

TPB SCENARIO STUDY

Development of the “What Would it Take?” Scenario

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Presentation to the Travel Management Subcommittee

September 23, 2008

The Two New Scenarios

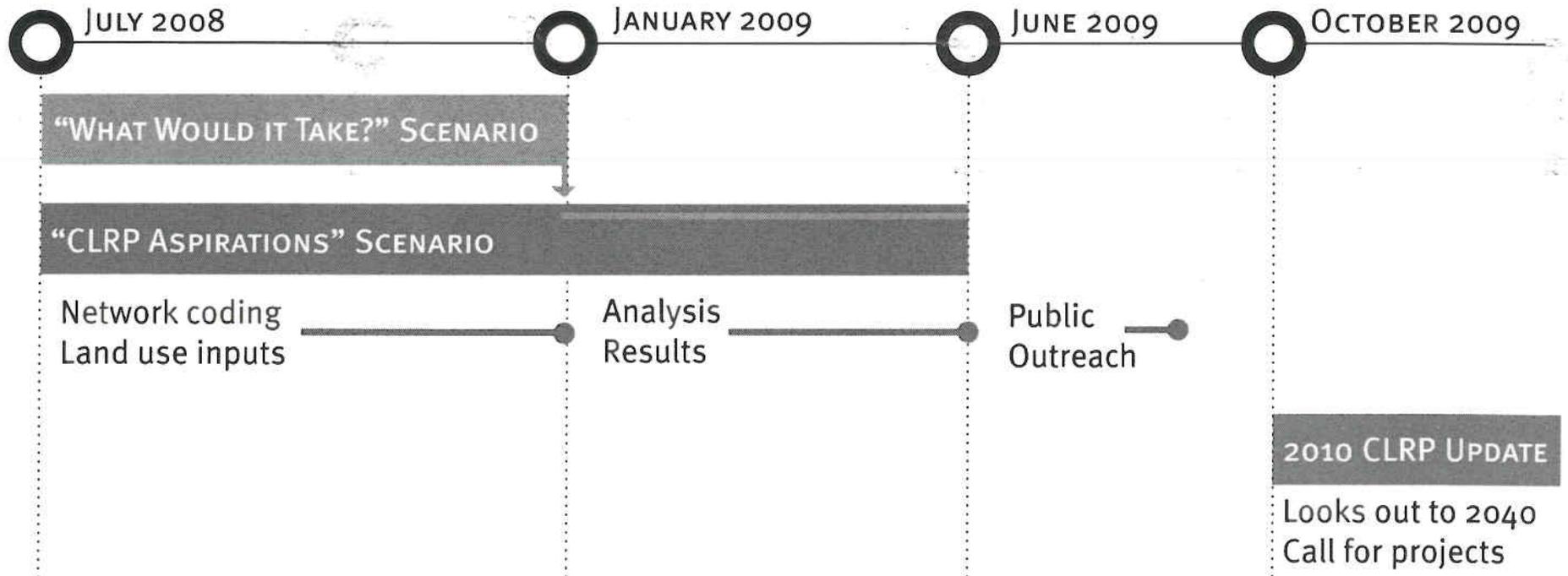
CLRP Aspirations

Draws on past scenarios (5 transportation/land use scenarios and 2 value pricing scenarios) to provide an ambitious yet attainable vision of land use and transportation for the 2010 CLRP update.

What Would it Take?

Starts with CO2 goals (80% below 2005 levels in 2050 and 20% reduction by 2020) and assesses what scales and combinations of interventions will be necessary to achieve the goal.

Study Timeline



What Would It Take

Developing and Analyzing the Scenario

Setting up the WWIT Scenario

Goal: To reduce CO2 emissions by 10%, 20% and 80% below 2005 levels in 2012, 2020 and 2050 respectively

3 categories of strategies to reduce mobile CO2 emissions

Fuel Efficiency

Beyond CAFE standards
[currently 35 mpg by 2020]

Fuel Carbon Intensity

Alternative fuels
(biofuels, hydrogen, electricity)

Vehicle technology
(hybrid engine technology)

