TECHNICAL MEMORANDUM

To:	Ryan Gackstetter City of Chino Hills	Date:	December 21, 2021
From:	Richard Barretto, P.E., Principal Zawwar Saiyed, P.E., Associate Principal Linscott, Law and Greenspan, Engineers	LLG Ref:	2.20.4345.1
Subject:	***Vehicle Miles Traveled (VMT) Analysis for the Shady View Project, Chino Hills***		

As requested, Linscott, Law & Greenspan, Engineers (LLG) is pleased to submit this Vehicle Miles Traveled (VMT) Analysis Technical Memorandum for the proposed Shady View project (herein after referred to as "Project") in the City of Chino Hills, San Bernardino County, California. This Technical Memorandum presents the VMT screening criteria, analysis methodology, significance thresholds and VMT analyses. It should be noted that since the City of Chino Hills is still in the process of finalizing and adopting it's VMT Guidelines and Thresholds, the approach and methodology outlined in this Technical Memorandum is generally consistent with the *Technical Advisory for Evaluating Transportation Impacts In CEQA,* published by the Governor's Office of Planning and Research (OPR), December 2018 (OPR Technical Advisory), which provides additional detail on the language and analysis procedures described in this Technical Memorandum.

The Project site is a 130-acre vacant parcel of land that is generally located south of Butterfield Ranch Road, south of an existing residential development at the southern terminus of Shady View Drive and Via La Cresta, and west of the SR-71 Freeway in the City of Chino Hills, San Bernardino County, California. The Project applicant is proposing to develop a new 159 dwelling unit (DU) single-family residential community to include a community center and approximately 72-acres of association-maintained open space. Vehicular access to the proposed Project will be provided via the proposed extension of Shady View Drive and Via La Cresta from its current southerly terminus into the Project site to connect to a proposed local residential network of streets. The Project is expected to be completed over the next four years (Year 2024), but is dependent on several factors, including timing of Project approvals, market conditions and/or Project funding.

The following sections of this Technical Memorandum provide a brief history of Senate Bill 743 (SB 743), summarize the Project description, present OPRs VMT screening criteria, analysis methodology and thresholds, Project VMT and cumulative VMT.

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HISTORY OF SENATE BILL 743 (SB 743)

On September 27, 2013, Governor Jerry Brown signed Senate Bill 743 (SB 743). SB 743 created a process to change the way analysis of transportation impacts under the California Environmental Quality Act (CEQA) is conducted. The Governor's Office of Planning and Research (OPR) was tasked to amend the CEQA Guidelines to provide an alternative to the traditional metric of automobile delay which would promote three statutory goals: 1) the reduction of greenhouse gas (GHG) emissions; 2) the development of multimodal transportation networks; and 3) a diversity of land uses. OPR concluded that the use of Vehicle Miles Traveled (VMT), with thresholds linked to GHG reduction targets, would adequately analyze a project's transportation impacts while supporting all three statutory goals.

OPR released a preliminary evaluation of alternative methods for transportation analysis in December 2013, and by August 2014, released a preliminary discussion draft of potential updates to the CEQA Guidelines, which specified VMT as the selected metric for analysis. In 2016, OPR released a draft of the proposed revisions to the CEQA Guidelines. At the same time, OPR released a new *Technical Advisory for Evaluating Transportation Impacts In CEQA*, which provides technical recommendations regarding the implementation of VMT analysis state-wide in a document external to the CEQA statute.

After extensive stakeholder outreach, OPR transmitted the final proposed revisions to the CEQA Guidelines and the current draft of the *Technical Advisory* to the California Natural Resources Agency (the body responsible for certifying, adopting, and amending the CEQA Guidelines) in November 2017. Beginning in January 2018, the California Natural Resources Agency initiated the formal rulemaking process to adopt the proposed revisions, including the new Section 15064.3 which specifies VMT as the metric for transportation analysis. On December 28, 2018, the California Office of Administrative Law filed the revised CEQA Guidelines with the Secretary of the State on behalf of the Natural Resources Agency, thereby formally implementing vehicle miles traveled as the metric for transportation analysis under CEQA. Pursuant to the adopted Section 15064.3, a lead agency may elect to implement the new criteria for analyzing transportation impacts immediately. Beginning on July 1, 2020, the criteria must be applied state-wide.

PROJECT DESCRIPTION

The Project site is a 130-acre vacant parcel of land that is generally located south of Butterfield Ranch Road, south of an existing residential development at the southern terminus of Shady View Drive and Via La Cresta, and west of the SR-71 Freeway in the City of Chino Hills, San Bernardino County, California. The Project applicant is proposing to develop a new 159 dwelling unit (DU) single-family residential

community to include a community center and approximately 72-acres of association-maintained open space. Vehicular access to the proposed Project will be provided via the proposed extension of Shady View Drive and Via La Cresta from its current southerly terminus into the Project site to connect to a proposed local residential network of streets.

