



Travel Demand, Smart Growth & Climate Change

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**Effectiveness of “Hard Side” and “Soft Side” Approaches
January 12, 2009 • TRB Annual Meeting**



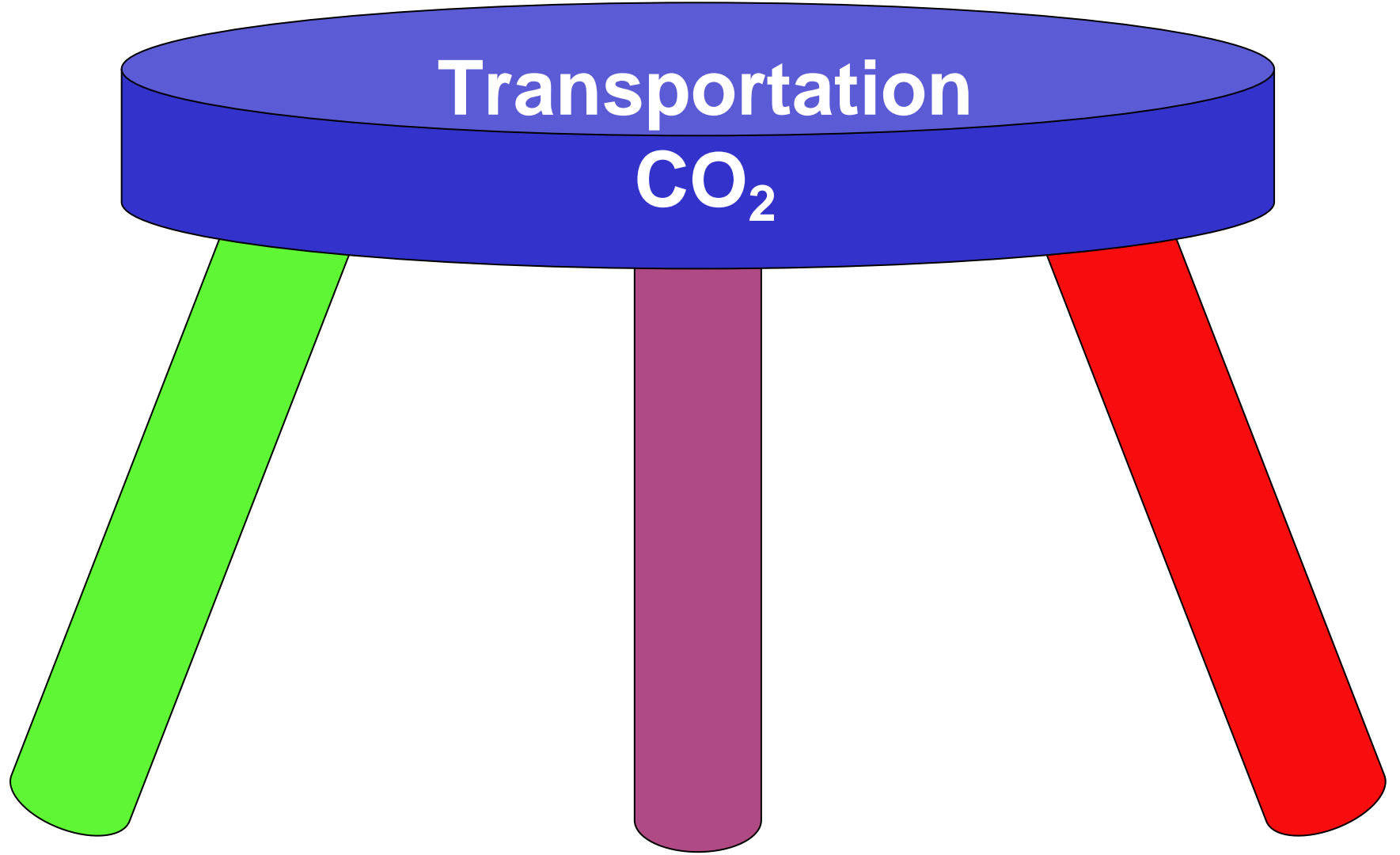
Center for Clean Air Policy

Dialogue. Insight. Solutions.

- Help governments develop and implement climate policy: Europe, China, Mexico, Brazil, CA, CT, MA, ME, NY...
- US Climate Policy Initiative
- VMT and Climate Policy Dialogue
- CCAP Transportation Emissions Guidebook
- Urban Leaders Adaptation Initiative

Overview

- Why do we need to deal with VMT?
- What do we know about VMT and land use?
- What can we do about VMT?
 - » What's worked?
 - » What's being tried at the state level?
 - » What's being proposed nationally?
 - » Costs and Benefits



