

MEMORANDUM

TO: Mr. Josh Sullivan
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True Storage
670 North Commercial Street
Manchester, NH 03101

FROM: Mr. Jeffrey S. Dirk, P.E.,* PTOE, FITE
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**Professional Engineer in CT, MA, ME, NH, RI and VA*

DATE: October 20, 2022

RE: 9481

SUBJECT: Transportation Impact Assessment
Proposed Self-Storage Facility – 2400 and 2402 Cranberry Highway (Route 28)
Wareham, Massachusetts

Vanasse & Associates, Inc. (VAI) has conducted a Transportation Impact Assessment (TIA) in order to determine the potential impacts on the transportation infrastructure associated with the proposed construction of a self-storage facility to be located at 2400 and 2402 Cranberry Highway (Route 28) in Wareham, Massachusetts (hereafter referred to as the “Project”). This assessment evaluates the following specific areas as they relate to the Project: i) access requirements; ii) potential off-site improvements; and iii) safety considerations; and identifies and analyzes existing traffic conditions and future traffic conditions, both with and without the Project along Route 28.

Based on this assessment, we have concluded the following with respect to the Project:

1. Using trip-generation statistics published by the Institute of Transportation Engineers (ITE),¹ the Project is expected to generate approximately 88 vehicle trips on an average weekday and 106 vehicle trips on a Saturday (both two-way volumes over the operational day of the Project), with 5 vehicle trips expected during the weekday morning peak hour, 9 vehicle trips expected during the weekday evening peak hour and 10 vehicle trips expected during the Saturday midday peak hour;
2. No apparent safety deficiencies were noted with respect to the motor vehicle crash history along Route 28 in the vicinity of the Project site;
3. All movements exiting the Project site driveway to Route 28 are predicted to operate at a level-of-service (LOS) D or better with negligible vehicle queuing, where an LOS of “D” or better is generally defined as “acceptable” operating conditions; and

¹*Trip Generation*, 11th Edition; Institute of Transportation Engineers; Washington, DC; 2021.



4. Lines of sight at the Route 28/Project site driveway intersection were found to exceed the recommended minimum distances for the intersections to operate in a safe and efficient manner based on the appropriate approach speed.

In consideration of the above, we have concluded that the Project can be accommodated within the confines of the existing transportation infrastructure in a safe and efficient manner with the implementation of the recommendations defined herein.

The following details our assessment of the Project.

PROJECT DESCRIPTION

As proposed, the Project will entail the construction of a two-story, 60,000± square foot (sf) self-storage building to be located at 2400 and 2402 Cranberry Highway (Route 28) in Wareham, Massachusetts. The Project site encompasses 3.76± acres of land that is bounded by Great Hill Drive to the north; a commercial property to the south; residential properties (Great Hill Estates mobile home park) to the east; and Route 28 to the west. The Project site is currently improved with a vacant commercial building and associated appurtenances that will be removed to accommodate the Project.



Imagery © 2022 Google

Access to the Project will be provided by a full access driveway that will intersect the east side of Route 28 at the location of the existing driveway in the southern portion of the Project site that is situated approximately 400 feet south of Great Hill Drive. The existing driveway in the northern portion of the Project site will be closed in conjunction with the Project, thereby reducing the number of conflict points for vehicles, pedestrians and bicyclists. The Project will require the issuance of a State Highway Access Permit from the Massachusetts Department of Transportation (MassDOT) for access to Route 28 as the section of roadway along which the Project site is located is a State highway under the jurisdiction of MassDOT.

Off-street parking will be provided for nine (9) vehicles, which is within the range of rates observed by ITE at similar land uses.²

²*Parking Generation*, 5th Edition; Institute of Transportation Engineers; Washington, DC; 2019.



STUDY METHODOLOGY

This study, prepared in consultation with MassDOT and the Town of Wareham; was performed in accordance with MassDOT's *Transportation Impact Assessment (TIA) Guidelines* and the standards of the Traffic Engineering and Transportation Planning professions for the preparation of such reports; and was conducted in three distinct stages.

The first stage involved an assessment of existing conditions in the study area and included an inventory of roadway geometrics; pedestrian and bicycle facilities; on-street parking; public transportation services; observations of traffic flow; and collection of pedestrian, bicycle, and vehicle counts.

In the second stage of the study, future traffic conditions were projected and analyzed. Specific travel demand forecasts for the Project were assessed along with future traffic demands due to expected traffic growth independent of the Project. A seven-year time horizon was selected for analyses consistent with MassDOT guidelines. The analysis conducted in stage two identifies existing or projected future capacity, safety, and access issues, as these areas relate to the transportation infrastructure.

The third stage of the study presents and evaluates measures to address deficiencies in the transportation infrastructure, if any, identified in stage two of the study.

EXISTING CONDITIONS

A comprehensive field inventory of existing conditions within the study area was conducted in September 2022. The field investigation consisted of an inventory of existing roadway geometrics; pedestrian and bicycle facilities; public transportation services; traffic volumes; and operating characteristics; as well as posted speed limits and land use information within the study area. The study area that was assessed for the Project consisted of Route 28 in the vicinity of the Project site and the Project site driveway intersection with Route 28.

The following describes the study area roadway and intersection.

Roadway

Route 28

- Two-lane urban minor arterial roadway under MassDOT jurisdiction;
- Traverses the study area in a general northwest-southeast direction;
- Provides two 11- to 12-foot-wide travel lanes in the vicinity of the Project site that are separated by a painted median or double-yellow centerline with 4-foot-wide marked shoulders provided;
- A sidewalk is provided along the east (Project) side of the roadway within the study area;
- Illumination is not provided in the vicinity of the Project site;
- The posted speed limit is 40 miles per hour (mph);
- Land use within the study area consists of the Project site and commercial properties.



Intersection

Table 1 summarizes existing lane use, traffic control, and pedestrian and bicycle accommodations at the study area intersections as observed in September 2022.

Table 1
STUDY AREA INTERSECTION DESCRIPTION

Intersection	Traffic Control Type^a	No. of Travel Lanes Provided	Shoulder Provided? (Yes/No/Width)	Pedestrian Accommodations? (Yes/No/Description)	Bicycle Accommodations? (Yes/No/Description)
Route 28/ Site Driveway	S	1 general-purpose travel lane on all approaches.	Yes, 4-feet on Route 28	Yes, sidewalk along the east side of Route 28	Yes; shared traveled-way on Route 28 ^b

^aS = STOP-sign control.

^bCombined shoulder and travel lane width equal to or exceeding 14 feet.

Existing Traffic Volumes

In order to determine existing traffic-volume demands and flow patterns within the study area, automatic traffic recorder (ATR) counts were completed in September 2022. The ATR counts were conducted on September 22nd through September 24th, 2022 (Thursday through Saturday, inclusive) on Route 28 in the vicinity of the Project site in order to record weekday and Saturday traffic conditions over an extended period.

In order to evaluate the potential for seasonal fluctuation of traffic volumes within the study area, traffic-volume data from MassDOT Continuous Count Station No. 7183 located on I-195 in Wareham was reviewed.³ Based on a review of this data, it was determined that traffic volumes for the month of September are approximately 7.0 percent *above* average-month conditions. As such, no adjustment was made to the September traffic volumes as they are representative of above average-month conditions.

In order to account for the impact on traffic volumes and trip patterns resulting from the COVID-19 pandemic, traffic-volume data collected at MassDOT Continuous Count Station No. 7183 in September 2018 was adjusted to the year 2019 by applying the traffic growth procedure detailed in the April 2020 “Guidance on Traffic Counting Data” published by MassDOT in order to allow for a comparison between the projected September 2019 data⁴ to the September 2022 traffic volumes that were collected at the same location. Based on this pre- and post-COVID-19 traffic-volume comparison, the traffic-volume data that was collected as part of this assessment was found to be 0.5 percent *above* the traffic volumes that existed prior to the COVID-19 pandemic. As such, no adjustments were made to the raw traffic-volume data.

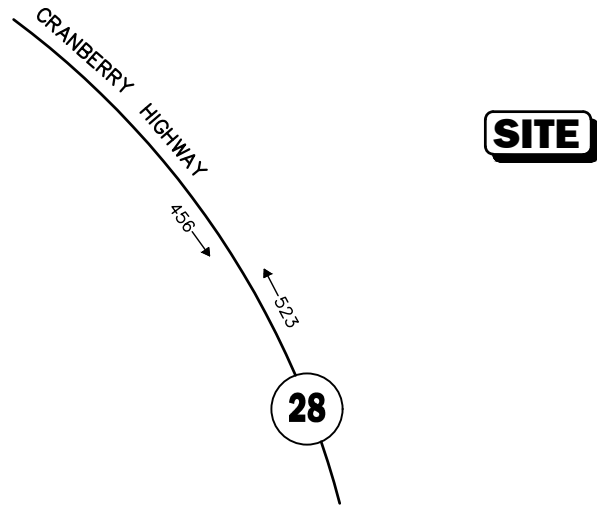
The 2022 Existing traffic volumes are summarized in Table 2, with the weekday morning, weekday evening, and Saturday midday peak-hour traffic volumes graphically depicted on Figure 1.

³MassDOT Traffic Volumes for the Commonwealth of Massachusetts; 2022.

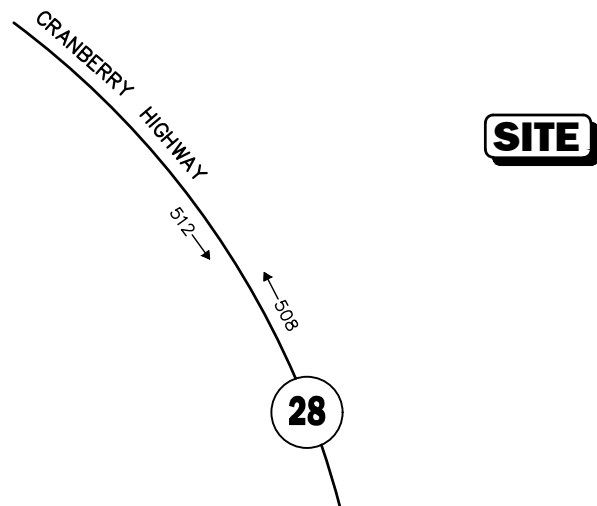
⁴MassDOT considers 2019 traffic-volume data to be representative of “existing” conditions had the COVID-19 pandemic not occurred.



WEEKDAY MORNING PEAK HOUR (7:45 - 8:45 AM)



WEEKDAY EVENING PEAK HOUR (4:15 - 5:15 PM)



SATURDAY MIDDAY PEAK HOUR (11:30 AM - 12:30 PM)

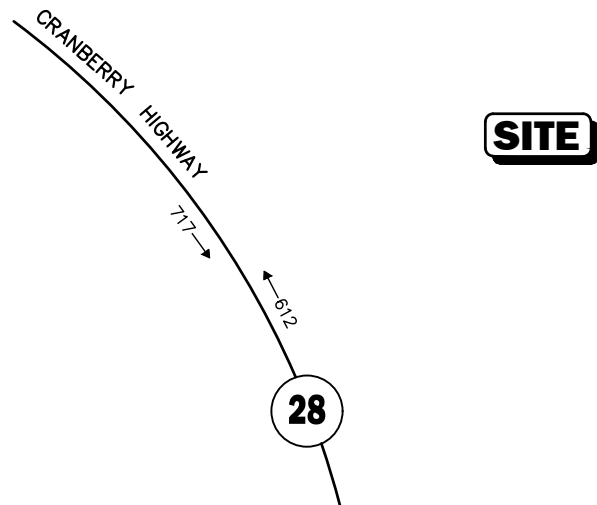


Figure 1

2022 Existing
Peak-Hour Traffic Volumes

Table 2
2022 EXISTING TRAFFIC VOLUMES

Location/Peak Hour	AWT ^a	Saturday ^b	VPH ^c	K Factor ^d	Directional Distribution ^e
<i>Route 28, east of Great Hill Drive:</i>	13,220	13,710	--	--	--
Weekday Morning (7:45 – 8:45 AM)	--	--	979	7.4	53.4% NWB
Weekday Evening (4:15 – 5:15 PM)	--	--	1,020	7.7	50.2% SEB
Saturday Midday (11:30 AM – 12:30 PM)	--	--	1,329	9.7	54.0% SEB

^aAverage weekday traffic in vehicles per day.

^bAverage Saturday traffic in vehicles per day.

^cVehicles per hour.

^dPercent of daily traffic occurring during the peak hour.

^ePercent traveling in peak direction.

NWB = northwestbound; SEB = southeastbound.

As can be seen in Table 2, Route 28 in the vicinity of the Project site was found to accommodate approximately 13,220 vehicles on an average weekday and 13,710 vehicles on a Saturday (both two-way volumes over the operational day of the Project), with approximately 979 vehicles per hour (vph) during the weekday morning peak-hour, 1,020 vph during the weekday evening peak-hour and 1,329 vph during the Saturday midday peak-hour.

Pedestrian and Bicycle Facilities

A comprehensive field inventory of pedestrian and bicycle facilities within the study area was undertaken in September 2022. The field inventory consisted of a review of the location of sidewalks and pedestrian crossing locations along the study roadways and at the study intersections, as well as the location of existing and planned future bicycle facilities. A sidewalk is provided along the east (Project) side of Route 28.

Formal bicycle facilities are not provided within the study area; however, Route 28 generally provides sufficient width (combined travel lane and shoulder) to accommodate bicycle travel in a shared traveled-way condition (i.e., motor vehicles and bicyclists sharing the roadway).⁵

Public Transportation Services

Public transportation services are provided within the study area by the Greater Attleboro Taunton Regional Transit Authority (GATRA). GATRA provides fixed-route bus service along Route 28 within the study area by way of Link 4, *Cranberry Plaza To West Wareham*. The Link 4 bus provides service between Lakeville Station on the Massachusetts Bay Transit Authority (MBTA) Commuter Rail system and Wagner Way in Buzzards Bay, with the closest regular stop located at the Walmart Supercenter approximately 0.3 miles (a 7-minute walk) to the south of the Project site; however, GATRA buses also operate in a “flag stop” mode, where a rider can request a stop (pick-up or drop-off) anywhere along the service route where it is safe for a bus to stop by signaling to the driver. In addition to fixed-route bus services, GATRA provides Dial-a-Ride paratransit services to eligible people who cannot use fixed-route transit all or some of the time due to a physical, cognitive, or mental disability in compliance with the Americans with Disabilities Act (ADA). The public transportation schedules and fare information are provided in the Appendix.

⁵A minimum combined travel lane and paved shoulder width of 14-feet is required to support bicycle travel in a shared traveled-way condition.



Spot Speed Measurements

Vehicle travel speed measurements were performed on Route 28 in the vicinity of the Project site in conjunction with the ATR counts. Table 3 summarizes the vehicle travel speed measurements.

Table 3
VEHICLE TRAVEL SPEED MEASUREMENTS

	Route 28	
	<u>Southeastbound</u>	<u>Northwestbound</u>
Mean Travel Speed (mph)	33	34
85 th Percentile Speed (mph)	38	40
Posted Speed Limit (mph)	40	40

mph = miles per hour.

As can be seen in Table 3, the mean vehicle travel speed along Route 28 in the vicinity of the Project site was found to be 33 mph in the southeastbound direction and 34 mph northwestbound. The measured 85th percentile vehicle travel speed, or the speed at which 85 percent of the observed vehicles traveled at or below, was found to be 38 mph in the southeastbound direction and 40 mph northwestbound, which is consistent with the posted speed limit in the vicinity of the Project site (40 mph). The 85th percentile speed is used as the basis of engineering design and in the evaluation of sight distances and is often used in establishing posted speed limits.