Figure 1 presents a vicinity map that illustrates the general location of the Project site and surrounding street system. ***Figure 2*** displays the existing site aerial of current site layout. ***Figure 3*** presents the proposed site plan prepared by Hunsaker and Associates.

The Project is expected to be constructed in several phases over the next couple of years or so by 2024, but is dependent on several factors, including the Project funding and market conditions.

PROJECT SCREENING CRITERIA

Under the VMT methodology, screening is used to determine if a project will be required to conduct a detailed VMT analysis. Since the City of Chino Hills currently does not have adopted VMT screening criteria, the following section discusses the various screening methods recommended by the State of California in the *OPR Technical Advisory* and whether the Project will screen-out, either in its entirety, or partially based on individual land uses.

Proximity to Transit Facilities

As noted previously, the CEQA Guidelines were amended to include section 15064.3, "Determining the Significance of Transportation Impacts". Subsection (b)(1) states in part:

> *"Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact."*

Pursuant to the statute, development projects may be screened out of VMT analysis based on proximity to certain transit facilities due to the presumption of less than significant impacts. The *Technical Advisory* reiterates this screening criteria, but also highlights certain project-specific or location-specific characteristics which may indicate the project will still generate "significant levels of VMT", even when located within one-half mile of a major transit stop or a stop along a high-quality transit corridor. These characteristics relate to the project's floor area ratio (FAR), parking supply, and number of dwelling units, as well as consistency with the applicable Sustainable Communities Strategy (SCS). If the project has any characteristics which indicate that the presumption of less than significant impacts as stated in the CEQA

Guidelines may not be appropriate, the *OPR Technical Advisory* recommends that the project should not be screened out of further VMT analysis.

Based on the above, the proposed Project will not screen-out since it is not within one-half mile of neither an existing major transit stop[1] nor a stop along an existing high-quality transit corridor[2].

Small Projects

The *OPR Technical Advisory* recommends that VMT analyses be conducted for projects which are forecast to generate 110 or more average daily trips (ADT). The CEQA Guidelines provide a categorical exemption for existing facilities, including additions to existing structures of up to 10,000 square feet[3]. OPR states that "typical project types for which trip generation increases relatively linearly with building footprint (i.e., general office building, single tenant office building, office park, and business park) generate or attract an additional 110-124 trips per 10,000 square feet. Therefore, absent substantial evidence otherwise, it is reasonable to conclude that the addition of 110 or fewer trips could be considered not to lead to a significant impact." OPR thus reasons that projects which are forecast to generate fewer than 110 daily trips would be comparable to categorically exempt projects and could be presumed to cause less than significant impacts.

*Based on the above and as presented in **Table 1**, the proposed Project will not screen-out since it generates 1,501 daily trips which is more than the threshold of 110 daily trips.*

Map-Based Screening

An additional screening methodology is provided for residential and office land use projects. Lead agencies may prepare maps based on a regional travel demand model or travel survey data to illustrate areas that are currently below the selected VMT threshold. OPR reasons that if a project has similar characteristics to the existing area (i.e., density, mix of uses, transit service, etc.), it will tend to exhibit similar VMT. Therefore, if a project is fully located within an area identified as having a below-threshold VMT, it may be presumed to also have less than significant VMT impacts and be screened out from requiring a detailed VMT analysis.

Based on the above, the proposed Project will not screen-out since no map-based screening is currently available.

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[1] *Public Resources Code Section 21064.3*: "'Major Transit Stop' means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods."

[2] *Public Resources Code Section 21155*: "For purposes of this section, a high-quality transit corridor means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours."

[3] CEQA Guidelines Section 15301, Subsection (e)(2).

Additional Screening Considerations

OPR provides additional recommendations on when the presumption of less than significant impacts may be appropriate, in addition to the formally recommended screening criteria described above. For instance, in the discussion regarding retail projects, the *OPR Technical Advisory* advises lead agencies that because local serving retail projects tend to improve retail destination proximity, shorten trips, and reduce VMT, they may be presumed to have less than significant impacts. Agencies may choose to define what constitutes local serving retail in their jurisdiction, although OPR suggests a threshold size of 50,000 square feet or less. Thus, lead agencies may choose to screen out projects based on the type and size of the land use(s) being proposed.

Further, OPR states that mixed-use projects should analyze each land use individually.

Based on the above, the proposed Project will not screen-out since it is not considered a local serving retail or mixed-use development.

