	270
08:15 AM	19	2	98	0	119	103	10	0	0	113	0	0	0	0	0	0	23	6	0	29	261
08:30 AM	14	0	87	0	101	93	15	0	0	108	0	0	0	0	0	0	24	20	1	45	254
08:45 AM	20	0	95	0	115	92	20	0	0	112	0	0	0	0	0	0	33	10	0	43	270
Total	70	3	383	0	456	386	64	0	0	450	0	0	0	0	0	0	98	50	1	149	1055
Grand Total	145	3	717	0	865	667	126	0	0	793	0	0	0	0	0	0	150	86	1	237	1895
Apprch %	16.8	0.3	82.9	0		84.1	15.9	0	0		0	0	0	0		0	63.3	36.3	0.4		
Total %	7.7	0.2	37.8	0	45.6	35.2	6.6	0	0	41.8	0	0	0	0	0	0	7.9	4.5	0.1	12.5	
PCs and Peds	140	3	657	0	800	575	116	0	0	691	0	0	0	0	0	0	137	81	1	219	1710
% PCs and Peds	96.6	100	91.6	0	92.5	86.2	92.1	0	0	87.1	0	0	0	0	0	0	91.3	94.2	100	92.4	90.2
Heavy Vehicles	5	0	60	0	65	92	10	0	0	102	0	0	0	0	0	0	12	5	0	17	184
% Heavy Vehicles	3.4	0	8.4	0	7.5	13.8	7.9	0	0	12.9	0	0	0	0	0	0	8	5.8	0	7.2	9.7
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7	0	0	0.4	0.1

[illegible]



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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



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

Innovatedataallc.com or 1.413.668.5094

N / S: Canal Street
E / W: Route 20 (West Center)
City, State: Lee, Massachusetts
Client: VHB / J. Locke

File Name : AM Peak - Route 20 @ Canal
Site Code : 3
Start Date : 8/22/2018
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	From North					West Center From East					Canal From South					West Center 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	66	3	0	69	3	0	0	0	3	0	56	0	0	56	128
07:15 AM	1	0	0	0	1	0	78	3	0	81	3	0	2	0	5	4	65	0	0	69	156
07:30 AM	1	0	0	0	1	0	86	4	0	90	1	0	3	1	5	0	92	0	0	92	188
07:45 AM	0	0	0	0	0	0	83	0	0	83	1	0	0	7	8	2	136	0	0	138	229
Total	2	0	0	0	2	0	313	10	0	323	8	0	5	8	21	6	349	0	0	355	701
08:00 AM	0	0	0	1	1	0	104	0	1	105	0	0	0	0	0	1	112	0	0	113	219
08:15 AM	0	0	0	2	2	0	108	1	1	110	4	0	0	0	4	1	100	0	0	101	217
08:30 AM	0	0	0	1	1	0	79	5	0	84	4	0	1	1	6	1	68	0	0	69	160
08:45 AM	0	0	0	1	1	0	89	6	0	95	3	0	0	0	3	2	103	0	0	105	204
Total	0	0	0	5	5	0	380	12	2	394	11	0	1	1	13	5	383	0	0	388	800
Grand Total	2	0	0	5	7	0	693	22	2	717	19	0	6	9	34	11	732	0	0	743	1501
Apprch %	28.6	0	0	71.4		0	96.7	3.1	0.3		55.9	0	17.6	26.5		1.5	98.5	0	0		
Total %	0.1	0	0	0.3	0.5	0	46.2	1.5	0.1	47.8	1.3	0	0.4	0.6	2.3	0.7	48.8	0	0	49.5	
PCs and Peds	2	0	0	5	7	0	617	20	2	639	16	0	6	9	31	11	687	0	0	698	1375
% PCs and Peds	100	0	0	100	100	0	89	90.9	100	89.1	84.2	0	100	100	91.2	100	93.9	0	0	93.9	91.6
Heavy Vehicles	0	0	0	0	0	0	75	2	0	77	3	0	0	0	3	0	44	0	0	44	124
% Heavy Vehicles	0	0	0	0	0	0	10.8	9.1	0	10.7	15.8	0	0	0	8.8	0	6	0	0	5.9	8.3
Bicycles	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
% Bicycles	0	0	0	0	0	0	0.1	0	0	0.1	0	0	0	0	0	0	0.1	0	0	0.1	0.1

	From North					West Center From East					Canal From South					West Center 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	1	0	0	0	1	0	86	4	0	90	1	0	3	1	5	0	92	0	0	92	188
07:45 AM	0	0	0	0	0	0	83	0	0	83	1	0	0	7	8	2	136	0	0	138	229
08:00 AM	0	0	0	1	1	0	104	0	1	105	0	0	0	0	0	1	112	0	0	113	219
08:15 AM	0	0	0	2	2	0	108	1	1	110	4	0	0	0	4	1	100	0	0	101	217
Total Volume	1	0	0	3	4	0	381	5	2	388	6	0	3	8	17	4	440	0	0	444	853
% App. Total	25	0	0	75		0	98.2	1.3	0.5		35.3	0	17.6	47.1		0.9	99.1	0	0		
PHF	.250	.000	.000	.375	.500	.000	.882	.313	.500	.882	.375	.000	.250	.286	.531	.500	.809	.000	.000	.804	.931
PCs and Peds	2	0	0	5	7	0	617	20	2	639	16	0	6	9	31	11	687	0	0	698	1375
% PCs and Peds	100	0	0	100	100	0	90.8	100	100	91.0	100	0	100	100	100	100	94.1	0	0	94.1	92.8
Heavy Vehicles	0	0	0	0	0	0	35	0	0	35	0	0	0	0	0	0	25	0	0	25	60
% Heavy Vehicles	0	0	0	0	0	0	9.2	0	0	9.0	0	0	0	0	0	0	5.7	0	0	5.6	7.0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0.2	0.1



Innovative Data, LLC

PO Box 468
Belchertown, Massachusetts
Innovativedataallc.com or 1.413.668.5094

N / S: Canal Street
E / W: Route 20 (West Center)
City, State: Lee, Massachusetts
Client: VHB / J. Locke

File Name : AM Peak - Route 20 @ Canal
Site Code : 3
Start Date : 8/22/2018
Page No : 1

Groups Printed- Heavy Vehicles

	From North					West Center From East					Canal From South					West Center 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	11	0	0	11	1	0	0	0	1	0	4	0	0	4	16
07:15 AM	0	0	0	0	0	0	11	0	0	11	1	0	0	0	1	0	0	0	0	0	12
07:30 AM	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	0	5	0	0	5	17
07:45 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	7	0	0	7	13
Total	0	0	0	0	0	0	40	0	0	40	2	0	0	0	2	0	16	0	0	16	58
08:00 AM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	11	0	0	11	18
08:15 AM	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	2	0	0	2	12
08:30 AM	0	0	0	0	0	0	9	1	0	10	1	0	0	0	1	0	6	0	0	6	17
08:45 AM	0	0	0	0	0	0	9	1	0	10	0	0	0	0	0	0	9	0	0	9	19
Total	0	0	0	0	0	0	35	2	0	37	1	0	0	0	1	0	28	0	0	28	66
Grand Total	0	0	0	0	0	0	75	2	0	77	3	0	0	0	3	0	44	0	0	44	124
Apprch %	0	0	0	0		0	97.4	2.6	0		100	0	0	0		0	100	0	0		
Total %	0	0	0	0		0	60.5	1.6	0	62.1	2.4	0	0	0	2.4	0	35.5	0	0	35.5	

	From North					West Center From East					Canal From South					West Center 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	0	0	0	0	7	0	0	7	0	0	0	0	0	0	11	0	0	11	18
08:15 AM	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	2	0	0	2	12
08:30 AM	0	0	0	0	0	0	9	1	0	10	1	0	0	0	1	0	6	0	0	6	17
08:45 AM	0	0	0	0	0	0	9	1	0	10	0	0	0	0	0	0	9	0	0	9	19
Total Volume	0	0	0	0	0	0	35	2	0	37	1	0	0	0	1	0	28	0	0	28	66
% App. Total	0	0	0	0		0	94.6	5.4	0		100	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.875	.500	.000	.925	.250	.000	.000	.000	.250	.000	.636	.000	.000	.636	.868



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PO Box 468
Belchertown, Massachusetts
Innovativedataallc.com or 1.413.668.5094

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

File Name : AM Peak - Route 20 @ East Center
Site Code : 2
Start Date : 8/22/2018
Page No : 1

Groups Printed- Heavy Vehicles

	Route 20 From North					East Center From East					Route 20 From South					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	5	0	0	5	0	1	1	0	2	1	5	0	0	6	0	0	0	0	0	13
07:15 AM	0	1	0	0	1	0	0	1	0	1	0	11	0	0	11	0	0	0	0	0	13
07:30 AM	0	2	0	0	2	0	0	0	0	0	3	10	0	0	13	0	0	0	0	0	15
07:45 AM	0	1	0	0	1	0	0	1	0	1	2	5	0	0	7	0	0	0	0	0	9
Total	0	9	0	0	9	0	1	3	0	4	6	31	0	0	37	0	0	0	0	0	50
08:00 AM	0	7	0	0	7	0	1	0	0	1	0	5	0	0	5	0	0	0	0	0	13
08:15 AM	0	2	0	0	2	0	0	2	0	2	1	4	0	0	5	0	0	0	0	0	9
08:30 AM	0	5	0	0	5	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	13
08:45 AM	0	3	0	0	3	0	0	0	0	0	1	9	0	0	10	0	0	0	0	0	13
Total	0	17	0	0	17	0	1	2	0	3	2	26	0	0	28	0	0	0	0	0	48
Grand Total	0	26	0	0	26	0	2	5	0	7	8	57	0	0	65	0	0	0	0	0	98
Apprch %	0	100	0	0		0	28.6	71.4	0		12.3	87.7	0	0		0	0	0	0		
Total %	0	26.5	0	0	26.5	0	2	5.1	0	7.1	8.2	58.2	0	0	66.3	0	0	0	0	0	

	Route 20 From North					East Center From East					Route 20 From South					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	5	0	0	5	0	1	1	0	2	1	5	0	0	6	0	0	0	0	0	13
07:15 AM	0	1	0	0	1	0	0	1	0	1	0	11	0	0	11	0	0	0	0	0	13
07:30 AM	0	2	0	0	2	0	0	0	0	0	3	10	0	0	13	0	0	0	0	0	15
07:45 AM	0	1	0	0	1	0	0	1	0	1	2	5	0	0	7	0	0	0	0	0	9
Total Volume	0	9	0	0	9	0	1	3	0	4	6	31	0	0	37	0	0	0	0	0	50
% App. Total	0	100	0	0		0	25	75	0		16.2	83.8	0	0		0	0	0	0		
PHF	.000	.450	.000	.000	.450	.000	.250	.750	.000	.500	.500	.705	.000	.000	.712	.000	.000	.000	.000	.000	.833



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

Innovatedataallc.com or 1.413.668.5094

N / S: Route 20

E / W: Summer Street

City, State: Lee, Massachusetts

Client: VHB / J. Locke

File Name : AM Peak - Route 20 @ Summer

Site Code : 4

Start Date : 8/22/2018

Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	Route 20 From North					From East					Route 20 From South					Summer 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	6	48	0	0	54	0	0	0	0	0	0	58	4	0	62	5	0	6	0	11	127
07:15 AM	7	65	0	0	72	0	0	0	0	0	0	73	7	0	80	5	0	13	0	18	170
07:30 AM	8	96	0	0	104	0	0	0	0	0	0	80	8	0	88	6	0	14	0	20	212
07:45 AM	10	115	0	0	125	0	0	0	0	0	0	77	5	0	82	14	0	8	4	26	233
Total	31	324	0	0	355	0	0	0	0	0	0	288	24	0	312	30	0	41	4	75	742
08:00 AM	13	107	0	1	121	0	0	0	0	0	0	97	9	0	106	9	0	9	0	18	245
08:15 AM	10	90	0	0	100	0	0	0	0	0	0	100	7	0	107	12	0	8	0	20	227
08:30 AM	7	71	0	0	78	0	0	0	0	0	0	79	2	0	81	6	0	14	0	20	179
08:45 AM	9	96	0	0	105	0	0	0	0	0	0	77	9	0	86	6	0	7	0	13	204
Total	39	364	0	1	404	0	0	0	0	0	0	353	27	0	380	33	0	38	0	71	855
Grand Total	70	688	0	1	759	0	0	0	0	0	0	641	51	0	692	63	0	79	4	146	1597
Apprch %	9.2	90.6	0	0.1		0	0	0	0		0	92.6	7.4	0		43.2	0	54.1	2.7		
Total %	4.4	43.1	0	0.1	47.5	0	0	0	0	0	0	40.1	3.2	0	43.3	3.9	0	4.9	0.3	9.1	
PCs and Peds	70	650	0	1	721	0	0	0	0	0	0	570	51	0	621	61	0	79	3	143	1485
% PCs and Peds	100	94.5	0	100	95	0	0	0	0	0	0	88.9	100	0	89.7	96.8	0	100	75	97.9	93
Heavy Vehicles	0	38	0	0	38	0	0	0	0	0	0	71	0	0	71	2	0	0	0	2	111
% Heavy Vehicles	0	5.5	0	0	5	0	0	0	0	0	0	11.1	0	0	10.3	3.2	0	0	0	1.4	7
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0.7	0.1

	Route 20 From North					From East					Route 20 From South					Summer 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	8	96	0	0	104	0	0	0	0	0	0	80	8	0	88	6	0	14	0	20	212
07:45 AM	10	115	0	0	125	0	0	0	0	0	0	77	5	0	82	14	0	8	4	26	233
08:00 AM	13	107	0	1	121	0	0	0	0	0	0	97	9	0	106	9	0	9	0	18	245
08:15 AM	10	90	0	0	100	0	0	0	0	0	0	100	7	0	107	12	0	8	0	20	227
Total Volume	41	408	0	1	450	0	0	0	0	0	0	354	29	0	383	41	0	39	4	84	917
% App. Total	9.1	90.7	0	0.2		0	0	0	0		0	92.4	7.6	0		48.8	0	46.4	4.8		
PHF	.788	.887	.000	.250	.900	.000	.000	.000	.000	.000	.000	.885	.806	.000	.895	.732	.000	.696	.250	.808	.936
PCs and Peds	100	94.9	0	100	95.3	0	0	0	0	0	0	90.1	100	0	90.9	95.1	0	100	75.0	96.4	93.6
% PCs and Peds	100	94.9	0	100	95.3	0	0	0	0	0	0	90.1	100	0	90.9	95.1	0	100	75.0	96.4	93.6
Heavy Vehicles	0	21	0	0	21	0	0	0	0	0	0	35	0	0	35	2	0	0	0	2	58
% Heavy Vehicles	0	5.1	0	0	4.7	0	0	0	0	0	0	9.9	0	0	9.1	4.9	0	0	0	2.4	6.3
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25.0	1.2	0.1



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PO Box 468
Belchertown, Massachusetts
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N / S: Route 20
E / W: Summer Street
City, State: Lee, Massachusetts
Client: VHB / J. Locke

File Name : AM Peak - Route 20 @ Summer
Site Code : 4
Start Date : 8/22/2018
Page No : 1

Groups Printed- Heavy Vehicles

	Route 20 From North					From East					Route 20 From South					Summer 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	4	0	0	4	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	12
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	11
07:30 AM	0	3	0	0	3	0	0	0	0	0	0	13	0	0	13	1	0	0	0	1	17
07:45 AM	0	8	0	0	8	0	0	0	0	0	0	6	0	0	6	1	0	0	0	1	15
Total	0	15	0	0	15	0	0	0	0	0	0	38	0	0	38	2	0	0	0	2	55
08:00 AM	0	8	0	0	8	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	14
08:15 AM	0	2	0	0	2	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	12
08:30 AM	0	6	0	0	6	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	14
08:45 AM	0	7	0	0	7	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	16
Total	0	23	0	0	23	0	0	0	0	0	0	33	0	0	33	0	0	0	0	0	56
Grand Total	0	38	0	0	38	0	0	0	0	0	0	71	0	0	71	2	0	0	0	2	111
Apprch %	0	100	0	0		0	0	0	0		0	100	0	0		100	0	0	0		
Total %	0	34.2	0	0	34.2	0	0	0	0	0	0	64	0	0	64	1.8	0	0	0	1.8	

	Route 20 From North					From East					Route 20 From South					Summer 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	3	0	0	3	0	0	0	0	0	0	13	0	0	13	1	0	0	0	1	17
07:45 AM	0	8	0	0	8	0	0	0	0	0	0	6	0	0	6	1	0	0	0	1	15
08:00 AM	0	8	0	0	8	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	14
08:15 AM	0	2	0	0	2	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	12
Total Volume	0	21	0	0	21	0	0	0	0	0	0	35	0	0	35	2	0	0	0	2	58
% App. Total	0	100	0	0		0	0	0	0		0	100	0	0		100	0	0	0		
PHF	.000	.656	.000	.000	.656	.000	.000	.000	.000	.000	.000	.673	.000	.000	.673	.500	.000	.000	.000	.500	.853

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Belchertown, Massachusetts

Innovativedata LLC 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- PCs and Peds - Heavy Vehicles - Bicycles

[illegible][illegible]



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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 : 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	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	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	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	0	2	9
Total	0	0	26	0	26	16	3	0	0	19	0	0	0	0	0	0	4	1	0	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	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	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	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	0	3	16
Total	6	0	18	0	24	19	1	0	0	20	0	0	0	0	0	0	4	2	0	0	6	50
Grand Total	6	0	44	0	50	35	4	0	0	39	0	0	0	0	0	0	8	3	0	0	11	100
Apprch %	12	0	88	0		89.7	10.3	0	0		0	0	0	0	0	0	72.7	27.3	0	0		
Total %	6	0	44	0	50	35	4	0	0	39	0	0	0	0	0	0	8	3	0	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	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



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Belchertown, Massachusetts

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N / S: Canal Street
E / W: Route 20 (West Center)
City, State: Lee, Massachusetts
Client: VHB / J. Locke

File Name : PM Peak - Route 20 @ Canal
Site Code : 3
Start Date : 8/22/2018
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	From North					West Center From East					Canal From South					West Center 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	147	6	0	153	3	0	2	0	5	2	141	0	0	143	301
04:15 PM	1	0	0	0	1	0	133	5	0	138	5	0	1	0	6	0	131	0	0	131	276
04:30 PM	0	0	0	0	0	0	122	2	0	124	5	0	1	0	6	2	162	0	0	164	294
04:45 PM	0	0	0	0	0	0	126	5	0	131	6	0	1	0	7	2	149	0	0	151	289
Total	1	0	0	0	1	0	528	18	0	546	19	0	5	0	24	6	583	0	0	589	1160
05:00 PM	0	0	0	0	0	0	108	3	0	111	1	0	3	0	4	4	122	0	0	126	241
05:15 PM	0	0	0	0	0	0	96	1	0	97	2	0	2	0	4	6	131	0	0	137	238
05:30 PM	0	0	0	0	0	0	128	2	0	130	3	0	3	0	6	1	125	0	0	126	262
05:45 PM	0	0	0	0	0	0	143	2	0	145	1	0	0	0	1	2	96	0	0	98	244
Total	0	0	0	0	0	0	475	8	0	483	7	0	8	0	15	13	474	0	0	487	985
Grand Total	1	0	0	0	1	0	1003	26	0	1029	26	0	13	0	39	19	1057	0	0	1076	2145
Apprch %	100	0	0	0		0	97.5	2.5	0		66.7	0	33.3	0		1.8	98.2	0	0		
Total %	0	0	0	0	0	0	46.8	1.2	0	48	1.2	0	0.6	0	1.8	0.9	49.3	0	0	50.2	
PCs and Peds	1	0	0	0	1	0	983	25	0	1008	26	0	13	0	39	19	1020	0	0	1039	2087
% PCs and Peds	100	0	0	0	100	0	98	96.2	0	98	100	0	100	0	100	100	96.5	0	0	96.6	97.3
Heavy Vehicles	0	0	0	0	0	0	20	1	0	21	0	0	0	0	0	0	36	0	0	36	57
% Heavy Vehicles	0	0	0	0	0	0	2	3.8	0	2	0	0	0	0	0	0	3.4	0	0	3.3	2.7
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0.1	0

	From North					West Center From East					Canal From South					West Center 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	147	6	0	153	3	0	2	0	5	2	141	0	0	143	301
04:15 PM	1	0	0	0	1	0	133	5	0	138	5	0	1	0	6	0	131	0	0	131	276
04:30 PM	0	0	0	0	0	0	122	2	0	124	5	0	1	0	6	2	162	0	0	164	294
04:45 PM	0	0	0	0	0	0	126	5	0	131	6	0	1	0	7	2	149	0	0	151	289
Total Volume	1	0	0	0	1	0	528	18	0	546	19	0	5	0	24	6	583	0	0	589	1160
% App. Total	100	0	0	0		0	96.7	3.3	0		79.2	0	20.8	0		1	99	0	0		
PHF	.250	.000	.000	.000	.250	.000	.898	.750	.000	.892	.792	.000	.625	.000	.857	.750	.900	.000	.000	.898	.963
PCs and Peds	1	0	0	0	1	0	98.3	100	0	98.4	100	0	100	0	100	100	96.4	0	0	96.4	97.4
% PCs and Peds	100	0	0	0	100	0	98.3	100	0	98.4	100	0	100	0	100	100	96.4	0	0	96.4	97.4
Heavy Vehicles	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	20	0	0	20	29
% Heavy Vehicles	0	0	0	0	0	0	1.7	0	0	1.6	0	0	0	0	0	0	3.4	0	0	3.4	2.5
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0.2	0.1



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N / S: Canal Street
E / W: Route 20 (West Center)
City, State: Lee, Massachusetts
Client: VHB / J. Locke

File Name : PM Peak - Route 20 @ Canal
Site Code : 3
Start Date : 8/22/2018
Page No : 1

Groups Printed- Heavy Vehicles

	From North					West Center From East					Canal From South					West Center 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	7	0	0	7	9
04:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	5	0	0	5	6
04:30 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	9
04:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5
Total	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	20	0	0	20	29
05:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
05:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5
05:30 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	11
05:45 PM	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	0	3	0	0	3	8
Total	0	0	0	0	0	0	11	1	0	12	0	0	0	0	0	0	16	0	0	16	28
Grand Total	0	0	0	0	0	0	20	1	0	21	0	0	0	0	0	0	36	0	0	36	57
Apprch %	0	0	0	0	0	0	95.2	4.8	0		0	0	0	0	0	0	100	0	0		
Total %	0	0	0	0	0	0	35.1	1.8	0	36.8	0	0	0	0	0	0	63.2	0	0	63.2	

	From North					West Center From East					Canal From South					West Center 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	7	0	0	7	9
04:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	5	0	0	5	6
04:30 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	9
04:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5
Total Volume	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	20	0	0	20	29
% App. Total	0	0	0	0	0	0	100	0	0		0	0	0	0	0	0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.450	.000	.000	.450	.000	.000	.000	.000	.000	.000	.714	.000	.000	.714	.806

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N / S: Route 20 (Main & West Center)

E / W: East Center Street

City, State: Lee, Massachusetts

Client: VHB / J. Locke

File Name : PM Peak - Route 20 @ East Center

Site Code : 2

Start Date : 8/22/2018

Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

[illegible][illegible]



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N / S: Route 20 (Main & West Center)
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City, State: Lee, Massachusetts
Client: VHB / J. Locke

File Name : PM Peak - Route 20 @ East Center
Site Code : 2
Start Date : 8/22/2018
Page No : 1

Groups Printed- Heavy Vehicles

	Route 20 From North					East Center From East					Route 20 From South					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	6	0	0	6	1	0	0	0	1	1	2	0	0	3	0	0	0	0	0	10
04:15 PM	0	2	0	0	2	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	5
04:30 PM	0	3	0	0	3	0	0	0	0	0	2	4	0	0	6	0	0	0	0	0	9
04:45 PM	0	3	0	0	3	0	0	1	0	1	1	1	0	0	2	0	0	0	0	0	6
Total	0	14	0	0	14	1	0	3	0	4	4	8	0	0	12	0	0	0	0	0	30
05:00 PM	0	3	0	0	3	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	5
05:15 PM	0	3	0	0	3	1	0	0	0	1	1	1	0	0	2	0	0	0	0	0	6
05:30 PM	0	5	0	0	5	0	0	1	0	1	0	4	0	0	4	0	0	0	0	0	10
05:45 PM	0	4	0	0	4	0	0	0	0	0	2	4	0	0	6	0	0	0	0	0	10
Total	0	15	0	0	15	1	0	1	0	2	4	10	0	0	14	0	0	0	0	0	31
Grand Total	0	29	0	0	29	2	0	4	0	6	8	18	0	0	26	0	0	0	0	0	61
Apprch %	0	100	0	0		33.3	0	66.7	0		30.8	69.2	0	0		0	0	0	0		
Total %	0	47.5	0	0	47.5	3.3	0	6.6	0	9.8	13.1	29.5	0	0	42.6	0	0	0	0	0	

	Route 20 From North					East Center From East					Route 20 From South					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 05:00 PM																					
05:00 PM	0	3	0	0	3	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	5
05:15 PM	0	3	0	0	3	1	0	0	0	1	1	1	0	0	2	0	0	0	0	0	6
05:30 PM	0	5	0	0	5	0	0	1	0	1	0	4	0	0	4	0	0	0	0	0	10
05:45 PM	0	4	0	0	4	0	0	0	0	0	2	4	0	0	6	0	0	0	0	0	10
Total Volume	0	15	0	0	15	1	0	1	0	2	4	10	0	0	14	0	0	0	0	0	31
% App. Total	0	100	0	0		50	0	50	0		28.6	71.4	0	0		0	0	0	0		
PHF	.000	.750	.000	.000	.750	.250	.000	.250	.000	.500	.500	.625	.000	.000	.583	.000	.000	.000	.000	.000	.775



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PO Box 468

Belchertown, Massachusetts

Innovatedataallc.com or 1.413.668.5094

N / S: Route 20

E / W: Summer Street

City, State: Lee, Massachusetts

Client: VHB / J. Locke

File Name : PM Peak - Route 20 @ Summer

Site Code : 4

Start Date : 8/22/2018

Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	Route 20 From North					From East					Route 20 From South					Summer 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	12	136	0	0	148	0	0	0	0	0	0	138	14	0	152	9	0	13	0	22	322
04:15 PM	18	124	0	0	142	0	0	0	0	0	0	124	7	0	131	11	0	12	0	23	296
04:30 PM	15	153	0	1	169	0	0	0	0	0	0	109	14	0	123	15	0	25	2	42	334
04:45 PM	18	134	0	0	152	0	0	0	0	0	0	118	12	0	130	19	0	20	0	39	321
Total	63	547	0	1	611	0	0	0	0	0	0	489	47	0	536	54	0	70	2	126	1273
05:00 PM	14	116	0	1	131	0	0	0	0	0	0	106	14	0	120	12	0	15	0	27	278
05:15 PM	13	124	0	2	139	0	0	0	0	0	0	87	10	0	97	14	0	10	0	24	260
05:30 PM	13	110	0	0	123	0	0	0	0	0	0	128	4	0	132	16	0	15	0	31	286
05:45 PM	18	88	0	0	106	0	0	0	0	0	0	130	10	0	140	9	0	13	0	22	268
Total	58	438	0	3	499	0	0	0	0	0	0	451	38	0	489	51	0	53	0	104	1092
Grand Total	121	985	0	4	1110	0	0	0	0	0	0	940	85	0	1025	105	0	123	2	230	2365
Apprch %	10.9	88.7	0	0.4		0	0	0	0		0	91.7	8.3	0		45.7	0	53.5	0.9		
Total %	5.1	41.6	0	0.2	46.9	0	0	0	0	0	0	39.7	3.6	0	43.3	4.4	0	5.2	0.1	9.7	
PCs and Peds	121	949	0	4	1074	0	0	0	0	0	0	921	85	0	1006	103	0	122	2	227	2307
% PCs and Peds	100	96.3	0	100	96.8	0	0	0	0	0	0	98	100	0	98.1	98.1	0	99.2	100	98.7	97.5
Heavy Vehicles	0	36	0	0	36	0	0	0	0	0	0	19	0	0	19	1	0	1	0	2	57
% Heavy Vehicles	0	3.7	0	0	3.2	0	0	0	0	0	0	2	0	0	1.9	1	0	0.8	0	0.9	2.4
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0.4	0

	Route 20 From North					From East					Route 20 From South					Summer 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	12	136	0	0	148	0	0	0	0	0	0	138	14	0	152	9	0	13	0	22	322
04:15 PM	18	124	0	0	142	0	0	0	0	0	0	124	7	0	131	11	0	12	0	23	296
04:30 PM	15	153	0	1	169	0	0	0	0	0	0	109	14	0	123	15	0	25	2	42	334
04:45 PM	18	134	0	0	152	0	0	0	0	0	0	118	12	0	130	19	0	20	0	39	321
Total Volume	63	547	0	1	611	0	0	0	0	0	0	489	47	0	536	54	0	70	2	126	1273
% App. Total	10.3	89.5	0	0.2		0	0	0	0		0	91.2	8.8	0		42.9	0	55.6	1.6		
PHF	.875	.894	.000	.250	.904	.000	.000	.000	.000	.000	.000	.886	.839	.000	.882	.711	.000	.700	.250	.750	.953
PCs and Peds	100	96.3	0	100	96.7	0	0	0	0	0	0	98.4	100	0	98.5	98.1	0	98.6	100	98.4	97.6
% PCs and Peds	0	20	0	0	20	0	0	0	0	0	0	8	0	0	8	0	0	1	0	1	29
Heavy Vehicles	0	3.7	0	0	3.3	0	0	0	0	0	0	1.6	0	0	1.5	0	0	1.4	0	0.8	2.3
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.9	0	0	0	0.8	0.1
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						



Innovative Data, LLC

PO Box 468
Belchertown, Massachusetts
Innovativedataallc.com or 1.413.668.5094

N / S: Route 20
E / W: Summer Street
City, State: Lee, Massachusetts
Client: VHB / J. Locke

File Name : PM Peak - Route 20 @ Summer
Site Code : 4
Start Date : 8/22/2018
Page No : 1

Groups Printed- Heavy Vehicles

	Route 20 From North					From East					Route 20 From South					Summer 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	6	0	0	6	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	8
04:15 PM	0	6	0	0	6	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	7
04:30 PM	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	8
04:45 PM	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	6
Total	0	20	0	0	20	0	0	0	0	0	0	8	0	0	8	0	0	1	0	1	29
05:00 PM	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4
05:15 PM	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	5
05:30 PM	0	7	0	0	7	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	12
05:45 PM	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	1	0	0	0	1	7
Total	0	16	0	0	16	0	0	0	0	0	0	11	0	0	11	1	0	0	0	1	28
Grand Total	0	36	0	0	36	0	0	0	0	0	0	19	0	0	19	1	0	1	0	2	57
Apprch %	0	100	0	0		0	0	0	0		0	100	0	0		50	0	50	0		
Total %	0	63.2	0	0	63.2	0	0	0	0	0	0	33.3	0	0	33.3	1.8	0	1.8	0	3.5	

	Route 20 From North					From East					Route 20 From South					Summer 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	6	0	0	6	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	8
04:15 PM	0	6	0	0	6	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	7
04:30 PM	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	8
04:45 PM	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	6
Total Volume	0	20	0	0	20	0	0	0	0	0	0	8	0	0	8	0	0	1	0	1	29
% App. Total	0	100	0	0		0	0	0	0		0	100	0	0		0	0	100	0		
PHF	.000	.833	.000	.000	.833	.000	.000	.000	.000	.000	.000	.500	.000	.000	.500	.000	.000	.250	.000	.250	.906

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PO Box 468

Belchertown, Massachusetts

Innovativedatalc.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- 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	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]



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PO Box 468
Belchertown, Massachusetts
Innovativedata LLC 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

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

Innovativedata LLC or 1.413.668.5094

N / S: Canal Street
E / W: Route 20 (West Center)
City, State: Lee, Massachusetts
Client: VHB / J. Locke

File Name : Sat Peak - Route 20 @ Canal

Site Code : 3

Start Date : 8/25/2018

Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	From North					West Center From East					Canal From South					West Center 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	1	1	0	129	5	2	136	4	0	0	2	6	1	121	0	0	122	265
11:15 AM	0	0	1	0	1	0	116	5	0	121	3	0	2	2	7	2	137	0	0	139	268
11:30 AM	0	0	0	1	1	1	133	1	0	135	3	0	0	0	3	0	120	0	0	120	259
11:45 AM	0	0	0	0	0	0	137	3	0	140	2	0	0	0	2	2	129	0	0	131	273
Total	0	0	1	2	3	1	515	14	2	532	12	0	2	4	18	5	507	0	0	512	1065
12:00 PM	0	0	0	1	1	0	150	4	0	154	2	0	2	1	5	1	130	0	0	131	291
12:15 PM	0	0	0	2	2	0	139	2	0	141	4	0	0	2	6	0	154	0	0	154	303
12:30 PM	0	0	0	2	2	0	126	1	1	128	5	0	0	2	7	2	119	0	0	121	258
12:45 PM	0	0	0	6	6	0	140	2	0	142	1	0	1	0	2	4	134	0	0	138	288
Total	0	0	0	11	11	0	555	9	1	565	12	0	3	5	20	7	537	0	0	544	1140
01:00 PM	0	0	0	0	0	0	136	3	0	139	3	0	1	2	6	4	156	0	0	160	305
01:15 PM	0	0	0	2	2	0	101	2	0	103	5	0	0	4	9	1	146	0	0	147	261
01:30 PM	0	0	0	0	0	0	128	2	0	130	5	0	1	2	8	0	144	0	0	144	282
01:45 PM	0	0	0	0	0	0	139	8	0	147	5	0	0	2	7	2	118	1	0	121	275
Total	0	0	0	2	2	0	504	15	0	519	18	0	2	10	30	7	564	1	0	572	1123
Grand Total	0	0	1	15	16	1	1574	38	3	1616	42	0	7	19	68	19	1608	1	0	1628	3328
Apprch %	0	0	6.2	93.8		0.1	97.4	2.4	0.2		61.8	0	10.3	27.9		1.2	98.8	0.1	0		
Total %	0	0	0	0.5	0.5	0	47.3	1.1	0.1	48.6	1.3	0	0.2	0.6	2	0.6	48.3	0	0	48.9	
PCs and Peds	0	0	1	15	16	1	1539	36	3	1579	42	0	7	19	68	19	1583	1	0	1603	3266
% PCs and Peds	0	0	100	100	100	100	97.8	94.7	100	97.7	100	0	100	100	100	100	98.4	100	0	98.5	98.1
Heavy Vehicles	0	0	0	0	0	0	31	2	0	33	0	0	0	0	0	0	22	0	0	22	55
% Heavy Vehicles	0	0	0	0	0	0	2	5.3	0	2	0	0	0	0	0	0	1.4	0	0	1.4	1.7
Bicycles	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	7
% Bicycles	0	0	0	0	0	0	0.3	0	0	0.2	0	0	0	0	0	0	0.2	0	0	0.2	0.2

[illegible]



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PO Box 468
Belchertown, Massachusetts
Innovativedataallc.com or 1.413.668.5094

N / S: Canal Street
E / W: Route 20 (West Center)
City, State: Lee, Massachusetts
Client: VHB / J. Locke

File Name : Sat Peak - Route 20 @ Canal
Site Code : 3
Start Date : 8/25/2018
Page No : 1

Groups Printed- Heavy Vehicles

	From North					West Center From East					Canal From South					West Center 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	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
11:30 AM	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	0	1	0	0	1	6
11:45 AM	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	0	2	0	0	2	7
Total	0	0	0	0	0	0	11	2	0	13	0	0	0	0	0	0	6	0	0	6	19
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
12:15 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	5
12:30 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	5
12:45 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5
Total	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	0	4	0	0	4	16
01:00 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	7
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	4
01:30 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	3
Total	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	12	0	0	12	20
Grand Total	0	0	0	0	0	0	31	2	0	33	0	0	0	0	0	0	22	0	0	22	55
Apprch %	0	0	0	0		0	93.9	6.1	0		0	0	0	0		0	100	0	0		
Total %	0	0	0	0		0	56.4	3.6	0	60	0	0	0	0		0	40	0	0	40	

	From North					West Center From East					Canal From South					West Center 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	0	0	0	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	5
12:30 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	5
12:45 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5
01:00 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	7
Total Volume	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	0	5	0	0	5	22
% App. Total	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.850	.000	.000	.850	.000	.000	.000	.000	.000	.000	.625	.000	.000	.625	.786



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

Innovativedataallc.com or 1.413.668.5094

N / S: Route 20 (Main & West Center)

E / W: East Center Street

City, State: Lee, Massachusetts

Client: VHB / J. Locke

File Name : Sat Peak - Route 20 @ East Center

Site Code : 2

Start Date : 8/25/2018

Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	Route 20 From North					East Center From East					Route 20 From South					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	107	4	0	111	23	0	12	9	44	10	108	0	0	118	0	0	0	0	0	273
11:15 AM	0	126	3	0	129	11	0	14	3	28	10	102	0	0	112	0	0	0	0	0	269
11:30 AM	0	116	2	0	118	12	0	18	3	33	9	108	0	0	117	0	0	0	0	0	268
11:45 AM	0	98	6	1	105	13	0	16	2	31	11	114	0	0	125	0	0	0	0	0	261
Total	0	447	15	1	463	59	0	60	17	136	40	432	0	0	472	0	0	0	0	0	1071
12:00 PM	0	119	5	0	124	17	0	13	6	36	16	126	0	0	142	0	0	0	0	0	302
12:15 PM	0	133	8	0	141	11	0	23	8	42	13	126	0	0	139	0	0	0	0	0	322
12:30 PM	0	108	3	4	115	10	0	16	7	33	7	116	0	0	123	0	0	0	0	0	271
12:45 PM	0	116	7	0	123	16	0	17	16	49	13	114	0	0	127	0	0	0	0	0	299
Total	0	476	23	4	503	54	0	69	37	160	49	482	0	0	531	0	0	0	0	0	1194
01:00 PM	0	106	9	0	115	8	0	9	5	22	10	108	0	0	118	0	0	0	0	0	255
01:15 PM	0	118	9	0	127	12	0	11	4	27	12	88	0	0	100	0	0	0	0	0	254
01:30 PM	0	107	8	0	115	11	0	14	8	33	6	102	0	0	108	0	0	0	0	0	256
01:45 PM	0	94	7	0	101	7	0	12	17	36	9	124	0	1	134	0	0	0	0	0	271
Total	0	425	33	0	458	38	0	46	34	118	37	422	0	1	460	0	0	0	0	0	1036
Grand Total	0	1348	71	5	1424	151	0	175	88	414	126	1336	0	1	1463	0	0	0	0	0	3301
Apprch %	0	94.7	5	0.4		36.5	0	42.3	21.3		8.6	91.3	0	0.1		0	0	0	0		
Total %	0	40.8	2.2	0.2	43.1	4.6	0	5.3	2.7	12.5	3.8	40.5	0	0	44.3	0	0	0	0	0	
PCs and Peds	0	1330	71	5	1406	148	0	175	87	410	126	1312	0	1	1439	0	0	0	0	0	3255
% PCs and Peds	0	98.7	100	100	98.7	98	0	100	98.9	99	100	98.2	0	100	98.4	0	0	0	0	0	98.6
Heavy Vehicles	0	15	0	0	15	2	0	0	0	2	0	20	0	0	20	0	0	0	0	0	37
% Heavy Vehicles	0	1.1	0	0	1.1	1.3	0	0	0	0.5	0	1.5	0	0	1.4	0	0	0	0	0	1.1
Bicycles	0	3	0	0	3	1	0	0	1	2	0	4	0	0	4	0	0	0	0	0	9
% Bicycles	0	0.2	0	0	0.2	0.7	0	0	1.1	0.5	0	0.3	0	0	0.3	0	0	0	0	0	0.3

