

Santa Clara Countywide VMT Evaluation Tool: Frequently Asked Questions (FAQs)

(August 12, 2020)

WHAT IS THE SANTA CLARA COUNTYWIDE VEHICLE MILES TRAVELED (VMT) EVALUATION TOOL?

The Santa Clara Countywide VMT Evaluation Tool (SCC VMT Evaluation Tool) is a web-based tool (available at <https://vmttool.vta.org>) to help users conduct a baseline VMT screening evaluation for small- to medium-sized residential, office, and industrial land use projects in Santa Clara County. The tool is capable of evaluating these land uses individually, in combination with each other, and with or without local-serving retail. The SCC VMT Evaluation Tool was developed by the Santa Clara Valley Transportation Authority (VTA) with consultant assistance, in collaboration with the 15 cities and towns of Santa Clara County, and the County of Santa Clara.

The SCC VMT Evaluation Tool is intended to help users meet the requirements of California Senate Bill 743 and the California Environmental Quality Act (CEQA), although additional analysis may be needed and each agency or user should consult with experts regarding their compliance with CEQA and other applicable laws. (Refer to the section 'IS THE SCC VMT EVALUATION TOOL ALL THAT IS NEEDED FOR PROJECT VMT ANALYSIS?' for more information.)

The SCC VMT Evaluation Tool screens land use projects to determine whether further VMT analysis is necessary, by identifying whether projects fall within a low-VMT area according to the applicable jurisdiction's VMT threshold and/or fall within proximity to transit. The SCC VMT Evaluation Tool estimates the project-generated VMT associated with the project using VMT data from a travel demand model at that specific project location, and calculates project-generated VMT after reductions from certain VMT-reducing measures have been applied.

The SCC VMT Evaluation Tool is modular such that VTA, along with cities in Santa Clara County and the County of Santa Clara, can include specific VMT screening criteria or model data within the Tool. The Tool is scalable such that it can be used for a range of project sizes and locations within any jurisdiction in Santa Clara County. The travel forecasting data that the SCC VMT Evaluation Tool uses is static, meaning that any data in this Tool does not affect the data from the source travel demand model.

WHAT IS SENATE BILL (SB) 743?

On September 27, 2013, Governor Jerry Brown signed SB 743 into law and started a process intended to fundamentally change transportation impact analysis as part of CEQA compliance. Specifically, the legislation directed the State of California Governor's Office of Planning and Research (OPR) to look at different metrics for identifying transportation impacts and make corresponding revisions to the *CEQA Guidelines*. The initial bill includes two legislative intent statements (emphasis and bullets added):

- **New methodologies** under the California Environmental Quality Act are **needed for evaluating transportation impacts** that are better able to promote the state's goals of reducing greenhouse gas

emissions and traffic-related air pollution, promoting the development of a multimodal transportation system, and providing clean, efficient access to destinations.

- More appropriately **balance the needs of congestion management with statewide goals** related to **infill development**, promotion of public health through **active transportation**, and **reduction of greenhouse gas emissions**.

Following several years of draft proposals and related public comments, OPR settled on VMT as the preferred metric for assessing passenger vehicle-related impacts and issued revised *CEQA Guidelines* in December 2018, along with a *Technical Advisory On Evaluating Transportation Impacts in CEQA* (December 2018) to assist practitioners in implementing the *CEQA Guidelines* revisions. Under the revised *CEQA Guidelines*, vehicle Level of Service (LOS)¹ is no longer to be used as a determinant of significant environmental impacts, and analysis of a project's impacts will now be based on assessment of VMT.

Further information about SB 743, the shift from LOS to VMT in CEQA, and related topics is available online at sites including <https://opr.ca.gov/ceqa/updates/sb-743/>, <https://sb743.org/>, and <https://dot.ca.gov/programs/transportation-planning/office-of-smart-mobility-climate-change/sb-743>.

WHAT LEVEL OF REDUCTION IN VMT IS REQUIRED?

