



**Center for
Clean Air Policy**

Travel Demand Data: Do we know where we're going?

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Center for Clean Air Policy (CCAP)

New energy indicators for transport: The Way Forward

International Energy Agency

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Paris

Center for Clean Air Policy

- Since 1985 CCAP has been a recognized world leader in climate and air quality policy and is the only independent, nonprofit think-tank working exclusively on those issues at the local, national & international levels.
 - » Assistance with enacting state climate plans: CA, CT, NY...
 - » Smart Growth and Climate Change
 - Linking **Green-TEA** and Climate Policy dialogue
 - *Growing Cooler*
 - CCAP Transportation Emissions Guidebook
 - » Urban Leaders Adaptation Initiative
 - » US and European Climate Policy Dialogues
 - » GHG policy projects in China, Mexico, Brazil, India
 - » Dialogue on future international climate actions

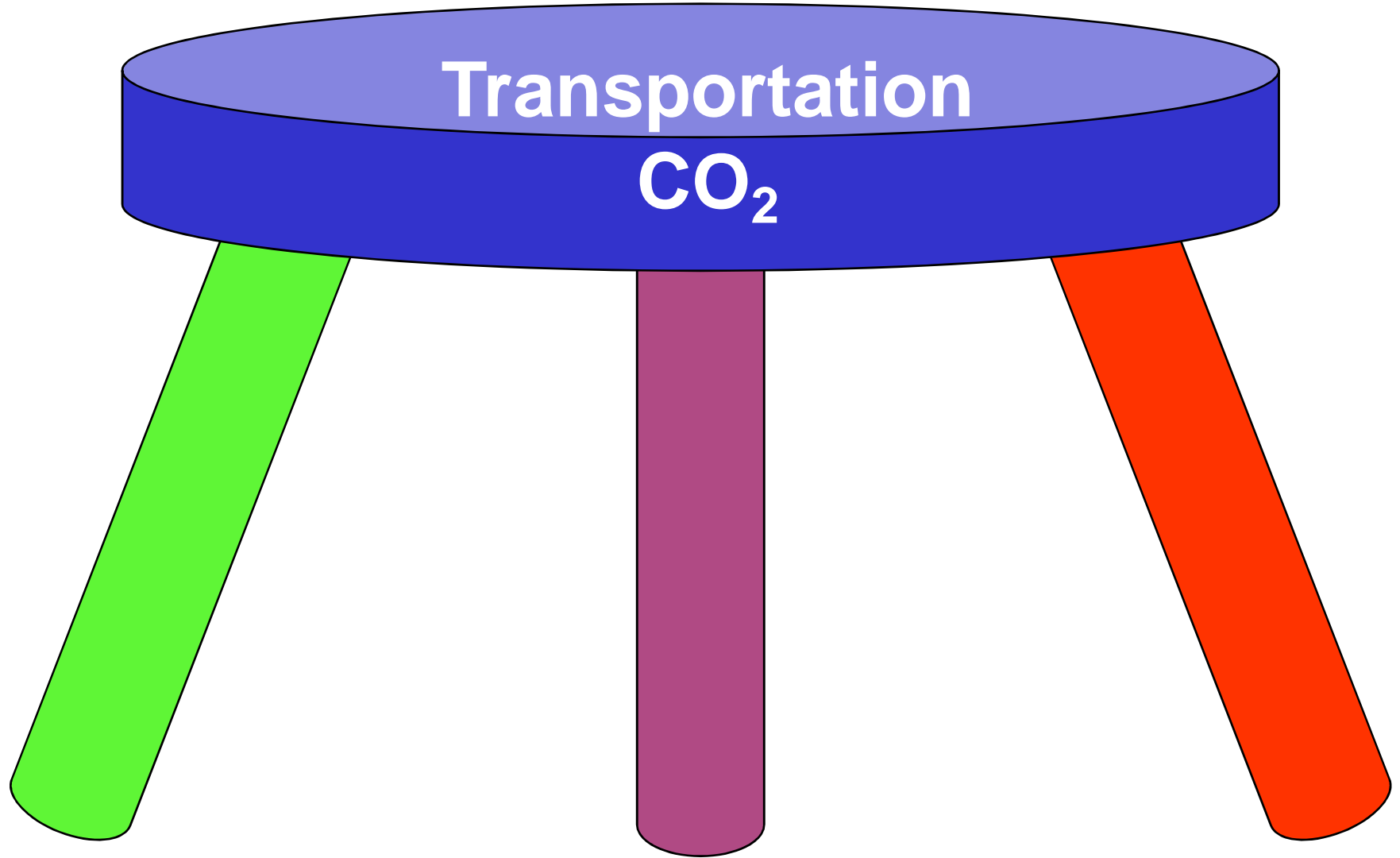


Overview

- Climate context
- Transportation GHG emission trends
- Sample data
- Data concerns
- Data needs
- Data improvement opportunities
- I hope for input on best practices in other countries to bring home to the (data) poor USA

Climate Change Context

- Emerging consensus: limit warming to 2 to 3°C
 - » Amazon rainforest ecosystem at risk of collapse; 100s of millions displaced from coastal areas; deglaciation of Greenland begins:
- US must cut GHGs **60-80% below 1990 levels by 2050**
 - » 15-30% below 1990 by 2020 to keep on track
 - » Not easy, but possible
 - » Delayed action means higher risks and costs
- Transportation: 1/3 of US CO₂ emissions, growing fast
 - » Major reductions will be needed in all sectors
 - » How much is needed from transportation?
 - » How much can other sectors overcompensate for transportation?