Motor Vehicle Crash Data

Motor vehicle crash information for the study area intersection was provided by the MassDOT Highway Division Safety Management/Traffic Operations Unit for the most recent five-year period available (2015 through 2019, inclusive) to examine motor vehicle crash trends occurring within the study area. The data is summarized by intersection, type, severity, roadway and weather conditions, and day of occurrence, and is presented in Table 4.

Based on a review of this data, Route 28 at and in the vicinity of the Project site driveway experienced a total of eight (8) crashes over the five-year review period, or an average of 1.6 crashes per year. The majority of the reported crashes occurred on a weekday, during daylight, under clear weather conditions, and involved rear-end type collisions that resulted in property damage only. The intersection was found to have a motor vehicle crash rate that is *below* both the MassDOT statewide and District average crash rates for an unsignalized intersection for the MassDOT Highway Division District in which the intersection is located in (District 5).

A review of the MassDOT statewide high crash location database (Highway Safety Improvement Program (HSIP) listing) indicates that there are no high crash locations in the vicinity of the Project site. In addition, no fatal motor vehicle crashes were reported to have occurred at the study area intersection over the five-year review period.

The detailed MassDOT Crash Rate Worksheet and High Crash Location mapping are provided in the Appendix.



Table 4
MOTOR VEHICLE CRASH DATA SUMMARY^a

	Route 28/ Project Site Driveway
Traffic Control Type ^b	U
<i>Year:</i>	
2015	0
2016	3
2017	1
2018	3
<u>2019</u>	<u>1</u>
Total	8
Average	1.60
Crash Rate ^c	0.30
MassDOT Crash Rate: ^d	0.57/0.57
Significant? ^e	No
<i>Type:</i>	
Angle	2
Head-On	0
Rear-End	4
Rear-to-Rear	0
Sideswipe	0
Fixed Object	1
Pedestrian/Bicycle	0
<u>Unknown/Other</u>	<u>1</u>
Total	8
<i>Conditions:</i>	
Clear	8
Cloudy	0
Rain	0
Snow/Ice	0
<u>Not Reported/Other</u>	<u>0</u>
Total	8
<i>Lighting:</i>	
Daylight	5
Dawn/Dusk	0
Dark (Road Lit)	2
<u>Dark (Road Unlit)</u>	<u>1</u>
Total	8
<i>Day of Week:</i>	
Monday-Friday	7
Saturday	0
<u>Sunday</u>	<u>1</u>
Total	8
<i>Severity:</i>	
Property Damage Only	5
Non-fatal Injury	3
<u>Not Reported</u>	<u>0</u>
Total	8

^aSource: MassDOT Safety Management/Traffic Operations Unit records, 2015 through 2019.

^bTraffic Control Type: U = unsignalized.

^cCrash rate per million vehicles entering the intersection.

^dStatewide/District crash rate.

^eThe intersection crash rate is significant if it is found to exceed the MassDOT crash rate for the MassDOT Highway Division District in which the Project is located (District 5).



FUTURE CONDITIONS

Traffic volumes in the study area were projected to the year 2029, which reflects a seven-year planning horizon from the date of publication of this assessment, consistent with MassDOT guidelines. Independent of the Project, traffic volumes on the roadway network in the year 2029 under No-Build conditions include all existing traffic and new traffic resulting from background traffic growth. Anticipated Project-generated traffic volumes superimposed upon the 2029 No-Build traffic volumes reflect 2029 Build traffic-volume conditions with the Project.

Future Traffic Growth

Future 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. A procedure frequently employed estimates an annual percentage increase in traffic growth and applies that percentage 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, potential population growth and development external to the study area would not be accounted for in the resulting traffic projections.

To provide a conservative analysis framework, both procedures were used, the salient components of which are described below.

Specific Development by Others

The Town of Wareham Planning Department was contacted in order to determine if there were any projects planned within the study area that would have an impact on future traffic volumes at the study intersections. Based on this consultation, no developments were identified at this time that are expected to result in an increase in traffic within the study area beyond the general background traffic growth (discussion follows).

General Background Traffic Growth

Traffic-volume data compiled by MassDOT from permanent count stations located in Wareham and Rochester were reviewed in order to determine general traffic growth trends in the area. This data indicates that traffic volumes have fluctuated over the 10-year period between 2009 and 2019, with an average traffic growth rate of 1.42 percent per year. In order to provide a prudent planning condition for the Project, a slightly higher 1.5 percent per year compounded annual background traffic growth rate was used in order to account for future traffic growth and presently unforeseen development within the study area.

Roadway Improvement Projects

The Town of Wareham and MassDOT were contacted in order to determine if there were any planned future roadway improvement projects expected to be completed by 2029 within the study area. Based on these discussions, no roadway improvement projects aside from routine maintenance activities were identified to be planned within the study area at this time.



No-Build Traffic Volumes

The 2029 No-Build condition peak-hour traffic volumes were developed by applying the 1.5 percent per year compounded annual background traffic growth rate to the 2022 Existing peak-hour traffic volumes. The resulting 2029 No-Build weekday morning, weekday evening, and Saturday midday peak-hour traffic volumes are shown on Figure 2.

Project-Generated Traffic

Design year (2029 Build) traffic volumes for the study area roadways were determined by estimating Project-generated traffic volumes and assigning those volumes on the study roadways. The following sections describe the methodology used to develop the anticipated traffic characteristics of the Project

As proposed, the Project will entail the construction of a 60,000± sf self-storage facility. In order to develop the traffic characteristics of the Project, trip-generation statistics published by the ITE⁶ for similar a land use as that proposed was used. ITE Land Use Code (LUC) 151, *Mini-Warehouse*, was used to develop the traffic characteristics of the Project, the results of which are summarized in Table 5.

Table 5
TRIP-GENERATION SUMMARY

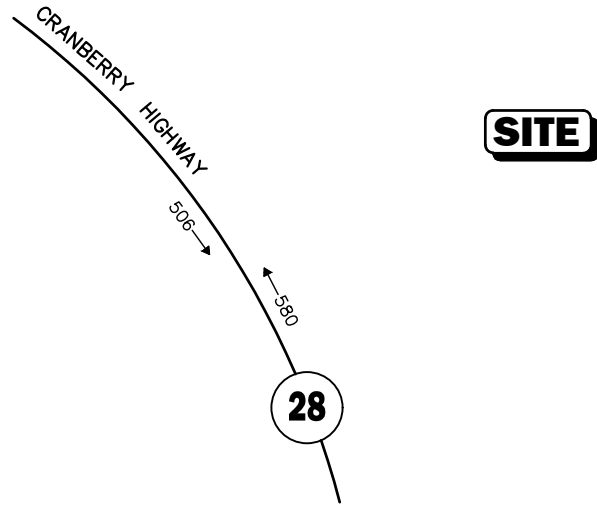
Time Period/Direction	Vehicle Trips
	Self-Storage (60,000 sf) ^a
<i>Average Weekday Daily:</i>	
Entering	44
<u>Exiting</u>	<u>44</u>
Total	88
<i>Weekday Morning Peak Hour:</i>	
Entering	3
<u>Exiting</u>	<u>2</u>
Total	5
<i>Weekday Evening Peak Hour:</i>	
Entering	4
<u>Exiting</u>	<u>5</u>
Total	9
<i>Saturday:</i>	
Entering	53
<u>Exiting</u>	<u>53</u>
Total	106
<i>Saturday Midday Peak Hour:</i>	
Entering	6
<u>Exiting</u>	<u>4</u>
Total	10

^aBased on ITE LUC 151, *Mini-Warehouse*.

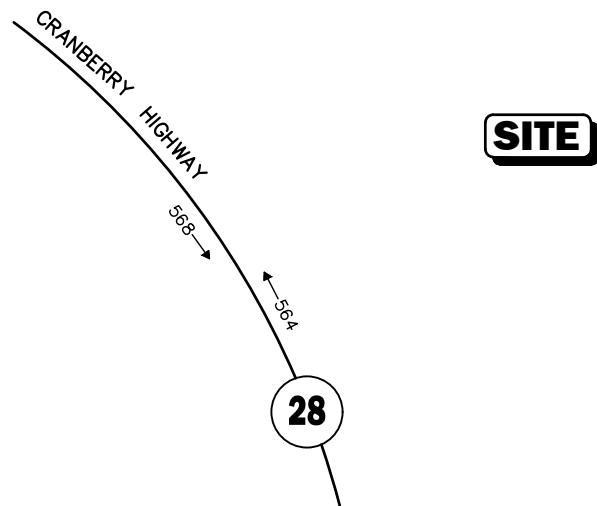
⁶Ibid 1.



WEEKDAY MORNING PEAK HOUR (7:45 - 8:45 AM)



WEEKDAY EVENING PEAK HOUR (4:15 - 5:15 PM)



SATURDAY MIDDAY PEAK HOUR (11:30 AM - 12:30 PM)

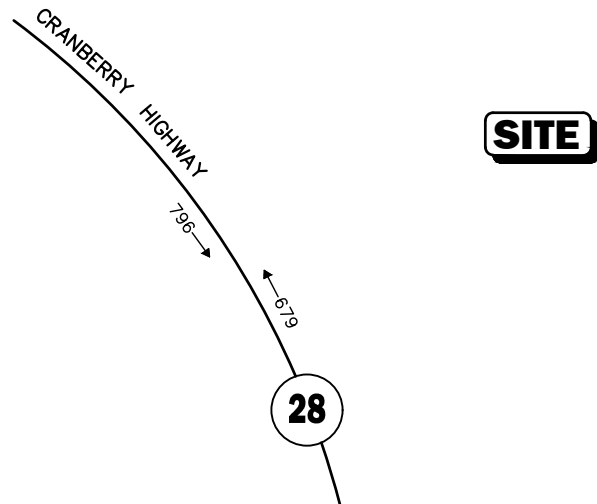


Figure 2

2029 No-Build
Peak-Hour Traffic Volumes

Project-Generated Traffic-Volume Summary

As can be seen in Table 5, the Project is expected to generate approximately 88 vehicle trips on an average weekday and 106 vehicle trips on a Saturday (both two-way volumes over the operational day of the Project), with approximately 5 vehicle trips (3 vehicles entering and 2 exiting) expected during the weekday morning peak-hour, 9 vehicle trips (4 vehicles entering and 5 exiting) expected during the weekday evening peak-hour and 10 vehicle trips (6 vehicles entering and 4 exiting) expected during the Saturday midday peak-hour.

Trip Distribution and Assignment

The directional distribution of generated trips to and from the Project site was determined based on a review of existing traffic patterns within the study area. The general trip distribution for the Project is graphically depicted on Figure 3. The additional traffic expected to be generated by the Project was assigned on the study area roadway network as shown on Figure 4.

Build Traffic Volumes

The 2029 Build condition traffic volumes consist of the 2029 No-Build traffic volumes with the addition of trips associated with the Project. The 2029 Build weekday morning, weekday evening, and Saturday midday peak-hour traffic volumes are graphically depicted on Figure 5.

TRAFFIC OPERATIONS ANALYSIS

In order to assess the potential impact of the Project on the roadway network, a detailed traffic operations analysis (motorist delays, vehicle queuing, and level-of-service) was performed for the study intersections. Capacity analyses provide an indication of how well transportation 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.

In brief, six levels of service are defined for each type of facility. They are given letter designations ranging from A to F, with LOS “A” representing the best-operating conditions and LOS “F” representing congested or constrained operations. An LOS of “E” is representative of a transportation facility that is operating at its design capacity with an LOS of “D” generally defined as the limit of “acceptable” traffic operations. Since the level-of-service of a traffic facility is a function of the 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 the year. The Synchro® intersection capacity analysis software, which is based on the analysis methodologies and procedures presented in the 2010 *Highway Capacity Manual* (HCM)⁷ for unsignalized intersections, was used to complete the level-of-service and vehicle queue analyses.

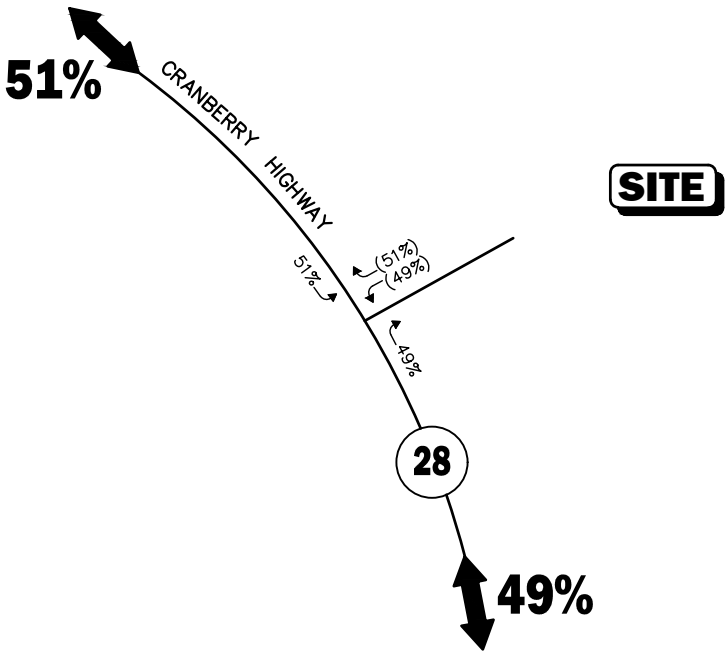
Analysis Results

Level-of-service and vehicle queue analysis were conducted for 2022 Existing, 2019 No-Build, and 2029 Build conditions for the intersection within the study area. The results of the intersection capacity and vehicle queue analyses are summarized in Table 6, with the detailed analysis results presented in the appendix. For context, we note that an LOS of “D” or better is generally defined as “acceptable” operating conditions.

⁷*Highway Capacity Manual*, Transportation Research Board; Washington, DC; 2010.



