Transportation to What Ends?

Updating the Metric of Transportation Impact under SB 743

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Senior Advisor for Transportation
Governor's Office of Planning and Research


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Sacramento

Old metric:

Transportation impact = **Level of Service (LOS)**

LOS	Signalized Intersection	Unsignalized Intersection
A	≤10 sec	≤10 sec
B	10–20 sec	10–15 sec
C	20–35 sec	15–25 sec
D	35–55 sec	25–35 sec
E	55–80 sec	35–50 sec
F	≥80 sec	≥50 sec

Level of Service A


Level of Service F
Source: Neighborhoods.org

Which is better?

45 min commute, including 5 min from congestion

Good LOS Grade

Bad Accessibility

20 min commute, including 10 min from congestion

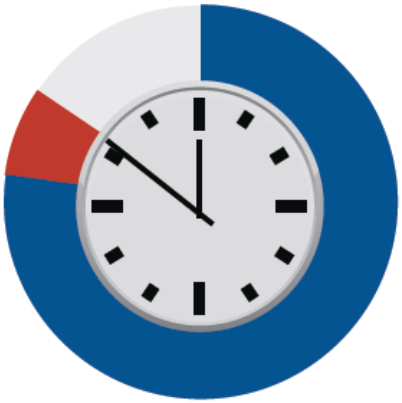
Bad LOS Grade

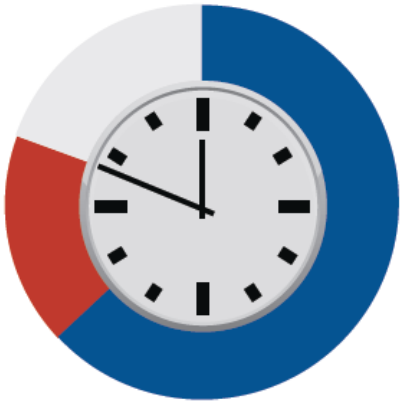
Good Accessibility

Auto Delay-Based Impact Analysis: Fundamental Problems

1. Good grade in LOS ≠ Success in Transportation

Denver 1982		Denver 2007
1.09	Travel Time Index	1.31
50.6 minutes	Average travel time	49.6 minutes
46.4 mins	Travel time without traffic	37.9 minutes
4.2 mins	Extra rush hour delay	11.7 minutes





http://t4america.org/2012/10/29/telling-only-half-the-story-of-congestion-travel-time-and-the-quality-of-our-metro-areas/

Auto Delay-Based Impact Analysis: Fundamental Problems

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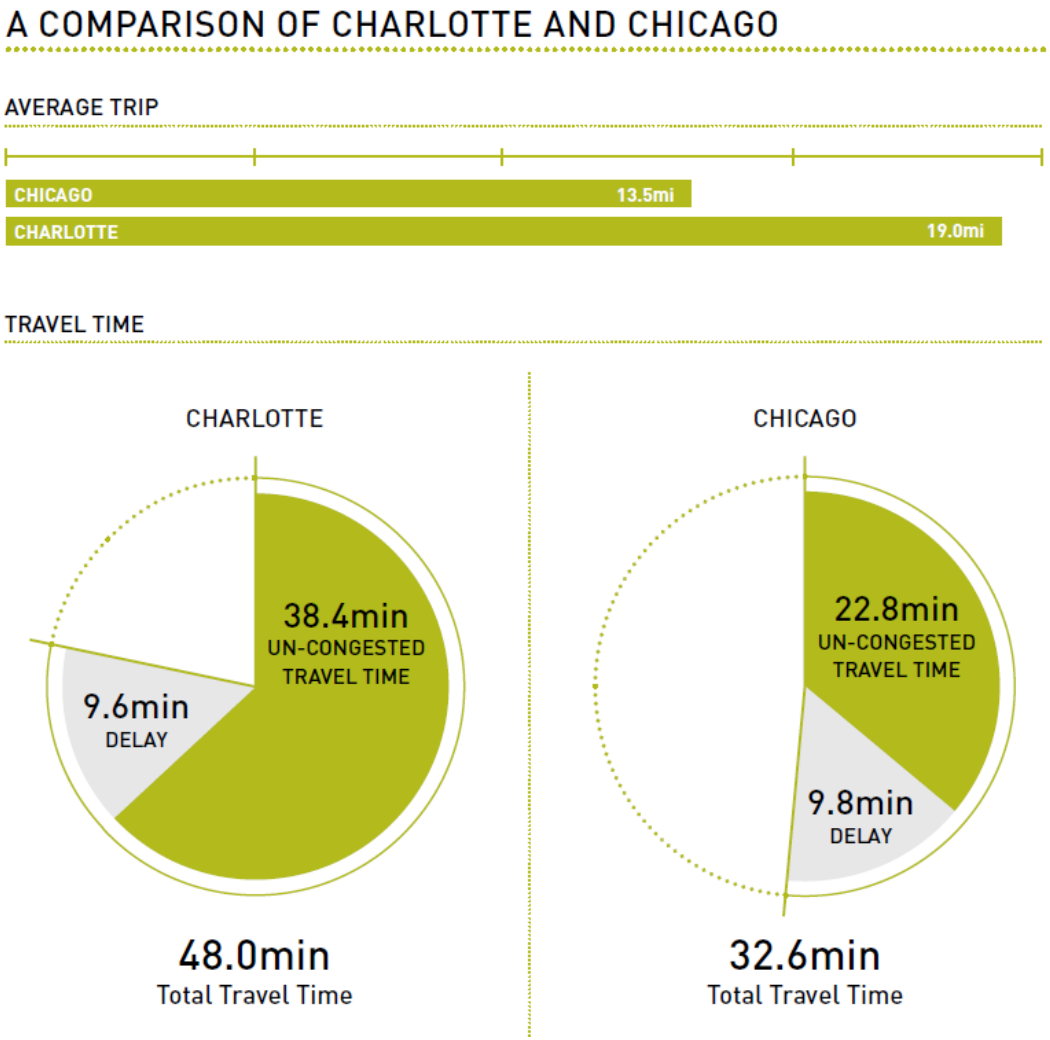

Driven Apart: How sprawl is lengthening our commutes and why misleading mobility measures are making things worse

Executive Summary:
http://www.opr.ca.gov/docs/Driven_Apart-How_Spral_Is_Legthening_Our_Communities.pdf

Technical Report:
http://www.opr.ca.gov/docs/Driven_Apart_-Technical_Report.pdf

Auto Delay-Based Impact Analysis: Fundamental Problems

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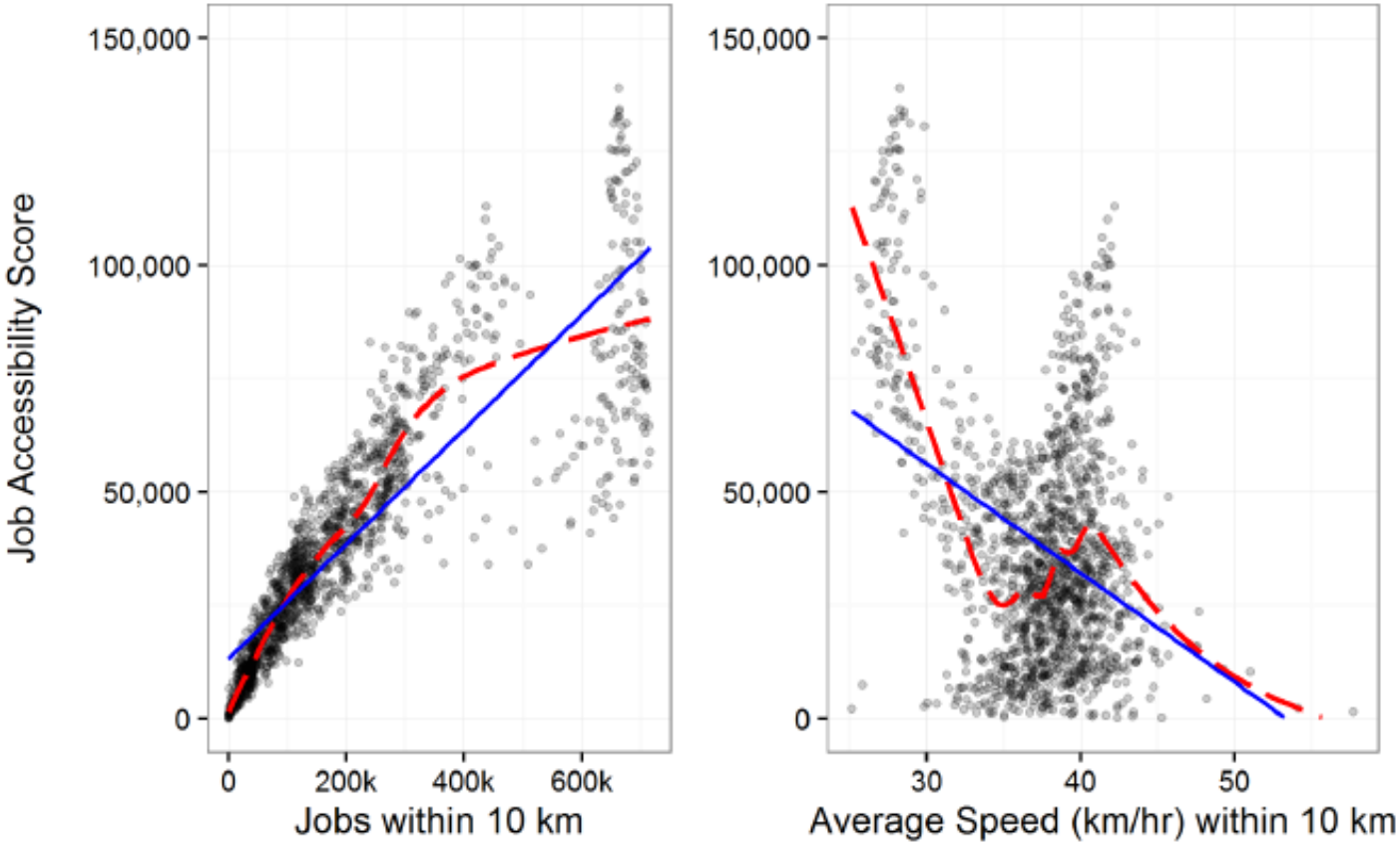

Figure 1 The Relationship between Proximity to Jobs and Job Accessibility (left) and Local Area Traffic Speeds and Job Accessibility (right) in the San Francisco Bay Area

Osman, Thomas, Mondschein, Taylor – MTC Area
http://www.its.ucla.edu/wp-content/uploads/sites/6/2016/08/Taylor-Not-so-Fast-04-01-2016_final.pdf

Auto Delay-Based Impact Analysis: Fundamental Problems

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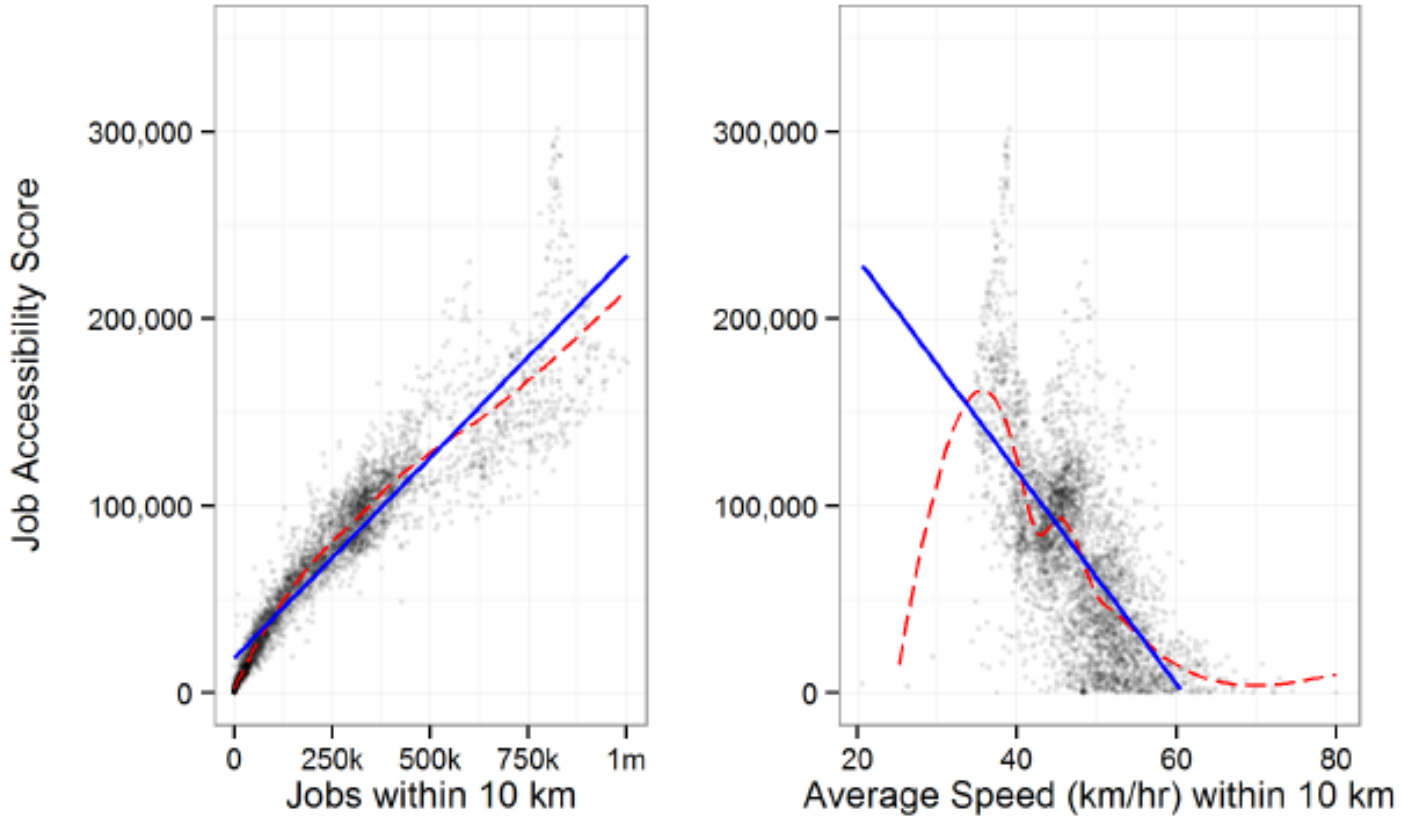

Figure 1 The Relationship Between Proximity To Jobs And Job Accessibility (left) and Local Area Traffic Speeds And Job Accessibility (right)

Mondschein, Osman, Taylor, Thomas – SCAG Area
http://www.its.ucla.edu/wp-content/uploads/sites/6/2015/11/Haynes_Congested-Development_1-Oct-2015_final.pdf

Auto Delay-Based Impact Analysis: Fundamental Problems

1. Good grade in LOS ≠ Success in Transportation

With infill development, "…time lost to commuter traffic delays is more than off-set by the greater opportunities to reach destinations over shorter distances to which high development densities gives rise."

Mondschein, Osman, Taylor, Thomas
http://www.its.ucla.edu/wp-content/uploads/sites/6/2015/11/Haynes_Congested-Development_1-Oct-2015_final.pdf

Auto Delay-Based Impact Analysis: Fundamental Problems

1. Good grade in LOS ≠ Success in Transportation

> "…myopic focus on the traffic impacts of new developments is misguided and may actually decrease accessibility and economic activity in an effort to protect traffic flows."

Mondschein, Osman, Taylor, Thomas
http://www.its.ucla.edu/wp-content/uploads/sites/6/2015/11/Haynes_Congested-Development_1-Oct-2015_final.pdf

Auto Delay-Based Impact Analysis: Fundamental Problems

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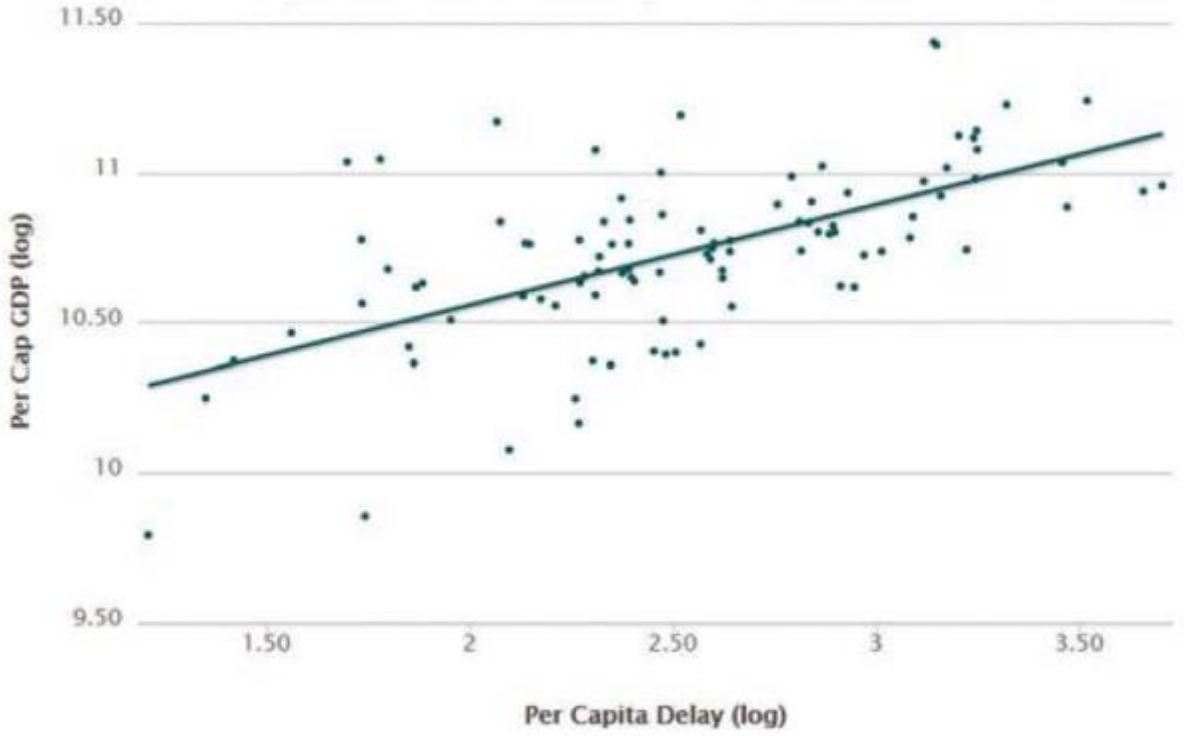


Figure 1: The Relationship between Traffic Delay and GDP in American Metros[6]

Dumbaugh et al., Decisions, Values, and Data: Understanding Bias in Transportation Performance Measures (ITE Journal, August 2014)

Auto Delay-Based Impact Analysis: Fundamental Problems

Amazon Chooses a Little Congestion – and Real Transportation Options

By Andy Clarke, Director of Strategy

There are twenty cities around the United States that must be pretty excited today at making it onto Amazon's short list for HQ2. Ironically, most of those cities are also awaiting their annual inclusion at the top of the naughty list for congestion – which might seem like a contradiction, especially thinking about a business that is built on the reliability of delivery services and wants to add up to 50,000 jobs to a local economy.

