

# *SB 743 Implementation Assistance Project*

## Resources to Support Implementation of Senate Bill 743

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### 1. General Guidance on Implementing SB 743

#### *Governors Office of Planning and Research (OPR)*

##### [Transportation Impacts \(SB 743\)](#)

CEQA Guidelines Update and Technical Advisory implementing SB 743.

##### [Key resources on SB 743](#)

Includes studies, reports, briefs/white papers, and tools. Also see [results of search using term "SB 743"](#) on OPR website.

##### [Technical Advisory on Evaluating Transportation Impacts in CEQA](#) (pdf) (December 2018)

See other [Technical Advisories from OPR](#).

#### *Caltrans*

##### [SB 743 Implementation](#)

Contains information about Caltrans' efforts related to SB 743, and resources for SB 743 implementation around the state. Also see [results of search using term "SB 743"](#) on Caltrans website.

##### [Informational Briefing on SB 743 Implementation](#) (webinar, November 8, 2019; posted Dec. 20, 2019)

Presenter: Chris Schmidt, Caltrans SB 743 Implementation Manager. See also:

- [Q&A from webinar](#).
- [Slides from webinar](#)

##### [Transportation Impact Study Guide: Vehicle Miles Traveled-Focused DRAFT](#) (February 2020)

Guidance to Caltrans districts, lead agencies, developers and consultants regarding Caltrans review of a land use project or plan's transportation analysis using VMT metric. Includes memo from Ellen Greenberg, Caltrans Deputy Director, Sustainability, and Chris Schmidt, SB 743 Program Manager.

##### [Shifting from LOS to VMT as the Measure of Transportation Impact Assessment](#) (June 29, 2019)

Subtitle: "Senate Bill 743 Implementation: Challenges and Opportunities." Caltrans Division of Research, Innovation and System Information.

[SB 743 Implementation: Challenges and Opportunities](#) (Final Report 2019)

Elisa Barbour, Daniel G. Chatman, Stella Yip, Sarah Doggett, and Manuel Santana, Center for Economic Competitiveness in Transportation, UC Berkeley. TO 039- 65A0529. doi:10.7922/G2S180Q7.

[Transportation Planning Website](#) (Caltrans)

### **Other General Guidance Resources**

[California SB 743](#)

Fehr & Peers web page - contains SB 743 description, resources, etc.

See also:

- [FAQ: Evaluating Transportation Impacts in CEQA](#) (Based on New Guidelines as Directed by SB 743)
- [Navigating General Plans through SB 743](#) (Flowchart)

[Changes Ahead for CEQA Traffic Studies: How Your City Can Prepare Now](#) (Oct. 1, 2016)

Rick Jarvis and Christine Crowl, *Western City*. Overview of SB 743 and its ramifications.

[SB 743 Implementation: A Step-By-Step Approach to Implementing Vehicle-Miles Traveled in Local Planning & Environmental Review](#) (May 2016)

WSP / Parsons Brinckerhoff.

### **Senate Bill 743**

[SB 743 bill information](#) (history, votes, bill analysis, and more)

[Text of Senate Bill 743](#)

## **2. LOS Reform: Shifting to VMT**

### **Academic Articles & Reports**

[A New Metric in Town: A Survey of Local Planners on California's Switch from LOS to VMT](#) (Nov. 6, 2019)

Jamey M.B. Volker, Joe Kaylor, Amy Lee, *Transport Findings*.

See related article:

- [California Planners Have Already Been Swapping VMT for LOS](#) (Dec. 4, 2019)  
"Level of Service may not be as ingrained in local planning practice as generally assumed,"  
Melanie Curry, *Streetsblog CAL*.

[Cutting Greenhouse Gas Emissions is Only the Beginning: A Literature Review of the Co-Benefits of Reducing Vehicle Miles Traveled](#) (2017)

National Center for Sustainable Transportation (NCST) White Paper. Kevin Fang, James Volker, Institute of Transportation Studies, University of California, Davis, Research Report UCD-ITS-RR-17-38.

[How Measuring Vehicle Miles Traveled Can Promote Health Equity: Case Studies & Lessons Learned from Early Adopters of VMT](#) (2019)

ChangeLab Solutions, Jessica Nguyen and Tina Yuen.