Additionally, the *OPR Technical Advisory* cites research that could support the presumption of less than significant impacts for 100% affordable housing projects, on the basis that low-wage workers are more likely to choose housing close to their workplaces, thus reducing commute distances and VMT.

Based on the above, the proposed Project will not screen-out since it is not a 100% affordable housing project.

Flow Chart 1 presents the recommended screening criteria, as discussed above, for land use projects consistent with the *OPR Technical Advisory*. It should be noted that a land use project only needs to satisfy one of the screening criteria of the flow chart to qualify for screening.

Based on the above, the proposed Project will not screen-out, thus requiring a full VMT analysis as presented in this Technical Memorandum.

VEHICLE MILES TRAVELED (VMT) ANALYSIS METHODOLOGY

According to OPR, Projects that do not screen out based on the aforementioned criteria shall complete a full VMT analysis. In the absence of adopted City of Chino Hills VMT guidelines, the VMT analysis methodology as provided by OPR has been utilized. The following summary of the guidelines has been prepared based on a review of the revisions to the CEQA Guidelines and OPR's current *Technical Advisory*.

It should be noted that according to OPR, "vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project. Here, the term "automobile" refers to on-road passenger vehicles, specifically cars, and light trucks. The primary reason being, as mentioned previously, is to align with the State's three statutory goals; (1) reduction of GHG emissions; (2) development of multi-modal networks; and (3) a diversity of land uses.

OPR's Guidance on Methodology for Residential Projects

According to OPR, tour-based and trip-based approaches offer the most viable methods for determining VMT from residential projects and for comparing those results to VMT thresholds. These approaches also offer the simplest methodology for determining VMT reductions from mitigation measures for residential projects.

Based on the above, a full VMT analysis utilizing the San Bernardino County Transportation Analysis Model (SBTAM) has been used to determine the VMT for the Project and for the City of Chino Hills average and will provide the following:

- Home-based average VMT per Capita for residential land uses.

Finally, the Project average VMT will then be compared to the City of Chino Hills average to determine whether or not the Project will have a significant impact based on the significance thresholds defined in this Technical Memorandum.

OPR's Guidance on Methodology for Cumulative Impacts

OPR states that a Project's cumulative impacts are based on a determination of whether the "incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." When using an absolute VMT metric, i.e., total VMT, analyzing the combined impacts for a cumulative impacts analysis may be appropriate. A project that falls below the threshold that is aligned with long-term goals and relevant plans has no cumulative impact distinct from the Project impact. Accordingly, a less than significant Project impact would imply a less than significant cumulative impact, and vice versa.

VEHICLE MILES TRAVELED (VMT) SIGNIFICANCE THRESHOLDS

As previously discussed, a project that meets the screening criteria will require preparation of a detailed transportation analysis. The project VMT will be evaluated in order to determine if the project is expected to cause a significant transportation impact. Under the VMT methodology, a transportation impact is considered significant if the project-related VMT is equal to or exceeds the thresholds.

Mitigation of project transportation impacts is required whenever VMT generated by the proposed development causes an increase of the analyzed VMT by an amount greater than the predetermined significance thresholds.

The following section discusses the VMT impact thresholds recommended by the State for residential projects.

OPR's Guidance on Thresholds for Residential Projects

Public Resources Code Section 21099 provides the criteria for determining the significance of transportation impacts. There are three statutory goals that the significance criteria must promote: (1) reduction of GHG emissions; (2) development of multi-modal networks; and (3) a diversity of land uses. The *OPR Technical Advisory* provides OPR's recommendations for quantitative thresholds of significance, which align with the State's three statutory goals. The recommended significance thresholds were developed from legislative mandates and state policies (i.e., AB 32, SB 375, SB 391 and a number of Executive Orders) that established quantitative GHG emissions reduction targets.

The *OPR Technical Advisory* states that a fifteen percent (15%) reduction in VMT is achievable for development projects in a variety of place types and is consistent with SB 743's direction to OPR to select a threshold that aligns with the State's three statutory goals.

For residential projects, the existing VMT per capita may be measured from city or regional averages. If city VMT per capita is used as a basis for a significance threshold in an Metropolitan Planning Organization (MPO) area, the project should not cumulatively exceed the population or number of units specified in the SCS for that city and should be consistent with the SCS. Exceeding the population or the number of units specified in the SCS would undermine the GHG reduction targets stated in SB 375. It should be noted that the proposed Project is consistent with the SCS.

For residential projects located in unincorporated county areas, the Technical Advisory provides additional recommendations as a basis for significance thresholds:

- "The local agency can compare a residential project's VMT to (1) the region's VMT per capita, or (2) the aggregate population-weighted VMT per capita of all cities in the region."

