

MEMORANDUM

TO: Fenix Partners Brush Hill, LLC
c/o Mr. Robert Murchison
177 Lake Street
Sherborn, MA 01770

FROM: Mr. Jeffrey S. Dirk, P.E.*¹, PTOE, FITE
Managing Partner
Vanasse & Associates, Inc.
35 New England Business Center Drive
Suite 140
Andover, MA 01810-1066
(978) 269-6830
jdirk@rdva.com

DATE: August 5, 2024

RE: 10053

SUBJECT: Transportation Impact Assessment
Brush Hill Homes – 34 Brush Hill Road
Sherborn, Massachusetts

*Professional Engineer in CT, MA, ME, NH, RI and VA

Vanasse & Associates, Inc. (VAI) has prepared a Transportation Impact Assessment in support of the proposed Brush Hill Homes residential development to be located at 34 Brush Hill Road in Sherborn, Massachusetts (hereafter referred to as the “Project”). This assessment: i) details the existing conditions context of the transportation infrastructure serving the Project site; ii) provides detailed trip-generation calculations for the Project; and iii) qualitatively assesses the potential impact of the Project on the transportation infrastructure.

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 Engineer (ITE),¹ the Project is predicted to generate approximately 76 vehicle trips on an average weekday (two-way, 24-hour volume), with six (6) vehicle expected during the weekday morning peak-hour and eight (8) vehicle trips expected during the weekday evening peak-hour;
2. The additional traffic that may be associated with the Project (fewer than one additional vehicle every six minutes during the weekday peak hours) will not result in a significant impact (increase) in motorist delays or vehicle queueing over existing conditions; and
3. Based on a review of motor vehicle crash data available from the Massachusetts Department of Transportation (MassDOT), no inherent safety deficiencies were identified with regard to current conditions along Brush Hill Road.

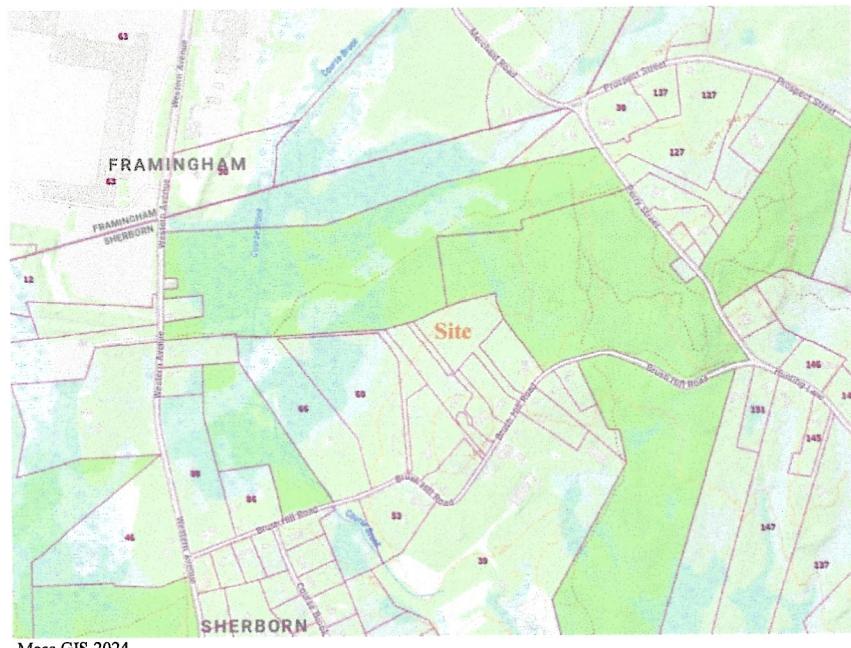
In consideration of the above, we have concluded that the Project can be accommodated within the confines of the existing transportation infrastructure in a safe and efficient manner with the implementation of the recommendations defined herein. The following details our findings with respect to the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

The following details our assessment of the Project.

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

PROJECT DESCRIPTION

The Project will entail the construction of eight (8) single-family homes to be located at 34 Brush Hill Road in Sherborn, Massachusetts. The Project site encompasses approximately 5.11± acres of land that is bounded by areas of open and wooded space and low-lying wetland areas to the north; Brush Hill Road and residential properties to the south; a residential property, areas of open and wooded space and low-lying wetland areas to the east; and residential properties and areas of open and wooded space to the west. The Project site consists of areas of open and wooded space.