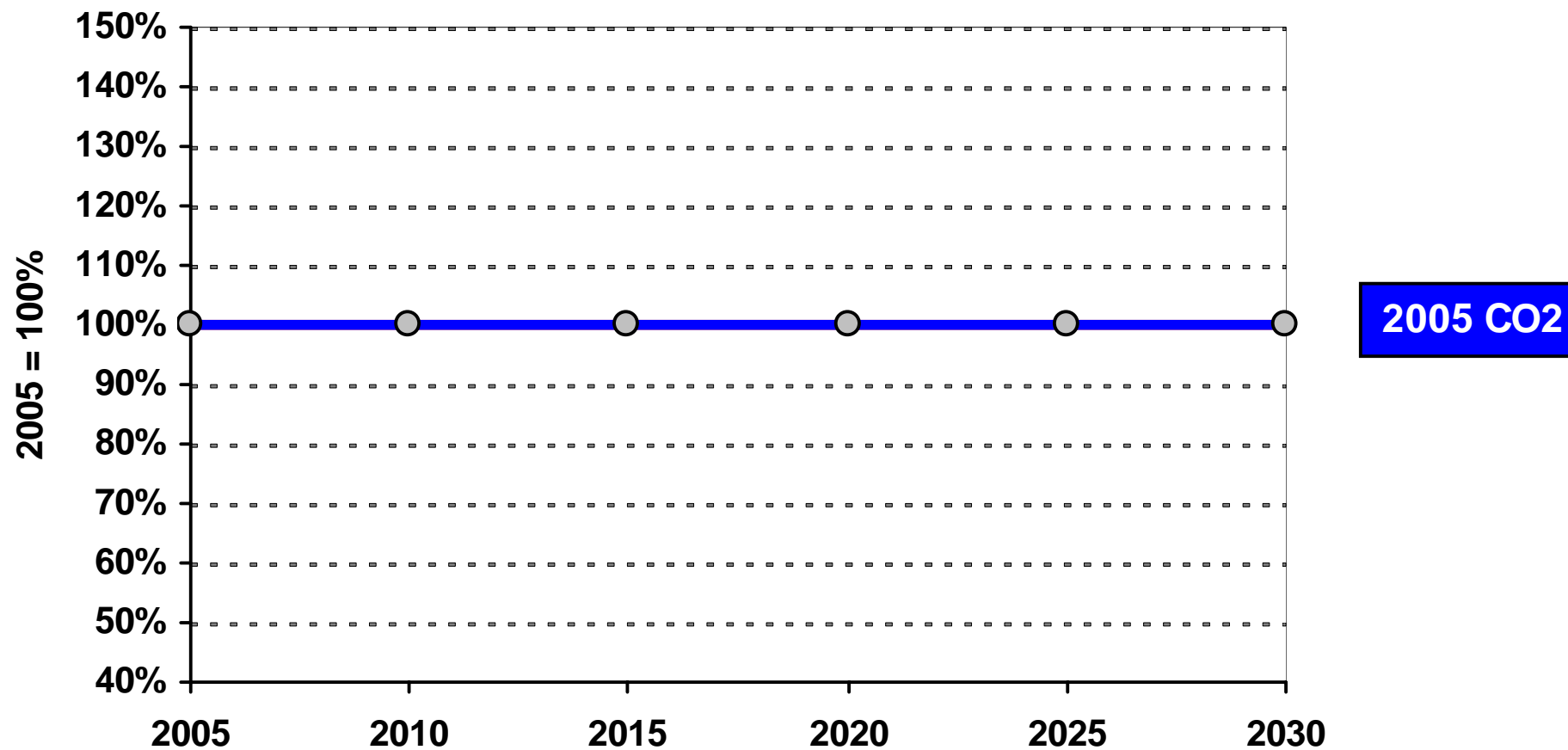


Vehicles

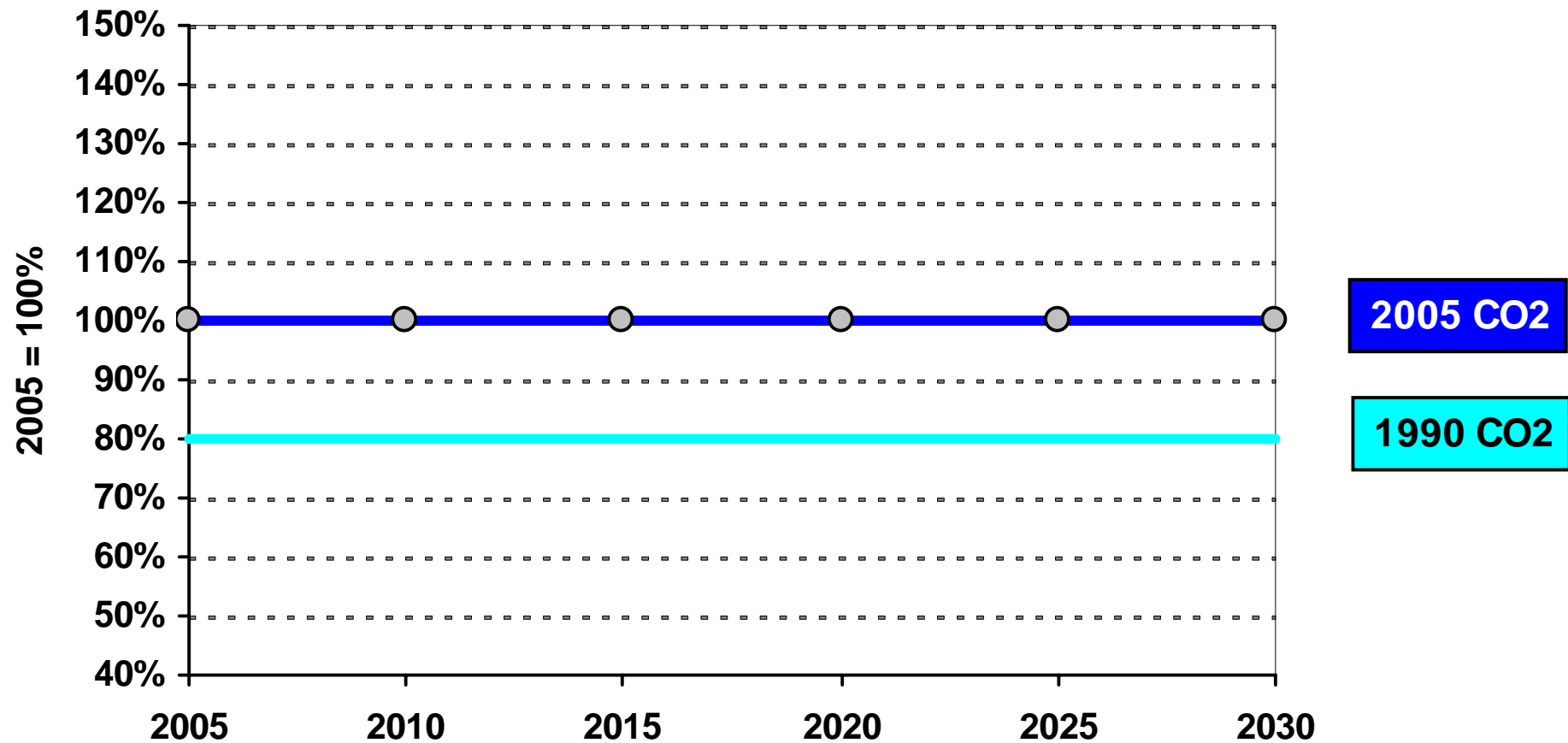
Fuels

VMT

2005 Transportation CO2 Levels

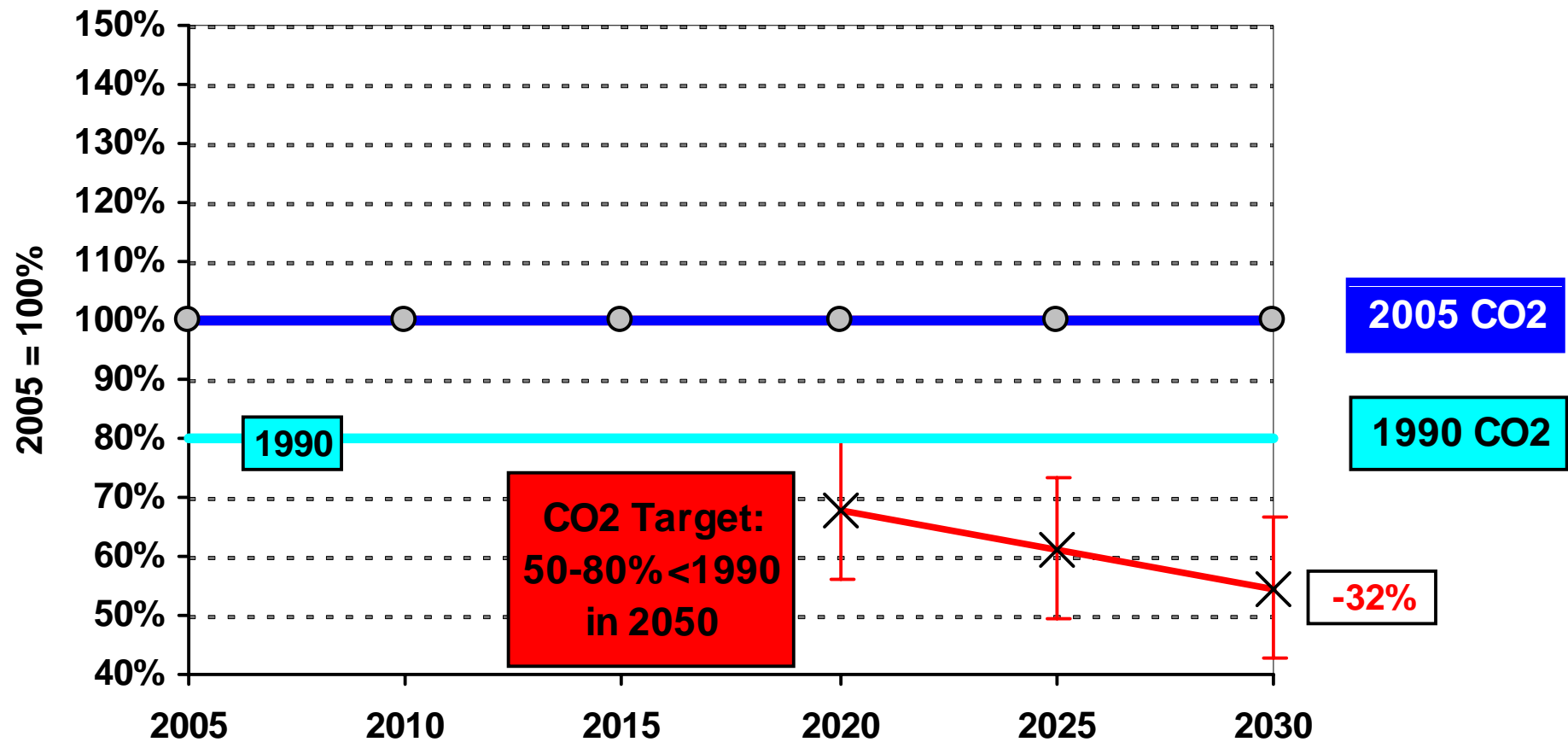