I take two things from this apparent contradiction. First, the Inrix Congestion Index is clearly measuring the wrong things if 8 of their "worst" ten cities are in the running for HQ2 (and the only ones missing are Seattle or HQ1, and San Francisco). Second, Amazon is sticking to its promise of looking for places with a truly multimodal transportation system, as most of the candidates also have mature and well-used transit systems, can boast among the most successful bikesharing systems, and are recognized as leading cities for walkability and bike-friendliness.

GOVERNMENT CODE - GOV

TITLE 7. PLANNING AND LAND USE [65000 - 66499.58] *(Heading of Title 7 amended by Stats. 1974, Ch. 1536.)*

DIVISION 1. PLANNING AND ZONING [65000 - 66210] *(Heading of Division 1 added by Stats. 1974, Ch. 1536.)*

CHAPTER 1.5. Office of Planning and Research [65025 - 65059.3] *(Chapter 1.5 repealed and added by Stats. 1970, Ch. 1534.)*

ARTICLE 5. Statewide Environmental Goals and Policy Report [65041 - 65051] *(Article 5 added by Stats. 1970, Ch. 1534.)*

65041.1. The state planning priorities, which are intended to promote equity, strengthen the economy, protect the environment, a ural communities, s

(a) To promote infrastructure that supports i underutilized land that is pre rly in underserved ar

(b) To protect e state's most valuable natura ural lands such as wetlands, w s, greenbelts, and other open as deserving special protecti

(c) To encourag development, other than infil

(1) Uses land e

(2) Is built adj pursuant to subdivision (b).

(3) Is located in an area appropriately planned for growth.

(4) Is served by adequate transportation and other essential utilities and services.

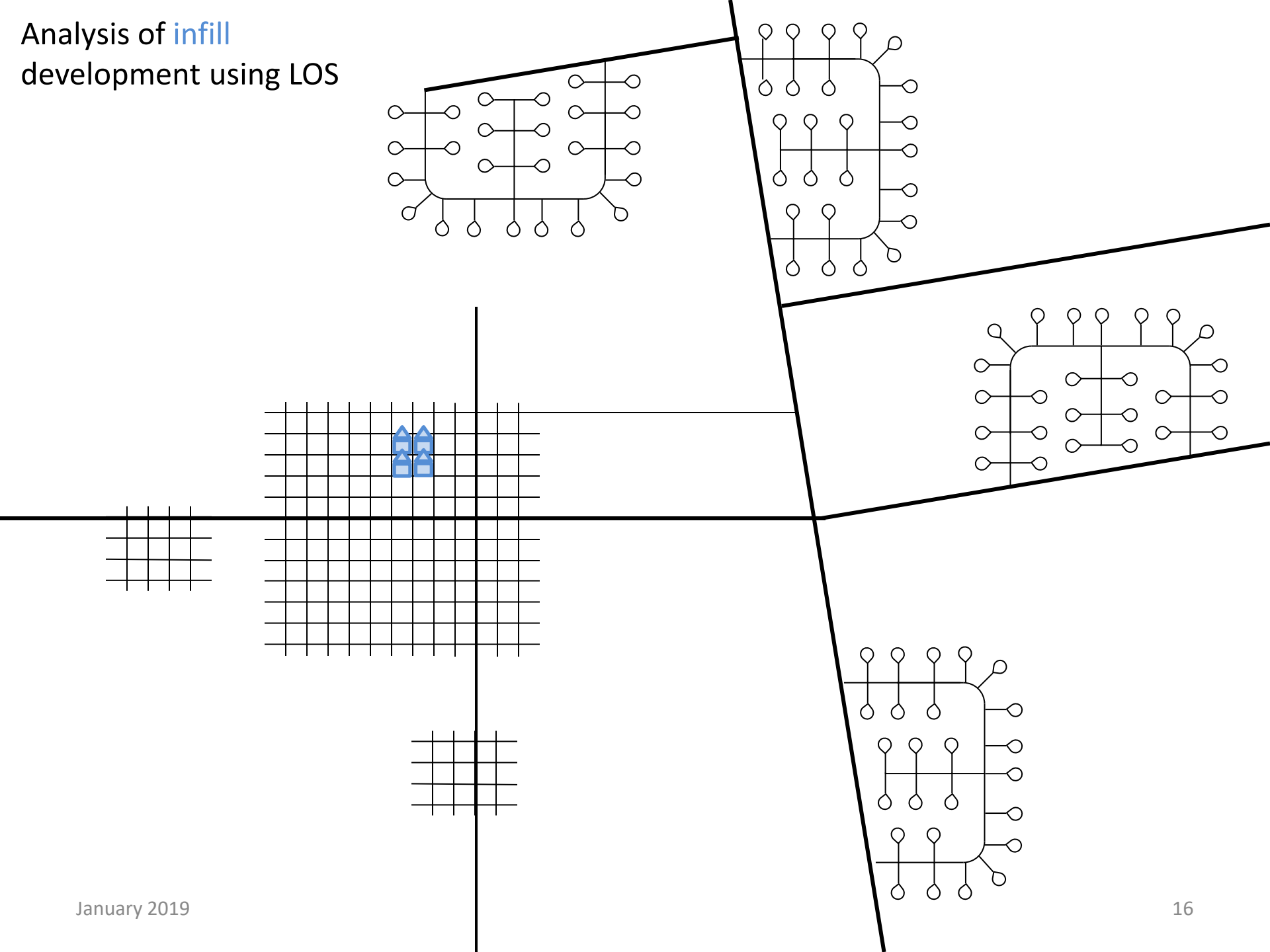
(5) Minimizes ongoing costs to taxpayers.

(Amended (as added by Stats. 2002, Ch. 1016) by Stats. 2002, Ch. 1109, Sec. 1. Effective January 1, 2003.)

65041.1. The state planning priorities, which are intended to promote equity, strengthen the economy, protect the environment, and promote public health and safety in the state, including in urban, suburban, and rural communities, shall be as follows:

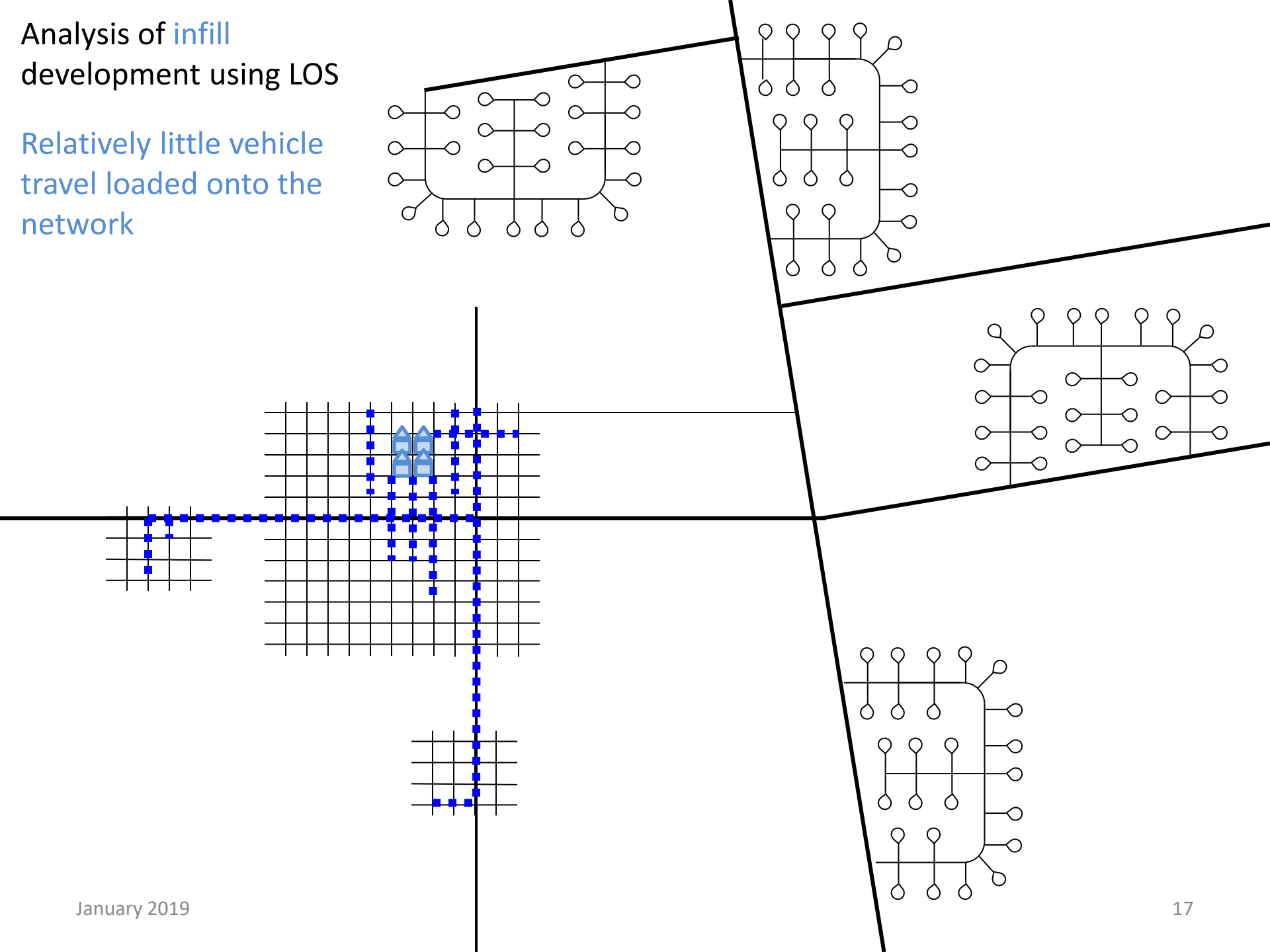
(a) To promote infill development…

Analysis of infill development using LOS



Analysis of infill development using LOS

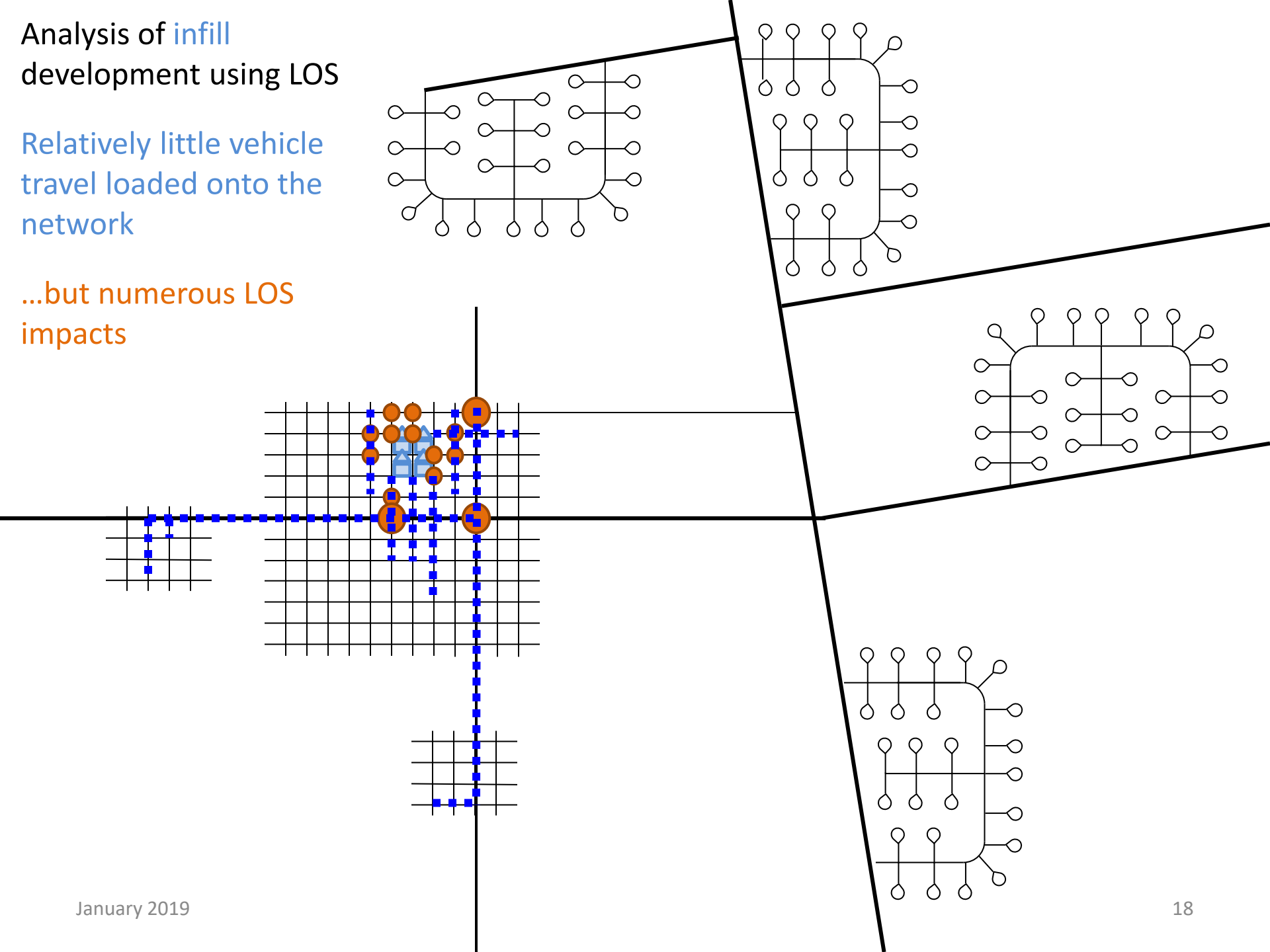
Relatively little vehicle travel loaded onto the network



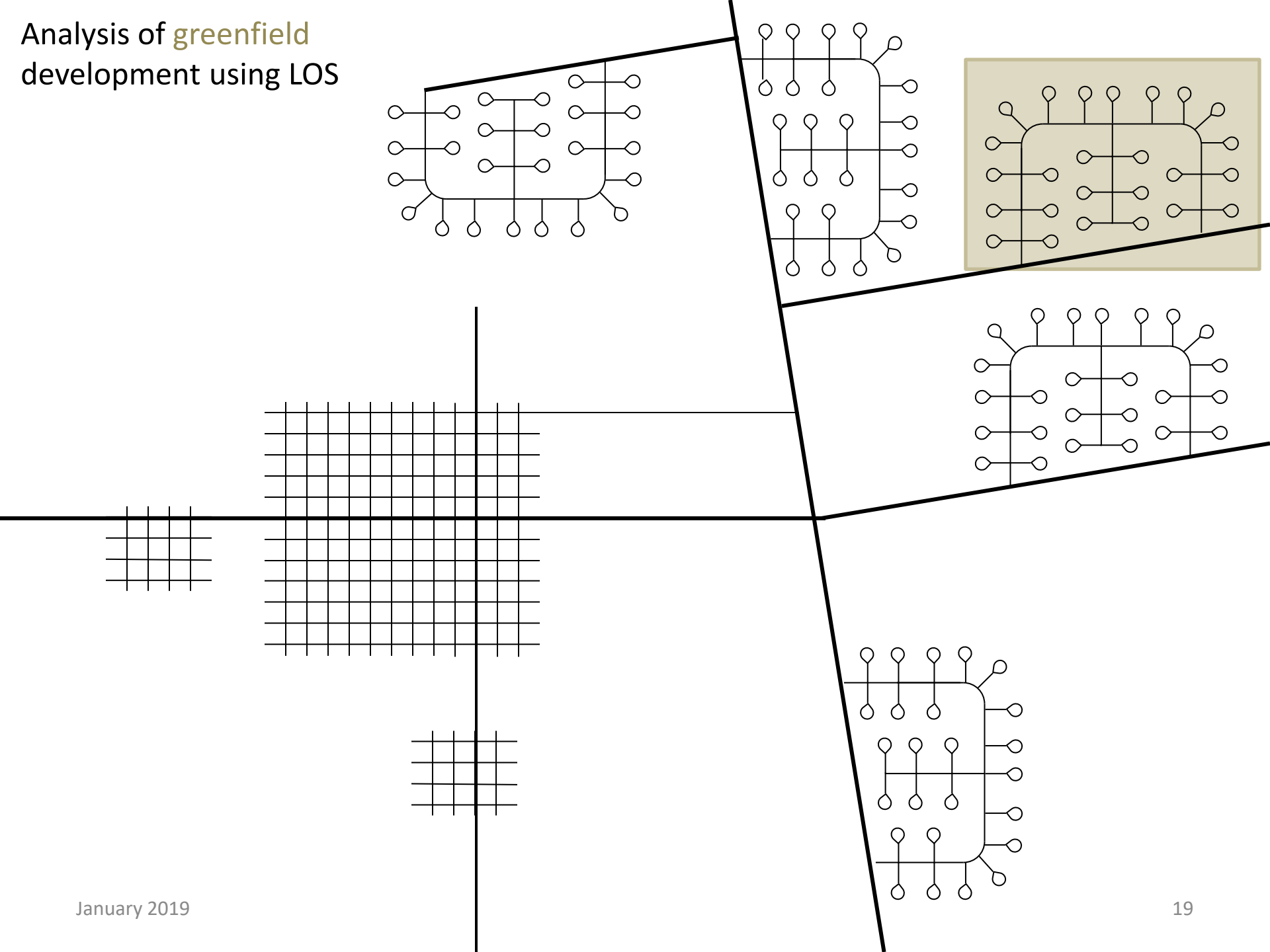
Analysis of infill development using LOS

