

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

**Empire Lakes Mixed-Use Project
(Rancho Cucamonga, CA)
Case Study**

January 2020

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

Participating Agencies

California Governor's Office of Planning and Research (OPR)
California State Transportation Agency (CalSTA)
California Department of Transportation (Caltrans)
Southern California Association of Governments (SCAG)
San Diego Association of Governments (SANDAG)
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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; **Jamey Volker** at Volker Law Offices, and PhD candidate in Transportation Technology and Policy at UC Davis

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Case Study: Empire Lakes Mixed-Use Project (Rancho Cucamonga, CA)

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 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) chose 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 includes the 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. Empire Lakes Project Description

(a) Project Overview

Empire Lakes is a planned 160-acre residential, office and retail land use project located within the City of Rancho Cucamonga in San Bernardino County. It is adjacent to a Metrolink commuter rail station and surrounded by a mix of commercial, residential, and light industrial uses.

The proposed project, the “Rancho Cucamonga Empire Lakes/Industrial Area Specific Plan (IASP) Sub-Area 18 Specific Plan Amendment” (hereafter referred to as the “Empire Lakes project”) involves an amendment to an existing specific plan in order to establish a mixed-use development on an existing golf course property, the Empire Lakes Golf Course. The proposed Specific Plan Amendment would allow for high and medium-high density residential, mixed use, recreation and open space connections, and transit-oriented land uses all within close proximity to transit services and local regional activity centers.

This case study draws on the draft environmental impact report¹ (“DEIR”) prepared for the project. According to the DEIR (p. 1-1), the total number of dwelling units envisioned is between 2,650 and 3,450, to be determined during future entitlement processes. Up to 220,000 square feet of non-residential uses would also be allowed, as well as open space. A mixed-use overlay presents locations where commercial or mixed use development could be located to converge with primarily residential neighborhoods.

This case study will assess methods of forecasting VMT² performance and mitigation strategies, including the extent to which emerging nearby projects and existing development should be considered for mitigation measures.

Reasons for selection as a case study

Empire Lakes was selected as a case study because it features relatively high-density infill development in a suburban context; is planned to host a mix of residential, office and retail uses; and is near high-quality regional transit.

(b) Project Details

Location and existing conditions

The Empire Lakes project site is located within the Rancho Cucamonga city limits, north of 4th Street (which forms the City of Rancho Cucamonga’s southern boundary with the City of Ontario), west of Milliken Avenue, east of Cleveland Avenue, and south of 8th Street and a BNSF/Metrolink rail line. See Figure 1 below.

¹ *Draft Environmental Impact Report for the Empire Lakes/Rancho Cucamonga Industrial Area Specific Plan Sub-Area 18 Specific Plan Amendment Project*, State Clearinghouse Number 2015041083, November 2015, City of Rancho Cucamonga Planning Department. [Hereafter “DEIR”.]

² VMT = vehicle miles traveled. See Appendix B, Glossary, for definitions of terms and acronyms used in this study.



Figure 1: Empire Lakes project location. (Source: Empire Lakes DEIR, Exhibit 3-1.)

As Figure 1 shows, the site is bisected by 6th Street which creates two roughly equivalent halves. These two geographies are referenced separately throughout the Draft EIR (DEIR) for the Empire Lakes project. The project site is zoned as Empire Lakes Specific Plan (SP-EL).

The project is within the jurisdictional boundaries of the Southern California Association of Governments (SCAG) and is situated in a suburban land use context. The site is adjacent to industrial and office uses to the north, while areas to the south include multi-family residences and office uses. The northern portion of the site is immediately adjacent to the above-referenced Metrolink rail station where passenger trains run daily from downtown Los Angeles to downtown San Bernardino (this same rail line is occasionally used by freight trains) (DEIR, p. 4-7).

Until recently, the project area hosted a public daily fee golf course, associated clubhouse, and pro shop. The Empire Lakes Golf Course and associated uses ceased operation on May 31, 2016;³ however, the former golf course is assumed to be operational for the purposes of the “existing conditions” transportation analysis in this case study.

Land use details

The Empire Lakes project includes up to 3,450 residential dwelling units (du) in “mixed use” (14-40 du/acre), “urban neighborhood” (24-80 du/acre), “core living” (18-35 du/acre), and “village neighborhood” (16-28 du/acre) configurations, as well as a business park component, an urban plaza, recreation areas, water district easement open space, and transit-oriented services. The project’s 220,000 square feet of non-residential uses is expected to provide an estimated net increase of 341 jobs (DEIR, p. 4.11-11).

The project broke ground in 2016 and remains under development at the time of this writing, with several sites under construction and several more under review. Figure 2 and Figure 3 below (Table 3-1 and Exhibit 3-4 from the DEIR) illustrate the project’s proposed land uses and conceptual development plan, respectively.

³ <https://www.sbsun.com/2016/03/25/empire-lakes-golf-course-owners-announce-sale-to-lewis/>

Placetypes	Non-Residential		Residential		
	Acres ^a	Maximum sf	Permitted Density Range (du/acre) ^b	Minimum Permitted Units ^b	Maximum Permitted Units ^b
North of 6th Street					
Transit (T)	1.2	25,000 ^c	-	-	-
Mixed Use (MU)	2.7	75,000 combined	14-40	0	108
	3.0		35-55	0	163
Urban Neighborhood (UN)	20.1	-	24-80	483	1,610
Core Living (CL)	26.5	-	18-35	476	926
Village Neighborhood (VN)	13.5	-	16-28	217	379
Potential Developable Subtotal	67.0	100,000	17.5-47.6	1,176	3,186
<i>Net Developable Minimum Permitted/Maximum Allowed</i>	67.0	100,000	23.8-29.9	1,594	2,000
Non-Developable					
Recreation (REC)	2.5	- ^d	-	-	-
Urban Plaza	0.6	-	-	-	-
MWD Easement Open Space	1.4	-	-	-	-
Roads/Miscellaneous Open Space	10.5	-	-	-	-
Non-Developable Subtotal	15.0	- ^d			
Gross Developable Minimum Permitted/Maximum Allowed	82.0	100,000	19.4-24.4	1,594	2,000
South of 6th Street					
Mixed Use (MU)	3.0	35,000	14-40	0	120
Core Living (CL)	14.1	-	18-35	254	494
Village Neighborhood (VN)	50.1	-	16-28	802	1,403
Potential Subtotal	67.2	35,000	15.7-30.0	1,056	2,017
Net Developable Minimum Permitted/Maximum Allowed	67.2	35,000	15.7-21.6	1,056	1,450
Non-Developable					
Recreation (REC)	4.3	- ^d	-	-	-
Roads/Miscellaneous Open Space	6.9	-	-	-	-
Non-Developable Subtotal	11.2	- ^d			
Gross Developable Minimum Permitted/Maximum Allowed	78.4	35,000	13.5-18.5	1,056	1,450
Mixed Use Overlay					
Mixed Use (MU)	-	85,000	Consistent with underlying Placetype		

Figure 2: Planning Area I Development Program, Empire Lakes. (Source: DEIR, Table 3-1.)



