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TRIP GENERATION AND VEHICLE MILES TRAVELED ANALYSIS FOR THE NORTH RANCH RESIDENTIAL DEVELOPMENT – CITY OF MOORPARK

Associated Transportation Engineers (ATE) has prepared the following trip generation and Vehicle Miles Traveled (VMT) analysis for the proposed North Ranch Residential Project (the “Project”), located in the City of Moorpark. The analysis was prepared to assist City staff in their review of the Project.

PROJECT DESCRIPTION

The Project site is located at 5979 Gabbert Road in the City of Moorpark. The Project is proposing to construct a 139 single-family residential units on a site which is currently undeveloped. Figure 1 (attached) illustrates the Project site plan. As shown on the Project site plan, access to the site is provided via a driveway connection to the future North Hills Parkway extension.

PROJECT TRIP GENERATION

The trip generation analysis presented in the December 2021 traffic impact analysis prepared by K2 Engineering Inc. for the Project was based on the rates published in the Institute of Transportation Engineers (ITE), Trip Generation, 10th Edition for Single Family Residential - Detached Housing (Land Use #210). Table 1 summarizes the trip generation estimates presented in the K2 Engineering Inc. study for the Project.

**Table 1
Project Trip Generation**

Land Use	Size	ADT		AM Peak Hour		PM Peak Hour	
		Rate	Trips	Rate	Trips	Rate	Trips
Single Family Residential	139 Units	9.44	1,312	0.74	103 (26/77)	0.99	138 (87/51)

The data presented in Table 1 indicate that the Project is forecast to generate 1,312 ADT, 103 AM peak hour trips and 138 PM peak hour trips.

POTENTIAL TRAFFIC IMPACTS

The December 2021 traffic impact analysis prepared by K2 Traffic Engineering, Inc., determined that the Project would not have significant “Project-Specific” or “Cumulative” impacts to the City of Moorpark street system.

VEHICLE MILES TRAVELED ANALYSIS

The State of California, in compliance with Senate Bill 743, has developed a new set of CEQA guidelines and thresholds for transportation impacts that are based on a Vehicle Miles Traveled (VMT) metric rather than a Level of Service (LOS) metric. The State’s Natural Resource Agency Updated Guidelines for the Implementation of the CEQA adopted in 2018, have designated VMT as the most appropriate measure of transportation impacts. “Vehicle miles traveled” refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. For land use projects, vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact.

VMT Thresholds

Local agencies have discretion to develop and adopt their own thresholds or rely on thresholds recommended by other agencies. Since the City of Moorpark has not yet adopted VMT impact criteria, the VMT analyses prepared for the Project was developed using VMT data presented in the recently updated Ventura County Transportation Commission (VCTC) traffic model for Ventura County and the following VMT thresholds published by the State.

The California Governor’s Office of Planning and Research (OPR) published a technical advisory that includes recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures.¹ The recommended VMT impact threshold for residential projects is as follows:

¹ Technical Advisory on Evaluating Transportation Impacts in CEQA, Governor’s Office of Planning and Research, December 2018.

“A proposed project exceeding a level of 15 percent below existing VMT per capita may indicate a significant transportation impact.”

VMT Analysis

The VCTC traffic model provides home based VMT per capita data for the City of Moorpark as well as the various Traffic Analysis Zones (TAZs) within the City, including the TAZ that encompasses the Project site. Traffic model data was used to establish the home-based VMT per capita thresholds for the City of Moorpark and to estimate the home-based VMT per capita for the Project. Table 2 shows the existing home-based VMT per capita for the City of Moorpark, the VMT threshold (15% below existing home-based VMT per capita), and the Project’s home-based VMT per capita based on the VCTC traffic model data (model data attached).

**Table 2
North Ranch Per Capita VMT Summary**

City of Moorpark VMT ^(a)	VMT Impact Threshold ^(b)	Project VMT Estimate ^(c)	Impact?
21.33 per capita	18.33 per capita	25.21 per capita	Yes

(a) City of Moorpark home-based VMT per capita based on VCTC traffic model.

(b) VMT Threshold is a 15% reduction from City VMT ($21.33 \times 0.85 = 18.33$).

(c) Project home-based VMT per capita estimate based on VCTC model traffic analysis zones.

As shown, the existing city-wide home-based VMT in the City of Moorpark is 21.33 VMT per capita. Thus, the VMT threshold is 18.13 VMT per capita (15% below existing VMT: $21.33 \times 0.85 = 18.13$). The VCTC model shows that the homes within the Project TAZ generate 25.21 VMT per capita, which is above the 18.13 VMT per capita impact threshold. Thus, the Project would have a potentially significant VMT impact.