As a result of changes to the *CEQA Guidelines*, there are several changes in transportation impact analysis metrics, methods, and thresholds that each jurisdiction must make. As a lead agency, each jurisdiction will need to establish its own VMT thresholds to comply with SB 743. The OPR *Technical Advisory* recommends that agencies use the following VMT efficiency metrics for land use projects:

- **Residential Land Use:** Home-based (light-duty vehicle) VMT per capita/resident, or household generated VMT per capita/resident.
- **Office Land Use:** Home-based work (light-duty vehicle) VMT per employee/worker, total employee VMT per employee/worker, or work tour VMT per employee/worker.

Since the SCC VMT Evaluation Tool includes data from a trip-based travel demand model (as opposed to an activity-based or tour-based model) as of August 2020, the Tool currently uses Home-based VMT per capita/resident and Home-based work VMT per employee/worker as the two possible metrics.

While it may be difficult for a lead agency to determine what level of VMT change is unacceptable when viewed solely through a transportation lens, there are several possible options, depending upon if the agency chooses to set a threshold based on local or state policies. Agencies will generally specify thresholds for each applicable VMT metric (i.e., for each main land use). Thresholds are represented as a percent reduction from baseline year VMT, and common options include: -0%, -14.3%, -15%, -16.8%, and -25%. A lead agency may also select a City-specific threshold consistent with its General Plan.

¹ LOS refers to "Level of Service," a metric that assigns a letter grade to network performance. The typical application in towns and cities is to measure the average amount of delay experienced by vehicle drivers at an intersection during the most congested time of day and assign a report card range from LOS A (fewer than 10 seconds of delay) to LOS F (more than 80 seconds of delay). Vehicle level of service is used to measure vehicle mobility.

WHAT ARE THE MAIN FUNCTIONS OF THIS TOOL?

As noted above, the SCC VMT Evaluation Tool screens land use projects to determine whether further VMT analysis is necessary, by identifying whether projects fall within a low-VMT area according to the applicable jurisdiction's VMT threshold and/or fall within proximity to transit. The SCC VMT Evaluation Tool estimates the project-generated VMT associated with the project using VMT data from a travel demand model at that specific project location, and calculates project-generated VMT after reductions from certain VMT-reducing measures have been applied.

The SCC VMT Evaluation Tool consists of three modules:

- **VMT Screening** – The location of the project is used to determine if the project site is within a low VMT generating area (including low VMT generating Traffic Analysis Zones or parcels) and/or in proximity to transit (including Transit Priority Areas and areas within a half-mile of a stop along a High-Quality Transit Corridor, as defined in state law and summarized in the OPR *Technical Advisory*).
- **Project-Generated VMT** – A combination of the project's location and project details is used to estimate VMT generated from the project, which is expressed as a VMT rate (i.e., VMT per resident/per employee). This process can use TAZ-level or parcel buffer-level VMT generation rates to estimate the project's VMT.
- **VMT Reductions** – A series of user-selected VMT mitigation measures are applied to potentially reduce the project-generated VMT. The project-generated VMT is compared to the applicable VMT threshold to determine whether it falls below the threshold at the start, or whether it is reduced below the threshold after applying VMT reduction measures. The VMT threshold used in this module is calculated in the VMT Screening module based on which agency's "rules" the user chooses to apply.

The functionality and technical basis of the SCC VMT Evaluation Tool will be further documented in the *SCC VMT Evaluation Tool User Manual* which VTA intends to release in the coming months.

WHO ARE THE INTENDED USERS OF THE SCC VMT EVALUATION TOOL?



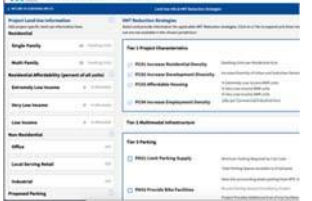

The SCC VMT Evaluation Tool is intended for a variety of users, including city and county staff, transportation and environmental consultants, land developers, and developers' representatives. It may also be used by advocacy organizations, citizen groups and members of the public interested in a particular development project or site. The Tool is available on the web without the need for a login or password.