Access to the Project site will be provided by way of a new driveway that will intersect the north side of Brush Hill Road that will be situated between 32 and 36 Brush Hill Road and generally opposite 35 Brush Hill Road. On-site parking will be provided for a minimum of 2.0 parking spaces per unit in attached garages with parking for additional vehicles provided in the driveways leading to the garages, with five (5) visitor parking spaces provided in a separate surface parking lot.

EXISTING CONDITIONS CONTEXT

In order to establish the existing conditions context of the Project with respect to the transportation infrastructure, a review of existing roadway geometrics; pedestrian and bicycle facilities; posted speed limits; and land use information was completed along Brush Hill Road in the vicinity of the Project site. The following provides a description of the transportation infrastructure serving the Project site.

Roadway

Brush Hill Road

Brush Hill Road is a local access roadway that is under Town jurisdiction and traverses a general east-west direction between Hunting Lane/Perry Street and Western Avenue. Brush Hill Road provides a variable width paved traveled way ranging from approximately 16 to 20 feet that supports two-way traffic with no pavement markings provided. Sidewalks and illumination are not provided along Brush Hill Road. The posted speed limit is 25 miles per hour (mph) between Western Avenue and the curve at 60 Brush Hill Road and 20 mph between the curve and Hunting Lane/Perry Street. The roadway alignment is considered rolling with both horizontal and vertical curves along its alignment. Trees and other roadside objects are located within one (1) to four (4) feet of edge of the traveled-way. Land use along Brush Hill Road consists of the Project site, residential and agricultural properties, and areas of open and wooded space.

Pedestrian and Bicycle Facilities

A review of pedestrian and bicycle facilities within the study area was undertaken. This review included identifying the location of sidewalks and pedestrian crossing locations in the vicinity of the Project site, as well as the location of existing bicycle facilities. Sidewalks and formal bicycle facilities are not provided [REDACTED] and the roadway does not provide sufficient width to support bicycle travel in a shared-traveled-way configuration.²

Public Transportation

Regularly scheduled public transportation services are not currently provided within the Town of Sherborn or in the immediate vicinity of the Project site. The closest regularly scheduled public transportation services to the Project site are located in Natick (Massachusetts Bay Transportation Authority (MBTA) Commuter Rail service on the Framingham/Worcester Line from Natick Center Station).

The Sherborn Council on Aging (COA) coordinates with JFK Transportation in Natick to provide discounted taxi ride coupons for seniors. The cards cost \$30.00 for a ten-ride coupon. JFK requires a 24-hour notice for local trips and a 48-hour notice for medical trips.

MOTOR VEHICLE CRASH DATA

A review of motor vehicle crash data available from MassDOT for Brush Hill Road indicates that one (1) motor vehicle crash was reported to have occurred between Hunting Lane/Perry Street and Western Avenue over the 5-year review period 2016 through 2018 (pre-COVID period), inclusive. In addition, a review of the MassDOT statewide High Crash Location List indicated that are no Highway Safety Improvement Program (HSIP) eligible high crash locations in the vicinity of the Project site. The MassDOT High Crash Location mapping is attached.

Based on a review of the MassDOT crash data, no inherent safety deficiencies were identified with regard to current conditions along Brush Hill Road.

²A minimum combined travel lane and paved shoulder width of 14-feet is required to support bicycle travel in a shared-traveled-way condition.

PROJECT-GENERATED TRAFFIC

In order to develop the traffic characteristics of the Project, trip generation statistics published by the Institute of Transportation Engineers (ITE)³ for a similar land use as that proposed was used. ITE Land Use Code (LUC) 210, *Single-Family Detached Housing*, was used to establish the traffic characteristics of the Project, the results of which are summarized in Table 1 with the detailed trip-generation calculations attached.

Table 1
TRIP GENERATION SUMMARY

Time Period	Vehicle Trips ^a		
	Entering	Exiting	Total
<i>Average Weekday:</i>	38	38	76
<i>Weekday Morning Peak-Hour:</i>	1	5	6
<i>Weekday Evening Peak-Hour:</i>	5	3	8

^aBased on ITE LUC 210, *Single-Family Detached Housing* (8 dwelling units).

