



MEMORANDUM

DATE: March 28, 2025

To: Annalisa Perea, Senior Planner, QK Inc.

FROM: Dean Arizabal, Principal, LSA

SUBJECT: Chowchilla Residential Development Project Vehicle Miles Traveled Analysis

LSA has prepared this vehicle miles traveled (VMT) analysis for the proposed Chowchilla Residential Development (project). The 18-acre project site is on the northeast corner of Roberson Boulevard and Road 15 in the City of Chowchilla's (City) sphere of influence and unincorporated Madera County. The proposed project includes construction of 34 attached single-family and 154 low-rise multifamily dwelling units. The 154 low-rise multifamily dwelling units would be constructed as 100-percent below-market rate/affordable housing.

BACKGROUND AND ANALYSIS METRICS

On December 28, 2018, the California Office of Administrative Law cleared the revised California Environmental Quality Act (CEQA) guidelines for use. Among the changes to the guidelines were removal of vehicle delay and level of service from consideration under CEQA. With the adopted guidelines, transportation impacts are to be evaluated based on a project-generated VMT.

The City has adopted its Senate Bill 743 guidelines – City of Chowchilla CEQA Transportation Impact Study Guidelines – July 20, 2022 (guidelines). Therefore, project VMT analysis was conducted using the methodology and significant threshold criteria identified in the City's guidelines.

The project includes two types of residential land uses – market rate attached single-family and affordable (below market rate) multifamily dwelling units. The guidelines recommend use of VMT per capita as the VMT metric to evaluate residential uses; therefore, the project was evaluated using VMT per capita. The guidelines established 15 percent as the threshold. Also, the guidelines established Madera County as the region for evaluation of land use projects. Therefore, the project would have a significant VMT impact if the project VMT per capita exceeds 85 percent of Madera County VMT per capita under baseline conditions.

Project Vehicle Miles Traveled Screening Analysis

In addition to provision of VMT metrics and thresholds, the guidelines also include multiple screening criteria for land use projects to be screened out of a detailed VMT analysis. The screening thresholds and their applicability to the project are:

- *Small Projects:* Based on the guidelines, projects that generate fewer than 1,116 daily trips can be assumed to cause a less than significant transportation impact. The project is estimated to generate 1,283 daily trips using trip rates from Institute of Transportation Engineers (ITE) Trip Generation Manual 11th edition for land use codes 215 (single-family attached) and 220 (multifamily low-rise not near transit). It should be noted that the trip rate for multifamily represents market-rate units and not affordable units. Use of below-market-rate multifamily trip rate for project multifamily and market rate attached single-family trip rates for the project single-family units would generate fewer than 1,000 daily trips. Therefore, as indicated above, the daily trip generation of the project (daily trips – 1,283) is greater than 1,116 and, therefore, this criterion is not applicable to the project.
- *Local-Serving Retail and Similar Land Use Projects:* The guidelines recommend screening of all local-serving retail projects and also indicate most retail projects in Chowchilla can be considered local-serving. However, the project consists of residential land uses; therefore, this criterion is not applicable to the project.
- *Local-Serving Public Facilities:* The project is not considered a public/government facility; therefore, this screening criterion is not applicable to the project.
- *Affordable and Farmworker Housing Projects:* The project consists of 34 attached, market-rate, single-family dwelling units in addition to 154 affordable multifamily dwelling units. The guidelines recommend land use projects with 100-percent affordable housing units or housing units primarily intended for farmworkers can be screened out of detailed VMT analysis. Although the majority of the project is affordable housing, the project does not consist of 100 percent affordable housing. Therefore, the project cannot be screened from VMT analysis.
- *Redevelopment Projects That Result in a Net Reduction of VMT:* The project is not considered a redevelopment project; therefore, this screening criterion is not applicable to the project.
- *Mixed-Use Projects That Result in a Net Reduction of VMT:* The project is not considered a mixed-use project; therefore, this screening criterion is not applicable to the project.