Figure 3: Conceptual development plan for the Empire Lakes project. (Source: DEIR, Exhibit 3-4.)

(c) Discussion of SB 743 in the DEIR

The draft environmental impact report for the Empire Lakes Specific Plan Amendment project⁴ (hereafter referred to as the “DEIR”) was prepared prior to full implementation of SB 743 and before final technical guidance was published by OPR. However, the DEIR includes a discussion of the implications of SB 743, concluding that “a defined set of analysis steps to meet all aspects of the law cannot be defined at this time,” since SB 743 implementation “is still evolving... as the state agency provides guidance on impact thresholds and the courts review relevant cases.” It adds, however:

The mixed-use nature, density of the project, and ability to utilize the existing Metrolink station are all attributes that would assist in decreasing the VMT generated by the project on a per service population basis. The project’s attributes are consistent with reducing VMT and development of the project is consistent with the goals and policies of SB 743 (DEIR, p. 4.13-8)

On the same page, the DEIR points out that while the SB 743 guidelines implementing the VMT metric would be applied prospectively once they are adopted, “VMT analysis is already required in CEQA documents for air pollution, greenhouse gas, and energy analyses,” and refers readers to those sections in the DEIR for additional information related to the project’s VMT generation. These other VMT estimates are discussed later in this case study.

3. CEQA Analysis

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

- (a) A new CEQA exemption provided by SB 743 (land use projects only)
- (b) Thresholds of significance for transportation impact analysis
- (c) Transportation impact analysis
- (d) Mitigation measures

(a) New CEQA Exemption Provided by SB 743

SB 743 created a new statutory exemption from CEQA review for certain types of land use projects (see Pub. Resources Code § 21155.4). Specifically it exempts a residential, employment center,⁵ or mixed-use development (including a subdivision or zoning change) that is:

- (1) Proposed within a transit priority area, as defined in Public Resources Code section 21099(a)(7).⁶

⁴ *Draft Environmental Impact Report: Empire Lakes/Rancho Cucamonga Industrial Area Specific Plan, Sub-Area 18 Specific Plan Amendment Project*, prepared for the City of Rancho Cucamonga, November 2015. State Clearinghouse Number 2015041083. (Hereafter referred to as “DEIR” in the text.)

⁵ As defined in Pub. Resources Code § 21099(1)(b).

⁶ Pub. Resources Code § 21099(a)(7) defines a Transit Priority Area as “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 Section 450.216 or 450.322 of Title 23 of the Code of Federal Regulations.”

- (2) Undertaken to implement and is consistent with a specific plan for which an EIR has been certified.
- (3) Consistent with the relevant Sustainable Communities Strategy or alternative planning strategy approved by⁷ the California Air Resources Board (CARB.)

The Empire Lakes project, however, does not qualify for this exemption because it satisfies only one of the exemption's three requirements as shown below:

- (1) *Criterion 1: Within a transit priority area (TPA).*

Assessment: Only the northern half of the project lies within a current TPA, as shown in Figure 4.⁸ The southern half lies within a SCAG-designated High-Quality Transit Area (HQTAs), which is less restrictive than a TPA⁹ and therefore not a substitute for a TPA for this purpose.

- (2) *Criterion 2: Undertaken to implement a specific plan.*

Assessment: The project itself is an amendment to an existing specific plan. It was not undertaken to implement a separate specific plan for which an EIR was certified. Therefore, the project does not meet this criterion.

- (3) *Criterion 3: Consistent with a sustainable communities strategy.*

Assessment: The proposed project, a Specific Plan Amendment, is consistent with the goals identified in SCAG's Regional Transportation Plan/Sustainable Communities Strategy. This is described in Section 4.9 of the DEIR.

⁷ "Approved by" means that CARB, pursuant to Section 65080(H)(2)(b) of the Government Code, has accepted an MPO's determination that the SCS or alternative planning strategy would, if implemented, achieve the GHG emissions reduction targets.

⁸ There may be room for interpretation of the phrase "within a TPA" (the 1/2 mile circle around a major transit stop). For purposes of implementing the Sustainable Communities Strategy, 25% of the project site may lie farther than 1/2 mile from a major transit stop (i.e., outside the TPA) yet the project would still be considered to be within 1/2 mile of a major transit stop (i.e., within a TPA) (Pub. Resources Code § 21155 (b)). But the portion of the Empire Lakes project lying farther than 1/2 mile from a major transit stop exceeds that percentage, so the project could not in any case be considered to be within a TPA.

⁹ HQTAs allow a longer planning horizon than TPAs for the planned "major transit stops" and "high quality transit corridors" that may be included in their area; therefore they tend to be larger than TPAs since they typically encompass more stops. The planning horizon for an HQTAs is the regional transportation plan (RTP), while the horizon for a TPA is the shorter-term transportation improvement program (TIP).



Figure 4: Empire Lakes site in relation to SCAG-designated HQTAs and current TPAs. (Source: DEIR, Exhibit 4.9-1.)

(b) Thresholds of Significance

OPR’s *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018) describes two types of thresholds for assessing transportation impacts: preliminary “screening thresholds” and “numeric thresholds.” Each is discussed in turn below.

Screening thresholds for transportation impacts

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).

LOS-based screening thresholds (CEQA pre-SB 743)

The Initial Study prepared for the Empire Lakes project¹⁰ used the “environmental checklist” criteria found in Appendix G of the CEQA Guidelines to establish thresholds of significance. Two Appendix G criteria are relevant to this case study, as they were used to establish thresholds of significance for the

¹⁰ The Initial Study was circulated with the Notice of Preparation (NOP) and included in Appendix A of the DEIR.

project’s LOS analysis.¹¹ If a project satisfies either of these two criteria, it will normally be considered to have a significant adverse environmental impact related to traffic and circulation (DEIR, p. 4.13-15):

- (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 including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.
- (2) Conflict with an applicable congestion management program, 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.