If aggregate VMT per capita is used as a basis for a significance threshold in an MPO area, the project should also not cumulatively exceed the population or number of units specified in the SCS for that city and should be consistent with the SCS.

The Technical Advisory applies the thresholds for residential projects to either household (i.e., tour-based) VMT or home-based (i.e., trip-based) VMT assessments. It should be noted that the metric used to determine project VMT and the city-wide or regional VMT must be consistent (i.e., "apples to apples" comparison).

It should be noted that the *OPR Technical Advisory* provides recommendations for thresholds of significance for only three types of development, focusing only on the project types which tend to have the greatest effect on VMT. The *OPR Technical Advisory* does not provide recommendations on thresholds for other kinds of development projects. The three main development project types, residential, office, and retail may be considered proxies for developments which exhibit certain trip/travel characteristics as shown below:

- "Residential" may be considered a proxy for a development which generates new trips.
- "Office" may be considered a proxy for a development which generates primarily work trips.
- "Retail" may be considered a proxy for a development which primarily attracts already existing trips, leading to a diversion of trips rather than generating new trips.

If a project can be demonstrated to match one of these proxy categories, the applicable thresholds may be utilized. Thus, the proposed Project is expected to generate new trips and have been analyzed under the Residential thresholds as listed below:

➢ A proposed Residential project exceeding a level of 15% below average existing regional (in this case City of Chino Hills) VMT per capita may indicate a significant transportation impact.

VEHICLE MILES TRAVELED (VMT) ANALYSIS

Summarized below are the average VMT/Capita values utilizing SBTAM for the City of Chino Hills and for the Project. It should be noted that the Project is located in Traffic Analysis Zone (TAZ) 53609101 (ID 1432) and the Project development totals were converted into Socio-Economic Data (SED) and inputted into the SBTAM. It should be noted that Year 2016 is the SBTAM baseline year (the most current model at of this report date).

After the completion of the model run, the off-peak and peak home-based production trips (all trip purposes) are summed and person trips are converted to vehicle trips based on auto occupancy rates. These vehicle trips are multiplied by the appropriate distance skim matrices to estimate the VMT.

City Average VMT/Capita

The City Average VMT/Capita is listed below:

- Year 2016 Average VMT/Capita = 20.65
- **15% Below Year 2016 Average VMT/Capita = 17.55**

Project Average VMT/Capita

The Project Average VMT/Capita is listed below:

- **Year 2016 Average VMT/Capita = 31.14 (50.80% Above City Average)**

Project Significant VMT Impact

As shown above, the proposed Project Average VMT/Capita is ***50.80%*** above the City average VMT/Capita and based on the criteria outlined in this report, the proposed Project will not have a level of 15% below existing City of Chino Hills VMT/Capita (i.e. VMT/Capita = 17.55) and thus will have a Project significant VMT impact.

Cumulative Significant VMT Impact

As previously mentioned and according to the *OPR Technical Advisory*, a significant Project impact would imply a significant cumulative impact.

VEHICLE MILES TRAVELED (VMT) MITIGATION MEASURES

The *OPR Technical Advisory* states that OPR recommends that a per capita or per employee VMT that is fifteen percent below that of existing development may be a reasonable threshold. Further, the *OPR Technical Advisory* points out that "fifteen percent reduction in VMT are achievable at the project level in a variety of place types", by referring to the California Air Pollution Control Officers Association's *Quantifying Greenhouse Gas Mitigation Measures, A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures* Report (CAPCOA Report, August 2010). In the Chapters 6 & 7, it quantifies the reduction in vehicle miles traveled (VMT) associated with a particular mitigation measure. The CAPCOA VMT reduction strategies include built environment changes and transportation demand management (TDM) actions.

It should be noted that there are rules and combined maximums for calculating the VMT reduction when applying multiple mitigation measures. The CAPCOA Report rules should be considered and the combined Global Maximum Reductions[4] should not be exceeded the maximums stated.

[4] According to the CAPCAO 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

Given that the City of Chino Hills is considered a "Suburban" setting, a maximum of 15% reduction will be permitted for VMT reduction mitigation measures utilizing the CAPCOA measures.