	Route 20 From North					East Center From East					Route 20 From South					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	119	5	0	124	17	0	13	6	36	16	126	0	0	142	0	0	0	0	0	302
12:15 PM	0	133	8	0	141	11	0	23	8	42	13	126	0	0	139	0	0	0	0	0	322
12:30 PM	0	108	3	4	115	10	0	16	7	33	7	116	0	0	123	0	0	0	0	0	271
12:45 PM	0	116	7	0	123	16	0	17	16	49	13	114	0	0	127	0	0	0	0	0	299
Total Volume	0	476	23	4	503	54	0	69	37	160	49	482	0	0	531	0	0	0	0	0	1194
% App. Total	0	94.6	4.6	0.8		33.8	0	43.1	23.1		9.2	90.8	0	0		0	0	0	0		
PHF	.000	.895	.719	.250	.892	.794	.000	.750	.578	.816	.766	.956	.000	.000	.935	.000	.000	.000	.000	.000	.927
PCs and Peds	0	99.6	100	100	99.6	96.3	0	100	97.3	98.1	100	97.3	0	0	97.6	0	0	0	0	0	98.5
% PCs and Peds	0	2	0	0	2	1	0	0	0	1	0	9	0	0	9	0	0	0	0	0	12
Heavy Vehicles	0	0.4	0	0	0.4	1.9	0	0	0	0.6	0	1.9	0	0	1.7	0	0	0	0	0	1.0
Bicycles	0	0	0	0	0	1	0	0	1	2	0	4	0	0	4	0	0	0	0	0	6
% Bicycles	0	0	0	0	0	1.9	0	0	2.7	1.3	0	0.8	0	0	0.8	0	0	0	0	0	0.5



Innovative Data, LLC

PO Box 468
Belchertown, Massachusetts
Innovativedataallc.com or 1.413.668.5094

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

File Name : Sat Peak - Route 20 @ East Center
Site Code : 2
Start Date : 8/25/2018
Page No : 1

Groups Printed- Heavy Vehicles

	Route 20 From North					East Center From East					Route 20 From South					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	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	3
11:15 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
11:30 AM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4
11:45 AM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
Total	0	5	0	0	5	1	0	0	0	1	0	6	0	0	6	0	0	0	0	0	12
12:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:15 PM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	5
12:45 PM	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	2
Total	0	2	0	0	2	1	0	0	0	1	0	9	0	0	9	0	0	0	0	0	12
01:00 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
01:15 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
01:30 PM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4
01:45 PM	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	8	0	0	8	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	13
Grand Total	0	15	0	0	15	2	0	0	0	2	0	20	0	0	20	0	0	0	0	0	37
Apprch %	0	100	0	0		100	0	0	0		0	100	0	0		0	0	0	0		
Total %	0	40.5	0	0	40.5	5.4	0	0	0	5.4	0	54.1	0	0	54.1	0	0	0	0	0	

	Route 20 From North					East Center From East					Route 20 From South					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	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	5
12:45 PM	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	2
01:00 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
Total Volume	0	3	0	0	3	1	0	0	0	1	0	11	0	0	11	0	0	0	0	0	15
% App. Total	0	100	0	0		100	0	0	0		0	100	0	0		0	0	0	0		
PHF	.000	.375	.000	.000	.375	.250	.000	.000	.000	.250	.000	.550	.000	.000	.550	.000	.000	.000	.000	.000	.750



Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

Innovatedataallc.com or 1.413.668.5094

N / S: Route 20

E / W: Summer Street

City, State: Lee, Massachusetts

Client: VHB / J. Locke

File Name : Sat Peak - Route 20 @ Summer

Site Code : 4

Start Date : 8/25/2018

Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	Route 20 From North					From East					Route 20 From South					Summer 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	9	110	0	0	119	0	0	0	0	0	0	117	11	0	128	12	0	5	2	19	266
11:15 AM	8	119	0	0	127	0	0	0	0	0	0	105	12	0	117	17	0	12	1	30	274
11:30 AM	8	110	0	0	118	0	0	0	0	0	0	117	16	0	133	14	0	14	0	28	279
11:45 AM	11	115	0	0	126	0	0	0	0	0	0	128	9	0	137	13	0	9	0	22	285
Total	36	454	0	0	490	0	0	0	0	0	0	467	48	0	515	56	0	40	3	99	1104
12:00 PM	8	120	0	0	128	0	0	0	0	0	0	136	15	0	151	11	0	10	1	22	301
12:15 PM	10	139	0	0	149	0	0	0	0	0	0	128	12	2	142	13	0	14	0	27	318
12:30 PM	8	112	0	0	120	0	0	0	0	0	0	124	8	0	132	13	0	16	0	29	281
12:45 PM	16	127	0	0	143	0	0	0	0	0	0	124	17	0	141	10	0	10	0	20	304
Total	42	498	0	0	540	0	0	0	0	0	0	512	52	2	566	47	0	50	1	98	1204
01:00 PM	7	151	0	0	158	0	0	0	0	0	0	129	11	0	140	12	0	13	0	25	323
01:15 PM	15	139	0	0	154	0	0	0	0	0	0	96	8	0	104	16	0	8	0	24	282
01:30 PM	11	124	0	0	135	0	0	0	0	0	0	107	16	0	123	12	0	17	0	29	287
01:45 PM	19	115	0	0	134	0	0	0	0	0	0	132	10	0	142	12	0	9	0	21	297
Total	52	529	0	0	581	0	0	0	0	0	0	464	45	0	509	52	0	47	0	99	1189
Grand Total	130	1481	0	0	1611	0	0	0	0	0	0	1443	145	2	1590	155	0	137	4	296	3497
Apprch %	8.1	91.9	0	0		0	0	0	0		0	90.8	9.1	0.1		52.4	0	46.3	1.4		
Total %	3.7	42.4	0	0	46.1	0	0	0	0	0	0	41.3	4.1	0.1	45.5	4.4	0	3.9	0.1	8.5	
PCs and Peds	129	1458	0	0	1587	0	0	0	0	0	0	1415	143	2	1560	155	0	136	4	295	3442
% PCs and Peds	99.2	98.4	0	0	98.5	0	0	0	0	0	0	98.1	98.6	100	98.1	100	0	99.3	100	99.7	98.4
Heavy Vehicles	0	20	0	0	20	0	0	0	0	0	0	22	2	0	24	0	0	1	0	1	45
% Heavy Vehicles	0	1.4	0	0	1.2	0	0	0	0	0	0	1.5	1.4	0	1.5	0	0	0.7	0	0.3	1.3
Bicycles	1	3	0	0	4	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	10
% Bicycles	0.8	0.2	0	0	0.2	0	0	0	0	0	0	0.4	0	0	0.4	0	0	0	0	0	0.3

	Route 20 From North					From East					Route 20 From South					Summer 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	10	139	0	0	149	0	0	0	0	0	0	128	12	2	142	13	0	14	0	27	318
12:30 PM	8	112	0	0	120	0	0	0	0	0	0	124	8	0	132	13	0	16	0	29	281
12:45 PM	16	127	0	0	143	0	0	0	0	0	0	124	17	0	141	10	0	10	0	20	304
01:00 PM	7	151	0	0	158	0	0	0	0	0	0	129	11	0	140	12	0	13	0	25	323
Total Volume	41	529	0	0	570	0	0	0	0	0	0	505	48	2	555	48	0	53	0	101	1226
% App. Total	7.2	92.8	0	0		0	0	0	0		0	91	8.6	0.4		47.5	0	52.5	0		
PHF	.641	.876	.000	.000	.902	.000	.000	.000	.000	.000	.000	.979	.706	.250	.977	.923	.000	.828	.000	.871	.949
PCs and Peds	100	99.1	0	0	99.1	0	0	0	0	0	0	96.4	97.9	100	96.6	100	0	98.1	0	99.0	98.0
% PCs and Peds	0	5	0	0	5	0	0	0	0	0	0	12	1	0	13	0	0	1	0	1	19
Heavy Vehicles	0	0.9	0	0	0.9	0	0	0	0	0	0	2.4	2.1	0	2.3	0	0	1.9	0	1.0	1.5
Bicycles	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	6
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	1.2	0	0	1.1	0	0	0	0	0	0.5



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N / S: Route 20
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Client: VHB / J. Locke

File Name : Sat Peak - Route 20 @ Summer
Site Code : 4
Start Date : 8/25/2018
Page No : 1

Groups Printed- Heavy Vehicles

	Route 20 From North					From East					Route 20 From South					Summer 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	1	1	0	2	0	0	0	0	0	3
11:15 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
11:30 AM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4
11:45 AM	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	5
Total	0	6	0	0	6	0	0	0	0	0	0	7	1	0	8	0	0	0	0	0	14
12:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:15 PM	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	5
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	4
12:45 PM	0	2	0	0	2	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	4
Total	0	4	0	0	4	0	0	0	0	0	0	8	1	0	9	0	0	1	0	1	14
01:00 PM	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	6
01:15 PM	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
01:30 PM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4
01:45 PM	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	10	0	0	10	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	17
Grand Total	0	20	0	0	20	0	0	0	0	0	0	22	2	0	24	0	0	1	0	1	45
Apprch %	0	100	0	0		0	0	0	0		0	91.7	8.3	0		0	0	100	0		
Total %	0	44.4	0	0	44.4	0	0	0	0	0	0	48.9	4.4	0	53.3	0	0	2.2	0	2.2	

	Route 20 From North					From East					Route 20 From South					Summer 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	1	0	0	1	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	5
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	4
12:45 PM	0	2	0	0	2	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	4
01:00 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	5	0	0	5	0	0	0	0	0	0	12	1	0	13	0	0	1	0	1	19
% App. Total	0	100	0	0		0	0	0	0		0	92.3	7.7	0		0	0	100	0		
PHF	.000	.625	.000	.000	.625	.000	.000	.000	.000	.000	.000	.750	.250	.000	.813	.000	.000	.250	.000	.250	.792



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

Innovative Data, LLC

PO Box 468
 Belchertown, Massachusetts
 Innovatedataallc.com 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
 Client: VHB / J. Locke

Innovative Data, LLC

PO Box 468
 Belchertown, Massachusetts
 Innovativedata LLC or 1.413.668.5094

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 Vol.		09:45	00:15	11:00	04:15	09:45	04:15							
P.H.F.		550	554	488	671	1032	1109							
		0.955	0.942	0.931	0.912	0.959	0.953							
ADT		ADT 14,817		AADT 14,817										

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

Innovativedatallc.com or 1.413.668.5094

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

Southbound

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

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

Innovativedatalc.com or 1.413.668.5094

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

Southbound

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

Innovative Data, LLC

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Belchertown, Massachusetts

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

Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
08/25/18	2	7	11	16	2	1	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	22	32	34
02:00	0	2	8	9	1	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	18	31	33
04:00	1	2	8	13	2	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	75	31	34
06:00	1	10	38	68	32	1	1	1	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	225	30	32
08:00	5	49	152	157	27	2	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	432	27	30
10:00	38	185	239	76	8	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	520	24	28
12 PM	38	234	218	43	4	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	523	23	26
14:00	24	133	249	74	13	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	504	26	29
16:00	20	119	212	88	7	1	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	431	26	29
18:00	16	90	167	57	9	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	319	26	29
20:00	13	79	139	44	4	1	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	281	25	28
22:00	14	47	135	85	6	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	510	28	30
Total	336	1862	3402	1551	255	10	1	1	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%			
AM Peak	10:00	10:00	11:00	08:00	06:00	08:00	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	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%			

15th Percentile : 13 MPH
50th Percentile : 21 MPH
85th Percentile : 26 MPH
95th Percentile : 30 MPH

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

PO Box 468

Belchertown, Massachusetts

Innovatedatallc.com or 1.413.668.5094

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

Northbound																		
Start Time	15	16	21	26	31	36	41	46	51	56	61	66	71	76	999	Total	85th Percent	95th Percent
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

PO Box 468

Belchertown, Massachusetts

Innovativedatalc.com or 1.413.668.5094

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

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
08/24/18	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		

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

Innovativedatalc.com or 1.413.668.5094

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

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

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

Innovatedatalc.com 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	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
08/23/18	0	3	21	30	14	2	0	0	0	0	0	0	0	0	70	31	34
01:00	1	3	16	12	8	1	0	0	0	0	0	0	0	0	41	31	34
02:00	0	2	15	8	7	0	0	0	0	0	0	0	0	0	32	31	34
03:00	0	6	15	11	3	1	0	0	0	0	0	0	0	0	36	28	31
04:00	1	9	28	29	11	2	0	0	0	0	0	0	0	0	80	30	33
05:00	2	14	53	109	39	5	0	0	0	0	0	0	0	0	222	31	34
06:00	13	65	176	228	64	8	0	0	0	0	0	0	0	0	554	30	33
07:00	15	59	270	249	65	6	0	0	0	0	0	0	0	0	664	29	32
08:00	42	142	443	219	23	1	0	0	0	0	0	0	0	0	870	27	29
09:00	41	167	426	211	24	0	0	0	0	0	0	0	0	0	869	27	29
10:00	45	203	445	153	18	0	0	0	0	0	0	0	0	0	864	26	29
11:00	51	275	441	161	17	0	0	0	0	0	0	0	0	0	945	25	28
12 PM	70	435	398	99	4	0	0	0	0	0	0	0	0	0	1006	24	27
13:00	77	364	434	110	14	0	0	0	0	0	0	0	0	0	999	24	27
14:00	79	403	411	99	5	0	0	0	0	0	0	0	0	0	997	24	27
15:00	36	213	568	234	25	2	0	0	0	0	0	0	0	0	1078	26	29
16:00	59	281	511	228	26	0	0	0	0	0	0	0	0	0	1105	26	29
17:00	37	238	559	196	20	1	0	0	0	0	0	0	0	0	1051	26	29
18:00	49	198	403	107	15	1	0	0	0	0	0	0	0	0	773	25	28
19:00	68	217	309	96	5	2	0	0	0	0	0	0	0	0	697	25	28
20:00	24	133	268	77	12	0	0	0	0	0	0	0	0	0	514	25	29
21:00	11	81	214	122	19	0	1	0	0	0	0	0	0	0	448	27	30
22:00	3	37	148	114	20	1	2	0	0	0	0	0	0	0	325	28	31
23:00	1	21	74	64	16	1	2	0	0	0	0	0	0	0	179	29	32
Total	725	3569	6646	2966	474	34	5	0	0	0	0	0	0	0	14419		
Percent	5.0%	24.8%	46.1%	20.6%	3.3%	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	07:00	07:00	06:00									11:00		
Vol.	51	275	445	249	65	8									945		
PM Peak	14:00	12:00	15:00	15:00	16:00	15:00	22:00								16:00		
Vol.	79	435	568	234	26	2	2								1105		

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

Southbound, 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	5	52	26	4	1	1	0	0	0	0	0	0	0	91	28	31
01:00	1	2	19	12	8	0	0	0	0	0	0	0	0	0	42	31	34
02:00	1	3	18	20	7	1	1	1	0	0	0	0	0	0	52	30	33
03:00	1	3	14	12	7	0	0	0	0	0	0	0	0	0	37	31	34
04:00	2	7	26	35	15	2	0	1	0	0	0	0	0	0	88	31	33
05:00	3	23	68	84	35	5	1	0	0	0	0	0	0	0	219	30	34
06:00	8	57	160	201	46	4	1	0	0	0	0	0	0	0	477	29	32
07:00	31	142	310	157	32	1	0	0	0	0	0	0	0	0	673	27	30
08:00	12	96	362	268	45	1	0	0	0	0	0	0	0	0	784	28	31
09:00	66	226	433	200	10	1	0	0	0	0	0	0	0	0	936	26	29
10:00	40	211	478	149	22	0	0	0	0	0	0	0	0	0	900	25	29
11:00	90	398	410	81	3	0	0	0	0	0	0	0	0	0	982	23	26
12 PM	127	486	369	48	2	0	0	0	0	0	0	0	0	0	1032	22	25
13:00	95	497	355	72	3	0	0	0	0	0	0	0	0	0	1022	23	26
14:00	77	315	546	123	13	0	0	0	0	0	0	0	0	0	1074	24	27
15:00	55	323	622	151	6	0	0	0	0	0	0	0	0	0	1157	25	27
16:00	53	285	585	219	16	1	0	0	0	0	0	0	0	0	1159	26	29
17:00	48	311	550	175	10	0	0	0	0	0	0	0	0	0	1094	25	28
18:00	55	270	452	111	7	0	0	0	0	0	0	0	0	0	895	24	27
19:00	92	325	291	53	3	0	0	0	0	0	0	0	0	0	764	23	26
20:00	61	333	229	30	2	0	0	0	0	0	0	0	0	0	655	22	25
21:00	22	148	319	55	2	0	0	0	0	0	0	0	0	0	546	24	27
22:00	16	142	300	118	11	0	0	0	0	0	0	0	0	0	587	26	29
23:00	2	28	78	69	15	3	0	0	0	0	0	0	0	0	195	29	32
Total	960	4636	7046	2469	324	20	4	2	0	0	0	0	0	0	15461		
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							11:00		
Vol.	90	398	478	268	46	5	1	1							982		
PM Peak	12:00	13:00	15:00	16:00	16:00	23:00									16:00		
Vol.	127	497	622	219	16	3									1159		

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Location: Route 20 (Main Street)
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Southbound, Northbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th 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
 Innovativedata 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
 Innovatedatalc.com 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 Classified	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
 Innovatedatalc.com 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 Classified	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
 Innovatedatalc.com 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	1	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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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	
08/24/18	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	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		
Vol.	18	346	72	6	20	10	2	5	10	1	1	1	1	7		
PM Peak	12:00	15:00	16:00	13:00	13:00	13:00	13:00	12:00	13:00	15:00			16:00	19:00		
Vol.	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

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 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	17:00	13:00	
Vol.	28	869	146	9	47	17	1	13	12	3		1	1	8	

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
08/24/18	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 Classified	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%	



Location: West Center St. (Route 20)
 Location: West of Main St. (Route 20)
 Location: Lee, Massachusetts
 Client: VHB / J. Locke

Innovative Data, LLC

PO Box 468
 Belchertown, Massachusetts
 Innovativedata LLC or 1.413.668.5094

Start Time	23-Aug-18 Thu	Eastbound		Westbound		Combined		24-Aug-Fri	Eastbound		Westbound		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		9	133	10	104	19	237		14	125	16	133	30	258
12:15		11	134	15	89	26	223		6	139	11	128	17	267
12:30		4	101	6	117	10	218		12	128	5	105	17	233
12:45		7	157	12	101	19	258		3	107	15	108	18	215
01:00		5	130	8	119	13	249		6	120	7	111	13	231
01:15		3	129	5	106	8	235		6	145	3	114	9	259
01:30		7	102	5	115	12	217		8	128	4	137	12	265
01:45		6	126	6	118	12	244		7	140	4	118	11	258
02:00		4	117	4	115	8	232		9	122	7	129	16	251
02:15		4	115	4	131	8	246		4	129	7	131	11	260
02:30		1	125	4	107	5	232		5	149	6	132	11	281
02:45		3	135	7	106	10	241		7	131	7	133	14	264
03:00		3	138	6	109	9	247		2	134	7	126	9	260
03:15		4	143	4	113	8	256		4	129	1	158	5	287
03:30		2	144	5	130	7	274		7	129	3	159	10	288
03:45		3	139	3	129	6	268		9	139	4	155	13	294
04:00		11	144	8	136	19	280		8	144	6	152	14	296
04:15		7	141	6	134	13	275		6	147	4	140	10	287
04:30		16	129	4	142	20	271		14	136	10	156	24	292
04:45		15	135	12	96	27	231		19	169	9	127	28	296
05:00		23	118	10	140	33	258		26	128	16	171	42	299
05:15		28	136	9	130	37	266		23	139	22	130	45	269
05:30		37	126	27	122	64	248		33	121	21	128	54	249
05:45		47	132	36	117	83	249		39	121	34	134	73	255
06:00		53	96	45	81	98	177		42	111	42	139	84	250
06:15		57	92	45	108	102	200		57	82	54	119	111	201
06:30		89	86	66	122	155	208		55	89	61	131	116	220
06:45		73	80	71	83	144	163		68	99	81	121	149	220
07:00		65	71	65	88	130	159		80	91	66	118	146	209
07:15		64	65	91	118	155	183		82	85	73	107	155	192
07:30		88	98	83	109	171	207		80	87	93	85	173	172
07:45		109	65	89	105	198	170		108	77	71	91	179	168
08:00		104	59	107	71	211	130		99	83	84	91	183	174
08:15		107	55	94	64	201	119		94	68	83	97	177	165
08:30		90	58	112	63	202	121		116	57	86	81	202	138
08:45		105	58	98	76	203	134		128	45	85	90	213	135
09:00		97	40	96	66	193	106		116	46	98	94	214	140
09:15		116	51	98	83	214	134		101	45	98	97	199	142
09:30		102	66	108	68	210	134		131	52	76	82	207	134
09:45		113	35	111	35	224	70		126	49	104	75	230	124
10:00		126	32	96	55	222	87		106	67	88	65	194	132
10:15		111	38	92	61	203	99		120	118	94	64	214	182
10:30		107	30	104	40	211	70		124	110	110	72	234	182
10:45		97	46	93	33	190	79		131	65	108	36	239	101
11:00		121	56	84	29	205	85		128	30	114	30	242	60
11:15		139	15	99	30	238	45		144	28	105	36	249	64
11:30		124	12	111	14	235	26		112	18	85	22	197	40
11:45		133	16	101	14	234	30		147	12	109	20	256	32
Total		2650	4449	2375	4442	5025	8891		2772	4813	2297	5178	5069	9991
Day Total		7099		6817		13916			7585		7475		15060	
% Total		19.0%	32.0%	17.1%	31.9%				18.4%	32.0%	15.3%	34.4%		
Peak		11:00	03:15	09:00	03:45	11:00	03:30		11:00	04:00	10:30	03:15	10:30	04:15
Vol.		517	570	413	541	912	1097		531	596	437	624	964	1174
P.H.F.		0.930	0.990	0.922	0.952	0.958	0.979		0.903	0.882	0.958	0.981	0.968	0.982



Location: West Center St. (Route 20)
 Location: West of Main St. (Route 20)
 Location: Lee, Massachusetts
 Client: VHB / J. Locke

Innovative Data, LLC

PO Box 468
 Belchertown, Massachusetts
 Innovativedata LLC or 1.413.668.5094

Start Time	25-Aug-18 Sat	Eastbound		Westbound		Combined		26-Aug-Sun	Eastbound		Westbound		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		6	130	28	141	34	271		0	*	0	*	0	*
12:15		12	142	16	126	28	268		*	*	*	*	*	*
12:30		8	119	18	121	26	240		*	*	*	*	*	*
12:45		7	125	15	118	22	243		*	*	*	*	*	*
01:00		5	152	12	127	17	279		*	*	*	*	*	*
01:15		5	150	14	101	19	251		*	*	*	*	*	*
01:30		6	132	7	124	13	256		*	*	*	*	*	*
01:45		4	112	9	137	13	249		*	*	*	*	*	*
02:00		10	141	11	99	21	240		*	*	*	*	*	*
02:15		5	105	9	134	14	239		*	*	*	*	*	*
02:30		4	117	8	145	12	262		*	*	*	*	*	*
02:45		4	113	7	118	11	231		*	*	*	*	*	*
03:00		5	125	8	149	13	274		*	*	*	*	*	*
03:15		3	127	4	134	7	261		*	*	*	*	*	*
03:30		3	121	4	118	7	239		*	*	*	*	*	*
03:45		6	126	2	151	8	277		*	*	*	*	*	*
04:00		3	117	4	134	7	251		*	*	*	*	*	*
04:15		1	103	3	189	4	292		*	*	*	*	*	*
04:30		10	107	6	160	16	267		*	*	*	*	*	*
04:45		9	123	0	166	9	289		*	*	*	*	*	*
05:00		14	98	6	178	20	276		*	*	*	*	*	*
05:15		11	114	11	152	22	266		*	*	*	*	*	*
05:30		23	80	13	159	36	239		*	*	*	*	*	*
05:45		24	102	18	146	42	248		*	*	*	*	*	*
06:00		23	94	25	162	48	256		*	*	*	*	*	*
06:15		32	93	30	131	62	224		*	*	*	*	*	*
06:30		29	61	30	123	59	184		*	*	*	*	*	*
06:45		62	85	31	118	93	203		*	*	*	*	*	*
07:00		26	58	38	105	64	163		*	*	*	*	*	*
07:15		41	79	30	103	71	182		*	*	*	*	*	*
07:30		51	102	50	103	101	205		*	*	*	*	*	*
07:45		74	86	46	98	120	184		*	*	*	*	*	*
08:00		87	73	48	73	135	146		*	*	*	*	*	*
08:15		92	70	72	64	164	134		*	*	*	*	*	*
08:30		78	70	70	68	148	138		*	*	*	*	*	*
08:45		106	70	85	77	191	147		*	*	*	*	*	*
09:00		74	61	103	63	177	124		*	*	*	*	*	*
09:15		94	64	110	63	204	127		*	*	*	*	*	*
09:30		102	77	106	61	208	138		*	*	*	*	*	*
09:45		137	88	132	52	269	140		*	*	*	*	*	*
10:00		117	57	113	44	230	101		*	*	*	*	*	*
10:15		136	47	112	49	248	96		*	*	*	*	*	*
10:30		135	59	103	35	238	94		*	*	*	*	*	*
10:45		117	128	120	33	237	161		*	*	*	*	*	*
11:00		120	51	128	22	248	73		*	*	*	*	*	*
11:15		134	140	112	31	246	171		*	*	*	*	*	*
11:30		110	160	125	25	235	185		*	*	*	*	*	*
11:45		114	180	134	23	248	203		*	*	*	*	*	*
Total		2279	4934	2186	5053	4465	9987		0	0	0	0	0	0
Day Total		7213		7239		14452			0	0	0	0	0	0
% Total		15.8%	34.1%	15.1%	35.0%				0.0%	0.0%	0.0%	0.0%		
Peak		09:45	00:45	11:00	04:15	09:45	04:15							
Vol.		525	559	499	693	985	1124							
P.H.F.		0.958	0.919	0.931	0.917	0.915	0.962							
ADT		ADT 14,469		AADT 14,469										

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

Innovatedatallc.com or 1.413.668.5094

Location: West Center St. (Route 20)
Location: West of Main St. (Route 20)
Location: Lee, Massachusetts
Client: VHB / J. Locke

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
08/23/18	0	2	13	9	5	2	0	0	0	0	0	0	0	0	31	32	35
01:00	0	1	10	5	5	0	0	0	0	0	0	0	0	0	21	31	33
02:00	0	1	7	3	1	0	0	0	0	0	0	0	0	0	12	26	27
03:00	0	2	6	3	1	0	0	0	0	0	0	0	0	0	12	26	27
04:00	0	2	19	19	6	2	0	0	1	0	0	0	0	0	49	30	34
05:00	9	13	37	54	21	1	0	0	0	0	0	0	0	0	135	30	33
06:00	7	28	109	99	28	0	1	0	0	0	0	0	0	0	272	29	32
07:00	16	32	143	107	28	0	0	0	0	0	0	0	0	0	326	28	31
08:00	40	89	168	92	17	0	0	0	0	0	0	0	0	0	406	26	30
09:00	33	118	167	102	8	0	0	0	0	0	0	0	0	0	428	26	29
10:00	39	150	191	55	6	0	0	0	0	0	0	0	0	0	441	24	28
11:00	64	162	219	65	7	0	0	0	0	0	0	0	0	0	517	24	28
12 PM	62	188	195	76	4	0	0	0	0	0	0	0	0	0	525	24	28
13:00	53	145	202	81	6	0	0	0	0	0	0	0	0	0	487	25	28
14:00	34	150	226	75	7	0	0	0	0	0	0	0	0	0	492	25	28
15:00	34	174	246	105	5	0	0	0	0	0	0	0	0	0	564	25	28
16:00	60	142	250	88	9	0	0	0	0	0	0	0	0	0	549	25	28
17:00	29	128	243	105	7	0	0	0	0	0	0	0	0	0	512	26	29
18:00	27	73	167	79	8	0	0	0	0	0	0	0	0	0	354	26	29
19:00	19	82	132	63	3	0	0	0	0	0	0	0	0	0	299	26	29
20:00	5	52	122	45	6	0	0	0	0	0	0	0	0	0	230	26	29
21:00	6	36	102	44	4	0	0	0	0	0	0	0	0	0	192	26	29
22:00	8	24	66	40	8	0	0	0	0	0	0	0	0	0	146	27	30
23:00	4	15	41	30	9	0	0	0	0	0	0	0	0	0	99	28	32
Total	549	1809	3081	1444	209	5	1	0	1	0	0	0	0	0	7099		
Percent	7.7%	25.5%	43.4%	20.3%	2.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	11:00	11:00	07:00	06:00	00:00	06:00		04:00						11:00		
Vol.	64	162	219	107	28	2	1		1						517		
PM Peak	12:00	12:00	16:00	15:00	16:00										15:00		
Vol.	62	188	250	105	9										564		

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

Innovatedatalc.com or 1.413.668.5094

Location: West Center St. (Route 20)
Location: West of Main St. (Route 20)
Location: Lee, Massachusetts
Client: VHB / J. Locke

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
08/24/18	1	3	20	11	0	0	0	0	0	0	0	0	0	0	35	27	29
01:00	2	1	8	13	3	0	0	0	0	0	0	0	0	0	27	29	31
02:00	0	2	10	11	2	0	0	0	0	0	0	0	0	0	25	28	30
03:00	0	3	11	6	2	0	0	0	0	0	0	0	0	0	22	29	31
04:00	0	1	9	22	13	2	0	0	0	0	0	0	0	0	47	32	34
05:00	2	11	33	51	18	6	0	0	0	0	0	0	0	0	121	31	35
06:00	6	32	67	101	16	0	0	0	0	0	0	0	0	0	222	29	31
07:00	24	61	139	112	13	1	0	0	0	0	0	0	0	0	350	27	30
08:00	29	103	199	102	4	0	0	0	0	0	0	0	0	0	437	26	29
09:00	47	129	207	83	7	1	0	0	0	0	0	0	0	0	474	25	28
10:00	53	111	240	73	4	0	0	0	0	0	0	0	0	0	481	25	28
11:00	84	184	196	60	6	1	0	0	0	0	0	0	0	0	531	24	27
12 PM	50	132	238	73	6	0	0	0	0	0	0	0	0	0	499	25	28
13:00	62	151	240	73	7	0	0	0	0	0	0	0	0	0	533	25	28
14:00	49	176	229	71	6	0	0	0	0	0	0	0	0	0	531	24	28
15:00	48	127	220	125	11	0	0	0	0	0	0	0	0	0	531	26	29
16:00	60	173	268	88	6	1	0	0	0	0	0	0	0	0	596	25	28
17:00	23	98	270	110	8	0	0	0	0	0	0	0	0	0	509	26	29
18:00	13	91	179	91	7	0	0	0	0	0	0	0	0	0	381	26	29
19:00	17	115	152	52	4	0	0	0	0	0	0	0	0	0	340	25	28
20:00	14	80	123	35	1	0	0	0	0	0	0	0	0	0	253	25	27
21:00	12	40	101	38	1	0	0	0	0	0	0	0	0	0	192	26	28
22:00	25	130	162	40	3	0	0	0	0	0	0	0	0	0	360	24	27
23:00	3	7	47	25	6	0	0	0	0	0	0	0	0	0	88	28	31
Total	624	1961	3368	1466	154	12	0	0	0	0	0	0	0	0	7585		
Percent	8.2%	25.9%	44.4%	19.3%	2.0%	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	07:00	05:00	05:00									11:00		
Vol.	84	184	240	112	18	6									531		
PM Peak	13:00	14:00	17:00	15:00	15:00	16:00									16:00		
Vol.	62	176	270	125	11	1									596		

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

Innovativedatalc.com or 1.413.668.5094

Location: West Center St. (Route 20)
Location: West of Main St. (Route 20)
Location: Lee, Massachusetts
Client: VHB / J. Locke

Eastbound																	
Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	85th Percent	95th Percent
08/25/18	1	2	15	11	4	0	0	0	0	0	0	0	0	0	33	29	32
01:00	0	2	5	9	4	0	0	0	0	0	0	0	0	0	20	31	33
02:00	0	0	10	12	1	0	0	0	0	0	0	0	0	0	23	29	30
03:00	0	3	4	10	0	0	0	0	0	0	0	0	0	0	17	28	30
04:00	0	3	10	7	3	0	0	0	0	0	0	0	0	0	23	29	31
05:00	1	7	19	37	7	1	0	0	0	0	0	0	0	0	72	29	32
06:00	3	8	39	69	22	5	0	0	0	0	0	0	0	0	146	31	34
07:00	5	25	70	82	10	0	0	0	0	0	0	0	0	0	192	28	30
08:00	16	64	153	105	24	1	0	0	0	0	0	0	0	0	363	28	31
09:00	12	84	233	69	9	0	0	0	0	0	0	0	0	0	407	26	29
10:00	55	146	220	77	7	0	0	0	0	0	0	0	0	0	505	25	28
11:00	48	137	220	70	3	0	0	0	0	0	0	0	0	0	478	25	28
12 PM	48	185	227	54	2	0	0	0	0	0	0	0	0	0	516	24	27
13:00	82	230	183	47	4	0	0	0	0	0	0	0	0	0	546	23	26
14:00	46	143	207	71	9	0	0	0	0	0	0	0	0	0	476	25	28
15:00	17	119	268	89	6	0	0	0	0	0	0	0	0	0	499	25	28
16:00	22	90	223	103	12	0	0	0	0	0	0	0	0	0	450	26	29
17:00	24	92	170	96	12	0	0	0	0	0	0	0	0	0	394	27	29
18:00	8	62	183	71	9	0	0	0	0	0	0	0	0	0	333	26	29
19:00	19	107	129	63	7	0	0	0	0	0	0	0	0	0	325	26	29
20:00	10	75	147	48	3	0	0	0	0	0	0	0	0	0	283	25	28
21:00	22	88	141	36	3	0	0	0	0	0	0	0	0	0	290	24	27
22:00	11	61	155	61	3	0	0	0	0	0	0	0	0	0	291	26	29
23:00	65	178	222	64	2	0	0	0	0	0	0	0	0	0	531	24	27
Total	515	1911	3253	1361	166	7	0	0	0	0	0	0	0	0	7213		
Percent	7.1%	26.5%	45.1%	18.9%	2.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	10:00	10:00	09:00	08:00	08:00	06:00									10:00		
Vol.	55	146	233	105	24	5									505		
PM Peak	13:00	13:00	15:00	16:00	16:00										13:00		
Vol.	82	230	268	103	12										546		
Total	1688	5681	9702	4271	529	24	1	0	1	0	0	0	0	0	21897		
Percent	7.7%	25.9%	44.3%	19.5%	2.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
			15th Percentile :	12 MPH													
			50th Percentile :	20 MPH													
			85th Percentile :	26 MPH													
			95th Percentile :	29 MPH													
Stats	10 MPH Pace Speed :	18-27 MPH															
	Number in Pace :	12438															
	Percent in Pace :	56.8%															
	Number of Vehicles > 40 MPH :	4															
	Percent of Vehicles > 40 MPH :	0.0%															
	Mean Speed(Average) :	20 MPH															

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

Innovativedatallc.com or 1.413.668.5094

Location: West Center St. (Route 20)
Location: West of Main St. (Route 20)
Location: Lee, Massachusetts
Client: VHB / J. Locke

Westbound																	
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
08/23/18	0	1	15	20	5	2	0	0	0	0	0	0	0	0	43	31	34
01:00	0	0	8	13	3	0	0	0	0	0	0	0	0	0	24	29	31
02:00	0	1	8	4	6	0	0	0	0	0	0	0	0	0	19	32	34
03:00	0	3	7	6	1	1	0	0	0	0	0	0	0	0	18	28	30
04:00	0	4	13	9	3	1	0	0	0	0	0	0	0	0	30	28	31
05:00	1	4	31	37	8	1	0	0	0	0	0	0	0	0	82	29	32
06:00	0	16	92	97	22	0	0	0	0	0	0	0	0	0	227	29	32
07:00	0	33	177	102	16	0	0	0	0	0	0	0	0	0	328	28	30
08:00	1	57	214	124	15	0	0	0	0	0	0	0	0	0	411	27	30
09:00	4	51	190	146	22	0	0	0	0	0	0	0	0	0	413	28	31
10:00	0	43	205	113	24	0	0	0	0	0	0	0	0	0	385	28	31
11:00	16	81	200	90	8	0	0	0	0	0	0	0	0	0	395	26	29
12 PM	10	69	219	101	11	1	0	0	0	0	0	0	0	0	411	27	30
13:00	6	97	241	102	12	0	0	0	0	0	0	0	0	0	458	26	29
14:00	6	71	246	123	12	1	0	0	0	0	0	0	0	0	459	27	30
15:00	8	98	248	116	10	1	0	0	0	0	0	0	0	0	481	26	29
16:00	4	66	241	173	23	1	0	0	0	0	0	0	0	0	508	28	30
17:00	9	53	251	174	21	1	0	0	0	0	0	0	0	0	509	28	30
18:00	3	50	200	120	20	1	0	0	0	0	0	0	0	0	394	28	30
19:00	3	56	220	131	10	0	0	0	0	0	0	0	0	0	420	27	30
20:00	0	21	154	91	7	1	0	0	0	0	0	0	0	0	274	28	30
21:00	1	26	126	84	15	0	0	0	0	0	0	0	0	0	252	28	31
22:00	1	7	77	84	19	1	0	0	0	0	0	0	0	0	189	29	32
23:00	0	3	30	49	5	0	0	0	0	0	0	0	0	0	87	29	31
Total	73	911	3413	2109	298	13	0	0	0	0	0	0	0	0	6817		
Percent	1.1%	13.4%	50.1%	30.9%	4.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	11:00	08:00	09:00	10:00	00:00									09:00		
Vol.	16	81	214	146	24	2									413		
PM Peak	12:00	15:00	17:00	17:00	16:00	12:00									17:00		
Vol.	10	98	251	174	23	1									509		

