Leaving Level of Service Behind

The Implications of the Switch to VMT Impact Metrics in Land Use Planning

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National Center for Sustainable Transportation

- Urban Metabolism & Land Use?
 Policy Landscape
 LOS & VMT
- 4. Implications of a Switch: Nishi Gateway



Urban Metabolism

"Big picture" quantification of inputs, outputs and storage of energy, water, nutrients, materials and waste from an urban region.

Kennedy et al. 2010



Urban Metabolism

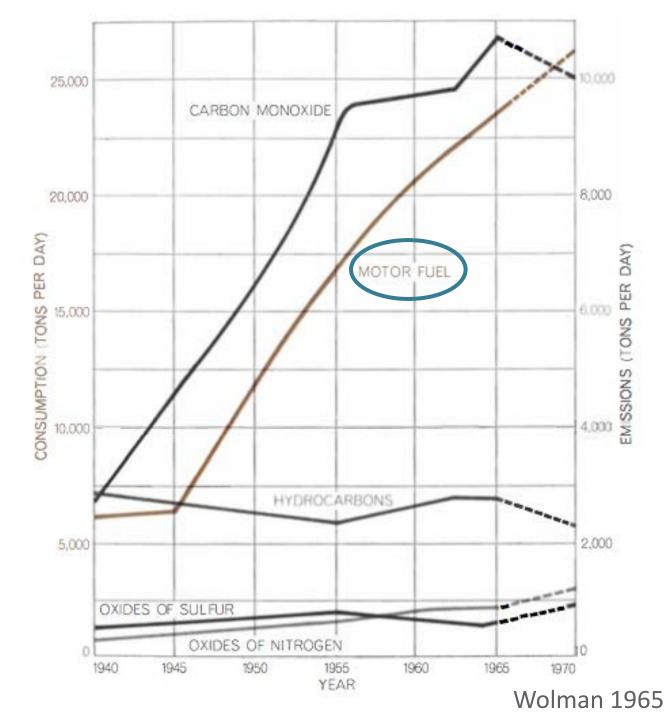
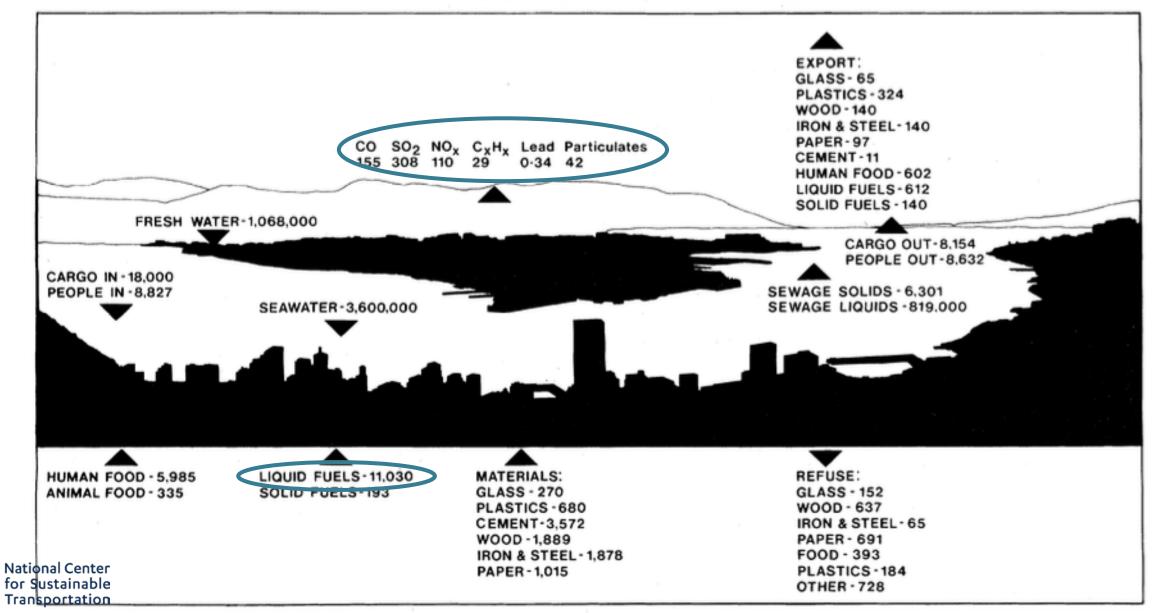




Figure 2. Diagrammatic representation of the flow of important materials into and through the settlement of Hong Kong. All units are in metric tonnes per day. Arrows are intended to give some indication of the direction of flow of materials.