Travel Efficiency

Reduce VMT through changes in land use, travel behavior, prices

Reduce congestion

Improve operational efficiency

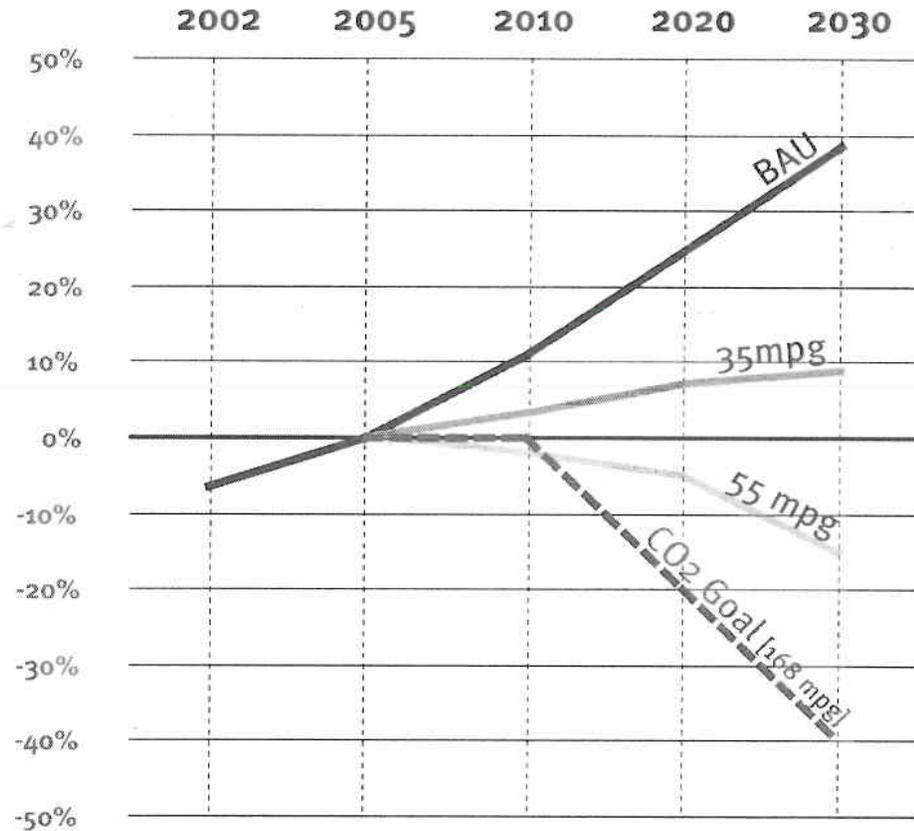
What Would it Take with Fuel Efficiency *Alone*?

Fuel Efficiency

Beyond CAFE standards

[currently 35 mpg by 2020]

Mobile CO₂ Projections and Goals
[8-hour Ozone Non-Attainment Area]



- “BAU” Mobile CO₂ Emissions
- Mobile CO₂ Emissions with 35 mpg CAFE standards
- Mobile CO₂ Emissions with 55 mpg Enhanced CAFE standards
- - - COG Climate Change Steering Committee CO₂ Goal

