

**California Senate Bill 743 Implementation Assistance Project:
*Case Studies on Using Vehicle Miles Traveled to Evaluate
Transportation Impacts in CEQA***

**City of Woodland
2035 General Plan Update
Case Study**

January 2020

The SB 743 Implementation Assistance Project was coordinated by the Urban Sustainability Accelerator, a joint program of the Toulon School of Urban Studies and Planning and the Institute for Sustainable Solutions at Portland State University

Participating Agencies

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Sacramento Area Council of Governments
Southern California Association of Governments
Metropolitan Transportation Commission
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We make special mention here of some of the most active participants: **Mike McKeever** (who initiated the project), former CEO of the Sacramento Area Council of Governments; **Chris Ganson** (a leading participant in every phase), with the California Governor's Office of Planning and Research; **Jeannie Lee** (who led the Legal Advisory Committee), also with the California Governor's Office of Planning and Research; **Kate White** with the California State Transportation Agency; **Bruce Griesenbeck** with the Sacramento Area Council of Governments; **Ping Chang** with the Southern California Association of Governments; **Ron Milam** at Fehr & Peers Transportation Consultants; and **Jamey Volker** at Volker Law Offices, and PhD candidate in Transportation Technology and Policy at UC Davis.

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Fregonese Associates assisted with preparation of communication materials and three case studies.

The analysis for this particular case study on Woodland's General Plan update was carried out by **Alex Steinberger** at Fregonese Associates with technical assistance from **Amy Lee** at the Sacramento Area Council of Governments (SACOG) as well as **Gordon Garry**, former transportation planner with SACOG. The study was enhanced by comments from **Steve Coyle** and **Cindy Norris** with the City of Woodland on the thresholds of significance and mitigation strategies.

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Case Study: City of Woodland 2035 General Plan Update

1. About the SB 743 Implementation Assistance Project

This case study is one of five undertaken as part of the SB 743 Implementation Assistance Project: From Driving More to Driving Less, a collaboration among California state agencies and metropolitan planning organizations, consulting professionals and project staff (see names in Appendix A). The project was managed by the Urban Sustainability Accelerator at Portland State University.

The purpose of the project was to assist with the development and implementation of new Guidelines governing transportation impact analysis under CEQA (California Environmental Quality Act). These were being drafted to carry out the groundbreaking provisions of California Senate Bill 743, which fundamentally changed transportation impact analysis as part of CEQA compliance. The updated CEQA Guidelines were adopted in December 2018 during the course of this project.

The nationally important feature of SB 743 (passed in 2013) was the elimination of auto delay, level of service (LOS), and similar measures of traffic congestion or vehicular capacity as a basis for determining the significant transportation impacts of new projects. Charged with selecting a replacement metric and developing associated guidance, the Governor's Office of Planning and Research (OPR) selected Vehicle Miles Traveled (VMT) – i.e., the amount and distance of automobile travel attributable to a project – as the preferred CEQA transportation metric going forward.

That shift necessitated corresponding changes in how transportation impacts are to be mitigated – from such methods as widening roads or adding turn lanes to improve LOS standards, to measures such as increasing transit service or instituting parking fees to reduce project-generated VMT.

The five case studies that form the core of this project represent a sample of previously approved land use and transportation projects, selected by the project's leadership to highlight different topics in implementing OPR's updated guidelines and technical guidance being drafted at the time. Each case study draws on a project's environmental impact report (EIR) and related documents prepared under the former LOS maintenance standard as a basis for illustrating what a new, VMT-based transportation impact analysis would look like, pursuant to the updated CEQA statute, guidelines, and technical advisory.

You can find more details about the project on the website at <https://www.sb743.org>. This site includes other case studies, related workshops, and a resource library.

Disclaimer: The approach and technical methods used here are illustrations of how the new CEQA analysis can be approached; they are not endorsements of that approach by any of the participating governments or technical experts. Reasonable minds can and do differ regarding how to implement the CEQA guidelines. That was true even among the distinguished experts who contributed to these case studies. CEQA gives lead agencies significant discretion in how they undertake their CEQA responsibilities and these case studies illustrate ways in which that discretion can be exercised.

2. Woodland General Plan Update Project Description

(a) Project Overview

The City of Woodland’s General Plan is the framework document within which decisions must be made on how to grow, provide public services and facilities, and protect and enhance the environment.¹ It is also the basis for all other planning efforts, such as specific plans, community plans, and redevelopment plans, which must be consistent with the General Plan.

The project for this case study is a proposed update to Woodland’s General Plan, addressing long-term planning through 2035. The process of updating the plan began in 2012, and in 2016 a draft 2035 General Plan Update was made available.² That document and its associated EIR³ form the basis for this case study.⁴

The Draft 2035 General Plan Update considers two options, a South and East Alternative, under which growth and development through 2035 could occur within the designated “planning area” – the 12,781 acres within the Urban Limit Line established by Woodland voters in 2006. Neither Alternative would involve full buildout of the City’s Planning Area through the planning horizon year of 2035 (DEIR, p. 2-9).

The Draft Environmental Impact Report (DEIR) for the Update⁵ not only evaluates the impact of the General Plan Update itself, but also an associated Draft 2035 Climate Action Plan (2035 CAP). The DEIR refers to the two documents collectively as the “Proposed Project.” The analysis in the DEIR provides information for developing the final General Plan for adoption by City Council.⁶

Reasons for selection as a case study

The City of Woodland’s 2035 General Plan Update was selected for a case study as an example of the obligation, under California Senate Bill 743, for general purpose units of government to demonstrate compliance with the law’s requirements. As a general plan update, the project’s planning horizon, scale, level of detail, EIR, and application of SB 743’s provisions differ from the other four case studies in this SB 743 Implementation Assistance Project.

¹ The General Plan was prepared to fulfill State law requirements and follows the *General Plan Guidelines* adopted by OPR in 2017.

² <https://www.cityofwoodland.org/DocumentCenter/View/1480/Notice-of-Availability-of-the-Draft-General-Plan-Update-PDF>

³ EIR = “Environmental Impact Report.” See Appendix B, Glossary, for definitions of terms and acronyms used in the case studies.

⁴ Note: The General Plan had been updated in 1996 and 2002 (technical update). In addition, there had been several project-driven amendments, and the Housing Element had been updated in 2013. (Source: <https://www.dailydemocrat.com/2016/09/09/general-plan-hearing-held-by-city-council/>)

⁵ *City of Woodland 2035 General Plan and Climate Action Plan Public Review Draft Environmental Impact Report*, prepared for the City of Woodland, September 2016 (State Clearinghouse Number 2013032015). Hereafter referred to in the case study as “DEIR.” Available at: <https://www.cityofwoodland.org/DocumentCenter/View/1184/Public-Review-Draft-Environmental-Impact-Report-PDF>

⁶ The final General Plan Update was adopted in May 2017.

Another reason for selecting this project as a case study was the opportunity to illustrate transportation impact analysis for a “Program EIR.”⁷ Although in theory the contents of a program EIR are the same as those of a project EIR, in practice there are differences in level of detail. As explained in the DEIR (p. 1-1): “Program EIRs contain a more general discussion of impacts, alternatives, and mitigation measures than do project-level EIRs.” This is to be expected since the general plan is a long-term guide for development and conservation throughout a city’s planning area. It is not possible for a general plan EIR to provide analysis of project-level details that are not yet known for future development projects.

In this case study of Woodland’s 2035 General Plan Update, we compare CEQA analysis methods for transportation impacts before and after implementation of SB 743.

City of Woodland planning staff comments

Senior planning staff in Woodland reviewed this case study after its completion and provided useful comments on how the City would likely have approached some key aspects of the case study differently. Those comments are included in this case study in the relevant sections.

(b) Project Details

Location

The City of Woodland is the county seat of Yolo County in California’s Sacramento Valley. The City is located approximately 20 miles northwest of Sacramento, 8 miles west of the Sacramento International Airport, and 12 miles north of the city of Davis, at the intersection of Interstate 5 and State Route 113 (see Figure 1).

Like other cities in Yolo County, Woodland has an urban limit line (ULL). The area within the ULL is the Planning Area for the General Plan Update. It includes the City’s approximately 9,624 acres (15 square miles) plus a 3,148-acre area outside the City within the unincorporated area of Yolo County.



Figure 1: Woodland General Plan Update project location. (Source: DEIR, p. 3-2.)

Existing conditions in the planning area

The DEIR analyzes impacts of the 2035 General Plan relative to current conditions in March 2013, the date a Notice of Preparation (NOP) was signed by the City of Woodland. At that time, there were

⁷ Program EIRs are described under CEQA statute (PRC § 21000 et seq.) and in the CEQA Guidelines (CCR, Title 14 § 15000 et seq). Guidelines section 15168(a) provides criteria for when an agency should prepare a program EIR rather than a project EIR. The EIR for the 2035 General Plan and Climate Action Plan is a Program EIR.

approximately 55,700 residents, 20,000 housing units, and 26,000 jobs within the City’s Planning Area. Vacant and agricultural land each occupied approximately 18 percent of the Planning Area, accounting for more than one-third of the total acreage. Approximately 21 percent of the Planning Area was residential (16.4 percent low density, 3.5 percent medium density, and 1.4 percent high density). Industrial uses occupied about 12 percent, and public and institutional uses such as schools, City buildings, and hospitals accounted for 10 percent of the Planning Area.