Project-Generated Traffic-Volume Summary

As can be seen in Table 1, the Project is expected to generate approximately 248 vehicle trips on an average weekday (two-way, 24-hour volume, or 124 vehicles entering and 124 exiting), with 15 vehicle trips (four (4) vehicle entering and 11 exiting) expected during the weekday morning peak-hour and 19 vehicle trips (11 vehicles entering and eight (8) exiting) expected during the weekday evening peak-hour.

The predicted traffic volume increases are expected to be less than one (1) additional vehicle every six (6) minutes, and would not be expected to result in a significant increase in motorist delays or vehicle queuing over existing conditions.

SUMMARY

VAI has prepared a Transportation Impact Assessment in support of the proposed Brush Hill Homes residential development to be located at 34 Brush Hill Road in Sherborn, Massachusetts. This assessment has provided trip-generation calculations for the Project and included a review of the anticipated travel patterns of the residents of the Project and a qualitative assessment of the potential impact of the Project on the transportation infrastructure. Based on this assessment, we have concluded the following with respect to the Project:

1. Using trip-generation statistics published by the ITE,⁴ the Project is predicted to generate approximately 76 vehicle trips on an average weekday (two-way, 24-hour volume), with six (6)

³Institute of Transportation Engineers, op. cit. 1.

⁴Institute of Transportation Engineers, op. cit. 1.

vehicle expected during the weekday morning peak-hour and eight (8) vehicle trips expected during the weekday evening peak-hour;

2. The additional traffic that may be associated with the Project (fewer than one additional vehicle every six minutes during the weekday peak hours) will not result in a significant impact (increase) in motorist delays or vehicle queueing over existing conditions; and
3. Based on a review of motor vehicle crash data available from MassDOT, no inherent safety deficiencies were identified with regard to current conditions along Brush Hill Road.

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 summarizes the recommendations that have been provided as a part of this evaluation.

Project Access

- The Project site driveway will be a minimum of 20 feet in width and designed to accommodate the turning and maneuvering requirements of service and delivery vehicles and the largest anticipated responding emergency vehicle to the extent that such vehicles will be directly accessing the site.
- On-street parking should be prohibited along the driveway and within the Project site.
- Vehicles exiting the Project site should be placed under Stop-sign control.
- All signs and pavement markings to be installed within the Project site should conform to the applicable standards of the *Manual on Uniform Traffic Control Devices* (MUTCD).⁵
- Existing trees and vegetation located within the sight triangle areas of the Project site driveway should be selectively trimmed or removed and maintained in order to provide the required sight distance (155 feet minimum based on a 25 mph approach speed) and signs and landscaping to be installed as a part of the Project within the sight triangle areas should be designed and maintained so as not to restrict lines of sight.
- Snow accumulations (windrows) within sight triangle areas shall be promptly removed where such accumulations would impede sight lines.

