

MEMORANDUM

TO: Mr. Mark Klinger
MKEP 770, LLC
55 Mead Street
Leominster, MA 01453

DATE: September 2, 2022

FROM: Samuel W. Gregorio, PE, PTOE, RSP¹, Sr. Traffic Engineer
Justin W. Wadsworth, Project Engineer

PROJECT NO.: T1154

RE: Proposed Skyview Estates - 651 Main Street – Leicester, Massachusetts
Traffic Impact Assessment

INTRODUCTION

TEC, Inc. (TEC) has been retained by MKEP 770, LLC (the “Applicant”) to prepare a Traffic Impact Assessment (TIA) associated with the proposed Skyview Estates (the “Project”), a proposed subdivision development to be located at 651 Main Street (Route 9) in Leicester, Massachusetts. The approximate 29.78-acre site is currently vacant. The Project proposes to construct 103-units of mixed single-family residential housing, including one (1) single unit house, six (6) duplexes, and thirty (30) 3-unit multi-family houses. Access/egress to 96-units is serviced by the Project’s proposed subdivision roadway which connects to the southerly side of Main Street. Gated emergency access is proposed via an existing residential driveway to #747 Main Street on the westerly end of the property. An additional 7-units, in the form of three (3) duplexes and the single unit house, directly access Main Street with standard residential driveways.

TEC has evaluated the traffic operations for the study area under existing and future conditions consistent with the *Transportation Impact Assessment (TIA) Guidelines* issued by the Massachusetts Department of Transportation (MassDOT)¹ and the standards of the Traffic Engineering and Transportation Planning professions for the preparation of such reports. The future year examines traffic operations under a 7-year planning horizon (2028) for traffic-volume projections, which includes an evaluation of the build conditions (with site traffic added). No analysis of the no build condition is provided as there is currently no operational challenges at the location in the absence of the project and proposed subdivision roadway. These conditions are compared to determine what, if any, additional off-site mitigation is necessary to provide reasonable traffic operations in the area after the project is complete.

EXISTING CONDITIONS

The study area was selected to contain the major roadways and intersections providing local access to the project site. This includes an evaluation of intersection in which the site-generated trips increase the peak hour traffic volume by more than 5 percent and/or by more than 100 vehicles per hour per MassDOT’s *TIA Guidelines* (Section 3.1.C). The Main Street /

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

Site Driveway (a.k.a. the subdivision roadway) intersection is noted as the only study area intersection.

The study area intersections are shown graphically in Figure 1.

Geometry

A comprehensive field inventory of existing traffic conditions at the study area intersections was conducted by TEC staff in September 2021 to obtain information related to intersection geometry and lane usage. The field investigation consisted of an inventory of existing roadway geometrics, operating characteristics, and safety characteristics. A description of the existing roadway and intersection inventory is provided below.

Roadways

Main Street

Main Street, signed as State Route 9, is a two-lane, east-west principle arterial roadway under the jurisdiction of MassDOT. Main Street provides regional connection between the City of Worcester to the east and the Town of Spencer to the west. The corridor is generally 35-foot wide in the vicinity of the project area with one travel lane in each direction and directional flow separated by a marked centerline. The posted speed limit along Main Street varies between 35-40 miles per hour (mph). Immediately adjacent to the proposed Site Driveway, the posted speed is 35 mph. The speed limit increases to 40 mph approximately 300-feet east of the driveway. Through most of the corridor, sidewalks are provided along at least one side or the Main Street. There are no formal bicycle accommodations along Main Street in the vicinity of the site; however, there are 4 to 6-foot shoulders that can accommodate bicycle traffic in the vicinity of the site. Land uses along the roadway include light commercial and residential uses.

Public Transportation

The Worcester Regional Transit Authority (WRTA) operates Bus Route #33 along Route 9 at the project's front door. There are currently no designated stops on Route 9 in the vicinity of the project; however, buses will stop at any safe location along the route by passenger flagging. Schedule data is included in Attachment A and a summary of the route is provided below:

- *WRTA Bus Route 33 (Union Station Hub – Leicester – Spencer – East Brookfield – Brookfield via Main Street & Route 9)* – Regular Service is provided between Union Station and Brookfield Center within Worcester, Leicester, Spencer, East Brookfield, and Brookfield. Major stops along the route provide access to Union Station, Clark University, Webster Square, Leicester Center, Spencer Center, and Brookfield Center. Weekday inbound service from Brookfield operates four times daily and from Spencer Center 14 times daily, with scheduled departure times between 6:00 AM to 8:00 PM at varying headways of generally an hour or less. Weekday outbound service from Union Station operates 14 times daily between 4:50 AM and 7:10 PM at varying headways of generally an hour or less. Weekend service is not provided.



1" = 400'

Study Area Intersection:
1. Main Street (Route 9) / Site Driveway

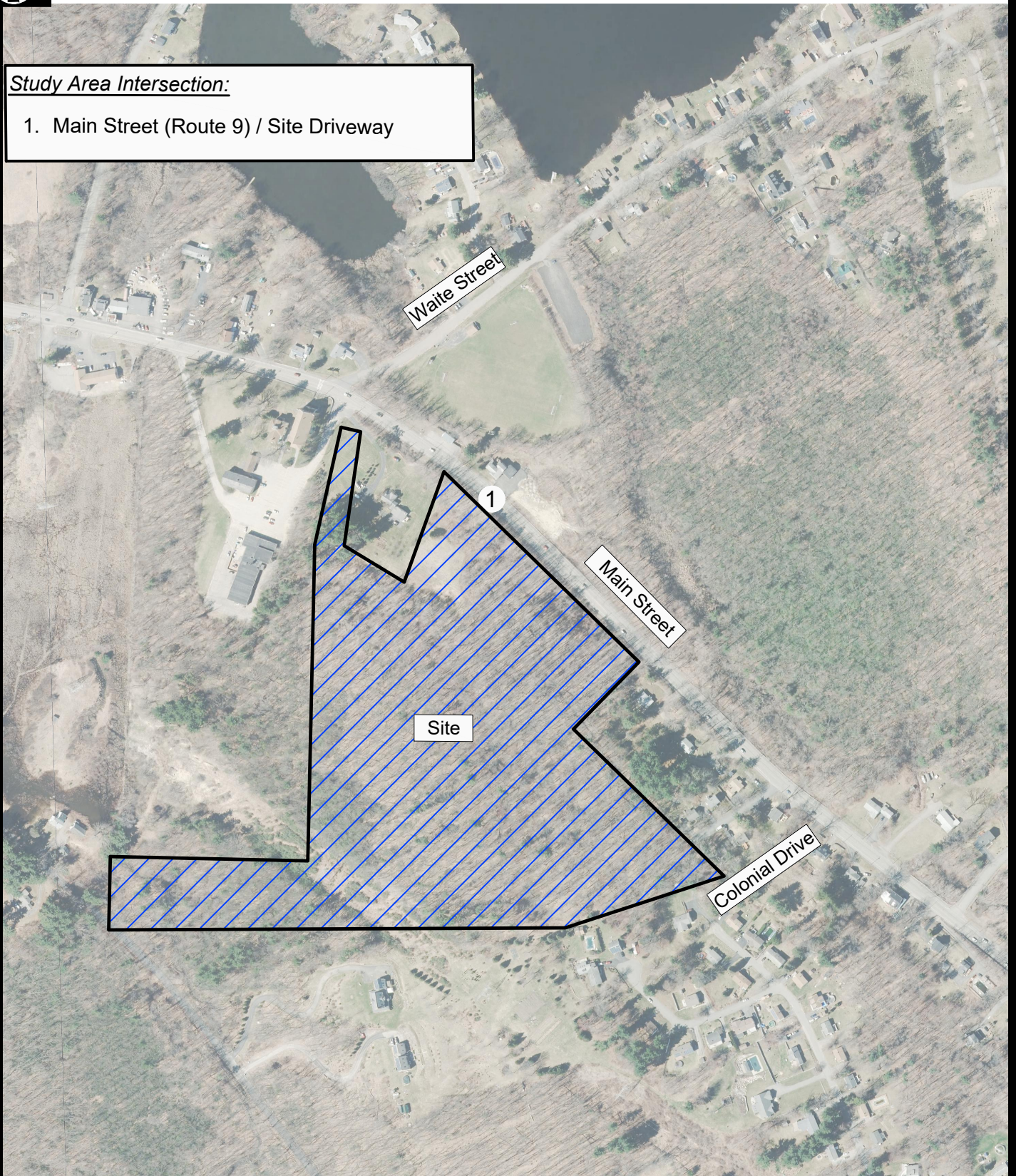


Figure 1

Project Location Map & Study Area Intersection

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146 Dascomb Road
Andover, MA 01810

Existing Traffic Volumes

In order to establish existing traffic-volume conditions, an Automatic Traffic Recorder (ATR) count was conducted along Main Street, east of Waite Street, from Tuesday, September 14, 2021, through Wednesday, September 15, 2021 to gather daily traffic-volume data, vehicle speeds, and vehicle classifications during a continuous 48-hour time period. A detailed summary of the ATR data, partitioned into one-hour intervals, is provided within Attachment B.

Traffic Volume Adjustments

Traffic volumes and area businesses have been significantly affected by and since the onset of the COVID-19 pandemic. TEC understands that traffic volumes in the area may be artificially lower than a standard non-pandemic time period. To establish a normalized traffic volume condition that could reasonably be expected without the COVID-19 pandemic, TEC adjusted area traffic volumes using historical traffic volumes collected at the permanent count station along Route 20 in Auburn, Massachusetts in September 2019 and 2021 and the following parameters.

Seasonal Adjustments

In accordance with MassDOT standards, traffic volumes are typically adjusted to average month conditions. To account for seasonal adjustment, TEC utilized MassDOT's published weekday seasonal and axle correction factors as published in 2019 (most recent publication). The factors provide a month-to-month overview of traffic volumes statewide by roadway functional classification and land (urban vs. rural) type. For principal arterials within an urban setting, traffic volumes in the month of September are 8 percent higher (factor of 0.92 of average month) than average-month conditions. Therefore, the September traffic volumes, for the subsequent COVID adjustment only, were downwardly adjusted by 8 percent to reflect an average month condition. The compiled seasonal adjustment data is provided in Attachment C.

COVID 19 Pandemic Adjustments

To determine the level of impact of COVID-19 in the project limits, TEC compared daily traffic volumes along Route 20 in Auburn, Massachusetts for both the date of the Main Street ATR (September 14, 2021) and a historical traffic count conducted on September 17, 2019 which represents the comparable mid-September Tuesday prior to COVID-19. This Auburn permanent count station was chosen as it represents the closest permanent count station along a principal arterial to the project and can be expected to experience similar commuter flow patterns. TEC then utilized MassDOT published year-by-year annual growth data between 2016 and 2019. The data indicates that for urban principal arterials, traffic volumes grew by approximately 1.0 percent per year on average between 2016 and 2019. Therefore, the 2019 seasonally adjusted traffic volumes were upwardly increased by the aforementioned growth rates year-by-year to reflect a comparative 2021 base comparison.

Upon review of the September 2021 traffic volumes and the adjusted 2019 traffic volumes, traffic along Route 20 was shown to have decreased by 0.71% as a result of the COVID-19 pandemic. Therefore, the September 2021 traffic volumes were upwardly increased by 0.71% to reflect a non-COVID-19 2021 Existing Year Condition. The compiled COVID-19 adjustment

data, including the 2019 and 2021 comparative Route 20 traffic volumes are provided in Attachment D. The resulting 2021 Existing Year Conditions weekday morning and weekday evening peak hour traffic volume network is illustrated in Figure 2.

A summary of the adjusted weekday ATR traffic data is presented in Table 1.

Table 1 – Existing Weekday Traffic Volume Summary

Location	Weekday Traffic Volume ^(a)	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		Traffic Volume ^(b)	K Factor ^(c)	Directional Distribution ^(d)	Traffic Volume	K Factor	Directional Distribution
Main Street, east of Waite Street	15,907	1,107	7.0	70.7% EB	1,219	7.7	60.6% WB

^a Daily traffic expressed in vehicles per day

^b Hourly traffic expressed in vehicles per hour

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

^d Percent of peak-hour volume in the predominant direction of travel

Main Street carries approximately 15,900 vehicles per day (vpd) on an average weekday. Directional distribution along the roadway is more prominent in the commuter direction to/from Worcester during both the weekday morning and weekday evening peak hour. Speed data indicates that the average speed and 85th percentile speed along Main Street is 43 mph and 47 mph in the eastbound direction, respectively, and 41 mph and 46 mph in the westbound direction, respectively.

Safety Analysis

Crash History Analysis

Crash data for the study area was compiled and analyzed for the most recent consecutive six-year period (2015-2020) on file from MassDOT through the Interactive Mapping Portal for Analysis and Crash Tracking (IMPACT) database. The motor vehicle crash data was reviewed to determine if any crash trends exist within the study area. A summary of the vehicle crash data and intersection crash rates are provided in Table 2. A detailed crash data summary is provided in Attachment E.

Crash Data Summary

The Main Street corridor adjacent to the site frontage experienced fourteen (14) crashes over the six-year study period. The crash rate for the corridor segment was calculated at 2.36 crashes per MVMT which is significantly lower than the statewide average for urban principal arterial. More than 70 percent (10 of 14) of the crashes were single vehicle crashes. Contributing factors were noted in the police reports of four (4) crashes related to distracted driving, three (3) crashes related to driving in a reckless manner, and three (3) crashes related to driver illness or falling asleep. Half (7 of 14) of the crashes related in a non-fatal injury. Approximately 60 percent (8 of 14) of crashes occurred during periods of dark skies.

Table 2 –Intersection Crash History Summary

Parameter	Main Street / Site Driveway	
Crash Year	2015	1
	2016	3
	2017	3
	2018	1
	2019	3
	2020	<u>3</u>
	TOTAL	14
Average Annual		2.33
Manner of Collision	Angle	0
	Rear-end	3
	Sideswipe	1
	Single Vehicle	10
	Head-On	0
	Ped / Bike	0
	Not Reported	<u>0</u>
TOTAL	14	
Road Surface Conditions	Dry	9
	Wet	3
	Snow / Ice	2
	Other / Unknown	<u>0</u>
TOTAL	14	
Injury Status (Crash Severity)	Prop Damage	7
	Non-Fatal Injury	7
	Fatal Injury	0
	Not Reported	<u>0</u>
TOTAL	14	
Day of Week	Monday-Friday	9
	Saturday-Sunday	<u>5</u>
	TOTAL	14
Time of Day	6:00AM-9:00AM	0
	9:00AM-3:00PM	5
	3:00PM-6:00PM	0
	6:00PM-6:00AM	<u>9</u>
	TOTAL	14

Sight Distance Measurements

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

Sight distance represents the length of roadway that is visible to a driver traveling within the roadway. Two types of sight distance are typically evaluated for driveways and intersections:

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

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

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

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

Tables 3 and 4 provide a summary of the available SSD and ISD at the Site Driveway intersection, respectively.

Table 3 – Existing Stopping Sight Distance Measurements

Approach / Direction	Operating Speed	AASHTO Recommended Minimum	Measured Stopping Sight Distance
Main Street at Site Driveway:			
Main Street eastbound	47 MPH ^a	385 FT	>500 FT
Main Street westbound	46 MPH ^a	375 FT	>800 FT

^a Operating speeds calculated as 85th percentile speed from ATR counts in September 2021

Table 4 – Existing Intersection Sight Distance Measurements

Approach / Direction	Operating Speed	AASHTO Recommended Minimum	Measured Intersection Sight Distance
Main Street at Site Driveway:			
East of Site Driveway	46 MPH ^a	375 FT	N/A
West of Site Driveway	47 MPH ^a	385 FT	N/A

^a Operating speeds calculated as 85th percentile speed from ATR counts in June 2021

As shown in Table 3, the SSD along Main Street approaching the subdivision roadway / Site Driveway meets AASHTO minimum recommendations. Under existing conditions, the ISD exiting the Site Driveway is non-existent based on the level of vegetation present on the southerly side of Main Street. To mitigate this, the Applicant is committed to remove and maintain the vegetation along the southerly side of Main Street, along the site frontage, to obtain the minimum ISD in both directions.

FUTURE CONDITIONS

Traffic volumes in the study area were projected to the year 2028, which reflects a 7-year planning horizon in accordance with MassDOT standards for TIA. Anticipated site-generated traffic volumes for the proposed development were superimposed upon the No-Build traffic networks to reflect the Build conditions with the proposed project.

Background Traffic Growth

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

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

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

General Background Growth

As previously mentioned, MassDOT published year-by-year annual growth data between 2016 and 2019 indicates that traffic volumes grew by approximately 1.0 percent per year on average between 2016 and 2019. To provide a conservative analysis scenario, a 1.0 percent per year compounded annual background traffic growth rate was used to account for potential future traffic growth external to the study area and any presently unforeseen development. Count station data has been included in Attachment F.

Specific Development by Others

TEC coordinated with the Town of Leicester Planning Department to identify nearby private / public development projects in the vicinity of the study area that are either in the planning process or were recently approved but not yet occupied. At the time of this TIA, there were no apparent developments that would significantly affect the traffic in the study area.

No-Build Traffic Volumes

The 2028 No-Build weekday morning and weekday evening peak-hour traffic-volume networks were developed by applying the 1.0 percent per year compounded annual background traffic growth rate to the 2021 Existing Conditions peak-hour traffic volumes over the 7-year planning horizon. The resulting 2028 No-Build weekday morning and weekday evening peak-hour traffic-volume networks are illustrated in Figure 2.

Site Generated Traffic

The Project proposes to construct 103 units of mixed single-family residential housing. TEC estimated the site-generated traffic based on industry standard trip rates published in the Institute of Transportation Engineers (ITE) publication, *Trip Generation, 11th Edition* for LUC 215 – Single Family Attached Housing.

Table 5 - Trip Generation Summary

<u>Time Period / Direction</u>	<u>LUC 210 Single Family Detached</u>
<i>Weekday Daily</i>	742
<i>Weekday Morning Peak Hour</i>	
Enter	15
Exit	34
Total	49
<i>Weekday Evening Peak Hour</i>	
Enter	34
Exit	25
Total	59

As shown in Table 5, the proposed development is anticipated to generate approximately 742 new vehicle trips during the average weekday, with 49 new vehicle trips (15 entering and 34 exiting) during the weekday morning peak hour and 59 new vehicle trips (34 entering and 25 exiting) during the weekday evening peak hour. Trip generation worksheets are provided in Attachment G.

Trip Distribution

The distribution of both the single-family residential site-generated traffic volumes was based on gravity models using 2009-2013 U.S. Census Bureau Journey-to-Work/Home data for the Town of Leicester. The residential distribution models the commutes of residents from Leicester to the top 24 workforce cities and towns, which represent approximately 85 percent of total Leicester residents. The top 85 percent of workforce communities generally allow for an approximation of overall distribution of traffic. Additional communities at this level each contribute less than 0.80% of the Leicester residents each which is deemed to not change the distribution of traffic calculations significantly.