Project alternatives

The 2035 General Plan EIR analyzes two alternative ways in which growth and development could occur through the planning horizon year (2035) – an “East Alternative” and a “South Alternative.” Both use the same land use diagram (see Figure 2), but offer different approaches regarding the timing, location, and sequence under which the Planning Area could build out through 2035, particularly in terms of greenfield growth in Specific Plan areas.

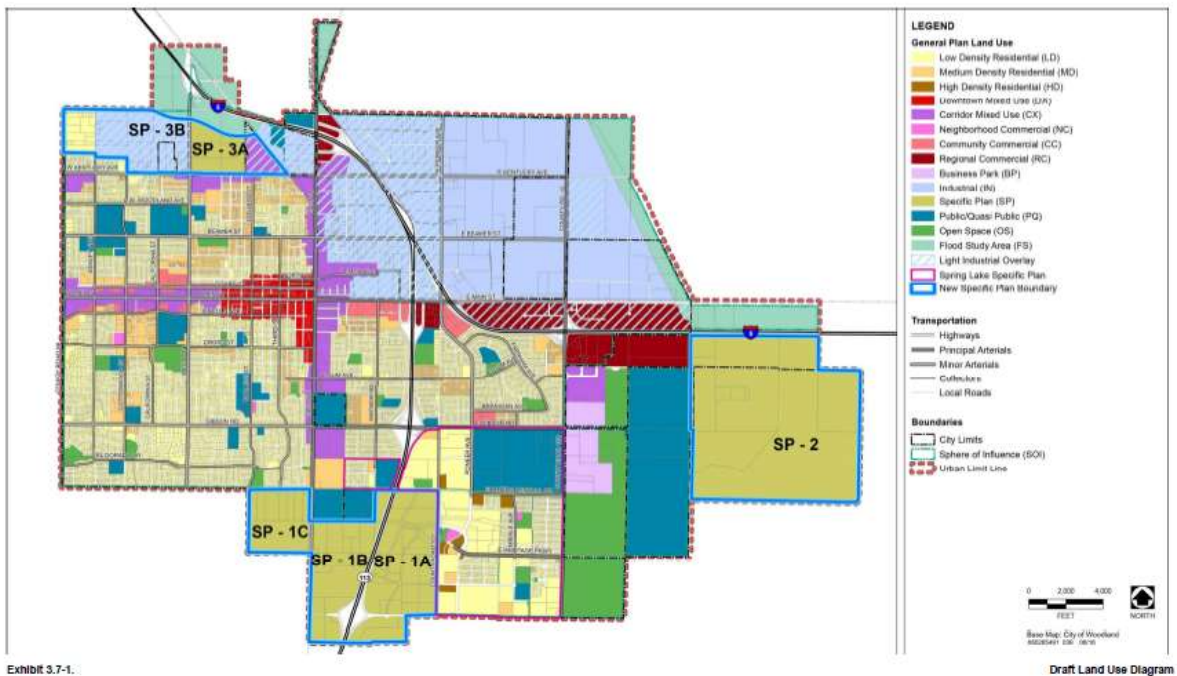


Figure 2: Land use diagram for 2035 Woodland General Plan Update. (Source: DEIR, p. 3-23.)

The East Alternative introduces new greenfield growth in the east, while the South Alternative continues to concentrate new greenfield growth in the south. The land area in both alternatives is 12,781 acres. Most policies in the 2035 General Plan are the same for both the East and South Alternatives. The only policies that differ between the alternatives are related to phasing of new growth in Specific Plan areas and other issues specific to growth in those areas (DEIR, p. 3-17).

Figure 3 provides an overview of new development and future land use expected under the East and South Alternatives. Both assume approximately 19,300 new residents and 7,000 new housing units by 2035. The South Alternative assumes 16.7 million square feet of new non-residential development, while the East Alternative assumes 17.4 million square feet of new non-residential development.

	Existing Conditions (2013)	East Alternative		South Alternative ³	
		New Growth	Total (2035)	New Growth	Total (2035)
Population	55,690	19,300	74,990	19,300	74,990
Housing Units	19,980	7,000	26,980	7,000	26,980
Non-Residential Square Footage	19,824,000	17,386,000	37,210,000	16,685,000	36,509,000
Jobs	26,000	19,340	45,340	18,210	44,210
Jobs/Housing Ratio	1.30	2.76	1.68	2.60	1.64

Notes:

¹ To calculate development yields for the Project Alternatives, a mid-range density/intensity was generally assumed for each land use designation. For the Downtown Mixed Use designation (DX), which has no specified residential density limits and an estimated maximum achievable density of 40 dwelling units per acre, a mid-range density of 30.0 dwelling units per acre was assumed. For the Corridor Mixed Use designation (CX) which allows densities from 20.0 to 40.0 dwelling units per acre, a residential density of 14.0 dwelling units per acre was assumed to account for instances when lower density development may be allowed due to proximity to low density residential development. For Specific Plan areas, a residential density of 8.0 dwelling units per acre was assumed, except in SP-1C where a lower density of 3.0 dwelling acres per unit was assumed.

² Assumptions were made regarding the percentage of vacant and underutilized land that is expected to develop for each land use designation under the 2035 General Plan. These percentages were based on characteristics of available sites as well as City and industry development trends.

³ The East Alternative assumes only 25 percent of land designated as SP-2 will develop by 2035.

Source: Dyett & Bhatia 2016

Figure 3: Assumptions for South and East Alternatives. (Source: DEIR, p. 3-47.)

The DEIR analyzes both the East and South alternatives at an equal level of detail, or “equal weight.” The impacts of each alternative are fully evaluated relative to baseline conditions and established significance criteria. The DEIR is structured to allow adoption by the City Council of one of these two alternatives, or some variation, as long as total growth numbers by 2035 do not exceed 7,000 residential units and approximately 17.0 million square feet of non-residential uses (±19,000 jobs), and there are no other substantive inconsistencies with assumptions made in the DEIR.

3. CEQA Analysis

This section compares approaches to a CEQA transportation impact analysis before and after SB 743’s implementation. We examine the following three topics of relevance to the Woodland project case study:

- (a) Thresholds of significance (for transportation impacts)
- (b) Transportation impact analysis
- (c) Mitigation measures

(a) Thresholds of Significance

Screening thresholds for transportation impacts

OPR’s *Technical Advisory on Transportation Impact Analysis in CEQA* (2018) describes two types of thresholds for assessing transportation impacts: preliminary, or “screening” thresholds and “numeric” thresholds. Many agencies use screening thresholds in the Initial Study phase of the CEQA process to “quickly identify when a project should be expected to cause a less-than-significant impact without conducting a detailed study” (Technical Advisory, p. 12).

In this case study, a screening step was not relevant/applicable (for both the LOS and VMT impact analyses) because it is designed largely for project-level analysis, not a city-wide general plan update.

Numeric thresholds for transportation impacts

LOS thresholds (pre-SB 743)

The DEIR for the Woodland General Plan Update uses criteria from Appendix G in the CEQA Guidelines to set its thresholds of significance for transportation impacts. For the LOS analysis the City used the two thresholds below (although in analyzing and reporting traffic impacts it applied Threshold 1 separately to two different roadway systems: City of Woodland streets and Caltrans facilities). Listed after each threshold are the acceptable LOS standards established by the relevant entities (for more detail see DEIR, pp. 4.13-11 and 4.13-12).

Implementation of the General Plan Update would have a significant adverse impact in terms of traffic if the project met either threshold below:

Threshold 1: “Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.”

- For City of Woodland streets, acceptable LOS is defined by Policy 3.A.2 of the 2002 General Plan, which establishes LOS C or better as acceptable except in the following areas where LOS D is allowed:
 - Within one-half mile of state or federal highways and freeways
 - Within the Downtown Specific Plan area
- For Caltrans facilities, LOS C was identified as the appropriate threshold for I-5 and SR 113 unless the existing (or No Project) condition is LOS D, E, or F, in which case, the threshold would be maintenance of the existing (or No Project) LOS. For SR 16, LOS E was identified as the appropriate significance threshold.

Threshold 2: “Conflict with an applicable congestion management program [CMP], including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.”

- For the CMP network, acceptable LOS is defined by the following thresholds (DEIR, pp. 4.13-11 and 4.13-12).
 - SR 16 from Colusa County to Woodland – LOS D
 - I-5 from Colusa County to Sacramento County – LOS D except within the City Limits where LOS E applies
 - SR 113 from I-80 to Sutter County – LOS D except within the City Limits where LOS C applies
 - East Street from Gibson Road to North City Limits – LOS D within ½ mile of a State or Federal highway; otherwise LOS C

- Gibson Road from County Road 98 to County Road 102 – LOS D within ½ mile of a State or Federal highway; otherwise LOS C
- Main Street from County Road 102 to West City Limits – LOS D within downtown and ½ mile of a State or Federal highway; otherwise LOS C
- County Road 98 from City Limits to City Limits – LOS D within ½ mile of a State or Federal highway; otherwise LOS C.
- County Road 102 from City Limits to City Limits – LOS D within ½ mile of a State or Federal highway; otherwise LOS C.

