17 SB743 VMT TOOL

Overview

The SB743 VMT Tool can be used to calculate VMT per capita by TAZ for a residential development project, or VMT per job by TAZ for an office development project for SB743 analysis using the MCTC Model outputs. The Madera County subregional baseline VMT per capita/job for the selected TAZ will also be reported for screening purposes.

Madera County subregional baseline VMT

Sub-regions in Madera County

There are six air basins defined in the MCTC model, which are

- Air Basin 1 - unincorporated valley
- Air Basin 2 - City of Chowchilla
- Air Basin 3 - City of Madera
- Air Basin 4 - south east county growth area
- Air Basin 5 - foothill/mountains

MCTC air basin map is shown in *Figure 22*.

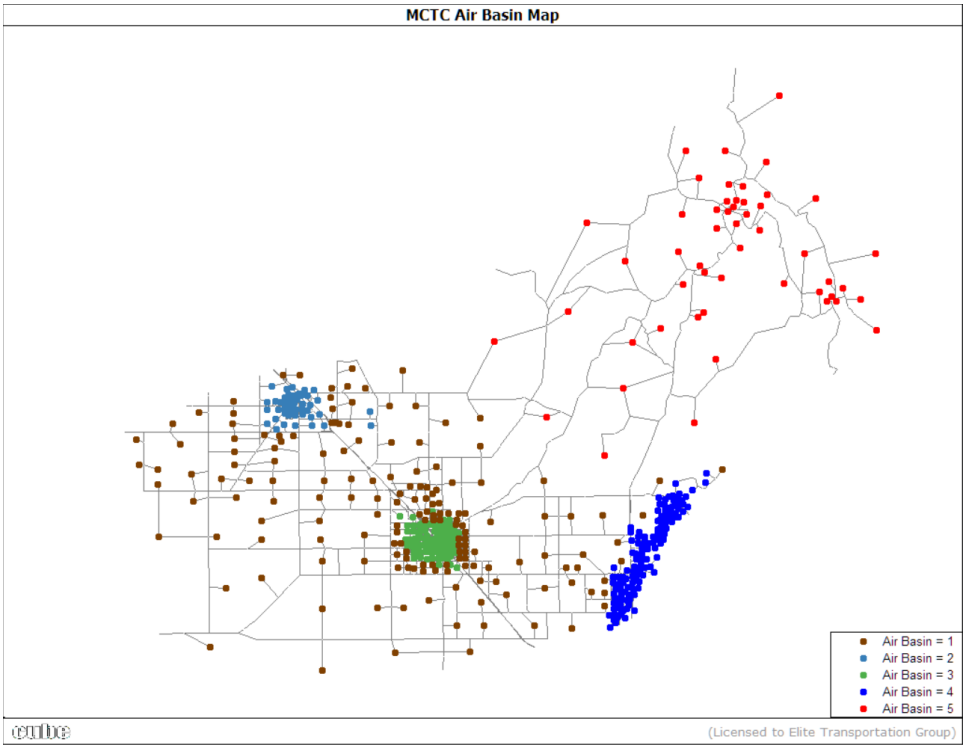


Figure 22: MCTC Air Basin Map

Those air basins were used to represent sub-regions in the Madera County. Baseline VMT for each of those six sub-regions were developed using the 2018 MCTC Model.

Baseline Average Residential VMT per Capita by Air Basin

VMT per capita were generated by residential, or home based, trips at the production ends. For residential VMT we summed up all outbound home-based trips, including HW, HS, HK, HC, HO trip purposes, from each internal TAZ. The O-D distances were skimmed off the highway network between each O-D pair in the model including gateway TAZs. For the IX/XI trips, external average trip lengths, per gateway, were added to the skimmed O-D distances. The product of total residential trips and the total O-D distance was the total residential VMT for that TAZ. The baseline VMT per capita for an air basin was calculated by dividing the total residential VMT by the total population in that air basin. The sub-regional baseline VMT per capita are shown in *Table 41*.

MCTC Average VMT per Capita by Air Basin

Air Basin	VMT	Population	VMT per Capita
1	519,641	37,204	14.0
2	165,659	14,848	11.2
3	290,174	58,891	4.9
4	98,010	7,917	12.4
5	513,456	39,468	13.0
TOTAL	**1,586,940**	**158,328**	**10.0**

Table 41: Sub-Regional Baseline VMT per Capita

Baseline Average Work VMT per Job by Air Basin

VMT per job were generated by home-based work (HW) trips at the attraction ends. Thus, for work VMT we summed up all inbound HW trips to each internal TAZ. The O-D distances were skimmed off the highway network between each O-D pair in the model including gateway TAZs. For the IX/XI trips, external average trip lengths, per gateway, were added to the skimmed O-D distances. The product of total HW trips and the total O-D distance was the work VMT for that TAZ. The baseline VMT per job for an air basin was calculated by dividing the total work VMT by the total jobs in that air basin. The sub-regional baseline VMT per job are shown in *Table 42*.