IS THE SCC VMT EVALUATION TOOL ALL THAT IS NEEDED FOR PROJECT VMT ANALYSIS?

The SCC VMT Evaluation Tool assists with baseline VMT screening of small- to medium-sized residential, office, and industrial land use projects in Santa Clara County. The tool is capable of evaluating these land uses individually, in combination with each other, and with or without local-serving retail. It only covers some of the possible screening criteria that a city or county may establish for land use project VMT analysis per California SB 743 and CEQA. Other land uses types, large or complex projects, or long-range land use plans will likely require other methods of VMT analysis. **Before making any decisions using the information provided by the SCC VMT Evaluation Tool, it is recommended that you contact the city/town/county in which the proposed development is located.** Please refer to the *User Agreement* dated May 20, 2020 (available in the tool at <https://vmttool.vta.org>) for more information.

WHAT STEPS ARE INVOLVED IN RUNNING THE SCC VMT EVALUATION TOOL?

There are four basic steps involved in running the SCC VMT Evaluation Tool:

<p>1. Select Project Area Choose what “rules” to follow, select the parcel(s) that make up your project area, and view related map layers</p> 	<p>2. Determine Screening Inputs Select what land uses to analyze, data to use, and other screening parameters</p> 
<p>3. Land Use Data & VMT Reductions Enter residential units and non-residential square footage, and select VMT reduction strategies</p> 	<p>4. Report View results in table and bar chart form, download a PDF report, and export CSV data tables</p> 

If you only wish to screen a site (i.e., determine whether it is in proximity to transit and/or in a low-VMT area) you may skip Step 3 by clicking the “Project Screening Only” button on the second screen.

HOW WERE THE DATA USED IN THE TOOL DEVELOPED?

The data in the SCC VMT Evaluation Tool include two main components: (1) base year and cumulative year VMT values and (2) other data used in certain VMT reduction calculations. In general, VMT values are an output of travel demand models maintained by regional and county-level agencies and some cities to estimate travel behavior within a certain geographic area now and in the future. The other data used in the VMT reduction calculations are a combination of inputs to the travel demand model (such as the number of households or employees in each zone) and outputs from the model (such as the number of trips by each mode of transportation originating in each zone).

The data listed in the SCC VMT Evaluation Tool as “VTA Countywide Model December 2019” were produced from VTA’s travel demand model for a base year of 2015, which was calibrated and validated in 2019. The data listed in the SCC VMT Evaluation Tool as “CSJ 2015 Model” were produced by the City of San Jose from the City’s travel demand model for a base year of 2015 in late 2017. It is important to note that both the VTA and City of San Jose travel demand models are trip-based models, which estimate VMT differently than an activity-based model like the Metropolitan Transportation Commission travel demand model.

In addition to modeling travel behavior for existing conditions based on land use inputs, transportation network supply inputs and observed travel data, a travel demand model can be used to estimate travel behavior for specific horizon years. The horizon year data in the SCC VMT Evaluation Tool represent 2040 cumulative conditions estimated in VTA’s travel demand model. These 2040 cumulative conditions reflect projected land uses in the year 2040, as well as transportation system improvements from financially constrained long-range plans such as the Regional Transportation Plan that are expected to be in place by 2040. The SCC VMT Evaluation Tool also allows the user to select an interim year of