Legend:
XX Entering Trips
(XX) Exiting Trips

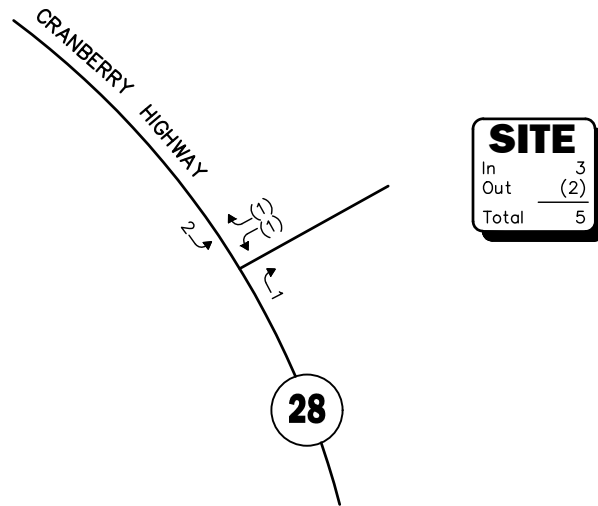


 Not To Scale

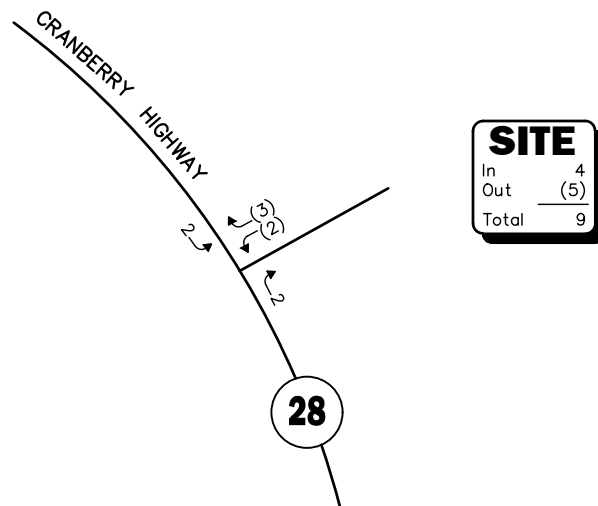
Figure 3
Trip Distribution Map



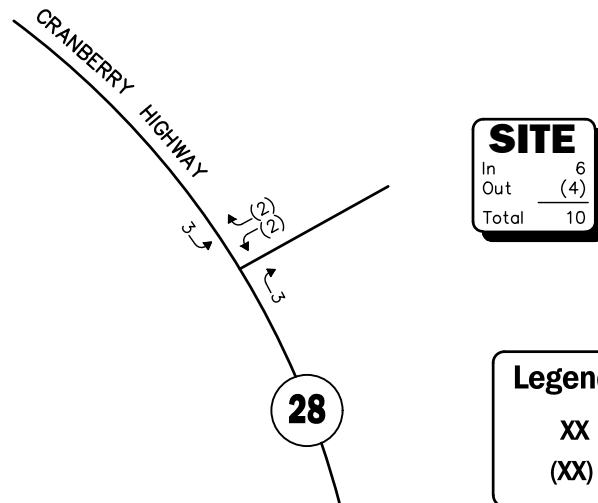
WEEKDAY MORNING PEAK HOUR (7:45 - 8:45 AM)



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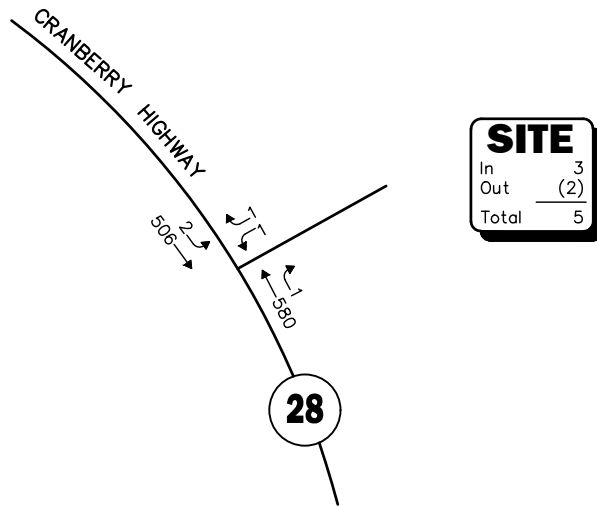
Legend:

XX Entering Trips
(XX) Exiting Trips

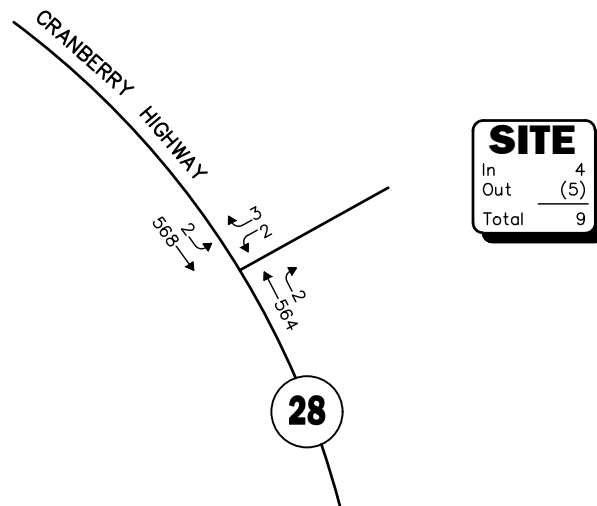


Figure 4

WEEKDAY MORNING PEAK HOUR (7:45 - 8:45 AM)



WEEKDAY EVENING PEAK HOUR (4:15 - 5:15 PM)



SATURDAY MIDDAY PEAK HOUR (11:30 AM - 12:30 PM)

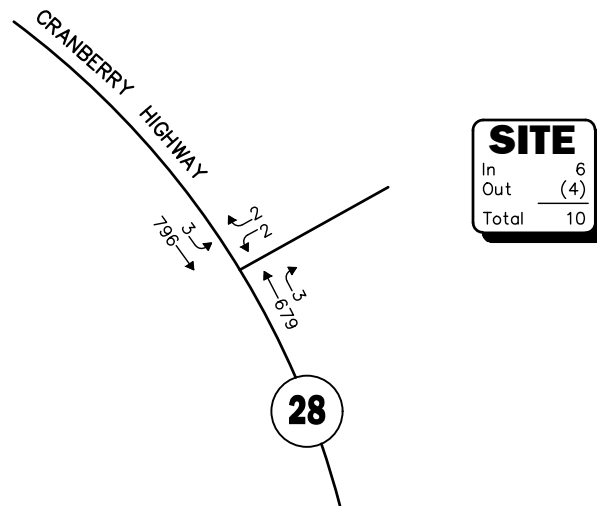


Figure 5

2029 Build
Peak-Hour Traffic Volumes

As can be seen in Table 6, all movements exiting the Project site driveway to Route 28 were shown to operate at LOS C during the weekday morning and evening peak hours and at LOS D during the Saturday midday peak-hour, with no material vehicle queuing predicted. All movements along Route 28 approaching the Project site driveway are expected to operate at LOS A during all peak hours also with no material vehicle queuing predicted.



Table 6**UNSIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY**

Unsignalized Intersection/Peak Hour/Movement	2022 Existing				2029 No-Build				2029 Build			
	Demand	Delay	LOS	Queue 95 th	Demand	Delay	LOS	Queue 95 th	Demand	Delay	LOS	Queue 95 th
Route 28 at Project Site Driveway												
<i>Weekday Morning:</i>												
Project Site Driveway LT/RT	--	--	--	--	--	--	--	--	2	18.2	C	0
Route 28 NWB LT/TH/RT	523	0.0	A	0	580	0.0	A	0	582	0.0	A	0
Route 28 SEB LT/TH/RT	456	0.0	A	0	506	0.0	A	0	507	0.0	A	0
<i>Weekday Evening:</i>												
Project Site Driveway LT/RT	--	--	--	--	--	--	--	--	5	17.3	C	0
Route 28 NWB LT/TH/RT	508	0.0	A	0	564	0.0	A	0	566	0.0	A	0
Route 28 SEB LT/TH/RT	512	0.0	A	0	568	0.0	A	0	570	0.0	A	0
<i>Saturday Midday:</i>												
Project Site Driveway LT/RT	--	--	--	--	--	--	--	--	4	25.0	D	0
Route 28 NWB LT/TH/RT	612	0.0	A	0	679	0.0	A	0	682	0.0	A	0
Route 28 SEB LT/TH/RT	717	0.0	A	0	796	0.0	A	0	799	0.0	A	0

^aDemand in vehicles per hour.^bAverage control delay per vehicle (in seconds).^cLevel of service.^dQueue length in vehicles.

SEB= southeastbound; NWB = northwestbound; LT = left-turning movements; TH = through movements; RT = right-turning movements.



SIGHT DISTANCE ASSESSMENT

Sight distance measurements were performed at the Project site driveway intersection with Route 28 in accordance with MassDOT and American Association of State Highway and Transportation Officials (AASHTO)⁸ requirements. Both stopping sight distance (SSD) and intersection sight distance (ISD) measurements were performed. In brief, SSD is the distance required by a vehicle traveling at the design speed of a roadway, on wet pavement, to stop prior to striking an object in its travel path. ISD or corner sight distance (CSD) is the sight distance required by a driver entering or crossing an intersecting roadway to perceive an oncoming vehicle and safely complete a turning or crossing maneuver with oncoming traffic. In accordance with AASHTO standards, if the measured ISD is at least equal to the required SSD value for the appropriate design speed, the intersection can operate in a safe manner. Table 7 presents the measured SSD and ISD at the subject intersection.

Table 7
SIGHT DISTANCE MEASUREMENTS^a

Intersection/Sight Distance Measurement	Feet		
	Required Minimum (SSD)	Desirable (ISD) ^b	Measured
Route 28 at Project Site Driveway			
<i>Stopping Sight Distance:</i>			
Site Driveway approaching from the south	305	--	650+
Site Driveway approaching from the north	305	--	650+
<i>Intersection Sight Distance:</i>			
Looking to the south from the Site Driveway	305	385	650+
Looking to the north from the Site Driveway	305	445	650+

^aRecommended minimum values obtained from *A Policy on Geometric Design of Highways and Streets*, 7th Edition; American Association of State Highway and Transportation Officials (AASHTO); 2018; and based on a 40 mph approach speed on Route 28.

^bValues shown are the intersection sight distance for a vehicle turning right or left exiting a roadway under STOP control such that motorists approaching the intersection on the major street should not need to adjust their travel speed to less than 70 percent of their initial approach speed

As can be seen in Table 7, the available lines of sight at the Project site driveway intersection were found to exceed the recommended minimum sight distance to function in a safe (SSD) and efficient (ISD) manner based on a 40 mph approach speed, which is consistent with both the measured 85th percentile vehicle travel speed along Route 28 (38/40 mph) and the posted speed limit in the vicinity of the Project site (40 mph).

⁸ *A Policy on Geometric Design of Highway and Streets*, 7th Edition; American Association of State Highway and Transportation Officials (AASHTO); Washington D.C.; 2018.



SUMMARY

VAI has completed a detailed assessment of the potential impacts on the transportation infrastructure associated with the proposed construction of a self-storage facility to be located at 2400 and 2402 Cranberry Highway (Route 28) in Wareham, Massachusetts. The following specific areas have been evaluated as they relate to the Project: i) access requirements; ii) potential off-site improvements; and iii) safety considerations; under existing and future conditions, both with and without the Project. Based on this assessment, we have concluded the following with respect to the Project:

1. Using trip-generation statistics published by the ITE,⁹ the Project is expected to generate approximately 88 vehicle trips on an average weekday and 106 vehicle trips on a Saturday (both two-way volumes over the operational day of the Project), with 5 vehicle trips expected during the weekday morning peak hour, 9 vehicle trips expected during the weekday evening peak hour and 10 vehicle trips expected during the Saturday midday peak hour;
2. No apparent safety deficiencies were noted with respect to the motor vehicle crash history along Route 28 in the vicinity of the Project site;
3. All movements exiting the Project site driveway to Route 28 are predicted to operate at LOS D or better with negligible vehicle queuing, where an LOS of “D” or better is generally defined as “acceptable” operating conditions; and
4. Lines of sight at the Route 28/Project site driveway intersection were found to exceed the recommended minimum distances for the intersections to operate in a safe and efficient manner based on the appropriate approach speed.

In consideration of the above, we have concluded that the Project can be accommodated within the confines of the existing transportation infrastructure in a safe and efficient manner with the implementation of the recommendations that follow.

RECOMMENDATIONS

A detailed transportation improvement program has been developed that is designed to provide safe and efficient access to the Project site and address any deficiencies identified as a part of this assessment. The following improvements have been recommended as a part of this evaluation and, where applicable, will be completed in conjunction with the Project subject to receipt of all necessary rights, permits, and approvals.

Project Access

Access to the Project will be provided by a full access driveway that will intersect the east side of Route 28 at the location of the existing driveway in the southern portion of the Project site that is situated approximately 400 feet south of Great Hill Drive. The existing driveway in the northern portion of the Project site will be closed in conjunction with the Project, thereby reducing the number of conflict points for vehicles, pedestrians and bicyclists. The following recommendations are offered with respect to the design and operation of the Project site access and internal circulation, many of which are reflected on the Site Plans:

⁹Ibid 1.



- The Project site driveway should be 24 feet in width and designed to accommodate the turning and maneuvering requirements of the largest anticipated responding emergency vehicle.
- Vehicles exiting the Project site should be placed under STOP control with a marked STOP-line provided.
- Where perpendicular parking is proposed, the drive aisle behind the parking should be a minimum of 23 feet in order to facilitate parking maneuvers.
- A sidewalk should be provided along one side of the Project site driveway that extends to the existing sidewalk along Route 28, with Americans with Disabilities Act (ADA) compliant wheelchair ramps provided for crossing the Project site driveway and at pedestrian crossings located within the Project site.
- All signs and pavement markings to be installed within the Project site shall conform to the applicable standards of the *Manual on Uniform Traffic Control Devices* (MUTCD).¹⁰
- Signs and landscaping to be installed as a part of the Project within the intersection sight triangle areas of the Project site driveway should be designed and maintained so as not to restrict lines of sight.
- Snow accumulations (windrows) within sight triangle areas will be promptly removed where such accumulations would impede sight lines.

Transportation Demand Management

In an effort to encourage the use of alternative modes of transportation to single-occupancy vehicles (SOVs) and to promote healthy transportation options to employees of the Project, the following Transportation Demand Management (TDM) measures should be considered for implementation as a part of the Project:

- A transportation coordinator should be assigned for the Project to coordinate the TDM program;
- Information regarding public transportation services, maps, schedules, and fare information should be posted in a central location and/or otherwise made available to employees;
- A “welcome packet” should be provided to employees detailing available commuter options and should include the contact information for the transportation coordinator;
- Specific amenities should be provided to discourage off-site trips, including one or more of the following measures: providing a breakroom equipped with a microwave and refrigerator; offering direct deposit of paychecks; coordinating with a dry-cleaning service for on-site pick-up and delivery; allowing telecommuting or flexible work schedules; and other such measures to reduce overall traffic volumes and travel during peak traffic-volume periods; and
- Secure bicycle parking should be provided at an appropriate location within the Project site.

With implementation of the above recommendations, safe and efficient access will be provided to the Project site and the Project can be accommodated within the confines of the existing transportation infrastructure.

¹⁰*Manual on Uniform Traffic Control Devices (MUTCD)*; Federal Highway Administration; Washington, D.C.; 2009.