The total daily VMT for the Project and was estimated as described below and summarized in Table 3.

- *Total Project VMT: 25.21 VMT per Capita * 3.15 Persons per Household = 79.41; 79.41 * 139 Units = **11,037.99 VMT** (3.15 Persons per Household U.S. Census Data).*

**Table 3
Existing and Proposed Daily VMT Estimates**

Land Use	#Units	VMT Estimate	Number of Residents(a)	Total Daily VMT
Residential	139 Units	25.21 VMT Per Capita	3.15 Per Household	11,037.99 VMT

Estimates based on U.S. Census data for the City of Moorpark.

The data in Table 4 shows the Project's total of daily VMT compared to the City of Moorpark's daily VMT threshold and identifies the excess daily VMT that needs to be mitigated.

Table 4
North Ranch Total VMT Generation Summary

	VMT per Capita	Total VMT
Project TAZ Data	25.21	11,038
VMT Impact Criteria	18.33	8,026
Excess VMT	6.88	3,012

As shown in Tables 4, without any Project Design Features (PDF's) or mitigation measures to reduce the VMT, the Project would exceed the VMT impact criteria by 6.88 VMT per capita which totals 3,012 daily VMT. Therefore, the Project must incorporate PDF's and mitigation measures that would reduce the VMT to less than significant. The following section discusses the PDF's and mitigation measure to reduce the estimated Project VMT to less than significant.

MITIGATION MEASURES

Projects must propose measures to reduce Project VMT and mitigate a CEQA transportation impact. Projects may select a combination of measures from the reduction parent strategies. When the selected measures are included during the planning and design stage as part of the project description and project plans, as applicable, the measures are reflected in the assessment of Project VMT.

When Project VMT exceeds the threshold(s) of significance, the Project will need to mitigate its CEQA transportation impact. Measures from the seven VMT reduction parent strategies can be used as mitigation measures. A Project may propose mitigation measures that are not included in the list of approved VMT reduction measures as described in the California Air Pollution Control Officers Association (CAPCOA) greenhouse gas mitigation document. In order to be considered as mitigation measures, the transportation consultant must submit substantial evidence of their effect on reducing Project VMT or mitigating a CEQA transportation impact for review and approval by City staff.

As noted, the Project will be required to select appropriate VMT mitigation measures from the list provided in the CAPCOA. The mitigation measures presented in Table 5 can be incorporated as part of the Project, or the Project can provide funding for improvements.

Table 5
VMT MITIGATION MEASURES

VMT MITIGATION MEASURES	CAPCOA VMT REDUCTION
Affordable And Below Market Rate Housing: Fifteen percent (20 of 139 lots) of the Project consist of affordable or below market rate housing units.	0.60%
Electric Vehicle Charging/Parking Spaces: The Project would install electric vehicle charging and parking stations. The charging and parking stations would be part of Neighborhood Electric Vehicle (NEV) Network for the future development of the area east of Moorpark Avenue.	8%
Remote Work and Telework: The on-set of COVID - 19 has created a shift in necessity of an in-person workforce for some occupations and industries. The Project would provide enhanced features to promote and encourage remote work from home opportunities.	6.04%
Metrolink: The Project site more than ½ mile from the existing Metrolink transit on High Street. The Project should coordinate with Metrolink the regional rail service provider to provide enhancements to encourage rail ridership in Moorpark.	6.4%
Pedestrian Amenities: The Project should provide safe pedestrian walkways that would connect to the pedestrian facilities along North Hills Parkway.	2%
Bikeways: The Project could commit funding improvements to the local bikeway system. The planned North Hills Parkway will be constructed with bike lanes.	5%
Bike Racks: The Project would provide on-site bike racks.	0.625%
Traffic Calming: The Project would implement traffic calming measures on-site and provide funding for off-site traffic calming in the vicinity of the Project site.	1%
School Transportation: The Project site is located within the Moorpark Unified School District (MUSD). If possible, the Project should coordinate with the MUSD to provide bus transportation for children residing in the Project.	5%

Table 6 shows the reduction in project-generated daily VMT that would be achieved through the implementation of the identified PDF's and mitigation measures.

