

# Automated Vehicles and VMT: Environment, Health, Livability, Climate

Chris Ganson, Governor's Office of Planning and Research

Chris Ganson, Governor's Office of Planning and Research\*

\*For identification purposes only

Automated vehicles will make vehicle travel easy!

...for everyone

# What will our world be like when vehicle travel is easy for everyone?

Climate

Health

Environment

Equity

Livability


Traffic/Accessibility


VMT

**Cutting Greenhouse Gas Emissions Is Only the Beginning: A Literature Review of the Co-Benefits of Reducing Vehicle Miles Traveled**

March 2017 | A White Paper from the National Center for Sustainable Transportation

Kevin Fang, University of California, Davis  
Jamey Volker, University of California, Davis

 National Center for Sustainable Transportation

 **ITS UC DAVIS**  
INSTITUTE OF TRANSPORTATION STUDIES

<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/>

Forthcoming...

# Policy Brief

February 2017

## Keeping Vehicle Use and Greenhouse Gas Emissions in Check in a Driverless Vehicle World

Co-Authors:

Giovanni Circella, University of California at Davis  
Chris Ganson, Governor's Office of Planning and Research\*  
Caroline Rodier, University of California at Davis

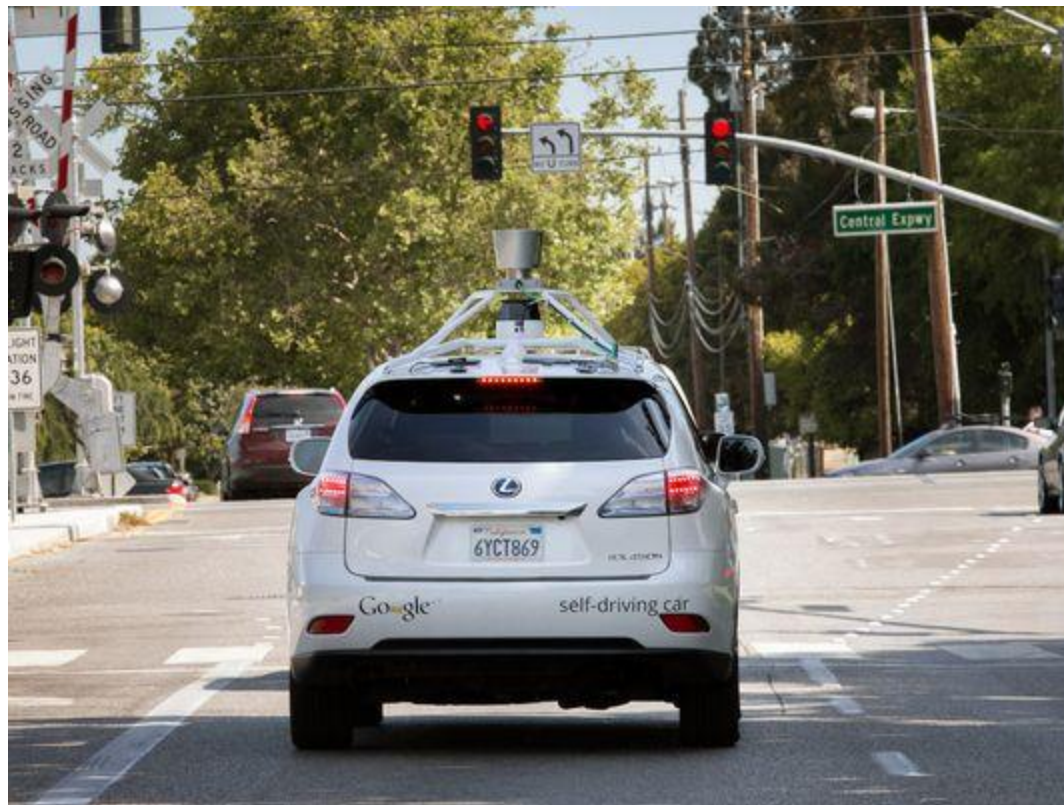
*In November 2016, the Institute of Transportation Studies at the University of California, Davis (ITS-Davis) convened leading academic, government, private industry, and public interest stakeholders to explore science-based policies that could steer the three transportation*

\* For identification purposes only

VMT	GHG	Possible Effect of Driverless Vehicles
↑	↑	Easy to go by car



VMT	GHG	Possible Effect of Driverless Vehicles
↑	↑	Easy to go by car
↑	↑	Vehicles park themselves remotely, do errands, collect family members