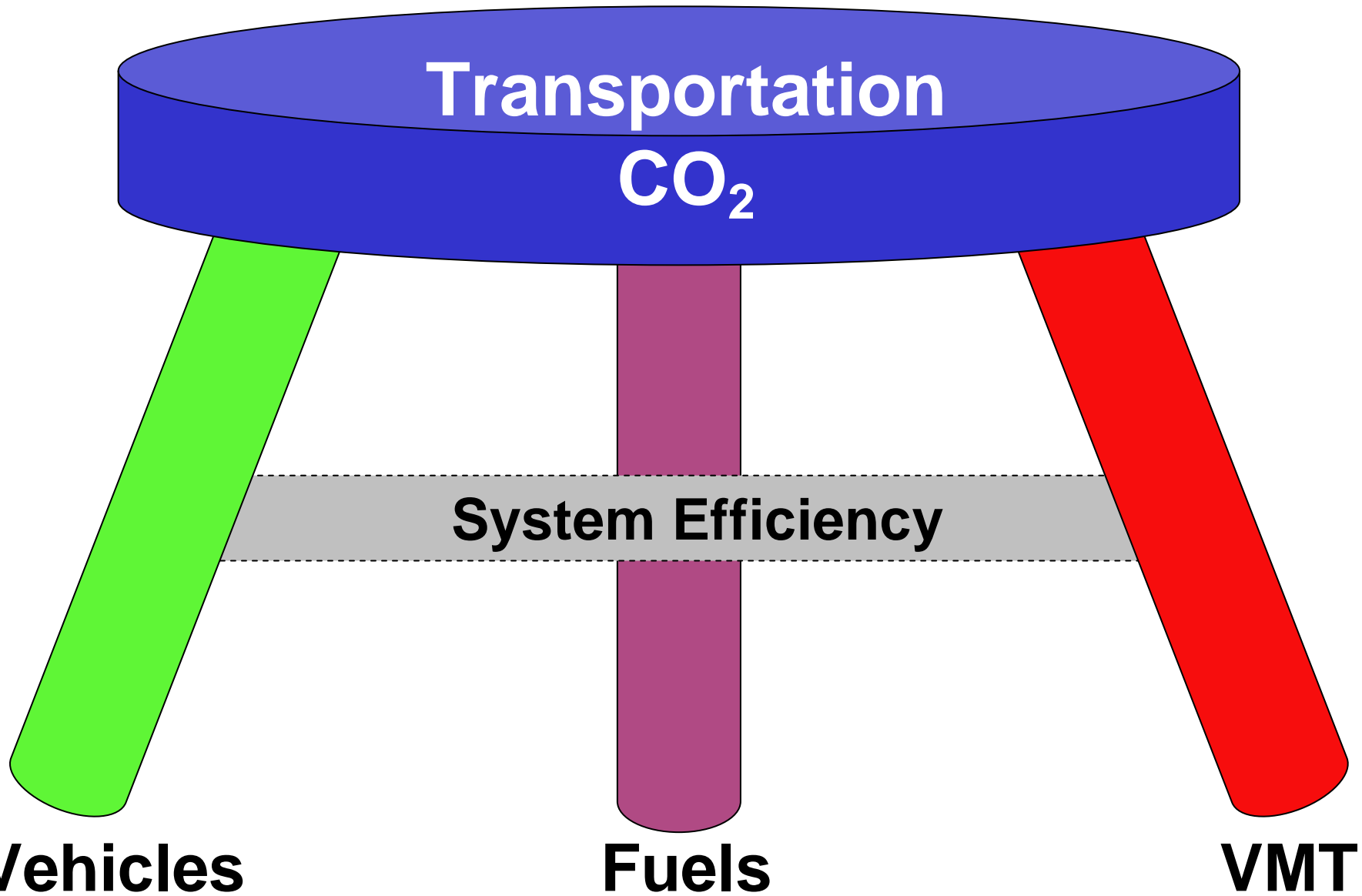
Vehicles

Fuels

VMT

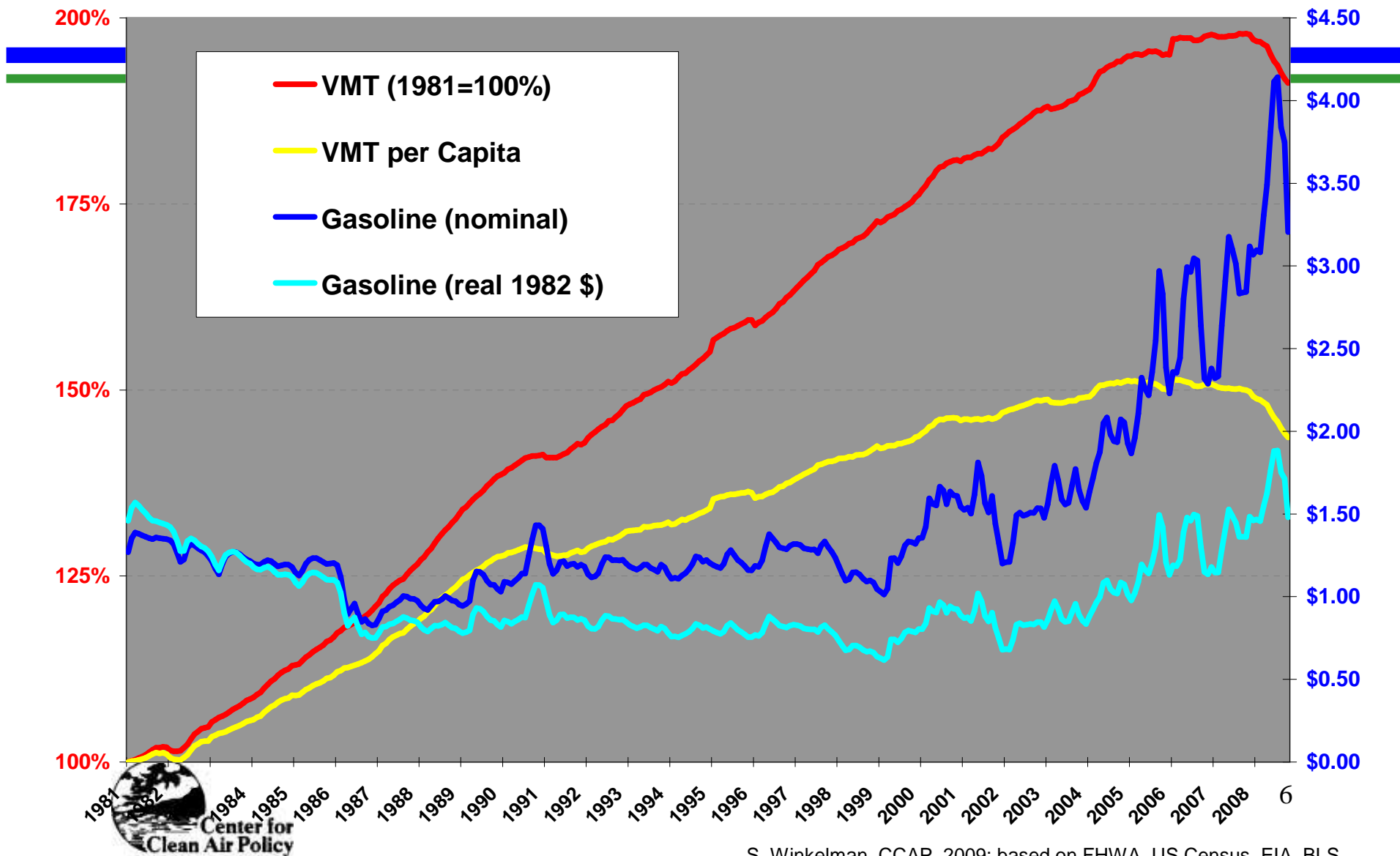


The 3-Legged Stool



The Fourth Leg?