			Transportation	Energy	Air Pollutants	GHGs	
	Hypothetical	1965	*	*	*		Wolman
	Miami	1975		*	*		Zuccheto
	Tokyo	1976	*		*	*	Hanya & Ambe
	Hong Kong	1978	*	*	*		Newcombe et al.
	32 Cities	1991	*	*			Newman & Kenworthy
	Gävle, SE	1995					Nilson
	Swiss Lowlands	1997	*	*	*		Baccini
	Brisbane	1999					Stimson
	Vienna	2000					Hendriks et al.
	Hong Kong	2001	*	*	*	*	Warren-Rhodes & Koenig
	Phoenix	2001					Baker et al.
	Stockholm	2001					Sviden & Jonsson
	Stockholm	2001					Sörme
	Vienna	2001					Obernosterer et al.
	Bangkok	2001					Faerge
	York	2002	*	*		*	Barrett et al.
	Toronto	2003	*	*	*	*	Sahely et al.
	Stockholm	2003					Burstrom
	Singapore	2003		*			Shulz et al.
	Shenzhen, CN	2007					Zhang & Yang
	Los Angeles	2008	*	*	*	*	Ngo & Pataki
	Cape Town	2008	*	*	*	*	Crane et al.
	Toronto	2008	*	*			Codoban & Kennedy
	10 Cities	2009	*			*	Kennedy et al.
	Lisbon	2009	*		*		Niza et al.
	Paris	2009	*	*	*		Barles
	Singapore	2009		*		*	Schulz
	Vancouver	2011	*	*	*	*	Moore et al.
er	Los Angeles	2014				*	Pincetl et al.
e n	Birmingham	2015	*	*	*	*	Lee et al.

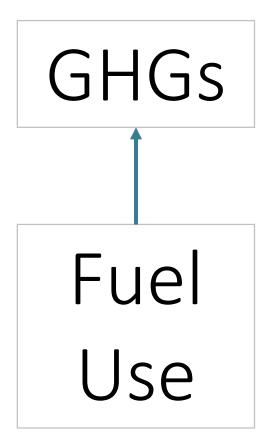


What does this have to do with land use planning?