2005 CO2 Levels are 25% above 1990 levels (1990 levels are 20% < 2005 levels)



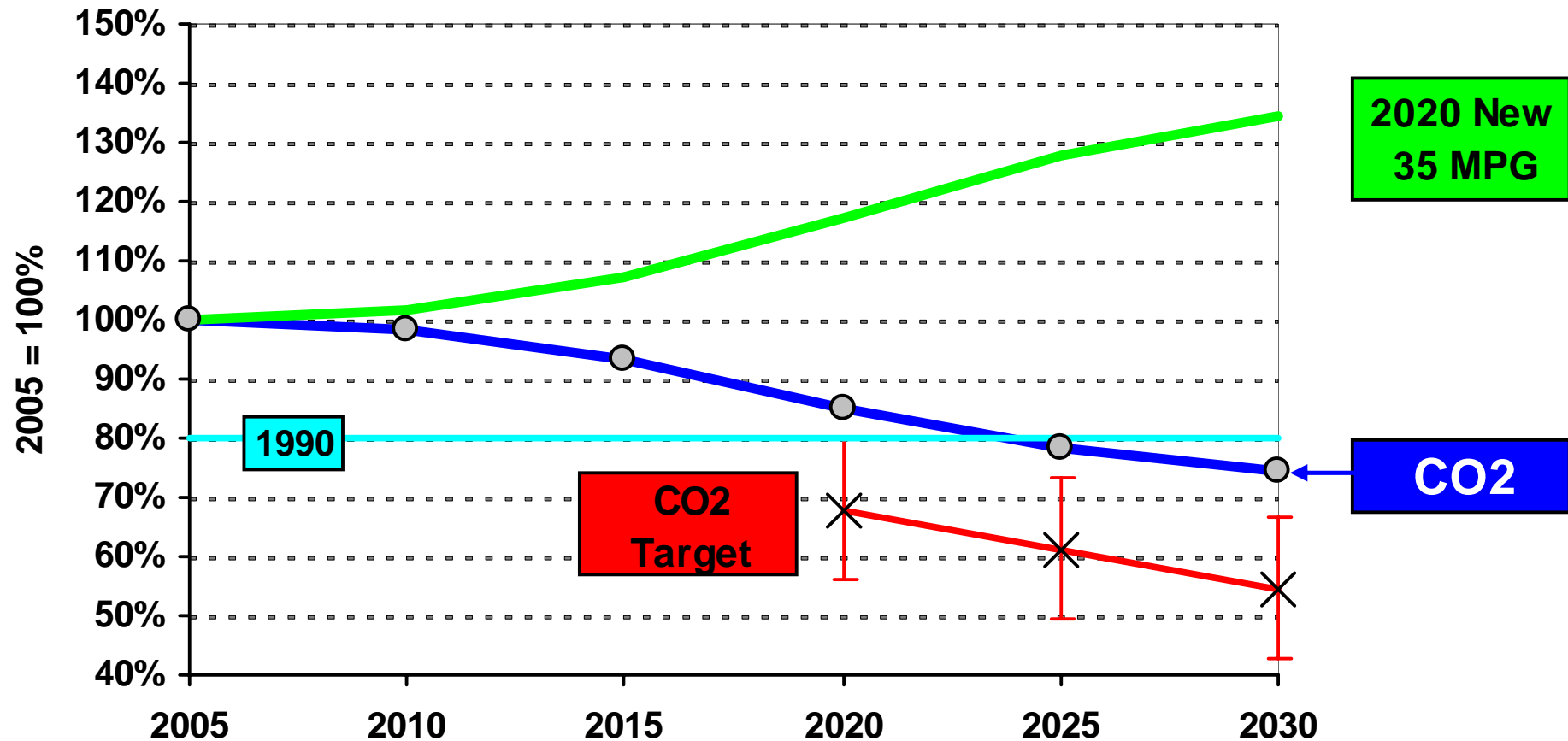
CO2 Targets: 50-80% < 1990 in 2050