**Table 6
Project VMT Reduction**

VMT Mitigation Measure	Estimated Project Reduction	
	Percentage	VMT Reduction
Affordable Housing/Below Market Rate Housing	0.60%	66
Electric Vehicle Charging/Parking	8%	883
Enhanced Remote Work and Telework	6.04%	667
Metrolink	6.4%	707
Pedestrian Amenities	2%	221
Bikeways	5%	552
On-Site Bike Parking	0.625%	69
Traffic Calming	1%	110
School Transportation	5%	552
Total Reduction:	34.66%	-3,827
Project VMT with Mitigation:		7,211

As shown in Table 6, implementing mitigation measure would result in a total VMT reduction of 3,837. The City of Moorpark's threshold is 8,026 VMT. The Project generates 11,038 daily VMT, with mitigation the Project VMT is reduced to 7,211 VMT which is below the threshold.

SUMMARY

The North Ranch Residential development is estimated to generate 1,312 ADT, 103 AM peak hour trips and 138 PM peak hour trips. Recent State law has adopted VMT as the new CEQA metric to determine transportation impacts. The existing home-based VMT per capita in the City of Moorpark is 21.33 and the impact threshold is 18.33 per capita. The VCTC traffic model shows that the home-based per capita VMT within the Project TAZ is 25.21, which is higher than the home-based VMT per capita impact threshold of 18.33. The Project would have a significant VMT impact which would require implementation of mitigation measures. The City of Moorpark's threshold is 8,026 daily VMT. The Project generates 11,038 daily VMT, with mitigation the Project VMT is reduced to 7,211 VMT which is below the threshold.

Associated Transportation Engineers



By: Scott A. Schell
Principal Transportation Planner

SAS/DFN

attachments: Figure 1 - Project Site Plan
VCTC Traffic Model VMT Data

Happy Camp Canyon
Regional Park

Happy Camp
Canyon
Regional Park

(1 of 3)

Moorpark	
FID	241
Tier2	60124100
ACRES	2613.73497085
COUNTY	Ventura
City_Name	Moorpark
Tot_HBVMVT	44242.22
Tot_WBVMVT	14585.92
Other_VMT	22320.54
HBVMT_Cap	25.21
WBVMT_Emp	34.89
ServiceVMT	37.34
TAZ	60124101
Shape__Area	15538170.53125

Zoom to

MEMORANDUM

To: Meghan Gibson
Chambers Group

Date: June 22, 2022

From: David Shender, P.E.
Linscott, Law & Greenspan, Engineers

LLG Ref: 5-20-0525-1

Subject: North Ranch Residential Development – VMT Mitigation Peer Review

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Linscott, Law & Greenspan, Engineers (LLG) has completed a peer review of the Vehicle Miles Traveled (VMT) mitigation analysis provided in “Trip Generation and Vehicle Miles Traveled Analysis for the North Ranch Residential Development – City of Moorpark”, prepared by Associated Transportation Engineers, dated May 20, 2022 (the “ATE report”). LLG previously prepared a peer review memorandum dated February 22, 2022 related to a prior version of the ATE report.

This memorandum summarizes LLG’s peer review of the ATE report for the North Ranch Residential Development (the “Project”). In addition, this memorandum provides comments to the relevant document used as the source for the VMT reduction measures and quantification methods, a summary of the guidance provided on calculating VMT reductions, and a review and recommendations for the mitigation measures applicable to the Project.

Summary of VMT Impact and Mitigation Measures Presented in ATE Report

Table 2 of the ATE report presents the following findings related to the transportation impacts of the Project:

- The Project VMT per capita as derived from the transportation model prepared by the Ventura County Transportation Commission (VCTC) is 25.21 VMT per capita;
- The Moorpark citywide VMT per capita of 21.33; and
- The threshold of significance, which is 15% below the citywide VMT, or 18.13 VMT per capita.

Accordingly, prior to the consideration of mitigation measures, a significant transportation impact related to the Project is determined based on the VMT metric.

The ATE report suggests a list of measures to reduce Project-related VMT. However, some of these measures appear to have insufficient source or documentation. As described in the following sections, a revised set of mitigation measures is recommended for the Project. In addition, a suggestion is provided for updating the Project’s VMT baseline calculation based on the effects of teleworking.

Effects of Telework on Project VMT

The baseline VMT results provided by the VCTC VMT spreadsheet and map-based visualization tools are based on data derived from the Southern California Association of Governments (SCAG) Regional Travel Demand Model (RTDM). It is noted that while the RTDM takes into account a wide variety of socio-economic data, including factors such as household size, income, and vehicle ownership, as well as aspects of travel mode choices relating to vehicle operating costs, transit wait times, etc., it does not account for all factors that affect travel behavior in the Southern California region. Specifically, the effect of telework or remote work on VMT generation is not reflected in the RTDM and is therefore not reflected in the baseline VMT forecasts reported by the VMT model.