The resulting primary trip distributions are shown in Table 6. The Net Site-Generated Trip Assignment traffic-volume network is graphically depicted in Figure 2 for the weekday morning and weekday evening peak hours. Trip distribution gravity model information is provided in Attachment H.

Table 6 – Trip Distribution Summary

Direction	All Time Periods
Route 9 to/from East	80%
Route 9 to/from West	5%
Route 56 to/from North	7%
<u>Route 56 to/from South</u>	<u>8%</u>
Total	100%

Where minimum impacts of site generated traffic are expected to/from the individual eight (8) duplex units along Main Street, the analyses provided in this TIA assumes that all traffic generated to/from the project enters and exits the site via the proposed subdivision road.

2028 Build Traffic Volumes

The 2028 Build Condition traffic-volume networks consist of the 2028 No-Build traffic-volumes with the addition of the site-generated traffic for the proposed development. The resulting 2028 Build weekday morning, and weekday evening peak-hour traffic-volume networks are presented in Figure 2.

CAPACITY AND QUEUE ANALYSIS

To assess quality of flow, roadway capacity and vehicle queue analyses were conducted under 2028 Build traffic volume conditions. Capacity analyses provide an indication of how well the roadway facilities serve the traffic demands placed upon them, with vehicle queue analyses providing a secondary measure of the operational characteristics of an intersection or section of roadway under study.

Methodology

Levels of Service

A primary result of capacity analyses is the assignment of level-of-service to traffic facilities under various traffic-flow conditions.² The concept of level-of-service is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

² The capacity analysis methodology is based on the concepts and procedures presented in the *Highway Capacity Manual 6th Edition*; Transportation Research Board; Washington, DC; 2017



Not to Scale

Main Street

← 324(739)

783(479) →

2021 Existing Conditions

Main Street

← 347(792)

839(514) →

2028 No Build Conditions

Main Street

←
↙ 12(27)

→
↘ 3(7)

↖ 7(5)
↗ 27(20)

Site Driveway

Site Generated Traffic Volumes

Main Street

← 347(792)
↙ 12(27)

→
↘ 3(7)
839(514)

↖ 7(5)
↗ 27(20)

Site Driveway

2028 Build Conditions

XXX(XXX) = Weekday Morning(Weekday Evening)

Figure 2

Weekday Morning and Weekday Evening Peak Hour Traffic Volumes



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Six levels of service are defined for each type of facility. They are given letter designations from A to F, with level-of-service (LOS) A representing the best operating conditions and LOS F representing the worst. Since the level of service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of levels of service, depending on the time of day, day of week, or period of year.

Queue Length Analysis

Vehicle queue analyses are a direct measurement of an intersection's ability to process vehicles under various traffic control and volume scenarios and lane use arrangements. The vehicle queue analysis was performed using the Synchro 11.0™ intersection capacity analysis software which is also based upon the methodology and procedures presented in the *Highway Capacity Manual (HCM) 6th Edition*. Synchro reports the 95th percentile queues for unsignalized intersections and both the 50th (average) and 95th percentile vehicle queues for signalized intersections, which are based on the number of vehicles that experience a delay of six (6) seconds or more at an intersection and is a function of the traffic signal timing; vehicle arrival patterns during the analysis period; and the saturation flow rate. The 50th percentile or average vehicle queue is the average number of vehicles that are projected to be delayed by six seconds or more at the intersection under study during the analysis period. The 95th percentile vehicle queue is the vehicle queue length that will be exceeded only five (5) percent of the time; or approximately three (3) minutes out of 60 minutes during the peak one hour of the day. During the remaining 57 minutes, the vehicle queue length will be less than the 95th percentile queue length.

Parameters for Traffic Impact Analysis

The levels of service of two-way stop-controlled unsignalized intersections are determined by application of a procedure described in the *HCM 6th Edition*. Level of service is measured in terms of average control delay. Mathematically, control delay is a function of the capacity and degree of saturation of the lane group and/or approach under study and is a quantification of motorist delay associated with traffic control devices such as traffic signals and stop signs. Control delay includes the effects of initial deceleration delay approaching a stop sign, stopped delay, queue move-up time, and final acceleration delay from a stopped condition. Definitions for level of service at unsignalized intersections are also given in the *HCM 6th Edition*. Table 7 summarizes the relationship between level of service and average control delay.

Table 7 – Level-of-Service Criteria for Unsignalized Intersections ^(a)

Level of Service ($v/c \leq 1.0$)	Level of Service ($v/c > 1.0$)	Average Control Delay (seconds per vehicle)	Description
A	F	≤ 10.0	LOS A represents a condition with little or no control delay to minor street traffic.
B	F	10.1 to 15.0	LOS B represents a condition with short control delays to minor street traffic.
C	F	15.1 to 25.0	LOS C represents a condition with average control delays to minor street traffic.
D	F	25.1 to 35.0	LOS D represents a condition with long control delays to minor street traffic.
E	F	35.1 to 50.0	LOS E represents operating conditions at or near capacity level, with very long control delays to minor street traffic.
F	F	> 50.0	LOS F represents a condition where minor street demand volume exceeds capacity of an approach lane, with excessive control delays resulting.

^a Source: *Highway Capacity Manual 6th Edition*; Transportation Research Board; Washington D.C.; 2017

Intersection Capacity and Queue Analysis Results

Level-of-service and queue analyses were conducted for 2028 Build Conditions for the intersection within the study area. The results of the intersection capacity and queue analysis are summarized in Table 8. The detailed intersection capacity and queue analysis worksheets are provided in Attachment I.

Main Street / Site Driveway

Under 2028 Build Conditions, the Site Driveway northbound approach at Main Street is anticipated to operate at an acceptable level-of-service (LOS C or better) for the weekday morning and weekday evening peak hours. This includes experiencing a volume-to-capacity (v/c) ratio well under 1.00 indicating that the driveway has adequate capacity to accommodate the expected demand of the site. Overall, the project is not expected to significantly impact the operations on the Main Street main line at the intersection. Generally, the number of vehicles entering and exiting the site is limited.

Table 8 – Intersection Capacity and Queue Analysis Summary

<u>Intersection / Lane Group</u>	<u>2028 Build</u>			
	<u>V/C</u>	<u>Delay</u>	<u>LOS</u>	<u>Queue</u>
<i>Weekday Morning</i>				
Main Street WB	0.02	10.1	B	<25
Site Driveway NBL/R	0.14	21.1	C	<25
<i>Weekday Evening</i>				
Main Street WB	0.03	8.8	A	<25
Site Driveway NBL/R	0.09	17.0	C	<25

^a Volume-to-capacity ratio,

^b Delay expressed in seconds per vehicle (average)

^c Level of service,

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

LEFT-TURN LANE WARRANTS

Table 8 shows that the level of delay experienced by Main Street westbound traffic as a result of left-turning vehicles into the site is generally minimal at approximately 10 seconds per vehicle during the weekday morning peak hour and 9 seconds per vehicle during the weekday evening peak hour. The overall peak hour of the day for the site, the weekday evening peak hour, would be expected to generate a need for 27 vehicles to turn left from Main Street westbound into the site. This equates to approximately one (1) left-turning vehicle every 2-minutes on average; a level of traffic that is generally unnoticeable. Based on the level of expected delay and the spacing of site generated traffic it would not be expected that more than one (1) vehicle is queued to enter the site along the Main Street mainline which currently does not a left-turn lane as part of its cross-section. The level of delay is considerably low as the opposing eastbound traffic during this peak hour is relatively modest for the principal arterial. With just over 500 vehicles per hour, the average gap in traffic over the course of the hour would be expected to be 6.9 seconds. This expected gap and the minimal number of left-turns results in ease of access to the site without exclusive need for a left-turn lane along Main Street.

Although a left-turn lane is not necessary along Main Street westbound, TEC completed a left-turn warrant analysis for the location. The left-turn lane warrant analysis was conducted for the intersection of Main Street / Site Driveway using hourly traffic volumes based on the projected 2028 Build Conditions. The potential left-turn lane along Main Street westbound was analyzed under unsignalized intersection conditions. Note that warranting a left-turn lane does not require the implementation of such a lane.

The *MassHighway Project Development and Design Guide*³ defines left-turn lane volume warrants at unsignalized and signalized intersections based on the Transportation Research Board's (TRB) publication, the *HCM 6th Edition*. The criteria are based on the operating speed of the roadway (approximate 45 mph 85th percentile speed), the opposing volume, and the percent of left-turning vehicles for the advancing vehicle volume. Based on the unsignalized operating conditions on Main Street, the traffic volumes do not warrant the construction of a left-turn lane on the Main Street westbound approach. The warrant is not met as the level of traffic for the left-turn movement does not represent 5% of the approach traffic. Beyond volume metrics, a left-turn lane is not recommended for this location as sufficient gaps are expected to be provided along Main Street to allow for ease of left turning traffic and the level of delay along Main Street westbound cause by the site traffic does not result in significant impacts to free flow conditions.

CONCLUSIONS

TEC has examined the potential traffic impacts associated with the proposed Skyview Estates at 651 Main Street in Leicester, Massachusetts on the study area roadways. The following is a summary of the conclusions in that effort:

³ *MassHighway Project Development and Design Guide*, MassHighway (now Massachusetts Department of Transportation (MassDOT) – Highway Division); Boston, Massachusetts, 2006

- The Project proposes to construct 103-units of mixed single-family residential housing, including one (1) single unit house, six (6) duplexes, and thirty (30) 3-unit multi-family houses.
- Access/egress to 96-units is serviced by the Project's proposed subdivision roadway which connects to the southerly side of Main Street. Gated emergency access is proposed via an existing residential driveway to #747 Main Street on the westerly end of the property. An additional 7-units, in the form of three (3) duplexes and the single unit house, directly access Main Street with standard residential driveways.
- The stopping sight distance along Main Street approaching the subdivision roadway / Site Driveway meets AASHTO minimum recommendations.
- Under existing conditions, the ISD exiting the Site Driveway is non-existent based on the level of vegetation present on the southerly side of Main Street. To mitigate intersection sight distance challenges on the proposed Site Driveway, the Applicant is committed to remove and maintain the vegetation along the southerly side of Main Street, along the site frontage.
- The proposed development is anticipated to generate approximately 742 new vehicle trips during the average weekday, with 49 new vehicle trips (15 entering and 34 exiting) during the weekday morning peak hour and 59 new vehicle trips (34 entering and 25 exiting) during the weekday evening peak hour.
- The Site Driveway northbound approach at Main Street is anticipated to operate at an acceptable level-of-service (LOS C or better) for the weekday morning and weekday evening peak hours. Overall, the project is not expected to significantly impact the operations on the Main Street main line at the intersection.
- A left-turn lane along Main Street westbound is not warranted and not recommended for this location as sufficient gaps are expected to be provided along Main Street to allow for ease of left turning traffic and the level of delay along Main Street westbound cause by the site traffic does not result in significant impacts to free flow conditions.
- The subject project represents a 3.3% increase in traffic at the intersection during the weekday morning peak hour and a 3.6% increase in traffic at the intersection during the weekday evening peak hour. The projected low impact of the Project and the negligible impact on the over-capacity conditions do not warrant specific site related mitigation at this location.

In conclusion, the anticipated traffic generated by the proposed residential community is generally negligible and can be safely and efficiently accommodated within the study area corridors and intersections without the implementation off off-site mitigation beyond clearing of vegetated areas along the site frontage to increase sight lines from the proposed driveway.

Attachment A

Public Transportation Data

Welcome aboard the WRTA!

This route timetable shows the times of departure at major stops along the route and contains route maps and other important information. Additional information can be obtained by calling the WRTA Information Line at (508) 791-WRTA (9782), or visit our website at www.TheRTA.com.

WRTA FARE INFORMATION Effective July 1, 2017

Full Cash Fare (Adults age 14 and up)	\$1.75
Senior/Disabled Cash Fare	\$0.85
Children 5-13 years of age accompanied by an adult	\$0.85
Children 9 years of age not accompanied by an adult**	\$1.75
Children under 5 accompanied by an adult	FREE
One Day 8 Ride Pass (Adults age 14 & up)	\$4.50
Senior/Disabled* / Child One Day 8 Ride Pass	\$2.25
31 Day Pass	\$57.00
Senior/Disabled* 31 Day Pass	\$28.50

*Valid ID Required for Senior/Disabled Fare

**Please have exact fare ready when boarding the bus.
The farebox does not accept pennies or half dollars.**

The Charlie Card is available to either purchase a monthly pass or add stored value (cash). The stored value gives you discounted fare with the WRTA. They can be used on the WRTA, MBTA and other participating RTA's in Massachusetts. You can obtain a Charlie Card at the Customer Service Center located at 60 Foster Street, Worcester, MA

Route schedules and the purchase of passes and paratransit tickets are available at the Customer Service Center at 60 Foster Street, Worcester.

ACCESSIBILITY: All WRTA buses are wheelchair accessible and feature bicycle racks for two bicycles. For TTY service call Massachusetts Relay TTY (800) 439-2370. For information, accommodations and or to provide feedback call 508-791-9782 option 2.

PROPER IDENTIFICATION: One of the following valid identification cards must be shown to the driver each time you board:

- SENIOR WRTA Senior I.D. card
- DISABLED Statewide Access Pass / WRTA ADA Photo I.D. MCB ID and PCA-ride free
- MEDICARE Medicare card with Photo I.D.

HOLIDAY SERVICE: Saturday* Service is provided on Martin Luther King, Jr. Day, Presidents' Day, Patriots' Day, Columbus Day, and the day after Thanksgiving.

Weekday Service is provided on Veterans' Day.
Routes 29, 33, 42 and community shuttles operate on a weekday schedule on these holidays. Routes 19 and 30 operate on a modified Saturday schedule on these holidays.

NO SERVICE ON: New Years Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; Christmas Day

Please...NO Smoking, Eating, Drinking or Music

**The Federal Transit Administration permits transit systems to set a minimum age limit for children riding without a parent or guardian. The WRTA has set this age limit at Nine (9) years old. In order to ensure compliance with this age limit, operators may question a child seeking to board a bus who appears, in the operator's opinion, to be Eight (8) years old or younger. If an operator is not satisfied with a child's answer, the operator may call for assistance from a WRTA supervisor and/or public safety personnel. This policy applies to Paratransit Service as well.

OUTBOUND WEEKDAYS

See the map for matching timepoint locations

1	1C	2	3	4	5	6	7	8	9	10
BUS STARTS Union Station Hub	BUS Leaves City Hall Franklin St	BUS Leaves Clark University	BUS Leaves Webster Square Plaza	BUS Leaves Leicester Center	BUS Leaves Leicester Wal-Mart	BUS ENDS Spencer Center	BUS Leaves Spencer DPW Garage	BUS Leaves East Brookfield Courthouse	BUS Leaves East Brookfield	BUS ENDS Brookfield Center
450a	453a	458a	505a	512a	517a	522a	529a	529a	529a	536a
600a	603a	613a	620a	630a	633a	643a	647a	647a	647a	732a
635a	638a	648a	655a	705a	708a	718a	718a	718a	725a	732a
740a	743a	753a	800a	810a	813a	823a	823a	823a	823a	823a
920a	923a	933a	940a	950a	953a	1003a	1003a	1003a	1003a	1003a
1100a	1104a	1114a	1121a	1131a	1134a	1145a	1145a	1145a	1145a	1145a
1210p	1214p	1224p	1231p	1241p	1244p	1255p	1255p	1255p	1255p	1255p
110p	114p	124p	131p	141p	144p	155p	155p	155p	155p	155p
210p	214p	224p	231p	241p	244p	255p	255p	255p	255p	255p
310p	314p	324p	331p	341p	344p	355p	355p	355p	355p	355p
410p	414p	424p	431p	441p	444p	455p	455p	455p	455p	455p
510p	513p	523p	530p	540p	543p	553p	553p	553p	553p	553p
610p	613p	623p	630p	640p	643p	653p	653p	653p	653p	653p
710p	713p	723p	730p	740p	743p	750p	750p	750p	750p	750p

* Trips end here

INBOUND WEEKDAYS

See the map for matching timepoint locations

10	9	8	7	6	5	4	3	2	1A	1
BUS STARTS Brookfield Center	BUS Leaves East Brookfield	BUS Leaves East Brookfield Courthouse	BUS Leaves Spencer DPW Garage	BUS Leaves Spencer Center	BUS Leaves Leicester Wal-Mart	BUS Leaves Leicester Center	BUS Leaves Webster Square Plaza	BUS Leaves Clark Univ.	BUS Leaves City Hall (Main St.)	BUS ENDS Union Station Hub
539a	546a	546a	553a	600a	600a	603a	613a	620a	630a	635a
735a	744a	744a	650a	701a	701a	705a	715a	725a	735a	740a
735a	744a	744a	751a	758a	758a	801a	813a	820a	830a	835a
830a	830a	830a	834a	841a	841a	845a	855a	905a	915a	920a
1010a	1010a	1010a	1014a	1021a	1021a	1025a	1035a	1045a	1055a	1100a
1200p	1200p	1200p	1205p	1215p	1215p	1220p	1235p	1243p	1255p	100p
110p	110p	110p	115p	125p	125p	130p	145p	153p	205p	210p
210p	210p	210p	215p	225p	225p	230p	245p	253p	305p	310p
310p	310p	310p	315p	325p	325p	330p	345p	353p	405p	410p
410p	410p	410p	415p	425p	425p	430p	445p	453p	505p	510p
510p	510p	510p	515p	525p	525p	530p	545p	553p	605p	610p
610p	619p	619p	626p	633p	633p	636p	648p	655p	705p	710p
710p	719p	719p	726p	733p	733p	736p	748p	755p	805p	810p
757p	757p	757p	801p	808p	808p	811p	823p	830p	840p	845p

Route 33

UNION STATION HUB-LEICESTER – SPENCER – EAST BROOKFIELD – BROOKFIELD via MAIN ST. & ROUTE 9

Effective Date: June 24, 2017

Worcester Regional Transit Authority



Serving:

- Union Station
- Federal Building / U.S. Courthouse
- YMCA Central Branch
- Clark University
- Webster Square
- Webster Square Plaza
- Becker College (Leicester campus)
- Leicester Housing Authority
- Leicester Wal-Mart
- Western Worcester District Court

Translation

English: If this information is needed in another language, please visit www.therta.com and use the Google Translate feature.
Portuguese: Se esta informação é necessária em outro idioma, por favor visite www.therta.com e use o Google Translate.
Spanish: Si necesita esta información en otro idioma, por favor visite www.therta.com y utilice Google Translate.
French: Si vous désirez ces renseignements dans une autre langue, prière de vous servir de Google Translate qui se trouve à l'adresse suivante: www.therta.com.
Polish: Jeśli ta informacja jest potrzebna w innym języku, proszę odwiedzić www.therta.com i korzystać z Google Translate (funkcja).
Vietnamese: Nếu thông tin này là cần thiết trong một ngôn ngữ khác, vui lòng truy cập www.therta.com và sử dụng các tính năng của Google Translate.
Chinese (Traditional): 如果此信息需要以另一種語言，請訪問 www.therta.com 並使用谷歌翻譯功能。
Swahili: Kama unahitaji habari hii katika nyingine lugha, unaweza kubonyeza mahali panaulikwa Google Translate hapa juu.