≈30% < 1990 in 2030 or "30 by 30"

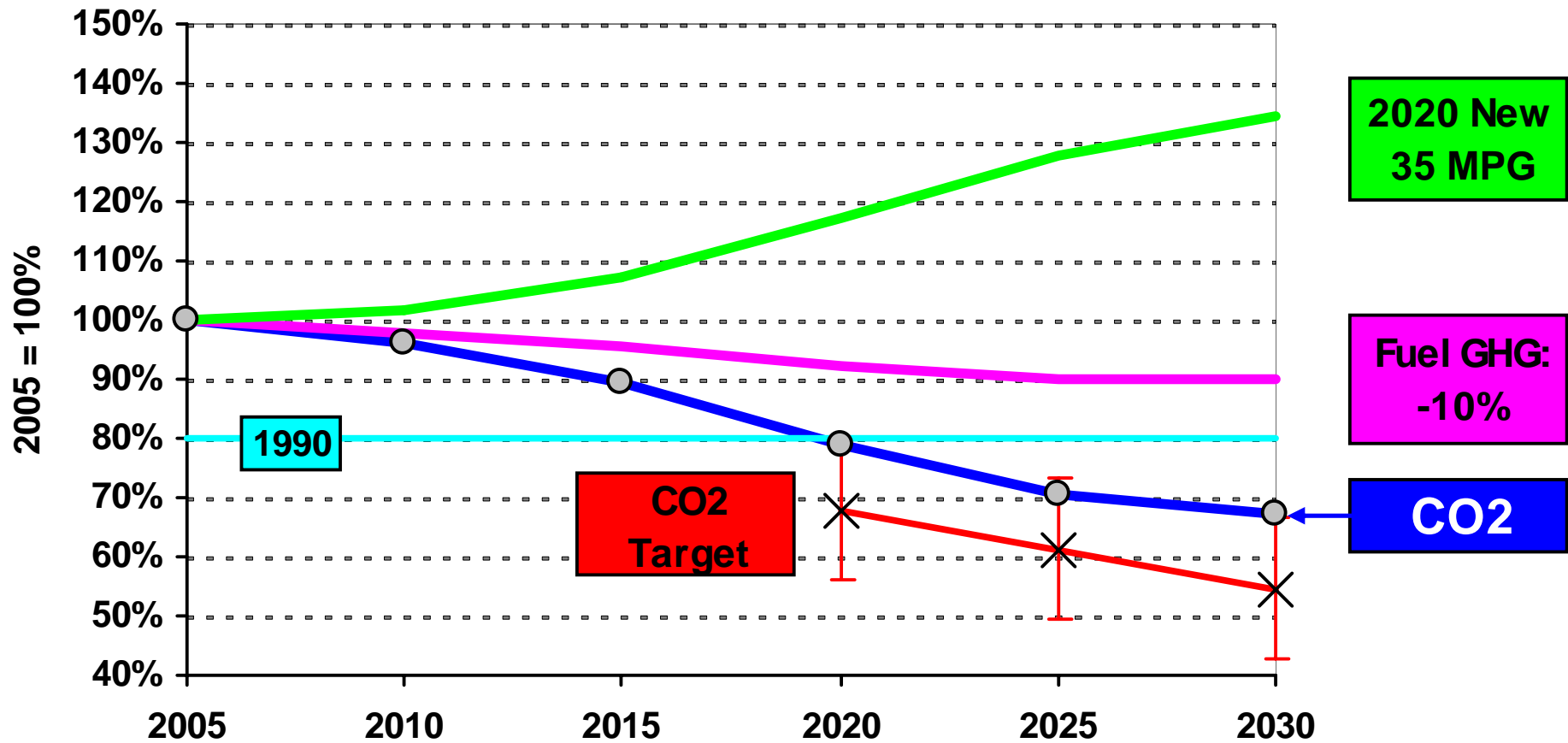


Source: S. Winkelman based on EIA AEO 2008 and sources cited in *Growing Cooler*.