[Evolving Use of Level of Service Metrics in Transportation Analysis – LOS Case Studies California Case Study](#)

U.S. Department of Transportation (2017). See especially:

- [Introduction](#)
- [California Case Study](#)

**News Articles & Blogs**

[Dancing on the Grave of “Level of Service”](#) (Jun. 2, 2016)

Roger Rudick, *Streetsblog SF*, for *SPUR News*.

[At Last, New Rules Are Final: Car Delay Is \(Sometimes\) NOT an Environmental Impact](#)

Melanie Curry, *Streetsblog*, Jan 4, 2019. See also this related article in *Planetizen*:

- [A New Day for the California Environmental Quality Act](#) (January 8, 2019) James Brasuell

[California Used to Classify Bus Lanes and Bike Racks as Bad for the Environment. Not Anymore](#)

Henry Grabar, *Slate*, Jan. 10, 2019.

[After 4 Years, Key Rule Requiring Development to Account for New Miles Driven Moves Forward](#)

“Replacing LOS with VMT is a milestone in aligning transportation metrics with community values”

Melanie Curry, *Streetsblog CAL*, Nov. 28, 2017.

[Why California Accidentally Encouraged Driving, and How That’s About to Change](#) (Jun. 30, 2016)

Joshua Karlin-Resnick, Nelson\Nygaard, for *SPUR News*.

[LOS to VMT: the arguments have begun](#) (Aug 27, 2014)

Martha Bridegam, *California Planning & Development Report*.

[California Has Officially Ditched Car-Centric ‘Level of Service’](#) (Aug 7, 2014)

Damien Newton and Melanie Curry, *Streetsblog LA*.

[The Beginning of the End for Level of Service?](#) (Oct 3, 2013)

Angie Schmitt, *Streetsblog USA*.

**Slide Presentations and Webinars**

[Defining and Measuring Success: Lessons from LOS Reform](#) (Oct. 2015)

NACTO presentation by Jeffrey Tumlin (Nelson Nygaard) and Fred Dock (City of Pasadena).

See also [this summary](#) of the presentation.

[Paradigm Shift: From LOS to VMT](#) (Jul. 30, 2014) (webinar)

Kate White (CalSTA), Chris Ganson (OPR), Kome Ajise (Caltrans). State Smart Transportation Initiative.

[LOS in CEQA Transportation Analysis](#) (ppt) (Oct. 2014)

Slide presentation, Governor’s Office of Planning and Research (OPR).

[Updating the Metric of Transportation Impact: Recommended Methods for Land Use Projects](#) (webinar)

Feb. 26, 2019.

### 3. VMT Analysis

#### Overview

[Introducing VMT – Vehicle Miles Traveled](#) (video, Jan 23, 2019)

Joe Linton, Streetsblog CAL.

[Vehicle-Miles Traveled \(VMT\) Impacts on the Environment, Human Health, and Fiscal Health.](#)

Currey, Ganson, Miller, Fesler

#### VMT Impact Assessment

##### Caltrans

[SB 743 VMT Impact Assessment](#)

Includes data from the California Statewide Travel Demand Model (CSTDm) that can be used to assess VMT resulting from residential and office land use projects, and also to set thresholds of significance.

##### National Center for Sustainable Transportation (UC Davis)

[Quantifying Vehicle Miles Traveled](#) (webinar, May 24, 2017)

Susan Handy, Amy Lee, Chris Ganson

[Evaluation of Sketch-Level VMT Quantification Tools](#) (2017)

Project compares and evaluates VMT estimation tools across a sample of land use projects. Compares results from different tools for each project; considers the applicability of methods in particular contexts and for different types of projects; and assesses data needs, relative ease of use, and other practical considerations. Sponsored by California Strategic Growth Council and California Department of Conservation. Researchers: Susan Handy, Amy Lee, Kevin Fang, National Center for Sustainable Transportation, UC Davis. Contract/Grant #: 3014-368; ID: UCD-SGC-201.

