

March 6, 2026

Emily Bowen, Principal Planner  
Crawford & Bowen Planning, Inc  
113 N Church St #302  
Visalia, CA 93291

RE: Vehicle Miles Traveled (VMT) Analysis for Proposed Granite Creek Master Plan in Madera, California

Dear Ms. Bowen:

This letter presents the results of the vehicle miles traveled (VMT) analysis for the proposed Granite Creek Master Plan development in the City of Madera. The approximately 199-acre project site is planned to be located on the northeast corner of Road 23 and Avenue 14 ½ in Madera, CA. The project will include 1,542 multi-family and single-family residential dwelling units as well as commercial land uses, K-8 school, and open space. The project will require a General Plan Amendment.

### ***Background***

In 2013, the state of California enacted legislation (SB 743) which required the Governor's Office of Planning and Research (OPR) to identify new metrics for measuring and mitigating transportation impacts within the California Environmental Quality Act (CEQA). For land development projects, OPR recommended replacing the metric of vehicle delay, as defined by level of service (LOS) and other similar measures, with VMT metrics based on project land use. Regulatory changes to CEQA Guidelines incorporating SB 743 were approved on December 28, 2018. Statewide implementation began on July 1, 2020.

Under CEQA, lead agencies have the authority to establish their own VMT significance thresholds and analysis methodologies. At the time of this report, the City of Madera has not yet adopted VMT guidelines. Therefore, the VMT analysis was completed using the guidelines and thresholds identified in the *California Governor's Office of Research and Planning Technical Advisory (OPR TA)*, dated December 2018.

***Project Screening***

The VMT Guidelines contain criteria for determining whether a land use project may be screened from a detailed VMT analysis. These “screening” criteria relate to project size, location, and accessibility to transit. With the exception of the public school, the project does not meet any of the screening criteria. The public school can be screened out as an institution/government use. Therefore, a detailed VMT analysis was conducted for the residential and retail component of the project.

***Detailed Analysis***

As defined in the OPR TA, residential land uses can be evaluated using the VMT per capita metric. Per the OPR TA recommendation, residential land uses less than 15% below the existing regional VMT per capita will indicate a significant VMT impact. As shown in Table 1a, the project is anticipated to generate 4.4 vehicle miles traveled per capita, which is 47.8% less than the significant threshold of 8.5 vehicle miles traveled per capita.

For the retail portion of the proposed project, if the total roadway VMT for the entire Madera County increases, the project is anticipated to have a significant VMT impact.

The detailed VMT analysis was performed by LSA Associates, Inc. (Riverside, California) using the 2019 Madera County Transportation Commission (MCTC) Travel Demand Forecasting Model to estimate project VMT (a copy of analysis memorandum is attached). It was determined that approximately 13 traffic analysis zones (TAZs) would be adequate to represent the project in the model. Based on this information, two model runs were conducted to estimate the VMT impact of the project’s residential and retail land uses. The analysis results for the residential and retail land uses are presented in Tables 1a and 1b, respectively.

**Table 1a  
 Baseline (2018) Regional & Project VMT per Capita**

<b>Base Year (2018)</b>	<b>Granite Creek Master Plan</b>	<b>Significance Threshold</b>	<b>Difference</b>	<b>% Difference</b>
VMT Per Capita	4.4	8.5	4.1	(47.8)

**Table 1b  
 Baseline (2018) Retail Component VMT Comparison**

<b>Base Year (2018)</b>	<b>With Project (Entire Project)</b>	<b>Significance Threshold</b>	<b>Difference</b>
Roadway VMT	4,919,062	4,941,869	(22,807)

## Summary

As shown in Table 1a, the proposed project's VMT per capita is 47.8% less than Madera County's significant threshold. Therefore, the residential portion of the project has a less-than-significant VMT impact. As shown in Table 1b, the retail VMT comparison indicates that the addition of the retail portion of the project does not increase the Countywide roadway VMT. Therefore, the retail portion of the project has a less-than-significant VMT impact. The school will screen out of VMT analysis as it is a public facility land use.

Therefore, it is anticipated that the entire project will have a less-than-significant VMT impact.

Please contact me should you have any questions.

Very truly yours,



Ian J. Parks  
RCE #58155



IJP/ssh

Attachment

## MEMORANDUM

**DATE:** March 6, 2026

**To:** Shalisha Hodson, Assistant Engineer; Provost & Pritchard

**FROM:** Ambarish Mukherjee, Principal, LSA Associates, Inc.

**SUBJECT:** Granite Creek Master Plan Project Vehicle Miles Traveled Analysis Memorandum (LSA Project# 20252395)

LSA has prepared this Vehicle Miles Traveled (VMT) Analysis Memorandum (Memo) for the proposed Granite Creek Master Plan Project (project). The approximately 203.6-acre project site would be located in the northeast quadrant of Road 23 and Avenue 14 1/2 within the General Plan planning area, and Sphere of Influence (SOI) of the City of Madera (City). The project proposes to include a maximum of 1,542 residential units, and a total of 697,089 square feet (sf) of commercial, open space, and public facility land uses. This includes a maximum of 417,609 sf retail/commercial, and 194,626 sf public facility (900 student K-8 school) land uses. The project would require a General Plan Amendment.