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Location: West Center St. (Route 20)
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Location: Lee, Massachusetts
Client: VHB / J. Locke

Westbound																	
Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76			
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	85th	95th
08/24/18	1	3	18	23	1	0	1	0	0	0	0	0	0	0	47	28	30
01:00	0	2	8	6	1	1	0	0	0	0	0	0	0	0	18	28	30
02:00	0	1	7	14	5	0	0	0	0	0	0	0	0	0	27	31	33
03:00	0	2	5	6	2	0	0	0	0	0	0	0	0	0	15	30	31
04:00	0	3	8	14	4	0	0	0	0	0	0	0	0	0	29	30	32
05:00	1	4	24	49	13	2	0	0	0	0	0	0	0	0	93	30	33
06:00	1	13	107	96	18	3	0	0	0	0	0	0	0	0	238	29	32
07:00	0	33	148	98	23	1	0	0	0	0	0	0	0	0	303	28	31
08:00	2	25	158	133	19	1	0	0	0	0	0	0	0	0	338	28	31
09:00	9	46	178	124	17	2	0	0	0	0	0	0	0	0	376	28	30
10:00	7	42	217	120	14	0	0	0	0	0	0	0	0	0	400	28	30
11:00	8	57	236	104	8	0	0	0	0	0	0	0	0	0	413	27	29
12 PM	5	68	272	119	10	0	0	0	0	0	0	0	0	0	474	27	29
13:00	3	60	257	148	12	0	0	0	0	0	0	0	0	0	480	27	30
14:00	4	70	312	122	17	0	0	0	0	0	0	0	0	0	525	27	30
15:00	4	59	311	200	23	1	0	0	0	0	0	0	0	0	598	28	30
16:00	7	91	336	127	13	1	0	0	0	0	0	0	0	0	575	26	29
17:00	4	53	292	186	27	1	0	0	0	0	0	0	0	0	563	28	30
18:00	21	53	244	173	18	1	0	0	0	0	0	0	0	0	510	28	30
19:00	10	68	184	124	15	0	0	0	0	0	0	0	0	0	401	28	30
20:00	5	58	198	86	12	0	0	0	0	0	0	0	0	0	359	27	30
21:00	1	41	172	123	10	1	0	0	0	0	0	0	0	0	348	28	30
22:00	0	27	112	86	12	0	0	0	0	0	0	0	0	0	237	28	30
23:00	0	6	39	58	5	0	0	0	0	0	0	0	0	0	108	29	31
Total	93	885	3843	2339	299	15	1	0	0	0	0	0	0	0	7475		
Percent	1.2%	11.8%	51.4%	31.3%	4.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	09:00	11:00	11:00	08:00	07:00	06:00	00:00								11:00		
Vol.	9	57	236	133	23	3	1								413		
PM Peak	18:00	16:00	16:00	15:00	17:00	15:00									15:00		
Vol.	21	91	336	200	27	1									598		

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Location: West Center St. (Route 20)
Location: West of Main St. (Route 20)
Location: Lee, Massachusetts
Client: VHB / J. Locke

Westbound																	
Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
08/25/18	0	7	26	38	6	0	0	0	0	0	0	0	0	0	77	29	31
01:00	0	2	12	19	9	0	0	0	0	0	0	0	0	0	42	31	34
02:00	0	0	8	20	7	0	0	0	0	0	0	0	0	0	35	31	34
03:00	0	0	7	8	3	0	0	0	0	0	0	0	0	0	18	30	32
04:00	1	0	6	5	1	0	0	0	0	0	0	0	0	0	13	28	29
05:00	0	3	17	25	3	0	0	0	0	0	0	0	0	0	48	29	30
06:00	0	5	37	54	17	3	0	0	0	0	0	0	0	0	116	30	34
07:00	1	16	46	84	15	2	0	0	0	0	0	0	0	0	164	29	32
08:00	1	27	97	133	14	3	0	0	0	0	0	0	0	0	275	29	31
09:00	6	35	255	146	9	0	0	0	0	0	0	0	0	0	451	27	30
10:00	6	57	252	124	9	0	0	0	0	0	0	0	0	0	448	27	29
11:00	7	92	280	110	10	0	0	0	0	0	0	0	0	0	499	26	29
12 PM	8	69	290	128	11	0	0	0	0	0	0	0	0	0	506	27	29
13:00	6	90	280	103	8	2	0	0	0	0	0	0	0	0	489	26	29
14:00	4	86	288	105	13	0	0	0	0	0	0	0	0	0	496	26	29
15:00	3	60	311	163	13	1	1	0	0	0	0	0	0	0	552	27	30
16:00	4	87	377	163	16	2	0	0	0	0	0	0	0	0	649	27	29
17:00	13	100	328	177	16	1	0	0	0	0	0	0	0	0	635	27	30
18:00	1	39	326	152	13	3	0	0	0	0	0	0	0	0	534	27	30
19:00	4	52	229	111	12	1	0	0	0	0	0	0	0	0	409	27	30
20:00	6	38	149	80	9	0	0	0	0	0	0	0	0	0	282	27	30
21:00	0	17	121	82	19	0	0	0	0	0	0	0	0	0	239	29	31
22:00	0	5	75	74	5	2	0	0	0	0	0	0	0	0	161	28	31
23:00	1	8	33	44	14	1	0	0	0	0	0	0	0	0	101	30	33
Total	72	895	3850	2148	252	21	1	0	0	0	0	0	0	0	7239		
Percent	1.0%	12.4%	53.2%	29.7%	3.5%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	11:00	11:00	09:00	06:00	06:00									11:00		
Vol.	7	92	280	146	17	3									499		
PM Peak	17:00	17:00	16:00	17:00	21:00	18:00	15:00								16:00		
Vol.	13	100	377	177	19	3	1								649		
Total	238	2691	11106	6596	849	49	2	0	0	0	0	0	0	0	21531		
Percent	1.1%	12.5%	51.6%	30.6%	3.9%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
			15th Percentile :		18 MPH												
			50th Percentile :		23 MPH												
			85th Percentile :		28 MPH												
			95th Percentile :		30 MPH												
Stats		10 MPH Pace Speed :		20-29 MPH													
		Number in Pace :		15266													
		Percent in Pace :		70.9%													
		Number of Vehicles > 40 MPH :		7													
		Percent of Vehicles > 40 MPH :		0.0%													
		Mean Speed(Average) :		23 MPH													

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

Innovativedatallc.com or 1.413.668.5094

Location: West Center St. (Route 20)
Location: West of Main St. (Route 20)
Location: Lee, Massachusetts
Client: VHB / J. Locke

Eastbound, Westbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
08/23/18	0	3	28	29	10	4	0	0	0	0	0	0	0	0	74	31	35
01:00	0	1	18	18	8	0	0	0	0	0	0	0	0	0	45	30	33
02:00	0	2	15	7	7	0	0	0	0	0	0	0	0	0	31	31	34
03:00	0	5	13	9	2	1	0	0	0	0	0	0	0	0	30	27	30
04:00	0	6	32	28	9	3	0	0	1	0	0	0	0	0	79	30	34
05:00	10	17	68	91	29	2	0	0	0	0	0	0	0	0	217	30	32
06:00	7	44	201	196	50	0	1	0	0	0	0	0	0	0	499	29	32
07:00	16	65	320	209	44	0	0	0	0	0	0	0	0	0	654	28	31
08:00	41	146	382	216	32	0	0	0	0	0	0	0	0	0	817	27	30
09:00	37	169	357	248	30	0	0	0	0	0	0	0	0	0	841	27	30
10:00	39	193	396	168	30	0	0	0	0	0	0	0	0	0	826	26	29
11:00	80	243	419	155	15	0	0	0	0	0	0	0	0	0	912	25	28
12 PM	72	257	414	177	15	1	0	0	0	0	0	0	0	0	936	25	29
13:00	59	242	443	183	18	0	0	0	0	0	0	0	0	0	945	26	29
14:00	40	221	472	198	19	1	0	0	0	0	0	0	0	0	951	26	29
15:00	42	272	494	221	15	1	0	0	0	0	0	0	0	0	1045	26	29
16:00	64	208	491	261	32	1	0	0	0	0	0	0	0	0	1057	27	29
17:00	38	181	494	279	28	1	0	0	0	0	0	0	0	0	1021	27	30
18:00	30	123	367	199	28	1	0	0	0	0	0	0	0	0	748	27	30
19:00	22	138	352	194	13	0	0	0	0	0	0	0	0	0	719	27	29
20:00	5	73	276	136	13	1	0	0	0	0	0	0	0	0	504	27	30
21:00	7	62	228	128	19	0	0	0	0	0	0	0	0	0	444	28	30
22:00	9	31	143	124	27	1	0	0	0	0	0	0	0	0	335	29	31
23:00	4	18	71	79	14	0	0	0	0	0	0	0	0	0	186	29	31
Total	622	2720	6494	3553	507	18	1	0	1	0	0	0	0	0	13916		
Percent	4.5%	19.5%	46.7%	25.5%	3.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	11:00	11:00	09:00	06:00	00:00	06:00		04:00						11:00		
Vol.	80	243	419	248	50	4	1		1						912		
PM Peak	12:00	15:00	15:00	17:00	16:00	12:00									16:00		
Vol.	72	272	494	279	32	1									1057		

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

Innovativedatalc.com or 1.413.668.5094

Location: West Center St. (Route 20)
Location: West of Main St. (Route 20)
Location: Lee, Massachusetts
Client: VHB / J. Locke

Eastbound, Westbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76		85th	95th
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Percent	Percent
08/24/18	2	6	38	34	1	0	1	0	0	0	0	0	0	0	82	28	30
01:00	2	3	16	19	4	1	0	0	0	0	0	0	0	0	45	29	32
02:00	0	3	17	25	7	0	0	0	0	0	0	0	0	0	52	30	33
03:00	0	5	16	12	4	0	0	0	0	0	0	0	0	0	37	29	32
04:00	0	4	17	36	17	2	0	0	0	0	0	0	0	0	76	31	34
05:00	3	15	57	100	31	8	0	0	0	0	0	0	0	0	214	31	34
06:00	7	45	174	197	34	3	0	0	0	0	0	0	0	0	460	29	31
07:00	24	94	287	210	36	2	0	0	0	0	0	0	0	0	653	28	31
08:00	31	128	357	235	23	1	0	0	0	0	0	0	0	0	775	27	30
09:00	56	175	385	207	24	3	0	0	0	0	0	0	0	0	850	27	29
10:00	60	153	457	193	18	0	0	0	0	0	0	0	0	0	881	26	29
11:00	92	241	432	164	14	1	0	0	0	0	0	0	0	0	944	25	28
12 PM	55	200	510	192	16	0	0	0	0	0	0	0	0	0	973	26	29
13:00	65	211	497	221	19	0	0	0	0	0	0	0	0	0	1013	26	29
14:00	53	246	541	193	23	0	0	0	0	0	0	0	0	0	1056	26	29
15:00	52	186	531	325	34	1	0	0	0	0	0	0	0	0	1129	27	30
16:00	67	264	604	215	19	2	0	0	0	0	0	0	0	0	1171	26	29
17:00	27	151	562	296	35	1	0	0	0	0	0	0	0	0	1072	27	30
18:00	34	144	423	264	25	1	0	0	0	0	0	0	0	0	891	27	30
19:00	27	183	336	176	19	0	0	0	0	0	0	0	0	0	741	26	29
20:00	19	138	321	121	13	0	0	0	0	0	0	0	0	0	612	26	29
21:00	13	81	273	161	11	1	0	0	0	0	0	0	0	0	540	27	29
22:00	25	157	274	126	15	0	0	0	0	0	0	0	0	0	597	26	29
23:00	3	13	86	83	11	0	0	0	0	0	0	0	0	0	196	28	31
Total	717	2846	7211	3805	453	27	1	0	0	0	0	0	0	0	15060		
Percent	4.8%	18.9%	47.9%	25.3%	3.0%	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	07:00	05:00	00:00								11:00		
Vol.	92	241	457	235	36	8	1								944		
PM Peak	16:00	16:00	16:00	15:00	17:00	16:00									16:00		
Vol.	67	264	604	325	35	2									1171		

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

Innovativedatalc.com or 1.413.668.5094

Location: West Center St. (Route 20)
Location: West of Main St. (Route 20)
Location: Lee, Massachusetts
Client: VHB / J. Locke

Eastbound, Westbound

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	1	9	41	49	10	0	0	0	0	0	0	0	0	0	110	29	32
01:00	0	4	17	28	13	0	0	0	0	0	0	0	0	0	62	31	34
02:00	0	0	18	32	8	0	0	0	0	0	0	0	0	0	58	30	33
03:00	0	3	11	18	3	0	0	0	0	0	0	0	0	0	35	29	31
04:00	1	3	16	12	4	0	0	0	0	0	0	0	0	0	36	29	32
05:00	1	10	36	62	10	1	0	0	0	0	0	0	0	0	120	29	32
06:00	3	13	76	123	39	8	0	0	0	0	0	0	0	0	262	31	34
07:00	6	41	116	166	25	2	0	0	0	0	0	0	0	0	356	29	31
08:00	17	91	250	238	38	4	0	0	0	0	0	0	0	0	638	28	31
09:00	18	119	488	215	18	0	0	0	0	0	0	0	0	0	858	27	29
10:00	61	203	472	201	16	0	0	0	0	0	0	0	0	0	953	26	29
11:00	55	229	500	180	13	0	0	0	0	0	0	0	0	0	977	25	28
12 PM	56	254	517	182	13	0	0	0	0	0	0	0	0	0	1022	25	28
13:00	88	320	463	150	12	2	0	0	0	0	0	0	0	0	1035	25	28
14:00	50	229	495	176	22	0	0	0	0	0	0	0	0	0	972	26	29
15:00	20	179	579	252	19	1	1	0	0	0	0	0	0	0	1051	26	29
16:00	26	177	600	266	28	2	0	0	0	0	0	0	0	0	1099	27	29
17:00	37	192	498	273	28	1	0	0	0	0	0	0	0	0	1029	27	29
18:00	9	101	509	223	22	3	0	0	0	0	0	0	0	0	867	27	30
19:00	23	159	358	174	19	1	0	0	0	0	0	0	0	0	734	26	29
20:00	16	113	296	128	12	0	0	0	0	0	0	0	0	0	565	26	29
21:00	22	105	262	118	22	0	0	0	0	0	0	0	0	0	529	27	30
22:00	11	66	230	135	8	2	0	0	0	0	0	0	0	0	452	27	29
23:00	66	186	255	108	16	1	0	0	0	0	0	0	0	0	632	25	29
Total	587	2806	7103	3509	418	28	1	0	0	0	0	0	0	0	14452		
Percent	4.1%	19.4%	49.1%	24.3%	2.9%	0.2%	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	06:00									11:00		
Vol.	61	229	500	238	39	8									977		
PM Peak	13:00	13:00	16:00	17:00	16:00	18:00	15:00								16:00		
Vol.	88	320	600	273	28	3	1								1099		
Total	1926	8372	20808	10867	1378	73	3	0	1	0	0	0	0	0	43428		
Percent	4.4%	19.3%	47.9%	25.0%	3.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 14 MPH
50th Percentile : 22 MPH
85th Percentile : 27 MPH
95th Percentile : 30 MPH

Stats
10 MPH Pace Speed : 19-28 MPH
Number in Pace : 27103
Percent in Pace : 62.4%
Number of Vehicles > 40 MPH : 11
Percent of Vehicles > 40 MPH : 0.0%
Mean Speed(Average) : 22 MPH

Innovative Data, LLC

Location: West Center St. (Route 20)
 Location: West of Main St. (Route 20)
 Location: Lee, Massachusetts
 Client: VHB / J. Locke

PO Box 468
 Belchertown, Massachusetts
 Innovativedata LLC or 1.413.668.5094

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 Classed	Total	
08/23/18	1	21	5	1	0	1	0	0	2	0	0	0	0	0	31	
01:00	1	12	3	0	2	2	0	1	0	0	0	0	0	0	21	
02:00	0	6	4	1	1	0	0	0	0	0	0	0	0	0	12	
03:00	0	7	1	1	1	0	0	0	2	0	0	0	0	0	12	
04:00	1	30	11	1	3	3	0	0	0	0	0	0	0	0	49	
05:00	1	73	41	1	13	3	0	0	3	0	0	0	0	0	135	
06:00	1	165	70	2	24	2	0	0	5	3	0	0	0	0	272	
07:00	3	244	52	5	18	0	0	0	4	0	0	0	0	0	326	
08:00	5	325	53	4	9	5	1	3	1	0	0	0	0	0	406	
09:00	10	313	69	4	21	6	0	2	3	0	0	0	0	0	428	
10:00	11	331	68	6	11	6	0	4	4	0	0	0	0	0	441	
11:00	6	386	76	4	25	12	0	3	4	0	0	0	0	1	517	
12 PM	10	398	83	4	16	7	0	2	4	0	0	0	0	1	525	
13:00	7	367	74	3	21	11	0	2	1	0	0	0	0	1	487	
14:00	7	373	69	3	17	14	0	4	2	2	0	0	0	1	492	
15:00	5	445	84	1	14	8	0	4	3	0	0	0	0	0	564	
16:00	13	428	71	3	21	7	0	3	2	0	0	0	0	1	549	
17:00	6	427	57	1	12	6	0	2	1	0	0	0	0	0	512	
18:00	4	299	41	0	5	3	0	0	0	0	0	0	0	2	354	
19:00	9	238	37	2	8	2	0	2	1	0	0	0	0	0	299	
20:00	2	185	31	1	6	3	0	1	1	0	0	0	0	0	230	
21:00	1	163	19	0	3	2	0	1	1	1	0	1	0	0	192	
22:00	0	119	21	2	2	0	0	0	2	0	0	0	0	0	146	
23:00	1	78	14	1	3	0	0	1	1	0	0	0	0	0	99	
Total	105	5433	1054	51	256	103	1	35	47	6	0	1	0	7	7099	
Percent	1.5%	76.5%	14.8%	0.7%	3.6%	1.5%	0.0%	0.5%	0.7%	0.1%	0.0%	0.0%	0.0%	0.1%		
AM Peak	10:00	11:00	11:00	10:00	11:00	11:00	08:00	10:00	06:00	06:00				11:00		
Vol.	11	386	76	6	25	12	1	4	5	3				1		
PM Peak	16:00	15:00	15:00	12:00	13:00	14:00		14:00	12:00	14:00		21:00		18:00		
Vol.	13	445	84	4	21	14		4	4	2		1		2		

Innovative Data, LLC

Location: West Center St. (Route 20)
 Location: West of Main St. (Route 20)
 Location: Lee, Massachusetts
 Client: VHB / J. Locke

PO Box 468
 Belchertown, Massachusetts
 Innovativedata LLC or 1.413.668.5094

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 Classed	Total	
08/24/18	4	20	3	1	2	2	0	0	3	0	0	0	0	0	35	
01:00	2	16	1	1	4	1	0	0	2	0	0	0	0	0	27	
02:00	1	12	3	1	2	2	0	1	3	0	0	0	0	0	25	
03:00	3	11	4	0	0	2	0	0	2	0	0	0	0	0	22	
04:00	0	24	16	0	4	0	0	2	1	0	0	0	0	0	47	
05:00	5	62	23	2	23	3	0	0	2	1	0	0	0	0	121	
06:00	6	149	49	0	13	3	0	1	0	0	0	1	0	0	222	
07:00	8	242	68	7	14	5	0	3	3	0	0	0	0	0	350	
08:00	8	318	77	3	18	7	0	3	2	1	0	0	0	0	437	
09:00	7	344	88	4	17	6	1	3	4	0	0	0	0	0	474	
10:00	12	367	72	6	15	5	0	0	4	0	0	0	0	0	481	
11:00	11	418	70	1	17	7	2	2	2	1	0	0	0	0	531	
12 PM	5	374	72	4	31	8	0	1	4	0	0	0	0	0	499	
13:00	12	407	72	8	20	11	0	1	1	0	0	0	0	1	533	
14:00	5	412	70	0	26	11	0	6	0	1	0	0	0	0	531	
15:00	4	424	75	1	18	9	0	0	0	0	0	0	0	0	531	
16:00	11	463	97	1	5	13	0	1	2	0	0	0	0	3	596	
17:00	4	416	70	0	11	4	0	0	3	1	0	0	0	0	509	
18:00	4	319	45	1	7	3	0	0	1	0	0	0	0	1	381	
19:00	2	292	33	0	6	3	0	1	2	0	0	0	0	1	340	
20:00	3	201	36	0	8	1	0	0	3	0	0	0	0	1	253	
21:00	3	154	25	0	6	2	0	1	0	0	0	1	0	0	192	
22:00	0	324	31	0	3	0	0	0	2	0	0	0	0	0	360	
23:00	3	66	13	0	3	1	0	1	1	0	0	0	0	0	88	
Total	123	5835	1113	41	273	109	3	27	47	5	0	2	0	7	7585	
Percent	1.6%	76.9%	14.7%	0.5%	3.6%	1.4%	0.0%	0.4%	0.6%	0.1%	0.0%	0.0%	0.0%	0.1%		
AM Peak	10:00	11:00	09:00	07:00	05:00	08:00	11:00	07:00	09:00	05:00		06:00				
Vol.	12	418	88	7	23	7	2	3	4	1		1				
PM Peak	13:00	16:00	16:00	13:00	12:00	16:00		14:00	12:00	14:00		21:00		16:00		
Vol.	12	463	97	8	31	13		6	4	1		1		3		

Innovative Data, LLC

Location: West Center St. (Route 20)
 Location: West of Main St. (Route 20)
 Location: Lee, Massachusetts
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PO Box 468
 Belchertown, Massachusetts
 Innovativedata LLC or 1.413.668.5094

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 Classed	Total	
08/25/18	1	26	3	1	1	0	0	0	1	0	0	0	0	0	33	
01:00	1	17	0	0	1	1	0	0	0	0	0	0	0	0	20	
02:00	0	20	2	1	0	0	0	0	0	0	0	0	0	0	23	
03:00	2	10	1	1	0	2	0	0	1	0	0	0	0	0	17	
04:00	0	14	4	1	3	1	0	0	0	0	0	0	0	0	23	
05:00	3	45	16	0	5	3	0	0	0	0	0	0	0	0	72	
06:00	3	94	33	2	10	3	0	0	1	0	0	0	0	0	146	
07:00	1	141	41	2	7	0	0	0	0	0	0	0	0	0	192	
08:00	7	257	82	3	8	1	0	3	2	0	0	0	0	0	363	
09:00	8	330	54	2	6	5	0	0	2	0	0	0	0	0	407	
10:00	6	404	80	1	7	2	0	2	1	0	1	0	0	1	505	
11:00	5	397	57	1	10	4	0	0	2	0	0	0	1	1	478	
12 PM	2	450	50	1	8	3	0	2	0	0	0	0	0	0	516	
13:00	10	450	65	0	10	7	0	0	1	0	0	0	0	3	546	
14:00	13	386	59	2	10	2	0	2	1	0	0	0	0	1	476	
15:00	11	414	57	2	9	3	0	2	1	0	0	0	0	0	499	
16:00	7	386	51	0	3	3	0	0	0	0	0	0	0	0	450	
17:00	9	332	43	1	4	3	0	2	0	0	0	0	0	0	394	
18:00	8	277	34	1	6	5	0	1	1	0	0	0	0	0	333	
19:00	3	278	33	0	8	3	0	0	0	0	0	0	0	0	325	
20:00	2	231	37	0	8	4	0	0	1	0	0	0	0	0	283	
21:00	3	251	27	0	7	2	0	0	0	0	0	0	0	0	290	
22:00	4	243	35	0	6	1	0	0	1	0	0	0	0	1	291	
23:00	1	485	39	0	5	1	0	0	0	0	0	0	0	0	531	
Total	110	5938	903	22	142	59	0	14	16	0	1	0	1	7	7213	
Percent	1.5%	82.3%	12.5%	0.3%	2.0%	0.8%	0.0%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.1%		
AM Peak	09:00	10:00	08:00	08:00	06:00	09:00		08:00	08:00		10:00		11:00	10:00		
Vol.	8	404	82	3	10	5		3	2		1		1	1		
PM Peak	14:00	23:00	13:00	14:00	13:00	13:00		12:00	13:00					13:00		
Vol.	13	485	65	2	10	7		2	1					3		
Grand Total	338	17206	3070	114	671	271	4	76	110	11	1	3	1	21	21897	
Percent	1.5%	78.6%	14.0%	0.5%	3.1%	1.2%	0.0%	0.3%	0.5%	0.1%	0.0%	0.0%	0.0%	0.1%		

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

Innovatedata LLC or 1.413.668.5094

Location: West Center St. (Route 20)
 Location: West of Main St. (Route 20)
 Location: Lee, Massachusetts
 Client: VHB / J. Locke

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	Not Classified	Total	
08/23/18	1	23	10	4	4	1	0	0	0	0	0	0	0	0	43	
01:00	0	18	3	0	1	0	0	1	1	0	0	0	0	0	24	
02:00	1	15	0	0	0	2	0	1	0	0	0	0	0	0	19	
03:00	0	7	1	3	1	1	0	1	2	2	0	0	0	0	18	
04:00	3	10	4	3	4	4	0	1	0	0	1	0	0	0	30	
05:00	6	42	10	1	14	6	1	0	2	0	0	0	0	0	82	
06:00	3	127	42	6	35	4	2	1	3	1	0	0	0	3	227	
07:00	5	203	59	7	39	6	0	3	4	0	0	0	0	2	328	
08:00	8	288	66	9	26	3	0	5	3	0	0	0	0	3	411	
09:00	7	276	68	8	36	10	0	4	3	1	0	0	0	0	413	
10:00	6	261	62	7	41	6	0	1	1	0	0	0	0	0	385	
11:00	6	268	67	2	39	4	0	3	3	0	0	0	0	3	395	
12 PM	7	282	80	1	35	2	0	1	2	0	0	0	0	1	411	
13:00	5	337	67	3	39	2	0	4	0	0	0	0	0	1	458	
14:00	6	339	72	1	32	3	0	5	0	0	0	0	0	1	459	
15:00	5	343	76	2	45	4	0	2	4	0	0	0	0	0	481	
16:00	4	390	71	1	39	1	0	1	0	0	0	0	0	1	508	
17:00	5	391	68	2	36	2	0	2	2	0	0	0	0	1	509	
18:00	2	296	65	2	28	1	0	0	0	0	0	0	0	0	394	
19:00	4	338	56	0	18	0	0	1	1	1	0	0	0	1	420	
20:00	2	212	44	1	15	0	0	0	0	0	0	0	0	0	274	
21:00	4	195	36	1	15	1	0	0	0	0	0	0	0	0	252	
22:00	1	150	29	1	8	0	0	0	0	0	0	0	0	0	189	
23:00	2	62	15	0	5	2	0	0	1	0	0	0	0	0	87	
Total	93	4873	1071	65	555	65	3	37	32	5	1	0	0	17	6817	
Percent	1.4%	71.5%	15.7%	1.0%	8.1%	1.0%	0.0%	0.5%	0.5%	0.1%	0.0%	0.0%	0.0%	0.2%		
AM Peak	08:00	08:00	09:00	08:00	10:00	09:00	06:00	08:00	07:00	03:00	04:00			06:00		
Vol.	8	288	68	9	41	10	2	5	4	2	1			3		
PM Peak	12:00	17:00	12:00	13:00	15:00	15:00		14:00	15:00	19:00				12:00		
Vol.	7	391	80	3	45	4		5	4	1				1		

Innovative Data, LLC

PO Box 468

Belchertown, Massachusetts

Innovatedata LLC or 1.413.668.5094

Location: West Center St. (Route 20)
 Location: West of Main St. (Route 20)
 Location: Lee, Massachusetts
 Client: VHB / J. Locke

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	Not Classed	Total	
08/24/18	2	23	7	4	5	1	0	1	4	0	0	0	0	0	47	
01:00	1	8	5	0	2	1	0	0	1	0	0	0	0	0	18	
02:00	2	15	2	0	4	1	2	1	0	0	0	0	0	0	27	
03:00	1	9	1	2	1	1	0	0	0	0	0	0	0	0	15	
04:00	1	9	6	1	5	3	0	1	1	0	1	0	0	1	29	
05:00	4	42	18	4	14	8	1	0	0	0	0	1	1	0	93	
06:00	7	118	62	5	32	7	1	1	3	0	0	0	0	2	238	
07:00	6	180	48	8	45	5	1	3	2	2	0	0	1	2	303	
08:00	10	221	57	3	37	5	0	0	2	0	0	0	0	3	338	
09:00	13	231	77	3	40	7	0	2	0	0	0	0	0	3	376	
10:00	9	272	74	7	32	2	0	0	4	0	0	0	0	0	400	
11:00	6	303	63	3	27	4	0	4	2	0	0	0	0	1	413	
12 PM	5	362	62	2	30	4	2	6	1	0	0	0	0	0	474	
13:00	5	355	62	6	41	4	0	3	2	0	0	0	0	2	480	
14:00	3	407	80	2	27	2	0	3	0	1	0	0	0	0	525	
15:00	6	454	77	1	50	2	0	6	2	0	0	0	0	0	598	
16:00	4	451	75	3	37	1	0	2	0	0	0	0	0	2	575	
17:00	7	442	67	1	39	3	0	2	1	0	0	0	0	1	563	
18:00	9	398	70	0	29	3	0	1	0	0	0	0	0	0	510	
19:00	6	312	56	1	22	2	0	1	0	0	0	0	0	1	401	
20:00	5	269	51	0	29	1	0	3	0	0	0	0	0	1	359	
21:00	4	273	47	1	17	2	0	2	1	0	0	0	0	1	348	
22:00	2	190	33	0	8	1	0	2	1	0	0	0	0	0	237	
23:00	3	82	13	1	7	1	0	1	0	0	0	0	0	0	108	
Total	121	5426	1113	58	580	71	7	45	27	3	1	1	2	20	7475	
Percent	1.6%	72.6%	14.9%	0.8%	7.8%	0.9%	0.1%	0.6%	0.4%	0.0%	0.0%	0.0%	0.0%	0.3%		
AM Peak	09:00	11:00	09:00	07:00	07:00	05:00	02:00	11:00	00:00	07:00	04:00	05:00	05:00	08:00		
Vol.	13	303	77	8	45	8	2	4	4	2	1	1	1	3		
PM Peak	18:00	15:00	14:00	13:00	15:00	12:00	12:00	12:00	13:00	14:00				13:00		
Vol.	9	454	80	6	50	4	2	6	2	1				2		

Innovative Data, LLC

Location: West Center St. (Route 20)
 Location: West of Main St. (Route 20)
 Location: Lee, Massachusetts
 Client: VHB / J. Locke

PO Box 468
 Belchertown, Massachusetts
 Innovativedata LLC or 1.413.668.5094

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	Not Classified	Total	
08/25/18	4	54	10	3	4	2	0	0	0	0	0	0	0	0	77	
01:00	0	32	4	1	4	0	0	0	1	0	0	0	0	0	42	
02:00	0	25	5	1	1	0	0	2	1	0	0	0	0	0	35	
03:00	0	13	3	1	1	0	0	0	0	0	0	0	0	0	18	
04:00	0	10	1	0	2	0	0	0	0	0	0	0	0	0	13	
05:00	2	26	5	2	10	3	0	0	0	0	0	0	0	0	48	
06:00	3	65	14	2	24	2	0	3	1	1	0	0	0	1	116	
07:00	4	102	32	1	20	3	0	1	1	0	0	0	0	0	164	
08:00	5	188	49	2	25	5	0	1	0	0	0	0	0	0	275	
09:00	8	332	75	0	32	0	0	1	1	1	0	0	0	1	451	
10:00	9	351	57	2	26	1	0	1	0	0	0	0	0	1	448	
11:00	6	379	84	2	25	1	0	2	0	0	0	0	0	0	499	
12 PM	8	391	77	3	22	2	0	2	1	0	0	0	0	0	506	
13:00	4	381	68	2	28	3	0	2	0	0	0	0	0	1	489	
14:00	4	390	78	0	19	1	0	1	1	0	0	0	0	2	496	
15:00	5	426	85	0	29	2	0	3	0	0	0	0	0	2	552	
16:00	2	532	83	2	24	3	1	0	1	0	0	0	0	1	649	
17:00	5	522	82	2	19	0	0	1	2	0	0	0	0	2	635	
18:00	7	448	53	1	20	1	0	3	0	0	0	0	0	1	534	
19:00	5	306	79	0	18	0	0	1	0	0	0	0	0	0	409	
20:00	2	218	45	1	14	0	0	2	0	0	0	0	0	0	282	
21:00	2	205	23	0	7	1	0	1	0	0	0	0	0	0	239	
22:00	2	123	30	0	5	1	0	0	0	0	0	0	0	0	161	
23:00	3	76	14	0	6	1	0	0	0	0	0	0	0	1	101	
Total	90	5595	1056	28	385	32	1	27	10	2	0	0	0	13	7239	
Percent	1.2%	77.3%	14.6%	0.4%	5.3%	0.4%	0.0%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.2%		
AM Peak	10:00	11:00	11:00	00:00	09:00	08:00		06:00	01:00	06:00				06:00		
Vol.	9	379	84	3	32	5		3	1	1				1		
PM Peak	12:00	16:00	15:00	12:00	15:00	13:00	16:00	15:00	17:00					14:00		
Vol.	8	532	85	3	29	3	1	3	2					2		
Grand Total	304	15894	3240	151	1520	168	11	109	69	10	2	1	2	50	21531	
Percent	1.4%	73.8%	15.0%	0.7%	7.1%	0.8%	0.1%	0.5%	0.3%	0.0%	0.0%	0.0%	0.0%	0.2%		

Innovative Data, LLC

Location: West Center St. (Route 20)
 Location: West of Main St. (Route 20)
 Location: Lee, Massachusetts
 Client: VHB / J. Locke

PO Box 468
 Belchertown, Massachusetts
 Innovatedatallc.com or 1.413.668.5094

Eastbound, 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	Not Classed	Total
08/23/18	2	44	15	5	4	2	0	0	2	0	0	0	0	0	74
01:00	1	30	6	0	3	2	0	2	1	0	0	0	0	0	45
02:00	1	21	4	1	1	2	0	1	0	0	0	0	0	0	31
03:00	0	14	2	4	2	1	0	1	4	2	0	0	0	0	30
04:00	4	40	15	4	7	7	0	1	0	0	1	0	0	0	79
05:00	7	115	51	2	27	9	1	0	5	0	0	0	0	0	217
06:00	4	292	112	8	59	6	2	1	8	4	0	0	0	3	499
07:00	8	447	111	12	57	6	0	3	8	0	0	0	0	2	654
08:00	13	613	119	13	35	8	1	8	4	0	0	0	0	3	817
09:00	17	589	137	12	57	16	0	6	6	1	0	0	0	0	841
10:00	17	592	130	13	52	12	0	5	5	0	0	0	0	0	826
11:00	12	654	143	6	64	16	0	6	7	0	0	0	0	4	912
12 PM	17	680	163	5	51	9	0	3	6	0	0	0	0	2	936
13:00	12	704	141	6	60	13	0	6	1	0	0	0	0	2	945
14:00	13	712	141	4	49	17	0	9	2	2	0	0	0	2	951
15:00	10	788	160	3	59	12	0	6	7	0	0	0	0	0	1045
16:00	17	818	142	4	60	8	0	4	2	0	0	0	0	2	1057
17:00	11	818	125	3	48	8	0	4	3	0	0	0	0	1	1021
18:00	6	595	106	2	33	4	0	0	0	0	0	0	0	2	748
19:00	13	576	93	2	26	2	0	3	2	1	0	0	0	1	719
20:00	4	397	75	2	21	3	0	1	1	0	0	0	0	0	504
21:00	5	358	55	1	18	3	0	1	1	1	0	1	0	0	444
22:00	1	269	50	3	10	0	0	0	2	0	0	0	0	0	335
23:00	3	140	29	1	8	2	0	1	2	0	0	0	0	0	186
Total	198	10306	2125	116	811	168	4	72	79	11	1	1	0	24	13916
Percent	1.4%	74.1%	15.3%	0.8%	5.8%	1.2%	0.0%	0.5%	0.6%	0.1%	0.0%	0.0%	0.0%	0.2%	
AM Peak	09:00	11:00	11:00	08:00	11:00	09:00	06:00	08:00	06:00	06:00	04:00			11:00	
Vol.	17	654	143	13	64	16	2	8	8	4	1			4	
PM Peak	12:00	16:00	12:00	13:00	13:00	14:00		14:00	15:00	14:00		21:00		12:00	
Vol.	17	818	163	6	60	17		9	7	2		1		2	

Innovative Data, LLC

Location: West Center St. (Route 20)
 Location: West of Main St. (Route 20)
 Location: Lee, Massachusetts
 Client: VHB / J. Locke

PO Box 468
 Belchertown, Massachusetts
 Innovativedata LLC or 1.413.668.5094

Eastbound, 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	Not Classed	Total
08/24/18	6	43	10	5	7	3	0	1	7	0	0	0	0	0	82
01:00	3	24	6	1	6	2	0	0	3	0	0	0	0	0	45
02:00	3	27	5	1	6	3	2	2	3	0	0	0	0	0	52
03:00	4	20	5	2	1	3	0	0	2	0	0	0	0	0	37
04:00	1	33	22	1	9	3	0	3	2	0	1	0	0	1	76
05:00	9	104	41	6	37	11	1	0	2	1	0	1	1	0	214
06:00	13	267	111	5	45	10	1	2	3	0	0	1	0	2	460
07:00	14	422	116	15	59	10	1	6	5	2	0	0	1	2	653
08:00	18	539	134	6	55	12	0	3	4	1	0	0	0	3	775
09:00	20	575	165	7	57	13	1	5	4	0	0	0	0	3	850
10:00	21	639	146	13	47	7	0	0	8	0	0	0	0	0	881
11:00	17	721	133	4	44	11	2	6	4	1	0	0	0	1	944
12 PM	10	736	134	6	61	12	2	7	5	0	0	0	0	0	973
13:00	17	762	134	14	61	15	0	4	3	0	0	0	0	3	1013
14:00	8	819	150	2	53	13	0	9	0	2	0	0	0	0	1056
15:00	10	878	152	2	68	11	0	6	2	0	0	0	0	0	1129
16:00	15	914	172	4	42	14	0	3	2	0	0	0	0	5	1171
17:00	11	858	137	1	50	7	0	2	4	1	0	0	0	1	1072
18:00	13	717	115	1	36	6	0	1	1	0	0	0	0	1	891
19:00	8	604	89	1	28	5	0	2	2	0	0	0	0	2	741
20:00	8	470	87	0	37	2	0	3	3	0	0	0	0	2	612
21:00	7	427	72	1	23	4	0	3	1	0	0	1	0	1	540
22:00	2	514	64	0	11	1	0	2	3	0	0	0	0	0	597
23:00	6	148	26	1	10	2	0	2	1	0	0	0	0	0	196
Total	244	11261	2226	99	853	180	10	72	74	8	1	3	2	27	15060
Percent	1.6%	74.8%	14.8%	0.7%	5.7%	1.2%	0.1%	0.5%	0.5%	0.1%	0.0%	0.0%	0.0%	0.2%	
AM Peak	10:00	11:00	09:00	07:00	07:00	09:00	02:00	07:00	10:00	07:00	04:00	05:00	05:00	08:00	
Vol.	21	721	165	15	59	13	2	6	8	2	1	1	1	3	
PM Peak	13:00	16:00	16:00	13:00	15:00	13:00	12:00	14:00	12:00	14:00		21:00		16:00	
Vol.	17	914	172	14	68	15	2	9	5	2		1		5	