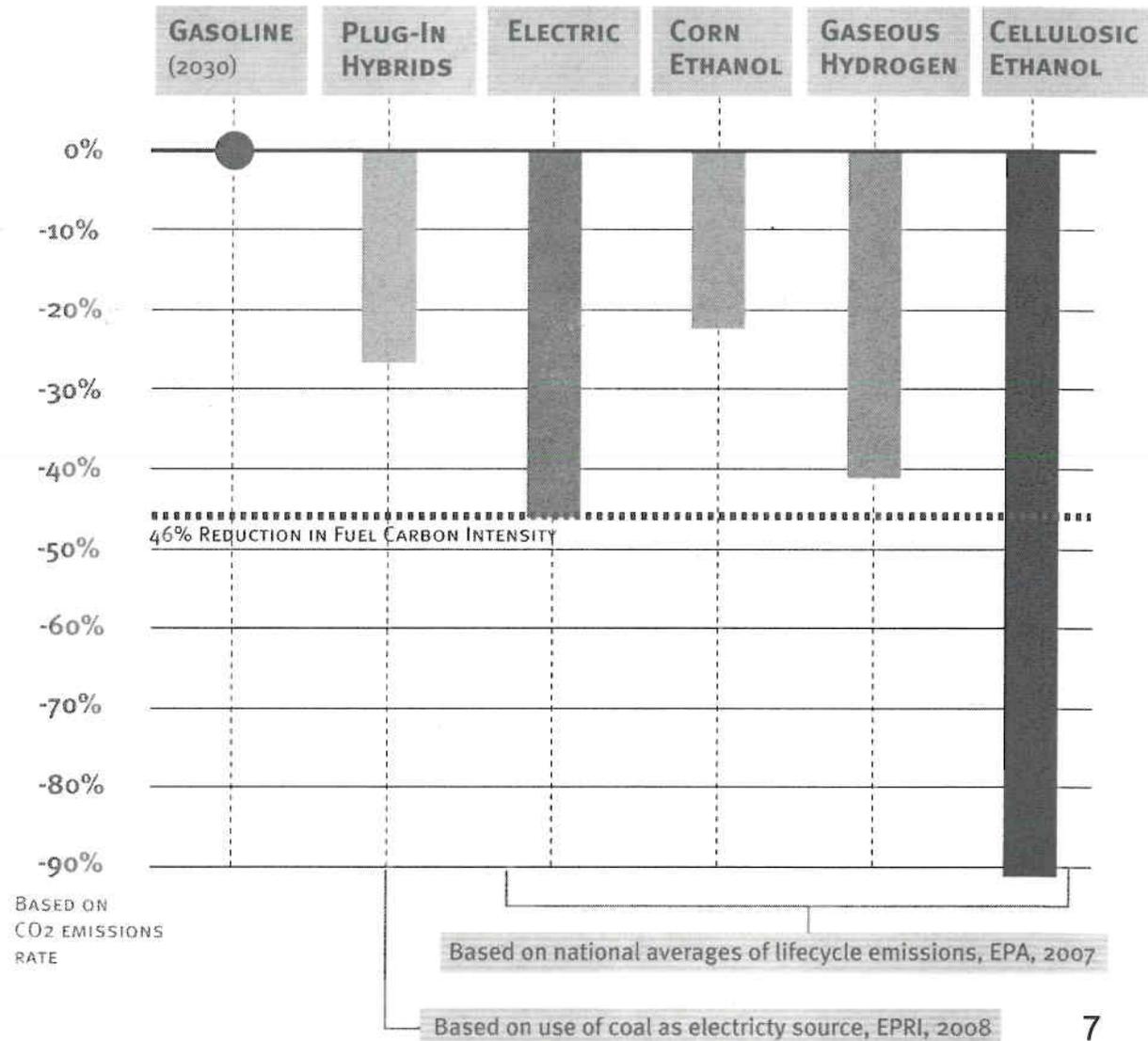
What Would it Take with Alternative Fuels *Alone*?

Fuel Carbon Intensity

Alternative fuels
(biofuels, hydrogen,
electricity)