### BACKGROUND

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 was the removal of vehicle delay and level of service (LOS) from consideration under CEQA. With the adopted guidelines, transportation impacts are to be evaluated based on a project generated VMT.

The City is yet to adopt its own Senate Bill 743 (SB 743) guidelines and so, the VMT analysis was conducted using the methodology and significant threshold criteria identified in the California Governor's Office of Research and Planning (OPR, currently Governor's office of Land Use and Climate Innovation) *Technical Advisory* (TA), dated December 2018.

### VMT METRICS, REGION AND THRESHOLD

As described before, the proposed project includes residential, commercial, open space, and public facilities. Therefore, the project could be considered as a mixed-use project. As per the OPR TA, for mixed-use projects, individual land use components should be analyzed separately for their VMT impacts. As such, the project's residential, retail, and school land use components need to be evaluated separately for the VMT evaluation.

Per OPR TA, residential land uses can be evaluated using VMT per capita metric. As such, per OPR TA recommendation, for the residential component, a project exceeding a level of 15 percent below the existing regional VMT per capita would indicate a significant impact.

Similarly, the OPR TA recommends using a region for VMT analysis purposes that is estimated to contain majority of the project land use trips, and thereby VMT. Given the land uses, size and

location of the project, it was estimated that majority of the project trips will be contained within Madera County region. As such, the entire Madera County has been used as the region for VMT analysis purposes. Therefore, the following will determine whether the project would have a VMT impact:

- If the VMT per capita for the residential component is higher than 85 percent of baseline VMT per capita for the entire Madera County, it will have a significant VMT impact;
- Similarly, if the total roadway VMT for the entire Madera County increases with the project's retail land use component, it will have a significant VMT impact.

It should be noted that per OPR TA, public services and open space land uses are typically screened out, since they tend to reduce vehicle travel and thereby VMT within the region. As such, these non-residential land use components of the project were screened out, though they have been coded in the model to accurately account for project's internal capture and estimate the project VMT profile.

## PROJECT SCREENING DETERMINATION

The OPR TA provides multiple screening criteria for land use projects. Each of these criteria was evaluated for the project to determine if the proposed project can be screened out. The following is a brief description of the applicability of each of these screening criteria for the proposed project:

**Small Project:** OPR identifies projects generating less than 110 daily trips could be screened out. Given the project land use and size, the project is estimated to generate more than 110 trips. Therefore, this screening criteria does not apply to the project

**Map-Based Screening for Residential and Office Projects:** Residential and office projects that are located in areas with low VMT, incorporate similar features (i.e., density, mix of uses, transit accessibility) tend to exhibit similarly low VMT will be eligible to be screened out from further analysis. Therefore, project location was examined in the Madera County Transportation Commission (MCTC) online VMT Screening maps, and it was determined that the project is located within low VMT area for both residential and non-residential (office) uses. However, the project site is currently agricultural land that has minimal population and employment. The project would add significantly different land uses in the area and requires a General Plan Amendment. As such, given the size and land use quantities, the project is estimated to significantly alter the existing VMT profile of the location. Therefore, the MCTC screening maps may not accurately reflect the proposed project VMT profile. As such, this screening criteria may not be applicable for this project and therefore was not applied to screen out this project from a full VMT analysis.

**Local-Serving Retail:** OPR TA recommends retail developments with less than 50,000 sf may be considered as local serving and could be screened out from further evaluation. The proposed project includes more than 50,000 sf of commercial/retail use. Since the project's commercial/retail area is more than 50,000 sf, it cannot be considered as local serving retail and needs to be evaluated using travel demand model.

**Other Screening Criteria:** The residential component of the proposed project is not an affordable housing project. Therefore, it could not be screened out using this criterion. However, as previously mentioned, the school component of the project could be classified as an institutional/government

use. Therefore, the school component of the project could be screened out from a detailed VMT evaluation using this screening criteria.

Thus, pursuant to the OPR TA recommendations, a detailed VMT analysis is required for the project, specifically for the residential and commercial/retail components. The OPR TA recommends using the regional travel demand model for detailed VMT analysis. The MCTC Travel Demand Forecasting Model (TDFM) is the currently used travel demand model within the County. Therefore, this model was used for the VMT evaluation as described below in detail.