As noted above, the project does not meet any of the screening criteria identified in the guidelines in its entirety, so a detailed VMT analysis was conducted to evaluate the project VMT impact.

Vehicle Miles Traveled Metrics and Thresholds

As described above, the project includes residential land uses and the guidelines recommend use of VMT per capita as the appropriate VMT metric to evaluate residential uses. The guidelines established the use of Madera County as the region for development of VMT thresholds.

Additionally, based on the guidelines, the threshold for determining VMT impacts has been considered as 15 percent below the region's current baseline VMT per capita. Therefore, the project would constitute a significant VMT impact if the project VMT per capita would be greater than 85 percent of Madera County VMT per capita under baseline conditions.

METHODOLOGY

The guidelines recommend use of a regional travel demand model for detailed VMT analysis. Madera County Transportation Commission's Travel Demand Model (MCTC Model) is the currently used travel demand model within Madera County. The current MCTC Model includes household characteristics/variables such as household income, size, population age, and dwelling unit type to capture the trip-making differences for different household types. These household variables play a key role in different modeling steps such as trip generation, trip distribution, and mode choice, and, as such, determines VMT of the households.

Given the project includes both market-rate and affordable housing units, the model was reviewed and tested for its ability to capture the trip-making characteristic differences between market-rate and affordable housing using the above-mentioned household variables. Based on the review and testing, it was concluded that the model's sensitivity to household variables such as income and size does not appropriately reflect the trip-making characteristic differences between market-rate and affordable housing identified in available research. This was not surprising, as travel demand models are typically calibrated and validated at a regional level, and most of the households in the region represent market-rate units.

The guidelines suggest use of "Additional VMT Methodologies for Unique Situations" (section 3.6) that can be used for projects that have unique VMT characteristics. As indicated above, given the limitations of the travel model in its ability to capture the VMT profile of affordable housing units, a combination of both a model and an off-model approach was used to develop project VMT metric/VMT per capita. The MCTC Model was used to develop VMT per capita for market-rate single-family housing units, whereas an off-model approach was used for the development of VMT per capita for affordable housing units. This methodology was presented to the City and was reviewed and approved by City Staff.

Market Rate Attached Single-family Vehicle Miles Traveled – MCTC Model

As indicated above, the MCTC Model was used to estimate VMT per capita for the market-rate attached single-family units for the project. To calculate the project's VMT metric, the first step was to update the traffic analysis zones (TAZs) in the model that include the project area. The MCTC Model includes capability to add new zones or conduct zone splits. Ideally, the project should be isolated to evaluate the project's VMT. Based on the review of project land uses, it was determined that addition of one new TAZ (for attached single-family residential) would be appropriate to incorporate the project into the model. Therefore, one new TAZ was added in the project location within the model, and the proposed project socioeconomic data was added within this TAZ for purposes of this analysis.

LSA converted the project land uses into model socioeconomic categories. The MCTC Model socioeconomic database for the baseline (2018) scenario was updated with the project socioeconomic data. LSA conducted a model run for this updated model and the outputs from this model run were used to estimate project VMT rates. Table A, below, shows VMT for the project single-family component from the MCTC Model.

Table A: Market Rate Attached Single-family VMT Per Capita –MCTC Model

2018	Chowchilla Residential (project) Attached Single-Family Only
Households (a)	34
Population (b)	130
Total Homebased (HB) VMT ('c)	1,311
HB VMT per capita (d=c/b)	10.1

Source: Compiled by LSA (2025).
MCTC = Madera County Transportation Commission
VMT = vehicle miles traveled

Below-Market-Rate/Affordable Multifamily VMT—Off-Model

VMT metric/VMT per capita for the market-rate, attached single-family component from the MCTC Model was postprocessed/adjusted to represent VMT per capita for the below market-rate/affordable housing units using available research. The “Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity – Designed for Local Governments, Communities, and Project Developers – October 2024 ” by the California Air Pollution Control Officers Association (CAPCOA) includes guidance about VMT mitigation for below market rate housing units. CAPCOA is widely used as guidance for application and quantification of VMT mitigation measures.