Screening thresholds for Criterion 1

This criterion can be measured in terms of impacts to LOS. The City of Rancho Cucamonga, the City of Ontario, Caltrans, and (what was then) SANBAG (San Bernardino Association of Governments), as part of the Congestion Management Program (CMP), established explicit LOS performance criteria for roadway intersection and freeway operations within their jurisdictions. Table 1 shows the applicable LOS thresholds.

Table 1: LOS Thresholds for Traffic Load and Street System Capacity		
	Intersection Existing Conditions	
	Acceptable LOS	Significant impact if...
City of Rancho Cucamonga	LOS D	The addition of project-generated trips causes an intersection to change from an acceptable LOS to a deficient LOS or if project traffic increases the delay at any intersection already operating at an unacceptable LOS.
City of Ontario	LOS D	Same as above
Caltrans	LOS C	Project causes the LOS to change from an acceptable LOS (C or better) to a deficient LOS (D or worse) or causes an increase in delay/density on a Caltrans facility operating at an unacceptable level.

¹¹ With passage of SB 743, both of these Appendix G criteria were modified to reflect the fact that LOS was replaced by VMT as the new transportation impact metric.

Screening thresholds for Criterion 2

The San Bernardino County Congestion Management Program (CMP) defines the network of state highways and arterials and LOS standards and related procedures, as well as the process for mitigating impacts of new development on the transportation system and a technical justification for the approach.

The San Bernardino Associated Governments (SANBAG), as the congestion management agency for the CMP at the time, set LOS E as the minimum acceptable threshold for all roadways and highways on the designated CMP system. However, given that the LOS standards adopted by Caltrans and the Cities of Rancho Cucamonga and Ontario are more stringent than the County's CMP standard, any analysis that satisfies City and Caltrans standards would automatically satisfy the CMP standard as well. Thus, the local LOS standards (adopted by Caltrans and the Cities of Rancho Cucamonga and Ontario) were applied as thresholds in the traffic impact assessment.¹²

Screening results

The Initial Study concluded that additional, project-level analysis of both sets of screening thresholds examined above would be required in an EIR – that is, neither impact could be screened out before conducting a detailed study.

The next section shows how a screening based on VMT thresholds (rather than LOS thresholds) could be conducted for the Empire Lakes project.

VMT-based screening thresholds (CEQA post-SB 743)

OPR's *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018) suggests several ways lead agencies may screen out land use projects without having to conduct a detailed VMT impact analysis (pp. 12-15). These screening thresholds are separate from the CEQA Guidelines Appendix G criteria.

Absent information to the contrary, a project that meets one or more of these screening criteria may be presumed to have a less-than-significant transportation impact in terms of VMT.

For mixed-use projects like Empire Lakes the Technical Advisory (p. 17) recommends that the lead agency either evaluate each use separately and compare results to the appropriate threshold, or focus analysis on the dominant use.¹³ Combining land uses for VMT analysis is not recommended.¹⁴

The three VMT-based thresholds relevant to this case study are described briefly below (but see the Technical Advisory for more detail). Following the description of each threshold is an assessment as to whether and how it applies to the Empire Lakes project.

¹² The CMP recommends applying local agency thresholds if they provide improved service levels compared to CMP requirements.

¹³ The "dominant use" would be determined by the agency, either pursuant to an established policy or on a case-by-case basis supported by substantial evidence.

¹⁴ Doing so may result in an inaccurate impact assessment, streamlining certain mixes of uses in a manner disconnected from policy objectives or environmental outcomes.

- **Small projects** – projects that would generate fewer than 110 auto trips per day¹⁵ can be presumed to cause a less-than-significant transportation impact.

Assessment: The Empire Lakes project will easily generate more than 110 trips per day, so is therefore not eligible for this screen.

- **Projects near transit** – residential, retail, office, and mixed-use projects proposed within ½ mile of an existing “major transit stop” or an existing stop along a “high-quality transit corridor”¹⁶ can be presumed to cause a less than significant transportation impact (Guidelines, § 15064.3 (b)(1)). This presumption would not apply, however, if project-specific or location-specific information indicates that the project will still generate significant levels of VMT. For example, if the project (a) has a Floor Area Ratio (FAR) of less than 0.75; (b) includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction; (c) is inconsistent with the applicable Sustainable Communities Strategy; and/or (d) replaces affordable residential units with a smaller number of moderate- or high-income residential units (Technical Advisory, p. 14).

Assessment: The Empire Lakes project does not qualify for this screen because the southern half of the site lies outside a TPA, which depicts the area “near transit” as defined by this threshold (see map in Figure 4 above). See also the discussion of this criterion in section 3(a) above, related to CEQA exemption eligibility requirements.

- **Location in Low-VMT area (“map-based screening”)**¹⁷ – residential and office projects that locate in areas with low VMT and incorporate similar features as their surrounding area (e.g., density, mix of uses, transit accessibility) tend to exhibit similarly low VMT and can thus be screened out from further analysis.¹⁸

“Low VMT areas” are defined with respect to the numeric thresholds identified in the Technical Advisory. For residential projects, “low VMT area” includes areas that exhibit average VMT per capita that is below 85% of existing city or regional household VMT per capita. For office projects, it includes areas that exhibit VMT per employee below 85% of existing regional VMT per employee. Retail projects are not eligible for this screening, as any net increase in VMT would be considered significant (Technical Advisory, pp. 16-17). These thresholds, applied directly to projects, rather than assumed based on maps, are discussed again below.

Assessment for Office VMT: The office component of the Empire Lakes project does not qualify for this screen, because per-worker VMT in the surrounding area is higher than the screening threshold set by SCAG (see Figure 5).

¹⁵ That is, absent substantial evidence that the project would generate a potentially significant level of VMT, or the project’s inconsistency with a Sustainable Communities Strategy (SCS) or general plan.

¹⁶ See Appendix B: Glossary for definitions of “major transit stop” and “high quality transit corridor.”