Innovative Data, LLC

Location: West Center St. (Route 20)
 Location: West of Main St. (Route 20)
 Location: Lee, Massachusetts
 Client: VHB / J. Locke

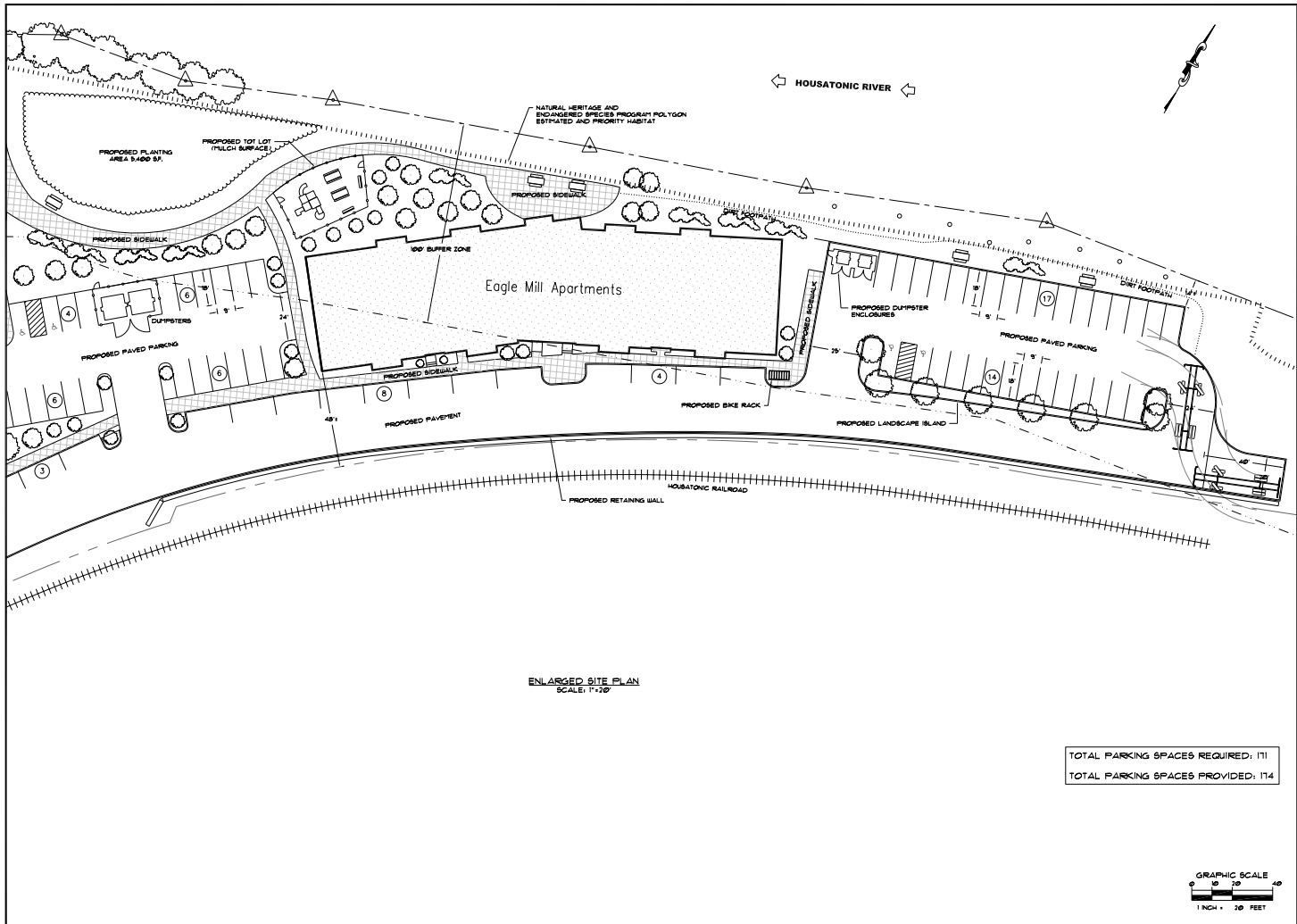
PO Box 468
 Belchertown, Massachusetts
 Innovativedata LLC or 1.413.668.5094

Eastbound, 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	Not Classified	Total
08/25/18	5	80	13	4	5	2	0	0	1	0	0	0	0	0	110
01:00	1	49	4	1	5	1	0	0	1	0	0	0	0	0	62
02:00	0	45	7	2	1	0	0	2	1	0	0	0	0	0	58
03:00	2	23	4	2	1	2	0	0	1	0	0	0	0	0	35
04:00	0	24	5	1	5	1	0	0	0	0	0	0	0	0	36
05:00	5	71	21	2	15	6	0	0	0	0	0	0	0	0	120
06:00	6	159	47	4	34	5	0	3	2	1	0	0	0	1	262
07:00	5	243	73	3	27	3	0	1	1	0	0	0	0	0	356
08:00	12	445	131	5	33	6	0	4	2	0	0	0	0	0	638
09:00	16	662	129	2	38	5	0	1	3	1	0	0	0	1	858
10:00	15	755	137	3	33	3	0	3	1	0	1	0	0	2	953
11:00	11	776	141	3	35	5	0	2	2	0	0	0	1	1	977
12 PM	10	841	127	4	30	5	0	4	1	0	0	0	0	0	1022
13:00	14	831	133	2	38	10	0	2	1	0	0	0	0	4	1035
14:00	17	776	137	2	29	3	0	3	2	0	0	0	0	3	972
15:00	16	840	142	2	38	5	0	5	1	0	0	0	0	2	1051
16:00	9	918	134	2	27	6	1	0	1	0	0	0	0	1	1099
17:00	14	854	125	3	23	3	0	3	2	0	0	0	0	2	1029
18:00	15	725	87	2	26	6	0	4	1	0	0	0	0	1	867
19:00	8	584	112	0	26	3	0	1	0	0	0	0	0	0	734
20:00	4	449	82	1	22	4	0	2	1	0	0	0	0	0	565
21:00	5	456	50	0	14	3	0	1	0	0	0	0	0	0	529
22:00	6	366	65	0	11	2	0	0	1	0	0	0	0	1	452
23:00	4	561	53	0	11	2	0	0	0	0	0	0	0	1	632
Total	200	11533	1959	50	527	91	1	41	26	2	1	0	1	20	14452
Percent	1.4%	79.8%	13.6%	0.3%	3.6%	0.6%	0.0%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.1%	
AM Peak	09:00	11:00	11:00	08:00	09:00	05:00		08:00	09:00	06:00	10:00		11:00	10:00	
Vol.	16	776	141	5	38	6		4	3	1	1		1	2	
PM Peak	14:00	16:00	15:00	12:00	13:00	13:00	16:00	15:00	14:00					13:00	
Vol.	17	918	142	4	38	10	1	5	2					4	
Grand Total	642	33100	6310	265	2191	439	15	185	179	21	3	4	3	71	43428
Percent	1.5%	76.2%	14.5%	0.6%	5.0%	1.0%	0.0%	0.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.2%	



Attachment B – Proposed Site Plan



PLANS TO ACCOMPANY PERMIT APPLICATIONS
PREPARED FOR:
EAGLE MILL REDEVELOPMENT, LLC
100 WEST CENTER STREET
LEE, MASSACHUSETTS 01940

Design Group, Inc.
DESIGN GROUP, INC.
100 WEST CENTER STREET
LEE, MASSACHUSETTS 01940
TEL: 978-264-3637
WWW.DESIGNGROUPINC.COM

DATE: 05/05/2015
PROJECT: EAGLE MILL REDEVELOPMENT
SHEET NO.: 5
SHEET TOTAL: 11

GRAPHIC SCALE
0 10 20 40
1 INCH = 20 FEET

TOTAL PARKING SPACES REQUIRED: 171
TOTAL PARKING SPACES PROVIDED: 174

C:\Users\DESIGN\OneDrive\Documents\2015\150515 Eagle Mill Redevelopment\150515 Eagle Mill Redevelopment.dwg
Author: DESIGN
Date: 05/05/2015
Time: 10:00:00 AM
Plot: 05/05/2015 10:00:00 AM
Plotter: Design Group, Inc.



Attachment C – Crash Data

INTERSECTION CRASH RATE WORKSHEET

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

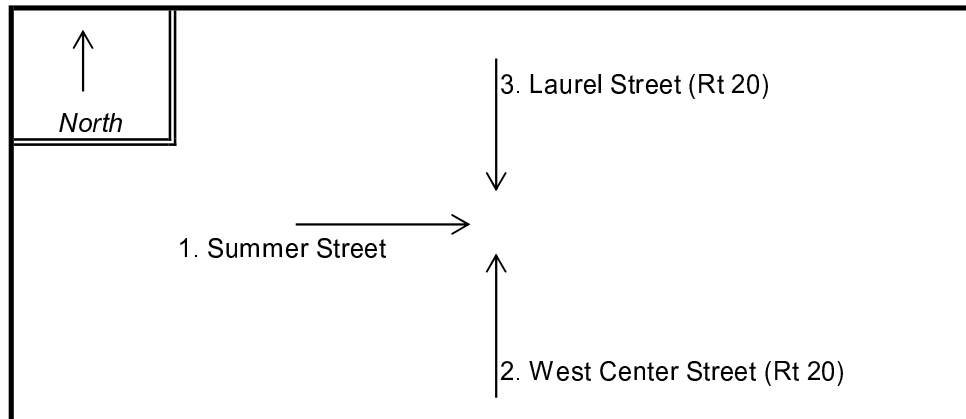
DISTRICT : 1 UNSIGNALIZED : ☒ SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Route 20 (West Center Street and Laurel Street)

MINOR STREET(S) : Summer Street

**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) :	125	565	615			1,305

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

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

CRASH RATE CALCULATION :

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

Comments : _____

Project Title & Date: _____

Crash Data 2013-2017: West Center Street at Summer Street and Laurel Street

Crash Date	Crash Severity	Crash Time	Light Conditions	Manner of Collision	Road Surface Condition	Weather Conditions
07/01/2014	Non-fatal injury	11:25 AM	Daylight	Rear-end	Dry	Clear
01/23/2015	Non-fatal injury	8:41 PM	Dark - lighted roadway	Unknown	Dry	Clear
06/23/2015	Non-fatal injury	6:07 AM	Daylight	Single vehicle crash	Dry	Clear
03/29/2016	Property damage only (none injured)	3:33 PM	Daylight	Angle	Dry	Clear
09/15/2017	Property damage only (none injured)	7:26 PM	Dark - lighted roadway	Rear-end	Dry	Cloudy

INTERSECTION CRASH RATE WORKSHEET

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

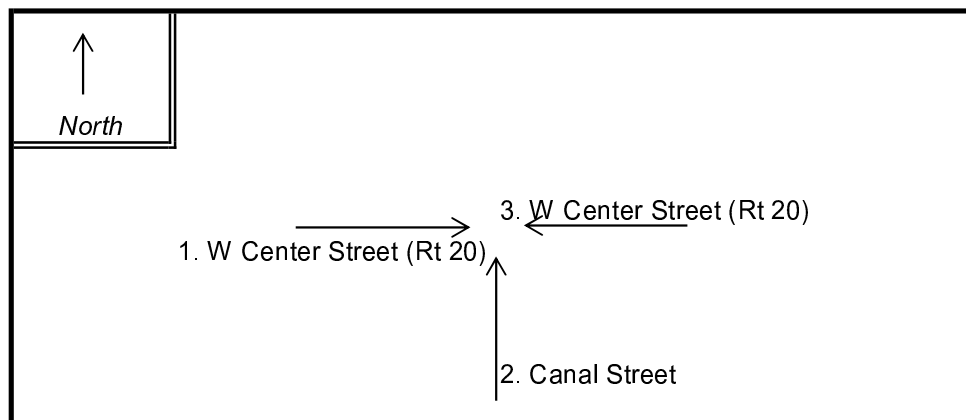
DISTRICT : 1 UNSIGNALIZED : ☒ X SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Route 20 (West Center Street)

MINOR STREET(S) : Canal Street

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB			
PEAK HOURLY VOLUMES (AM/PM) :	605	580	25			1,210

" K " FACTOR : **0.080** INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME : **15,125**

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

CRASH RATE CALCULATION :

0.18

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

Comments : _____

Project Title & Date: _____

Crash Data 2013-2017: West Center Street at Canal Street

Crash Date	Crash Severity	Crash Time	Max Injury Severity Reported	Light Conditions	Manner of Collision	Road Surface Condition	Weather Conditions
01/06/2014	Non-fatal injury	11:55 PM	Non-fatal injury - Non-incapacitating	Dark - lighted roadway	Single vehicle crash	Ice	Snow
04/12/2013	Property damage only (none injured)	11:41 AM	No injury	Daylight	Rear-end	Ice	Sleet, hail (freezing rain or drizzle)/Rain
09/05/2013	Non-fatal injury	8:39 PM	Non-fatal injury - Incapacitating	Dark - lighted roadway	Single vehicle crash	Dry	Clear
08/15/2016	Property damage only (none injured)	4:13 PM	No injury	Daylight	Rear-end	Dry	Clear
12/06/2017	Non-fatal injury	4:18 PM	Non-fatal injury - Non-incapacitating	Daylight	Head-on	Dry	Clear

INTERSECTION CRASH RATE WORKSHEET

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

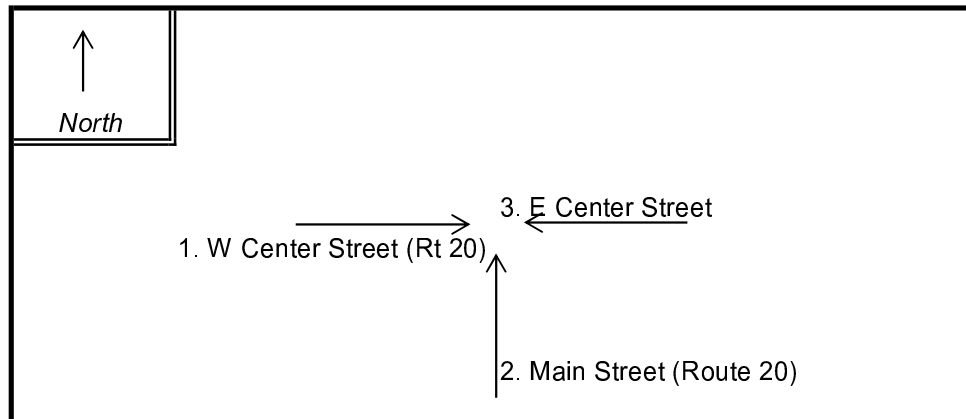
DISTRICT : 1 UNSIGNALIZED : ☒ X SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Route 20 (West Center Street and Main Street)

MINOR STREET(S) : East Center Street

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB			
PEAK HOURLY VOLUMES (AM/PM) :	620	110	585			1,315

" K " FACTOR : **0.080** INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME : **16,438**

TOTAL # OF CRASHES : **7** # OF YEARS : **5** AVERAGE # OF CRASHES PER YEAR (A) : **1.40**

CRASH RATE CALCULATION :

0.23

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

Comments : _____

Project Title & Date: _____

Crash Data 2013-2017: Main Street at West and East Center Streets

Crash Date	Crash Severity	Crash Time	Max Injury Severity Reported	Light Conditions	Manner of Collision	Road Surface Condition	Weather Conditions
05/16/2013	Property damage only (none injured)	4:54 PM	No injury	Daylight	Rear-end	Dry	Clear
09/14/2013	Property damage only (none injured)	9:27 AM	No injury	Daylight	Angle	Dry	Cloudy
02/25/2014	Property damage only (none injured)	4:32 PM	No injury	Daylight	Single vehicle crash	Dry	Clear
10/08/2014	Property damage only (none injured)	5:32 PM	No injury	Daylight	Sideswipe, same direction	Dry	Clear
03/06/2015	Property damage only (none injured)	11:05 AM	No injury	Daylight	Angle	Wet	Clear
07/29/2016	Property damage only (none injured)	12:05 PM	No injury	Daylight	Angle	Dry	Clear
06/01/2017	Property damage only (none injured)	12:18 PM	No injury	Daylight	Sideswipe, same direction	Dry	Clear

INTERSECTION CRASH RATE WORKSHEET

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

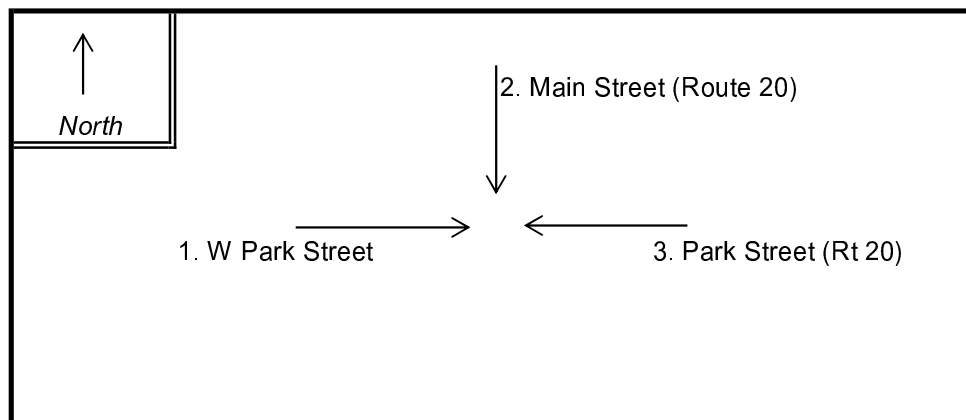
DISTRICT : 1 UNSIGNALIZED : ☒ X SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Route 20 (Main Street 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) :	255	650	745			1,650

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

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

CRASH RATE CALCULATION :

0.29

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

Comments : _____

Project Title & Date: _____

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

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



Attachment D – Trip Generation & Distribution

Table Existing Site Generated Traffic Summary

Time Period	Apartments¹ (11 Units)	Single Family Homes² (2 Units)	Commercial³ (1,071 SF)	Total Gross Trips
<i>Daily</i>	42	28	40	110
<i>Weekday Morning Peak Hour^b</i>				
Enter	1	1	1	3
Exit	<u>5</u>	<u>5</u>	<u>0</u>	<u>10</u>
Total	6	6	1	13
<i>Weekday Evening Peak Hour^b</i>				
Enter	5	1	2	8
Exit	<u>3</u>	<u>1</u>	<u>2</u>	<u>6</u>
Total	8	2	4	14
<i>Saturday Midday Peak Hour^b</i>				
Enter	4	11	3	18
Exit	<u>4</u>	<u>9</u>	<u>2</u>	<u>15</u>
Total	8	20	5	33

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 220 (Multifamily Low-rise) based on 11 Units

2 Future trip generation based on LUC 210 (Single Family Housing) based on 2 Units

3 Future trip generation based on LUC 820 (Shopping Center) based on 1,071 SF

Single-Family Detached Housing (210)

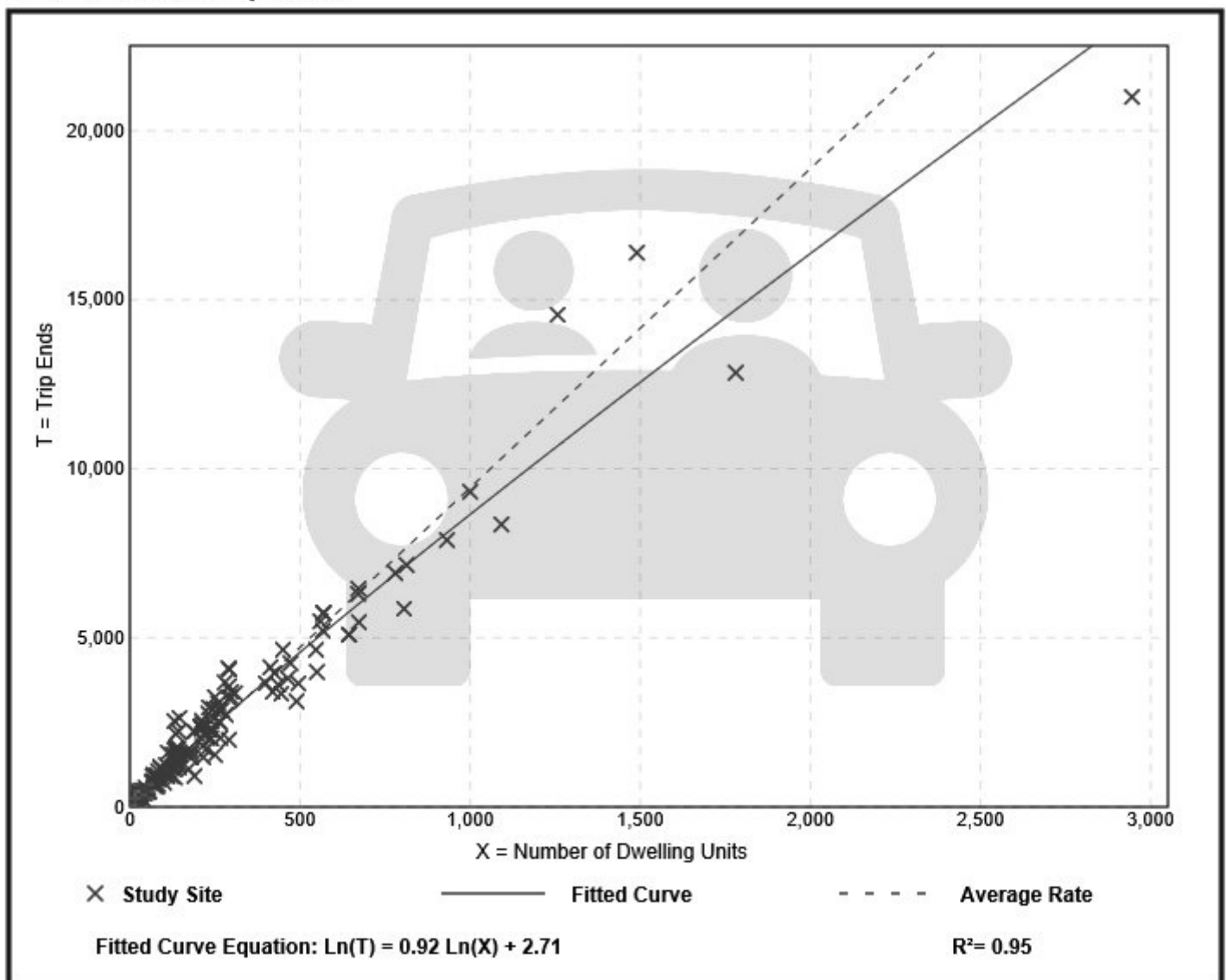
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 159
Avg. Num. of Dwelling Units: 264
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.44	4.81 - 19.39	2.10

Data Plot and Equation



Single-Family Detached Housing (210)

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: 173

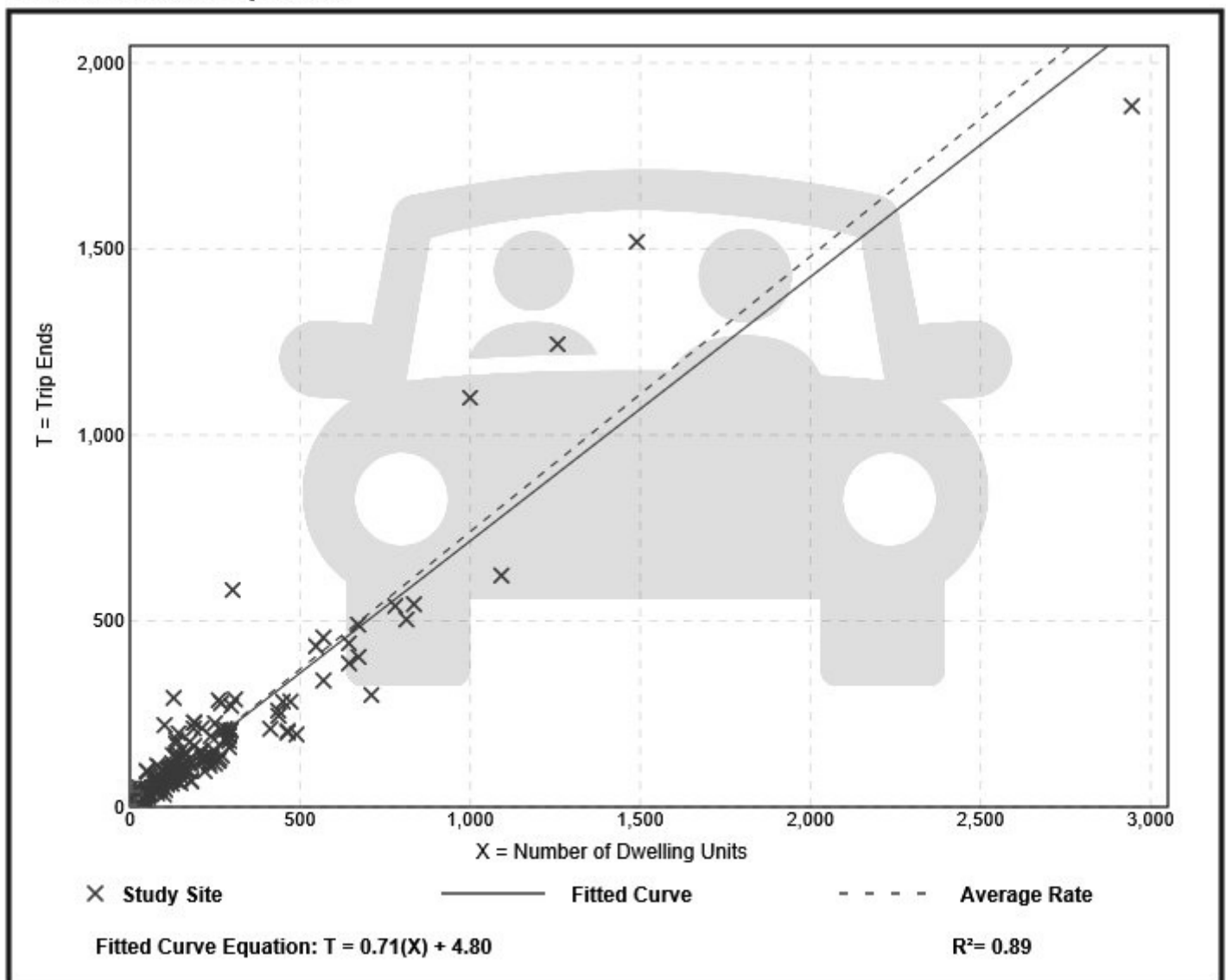
Avg. Num. of Dwelling Units: 219

Directional Distribution: 25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.74	0.33 - 2.27	0.27

Data Plot and Equation



Single-Family Detached Housing (210)

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: 190

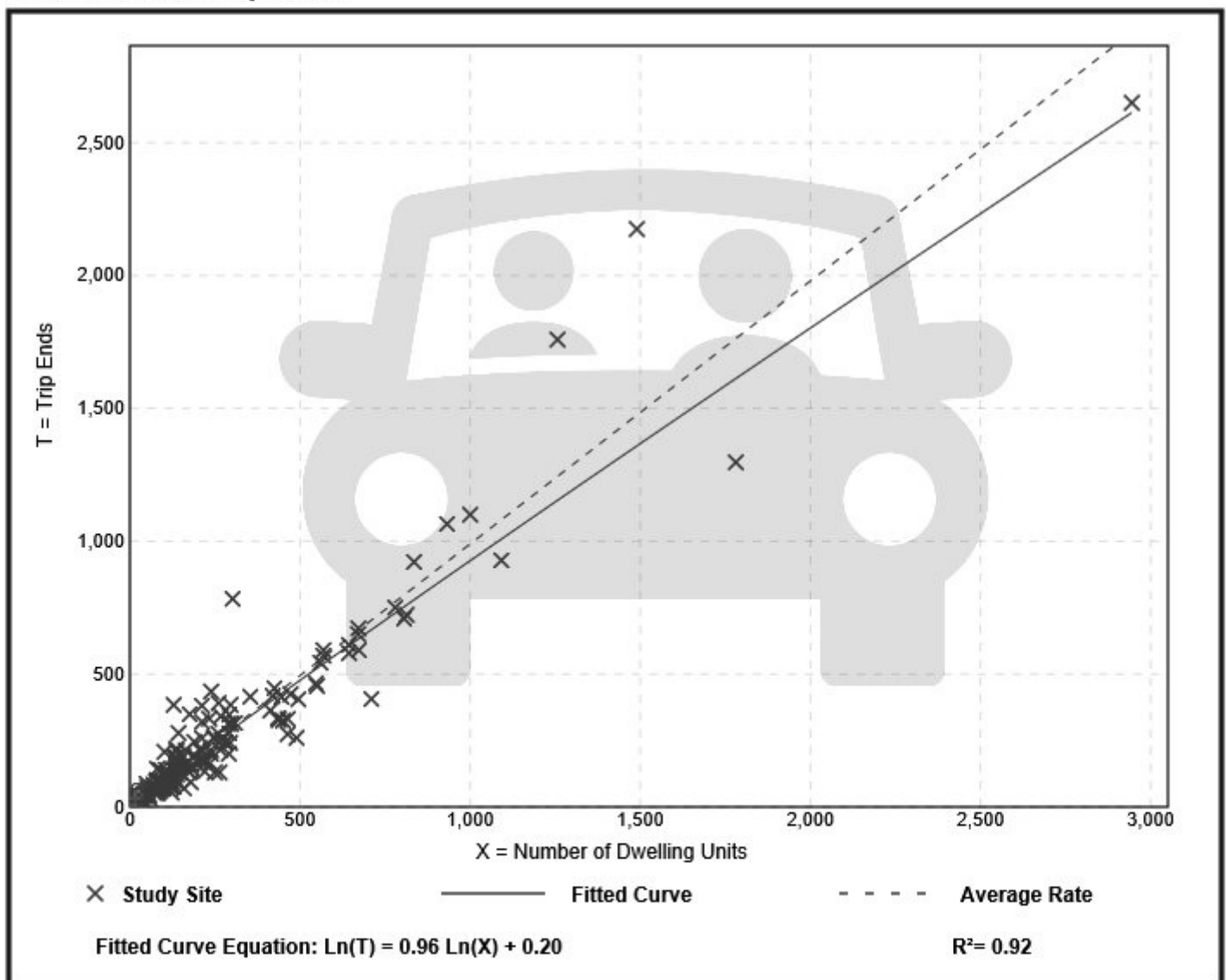
Avg. Num. of Dwelling Units: 242

Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.99	0.44 - 2.98	0.31

Data Plot and Equation



Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 31

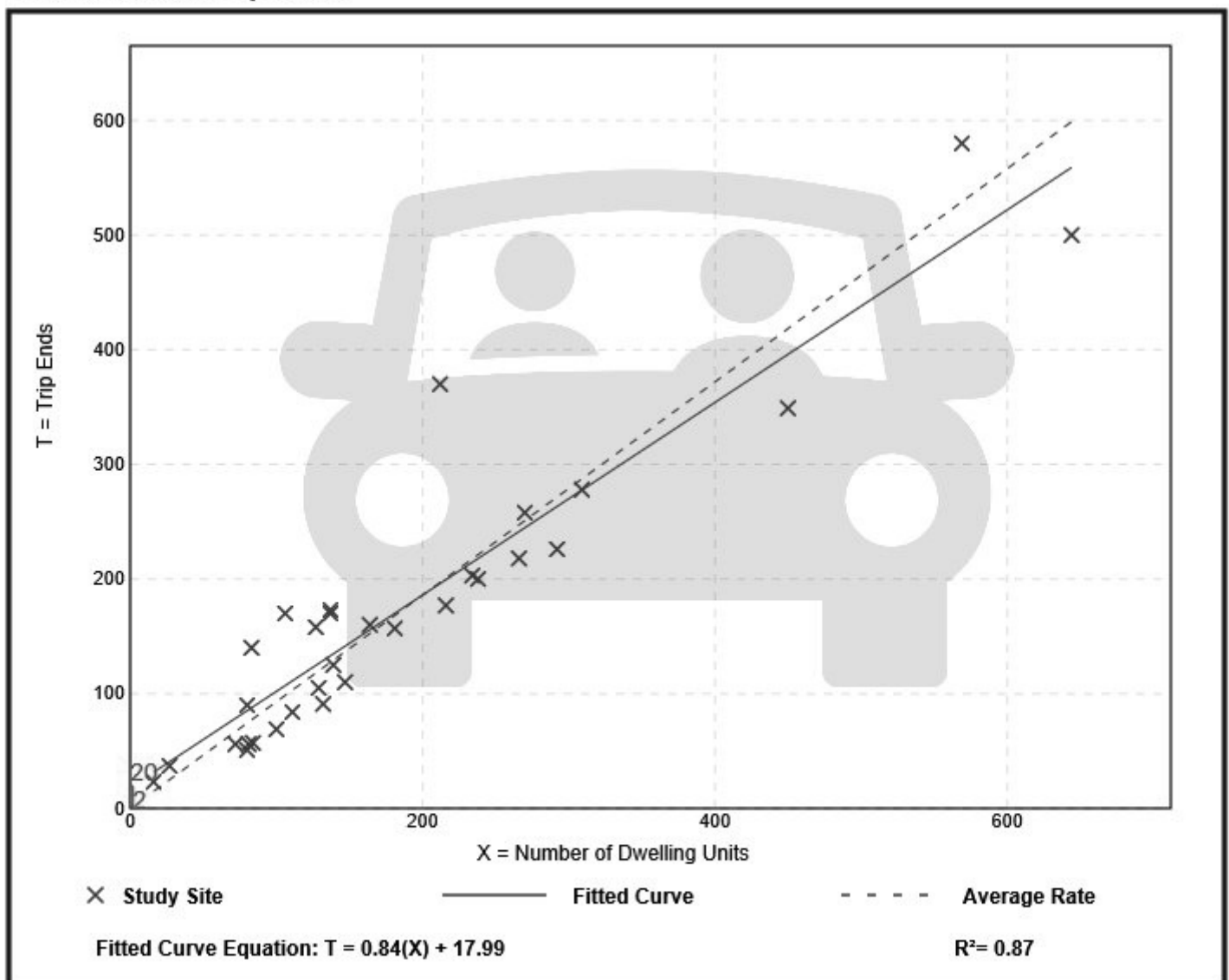
Avg. Num. of Dwelling Units: 188

Directional Distribution: 54% entering, 46% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.93	0.64 - 1.75	0.26

Data Plot and Equation



Multifamily Housing (Low-Rise) (220)

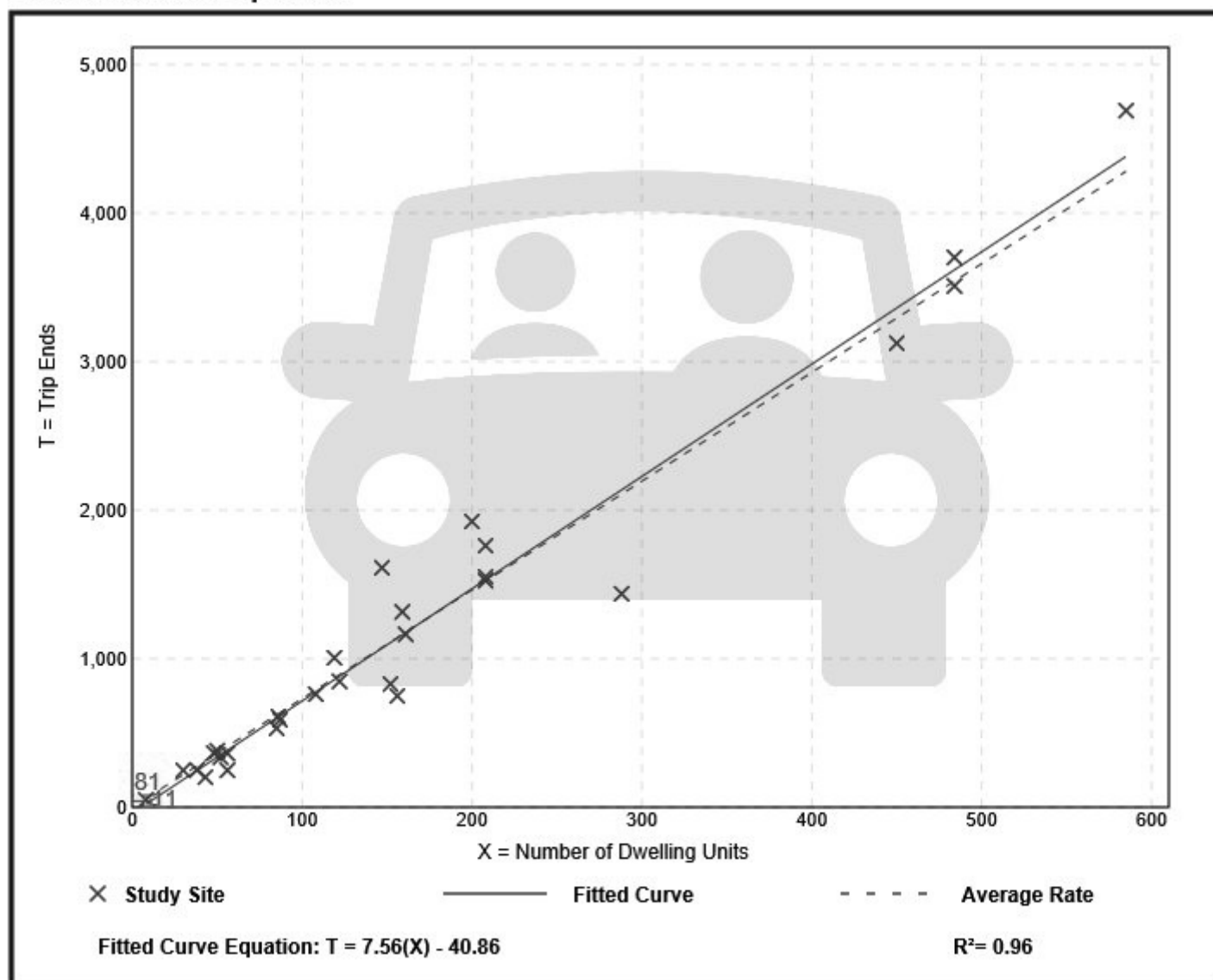
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 29
Avg. Num. of Dwelling Units: 168
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
7.32	4.45 - 10.97	1.31

Data Plot and Equation



Multifamily Housing (Low-Rise) (220)