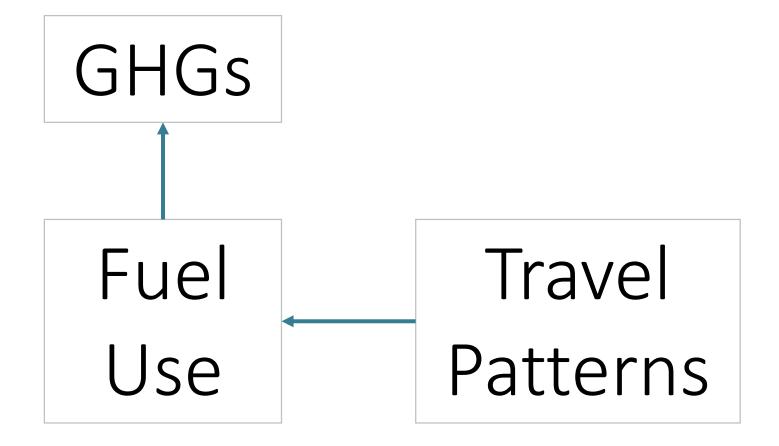


Fuel Use

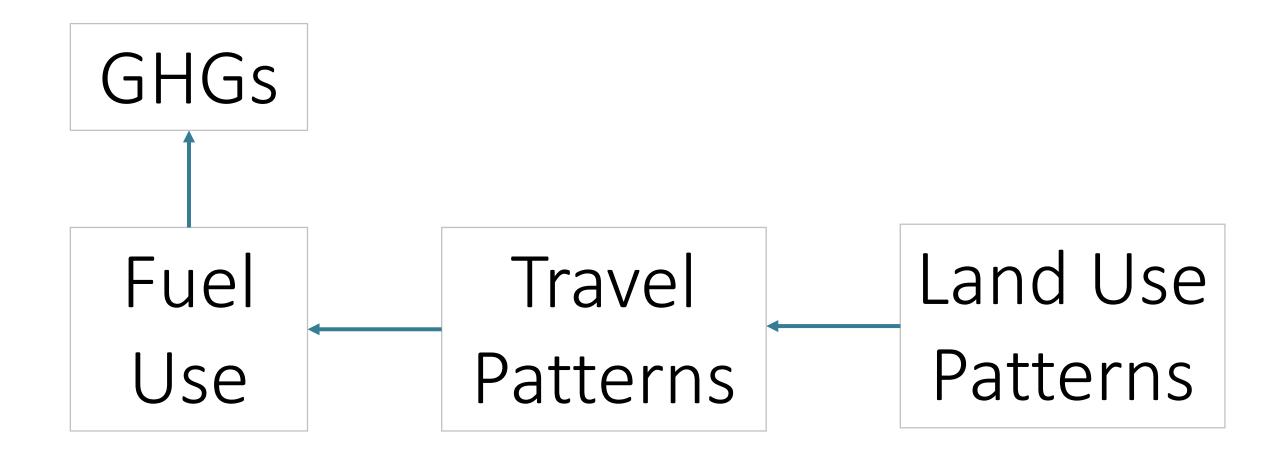








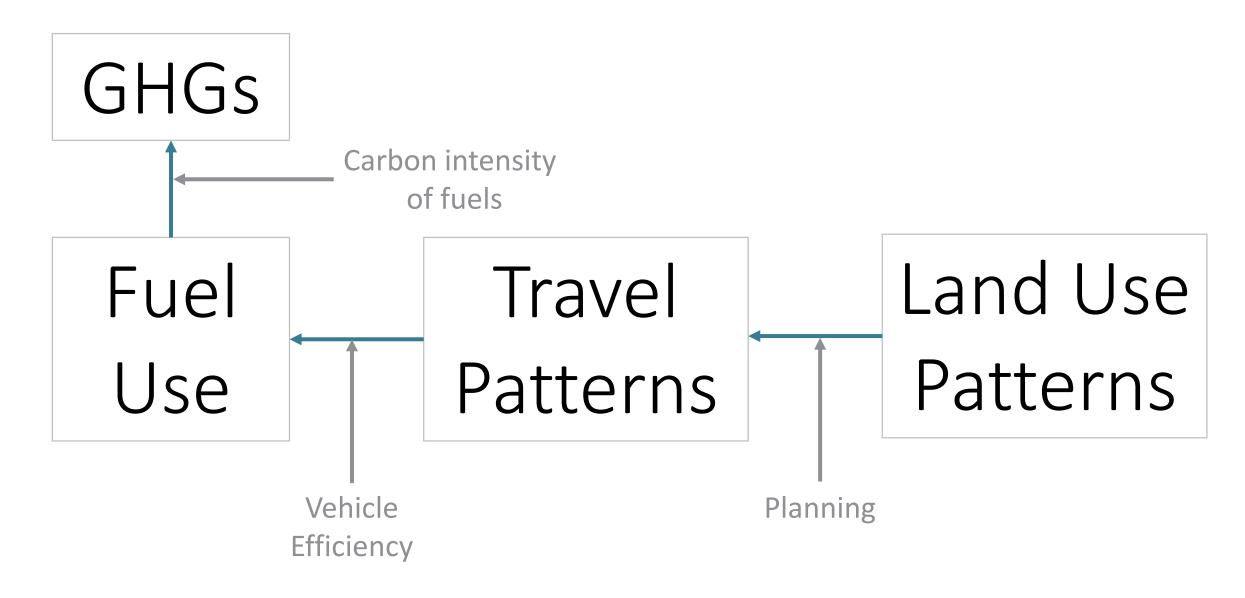






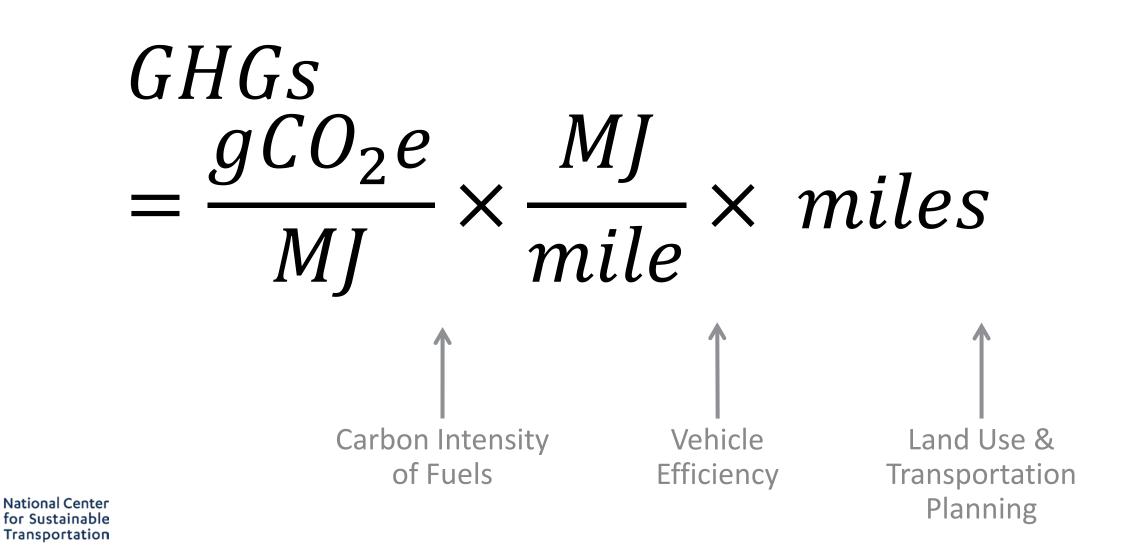
		Fuel Use	VMT/VKT	
Hypothetical	1965	*		Wolman
Miami	1975			Zuccheto
Tokyo	1976	*		Hanya & Ambe