See also:

- [Slides from Webinar](#) (May 24, 2017)
- [Final Report](#) (May 22, 2017)
- [Final Report](#) (August 2017)
- [Final Report Abstract](#)
- [Figures & Tables from Final Report](#)

#### Tools and Calculators

National Center for Sustainable Transportation, University of California, Davis

- [Induced Travel Calculator](#)
- [About the Calculator](#)
- [Webinar: A New Web Tool to Calculate Induced Travel](#)
  - See also [Webinar description](#)

City of Los Angeles VMT Calculator (Nov. 2019)

- [L.A. VMT Calculator v.1.2](#)
- [User Guide](#) (pdf)
- [Documentation](#) (pdf)

- [TDM Strategies in LA VMT Calculator](#) (Attachment G) (pdf)

San José

- [VMT Evaluation Tool: User Guide](#) (Feb. 16, 2018)
- [VMT Tool](#) (pdf)

#### 4. VMT Reduction and Mitigation Strategies

##### [Mitigating Vehicle-Miles Traveled \(VMT\) in Rural Development](#)

Ruth Miller, Chris Ganson, submitted for TRB 2015.

[VMT Mitigation Spotlight](#) (web page, Fehr & Peers).

##### [Implementing California Senate Bill 743 in the WRCOG Region](#)

Produced by Fehr & Peers for Western Riverside Council of Governments

See also technical memoranda to WRCOG:

- [Review and Assessment of Existing Planning/Travel Demand Tools for SB 743](#) (12/17/18)
- [SB 743 Implementation TDM Strategy Assessment](#) (2/26/19)

#### ***CAPCOA Resources (California Air Pollution Control Officers Association)***

##### [Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures](#) (pdf) (August, 2010)

This 546-page report may also be [accessed here](#).

##### [Quantifying the Effect of Local Government Actions on VMT](#) (Feb. 14, 2014)

In April 2014, CARB announced a new tool to help local governments and regional planners evaluate the impact of policy-relevant variables on vehicle miles traveled. This tool offers look-up tables that provide neighborhood-scale VMT elasticities and marginal effects associated with changes in land use and transportation variables for city, county and regional geographic areas. Contract 09-343. Principal Investigator: Deborah Salon, Institute of Transportation Studies, UC Davis.

See also:

- [Final Report](#) (Feb 14, 2014)
- [Summary for Policy Makers](#) (March 2014)
- [Webinar](#) (May 1, 2014 at Cal/EPA headquarters)

A training to educate cities, counties and metropolitan planning organizations on how to use the tool and interpret results.

And see this research article on same topic:

- [How do local actions affect VMT? A critical review of the empirical evidence](#) (Oct. 2012)  
Salon, D., Boarnet, M. G., Handy, S., Spears, S., Tal, G. *Transportation Research Part D: Transport and Environment*. Vol. 17, Issue 7, pp. 495-508. See also [article citation](#).

#### ***Pricing Strategies***

##### [Tolling & Pricing Defined: Vehicle-miles Traveled \(VMT\) Fees](#) (website with resources)

U.S. DOT Federal Highway Administration, Center for Innovative Finance Support

[Pricing and Parking Management to Reduce Vehicle Miles Travelled \(VMT\)](#) (March 15, 2018)  
Caltrans Division of Research, Innovation and System Information, Preliminary Investigation (PI-0045)

[Road user charging and implications for transport policy: Findings from the CURACAO project](#)

Atm Koh, Anthony D. May, David Blackledge, Michela Fioretto, 2010. Also see:

- [CURACAO Final Report](#) (June 2009)
- [CURACAO Project Description 1](#)
- [CURACAO Project Description 2](#)

[Impacts of Road User Pricing Based on a Review of the Empirical Literature](#) (2013)

Steven Spears & Marlon Boarnet.

See also:

- [Impacts of Road User Pricing on Passenger Vehicle Use and Greenhouse Gas Emissions](#)  
Marlon Boarnet, Steven Spears, Susan Handy and Caroline Rodier
  - [Technical Background Document](#) (Sep. 30, 2014)
  - [Policy Brief](#) (Sep 30, 2014)

### ***VMT Mitigation Exchange Bank Concept***

[VMT Mitigation Through Banks and Exchanges: Understanding New Mitigation Approaches](#)

January 2020 draft white paper prepared by Fehr & Peers.

[Implementing SB 743: An Analysis of Vehicle Miles Traveled Banking and Exchange Frameworks](#)

Center for Law, Energy and the Environment and the Institute for Transportation Studies, UC Berkeley.  
Ethan N. Elkind, Ted Lamm, and Eric Prather. October 2018. DOI: 10.7922/G2MK6B22.