¹⁷ The phrase “map-based screening” derives from the use of maps created with VMT data (e.g., from a travel survey or travel demand model) that can illustrate areas currently below threshold VMT.

¹⁸ This screen does not apply to retail projects, since the significance threshold for such projects is any increase in net VMT.

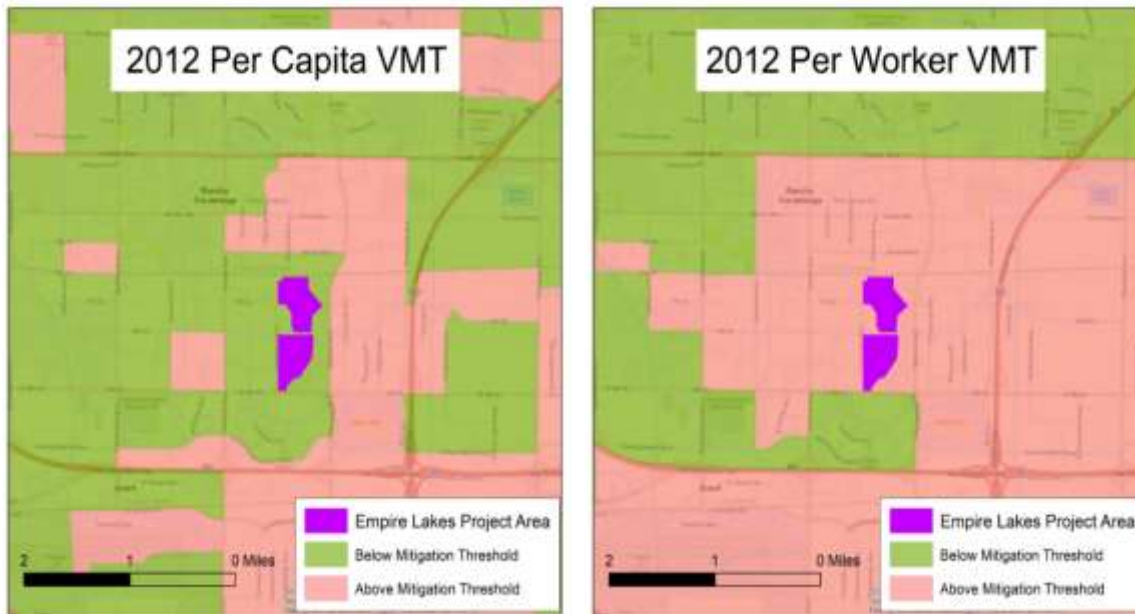


Figure 5: VMT per capita (for residential screening) and per worker (for office screening) in area surrounding Empire Lakes project (2012).

Assessment for Residential VMT: While Figure 5 indicates the residential component *may* qualify for this screen because the surrounding area has low residential VMT per capita, there are at least two reasons not to rely on this screen to presume less than significant impact on VMT:

- 1) The “surrounding area” of low VMT is actually quite thin on the east and north sides of the project.
- 2) It is not clear that the project will “incorporate similar features” as the surrounding area. Figure 6 below shows an aerial view of the surrounding area. The density and mix of uses in the surrounding area varies, from fairly dense residential development to warehouses and offices. The proposed project, as conceptualized in Figure 6, will likely look quite different from its surroundings, dominated more by residential use.

For these reasons, we decided the residential component was not eligible for this screen. If it were eligible, and given that an argument could be made that residential is the project’s “dominant use,”¹⁹ the entire project could be screened out based on this dominant use.

¹⁹ While OPR’s Technical Advisory does not define “dominant use,” a lead agency might reasonably conclude that Empire Lake’s planned 2,650 residential units (the low end of build-out), representing around two million square feet, dominates 220,000 square feet of potential nonresidential uses.



Figure 6: Aerial view showing land uses surrounding Empire Lakes project site. (Source: Google Earth.)

Numeric thresholds for transportation impacts

“Numeric thresholds” define the point at which impacts on the environment are regarded as “significant” and trigger mitigation obligations under CEQA; and if they are not mitigated, a Statement of Overriding Considerations (SOC) is required.

Numeric thresholds for LOS analysis (CEQA pre-SB 743)

Numeric thresholds of significance for transportation impacts are defined by the lead agency based on substantial evidence. In the Empire Lakes DEIR, the City employed the same transportation impact thresholds as in its Initial Study, from Appendix G in the CEQA Guidelines. The two thresholds relevant to this case study and their associated LOS standards are presented in the section above titled “LOS-based screening thresholds.”

Numeric thresholds for VMT analysis (CEQA post-SB 743)

As was the case prior to SB 743, lead agencies have discretion to establish significance thresholds for transportation impacts such as VMT, published in their general plans and/or policy documents.

OPR’s *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018) recommends lead agencies use separate numeric thresholds for residential, office, and retail projects.

- For residential VMT, the Technical Advisory recommends a 15% reduction relative to either regional or municipal averages as the threshold (p.12).

- For office VMT, the same 15% reduction applies, but OPR recommends using regional VMT per employee for the threshold of significance.
- The retail component of the project was determined to be local-serving (no store over 50,000 square feet)²⁰ and could thus be screened out from further analysis, since local-serving retail is generally presumed to have a less-than-significant impact. Lead agencies are in the best position to decide when a retail project would likely be local-serving (Technical Advisory, p.17). If, however, the retail component were regional serving, OPR recommends the lead agency assess the “net change in total VMT” across the affected area because such projects typically re-route travel from other retail destinations. This figure would serve as the threshold for retail VMT.

Table 2 shows the calculation of numeric thresholds from regional averages for residential and office VMT for the Empire Lakes case study.

	Residential VMT per Capita	Office VMT per Worker
SCAG’s regional average (2012) ²	22.8	23.4
Threshold for Project (85% of 2012 Average)	19.4	19.9

¹ From SCAG’s Regional Model - household-generated and worker-generated VMT for San Bernardino County.

² Although the Notice of Preparation for the Empire Lakes project was issued in 2015, which would therefore be the baseline year, 2012 data is used for illustrative purposes.

(c) Transportation Impact Analysis

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

As part of the DEIR, a traffic impact analysis was prepared for the proposed Empire Lakes project to identify potential significant project impacts.²¹ A study area and the intersections to be analyzed were determined based on preliminary estimates of trip generation, trip distribution, and trip assignments for the project, as well as input from staff at Caltrans and the Cities of Rancho Cucamonga and Ontario.