The CAPCOA handbook includes “T-4: Integrate Affordable and Below Market Rate Housing” as a VMT mitigation measure. The research for this mitigation measure provides VMT characteristics of affordable/low-income housing units compared to market rate housing units. This research has been used to adjust the single-family VMT per capita obtained from MCTC model to estimate VMT per capita for the affordable housing units. Table B illustrates estimation of VMT per capita for the affordable housing component.

Table B: Affordable Multi Family VMT per capita – Off-Model

Project Attached Single-Family VMT per capita (d)*	10.1
Percent reduction in VMT for affordable units ('e)**	28.6%
Affordable Multifamily VMT per capita (f = (1-e)*d)	7.2

* Obtained from Table A above - MCTC Model
** CAPCOA Handbook 2024: Transportation Measure T-4. Integrate Affordable and Below Market Rate Housing
MCTC = Madera County Transportation Commission
VMT = vehicle miles traveled

Total home-based VMT for the project’s affordable multifamily units was estimated in Table C, below, using an average multifamily household size from the MCTC Model. Total homebased VMT for the affordable component was estimated to develop a weighted average VMT per capita for the entire project.

Table C: Affordable Multi Family Total Homebased VMT

Affordable Multifamily VMT per capita (f)*	7.2
Number of Affordable Multifamily Units (g)	154
Affordable Multifamily Average Household Size (h) **	3.14
Total Affordable Multifamily Population (i=g*h)	483
Total Homebased VMT for Affordable Units (j=i*f)	3,488

* Obtained from Table B, above

** Average household size was obtained from MCTC Model for multifamily units

MCTC = Madera County Transportation Commission

VMT = vehicle miles traveled

It should be noted that, although CAPCOA suggests 28.6 percent lower VMT for affordable housing compared to market rate housing, the ITE Trip Generation Manual 11th edition shows a much lower trip rate for affordable housing compared to attached single-family housing units. For example, daily trip rates for attached single-family unit (ITE LU Code 215) is 7.20 trips per dwelling unit, whereas daily trip rate for affordable multifamily unit (ITE LU Code 223) is 4.81 trips per dwelling unit, which indicates a reduction of approximately 33 percent. As VMT is the product of trips and trip lengths, even if the average trip lengths for attached single-family and affordable housing units are assumed to be similar, affordable housing would produce approximately 33 percent less VMT compared to a market rate attached single-family dwelling unit based on ITE. As such, use of CAPCOA to estimate project’s affordable housing VMT presents a conservative estimate.

VEHICLE MILES TRAVELED ANALYSIS

LSA combined VMT from both components of the project – Single-Family VMT from the MCTC Model and Affordable Multifamily VMT from the off-model approach, described above to estimate VMT per capita for the entire project. Table D, below, shows the combined VMT metric for the entire project.

Table D: Total Project Homebased VMT and VMT Per Capita

Total Homebased VMT - Project Single-Family ('c)*	1,311
Total Homebased VMT - Project Affordable Units (j)**	3,488
Total Project Homebased VMT (k=j+c)	4,799
Total Population - Project Single-Family (b) *	130
Total Population - Project Affordable Units (i) **	483
Total Population - Entire Project (l=b+i)	612
HB VMT per capita - Entire Project (m=k/l)	7.8

* Obtained from Table A - MCTC Model

** Obtained from Table C

MCTC = Madera County Transportation Commission

VMT = vehicle miles traveled

As shown in Table E, the VMT per capita of the project is 7.8 percent lower than the regional threshold. As such, based on the guidelines and the methodology described in this analysis, the project does not constitute a significant VMT impact.

Table E: Baseline (2018) Regional and Project VMT Comparison

Project	Project VMT per Capita	City of Chowchilla VMT per capita Threshold *	Difference	Percentage Difference
Total Households	7.8	8.5	-0.7	-7.8%

Source: MCTC Travel Demand Model (2025).

MCTC = Madera County Transportation Commission

VMT = vehicle miles traveled