Given that the City of Chino Hills is considered a "Suburban" setting, the maximum VMT reduction values utilizing the CAPCOA measures for suburban areas shall apply to proposed land use projects within the City as shown below:

- 5% Land Use/Location Maximum Reduction
- 10% Transportation Measures Cross-Category Maximum Reduction
- 15% Transportation Measures Global Maximum Reduction

The Transportation Demand Management (TDM) strategies are sub-categorized into the following:

1) Land Use/Location
2) Neighborhood/Site Design
3) Parking Policy/Pricing
4) Trip Reduction Programs
5) Transit System Improvements
6) Road Pricing/Management

Since CAPCOA only allows for a maximum reduction of up to 15%, no mitigation measures or combination of measures have been identified that could achieve the required VTM reduction of 50.80% or more. ***Table 2***[5] presents the CAPCAO TDM strategies for land use projects for informational purposes. Please note that not all TDM strategies will be applicable for the Project, and no feasible TDM strategies have been identified for the Project. The first column indicates the CAPCOA Report section that discusses the methodology for quantifying the VMT reduction associated with the corresponding measure. A measure's range of effectiveness in VMT reduction is indicated in the last column. One or a combination of these mitigation measures could be utilized to partially offset the impact.

strategies. This excludes reductions from road-pricing measurements. The total project VMT reduction across these five subcategories categories, which can be combined through multiplication, should be capped at these levels based on empirical evidence.

[5] California Air Pollution Control Officers Association's *Quantifying Greenhouse Gas Mitigation Measures, A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures* Report, Chapters 6 & 7, August 2010, (CAPCOA Report).

Recommended Mitigation Measures[6]

The following strategies are recommended as mitigation measures to partially offset the VMT impact:

a) Land Use/Location LUT-9 (Improve Design of Development):

> *"The Project will include improved design elements to enhance walkability and connectivity. Improved street network characteristics within a neighborhood include street accessibility, usually measured in terms of average block size, proportion of four-way intersections, or number of intersections per square mile, and etc."*
>
> Utilizing this strategy will give a maximum VMT reduction of up to ***9.33%***, which will offset part of the Project's VMT impact.

b) Neighborhood/Site Design SDT-1 (Provide Pedestrian Network)

> *"Providing a pedestrian access network to link area of the Project site encourages people to walk instead of drive. This mode shift results in people driving less and thus a reduction in VMT. The Project will provide a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the Project site."*
>
> Utilizing this strategy will give a maximum VMT reduction of up to ***2.00%***, which will offset part of the Project's VMT impact.

The maximum allowable VMT reduction is 10.00% since a residential project can only utilize strategies in four categories: Land Use/Location, Neighborhood/Site Enhancement, Parking Police/Price, and Transit System Improvements. Thus, based on the above and with the Year 2016 Average VMT/Capita of 31.14, which is 50.80% above the City Average, the Project will have a unmitigable significant impact even with the maximum allowable VMT reduction mitigation measures of 10%.

CONCLUSION

Consistent with the *OPR Technical Advisory* and based on the VMT methodology, criteria, guidelines, thresholds and results outlined in this Technical Memorandum, the proposed Project will have a unmitigable significant Project VMT impact and a unmitigable significant cumulative impact.

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[6] California Air Pollution Control Officers Association's *Quantifying Greenhouse Gas Mitigation Measures, A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures* Report, Chapters 6 & 7, August 2010, (CAPCOA Report).

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We appreciate the opportunity to provide this Technical Memorandum. Should you have any questions regarding the memorandum, please contact us at (949) 825-6175.

cc: File

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TABLE 1
PROJECT TRIP GENERATION RATES AND FORECAST[7]

Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Trip Generation Rates:							
▪ 210: Single-Family Detached Housing (TE/DU)	9.44	25%	75%	0.74	63%	37%	0.99
Project Trip Generation Forecast:							
▪ Single-Family Homes (159 DU)	1,501	30	88	118	99	58	157

Notes:
- TE/DU = Trip End per Dwelling Unit

[7] Source: *Trip Generation*, 10th Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2017).

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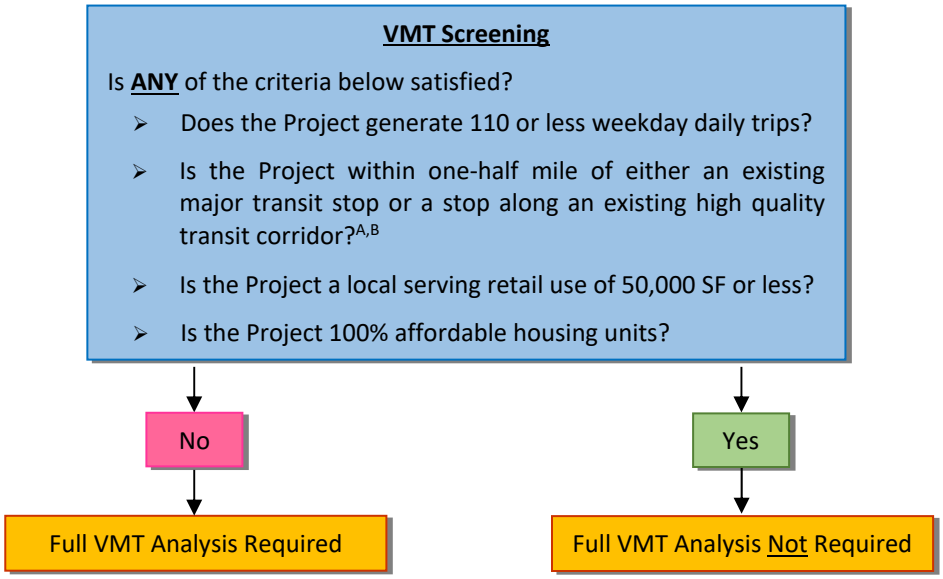
FLOW CHART 1
VMT SCREENING CRITERIA FLOW CHART