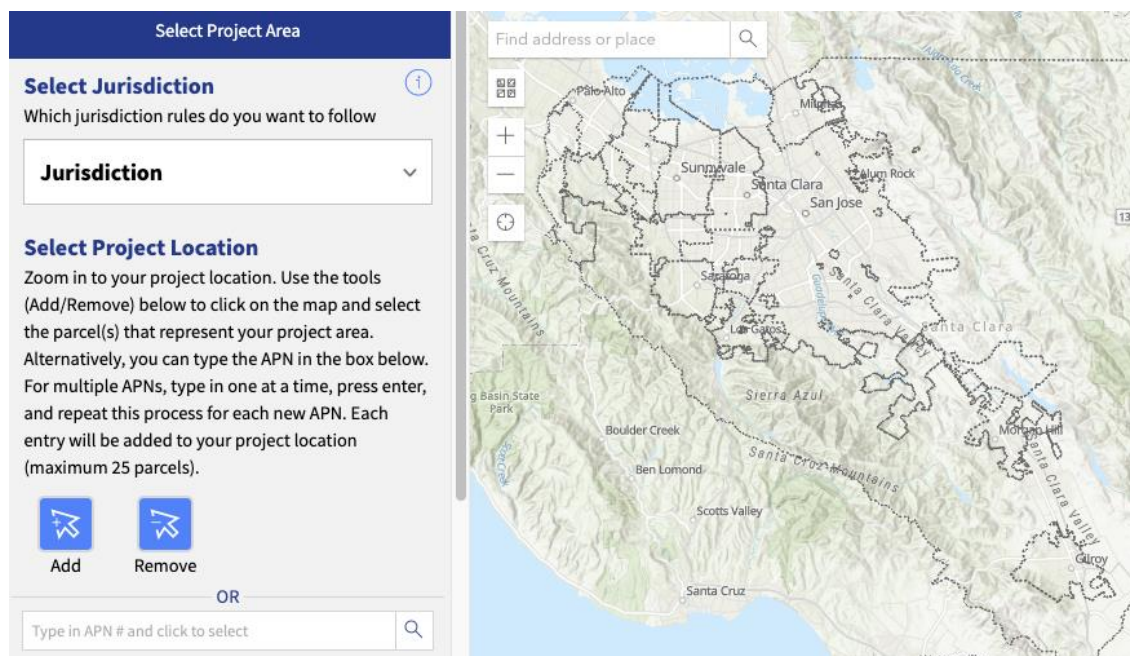
analysis between 2015 and 2040. The VMT values for interim years are calculated via straight-line interpolation; 2015 values are multiplied by a single 2015-2040 VMT change factor for the jurisdiction in which the project is located. This simplified method effectively assumes that changes in land use and travel patterns occur at a constant yearly rate.

VTA will be providing more detailed documentation of the base data, including an overview of the VTA travel demand model, model parameters, model calibration & validation, and related technical issues in coming months. This documentation will be made available separately from this FAQ list.

WHAT INFORMATION DO I NEED TO START AN ANALYSIS?

To start, you need to specify which jurisdiction’s “rules” you want to follow. In most cases, this will be the jurisdiction in which your project is located, but there may be a few exceptions. For example, if your project is located in unincorporated Santa Clara County, outside of any city’s Urban Service Area or Sphere of Influence, you would likely choose Unincorporated County rules. However, if your project falls in a County “island” (i.e., an unincorporated area that is all or mostly surrounded by a city, such as San Jose) you would likely choose that city’s rules. It is recommended that you consult with the jurisdiction in which your project is located to confirm which rules to select.

You need to know the general location of your project to zoom in on the map, or the Assessor’s Parcel Number (APN) or APNs to enter manually. If you know an address near the project site, you can type it in the search bar at the top of the map. The SCC VMT Evaluation Tool will locate the address on the interactive map, and you will be able to highlight the parcels to be evaluated. The SCC VMT Evaluation Tool will identify APNs for the parcels highlighted.



You also need to know your project’s land use and quantities (e.g., number of single-family or multi-family dwelling units, or thousands of square feet of non-residential uses).

BESIDES MY PROJECT LOCATION WHAT OTHER INFORMATION CAN BE MAPPED BY THE TOOL?

The Select Project Area map has numerous layers that can be switched on or off, or shown screened (i.e., with partial visibility). These map layers are available for the entire geography of Santa Clara County. In addition to the Project Area selected by the user, these map layers include:

- Parcels
- Traffic Analysis Zones (TAZs)
- Rail Stations
- Rail Lines
- Frequent Bus Stops
- Frequent Bus Routes
- Transit Priority Area/High Quality Transit Corridor Buffers
- Jurisdiction Boundaries
- Federal Land
- Sphere of Influence

ONCE I HAVE LOCATED MY PROJECT ON THE MAP WHAT IS NEXT?