CAFE: 35 MPG (28 adj) for new vehicles in 2020 → 2030 CO₂ is 7% < 1990



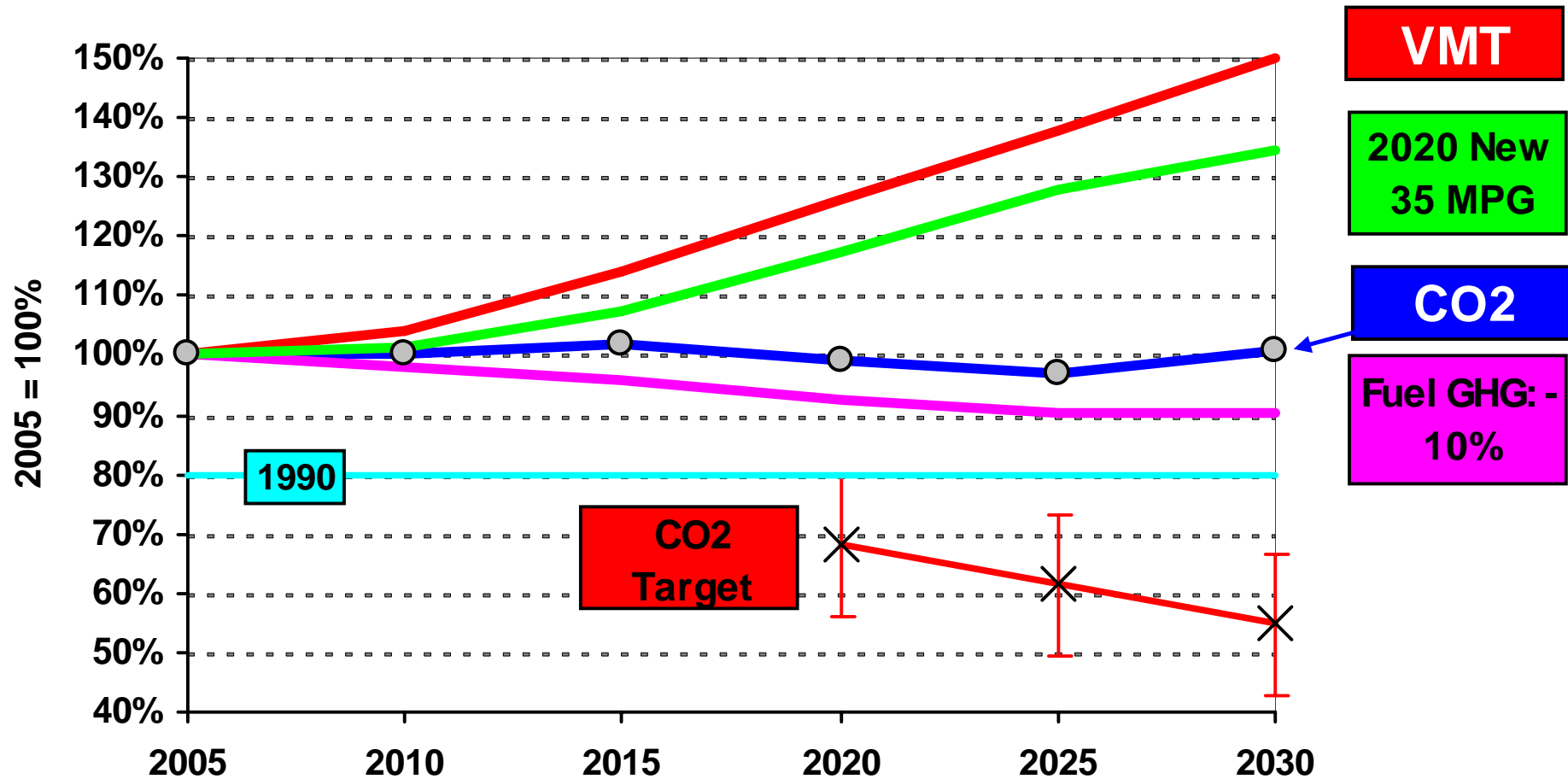
Energy Bill: **CAFE** & **-10% Fuel GHG** by 2025 → 2030 CO2 is 16% < 1990



Source: S. Winkelman based on EIA AEO 2008, HR6, stock model calculations and sources cited in *Growing Cooler*.

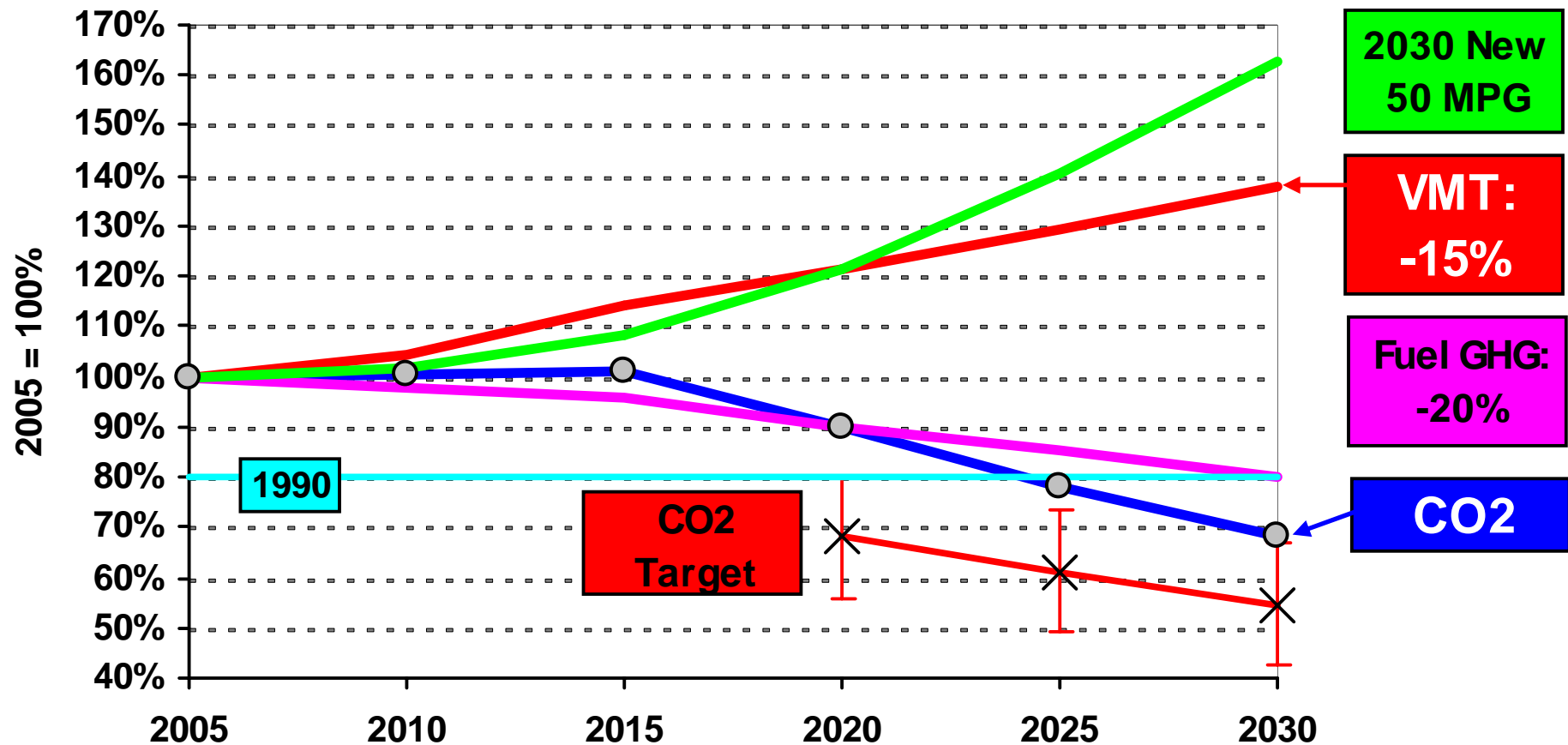
VMT Growth to Wipe Out Energy Bill Savings