Notes: French, Spanish, Polish and Portuguese translations were created by human translation from the English version. Vietnamese, Chinese and Swahili translations were created from the English version using Google Translate. There are likely grammatical errors in these translations; however, the translators re-checked use of Google Translate for bus schedule printing within necessary timeframe (June 2017)

SATURDAY SERVICE: TO SPENCER USE ROUTE 19

For Transit Information Call
508-791-9782 or Visit
www.therta.com

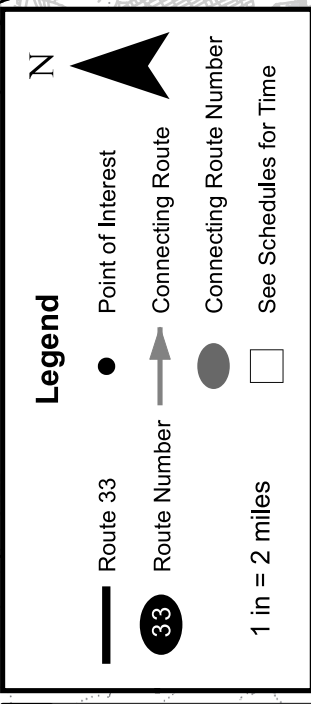
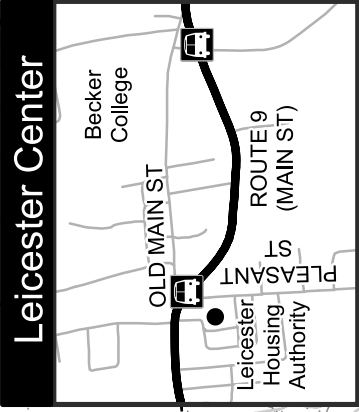
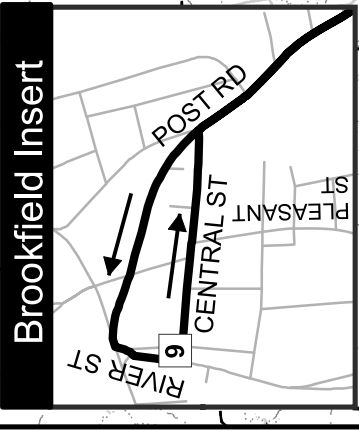


All Routes Serve:
 ~ Union Station
 ~ WRTA Customer Service Center

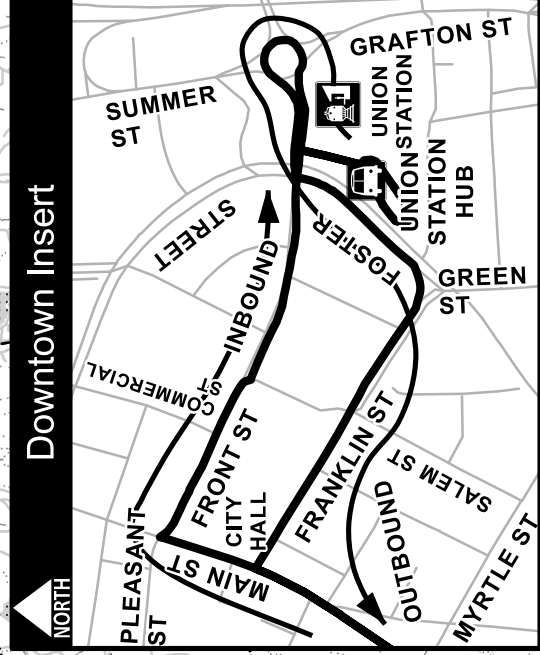
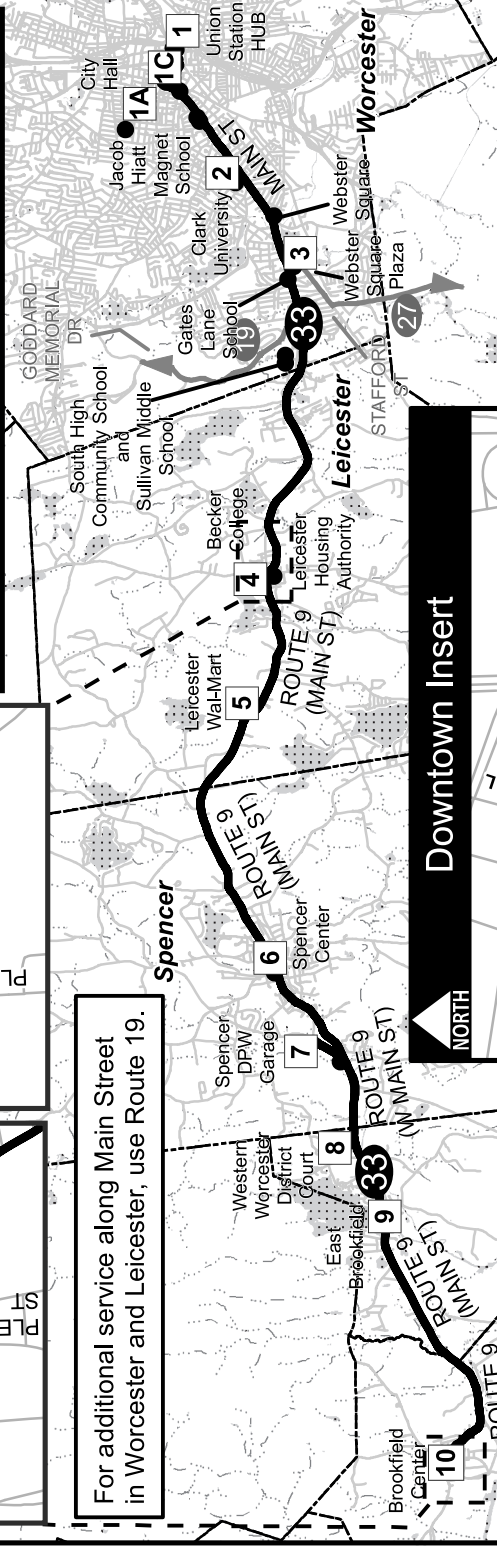
Route 33 Serving:
 ~ Worcester City Hall
 ~ Federal Building/ U.S. Courthouse
 ~ YMCA Central Branch
 ~ Jacob Hiatt Magnet School
 ~ Clark University
 ~ Webster Square Plaza
 ~ Gates Lane School
 ~ Leicester Center
 ~ Leicester
 ~ Wal-Mart
 ~ Spencer Center
 ~ Western
 ~ Worcester District Court
 ~ East Brookfield Elementary School
 ~ Lake Lashaway
 ~ East Brookfield Center
 ~ Brookfield Center

Connecting Routes:
 Route 19
 Route 27

33 UNION STATION HUB - Leicester - Spencer - 33 East Brookfield - Brookfield via Main St & Route 9



For additional service along Main Street in Worcester and Leicester, use Route 19.



FLAG STOPS:
 Outside of Worcester, buses will stop at any safe location along the route. Simply wave to the driver.
 To exit, let the driver know where you would like to get off.



Thank You for riding the

Attachment B

Automatic Traffic Recorder (ATR) Counts



PRECISION
D A T A
INDUSTRIES, LLC

157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Main Street (Route 9) between
Waite Street and Colonial Drive

City, State: Leicester, MA

Client: TEC/ S. Gregorio

Site Code: T1154

PDI File #: 218159 ATR-A

Count Date:

Tuesday, September, 14, 2021

Volume

WB					EB					Combined							
Start Time:	15 min	60 min	15 min	60 min	Start Time:	15 min	60 min	15 min	60 min	Start Time:	15 min	60 min	15 min	60 min			
12:00 AM	13		12:00 PM	119	12:00 AM	4		12:00 PM	97	12:00 AM	17		12:00 PM	216			
12:15 AM	17		12:15 PM	116	12:15 AM	8		12:15 PM	116	12:15 AM	25		12:15 PM	232			
12:30 AM	14		12:30 PM	109	12:30 AM	3		12:30 PM	107	12:30 AM	17		12:30 PM	216			
12:45 AM	6	50	12:45 PM	130	474	12:45 AM	6	21	12:45 PM	104	424	12:45 AM	12	71	12:45 PM	234	898
1:00 AM	11		1:00 PM	110		1:00 AM	6		1:00 PM	126		1:00 AM	17		1:00 PM	236	
1:15 AM	8		1:15 PM	100		1:15 AM	2		1:15 PM	145		1:15 AM	10		1:15 PM	245	
1:30 AM	7		1:30 PM	123		1:30 AM	11		1:30 PM	109		1:30 AM	18		1:30 PM	232	
1:45 AM	5	31	1:45 PM	132	465	1:45 AM	6	25	1:45 PM	133	513	1:45 AM	11	56	1:45 PM	265	978
2:00 AM	2		2:00 PM	119		2:00 AM	9		2:00 PM	123		2:00 AM	11		2:00 PM	242	
2:15 AM	5		2:15 PM	148		2:15 AM	6		2:15 PM	97		2:15 AM	11		2:15 PM	245	
2:30 AM	6		2:30 PM	164		2:30 AM	8		2:30 PM	126		2:30 AM	14		2:30 PM	290	
2:45 AM	3	16	2:45 PM	143	574	2:45 AM	7	30	2:45 PM	112	458	2:45 AM	10	46	2:45 PM	255	1032
3:00 AM	6		3:00 PM	151		3:00 AM	4		3:00 PM	126		3:00 AM	10		3:00 PM	277	
3:15 AM	6		3:15 PM	156		3:15 AM	5		3:15 PM	116		3:15 AM	11		3:15 PM	272	
3:30 AM	9		3:30 PM	160		3:30 AM	16		3:30 PM	112		3:30 AM	25		3:30 PM	272	
3:45 AM	5	26	3:45 PM	193	660	3:45 AM	11	36	3:45 PM	126	480	3:45 AM	16	62	3:45 PM	319	1140
4:00 AM	3		4:00 PM	166		4:00 AM	19		4:00 PM	116		4:00 AM	22		4:00 PM	282	
4:15 AM	10		4:15 PM	205		4:15 AM	21		4:15 PM	121		4:15 AM	31		4:15 PM	326	
4:30 AM	13		4:30 PM	154		4:30 AM	48		4:30 PM	125		4:30 AM	61		4:30 PM	279	
4:45 AM	13	39	4:45 PM	166	691	4:45 AM	49	137	4:45 PM	115	477	4:45 AM	62	176	4:45 PM	281	1168
5:00 AM	15		5:00 PM	184		5:00 AM	52		5:00 PM	105		5:00 AM	67		5:00 PM	289	
5:15 AM	17		5:15 PM	189		5:15 AM	96		5:15 PM	117		5:15 AM	113		5:15 PM	306	
5:30 AM	18		5:30 PM	177		5:30 AM	96		5:30 PM	135		5:30 AM	114		5:30 PM	312	
5:45 AM	35	85	5:45 PM	184	734	5:45 AM	100	344	5:45 PM	119	476	5:45 AM	135	429	5:45 PM	303	1210
6:00 AM	35		6:00 PM	167		6:00 AM	130		6:00 PM	89		6:00 AM	165		6:00 PM	256	
6:15 AM	46		6:15 PM	141		6:15 AM	170		6:15 PM	98		6:15 AM	216		6:15 PM	239	
6:30 AM	62		6:30 PM	136		6:30 AM	168		6:30 PM	95		6:30 AM	230		6:30 PM	231	
6:45 AM	95	238	6:45 PM	108	552	6:45 AM	153	621	6:45 PM	96	378	6:45 AM	248	859	6:45 PM	204	930
7:00 AM	73		7:00 PM	127		7:00 AM	206		7:00 PM	84		7:00 AM	279		7:00 PM	211	
7:15 AM	74		7:15 PM	89		7:15 AM	219		7:15 PM	77		7:15 AM	293		7:15 PM	166	
7:30 AM	80		7:30 PM	94		7:30 AM	209		7:30 PM	66		7:30 AM	289		7:30 PM	160	
7:45 AM	95	322	7:45 PM	70	380	7:45 AM	143	777	7:45 PM	69	296	7:45 AM	238	1099	7:45 PM	139	676
8:00 AM	82		8:00 PM	69		8:00 AM	174		8:00 PM	57		8:00 AM	256		8:00 PM	126	
8:15 AM	87		8:15 PM	70		8:15 AM	195		8:15 PM	50		8:15 AM	282		8:15 PM	120	
8:30 AM	94		8:30 PM	81		8:30 AM	162		8:30 PM	53		8:30 AM	256		8:30 PM	134	
8:45 AM	114	377	8:45 PM	66	286	8:45 AM	129	660	8:45 PM	40	200	8:45 AM	243	1037	8:45 PM	106	486
9:00 AM	113		9:00 PM	56		9:00 AM	125		9:00 PM	44		9:00 AM	238		9:00 PM	100	
9:15 AM	104		9:15 PM	65		9:15 AM	113		9:15 PM	78		9:15 AM	217		9:15 PM	143	
9:30 AM	91		9:30 PM	53		9:30 AM	111		9:30 PM	34		9:30 AM	202		9:30 PM	87	
9:45 AM	94	402	9:45 PM	46	220	9:45 AM	140	489	9:45 PM	39	195	9:45 AM	234	891	9:45 PM	85	415
10:00 AM	77		10:00 PM	37		10:00 AM	121		10:00 PM	37		10:00 AM	198		10:00 PM	74	
10:15 AM	92		10:15 PM	36		10:15 AM	107		10:15 PM	40		10:15 AM	199		10:15 PM	76	
10:30 AM	88		10:30 PM	26		10:30 AM	136		10:30 PM	28		10:30 AM	224		10:30 PM	54	
10:45 AM	109	366	10:45 PM	35	134	10:45 AM	106	470	10:45 PM	19	124	10:45 AM	215	836	10:45 PM	54	258
11:00 AM	97		11:00 PM	22		11:00 AM	124		11:00 PM	19		11:00 AM	221		11:00 PM	41	
11:15 AM	104		11:15 PM	26		11:15 AM	116		11:15 PM	14		11:15 AM	220		11:15 PM	40	
11:30 AM	119		11:30 PM	23		11:30 AM	110		11:30 PM	15		11:30 AM	229		11:30 PM	38	
11:45 AM	106	426	11:45 PM	21	92	11:45 AM	122	472	11:45 PM	3	51	11:45 AM	228	898	11:45 PM	24	143
Total	2378		5262			Total	4082		4072			Total	6460		9334		
Percent	31.13%		68.87%			Percent	50.06%		49.94%			Percent	40.90%		59.10%		
Day Total			7640			Day Total			8154			Day Total			15794		
Peak Hour	10:45 AM		5:00 PM			Peak Hour	6:45 AM		1:00 PM			Peak Hour	6:45 AM		5:00 PM		
Volume	429		734			Volume	787		513			Volume	1109		1210		
P.H.F.	0.901		0.971			P.H.F.	0.898		0.884			P.H.F.	0.946		0.970		



PRECISION
D A T A
INDUSTRIES, LLC

157 Washington Street, Suite 2
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Office: 508-875-0100 Fax: 508-875-0118

Main Street (Route 9) between
Waite Street and Colonial Drive

City, State: Leicester, MA

Client: TEC/ S. Gregorio

Site Code: T1154

PDI File #: 218159 ATR-A

Count Date:

Wednesday, September 15, 2021

Volume

WB					EB					Combined							
Start Time:	15 min	60 min	15 min	60 min	Start Time:	15 min	60 min	15 min	60 min	Start Time:	15 min	60 min	15 min	60 min			
12:00 AM	19		12:00 PM	133	12:00 AM	13		12:00 PM	110	12:00 AM	32		12:00 PM	243			
12:15 AM	22		12:15 PM	93	12:15 AM	6		12:15 PM	128	12:15 AM	28		12:15 PM	221			
12:30 AM	18		12:30 PM	110	12:30 AM	6		12:30 PM	110	12:30 AM	24		12:30 PM	220			
12:45 AM	8	67	12:45 PM	103	439	12:45 AM	5	30	12:45 PM	115	463	12:45 AM	13	97	12:45 PM	218	902
1:00 AM	6		1:00 PM	105		1:00 AM	9		1:00 PM	121		1:00 AM	15		1:00 PM	226	
1:15 AM	11		1:15 PM	116		1:15 AM	4		1:15 PM	118		1:15 AM	15		1:15 PM	234	
1:30 AM	9		1:30 PM	127		1:30 AM	11		1:30 PM	116		1:30 AM	20		1:30 PM	243	
1:45 AM	10	36	1:45 PM	107	455	1:45 AM	3	27	1:45 PM	114	469	1:45 AM	13	63	1:45 PM	221	924
2:00 AM	6		2:00 PM	136		2:00 AM	2		2:00 PM	122		2:00 AM	8		2:00 PM	258	
2:15 AM	2		2:15 PM	137		2:15 AM	4		2:15 PM	117		2:15 AM	6		2:15 PM	254	
2:30 AM	2		2:30 PM	149		2:30 AM	9		2:30 PM	119		2:30 AM	11		2:30 PM	268	
2:45 AM	4	14	2:45 PM	183	605	2:45 AM	8	23	2:45 PM	116	474	2:45 AM	12	37	2:45 PM	299	1079
3:00 AM	5		3:00 PM	160		3:00 AM	7		3:00 PM	119		3:00 AM	12		3:00 PM	279	
3:15 AM	4		3:15 PM	166		3:15 AM	12		3:15 PM	114		3:15 AM	16		3:15 PM	280	
3:30 AM	7		3:30 PM	162		3:30 AM	6		3:30 PM	120		3:30 AM	13		3:30 PM	282	
3:45 AM	5	21	3:45 PM	180	668	3:45 AM	11	36	3:45 PM	138	491	3:45 AM	16	57	3:45 PM	318	1159
4:00 AM	4		4:00 PM	147		4:00 AM	27		4:00 PM	110		4:00 AM	31		4:00 PM	257	
4:15 AM	6		4:15 PM	172		4:15 AM	27		4:15 PM	110		4:15 AM	33		4:15 PM	282	
4:30 AM	11		4:30 PM	189		4:30 AM	45		4:30 PM	119		4:30 AM	56		4:30 PM	308	
4:45 AM	24	45	4:45 PM	166	674	4:45 AM	39	138	4:45 PM	121	460	4:45 AM	63	183	4:45 PM	287	1134
5:00 AM	9		5:00 PM	211		5:00 AM	65		5:00 PM	106		5:00 AM	74		5:00 PM	317	
5:15 AM	21		5:15 PM	190		5:15 AM	66		5:15 PM	128		5:15 AM	87		5:15 PM	318	
5:30 AM	21		5:30 PM	192		5:30 AM	107		5:30 PM	116		5:30 AM	128		5:30 PM	308	
5:45 AM	35	86	5:45 PM	178	771	5:45 AM	94	332	5:45 PM	90	440	5:45 AM	129	418	5:45 PM	268	1211
6:00 AM	34		6:00 PM	144		6:00 AM	135		6:00 PM	124		6:00 AM	169		6:00 PM	268	
6:15 AM	40		6:15 PM	134		6:15 AM	162		6:15 PM	121		6:15 AM	202		6:15 PM	255	
6:30 AM	70		6:30 PM	140		6:30 AM	191		6:30 PM	91		6:30 AM	261		6:30 PM	231	
6:45 AM	83	227	6:45 PM	138	556	6:45 AM	164	652	6:45 PM	99	435	6:45 AM	247	879	6:45 PM	237	991
7:00 AM	80		7:00 PM	104		7:00 AM	200		7:00 PM	83		7:00 AM	280		7:00 PM	187	
7:15 AM	84		7:15 PM	116		7:15 AM	200		7:15 PM	111		7:15 AM	284		7:15 PM	227	
7:30 AM	80		7:30 PM	95		7:30 AM	196		7:30 PM	84		7:30 AM	276		7:30 PM	179	
7:45 AM	103	347	7:45 PM	94	409	7:45 AM	185	781	7:45 PM	62	340	7:45 AM	288	1128	7:45 PM	156	749
8:00 AM	79		8:00 PM	72		8:00 AM	145		8:00 PM	54		8:00 AM	224		8:00 PM	126	
8:15 AM	85		8:15 PM	71		8:15 AM	201		8:15 PM	70		8:15 AM	286		8:15 PM	141	
8:30 AM	85		8:30 PM	75		8:30 AM	148		8:30 PM	58		8:30 AM	233		8:30 PM	133	
8:45 AM	94	343	8:45 PM	68	286	8:45 AM	122	616	8:45 PM	33	215	8:45 AM	216	959	8:45 PM	101	501
9:00 AM	104		9:00 PM	37		9:00 AM	144		9:00 PM	34		9:00 AM	248		9:00 PM	71	
9:15 AM	75		9:15 PM	56		9:15 AM	117		9:15 PM	36		9:15 AM	192		9:15 PM	92	
9:30 AM	85		9:30 PM	47		9:30 AM	126		9:30 PM	34		9:30 AM	211		9:30 PM	81	
9:45 AM	93	357	9:45 PM	46	186	9:45 AM	143	530	9:45 PM	26	130	9:45 AM	236	887	9:45 PM	72	316
10:00 AM	90		10:00 PM	35		10:00 AM	104		10:00 PM	35		10:00 AM	194		10:00 PM	70	
10:15 AM	93		10:15 PM	25		10:15 AM	110		10:15 PM	25		10:15 AM	203		10:15 PM	50	
10:30 AM	117		10:30 PM	36		10:30 AM	121		10:30 PM	29		10:30 AM	238		10:30 PM	65	
10:45 AM	106	406	10:45 PM	31	127	10:45 AM	102	437	10:45 PM	25	114	10:45 AM	208	843	10:45 PM	56	241
11:00 AM	97		11:00 PM	31		11:00 AM	103		11:00 PM	15		11:00 AM	200		11:00 PM	46	
11:15 AM	120		11:15 PM	25		11:15 AM	122		11:15 PM	17		11:15 AM	242		11:15 PM	42	
11:30 AM	119		11:30 PM	20		11:30 AM	104		11:30 PM	14		11:30 AM	223		11:30 PM	34	
11:45 AM	109	445	11:45 PM	24	100	11:45 AM	94	423	11:45 PM	9	55	11:45 AM	203	868	11:45 PM	33	155
Total	2394		5276			Total	4025		4086			Total	6419		9362		
Percent	31.21%		68.79%			Percent	49.62%		50.38%			Percent	40.68%		59.32%		
Day Total			7670			Day Total			8111			Day Total			15781		
Peak Hour	11:00 AM		5:00 PM			Peak Hour	7:00 AM		3:00 PM			Peak Hour	7:00 AM		4:30 PM		
Volume	445		771			Volume	781		491			Volume	1128		1230		
P.H.F.	0.927		0.914			P.H.F.	0.976		0.889			P.H.F.	0.979		0.967		

Main Street (Route 9) between
 Waite Street and Colonial Drive
 City, State: Leicester, MA
 Client: TEC/ S. Gregorio
 Site Code: T1154



PDI File #: 218159 ATR-A

Count Date
 Tuesday, September, 14, 2021

Classification (60-minute)

WB															
Start Time:	Motorcycles	Cars and Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Bicycles	Total
12:00 AM	0	44	5	0	0	0	0	0	1	0	0	0	0	0	50
1:00 AM	0	23	4	0	3	0	0	0	1	0	0	0	0	0	31
2:00 AM	0	14	1	0	1	0	0	0	0	0	0	0	0	0	16
3:00 AM	0	18	3	1	3	0	0	0	1	0	0	0	0	0	26
4:00 AM	0	28	7	2	2	0	0	0	0	0	0	0	0	0	39
5:00 AM	0	58	13	3	8	2	0	0	0	1	0	0	0	0	85
6:00 AM	0	162	37	9	16	1	0	3	8	2	0	0	0	0	238
7:00 AM	1	233	55	7	16	1	0	4	3	2	0	0	0	0	322
8:00 AM	2	261	69	10	13	1	1	4	15	1	0	0	0	0	377
9:00 AM	2	282	69	7	23	2	0	1	11	4	0	0	1	0	402
10:00 AM	2	238	72	5	30	1	0	3	12	3	0	0	0	0	366
11:00 AM	2	317	66	4	21	1	0	4	9	1	0	0	0	1	426
12:00 PM	2	323	86	10	25	4	1	5	13	5	0	0	0	0	474
1:00 PM	5	336	69	9	22	3	0	6	11	3	0	0	0	1	465
2:00 PM	3	426	105	8	15	2	0	3	8	4	0	0	0	0	574
3:00 PM	3	470	136	7	32	2	1	5	3	1	0	0	0	0	660
4:00 PM	5	507	139	4	26	0	0	4	3	1	0	0	0	2	691
5:00 PM	2	603	105	4	15	1	0	2	1	1	0	0	0	0	734
6:00 PM	8	430	93	5	14	1	0	1	0	0	0	0	0	0	552
7:00 PM	0	313	57	1	8	0	0	0	1	0	0	0	0	0	380
8:00 PM	0	237	39	0	8	0	0	0	1	1	0	0	0	0	286
9:00 PM	0	176	35	1	8	0	0	0	0	0	0	0	0	0	220
10:00 PM	0	111	22	0	1	0	0	0	0	0	0	0	0	0	134
11:00 PM	0	81	10	0	1	0	0	0	0	0	0	0	0	0	92
Total	37	5691	1297	97	311	22	3	45	102	30	0	0	1	4	7640
Percent	0.48%	74.49%	16.98%	1.27%	4.07%	0.29%	0.04%	0.59%	1.34%	0.39%	0.00%	0.00%	0.01%	0.05%	

AM Peak	8:00 AM	11:00 AM	10:00 AM	8:00 AM	10:00 AM	5:00 AM	8:00 AM	7:00 AM	8:00 AM	9:00 AM			9:00 AM	11:00 AM	11:00 AM
Volume	2	317	72	10	30	2	1	4	15	4	0	0	1	1	426
PM Peak	6:00 PM	5:00 PM	4:00 PM	12:00 PM	3:00 PM	12:00 PM	12:00 PM	1:00 PM	12:00 PM	12:00 PM				4:00 PM	5:00 PM
Volume	8	603	139	10	32	4	1	6	13	5	0	0	0	2	734

Bicycles	4	0.1%
Motorcycles, Cars, Light Trucks:	7025	92.0%
Heavy Vehicles:	611	8.0%

Main Street (Route 9) between
 Waite Street and Colonial Drive
 City, State: Leicester, MA
 Client: TEC/ S. Gregorio
 Site Code: T1154



PDI File #: 218159 ATR-A

Count Date
 Tuesday, September, 14, 2021

Classification (60-minute)

EB															
Start Time:	Motorcycles	Cars and Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Bicycles	Total
12:00 AM	0	17	2	0	1	0	0	0	1	0	0	0	0	0	21
1:00 AM	0	20	3	0	2	0	0	0	0	0	0	0	0	0	25
2:00 AM	0	22	5	0	3	0	0	0	0	0	0	0	0	0	30
3:00 AM	0	27	6	0	3	0	0	0	0	0	0	0	0	0	36
4:00 AM	1	92	19	0	25	0	0	0	0	0	0	0	0	0	137
5:00 AM	2	217	70	1	50	0	0	3	1	0	0	0	0	0	344
6:00 AM	5	399	127	15	72	1	0	2	0	0	0	0	0	0	621
7:00 AM	3	544	155	7	62	0	0	2	4	0	0	0	0	0	777
8:00 AM	4	473	121	4	44	2	0	5	6	0	0	0	0	1	660
9:00 AM	0	339	81	9	39	0	0	4	13	1	0	0	0	3	489
10:00 AM	3	330	76	4	41	1	1	3	11	0	0	0	0	0	470
11:00 AM	0	331	83	9	38	1	1	4	4	1	0	0	0	0	472
12:00 PM	2	290	70	10	32	2	2	6	9	0	0	0	0	1	424
1:00 PM	2	361	74	14	39	2	2	6	11	0	1	0	0	1	513
2:00 PM	1	325	71	11	37	1	1	8	3	0	0	0	0	0	458
3:00 PM	3	364	67	9	30	0	0	1	5	0	0	0	0	1	480
4:00 PM	4	340	82	5	34	1	1	4	3	1	0	0	0	2	477
5:00 PM	3	355	77	9	25	1	0	2	1	0	0	0	0	3	476
6:00 PM	2	269	79	3	21	1	0	3	0	0	0	0	0	0	378
7:00 PM	0	226	49	2	19	0	0	0	0	0	0	0	0	0	296
8:00 PM	1	164	23	1	10	0	0	0	1	0	0	0	0	0	200
9:00 PM	0	149	32	0	13	0	0	0	1	0	0	0	0	0	195
10:00 PM	1	104	13	0	6	0	0	0	0	0	0	0	0	0	124
11:00 PM	0	41	7	0	3	0	0	0	0	0	0	0	0	0	51
PM Total	37	5799	1392	113	649	13	8	53	74	3	1	0	0	12	8154
Percent	0.45%	71.12%	17.07%	1.39%	7.96%	0.16%	0.10%	0.65%	0.91%	0.04%	0.01%	0.00%	0.00%	0.15%	

AM Peak	6:00 AM	7:00 AM	7:00 AM	6:00 AM	6:00 AM	8:00 AM	10:00 AM	8:00 AM	9:00 AM	9:00 AM				9:00 AM	7:00 AM
Volume	5	544	155	15	72	2	1	5	13	1	0	0	0	3	777

PM Peak	4:00 PM	3:00 PM	4:00 PM	1:00 PM	1:00 PM	12:00 PM	12:00 PM	2:00 PM	1:00 PM	4:00 PM	1:00 PM			5:00 PM	1:00 PM
Volume	4	364	82	14	39	2	2	8	11	1	1	0	0	3	513

Bicycles	12	0.1%
Motorcycles, Cars, Light Trucks:	7228	88.6%
Heavy Vehicles:	914	11.2%

Main Street (Route 9) between
 Waite Street and Colonial Drive
 City, State: Leicester, MA
 Client: TEC/ S. Gregorio
 Site Code: T1154



PDI File #: 218159 ATR-A

Count Date
 Tuesday, September, 14, 2021

Classification (60-minute)

Combined															
Start Time:	Motorcycles	Cars and Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Bicycles	Total
12:00 AM	0	61	7	0	1	0	0	0	2	0	0	0	0	0	71
1:00 AM	0	43	7	0	5	0	0	0	1	0	0	0	0	0	56
2:00 AM	0	36	6	0	4	0	0	0	0	0	0	0	0	0	46
3:00 AM	0	45	9	1	6	0	0	0	1	0	0	0	0	0	62
4:00 AM	1	120	26	2	27	0	0	0	0	0	0	0	0	0	176
5:00 AM	2	275	83	4	58	2	0	3	1	1	0	0	0	0	429
6:00 AM	5	561	164	24	88	2	0	5	8	2	0	0	0	0	859
7:00 AM	4	777	210	14	78	1	0	6	7	2	0	0	0	0	1099
8:00 AM	6	734	190	14	57	3	1	9	21	1	0	0	0	1	1037
9:00 AM	2	621	150	16	62	2	0	5	24	5	0	0	1	3	891
10:00 AM	5	568	148	9	71	2	1	6	23	3	0	0	0	0	836
11:00 AM	2	648	149	13	59	2	1	8	13	2	0	0	0	1	898
12:00 PM	4	613	156	20	57	6	3	11	22	5	0	0	0	1	898
1:00 PM	7	697	143	23	61	5	2	12	22	3	1	0	0	2	978
2:00 PM	4	751	176	19	52	3	1	11	11	4	0	0	0	0	1032
3:00 PM	6	834	203	16	62	2	1	6	8	1	0	0	0	1	1140
4:00 PM	9	847	221	9	60	1	1	8	6	2	0	0	0	4	1168
5:00 PM	5	958	182	13	40	2	0	4	2	1	0	0	0	3	1210
6:00 PM	10	699	172	8	35	2	0	4	0	0	0	0	0	0	930
7:00 PM	0	539	106	3	27	0	0	0	1	0	0	0	0	0	676
8:00 PM	1	401	62	1	18	0	0	0	2	1	0	0	0	0	486
9:00 PM	0	325	67	1	21	0	0	0	1	0	0	0	0	0	415
10:00 PM	1	215	35	0	7	0	0	0	0	0	0	0	0	0	258
11:00 PM	0	122	17	0	4	0	0	0	0	0	0	0	0	0	143
PM Total	74	11490	2689	210	960	35	11	98	176	33	1	0	1	16	15794
Percent	0.47%	72.75%	17.03%	1.33%	6.08%	0.22%	0.07%	0.62%	1.11%	0.21%	0.01%	0.00%	0.01%	0.10%	

AM Peak	8:00 AM	7:00 AM	7:00 AM	6:00 AM	6:00 AM	8:00 AM	8:00 AM	8:00 AM	9:00 AM	9:00 AM				9:00 AM	9:00 AM	7:00 AM
Volume	6	777	210	24	88	3	1	9	24	5	0	0		1	3	1099

PM Peak	6:00 PM	5:00 PM	4:00 PM	1:00 PM	3:00 PM	12:00 PM	12:00 PM	1:00 PM	12:00 PM	12:00 PM	1:00 PM				4:00 PM	5:00 PM
Volume	10	958	221	23	62	6	3	12	22	5	1	0	0		4	1210

Bicycles	16	0.1%
Motorcycles, Cars, Light Trucks:	14253	90.2%
Heavy Vehicles:	1525	9.7%

Main Street (Route 9) between
 Waite Street and Colonial Drive
 City, State: Leicester, MA
 Client: TEC/ S. Gregorio
 Site Code: T1154



PDI File #: 218159 ATR-A

Count Date
 Wednesday, September 15, 2021

Classification (60-minute)

WB															
Start Time:	Motorcycles	Cars and Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Bicycles	Total
12:00 AM	0	59	7	0	1	0	0	0	0	0	0	0	0	0	67
1:00 AM	0	26	6	0	3	0	0	0	1	0	0	0	0	0	36
2:00 AM	0	14	0	0	0	0	0	0	0	0	0	0	0	0	14
3:00 AM	0	18	2	1	0	0	0	0	0	0	0	0	0	0	21
4:00 AM	0	35	7	2	0	0	0	0	0	1	0	0	0	0	45
5:00 AM	0	57	17	3	6	2	0	0	1	0	0	0	0	0	86
6:00 AM	1	157	41	7	10	2	0	1	6	2	0	0	0	0	227
7:00 AM	0	230	58	8	38	1	0	5	6	1	0	0	0	0	347
8:00 AM	1	207	61	11	41	3	2	7	7	3	0	0	0	0	343
9:00 AM	0	225	61	10	43	2	1	5	10	0	0	0	0	0	357
10:00 AM	0	245	84	10	50	1	0	2	11	3	0	0	0	0	406
11:00 AM	2	265	97	3	64	2	0	5	6	1	0	0	0	0	445
12:00 PM	2	291	76	8	37	1	0	9	13	2	0	0	0	0	439
1:00 PM	0	316	75	9	42	2	0	2	8	1	0	0	0	0	455
2:00 PM	3	425	94	15	55	2	0	7	4	0	0	0	0	0	605
3:00 PM	5	449	124	13	70	2	0	3	1	0	0	0	0	1	668
4:00 PM	1	471	128	6	60	0	0	5	0	0	0	0	0	3	674
5:00 PM	3	571	125	6	59	1	0	3	2	0	0	0	0	1	771
6:00 PM	3	420	82	7	43	0	0	1	0	0	0	0	0	0	556
7:00 PM	1	325	55	2	26	0	0	0	0	0	0	0	0	0	409
8:00 PM	1	217	35	1	32	0	0	0	0	0	0	0	0	0	286
9:00 PM	0	140	30	0	16	0	0	0	0	0	0	0	0	0	186
10:00 PM	0	106	12	0	9	0	0	0	0	0	0	0	0	0	127
11:00 PM	0	77	19	0	3	0	0	0	1	0	0	0	0	0	100
Total	23	5346	1296	122	708	21	3	55	77	14	0	0	0	5	7670
Percent	0.30%	69.70%	16.90%	1.59%	9.23%	0.27%	0.04%	0.72%	1.00%	0.18%	0.00%	0.00%	0.00%	0.07%	

AM Peak	11:00 AM	11:00 AM	11:00 AM	8:00 AM	11:00 AM	8:00 AM	8:00 AM	8:00 AM	10:00 AM	8:00 AM					11:00 AM
Volume	2	265	97	11	64	3	2	7	11	3	0	0	0	0	445

PM Peak	3:00 PM	5:00 PM	4:00 PM	2:00 PM	3:00 PM	1:00 PM		12:00 PM	12:00 PM	12:00 PM					4:00 PM	5:00 PM
Volume	5	571	128	15	70	2	0	9	13	2	0	0	0	3	771	

Bicycles	5	0.1%
Motorcycles, Cars, Light Trucks:	6665	86.9%
Heavy Vehicles:	1000	13.0%

Main Street (Route 9) between
 Waite Street and Colonial Drive
 City, State: Leicester, MA
 Client: TEC/ S. Gregorio
 Site Code: T1154



PDI File #: 218159 ATR-A

Count Date
 Wednesday, September 15, 2021

Classification (60-minute)