VMT and Gasoline Prices: 1981 - October 2008



S. Winkelman, CCAP, 2009: based on FHWA, US Census, EIA, BLS

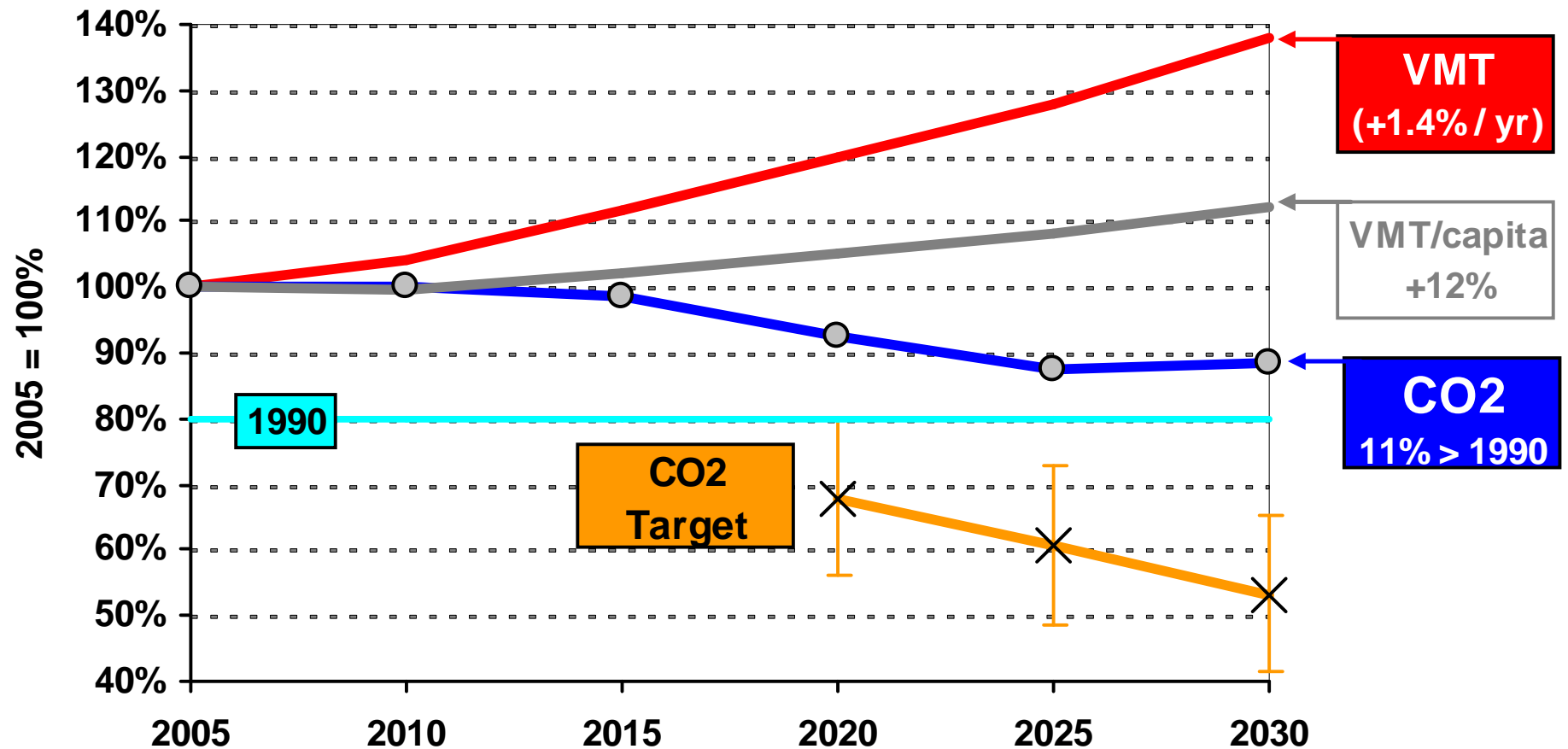
Recent State & MPO VMT Forecasts

Will these be much different next year?

Location	VMT Growth 2007-2030
National (EIA)	
	152%
State	
California (CEC)	148%
Kansas	141%
Pennsylvania	130%
Maryland	126%
Region	
Dallas-Fort Worth (NCTCOG)	155%
Sacramento (SACOG)	139%
Bay Area (MTC)	132%
St. Louis (E-W Gateway COG)	117%
New York City (NYMTC)	109%