Notes:

A. "Major transit stop" means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.

B. "High-quality transit corridor" means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.

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TABLE 2
TRANSPORTATION DEMAND MANAGEMENT (TDM) STRATEGIES

Category	Measure Number	Strategy	Grouped With #	Range of Effectiveness	
				Percent Reduction in GHG Emissions	Basis
Land Use / Location	LUT-6	Integrate Affordable and Below Market Rate Housing		0.04-1.20%	VMT
	LUT-9	Improve Design of Development		3.0-21.3%	VMT
Neighborhood / Site Design	SDT-1	Provide Pedestrian Network Improvements		0-2%	VMT
	SDT-2	Traffic Calming Measures		0.25-1.00%	VMT
	SDT-3	Implement a Neighborhood Electric Vehicle (NEV) Network		0.5-12.7%	VMT
	SDT-4	Urban Non-Motorized Zones	SDT-1	NA	
	SDT-5	Incorporate Bike Lane Street Design (on-site)	LUT-9	NA	
	SDT-6	Provide Bike Parking in Non-Residential Projects	LUT-9	NA	
	SDT-7	Provide Bike Parking in Multi-Unit Residential Projects	LUT-9	NA	
	SDT-9	Dedicate Land for Bike Trails	LUT-9	NA	
Parking Policy / Pricing	PDT-1	Limit Parking Supply		5-12.5%	
	PDT-2	Unbundle Parking Costs from Property Cost		2.6-13%	
	PDT-3	Implement Market Price Public Parking (On-Street)		2.8-5.5%	
	PDT-4	Require Residential Area Parking Permits	PDT-1, 2 & 3	NA	

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TABLE 2 (CONTINUED)
TRANSPORTATION DEMAND MANAGEMENT (TDM) STRATEGIES

Category	Measure Number	Strategy	Grouped With #	Range of Effectiveness	
				Percent Reduction in GHG Emissions	Basis
Trip Reduction Programs	TRT-1	Implement Voluntary CTR Programs		1.0-6.2%	Commute VMT
	TRT-2	Implement Mandatory CTR Programs – Required Implementation/Monitoring		4.2-21.0%	Commute VMT
	TRT-3	Provide Ride-Sharing Programs		1-15%	Commute VMT
	TRT-4	Implement Subsidized or Discounted Transit Prog.		0.3-20.0%	Commute VMT
	TRT-5	Provide End of Trip Facilities	TRT-1, 2 & 3	NA	
	TRT-6	Telecommuting and Alternative Work Schedules		0.07-5.50%	Commute VMT
	TRT-7	Implement Commute Trip Reduction Marketing		0.8-4.0%	Commute VMT
	TRT-8	Implement Preferential Parking Permit Program	TRT-1, 2 & 3	NA	
	TRT-9	Implement Car-Sharing Program		0.4-0.7%	VMT
	TRT-10	Implement School Pool Program		7.2-15.8%	School VMT
	TRT-11	Provide Employer-Sponsored Vanpool/Shuttle		0.3-13.4%	Commute VMT
	TRT-12	Implement Bike-Sharing Program	SDT-5, LUT-9	NA	
	TRT-13	Implement School Bus Program		38-63%	School VMT
	TRT-14	Price Workplace Parking		0.1-19.7%	Commute VMT
	TRT-15	Implement Employee Parking "Cash-Out"		0.6-7.7%	Commute VMT