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

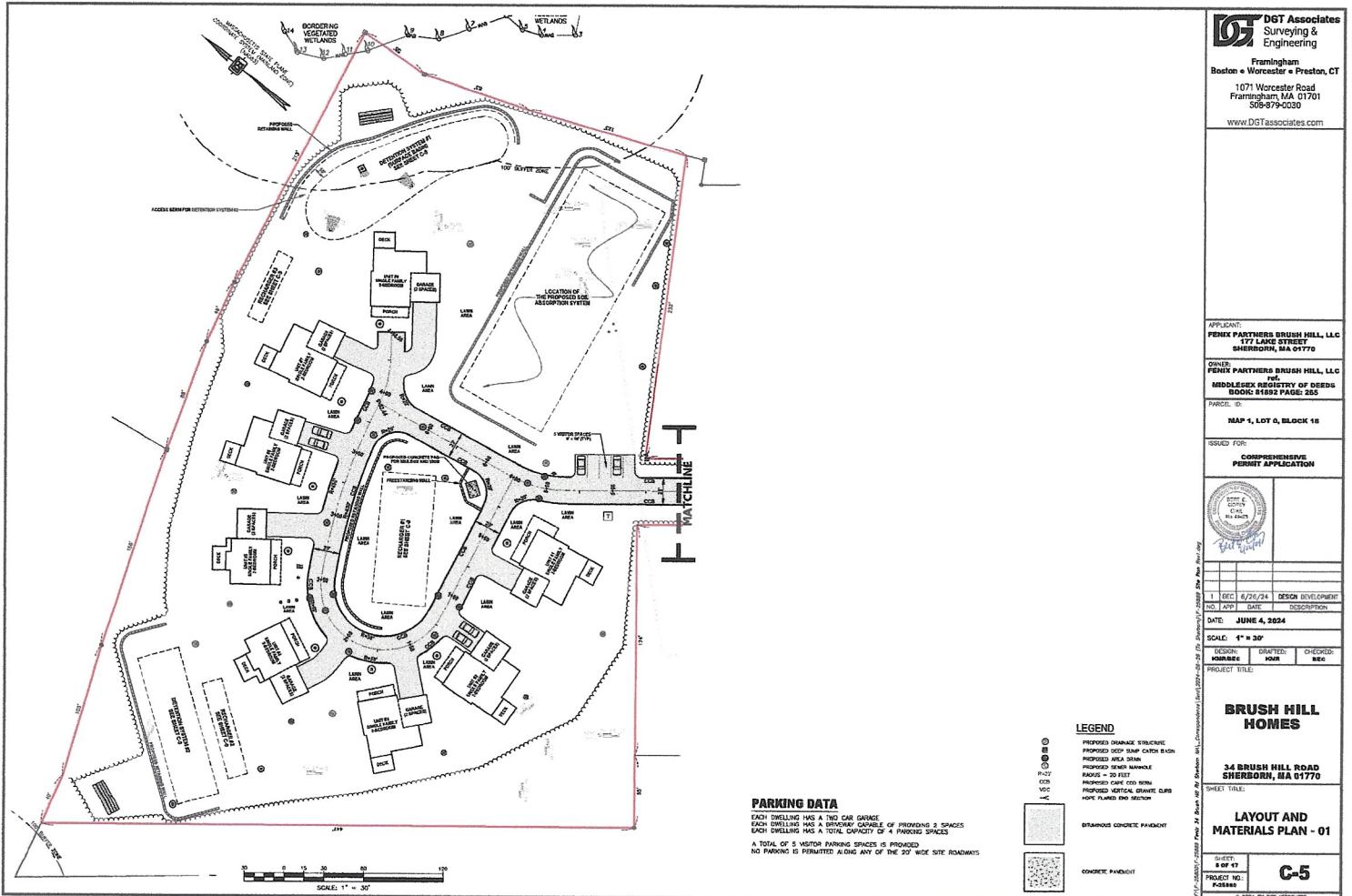
Attachments

⁵*Manual on Uniform Traffic Control Devices* (MUTCD); Federal Highway Administration; Washington, D.C.; 2009.



ATTACHMENTS

**SITE PLAN
HSIP MAPPING
TRIP-GENERATION CALCULATIONS**



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Engineering
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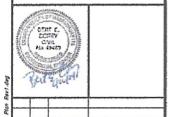
APPLICANT:
FENIX PARTNERS BRUSH HILL, LLC
177 LAKE STREET
SHERBORN, MA 01770

OWNER:
FENIX PARTNERS BRUSH HILL, LLC
ref.
MIDDLESEX REGISTRY OF DEEDS
BOOK: 51592 PAGE: 265

PARCEL ID:

MAP 1, LOT 0, BLOCK 18

ISSUED FOR:
COMPREHENSIVE
PERMIT APPLICATION



1 8/26/24 DESIGN DEVELOPMENT
NO APP. DATE DESCRIPTION
DATE: JUNE 4, 2024

SCALE: 1" = 30'
DESIGN: DRAFTED: CHECKED:
PROJECT TITLE: **BRUSH HILL**
HOMES

24 BRUSH HILL ROAD
SHERBORN, MA 01770

SHED TITLE:

LAYOUT AND
MATERIALS PLAN - 02

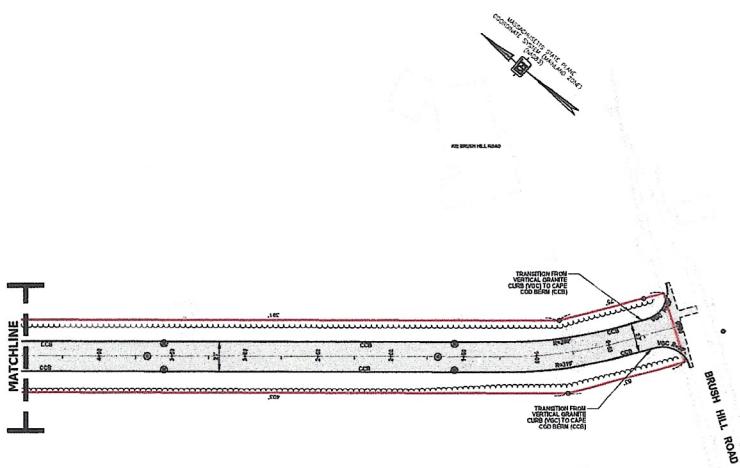
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SCALE: 1" = 30'