Relatively little vehicle travel loaded onto the network

…but numerous LOS impacts

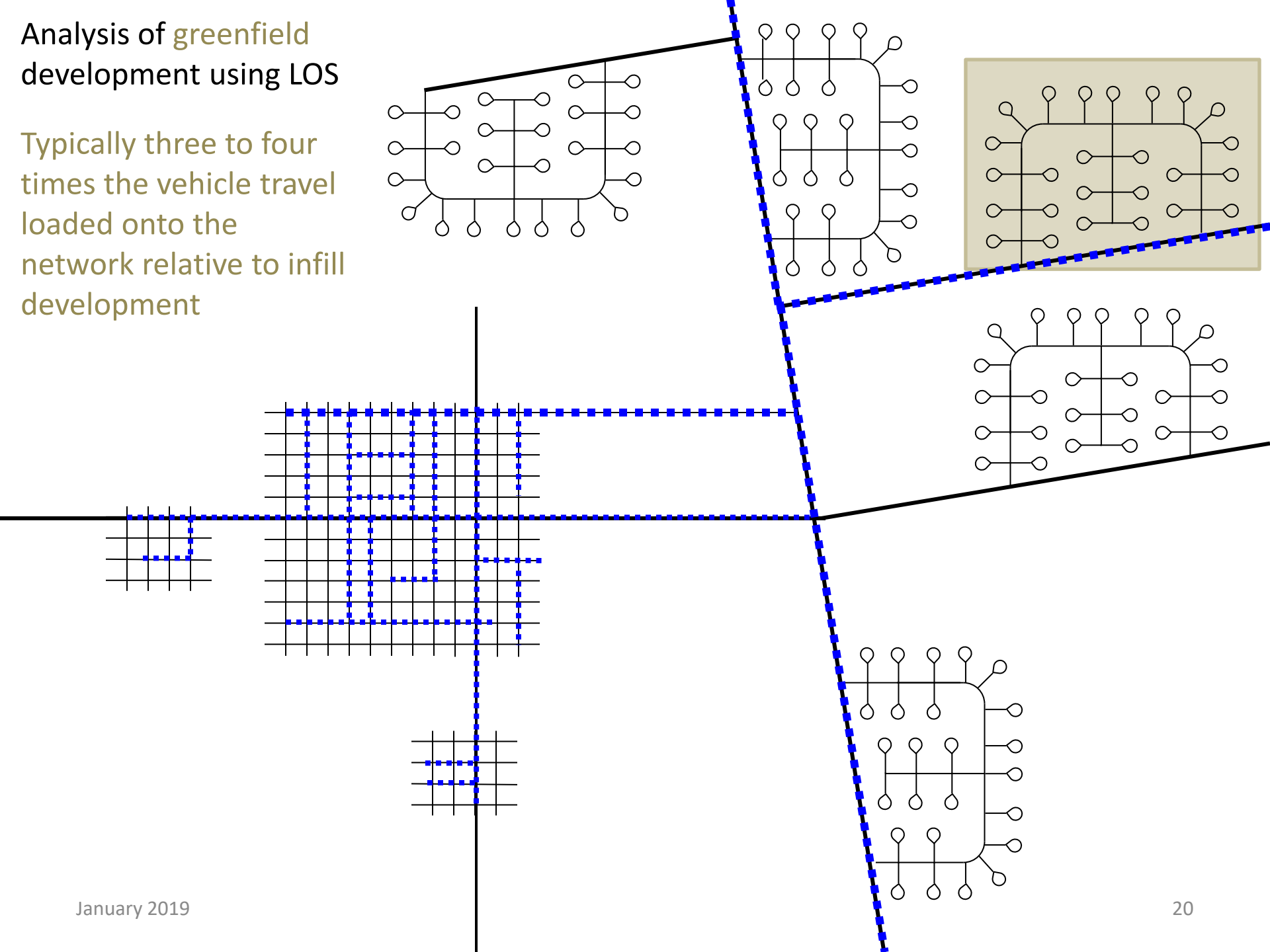


Analysis of greenfield development using LOS



Analysis of greenfield development using LOS

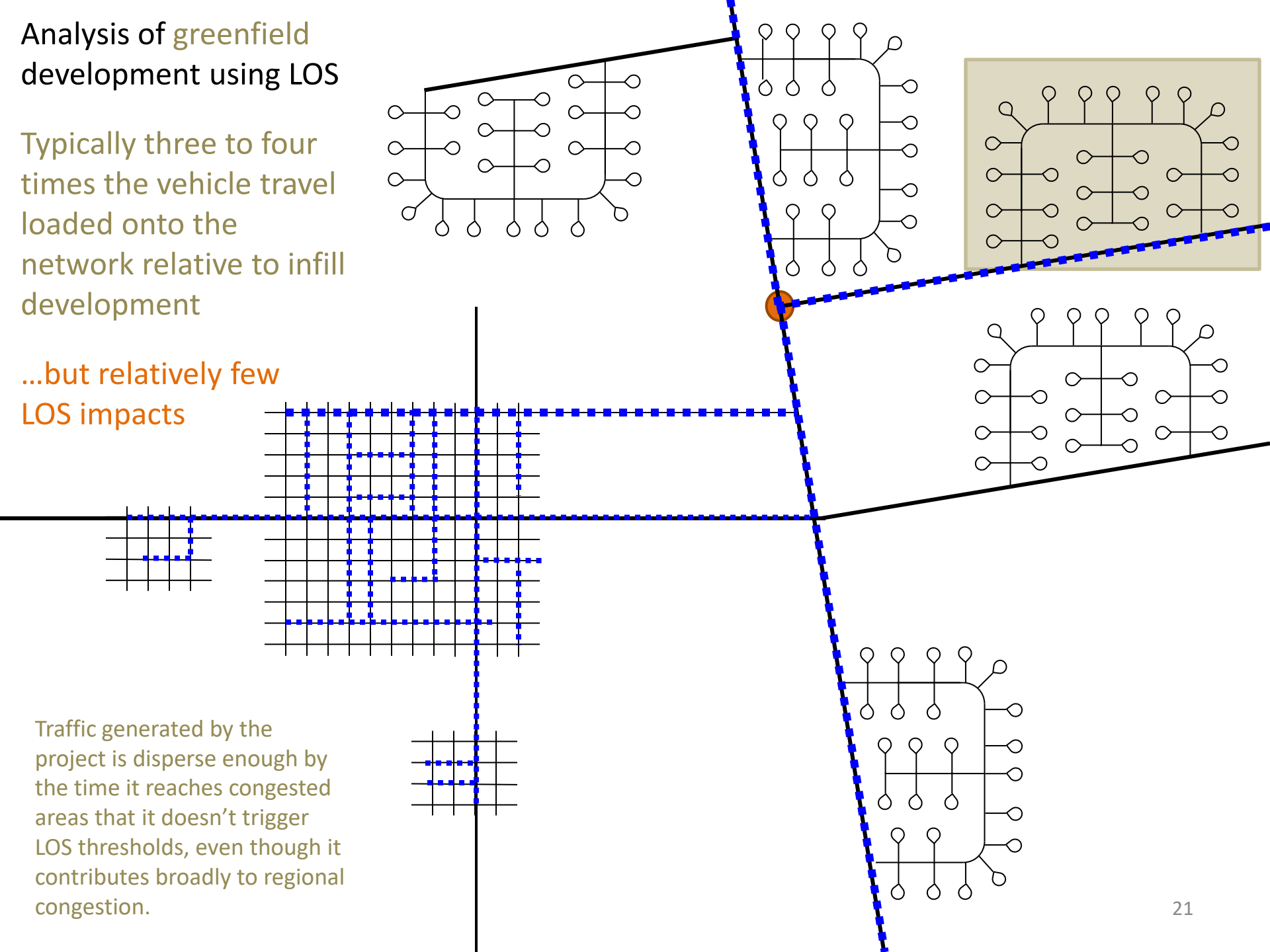
Typically three to four times the vehicle travel loaded onto the network relative to infill development



Analysis of greenfield development using LOS

Typically three to four times the vehicle travel loaded onto the network relative to infill development

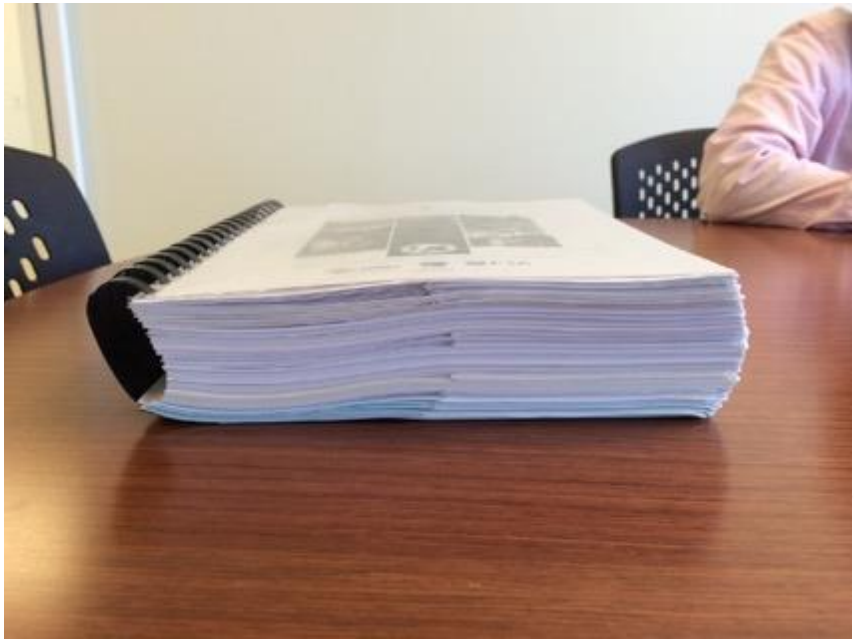
…but relatively few LOS impacts



Traffic generated by the project is disperse enough by the time it reaches congested areas that it doesn't trigger LOS thresholds, even though it contributes broadly to regional congestion.

Auto Delay-Based Impact Analysis: Fundamental Problems

1. Good grade in LOS ≠ Success in Transportation
2. **LOS assessments are expensive, time consuming, and inaccurate**



[Van Ness BRT analysis](#) (28MB)

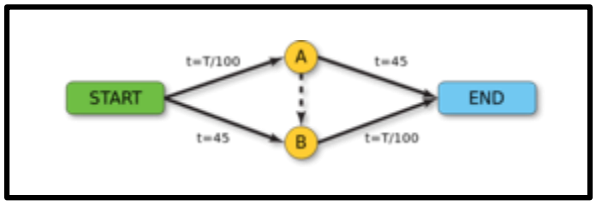
Table V.M-13
Intersection Critical Movement Analysis (CMA) and Level of Service (LOS) Summary
Existing (2001) and Future (2005) Conditions

No.	Intersection	Peak Hour	Existing CMA	Existing LOS	Without Project CMA	Without Project LOS	With Project CMA	With Project LOS	With Project Impact	With Project + Miti CMA	With Project + Miti LOS	With Project + Miti I
1.	Sunset Boulevard & Beverly Glen Boulevard (E.)	AM	0.894	D	1.036	F	1.037	F	0.001	1.036	F	
		PM	1.023	F	1.225	F	1.216	F	-0.009	1.215	F	
2.	Sunset Boulevard & Beverly Glen Boulevard (W.)	AM	1.169	F	1.385	F	1.388	F	0.003	1.385	F	
		PM	1.062	F	1.264	F	1.251	F	-0.013	1.249	F	
3.	Wilshire Boulevard & Beverly Glen Boulevard	AM	0.868	D	1.030	F	1.030	F	0.000	1.029	F	
		PM	0.884	D	1.140	F	1.133	F	-0.007	1.133	F	
4.	Santa Monica Boulevard (N.) & Overland Avenue	AM	0.861	D	1.076	F	1.080	F	0.004	1.078	F	
		PM	0.814	D	1.082	F	1.054	F	-0.028	1.054	F	
5.	Santa Monica Boulevard (S.) & Overland Avenue	AM	0.478	A	0.358	A	0.358	A	0.000	0.358	A	
		PM	0.428	A	0.465	A	0.465	A	0.000	0.465	A	
6.	Santa Monica Boulevard (N.) & Beverly Glen Boulevard	AM	0.849	D	1.099	F	1.107	F	0.008	1.104	F	
		PM	0.823	D	1.139	F	1.130	F	-0.009	1.128	F	
7.	Santa Monica Boulevard (S.) & Beverly Glen Boulevard	AM	0.849	D	0.464	A	0.464	A	0.000	0.464	A	
		PM	0.884	D	0.575	A	0.575	A	0.000	0.575	A	
8.	Santa Monica Boulevard (S.) & Century Park West	AM	0.325	A	1.006	F	1.007	F	0.001	1.005	F	
		PM	0.397	A	0.984	E	0.969	E	-0.015	0.966	E	
9.	Santa Monica Boulevard (N.) & Club View Drive	AM	0.613	B	0.213	A	0.213	A	0.000	0.213	A	
		PM	0.707	C	0.408	A	0.408	A	0.000	0.408	A	
10.	Santa Monica Boulevard (N.) & Avenue Of The Stars	AM	0.825	D	1.191	F	1.205	F	0.014	1.199	F	
		PM	0.755	C	0.967	E	0.956	E	-0.011	0.955	E	
11.	Santa Monica Boulevard (S.) & Avenue Of The Stars	AM	0.506	A	NA		NA			NA		
		PM	0.544	A	NA		NA			NA		
12.	Santa Monica Boulevard (N.) & Century Park East	AM	0.759	C	0.950	E	0.955	E	0.005	0.953	E	
		PM	0.686	B	0.846	D	0.805	D	-0.041	0.804	D	
13.	Santa Monica Boulevard (S.) & Century Park East	AM	0.771	C	NA		NA			NA		
		PM	0.648	B	NA		NA			NA		
14.	Santa Monica Boulevard (N.) & Wilshire Boulevard	AM	1.096	F	1.261	F	1.263	F	0.002	1.263	F	
		PM	1.046	F	1.294	F	1.288	F	-0.006	1.287	F	

Auto Delay-Based Impact Analysis: Fundamental Problems

1. Good grade in LOS ≠ Success in Transportation
2. LOS assessments are expensive, time consuming, and inaccurate
3. **"Fixing" LOS simply moves congestion elsewhere**

http://www.opr.ca.gov/docs/ITE_Journal_Article_-_Decisions_Values_and_Data.pdf



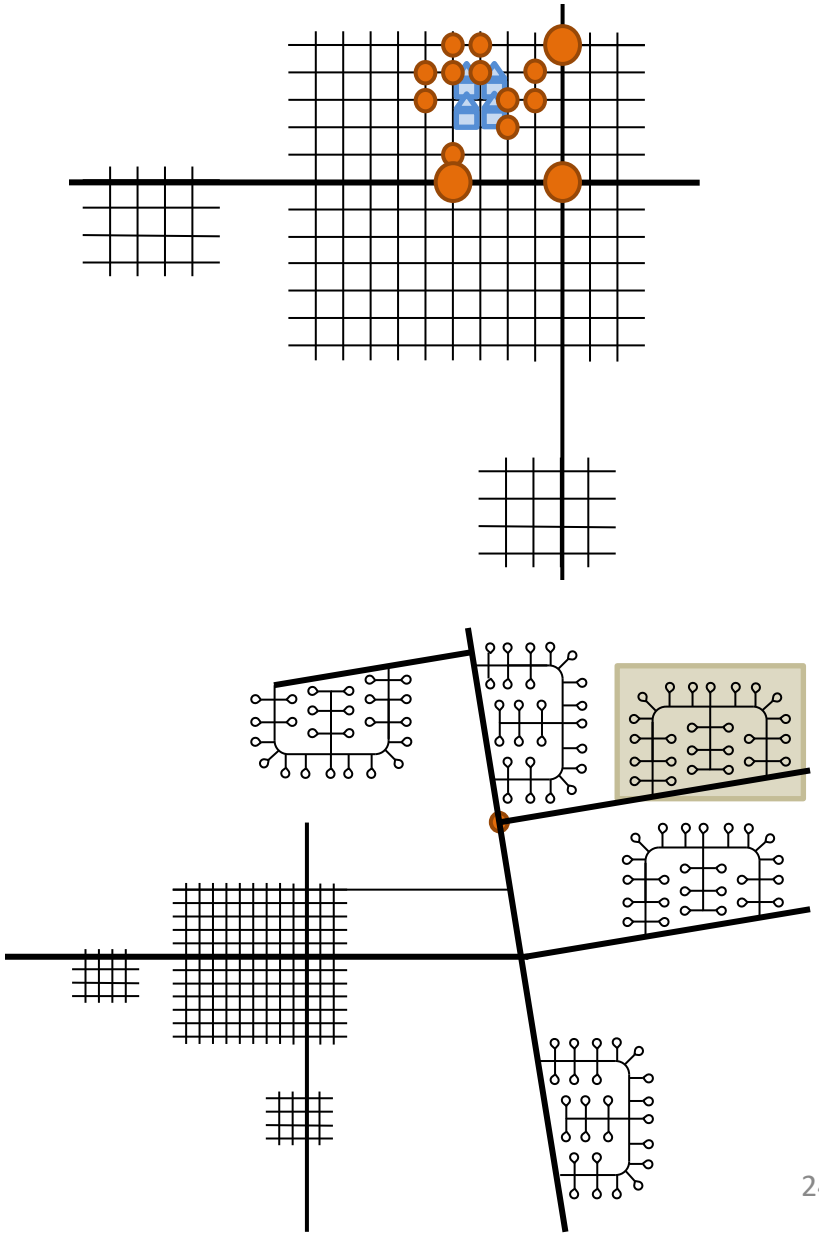
Braess's Paradox

https://en.wikipedia.org/wiki/Braess%27s_paradox

Auto Delay-Based Impact Analysis: Secondary Problems

1. **Punishes last-in, inhibits infill, pushes development outward**

   http://www.opr.ca.gov/docs/ITE_Journal_Article_-_Decisions_Values_and_Data.pdf



Auto Delay-Based Impact Analysis: Secondary Problems

1. Punishes last-in, inhibits infill, pushes development outward
2. **Inhibits transit and active transportation**

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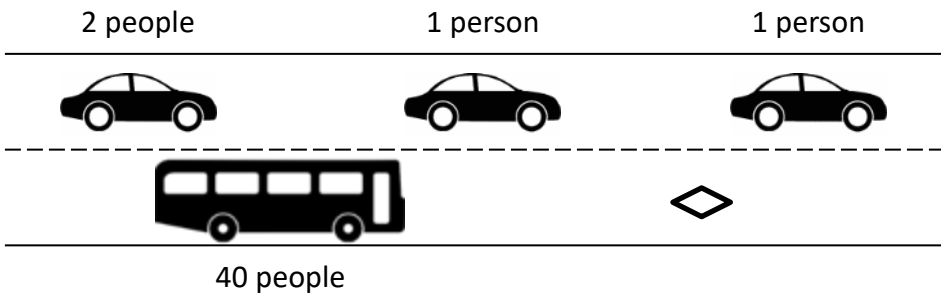