Savings → 2030 CO₂: 26% above 1990

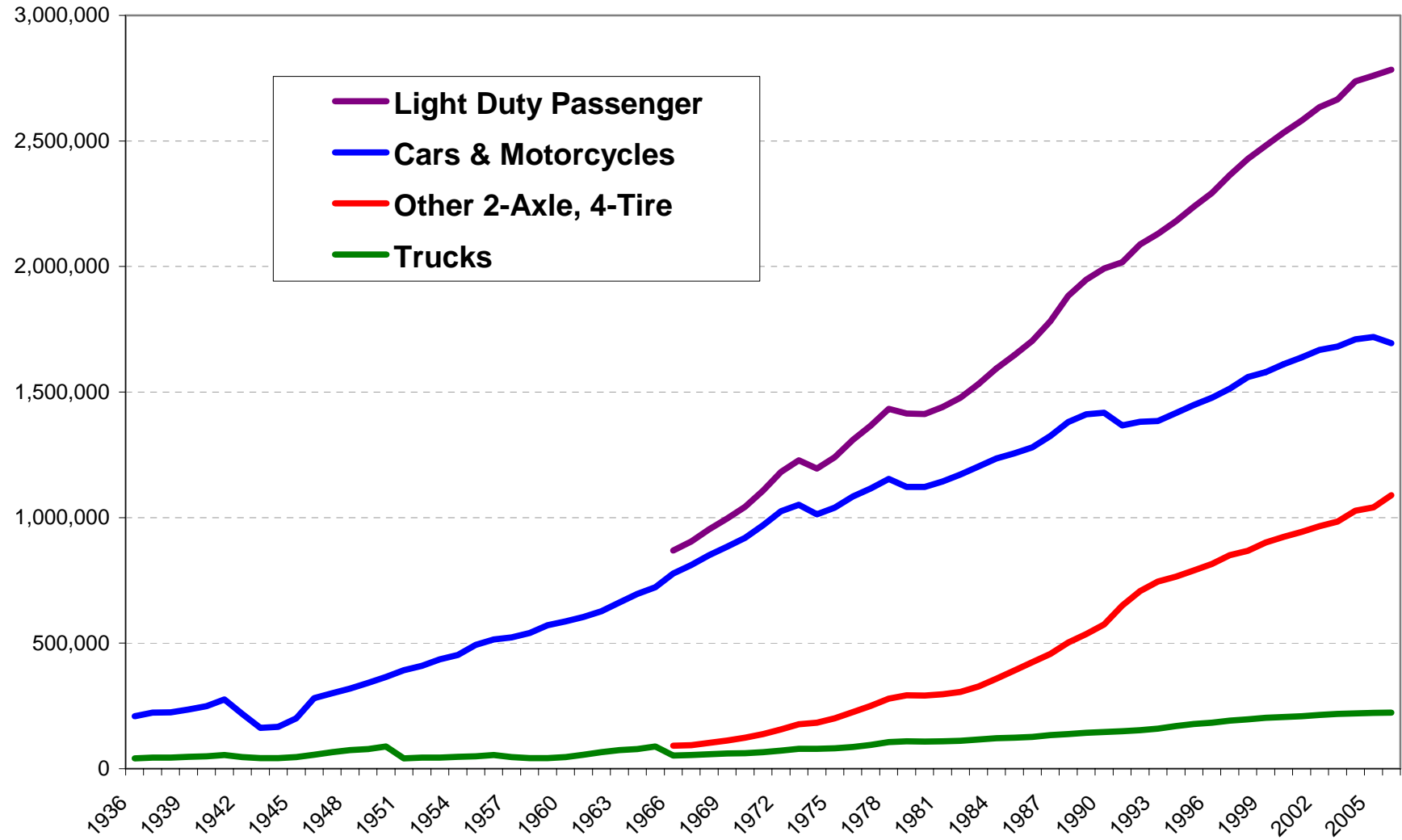


Source: S. Winkelmann based on EIA AEO 2008, HR6, stock model calculations and sources cited in *Growing Cooler*.

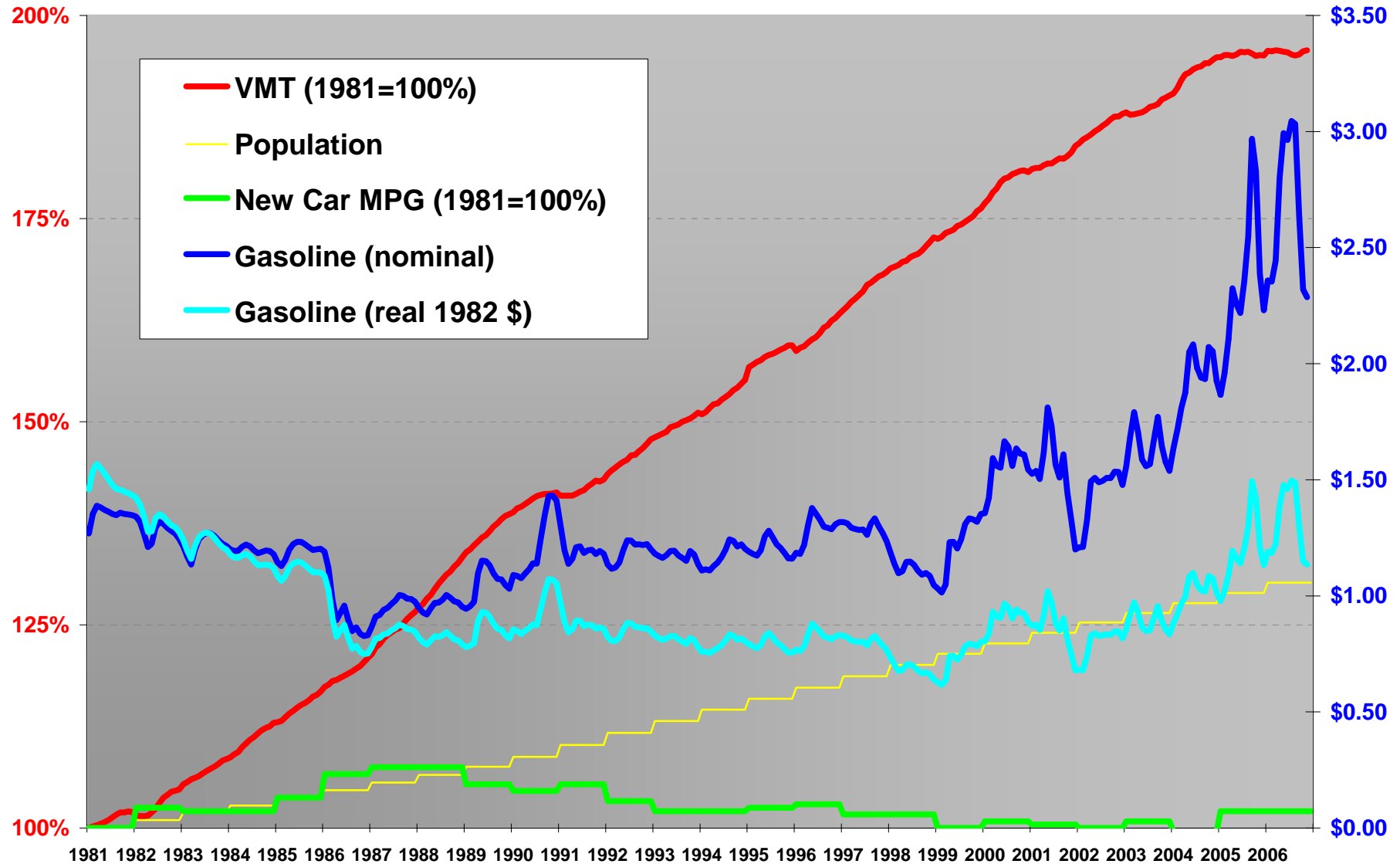
Aggressive case: 50 mpg (40 adj) in 2030, -20% Fuel, -15% VMT → 15% < 1990