EB															
Start Time:	Motorcycles	Cars and Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Bicycles	Total
12:00 AM	0	24	5	0	0	0	0	0	1	0	0	0	0	0	30
1:00 AM	0	17	7	0	2	0	0	0	1	0	0	0	0	0	27
2:00 AM	0	15	4	0	3	0	0	0	1	0	0	0	0	0	23
3:00 AM	0	24	10	0	1	1	0	0	0	0	0	0	0	0	36
4:00 AM	1	94	25	1	17	0	0	0	0	0	0	0	0	0	138
5:00 AM	1	204	93	1	32	0	0	1	0	0	0	0	0	0	332
6:00 AM	2	442	146	10	48	1	0	3	0	0	0	0	0	0	652
7:00 AM	1	558	160	7	46	0	1	5	3	0	0	0	0	0	781
8:00 AM	1	468	109	7	23	0	0	3	5	0	0	0	0	0	616
9:00 AM	2	375	94	4	38	2	1	2	12	0	0	0	0	0	530
10:00 AM	2	305	88	3	27	2	1	3	6	0	0	0	0	0	437
11:00 AM	0	297	75	9	28	1	3	4	5	0	0	0	0	1	423
12:00 PM	2	325	87	6	30	0	1	5	7	0	0	0	0	0	463
1:00 PM	2	342	66	12	31	0	2	4	9	1	0	0	0	0	469
2:00 PM	1	339	81	15	27	3	0	4	3	0	0	0	0	1	474
3:00 PM	0	346	88	11	38	1	1	1	4	0	0	0	0	1	491
4:00 PM	0	345	64	9	40	1	0	0	0	0	0	0	0	1	460
5:00 PM	1	320	79	7	32	0	0	1	0	0	0	0	0	0	440
6:00 PM	1	328	72	5	27	0	0	1	1	0	0	0	0	0	435
7:00 PM	3	275	52	1	9	0	0	0	0	0	0	0	0	0	340
8:00 PM	0	164	32	2	17	0	0	0	0	0	0	0	0	0	215
9:00 PM	0	106	19	0	5	0	0	0	0	0	0	0	0	0	130
10:00 PM	0	98	10	0	6	0	0	0	0	0	0	0	0	0	114
11:00 PM	0	49	5	0	1	0	0	0	0	0	0	0	0	0	55
PM Total	20	5860	1471	110	528	12	10	37	58	1	0	0	0	4	8111
Percent	0.25%	72.25%	18.14%	1.36%	6.51%	0.15%	0.12%	0.46%	0.72%	0.01%	0.00%	0.00%	0.00%	0.05%	

AM Peak	6:00 AM	7:00 AM	7:00 AM	6:00 AM	6:00 AM	9:00 AM	11:00 AM	7:00 AM	9:00 AM					11:00 AM	7:00 AM
Volume	2	558	160	10	48	2	3	5	12	0	0	0	0	1	781

PM Peak	7:00 PM	3:00 PM	3:00 PM	2:00 PM	4:00 PM	2:00 PM	1:00 PM	12:00 PM	1:00 PM	1:00 PM				2:00 PM	3:00 PM
Volume	3	346	88	15	40	3	2	5	9	1	0	0	0	1	491

Bicycles	4	0.0%
Motorcycles, Cars, Light Trucks:	7351	90.6%
Heavy Vehicles:	756	9.3%

Main Street (Route 9) between
 Waite Street and Colonial Drive
 City, State: Leicester, MA
 Client: TEC/ S. Gregorio
 Site Code: T1154



PDI File #: 218159 ATR-A

Count Date
 Wednesday, September 15, 2021

Classification (60-minute)

Combined															
Start Time:	Motorcycles	Cars and Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Bicycles	Total
12:00 AM	0	83	12	0	1	0	0	0	1	0	0	0	0	0	97
1:00 AM	0	43	13	0	5	0	0	0	2	0	0	0	0	0	63
2:00 AM	0	29	4	0	3	0	0	0	1	0	0	0	0	0	37
3:00 AM	0	42	12	1	1	1	0	0	0	0	0	0	0	0	57
4:00 AM	1	129	32	3	17	0	0	0	0	1	0	0	0	0	183
5:00 AM	1	261	110	4	38	2	0	1	1	0	0	0	0	0	418
6:00 AM	3	599	187	17	58	3	0	4	6	2	0	0	0	0	879
7:00 AM	1	788	218	15	84	1	1	10	9	1	0	0	0	0	1128
8:00 AM	2	675	170	18	64	3	2	10	12	3	0	0	0	0	959
9:00 AM	2	600	155	14	81	4	2	7	22	0	0	0	0	0	887
10:00 AM	2	550	172	13	77	3	1	5	17	3	0	0	0	0	843
11:00 AM	2	562	172	12	92	3	3	9	11	1	0	0	0	1	868
12:00 PM	4	616	163	14	67	1	1	14	20	2	0	0	0	0	902
1:00 PM	2	658	141	21	73	2	2	6	17	2	0	0	0	0	924
2:00 PM	4	764	175	30	82	5	0	11	7	0	0	0	0	1	1079
3:00 PM	5	795	212	24	108	3	1	4	5	0	0	0	0	2	1159
4:00 PM	1	816	192	15	100	1	0	5	0	0	0	0	0	4	1134
5:00 PM	4	891	204	13	91	1	0	4	2	0	0	0	0	1	1211
6:00 PM	4	748	154	12	70	0	0	2	1	0	0	0	0	0	991
7:00 PM	4	600	107	3	35	0	0	0	0	0	0	0	0	0	749
8:00 PM	1	381	67	3	49	0	0	0	0	0	0	0	0	0	501
9:00 PM	0	246	49	0	21	0	0	0	0	0	0	0	0	0	316
10:00 PM	0	204	22	0	15	0	0	0	0	0	0	0	0	0	241
11:00 PM	0	126	24	0	4	0	0	0	1	0	0	0	0	0	155
PM Total	43	11206	2767	232	1236	33	13	92	135	15	0	0	0	9	15781
Percent	0.27%	71.01%	17.53%	1.47%	7.83%	0.21%	0.08%	0.58%	0.86%	0.10%	0.00%	0.00%	0.00%	0.06%	

AM Peak	6:00 AM	7:00 AM	7:00 AM	8:00 AM	11:00 AM	9:00 AM	11:00 AM	7:00 AM	9:00 AM	8:00 AM				11:00 AM	7:00 AM
Volume	3	788	218	18	92	4	3	10	22	3	0	0	0	1	1128
PM Peak	3:00 PM	5:00 PM	3:00 PM	2:00 PM	3:00 PM	2:00 PM	1:00 PM	12:00 PM	12:00 PM	12:00 PM				4:00 PM	5:00 PM
Volume	5	891	212	30	108	5	2	14	20	2	0	0	0	4	1211

Bicycles	9	0.1%
Motorcycles, Cars, Light Trucks:	14016	88.8%
Heavy Vehicles:	1756	11.1%

Main Street (Route 9) between
 Waite Street and Colonial Drive
 City, State: Leicester, MA
 Client: TEC/ S. Gregorio
 Site Code: T1154



PDI File #: 218159 ATR-A

Count Date
 Tuesday, September, 14, 2021

Speed (60-minute)

WB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	0	0	14	17	8	9	1	1	0	0	50	51.0	44.2
1:00 AM	0	0	0	0	1	8	9	9	2	1	0	1	0	31	48.5	44.2
2:00 AM	0	0	0	1	1	4	5	3	2	0	0	0	0	16	47.8	41.6
3:00 AM	0	0	0	0	0	6	9	8	2	1	0	0	0	26	49.0	43.6
4:00 AM	0	0	0	0	0	11	15	9	1	3	0	0	0	39	47.3	43.2
5:00 AM	0	0	0	0	2	10	41	25	4	2	1	0	0	85	49.0	43.8
6:00 AM	2	0	3	9	19	51	98	47	8	1	0	0	0	238	46.0	40.4
7:00 AM	4	0	0	6	9	83	144	62	14	0	0	0	0	322	46.0	41.1
8:00 AM	3	0	0	8	30	70	159	95	11	1	0	0	0	377	46.0	41.3
9:00 AM	6	0	0	7	30	104	178	68	9	0	0	0	0	402	45.0	40.3
10:00 AM	3	1	0	14	44	137	128	36	3	0	0	0	0	366	43.0	38.5
11:00 AM	2	0	3	6	43	135	159	65	12	0	1	0	0	426	45.0	40.1
12:00 PM	6	0	2	13	52	131	192	71	6	0	0	1	0	474	45.0	39.5
1:00 PM	4	0	0	9	37	142	186	68	16	3	0	0	0	465	45.0	40.2
2:00 PM	1	1	3	10	63	147	259	81	8	1	0	0	0	574	45.0	40.0
3:00 PM	3	0	0	12	57	187	288	101	10	2	0	0	0	660	45.0	40.2
4:00 PM	5	4	10	16	57	161	319	107	10	2	0	0	0	691	45.0	40.0
5:00 PM	4	0	0	2	34	177	362	140	13	2	0	0	0	734	45.0	41.3
6:00 PM	4	0	0	0	30	118	285	107	6	2	0	0	0	552	45.0	41.2
7:00 PM	0	0	2	0	14	87	210	61	6	0	0	0	0	380	45.0	41.3
8:00 PM	0	0	0	0	5	81	144	54	2	0	0	0	0	286	45.0	41.5
9:00 PM	1	0	0	0	4	59	105	46	5	0	0	0	0	220	45.0	41.6
10:00 PM	0	0	0	1	3	24	65	29	11	1	0	0	0	134	47.1	42.8
11:00 PM	0	0	0	0	1	22	41	24	1	2	1	0	0	92	47.0	42.8
Total	48	6	23	114	536	1969	3418	1324	171	25	4	2	0	7640	45.0	40.6
Percent	0.63%	0.08%	0.30%	1.49%	7.02%	25.77%	44.74%	17.33%	2.24%	0.33%	0.05%	0.03%	0.00%			

AM Peak	9:00 AM	10:00 AM	6:00 AM	10:00 AM	10:00 AM	10:00 AM	9:00 AM	8:00 AM	7:00 AM	4:00 AM	12:00 AM	1:00 AM		11:00 AM
Volume	6	1	3	14	44	137	178	95	14	3	1	1	0	426
PM Peak	12:00 PM	4:00 PM	4:00 PM	4:00 PM	2:00 PM	3:00 PM	5:00 PM	5:00 PM	1:00 PM	1:00 PM	11:00 PM	12:00 PM		5:00 PM
Volume	6	4	10	16	63	187	362	140	16	3	1	1	0	734

15th Percentile:	36.0 MPH	Average Speed:	40.6 MPH	Posted Speed Limit:	35 MPH
50th Percentile:	41.0 MPH	10 MPH Pace:	37 to 46 MPH	Number of Vehicles > 35 MPH:	6702
85th Percentile:	45.0 MPH	Number in Pace:	5682	Percent of Vehicles > 35 MPH:	87.7%
95th Percentile:	48.0 MPH	Percent in Pace:	74.4%		

Main Street (Route 9) between
 Waite Street and Colonial Drive
 City, State: Leicester, MA
 Client: TEC/ S. Gregorio
 Site Code: T1154



PDI File #: 218159 ATR-A

Count Date
 Tuesday, September, 14, 2021

Speed (60-minute)

EB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	0	0	3	9	8	1	0	0	0	0	21	47.0	43.7
1:00 AM	0	0	0	0	1	11	4	8	1	0	0	0	0	25	46.0	41.5
2:00 AM	0	0	0	0	0	8	11	6	3	0	2	0	0	30	49.6	43.9
3:00 AM	0	0	0	0	3	4	18	8	0	3	0	0	0	36	47.8	43.0
4:00 AM	0	0	0	0	2	12	49	56	12	4	1	1	0	137	49.0	45.1
5:00 AM	0	0	0	0	1	31	158	122	30	2	0	0	0	344	48.0	44.3
6:00 AM	3	0	0	0	8	47	287	242	33	1	0	0	0	621	47.0	43.8
7:00 AM	1	0	0	0	0	51	322	323	73	6	1	0	0	777	49.0	44.7
8:00 AM	3	0	0	0	2	57	268	285	42	3	0	0	0	660	48.0	44.2
9:00 AM	7	0	5	2	4	68	238	137	26	2	0	0	0	489	47.0	42.4
10:00 AM	1	0	0	4	12	115	238	86	14	0	0	0	0	470	46.0	41.5
11:00 AM	5	0	0	0	6	101	222	120	18	0	0	0	0	472	46.0	42.1
12:00 PM	13	0	0	6	1	101	186	95	20	1	1	0	0	424	46.0	41.2
1:00 PM	10	0	0	0	12	123	255	100	11	2	0	0	0	513	46.0	41.2
2:00 PM	4	0	0	0	6	100	188	128	29	3	0	0	0	458	47.0	42.7
3:00 PM	3	0	0	0	9	82	244	117	19	5	1	0	0	480	46.0	42.5
4:00 PM	12	0	1	3	5	81	233	123	14	3	2	0	0	477	47.0	41.7
5:00 PM	12	0	0	0	2	62	240	125	27	7	1	0	0	476	47.0	42.6
6:00 PM	2	0	0	0	3	67	201	91	13	0	1	0	0	378	46.0	42.5
7:00 PM	1	0	0	6	15	89	141	31	11	2	0	0	0	296	44.0	40.5
8:00 PM	0	0	0	0	6	53	102	30	7	1	1	0	0	200	45.0	41.7
9:00 PM	0	0	0	0	11	55	88	32	7	2	0	0	0	195	45.0	41.5
10:00 PM	0	0	0	0	1	31	59	21	8	4	0	0	0	124	47.0	42.6
11:00 PM	0	0	0	0	2	8	19	12	8	1	1	0	0	51	51.5	44.4
Total	77	0	6	21	112	1360	3780	2306	427	52	12	1	0	8154	47.0	42.7
Percent	0.94%	0.00%	0.07%	0.26%	1.37%	16.68%	46.36%	28.28%	5.24%	0.64%	0.15%	0.01%	0.00%			

AM Peak	9:00 AM		9:00 AM	10:00 AM	10:00 AM	10:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	2:00 AM	4:00 AM		7:00 AM
Volume	7	0	5	4	12	115	322	323	73	6	2	1	0	777
PM Peak	12:00 PM		4:00 PM	12:00 PM	7:00 PM	1:00 PM	1:00 PM	2:00 PM	2:00 PM	5:00 PM	4:00 PM			1:00 PM
Volume	13	0	1	6	15	123	255	128	29	7	2	0	0	513

15th Percentile:	39.0 MPH	Average Speed:	42.7 MPH	Posted Speed Limit:	35 MPH
50th Percentile:	43.0 MPH	10 MPH Pace:	38 to 47 MPH	Number of Vehicles > 35 MPH:	7828
85th Percentile:	47.0 MPH	Number in Pace:	6369	Percent of Vehicles > 35 MPH:	96.0%
95th Percentile:	50.0 MPH	Percent in Pace:	78.1%		

Main Street (Route 9) between
 Waite Street and Colonial Drive
 City, State: Leicester, MA
 Client: TEC/ S. Gregorio
 Site Code: T1154



PDI File #: 218159 ATR-A

Count Date
 Tuesday, September, 14, 2021

Speed (60-minute)

Combined WB and EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	0	0	17	26	16	10	1	1	0	0	71	50.0	44.0
1:00 AM	0	0	0	0	2	19	13	17	3	1	0	1	0	56	48.0	43.0
2:00 AM	0	0	0	1	1	12	16	9	5	0	2	0	0	46	48.8	43.1
3:00 AM	0	0	0	0	3	10	27	16	2	4	0	0	0	62	48.9	43.3
4:00 AM	0	0	0	0	2	23	64	65	13	7	1	1	0	176	49.0	44.7
5:00 AM	0	0	0	0	3	41	199	147	34	4	1	0	0	429	49.0	44.2
6:00 AM	5	0	3	9	27	98	385	289	41	2	0	0	0	859	47.0	42.9
7:00 AM	5	0	0	6	9	134	466	385	87	6	1	0	0	1099	48.0	43.6
8:00 AM	6	0	0	8	32	127	427	380	53	4	0	0	0	1037	48.0	43.1
9:00 AM	13	0	5	9	34	172	416	205	35	2	0	0	0	891	46.0	41.4
10:00 AM	4	1	0	18	56	252	366	122	17	0	0	0	0	836	45.0	40.2
11:00 AM	7	0	3	6	49	236	381	185	30	0	1	0	0	898	46.0	41.2
12:00 PM	19	0	2	19	53	232	378	166	26	1	1	1	0	898	45.0	40.3
1:00 PM	14	0	0	9	49	265	441	168	27	5	0	0	0	978	45.0	40.7
2:00 PM	5	1	3	10	69	247	447	209	37	4	0	0	0	1032	46.0	41.2
3:00 PM	6	0	0	12	66	269	532	218	29	7	1	0	0	1140	46.0	41.2
4:00 PM	17	4	11	19	62	242	552	230	24	5	2	0	0	1168	46.0	40.7
5:00 PM	16	0	0	2	36	239	602	265	40	9	1	0	0	1210	46.0	41.8
6:00 PM	6	0	0	0	33	185	486	198	19	2	1	0	0	930	45.0	41.7
7:00 PM	1	0	2	6	29	176	351	92	17	2	0	0	0	676	45.0	40.9
8:00 PM	0	0	0	0	11	134	246	84	9	1	1	0	0	486	45.0	41.6
9:00 PM	1	0	0	0	15	114	193	78	12	2	0	0	0	415	45.0	41.5
10:00 PM	0	0	0	1	4	55	124	50	19	5	0	0	0	258	47.0	42.7
11:00 PM	0	0	0	0	3	30	60	36	9	3	2	0	0	143	48.0	43.4
Total	125	6	29	135	648	3329	7198	3630	598	77	16	3	0	15794	46.0	41.7
Percent	0.79%	0.04%	0.18%	0.85%	4.10%	21.08%	45.57%	22.98%	3.79%	0.49%	0.10%	0.02%	0.00%			

AM Peak	9:00 AM	10:00 AM	9:00 AM	10:00 AM	10:00 AM	10:00 AM	7:00 AM	7:00 AM	7:00 AM	4:00 AM	2:00 AM	1:00 AM		7:00 AM
Volume	13	1	5	18	56	252	466	385	87	7	2	1	0	1099

PM Peak	12:00 PM	4:00 PM	4:00 PM	12:00 PM	2:00 PM	3:00 PM	5:00 PM	5:00 PM	5:00 PM	5:00 PM	4:00 PM	12:00 PM		5:00 PM
Volume	19	4	11	19	69	269	602	265	40	9	2	1	0	1210

15th Percentile:	38.0 MPH	Average Speed:	41.7 MPH	Posted Speed Limit:	35 MPH
50th Percentile:	42.0 MPH	10 MPH Pace:	38 to 47 MPH	Number of Vehicles > 35 MPH:	14530
85th Percentile:	46.0 MPH	Number in Pace:	11950	Percent of Vehicles > 35 MPH:	92.0%
95th Percentile:	49.0 MPH	Percent in Pace:	75.7%		

Main Street (Route 9) between
 Waite Street and Colonial Drive
 City, State: Leicester, MA
 Client: TEC/ S. Gregorio
 Site Code: T1154