Vehicle technology
(hybrid engine
technology)

How would this look
with lifecycle emissions
for the region?



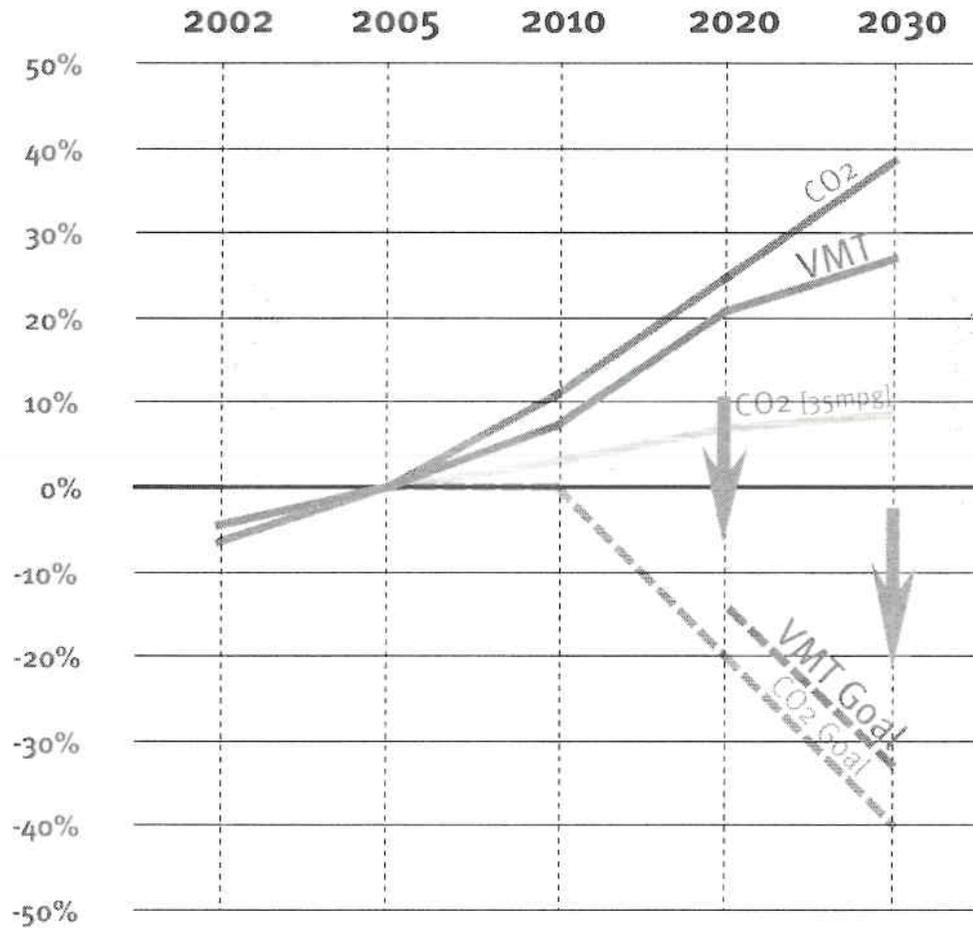
What Would it Take with VMT Alone?