Auto Delay-Based Impact Analysis: Secondary Problems

1. Punishes last-in, inhibits infill, pushes development outward
2. Inhibits transit and active transportation
3. **Forces more road construction than we can afford to maintain**

http://lgc.org/wordpress/docs/events/first_thursday_dinners/ftd_2013_Protecting_Transportation-june.pdf

Auto Delay-Based Impact Analysis: Secondary Problems

1. Punishes last-in, inhibits infill, pushes development outward
2. Inhibits transit and active transportation
3. Forces more road construction than we can afford to maintain
4. **Generates an array of environmental impacts**

https://ncst.ucdavis.edu/white-paper/cutting-greenhouse-gas-emissions-is-only-the-beginning-a-literature-review-of-the-co-benefits-of-reducing-vehicle-miles-traveled/

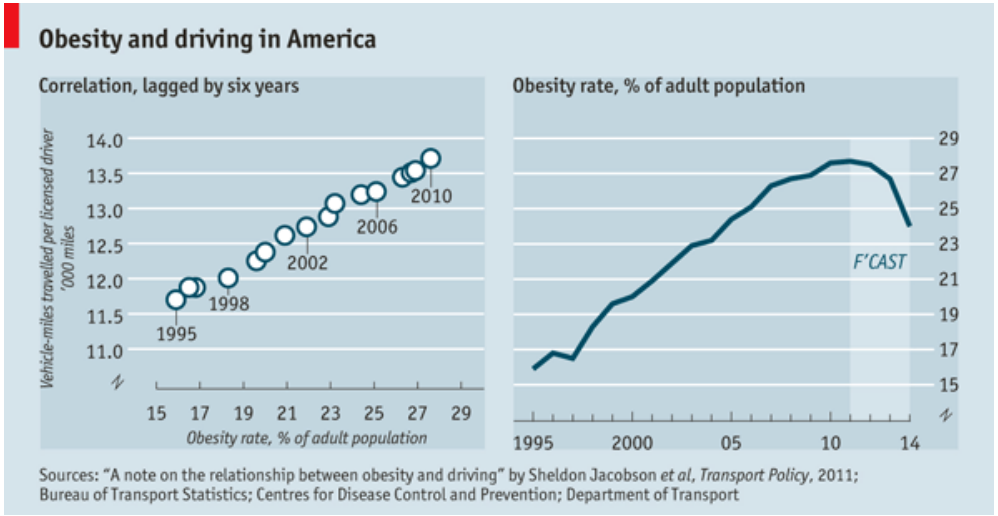
Peer-reviewed research on environmental impacts from high VMT projects:

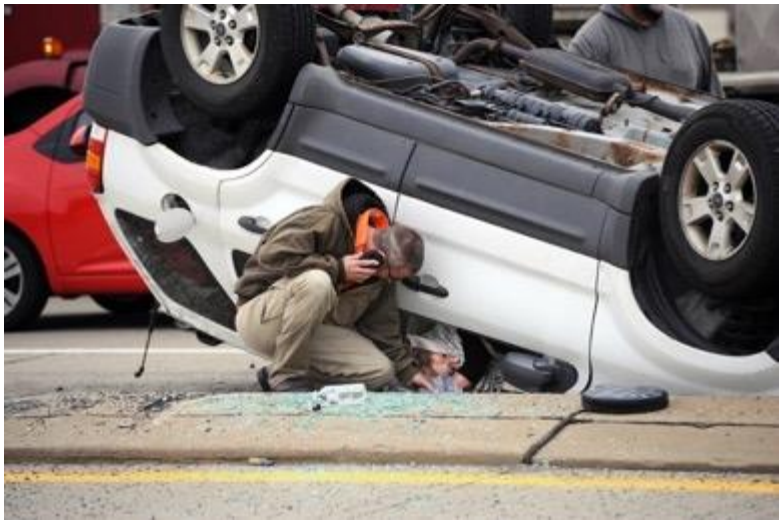
- Emissions
  - GHG
  - Regional pollutants
- Energy use
  - Transportation energy
  - Building energy
- Water
  - Water use
  - Runoff – flooding
  - Runoff – pollution
- Consumption of open space
  - Sensitive habitat
  - Agricultural land

Auto Delay-Based Impact Analysis: Secondary Problems

1. Punishes last-in, inhibits infill, pushes development outward
2. Inhibits transit and active transportation
3. Forces more road construction than we can afford to maintain
4. Generates an array of environmental impacts
5. **Worsens public health and safety**

https://ncst.ucdavis.edu/white-paper/cutting-greenhouse-gas-emissions-is-only-the-beginning-a-literature-review-of-the-co-benefits-of-reducing-vehicle-miles-traveled/





Updated metric of transportation impact: VMT

Why did OPR choose VMT?

1. Best umbrella metric for transportation environmental impact

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1. Best umbrella metric for transportation environmental impact
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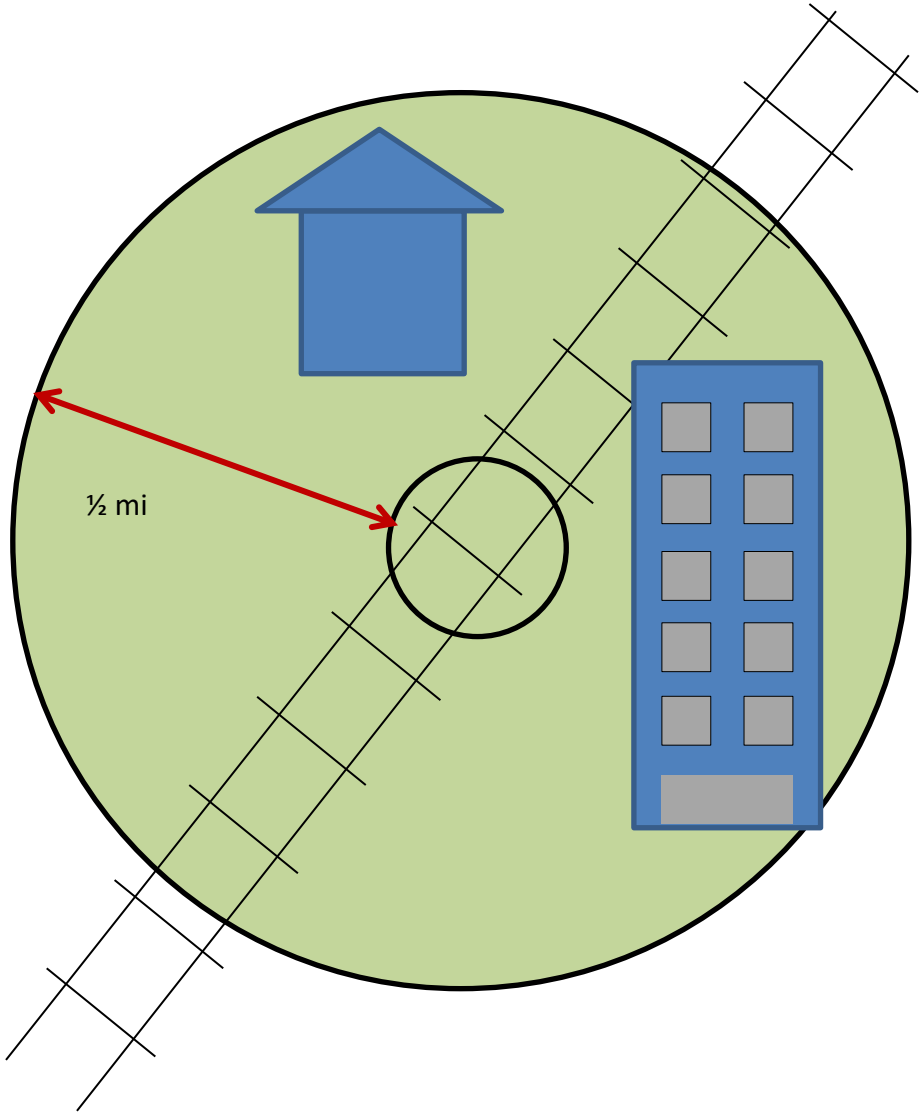
4. Achieving long-run GHG goals depend on near-term actions to contain VMT
5. Opportunities for streamlining infill

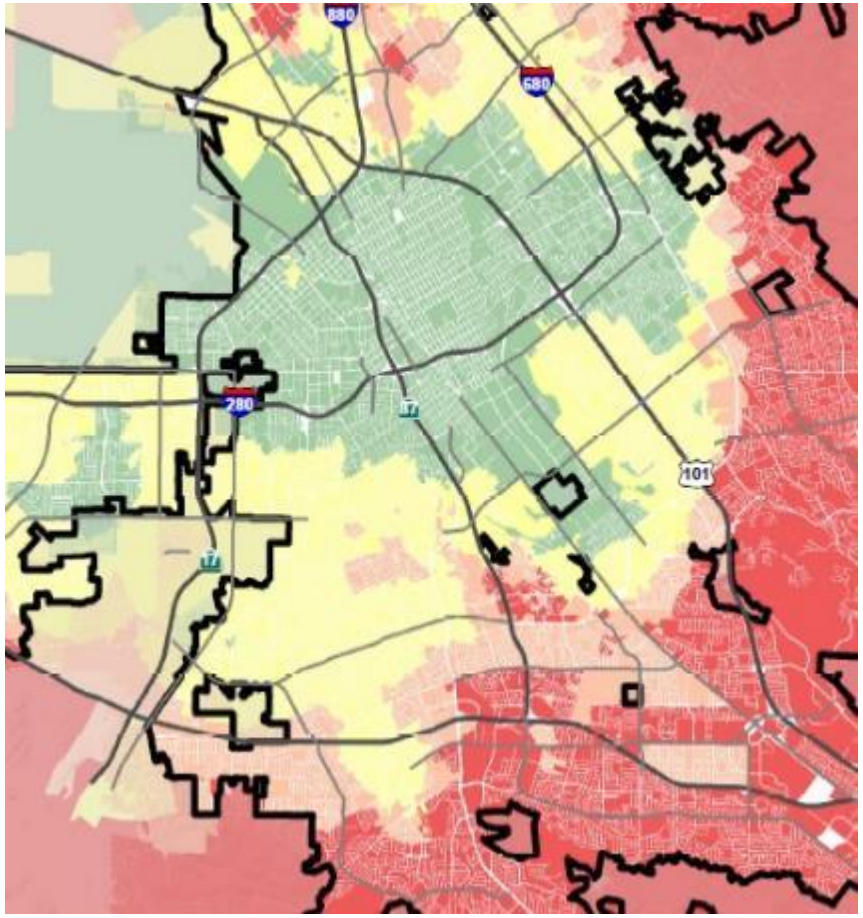
Benefits of VMT as a Measure of Transportation Impact

1. **Streamline TOD**



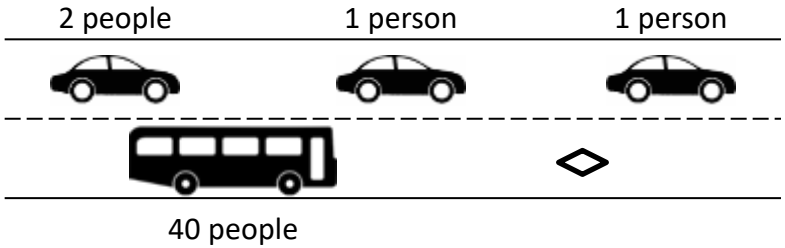
Benefits of VMT as a Measure of Transportation Impact

1. Streamline TOD
2. **Streamline infill**



Benefits of VMT as a Measure of Transportation Impact

1. Streamline TOD
2. Streamline infill
3. **Streamline transit projects**



Benefits of VMT as a Measure of Transportation Impact

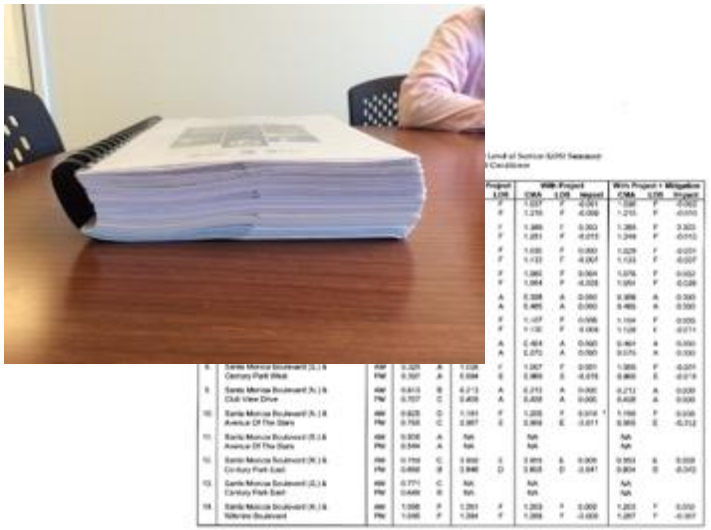
1. Streamline TOD
2. Streamline infill
3. Streamline transit projects
4. **Streamline active transportation projects**

Benefits of VMT as a Measure of Transportation Impact

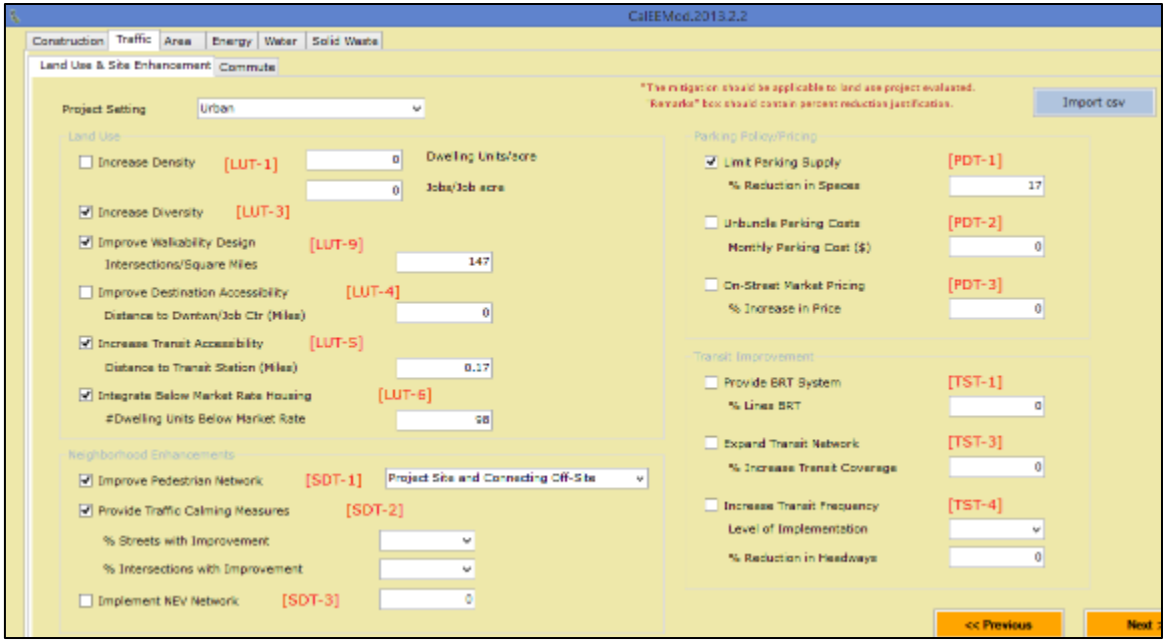
1. Streamline TOD
2. Streamline infill
3. Streamline transit projects
4. Streamline active transportation projects
5. **Streamline locally-serving retail**

Benefits of VMT as a Measure of Transportation Impact

1. Streamline TOD
2. Streamline infill
3. Streamline transit projects
4. Streamline active transportation projects
5. Streamline locally-serving retail
6. **Streamline modeling for remaining projects**



http://www.caleemod.com/



Benefits of VMT as a Measure of Transportation Impact

1. Streamline TOD
2. Streamline infill
3. Streamline transit projects
4. Streamline active transportation projects
5. Streamline locally-serving retail
6. Streamline modeling for remaining projects
7. **Attack regional congestion more effectively**

http://www.opr.ca.gov/docs/ITE_Journal_Article_-_Decisions_Values_and_Data.pdf

Benefits of VMT as a Measure of Transportation Impact

1. Streamline TOD
2. Streamline infill
3. Streamline transit projects
4. Streamline active transportation projects
5. Streamline locally-serving retail
6. Streamline modeling for remaining projects
7. Attack regional congestion more effectively
8. **Reduce future pavement maintenance deficits**

http://lgc.org/wordpress/docs/events/first_thursday_dinners/ftd_2013_Protecting_Transportation-june.pdf