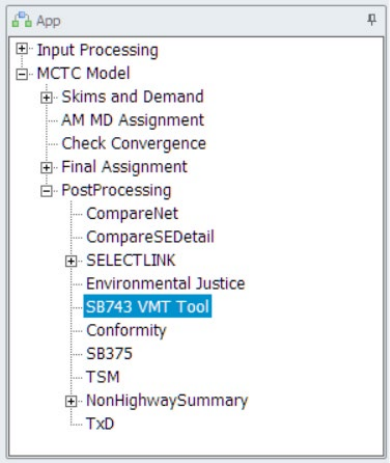
MCTC Average VMT per Job by Air Basin

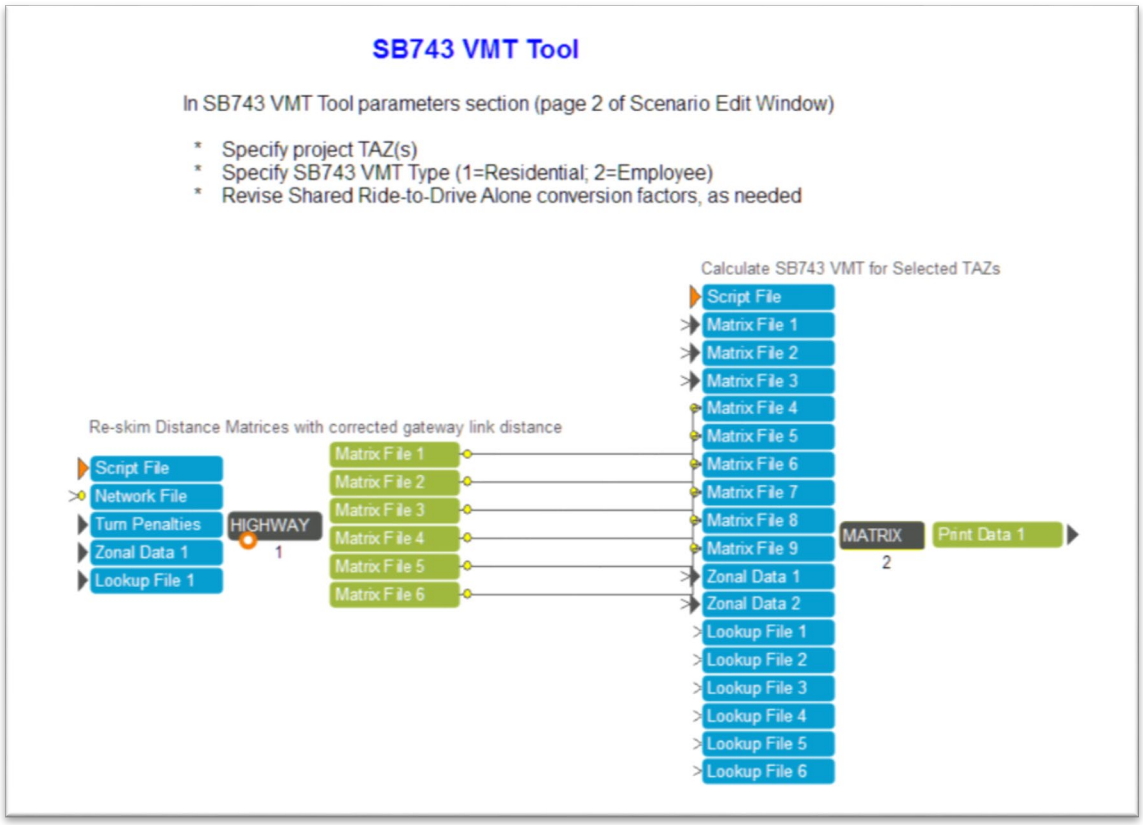
Air Basin	VMT	Jobs	VMT per Job
1	581,611	22,926	25.4
2	47,986	3,648	13.2
3	165,606	17,931	9.2
4	90,416	4,467	20.2
5	75,049	8,030	9.4
TOTAL	**960,669**	**57,002**	**16.9**

Table 42: Sub-Regional Baseline VMT per Job

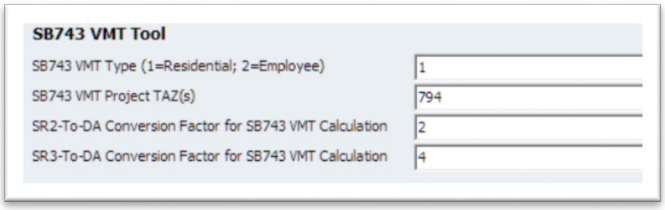
MCTC SB743 VMT Tool

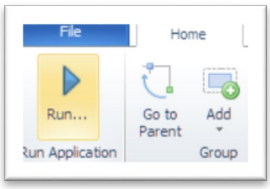
The **SB743 VMT Tool** is in the **PostProcessing** group.