APPENDIX

AUTOMATIC TRAFFIC RECORDER COUNT DATA

SEASONAL ADJUSTMENT DATA

COVID-19 ADJUSTMENT DATA

PUBLIC TRANSPORTATION SCHEDULES

VEHICLE TRAVEL SPEED DATA

MASSDOT CRASH RATE WORKSHEETS AND HIGH CRASH LOCATION MAP

GENERAL BACKGROUND TRAFFIC GROWTH

TRIP-GENERATION CALCULATIONS

CAPACITY ANALYSIS WORKSHEETS



AUTOMATIC TRAFFIC RECORDER COUNT DATA



Location : Route 28
Location : East of Great Hill Drive
City/State: Wareham, MA

94810001

Accurate Counts
978-664-2565

9/22/2022	EB,		Hour Totals		WB,		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	9	150			9	145				
12:15	3	121			6	133				
12:30	11	153			6	146				
12:45	6	137			5	152				
1:00	6	134			2	139				
1:15	4	95			7	138				
1:30	8	88			10	113				
1:45	2	88			6	111				
2:00	5	98			7	127				
2:15	5	71			6	96				
2:30	6	116			7	95				
2:45	3	104			6	120				
3:00	4	104			3	103				
3:15	2	102			7	122				
3:30	7	137			12	120				
3:45	6	139			10	101				
4:00	9	133			15	130				
4:15	11	132			25	116				
4:30	17	122			29	129				
4:45	11	123			22	119				
5:00	18	135			31	144				
5:15	24	89			31	121				
5:30	27	111			56	97				
5:45	32	82			61	97				
6:00	33	91			55	86				
6:15	51	66			85	81				
6:30	74	63			94	88				
6:45	119	74			134	77				
7:00	94	68			94	64				
7:15	96	51			127	57				
7:30	86	44			122	51				
7:45	133	31			136	56				
8:00	99	36			121	53				
8:15	113	35			146	61				
8:30	111	35			120	32				
8:45	108	30			102	33				
9:00	91	37			94	45				
9:15	113	18			94	20				
9:30	101	22			109	32				
9:45	126	16			95	27				
10:00	127	12			107	21				
10:15	121	9			103	16				
10:30	129	12			117	20				
10:45	113	12			121	12				
11:00	121	10			106	6				
11:15	124	8			117	19				
11:30	111	6			117	7				
11:45	129	3			129	6				
Total	2759	3553			3024	3884			0	0
Percent	43.7%	56.3%			43.8%	56.2%			*	*

94810001

Accurate Counts
978-664-2565

[illegible]

SEASONAL ADJUSTMENT DATA

2018 Average Count Data – Sta. 7183

September 2018 ADT: 37,770

2018 Average Count Data – Sta. 7183

Year 2018 ADT: 35,113

Seasonal Adjustment

$$35,113 / 37,770 = 0.930$$

Massachusetts Highway Department

7183: Monthly Hourly Volume for September 2018

Location ID: 7183
 County: Plymouth
 Functional Class: 1
 Location: INTERSTATE 195

Seasonal Factor Group: U1-Southeast
 Daily Factor Group:
 Axle Factor Group: U1-Southeast
 Growth Factor Group:

	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL	QC Status
1	483	247	171	174	233	438	910	1492	1898	2334	2840	2984	2751	2759	2645	2697	2543	2287	1957	1637	1374	1274	1034	615	37777	Accepted
2	337	185	140	112	148	285	594	955	1330	1937	2404	2827	2777	2550	2290	2378	2302	2298	2086	1714	1564	1192	873	546	33824	Accepted
3	283	141	114	123	198	329	688	1190	1673	2176	2568	2815	2800	2756	2620	2626	2498	2519	1981	1675	1302	882	538	317	34812	Accepted
4	156	100	112	163	425	1071	2592	3314	2918	2537	2545	2492	2513	2465	2683	3252	3487	3175	2186	1359	1120	721	545	391	42322	Accepted
5	181	138	104	154	371	1056	2512	3368	2671	2144	2134	2200	2177	2177	2491	3235	3428	2964	2089	1413	1082	838	569	399	39895	Accepted
6	229	146	126	159	369	1063	2476	3128	2682	2171	2300	2223	2285	2237	2583	3273	3563	3104	2240	1422	1081	793	646	480	40779	Accepted
7																										
8	362	258	184	187	261	466	1064	1615	1794	2414	2602	2950	3046	2777	2707	2794	2556	2503	1982	1434	1261	1058	932	601	37808	Accepted
9	288	196	131	124	157	274	620	1021	1268	1852	2266	2586	2829	2634	2409	2443	2353	2244	1821	1366	1003	678	512	355	31430	Accepted
10	195	138	109	165	390	1044	2463	3181	2691	2251	2188	2268	2299	2178	2588	2972	3216	2980	1954	1195	869	614	451	328	38727	Accepted
11	160	121	97	156	340	1050	2455	3351	2565	2026	2131	2072	2186	2080	2577	3140	3441	3095	2068	1372	1000	713	553	345	39094	Accepted
12	183	132	88	140	397	1025	2522	3274	2695	2053	1960	2038	2072	2162	2588	3123	3336	3091	1998	1264	1002	780	521	382	38826	Accepted
13	226	127	97	144	323	1004	2237	2671	2536	2442	2142	2075	2113	2177	2519	3267	3356	3166	2340	1513	1166	814	597	502	39554	Accepted
14	240	169	103	148	345	1030	2398	3156	2778	2284	2415	2375	2492	2579	3029	3653	3724	3408	2733	1855	1405	1179	916	638	45052	Accepted
15	389	232	153	156	233	480	969	1503	1801	2268	2649	2839	2962	2761	2739	2769	2522	2270	1982	1561	1308	1017	901	622	37086	Accepted
16	317	204	133	99	149	319	565	1018	1362	1945	2542	2776	2839	2715	2634	2865	2754	2327	1994	1547	1262	779	479	341	33965	Accepted
17	156	123	100	161	378	1084	2568	3206	2694	2108	2074	2148	2200	2143	2439	3077	3398	3101	2021	1329	969	649	495	351	38972	Accepted
18	163	112	99	131	350	967	2370	3148	2555	2006	1850	1908	1804	1940	2139	2674	3012	2689	1604	1096	815	613	462	324	34831	Accepted
19	151	105	78	110	329	1043	2502	3245	2601	2108	1931	2090	2073	2118	2417	3097	3268	3154	2048	1289	978	701	521	376	38333	Accepted
20	210	135	112	117	363	1076	2569	3199	2715	2231	2146	2179	2165	2190	2639	3322	3503	3226	2254	1446	1086	786	665	482	40816	Accepted
21	289	146	101	155	357	981	2437	3100	2712	2191	2344	2298	2469	2555	3000	3571	3608	3446	2593	1705	1262	1055	910	635	43920	Accepted
22	296	214	145	150	231	472	1022	1362	1820	2075	2467	2777	2751	2749	2691	2684	2512	2418	1963	1452	1133	1040	820	593	35837	Accepted
23	301	179	125	123	142	318	633	881	1229	1813	2311	2680	2863	2593	2519	2625	2523	2296	2026	1418	1027	587	439	328	31979	Accepted
24	152	92	87	135	350	1061	2479	3409	2617	2101	2104	2017	2132	2077	2470	2972	3181	3048	2013	1271	878	598	452	318	38014	Accepted
25	159	119	98	122	344	996	2478	3143	2659	2013	1888	1926	1940	1976	2298	2779	3027	2792	1731	1089	838	631	457	325	35828	Accepted
26	165	102	96	119	328	965	2420	3114	2534	2001	1878	2000	2016	2063	2381	3067	3261	3049	2016	1212	992	699	536	365	37379	Accepted
27	183	123	94	124	387	1071	2513	3266	2701	2160	2047	2147	2075	2190	2552	3047	3422	3067	2309	1586	1126	783	606	437	40016	Accepted
28	241	146	100	138	332	992	2189	2953	2474	2030	2055	2210	2349	2382	2747	3123	3428	3256	2323	1528	1130	1013	835	547	40521	Accepted
29	358	180	135	154	217	485	997	1408	1761	2141	2550	2823	2853	2634	2772	2642	2529	2343	2036	1584	1207	1002	822	605	36238	Accepted
30	364	162	120	119	145	296	576	872	1235	1820	2319	2619	2723	2643	2506	2371	2492	2346	1987	1513	1023	645	481	308	31685	Accepted

Sept 37769.66

Year 35,113

Adjust 92.97%

COVID-19 ADJUSTMENT DATA



2018 Average Count Data – Sta. 7183

September 2018 ADT: 37,770

Growth Rate (2018-2019): 0% [MassDOT Yearly Growth Rates (U1 - Southeast)]

$$37,770 \times (1.00) = 37,770$$

2022 Average Count Data – Sta. 7183

September 2022 ADT: 37,977

COVID Adjustment

$$37,770 / 37,977 = 0.995$$

Massachusetts Highway Department

7183: Monthly Hourly Volume for September 2022

Location ID: 7183
 County: Plymouth
 Functional Class: 1
 Location: INTERSTATE 195

Seasonal Factor Group:
 Daily Factor Group:
 Axle Factor Group:
 Growth Factor Group:

	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL	QC Status
1	199	116	100	124	357	1072	2630	3095	2676	2484	2303	2333	2367	2436	2816	3353	3532	3155	2215	1609	1257	910	772	649	42560	Accepted
2	371	176	114	145	333	935	2285	2685	2352	2132	2486	2722	2789	2720	2935	3190	3106	3051	2278	1713	1477	1246	1009	717	42967	Accepted
3	298	165	118	155	255	477	884	1360	1804	2472	2722	2930	2781	2624	2512	2490	2295	2183	1884	1464	1248	1010	888	507	35526	Accepted
4	236	178	104	115	179	295	540	943	1282	1883	2440	2629	2664	2677	2423	2321	2207	2151	2080	1767	1288	934	654	468	32458	Accepted
5	221	130	95	131	188	336	739	1158	1539	1920	2328	2519	2691	2563	2655	2290	2085	1665	1621	1240	844	513	394	264	30129	Accepted
6	117	79	71	120	342	968	2315	3051	2581	2149	2179	2138	2140	2199	2512	2924	3029	2745	1699	1113	788	582	425	301	36567	Accepted
7	137	96	74	138	370	1069	2650	3230	2662	2197	2168	2088	2075	2354	2617	3142	3397	3158	2027	1231	988	659	515	319	39361	Accepted
8	159	99	85	136	369	1083	2632	3180	2658	2195	2241	2193	2292	2450	2758	3399	3500	2998	2064	1432	1067	768	585	394	40737	Accepted
9	203	119	106	126	316	1022	2452	2880	2477	2186	2326	2491	2468	2569	3001	3430	3431	3134	2315	1598	1158	1064	813	525	42210	Accepted
10	308	170	136	124	240	556	1154	1511	1759	2172	2722	2911	2855	2846	2586	2557	2488	2328	1862	1465	1217	1003	737	547	36254	Accepted
11	321	189	108	107	166	312	599	1026	1448	1963	2412	2538	2877	2634	2472	2569	2516	2236	1791	1444	976	606	445	262	32017	Accepted
12	120	75	89	115	359	1050	2515	3043	2527	2094	2122	2064	2222	2245	2492	3078	3264	2869	1732	1159	827	557	430	314	37362	Accepted
13																										
14	158	92	83	109	365	1097	2595	3178	2690	2081	2141	2086	2130	2210	2539	3249	3530	3065	1950	1414	964	688	549	399	39362	Accepted
15	167	94	76	127	371	1132	2670	3168	2638	2286	2156	2261	2287	2420	2733	3287	3616	3138	2125	1432	1077	833	601	409	41104	Accepted
16	186	120	107	134	348	1010	2487	2907	2634	2309	2326	2435	2701	2669	2977	3549	3600	3186	2502	1661	1249	968	838	581	43484	Accepted
17	303	165	122	126	250	478	1006	1436	1824	2351	2711	3052	2889	2746	2603	2643	2433	2335	2074	1473	1197	909	801	578	36505	Accepted
18	265	140	88	101	151	304	577	982	1419	1976	2298	2662	2883	2788	2492	2548	2451	2310	2012	1500	1061	645	435	298	32386	Accepted
19	169	112	79	129	374	1111	2570	3076	2685	2140	2142	2112	2097	2149	2488	3098	3215	2817	1716	1120	768	500	426	300	37393	Accepted
20	161	100	86	113	351	1118	2617	3233	2633	2156	1997	1942	2065	2158	2478	3117	3349	2891	1873	1159	818	639	461	299	37814	Accepted
21	154	89	71	132	349	1137	2611	3242	2738	2088	2071	2182	2006	2210	2530	3154	3434	2873	1939	1406	990	637	474	335	38852	Accepted
22																										
23	189	99	101	120	335	1063	2484	2884	2551	2303	2407	2504	2545	2650	3048	3503	3586	3255	2335	1713	1203	900	822	524	43124	Accepted
24	306	155	102	105	231	469	962	1314	1670	2127	2592	2873	2956	2902	2888	2661	2677	2355	1974	1492	1275	916	769	532	36303	Accepted
25	264	153	114	121	142	291	549	881	1238	1876	2289	2650	2721	2511	2446	2314	2266	2007	1701	1309	906	574	395	292	30010	Accepted
26	122	105	60	123	353	1092	2506	3118	2624	2244	2240	2248	2186	2201	2586	3193	3303	2859	1825	1260	786	553	458	306	38351	Accepted
27	133	87	77	148	371	1073	2677	3202	2692	2229	2135	2100	2189	2220	2595	3076	3403	2992	1850	1274	895	604	463	294	38779	Accepted
28	138	80	86	121	352	1121	2592	3197	2607	2067	2067	1912	2034	2100	2619	3140	3522	3106	1968	1291	1012	643	559	326	38660	Accepted
29	185	91	71	124	346	1184	2600	3216	2697	2304	2154	2153	2299	2241	2676	3307	3533	3162	2087	1374	1001	729	605	399	40538	Accepted
30	197	109	100	122	362	1070	2521	3019	2617	2118	2314	2405	2458	2543	2947	3553	3490	3213	2306	1596	1178	965	804	542	42549	Accepted

2022 37977.21
 2018 37770
 Adjust 99.45%

PUBLIC TRANSPORTATION SCHEDULES



⚠ System Alert: MASKS ARE RECOMMENDED ON ALL GATRA VEHICLES



[Home](#) / [Routes](#) / [Route Link 4](#)

Link 4 Cranberry Plaza To West Wareham

Link 4 travels between Cranberry Plaza and Rt. 28 & Rt. 58 South. Stops include YMCA, Super Walmart, and Wareham Crossing.