Hong Kong	1978	*	*	Newcombe et al.
32 Cities	1991	*		Newman & Kenworthy
Gävle, SE	1995			Nilson
Swiss Lowlands	1997	*		Baccini
Brisbane	1999			Stimson
Vienna	2000			Hendriks et al.
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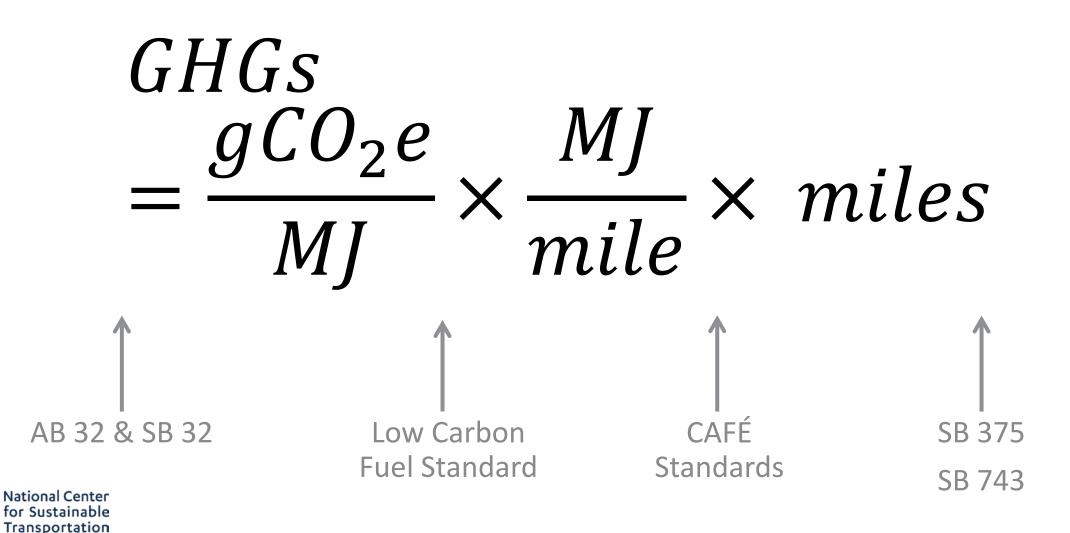