The study area examined in the DEIR spans both the City of Rancho Cucamonga and the City of Ontario and includes all freeway links within a five-mile radius with 100 or more peak-hour project trips, and

²⁰ See discussion of local-serving retail in OPR’s Technical Advisory, pp. 16-17. It explains why local-serving retail – which typically includes no store larger than 50,000 square feet – tends to decrease net total VMT. Empire Lakes Specific Plan zoning does not allow retail establishments larger than 10,000 square feet (DEIR, Appendix E, A-58, Table Note 12); so we presumed the project’s retail component could be considered local-serving.

²¹ Fehr & Peers, *Final Transportation Impact Analysis for Empire Lakes*, prepared for SC Rancho Development Corp., October 2015, OC14-0292. (Included in its entirety in Appendix I of the DEIR for Empire Lakes.)

arterial roadways with 50 or more peak-hour project trips (see Figure 7). It is consistent with the San Bernardino County CMP study area guidelines (DEIR, p. 4.13-1).



Figure 7: Study area and intersections analyzed for LOS impact. (Source: DEIR, after p. 4.13-2).

The following traffic scenarios were analyzed to identify project impacts:

- Existing Year (2014) Without Project and Plus Project
- Completion Year (2024) Without Project and Plus Project
- Cumulative Year (2036) Without Project and Plus Project

Details of each scenario’s traffic conditions are described in the DEIR, pp. 4.13-17 to 4.13-19.

A primary component of LOS analysis is estimated trip generation, or the amount of traffic attracted to and produced by a development based on its specific land uses. Given the mixed-use nature of Empire Lakes, the DEIR (p. 4.13-19) determined “it will not generate traffic in a similar manner as to what is typically evaluated for most traffic studies.” Thus project trip generation (as well as expected internalization, and pass-by trips) were estimated using the Mixed-Use (MXD) Trip Generation Model developed for the EPA by Fehr & Peers and several academic researchers.²²

²² See <https://www.epa.gov/smartgrowth/mixed-use-trip-generation-model>.

Based on trip generation and trip distribution estimates, project trips were assigned to the surrounding roadway network. (The assignment of “project only” trips is shown in Exhibits 4.13-3a through 4.13-3f in the DEIR, starting at p. 4.13-22.) These figures were then used to calculate LOS for 36 local intersections and numerous segments of the I-10 and I-15 freeways in the scenarios analyzed.

The intersection analysis found that a number of Rancho Cucamonga, Ontario and Caltrans intersections, including CMP-designated intersections, were projected to experience a significant impact because of the project in all scenarios (DEIR pp. 4.13-22 to 4.13-65).

Of the freeway segments studied, most, including CMP-designated freeway facilities, were found to operate below an acceptable standard (LOS C) in all scenarios. Since the proposed project was projected to increase density on certain freeway facilities identified as already operating at an unacceptable level, the project was considered to have a significant impact at those segments as well.

The DEIR used Appendix G criteria in the CEQA Guidelines as significance thresholds for traffic impact analysis. The two thresholds listed below are presented in an abbreviated format, but are described in full, along with associated LOS standards, in the previous section titled “LOS-based screening thresholds.” Under each threshold is a summary of the impact determined by the traffic analysis in the DEIR.

Threshold 1: Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system

Impact: Increases in traffic impacts are presented in the DEIR (pp. 4.13-22 to 4.13-65). The project was found to cause “significant and unavoidable” impacts under the Existing Year (2014) and Completion Year (2024) scenarios at seven intersections and “significant and unavoidable” cumulative impacts under the Cumulative Year (2036) scenario at four intersections. In addition, the project was found to cause “significant and unavoidable” impacts at numerous I-10 and I-15 mainline segments and ramps.

Threshold 2: Conflict with an applicable congestion management program

Impact: The analysis found that CMP-designated intersections and freeway facilities would operate at a deficient LOS with the proposed project. Impacts to identified CMP facilities would be significant and unavoidable.

The analysis includes cumulative impacts. The proposed project would result in significant and unavoidable cumulative impacts under the Cumulative Year (2036) Plus Project scenario (DEIR, p. 4.13-66).

In the Mitigation Measures section of this case study, we will return to these findings and present the DEIR’s final determination of significance of traffic impacts after mitigation measures and regulatory requirements were applied.

VMT analysis (CEQA post-SB 743)

VMT estimates in the DEIR

The Empire Lakes DEIR included VMT estimates in Section 4.6: Greenhouse Gas Emissions,²³ and Section 6.3: Energy Conservation. These were modeled using CalEEMod and are presented below for reference (Figure 8 and Figure 9). Wherever possible, trip generation rate assumptions from the VMT calculations in Figures 8 and 9 were used in this case study.

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Golf Course	643.32	731.34	711.54	1,621,174	1,621,174
Total	643.32	731.34	711.54	1,621,174	1,621,174

Figure 8: CalEEMod VMT Trip Summary, “No Project.” (Source: Empire Lakes DEIR, Appendix C, p.C-139.)

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	20,182.50	21,942.00	18595.50	74,583,756	73,837,918
City Park	0.00	0.00	0.00		
General Office Building	776.00	167.20	68.80	3,375,285	3,341,532
Other Asphalt Surfaces	0.00	0.00	0.00		
Strip Mall	4,218.20	4,001.20	1944.60	12,498,572	12,373,586
Total	25,176.70	26,110.40	20,608.90	90,457,613	89,553,036

Figure 9: CalEEMod VMT Trip Summary, “With Project.” (Source: Empire Lakes DEIR, Appendix C, p.C-130.)

Determining the impact area

Based on California appellate court precedents, the impact area for land use projects is defined as the area over which travel behavior changes because of the project. With respect to VMT, OPR’s Technical Advisory (p. 23) reiterates that “[t]he assessment should cover the full area in which driving patterns are expected to change. VMT estimation should not be truncated at a modeling or jurisdictional boundary for convenience of analysis when travel behavior is substantially affected beyond that boundary.”