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: 42

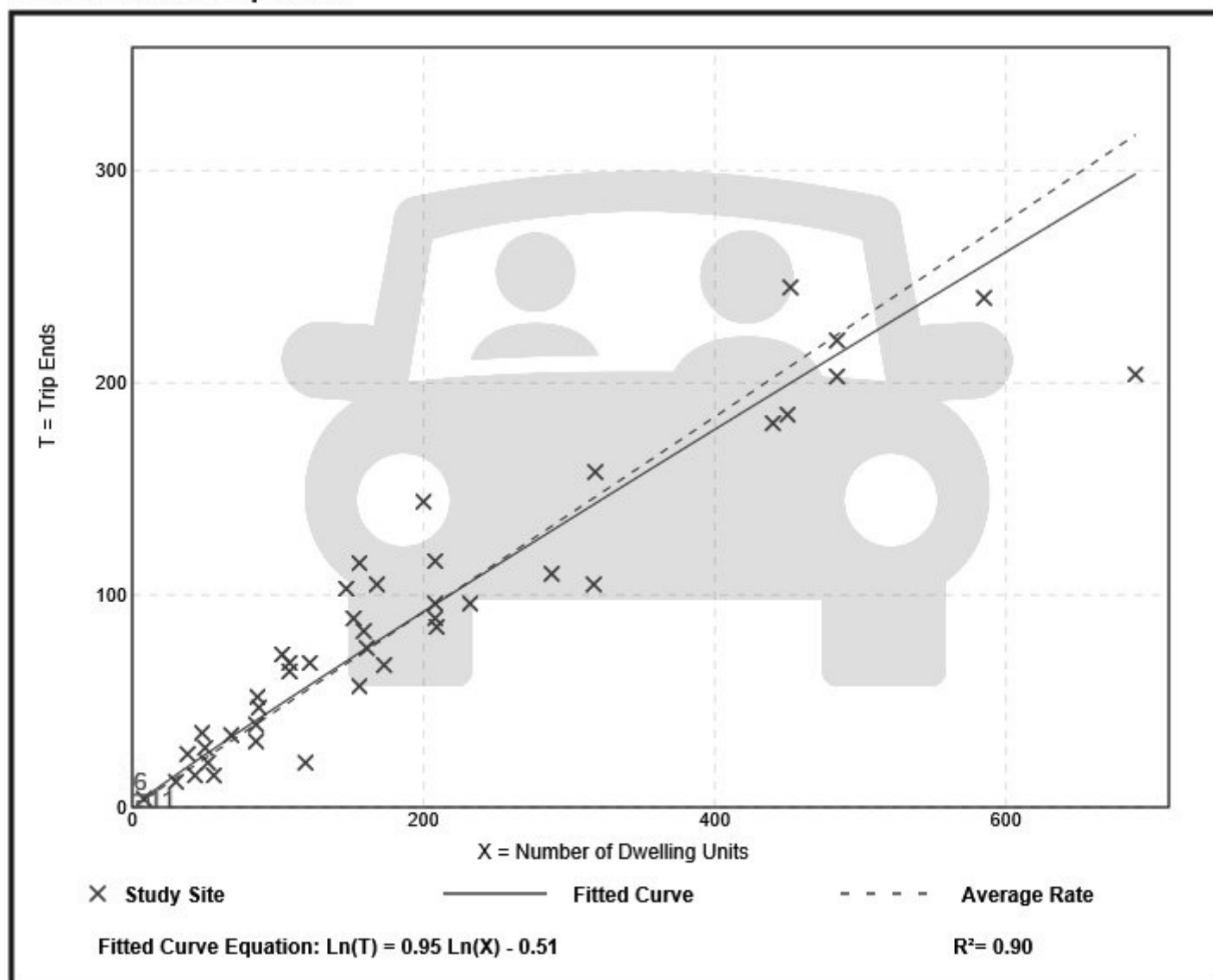
Avg. Num. of Dwelling Units: 199

Directional Distribution: 23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.46	0.18 - 0.74	0.12

Data Plot and Equation



Multifamily Housing (Low-Rise) (220)

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: 50

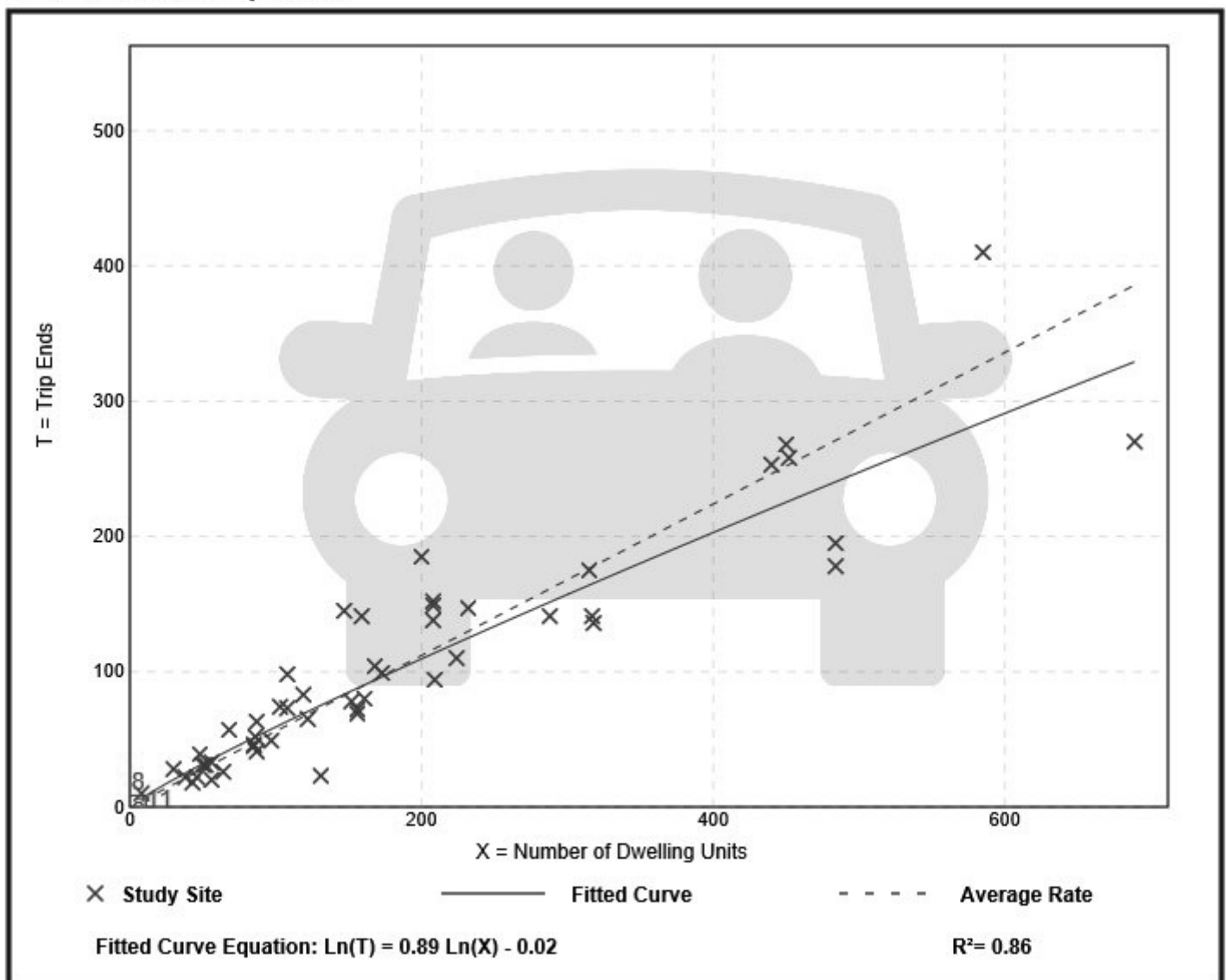
Avg. Num. of Dwelling Units: 187

Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.56	0.18 - 1.25	0.16

Data Plot and Equation



Multifamily Housing (Low-Rise) (220)

Vehicle Trip Ends vs: Dwelling Units

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 5

Avg. Num. of Dwelling Units: 89

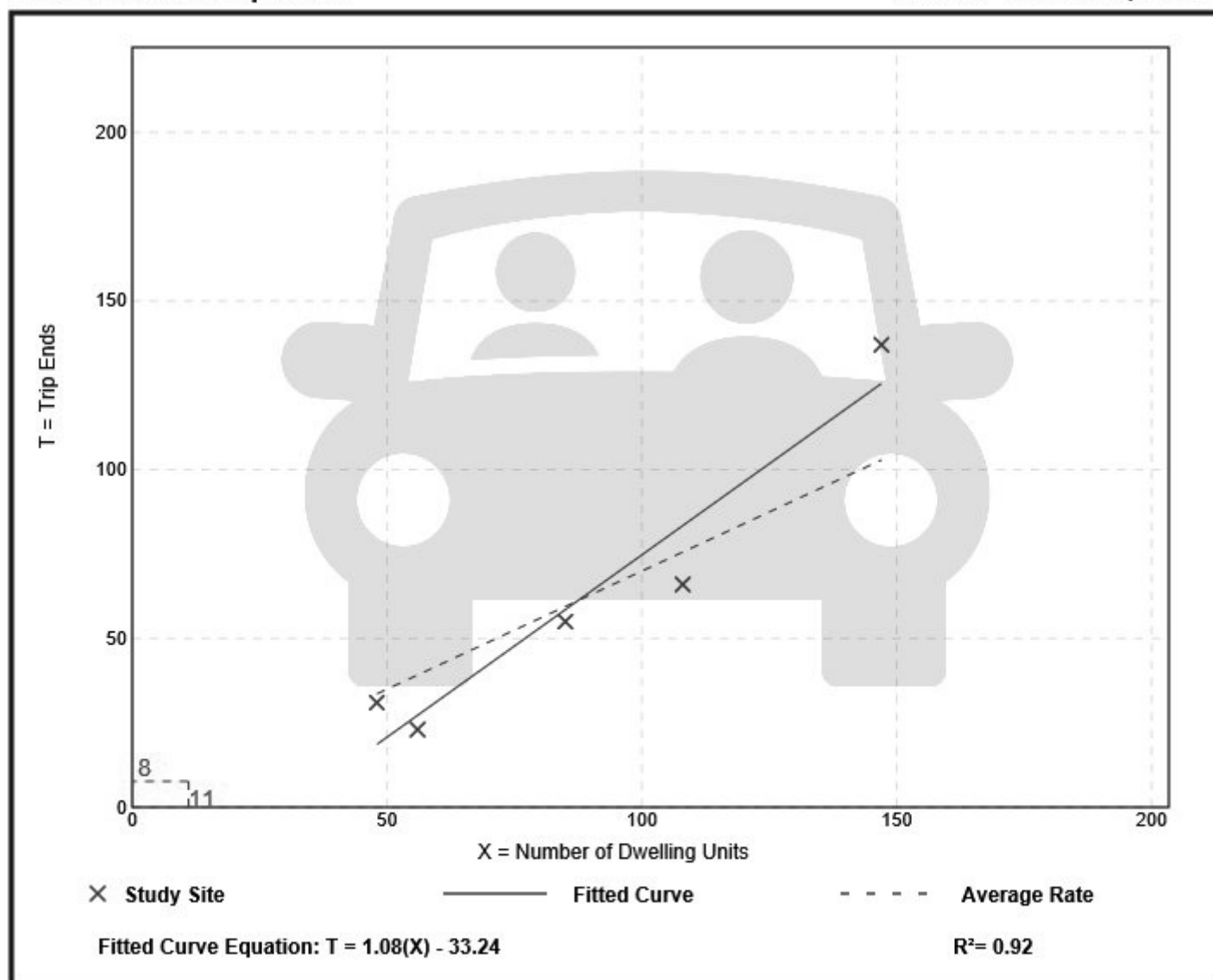
Directional Distribution: 54% entering, 46% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.41 - 0.93	0.20

Data Plot and Equation

Caution – Small Sample Size



Shopping Center (820)

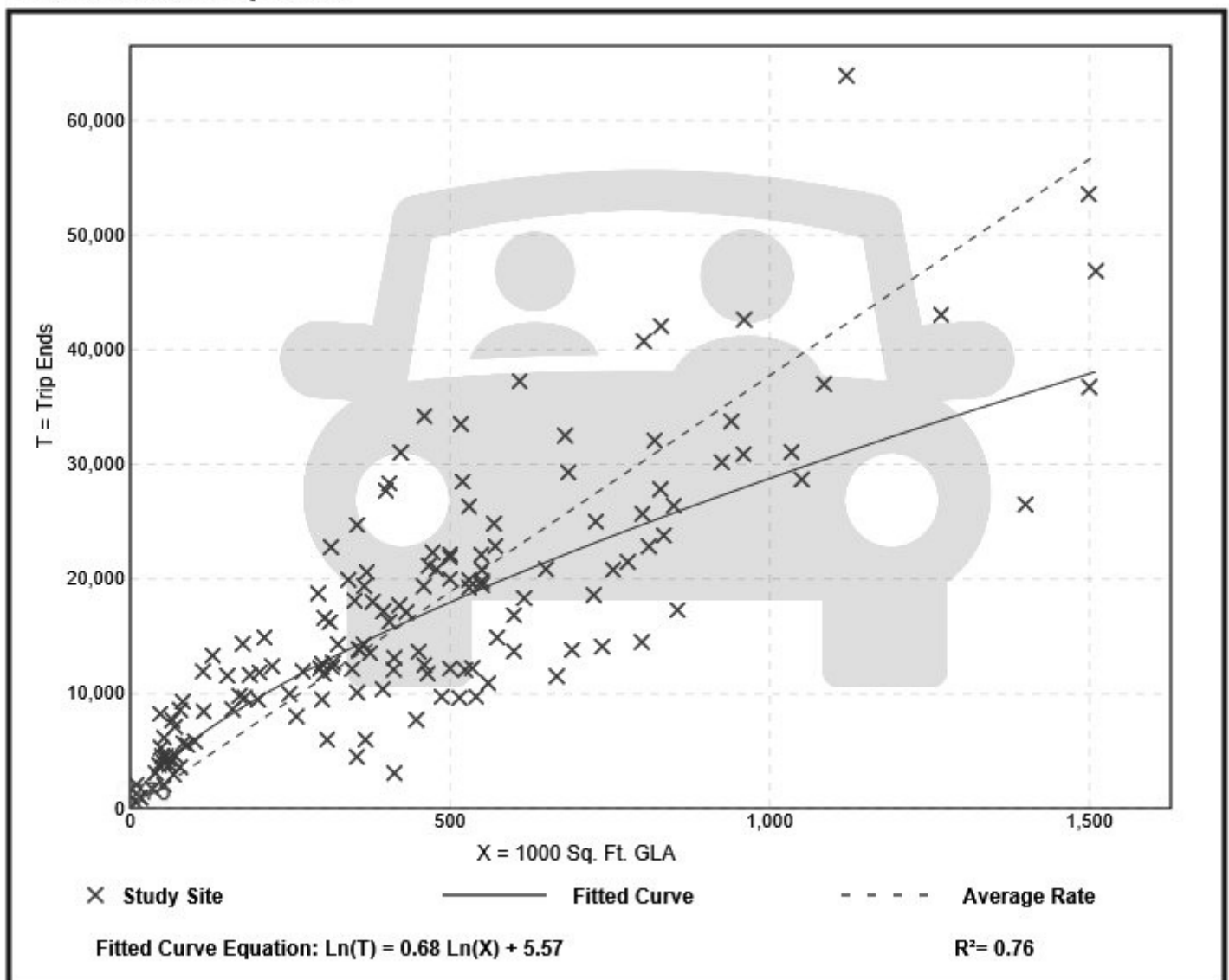
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday

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



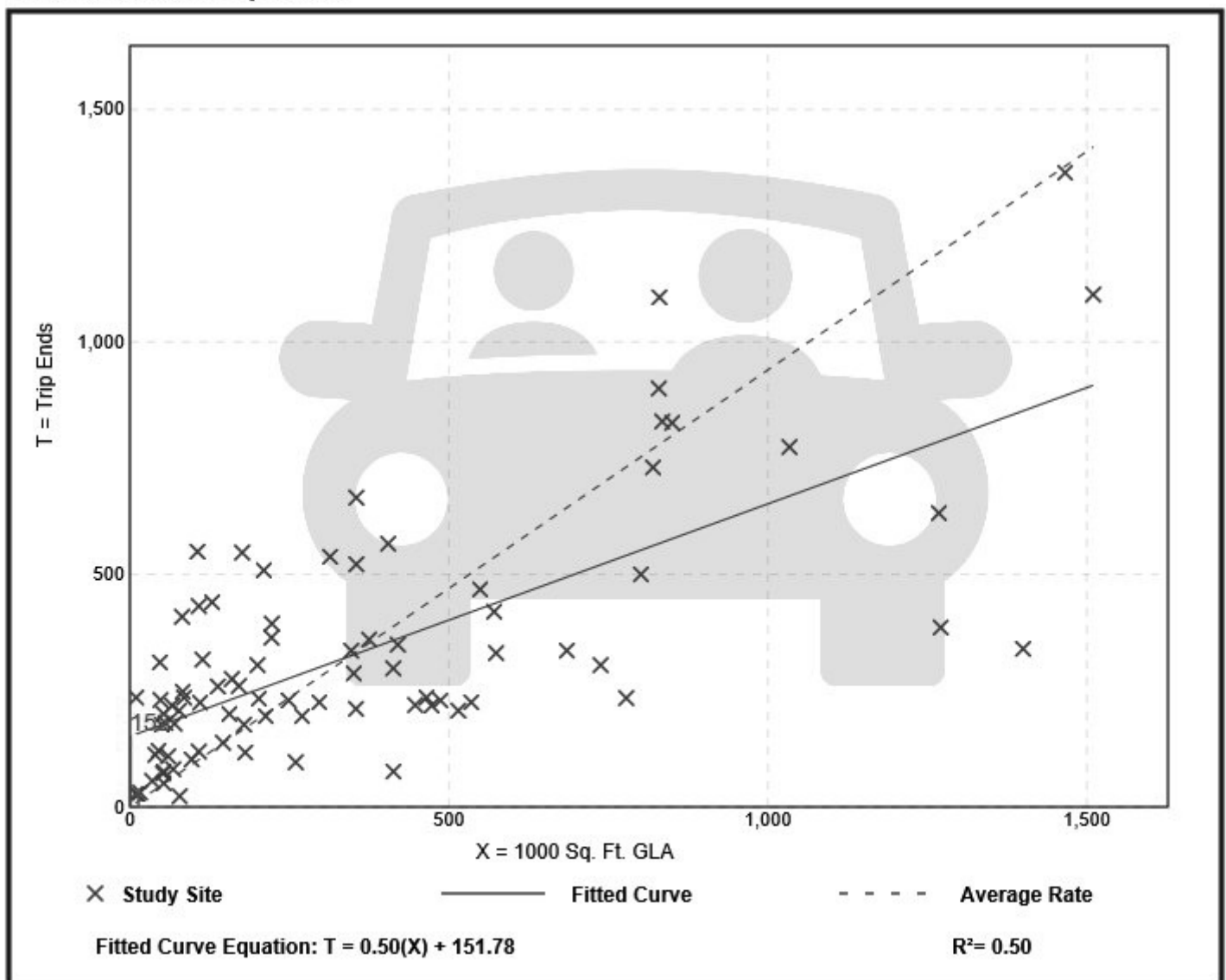
Shopping Center (820)

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



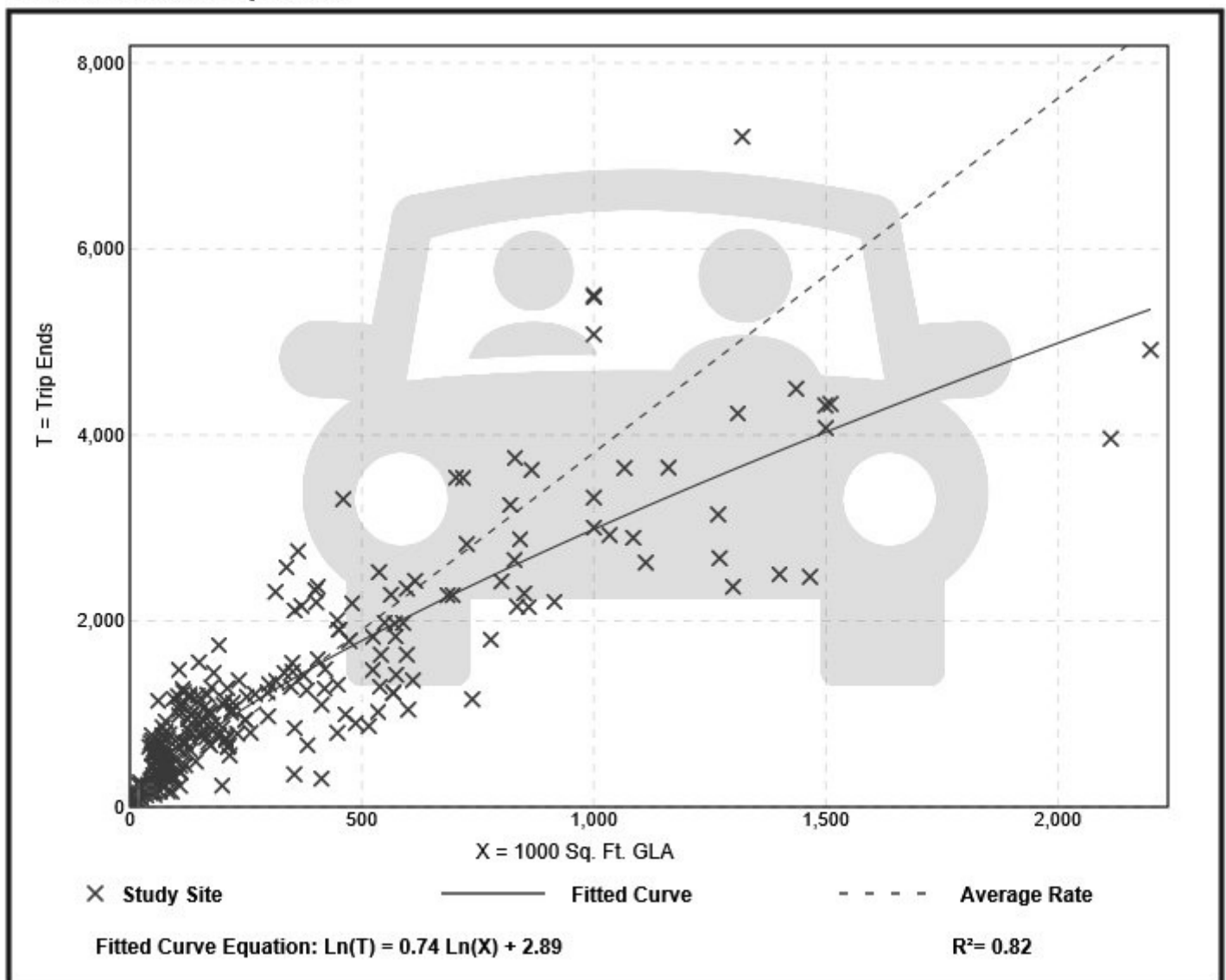
Shopping Center (820)

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

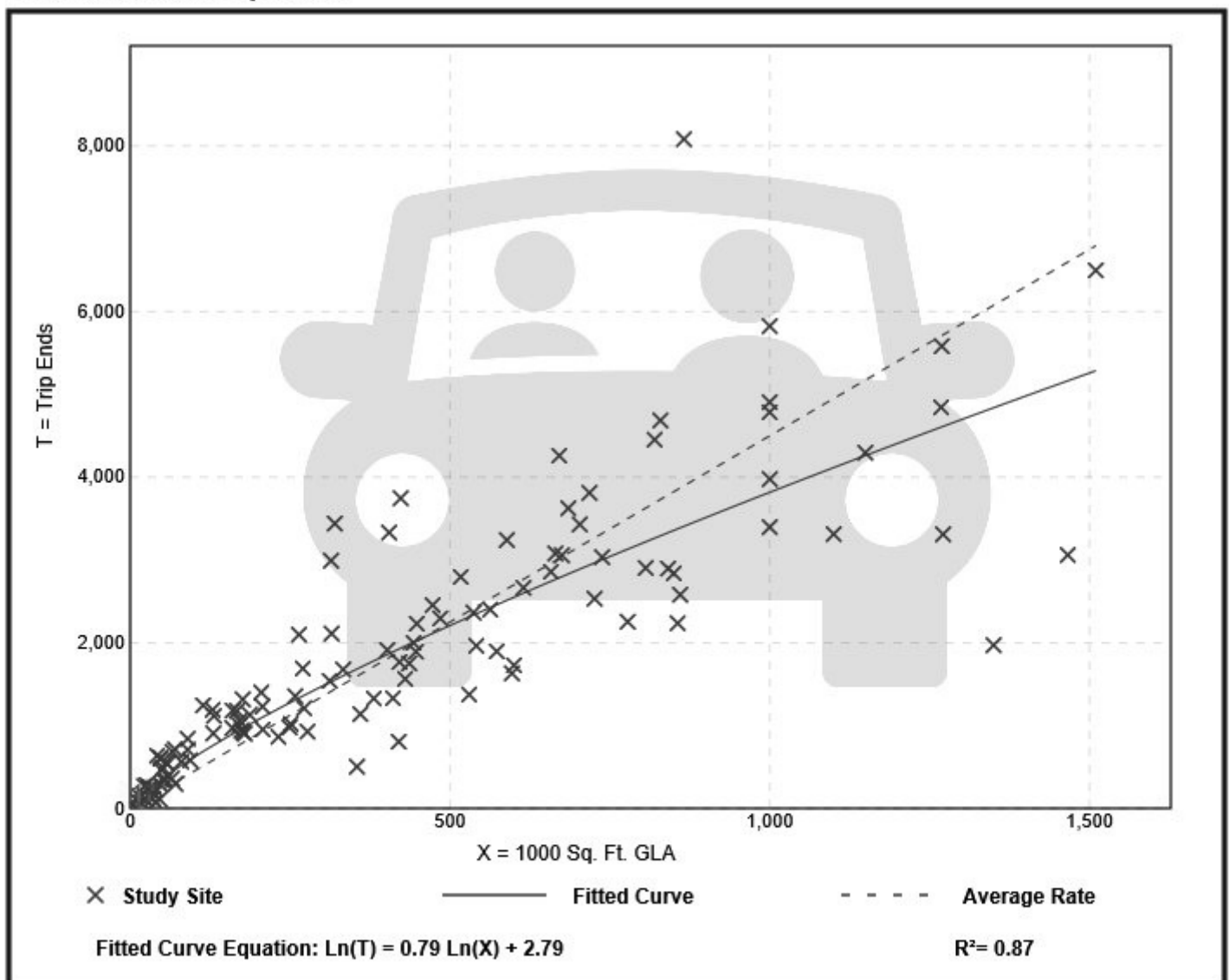




Table 3 Site Generated Traffic Summary

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

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

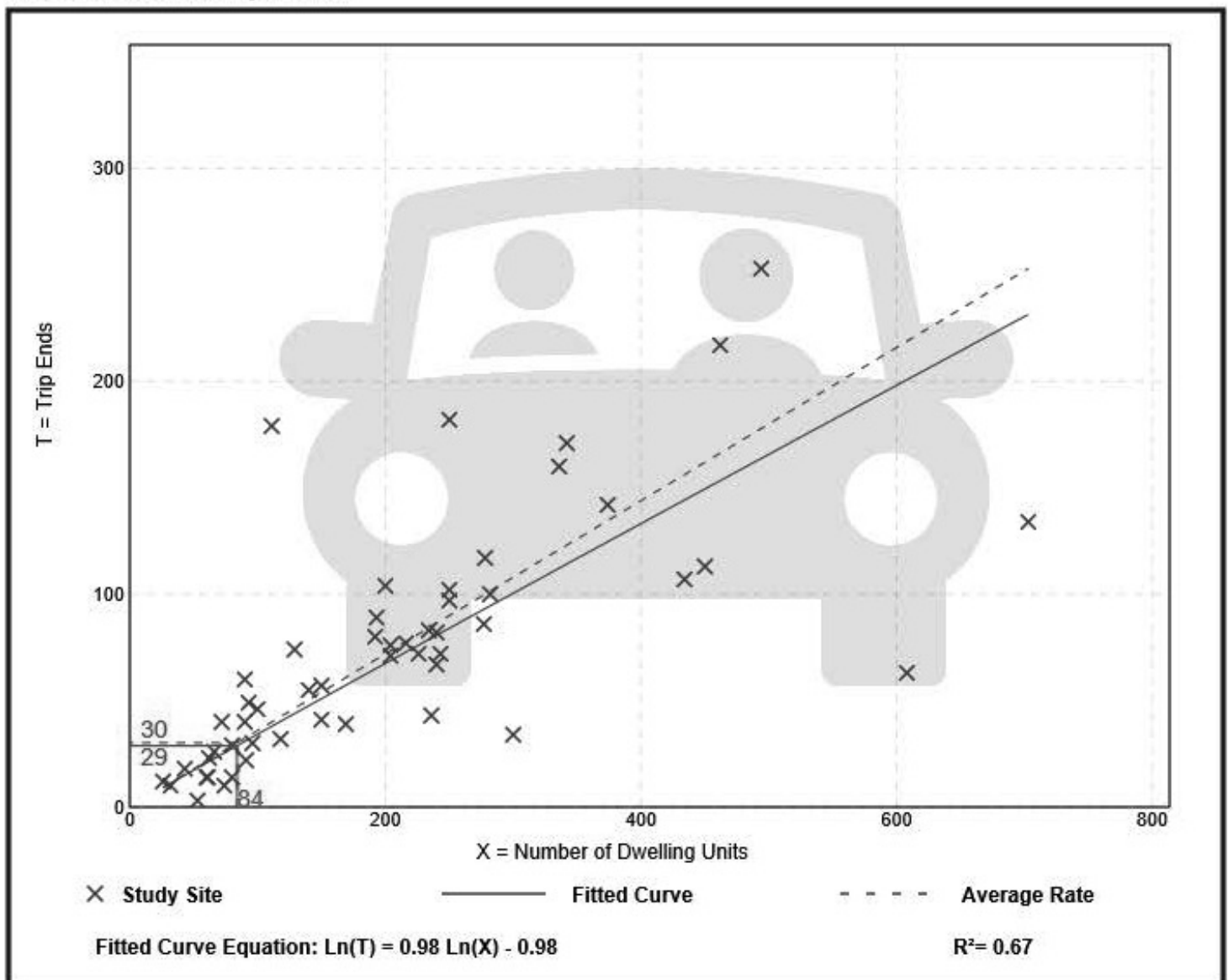
Avg. Num. of Dwelling Units: 207

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

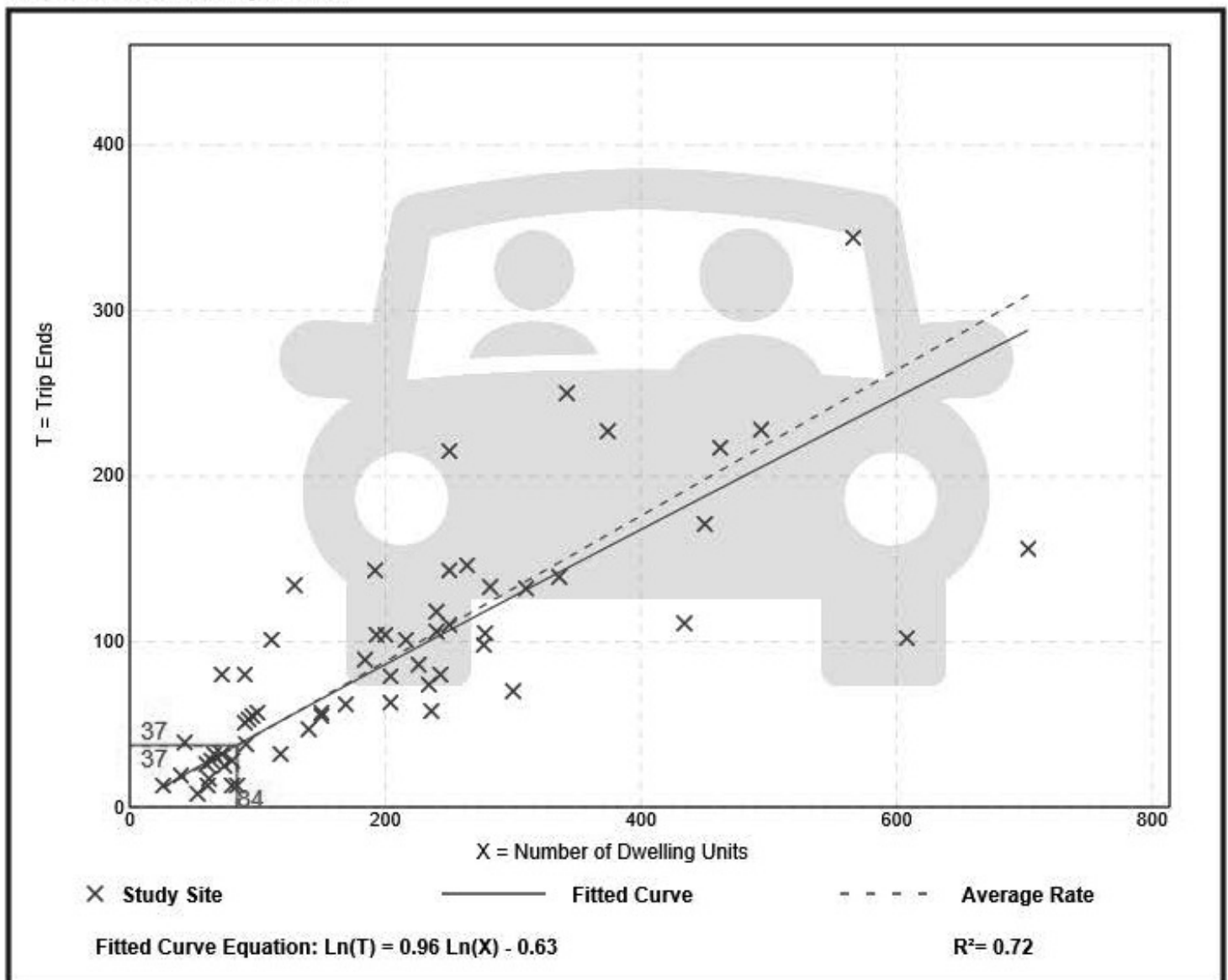
Avg. Num. of Dwelling Units: 208

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

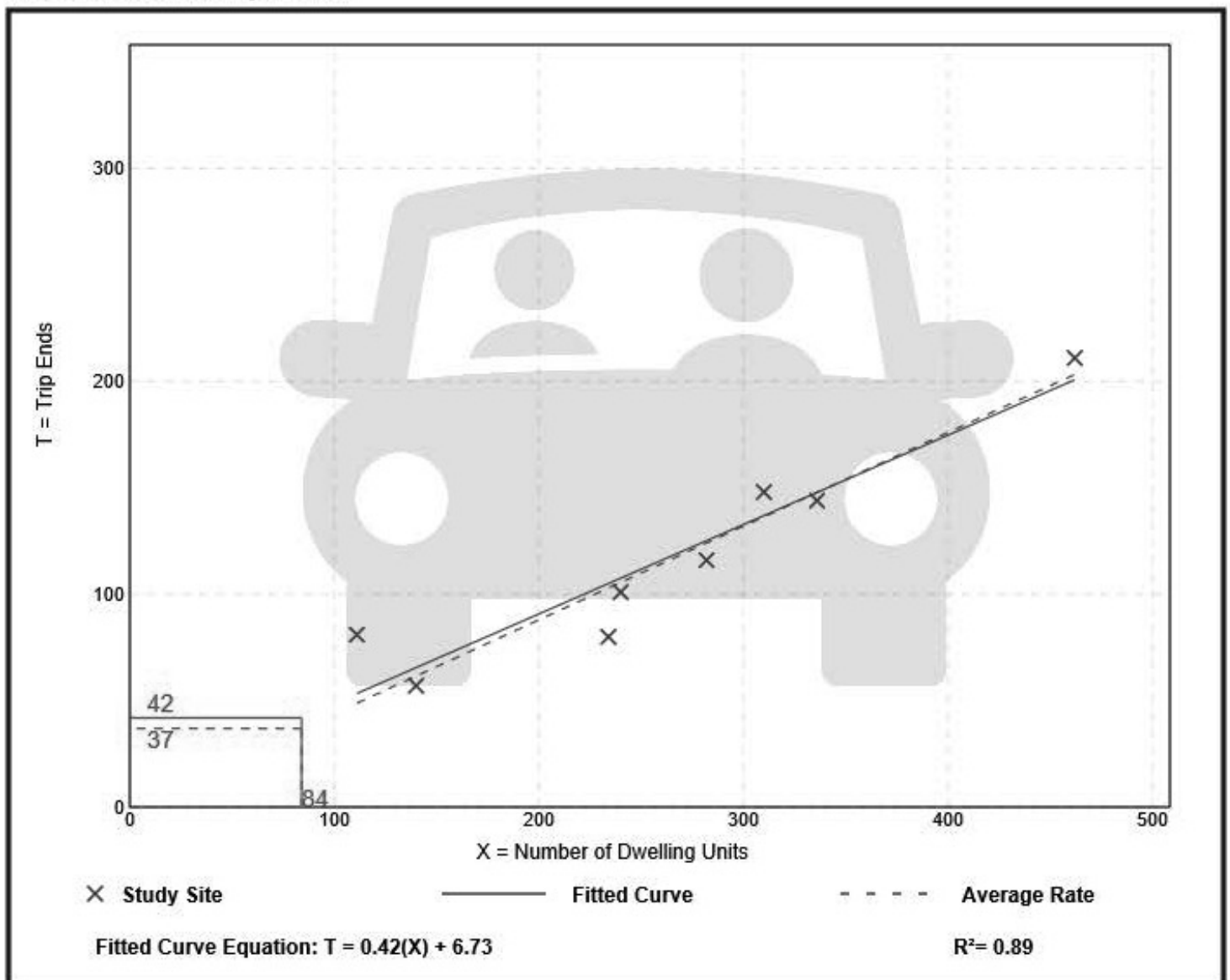
Avg. Num. of Dwelling Units: 264

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)