Handy 2016



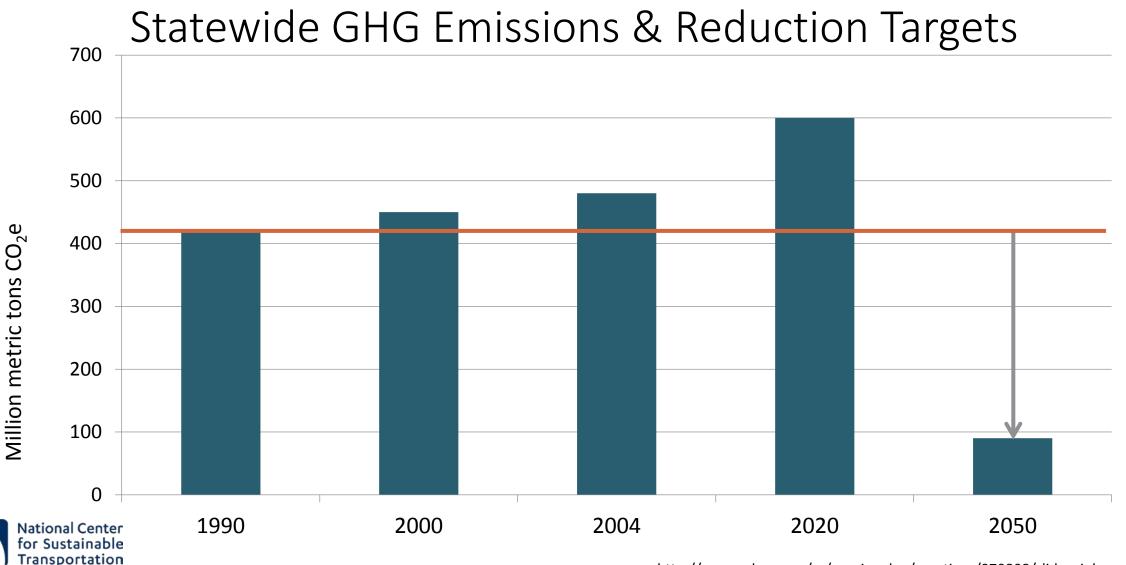


Climate Policy

The Case of California



AB 32 – Global Warming Solutions Act of 2006



http://www.arb.ca.gov/cc/scopingplan/meetings/070808/slides_julyspworkshops.pdf

SB 375 – Sustainable Communities & Climate Protection Act of 2008

Per Capita GHG Reduction Targets

	2020	2035
Bay Area	-10%	-19%
Sacramento Area	-7%	-19%
San Diego Area	-15%	-21%
Southern California	-8%	-21%