Telework refers to the practice of working from home or other remote locations by using telecommunications services such as the internet and phone services to connect to a central office or place of business.¹ Further, the COVID-19 pandemic has substantially and likely permanently changed telework. By example, the Orange County Transportation Authority (OCTA) determined based on an employment travel survey that in February 2020² (pre-pandemic), an average of 0.76 days per five-day work week, or 15.1% of working days were worked remotely via teleworking. OCTA further found that teleworking increased to an average of 2.56 days per work week, or 52.8% of working days, in response to the COVID-19 pandemic. Further, surveyed employees expect to telework 1.55 days per work week on average, or 31.2% of working days, in post-pandemic conditions. It is therefore expected that the percent of employees teleworking will remain elevated in the post-pandemic period.

The degree of teleworking in the SCAG region is expected to remain higher than pre-pandemic levels for the foreseeable future. Further, the proposed residential units at the Project are sized appropriately to accommodate home offices and workspaces, and the site will accommodate new and efficient internet and cable systems to provide reliable communication connections; therefore, the Project will increase the number of residential units in the region which are well-suited to accommodate telework. Employed residents of the Project are expected to reflect the similar, and likely increased teleworking trends when compared to the region. Accordingly, an adjustment to the baseline VMT forecast to reflect the documented share of telework after the pandemic would therefore be most appropriate.

¹ It should be noted that the definition of telework typically does not include work which is primarily conducted in the home (i.e., self-employed, care-taker, etc.) or which require travel to off-site locations as part of the normal job duties (i.e., service technicians, drivers, etc.)

² “Employment & Travel Survey: Summary Report of Pandemic Impacts”, prepared for OCTA by True North Research, Inc., December 14, 2021.

Based on the Project features, as well as the location of Moorpark relative to business centers, it is reasonable to expect that teleworking will be more prominent as compared to other areas of the SCAG region. Thus, 40% of working days (i.e., two days a week) are expected to be worked remotely at the Project via telework, which corresponds to a 40% reduction in home-based work trips. However, it is noted that this reduction in commute trips does not result in a 40% reduction in household VMT. Rather, home-to-work commute trips account for approximately 41% of all residential vehicle miles in the SCAG region.³ Therefore the baseline forecasts for residential VMT may be adjusted downward by 16.4% (i.e., 41% of all residential VMT * 40% reduction in home-to-work commute trips = 16.4% reduction in total residential VMT) in order to reflect the effect of teleworking at the Project. It is noted that in areas located relatively further from primary business center such as the City of Moorpark, the proportion of home-to-work vehicle miles to total residential VMT is likely much higher than the SCAG regional average. Accordingly, the use of the 41% factor is conservative in estimating the Project VMT reduced due to telework.

Application of this adjustment to the baseline derived VMT forecast results in the following adjusted baseline VMT forecast:

- The Project is forecast to generate 21.07 residential VMT per capita ($25.21 \text{ VMT/capita} * (1 - 0.164) = 21.07 \text{ VMT/capita}$) when accounting for expected post-pandemic levels of telework in the SCAG region.

The Project VMT of 21.07 VMT per capita as adjusted for telework remains above the City's significance threshold of 18.33 VMT per capita. Accordingly, additional review of mitigation measures as outlined in the ATE report is provided in the following sections to further reduce the Project VMT.

Source of VMT Reduction Measures and Quantification Methods

The ATE report indicates that VMT mitigation measures have been selected from the list provided by the California Air Pollution Control Officers Association (CAPCOA). CAPCOA produced a report titled "Quantifying Greenhouse Gas Mitigation Measures" in August 2010 (the "2010 Report"), which provided substantial evidence for VMT reductions due to a variety of transportation demand management (TDM) strategies and measures. It is noted that CAPCOA recently adopted a revised report titled "Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity" in December 2021 (the "2021 Handbook"), which provides substantial evidence for VMT reductions based on the most current research and literature.

³ CalEEMod Version 2022.1, Appendix Table G-16, MPO/RTPA Trip Lengths and Purpose Splits by Trip Type.

The proposed mitigation program in the ATE report reflects use of the 2010 Report. Some of the number of measures included in the program reflect VMT reductions (expressed as a percentage) which are no longer supported by the current literature referenced in the 2021 Handbook. Instead, measures such as providing bicycle parking and traffic calming are considered non-quantified or supporting strategies in the most recent guidance (although the 2021 Handbook does not suggest that VMT reductions are not justified). Therefore, the quantified reductions that were provided for these measures indicates that the 2010 Report was consulted.