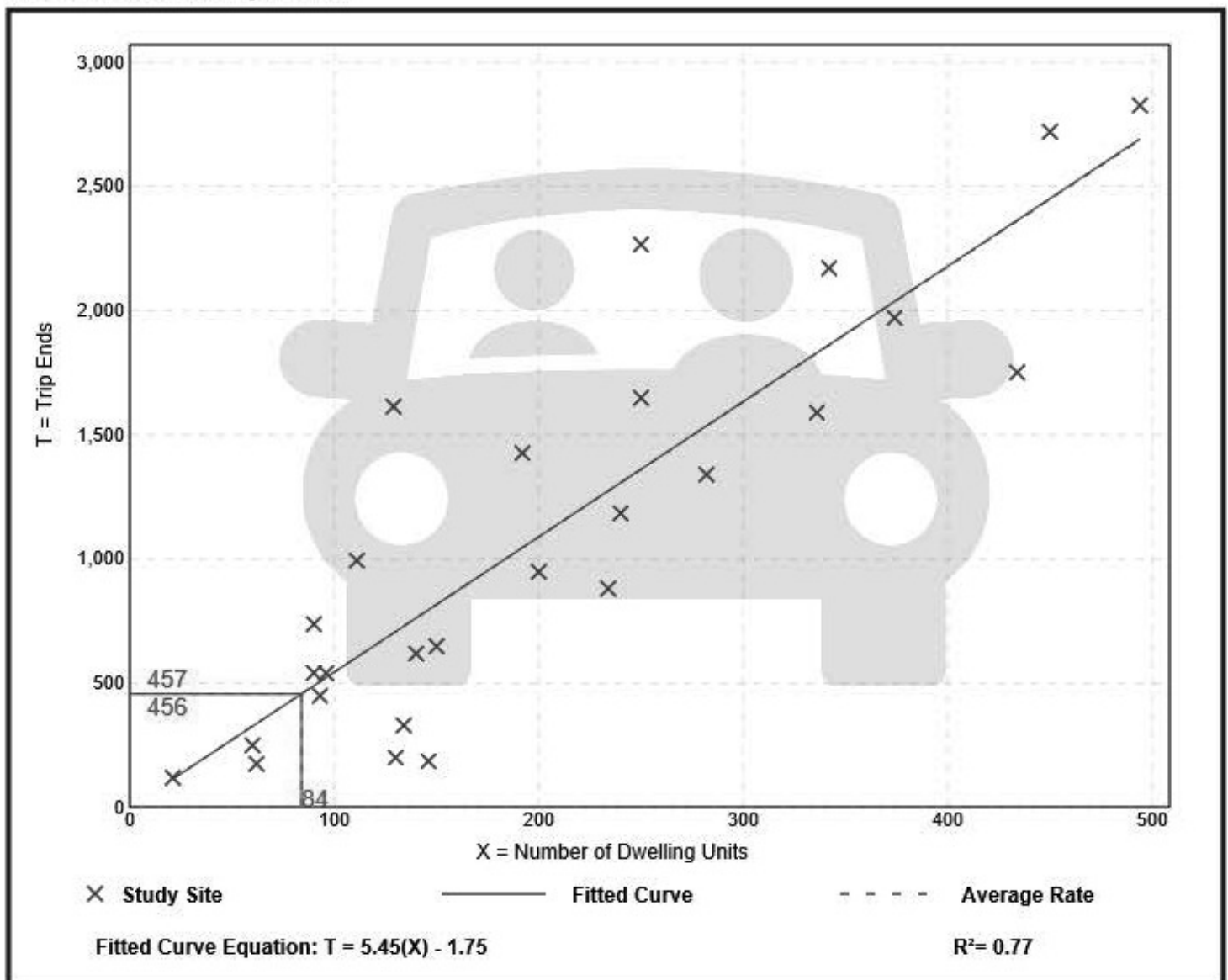
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

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)

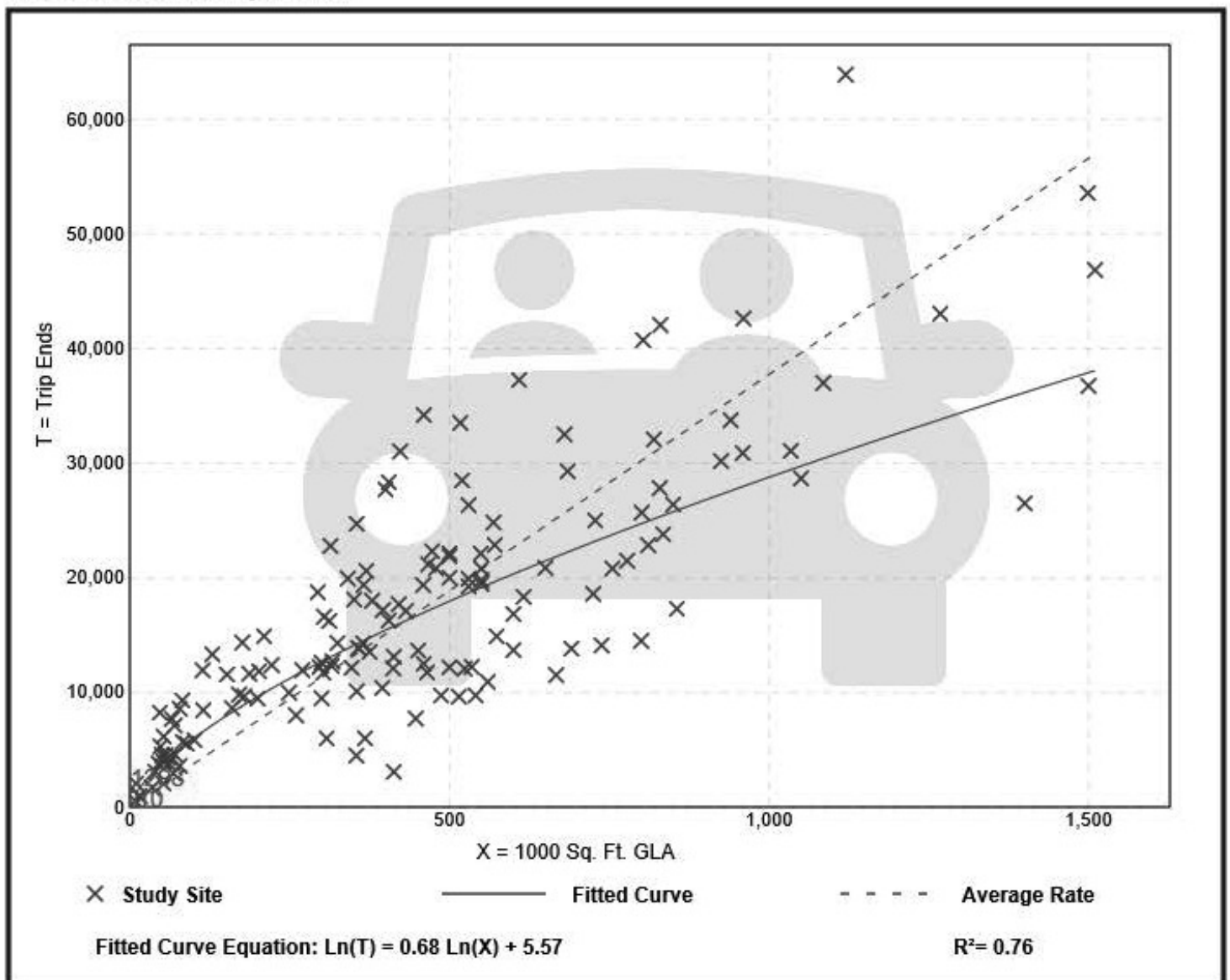
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday

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



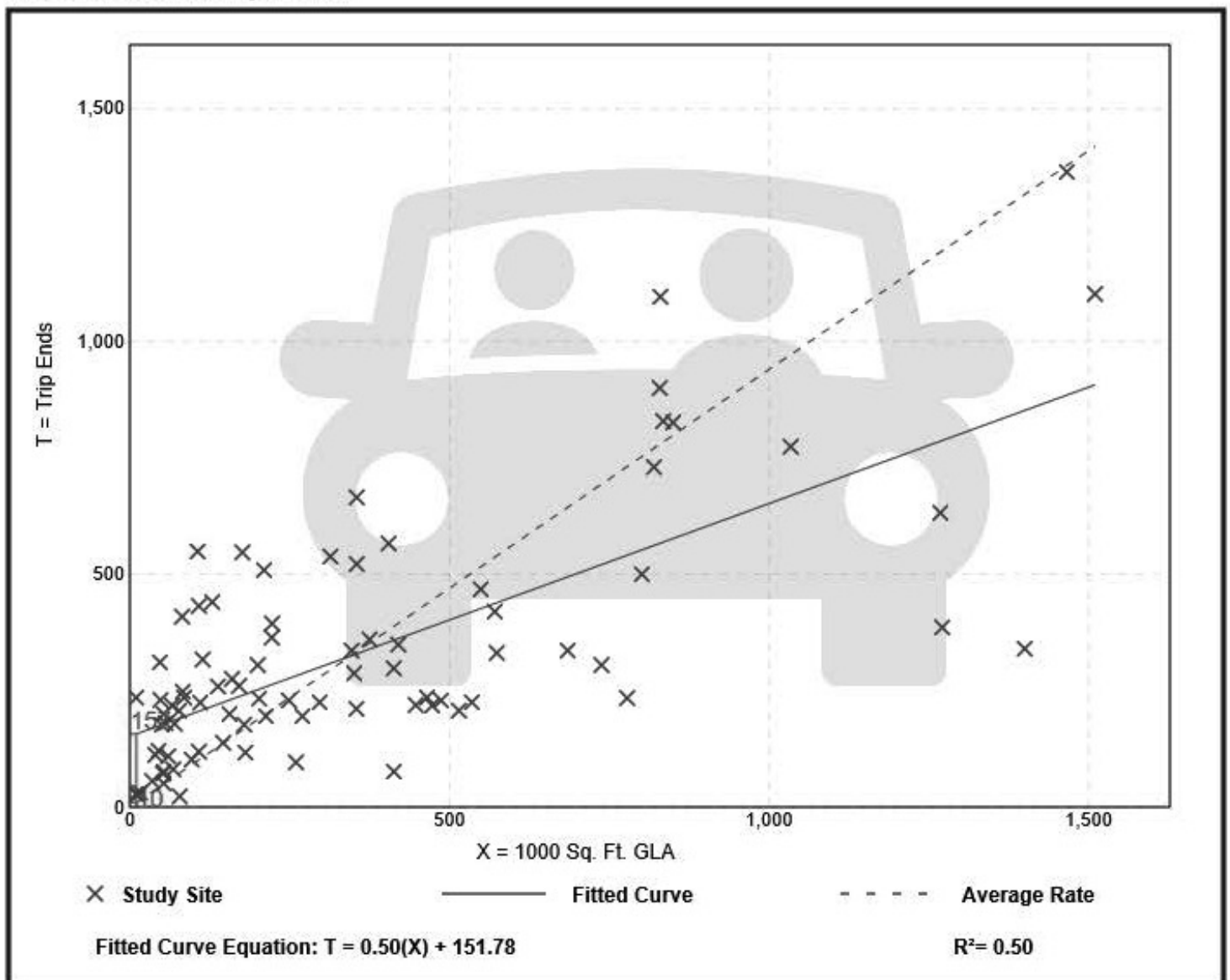
Shopping Center (820)

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



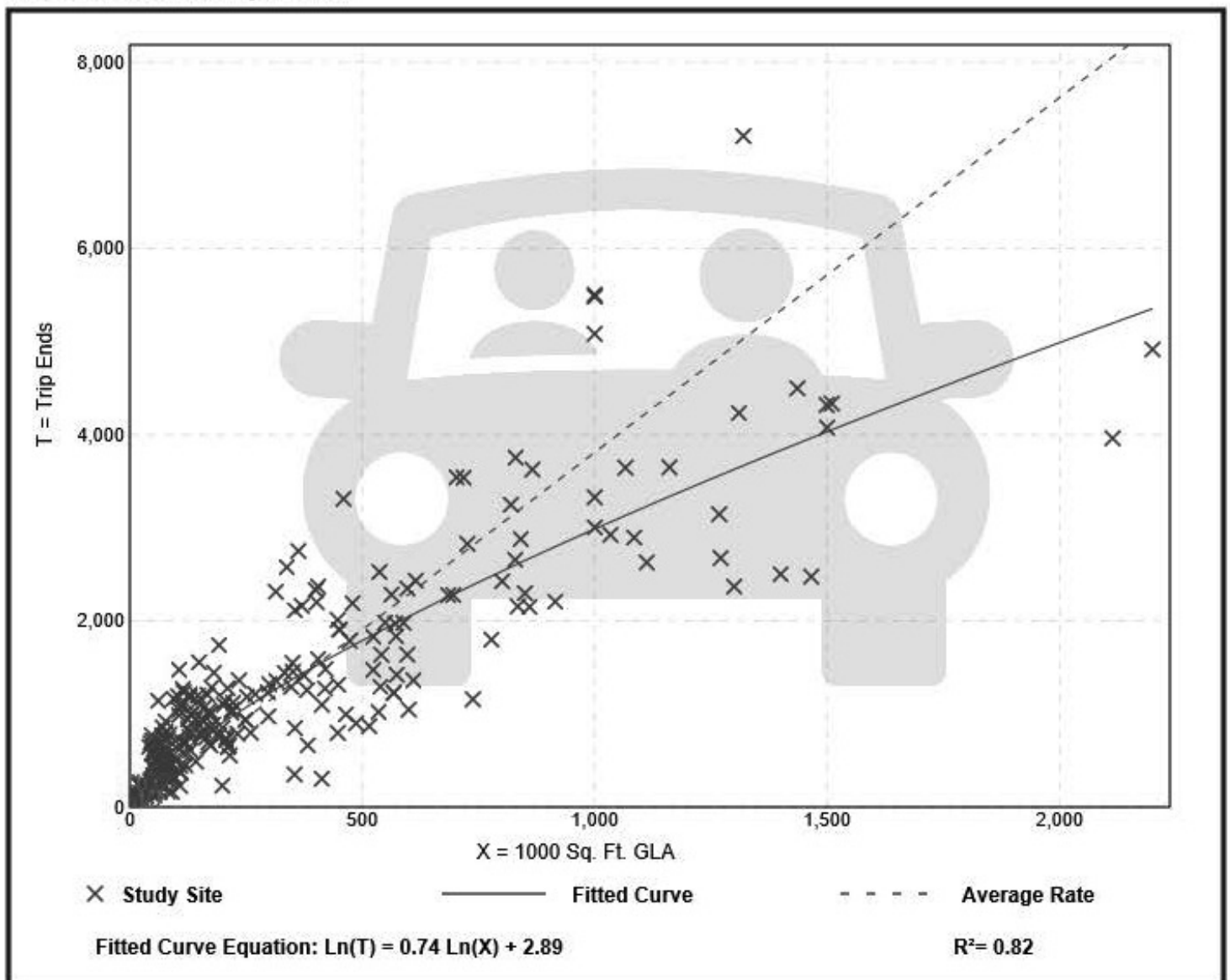
Shopping Center (820)

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

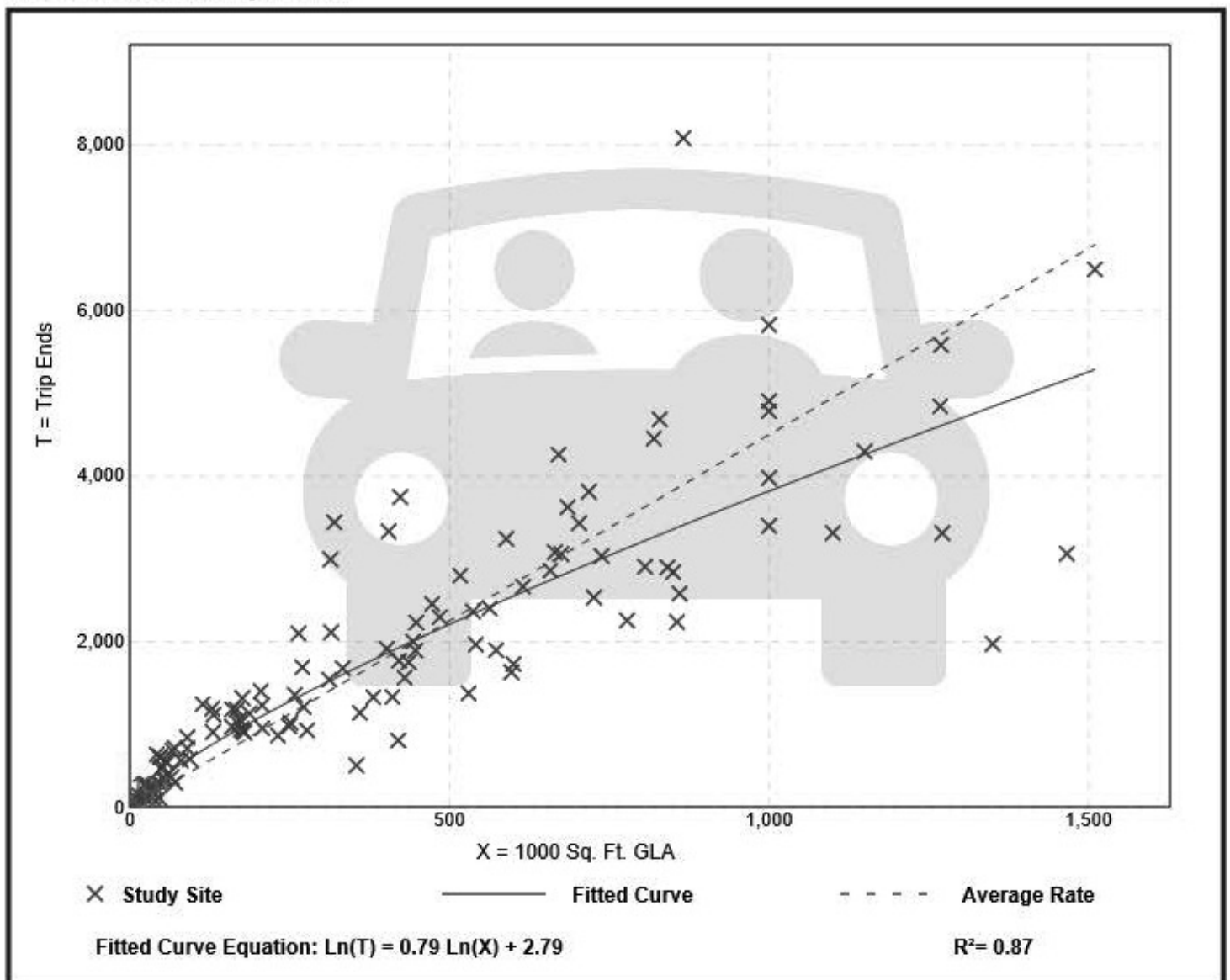
Avg. 1000 Sq. Ft. GLA: 416

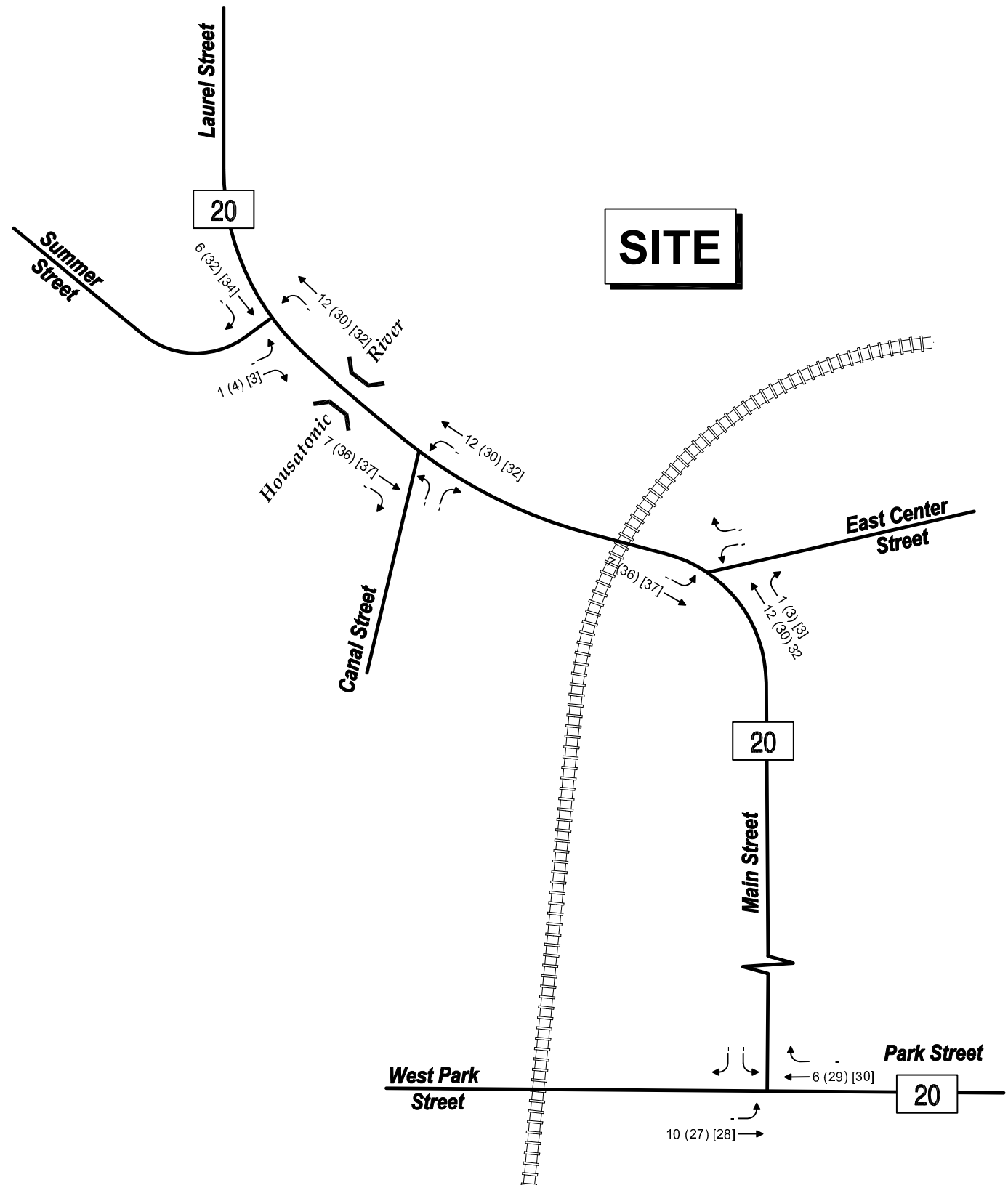
Directional Distribution: 52% entering, 48% exiting

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



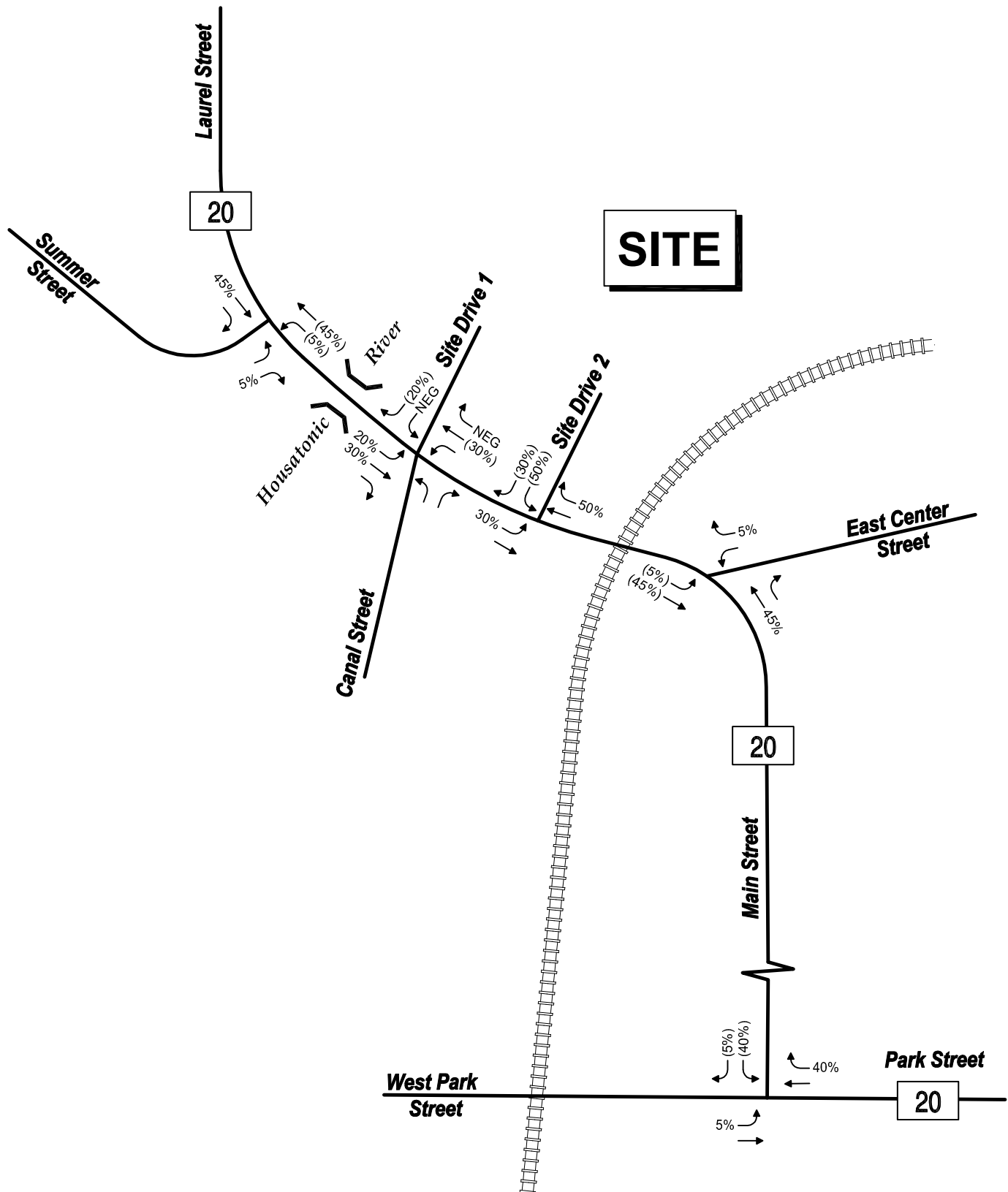


Legend:
 Weekday Morning Trips
 (Weekday Evening Trips)
 [Saturday Midday Trips]



Eagle Mill Redevelopment
 88 West Park Street Background Project
 Trip Distribution
 Lee, Massachusetts

Figure



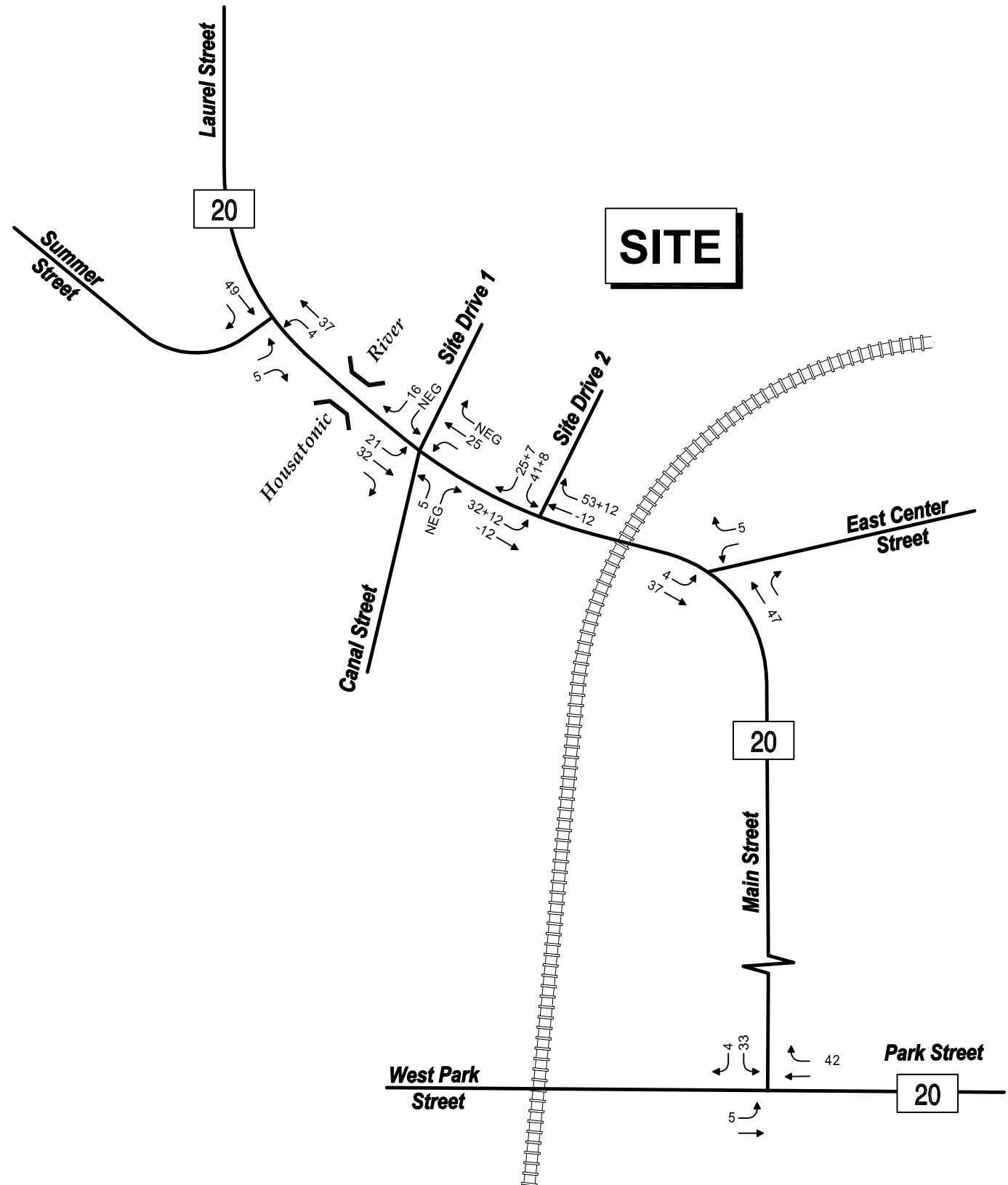
Legend:
 Entering Trips by %
 (Exiting Trips by %)



Eagle Mill Redevelopment
 Trip Distribution

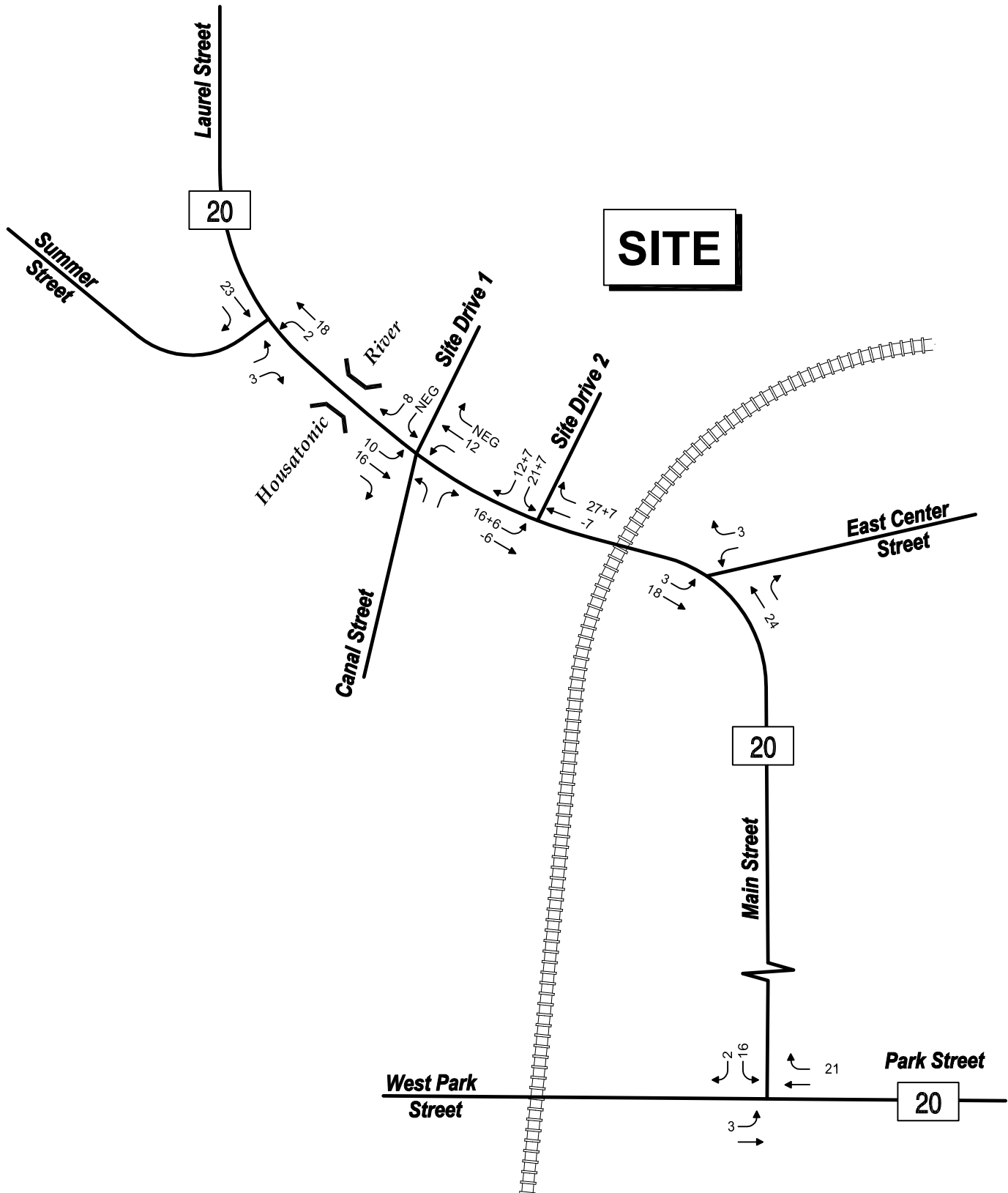
Lee, Massachusetts

Figure



Eagle Mill Redevelopment
 Site Generated Traffic
 AM
 Lee, Massachusetts

Figure



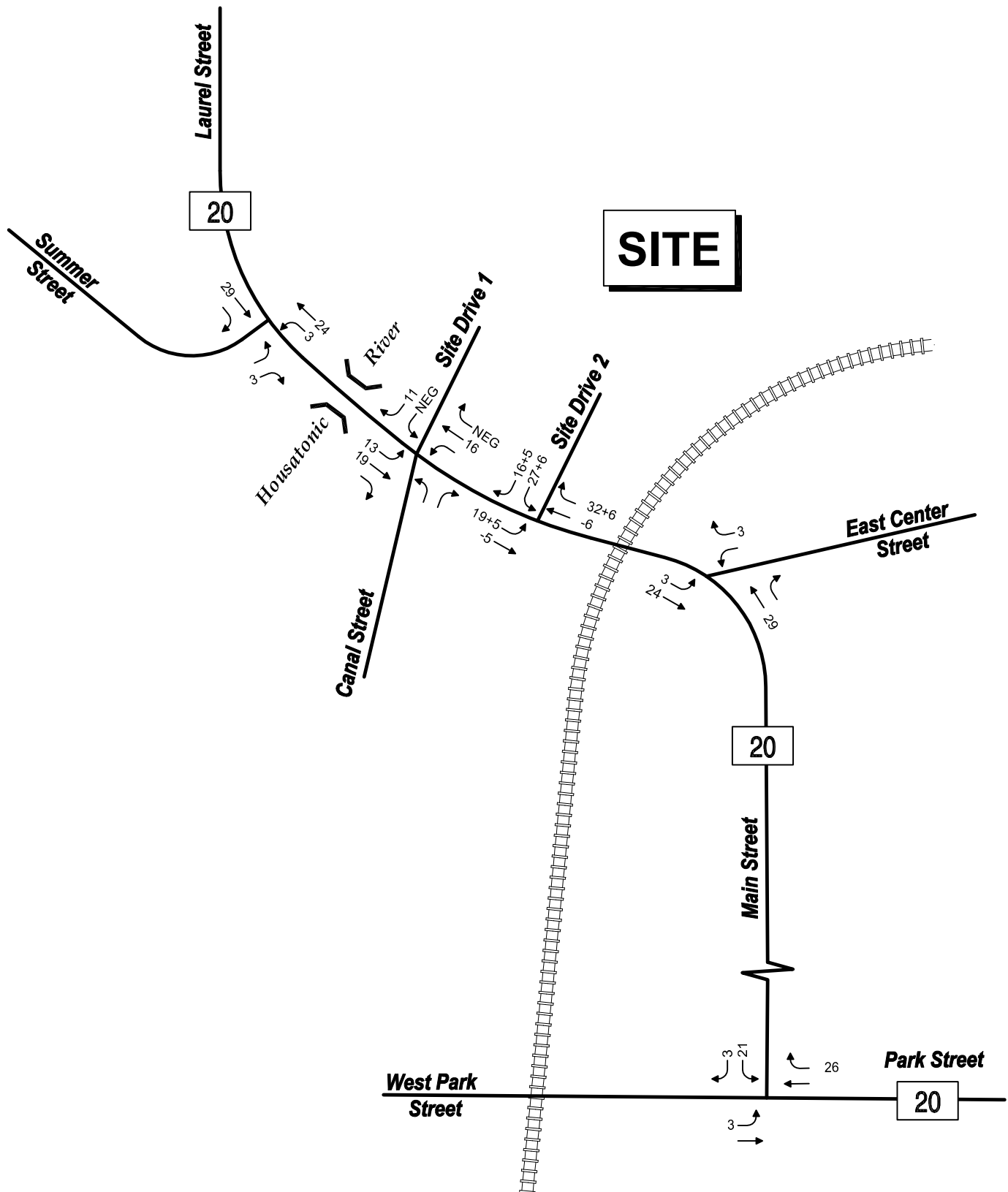
Legend

XX → Traffic Volume



Eagle Mill Redevelopment
Site Generated Traffic
PM
Lee, Massachusetts

Figure



Eagle Mill Redevelopment
 Site Generated Traffic
 SAT
 Lee, Massachusetts

Figure

Multifamily Housing (Low-Rise) (220)