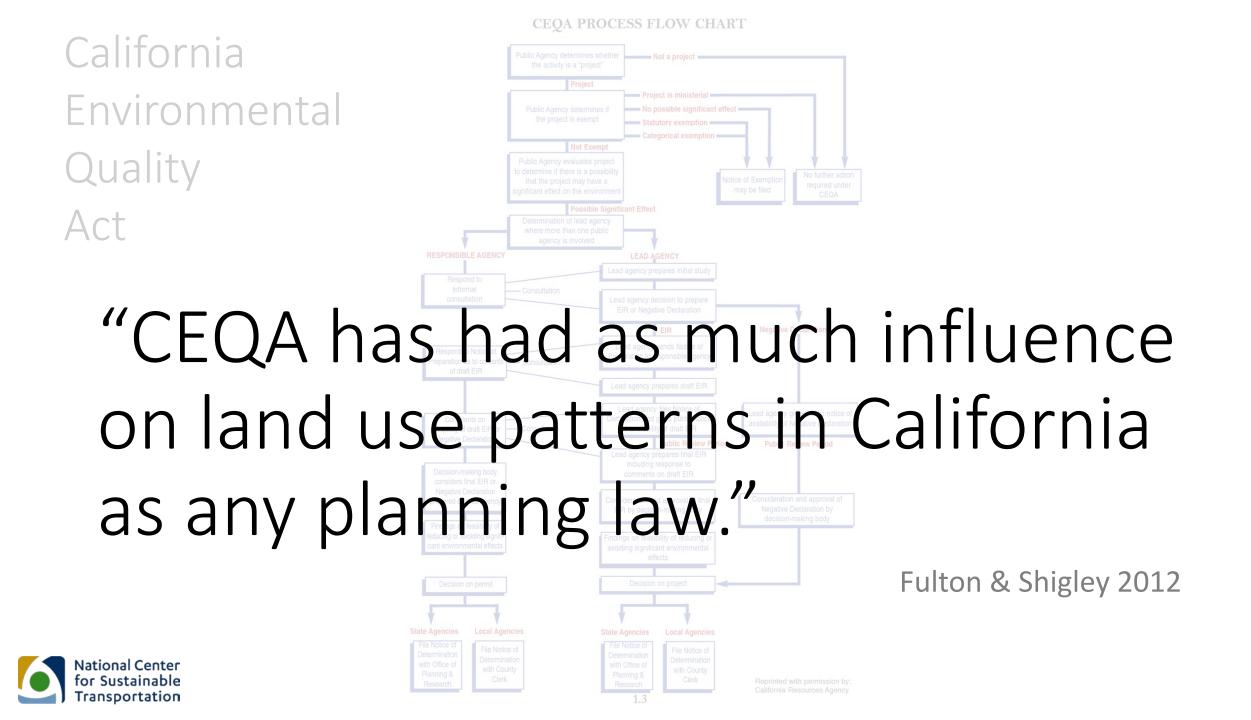
CARB Final Staff Report, Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets, October 2017