Continue to the next screen titled “Determine Screening Inputs.” Here you will input your project name and description. You also need to select a version of VMT Tool to use (currently there is only one version) and what model data you wish to use (currently there is only one set of model data offered for each jurisdiction). Next, select between TAZ or Parcel Buffer Analysis Method (refer to questions below for further information). Finally select the Baseline Year, which could be 2015 or the current year (refer to question below for further information). The jurisdiction in which the project is located may give you guidance on TAZ vs. Parcel Buffer Analysis Method, and Baseline Year, or these may be pre-set in the Tool.

Proceed to the right side of the page and select the Land Use Type(s) to be evaluated, and the VMT Metric for each land use (Home-based VMT per capita for residential uses, and Home-based work VMT per worker for nonresidential uses). Next, choose the Jurisdictional Average against which the project’s VMT will be compared – Bay Area Regional Average, County Average or City Average.² Finally choose a VMT Threshold, which is expressed as the percent reduction from the baseline year VMT. The jurisdiction in which the project is located may give you guidance on Jurisdictional Average and Threshold values to use, or these may be pre-set in the Tool.

WHAT ARE TRAFFIC ANALYSIS ZONES (TAZs)?

Traffic Analysis Zones are geographic areas used in travel demand models. They can be defined as the finest level of land use disaggregation in a travel demand model. As defined by *NCHRP Report 716, Travel Demand Forecasting: Parameters and Techniques*, TRB, 2012, “TAZ boundaries are usually major roadways, jurisdictional borders, and geographic boundaries and are defined by homogeneous land uses to the extent possible.”

² When the user chooses Unincorporated County “rules” on the first page, the Tool will reference Unincorporated County average VMT values when the “City Average” option is chosen in the “Jurisdictional Average for Baseline” drop-down menu. If “County Average” is chosen, this will reference the average VMT values for the entire county including incorporated and unincorporated areas.

WHAT IS THE TAZ ANALYSIS METHOD?

In the SCC VMT Evaluation Tool, if the user selects the “TAZ Method” of analysis, the SCC VMT Estimation Tool uses data that has been produced at the TAZ level. This includes base year VMT values (or VMT values interpolated between the base year and cumulative year) and other data used in VMT reduction calculations. When the TAZ Method of analysis is selected, the Tool uses the travel characteristics in the TAZ containing the project parcels to conduct the baseline VMT screening evaluation. If the user selects parcels that fall into more than one TAZ, the Tool reports results separately for each TAZ because the travel characteristics vary by TAZ.

WHAT IS THE PARCEL BUFFER ANALYSIS METHOD?

In the SCC VMT Evaluation Tool, if the user selects the “Parcel Buffer Method” of analysis, the data from the travel demand model has been post-processed using the ArcGIS “Focal Statistics” function for a one-half mile buffer surrounding the project parcel(s). In this case, the VMT values for each parcel represent a population-weighted or employee-weighted average of the base VMT values for the TAZs within a half-mile buffer of the parcel centroid. The other data, used in the VMT reduction calculations, represent area-weighted averages or area-weighted sums for the TAZs within a half-mile buffer of the parcel centroid. If the user selects a single parcel, the Tool pulls the data representing the half-mile buffer around that parcel and uses that in the evaluation. If the user selects multiple parcels within one TAZ, the tool pulls the data for the half-mile buffer around each parcel, runs the VMT calculations for each parcel buffer, then reports the *most conservative (i.e., highest)* VMT result. If the user selects parcels that fall into more than one TAZ, the Tool reports results separately for each TAZ (same as in the TAZ Method).

VTA will be providing more detailed documentation of the base data, including how the parcel buffer data were produced, in the coming months. This documentation will be made available separately from this FAQ list.