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5. Streamline locally-serving retail
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7. Attack regional congestion more effectively
8. Reduce future pavement maintenance deficits
9. **Large improvements in public health**

> 21,000 deaths/y attributable to physical inactivity in California

Achieving CA's mode share targets:

- **2,095 fewer deaths annually**
- **$1 billion-$15 billion/y prevented premature death and disability**

Maizlish N. ***Increasing Walking,*** *Cycling, and Transit: Improving Californians' Health, Saving Costs, and Reducing Greenhouse Gases. Final Technical Report to the California Department of Public Health (CDPH)*. Berkeley, CA; 2016. https://www.cdph.ca.gov/programs/Documents/IncreasingWalkingCyclingTransitFinalReport2016rev2017-01-28.pdf

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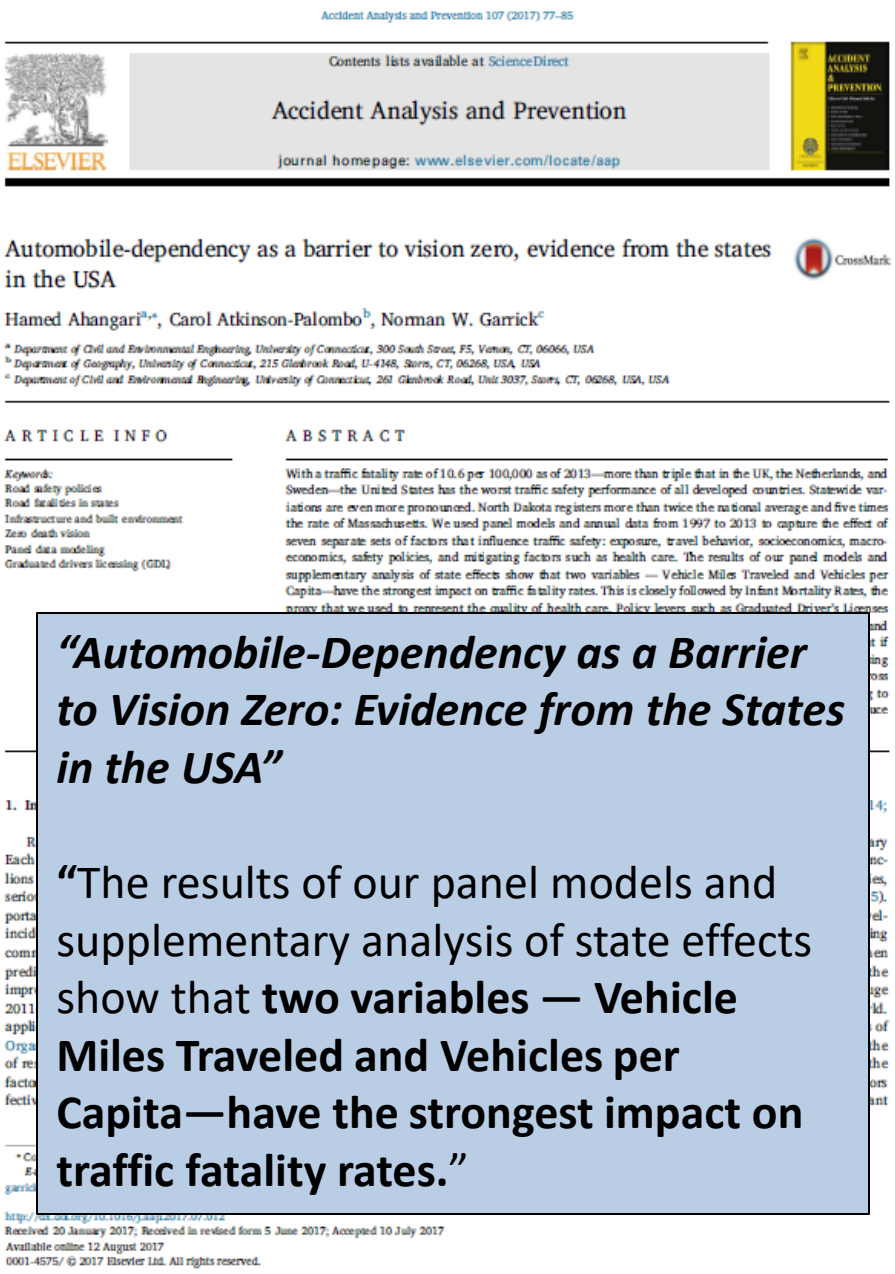

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Automobile-dependency as a barrier to vision zero, evidence from the states in the USA

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Zero death vision
Panel data modeling
Graduated drivers licensing (GDL)

ABSTRACT

With a traffic fatality rate of 10.6 per 100,000 as of 2013—more than triple that in the UK, the Netherlands, and Sweden—the United States has the worst traffic safety performance of all developed countries. Statewide variations are even more pronounced. North Dakota registers more than twice the national average and five times the rate of Massachusetts. We used panel models and annual data from 1997 to 2013 to capture the effect of seven separate sets of factors that influence traffic safety: exposure, travel behavior, socioeconomics, macroeconomics, safety policies, and mitigating factors such as health care. The results of our panel models and supplementary analysis of state effects show that two variables — Vehicle Miles Traveled and Vehicles per Capita—have the strongest impact on traffic fatality rates. This is closely followed by Infant Mortality Rates, the proxy that we used to represent the quality of health care. Policy levers such as Graduated Driver's Licenses

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"Automobile-Dependency as a Barrier to Vision Zero: Evidence from the States in the USA"

"The results of our panel models and supplementary analysis of state effects show that **two variables — Vehicle Miles Traveled and Vehicles per Capita—have the strongest impact on traffic fatality rates."**

Benefits of VMT as a Measure of Transportation Impact

1. Streamline TOD
2. Streamline infill
3. Streamline transit projects
4. Streamline active transportation projects
5. Streamline locally-serving retail
6. Streamline modeling for remaining projects
7. Attack regional congestion more effectively
8. Reduce future pavement maintenance deficits
9. **Large improvements in public health**

Country	*Traffic deaths per 100K pop*
Sweden	**2.8**
UK	**2.9**
Switzerland	**3.3**
Netherlands	**3.4**
Denmark	**3.5**
Singapore	**3.6**
Spain	**3.7**
Germany	**4.3**
Japan	**4.7**
Finland	**4.8**
France	**5.1**
USA	**10.6**

World Health Organization
http://apps.who.int/gho/data/node.main.A997

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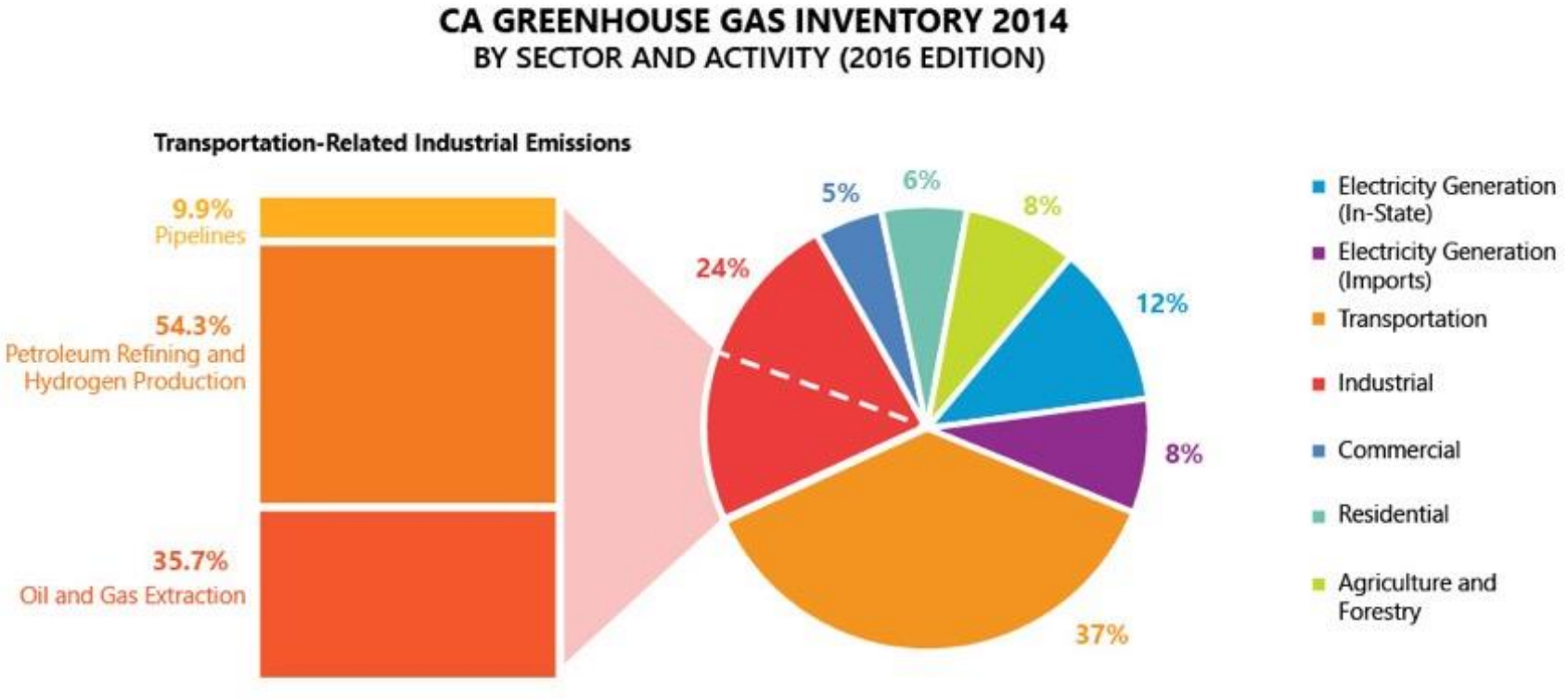
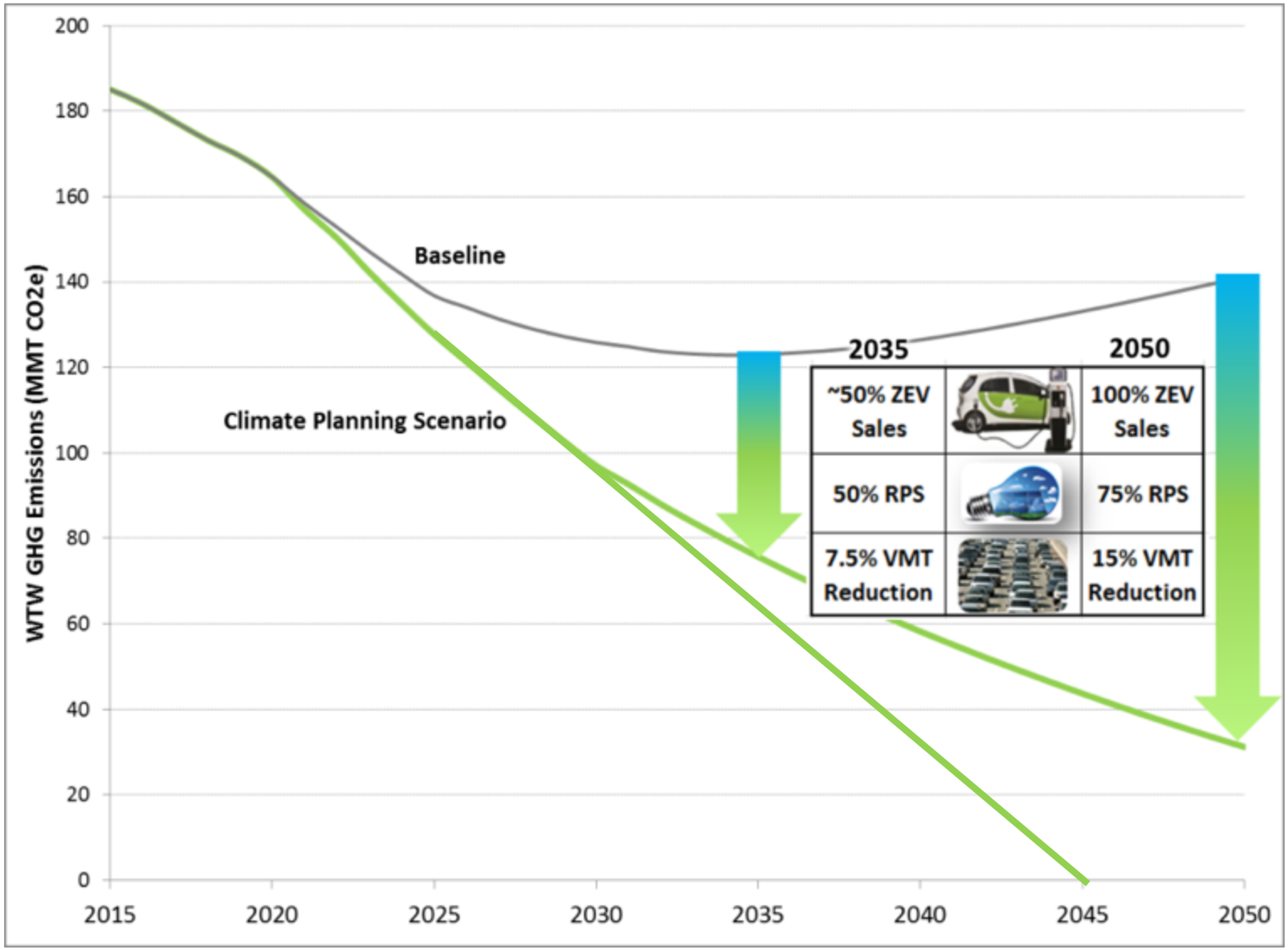
10. **Reduction in GHG and other emissions**



http://ca50million.ca.gov/Transportation/transportation.html

Background – State GHG Goals



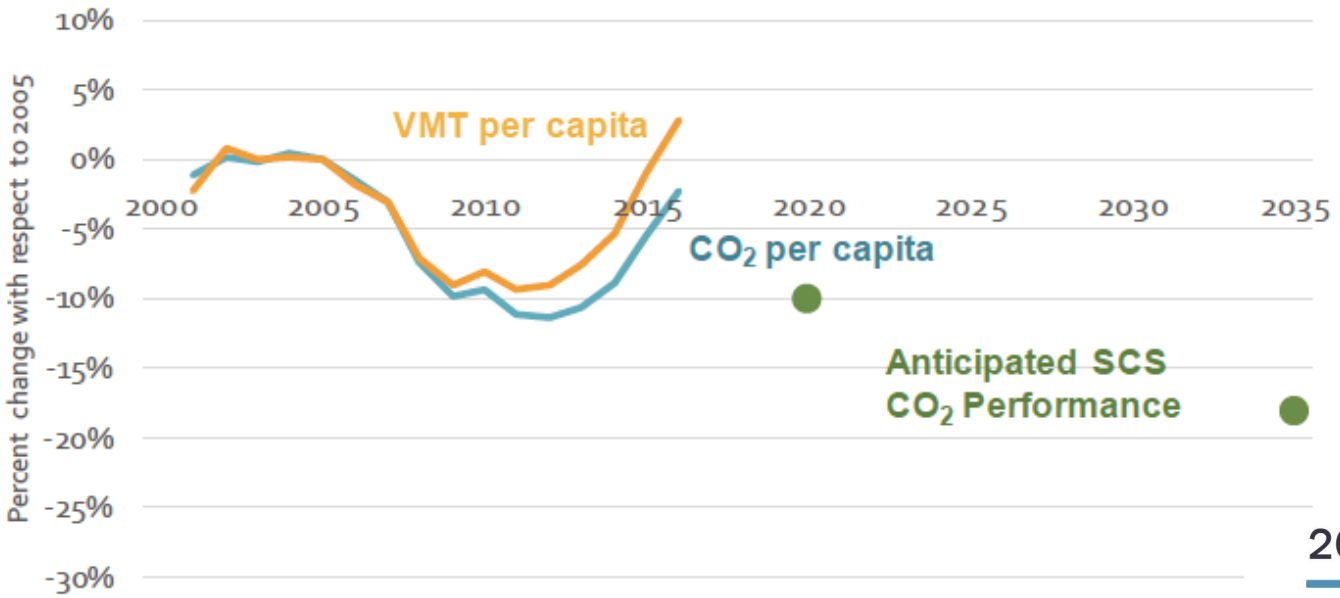
2018 PROGRESS REPORT

California's Sustainable Communities and Climate Protection Act

NOVEMBER 2018

CALIFORNIA
AIR RESOURCES BOARD

Statewide CO_2 and Vehicle Miles Traveled (VMT) Per Capita Trend with Respect to Anticipated Performance of Current SB 375 SCSs[2]



Source: CDTFA, U.S.EIA, U.S.EI

2018 PROGRESS REPORT

California's Sustainable Communities and Climate Protection Act

NOVEMBER 2018

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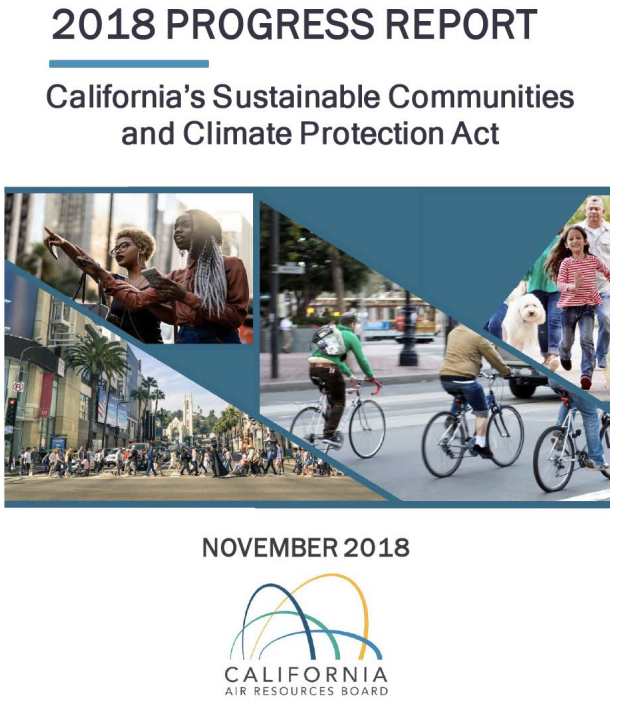
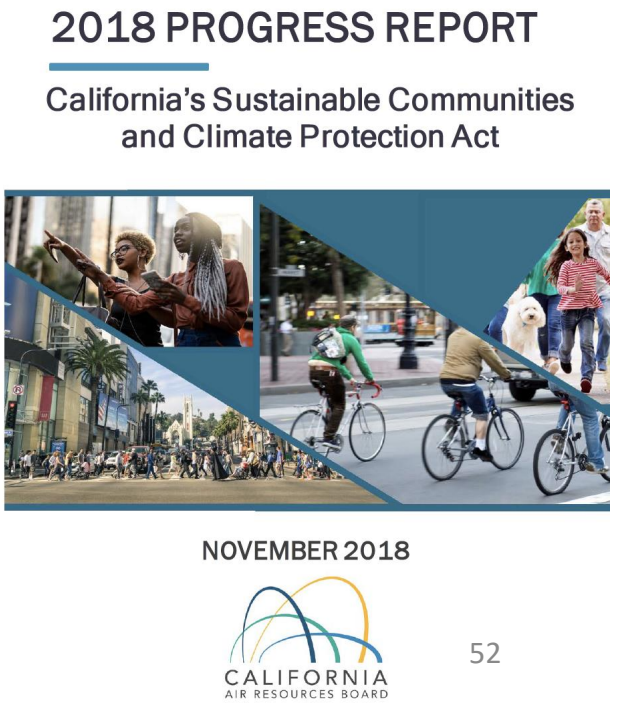
“California is not on track to meet the greenhouse gas reductions expected under SB 375 for 2020, with **emissions from statewide passenger vehicle travel per capita increasing and going in the wrong direction**.”