VMT thresholds (post-SB 743)

Preparing for the new VMT standard

The 2035 General Plan DEIR was completed before full implementation of SB 743, so VMT thresholds of significance were not yet established for transportation impacts. Nevertheless, anticipating the change ahead, the DEIR discusses SB 743 and notes that VMT will be the preferred CEQA metric for transportation impact analysis going forward (replacing LOS), and that OPR would soon finalize guidance materials. The discussion concludes:

SB 743 did not change the discretion that lead agencies have to select a methodology or define their own significance thresholds, but the guidance being developed by OPR should be carefully considered by lead agencies when they ultimately finalize their own recommended practices. A key factor should be how the lead agency/community values VMT reduction especially with regard to its influence on reducing greenhouse gases, promoting active transportation, and encouraging infill development, all of which, are identified as objectives in the legislative intent of SB 743 (DEIR, pp. 4.13-12 to 4.13-13).

VMT was thus one of several topics that were evaluated in the EIR as part of the impact analysis but were not identified as specific impacts (DEIR, p. 4.13-18).

Additionally, a mitigation strategy was included in the EIR that proposed amending the General Plan with a modified policy providing a more ambitious VMT threshold. The proposed modifications to Policy 3.A.4, “Reduce Vehicle Miles Traveled (VMT)” would require new development projects to achieve:

- A 10 percent reduction in VMT per capita or VMT per service population compared to the general plan 2035 VMT performance.
- or*
- A 10 percent reduction in VMT compared to baseline conditions for similar land uses (DEIR, Policy 3.4.A).⁸

To accompany the policy the City proposed a new implementation program whereby it committed to reassessing the VMT reduction goals in Policy 3.A.4 after OPR’s final regulations and advisory were in place. That assessment would consider “any substantial State evidence recommending alternative VMT reduction goals as CEQA thresholds” (DEIR, p. 4.13-19).

⁸ The previous proposed policy applied a VMT transportation performance metric threshold of 30 VMT per capita when measuring transportation impacts for subsequent projects and making General Plan consistency findings.

Establishing numeric thresholds for VMT

CEQA gives lead agencies discretion in setting thresholds for the significance of environmental impacts (SB 743 does not change that), although "[c]ompliance with the threshold does not relieve a lead agency of the obligation to consider substantial evidence indicating that the project's environmental effects may still be significant" (CEQA Guidelines, § 15064(b)(2)).

In the case of a general plan, OPR's *Technical Advisory on Transportation Impact Analysis in CEQA* (2018) suggests considering the plan to have a significant impact on the environment if the proposed new residential, office, or retail land uses would in aggregate exceed the respective thresholds recommended in the Technical Advisory. A full transportation impact analysis would thus determine the future VMT resulting from new residential, new retail, and new office development/uses for each alternative.

This case study was limited to the residential portion of the analysis because at the time the analysis was done, the method used to quantify VMT – the UrbanFootprint (UF) transport module – reported only VMT attributed to residents.⁹ Nevertheless, we hope this illustrates an approach that could be applied to each type of trip purpose in order to obtain an aggregate threshold. All trip purposes should be included in a full VMT analysis.

Household-generated VMT per capita – defined as all trips and their associated VMT attributable to households residing within the project area¹⁰ – was used as the metric for identifying a threshold of significance for the residential component.

For residential VMT, the Technical Advisory (p. 12) recommends a 15% reduction relative to either regional or municipal averages (higher than the 10% VMT reduction the City proposed for the review of new development projects.)

Table 1 shows the calculation of a residential VMT per capita threshold for Woodland in the then-current year of 2012 and in 2036, prepared for this case study using the SACSIM model:

Table 1: Calculation of Numeric Threshold for Woodland General Plan	
	VMT Amount
2012 Avg. Household-generated VMT per capita, City of Woodland (from SACSIM)	16.45
2036 Avg. Household-generated VMT per capita, City of Woodland (from SACSIM)	16.33
Threshold VMT (85% of 2012 average above)	13.98
Threshold VMT (85% of 2036 average above)	13.88
Amount of VMT per capita to be mitigated (average minus threshold VMT - 2012)	2.47
Amount of VMT per capita to be mitigated (average minus threshold VMT - 2036)	2.45

⁹ UrbanFootprint now appears to generate total VMT, which could be used to derive non-residential VMT. For a summary of this modeling software see <https://urbanfootprint.com/wp-content/uploads/2019/07/Transportation-Module-Methodology.pdf>

¹⁰ Household-generated VMT consists of VMT generated by residents of the region for their travel within the region. It includes vehicle travel for normal commuting, going to school, shopping, and personal business. Household-generated VMT usually comprises about 80 percent of total VMT. Source: Sacramento Area Council of Governments (SACOG) *Metropolitan Transportation Plan/Sustainable Communities Strategy*, (MTP/SCS) Final Plan Released February 18, 2016, p. 77.

The numeric threshold for the VMT impact analysis is 85% of the 2012 average, or 13.98 household-generated VMT per capita. Note that the 2036 VMT figure in Table 1 is lower than the 2012 figure, meaning average household-generated VMT per capita is expected to decrease over that time.¹¹ The amount of VMT per capita to be mitigated from the proposed general plan would be 2.47 VMT per capita per day measured against the 2012 VMT average or 2.45 VMT per day measured against the 2036 VMT average.

In this case study we selected a VMT threshold of significance (15% reduction from current city VMT averages for residential trips) based on the set of recommendations and supporting analyses prepared and assembled by OPR. Several OPR documents were prepared or finalized after the City had completed and adopted its General Plan update and associated Final EIR.

The City of Woodland considered many of the same documents in the course of preparing its 2035 General Plan Update and 2035 Climate Action Plan, as well as the EIR for both of these policy documents. As mentioned above, the City chose to articulate a VMT threshold of significance for future projects as part of a modified policy in the General Plan Update. The modified policy reads:

Policy 3.A.4: Reduce Vehicle Miles Traveled (VMT). Require new development projects to achieve a 10 percent reduction in VMT per capita or VMT per service population compared to the General Plan 2035 VMT performance, or a 10 percent reduction compared to baseline conditions for similar land use when measuring transportation impacts for subsequent projects and making General Plan consistency findings... (Woodland General Plan 2035, pp. TC 3-21 to 3-22).

The question of whether or not a local government can justify a less stringent threshold of significance than what was adopted in the *CEQA Guidelines* (December 2018) implementing SB 743 is one that City planning staff wished to address in this case study. We present their comments here:

City of Woodland staff comments on thresholds of significance for VMT

The policy, legal and technical questions raised by this issue suggest the need for consideration of a jurisdiction's physical, economic and social context as local government plans are updated. For example, the City of Woodland (reflective of many Central Valley agricultural communities) and West Sacramento (a rapidly developing industrial port city) offer divergent ridership profiles and opportunities for transit service.

Within the overall State goal (or regional goals), these community context factors should guide whether and how mitigation thresholds and obligations can be set to account for significant differences in the communities' starting points (in terms of VMT per capita, location relative to employment areas, fixed circulation patterns, etc.) and capacities for mitigation through changes to urban form, availability of transportation choices, etc.

¹¹ For the SACOG region as a whole, household-generated VMT per capita is projected to decrease from 17.9 in 2012 to 17.0 by 2036, a decrease of 5.4 percent. (SACOG's MTP/SCS, February 18, 2016, p. 80).

Even if concluding that local governments lack the discretion to adopt a lower VMT threshold of significance, they may still choose to adopt a statement of overriding consideration to the extent they decide they will not mitigate some or all of the VMT in excess of the threshold or will deploy mitigation to reduce VMT in more walkable areas of the city.

Revisiting the question of an appropriate threshold of significance for VMT was anticipated by the City in its Final EIR for the 2035 General Plan and CAP (January 2017) (hereafter FEIR).¹² In the section titled “Comments and Responses to Comments on the Draft EIR,” the City says it “will reconsider its VMT reduction goals” in the future, including “requiring the City to assess the VMT reduction goal contained in Policy 3.A.4 once the State of California adopts final CEQA guidance for SB 743” (FEIR, p. 2-70).

Readers may wish to review Appendix C in this case study containing the City’s response to a comment letter on the DEIR from Caltrans recommending that the City consider a significance threshold higher than a 10% reduction from local or regional VMT, in accord with the (then) draft OPR Technical Advisory.