Travel Efficiency

Reduce VMT through changes in land use, travel behavior, prices

Reduce congestion

Improve operational efficiency



Analyzing the WWIT Scenario

3 categories of analysis for each strategy

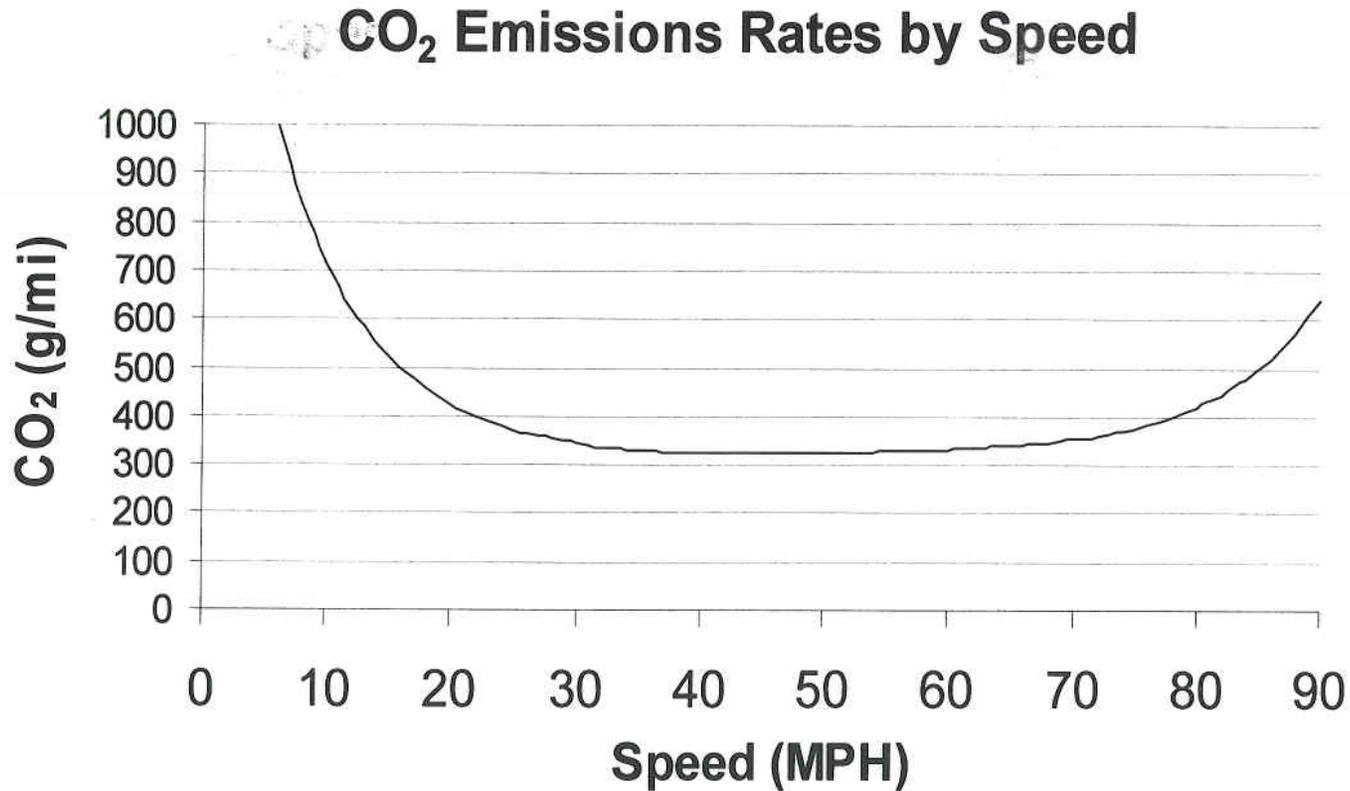
1. Effectiveness

2. Cost-effectiveness

3. Timeframe for Implementation

Effectiveness

What can we accomplish by reducing congestion?



Source: University of California, Riverside

Cost-effectiveness

How can we begin to prioritize strategies?

Initial analysis of cost-effectiveness of Transportation Emissions Reduction Measures (\$ per ton of CO₂ reduced)

(TIP Projects)

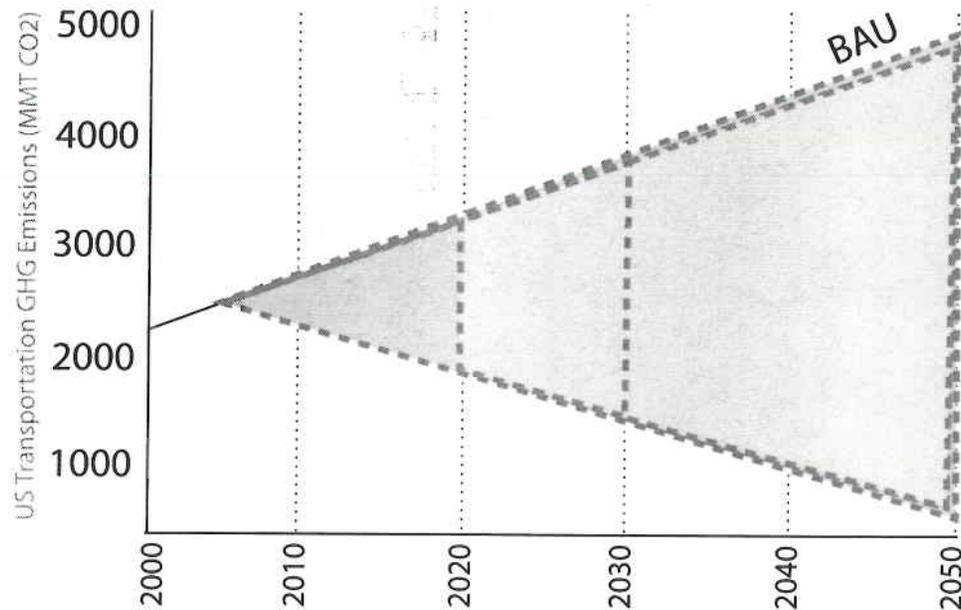
Number	Category Description	CO ₂ Cost Effectiveness Range *
1	Access Improvements to Transit/ HOV	\$100 to \$400
2	Bicycle / Pedestrian projects	\$50 to \$100
3	Transit Service improvements	\$100 to \$800
4	Rideshare Assistance Programs	\$30 to \$300
5	Park & Ride Lots (Transit and HOV)	\$100 to \$500
6	Telecommute Programs	\$10 to \$40
7	Signal Optimization	\$30 to \$50
8	Bus Replacement Programs	\$525 to \$775