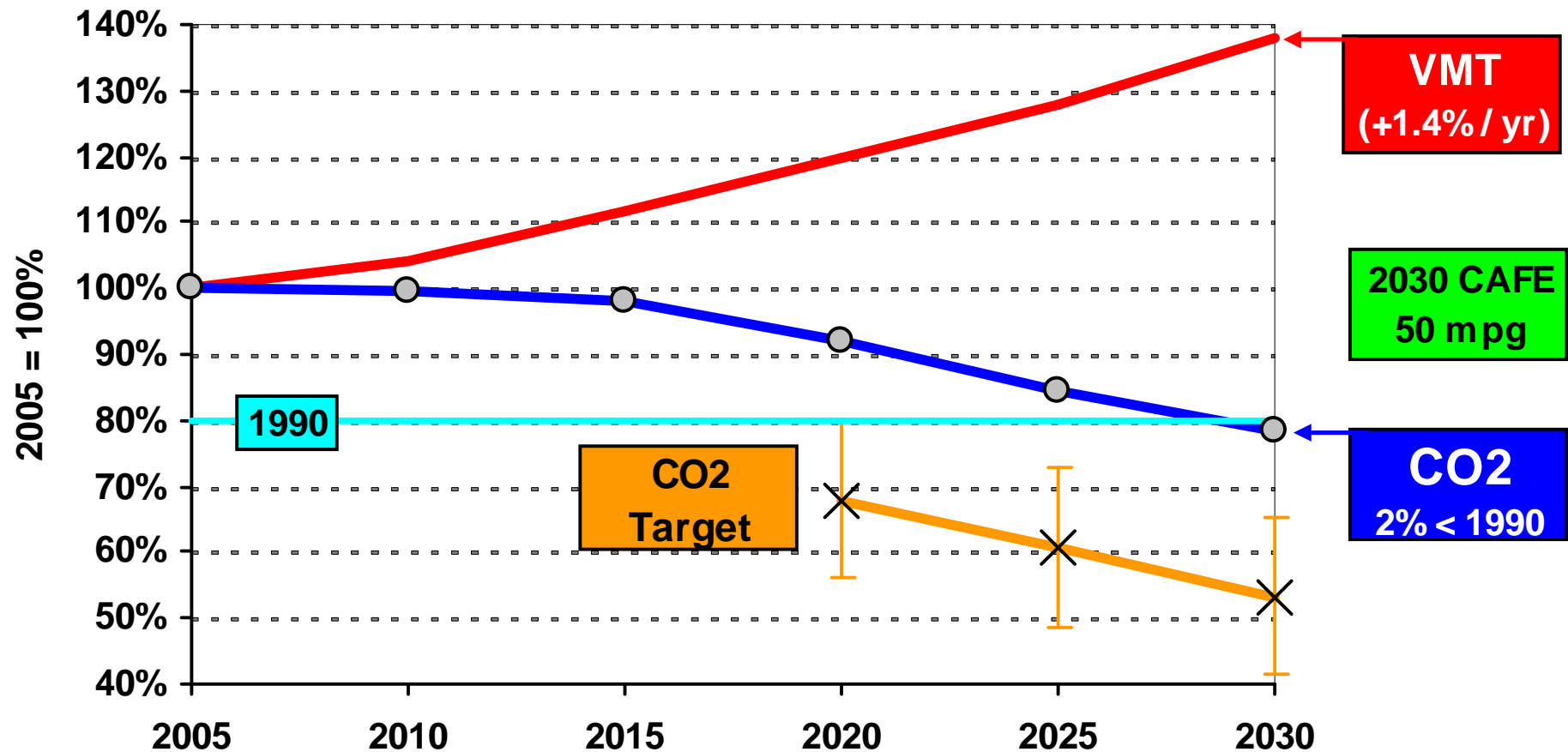
1.8%/yr

VMT: +1.4% / yr. 35 mpg CAFE in 2020.
Fuel GHG: -10% by 2025. CO₂ 11% > 1990.



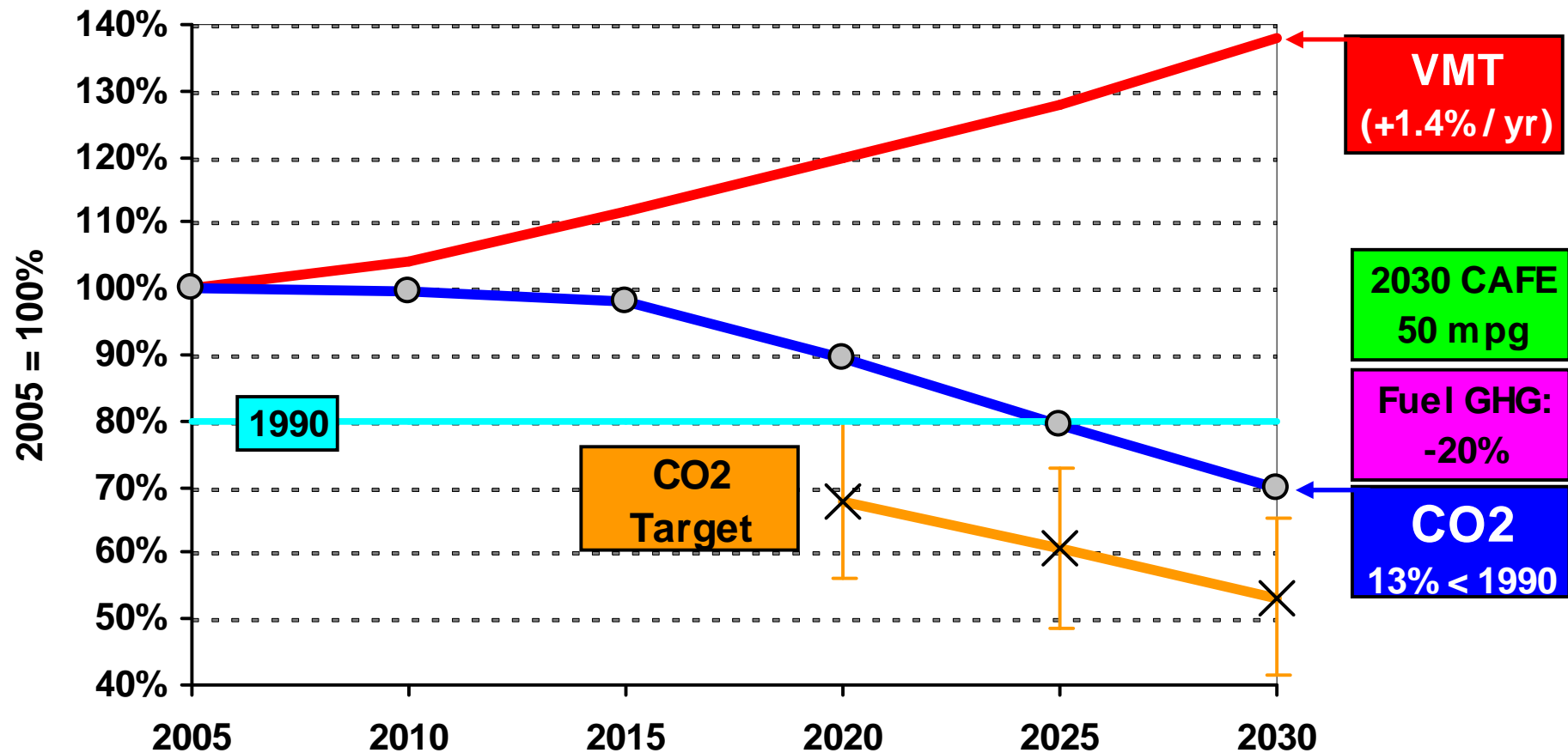
CAFE: 50 MPG new vehicles in 2030.