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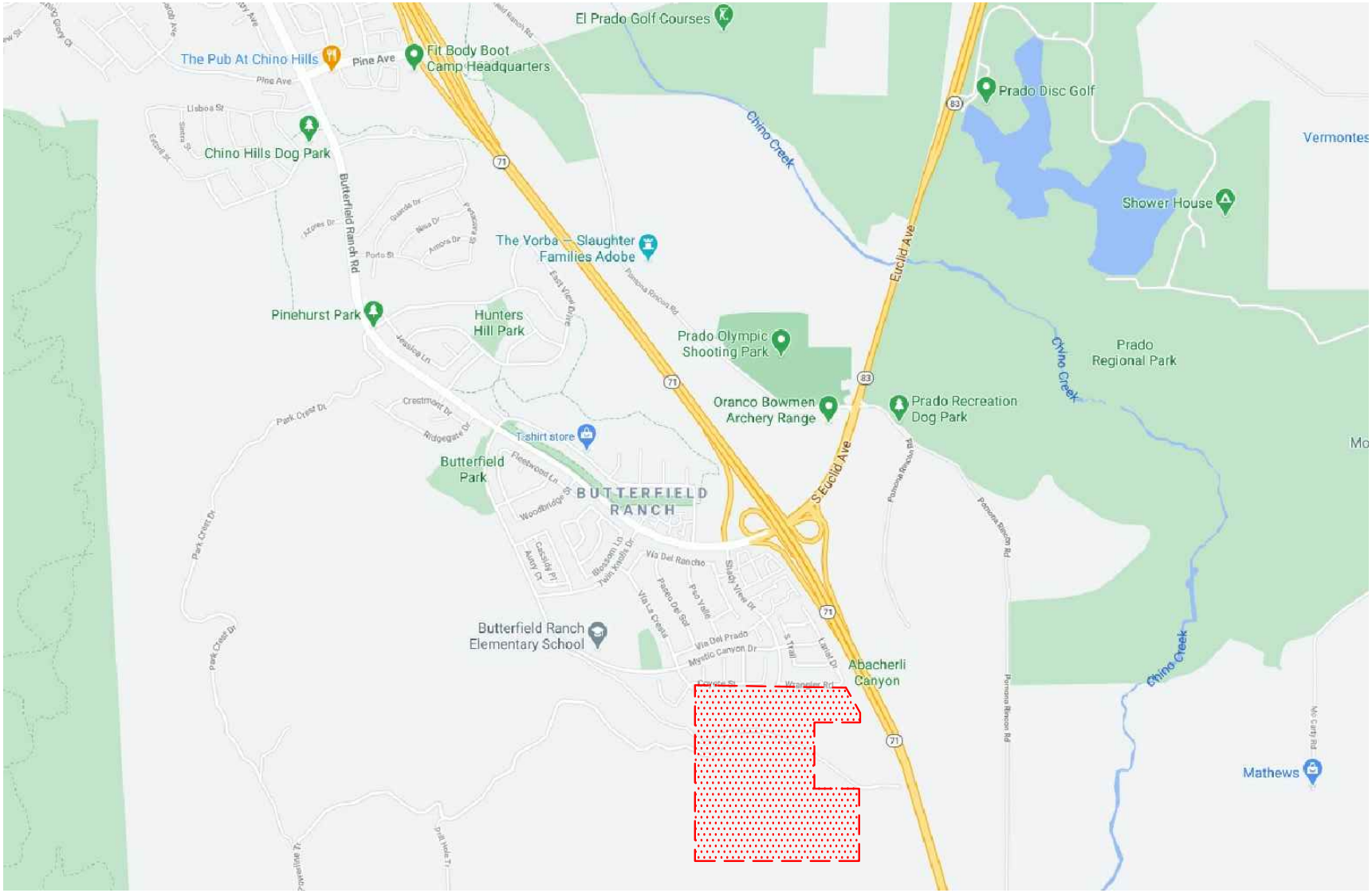
TABLE 2 (CONTINUED)
TRANSPORTATION DEMAND MANAGEMENT (TDM) STRATEGIES

Category	Measure Number	Strategy	Grouped With #	Range of Effectiveness	
				Percent Reduction in GHG Emissions	Basis
Transit System Improvements	TST-1	Provide a Bus Rapid Transit System		0.02-3.2%	VMT
	TST-2	Implement Transit Access Improvements	TST-3, TST-4	NA	
	TST-3	Expand Transit Network		0.1-8.2%	VMT
	TST-4	Increase Transit Service Frequency/Speed		0.02-2.5%	VMT
	TST-5	Provide Bike Parking Near Transit	TST-3, TST-4	NA	
	TST-6	Provide Local Shuttles	TST-3, TST-4	NA	
Road Pricing / Management	RPT-1	Implement Area or Cordon Pricing		7.9-22.0%	VMT
	RPT-2	Improve Traffic Flow		0-45%	VMT
	RPT-3	Require Project Contributions to Transportation Infrastructure Improvement Projects	RPT-2, TST-1 to 6	NA	
	RPT-4	Install Park-and-Ride Lots	RPT-1, TRT-11, TRT-3, TST-1 to 6	NA	