PRODUCT NO: P-03889

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24 BRUSH HILL ROAD
SHERBORN, MA 01770

SHED TITLE:

LAYOUT AND
MATERIALS PLAN - 02

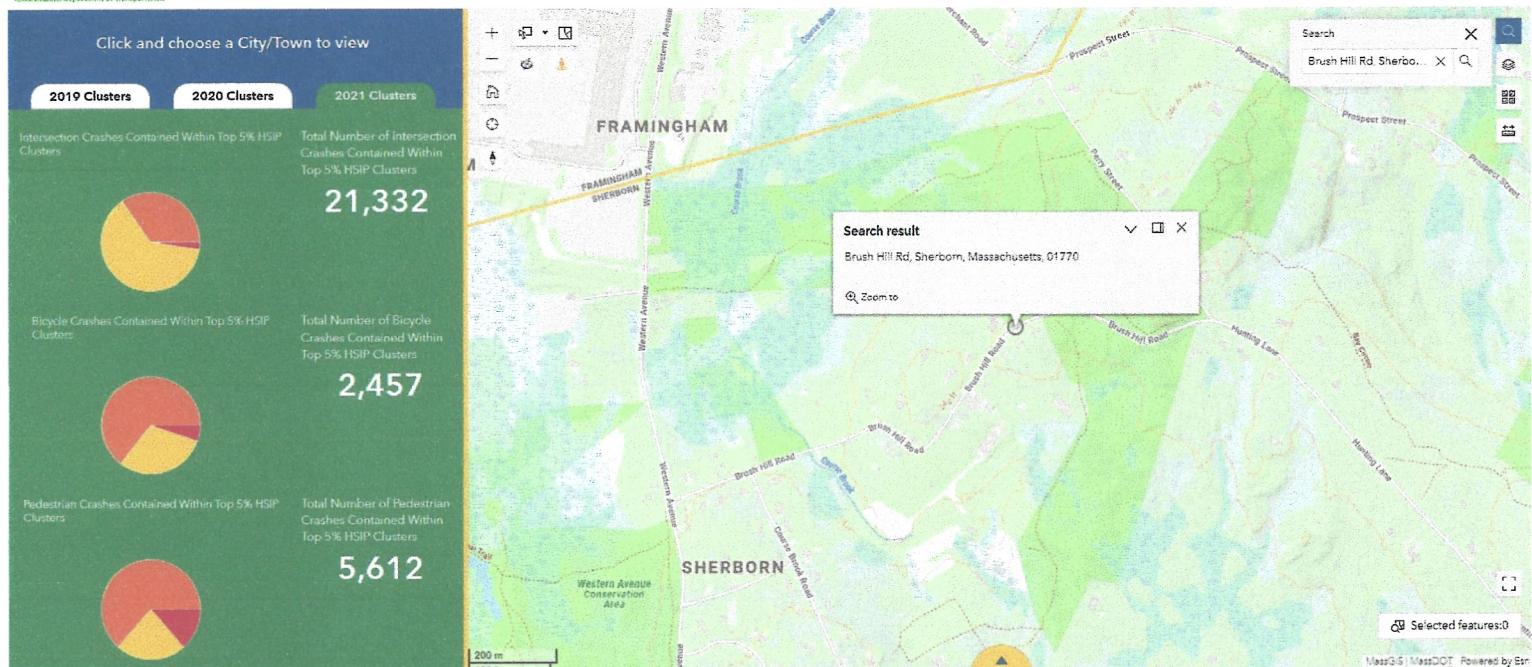