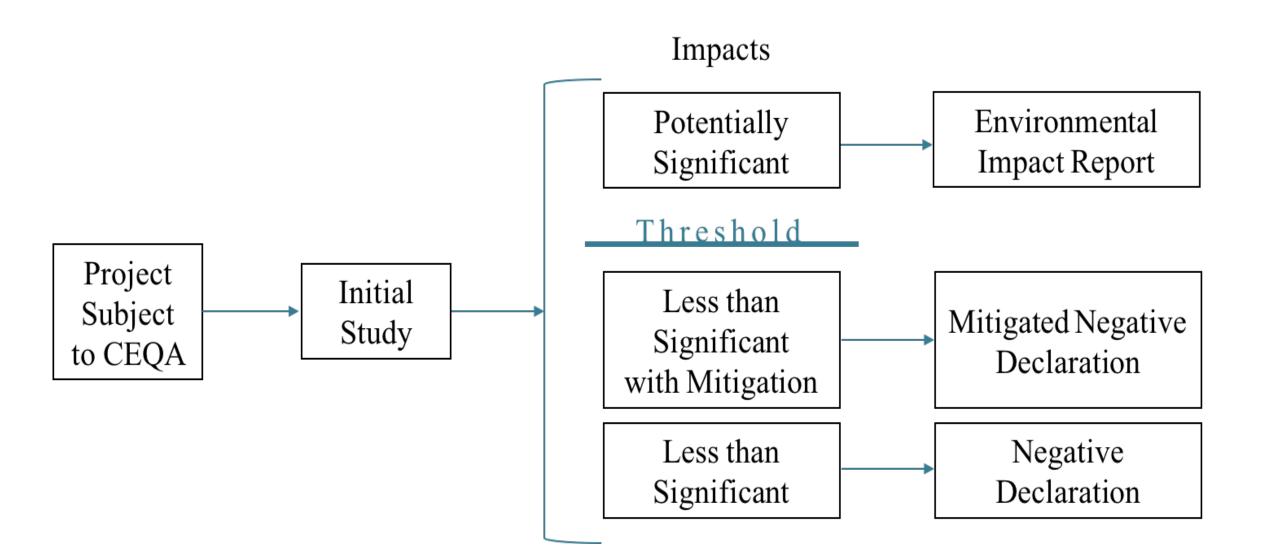
California Environmental Quality Act

ublic Agency determines whether Not a project the activity is a "project" Project Project is ministerial Public Agency determines if No possible significant effect the project is exempt Statutory exemption Categorical exemption Not Exempt Public Agency evaluates project to determine if there is a possibility No further action Notice of Exemptio that the project may have a required under significant effect on the environmen may be filed CEQA Possible Significant Effect Determination of lead agency where more than one public agency is involved **RESPONSIBLE AGENCY** LEAD AGENCY Lead agency prepares initial study Respond to informal - Consultation consultation Lead agency decision to prepare EIR or Negative Declaration EIR **Negative Declaration** Lead agency sends Notice of Respond to Notice of Preparation to responsible agency Preparation as to contents _____ Consultation of draft EIR Lead agency prepares draft EIR Lead agency files Notice of Lead agency gives public notice of Completion and gives public notice Comments on availability of Negative Declaration - Consultation of availability of draft EIR adequacy of draft EIR or Negative Declaration Public Review Period Public Review Period Lead agency prepares final EIR including response to Decision-making body comments on draft EIR considers final EIR or Negative Declaration Consideration and approval of Consideration and approval of final prepared by lead agency EIR by decision-making body Negative Declaration by decision-making body Findings on feasibility of reducing or avoiding signifi-Findings on feasibility of reducing or cant environmental effects avoiding significant environmental effects Decision on project Decision on permit State Agencies Local Agencies State Agencies Local Agencies File Notice of File Notice of File Notice of File Notice of Determination Determination Determination Determination with Office of with Office of with County with County Planning & Planning & Clerk Clerk Reprinted with permission by: Research Research California Resources Agency 1.3

CEQA PROCESS FLOW CHART









"Adverse effects on **traffic** circulation ... can be significant environmental impacts."

Fourth District Court of Appeal, City of Orange v. Valenti 1974



Level of Service (LOS)

Qualitative measure of the effect of a number of factors, which include:

- vehicle speed and travel time
- traffic interruptions
- freedom to maneuver
- safety
- driving comfort and convenience
- operating costs



"New methodologies under CEQA are needed for evaluating transportation impacts that are better able to promote the state's goals of reducing greenhouse gas emissions and traffic-related air pollution, promoting the development of a multimodal transportation system, and providing clean, efficient access to destinations."

Senate Bill 743 (2013)



"Vehicle miles traveled is the most appropriate measure of a project's potential transportation impacts."

Senate Bill 743 (2013)



So what difference does it make?