HOW DO I CHOOSE BETWEEN THE TAZ METHOD VS. THE PARCEL BUFFER ANALYSIS METHOD?

The jurisdiction in which the project is located may give you direction on this issue, or this may be pre-set in the SCC VMT Estimation Tool. The appropriate method should be based on substantial evidence and statistical validity.

HOW DO I CHOOSE WHETHER TO USE 2015 OR A DIFFERENT YEAR FOR THE BASELINE YEAR?

The *California Environmental Quality Act Statute & Guidelines* provides guidance on the definition of baseline conditions for use in an environmental analysis. The jurisdiction in which the project is located may have additional guidance and supporting evidence for defining its baseline year, or this may be pre-set in the SCC VMT Evaluation Tool.

WHAT IS A BASELINE VMT SCREENING ANALYSIS?

The concept of baseline (often defined as Existing Conditions) project screening is that some projects have characteristics that readily lead to the conclusion that they would not cause a VMT impact, and therefore could be screened out of doing a detailed VMT analysis. Some types of baseline project screening criteria include transit proximity, low-VMT area, local-serving retail, transportation projects that do not add

capacity, and projects with no net VMT increase.

CAN A JURISDICTION APPLY UNIQUE SCREENING CRITERIA?

Yes, a jurisdiction can apply a unique screening criterion that supersedes, or is used in combination with, proximity to transit and location in a low-VMT-generating area. To implement unique screening criteria in the SCC VMT Evaluation Tool the jurisdiction would need to develop the screening criteria and work with VTA staff to add it to the Screening Override field in the tool. These screening overrides are land-use specific, just as the VMT thresholds and therefore the low-VMT-generating areas are land use-specific. As of August 2020, the SCC VMT Evaluation Tool contains custom screening criteria for only one jurisdiction – the City of San Jose, for Residential and Office land uses.

WHAT VMT REDUCTION STRATEGIES CAN THE TOOL ANALYZE?

The SCC VMT Estimation Tool can analyze twenty-nine VMT reduction strategies. These strategies are supported by a variety of studies and reports, which are noted in the “tool-tips” within the Tool and which will be further documented in the forthcoming *SCC VMT Evaluation Tool User Manual*. The framework of category, cross-category, and global maxima varying by place type used in the SCC VMT Evaluation Tool is based on *Quantifying Greenhouse Gas Mitigation Measures*, published in 2010 by the California Air Pollution Control Officers Association (CAPCOA); this report provides an evidence-based framework for aggregating the effectiveness of VMT mitigation measures. As part of the data preparation for this Tool, VTA assigned every TAZ or parcel in Santa Clara County with a place type based on the classification scheme in *Quantifying the effect of local government actions on VMT*, published in 2014 by the Institute of Transportation Studies, University of California, Davis; this classification scheme roughly corresponds to the place types in the 2010 CAPCOA report.

There are four levels or “tiers” of VMT reduction strategies, which were originally developed by the City of San José and which were carried over to the SCC VMT Evaluation Tool.

1. The first tier derives from the **characteristics of the project land use itself**: e.g., whether it increases residential or employment density, whether it includes affordable housing, and whether it improves the land use mix in the area which may reduce external travel.
2. The second tier relates to **improvements that better connect the project to non-auto modes**: walking, biking, and transit facilities.
3. The third tier relates to **parking-related measures** that reduce the amount of parking or increase the cost of parking at the project for employees.
4. The fourth tier is the most extensive, encompassing 18 varieties of **Travel Demand Management (TDM) programs**. These are strategies that aim to shift travel behavior away from driving via incentives and education.

While a long list of potential VMT reduction measures is available to users of the SCC VMT Evaluation Tool, care must be taken by the user in selecting which measures to apply. **The user should carefully consider the research supporting each VMT reduction measure to determine the efficacy of the potential VMT mitigation and its applicability to the project and the local context.** The user should also contact the jurisdiction in which the project is located to confirm the proposed VMT reduction measures with agency staff. Furthermore, the user should understand what VMT reduction strategies, if any, may have already been captured in the VTA travel demand model to avoid double counting.