VMT	GHG	Possible Effect of Driverless Vehicles
↑	↑	Easy to go by car
↑	↑	Vehicles park themselves remotely, do errands, collect family members
↑	↑	Replacement of line-haul transit





VMT	GHG	Possible Effect of Driverless Vehicles
↑	↑	Easy to go by car
↑	↑	Vehicles park themselves remotely, do errands, collect family members
↑	↑	Replacement of line-haul transit
↑	↑	Replacement of bike and walk trips



**> 23,000 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 deaths and disability**

*Increasing Walking, Cycling, and Transit: Improving Californians' Health, Saving Costs, and Reducing Greenhouse Gases (Maizlish, N.)*  
<https://www.cdph.ca.gov/programs/Documents/IncreasingWalkingCyclingTransitFinalReport2016rev2017-01-28.pdf>

VMT	GHG	Possible Effect of Driverless Vehicles
↑	↑	Easy to go by car
↑	↑	Vehicles park themselves remotely, do errands, collect family members
↑	↑	Replacement of line-haul transit
↑	↑	Replacement of bike and walk trips
~	↑ or ↓	Right-sizing of vehicles



or



?

So what should we do?

# Synthesis of current thinking: Harnessing automation for the public good

- **Shared use**
- Shared ride
- Zero emissions
- Right-priced
- Transit-supportive
- Equitable
- Well-behaved



# Synthesis of current thinking: Harnessing automation for the public good

- Shared use
- **Shared ride**
- Zero emissions
- Right-priced
- Transit-supportive
- Equitable
- Well-behaved





# Synthesis of current thinking: Harnessing automation for the public good

- Shared use
- Shared ride
- **Zero emissions**
- Right-priced
- Transit-supportive
- Equitable
- Well-behaved



# Synthesis of current thinking: Harnessing automation for the public good

- Shared use
- Shared ride
- Zero emissions
- **Right-priced**
- Transit-supportive
- Equitable
- Well-behaved

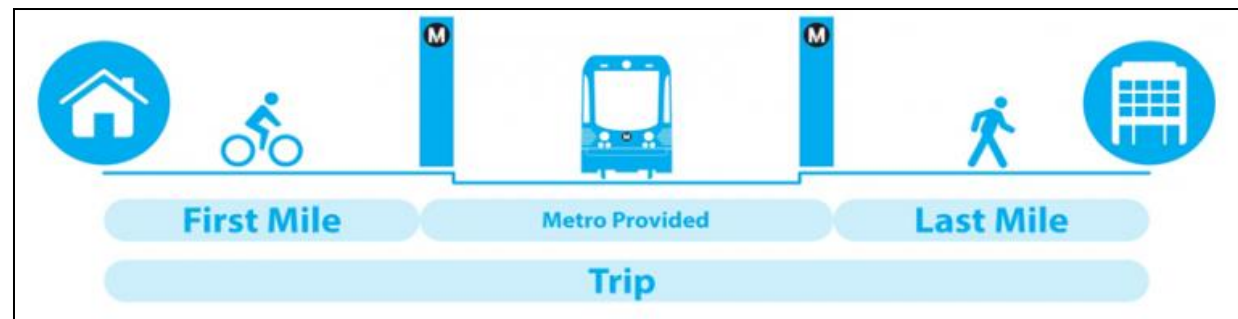


March 2017

Deliberative, not a statement of OPR policy

# Synthesis of current thinking: Harnessing automation for the public good

- Shared use
- Shared ride
- Zero emissions
- Right-priced
- **Transit-supportive**
- Equitable
- Well-behaved





# Synthesis of current thinking: Harnessing automation for the public good

- Shared use
- Shared ride
- Zero emissions
- Right-priced
- Transit-supportive
- **Equitable**
- Well-behaved



# Synthesis of current thinking: Harnessing automation for the public good

- Shared use
- Shared ride
- Zero emissions
- Right-priced
- Transit-supportive
- Equitable
- **Well-behaved**



# Synthesis of current thinking: Harnessing automation for the public good

- Shared use
- Shared ride
- Zero emissions
- Right-priced
- Transit-supportive
- Equitable
- Well-behaved

Prospects?

# Thanks!

Chris Ganson: [chris.ganson@opr.ca.gov](mailto:chris.ganson@opr.ca.gov)