LOS





Implications of a Switch

The Nishi Gateway





High-density residential, retail, R & D

50 acres

650 HHs

ional Center Sustainable

Rensportation

Significant Impacts from Nishi Gateway

Increase delay at local intersections

Increase delay at freeway interchange

Construction activities would increase traffic congestion



Mitigations for Significant Impacts

Design and construct roundabout at local intersections

Fair-share funding of freeway interchange reconfiguration

Prepare Construction Traffic Control Plan



SB 734-Based Impacts from Nishi Gateway

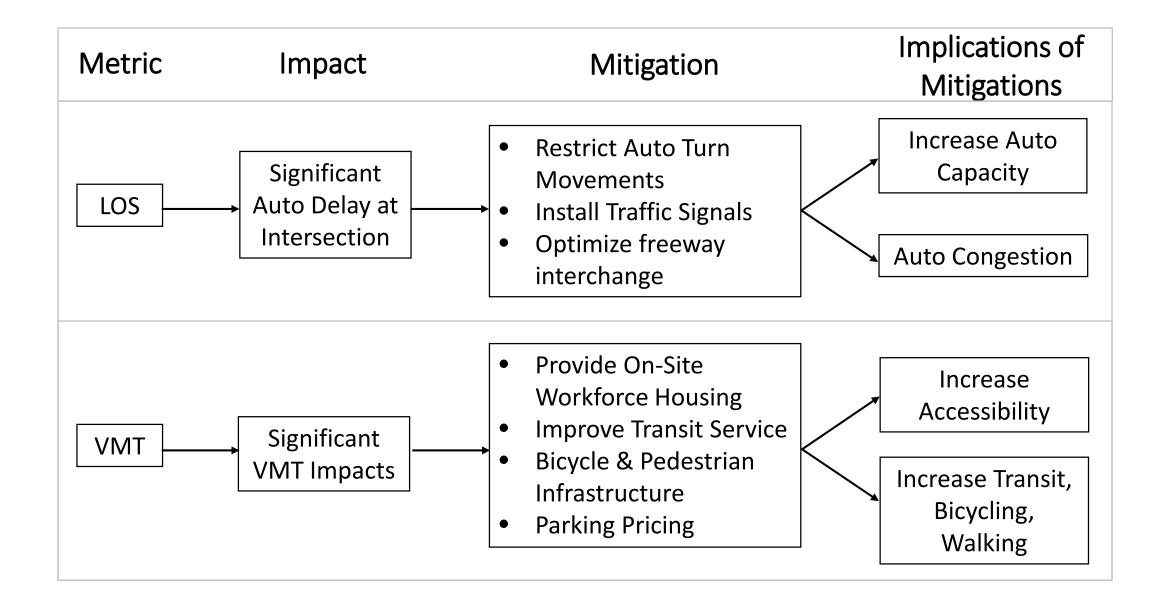
Near Transit – within ½ mile of rail or frequent bus service	Less than Significant		
Low-VMT Residential Area	Less than Significant		
Low-VMT Employment Area	Not Less Than Significant		
Locally-Serving Retail	n/a		



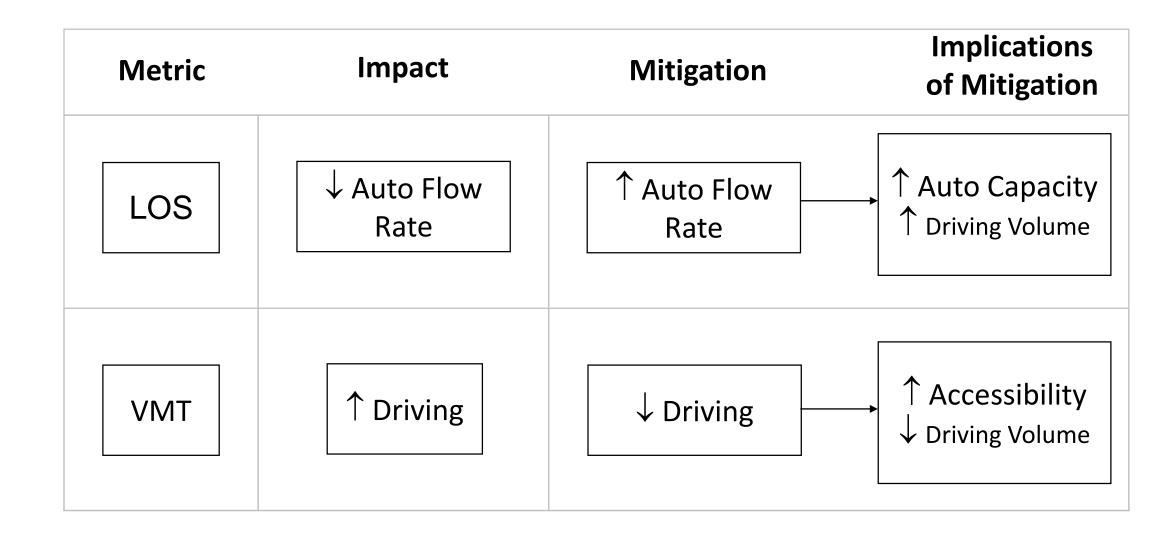
SB 734-Based Mitigations

None Required











Questions?

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