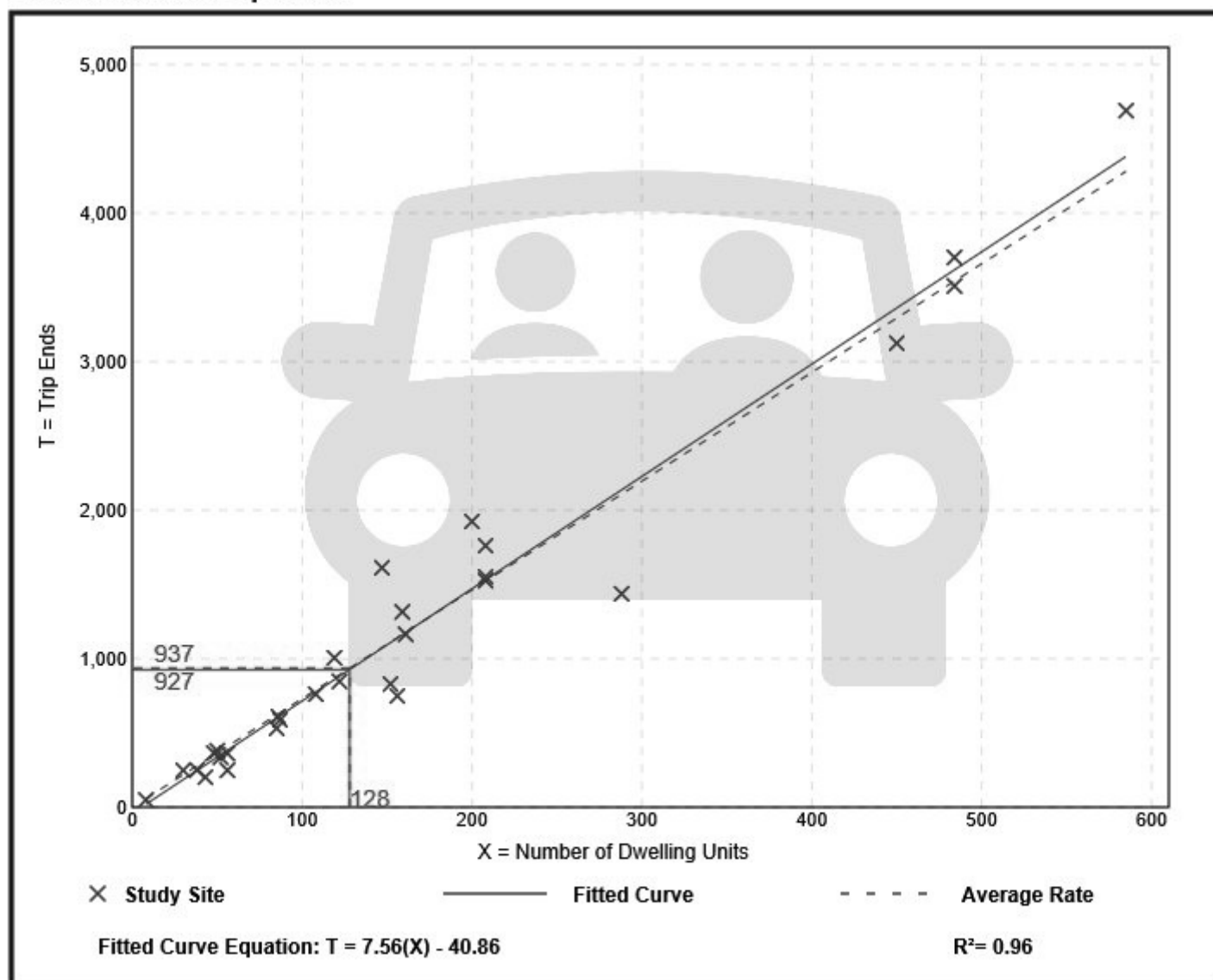
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 29
Avg. Num. of Dwelling Units: 168
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
7.32	4.45 - 10.97	1.31

Data Plot and Equation



Multifamily Housing (Low-Rise) (220)

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: 42

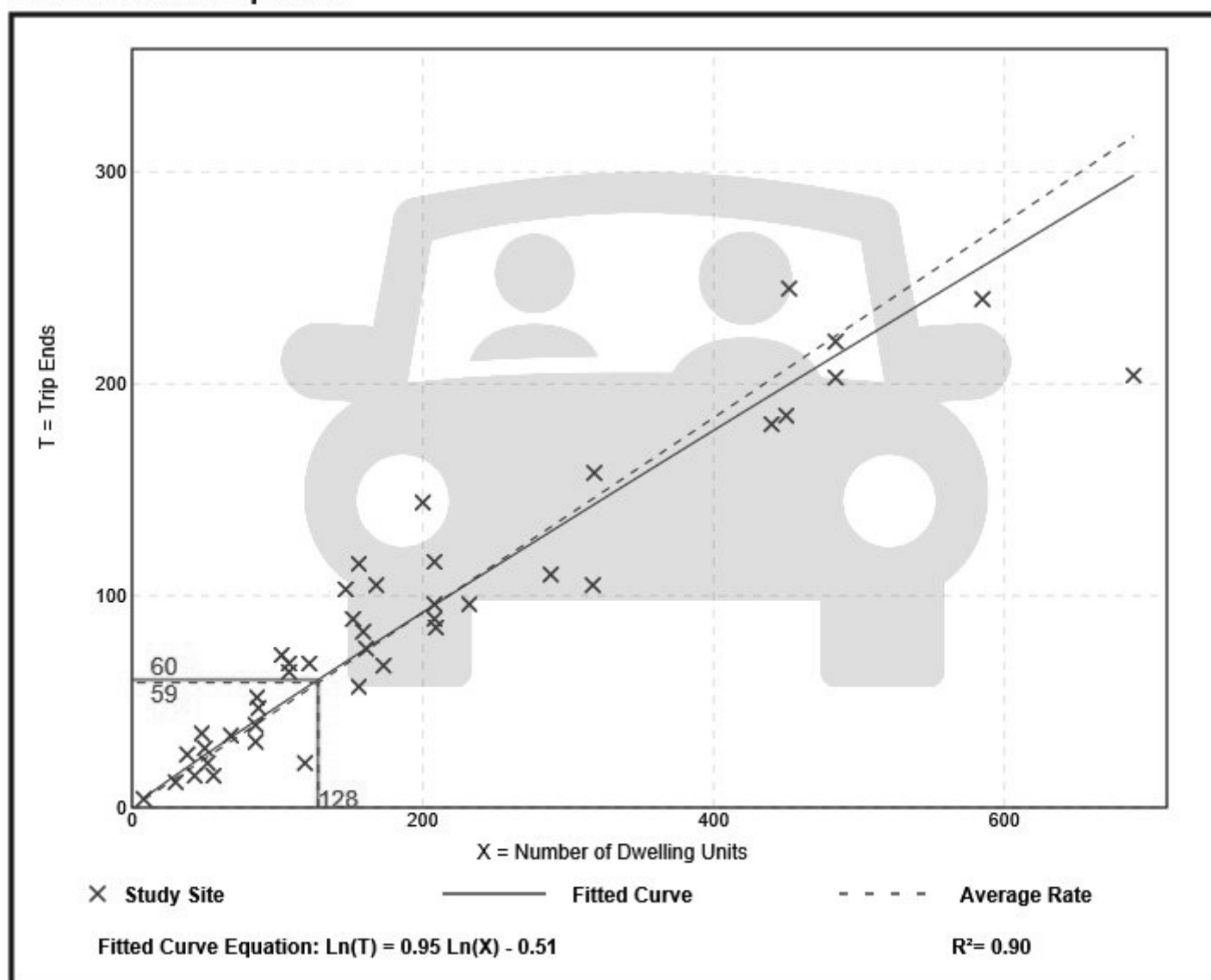
Avg. Num. of Dwelling Units: 199

Directional Distribution: 23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.46	0.18 - 0.74	0.12

Data Plot and Equation



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:	50
Num. of Dwelling Units:	187
Directional Distribution:	63% entering, 37% exiting

Average Rate	Range of Rates	Standard Deviation
0.56	0.18 - 1.25	0.16

Figure 1 is a scatter plot showing the relationship between the Number of Dwelling Units (X) and Trip Ends (T). The X-axis represents the Number of Dwelling Units, ranging from 0 to 600. The Y-axis represents Trip Ends (T), ranging from 0 to 500. The plot includes a solid line for the Fitted Curve, a dashed line for the Average Rate, and data points marked with 'X' for Study Sites. The Fitted Curve Equation is $\ln(T) = 0.89 \ln(X) - 0.02$, and the R^2 value is 0.86. A large car icon is overlaid on the plot.

Multifamily Housing (Low-Rise) (220)

Vehicle Trip Ends vs: Dwelling Units

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 5

Avg. Num. of Dwelling Units: 89

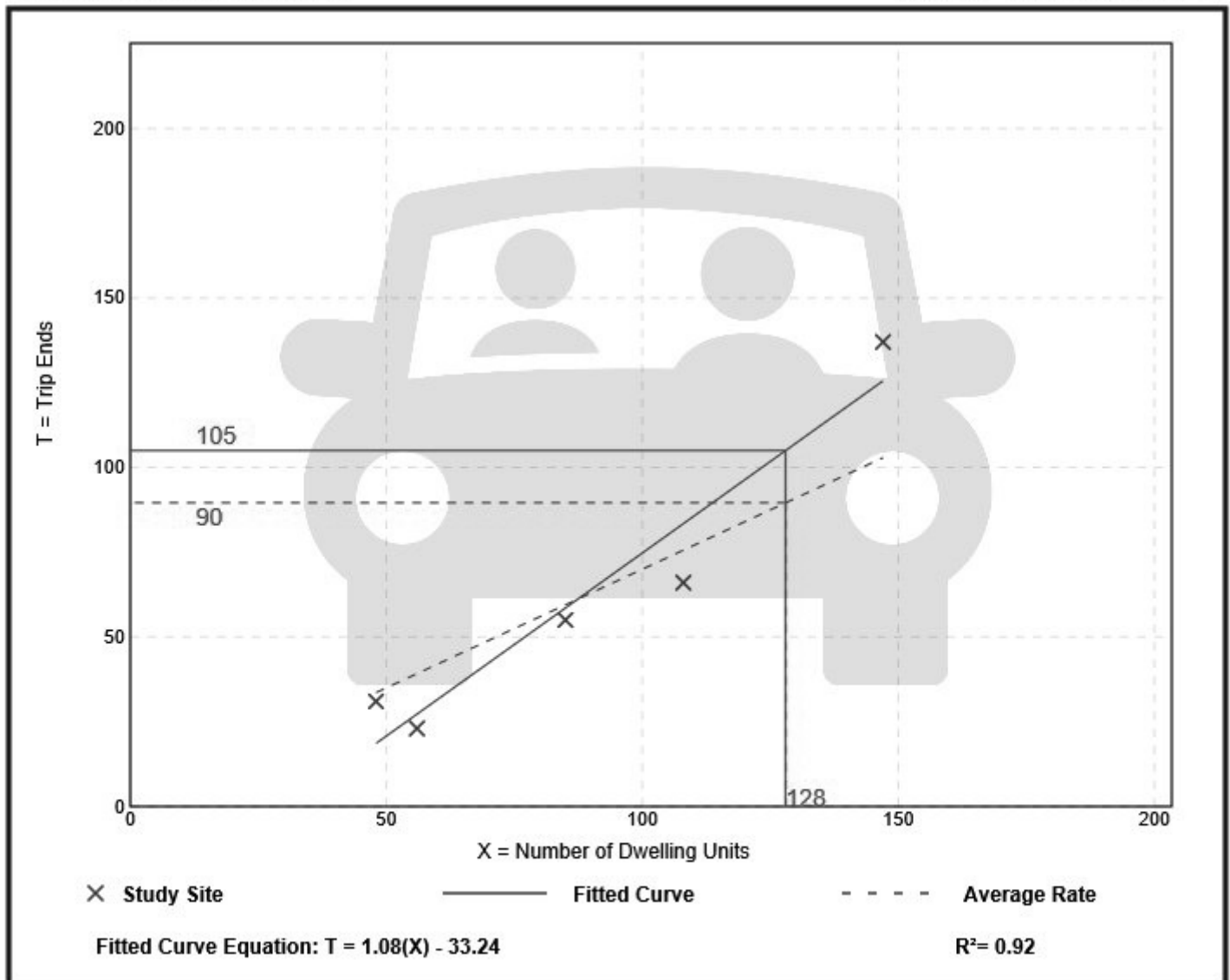
Directional Distribution: 54% entering, 46% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.41 - 0.93	0.20

Data Plot and Equation

Caution – Small Sample Size



General Office Building (710)

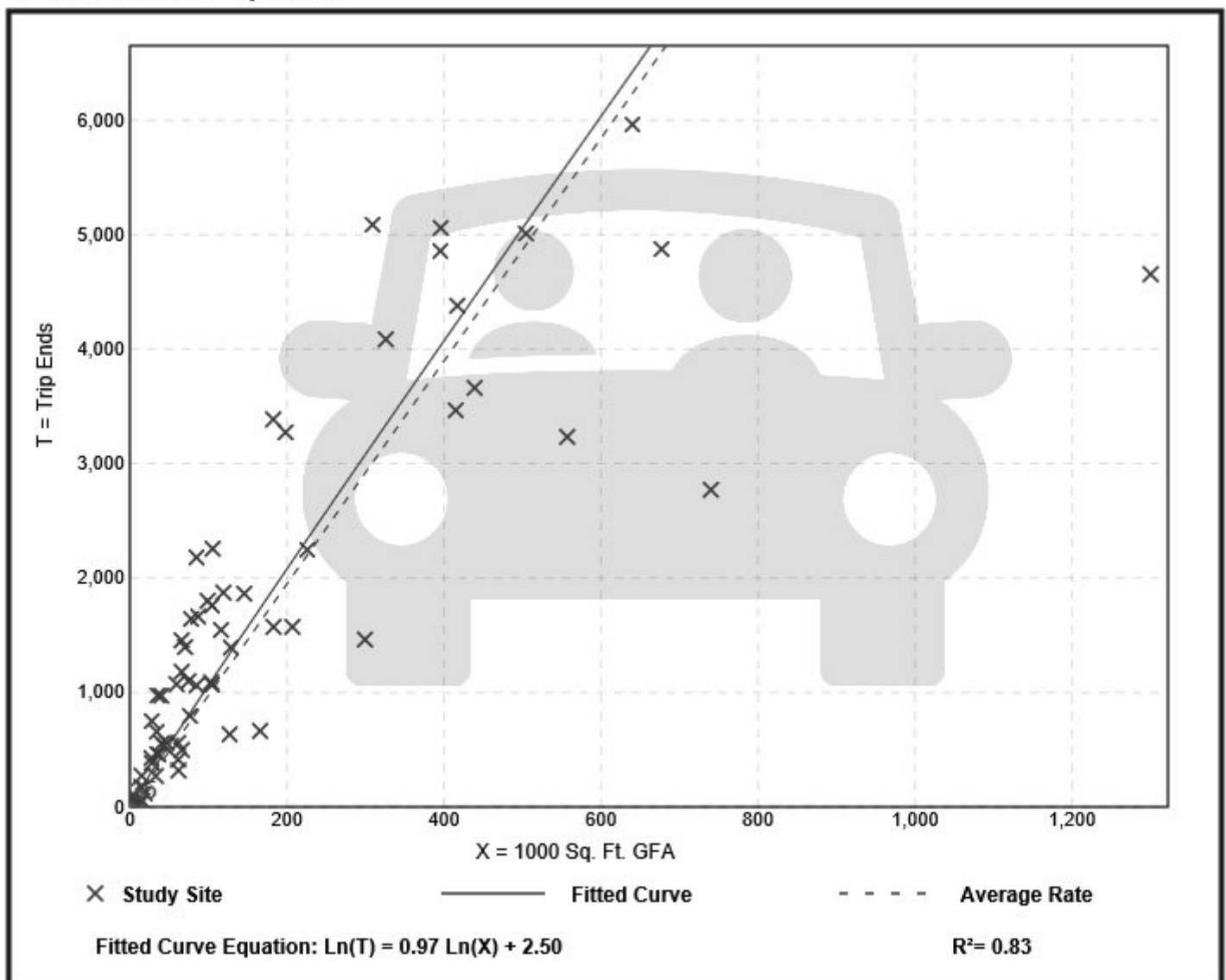
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 66
Avg. 1000 Sq. Ft. GFA: 171
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.74	2.71 - 27.56	5.15

Data Plot and Equation



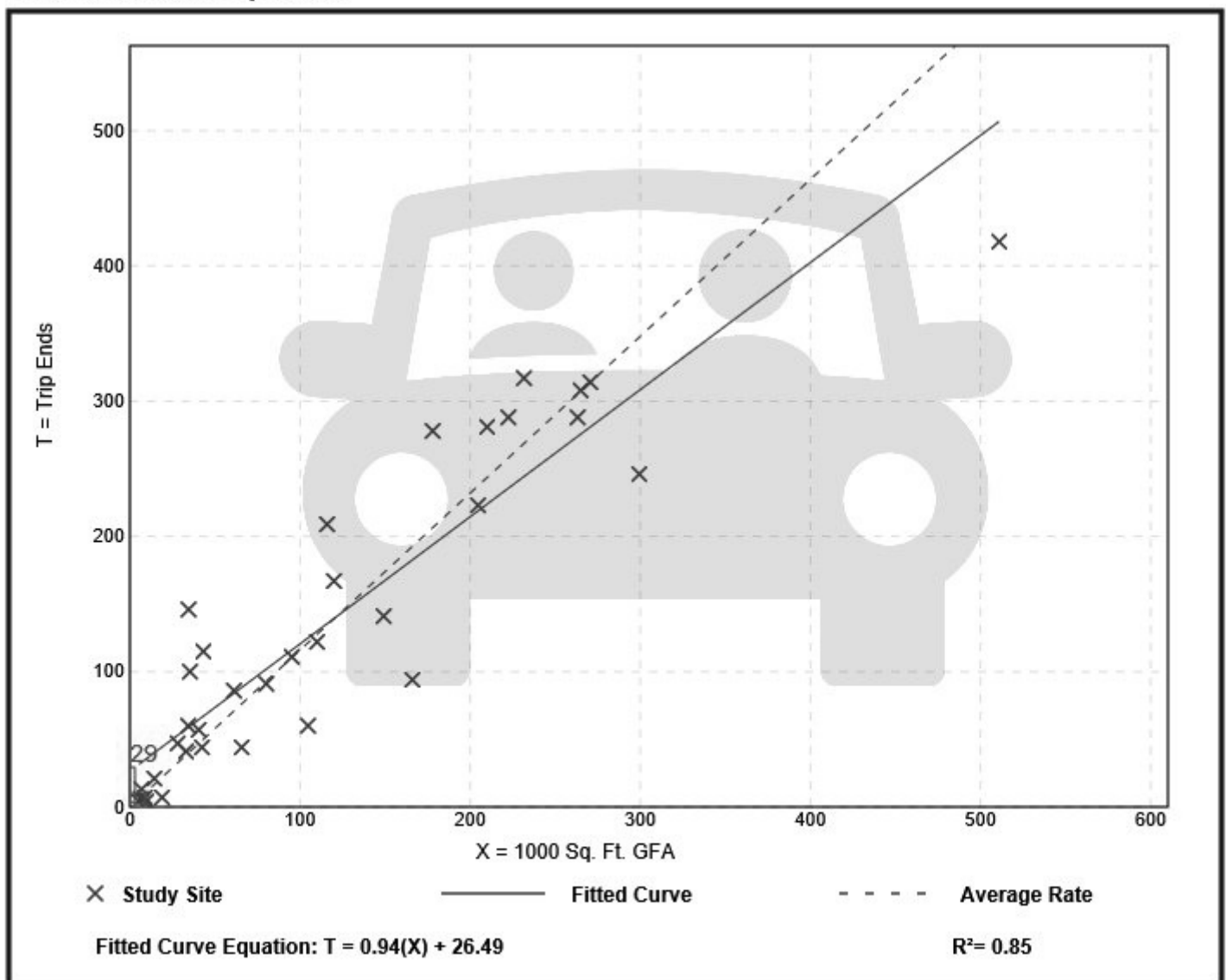
General Office Building (710)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 a.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 35
 Avg. 1000 Sq. Ft. GFA: 117
 Directional Distribution: 86% entering, 14% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.16	0.37 - 4.23	0.47

Data Plot and Equation



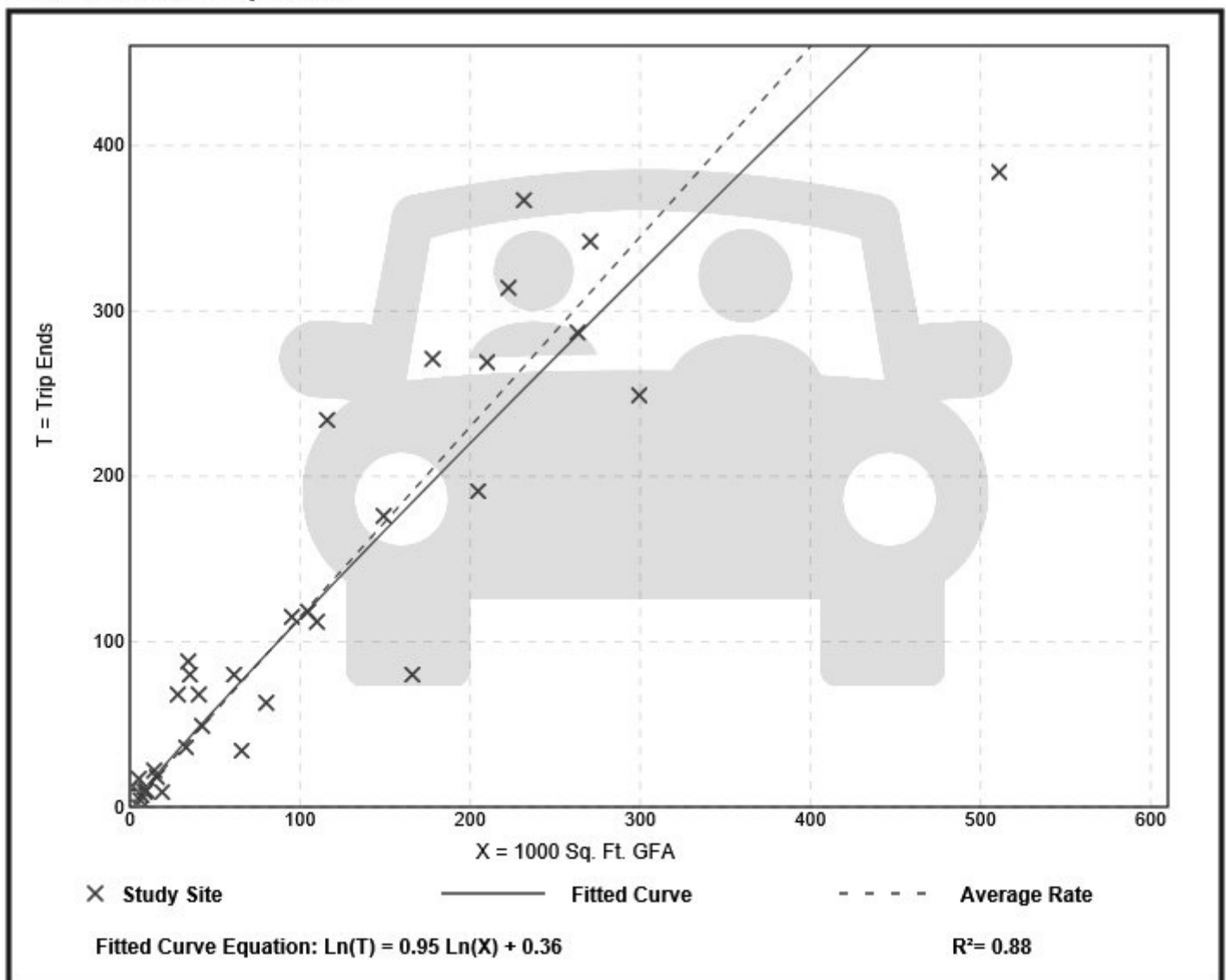
General Office Building (710)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.
 Setting/Location: General Urban/Suburban
 Number of Studies: 32
 Avg. 1000 Sq. Ft. GFA: 114
 Directional Distribution: 16% entering, 84% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.15	0.47 - 3.23	0.42

Data Plot and Equation



General Office Building (710)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Saturday, Peak Hour of Generator

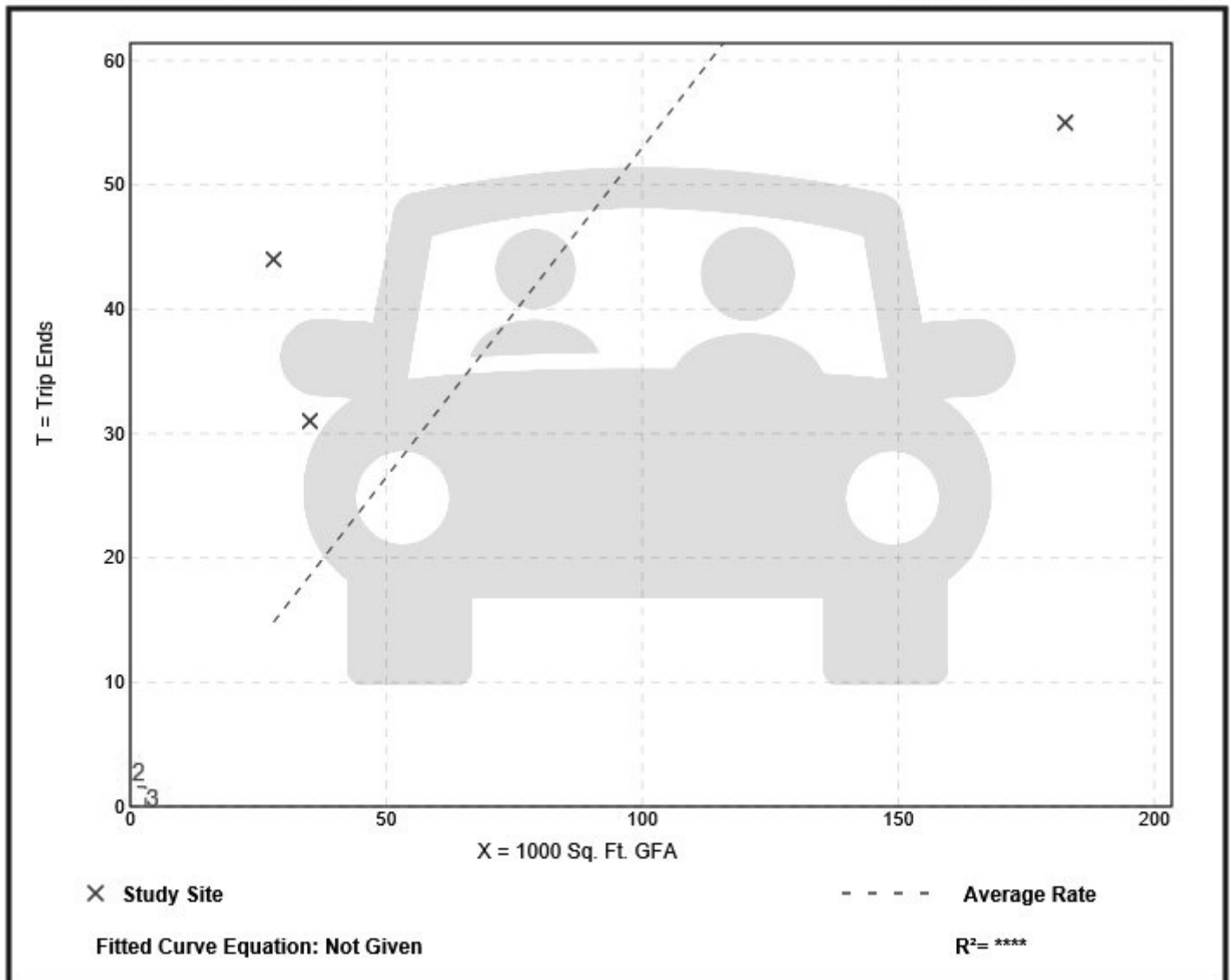
Setting/Location: General Urban/Suburban
Number of Studies: 3
Avg. 1000 Sq. Ft. GFA: 82
Directional Distribution: 54% entering, 46% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.53	0.30 - 1.57	0.52

Data Plot and Equation

Caution – Small Sample Size



Shopping Center (820)

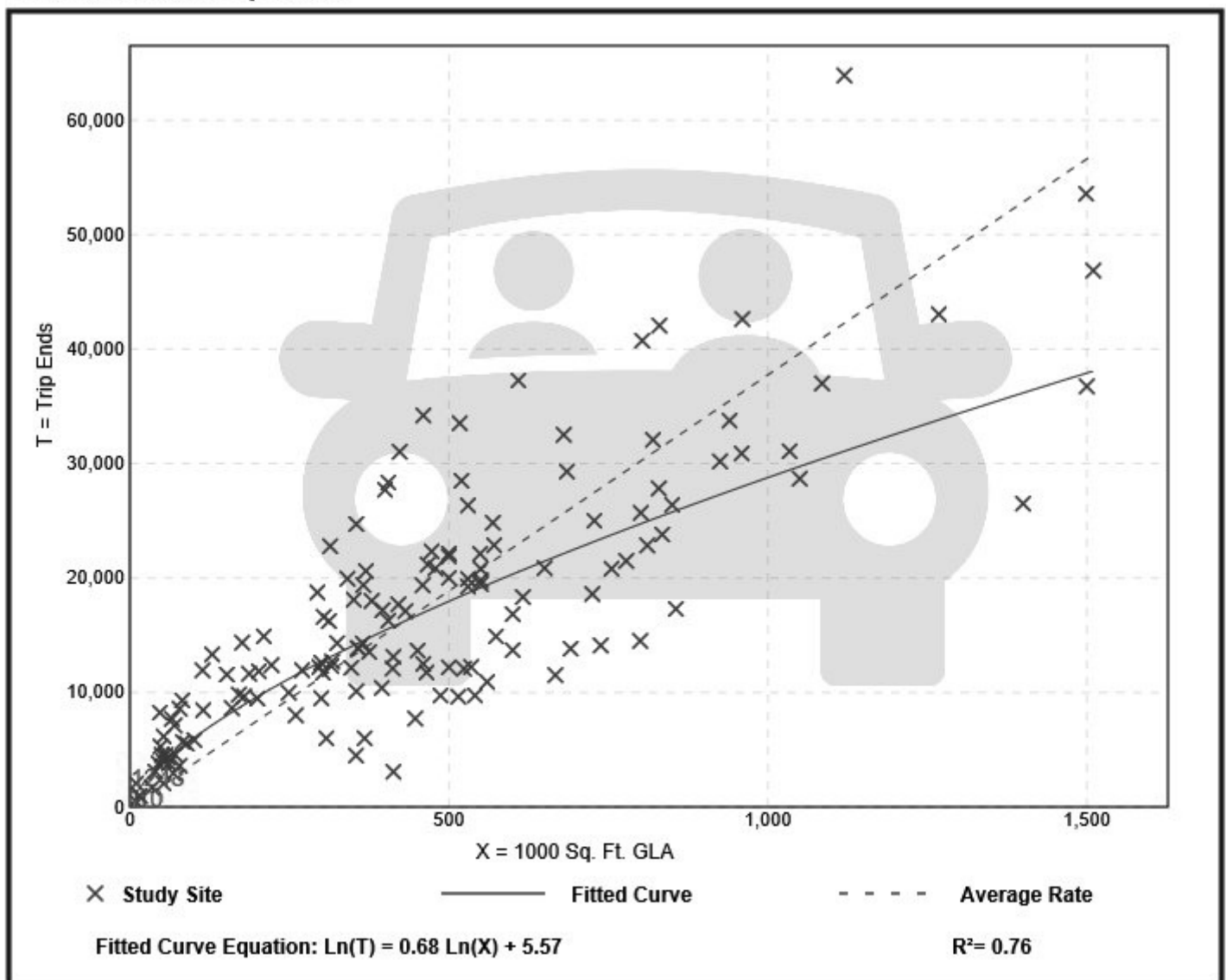
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday

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



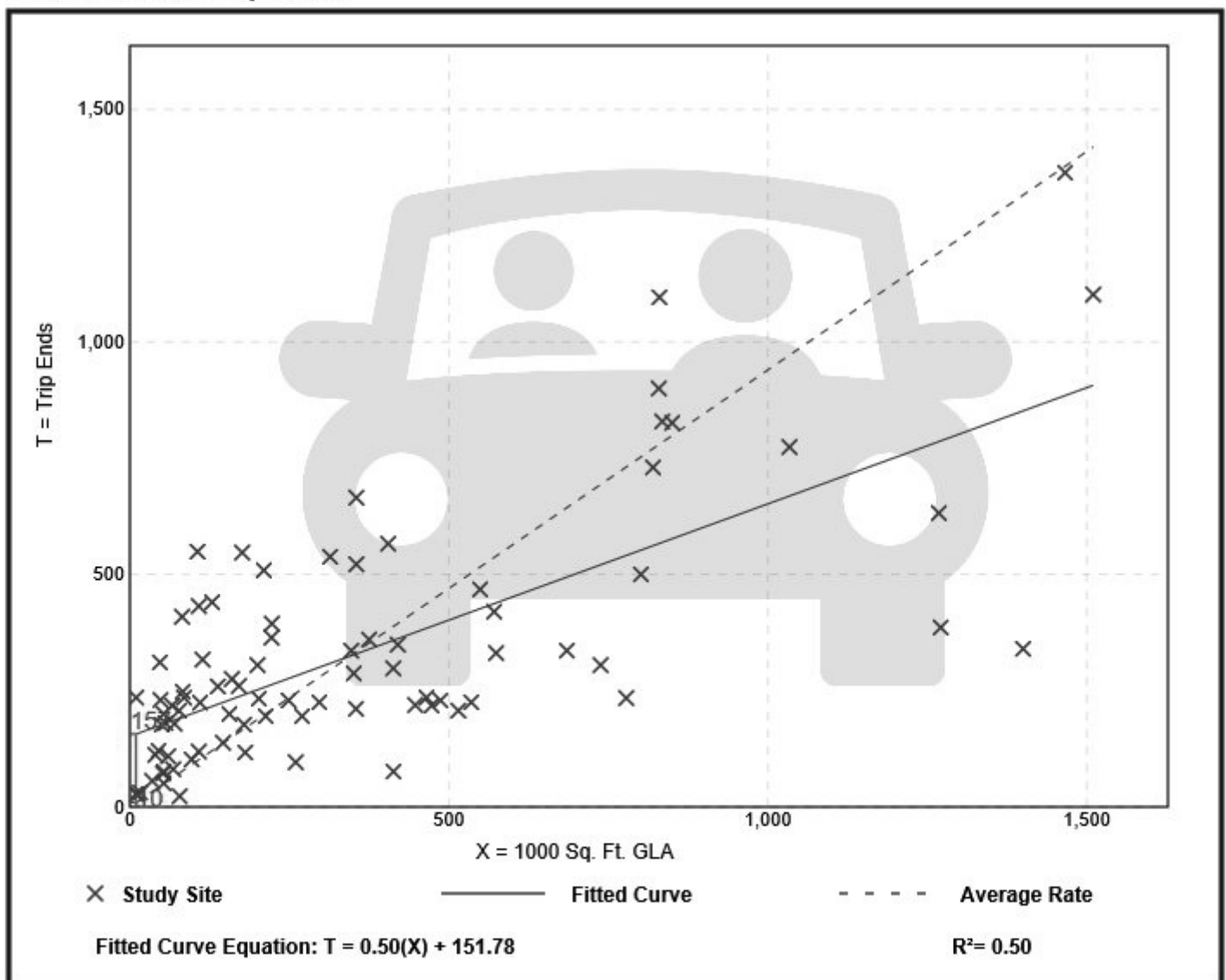
Shopping Center (820)

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



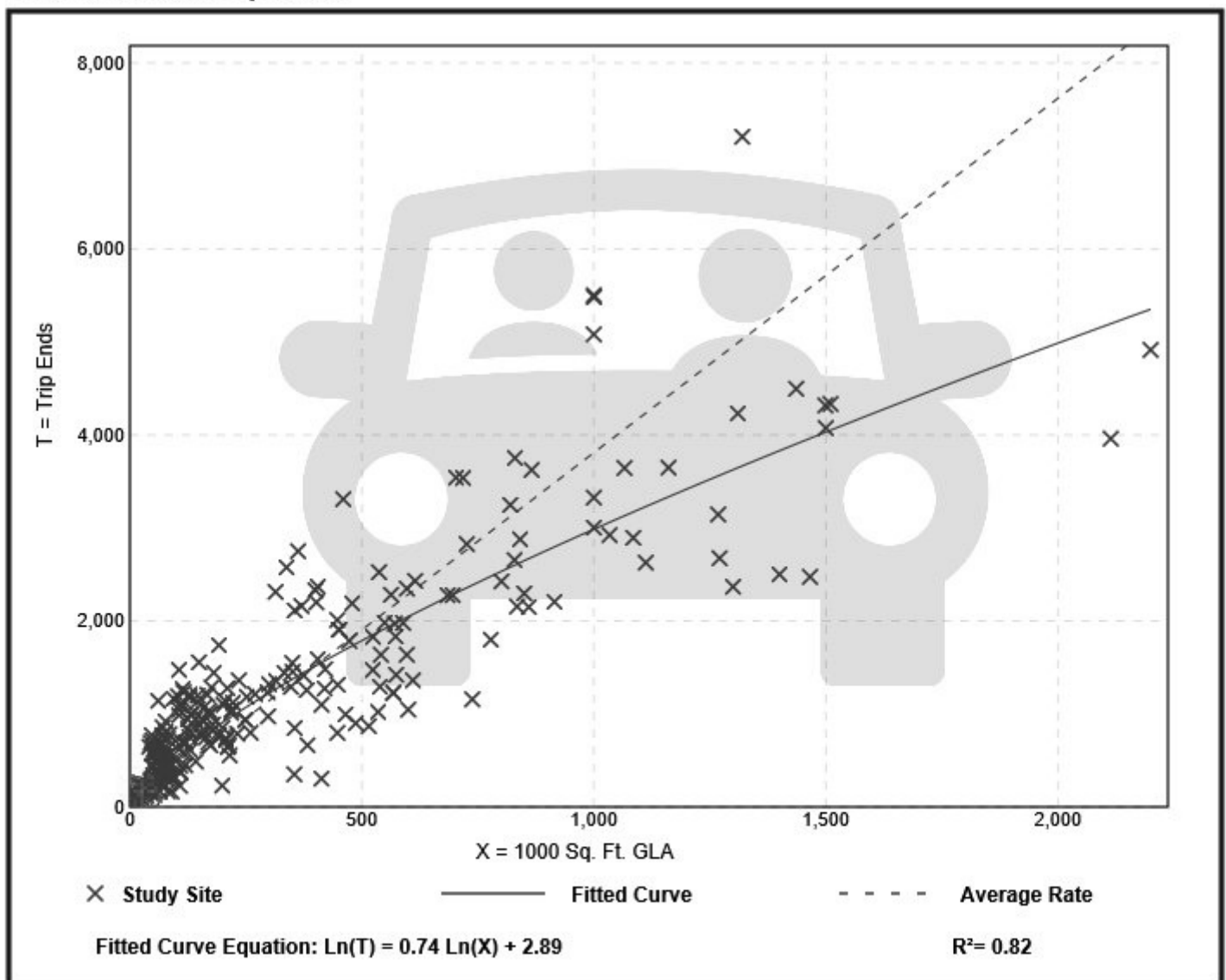
Shopping Center (820)

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)

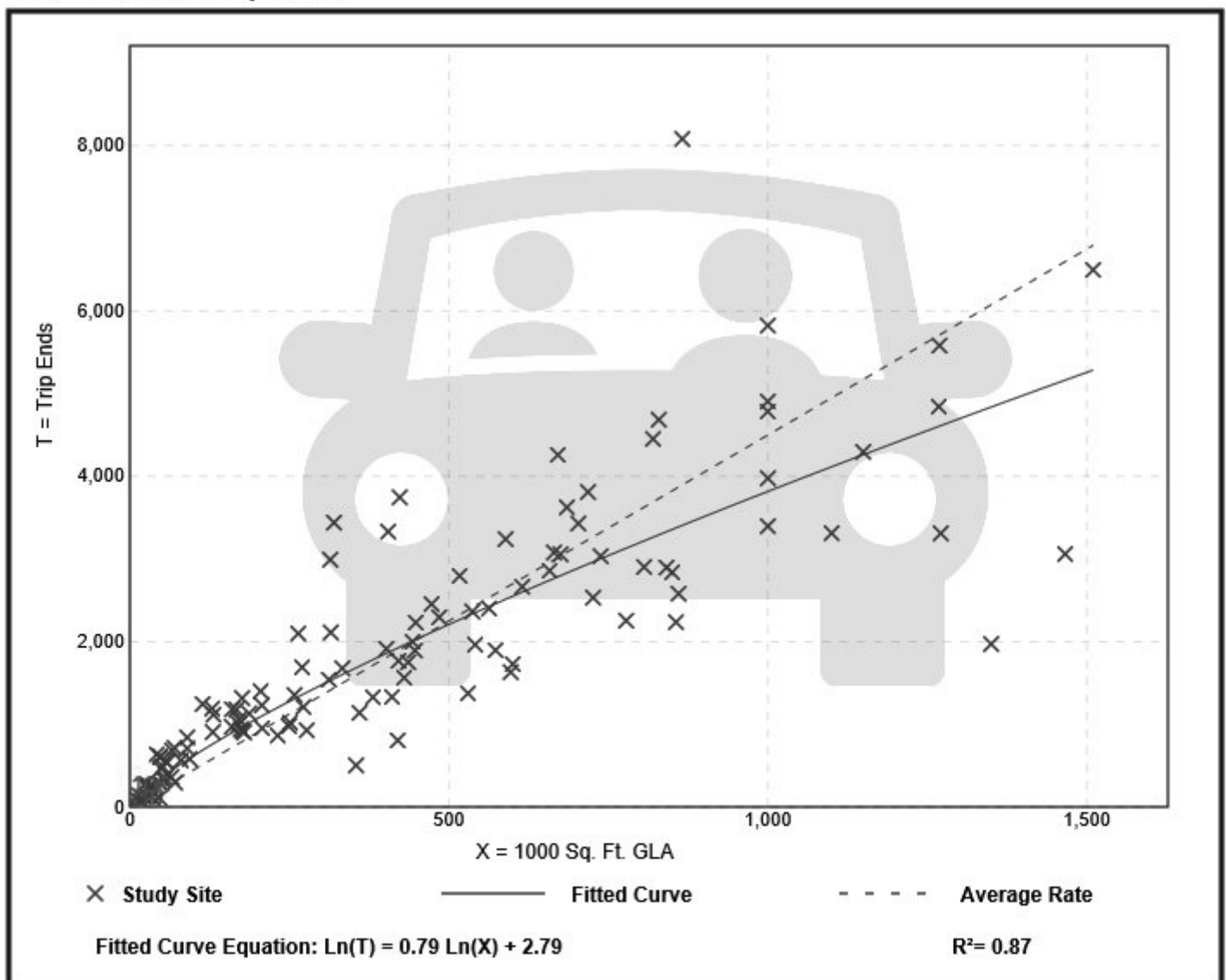
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Saturday, Peak Hour of Generator

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



TRIP GENERATION INPUTS

Land Use	Size	Units
Residential	128	units
Office	3	ksf
Specialty Retail	9.9	ksf

Combined Total Development

See "Existing
Use Hand Calc"
Sept 2020

TRIP GENERATION SUMMARY

LUC SIZE	Residential ¹			Office ²			Retail ³			Total Gross Trips	Total Existing Trips	Total New Trips	Total Pass-by Trips	Total Internal Capture	Internal Capture Percentage
	220 128	Internal Capture ³	Net New	710 3	Internal Capture ³	Net New	820 9.9	Internal Capture ³	Pass-by ⁶	Net New					
Weekday Daily									25%						
Enter	463	69	394	18	3	15	624	60	140	424	1,105	55	778	140	132
Exit	463	56	407	18	4	14	624	72	140	412	1,105	55	778	140	132
Total	926	125	801	36	7	29	1,248	132	280	836	2,210	110	1,556	280	264
															12%
Weekday Morning Peak Hour									25%						
Enter	14	-	14	25	2	23	97	1	24	72	136	3	106	24	3
Exit	46	1	45	4	1	3	60	1	15	44	110	10	82	15	3
Total	60	1	59	29	3	26	157	2	39	116	246	13	188	39	6
															2%
Weekday Evening Peak Hour									34%						
Enter	46	13	33	1	1	-	47	6	13	28	94	8	53	13	20
Exit	27	6	21	3	1	2	51	13	14	24	81	6	41	14	20
Total	73	19	54	4	2	2	98	19	27	52	175	14	94	27	40
															23%
Saturday Midday Peak Hour									26%						
Enter	57	12	45	1	-	1	52	5	11	36	110	18	64	11	17
Exit	48	5	43	1	-	1	48	12	11	25	97	15	54	11	17
Total	105	17	88	2	-	2	100	17	22	61	207	33	118	22	34
															16%

1 Trip generation estimate based on ITE LUC 220 (Low-Rise Residential), using regression equation

2 Trip generation estimate based on ITE LUC 710 (General Office Building), using regression equation

3 Trip generation estimate based on ITE LUC 820 (Retail), using regression equation

5 Internal capture rates for weekday morning and weekday evening based on NCHRP Report 684 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.