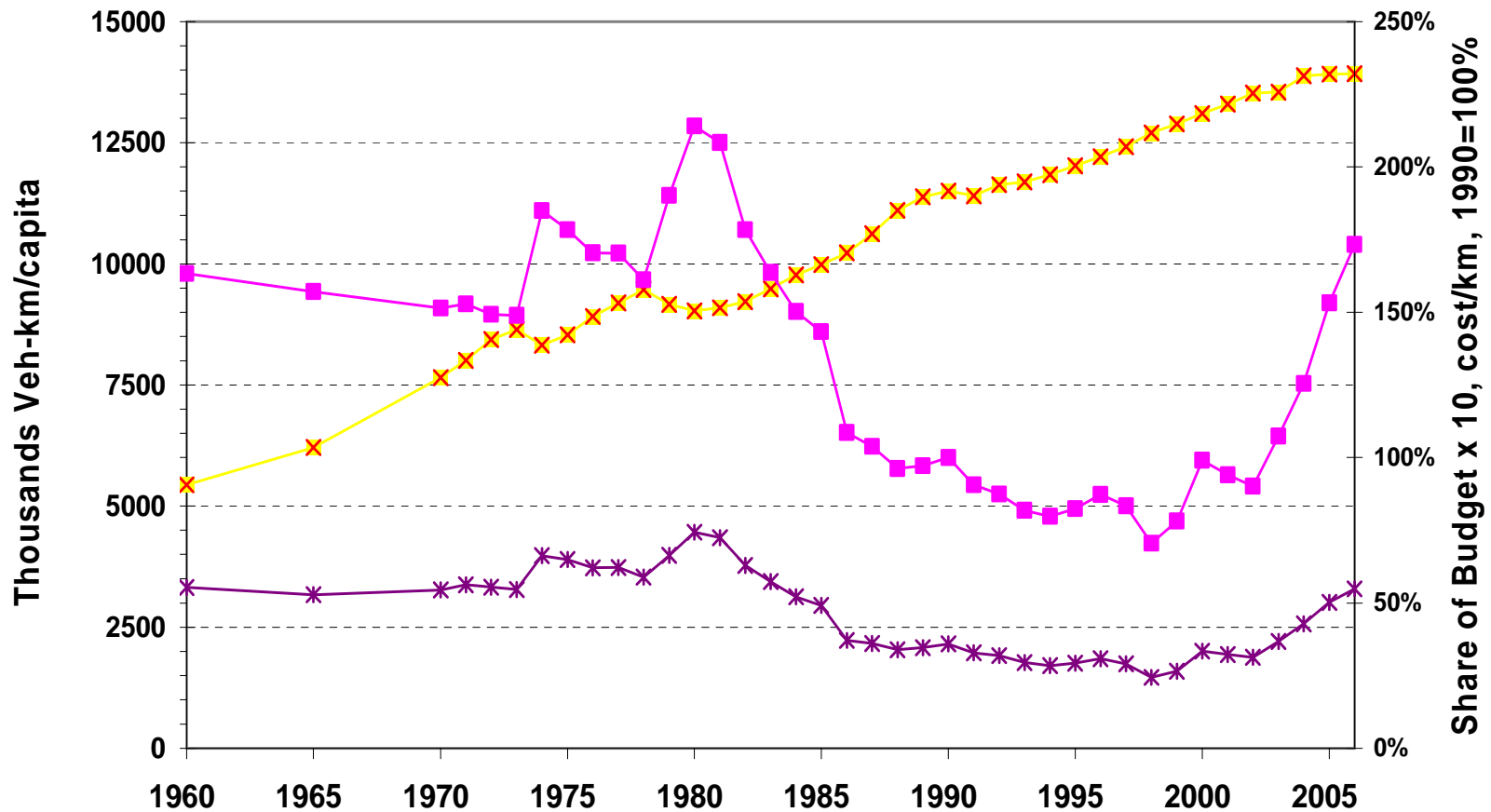


US VMT Data by Vehicle Type: 1936-2006 (million)



US VMT growth slowing... For now?