DAYS:

Weekday **Saturday**

DIRECTION:

Inbound **Outbound**

Stop	Run #1	Run #2	Run #3	Run #4	Run #5	Run #6	Run #7	Run #8
Lakeville MBTA Station	7:50am	—	—	—	—	—	—	—
South Middleborough	8:05am	—	—	—	—	—	—	—
Route 28 and Route 58	8:10am	8:56am	9:56am	10:56am	11:56am	12:56pm	1:56pm	2:56pm
Walmart Supercenter	RR	9:01am	10:01am	11:01am	12:01pm	1:01pm	2:01pm	3:01pm
Wareham Crossing	RR	9:04am	10:04am	11:04am	12:04pm	1:04pm	2:04pm	3:04pm
All American/Rosebrook	RR	9:08am	10:08am	11:08am	12:08pm	1:08pm	2:08pm	3:08pm
Mill Pond	8:14am	9:12am	10:12am	11:12am	12:12pm	1:12pm	2:12pm	3:12pm
Cranberry Plaza	8:20am	9:18am	10:18am	11:18am	12:18pm	1:18pm	2:18pm	3:18pm
Onset Pier	—	—	—	—	—	—	—	—



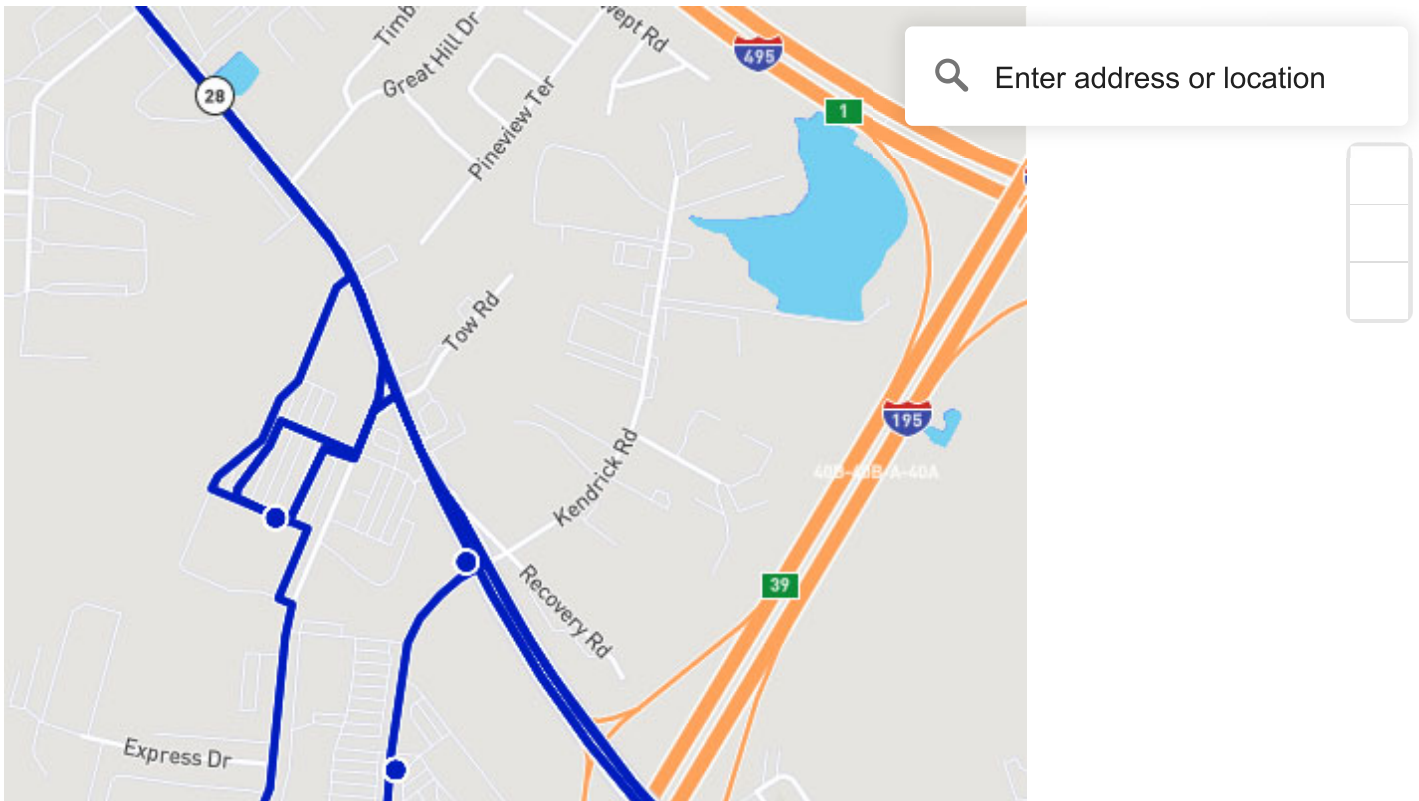
Service not provided on: New Years Day, Memorial Day, 4th of July, Labor Day, Columbus Day, Thanksgiving, Christmas

Fares

Regular	\$1.50
Seniors (60+)/Medicare Card Holder	\$0.75
Student	\$0.75
Children (6 & under with adult)	Free

Connections

LINK 2 LINK 1



© Mapbox © OpenStreetMap

Stop Zone Legend

Flag stop zone: Flag down the bus anywhere along this segment to ride.

No stop zone: Bus will only stop at marked, designated stops in this area.

About GATRA

GATRA oversees operations of fixed-route bus services in the cities of Attleboro and Taunton, and the towns of Bellingham, Berkley, Carver, Dighton, Duxbury, Foxborough, Franklin, Hanover, Kingston, Lakeville, Mansfield, Marshfield, Medway, Middleborough, Norfolk, North Attleboro, Norton, Pembroke, Plainville, Plymouth, Plympton, Raynham, Rehoboth, Scituate, Seekonk, Wareham, and Wrentham. All 29 member communities have demand response (Dial-A-Ride) services for people with disabilities and seniors.

Contact Us

800-483-2500

TTD: 508-824-7439

10 Oak Street Taunton, MA 02780

Requests For Information In Alternate Formats

All documents and information available on this website are available in alternate formats upon request.

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Attleboro Commuter Parking Lot

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 System Alert: MASKS ARE RECOMMENDED ON ALL GATRA VEHICLES



Dial-A-Ride: ADA & Senior Transportation

Home / Dial-A-Ride: ADA & Senior Transportation

Contact The Dial-A-Ride Office In Your Area

Select your town to get the correct phone number:

Dial-A-Ride

Dial-a-Ride is a curb to curb transportation service available to eligible passengers in each of GATRA's towns. Eligible residents are seniors (60 and over) or persons with a disability who cannot access public transportation.

Please use the drop box above to research the Dial-a-Ride options in your town.

If you believe you are eligible for the service, please download and fill out the ADA or Senior application below.

[Senior Dial-A-Ride Application](#)

ADA Paratransit

Purpose

The Americans with Disabilities Act of 1990 mandated that Americans with disabilities have equal access to public transportation as well as places of “public accommodation”.

In conformance with the Americans with Disabilities Act (ADA), the Greater Attleboro Regional Transit Authority (GATRA) offers a paratransit service to individuals with disabilities who cannot use the fixed route bus system.

Service Description

Operating in compliance with the FTA’s ADA regulations, GATRA’s ADA Paratransit Service provides origin to destination transportation to ADA eligible individuals who are unable to use the fixed route bus service due to a disability. This service operates the same days and times as the fixed route bus service and travels within $\frac{3}{4}$ of a mile of the route. It is a shared ride and multiple users could be grouped together allowing GATRA to provide efficient trips that will meet all ADA requests.

Qualifying for ADA Paratransit

A person must apply to see if they qualify for this transportation. Download the application and fill out Part A. A licensed professional who can attest to the disability that prevents use of a fixed route bus must complete Part B. The application should be sent to the administrative office (10 Oak Street Taunton, MA 02780).

Within 21 days of receipt of the application, GATRA will review and determine rider’s eligibility for ADA services. If determination has not been made within the 21 days, the applicant will be considered eligible for ADA services on day 22 until formal determination by GATRA.

[ADA Dial-A-Ride Application Part A](#)

[ADA Dial-A-Ride Application Part B](#)

Eligibility for out-of-area visitors

Visitors to the GATRA area who wish to use our Paratransit service should call for information concerning eligibility. The number is 508-823-8828. The Americans with Disabilities Act (ADA) allows you to travel as a visitor for 21 days in a 12-month period. Please provide a copy of your ADA Paratransit Certificate of Eligibility from your home transit agency, along with your contact information while in the area.

Procedure For Filing A Complaint:

Any person, who believes his/her ADA rights have been violated, may file a complaint with GATRA's Customer Service Department. For ADA complaints, please call Joanne LaFerrara, Director of Customer Relations at 800-283-2500 ext 275.

[ADA Service Complaint Form](#) Download

About GATRA

GATRA oversees operations of fixed-route bus services in the cities of Attleboro and Taunton, and the towns of Bellingham, Berkley, Carver, Dighton, Duxbury, Foxborough, Franklin, Hanover, Kingston, Lakeville, Mansfield, Marshfield, Medway, Middleborough, Norfolk, North Attleboro, Norton, Pembroke, Plainville, Plymouth, Raynham, Rehoboth, Scituate, Seekonk, Wareham, and Wrentham. All 28 member communities have demand response (Dial-A-Ride) services for people with disabilities and seniors.

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VEHICLE TRAVEL SPEED DATA



Accurate Counts
978-664-2565

Location : Route 28
Location : East of Great Hill Drive
City/State: Wareham, MA
Direction: EB,

94810001

9/22/2022	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	Total
12:00 AM	0	0	4	4	6	10	5	0	0	0	0	0	0	29
1:00	0	0	0	6	8	3	1	2	0	0	0	0	0	20
2:00	0	0	3	3	5	3	3	2	0	0	0	0	0	19
3:00	0	0	1	6	6	4	1	0	0	1	0	0	0	19
4:00	0	1	2	15	17	10	2	1	0	0	0	0	0	48
5:00	0	0	6	27	35	27	3	3	0	0	0	0	0	101
6:00	0	2	9	30	109	92	31	4	0	0	0	0	0	277
7:00	0	3	10	60	170	132	29	4	1	0	0	0	0	409
8:00	4	3	27	74	178	120	21	3	1	0	0	0	0	431
9:00	0	4	22	98	165	118	21	3	0	0	0	0	0	431
10:00	7	7	32	106	204	107	26	1	0	0	0	0	0	490
11:00	5	4	26	126	199	108	15	1	1	0	0	0	0	485
12:00 PM	1	4	42	139	233	114	24	2	1	0	1	0	0	561
1:00	1	6	25	111	156	81	22	1	2	0	0	0	0	405
2:00	3	12	38	89	145	76	24	2	0	0	0	0	0	389
3:00	6	5	29	142	180	88	28	2	2	0	0	0	0	482
4:00	0	3	21	110	231	119	21	4	0	1	0	0	0	510
5:00	0	0	18	83	172	120	15	7	1	0	0	0	1	417
6:00	0	2	15	67	142	57	9	2	0	0	0	0	0	294
7:00	1	1	5	35	105	33	10	4	0	0	0	0	0	194
8:00	0	0	7	27	63	30	6	3	0	0	0	0	0	136
9:00	0	2	7	13	36	24	11	0	0	0	0	0	0	93
10:00	0	0	2	11	16	9	6	1	0	0	0	0	0	45
11:00	0	0	0	7	11	6	3	0	0	0	0	0	0	27
Total	28	59	351	1389	2592	1491	337	52	9	2	1	0	1	6312
New Line	Percentile			15th	50th	85th	95th							
	Speed			28	32	37	40							
	Mean Speed (Average)			32.5										
	10 MPH Pace Speed			30-39										
	Number in Pace			4081										
	Percent in Pace			64.7%										
	Number > 35 MPH			1893										
	Percent > 35 MPH			30.0%										

Accurate Counts
978-664-2565

Location : Route 28
Location : East of Great Hill Drive
City/State: Wareham, MA
Direction: EB,

94810001

9/23/2022	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	Total
12:00 AM	0	0	1	0	8	4	2	0	0	0	0	0	0	15
1:00	0	0	0	9	7	0	1	1	0	0	0	0	0	18
2:00	0	1	6	3	5	1	1	0	0	0	0	0	0	17
3:00	0	0	4	4	9	5	0	1	0	0	0	0	0	23
4:00	0	0	4	10	19	5	3	4	1	0	0	0	0	46
5:00	0	1	5	18	42	19	10	1	0	0	0	0	0	96
6:00	1	4	11	41	111	94	15	4	0	0	0	0	0	281
7:00	3	2	8	49	157	138	23	4	0	0	0	0	0	384
8:00	2	3	18	65	176	124	41	5	0	0	0	0	0	434
9:00	0	6	14	88	225	137	39	3	0	0	0	0	0	512
10:00	1	2	41	84	226	122	36	2	0	0	0	0	0	514
11:00	8	23	35	141	252	127	29	1	1	0	0	0	0	617
12:00 PM	0	6	55	159	231	128	30	4	0	0	0	0	0	613
1:00	2	4	22	140	263	144	19	2	0	0	0	0	0	596
2:00	0	6	18	110	217	133	48	8	0	0	0	0	0	540
3:00	3	5	46	167	294	178	30	1	0	0	0	0	0	724
4:00	0	23	33	131	296	188	45	2	1	0	0	0	0	719
5:00	0	1	8	61	267	199	40	5	0	0	0	0	0	581
6:00	1	0	12	45	193	162	33	3	0	0	0	0	0	449
7:00	2	0	11	52	125	95	35	2	0	0	0	0	0	322
8:00	0	0	10	24	77	60	19	4	0	0	0	0	0	194
9:00	0	1	3	20	42	39	15	2	1	0	0	0	0	123
10:00	1	0	1	6	24	25	6	0	0	0	0	0	0	63
11:00	0	0	3	7	12	12	8	1	1	0	0	0	0	44
Total	24	88	369	1434	3278	2139	528	60	5	0	0	0	0	7925
New Line	Percentile			15th	50th	85th	95th							
	Speed			29	34	38	41							
	Mean Speed (Average)			33.1										
	10 MPH Pace Speed			30-39										
	Number in Pace			5403										
	Percent in Pace			68.2%										
	Number > 35 MPH			2732										
	Percent > 35 MPH			34.5%										

Accurate Counts
978-664-2565

Location : Route 28
Location : East of Great Hill Drive
City/State: Wareham, MA
Direction: EB,

94810001

9/24/2022	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	Total
12:00 AM	0	0	1	6	8	3	5	3	1	0	0	0	0	27
1:00	0	0	1	9	12	6	1	0	0	0	0	0	0	29
2:00	0	0	2	6	6	3	3	0	0	0	0	0	0	20
3:00	0	2	2	7	3	4	1	2	0	0	0	0	0	21
4:00	1	0	2	6	7	5	2	0	0	0	0	0	0	23
5:00	0	1	7	12	18	19	4	0	0	0	0	0	0	61
6:00	0	0	5	26	39	42	12	1	0	0	0	0	0	125
7:00	0	0	1	20	71	85	32	2	1	0	0	0	0	212
8:00	0	4	8	33	128	131	42	15	0	1	0	0	0	362
9:00	0	2	11	54	171	161	40	11	0	0	0	0	0	450
10:00	1	5	23	108	272	160	37	2	0	0	0	0	0	608
11:00	0	3	28	107	261	181	53	2	1	0	0	0	0	636
12:00 PM	0	2	17	112	270	207	47	9	0	0	0	0	0	664
1:00	0	1	27	112	245	147	37	5	1	0	0	0	0	575
2:00	0	7	23	93	245	177	34	1	1	0	0	0	0	581
3:00	0	4	12	62	211	198	25	4	0	0	0	0	0	516
4:00	0	0	16	48	198	188	50	1	1	0	0	0	0	502
5:00	1	3	15	36	148	149	33	3	0	0	0	0	0	388
6:00	0	1	11	44	142	145	29	5	1	0	0	0	0	378
7:00	0	2	2	33	106	75	14	2	0	0	1	0	0	235
8:00	0	0	8	33	66	37	10	2	0	0	0	0	0	156
9:00	0	0	6	17	51	39	13	1	0	1	1	0	0	129
10:00	0	0	1	12	29	29	3	3	0	0	0	0	0	77
11:00	0	0	0	2	5	5	1	0	0	0	0	0	0	13
Total	3	37	229	998	2712	2196	528	74	7	2	2	0	0	6788
New Line	Percentile			15th	50th	85th	95th							
	Speed			29	34	38	42							
	Mean Speed (Average)			34.0										
	10 MPH Pace Speed			30-39										
	Number in Pace			4884										
	Percent in Pace			72.0%										
	Number > 35 MPH			2809										
	Percent > 35 MPH			41.4%										
Grand Total	Percentile			15th	50th	85th	95th							
	Speed			29	34	38	41							
	Mean Speed (Average)			33.2										
	10 MPH Pace Speed			30-39										
	Number in Pace			14368										
	Percent in Pace			68.3%										
	Number > 35 MPH			7434										
	Percent > 35 MPH			35.4%										

Accurate Counts
978-664-2565

Location : Route 28
Location : East of Great Hill Drive
City/State: Wareham, MA
Direction: WB,