For residential and office VMT, the impact area can be delineated by the extent of all project-based trips (i.e., trips generated by the uses in the project). For retail, OPR recommends lead agencies assess the change in total VMT in the area affected with and without the project, since retail projects typically re-route travel from other retail destinations. This, however, would not apply if the retail component of a project is local-serving (Technical Advisory, p.16). Since we determined that the Empire Lakes retail

²³ For most land use development projects, VMT is the most direct indicator of total GHG emissions.

component could be considered local-serving (as discussed above) and thus could be presumed to cause a less than significant VMT impact, it was not analyzed further in this case study.

Selecting a modeling tool

As with threshold methods, there are several potential ways to estimate a project's VMT and other transportation impacts. Regional models can provide data for project-generated VMT. Sketch models can also be used, for example the EPA's Mixed Use District (MXD) model which was applied in the Empire Lakes LOS analysis for traffic impacts. Whatever model is selected, OPR recommends that lead agencies select models that are sensitive to the features of the project that affect VMT, and facilitate as close as possible an apples-to-apples comparison of the methods used to measure threshold VMT (Technical Advisory, p. 26).

The Envision Tomorrow (ET) Mixed-Use District (MXD) Trip Generation Model was selected to estimate project VMT for Empire Lakes. The ET MXD model takes a similar approach to the EPA MXD model in that it estimates trip generation and internal capture by using ratios from a leading research-based MXD model to reduce Institute of Transportation Engineers (ITE) vehicle trip estimates to account for the VMT savings from a mixed-use project. It also presents a summary of results that shows the effects on VMT, internal capture, and mode split due to enhanced activity density and diversity of land uses within a study area. The model was developed by researchers at the University of Utah and is based on the methodology described in Ewing et al. (2011),²⁴ which analyzed datasets for MXDs in fifteen large and diverse metropolitan regions.

Model assumptions and inputs

The Envision Tomorrow (ET) MXD model requires users to provide a base condition and project condition development program. To estimate per capita and per employee VMT at project build-out, the ET MXD was provided inputs that match those used in the Empire Lakes TIA. Those inputs are summarized in Figure 10 (Table 3-5 from the Empire Lakes TIA). Had the project included regional-serving retail, the net change in VMT (from pre- to post-project conditions) would also have been of interest, but since the project's retail component is considered local-serving, it can be excluded from the analysis.

²⁴ Ewing, R., Greenwald, M., Zhang, M., Walters, J., Feldman, M., Cervero, R., Frank, L., and Thomas, J. "Traffic Generated by Mixed-Use Developments – A Six-Region Study Using Consistent Built Environmental Measures." *Journal of Urban Planning and Development*, Vol. 137, No. 3, 2011, pp. 248–261. Available at: <https://ascelibrary.org/doi/full/10.1061/%28ASCE%29UP.1943-5444.0000068>

Table 3-5 from Empire Lakes DEIR		
PROPOSED PROJECT MXD MODEL INPUT VALUES		
Input Variable	Input Value	Source
Developed Area (Acres)	160.4	Project Site Plan
Number of Project Intersections	11	Project Site Plan and Sample Development Area Layouts
Transit Available within Site	Yes	Site Plan and Transit Maps
Employment within 1 Mile of the Project Site	2,000	Estimated from United States Census Bureau data
Employment within a 30 minute trip by transit	15,000	
Total SCAG Regional Employment	7,733,805	Estimated from SBTAM Travel Demand Forecasting Model
Average household size near site	2.80	Estimated from United States Census Bureau data
Average vehicles owner per dwelling unit near site	1.81	
Multi-Family (Dwelling Units)	3,450	Project Site Plan
Office (Non-Medical, KSF)	80	
General Retail (KSF)	115	

Figure 10: Empire Lakes MXD model inputs. (Source: DEIR, Table 3-5, p. 20.)

OPR's *Technical Advisory on Evaluating Transportation Impacts in CEQA* (p. 27) states that "whenever possible, agencies should input localized trip lengths into a sketch model to tailor the analysis to the project location" and 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." It also recommends that any changes to sketch model defaults should be recorded and reported for transparency of analysis.

Following OPR's recommendations for numeric thresholds (see numeric thresholds section above), a 15% reduction below regional average VMT from SCAG's regional travel model was used to set the threshold for residential VMT per capita and for office VMT per worker. To produce results comparable to SCAG's regional VMT estimates, average trip lengths by purpose from the SCAG model were used in place of the default trip lengths contained within the Envision Tomorrow model's VMT assumptions. OPR's draft technical guidance dated January 20, 2016 provides examples of how to estimate suitable trip lengths.²⁵

For the purposes of this case study, trip lengths for the City of Rancho Cucamonga from SCAG's regional travel model were used; although if possible, using trip lengths for individual transportation analysis zones (TAZ's) would provide a more refined analysis. The average trip lengths are presented in Table 3.

²⁵ http://opr.ca.gov/docs/Revised_VMT_CEQA_Guidelines_Proposal_January_20_2016.pdf (see pp. 47-56).

Table 3: MXD Model Trip Length Assumptions (Miles)

	Home-Based Work (HBW)	Home-Based Other (HBO)	Non-Home-Based (NHB)
SCAG Average Trip Lengths (2012) ¹	15.5	8.9	7.6

¹ Obtained from SCAG’s regional model for the City of Rancho Cucamonga.

Findings from VMT impact analysis

Envision Tomorrow was used to model a “build” scenario that assumed a fully implemented Empire Lakes development. Results of this analysis are summarized in Table 4.

Table 4: VMT Estimates Compared to Applicable Threshold

	Residential VMT per Capita	Office VMT per Worker	Average Daily Retail VMT
Build	21.2	28.0	N/A
Numeric threshold (85% of 2012 average)	19.4	19.9	N/A
Excess VMT (% above threshold)	9%	41%	N/A

As evidenced in the table, project VMT would exceed thresholds for both residential uses (by 1.8 VMT or 9%) and office uses (by 8.1 VMT or 41%) and thus require mitigation, discussed in the next section.

(d) Mitigation Measures

LOS mitigation

As described above, the Empire Lakes DEIR’s traffic impact analysis found that vehicle trips generated by operation of the proposed project would lead to study area intersections and freeway facilities operating at deficient LOS, exceeding City of Rancho Cucamonga, City of Ontario, and/or Caltrans standards (Threshold 1). In addition, CMP-designated intersections and freeway facilities would operate at a deficient LOS with the proposed project (Threshold 2).