2030 CO₂ is 2% < 1990 levels

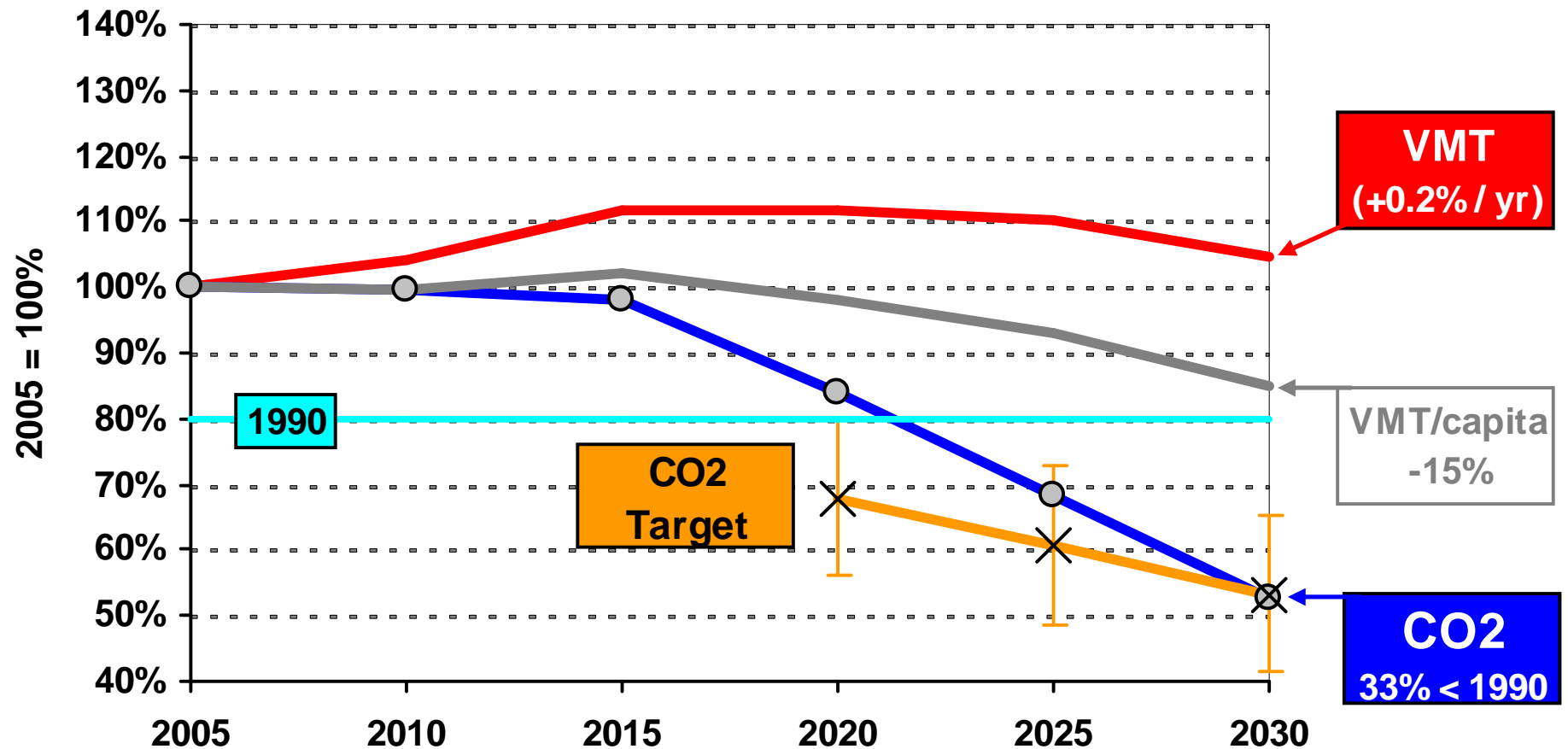


CAFE & -20% Fuel GHG.

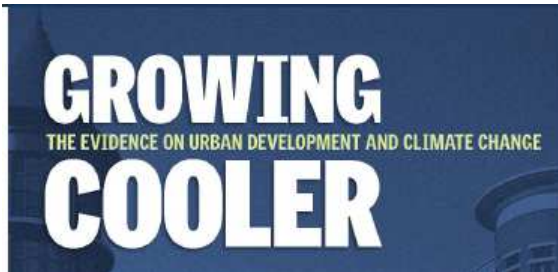
2030 CO₂ is 13% < 1990 levels



If VMT/capita -15% vs. 2005 (= 1990 level)
2030 CO₂ is 33% < 1990 levels



By How Much Can We Slow VMT Growth? (through 2030)