Attachment E – Capacity Analyses

HCM Unsignalized Intersection Capacity Analysis

1: West Center Street/Laurel Street & Summer Street

2020 Existing Conditions
Weekday Morning Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	40	40	30	375	415	40
Future Volume (Veh/h)	40	40	30	375	415	40
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	49	49	33	417	461	44
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	966	483	505			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	966	483	505			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	82	92	97			
cM capacity (veh/h)	273	584	1025			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	98	450	505			
Volume Left	49	33	0			
Volume Right	49	0	44			
cSH	372	1025	1700			
Volume to Capacity	0.26	0.03	0.30			
Queue Length 95th (ft)	26	2	0			
Control Delay (s)	18.1	1.0	0.0			
Lane LOS	C	A				
Approach Delay (s)	18.1	1.0	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay		2.1				
Intersection Capacity Utilization		55.8%		ICU Level of Service		B
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

2: Canal Street & West Center Street

2020 Existing Conditions
Weekday Morning Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↖	↗
Traffic Volume (veh/h)	450	5	5	400	5	5
Future Volume (Veh/h)	450	5	5	400	5	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.88	0.88	0.53	0.53
Hourly flow rate (vph)	563	6	6	455	9	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			569		1033	566
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			569		1033	566
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			99		97	98
cM capacity (veh/h)			969		258	528
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	569	461	18			
Volume Left	0	6	9			
Volume Right	6	0	9			
cSH	1700	969	347			
Volume to Capacity	0.33	0.01	0.05			
Queue Length 95th (ft)	0	0	4			
Control Delay (s)	0.0	0.2	16.0			
Lane LOS		A	C			
Approach Delay (s)	0.0	0.2	16.0			
Approach LOS			C			
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			35.0%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Main Street/West Center Street & East Center Street

2020 Existing Conditions
Weekday Morning Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	60	30	375	30	25	430
Future Volume (Veh/h)	60	30	375	30	25	430
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.88	0.88	0.79	0.79
Hourly flow rate (vph)	71	36	426	34	32	544
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	1051	443			460	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1051	443			460	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	71	94			97	
cM capacity (veh/h)	242	611			1096	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	107	460	576			
Volume Left	71	0	32			
Volume Right	36	34	0			
cSH	303	1700	1096			
Volume to Capacity	0.35	0.27	0.03			
Queue Length 95th (ft)	38	0	2			
Control Delay (s)	23.2	0.0	0.8			
Lane LOS	C		A			
Approach Delay (s)	23.2	0.0	0.8			
Approach LOS	C					
Intersection Summary						
Average Delay		2.6				
Intersection Capacity Utilization		54.9%	ICU Level of Service	A		
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

4: West Park Street/Park Street & Main Street

2020 Existing Conditions
Weekday Morning Peak Hour

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	35	70	75	365	430	90
Future Volume (Veh/h)	35	70	75	365	430	90
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.83	0.83	0.96	0.96	0.94	0.94
Hourly flow rate (vph)	42	84	78	380	457	96
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	1191	962	1010	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1191	962	1010	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 %	19	53	53	64	71	
cM capacity (veh/h)	52	179	164	1059	1578	
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	42	84	458	553		
Volume Left	42	0	0	457		
Volume Right	0	0	380	96		
cSH	52	179	965	1578		
Volume to Capacity	0.81	0.47	0.47	0.29		
Queue Length 95th (ft)	85	56	65	30		
Control Delay (s)	198.6	41.7	16.2	7.2		
Lane LOS	F	E	C	A		
Approach Delay (s)	94.0		16.2	7.2		
Approach LOS	F		C			
Intersection Summary						
Average Delay			20.5			
Intersection Capacity Utilization			44.6%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: West Center Street/Laurel Street & Summer Street

202 Existing Conditions
Weekday Evening Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	55	50	515	550	65
Future Volume (Veh/h)	70	55	50	515	550	65
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.75	0.75	0.88	0.88	0.90	0.90
Hourly flow rate (vph)	93	73	57	585	611	72
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	1346	647	683			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1346	647	683			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	41	85	94			
cM capacity (veh/h)	157	473	910			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	166	642	683			
Volume Left	93	57	0			
Volume Right	73	0	72			
cSH	222	910	1700			
Volume to Capacity	0.75	0.06	0.40			
Queue Length 95th (ft)	128	5	0			
Control Delay (s)	57.3	1.6	0.0			
Lane LOS	F	A				
Approach Delay (s)	57.3	1.6	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay		7.1				
Intersection Capacity Utilization		80.0%		ICU Level of Service		D
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

2: Canal Street & West Center Street

202 Existing Conditions
Weekday Evening Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	600	5	20	560	5	20
Future Volume (Veh/h)	600	5	20	560	5	20
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.89	0.89	0.86	0.86
Hourly flow rate (vph)	667	6	22	629	6	23
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			673		1343	670
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			673		1343	670
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		96	95
cM capacity (veh/h)			918		165	460
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	673	651	29			
Volume Left	0	22	6			
Volume Right	6	0	23			
cSH	1700	918	336			
Volume to Capacity	0.40	0.02	0.09			
Queue Length 95th (ft)	0	2	7			
Control Delay (s)	0.0	0.6	16.7			
Lane LOS		A	C			
Approach Delay (s)	0.0	0.6	16.7			
Approach LOS			C			
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			55.6%	ICU Level of Service	B	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Main Street/West Center Street & East Center Street

202 Existing Conditions
Weekday Evening Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	55	55	525	60	50	570
Future Volume (Veh/h)	55	55	525	60	50	570
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.81	0.81	0.88	0.88	0.93	0.93
Hourly flow rate (vph)	68	68	597	68	54	613
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	1352	631			665	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1352	631			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 %	56	86			94	
cM capacity (veh/h)	155	479			919	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	136	665	667			
Volume Left	68	0	54			
Volume Right	68	68	0			
cSH	234	1700	919			
Volume to Capacity	0.58	0.39	0.06			
Queue Length 95th (ft)	82	0	5			
Control Delay (s)	39.7	0.0	1.5			
Lane LOS	E		A			
Approach Delay (s)	39.7	0.0	1.5			
Approach LOS	E					
Intersection Summary						
Average Delay			4.4			
Intersection Capacity Utilization			80.5%	ICU Level of Service		D
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

4: West Park Street/Park Street & Main Street

202 Existing Conditions
Weekday Evening Peak Hour

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	110	145	125	525	625	120
Future Volume (Veh/h)	110	145	125	525	625	120
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.82	0.82	0.91	0.91	0.94	0.94
Hourly flow rate (vph)	134	177	137	577	665	128
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	1751	1394	1458	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1751	1394	1458	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	47	59	
cM capacity (veh/h)	0	83	76	1082	1610	
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	134	177	714	793		
Volume Left	134	0	0	665		
Volume Right	0	0	577	128		
cSH	0	83	331	1610		
Volume to Capacity	Err	2.13	2.16	0.41		
Queue Length 95th (ft)	Err	398	1323	52		
Control Delay (s)	Err	629.0	555.4	8.0		
Lane LOS	F	F	F	A		
Approach Delay (s)	Err		555.4	8.0		
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

1: West Center Street/Laurel Street & Summer Street

2020 Existing Conditions
Saturday Midday Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	45	55	535	505	40
Future Volume (Veh/h)	50	45	55	535	505	40
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.98	0.98	0.90	0.90
Hourly flow rate (vph)	57	52	56	546	561	44
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	1241	583	605			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1241	583	605			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	69	90	94			
cM capacity (veh/h)	183	514	973			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	109	602	605			
Volume Left	57	56	0			
Volume Right	52	0	44			
cSH	264	973	1700			
Volume to Capacity	0.41	0.06	0.36			
Queue Length 95th (ft)	48	5	0			
Control Delay (s)	27.9	1.5	0.0			
Lane LOS	D	A				
Approach Delay (s)	27.9	1.5	0.0			
Approach LOS	D					
Intersection Summary						
Average Delay		3.0				
Intersection Capacity Utilization		75.7%		ICU Level of Service		D
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

2: Canal Street & West Center Street

2020 Existing Conditions
Saturday Midday Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Volume (veh/h)	545	5	10	585	5	10
Future Volume (Veh/h)	545	5	10	585	5	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.97	0.97	0.75	0.75
Hourly flow rate (vph)	606	6	10	603	7	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			612		1232	609
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			612		1232	609
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		96	97
cM capacity (veh/h)			962		195	499
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	612	613	20			
Volume Left	0	10	7			
Volume Right	6	0	13			
cSH	1700	962	323			
Volume to Capacity	0.36	0.01	0.06			
Queue Length 95th (ft)	0	1	5			
Control Delay (s)	0.0	0.3	16.9			
Lane LOS		A	C			
Approach Delay (s)	0.0	0.3	16.9			
Approach LOS			C			
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			48.8%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Main Street/West Center Street & East Center Street

2020 Existing Conditions
Saturday Midday Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	70	60	535	55	25	530
Future Volume (Veh/h)	70	60	535	55	25	530
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.82	0.82	0.94	0.94	0.89	0.89
Hourly flow rate (vph)	85	73	569	59	28	596
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	1250	598			628	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1250	598			628	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	54	86			97	
cM capacity (veh/h)	186	504			964	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	158	628	624			
Volume Left	85	0	28			
Volume Right	73	59	0			
cSH	262	1700	964			
Volume to Capacity	0.60	0.37	0.03			
Queue Length 95th (ft)	89	0	2			
Control Delay (s)	37.5	0.0	0.8			
Lane LOS	E		A			
Approach Delay (s)	37.5	0.0	0.8			
Approach LOS	E					
Intersection Summary						
Average Delay		4.5				
Intersection Capacity Utilization		62.4%		ICU Level of Service		B
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

4: West Park Street/Park Street & Main Street

2020 Existing Conditions
Saturday Midday Peak Hour

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	40	100	100	595	600	55
Future Volume (Veh/h)	40	100	100	595	600	55
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.94	0.94	0.96	0.96
Hourly flow rate (vph)	43	108	106	633	625	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	1648	1278	1307	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1648	1278	1307	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	42	62	
cM capacity (veh/h)	0	103	98	1082	1630	
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	43	108	739	682		
Volume Left	43	0	0	625		
Volume Right	0	0	633	57		
cSH	0	103	649	1630		
Volume to Capacity	Err	1.05	1.14	0.38		
Queue Length 95th (ft)	Err	167	580	46		
Control Delay (s)	Err	180.4	103.7	8.1		
Lane LOS	F	F	F	A		
Approach Delay (s)	Err		103.7	8.1		
Approach LOS	F		F			
Intersection Summary						
Average Delay			Err			
Intersection Capacity Utilization			52.1%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: West Center Street/Laurel Street & Summer Street

2027 No-Build Condition
Weekday Morning Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	45	45	30	415	450	45
Future Volume (Veh/h)	45	45	30	415	450	45
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)	49	49	33	451	489	49
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	1030	514	538			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1030	514	538			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	80	91	97			
cM capacity (veh/h)	250	561	996			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	98	484	538			
Volume Left	49	33	0			
Volume Right	49	0	49			
cSH	346	996	1700			
Volume to Capacity	0.28	0.03	0.32			
Queue Length 95th (ft)	29	3	0			
Control Delay (s)	19.5	1.0	0.0			
Lane LOS	C	A				
Approach Delay (s)	19.5	1.0	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay		2.1				
Intersection Capacity Utilization		58.4%		ICU Level of Service		B
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

2: Canal Street & West Center Street

2027 No-Build Condition
Weekday Morning Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Volume (veh/h)	490	5	5	440	5	5
Future Volume (Veh/h)	490	5	5	440	5	5
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)	533	5	5	478	5	5
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			538		1024	536
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			538		1024	536
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			99		98	99
cM capacity (veh/h)			996		262	549
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	538	483	10			
Volume Left	0	5	5			
Volume Right	5	0	5			
cSH	1700	996	355			
Volume to Capacity	0.32	0.01	0.03			
Queue Length 95th (ft)	0	0	2			
Control Delay (s)	0.0	0.1	15.4			
Lane LOS		A	C			
Approach Delay (s)	0.0	0.1	15.4			
Approach LOS			C			
Intersection Summary						
Average Delay		0.2				
Intersection Capacity Utilization		37.1%	ICU Level of Service	A		
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

3: Main Street/West Center Street & East Center Street

2027 No-Build Condition
Weekday Morning Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	65	30	415	35	25	470
Future Volume (Veh/h)	65	30	415	35	25	470
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)	71	33	451	38	27	511
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	1035	470			489	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1035	470			489	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	71	94			97	
cM capacity (veh/h)	248	589			1069	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	104	489	538			
Volume Left	71	0	27			
Volume Right	33	38	0			
cSH	304	1700	1069			
Volume to Capacity	0.34	0.29	0.03			
Queue Length 95th (ft)	37	0	2			
Control Delay (s)	22.9	0.0	0.7			
Lane LOS	C		A			
Approach Delay (s)	22.9	0.0	0.7			
Approach LOS	C					
Intersection Summary						
Average Delay		2.4				
Intersection Capacity Utilization		57.2%		ICU Level of Service		B
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

4: West Park Street/Park Street & Main Street

2027 No-Build Condition
Weekday Morning Peak Hour

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	40	85	85	390	460	95
Future Volume (Veh/h)	40	85	85	390	460	95
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)	43	92	92	424	500	103
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	1310	1052	1103	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1310	1052	1103	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	40	34	60	68	
cM capacity (veh/h)	29	152	139	1059	1578	
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	43	92	516	603		
Volume Left	43	0	0	500		
Volume Right	0	0	424	103		
cSH	29	152	780	1578		
Volume to Capacity	1.46	0.60	0.66	0.32		
Queue Length 95th (ft)	124	80	127	34		
Control Delay (s)	534.2	59.3	21.4	7.4		
Lane LOS	F	F	C	A		
Approach Delay (s)	210.6		21.4	7.4		
Approach LOS	F		C			
Intersection Summary						
Average Delay			35.0			
Intersection Capacity Utilization			46.8%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: West Center Street/Laurel Street & Summer Street

2027 No-Build Condition
Weekday Evening Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	75	65	55	585	620	75
Future Volume (Veh/h)	75	65	55	585	620	75
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)	82	71	60	636	674	82
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	1471	715	756			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1471	715	756			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	37	84	93			
cM capacity (veh/h)	131	432	855			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	153	696	756			
Volume Left	82	60	0			
Volume Right	71	0	82			
cSH	193	855	1700			
Volume to Capacity	0.79	0.07	0.44			
Queue Length 95th (ft)	136	6	0			
Control Delay (s)	70.6	1.8	0.0			
Lane LOS	F	A				
Approach Delay (s)	70.6	1.8	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay		7.5				
Intersection Capacity Utilization		89.1%		ICU Level of Service	E	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

2: Canal Street & West Center Street

2027 No-Build Condition
Weekday Evening Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Volume (veh/h)	685	5	20	635	5	20
Future Volume (Veh/h)	685	5	20	635	5	20
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)	745	5	22	690	5	22
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			750		1482	748
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			750		1482	748
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		96	95
cM capacity (veh/h)			859		136	416
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	750	712	27			
Volume Left	0	22	5			
Volume Right	5	0	22			
cSH	1700	859	301			
Volume to Capacity	0.44	0.03	0.09			
Queue Length 95th (ft)	0	2	7			
Control Delay (s)	0.0	0.7	18.1			
Lane LOS		A	C			
Approach Delay (s)	0.0	0.7	18.1			
Approach LOS			C			
Intersection Summary						
Average Delay		0.7				
Intersection Capacity Utilization		59.6%	ICU Level of Service	B		
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

3: Main Street/West Center Street & East Center Street

2027 No-Build Condition
Weekday Evening Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	60	60	595	65	55	650
Future Volume (Veh/h)	60	60	595	65	55	650
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)	65	65	647	71	60	707
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	1510	682			718	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1510	682			718	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	47	85			93	
cM capacity (veh/h)	123	448			878	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	130	718	767			
Volume Left	65	0	60			
Volume Right	65	71	0			
cSH	193	1700	878			
Volume to Capacity	0.67	0.42	0.07			
Queue Length 95th (ft)	102	0	5			
Control Delay (s)	55.4	0.0	1.7			
Lane LOS	F		A			
Approach Delay (s)	55.4	0.0	1.7			
Approach LOS	F					
Intersection Summary						
Average Delay		5.3				
Intersection Capacity Utilization		89.5%	ICU Level of Service	E		
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

4: West Park Street/Park Street & Main Street

2027 No-Build Condition
Weekday Evening Peak Hour

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	120	180	165	565	670	130
Future Volume (Veh/h)	120	180	165	565	670	130
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)	130	196	179	614	728	141
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	1923	1526	1597	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1923	1526	1597	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	43	55	
cM capacity (veh/h)	0	64	58	1082	1610	
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	130	196	793	869		
Volume Left	130	0	0	728		
Volume Right	0	0	614	141		
cSH	0	64	221	1610		
Volume to Capacity	Err	3.04	3.58	0.45		
Queue Length 95th (ft)	Err	Err	Err	61		
Control Delay (s)	Err	Err	Err	8.3		
Lane LOS	F	F	F	A		
Approach Delay (s)	Err		Err	8.3		
Approach LOS	F		F			
Intersection Summary						
Average Delay			Err			
Intersection Capacity Utilization			70.4%	ICU Level of Service		C
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: West Center Street/Laurel Street & Summer Street

2027 No-Build Condition
Saturday Midday Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	55	50	60	605	575	45
Future Volume (Veh/h)	55	50	60	605	575	45
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)	60	54	65	658	625	49
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	1438	650	674			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1438	650	674			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	56	89	93			
cM capacity (veh/h)	137	471	917			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	114	723	674			
Volume Left	60	65	0			
Volume Right	54	0	49			
cSH	206	917	1700			
Volume to Capacity	0.55	0.07	0.40			
Queue Length 95th (ft)	74	6	0			
Control Delay (s)	42.1	1.8	0.0			
Lane LOS	E	A				
Approach Delay (s)	42.1	1.8	0.0			
Approach LOS	E					
Intersection Summary						
Average Delay			4.0			
Intersection Capacity Utilization		84.3%		ICU Level of Service		E
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

2: Canal Street & West Center Street

2027 No-Build Condition
Saturday Midday Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Volume (veh/h)	620	5	10	660	5	10
Future Volume (Veh/h)	620	5	10	660	5	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)	674	5	11	717	5	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			679		1416	676
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			679		1416	676
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		97	98
cM capacity (veh/h)			908		151	457
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	679	728	16			
Volume Left	0	11	5			
Volume Right	5	0	11			
cSH	1700	908	280			
Volume to Capacity	0.40	0.01	0.06			
Queue Length 95th (ft)	0	1	5			
Control Delay (s)	0.0	0.3	18.6			
Lane LOS		A	C			
Approach Delay (s)	0.0	0.3	18.6			
Approach LOS			C			
Intersection Summary						
Average Delay		0.4				
Intersection Capacity Utilization		52.7%	ICU Level of Service	A		
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

3: Main Street/West Center Street & East Center Street

2027 No-Build Condition
Saturday Midday Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	75	65	605	60	25	605
Future Volume (Veh/h)	75	65	605	60	25	605
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)	82	71	658	65	27	658
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	1402	690			723	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1402	690			723	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	45	84			97	
cM capacity (veh/h)	150	447			889	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	153	723	685			
Volume Left	82	0	27			
Volume Right	71	65	0			
cSH	217	1700	889			
Volume to Capacity	0.70	0.43	0.03			
Queue Length 95th (ft)	114	0	2			
Control Delay (s)	53.5	0.0	0.8			
Lane LOS	F		A			
Approach Delay (s)	53.5	0.0	0.8			
Approach LOS	F					
Intersection Summary						
Average Delay		5.6				
Intersection Capacity Utilization		66.9%	ICU Level of Service	C		
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

4: West Park Street/Park Street & Main Street

2027 No-Build Condition
Saturday Midday Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	45	135	135	640	645	60
Future Volume (Veh/h)	45	135	135	640	645	60
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)	49	147	147	696	701	65
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	1856	1434	1467	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1856	1434	1467	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	36	57	
cM capacity (veh/h)	0	77	72	1082	1630	
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	49	147	843	766		
Volume Left	49	0	0	701		
Volume Right	0	0	696	65		
cSH	0	77	339	1630		
Volume to Capacity	Err	1.92	2.49	0.43		
Queue Length 95th (ft)	Err	326	1693	56		
Control Delay (s)	Err	547.8	703.3	8.4		
Lane LOS	F	F	F	A		
Approach Delay (s)	Err		703.3	8.4		
Approach LOS	F		F			
Intersection Summary						
Average Delay			Err			
Intersection Capacity Utilization			59.8%	ICU Level of Service		B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: West Center Street/Laurel Street & Summer Street

2027 Build Condition
Weekday Morning Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	45	50	35	450	500	45
Future Volume (Veh/h)	45	50	35	450	500	45
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)	49	54	38	489	543	49
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	1132	568	592			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1132	568	592			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	77	90	96			
cM capacity (veh/h)	216	523	950			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	103	527	592			
Volume Left	49	38	0			
Volume Right	54	0	49			
cSH	312	950	1700			
Volume to Capacity	0.33	0.04	0.35			
Queue Length 95th (ft)	35	3	0			
Control Delay (s)	22.2	1.1	0.0			
Lane LOS	C	A				
Approach Delay (s)	22.2	1.1	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			2.3			
Intersection Capacity Utilization		64.8%		ICU Level of Service		C
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

2: Canal Street/Site Drive 1 & West Center Street

2027 Build Condition
Weekday Morning Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	520	5	5	465	0	5	0	5	0	0	15
Future Volume (Veh/h)	20	520	5	5	465	0	5	0	5	0	0	15
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)	22	565	5	5	505	0	5	0	5	0	0	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	505			570			1142	1126	568	1132	1129	505
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	505			570			1142	1126	568	1132	1129	505
tC, single (s)	4.1			4.2			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			97	100	99	100	100	97
cM capacity (veh/h)	1060			969			170	199	527	175	199	567
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	592	510	10	16								
Volume Left	22	5	5	0								
Volume Right	5	0	5	16								
cSH	1060	969	258	567								
Volume to Capacity	0.02	0.01	0.04	0.03								
Queue Length 95th (ft)	2	0	3	2								
Control Delay (s)	0.6	0.1	19.5	11.5								
Lane LOS	A	A	C	B								
Approach Delay (s)	0.6	0.1	19.5	11.5								
Approach LOS			C	B								
Intersection Summary												
Average Delay			0.7									
Intersection Capacity Utilization			51.9%	ICU Level of Service					A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

3: Main Street/West Center Street & East Center Street

2027 Build Condition
Weekday Morning Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	70	30	460	35	30	505
Future Volume (Veh/h)	70	30	460	35	30	505
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)	76	33	500	38	33	549
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	1134	519			538	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1134	519			538	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	65	94			97	
cM capacity (veh/h)	215	553			1025	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	109	538	582			
Volume Left	76	0	33			
Volume Right	33	38	0			
cSH	264	1700	1025			
Volume to Capacity	0.41	0.32	0.03			
Queue Length 95th (ft)	48	0	2			
Control Delay (s)	27.9	0.0	0.9			
Lane LOS	D		A			
Approach Delay (s)	27.9	0.0	0.9			
Approach LOS	D					
Intersection Summary						
Average Delay			2.9			
Intersection Capacity Utilization			63.5%	ICU Level of Service	B	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

4: West Park Street/Park Street & Main Street

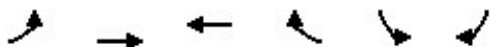
2027 Build Condition
Weekday Morning Peak Hour

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	45	85	85	430	495	100
Future Volume (Veh/h)	45	85	85	430	495	100
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)	49	92	92	467	538	109
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	1410	1130	1185	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1410	1130	1185	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	30	23	56	66	
cM capacity (veh/h)	18	132	120	1059	1578	
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	49	92	559	647		
Volume Left	49	0	0	538		
Volume Right	0	0	467	109		
cSH	18	132	727	1578		
Volume to Capacity	2.70	0.70	0.77	0.34		
Queue Length 95th (ft)	166	97	184	38		
Control Delay (s)	1211.0	79.1	25.3	7.6		
Lane LOS	F	F	D	A		
Approach Delay (s)	472.5		25.3	7.6		
Approach LOS	F		D			
Intersection Summary						
Average Delay			63.6			
Intersection Capacity Utilization			49.3%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

5: West Center Street & Site Drive 2

2027 Build Condition
Weekday Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	45	480	430	65	50	30
Future Volume (Veh/h)	45	480	430	65	50	30
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)	49	522	467	71	54	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type		None	None			
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	538				1122	502
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	538				1122	502
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				75	94
cM capacity (veh/h)	1030				217	569
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	571	538	87			
Volume Left	49	0	54			
Volume Right	0	71	33			
cSH	1030	1700	349			
Volume to Capacity	0.05	0.32	0.25			
Queue Length 95th (ft)	4	0	24			
Control Delay (s)	1.3	0.0	21.2			
Lane LOS	A		C			
Approach Delay (s)	1.3	0.0	21.2			
Approach LOS			C			
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			67.7%	ICU Level of Service		C
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: West Center Street/Laurel Street & Summer Street

2027 Build Condition
Weekday Evening Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	75	70	55	605	645	70
Future Volume (Veh/h)	75	70	55	605	645	70
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)	82	76	60	658	701	76
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	1517	739	777			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1517	739	777			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	33	82	93			
cM capacity (veh/h)	122	419	839			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	158	718	777			
Volume Left	82	60	0			
Volume Right	76	0	76			
cSH	186	839	1700			
Volume to Capacity	0.85	0.07	0.46			
Queue Length 95th (ft)	154	6	0			
Control Delay (s)	83.3	1.8	0.0			
Lane LOS	F	A				
Approach Delay (s)	83.3	1.8	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay			8.8			
Intersection Capacity Utilization		91.5%		ICU Level of Service		F
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

2: Canal Street/Site Drive 1 & West Center Street

2027 Build Condition
Weekday Evening Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	700	5	20	645	0	5	0	20	0	0	10
Future Volume (Veh/h)	10	700	5	20	645	0	5	0	20	0	0	10
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)	11	761	5	22	701	0	5	0	22	0	0	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	701			766			1542	1530	764	1552	1533	701
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	701			766			1542	1530	764	1552	1533	701
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			97			94	100	95	100	100	97
cM capacity (veh/h)	891			847			90	114	407	85	112	439
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	777	723	27	11								
Volume Left	11	22	5	0								
Volume Right	5	0	22	11								
cSH	891	847	246	439								
Volume to Capacity	0.01	0.03	0.11	0.03								
Queue Length 95th (ft)	1	2	9	2								
Control Delay (s)	0.3	0.7	21.4	13.4								
Lane LOS	A	A	C	B								
Approach Delay (s)	0.3	0.7	21.4	13.4								
Approach LOS			C	B								
Intersection Summary												
Average Delay			1.0									
Intersection Capacity Utilization			58.2%	ICU Level of Service		B						
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

3: Main Street/West Center Street & East Center Street

2027 Build Condition
Weekday Evening Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	65	60	620	65	60	670
Future Volume (Veh/h)	65	60	620	65	60	670
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)	71	65	674	71	65	728
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	1568	710			745	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1568	710			745	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	37	85			92	
cM capacity (veh/h)	112	432			858	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	136	745	793			
Volume Left	71	0	65			
Volume Right	65	71	0			
cSH	174	1700	858			
Volume to Capacity	0.78	0.44	0.08			
Queue Length 95th (ft)	129	0	6			
Control Delay (s)	75.2	0.0	1.9			
Lane LOS	F		A			
Approach Delay (s)	75.2	0.0	1.9			
Approach LOS	F					
Intersection Summary						
Average Delay		7.0				
Intersection Capacity Utilization		92.4%		ICU Level of Service		F
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

4: West Park Street/Park Street & Main Street

2027 Build Condition
Weekday Evening Peak Hour

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	125	180	165	585	685	130
Future Volume (Veh/h)	125	180	165	585	685	130
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)	136	196	179	636	745	141
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	1968	1560	1631	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1968	1560	1631	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	54	
cM capacity (veh/h)	0	60	54	1082	1610	
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	136	196	815	886		
Volume Left	136	0	0	745		
Volume Right	0	0	636	141		
cSH	0	60	213	1610		
Volume to Capacity	Err	3.26	3.82	0.46		
Queue Length 95th (ft)	Err	Err	Err	63		
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			71.5%	ICU Level of Service		C
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 5: West Center Street & Site Drive 2

2027 Build Condition
Weekday Evening Peak Hour

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	700	645	35	30	20
Future Volume (Veh/h)	20	700	645	35	30	20
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	761	701	38	33	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type		None	None			
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	739				1525	720
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	739				1525	720
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				74	95
cM capacity (veh/h)	867				126	428
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	783	739	55			
Volume Left	22	0	33			
Volume Right	0	38	22			
cSH	867	1700	211			
Volume to Capacity	0.03	0.43	0.26			
Queue Length 95th (ft)	2	0	25			
Control Delay (s)	0.7	0.0	31.5			
Lane LOS	A		D			
Approach Delay (s)	0.7	0.0	31.5			
Approach LOS			D			
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization		63.0%		ICU Level of Service		B
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

1: West Center Street/Laurel Street & Summer Street

2027 Build Condition
Saturday Midday Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	55	55	65	630	605	45
Future Volume (Veh/h)	55	55	65	630	605	45
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)	60	60	71	685	658	49
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	1510	682	707			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1510	682	707			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	51	87	92			
cM capacity (veh/h)	123	451	891			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	120	756	707			
Volume Left	60	71	0			
Volume Right	60	0	49			
cSH	193	891	1700			
Volume to Capacity	0.62	0.08	0.42			
Queue Length 95th (ft)	89	6	0			
Control Delay (s)	50.2	2.0	0.0			
Lane LOS	F	A				
Approach Delay (s)	50.2	2.0	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay		4.8				
Intersection Capacity Utilization		87.7%		ICU Level of Service	E	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis 2: Canal Street/Site Drive 1 & West Center Street

2027 Build Condition
Saturday Midday Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	640	5	10	675	0	5	0	10	0	0	10
Future Volume (Veh/h)	15	640	5	10	675	0	5	0	10	0	0	10
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)	16	696	5	11	734	0	5	0	11	0	0	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	734			701			1498	1486	698	1498	1489	734
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	734			701			1498	1486	698	1498	1489	734
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 %	98			99			95	100	98	100	100	97
cM capacity (veh/h)	876			891			97	122	444	96	120	420
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	717	745	16	11								
Volume Left	16	11	5	0								
Volume Right	5	0	11	11								
cSH	876	891	209	420								
Volume to Capacity	0.02	0.01	0.08	0.03								
Queue Length 95th (ft)	1	1	6	2								
Control Delay (s)	0.5	0.3	23.6	13.8								
Lane LOS	A	A	C	B								
Approach Delay (s)	0.5	0.3	23.6	13.8								
Approach LOS			C	B								
Intersection Summary												
Average Delay			0.8									
Intersection Capacity Utilization			54.6%	ICU Level of Service				A				
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

3: Main Street/West Center Street & East Center Street

2027 Build Condition
Saturday Midday Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	80	65	635	60	30	630
Future Volume (Veh/h)	80	65	635	60	30	630
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)	87	71	690	65	33	685
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	1474	722			755	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1474	722			755	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	35	83			96	
cM capacity (veh/h)	135	428			865	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	158	755	718			
Volume Left	87	0	33			
Volume Right	71	65	0			
cSH	195	1700	865			
Volume to Capacity	0.81	0.44	0.04			
Queue Length 95th (ft)	143	0	3			
Control Delay (s)	73.4	0.0	1.0			
Lane LOS	F		A			
Approach Delay (s)	73.4	0.0	1.0			
Approach LOS	F					
Intersection Summary						
Average Delay			7.5			
Intersection Capacity Utilization			72.6%	ICU Level of Service		C
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

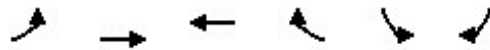
4: West Park Street/Park Street & Main Street

2027 Build Condition
Saturday Midday Peak Hour

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	135	135	665	665	65
Future Volume (Veh/h)	50	135	135	665	665	65
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)	54	147	147	723	723	71
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	1482	1517	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1916	1482	1517	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	33	56	
cM capacity (veh/h)	0	70	66	1082	1630	
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	54	147	870	794		
Volume Left	54	0	0	723		
Volume Right	0	0	723	71		
cSH	0	70	318	1630		
Volume to Capacity	Err	2.10	2.73	0.44		
Queue Length 95th (ft)	Err	341	1835	59		
Control Delay (s)	Err	635.1	813.7	8.5		
Lane LOS	F	F	F	A		
Approach Delay (s)	Err		813.7	8.5		
Approach LOS	F		F			
Intersection Summary						
Average Delay			Err			
Intersection Capacity Utilization			61.2%	ICU Level of Service		B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 5: West Center Street & Site Drive 2

2027 Build Condition
Saturday Midday Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		←	←		←	←
Traffic Volume (veh/h)	25	625	660	40	35	20
Future Volume (Veh/h)	25	625	660	40	35	20
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)	27	679	717	43	38	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	760				1472	738
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	760				1472	738
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				72	95
cM capacity (veh/h)	852				135	418
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	706	760	60			
Volume Left	27	0	38			
Volume Right	0	43	22			
cSH	852	1700	214			
Volume to Capacity	0.03	0.45	0.28			
Queue Length 95th (ft)	2	0	28			
Control Delay (s)	0.8	0.0	31.5			
Lane LOS	A		D			
Approach Delay (s)	0.8	0.0	31.5			
Approach LOS			D			
Intersection Summary						
Average Delay		1.6				
Intersection Capacity Utilization		63.2%		ICU Level of Service		B
Analysis Period (min)		15				