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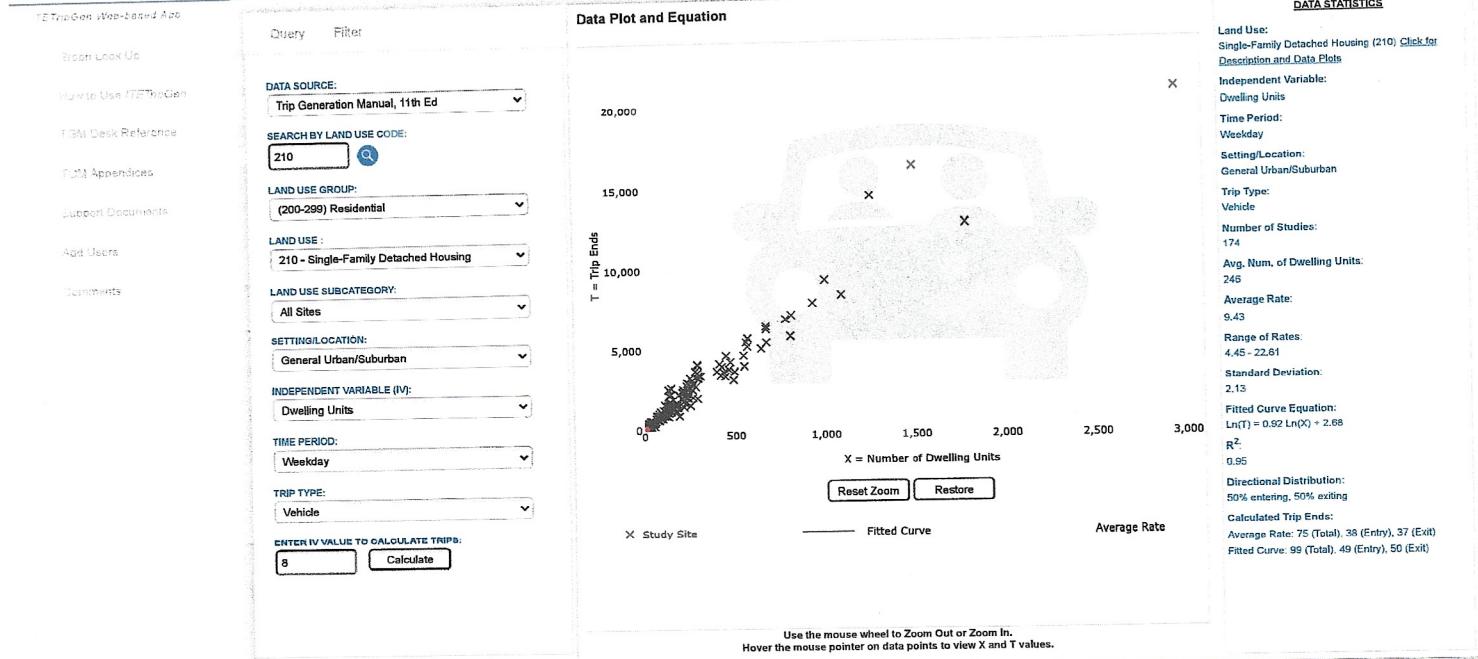
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Graph Look Up