94810001

9/22/2022	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	Total
12:00 AM	0	0	0	3	5	6	8	2	2	0	0	0	0	26
1:00	0	1	1	0	7	5	8	3	0	0	0	0	0	25
2:00	0	0	2	2	4	11	6	1	0	0	0	0	0	26
3:00	0	1	0	3	7	10	9	2	0	0	0	0	0	32
4:00	0	0	1	8	12	42	13	10	3	0	1	1	0	91
5:00	4	2	3	15	50	57	38	6	1	2	1	0	0	179
6:00	0	3	6	20	117	152	58	9	1	2	0	0	0	368
7:00	6	3	7	52	139	175	83	13	0	0	0	0	1	479
8:00	4	7	21	65	159	152	58	14	3	1	1	0	4	489
9:00	4	7	7	85	144	94	42	8	0	0	0	0	1	392
10:00	4	24	37	63	168	115	33	3	0	0	0	1	0	448
11:00	4	2	31	102	141	140	42	7	0	0	0	0	0	469
12:00 PM	4	22	51	87	226	152	24	10	0	0	0	0	0	576
1:00	6	6	44	127	195	101	19	3	0	0	0	0	0	501
2:00	6	16	43	115	151	91	15	1	0	0	0	0	0	438
3:00	2	13	39	142	139	90	20	0	0	0	1	0	0	446
4:00	1	4	22	101	214	117	33	2	0	0	0	0	0	494
5:00	0	9	24	86	185	112	38	4	0	1	0	0	0	459
6:00	2	2	14	52	105	116	34	5	0	0	0	0	2	332
7:00	1	4	9	34	90	62	22	6	0	0	0	0	0	228
8:00	1	5	8	12	48	68	33	3	1	0	0	0	0	179
9:00	0	0	4	14	31	51	21	1	2	0	0	0	0	124
10:00	0	0	1	5	15	22	20	5	1	0	0	0	0	69
11:00	0	0	0	3	6	17	10	1	1	0	0	0	0	38
Total	49	131	375	1196	2358	1958	687	119	15	6	4	2	8	6908
New Line	Percentile			15th	50th	85th	95th							
	Speed			28	34	39	43							
	Mean Speed (Average)			33.6										
	10 MPH Pace Speed			30-39										
	Number in Pace			4301										
	Percent in Pace			62.3%										
	Number > 35 MPH			2799										
	Percent > 35 MPH			40.5%										

Accurate Counts
978-664-2565

Location : Route 28
Location : East of Great Hill Drive
City/State: Wareham, MA
Direction: WB,

94810001

9/23/2022	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	Total
12:00 AM	0	0	1	1	4	7	2	5	1	0	0	0	0	21
1:00	0	1	2	0	7	7	5	0	0	0	3	0	0	25
2:00	0	0	1	6	6	7	3	1	1	0	0	1	1	27
3:00	0	0	0	6	6	17	9	2	0	0	0	0	0	40
4:00	0	0	1	3	20	26	21	9	3	0	1	2	3	89
5:00	3	0	0	16	42	62	38	13	2	2	1	0	1	180
6:00	1	4	6	30	135	136	52	13	1	0	0	0	0	378
7:00	5	1	23	44	149	176	63	8	0	0	0	1	3	473
8:00	5	8	23	56	158	156	65	11	0	0	0	0	1	483
9:00	2	8	22	52	148	110	51	8	1	0	0	1	1	404
10:00	5	5	46	95	165	123	34	5	0	1	0	0	1	480
11:00	23	24	39	97	213	162	39	5	1	1	0	0	1	605
12:00 PM	15	14	40	121	227	193	27	6	1	0	0	0	0	644
1:00	5	15	25	92	222	172	44	8	1	0	1	0	1	586
2:00	3	2	36	98	190	197	61	6	1	0	0	0	0	594
3:00	6	16	29	98	252	172	29	10	2	1	0	0	0	615
4:00	1	10	33	73	174	220	67	11	1	0	0	0	0	590
5:00	1	9	28	53	173	234	69	12	1	0	0	0	0	580
6:00	3	12	16	50	154	175	51	8	1	1	0	0	0	471
7:00	0	1	8	35	131	116	30	5	0	0	0	1	0	327
8:00	1	1	5	21	67	102	33	5	3	0	0	0	1	239
9:00	0	0	2	9	47	66	36	6	0	0	0	0	1	167
10:00	1	0	0	9	20	43	21	7	1	0	0	0	0	102
11:00	0	0	0	5	10	31	16	6	3	0	0	0	0	71
Total	80	131	386	1070	2720	2710	866	170	25	6	6	6	15	8191
New Line	Percentile			15th	50th	85th	95th							
	Speed			29	35	40	43							
	Mean Speed (Average)			34.3										
	10 MPH Pace Speed			30-39										
	Number in Pace			5397										
	Percent in Pace			65.9%										
	Number > 35 MPH			3804										
	Percent > 35 MPH			46.4%										

Accurate Counts
978-664-2565

Location : Route 28
Location : East of Great Hill Drive
City/State: Wareham, MA
Direction: WB,

94810001

9/24/2022	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	Total
12:00 AM	0	0	0	3	6	9	10	4	0	0	0	0	0	32
1:00	0	0	0	2	3	13	6	3	1	0	0	0	0	28
2:00	0	1	0	3	0	4	4	2	2	1	0	0	0	17
3:00	0	1	1	1	6	6	6	2	0	1	0	0	0	24
4:00	0	0	1	0	9	13	10	7	1	0	0	1	0	42
5:00	1	0	1	10	19	18	19	8	0	0	1	0	0	77
6:00	0	0	2	13	28	48	22	8	3	1	0	0	1	126
7:00	0	0	1	12	68	74	60	12	1	0	0	0	0	228
8:00	0	0	3	26	93	145	69	6	0	1	0	0	0	343
9:00	3	3	6	46	143	150	73	13	0	0	1	1	0	439
10:00	5	8	11	87	188	217	44	10	1	0	1	0	0	572
11:00	2	1	12	66	182	233	72	10	3	0	0	0	1	582
12:00 PM	2	2	20	76	217	215	56	1	1	0	0	1	0	591
1:00	0	4	14	72	216	175	62	4	1	0	0	0	0	548
2:00	2	7	40	61	208	215	53	6	0	1	1	1	0	595
3:00	2	5	24	73	149	178	50	10	1	0	0	1	1	494
4:00	0	1	16	50	142	213	78	14	1	0	0	0	0	515
5:00	0	7	36	46	132	159	68	6	2	0	1	0	0	457
6:00	1	2	5	26	102	153	66	3	0	0	0	0	0	358
7:00	2	1	9	23	97	92	37	5	1	0	0	0	0	267
8:00	1	2	10	34	92	113	33	13	2	0	0	0	0	300
9:00	0	0	9	8	35	66	38	7	0	1	1	1	1	167
10:00	0	1	1	4	17	48	20	8	0	1	0	0	0	100
11:00	0	0	1	0	3	9	4	2	0	0	0	0	0	19
Total	21	46	223	742	2155	2566	960	164	21	7	6	6	4	6921
New Line	Percentile			15th	50th	85th	95th							
	Speed			30	35	40	43							
	Mean Speed (Average)			35.3										
	10 MPH Pace Speed			30-39										
	Number in Pace			4685										
	Percent in Pace			67.7%										
	Number > 35 MPH			3734										
	Percent > 35 MPH			54.0%										
Grand Total	Percentile			15th	50th	85th	95th							
	Speed			29	35	40	43							
	Mean Speed (Average)			34.4										
	10 MPH Pace Speed			30-39										
	Number in Pace			14382										
	Percent in Pace			65.3%										
	Number > 35 MPH			10337										
	Percent > 35 MPH			46.9%										

Accurate Counts
978-664-2565

Location : Route 28
Location : East of Great Hill Drive
City/State: Wareham, MA
Direction: Combined

94810001

9/22/2022	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	Total
12:00 AM	0	0	4	7	11	16	13	2	2	0	0	0	0	55
1:00	0	1	1	6	15	8	9	5	0	0	0	0	0	45
2:00	0	0	5	5	9	14	9	3	0	0	0	0	0	45
3:00	0	1	1	9	13	14	10	2	0	1	0	0	0	51
4:00	0	1	3	23	29	52	15	11	3	0	1	1	0	139
5:00	4	2	9	42	85	84	41	9	1	2	1	0	0	280
6:00	0	5	15	50	226	244	89	13	1	2	0	0	0	645
7:00	6	6	17	112	309	307	112	17	1	0	0	0	1	888
8:00	8	10	48	139	337	272	79	17	4	1	1	0	4	920
9:00	4	11	29	183	309	212	63	11	0	0	0	0	1	823
10:00	11	31	69	169	372	222	59	4	0	0	0	1	0	938
11:00	9	6	57	228	340	248	57	8	1	0	0	0	0	954
12:00 PM	5	26	93	226	459	266	48	12	1	0	1	0	0	1137
1:00	7	12	69	238	351	182	41	4	2	0	0	0	0	906
2:00	9	28	81	204	296	167	39	3	0	0	0	0	0	827
3:00	8	18	68	284	319	178	48	2	2	0	1	0	0	928
4:00	1	7	43	211	445	236	54	6	0	1	0	0	0	1004
5:00	0	9	42	169	357	232	53	11	1	1	0	0	1	876
6:00	2	4	29	119	247	173	43	7	0	0	0	0	2	626
7:00	2	5	14	69	195	95	32	10	0	0	0	0	0	422
8:00	1	5	15	39	111	98	39	6	1	0	0	0	0	315
9:00	0	2	11	27	67	75	32	1	2	0	0	0	0	217
10:00	0	0	3	16	31	31	26	6	1	0	0	0	0	114
11:00	0	0	0	10	17	23	13	1	1	0	0	0	0	65
Total	77	190	726	2585	4950	3449	1024	171	24	8	5	2	9	13220
New Line	Percentile			15th	50th	85th	95th							
	Speed			28	33	38	42							
	Mean Speed (Average)			33.1										
	10 MPH Pace Speed			30-39										
	Number in Pace			8382										
	Percent in Pace			63.4%										
	Number > 35 MPH			4692										
	Percent > 35 MPH			35.5%										

Accurate Counts
978-664-2565

Location : Route 28
Location : East of Great Hill Drive
City/State: Wareham, MA
Direction: Combined

94810001

9/23/2022	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	Total
12:00 AM	0	0	2	1	12	11	4	5	1	0	0	0	0	36
1:00	0	1	2	9	14	7	6	1	0	0	3	0	0	43
2:00	0	1	7	9	11	8	4	1	1	0	0	1	1	44
3:00	0	0	4	10	15	22	9	3	0	0	0	0	0	63
4:00	0	0	5	13	39	31	24	13	4	0	1	2	3	135
5:00	3	1	5	34	84	81	48	14	2	2	1	0	1	276
6:00	2	8	17	71	246	230	67	17	1	0	0	0	0	659
7:00	8	3	31	93	306	314	86	12	0	0	0	1	3	857
8:00	7	11	41	121	334	280	106	16	0	0	0	0	1	917
9:00	2	14	36	140	373	247	90	11	1	0	0	1	1	916
10:00	6	7	87	179	391	245	70	7	0	1	0	0	1	994
11:00	31	47	74	238	465	289	68	6	2	1	0	0	1	1222
12:00 PM	15	20	95	280	458	321	57	10	1	0	0	0	0	1257
1:00	7	19	47	232	485	316	63	10	1	0	1	0	1	1182
2:00	3	8	54	208	407	330	109	14	1	0	0	0	0	1134
3:00	9	21	75	265	546	350	59	11	2	1	0	0	0	1339
4:00	1	33	66	204	470	408	112	13	2	0	0	0	0	1309
5:00	1	10	36	114	440	433	109	17	1	0	0	0	0	1161
6:00	4	12	28	95	347	337	84	11	1	1	0	0	0	920
7:00	2	1	19	87	256	211	65	7	0	0	0	1	0	649
8:00	1	1	15	45	144	162	52	9	3	0	0	0	1	433
9:00	0	1	5	29	89	105	51	8	1	0	0	0	1	290
10:00	2	0	1	15	44	68	27	7	1	0	0	0	0	165
11:00	0	0	3	12	22	43	24	7	4	0	0	0	0	115
Total	104	219	755	2504	5998	4849	1394	230	30	6	6	6	15	16116
New Line	Percentile			15th	50th	85th	95th							
	Speed			29	34	39	42							
	Mean Speed (Average)			33.7										
	10 MPH Pace Speed			30-39										
	Number in Pace			10800										
	Percent in Pace			67.0%										
	Number > 35 MPH			6536										
	Percent > 35 MPH			40.6%										

Accurate Counts
978-664-2565

Location : Route 28
Location : East of Great Hill Drive
City/State: Wareham, MA
Direction: Combined

94810001

9/24/2022	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	Total
12:00 AM	0	0	1	9	14	12	15	7	1	0	0	0	0	59
1:00	0	0	1	11	15	19	7	3	1	0	0	0	0	57
2:00	0	1	2	9	6	7	7	2	2	1	0	0	0	37
3:00	0	3	3	8	9	10	7	4	0	1	0	0	0	45
4:00	1	0	3	6	16	18	12	7	1	0	0	1	0	65
5:00	1	1	8	22	37	37	23	8	0	0	1	0	0	138
6:00	0	0	7	39	67	90	34	9	3	1	0	0	1	251
7:00	0	0	2	32	139	159	92	14	2	0	0	0	0	440
8:00	0	4	11	59	221	276	111	21	0	2	0	0	0	705
9:00	3	5	17	100	314	311	113	24	0	0	1	1	0	889
10:00	6	13	34	195	460	377	81	12	1	0	1	0	0	1180
11:00	2	4	40	173	443	414	125	12	4	0	0	0	1	1218
12:00 PM	2	4	37	188	487	422	103	10	1	0	0	1	0	1255
1:00	0	5	41	184	461	322	99	9	2	0	0	0	0	1123
2:00	2	14	63	154	453	392	87	7	1	1	1	1	0	1176
3:00	2	9	36	135	360	376	75	14	1	0	0	1	1	1010
4:00	0	1	32	98	340	401	128	15	2	0	0	0	0	1017
5:00	1	10	51	82	280	308	101	9	2	0	1	0	0	845
6:00	1	3	16	70	244	298	95	8	1	0	0	0	0	736
7:00	2	3	11	56	203	167	51	7	1	0	1	0	0	502
8:00	1	2	18	67	158	150	43	15	2	0	0	0	0	456
9:00	0	0	15	25	86	105	51	8	0	2	2	1	1	296
10:00	0	1	2	16	46	77	23	11	0	1	0	0	0	177
11:00	0	0	1	2	8	14	5	2	0	0	0	0	0	32
Total	24	83	452	1740	4867	4762	1488	238	28	9	8	6	4	13709
New Line	Percentile		15th		50th		85th		95th					
	Speed		30		35		40		43					
	Mean Speed (Average)		34.7											
	10 MPH Pace Speed		30-39											
	Number in Pace		9569											
	Percent in Pace		69.8%											
	Number > 35 MPH		6543											
	Percent > 35 MPH		47.7%											
Grand Total	Percentile		15th		50th		85th		95th					
	Speed		29		34		39		42					
	Mean Speed (Average)		33.8											
	10 MPH Pace Speed		30-39											
	Number in Pace		28750											
	Percent in Pace		66.8%											
	Number > 35 MPH		17772											
	Percent > 35 MPH		41.3%											

MASSDOT CRASH RATE WORKSHEETS AND HIGH CRASH LOCATION MAP



INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Wareham COUNT DATE : Sep-22