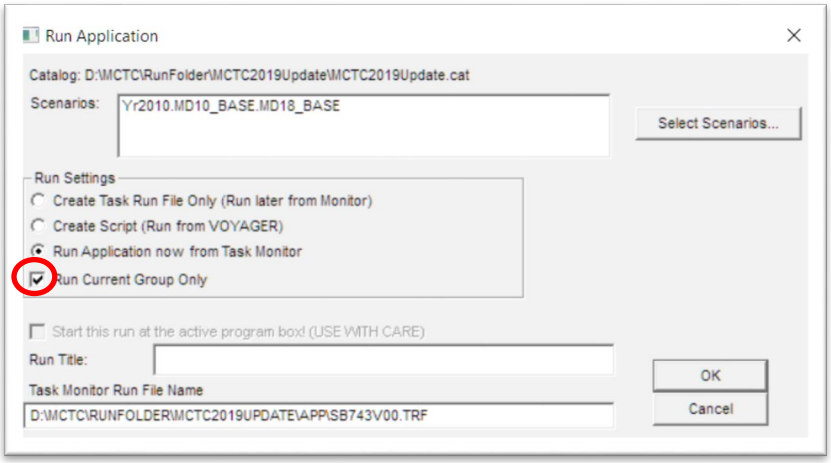




The steps to apply the **SB743 VMT Tool** are as follows:

1. Create a new project scenario
    - Identify project TAZ(s)
    - If there are existing social-economic data (SED) in project TAZ(s),
        - move them to a nearby TAZ to preserve the trips generated by existing SED
    - Add project SED to the emptied project TAZ(s)
        - so only project SED are in the project TAZ(s)
    - Do a full model run, including **Input Processing**
2. Specify **SB743 VMT Tool** parameters in **Scenario Edit** window
    - Specify SB743 VMT Type (1=Residential; 2=Employee)
    - Specify project TAZ(s)
    - Optional - revise shared ride-to-drive alone conversion factors, if needed
    - Click **Save** to save the changes
    - 

3. Run **SB743 VMT Tool**
    - Click **Home – Run** button to start **Run Application** window
    - 

    - Select **Run Current Group Only** option, and click **OK**
    - 

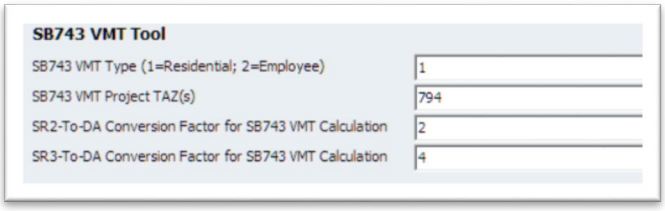
    - A SB743 VMT report, "MD18_BASE_VMT_SB743.CSV", will be generated in the "\10_Reporting" folder. It can also be open from the output file box.

VMT per Capita Analysis Example

1. Create a new project scenario
    - Selected a project TAZ (794)
    - Move existing social-economic data (SED), if any, from Z 794 to a nearby TAZ
    - Add project SED to Z 794

; TAZ	ATYPE	JURISDICT	TOTHH	HHPOP
794	1	Mountain	26	83

    -
2. Do a full model run, including **Input Processing**
3. Set SB743 VMT Type to 1 and TAZ to report to "794" in the Scenario Parameters Window



4. Run the **SB743 VMT Tool**, and the following CSV report "MD18_BASE_VMT_SB743.CSV" will be generated in the "\10_Reporting" folder

VMT per Capita Report

TAZ	RESIDENTIAL VMT	POPULATION	VMT/CAPITA	Air Basin	Avg VMT/CAPITA
794	435	83	5.2	5	13

The average VMT per capita for the air basin the selected TAZ is in is listed for screening purposes. The following guidelines are from "Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA" report by Governor's Office of Planning and Research (OPR).

Recommended threshold for residential projects: A project exceeding *both*

- Existing *city* household VMT per capita minus 15 percent *and*
- Existing *regional* household VMT per capita minus 15 percent

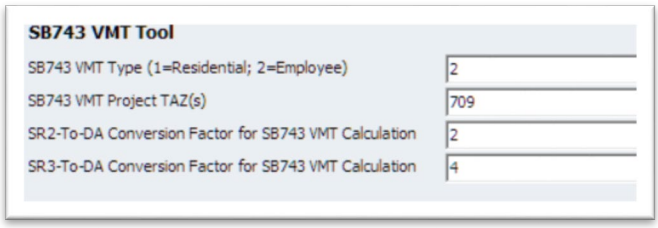
may indicate a significant transportation impact

VMT per Job Analysis Example

1. Create a new project scenario
    - Selected a project TAZ (709)
    - Move existing social-economic data (SED), if any, from Z 709 to a nearby TAZ
    - Add project SED to Z 709

; TAZ	TOTEMP
709	18

    -
2. Do a complete model run, including **Input Processing**
3. Set SB743 VMT Type to 1 and TAZ to report to "794" in the Scenario Parameters Window



4. Run the **SB743 VMT Tool**, and the following CSV report "MD18_BASE_VMT_SB743.CSV" will be generated in the "\10_Reporting" folder.

VMT per Job Report

TAZ	WORK VMT	EMPLOYMENT	VMT/JOB	Air Basin	Avg VMT/JOB
709	338	18	18.8	1	25.4