4% — just from land use

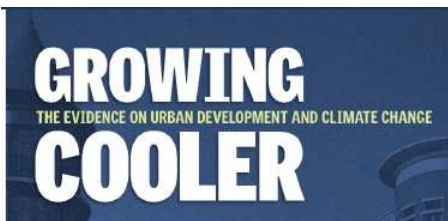
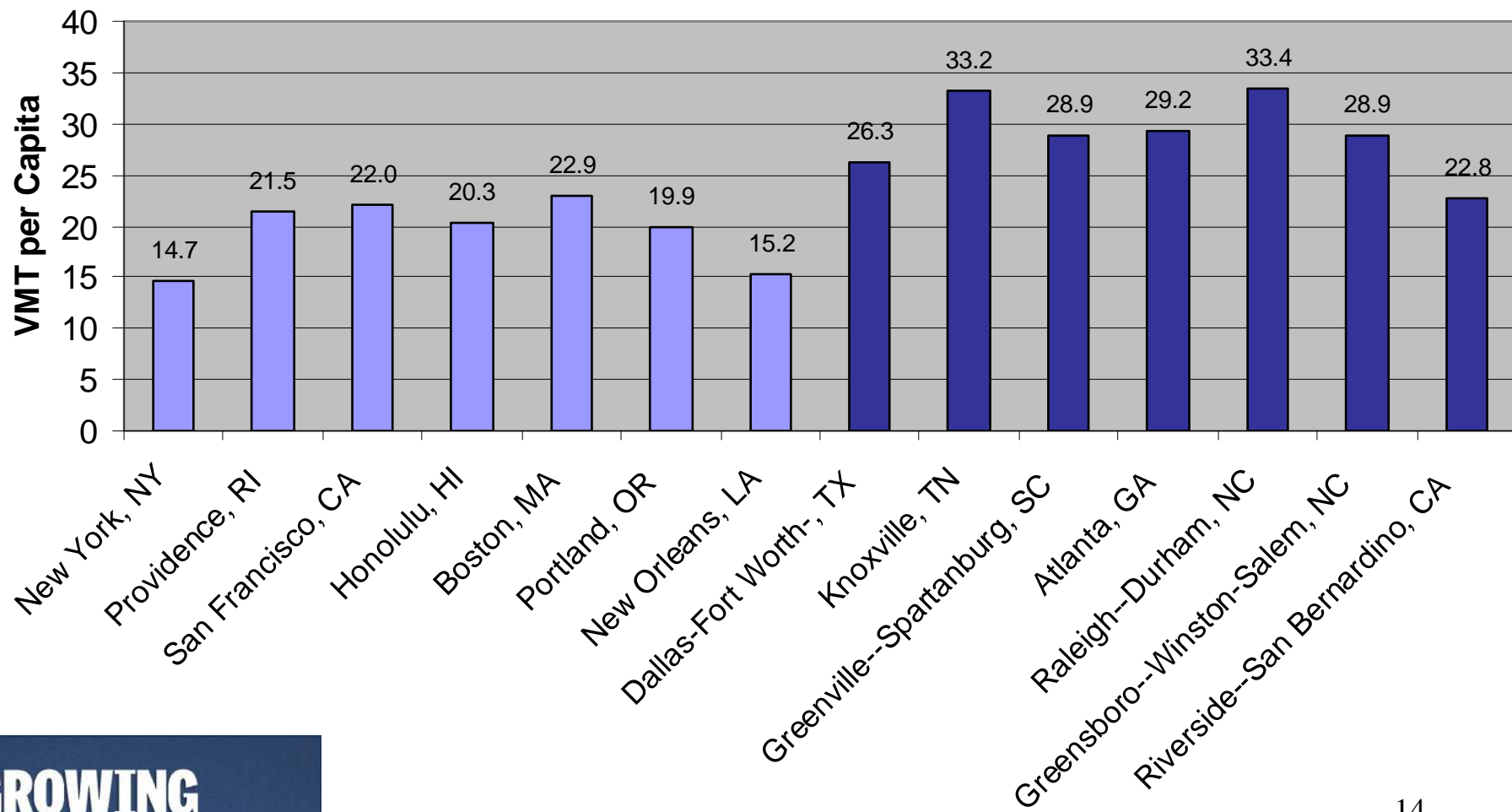
38% from aggressive policies

- “Moving Cooler” (ULI 2009)
~ **20%** comprehensive policies
(based on preliminary draft)
- AASHTO goal:
 - » Cut VMT growth in half ~ **23%**

Evidence on VMT and Land Use

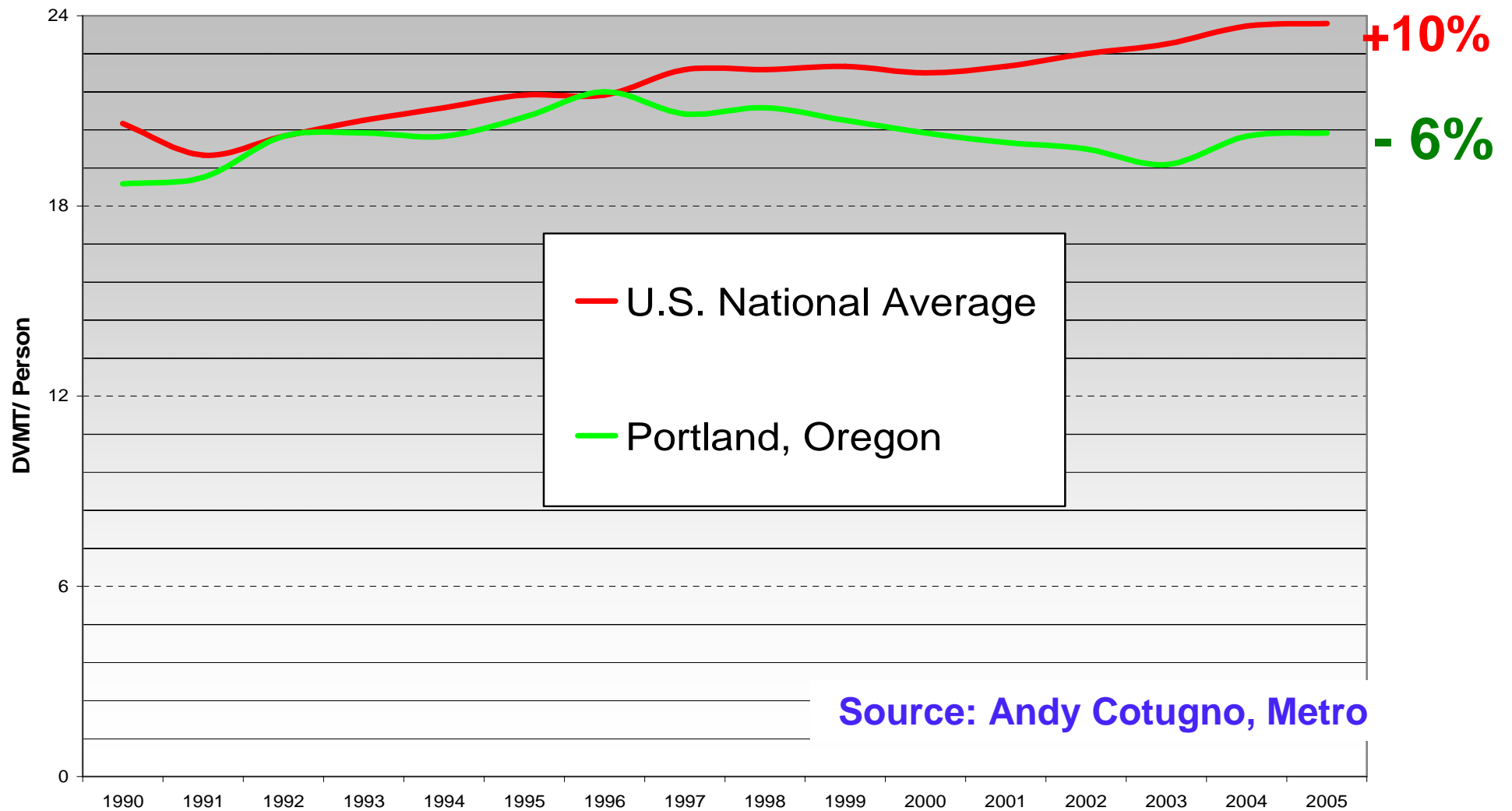
- 20-40% VMT reduction for each increment of new growth that is done in compact form (*Growing Cooler*, ULI 2008)
- Based on empirical evidence (controlling for demographics) and modeling results
- A few examples follow at different scales (regional, local, corridor, neighborhood, site)