(b) Transportation Impact Analysis

LOS-based impact analysis (CEQA pre-SB 743)

The LOS impact analysis used a modified version of SACOG’s regional SACMET travel model to transform the land use and network changes associated with the East and South Alternatives into VMT and traffic volume forecasts. The methodology is described on pp. 4.13-8 to 4.13-10 of the DEIR. The final step in the process compared the p.m. peak hour traffic volume forecasts to roadway segment volume thresholds to assess vehicle LOS on 203 roadway segments, including local City of Woodland streets and Caltrans freeway facilities.¹³

Below are the analysis results for the relevant impact thresholds (which are described in the thresholds section above). The findings take into account 2035 General Plan goals, policies, and implementation programs and 2035 CAP objectives and actions that reduce potential impacts associated with the proposed Project.¹⁴

Impact Threshold 1: [Would the Project] Conflict with an Applicable Plan, Ordinance or Policy Establishing Measures of Effectiveness for the Performance of the Circulation System by Resulting in Unacceptable Levels of Service on City of Woodland Roadways.

Findings: Implementation of the General Plan Update could cause unacceptable LOS conditions on some roadway segments. The impact was considered significant for the East Alternative¹⁵ but

¹² Available at: <https://www.cityofwoodland.org/DocumentCenter/View/1175/2035-General-Plan-and-Climate-Action-Plan-Final-Environmental-Impact-Report-PDF>

¹³ In addition to the roadway segment analysis, key intersections in the City were evaluated to assess their p.m. peak hour performance. While such an analysis is more sensitive than the roadway segment analysis, it is largely speculative given the limitations associated with predicting individual turning movement volumes decades into the future, and was thus used for comparison purposes only (DEIR, p. 4.13-10).

¹⁴ Such actions include a policy change to allow for the LOS D and E outcomes, and developing a TDM ordinance.

¹⁵ Proposed project policies would reduce the impact for the East Alternative, but the impact would remain significant without mitigation for one segment (E. Gum Avenue from Bourn Drive to Pioneer Avenue).

less than significant for the South Alternative (DEIR, p. 4.13-13). For details of the analysis see pp. 4.13-13 to 4.13-17 of the DEIR.

Impact Threshold 2: [Would the Project] Conflict with an Applicable Plan, Ordinance or Policy Establishing Measures of Effectiveness for the Performance of the Circulation System by Resulting in Unacceptable Levels of Service on Caltrans Roadways.

Findings: Implementation of the proposed Project would exacerbate already unacceptable “No Project” LOS D conditions on the I-5 Mainline east of County Road 102 under 2035 conditions. The impact was considered potentially significant under both the East and South Alternatives (DEIR, p. 4.13-20). For details of the analysis see pp. 4.13-20 to 4.13-21 of the DEIR.

Impact Threshold 3: [Would the Project] Conflict with an Applicable Congestion Management Program by Resulting in Unacceptable Levels of Service on CMP Network Roadways.

Findings: Implementation of the Proposed Project would cause unacceptable LOS conditions on one Yolo County CMP roadway segment. The impact was considered potentially significant under both the East and South Alternatives (DEIR, p. 4.13-21). For details of the analysis see pp. 4.13-21 to 4.13-22 of the DEIR.

Recommended mitigation measures to reduce these potentially significant impacts to less than significant are discussed in the Mitigation section below.

VMT-based impact analysis (CEQA post-SB 743)

(a) VMT estimates in the 2016 DEIR

VMT estimates are calculated in several places in the Woodland General Plan DEIR. Table 2 below is a composite of three tables showing estimated daily VMT forecasts under four different project scenarios in the City of Woodland’s Planning Area.

As the table shows, the proposed Project is expected to result in a total daily VMT of approximately 2,100,000, with some variation in expected total and per capita VMT between the East and South Alternatives.

While these VMT figures were used for such purposes as travel demand estimation, they could not be plugged into our VMT impact analysis for a couple of reasons: First, our analysis considers only household trips (for reasons explained earlier) and only automobile and light truck travel, whereas the figures in the DEIR encompass all types of trips and all types of vehicles. Second, our VMT impact analysis covers a wider area of impact (see next section), whereas these figures apply only to the City’s Planning Area (with 50 percent responsibility for trips with only one trip end in the City).

Table 2: City of Woodland Daily VMT Forecasts. (Source: DEIR Tables 4.13-6, 5-19, and 6-8.)

Scenario	VMT ¹	Population ²	Employment ³	VMT/Capita ⁴	VMT/Service Population ⁵
Existing (2013)	1,476,600	45,207	26,694	32.5	20.5
No Project (2035)	1,939,400	58,483	33,929	33.2	21.0
East Alternative (2035)	2,107,500	62,780	42,268	33.6	20.1
South Alternative (2035)	2,092,800	62,953	41,156	33.2	20.1
Cumulative Scenario	2,632,200	75,623	61,745	34.8	19.2

¹ Includes travel from all vehicles. The allocation of VMT includes 100 percent responsibility for all trips with both trips ends in the City of Woodland and 50 percent responsibility for trips with only one trip end in the City.

² Population estimates and forecasts are based on SACMET household size distribution.

³ Employment estimates and forecasts are based on SACMET land use yields.

⁴ VMT per capita is calculated by dividing total daily VMT by population. Since total VMT includes VMT generated by commercial vehicles, visitors, and workers/students who live outside Woodland, it is not an estimate of the VMT 'generated' per capita for Woodland residents.

⁵ VMT Per Service Population is calculated by dividing total daily VMT by population plus employment. Similar to the VMT per capita metric, this form of VMT includes VMT generated by commercial vehicles, visitors, and students that live outside Woodland. As such, it is not an estimate of the VMT 'generated' per service population for Woodland residents and workers.

Source: Fehr & Peers Associates. 2016. Existing Conditions traffic data for the City of Woodland General Plan Update. Woodland, CA.

The DEIR explained that environmental impacts of project-generated VMT, such as air pollution or GHG emissions, are identified in the appropriate chapters of the EIR; and that a separate VMT significance impact threshold had not yet been established for the 2035 General Plan. VMT results are thus simply recognized as the composite outcome of the City's desired land use and transportation network.

That said, the City noted that VMT reductions may be achieved through the implementation of individual development projects as part of 2035 General Plan implementation, and that General Plan Policy 3.A.4 establishes a VMT per capita threshold of 30 for measuring transportation impacts for subsequent projects. The DEIR states:

This value is approximately 10 to 11 percent lower than the projected VMT per capita for the East and South Alternatives and represents the potential to achieve VMT reductions through project design and transportation demand management (TDM) strategies as required under Policy 3.A.5.... Over time, the actual VMT/capita associated with the 2035 General Plan implementation is predicted to trend downward from the results in [Table 2 above] (DEIR, p. 4.13-12).

(b) Area affected by VMT outcomes

OPR advises that with land use plans, just as with projects, "agencies should analyze VMT outcomes across the full area over which the plan may substantively affect travel patterns, including beyond the boundary of the plan or jurisdiction's geography." Also as with projects, "VMT should be counted in full

rather than split between origin and destination,”¹⁶ and lead agencies “should not truncate any VMT analysis because of jurisdictional or other boundaries” (Technical Advisory, p. 6).

(c) Selection of tool

Travel demand models, sketch models, spreadsheet models, research, and data can all be used to calculate and estimate VMT (Technical Advisory, p. 26). As with threshold methods, there are several possible ways to estimate a General Plan project’s VMT and other transportation impacts. Regional models, such as SACSIM, can provide data for project-generated VMT. Sketch models can also be used. However, whatever model is used, the methodology should be the same as that used to set the threshold, in order to ensure an “apples-to-apples” comparison. If the SACSIM model is the basis for setting thresholds, then a sketch model could be used to conduct the analysis only if it used the VMT generation rates from SACSIM.

The choice of sketch tool for VMT estimation has a bearing on the VMT metric that can be reported. For this case study, the choice was driven largely by the need to select a comparable metric (city-wide or regional VMT) that can be produced by both a sketch model and SACOG’s SACSIM regional travel demand model. The need for a sketch model that can produce city-wide or regional VMT estimates limits lead agencies to a particular subset of sketch tools that cannot produce separate VMT estimates by trip purpose. Moreover, such tools generally report only household-generated VMT.

Sketch tools can be broadly grouped into four categories, as shown in Table 3:

Table 3: Sketch Tools Grouped by Characteristics¹

	Examples²	VMT by Trip Purpose	Scale
Trip generation estimates based on removing trips that are not new.	URBEMIS, VMT+	Yes	Site - District
Statistical models are used to derive reduced estimates for trips based on project and context characteristics.	MXD (EPA/Fehr & Peers), MXD+, Envision Tomorrow MXD	Yes	Site - District
Statistical models are used to derive reduced estimates for VMT based on project and context characteristics.	Sketch7, Envision Tomorrow HH7D, UrbanFootprint	No	District - Region
Separate elasticities are used for specific project or context characteristics to derive reduced estimates for VMT.	CalEEMod	Yes	Site - District

¹ <https://ncst.ucdavis.edu/wp-content/uploads/2017/04/VMT-Quant-Final-Report-5.22.17.pdf>

² This is by no means an exhaustive list, as the number of available VMT sketch tools continues to grow.

While common practice has been to use regional models for analyzing transportation impacts of general plans in order to capture all trip purposes, for this case study we used a sketch model called

¹⁶ Emissions inventories have occasionally split cross-boundary trips in order to sum to a regional total, but CEQA requires accounting for the full impact without truncation or discounting (Technical Advisory, p. 18).