Also see:

- Related [policy brief](#).
- [Project website](#) containing report, overview, webinar, resources – Center for Law, Energy & the Environment, BerkeleyLaw, UC
- [Review of report](#) – on Streetsblog CAL (titled “Mitigation Banks: How Benefits from Upcoming CEQA Change Could Be Captured, Shared, Amplified,” Melanie Curry, Oct. 2018)
- [Report announcement & description](#) – Institute of Transportation Studies, UC Berkeley
- [Report description & details](#) – University of California Institute of Transportation Studies
- [Report description & details](#) – eScholarship, open access publications from the University of California

### ***Legal & Technical Basis for VMT Reduction Targets - California Air Resources Board***

[May 2016 Mobile Source Strategy](#)

[California’s 2017 Climate Change Scoping Plan: The strategy for achieving California’s 2030 greenhouse gas target](#) (November 2017)

[Updated Final Staff Report: Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets](#) (February 2018).

## 5. Cities and Counties Adopting VMT Metric

### Early Adopters

Caltrans article, lists early adopting jurisdictions & resources

### ***Southern California***

#### Los Angeles

On July 30, 2019, the Los Angeles City Council unanimously approved an update to the “Transportation” section of the City’s CEQA Threshold Guide. This action effectively updated the framework for evaluating traffic impact analysis to a vehicle miles traveled (“VMT”) metric in accordance with updated CEQA Guidelines section 15064.3 and Senate Bill 743. By shifting to a VMT-centric analysis, the City will be better positioned to assess potential impacts on its transportation system, as well as meet its climate change goals. See the following:

- [Big Wonky Good News: L.A. City Adopts People-Centered Transportation Metric: “VMT” In, “LOS” Out](#) (Aug 6, 2019). Joe Linton, Streetsblog CAL.
- [Modernizing Transportation Analysis](#) (website with videos, planning docs, resources)
- [CEQA Transportation Thresholds Applied to L.A. Threshold Analysis](#)  
Applies new CEQA VMT threshold recommendations to L.A. VMT threshold analysis
- [LADOT Transportation Assessment Guidelines](#) (Jul. 2019)
- [L.A. Dashboards on New VMT assessment](#)
- [Transportation Planning & Policy website](#)
- [Joint Open House & Public Hearing: CEQA Appendix G & Transportation Section Update](#)
- [Old CEQA Thresholds Guide](#) (2006)

#### Pasadena

- [Transportation Impact Analysis: Current Practice & Guidelines](#)
- [New Transportation Performance Measures for Transportation Analysis and Thresholds for CEQA](#) (PPT) Three case studies, from Nov. 11, 2014 Council Meeting
- [Measuring Mobility In Pasadena Beyond Auto LOS Complete Streets: Competing Priorities](#) (PPT)  
Mark Yamarone
- [Complying With CEQA’s VMT Threshold For Transportation](#)
- [Pasadena Ushers in Era of VMT Metrics](#) (Apr. 2015)
- [Comments on the Preliminary Discussion Draft of Updates to the CEQA Guidelines Implementing SB 743](#) (Nov. 2014)
- [Pasadena’s Transportation Impact Review and MMLOS](#) (Nov. 2013)  
Mike Bagheri, Transportation Manager, DOT
- [OMG! PASADENA TO LOS: CYA!](#) (Nov. 2014, Pasadena Complete Streets Coalition)

### ***Northern and Central California***

#### San Jose

- [San Jose Becomes Fourth California City to Adopt VMT as Metric for Traffic Impacts](#) (Mar 6, 2018). Melanie Curry, Streetsblog CAL.
- [Vehicle Miles Traveled Metric](#) (website)  
Includes policy documents, VMT evaluation tool (and user guide), and other links.

## Oakland

- [Modernizing Transportation Impact Review](#) (website)

## San Francisco

- [Transportation Sustainability Program](#) (2017, SF Planning Department)
- [No Great “LOS”: How San Francisco switched to VMT](#) (Slide presentation, 9/28/16)

## Santa Clara County

Santa Clara Valley Transportation Authority:

- [Level of Service \(LOS\) to Vehicle Miles Traveled \(VMT\) Transition](#)
- [Webinar: Vehicle-Miles-Traveled for Smarter Development](#) (1/23/18) Rob Swierk, Cody Kraatz
- [LOS to VMT Transition: Things Local Agencies Should Be Thinking About](#) (v.3, 8/16/19)

## Elk Grove

- [General Plan - Chapter 6: Mobility](#) (Adopted February 27, 2019) (See Policy MOB-1-1)
- [Transportation Analysis Guidelines](#) (Adopted February, 2019)