For this review, LLG generally supports use of both the 2010 Report, as well as updated guidance in the 2021 Handbook for estimating VMT reductions related to the proposed strategies in ATE report. It is recognized that such technical guidance is evolving and subject to change. For example, the source for Project trip generation forecast provided in Table 1 of the ATE report – the 10th Edition of the “Trip Generation Manual” published by the Institute of Transportation Engineers – is now in its 11th Edition.

CAPCOA 2010 Report Guidance on Quantifying VMT Reductions

The 2010 Report provides a comprehensive set of guidelines for assessing and quantifying reductions in greenhouse gas emissions associated with land use, transportation, energy use, and other related project areas. The mitigation measures outlined in the 2010 report fall into general categories, within which the methods follow a common approach. For the measures related to transportation, the methodology is generally based on reductions in VMT. The 2010 report lists 50 transportation-related strategies covering a wide range of subcategories, including land use/site location, site design, parking policies, commute trip reductions, transit system enhancements, and roadway pricing/management. These strategies are broadly referred to as transportation demand management (TDM) strategies due to the focus on reducing the amount of automobile travel generated by a project.

The 2010 Report validates and quantifies the effectiveness of each TDM strategy in reducing VMT based on various factors, resulting in a percent reduction in VMT which can be applied to a project’s VMT forecast. TDM measures are frequently implemented together with other measures. The 2010 Report acknowledges that while combining measures often leads to greater reductions than implementing a single strategy, when multiple measures are implemented to mitigate a single source (i.e., transportation emissions generated by VMT), the benefit of each additional measure diminishes. Each successive measure is slightly less effective than predicted when implemented on its own. Therefore, the effectiveness of multiple strategies should be multiplied, not added to determine a combined effectiveness, unless substantial evidence can be provided that reductions are independent of one another. This takes the form of:

$$\textit{Combined Reduction} = 1 - [(1 - A) \times (1 - B) \times (1 - C) \times \dots]$$

Where A, B, and C are reduction percentages for individual strategies.

In particular, the interactions between the various categories of transportation-related strategies are complex and sometimes counter-intuitive. In order to protect the accuracy of the methodology, CAPCOA has provided maximum VMT reductions for the transportation strategies at multiple levels: within each subcategory; a Cross Category Maximum Reduction⁴; and a Global Maximum Reduction⁵. These maximum reduction values, or caps, reflect the highest reduction levels justified by the literature consulted in the preparation of the document.

The maximum VMT reduction caps are stated as a percent of the baseline project VMT, and applies to all VMT reduction strategies applied to the project, regardless of whether the strategy is implemented as a project design feature or as a mitigation measure. The cross-category and global caps are determined based on the project's location setting, which takes into account the land use characteristics of the project site and vicinity. The 2010 Report provides caps based on four (4) location settings: 1) Urban; 2) Compact Infill; 3) Suburban Center; and 4) Suburban. Based on a review of the definitions of the location settings and the development characteristics of VCTC Transportation Analysis Zone (TAZ) 60124101, the Project is located in a Suburban location setting⁶. Therefore, the Global Maximum Reduction in VMT that can be applied to the proposed project due to implementation of TDM strategies is capped at 15%. The maximum reduction provided for this location setting assumes that regardless of the measures implemented, the project's distance from transit, density, design, and lack of mixed-use destinations will keep the effect of any strategies to a minimum.

The revised Project VMT of 21.07 VMT per capita as adjusted for telework remains above the City's significance threshold of 18.33 VMT per capita. The Project VMT would need to be reduced by approximately 13% to be below the significance level, which is consistent with the guidance in the 2010 Report.

⁴ According to the 2010 Report, cross category maximum reductions are provided for any combination of: 1) land use/location; 2) neighborhood/site enhancements; 3) parking policy/pricing; and 4) transit system improvement strategies. The total project VMT reduction across these subcategories should be capped at these levels based on empirical evidence. Caps are provided for the location and development type of the project. VMT reductions may be multiplied across the four categories up to this maximum.

⁵ According to the 2010 Report, global maximum reductions are provided for any combination of: 1) land use/location; 2) neighborhood/site enhancements; 3) parking policy/pricing; 4) commute trip reduction and; 5) transit system improvement strategies. This excludes reductions from road-pricing measurements. The total project VMT reduction across these five subcategories, which can be combined through multiplication, should be capped at these levels based on empirical evidence. Maximums are provided for the location and development type of the project.

⁶ The City of Moorpark is classified as Suburban with Single-Family Homes (Neighborhood Type 5) in "Quantifying the Effect of Local Government Actions on VMT", Institute of Transportation Studies, UC Davis, February 14, 2014.