PDI File #: 218159 ATR-A

Count Date
 Wednesday, September 15, 2021

Speed (60-minute)

WB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	0	2	13	25	19	7	0	1	0	0	67	49.0	43.5
1:00 AM	0	0	0	0	0	9	18	7	2	0	0	0	0	36	45.0	42.4
2:00 AM	0	0	0	0	0	5	4	3	2	0	0	0	0	14	49.1	43.0
3:00 AM	0	0	0	0	0	4	9	7	0	0	1	0	0	21	48.0	43.9
4:00 AM	0	0	0	0	2	7	22	10	2	1	1	0	0	45	47.4	42.8
5:00 AM	0	0	0	1	0	12	38	29	6	0	0	0	0	86	48.0	43.3
6:00 AM	3	0	0	2	20	56	98	42	6	0	0	0	0	227	46.0	40.6
7:00 AM	2	0	0	0	15	80	149	83	15	3	0	0	0	347	47.0	42.0
8:00 AM	2	0	0	4	11	53	151	99	20	2	0	0	1	343	47.7	42.8
9:00 AM	1	0	0	7	28	71	140	86	23	1	0	0	0	357	47.0	41.8
10:00 AM	2	0	0	9	34	78	147	119	16	0	1	0	0	406	47.0	41.7
11:00 AM	3	0	0	3	28	80	191	124	13	3	0	0	0	445	47.0	42.0
12:00 PM	2	0	0	1	19	101	198	100	17	1	0	0	0	439	47.0	41.9
1:00 PM	4	1	0	5	28	101	181	109	23	3	0	0	0	455	47.0	41.6
2:00 PM	6	1	4	11	51	131	251	127	22	1	0	0	0	605	46.0	40.6
3:00 PM	8	0	0	12	28	126	289	170	30	5	0	0	0	668	47.0	41.9
4:00 PM	8	0	0	1	17	111	271	226	35	3	1	1	0	674	48.0	42.9
5:00 PM	3	0	0	1	12	158	344	218	32	3	0	0	0	771	47.0	42.6
6:00 PM	3	0	0	0	7	74	256	178	32	4	2	0	0	556	47.0	43.4
7:00 PM	1	0	0	0	15	83	181	116	11	2	0	0	0	409	46.0	42.4
8:00 PM	1	0	1	0	10	57	135	55	27	0	0	0	0	286	47.0	42.3
9:00 PM	0	0	0	0	6	34	85	51	7	2	0	1	0	186	47.0	42.8
10:00 PM	0	0	0	0	0	16	59	37	12	3	0	0	0	127	48.1	44.1
11:00 PM	0	0	0	0	0	17	47	27	7	2	0	0	0	100	47.2	43.6
Total	49	2	5	57	333	1477	3289	2042	367	39	7	2	1	7670	47.0	42.2
Percent	0.64%	0.03%	0.07%	0.74%	4.34%	19.26%	42.88%	26.62%	4.78%	0.51%	0.09%	0.03%	0.01%			

AM Peak	6:00 AM			10:00 AM	10:00 AM	7:00 AM	11:00 AM	11:00 AM	9:00 AM	7:00 AM	12:00 AM		8:00 AM	11:00 AM
Volume	3	0	0	9	34	80	191	124	23	3	1	0	1	445
PM Peak	3:00 PM	1:00 PM	2:00 PM	3:00 PM	2:00 PM	5:00 PM	5:00 PM	4:00 PM	4:00 PM	3:00 PM	6:00 PM	4:00 PM		5:00 PM
Volume	8	1	4	12	51	158	344	226	35	5	2	1	0	771

15th Percentile: 38.0 MPH Average Speed: 42.2 MPH Posted Speed Limit: 35 MPH
 50th Percentile: 43.0 MPH 10 MPH Pace: 38 to 47 MPH Number of Vehicles > 35 MPH: 7072
 85th Percentile: 47.0 MPH Number in Pace: 5644 Percent of Vehicles > 35 MPH: 92.2%
 95th Percentile: 50.0 MPH Percent in Pace: 73.6%

Main Street (Route 9) between
 Waite Street and Colonial Drive
 City, State: Leicester, MA
 Client: TEC/ S. Gregorio
 Site Code: T1154



PDI File #: 218159 ATR-A

Count Date
 Wednesday, September 15, 2021

Speed (60-minute)

EB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	0	2	6	12	4	4	2	0	0	0	30	50.7	43.4
1:00 AM	0	0	0	0	1	6	9	7	4	0	0	0	0	27	49.2	43.4
2:00 AM	0	0	0	0	1	4	10	7	1	0	0	0	0	23	46.7	43.0
3:00 AM	0	0	0	0	5	3	18	4	6	0	0	0	0	36	50.5	42.5
4:00 AM	0	0	0	0	1	9	59	53	14	1	1	0	0	138	48.0	44.7
5:00 AM	0	0	0	0	1	36	150	118	25	1	0	0	1	332	48.0	44.2
6:00 AM	1	0	0	0	12	106	348	165	19	1	0	0	0	652	46.0	42.5
7:00 AM	2	0	0	0	6	101	410	225	36	1	0	0	0	781	47.0	43.1
8:00 AM	3	0	0	0	5	91	341	149	23	3	1	0	0	616	47.0	42.7
9:00 AM	1	0	1	2	3	99	296	106	17	4	1	0	0	530	46.0	42.2
10:00 AM	0	0	0	0	3	90	221	102	18	2	0	0	1	437	46.0	42.7
11:00 AM	9	0	0	0	6	78	195	111	20	3	1	0	0	423	47.0	42.2
12:00 PM	0	0	0	0	4	80	236	114	26	3	0	0	0	463	47.0	43.0
1:00 PM	1	0	0	0	19	98	233	95	19	4	0	0	0	469	46.0	42.0
2:00 PM	7	0	0	0	19	119	224	78	27	0	0	0	0	474	46.0	41.3
3:00 PM	8	0	0	0	1	70	246	140	21	5	0	0	0	491	47.0	42.8
4:00 PM	5	0	0	0	5	74	202	135	37	2	0	0	0	460	48.0	43.2
5:00 PM	4	0	0	0	1	60	216	125	28	4	2	0	0	440	48.0	43.2
6:00 PM	2	0	0	0	3	59	214	126	26	4	1	0	0	435	47.0	43.4
7:00 PM	0	0	0	1	25	98	166	44	5	1	0	0	0	340	44.0	40.6
8:00 PM	1	0	1	1	14	50	81	56	8	3	0	0	0	215	46.9	41.6
9:00 PM	0	0	0	0	3	34	56	29	7	1	0	0	0	130	47.0	42.0
10:00 PM	0	0	0	0	3	22	52	24	9	4	0	0	0	114	48.0	43.1
11:00 PM	0	0	0	0	1	12	27	6	7	2	0	0	0	55	49.8	43.5
Total	44	0	2	4	144	1405	4022	2023	407	51	7	0	2	8111	47.0	42.6
Percent	0.54%	0.00%	0.02%	0.05%	1.78%	17.32%	49.59%	24.94%	5.02%	0.63%	0.09%	0.00%	0.02%			

AM Peak	11:00 AM		9:00 AM	9:00 AM	6:00 AM	6:00 AM	7:00 AM	7:00 AM	7:00 AM	9:00 AM	4:00 AM		5:00 AM	7:00 AM
Volume	9	0	1	2	12	106	410	225	36	4	1	0	1	781
PM Peak	3:00 PM		8:00 PM	7:00 PM	7:00 PM	2:00 PM	3:00 PM	3:00 PM	4:00 PM	3:00 PM	5:00 PM			3:00 PM
Volume	8	0	1	1	25	119	246	140	37	5	2	0	0	491

15th Percentile: 39.0 MPH Average Speed: 42.6 MPH Posted Speed Limit: 35 MPH
 50th Percentile: 43.0 MPH 10 MPH Pace: 38 to 47 MPH Number of Vehicles > 35 MPH: 7822
 85th Percentile: 47.0 MPH Number in Pace: 6444 Percent of Vehicles > 35 MPH: 96.4%
 95th Percentile: 50.0 MPH Percent in Pace: 79.4%

Main Street (Route 9) between
 Waite Street and Colonial Drive
 City, State: Leicester, MA
 Client: TEC/ S. Gregorio
 Site Code: T1154



PDI File #: 218159 ATR-A

Count Date
 Wednesday, September 15, 2021

Speed (60-minute)

Combined WB and EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	0	4	19	37	23	11	2	1	0	0	97	49.0	43.5
1:00 AM	0	0	0	0	1	15	27	14	6	0	0	0	0	63	48.7	42.8
2:00 AM	0	0	0	0	1	9	14	10	3	0	0	0	0	37	47.6	43.0
3:00 AM	0	0	0	0	5	7	27	11	6	0	1	0	0	57	48.6	43.0
4:00 AM	0	0	0	0	3	16	81	63	16	2	2	0	0	183	48.0	44.2
5:00 AM	0	0	0	1	1	48	188	147	31	1	0	0	1	418	48.0	44.0
6:00 AM	4	0	0	2	32	162	446	207	25	1	0	0	0	879	46.0	42.0
7:00 AM	4	0	0	0	21	181	559	308	51	4	0	0	0	1128	47.0	42.8
8:00 AM	5	0	0	4	16	144	492	248	43	5	1	0	1	959	47.0	42.7
9:00 AM	2	0	1	9	31	170	436	192	40	5	1	0	0	887	46.0	42.0
10:00 AM	2	0	0	9	37	168	368	221	34	2	1	0	1	843	47.0	42.2
11:00 AM	12	0	0	3	34	158	386	235	33	6	1	0	0	868	47.0	42.1
12:00 PM	2	0	0	1	23	181	434	214	43	4	0	0	0	902	47.0	42.4
1:00 PM	5	1	0	5	47	199	414	204	42	7	0	0	0	924	46.0	41.8
2:00 PM	13	1	4	11	70	250	475	205	49	1	0	0	0	1079	46.0	41.0
3:00 PM	16	0	0	12	29	196	535	310	51	10	0	0	0	1159	47.0	42.3
4:00 PM	13	0	0	1	22	185	473	361	72	5	1	1	0	1134	48.0	43.0
5:00 PM	7	0	0	1	13	218	560	343	60	7	2	0	0	1211	47.0	42.8
6:00 PM	5	0	0	0	10	133	470	304	58	8	3	0	0	991	47.0	43.4
7:00 PM	1	0	0	1	40	181	347	160	16	3	0	0	0	749	46.0	41.6
8:00 PM	2	0	2	1	24	107	216	111	35	3	0	0	0	501	47.0	42.0
9:00 PM	0	0	0	0	9	68	141	80	14	3	0	1	0	316	47.0	42.5
10:00 PM	0	0	0	0	3	38	111	61	21	7	0	0	0	241	48.0	43.6
11:00 PM	0	0	0	0	1	29	74	33	14	4	0	0	0	155	48.0	43.6
Total	93	2	7	61	477	2882	7311	4065	774	90	14	2	3	15781	47.0	42.4
Percent	0.59%	0.01%	0.04%	0.39%	3.02%	18.26%	46.33%	25.76%	4.90%	0.57%	0.09%	0.01%	0.02%			

AM Peak	11:00 AM		9:00 AM	9:00 AM	10:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	11:00 AM	4:00 AM		5:00 AM	7:00 AM		
Volume	12	0	1	9	37	181	559	308	51	6	2	0	1	1128		
PM Peak	3:00 PM	1:00 PM	2:00 PM	3:00 PM	2:00 PM	2:00 PM	5:00 PM	4:00 PM	4:00 PM	3:00 PM	6:00 PM	4:00 PM		5:00 PM		
Volume	16	1	4	12	70	250	560	361	72	10	3	1	0	1211		

15th Percentile: 38.0 MPH Average Speed: 42.4 MPH Posted Speed Limit: 35 MPH
 50th Percentile: 43.0 MPH 10 MPH Pace: 38 to 47 MPH Number of Vehicles > 35 MPH: 14894
 85th Percentile: 47.0 MPH Number in Pace: 12088 Percent of Vehicles > 35 MPH: 94.4%
 95th Percentile: 50.0 MPH Percent in Pace: 76.6%

Attachment C

Seasonal Adjustment Data

Massachusetts Highway Department
 Statewide Traffic Data Collection
 2019 Weekday Seasonal Factors

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

Round off:

0-999 = 10

>1000 = 100

U = Urban

R = Rural

1 - Interstate

2 - Freeway and Expressway

3 - Other Principal Arterial

4 - Minor Arterial

5 - Major Collector

6 - Minor Collector

7 - Local Road and Street

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

Attachment D

COVID 19 ATR Comparisons

COVID-19 Adjustment

Project: Skyview Estates
Date: 9/24/2021
Analyst: TEC, Inc.
Source: MassDOT Yearly Growth Rates, MassDOT weekday Seasonal Factors

Year	Vol	2019 Seasonal Factor	Vol (vpd)
2019	21066	0.92	19381
2021	21323	0.92	19617

Years	Growth Rate	Volume
16-17	0.011	Route 20
17-18	0.014	2019 19381
18-19	0.004	2020 19568
Average	0.009667	2021 19757

100.71% Covid Adjustment.

Location Info	
Location ID	3178
Type	I-SECTION
Functional Class	3
Located On	WASHINGTON STREET
EAST OF	SOUTH ST.
Direction	2-WAY
Community	Auburn
MPO_ID	
HPMS ID	17002102080
Agency	Massachusetts Highway Department

Count Data Info	
Start Date	9/17/2019
End Date	9/18/2019
Start Time	12:00 AM
End Time	12:00 AM
Direction	
Notes	
Count Source	EE36227
File Name	
Weather	
Study	
Owner	MhdTelemetryAuto
QC Status	Accepted

Interval: 15 mins					
Time	15 Min				Hourly Count
	1st	2nd	3rd	4th	
00:00 - 01:00	22	33	17	32	104
01:00 - 02:00	21	18	26	16	81
02:00 - 03:00	14	22	31	25	92
03:00 - 04:00	23	29	20	27	99
04:00 - 05:00	34	57	88	76	255
05:00 - 06:00	120	145	195	194	654
06:00 - 07:00	193	255	360	326	1134
07:00 - 08:00	345	397	434	401	1577
08:00 - 09:00	348	309	378	284	1319
09:00 - 10:00	290	275	259	272	1096
10:00 - 11:00	261	295	317	301	1174
11:00 - 12:00	273	298	291	282	1144
12:00 - 13:00	330	343	289	307	1269
13:00 - 14:00	301	317	316	311	1245
14:00 - 15:00	321	357	380	384	1442
15:00 - 16:00	421	382	401	405	1609
16:00 - 17:00	443	455	496	468	1862
17:00 - 18:00	493	449	436	357	1735
18:00 - 19:00	312	262	264	251	1089
19:00 - 20:00	232	206	201	167	806
20:00 - 21:00	158	130	134	103	525
21:00 - 22:00	119	95	75	76	365
22:00 - 23:00	79	64	58	48	249
23:00 - 24:00	40	28	41	32	141
TOTAL					21066

Location Info	
Location ID	3178
Type	I-SECTION
Functional Class	3
Located On	WASHINGTON STREET
EAST OF	SOUTH ST.
Direction	2-WAY
Community	Auburn
MPO_ID	
HPMS ID	17002102080
Agency	Massachusetts Highway Department

Count Data Info	
Start Date	9/14/2021
End Date	9/15/2021
Start Time	12:00 AM
End Time	12:00 AM
Direction	
Notes	
Count Source	
File Name	
Weather	
Study	
Owner	MhdTelemetryAuto
QC Status	Accepted

Interval: 15 mins					
Time	15 Min				Hourly Count
	1st	2nd	3rd	4th	
00:00 - 01:00	28	13	15	18	74
01:00 - 02:00	8	15	17	13	53
02:00 - 03:00	13	39	12	27	91
03:00 - 04:00	20	30	31	38	119
04:00 - 05:00	44	58	61	73	236
05:00 - 06:00	120	161	193	173	647
06:00 - 07:00	263	356	311	338	1268
07:00 - 08:00	336	416	421	304	1477
08:00 - 09:00	349	339	288	263	1239
09:00 - 10:00	273	273	289	265	1100
10:00 - 11:00	297	310	302	328	1237
11:00 - 12:00	322	337	310	312	1281
12:00 - 13:00	375	343	343	352	1413
13:00 - 14:00	341	354	322	330	1347
14:00 - 15:00	386	401	416	472	1675
15:00 - 16:00	442	406	409	492	1749
16:00 - 17:00	460	488	455	481	1884
17:00 - 18:00	453	400	385	306	1544
18:00 - 19:00	295	259	254	248	1056
19:00 - 20:00	223	184	179	175	761
20:00 - 21:00	144	117	101	106	468
21:00 - 22:00	92	61	63	68	284
22:00 - 23:00	54	45	45	46	190
23:00 - 24:00	37	29	32	32	130
TOTAL					21323

Attachment E

Crash Data

Crash Data Summary Tables
 Main Street (651 Main Street Site Frontage) - Leicester, MA
 01/01/2015 - 12/31/2020

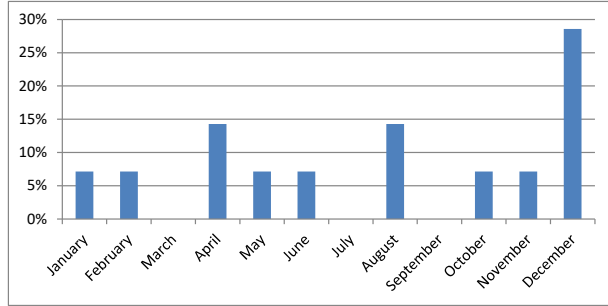
Collision Diagram	Crash Date	Crash Time	Day of Week	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Crash Severity	Manner of Collision	Driver Contributing Codes
1	6/24/2015	10:34 AM	Wednesday	Daylight	Clear	Dry	2	Non-fatal Injury	Rear-end	Inattention / Distracted
2	4/24/2016	1:17 AM	Sunday	Dark - Not Lighted	Clear	Dry	1	Property Damage Only	Single Vehicle	Erratic / Aggressive / Reckless Driving
3	8/29/2016	9:27 PM	Monday	Dark - Lighted	Clear	Dry	1	Non-fatal Injury	Single Vehicle	Inattention / Distracted
4	8/30/2016	12:52 PM	Tuesday	Daylight	Clear	Dry	2	Property Damage Only	Rear-end	Swerving / Avoiding
5	1/28/2017	6:31 PM	Saturday	Dark - Lighted	Clear	Dry	1	Non-fatal Injury	Single Vehicle	Erratic / Aggressive / Reckless Driving
6	5/3/2017	7:15 PM	Wednesday	Daylight	Clear	Dry	1	Property Damage Only	Single Vehicle	Inattention / Distracted
7	12/9/2017	2:08 PM	Saturday	Daylight	Snow	Snow	1	Property Damage Only	Single Vehicle	Excessive Speed
8	11/21/2018	12:02 AM	Wednesday	Dark - Lighted	Cloudy	Wet	1	Property Damage Only	Single Vehicle	Not Reported
9	4/9/2019	1:45 PM	Tuesday	Daylight	Clear	Dry	1	Non-fatal Injury	Single Vehicle	Other
10	12/6/2019	7:10 PM	Friday	Dark - Not Lighted	Clear	Wet	1	Property Damage Only	Single Vehicle	Erratic / Aggressive / Reckless Driving
11	12/22/2019	6:05 PM	Sunday	Dark - Not Lighted	Clear	Dry	3	Property Damage Only	Rear-end	Inattention / Distracted
12	2/27/2020	12:07 AM	Thursday	Dark - Lighted	Rain	Wet	1	Non-fatal Injury	Single Vehicle	Other
13	10/2/2020	5:58 AM	Friday	Dark - Lighted	Clear	Dry	1	Non-fatal Injury	Single Vehicle	Other
14	12/5/2020	11:15 AM	Saturday	Daylight	Snow	Ice	2	Non-fatal Injury	Sideswipe	Swerving / Avoiding