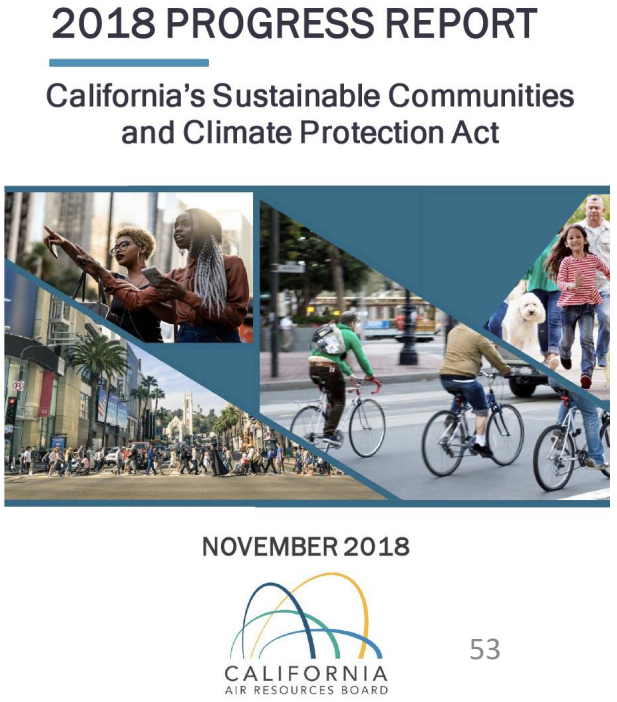


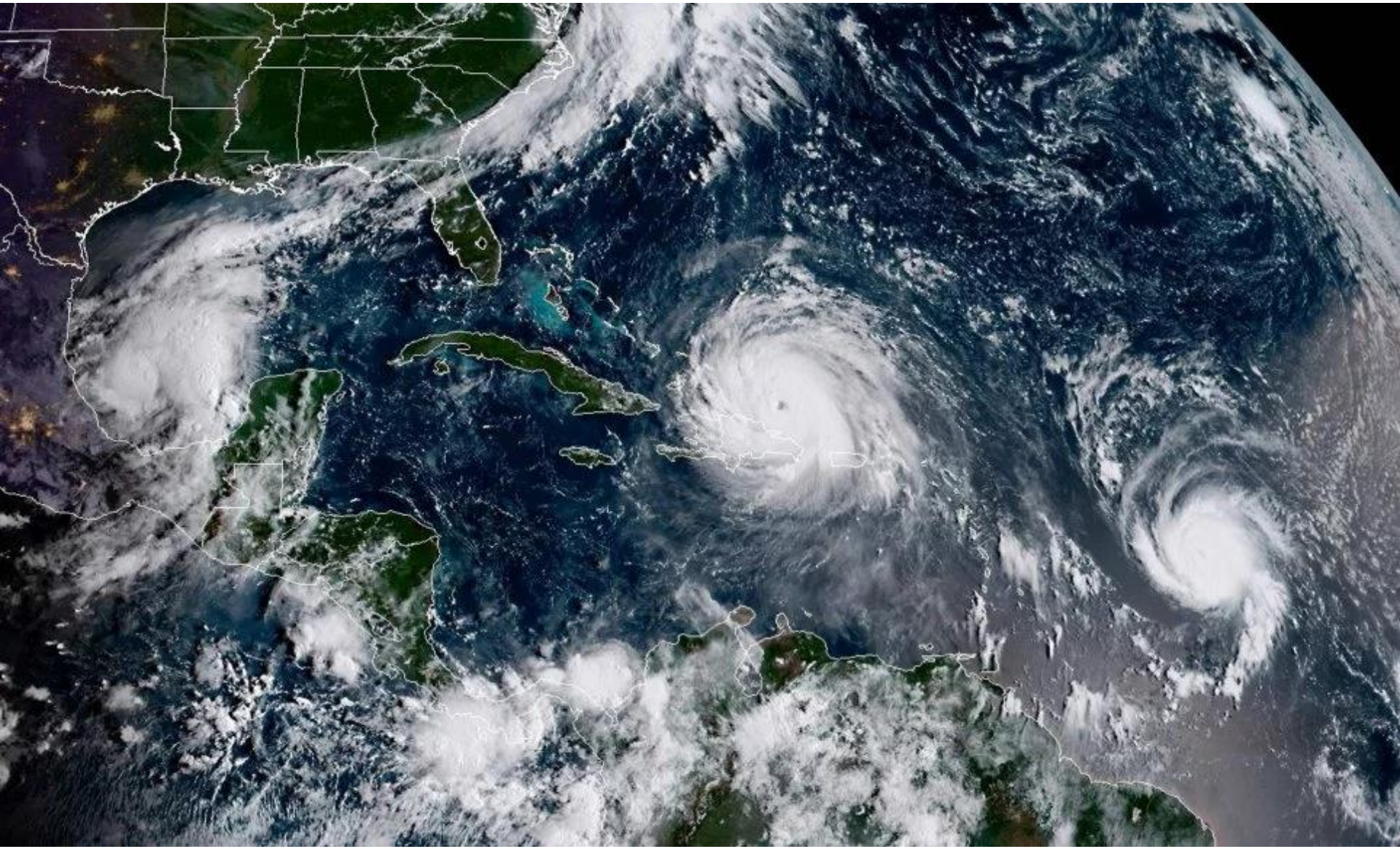
"With emissions from the transportation sector continuing to rise despite increases in fuel efficiency and decreases in the carbon content of fuel, **California will not achieve the necessary greenhouse gas emissions reductions to meet mandates for 2030 and beyond without significant changes to how communities and transportation systems are planned, funded, and built.**"

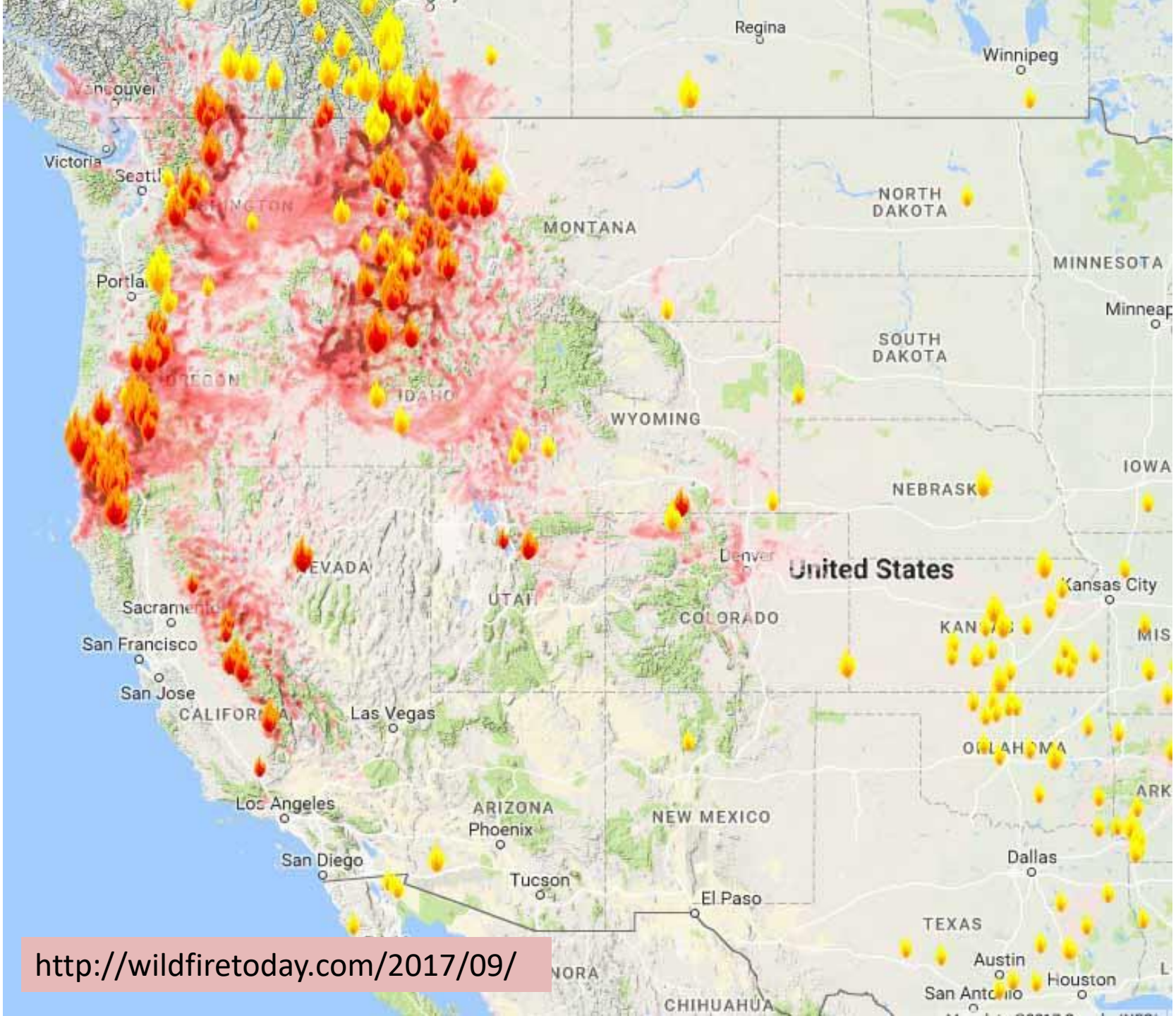


"CARB's 2017 Climate Change Scoping Plan Update conducted a comprehensive assessment of greenhouse gas emissions reductions strategies. The plan concludes that **California cannot meet its climate goals without curbing growth in single-occupancy vehicle activity.**

Even if the share of new car sales that are ZEVs grows nearly 10-fold from today, California would still need to reduce VMT per capita 25 percent to achieve the necessary reductions for 2030."







http://wildfiretoday.com/2017/09/

A sand tornado passes through as thousands of Kurds stream into Dikmetas, Turkey, from Syria in September 2014. Years after rural residents fleeing drought poured into Syria's cities, helping to spark a civil war, the region remains in turmoil.

PHOTOGRAPH BY JOHN STANMEYER, NATIONAL GEOGRAPHIC

Climate Change Helped Spark Syrian War, Study Says

Research provides first deep look at how global warming may already influence armed conflict.

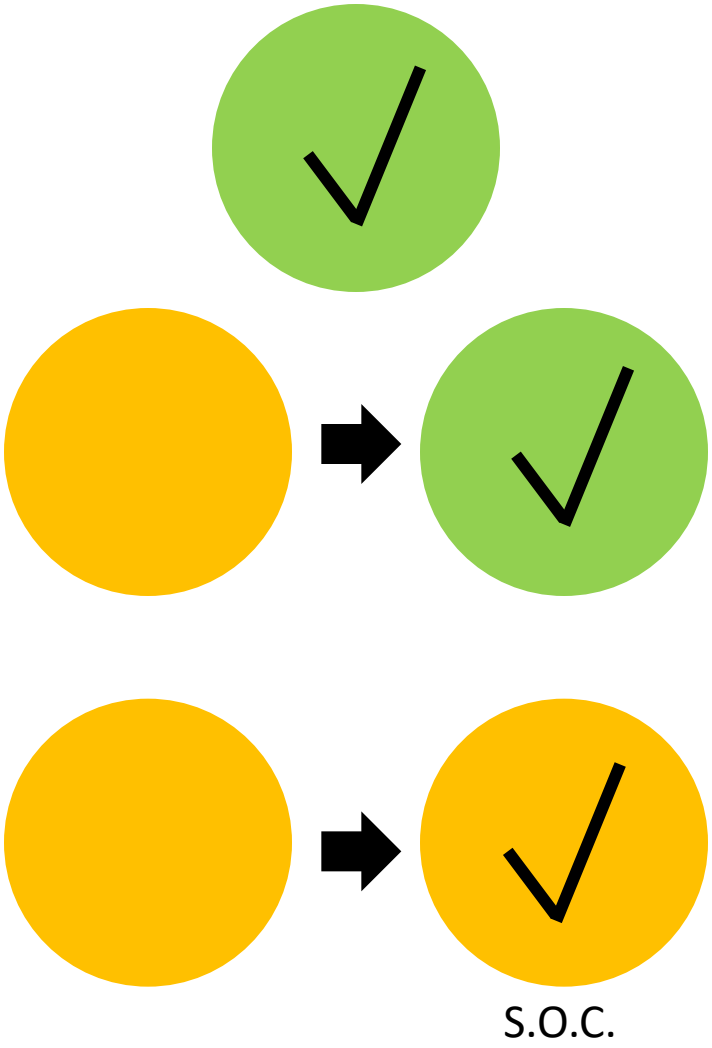
BY CRAIG WELCH, FOR NATIONAL GEOGRAPHIC

743: Three Cases

1. Project streamlined

2. Project mitigates VMT to less than significant

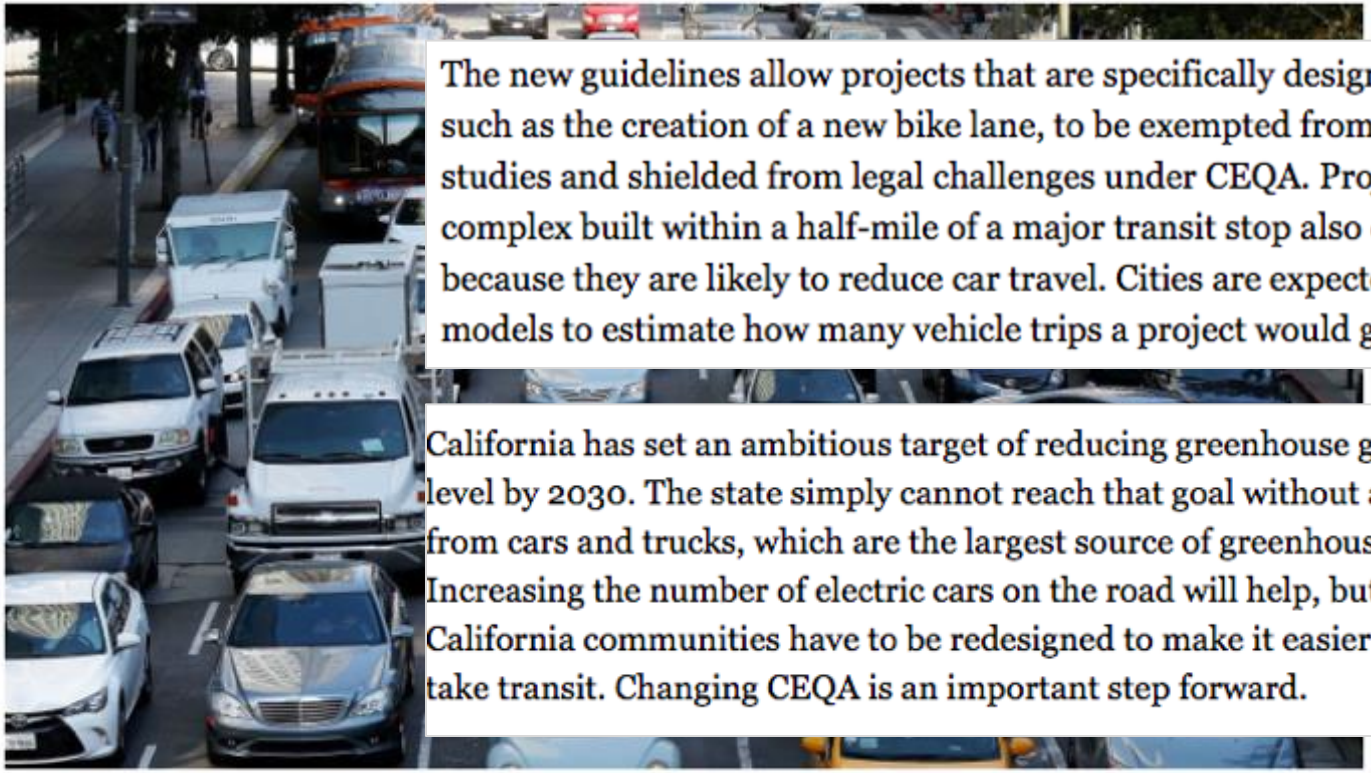
3. Project mitigates VMT as feasible, but VMT remains significant



EDITORIAL | EDITORIALS

If California is serious about climate change, the car can't be king of our roads

By THE TIMES EDITORIAL BOARD
DEC 16, 2017 | 5:00 AM



Vehicle traffic backs up along 5th Street in downtown Los Angeles on June 29, 2016. (Los Angeles Times)

The new guidelines allow projects that are specifically designed to reduce vehicle trips, such as the creation of a new bike lane, to be exempted from lengthy transportation studies and shielded from legal challenges under CEQA. Projects such as an apartment complex built within a half-mile of a major transit stop also could escape lengthy study because they are likely to reduce car travel. Cities are expected to develop computer models to estimate how many vehicle trips a project would generate.