Regional Level: 35% Less VMT with Compact Development



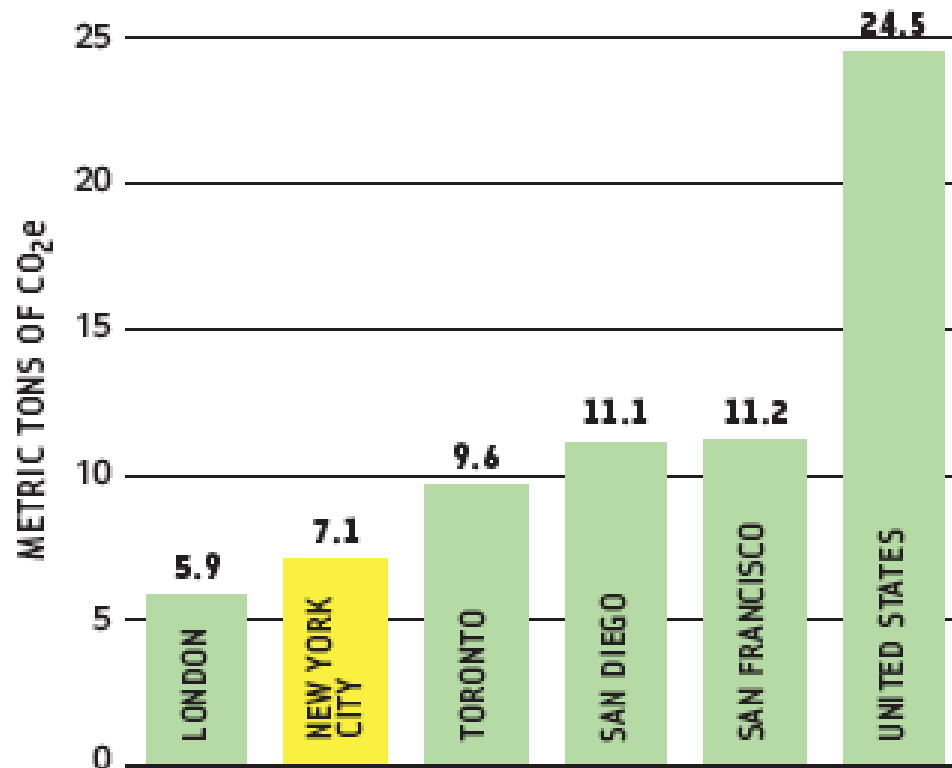
Source: Reid Ewing

Portland OR: VMT/capita 1990 - 2005



City Level: GHG/Capita (all sectors)