Crash Data Summary Tables
Main Street (651 Main Street Site Frontage) - Leicester, MA
01/01/2015 - 12/31/2020

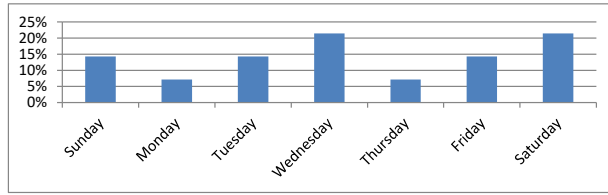
Main Street

14

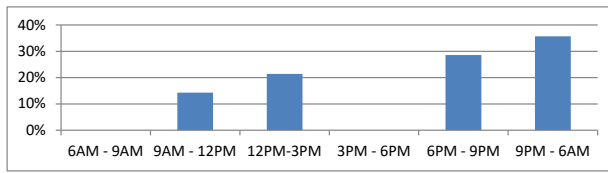
Month	#	%
January	1	7%
February	1	7%
March	0	0%
April	2	14%
May	1	7%
June	1	7%
July	0	0%
August	2	14%
September	0	0%
October	1	7%
November	1	7%
December	4	29%



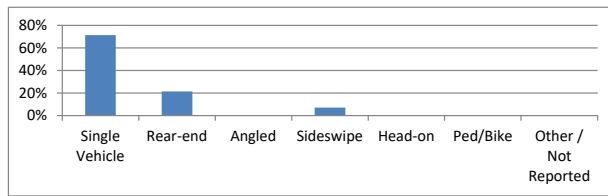
Day of Week	#	%
Sunday	2	14%
Monday	1	7%
Tuesday	2	14%
Wednesday	3	21%
Thursday	1	7%
Friday	2	14%
Saturday	3	21%



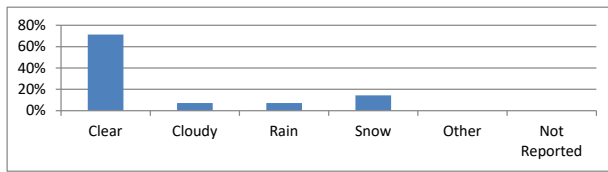
Time of Day	#	%
6AM - 9AM	0	0%
9AM - 12PM	2	14%
12PM-3PM	3	21%
3PM - 6PM	0	0%
6PM - 9PM	4	29%
9PM - 6AM	5	36%



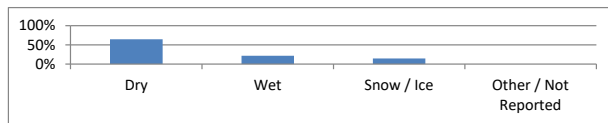
Manner of Collision	#	%
Single Vehicle	10	71%
Rear-end	3	21%
Angled	0	0%
Sideswipe	1	7%
Head-on	0	0%
Ped/Bike	0	0%
Other / Not Reported	0	0%



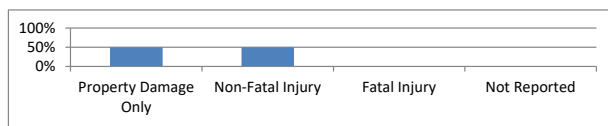
Weather Conditions	#	%
Clear	10	71%
Cloudy	1	7%
Rain	1	7%
Snow	2	14%
Other	0	0%
Not Reported	0	0%



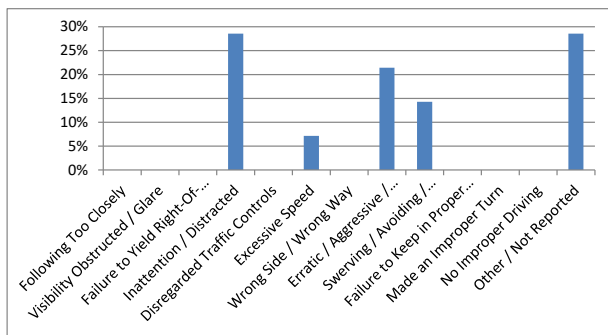
Road Surface	#	%
Dry	9	64%
Wet	3	21%
Snow / Ice	2	14%
Other / Not Reported	0	0%



Crash Severity	#	%
Property Damage Only	7	50%
Non-Fatal Injury	7	50%
Fatal Injury	0	0%
Not Reported	0	0%



Main Contributing Factor from Narrative	#	%
Following Too Closely	0	0%
Visibility Obstructed / Glare	0	0%
Failure to Yield Right-Of-Way	0	0%
Inattention / Distracted	4	29%
Disregarded Traffic Controls	0	0%
Excessive Speed	1	7%
Wrong Side / Wrong Way	0	0%
Erratic / Aggressive / Reckless Driving	3	21%
Swerving / Avoiding / Over-Steering / Over-Correcting	2	14%
Failure to Keep in Proper Lane	0	0%
Made an Improper Turn	0	0%
No Improper Driving	0	0%
Other / Not Reported	4	29%



SEGMENT CRASH RATE WORKSHEET

CITY/TOWN : Leicester, MA COUNT DATE : Sep-21

DISTRICT : _____

~ SEGMENT DATA ~

ROADWAY NAME: Main Street

START POINT: 300-feet east of Waite Street

END POINT: 1,200-feet east of Waite Street

FUNCTIONAL CLASSIFICATION OF ROADWAY: Principal Arterial

ROADWAY DIAGRAM (LABEL ROADWAY AND CROSS STREETS)



AVERAGE DAILY TRAFFIC

SEGMENT LENGTH IN MILES (L): 0.17
 AVERAGE DAILY TRAFFIC VOLUME (V): 15,907

TOTAL # OF CRASHES: 7 # OF YEARS : 3 AVERAGE # OF CRASHES PER YEAR (A): 2.33

CRASH RATE CALCULATION : 2.36 RATE = $\frac{(A * 1,000,000)}{(L * V * 365)}$

Comments : Includes 2015-2017 crash data only (complete years)

Project Title & Date: Skyview Estates - 651 Main Street - Leicester, MA

Attachment F

Ambient Growth Rate Data

MassDOT Yearly Growth Rates

for data from 2014 to 2018

Growth Group	Grow 2014 to 2015	Grow 2015 to 2016	Grow 2016 to 2017	Grow 2017 to 2018	Grow 2018 to 2019
R1	0	0.023	0.004	0.018	0.016
R2	0.05	0.068	0.004	0.014	0.014
R3	-0.038	0.002	0.008	0.011	0.06
R4-7	-0.01	0.003	0.001	0.011	0.012
Rec - East		0.032	0.02	0.041	0.025
Rec - West		0.051	-0.008	0.029	0
U1-Boston	0.061	0.07	-0.003	0.012	0.006
U1-Essex	0.024	0.025	0.007	0.014	0.011
U1-Southeast	0.05	0.062	0.021	0.014	0
U1-West	0.03	-0.027	0.02	0.028	0.013
U1-Worcester	0.042	0.005	0.018	0.01	0.01
U2	0.04	0.048	0.008	0.01	0.02
U3	0.011	0.013	0.011	0.014	0.004
U4-7	0.023	0.062	0.017	0.003	-0.004

updated 5/1/2020

Attachment G

Site Trip Generation

Trip Generation Assessment

Project: T1154 - 651 Main Street - Leicester, MA
 Date: 9/30/2021
 Analyst: TEC, Inc. / Samuel W. Gregorio, PE, PTOE, RSP
 Source: Institute of Transportation Engineers - Trip Generation - 11th Ed.

Use	Infill Development Transit Use Rate		Walk/Bike Rate	
	AM	PM	AM	PM
Residential				
Retail				
Office				

Proposed Development

Single Family 0 Attached Housing (LUC 215)

Units	Total Trips		% Distribution		# New Trips		Multi-Use Trips		# Transit Trips		# Walk/Bike Trips		Total New Pass-by Trips		Total New Primary Trips		# Pass-by Trips		# Primary Trips		
	Avg. Rates	Fitted Curve	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	
Weekday Daily	742	734	50%	50%	371	371	0	0	0	0	0	0	0	0	0	0	0	0	0	371	371
Weekday AM PH	49	48	31%	69%	15	34	0	0	0	0	0	0	0	0	0	0	0	0	0	15	34
Weekday PM PH	59	58	57%	43%	34	25	0	0	0	0	0	0	0	0	0	0	0	0	0	34	25
Saturday Daily	902	916	50%	50%	458	458	0	0	0	0	0	0	0	0	0	0	0	0	0	458	458
Sat Midday PH	69	69	48%	52%	33	36	0	0	0	0	0	0	0	0	0	0	0	0	0	33	36
TOTAL NEW DEVELOPMENT																					
Weekday Daily					371	371	0	0	0	0	0	0	0	0	0	0	0	0	0	371	371
Weekday AM Peak Hour					15	34	0	0	0	0	0	0	0	0	0	0	0	0	0	15	34
Weekday PM Peak Hour					34	25	0	0	0	0	0	0	0	0	0	0	0	0	0	34	25
Saturday Daily					458	458	0	0	0	0	0	0	0	0	0	0	0	0	0	458	458
Sat Midday Peak Hour					33	36	0	0	0	0	0	0	0	0	0	0	0	0	0	33	36



Single-Family Attached Housing (215)

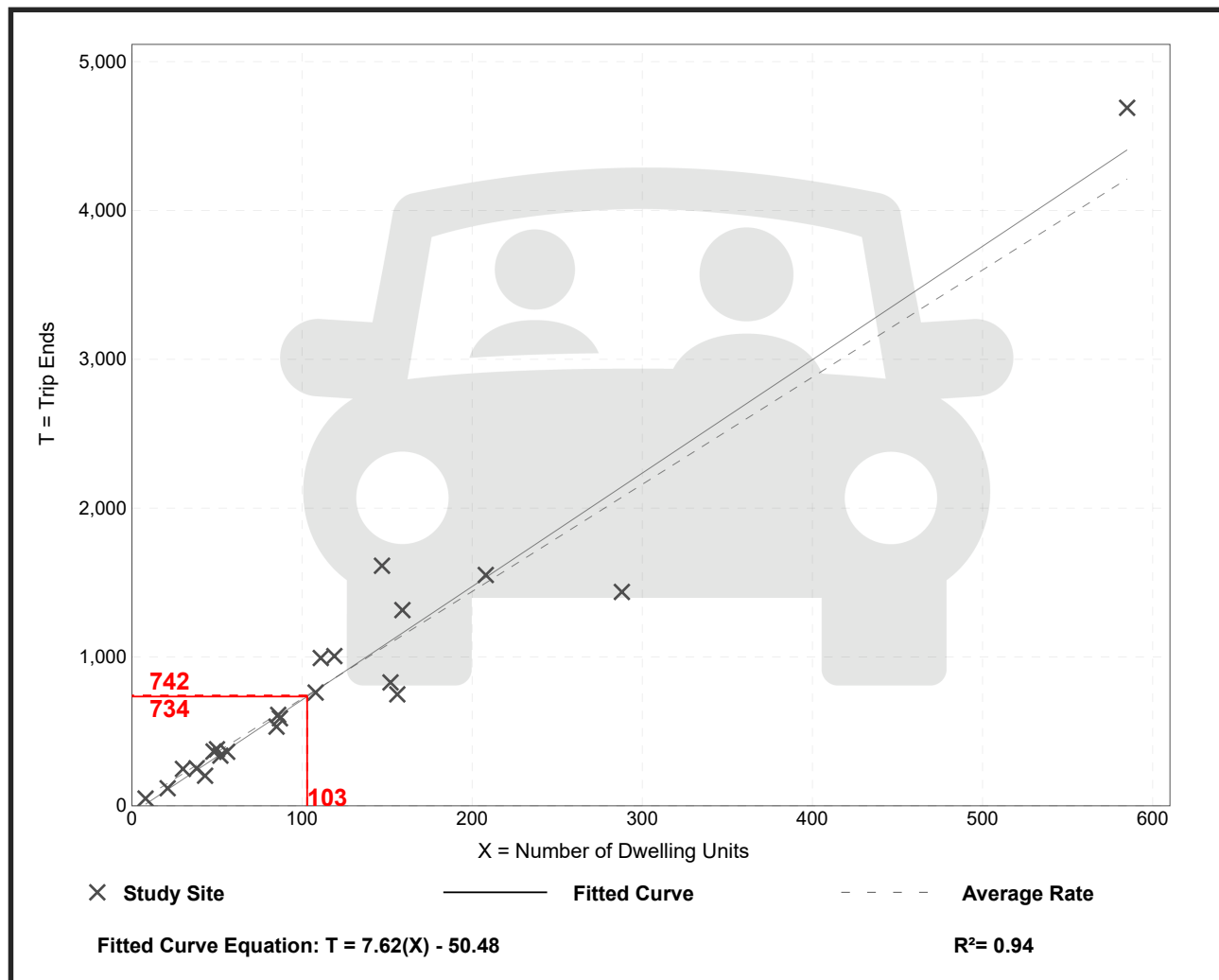
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 22
Avg. Num. of Dwelling Units: 120
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
7.20	4.70 - 10.97	1.61

Data Plot and Equation



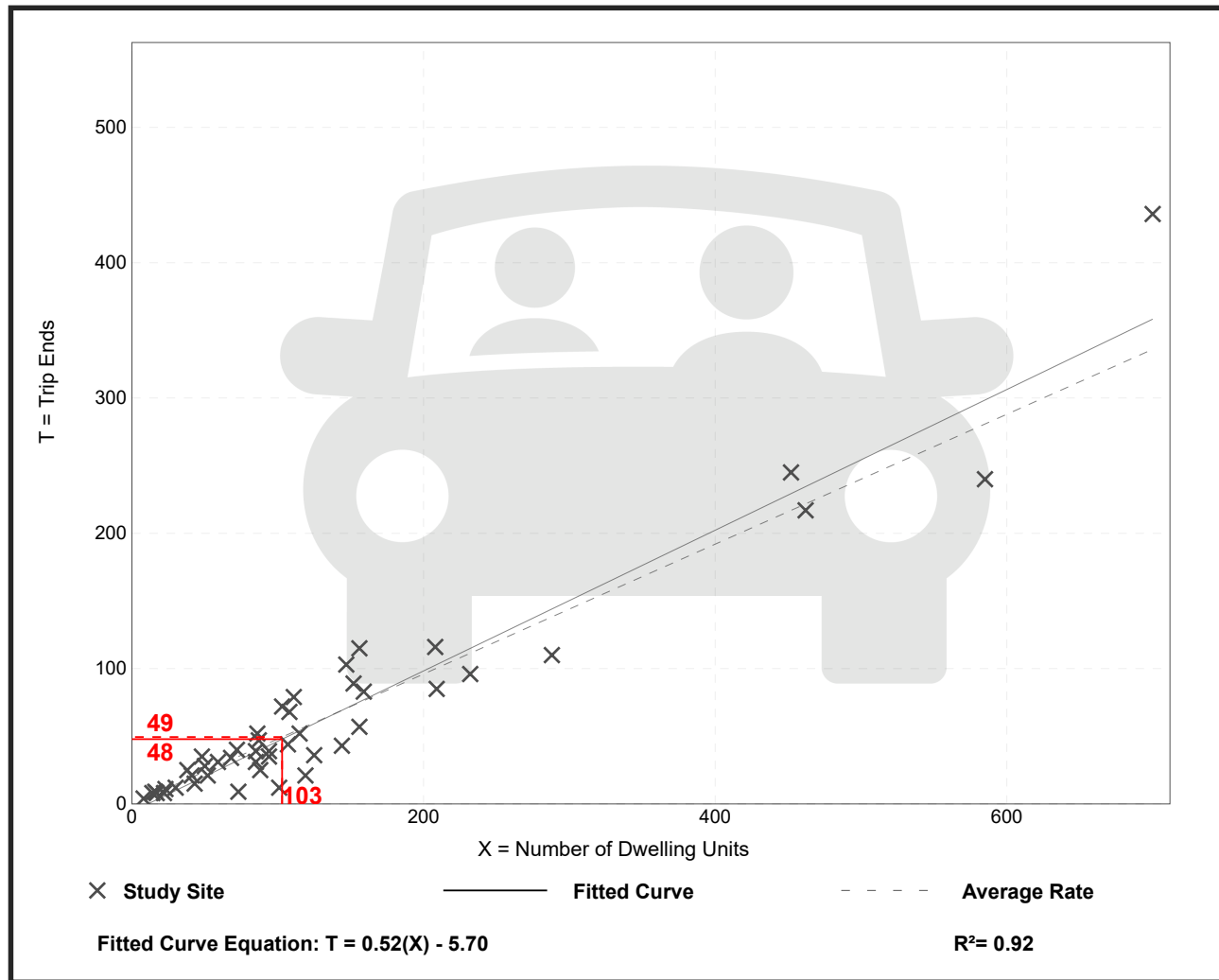
Single-Family Attached Housing (215)

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: 46
 Avg. Num. of Dwelling Units: 135
 Directional Distribution: 31% entering, 69% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.48	0.12 - 0.74	0.14

Data Plot and Equation



Single-Family Attached Housing (215)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