California has set an ambitious target of reducing greenhouse gases 40% below their 1990 level by 2030. The state simply cannot reach that goal without a dramatic cut in emissions from cars and trucks, which are the largest source of greenhouse gases in the state. Increasing the number of electric cars on the road will help, but that alone won't suffice. California communities have to be redesigned to make it easier for people to walk, bike or take transit. Changing CEQA is an important step forward.

Benefits of VMT as a Measures of Transportation Impact

Picturing a low-VMT future

Image Credit: Urban Advantage, Roma Design Group, City of Dana Point

Benefits of VMT as a Measures of Transportation Impact

Picturing a low-VMT future

Image Credit: Urban Advantage, Roma Design Group, City of Dana Point

Benefits of VMT as a Measures of Transportation Impact

VMT mitigation helps preserve rural character

LOS mitigation turns rural into exurban

VMT in Case Law

NEPA

Conservation Law Fdn. v. FHA (2007) 630 F. Supp. 2d 183

Include land use effects of roadway capacity projects

CEQA

Cal. Clean Energy Comm. v. Woodland (2014) 225 Cal.App.4th 173

Ukiah Citizens for Safety First v. City of Ukiah (2016) 248 Cal.App.4th 256

Include transportation energy in energy impacts

Cleveland Nat'l Forest Fdn. v. SANDAG (2017) 17 Cal.App.5th 413

Include a low VMT alternative

With VMT as the metric of transportation impact, how do we do transportation planning?

Transportation Planning:

Bad

Project mitigates LOS impacts

Plan roadway capacity using LOS

Impact fee based on s.f. or # of units

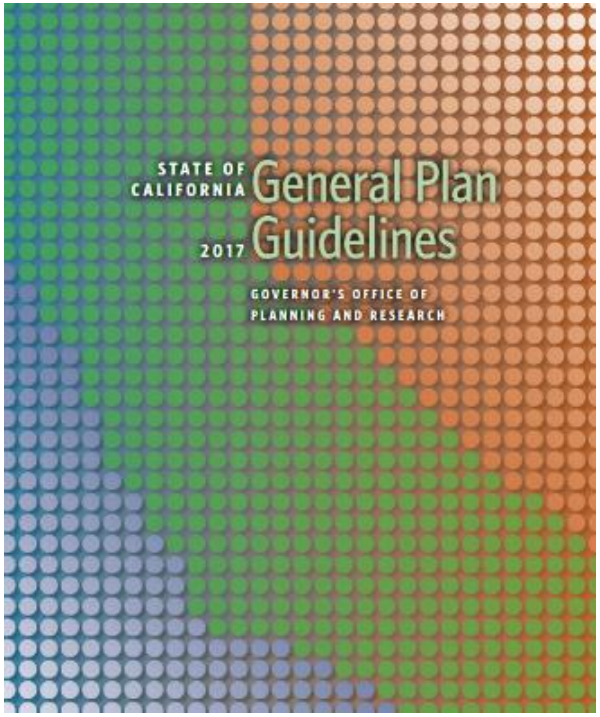
Plan roadway capacity using LOS

Impact fee based on VMT

Plan T network using accessibility

Impact fee based on VMT

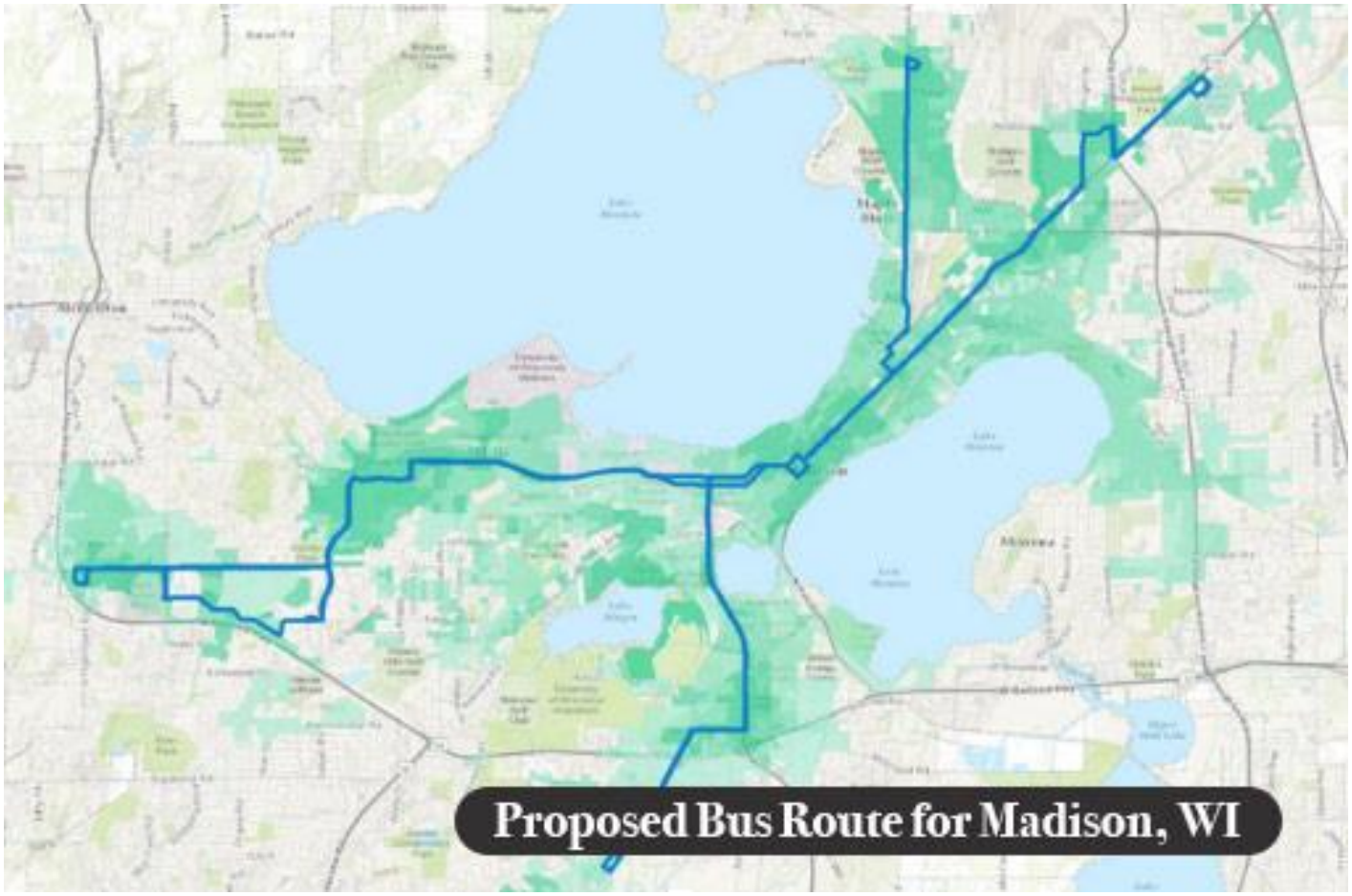
Good



Also consider cost, livability, walkability, air quality, GHGs, health, etc.

Plan Transportation for the Well-Being of Your City (Not Vice Versa)

Assess transportation infrastructure investments by how much they will improve Access to Destinations



Plan Transportation for the Well-Being of Your City (Not Vice Versa)

Assess transportation infrastructure investments by how much they will improve Access to Destinations

Multi-modal analysis of increased access to jobs via a new bus only lane in Alexandria, VA

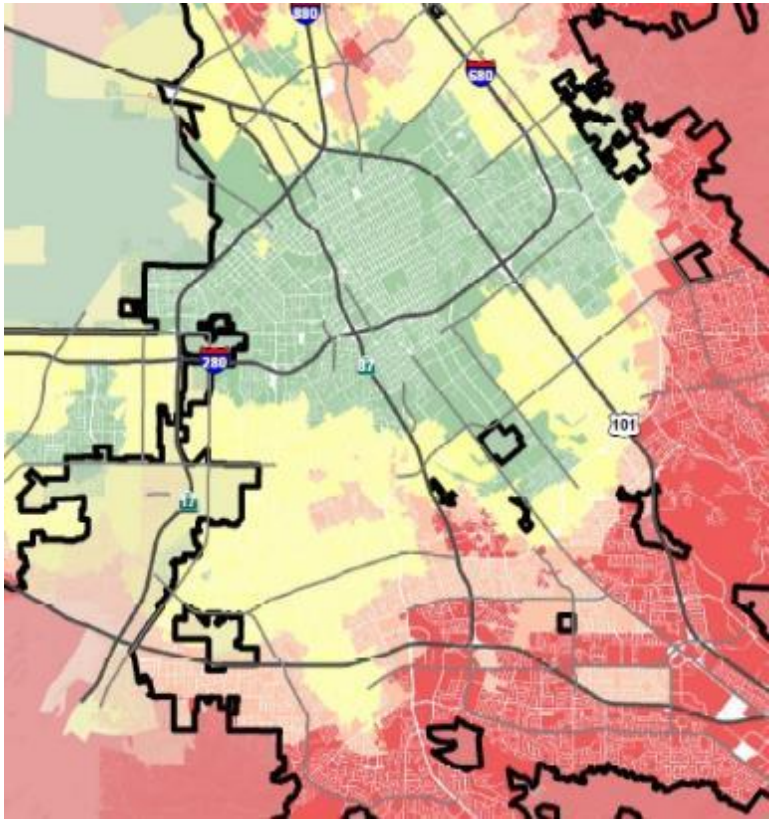
Methods: Land use projects

OPR Recommendations on Methodology – Land Use

Take advantage of streamlining

- Use VMT screening maps for residential and office projects
- Presume development near transit LTS*
- Presume locally-serving retail LTS
- More stringent thresholds may be applied at lead agency discretion

*Exceptions:
- FAR < 0.75
- Parking > minimum requirements
- Inconsistent with SCS



OPR Recommendations on Methodology – Land Use

Residential project recommendations:

- Assess residential with trip-based approach
- Threshold: *15 percent below regional or city* VMT/capita*

* For above-average VMT cities

Office project recommendations:

- Assess office with trip-based approach
- Threshold: *15 percent below regional VMT/employee*

OPR Recommendations on Methodology – Land Use

Retail project recommendations:

- Assess retail with “Net VMT” approach
- Retail which increases VMT compared to previous shopping patterns may be considered significant
- Local-serving retail presumed less than significant

OPR Recommendations on Methodology – Land Use

Mixed-use development

- Consider uses separately or focus on predominate use
- Compare to relevant threshold
- Take credit for internal capture

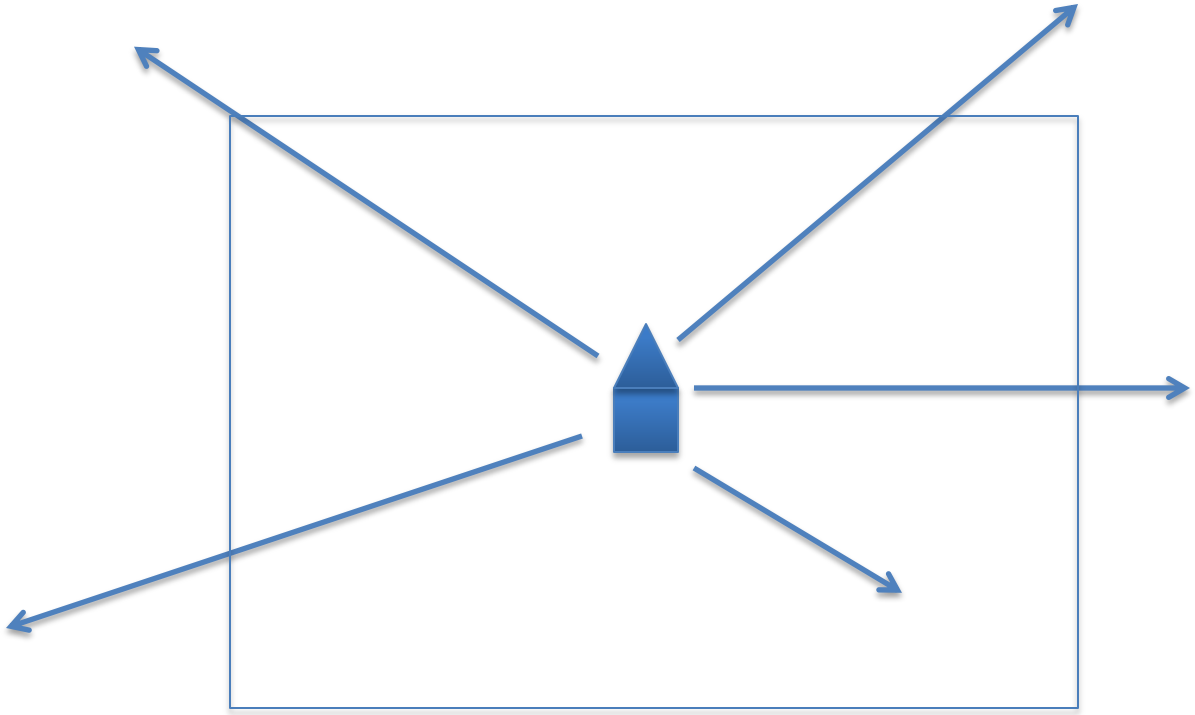
OPR Recommendations on Methodology – Land Use

Other recommendations:

- **Rural projects** choose thresholds on a case-by-case basis
- **Small projects** screening threshold – 110 vehicle trips per day

OPR Recommendations on Methodology – All Projects

CEQA Rule of Reason requires capturing spillover VMT



OPR Recommendations on Methodology – All Projects

Methodologies for…

1. Threshold determination
2. Project Assessment
3. Project Mitigation

…should be apples to apples

Background and methods: Transportation projects

Research on Induced Travel

October 2015

National Center for Sustainable Transportation

Increasing Highway Capacity Unlikely to Relieve Traffic Congestion

Susan Handy
Department of Environmental Science and Policy
University of California, Davis

Contact Information:
slhandy@ucdavis.edu

BRIEF

Issue

Reducing traffic congestion is often proposed as a solution for improving fuel efficiency and reducing greenhouse gas (GHG) emissions. Traffic congestion has traditionally been addressed by adding additional roadway capacity via constructing entirely new roadways, adding additional lanes to existing roadways, or upgrading existing highways to controlled-access freeways. Numerous studies have examined the effectiveness of this approach and consistently show that adding capacity to roadways fails to alleviate congestion for long because it actually increases vehicle miles traveled (VMT).