## DETAILED VMT ANALYSIS METHODOLOGY

### Project Traffic Analysis Zone Update

The first step in the preparation of this analysis was to update the traffic analysis zones (TAZs) in the model that includes the project area. MCTC TDFM includes the ability to add or split zones. The project should be isolated to estimate project related VMT. Since the project is significantly large in the size and contains multiple land use types, based on the review of project site plan, it was determined that addition of approximately 13 new TAZs will be adequate to represent the project in the model. Therefore, 13 new TAZ were created to incorporate the project land use.

The project land uses were converted into model socioeconomic categories using regional conversion factors, inputs from the project description, and using the ratio of daily trips/employee and daily trips/TSF rates from Institute of Transportation Engineer (ITE) *Trip Generation Manual*, 11<sup>th</sup> Edition land use rates. The socioeconomic data for the project TAZs were updated for the base year scenario of the model. Additionally, the roadway network within the project site was also modified to reflect the proposed roadway network within the plan area as well as to appropriately reflect the interactions between project land uses in the VMT calculation.

It should be noted that as previously stated, the school component of the project is eligible to be screened out from a detailed VMT analysis. However, since this component would affect the VMT profile of the residential and commercial component of the project, one project TAZ was used to incorporate the school land use.

### MCTC Model Runs

Model runs were conducted for this updated model and the outputs from these model runs were used to estimate project VMT for each of the project land uses separately. Two separate model runs were conducted to estimate VMT impact of the project's residential and retail land uses:

**With Entire Project/With Retail:** This model run was conducted incorporating the entire project's land uses in the MCTC model. Outputs from this model run were utilized to calculate total roadway VMT with the retail component of the project. Additionally, VMT per capita for the residential component of the project was also calculated from this model run.

**Without Retail:** This model run was conducted with incorporating all other project land uses, with the exception of the project retail land use in the MCTC model. Outputs from this model run were utilized to calculate total roadway VMT without the retail component of the project.

**VMT Analysis**

*Residential Component*

The regional VMT per capita value was obtained from the *Madera County Travel Demand Model - 2019 Model Update*, dated September 2020 as 10.0. Further, as stated above, 15 percent below the baseline regional VMT per capita was considered as the threshold for residential projects, which resulted in a VMT threshold of 8.5. Table A shows the regional threshold and project VMT per capita rate for the residential component of the project. As shown in Table A, the project VMT per capita for the residential component is 4.4, which is 47.8 percent less than the significant threshold. As such, the residential component of the project would not have any significant VMT impact. Detailed VMT calculation for the project is included in Appendix A.

**Table A: Baseline (2018) Regional and Project VMT per Capita Comparison**

Base Year (2018)	Granite Creek Master Plan (project)	Significant Threshold *	Difference	% Difference
VMT per capita	4.4	8.5	(4.1)	(47.8) %

*Source: Madera County Transportation Commission (MCTC) Travel Demand Model*

*\*Threshold obtained from Madera County Travel Demand Model - 2019 Model Update, September 2020 (85% of baseline average)*

*Retail Component*

Table B shows the countywide roadway VMT from both “with retail” and “without retail” model runs. As shown in Table B, the addition of project’s retail doesn’t increase Countywide roadway VMT. As such, based on the OPR TA recommendation, the retail component of the project will not have a significant VMT impact. Detailed VMT calculation for the project is included in Appendix A.

**Table B: Baseline (2018) Retail Component VMT Comparison**

Base Year (2018)	With Project (Entire Project)	Without Project (Project without Retail)	Difference
Roadway VMT	4,919,062	4,941,869	(22,807)

**Conclusion**

As shown in Tables A and B, neither the residential component nor the retail component of the project would have a significant VMT impact. The school component of the project could be screened out as a public facility land use. Therefore, the entire project would not have any significant VMT impact.

**ATTACHMENTS**

Appendix A: VMT Calculation Worksheet



**Appendix A**  
**VMT Calculation Worksheet**

**VMT Calculation- Residential**

<b>2018</b>	<b>Granite Creek (Project)</b>	<b>Madera County *</b>
<b>Total Households</b>	1,542	
<b>Total Population</b>	5,118	158,328
<b>Homebased (HB) VMT</b>	22,700	1,586,940
<b>HB VMT per capita</b>	4.4	10.0

*\* Threshold obtained from Madera County Travel Demand Model - 2019 Model Update, September 2020 (85% of baseline average)*

<b>Project</b>	<b>Project VMT per Capita</b>	<b>Madera County VMT per capita Threshold *</b>	<b>Difference</b>	<b>Percentage Difference</b>
<b>Residential</b>	4.4	8.5	(4.06)	-47.8%

*Source: Madera County Transportation Commission (MCTC) Travel Demand Model*

*\* Threshold obtained from Madera County Travel Demand Model - 2019 Model Update, September 2020 (85% of baseline average)*

**VMT Calculation- Retail**

<b>2018</b>	<b>With Project (Entire Project)</b>	<b>Without Project (Project without Retail)</b>	<b>Difference</b>
<b>Roadway VMT</b>	4,919,062	4,941,869	(22,807)