DISTRICT : 5 UNSIGNALIZED : ☒ SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Route 28

MINOR STREET(S) : Project Site Driveway

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (Midday) :	717	612				1,329

" K " FACTOR :

0.090

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

14,767

TOTAL # OF CRASHES :

8

OF YEARS :

5

AVERAGE # OF CRASHES PER YEAR (A) :

1.60

CRASH RATE CALCULATION :

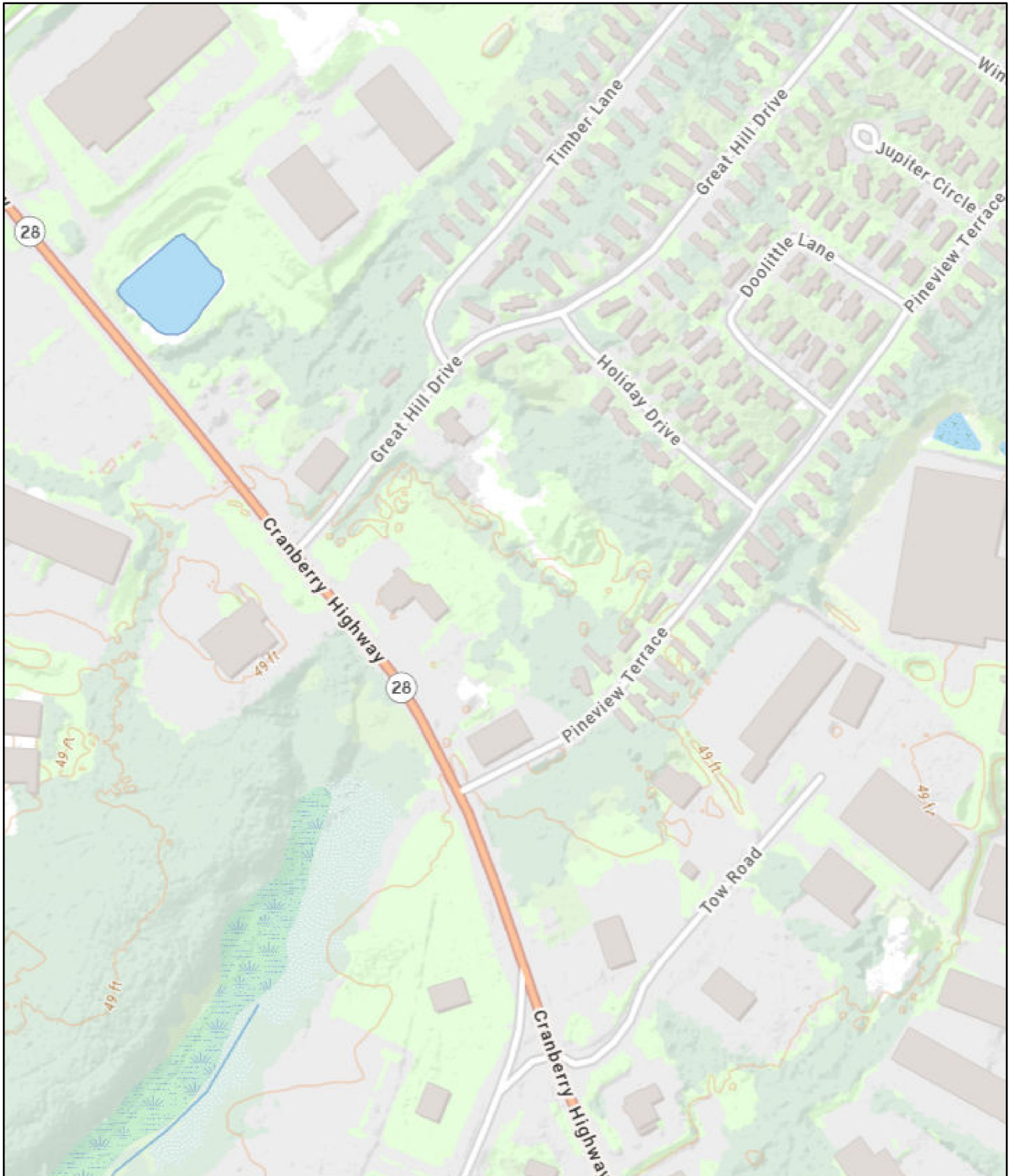
0.30

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

Comments : Below Statewide and District Crash Rates

Project Title & Date: Proposed Self-Storage Facility

MassDOT Top Crash Locations



10/20/2022, 4:04:52 PM



MassGIS

MassDOT
MassGIS |

GENERAL BACKGROUND TRAFFIC GROWTH



General Background Traffic Growth - Daily Traffic Volumes

CITY/TOWN	ROUTE/STREET	LOCATION	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Average Annual Growth Rate
Wareham	Kendrick Road	North of Cranberry Highway						2,398	2,453	2,605	2,649	2,657	2,646	2.15%
Wareham	Main Street	East of Tobey Road					6,870	7,083	7,246	7,695	7,826	7,849	7,553	1.99%
Wareham	Hathaway Street	South of Park Street							3,057	3,247	3,302	3,312	3,299	1.79%
Wareham	Doty Street	North of Cranberry Highway						3,475	3,555	3,775	3,839	3,851	3,836	2.16%
Rochester	County Road	North of Main Street							3,941	4,185	4,256	4,269	4,252	1.78%
Wareham	Fearing Hill Road	East of County Road							3,487	3,703	3,766	3,777	3,762	1.78%
Wareham	County Road	North of Fearing Hill Road							2,837	3,013	3,064	3,073	3,061	1.78%
Wareham	Gibbs Avenue	South of Main Street	8,837	8,214	8,496	8,379	8,332	7,988	8,172	8,679	9,301	9,329	9,292	0.96%
Wareham	Main Street	East of Tremont Road	14,099	13,106	14,933	14,705	14,687	14,495	14,828	15,747	16,015	16,063	15,999	1.65%
Wareham	I-495NB	South of Route 58	70,257	62,454	64,100	59,488	59,845	61,421	64,492	68,491	51,744	52,468	49,522	-2.50%
Wareham	Main Street	East of Tobey Road					6,870	7,083	7,246	7,695	7,826	7,849	7,553	1.99%
Wareham	Mary's Pond Road	West of County Road							3,483	3,699	3,762	3,773	3,758	1.78%
Wareham	Main Street	South of Route 6					1,919	1,978	2,023			2,156	2,147	1.93%
Wareham	County Road	South of Fearing Hill Road							2,101	2,231	2,269	2,276	2,267	1.78%
Wareham	Route 25	East of I-195	46,277	47,854	56,656	55,949	55,945	56,840	59,114	61,951	67,131	67,802	69,158	3.96%
Wareham	Chapel Street	West of Main Street		8,500	8,913	8,799	7,475	7,707	7,884	7,325	7,450	7,472	7,043	-2.20%

1.42%

TRIP-GENERATION CALCULATIONS



Mini-Warehouse

(151)

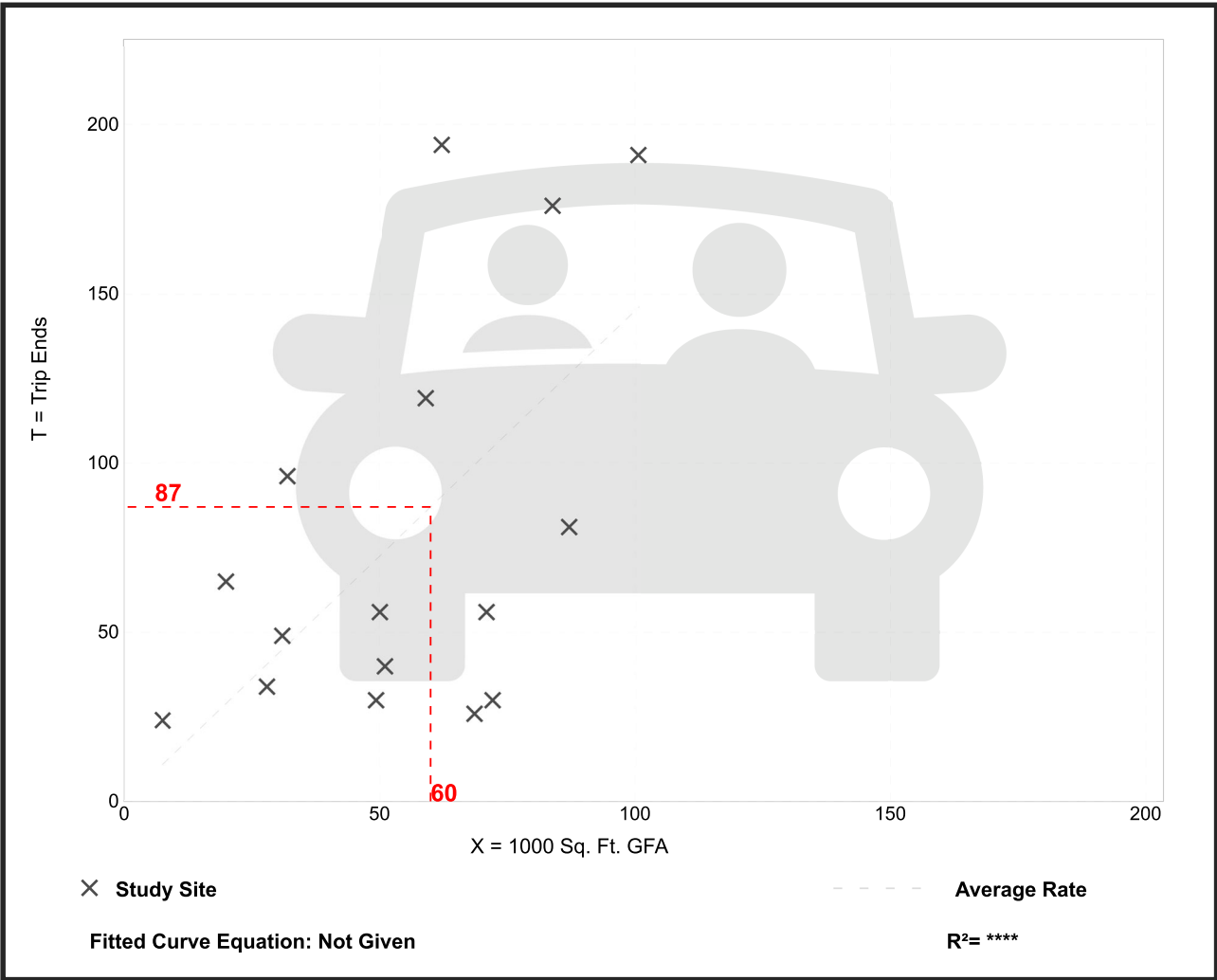
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 16
Avg. 1000 Sq. Ft. GFA: 55
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.45	0.38 - 3.25	0.92

Data Plot and Equation



Mini-Warehouse

(151)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 13

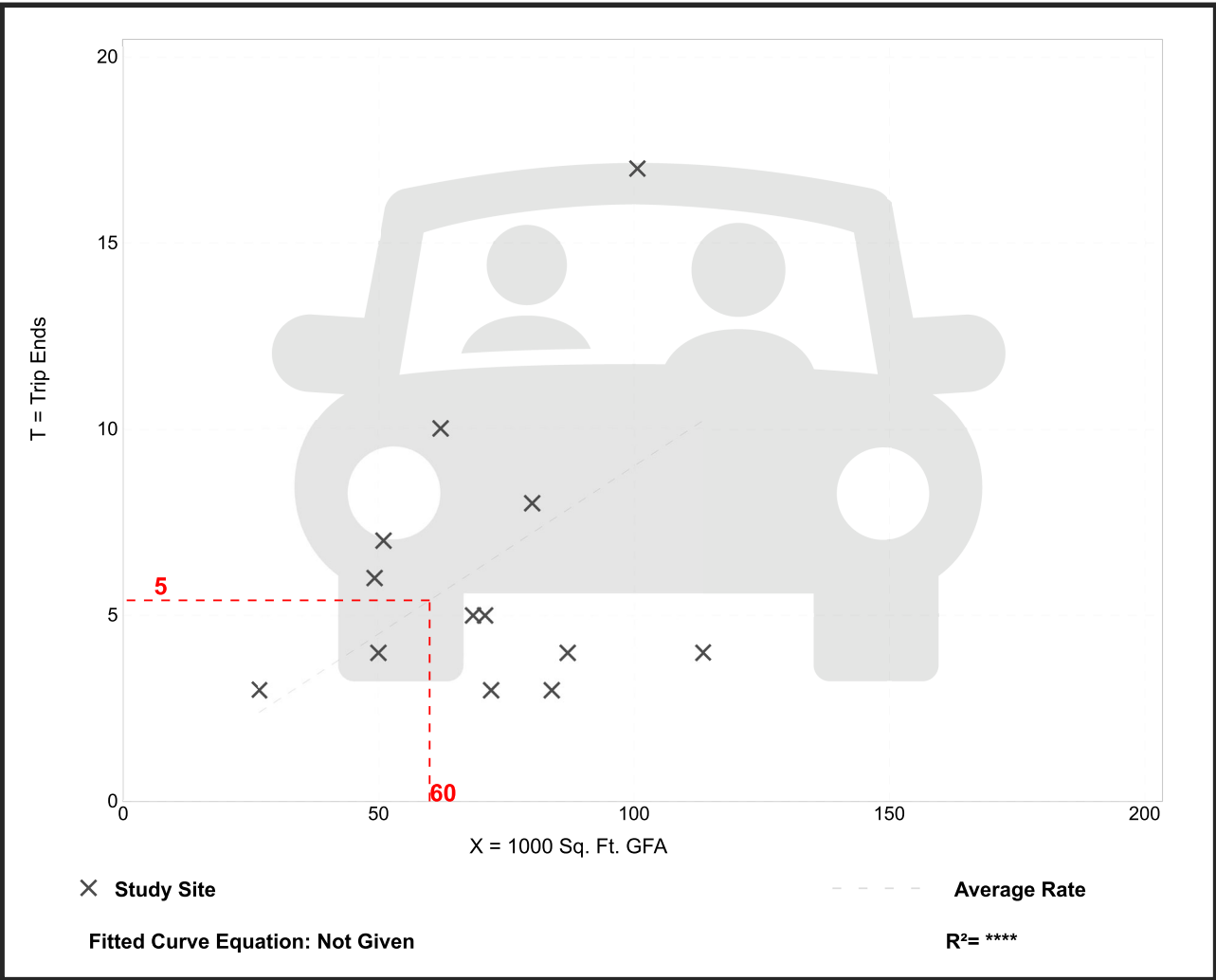
Avg. 1000 Sq. Ft. GFA: 70

Directional Distribution: 59% entering, 41% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.09	0.04 - 0.17	0.05