The DEIR on pages 4.13-68 to 69 describes five mitigation measures: MM 13-1 through MM 13-5. These include a range of congestion management measures such as:

- Intersection improvements at affected Rancho Cucamonga intersections including optimizing PM signal timing plans, lane additions at 6th Street and Haven Avenue, and a new traffic signal at 6th Street and Cleveland Avenue (see MM 13-1).
- Signal timing optimization at the City of Ontario’s 4th Street and Haven Avenue, 4th Street and Milliken Avenue, and Inland Empire Boulevard and Haven Avenue (see MM 13-2).
- Signal timing optimization at Caltrans intersection of I-10 Westbound Ramps – Ontario Mills Parkway and Milliken Avenue (see MM 13-3).

- Pay fair share fee to City of Rancho Cucamonga for signal timing optimization at Foothill Boulevard and Day Creek Boulevard, 6th Street and Haven Avenue, and 6th Street and Milliken Avenue (see MM 13-4).
- Submittal of a Traffic Control Plan to the Engineering Services Department for review and approval (see MM 13-5).

The project’s traffic impacts after the application of these mitigation measures are described here:

Threshold 1: Conflict with applicable plan, ordinance or policy for performance of circulation system.

Impact after mitigation: Implementation of mitigation measures MM 13-1 through MM 13-4 (and application of two regulatory requirements identified in the DEIR) would reduce impacts identified in the analysis section above, but some impacts would remain significant due to the lack of feasible mitigation or because the project Property Owner/Developer or the City of Rancho Cucamonga cannot guarantee the implementation of improvements in another jurisdiction besides their own.

Thus, even with the implementation of mitigation measures, the project and cumulative traffic impacts resulting from implementation of the proposed project cannot be fully mitigated. As shown in the DEIR’s impact analysis (pp. 4.13-22 to 58), operational traffic impacts would remain significant and unavoidable. Construction-related traffic impacts would be less than significant with adherence to identified regulatory requirements and implementation of mitigation measure MM 13-5 (DEIR, p. 4.13-59).

Threshold 2: Conflict with an applicable congestion management program²⁶ or other standards established by the county congestion management agency for designated roads or highways.

Impact after mitigation: As discussed in the LOS analysis section above, the proposed Empire Lakes project would result in several CMP-designated intersections and freeway facilities operating at a deficient LOS. The DEIR found that “identified mitigation for certain intersections is not feasible and/or the Property Owner/Developer and the City of Rancho Cucamonga cannot guarantee implementation of mitigation in the City of Ontario or for Caltrans facilities” (DEIR 4.13-59, 62, 72). Therefore, it concluded that even after mitigation there would still be several “significant but unavoidable” impacts on Level of Service on specific CMP facilities (freeway facilities and nearby intersections).

VMT mitigation

As summarized in Table 4 above, the VMT in the “build” alternative exceeds recommended thresholds and thus the project would have a significant VMT impact (related to its residential and office components) before mitigation, assuming the lead agency chose not to conduct a transportation impact analysis by relying on the small retail project and low-VMT-area residential project screening results.

To demonstrate the impact of mitigation for the Empire Lakes project, the lead agency would ideally select mitigation strategies that, among other criteria, a) are capable of being modeled by a VMT

²⁶ Including, but not limited to level of service standards and travel demand measures.

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 residential VMT, five project-level mitigation measures were selected to analyze and compare their effectiveness at reducing VMT:

- Connectivity – increase connectivity by breaking the site into smaller blocks
- Transit Access – improve transit access by creating a new OmniTrans route through the site
- Affordable Housing – increase income diversity by making 50% of the project’s housing units affordable to households earning 60% of Rancho Cucamonga’s Area Median Income (AMI)
- Carsharing Program – institute a carsharing program with a utilization goal of 50% of all residents of the project
- Residential Density – double the number of residential units on the site

The results of each mitigation strategy are summarized in Table 5. As the table shows, project-specific strategies such as affordable housing, transit access, and road network connectivity have a relatively small impact on VMT as compared to city or area-wide strategies.

Table 5: Impact of Mitigation Strategies on Reducing Residential VMT

	Source	Percent Reduction	Numeric Threshold ¹	Build w/o Mitigation	Build w/Mitigation
Connectivity	Envision Tomorrow MXD ²	0.3%	19.4	21.2	21.2
Transit Access	Envision Tomorrow MXD	1.0%	19.4	21.2	21.0
Affordable Housing	Envision Tomorrow MXD	1.0%	19.4	21.2	21.0
Carsharing Program	Cervero et al., 2007 ³	32.9% per carsharing member (10% max. reduction ⁴)	19.4	21.2	19.1
Residential Density	Kim and Brownstone (2013) ⁵	9.0% per 100% increase in density	19.4	21.2	19.3

¹ See Table 2 for threshold calculations

² <http://envisiontomorrow.org/site-mxd>

³ https://arb.ca.gov/cc/sb375/policies/carsharing/carsharing_brief.pdf

⁴ Per CAPCOA research, 10% is the maximum any strategy can achieve in a suburban context

⁵ https://ww3.arb.ca.gov/cc/sb375/policies/density/residential_density_brief.pdf

For office VMT, four mitigation measures were selected for further analysis:

- Increase connectivity by breaking the site into smaller blocks.
- Improve transit access by creating a new OmniTrans route through the site.
- Increase income diversity by making 50% of the project’s housing units affordable to households earning 60% of Rancho Cucamonga’s Area Median Income (AMI).
- Institute parking pricing throughout the project area (\$3/day).

The results of each mitigation strategy are summarized in Table 6 below. These findings are illustrative only; they are based on the specific context and character of the proposed development and thus should not be assumed to apply elsewhere.

	Source	Percent Reduction	Numeric Threshold	Build w/o Mitigation	Build w/Mitigation
Connectivity	Envision Tomorrow MXD	0.2%	19.9	28.0	27.9
Transit Access	Envision Tomorrow MXD	0.2%	19.9	28.0	27.9
Affordable Housing	Envision Tomorrow MXD	2.2%	19.9	28.0	27.3
Parking Pricing	Dueker et al. (1998) ¹	1.9%	19.9	28.0	27.3

¹ https://arb.ca.gov/cc/sb375/policies/pricing/parking_pricing_brief.pdf

Because project-level mitigation strategies tested here are inadequate, city, county and/or regional measures ought to be considered.