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N NO SCALE

SOURCE: GOOGLE

KEY

= PROJECT SITE

FIGURE 1

VICINITY MAP

SHADY VIEW PROJECT, CHINO HILLS

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SOURCE: GOOGLE

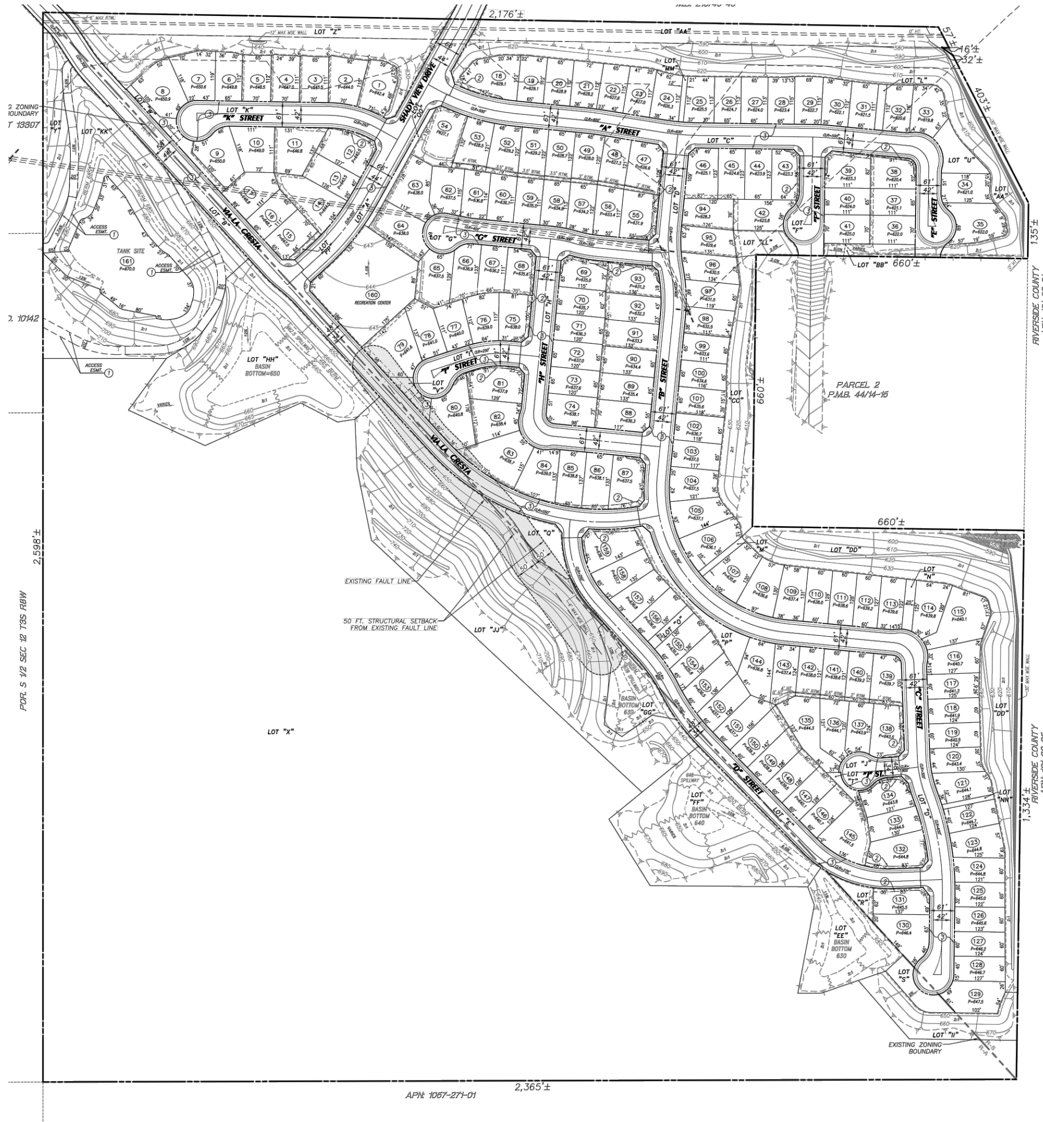
KEY

= PROJECT SITE

FIGURE 2

EXISTING SITE AERIAL

SHADY VIEW PROJECT, CHINO HILLS



n:\4300\2204345 – shady view tia & vmt analysis, chino hills\vmt\dwg\4345 f-3.dwg LDP 08:42:12 11-23-2020 besa

LINSCOTT
LAW &
GREENSPAN
engineers

SOURCE: HUNSAKER AND ASSOCIATES

NO SCALE

FIGURE 3

PROPOSED SITE PLAN

SHADY VIEW PROJECT, CHINO HILLS