“UrbanFootprint” (UF).¹⁷ Based on a range of built environment and demographic factors, this model estimates household VMT only, which was our focus in this limited analysis. However, a lead agency conducting a full transportation impact analysis should choose a method that offers estimates of total VMT from all trip types.

Another reason we selected UF is that it does not truncate results based on political boundaries. It considers travel behavior of all households within the General Plan Planning Area regardless of where trips start and end. The analyst should note the need to analyze all VMT affected by the land use plan and verify that UF’s trip lengths are suitable for the plan under consideration.

(d) Analysis

UF’s Transportation Module quantifies a scenario’s relationships to a series of “D variables” (density, diversity, design, etc.) using hierarchical models that capture the relationships between the “D” factors and the amount of travel generated by over 230 mixed-use developments of a wide variety of settings and sizes across the US, including the Sacramento region.¹⁸

OPR advises that “whenever possible, agencies should input localized trip lengths into a sketch model to tailor the analysis to the project location,” while being careful to “avoid double counting if the sketch model includes other inputs or toggles that are proxies for trip length (e.g., distance to city center).” It also reminds analysts that “trip length data should come from the same source as data used to calculate thresholds to be sure of an ‘apples-to-apples’ comparison,” and that any changes to sketch model defaults should be recorded and reported for transparency of analysis (Technical Advisory, pp. 30-31).

While UF’s Transportation Module uses a different approach to estimating trip generation than SACOG’s travel demand model, its trip lengths for the Sacramento region are based on the same local travel survey information as SACOG’s regional travel demand model – i.e., the 2001 California Household Travel Survey.

Although UF uses locally-specific trip lengths by default, it should be noted that the tool does not currently allow users to set custom trip lengths by trip purpose. Lead agency staff should determine the source of UF’s trip lengths for their locality before deciding whether it is an appropriate VMT estimation tool for a particular project. The trip lengths used by UF are listed in Table 4.

Table 4: UrbanFootprint Average Trip Length Assumptions¹			
District-Based Average Production Trip Length (Miles)			
HBW (Home-Based Work)	HBO (Home-Based Other)	NHB (Non-Home Based)	Total
10.05	3.29	7.13	6.15

¹ Source: SACMET Regional Travel Demand Model, average for City of Woodland TAZs

¹⁷ “UrbanFootprint Technical Documentation: Transportation Analysis,” available at: <https://urbanfootprint.com/wp-content/uploads/2019/07/Transportation-Module-Methodology.pdf>

¹⁸ See <https://urbanfootprint.com/wp-content/uploads/2017/11/UrbanFootprint-Technical-Guide-v2-3.pdf>

In addition to identifying local average trip lengths, it is important to perform an additional calibration step to ensure VMT estimates produced by the sketch model are comparable to regional travel model estimates, shown in Table 5.

	SACSIM¹	UrbanFootprint	Scaling Factor
Base Year (2012) Household-Generated VMT per Capita	16.45	22.72	0.72

¹Source: SACOG

Even with localized trip lengths, models use different assumptions and calculation methods, so some variability in outputs should be expected. This is especially true for general plans, community plans, and other long-range planning exercises, as the project area size and development horizon can serve to amplify differences in model outputs. For this reason, it is recommended that base year trip generation and trip length estimates be compared to regional numbers to assure consistency.

Using UF, we modeled VMT for the South and East Alternatives. Modeling assumptions were set based on the growth assumptions listed in sections 3.7.1.1 and 3.7.1.2 of the DEIR, and included both residential and non-residential land use changes. Table 6 displays estimates of the resulting household-generated VMT (total and per capita) for the two Alternatives, as well as the base year and no project conditions and the 10% and 15% VMT reduction thresholds.

(CEQA analysis typically requires a comparison of the impact between the base year and the future year with the project, but in some cases it is appropriate to compare future years, with and without the project – or in this case, with or without the implementation of a revised General Plan. Both figures are shown in the table, but for the remainder of this case study, the 13.88 VMT/capita threshold will be used. In any event, the difference between the thresholds 0.1 miles, 524 feet per day, is nominal.)

	Base Year (2012)¹	No Project (2036)	South Alternative (2036)²	East Alternative (2036)
Household-generated VMT	878,101	1,078,368	1,309,915	1,369,662
Population	53,380	66,036	75,033	75,356
Household-generated VMT/capita	16.45	16.33	17.46	18.18
10% VMT/capita reduction threshold proposed by Woodland	14.81	14.70	14.70	14.70
15% VMT/capita reduction threshold used in this case study	13.98	13.88	13.88	13.88

¹ “Base Year” and “No Project” scenarios based on SACSIM VMT estimates.

² South and East Alternative VMT estimates based on UrbanFootprint modeling with scaling factor applied.

Based on the results of the UrbanFootprint VMT analysis, neither Alternative would meet the numeric VMT per capita threshold selected for this case study - 13.88 measured against 2036 and 13.98

measured against 2012 – nor would either Alternative meet the VMT per capita numeric threshold proposed in the General Plan Update (14.70 measured against 2036 and 14.81 measured against the 2012 baseline). Both Alternatives, South and East, would result in significant transportation impacts without mitigation.

(c) Mitigation Measures

LOS mitigation (CEQA pre-SB 743)

As described in the LOS impact analysis section above, significant impacts from the project were identified for the three impact thresholds relevant to this case study. The following mitigation measures were applied (DEIR, pp. 4.13-17 to 4.13-21):

Mitigation Measures for Impact Threshold 1

Impact Threshold 1: Conflict with an Applicable Plan, Ordinance or Policy Establishing Measures of Effectiveness for the Performance of the Circulation System by Resulting in Unacceptable Levels of Service on **City of Woodland Roadways**. (Note: bolded text indicates the only difference between Thresholds 1 and 2.)

In the previous section we reported that for City of Woodland roadways, only the East Alternative was found to have significant impacts in need of mitigation. The following mitigation options were applied to the East Alternative in the DEIR (pp. 4.13-17 and 4.13-18):

Mitigation Measure 4.13-1a:

The Draft General Plan should be amended to include the following modification of the East Alternative Circulation Diagram: Include E. Gum Avenue from Bourn Drive to Pioneer Avenue as a 2-lane minor arterial... in the East Alternative Circulation Diagram. This action would result in potential physical changes to the roadway under this classification that may include access control and minor turn-lane widening at intersections. Under this classification, the LOS would be improved to LOS C and the impact would be less than significant with mitigation.

OR

Mitigation Measure 4.13-1b:

The 2035 General Plan should be amended to include the following modified policy:

Policy 3.A.1 Vehicle Level of Service (LOS) Standard. *Strive to develop and manage the roadway system to maintain LOS D or better as defined in the latest edition of the Highway Capacity Manual with the following exceptions described below... [Note: only the portion with modified text (underlined) is shown here]:*

B. LOS E – Freeway ramp terminal intersections and E. Gum Avenue from Bourn Drive to Pioneer Avenue.

This action would recognize that potential physical changes to this section of E. Gum Avenue to increase its capacity are not desirable due to access or right-of-way impacts on adjacent properties or the environment. The impact would be less than significant with mitigation.

AND

Mitigation Measure 4.13-1c:

The 2035 General Plan should be amended to include the following modified policy and new implementation program. [Note: modified text is indicated below with underscore or strike-out]:

Policy 3.A.4 Reduce Vehicle Miles Traveled (VMT) Require new development projects to achieve a 10 percent reduction in VMT per capita or VMT per service population compared to the general plan 2035 VMT performance, or a 10 percent reduction compared to baseline conditions for similar land uses. Apply a VMT transportation performance metric threshold of 30 VMT per capita when measuring transportation impacts for subsequent projects and making General Plan consistency findings. Reducing peak period VMT in particular is desirable due to the added benefit of minimizing severe congestion and reducing emissions. Use of VMT reduction strategies such as those in Chart 6-2 below taken from Quantifying Greenhouse Gas Mitigation Measures, CAPCOA, 2010 or similar professional research documents is encouraged.

Implementation Program 3.8 After final adoption of SB 743 CEQA Guidelines changes and any associated technical advisory recommendations by the State of California, the City will assess the VMT reduction goal contained in Policy 3.A.4. The assessment should consider substantial evidence presented by the State in recommending any alternative VMT reduction goals as CEQA thresholds plus the community values expressed by the goals and policies. The City should strive to set thresholds consistent with the City's envisioned future while striving to achieve reasonable reductions in vehicle travel that produce air pollution and greenhouse gases.

This action would strengthen the policy's influence on reducing vehicle travel associated with new development projects, helping to reduce p.m. peak hour traffic volumes. The impact would be less than significant with mitigation.

Summary of Impact after Mitigation

- a. East Alternative – the impact would be less than significant with mitigation.
- b. South Alternative – no mitigation was required for the South Alternative.