HOW DO I READ THE REPORT AND EXPORT FILES?

The SCC VMT Evaluation Tool produces two types of outputs: a formatted report, which shows up on the Results screen and can be downloaded as a PDF file, and data tables including all the user-provided inputs and the back-end data which can be downloaded as CSV files (using the “Export” button on the Results screen) and which can be opened in Excel and other spreadsheet programs.

Key things to look for in the report / PDF:


- **Whether the project is in close proximity to transit** (within ½ mile of a Major Transit Stop, or ½ mile of a stop along a High- Quality Transit Corridor as defined in state law): Look for the ‘Inside TPA?’ question on Page 1 of the report.
- **Whether the project falls in a low-VMT area** (i.e., below the VMT threshold specified by the city/town/county): Look for the ‘Low VMT Screening Analysis’ row on the Screening Results page(s) of the report, starting on page 2. There will be Low-VMT Screening results for each land use you select.

Project Location					
Jurisdiction:	<table border="1"> <tr> <th>APN</th> <th>TAZ</th> </tr> <tr> <td>27938075</td> <td>21</td> </tr> </table>	APN	TAZ	27938075	21
APN	TAZ				
27938075	21				
Inside Transit Priority Area (TPA)?	Yes (Pass)				

	Without Project	With Project and Tier 1-3 VMT Reductions	With Project and All VMT Reductions
Project Generated Vehicle Miles Traveled (VMT) Rate	14.69	14.53	11.75
Low VMT Screening Analysis	No (Fail)	No (Fail)	Yes (Pass)

The CSV files are intended to help the user understand how the VMT reduction results were obtained. The data in the files, along with the formulas in the “tool-tips” and forthcoming *SCC VMT Evaluation Tool User Manual*, should help confirm the results.


WHERE CAN I FIND HELP WITHIN THE TOOL?

Look for the “tool-tips” icons  that are found throughout the tool to help understand fields where inputs are required.

HOW LONG DOES IT TAKE FOR THE TOOL TO PRODUCE RESULTS?

The tool may take 1 - 2 minutes to run a report; if it takes much longer, refresh your screen and try again.

HOW DO I ANALYZE PROJECT VARIATIONS FOR A PROJECT SITE?

If you are running variations on the same site and project, use the back arrows in the upper-left of the screen (such as ) to go back, vary some inputs, and run the report again.

HOW DO I ANALYZE A PROJECT AT A DIFFERENT SITE?

To analyze a different site, you must start a new analysis. To start a completely new analysis while staying in the tool, use the button in the upper-right of the Results screen:



CAN I DOWNLOAD THE TOOL TO USE OFF-LINE?

No. It is a web-based tool and needs to access databases via the internet.

WHAT WEB BROWSERS AND DEVICES ARE COMPATIBLE WITH USING THE TOOL?

The tool is optimized for Chrome, Firefox, Edge or Safari on a Windows or Mac computer. You may also access it from a tablet or another browser. If you encounter unexpected issues, try clearing your browser cache and cookies and running again.

CAN I GIVE FEEDBACK ON THE TOOL?

Yes. You can access a short feedback form by clicking on the link in the upper-right of the tool. You may report errors, rate the tool, and offer suggestions:



IF I HAVE OTHER QUESTIONS OR NEED MORE INFORMATION ABOUT THE TOOL WHO DO I CONTACT?

If you have questions about the SCC VMT Evaluation Tool, you may email vta.los.vmt@gmail.com.

For any inquiries about how the tool may be applied in a land use review and approval process, please contact staff at the city/town/county in which the project is located. Before making any decisions using the information provided by the SCC VMT Evaluation Tool, it is recommended that you contact the relevant jurisdiction.

CAN I USE THE TOOL TO ANALYZE A PROJECT OUTSIDE OF SANTA CLARA COUNTY?

No. The SCC VMT Evaluation tool is designed for use for locations within Santa Clara County only. The critical land use and transportation data used in the tool is specific to Santa Clara County.