Applicability of Proposed Mitigation Measures in the ATE Report

The mitigation measures proposed in the ATE report were reviewed to confirm applicability based on the Project site location, proposed land use, and other features of the transportation network in the vicinity of the site. A review of each measure is provided below.

- Affordable and Below Market Rate Housing. This measure listed in the ATE Report corresponds to measure LUT-6 of the 2010 Report, which reflects the integration of deed-restricted low-income housing into residential developments of five (5) or more dwelling units, and is applicable in urban and suburban contexts. A total of 15% of the proposed project (i.e., 20 of 139 lots) consists of affordable or below market rate (BMR) housing units, and is located in a suburban setting, therefore this measure is applicable. The VMT reduction is correctly calculated in the ATE report as 0.60% (4% VMT reduction * 15% deed-restricted affordable/BMR housing = 0.60%).

It is noted use of the methodology and assumptions provided in the 2021 Handbook for providing affordable or BMR housing (measure T-4) would result in calculation of a 4.29% VMT reduction (28.6% reduction in VMT * 15% deed-restricted affordable/BMR housing = 4.29% VMT reduction). Therefore, the 4.29% VMT reduction is appropriate for the Project, based on the most current supporting literature.

- Electric Vehicle Charging/Parking Spaces. LLG understands the Project will provide elective vehicle charging stations within each unit. The measure description provided in the ATE report indicates that electric vehicle (EV) charging and parking stations would be installed as part of a future Neighborhood Electric Vehicle (NEV) network in the area east of Moorpark Avenue. This measure appears to correspond to SDT-3 and/or SDT-8, which reflects implementation of a Neighborhood Electric Vehicle (NEV) network and EV parking. The calculated VMT reduction of 8% in the ATE report appears to assume a 63% penetration rate, or 0.63 NEV per household within the proposed development (12.7% reduction in VMT * 63% penetration = 8% VMT reduction).

NEV are classified by the California Vehicle Code as “low speed vehicles”, and may be legally used on roadways with a posted speed limit of 35 miles per hour or less (e.g., golf carts). While this measure is appropriate for application in suburban contexts, implementation of an NEV network also includes provision of appropriate on-street infrastructure such as NEV lanes, signing and striping, and signal modifications, in addition to charging and parking facilities throughout the community. LLG is not aware that the City of Moorpark has an

NEV network or other infrastructure which would support the effectiveness of the proposed EV charging/parking spaces in reducing VMT.

It is noted, however, that the 2021 Handbook includes a measure specifically related to the provision of EV charging infrastructure (measure T-14) which is unrelated to NEV networks. While this measure supports the reduction of GHG emissions, provision of EV charging spaces does not result in quantifiable VMT reductions. However, the overall purpose of SB 743 is to promote measures "...all with the goal of reducing greenhouse gas emissions." Therefore, it is appropriate to include the quantified VMT reductions (8%) related to the provision of EV charging in each unit as calculated from the 2010 Report irrespective as to whether the City develops and NEV network. As noted, this calculation is conservative as the Project proposes EV charging stations in each unit while the assumed penetration rate from the ATE report in determining the associated VMT reduction is 63%.

- Metrolink. The measure description provided in the ATE report indicates that the Project site is located over 0.50-miles from the existing Metrolink Ventura Line station located along High Street between Moorpark Avenue and Spring Street. It further indicates that the applicant would coordinate with Metrolink to encourage rail ridership. The associated percent VMT reduction of 6.4% in the ATE report suggests use of measure LUT-5. The methodology provided for LUT-5 along with the assumption that the Project site is located 1.0 mile from the transit station would result in a theoretical VMT reduction of 6.4% $([(-4.4 * 1 \text{ mi} - 15.2)\% - 1.3\%] * 0.67 = 6.4\%)$, which is the VMT reduction for this measure provided in the ATE report.

Measure LUT-5 reflects the VMT reductions due to the use of transit by people traveling to/from high-density transit-oriented developments (TODs) located near high-quality transit (rail or bus) service. Projects eligible for the VMT reductions described by this measure should at a minimum be located within 0.5-miles of a rail station which provides fast, frequent, and reliable service to a high percentage of regional destinations, and should be located in a neighborhood designed for walking and bicycling. The methodology on which the calculations for LUT-5 are based was developed based on surveys of TODs within walking distance of a transit station with headways of 15-minutes or less, and which were intentionally developed as TODs.