Mitigation Measures for Impact Threshold 2

Impact Threshold 2: *Conflict with an Applicable Plan, Ordinance or Policy Establishing Measures of Effectiveness for the Performance of the Circulation System by Resulting in Unacceptable Levels of Service on **Caltrans Roadways** (bolded text indicates the only difference between Thresholds 1 and 2).*

In the previous section we reported that implementation of the Proposed Project would exacerbate already unacceptable “No Project” LOS D conditions on one freeway segment (the I-5 Mainline east of County Road 102) under 2035 conditions. The impact was considered potentially significant in both the East and South Alternatives. The following mitigation measure was applied (DEIR, p. 4.13-21):

Mitigation Measure 4.13-2:

Implement Mitigation Measure 4.13-1b [see above]. This action would strengthen the policy's influence on reducing vehicle travel associated with new development projects helping to reduce p.m. peak hour traffic volumes.

Summary of Impact after Mitigation

- a. East Alternative – the impact was considered less than significant with mitigation.
- b. South Alternative – the impact was considered less than significant with mitigation.

Mitigation Measures for Impact Threshold 3

Impact Threshold 3: *Conflict with an Applicable Congestion Management Program by Resulting in Unacceptable Levels of Service on CMP Network Roadways.*

In the previous section we reported that implementation of the proposed Project would cause unacceptable LOS conditions on one CMP roadway segment in both the East and South Alternatives. The impact was considered potentially significant, and the following mitigation measures were applied (DEIR, p. 4.13-21).

Mitigation Measure 4.13-3a:

Implement Mitigation Measure 4.13-1b [see above]. This action would strengthen the policy's influence on reducing vehicle travel associated with new development projects.

OR

Mitigation Measure 4.13-3b:

The 2035 General Plan should be amended to include the following modification of the circulation diagram.

East Alternative Circulation Diagram: *Include County Road 102 from E. Gibson Road to Farmers Central Road as a 4-lane principal arterial.*

This action would result in a physical capacity expansion to the roadway under this classification that would improve the LOS to C or better.

Summary of Impact after Mitigation

- a. East Alternative – the impact was considered less than significant with mitigation.
- b. South Alternative – the impact was considered less than significant with mitigation.

VMT mitigation (CEQA post-SB 743)

As summarized in Table 7 (which draws from Table 6), the VMT in both proposed project alternatives would have a significant transportation impact before mitigation, given the significance threshold selected for this case study.

Table 7: VMT Estimates Compared with Numeric Threshold

	South Alternative (2036)	East Alternative (2036)
Household-generated VMT per capita ¹	17.46	18.18
Threshold VMT (85% of Household VMT per capita in 2036; 15% reduction) ²	13.88	13.88
Significant impact? (Exceeds threshold?)	Yes	Yes
Amount to be mitigated (in VMT per capita)	3.58	4.30

¹ Estimates from UrbanSim scenarios

² Based on 2036 SACSIM estimates for the City of Woodland.

To demonstrate the impact of mitigation for the City of Woodland EIR, the lead agency would need to select mitigation strategies that, among other criteria, a) are capable of being modeled by a VMT estimation model that can produce results comparable to the pre-mitigation analysis; or b) have the resulting reductions in travel demand documented in credible peer-reviewed research.

For the selected metric – household-generated VMT per capita – two mitigation scenarios were modeled using UrbanFootprint. Both scenarios address a key determinant of travel behavior and are based off the South Alternative, the better performing of the two alternatives modeled in the previous section. Each mitigation alternative is described below.

Mitigation Scenario 1 – Increased Density:

Mitigation Scenario 1 explores the potential for a higher density build-out of Specific Plan Area 1 (SP 1) in the South Alternative. Rather than building out the South Alternative using densities specified in the General Plan, this scenario meets the same control totals, but with significantly less land consumption. As Table 8 below shows, the increased density alternative roughly doubles the percentage of multifamily dwelling units in the South Alternative.

	South Alternative (2036)	South Alternative with Increased Density (2036)
Large lot detached single-family	33%	32%
Small lot detached single-family	38%	15%
Attached single-family	6%	8%
All multi-family	23%	44%
Total	100%	99%

Mitigation Scenario 2 – Increased Infill:

The second mitigation scenario sought to spread more housing and employment growth in existing developed areas of the City of Woodland. This scenario puts less growth in Specific Plan Area 1 (SP-1) in favor of smaller, more dispersed development opportunities throughout the City. The intent with this scenario was to gauge the VMT impacts associated with less greenfield development at the urban edge. Figure 4 below shows how the “increased density” and “increased infill” mitigation scenarios compare

to one another spatially. Note the relative differences in the concentration of new population in each scenario.

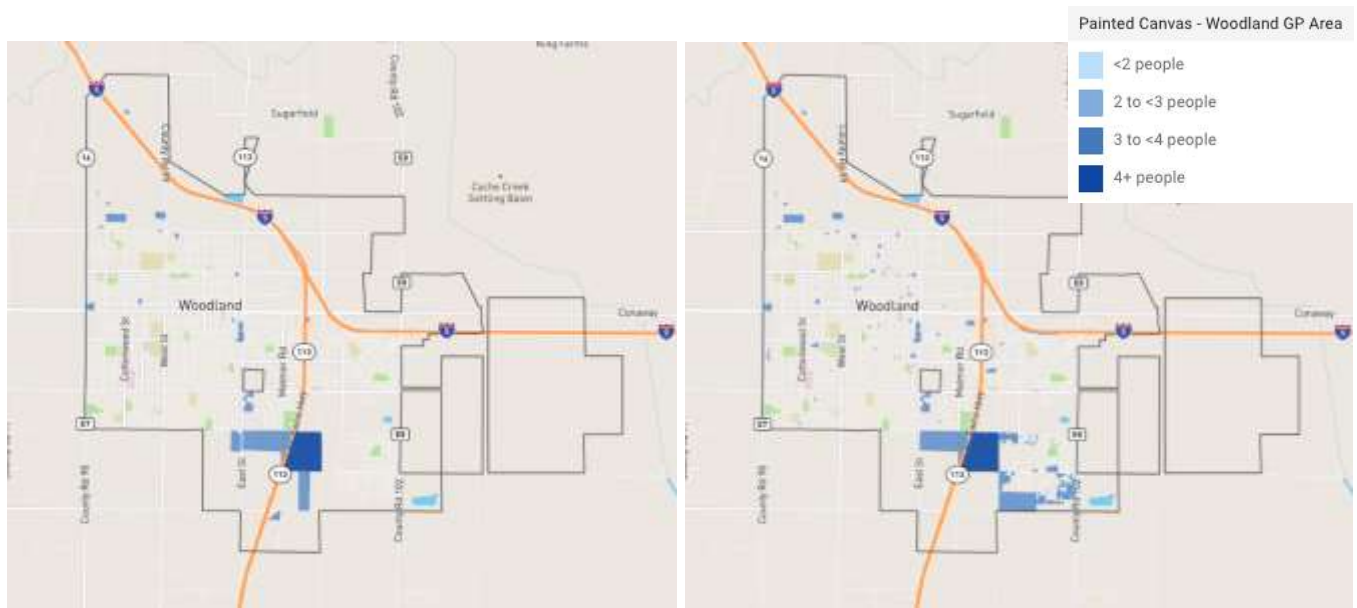


Figure 4: Population per acre associated with new development in the "Increased Density" Mitigation Scenario (left) and "Increased Infill" Mitigation Scenario (right). (Source: UrbanFootprint.)

VMT estimates from the "increased density" and "increased infill" mitigation scenarios are summarized in Table 9 below. Because of the city-wide mitigation measures tested, both scenarios result in lower household-generated VMT per capita than the numeric threshold identified in this case study. As a result, a recommendation of amending the City of Woodland's General Plan to implement either of these two strategies would result in a less than significant transportation impact with mitigation.

Table 9: Mitigation VMT Estimates			
	85% of 2036 Household VMT per Capita (Threshold) ¹	Increased Infill Mitigation Alternative (2036) ²	Increased Density Mitigation Alternative (2036)
Household-Generated VMT	923,183	973,649	944,991
Population	66,036	74,701	74,448
Household-Generated VMT/Capita	13.88	13.03	12.69

¹ Based on 2036 SACSIM estimates for Woodland

² Mitigation alternative VMT estimates based on UrbanFootprint modeling with scaling factor applied

City of Woodland staff comments on case study mitigation strategies

Given the limitations of time and funding and the particular specialty of the analyst, we were able to explore only two alternatives for VMT mitigation in this case study: changing the density and changing the locations of new residential development.

However, City of Woodland planning staff said they would have liked the case study to have examined other, perhaps more likely mitigation strategies, “rather than revisiting the often contentious issues of the density and location of new development, which were addressed and settled in the 2035 General Plan update.”

Along those lines, the final 2035 General Plan, adopted May 2017, contains a chart on p. 3-22 of VMT reduction measures and their corresponding efficacies (originally published in a 2010 CAPCOA report¹⁹ hereafter referred to as “CAPCOA 2010”). Some of these measures will likely be considered by the City when it re-examines its VMT mitigation threshold and strategies under the new CEQA Guidelines.