Greenhouse Gas Emissions Per Capita

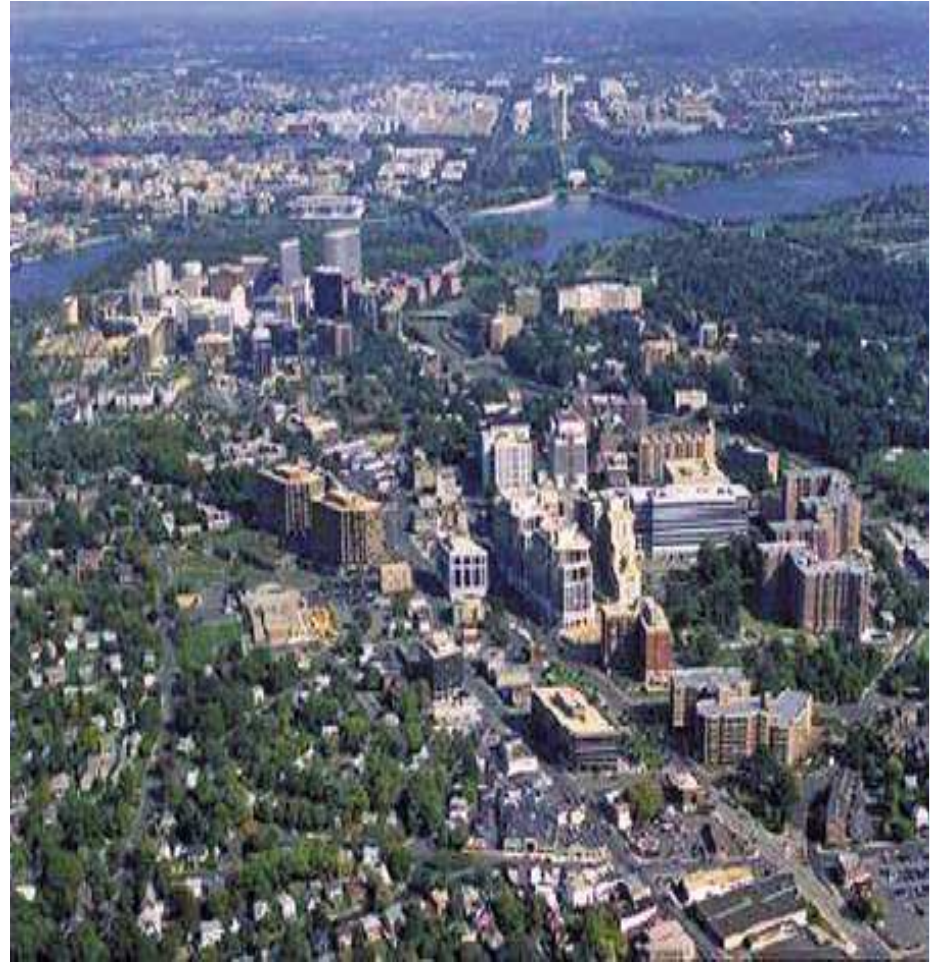


Source: NYC Mayor's Office of Long-Term Planning and Sustainability

Corridor Level: Arlington, VA

Local VMT holding steady

- 48% transit, walk/bike to work
- 73% of trips to Metro by foot
- 12% of households don't own cars vs. 4% for region



Source: Dennis Leach Arlington County

Project Level: Atlantic Station Infill: 75% lower VMT

- Modeled VMT savings: 33%
- Actual VMT savings 75%
8 VMT per resident per day (vs. 32 for region and 25 for US)



What's Being Tried
at the State Level?

All Eyes on California

- Landmark **AB 32** global warming law of 2006
 - » Reduce GHGs to 1990 levels, by 2020
 - » 5 MMTCO₂ for smart growth land use and transportation strategies
 - Climate Plan analysis: 14 -18 MMTCO₂ is possible
 - Actual savings will depend on CARB guidance, informed by Regional Target Advisory Committee, MPO plans and local implementation
- Implementation through **SB 375**
 - » CARB sets GHG goals for 18 CA MPOs to plan for GHG emissions reduction to achieve state targets
 - » Encourages “Blueprint”-style scenario planning
 - » Offers priority transportation funding, incentives for implementation, additional flexibility for compliance
 - » Additional funding from SB 372 (Prop 84 bonds), including \$500k for Strategic Growth Council

Other States:

Washington, New York, Massachusetts

Washington

- VMT/capita target: 2000 levels by 2020, 1990 by 2035
- Serious consideration of pricing measures

New York

- MPO GHG analysis of Transportation Improvement Programs (TIPs) & Long Range Transportation Plans
- VMT reduction goal: 10% from BAU by 2018

Massachusetts

- Commonwealth Capital
- Global Warming Solutions Act: 80% < 1990 by 2050

What's Being Considered at
the Federal Level?

CCAP Strawman: Transportation GHG Reduction Incentive Program (11/10 draft)

- **States & MPOs set GHG reduction goals**
- Launch bottom-up **discovery process** using scenario analyses to determine goals appropriate for each location
- Use **cap & trade revenues** to fund:
 - » Goal development, planning, data improvement
 - » Project and policy implementation
- **A funded obligation** (not an unfunded mandate!)
 - » New responsibilities require new resources
- Set the stage for climate-friendly transport bill²³

Data Improvement Recommendations

1. Substantially increase **funding** for travel data collection & improvement
2. Study & develop **recommendations** on highest priority data & modeling improvements
 - Assess the costs and benefits for states to process, collect and analyze **odometer** data
3. Travel & GHG **modeling** capacity and ability
4. Measure real-world vehicle **fuel economy**
5. **Coordination** and collaboration across government agencies and levels

Sen. Carper: CLEAN-TEA (S. 3624) (9/08)

- States and MPOs develop transportation GHG reduction plans using scenario analyses
- Integrate projects into transportation plans
- Eligible uses: transit, ped/bike, freight rail, travel data and model improvements
- 10% of cap-and-trade auction revenues (~\$10-20 billion/yr by 2020, depending on cap)

House

Dingell-Boucher draft (10/08)

- Sec 552: States & local govts may develop Transportation Energy Efficiency Plans
- Support for planning, data, model improvement, scenario analysis, stakeholder engagement
- Eligible uses include: transit, smart growth, TDM, freight, bottleneck relief
- 3% of cap-and-trade auction revenues (~\$0.5-2.0 billion/yr by 2020?)
- Intended to complement transportation reauthorization

Economic Costs and Benefits

Transit Oriented Development, done well = Economic Development

- Arlington, VA
 - » 20 years of TOD → major economic and population growth with no increase in traffic
 - » 8% of land use = 33% of real estate tax revenues
 - » 2 mi² would need 14 mi² at suburban densities
- Street Cars & Economic Development
 - Street Smart* (Reconnecting America, 2006)
 - » Portland: \$73 million, helped attract \$2.3 billion in private investments w/in two blocks – 30 fold ROI
 - » Little Rock: \$20 million attracted \$200 million
 - » Tampa: \$60 million attracted \$1 billion

Negative \$/ton: Sacramento 2050 Blueprint vs. Business as Usual (CCAP)

Infrastructure Costs (savings)

Major transportation capital	- \$ 1.9 billion
Other infrastructure (water, utilities, etc.)	- \$ 7.5 billion
	<u>- \$ 9.4 billion</u>

Annual Costs (savings) in 2050

Private fuel costs	- \$ 655 million
Transit operating costs	<u>\$ 121 million</u>
	- \$ 534 million/year

Cumulative CO2 Savings 7.2 MMTCO2 (14%)

	<u>Net Present Value</u>	<u>Cost per ton CO2</u>
Just Transportation Costs	- \$ 500 million	- \$ 70/ton
With Infrastructure savings	- \$1,400 million	- \$200/ton

Excludes savings from building energy use, mitigation land purchases (\$8.3 billion), and reduced congestion.

Closing Thoughts

- **VMT growth is a policy choice**, not pre-ordained
- Entering an era where planning may be as important as regulation and technology for climate resiliency
- Transportation and Climate bills both in play in 2009
- But economic crisis may slow everything down
- Exciting possibility of an infrastructure reinvestment package linking energy, climate and stimulus
- Perhaps because things are so bad, we might actually have the vision and courage to craft bold policies and raise revenues to invest in an economically and environmentally sustainable future



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Thank you

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