The Project is located approximately 1.6 miles from the transit station by walking path (i.e., not by direct-line or radius). Further, the Metrolink Ventura Line does not provide service with less than 15-minute headways. The location of the Project and nature of the rail service suggests that application of LUT-5 may not be appropriate.

The 2021 Handbook also includes a measure to quantify VMT reductions due to TODs (measure T-3), which has similar location and high-quality transit requirements. The Project is not anticipated to qualify as a TOD under the most recent guidance.

It should also be noted that the VMT reductions due to this measure should be applied to the initial VMT forecast for the Project, since the reductions are due to the project's location and transportation network context, rather than as a result of proactive actions taken by the project applicant to reduce VMT. Thus, for purposes of assigning an incremental VMT reduction related to the Project's proximity to the Metrolink station as a mitigation measure, the Project should provide additional incentives for both Project residents, as well as other potential users of the station to ride public transit. Accordingly, LLG recommends the Project coordinate with the City to install enhanced features at the existing Metrolink station, such as bicycle storage lockers to supplement the existing bike racks at the station. While the assumed 6.4% reduction in VMT as presented in the ATE report cannot be supported based on the Project's location, a modest 2% reduction in VMT is appropriately conservative for implementing the mitigation measure. This would include VMT reductions related to the Project, as well as other users of the Metrolink station.

- Pedestrian Amenities: This measure corresponds to SDT-1, which reflects VMT reductions due to the mode shift from driving trips to walking trips when pedestrian access is provided internally and connects to external roadways and pedestrian facilities contiguous to the project site. This measure is applicable in suburban contexts. The Project will provide sidewalks along all internal roadways and will provide sidewalks along the easterly access road and along the project frontage adjacent to the future extension of North Hills Parkway. Thus, the Project will provide pedestrian accommodations within the Project site. It is noted the existing off-site pedestrian network is underdeveloped in the vicinity of the Project (e.g., Gabbert Road does not provide pedestrian sidewalks north of Poindexter Avenue, and North Hills Parkway does not currently exist). The City may consider the planned roadway improvement projects in the vicinity of the Project site in order to determine the appropriateness of the assumption that the Project would connect to off-site facilities.

Assuming that the roadways connecting to the Project site would accommodate pedestrian infrastructure such as sidewalks, curb cuts, crosswalks, etc., the VMT reduction of 2.0% is correctly stated.

- Bikeways. The measure description provided in the ATE report indicates that the project applicant would fund improvements to the local bikeway system, and that the planned North Hills Parkway will be constructed with bike lanes. This measure does not appear to correspond to any specific measures in the 2010 Report. While it is reasonable to assume that provision of additional bicycle infrastructure (e.g., paths, lanes, or bicycle routes) would reduce VMT by promoting a mode shift from driving trips to bicycling trips, additional information is needed to support the 5.0% VMT reduction credited to the measure in the ATE report.

The 2021 Handbook recommends that VMT reductions due to expanding the bikeway network (measure T-20) should be considered at a community-wide scale, and thus would not be directly applicable to the proposed project as a mitigation measure. In summary, while increased bicycling would promote a reduction in Project VMT, because no specific bikeway project is proposed in the ATE report, it is recommended that no VMT reduction be quantified for this measure.

- Bike Racks. The measure description provided in the ATE report indicates that the project would provide on-site bike racks. As it assumed each unit will accommodate its own bike parking, it is not clear where bike racks would be provided on-site. Further, this measure does not appear to correspond to any specific measure in the 2010 Report, but instead may be based on the alternate literature source provided for a number of bicycle-related strategies. A review of the Center for Clean Air Policy (CCAP) Transportation Emission Guidebook assumed a 2.5% VMT reduction for all bicycle-related measures, and that a quarter (25%) of that reduction is due to the provision of bicycle parking alone, resulting in a 0.625% VMT reduction (i.e., $2.5\% * 25\% = 0.625\%$).

The most closely applicable measures are SDT-6 and SDT-7, which address providing bicycle parking at non-residential projects and multi-family projects (i.e., apartment complexes or condominiums without garages). At the proposed project site, it is assumed that bicycle parking and secure storage for residents would be accommodated by the private garages provided with each housing unit. Provision of public bike racks within the Project site is not anticipated to result in additional mode shift by residents from vehicle trips to bicycle trips. Thus, application of the VMT reduction may not be appropriate.

The 2021 Handbook includes provision of public bicycle parking (measure T-34) as a supporting or non-quantified measure. Thus, while the measure may enhance the effectiveness of the overall mitigation program, the current guidance indicates that providing bike parking as a stand-alone measure would not result in quantifiable VMT reductions.