Example measures are listed below with their estimated percentage VMT reduction (in parentheses) and CAPCOA 2010 report page reference for further details:

- Transit Fare Subsidy (20% work VMT) - especially for commutes to Davis (for details see CAPCOA 2010, pp. 230-233).
- Workplace Parking Pricing (19.7% work VMT) – see CAPCOA 2010, pp. 261-265.
- Employer Sponsored Vanpools/Shuttles (13.4% - work VMT) – see CAPCOA 2010, pp. 253-255.
- Employee Parking Cash-out (7.7% work VMT) – see CAPCOA 2010, pp. 266-269.
- On-street Market Pricing (5.5%) – see CAPCOA 2010, pp. 213-216. Note: Woodland does not yet charge public parking fees.
- Pedestrian Network Improvements (1% to 2% - See CAPCOA 2010, pp. 186-189; includes master planning with shorter blocks lengths to promote walkability.)
- Transit Accessibility improvements (25%) – this could include Woodland’s discussions with the Transit District around the testing and deployment of micro-transit and other means of improving ridership and service. (See CAPCOA 2010, pp. 275-285).
- Pedestrian Network Improvements (2%) – includes master planning with shorter blocks lengths to promote walkability (for details see CAPCOA 2010, pp. 186-189).
- Bicycle Network Improvements (no estimated % reduction provided) – examples include bike lanes, bike parking, and land dedication for trails.

City staff also commented that an online VMT calculator “would be exceptionally helpful as we consider how to evaluate VMT on a regular basis, determine impacts, and assess possible offsets.” One such tool

¹⁹ California Air Pollution Control Officers Association (CAPCOA), *Quantifying Greenhouse Gas Mitigation Measures*, August 2010 (see Chart 6-2, p. 55). Found online at <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>. Ron Milam at Fehr & Peers, who contributed to this SB 743 Implementation Assistance Project, and his colleague Jason Pack, PE, prepared a memo for several MPOs in February 2019 updating the research results compiled in the CAPCAO 2010 document. Their memo can be found here: <http://www.fehrandpeers.com/wp-content/uploads/2019/03/TDM-Strategies-Evaluation.pdf>.

that has since been developed²⁰ estimates the VMT induced annually from adding lane miles to roadways managed by the California Department of Transportation (Caltrans).

Since it is not likely that the measures suggested above can be easily implemented to provide significant results, the City is interested in the possibility of developing a VMT offset fee, and staff expressed hope that any modeling proposed in this case study analysis might be useful toward a future impact fee assessment.

According to City staff, VMT offset fees would be utilized in new development areas, such as the area shown as SP-1A in the General Plan, and the offset funds would be used to further incentivize infill development along Woodland's major corridors and in the downtown.

The staff identified several challenges the City will likely face in implementing VMT mitigation strategies:

- Difficulty in understanding how to transition to use of VMT in the normal course of review without resulting in expensive costs to development to analyze on a case-by-case basis.
- Difficulty in understanding how to calculate VMT, and identifying appropriate and logical mitigations for a suburban community developed in a low-density pattern.
- How to apply a VMT analysis to newly developing greenfield areas so that they are not penalized by surrounding low density suburban development even if the new development pattern is a mixed-use jobs/housing project.

City staff also expressed interest in exploring the concept of VMT offset exchange transactions, a concept developed in the course of this SB 743 Implementation Assistance project.

4. Insights and Policy Implications

(a) Implications for Policy Makers

This case study shows that changes to land use density, design, and distance of development to transit can be effective for general plan VMT mitigation, even in communities that may have a number of residents commuting to job centers in other cities or metropolitan areas.

The city commentary on the case study also illustrates that increasing density as a mitigation strategy remains a politically sensitive issue in many communities. In those communities, elected officials should encourage their staff and citizen advisory boards and commissions to consider a long menu of VMT mitigation actions at the outset, and from that menu develop a mix of responses that is both effective and best fits community goals and concerns.

²⁰ Jamey Volker, who contributed to this project as an attorney and a PhD candidate in the Transportation Technology and Policy program at the University of California, Davis, helped develop a web-based VMT estimator found here: <https://blinktag.com/induced-travel-calculator>. The tool is presented in this webinar, organized by the Institute of Transportation Studies at UC Davis: <https://its.ucdavis.edu/webinar/a-new-web-tool-to-calculate-induced-travel>.

Workshops and papers generated by this project described the legal and administrative precedents for regional approaches that may be preferable to project level or local VMT mitigation strategies. Regional approaches include tiering approaches (an established practice in CEQA), regional planning, and creating a regional mitigation bank. In lieu fees have also “been found to be valid mitigation where there is both a commitment to pay fees and evidence that mitigation will actually occur” (Technical Advisory, p. 27).

Another approach, developed in the course of this case study, is the concept of VMT mitigation offset exchanges, a form of market approach with parallels to both carbon trading and the transfer of development rights. Video and slide presentations on this concept are available on the project website at www.SB743.org.²¹

(b) Technical Insights for Lead Agency Staff

Consistency in modeling for thresholds, impacts and mitigation

The choice of sketch tool or regional travel demand model should be made based on its ability to produce a VMT metric comparable to those produced by the tool used to establish the numeric threshold. If a regional model is used to set the numeric threshold, then any sketch tools for project analysis should use the VMT generation rates produced by that model. And the analyses of mitigation strategies should also be consistent with the modeling used for the threshold and estimation.

Integrating RTP/SCS and VMT target consistency into general plan updates

CEQA guidance describes land use plans as guiding documents for subsequent projects. For general plans, this means that land use and transportation projects implementing the plan should be able to look to significance thresholds and screening criteria in the plan for guidance. The City of Woodland’s General Plan EIR provides such an example with its VMT/capita threshold for land use projects.

Context-sensitive thresholds

The lead agency should work in conjunction with the local MPO, where one exists, as well as CEQA practitioners and others to identify appropriate thresholds of significance for VMT. For a city like Woodland, located near a regional boundary, this may involve deviating from regional average VMT in favor of a threshold that recognizes its particular location within the SACOG region.

Extra-regional travel estimation and mitigation

SB 743 compliance for general plans requires looking at transportation impacts beyond jurisdictional boundaries, and outside regional boundaries and regional travel models. MPO staff should be consulted regarding methods for assessing travel outside the region. An analysis using a worker flow matrix, as well as household or worker travel surveys, the Caltrans statewide travel demand model, or mobile device data can be helpful in estimating extra-regional travel. Extra-regional travel mitigation may also prompt thinking about inter-regional cooperation on mitigation strategies.

²¹ See also Elkind, Lamm and Prather, “An Analysis of Vehicle Miles Traveled Banking and Exchange Frameworks,” published by the Center for Law, Energy and the Environment and the Institute for Transportation Studies at UC Berkeley (October 2018).

Mitigation measures

VMT mitigation measures are sometimes difficult to model for smaller projects, since their effectiveness is often site or building and tenant specific. Sketch tools focused on TDM mitigation may be better at the project scale. At the scale of a general plan, city-wide VMT mitigation strategies such as land use, transit service, parking policies and others are best applied.

Appendix A: Project Participants

LEADERSHIP TEAM

Alyssa Begley	SB 743 Implementation Program Manager, Caltrans
Chris Calfee	Deputy Secretary and Chief Counsel, California Natural Resources Agency
Andy Chesley	Executive Director, San Joaquin Council of Governments
Coleen Clementson	Principal Planner, San Diego Association of Governments
James Corless	Executive Director, Sacramento Area Council of Governments
Chris Ganson	Senior Planner, California Governor's Office of Planning & Research
Hasan Ikhata	Executive Director, Southern California Association of Governments
Jeannie Lee	Senior Counsel, California Governor's Office of Planning & Research
Robert Liberty	Director, Urban Sustainability Accelerator, Portland State University
Rebecca Long	Manager, Government Relations, Metropolitan Transportation Commission
Mike McKeever	CEO, Sacramento Area Council of Governments
Lynn Peterson	Transportation Consultant
Kate White	Dep. Sec. Envir. Policy & Housing Coord., California State Transportation Agency

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Rob Cunningham	Senior Regional Planner, San Joaquin Council of Governments
Rick Curry	Mngr, Transp. Analysis & Applications, San Diego Association of Governments
Chris Ganson	Senior Planner, California Governor's Office of Planning & Research
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Bruce Griesenbeck	Data Modeling Manager, Sacramento Area Council of Governments
Jennifer Heichel	Environmental Management Office Chief, Caltrans
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Appendix B:

Glossary of Terms and Acronyms Used in Case Studies

CalEEMod – California Emissions Estimator Model.

Caltrans – California Department of Transportation.

CAPCOA – California Air Pollution Control Officers Association.

CARB – California Air Resources Board.

CEQA – California Environmental Quality Act.

CMP – Congestion Management Program. The California state CMP requires urbanized counties to prepare their own CMPs in order to receive their share of gas tax revenue.

CRC – California Code of Regulations, which contains the CEQA Guidelines.

CSTDM – California Statewide Travel Demand Model.

DEIR – Draft Environmental Impact Report.

EIR – Environmental Impact Report.

HOV – High Occupancy Vehicle.

HQTA – High-Quality Transit Area. While not defined in statute, the term is used by some MPOs for mapping purposes, and is generally based on definitions of “major transit stop” and “high quality transit corridor” in the State Public Resources Code (specifically the section implementing SB 375, the Sustainable Communities Strategy). SCAG, for example, defines an HQTA for mapping purposes as “the area within one-half mile from major transit stops and high quality transit corridors.”