4. Insights and Policy Implications

(a) Implications for Policy-Makers

The case study showed both the feasibility of project-level mitigation for residential-based VMT for a fairly dense mixed-use infill redevelopment project and the infeasibility of VMT mitigation for the office component of the project.

The creation of VMT reduction efforts that apply across an entire jurisdiction, multiple jurisdictions or a metropolitan region, while politically and administratively challenging and that can be used to offset increased VMT from many projects, may allow more projects to proceed, or to proceed without at a statement of overriding consideration.

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 <https://www.sb743.org/>.

This case study brought up a question about the meaning of the phrase “within a transit priority area” (TPA). One of the criteria for a new statutory exemption from CEQA review provided by SB 743 is that the proposed project lie within a TPA (see Pub. Resources Code Section 21155.4). It would be helpful to have clarification from policy makers about whether a project with a certain minimum percentage within a TPA could qualify for the exemption (recognizing that much may depend on the proposed land use and impacts for the portion outside the TPA). In the case of Empire Lakes, about half the project is proposed within a TPA and comprises a distinct development phase; but we decided it would not qualify for the exemption since the project is not fully within a TPA.

(b) Technical Insights for Lead Agency Staff

Analyzing plans for projects that will develop over time under changing conditions

The development horizon of large land use projects such as Empire Lakes, is a function of the real estate market at the time the project commences and may evolve over time. Findings based on the details of a development plan may be unreliable if the completion year is too far in the future or tenants of buildings change. It is recommended that policy makers rely on local zoning ordinances to bring certainty to the types of uses that may eventually be built, and thus the reliability of the information used in the CEQA analysis.

Screening threshold versus numeric threshold results

The analysis results indicate that Empire Lakes would likely meet the residential and small-retail screening thresholds, and thus avoid a fuller VMT impact analysis in the EIR, at least for the residential and retail components of the project. However, the project-level analysis indicated that the project would have a significant VMT impact from both the residential- and office-containing portions of the project. This highlights the importance for lead agencies of demonstrating in the record that a project would “incorporate similar features” to their surrounding low-VMT area “(i.e., density, mix of uses, transit accessibility),” and therefore “exhibit similarly low VMT” and qualify for screening (Technical Advisory, p. 10). The VMT analysis could use factors such as local mode share (percent of trips taken by vehicle, bicycle, transit, et cetera) to explain the project’s context that may not be fully captured by sketch models.

Combining mitigation strategies and drawing on jurisdiction and region scale mitigation efforts

The mitigation measures tested did not completely mitigate the increases in per worker VMT to less than significant levels for this illustrative, suburban, mixed use project. To anticipate this challenge, staff should make available a longer list of county and regional level VMT reduction strategies (see Technical Advisory, pp. 27-28). There may be opportunities for greater reductions in VMT with other strategies, or

through the combination of multiple strategies, or by implementing measures at the municipal and/or regional level that could offset the impact of a number of land development projects.

Comparable VMT estimates

An “apples-to-apples” comparison can be achieved by using the same VMT estimation model for VMT estimation, numeric thresholds, and the impact of mitigation measures. OPR advises that “models can work together,” and as an example suggests that an agency “can use travel demand models or survey data to estimate existing trip lengths and input those into sketch models such as CalEEMod to achieve more accurate results.” For more information, see OPR Technical Advisory, pp. 30-31.

Average trip lengths

Average trip length assumptions play a large role in determining VMT outputs of sketch models. To ensure reasonable results, acquire sub-regional (ideally TAZ-resolution) average trip length data from local or regional travel demand models. For more information see OPR Technical Advisory, p. 26.

VMT model choice and mitigation

The effects of mitigation measures on VMT are quantified by models and/or by direct application of studies. It is useful to choose models that have sensitivity to the types of features of the project and potential mitigation measures rather than models that simply have many options overall. For more information see OPR Technical Advisory, p. 22.

Location near transit

Projects located near transit may be eligible for special dispensations ranging from CEQA exemption to streamlined review of transportation impacts. The concept of being located “near transit” may be defined and applied differently depending on the context, as laid out below.

Exemption from CEQA review

Public Resources Code section 21155.4 creates a new exemption from the requirements of CEQA for certain types of land development projects (and zone changes) that meet a set of tests, including projects “proposed within a transit priority area.”

A Transit Priority Area (TPA) is defined as “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 [TIP] adopted pursuant to [Section 450.216](#) or [450.322 of Title 23 of the Code of Federal Regulations](#)” (Pub. Resources Code § 21099(a)(7)). See Glossary in Appendix B for definitions of major transit stop, transit priority area (TPA), and transportation improvement program (TIP).

Based on the definition of a TPA, a qualifying land use project may be exempt from CEQA review even if the major transit stop included in the TPA does not yet exist, provided the stop will be completed within the planning period of a TIP.

Screening threshold and CEQA presumption of less than significant

According to the CEQA Guidelines, “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” (§15064.3(b)(1)). This same definition is recommended as a screening threshold in OPR’s *Technical Advisory on Evaluating Transportation Impacts in CEQA* (pp. 12-15). However, the definition leads to two questions:

- 1) What counts as an “existing” major transit stop?
- 2) Does the presumption still apply if *most of the project area* is located near transit (as defined in the relevant CEQA section)?

Since many agencies use the criteria in Appendix M of the Guidelines as the basis for determining thresholds, one can look to the definition provided there to answer question 1 above. According to Appendix M, an ‘existing major transit stop’ may be a planned and funded stop that is included in an adopted regional transportation improvement program (TIP). Similarly, an ‘existing stop along a high-quality transit corridor’ may be a planned and funded stop that is included in an adopted regional TIP (CEQA Guidelines, Appendix M, Section II: “Definitions”).

This definition of “existing major transit stop” used for purposes of expediting review is the same definition used in determining the CEQA exemption described above. Unlike the exemption, however, there are no additional eligibility criteria for this screening threshold, so it can apply to more projects.

Maps of areas “near transit” may include different numbers of transit stops based on the planning horizon allowed for their inclusion, and will thus encompass different geographies. For example, a map of an MPO-designated “High Quality Transit Area” may be different than a map of a “Transit Priority Area” since the two use different planning horizons to determine whether or not to include a major transit stops. Lead agencies should be careful to use the correct map for the exemption or screening analysis.

Appendix A: Project Participants

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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 (Pub. Resources Code § 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, or Pub. Resources Code – 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.