Data Plot and Equation



Mini-Warehouse

(151)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 18

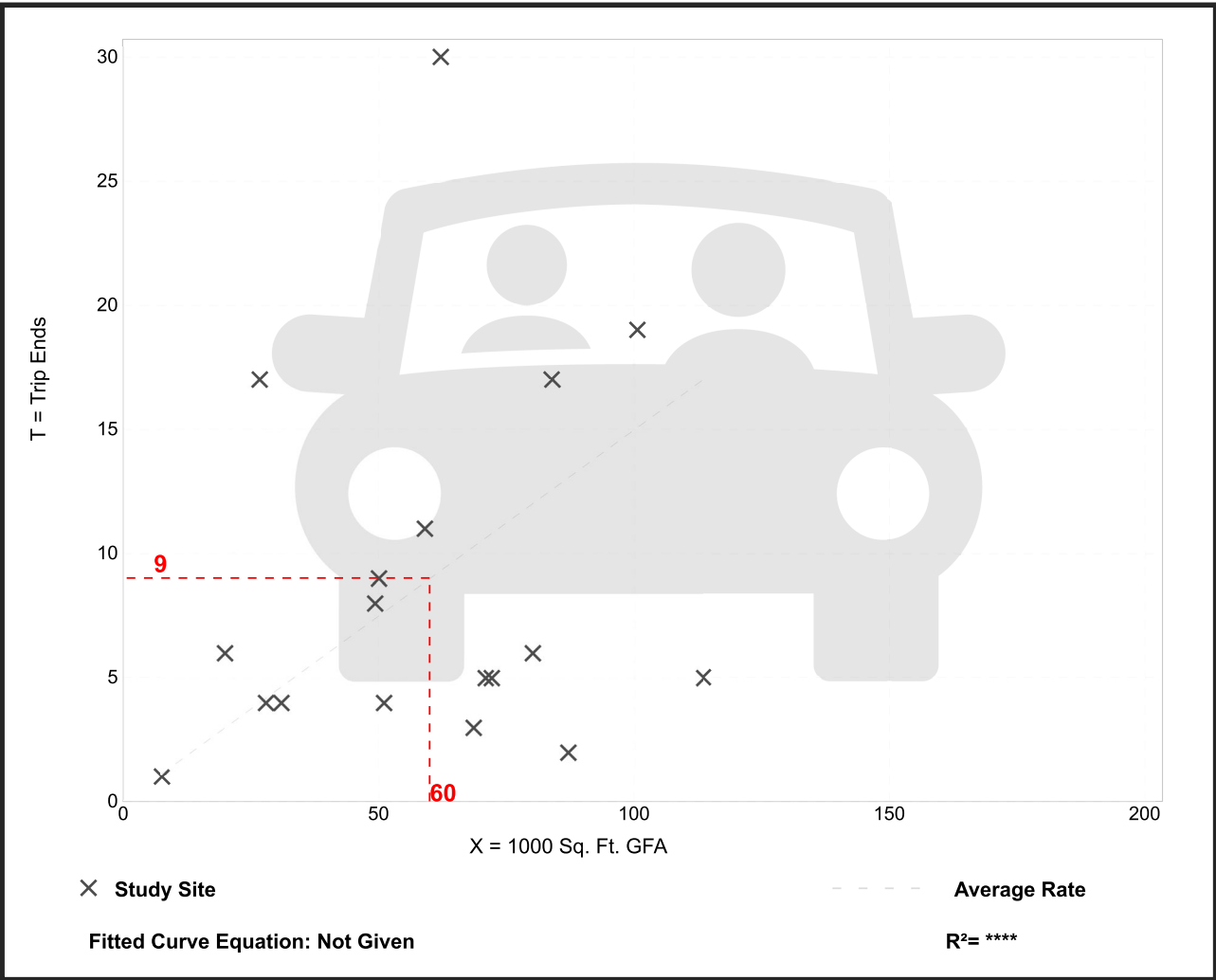
Avg. 1000 Sq. Ft. GFA: 59

Directional Distribution: 47% entering, 53% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.15	0.02 - 0.64	0.14

Data Plot and Equation



Mini-Warehouse

(151)

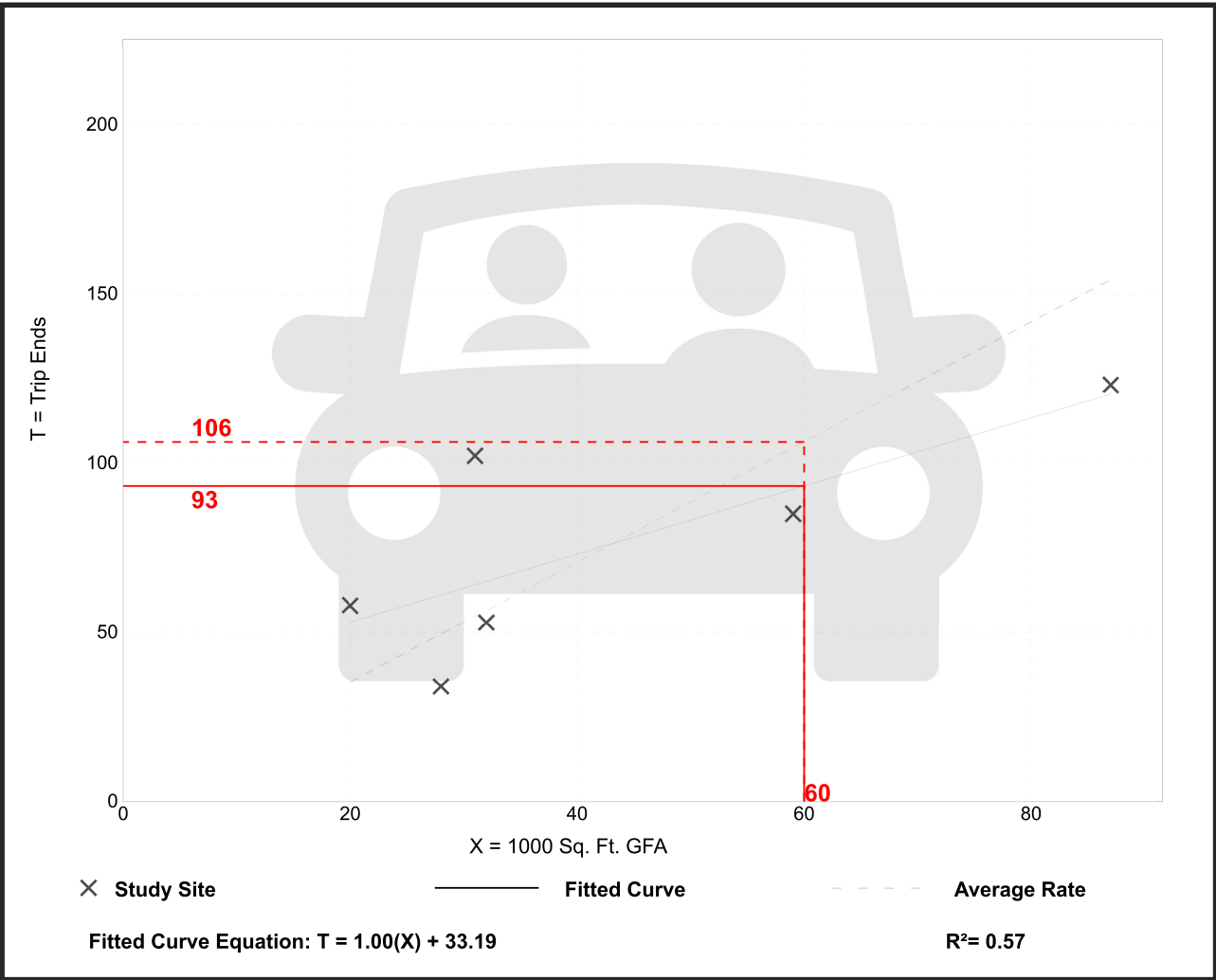
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Saturday

Setting/Location: General Urban/Suburban
Number of Studies: 6
Avg. 1000 Sq. Ft. GFA: 43
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.77	1.21 - 3.29	0.76

Data Plot and Equation



Mini-Warehouse

(151)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 3

Avg. 1000 Sq. Ft. GFA: 90

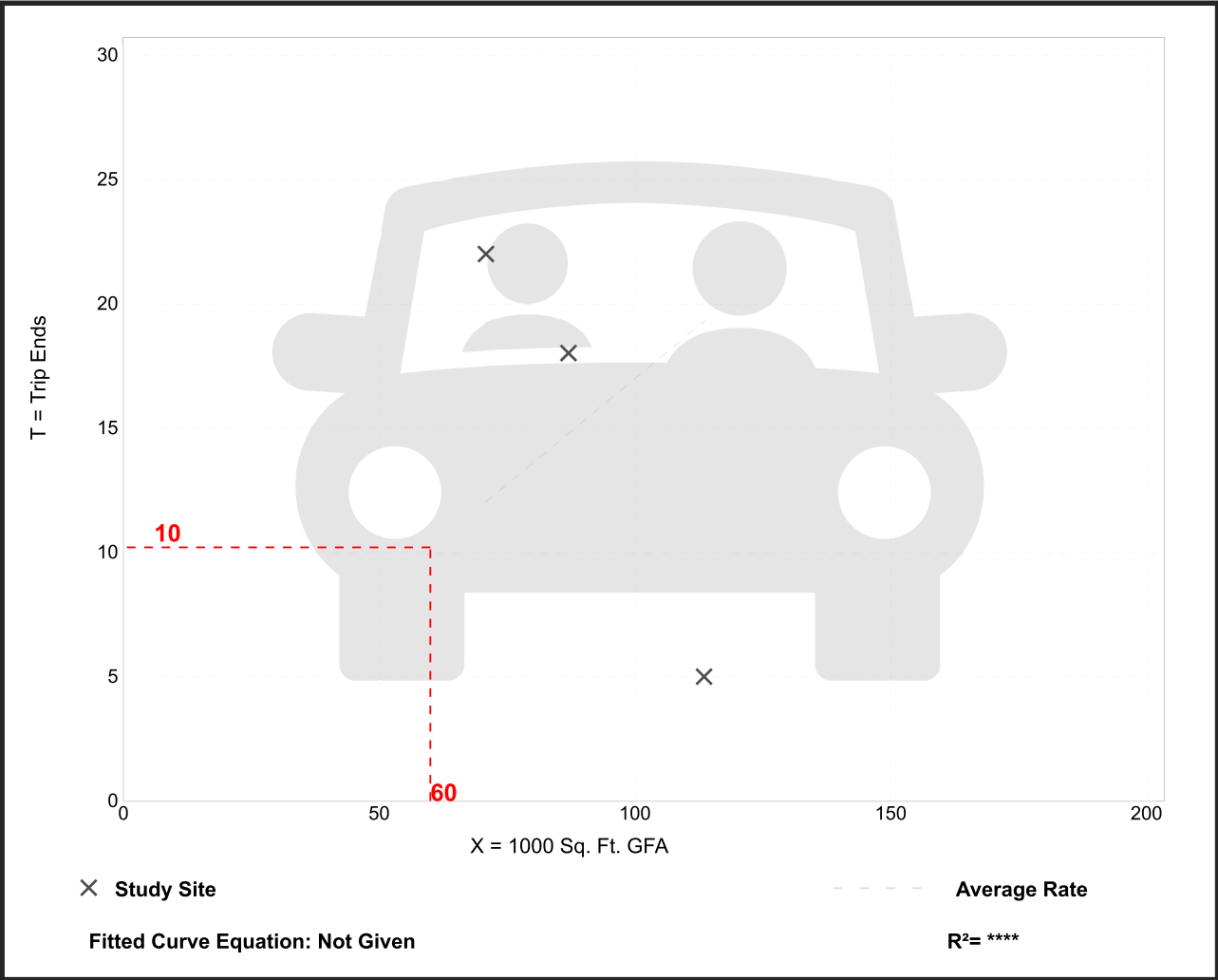
Directional Distribution: 62% entering, 38% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.17	0.04 - 0.31	0.14

Data Plot and Equation

Caution – Small Sample Size



CAPACITY ANALYSIS WORKSHEETS

Route 28 Cranberry Highway at Project Site Driveway












Route 28 Cranberry Highway at Project Site Driveway






2029 Build Weekday Morning
 1: Route 28 (Cranberry Highway) & Project Driveway

10/04/2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	1	580	2	1	506
Future Volume (vph)	1	1	580	2	1	506
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932					
Flt Protected	0.976					
Satd. Flow (prot)	1694	0	1801	0	0	1863
Flt Permitted	0.976					
Satd. Flow (perm)	1694	0	1801	0	0	1863
Adj. Flow (vph)	1	1	644	2	1	588
Lane Group Flow (vph)	2	0	646	0	0	589
Sign Control	Stop		Free			Free
Intersection Summary						
Control Type: Unsignalized						

2029 Build Weekday Morning
1: Route 28 (Cranberry Highway) & Project Driveway

10/04/2022

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	1	580	2	1	506
Future Vol, veh/h	1	1	580	2	1	506
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	90	90	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	1	644	2	1	588










Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1235	645	0
Stage 1	645	-	-
Stage 2	590	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	195	472	-
Stage 1	522	-	-
Stage 2	554	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	195	472	-
Mov Cap-2 Maneuver	195	-	-
Stage 1	522	-	-
Stage 2	553	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.1	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	276	939
HCM Lane V/C Ratio	-	-	0.008	0.001
HCM Control Delay (s)	-	-	18.1	8.8
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0	0




2029 Build Weekday Morning
 1: Route 28 (Cranberry Highway) & Project Driveway

10/04/2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	3	564	2	2	568
Future Volume (vph)	2	3	564	2	2	568
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.919					
Flt Protected	0.980					
Satd. Flow (prot)	1678	0	1801	0	0	1863
Flt Permitted	0.980					
Satd. Flow (perm)	1678	0	1801	0	0	1863
Adj. Flow (vph)	2	3	641	2	2	598
Lane Group Flow (vph)	5	0	643	0	0	600
Sign Control	Stop		Free			Free
Intersection Summary						
Control Type: Unsignalized						










2029 Build Weekday Morning
1: Route 28 (Cranberry Highway) & Project Driveway

10/04/2022

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	3	564	2	2	568
Future Vol, veh/h	2	3	564	2	2	568
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	88	88	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	3	641	2	2	598
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1244	642	0	0	643	0
Stage 1	642	-	-	-	-	-
Stage 2	602	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	192	474	-	-	942	-
Stage 1	524	-	-	-	-	-
Stage 2	547	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	191	474	-	-	942	-
Mov Cap-2 Maneuver	191	-	-	-	-	-
Stage 1	524	-	-	-	-	-
Stage 2	545	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	17.3	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	298	942	-	
HCM Lane V/C Ratio	-	-	0.018	0.002	-	
HCM Control Delay (s)	-	-	17.3	8.8	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	




2029 Build Saturday Midday
 1: Route 28 (Cranberry Highway) & Project Driveway

10/04/2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	2	679	3	3	796
Future Volume (vph)	2	2	679	3	3	796
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932		0.999			
Flt Protected	0.976					
Satd. Flow (prot)	1694	0	1799	0	0	1863
Flt Permitted	0.976					
Satd. Flow (perm)	1694	0	1799	0	0	1863
Adj. Flow (vph)	2	2	730	3	3	847
Lane Group Flow (vph)	4	0	733	0	0	850
Sign Control	Stop		Free			Free
Intersection Summary						
Control Type: Unsignalized						

2029 Build Saturday Midday
1: Route 28 (Cranberry Highway) & Project Driveway

10/04/2022

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	2	679	3	3	796
Future Vol, veh/h	2	2	679	3	3	796
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	93	93	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	2	730	3	3	847

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1585	732	0	0	733
Stage 1	732	-	-	-	-
Stage 2	853	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	119	421	-	-	872
Stage 1	476	-	-	-	-
Stage 2	418	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	118	421	-	-	872
Mov Cap-2 Maneuver	118	-	-	-	-
Stage 1	476	-	-	-	-
Stage 2	415	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	184	872
HCM Lane V/C Ratio	-	-	0.024	0.004
HCM Control Delay (s)	-	-	25	9.1
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	0.1	0