HQTC– High Quality Transit Corridor, defined in CEQA as a corridor with fixed route bus service with service intervals of 15 minutes or less during peak commute hours.

Infill Site – defined in CEQA as a lot located within an urban area that has been previously developed, or on a vacant site where at least 75% of the perimeter of the site adjoins, or is separated only by an improved public right-of-way from parcels that are developed with qualified urban uses.

LOS – Level of Service, a standard for measuring vehicle delay, initially designed as a performance standard for highways. It is sometimes described as a ratio between the volume of vehicles and the capacity of a roadway. LOS standards in the Highway Capacity Manual (HCM) and AASHTO Geometric Design of Highways and Streets (“Green Book”) use letters A through F, with A being the best and F the worst. LOS “A” describes free flow and “F” describes stop-and-go movement and gridlock.

Low-VMT Area – an area that exhibits VMT below the designated numeric threshold. For residential projects, this includes areas such as transportation analysis zones, or TAZs, that exhibit average VMT per capita less than or equal to 85% of existing city or regional household VMT per capita (Technical Advisory, p. 12).

Major Transit Stop – a site containing an existing rail 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

intervals of 15 minutes or less during the morning and afternoon peak commute periods (PRC § 21064.3). Major transit stops may be included in a regional transportation plan.

MPO – Metropolitan Planning Organization. Federal law requires that any urbanized area with a population of at least 50,000 be guided and maintained by a regional entity known as a metropolitan planning organization. SB 375 details specific roles for California MPOs, expanding their role in regional planning. Eighteen MPOs are designated in California, accounting for approximately 98% of the state's population.

OPR – California Governor's Office of Planning and Research.

PRC – Public Resources Code for the state of California, which contains the CEQA statutes.

RTP – Regional Transportation Plan. A long-term blueprint of a region's transportation system, which identifies and analyzes transportation needs of the metropolitan region and creates a framework for project priorities. Usually RTPs are conducted every five years and plan for thirty years into the future. They are normally the product of recommendations put forth and studies carried out by an MPO, with the participation of dozens of transportation and infrastructure specialists.

SACOG – Sacramento Area Council of Governments, one of the largest MPOs in California.

SACSIM – Sacramento Activity-Based Travel Simulation model, used for regional travel forecasting.

SANBAG – San Bernardino Associated Governments. SANBAG (or "SanBAG") was the regional transportation planning agency and MPO for San Bernardino County, and the funding agency for the county's transit systems. In January 2017, SANBAG split into the San Bernardino County Transportation Authority (SBCTA) and the San Bernardino Council of Governments (SBCOG).

SB 375 – California Senate Bill 375, the "Sustainable Communities and Climate Protection Act of 2008," which is an effort to reduce greenhouse gases by requiring each MPO to develop a "Sustainable Communities Strategy" that integrates transportation, land-use and housing policies to plan for achievement of the greenhouse gas emissions target for their region.

SB 743 – California Senate Bill 743, passed in 2013 – the subject of these case studies.

SCAG – Southern California Association of Governments, the MPO for six of the ten counties in Southern California (Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura). It is the largest MPO in the country, representing over 18.5 million people in an area covering over 38,000 square miles.

SCS – Sustainable Communities Strategy, required by SB 375.

TA – Technical Advisory. OPR publishes a series of these advisories on CEQA-related aspects.

TAZ – Traffic Analysis Zone (or "Transportation Analysis Zone"), the unit of geography most commonly used in transportation planning models. The population of a zone varies, but a zone of under 3,000 people is common for a typical metropolitan planning software. The spatial extent also varies, ranging from very large areas in an exurb to a few city blocks or buildings in a central business district.

TIP – Transportation Improvement Program.

TPA – Transit Priority Area. An area within one-half mile of a major transit stop that is existing or planned, if the planned stop is scheduled to be completed within the planning horizon included in a Transportation Improvement Program adopted pursuant to sections 450.216 and 450.322 of Title 23 of the Code of Federal Regulations (PRC § 21099(a)(7)).

TPP – Transit Priority Project. A TPP meets these specifications: (1) contains at least 50 percent residential use, based on total building square footage and, if the project contains between 26% and 50% nonresidential uses, a floor area ratio of not less than 0.75; (2) provides a minimum net density of at least 20 dwelling units per acres; and (3) is within one-half mile of a major transit stop or high-quality transit corridor included in a regional transportation plan (PRC § 21155(b)).

URBEMIS – URBan EMISsions model, used for quantifying emissions from land use projects.

VMT – Vehicle Miles Traveled, which as a result of SB 743 replaces LOS as the metric for measuring transportation impact under CEQA.

Appendix C:

Response to Caltrans Comment on Proposed VMT Targets in DEIR

Excerpts below are taken from “Chapter 2: Comments and Responses to Comments on the Draft EIR” in the *City of Woodland 2035 General Plan and Climate Action Plan: Final Environmental Impact Report* (January 2017), State Clearinghouse Number 2013032015.

Section. 2.23: COMMENT LETTER #11

Eric Fredericks, Chief, Office of Transportation Planning South Branch (Nov. 3, 2016).

Paragraph 11-4 of Comment Letter (p. 2-69):

Caltrans supports a VMT reduction threshold more stringent than 10%, which is consistent with OPR’s current technical advisory. We do note, however, that the Lead Agency has full discretion to set its own significance thresholds. As identified by Table 4.13-6 of the EIR, the East Alternative would have 33.6 VMT per capita, and the South Alternative would have 33.2 VMT per capita. Both alternatives have VMT rates higher than the existing 32.7 VMT per capita for the City. The City has nearly double the VMT per capita compared to the Sacramento Area Council of Governments (SACOG) regional average of 16.8. We anticipate many of the City’s residents will need to commute to employment centers in Davis and Sacramento, resulting in the high rate of VMT per capita. One potential strategy to reduce VMT is to provide additional public transit service from Woodland to Davis and Sacramento.

Section 2.24: RESPONSE TO COMMENT LETTER #11

City of Woodland Staff

Comment 11-4 of Responses (pp. 2-70, 2-71)

The commenter expresses support for a more stringent VMT reduction threshold than 10 percent but notes that lead agencies have discretion on setting this threshold. The commenter also notes that the VMT per capita for both alternatives is higher than the existing VMT per capita for the City and as compared to the Sacramento Area Council of Governments regional average. The commenter anticipates that many City residents will commute to their jobs, which would result in the high rate of VMT per capita and that one strategy to reduce VMT is to provide additional public transit service.

Response: This comment does not relate to the adequacy of the Draft EIR for addressing potential impact associated with the Proposed Project.

The City agrees with the commenter that lead agencies have discretion to exercise judgement in relation to VMT policies. The current VMT reduction goal considered the OPR recommended VMT threshold for residential and office projects contained in the Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA Implementing Senate Bill 743 (Steinberg, 2013), January 20, 2016, OPR. The ‘draft’ guidance from OPR recommends a per-capita VMT threshold of 15 percent below the existing (baseline) citywide or regional value depending on the specific land use. One justification for this particular threshold was based on analysis contained in Quantifying Greenhouse Gas Mitigation Measures, California Air Pollution Control Officers Association (CAPCOA), 2010 that indicates a 15

reduction in VMT per capita is achievable in suburban 2035 General Plan and CAP Final EIR AECOM City of Woodland 2-71 Comments and Responses to Comments on the Draft EIR areas. This reduction is the 'maximum' feasible reduction in a suburban area and the CAPCOA document acknowledges that limited empirical evidence exists to support this value. The document also explains that achieving maximum reductions in suburban areas requires projects to include a diverse land use mix, workforce housing, and project-specific transit. This will not always be possible for all future land use projects in Woodland, especially in the City's industrial area or when a project only includes a single land use. The 10 percent reduction goal as recommended in Mitigation 4.13-2 considers the local land use and transportation context in Woodland.

As to the differences in Woodland and SACOG VMT per capita estimates, a direct comparison is not appropriate. The Woodland VMT per capita estimates in Table 4.13-6 of the Draft EIR (as documented in footnote 1 to the table) includes travel from all vehicles based on an allocation of VMT that includes 100 percent responsibility for all trips with both trips ends in the City of Woodland and 50 percent responsibility for trips with only one trip in the City. The estimate of a regional average of 16.8 VMT per capita is similar to the household generated VMT per capita for the region contained in Table 16.10 of the SACOG MTP/SCS 2016 Draft Environmental Impact Report. If the cited figure is in fact from the MTP/SCS, this would only represents a portion of total VMT for the region excluding commercial and external trips that are included in the Woodland estimate in Table 4.13-6. The estimate presented for the General Plan alternatives includes not just household generated VMT, but all VMT, so it is not unexpected that it would be higher than a VMT estimate that includes household generated VMT only.

The City will consider expanded transit service in coordination with Yolo County Transportation District (YCTD) as a potential VMT reduction strategy as part of new development review and citywide planning efforts. The specific service expansion and timing will be subject to implementation feasibility and cost effectiveness.