California’s GHG Legislation: Regional Planning and New Transport Services

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California’s Climate Change Legislation

- Dramatic reductions in greenhouse gas emissions (GHGs)
- Global Warming Solutions Act (AB 32, 2006)
  - 1990 GHGs by 2020
- Executive Order (S-3-05, 2005)
  - 80% of 1990 GHG’s by 2050
California’s GHGs (ARB, 2008)

- **On Road Vehicles**: 36%
- **Residential Buildings**: 14%
- **Commercial Buildings**: 8%
- **Industrial Manufacturing, Construction & Mining**: 12%
- **Oil and Gas Extraction and Refining**: 14%
- **Agriculture/ Food Processing**: 9%
- **Cement Plants**: 2%
- **High GWP Gases**: 3%
- **Other Transportation**: 2%
- **Oil and Gas Extraction and Refining**: 14%
The “Three-Legged Stool”

Attaining GHG targets for on-road vehicle travel requires an approach that includes three interventions, also known as the “Three-Legged Stool”

1. Increase vehicle fuel economy
2. Decrease carbon content of fuel
3. Decrease in growth in vehicle miles travel (VMT)

\[ VMT = \text{distance traveled by autos and trucks on roads} \]
Sustainable Communities and Climate Protection Act—2008 (SB 375)

• Legislative answer to the “3rd leg of the stool,” requires regional land use and transportation plans reduce per capita VMT growth largely through
  1. Transit capacity expansion
  2. High density compact growth
  3. Auto pricing policies
Relative Contribution to GHG Goals

• CARB recently estimated that SB375 will contribute to 6% of the GHG reductions required to meet AB 32 goals
  — However, some expect that SB 375 policies will provide a host of co-benefits that meet broader social goals of health, equity, and economic growth
Multi-scale Performance Base Planning

• Regional governments (or MPOs) lead the coordination, development, and evaluation of state, regional, and local governments’ policies.
• Regional GHG targets for SB 375 policies set by the California Air Board (ARB) with MPOs.
• MPOs must develop a Sustainable Communities Strategy (SCS) as part of their regional transportation plan that demonstrates how the region will meet their GHG target.
Implementation: Legislative Requirements and Incentives

• Local governments retain authority
  – final word on implementation of land use plans

• Relies on bottom-up public participation processes and incentives
  – streamlined environmental review for project consistent with SCS
  – transportation funding
SB 375 and New Transport Services

• Little research explores the potential synergisms of new transport services (e.g., dynamic ridesharing) with land use, transit, and auto pricing policies.
ABMs and Market Potential

• GHG legislation spurred adoption of advanced travel models (or ABMs)
  – track individuals’/households’ activities and travel
  – identify trip start/stop times, locations, purpose, and mode by segment that compose tours for daily activities
• Number of individuals who could use new services
• Magnitude of avoided vehicle trips and VMT/GHG
• MTI funded study with California ABM