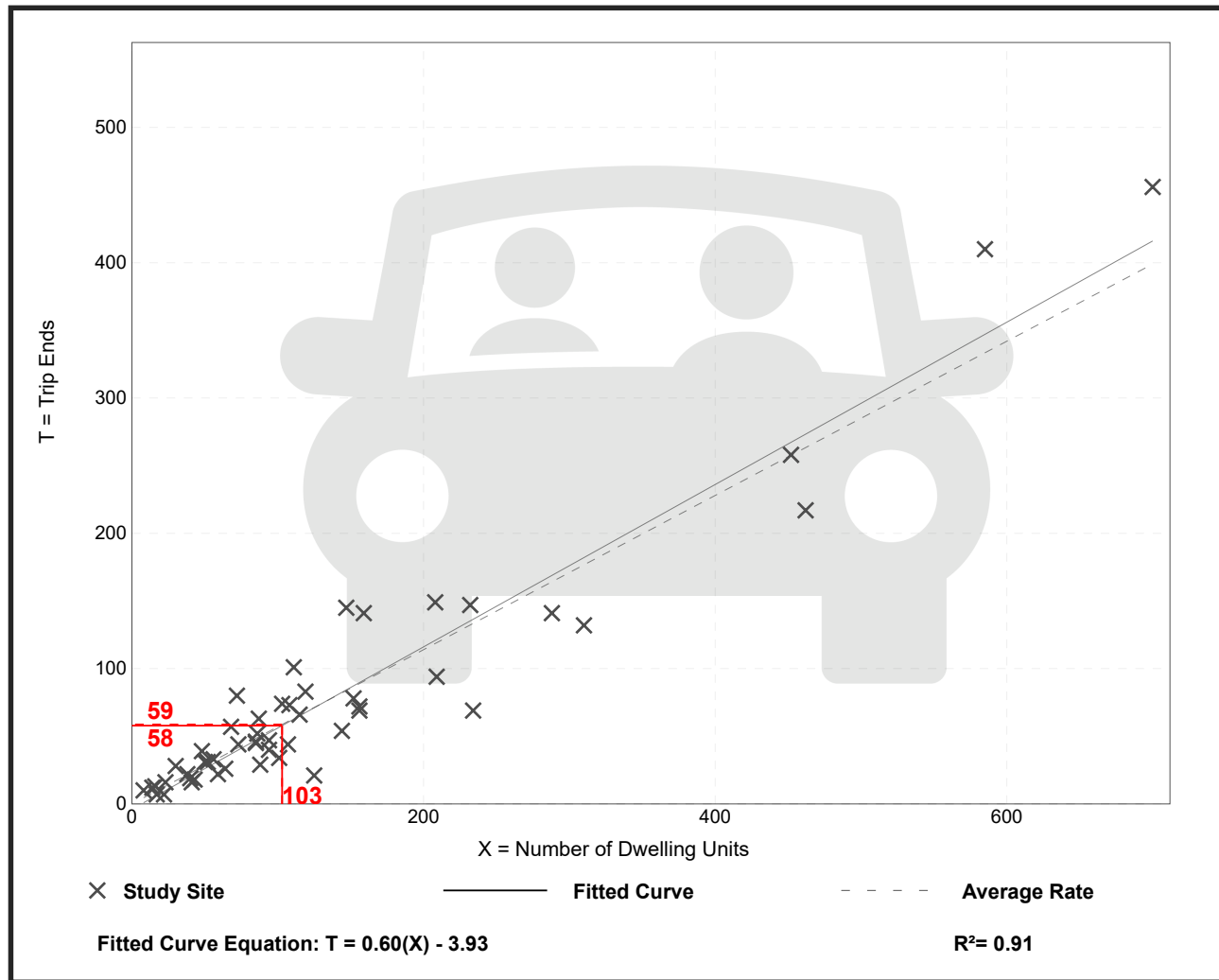
Setting/Location: General Urban/Suburban

Number of Studies: 51
 Avg. Num. of Dwelling Units: 136
 Directional Distribution: 57% entering, 43% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.57	0.17 - 1.25	0.18

Data Plot and Equation



Single-Family Attached Housing (215)

Vehicle Trip Ends vs: Dwelling Units
On a: Saturday

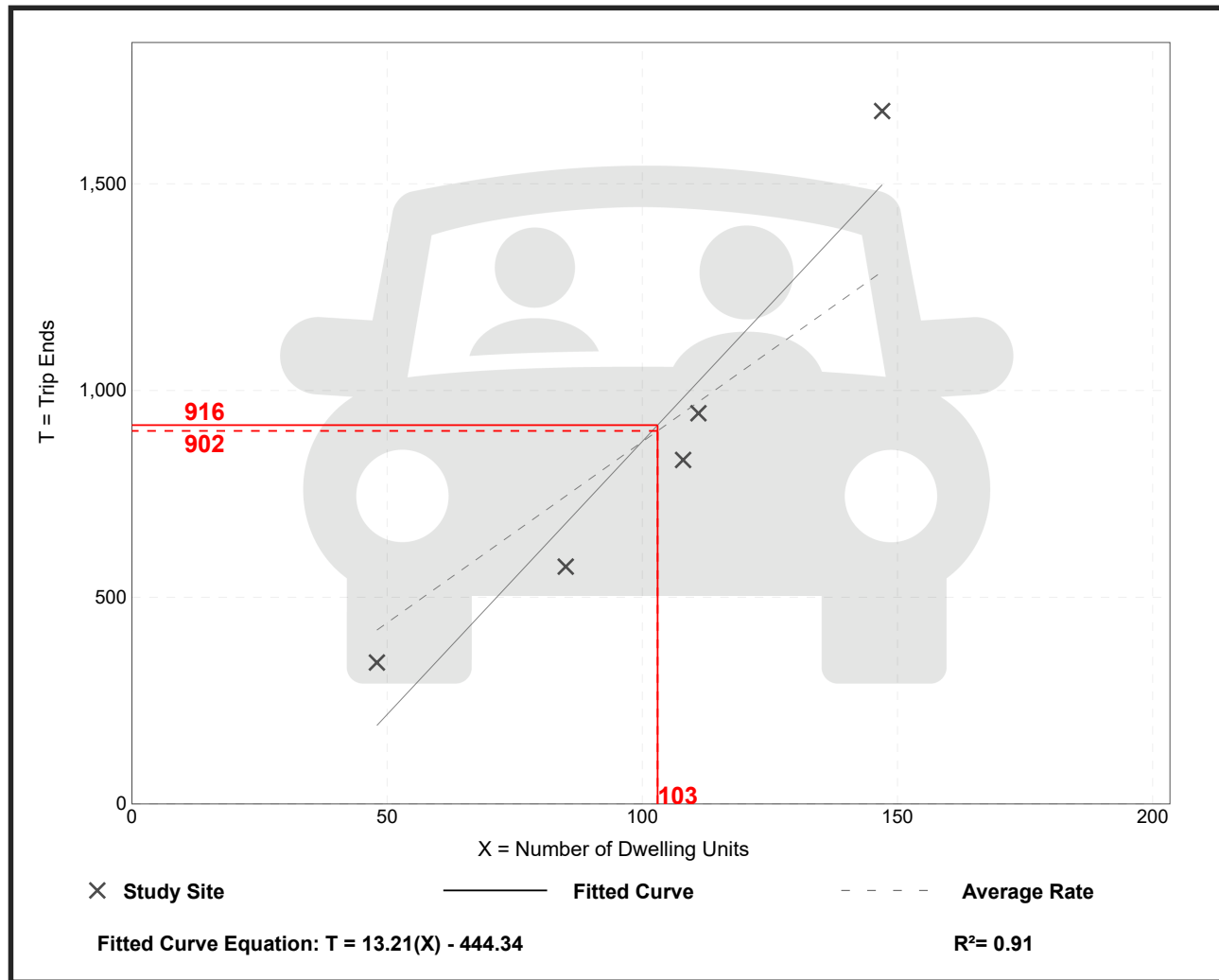
Setting/Location: General Urban/Suburban
Number of Studies: 5
Avg. Num. of Dwelling Units: 100
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
8.76	6.75 - 11.40	2.02

Data Plot and Equation

Caution – Small Sample Size



Single-Family Attached Housing (215)

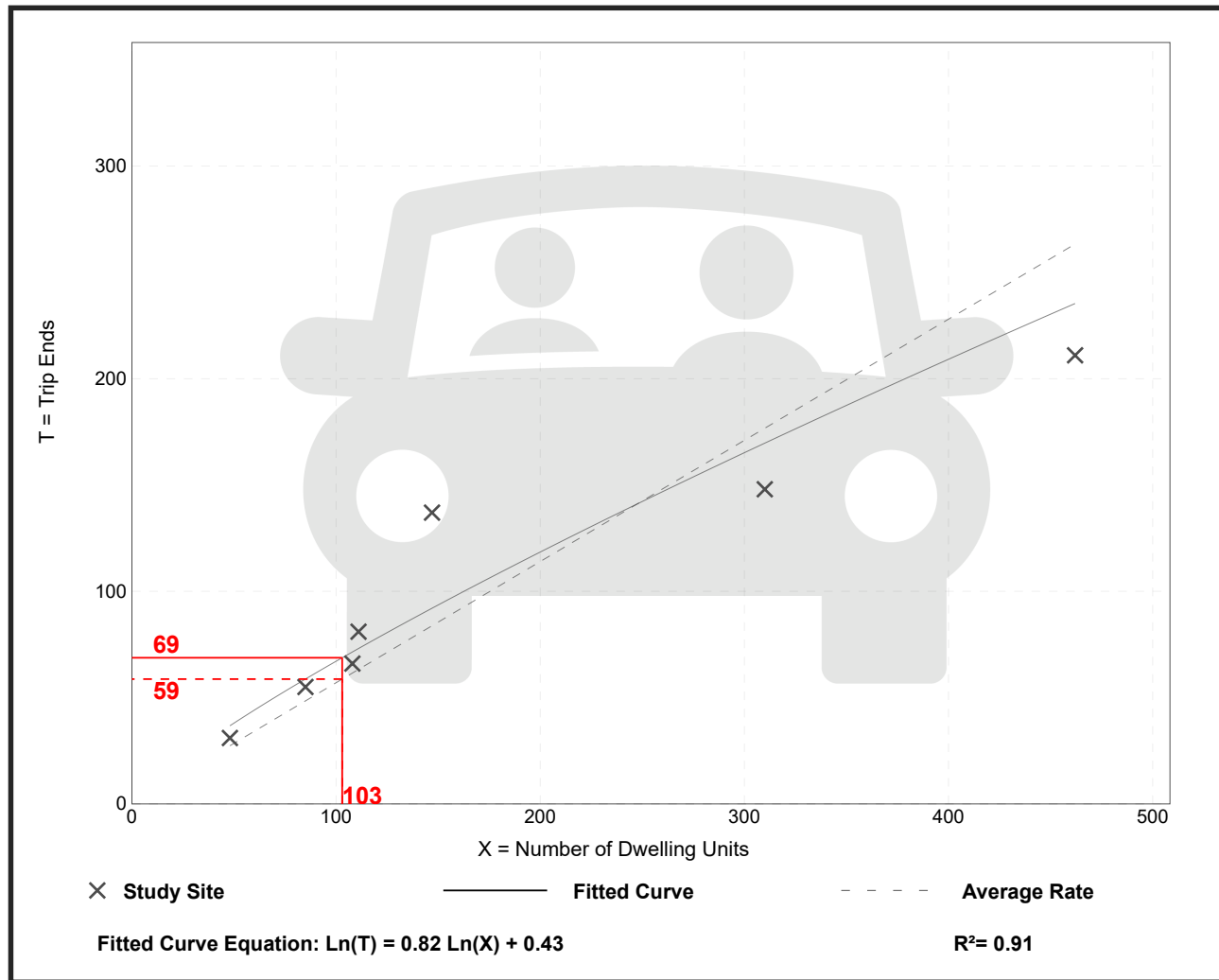
Vehicle Trip Ends vs: Dwelling Units
On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban
 Number of Studies: 7
 Avg. Num. of Dwelling Units: 182
 Directional Distribution: 48% entering, 52% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.57	0.46 - 0.93	0.17

Data Plot and Equation



Attachment H

Site Trip Distribution

Trip Distribution Gravity Model

Project: T1154 - 651 Main Street Development - Leicester, MA
 Date: September 22, 2021
 Analyst: TEC, Inc. / Justin Wadsworth
 Source: United States Census Bureau, 5-Year ACS, 2009-2013










Residence State-County-MCD Name	Workplace-County-MCD Name	Count	% of Total Leicester Workers	% of Distributed Workforce	Major Route Entering / Exiting				Check					
					Route 9 (East)	Route 9 (West)	Route 56 (North)	Route 56 (South)						
Leicester Town Worcester Co. MA	Worcester City Worcester Co. MA	2,162	40.98%	40.98%	100%	25%	25%	25%	100%	41%	0%	0%	0%	41%
Leicester Town Worcester Co. MA	Leicester Town Worcester Co. MA	1,037	19.66%	19.66%	25%	25%	25%	25%	100%	5%	5%	5%	5%	20%
Leicester Town Worcester Co. MA	Auburn Town Worcester Co. MA	438	8.30%	8.30%	100%	25%	25%	25%	100%	0%	0%	0%	0%	8%
Leicester Town Worcester Co. MA	Shrewsbury Town Worcester Co. MA	286	5.42%	5.42%	100%	25%	25%	25%	100%	0%	0%	0%	0%	5%
Leicester Town Worcester Co. MA	Westborough Town Worcester Co. MA	153	2.90%	2.90%	100%	25%	25%	25%	100%	0%	0%	0%	0%	3%
Leicester Town Worcester Co. MA	West Boylston Town Worcester Co. MA	151	2.86%	2.86%	75%	25%	25%	75%	100%	0%	1%	0%	0%	3%
Leicester Town Worcester Co. MA	Oxford Town Worcester Co. MA	148	2.81%	2.81%	100%	25%	25%	25%	100%	0%	0%	0%	0%	3%
Leicester Town Worcester Co. MA	Boston City Suffolk Co. MA	114	2.16%	2.16%	100%	25%	25%	25%	100%	2%	0%	0%	0%	2%
Leicester Town Worcester Co. MA	Millis Town Worcester Co. MA	82	1.55%	1.55%	100%	25%	25%	25%	100%	0%	0%	0%	0%	2%
Leicester Town Worcester Co. MA	Northbridge Town Worcester Co. MA	65	1.23%	1.23%	100%	25%	25%	25%	100%	1%	0%	0%	0%	1%
Leicester Town Worcester Co. MA	Charlton Town Worcester Co. MA	60	1.14%	1.14%	50%	25%	25%	25%	100%	1%	0%	0%	0%	1%
Leicester Town Worcester Co. MA	Millbury Town Worcester Co. MA	60	1.14%	1.14%	100%	25%	25%	25%	100%	1%	0%	0%	0%	1%
Leicester Town Worcester Co. MA	Marlborough City Middlesex Co. MA	57	1.08%	1.08%	100%	25%	25%	25%	100%	1%	0%	0%	0%	1%
Leicester Town Worcester Co. MA	Holden Town Worcester Co. MA	52	0.99%	0.99%	25%	25%	25%	25%	100%	0%	0%	0%	0%	1%
Leicester Town Worcester Co. MA	Webster Town Worcester Co. MA	52	0.99%	0.99%	100%	25%	25%	25%	100%	1%	0%	0%	0%	1%
Leicester Town Worcester Co. MA	Hopkinton Town Middlesex Co. MA	47	0.89%	0.89%	100%	25%	25%	25%	100%	1%	0%	0%	0%	1%
Leicester Town Worcester Co. MA	Northborough Town Worcester Co. MA	47	0.89%	0.89%	100%	25%	25%	25%	100%	1%	0%	0%	0%	1%
Leicester Town Worcester Co. MA	Framingham Town Middlesex Co. MA	46	0.87%	0.87%	100%	25%	25%	25%	100%	1%	0%	0%	0%	1%
Leicester Town Worcester Co. MA	Wrentham Town Norfolk Co. MA	40	0.76%	0.76%	100%	25%	25%	25%	100%	1%	0%	0%	0%	1%
Leicester Town Worcester Co. MA	Sudbury Town Middlesex Co. MA	39	0.74%	0.74%	100%	25%	25%	25%	100%	1%	0%	0%	0%	1%
Leicester Town Worcester Co. MA	Paxton Town Worcester Co. MA	38	0.72%	0.72%	50%	25%	25%	50%	100%	0%	0%	0%	0%	1%
Leicester Town Worcester Co. MA	Fitchburg City Worcester Co. MA	35	0.66%	0.66%	75%	25%	25%	25%	100%	0%	0%	0%	0%	1%
Leicester Town Worcester Co. MA	Danvers Town Essex Co. MA	34	0.64%	0.64%	100%	25%	25%	25%	100%	1%	0%	0%	0%	1%
Leicester Town Worcester Co. MA	Clinton Town Worcester Co. MA	33	0.63%	0.63%	75%	25%	25%	25%	100%	0%	0%	0%	0%	1%
TOTAL		5,276	100.00%	100.00%					Say	80.2%	5.2%	6.7%	7.9%	100.0%
										80%	5%	7%	8%	100%

Attachment I

Intersection Capacity and Queue Analysis Worksheets

Lanes, Volumes, Timings
 1: Site Driveway & Main Street (Route 9)

2028 Build Conditions
 Weekday Morning

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	839	3	12	347	7	27
Future Volume (vph)	839	3	12	347	7	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	956			1320	387	
Travel Time (s)	21.7			30.0	8.8	
Peak Hour Factor	0.89	0.89	0.85	0.85	0.92	0.92
Heavy Vehicles (%)	10%	2%	2%	11%	2%	2%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	839	3	12	347	7	27
Future Vol, veh/h	839	3	12	347	7	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	85	85	92	92
Heavy Vehicles, %	10	2	2	11	2	2
Mvmt Flow	943	3	14	408	8	29










Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	946	0	1381 945
Stage 1	-	-	-	-	945 -
Stage 2	-	-	-	-	436 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	725	-	159 318
Stage 1	-	-	-	-	378 -
Stage 2	-	-	-	-	652 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	725	-	155 318
Mov Cap-2 Maneuver	-	-	-	-	155 -
Stage 1	-	-	-	-	378 -
Stage 2	-	-	-	-	636 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	21.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	261	-	-	725	-
HCM Lane V/C Ratio	0.142	-	-	0.019	-
HCM Control Delay (s)	21.1	-	-	10.1	0
HCM Lane LOS	C	-	-	B	A
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Lanes, Volumes, Timings
 1: Site Driveway & Main Street (Route 9)

2028 Build Conditions
 Weekday Evening

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	514	7	27	792	5	20
Future Volume (vph)	514	7	27	792	5	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	956			1320	387	
Travel Time (s)	21.7			30.0	8.8	
Peak Hour Factor	0.88	0.88	0.97	0.97	0.92	0.92
Heavy Vehicles (%)	8%	2%	2%	3%	2%	2%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

Intersection

Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	514	7	27	792	5	20
Future Vol, veh/h	514	7	27	792	5	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	97	97	92	92
Heavy Vehicles, %	8	2	2	3	2	2
Mvmt Flow	584	8	28	816	5	22

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	592	0	1460 588
Stage 1	-	-	-	-	588 -
Stage 2	-	-	-	-	872 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	984	-	142 509
Stage 1	-	-	-	-	555 -
Stage 2	-	-	-	-	409 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	984	-	135 509
Mov Cap-2 Maneuver	-	-	-	-	135 -
Stage 1	-	-	-	-	555 -
Stage 2	-	-	-	-	388 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	17
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	328	-	-	984	-
HCM Lane V/C Ratio	0.083	-	-	0.028	-
HCM Control Delay (s)	17	-	-	8.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-