An increase in VMT attributable to increases in roadway capacity where congestion is present is called "induced travel". The basic economic principles of supply and demand explain this phenomenon: adding capacity decreases travel time, in effect

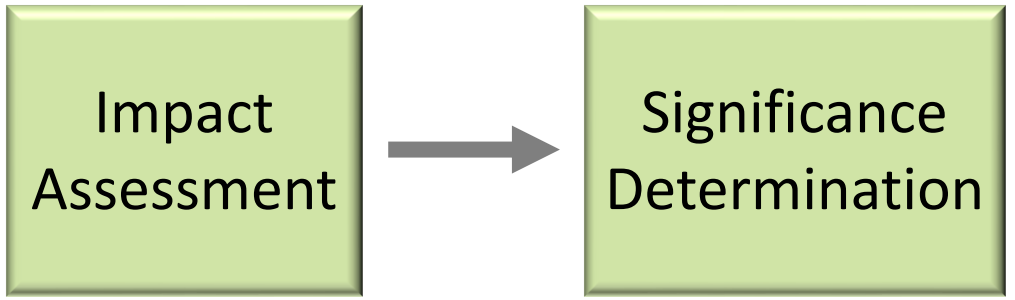
Increased roadway capacity induces additional VMT in the short-run and even more VMT in the long-run. A capacity expansion of 10% is likely to increase VMT by 3% to 6% in the short-run and 6% to 10% in the long-run. Increased capacity can lead to increased VMT in the short-run in several ways: if people shift from other modes to driving, if drivers make longer trips (by choosing longer routes and/or more distant destinations), or if drivers make more frequent trips.[3,4,5] Longer-term effects may also occur if households and businesses move to more distant locations or if development patterns become more dispersed in response to the capacity increase. One study concludes that the full impact of capacity expansion on VMT materializes within five years[6] and another concludes that the full effect takes as long as 10 years.[7]

Research on Induced Travel

Key findings:

- Adding highway capacity induces VMT
- The quality of evidence on this phenomenon is high
- Each 1% increase in lane miles causes VMT to ultimately rise by 0.6 to 1.0%
- The research controls for other factors such as population and economic growth; the added VMT results from the capacity increase
- The added VMT is truly new, not shifted from elsewhere
- The new VMT tends to increase GHGs
- The new highway capacity does not increase overall employment or economic activity

Roadway Capacity Project Analysis in CEQA



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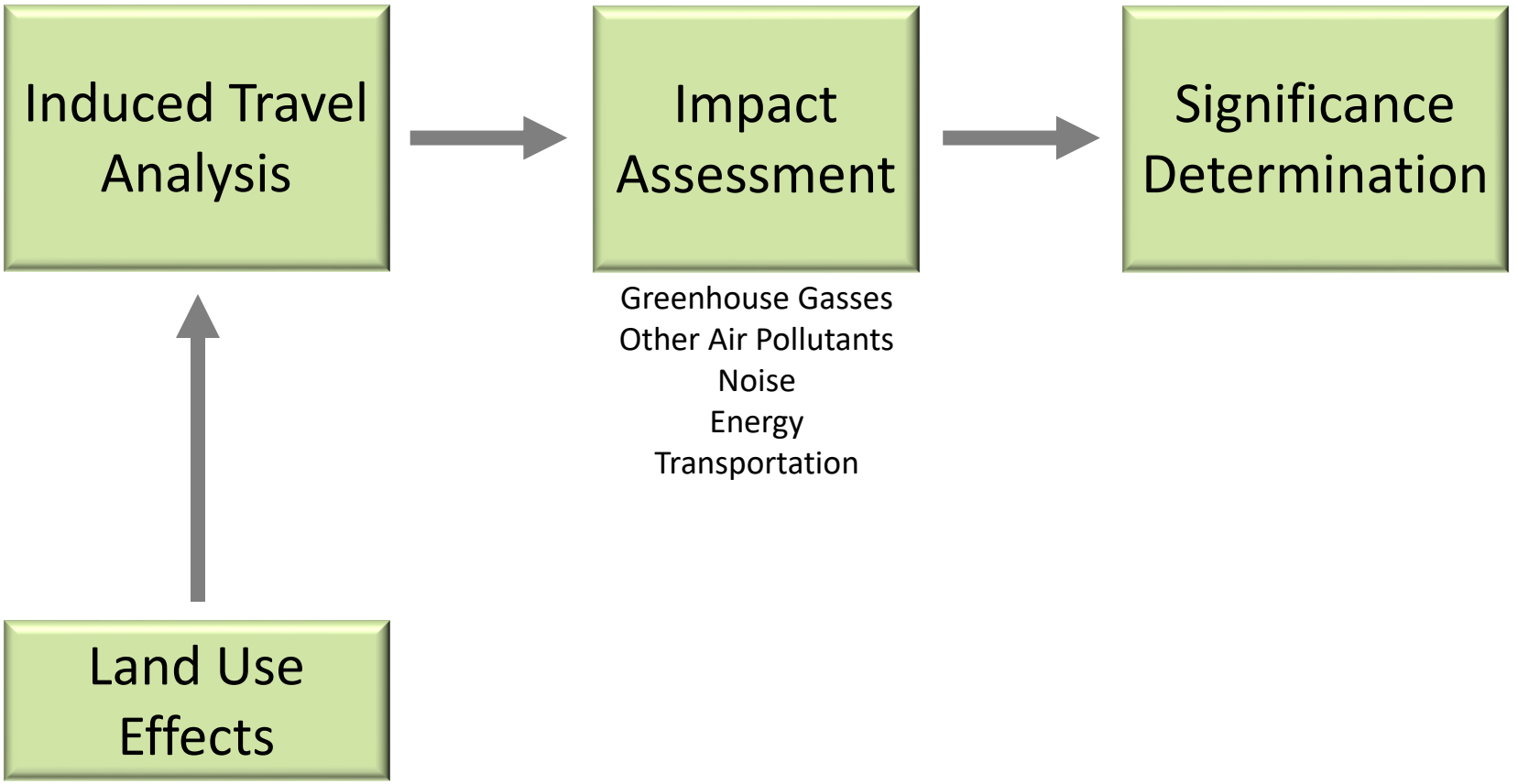

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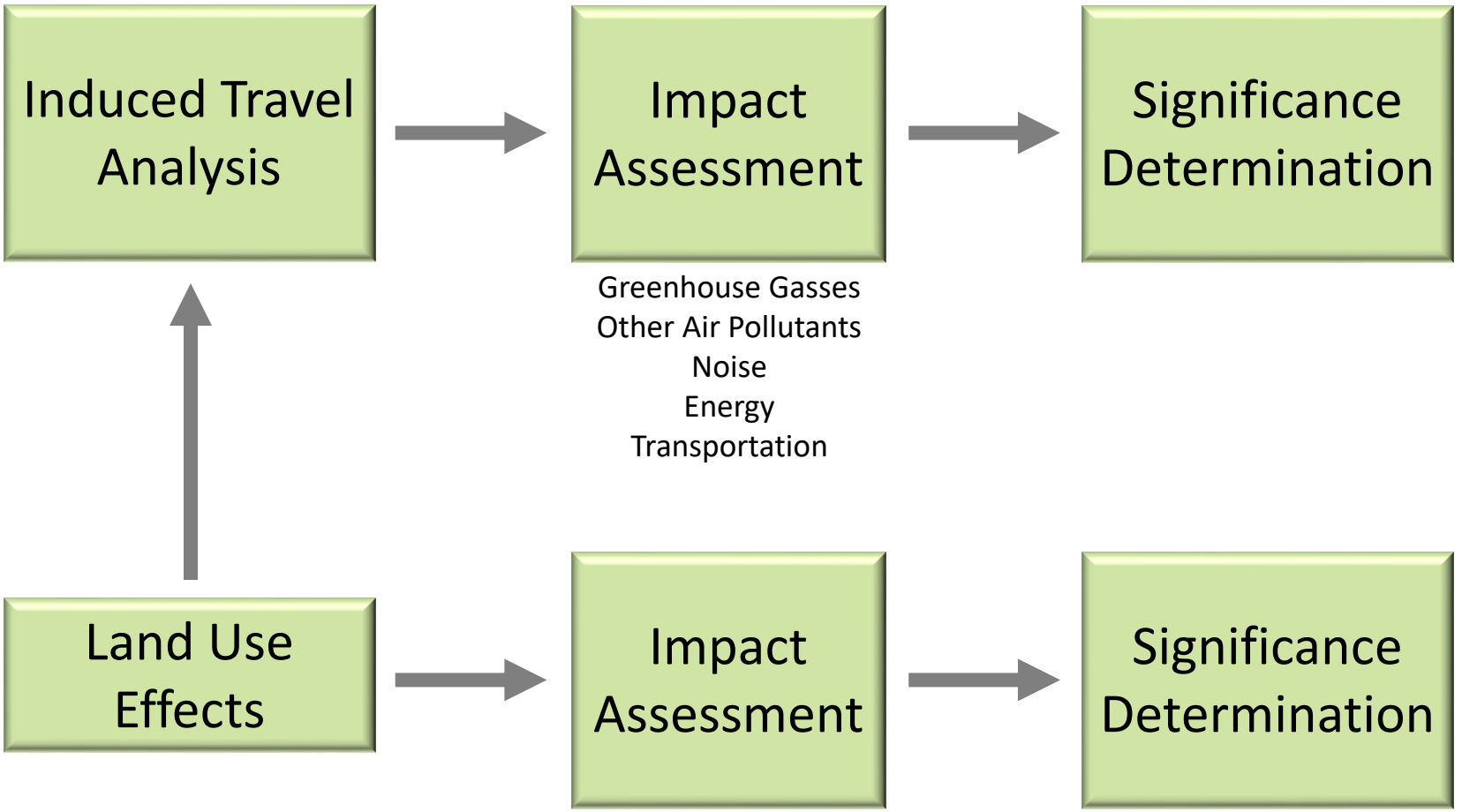

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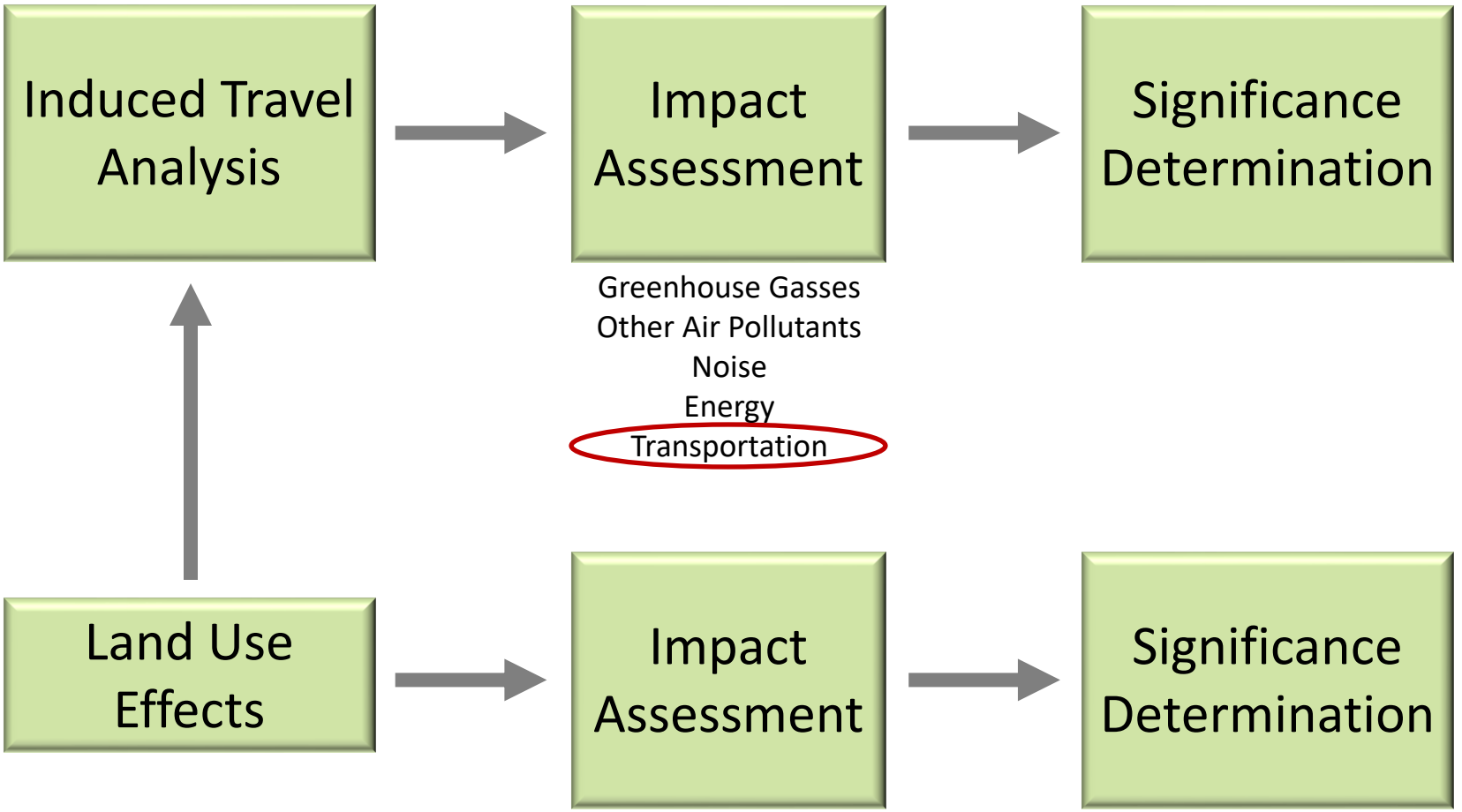
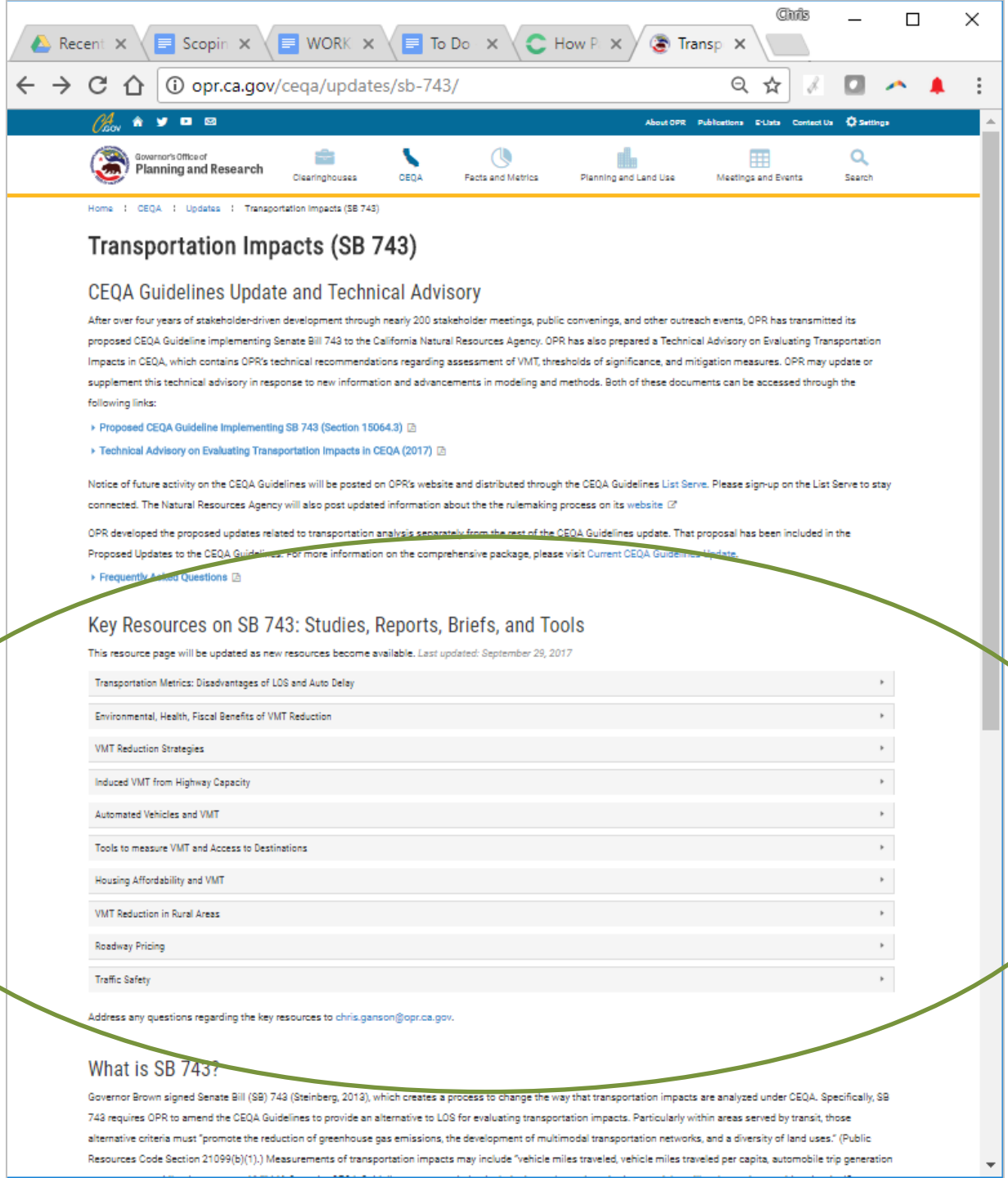


Adoption of VMT Across California

January 2019

Resources on OPR Website


opr.ca.gov/ceqa/updates/sb-743/
Governor's Office of Planning and Research
Clearinghouses
CEQA
Facts and Metrics
Planning and Land Use
Meetings and Events
Search
Home : CEQA : Updates : Transportation Impacts (SB 743)
Transportation Impacts (SB 743)
CEQA Guidelines Update and Technical Advisory
After over four years of stakeholder-driven development through nearly 200 stakeholder meetings, public convenings, and other outreach events, OPR has transmitted its proposed CEQA Guideline implementing Senate Bill 743 to the California Natural Resources Agency. OPR has also prepared a Technical Advisory on Evaluating Transportation Impacts in CEQA, which contains OPR's technical recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures. OPR may update or supplement this technical advisory in response to new information and advancements in modeling and methods. Both of these documents can be accessed through the following links:
Proposed CEQA Guideline Implementing SB 743 (Section 15064.3)
Technical Advisory on Evaluating Transportation Impacts in CEQA (2017)
Notice of future activity on the CEQA Guidelines will be posted on OPR's website and distributed through the CEQA Guidelines List Serve. Please sign-up on the List Serve to stay connected. The Natural Resources Agency will also post updated information about the the rulemaking process on its website
OPR developed the proposed updates related to transportation analysis separately from the rest of the CEQA Guidelines update. That proposal has been included in the Proposed Updates to the CEQA Guidelines. For more information on the comprehensive package, please visit Current CEQA Guidelines Update.
Frequently Asked Questions
Key Resources on SB 743: Studies, Reports, Briefs, and Tools
This resource page will be updated as new resources become available. Last updated: September 29, 2017
Transportation Metrics: Disadvantages of LOS and Auto Delay
Environmental, Health, Fiscal Benefits of VMT Reduction
VMT Reduction Strategies
Induced VMT from Highway Capacity
Automated Vehicles and VMT
Tools to measure VMT and Access to Destinations
Housing Affordability and VMT
VMT Reduction in Rural Areas
Roadway Pricing
Traffic Safety
Address any questions regarding the key resources to chris.ganson@opr.ca.gov.
What is SB 743?
Governor Brown signed Senate Bill (SB) 743 (Steinberg, 2013), which creates a process to change the way that transportation impacts are analyzed under CEQA. Specifically, SB 743 requires OPR to amend the CEQA Guidelines to provide an alternative to LOS for evaluating transportation impacts. Particularly within areas served by transit, those alternative criteria must "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." (Public Resources Code Section 21099(b)(1).) Measurements of transportation impacts may include "vehicle miles traveled, vehicle miles traveled per capita, automobile trip generation

Thanks!

chris.ganson@opr.ca.gov

Research and resources:

http://opr.ca.gov/ceqa/updates/sb-743/index.html#KeyResources