* Several locations / applications studied

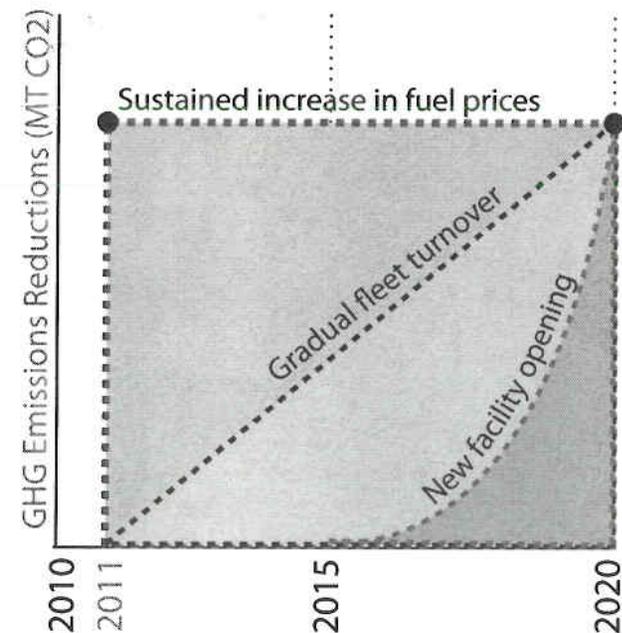
Timeframe for Implementation

Early action is essential to meet the goals

Transportation Sector Emissions Measures



Example Reductions for

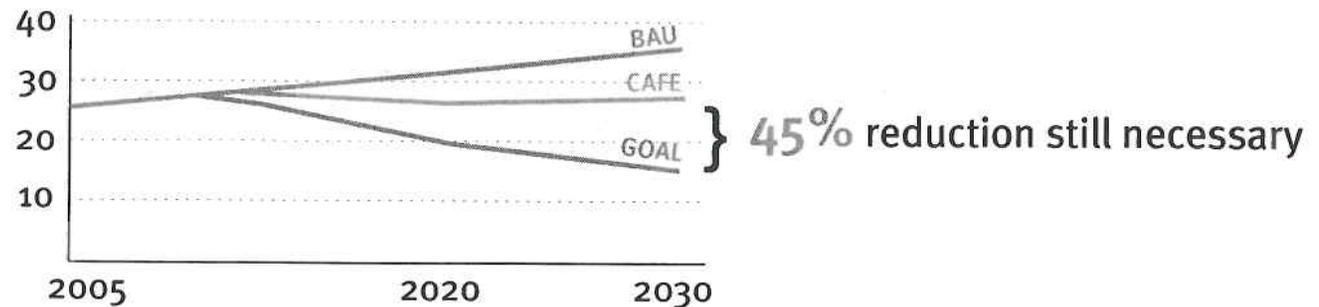


If we begin reducing in 2020 or 2030 rather than steadily reducing now, we will not reduce the same level of cumulative emissions as may be needed¹²

Alternative 1

Fuel Efficiency

35 mpg



Travel Efficiency

VMT

↓ 46.3%

Transit

↑ 645% (transit = 58% of all 2030 trips)

OR

Behavior Change: Vehicle Trips

↓ 36% (all discretionary trips cut/chained)

Transit

↑ 65% (transit = 23% of all 2030 trips)

OR

Behavior Change: Vehicle Trips

↓ 10% (30% of discretionary trips cut/chained)

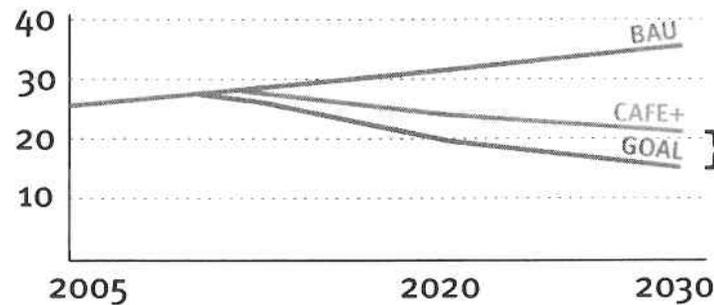
Transit

↑ 471% (transit = 36% of all 2030 trips)

Alternative 2

Fuel Efficiency

55 mpg



} 28% reduction still necessary

Travel Efficiency

VMT

↓ 22.9%

Transit

↑ 268% (transit = 27% of all 2030 trips)

OR

Behavior Change: Vehicle Trips

↓ 13% (36.5% of discretionary trips cut/chained)

Transit

↑ 0% (transit = 7% of all 2030 trips)

OR

Behavior Change: Vehicle Trips

↓ 10% (30% of discretionary trips cut/chained)

Transit

↑ 95% (transit = 16% of all 2030 trips)