 Graph Look Up

ITETripGen Web-based App

Graph Look Up

How to Use ITETripGen

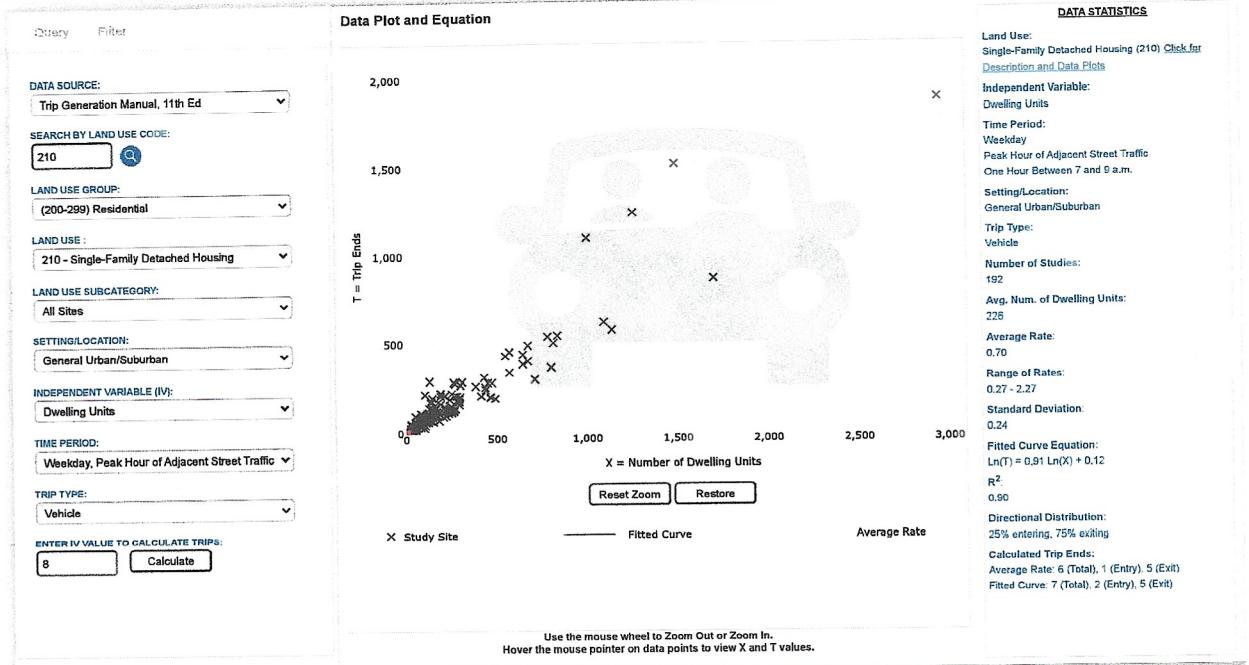
TOM Desk Reference

TOM Appendices

Support Documents

Add Users

Comments

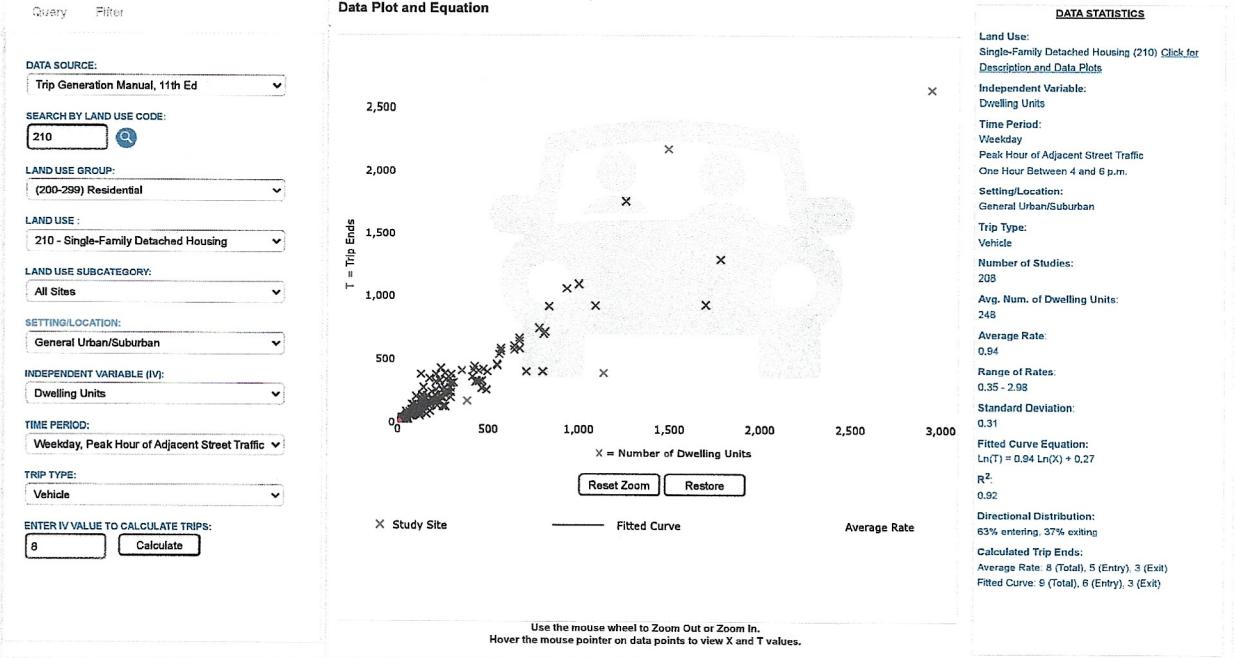


View Details to Go More

View OTIS8 Pro

 Graph Look Up


ITETripGen Web-based App



Add-ons to do more

ITECTB Pro