As previously noted, LLG recommends the installation of bicycle storage lockers at the Metrolink station. Thus, the reduction in Project VMT related to public bike racks/bicycle storage facilities has already been incorporated into the Metrolink station mitigation measure.

- Traffic Calming. This measure corresponds to SDT-2, which reflects VMT reductions due to traffic calming, resulting in mode shifts from driving trips to other active transportation modes such as walking or bicycling trips. Traffic calming improvements may be applied to intersections and/or streets within project sites, and is applicable in suburban contexts. The measure description provided in the ATE report indicates the Project would implement traffic calming on-site and provide funding for off-site traffic calming in the vicinity.

The 1.0% VMT reduction credited to this measure appears to be based on the assumption that all intersections and all roadways within the project site would provide traffic calming features. However, the ATE report does not identify the traffic calming measures proposed. Traffic calming measures could include marked crosswalks, count-down signal timers, curb extensions/bulb-outs, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts/mini-circles, on street parking, planter strips with street trees, chicanes/chokers, etc.

The 2021 Handbook also includes traffic calming measures (T-35) as a supporting or non-quantified measure. Thus, while the measure may enhance the effectiveness of the overall mitigation program, the current guidance indicates that traffic calming as a stand-alone measure may not result in quantifiable VMT reductions. Therefore, it is conservatively recommended that no additional reductions in Project VMT be associated with on-site traffic calming measures.

- School Transportation. This measure corresponds to TRT-13, which reflects expanded school bus services in the project area and local community. The measure description provided by in the ATE report indicates the project applicant would coordinate with Moorpark Unified School District (MUSD) to implement a bus transportation program for children residing at the project site, therefore this measure may be applicable. It is recommended that MUSD provide input on the feasibility of providing school bus service to the proposed project. While it is reasonable to assume that provision of a school bus route that serves the project site would reduce household VMT, the ATE report does not provide information as to how the 5.0% VMT reduction credited to the measure was derived.

The 2021 Handbook also includes implementing a school bus program (T-40) as a supporting or non-quantified measure, however it is reasonable to assume that a school bus program would reduce household VMT. Thus, while the measure may enhance the effectiveness of the overall mitigation program, the current guidance does not provide sufficient substantial evidence for estimating quantifiable VMT reductions.

Summary and Conclusions

In summary, LLG recommends the following VMT-reducing mitigation measures related to the Project:

- Provide affordable housing at the Project;
- Provide EV charging stations within each unit at the Project;
- Install bicycle storage lockers at the Metrolink station; and
- Install on-site sidewalks and provide connections to the existing/future off-site pedestrian network.

Other measures in the ATE report, such as bike routes, on-site bike parking, installation of traffic calming measures, and encouraging transportation to schools by modes other than a private vehicle would produce reductions in Project VMT, but are not sufficiently defined or quantifiable to be included in the recommended mitigation package for the Project.

As previously stated, the adjusted baseline Project VMT is calculated at 21.07 VMT per capita when accounting for the recent and documented effects related to teleworking. The adjusted baseline Project VMT exceeds the derived City threshold of significance of 18.13 VMT per capita.

When taken together, the four mitigation measures are calculated to result in a reduction in the adjusted Project VMT by approximately 15.43%. The summary of the VMT analysis for the Project and calculated effectiveness of the VMT-reducing mitigation measures is summarized in the table below.

Summary of Project VMT Analysis and Mitigation Measures

Scenario	Source/Calculation	VMT
Project Baseline VMT	VCTC VMT model for Project TAZ	25.21 VMT per capita
Revised Baseline VMT for Telework	16.4% reduction in VMT	21.07 VMT per capita
<u>Mitigation Measures</u> Affordable Housing EV Charging Stations Metrolink (bike lockers) Pedestrian Amenities	4.29 % reduction in VMT 8% reduction in VMT 2% reduction in VMT 2% reduction in VMT	
Total VMT Reducing Effects of Mitigation	$1 - [(1-0.0429) * (1-0.08) * (1-0.02) * (1-0.02)] =$ 15.43% reduction in VMT	17.82 VMT per capita
Applicable Threshold of Significance	15% below derived City VMT (21.33 VMT per capita) from VCTC Tool	18.13 VMT per capita

As shown in the table above, the four mitigation measures are calculated reduce the Project VMT to 17.82 VMT per capita, which is below the City threshold of significance of 18.13 VMT per capita. Therefore, it is concluded that with implementation of the recommended mitigation measures, the Project’s transportation impact as assessed through use of the VMT metric is less than significant.