## El Dorado County & City of Placerville

- [El Dorado County and City of Placerville SB 743 Implementation Plan](#) (7/22/19, by Fehr & Peers)

## Woodland

- [General Plan Update 2035](#) (Adopted May 16, 2017) (See Policy 3.A.4 in the Mobility Element)

## Yolo County

- [2030 Countywide General Plan – 4: Circulation Element](#) (See Policies CI-3.19 through CI-3.21)

## San Luis Obispo

- [Multimodal Transportation Impact Study Guidelines](#) (March 2015)  
1<sup>st</sup> edition, 2035 Circulation Element

## **6. CEQA Statute & Regulations Implementing SB 743**

[CEQA: The California Environmental Quality Act](#) (Governor’s Office of Planning and Research)

[CEQA Statutes and Guidelines](#) (full text)

Association of Environmental Professionals, 2019. See also the following sections of the California Public Resources Code (PRC):

- [CEQA Statute](#) - Division 13. Environmental Quality
- [Modernization of Transportation Analysis for Transit-Oriented Infill Projects](#)  
Chapter 2.7 (PRC sections 21099-21099) of Division 13. Added by Stats. 2013, Ch. 386, Sec. 5.

To assist public agencies’ compliance with CEQA requirements, CEQA requires the Secretary for the Natural Resources Agency, in consultation with the Governor’s Office of Planning and Research (OPR), to



periodically adopt, amend and repeal CEQA Guidelines. The CEQA Guidelines elaborate on the requirements found in the Public Resources Code and court cases interpreting CEQA. The entirety of the CEQA Guidelines are found in Title 14 of the California Code of Regulations, beginning at section 15000, and are available online from Thomson Reuters Westlaw – California Code of Regulations.

The Natural Resources Agency updated the CEQA Guidelines in December 2018. See the following related resources:

- [California Environmental Quality Act \(CEQA\): Supplemental Documents](#) (website)  
Relevant resources from the California Natural Resources Agency, including 2018 amendments and additions to the state CEQA Guidelines.
- [CEQA Guidelines Update](#) (web page, OPR)  
Contains historical background and useful resources from the Governor’s Office of Planning and Research. The updated Guidelines became effective on December 28, 2018.
- [Final CEQA Guidelines Adopted Text](#)  
With SB 743-related changes and other changes. Changes to the text of the CEQA Guidelines are highlighted in underline/strikeout format.
- [Final Statement of Reasons for Regulatory Action Amendments to the State CEQA Guidelines](#) (PDF) November 2018. Explains reasons for adopting the Guidelines updates, as well as policy, legal and factual bases for the changes. California Natural Resources Agency, OAL Notice File No. Z-2018-0116-12.
- [Initial Statement of Reasons for Regulatory Action: Amendments and Additions to the State CEQA Guidelines](#) (January 26, 2018, California Natural Resources Agency)

### **Related CEQA Resources**

[Changes to CEQA for Transit Oriented Development – FAQ](#) (OPR web page)

Includes: “What is the CEQA Exemption for Projects that are Consistent with a Specific Plan?”

[2019 Amendments to the CEQA Guidelines: Transportation Impacts](#)

Arielle O. Harris and Natalie C. Kirkish. Posted in *CEQA Chronicles*, February 15, 2019.

[Natural Resources Agency Finalizes Updates to the CEQA Guidelines](#) (12/10/2018)

Norman F. Carlin, Eric Moorman, Kevin Ashe, Pillsbury law firm.

[CEQA Regulatory Update: OPR Provides Further Guidance on VMT, Asks for Input on GHGs; Guidelines Revisions Now Effective](#) (January 10, 2019)

Arthur F. Coon & Matthew C. Henderson, Miller Starr Regalia law firm.

[New Guidelines for Assessing Transportation Impacts Under CEQA Finalized](#) (January 7, 2019)

The California Natural Resources Agency has adopted new CEQA Guidelines that will leave behind level of service in favor of vehicle miles traveled. Sunny Tsou, Perkins Coie law firm.

[Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA: Implementing Senate Bill 743](#) (1/20/2016, OPR).

[Updating Transportation Impacts Analysis in the CEQA Guidelines: Preliminary Discussion Draft of Updates to the CEQA Guidelines: Implementing Senate Bill 743](#) (8/6/2014, OPR)