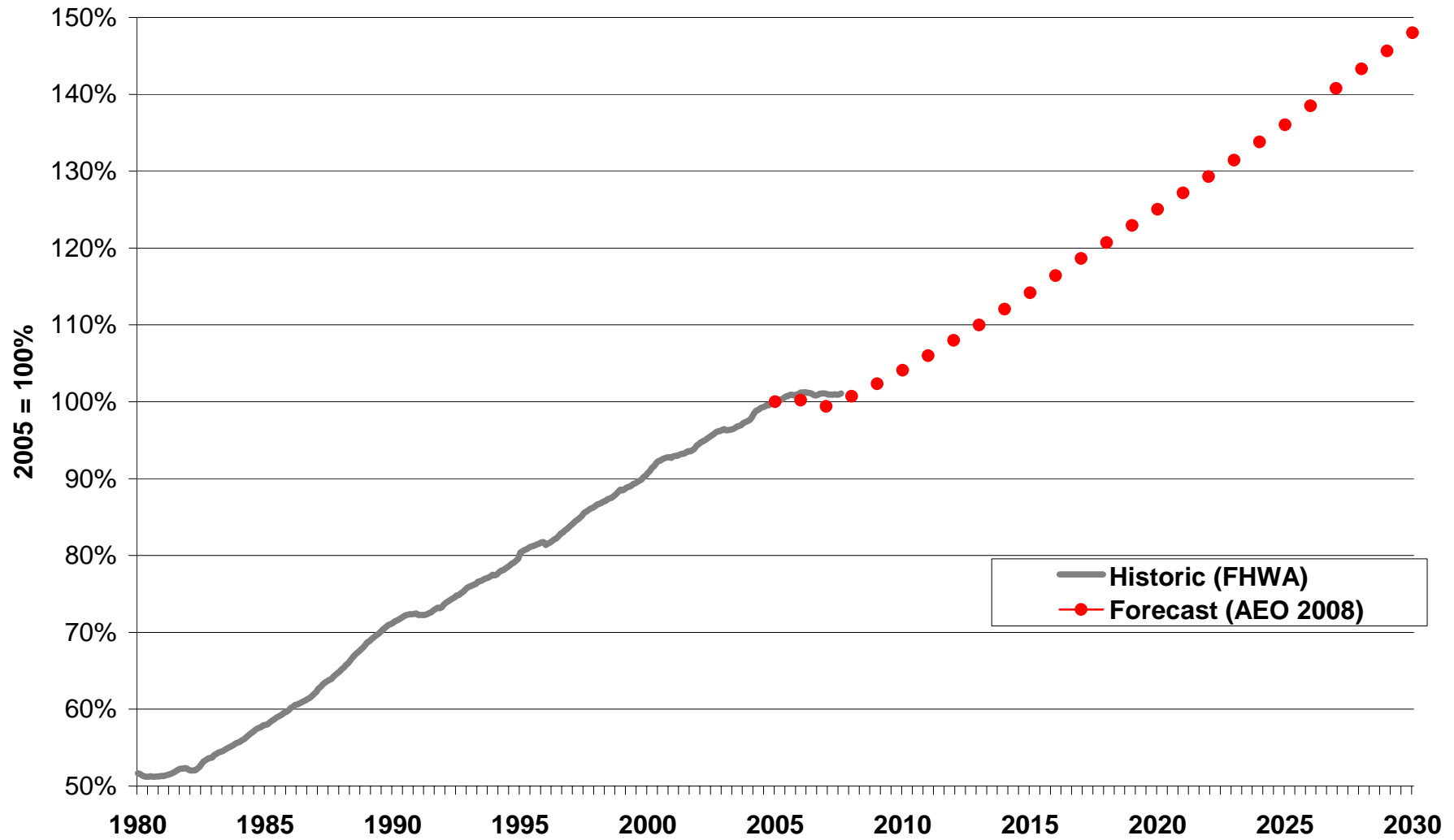




- x VKt/Capita (LH Axis)
- Fuel Cost/km, 1990 - 100% (RH Axis)
- * Share of Private Consumption x 10 (RH axis)

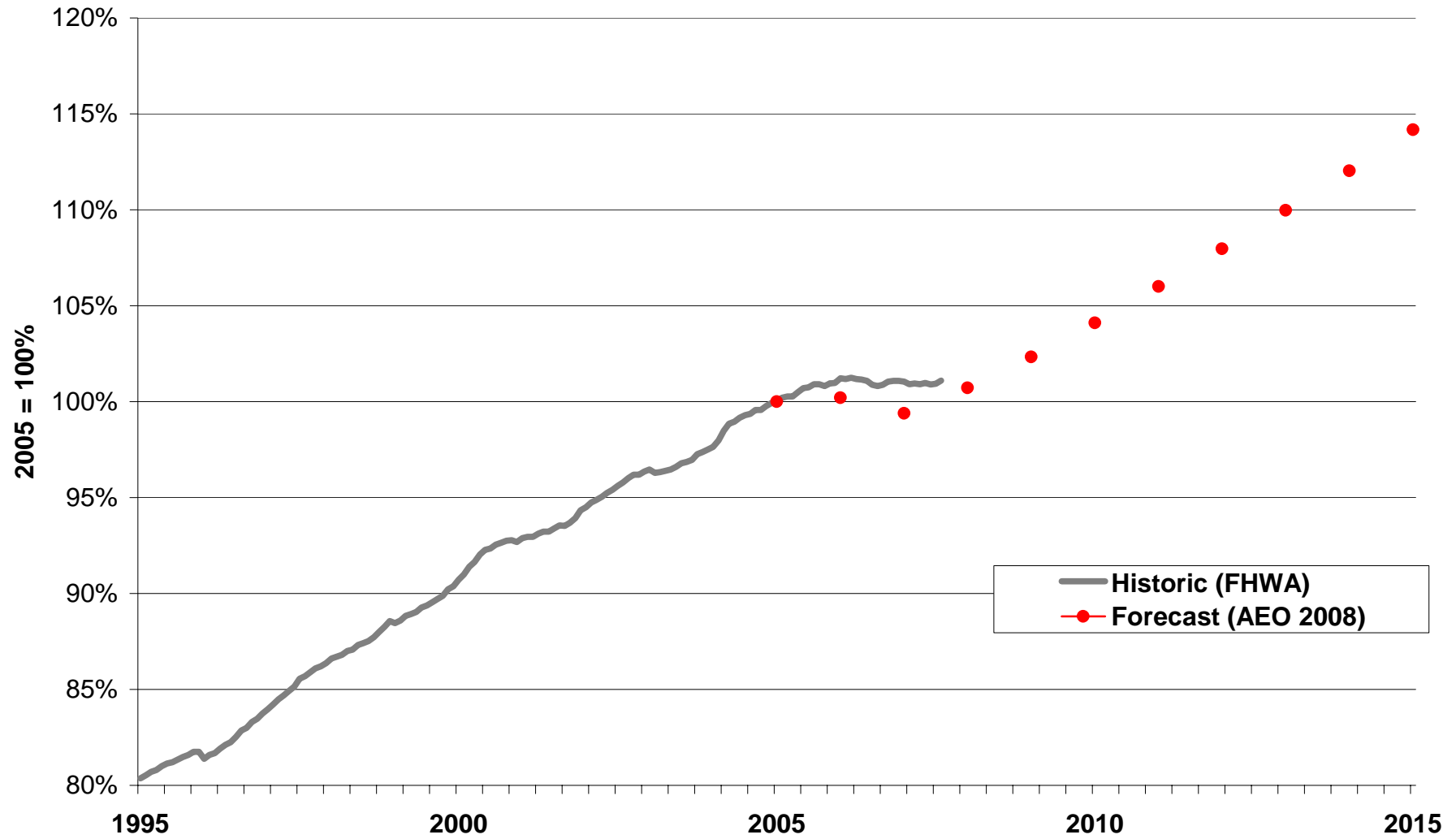
VMT: 1980-2007 (TVT/HPMS)

Forecast to 2030 (EIA)



VMT: 1995-2007 (TVT/HPMS)

Forecast to 2015 (EIA)

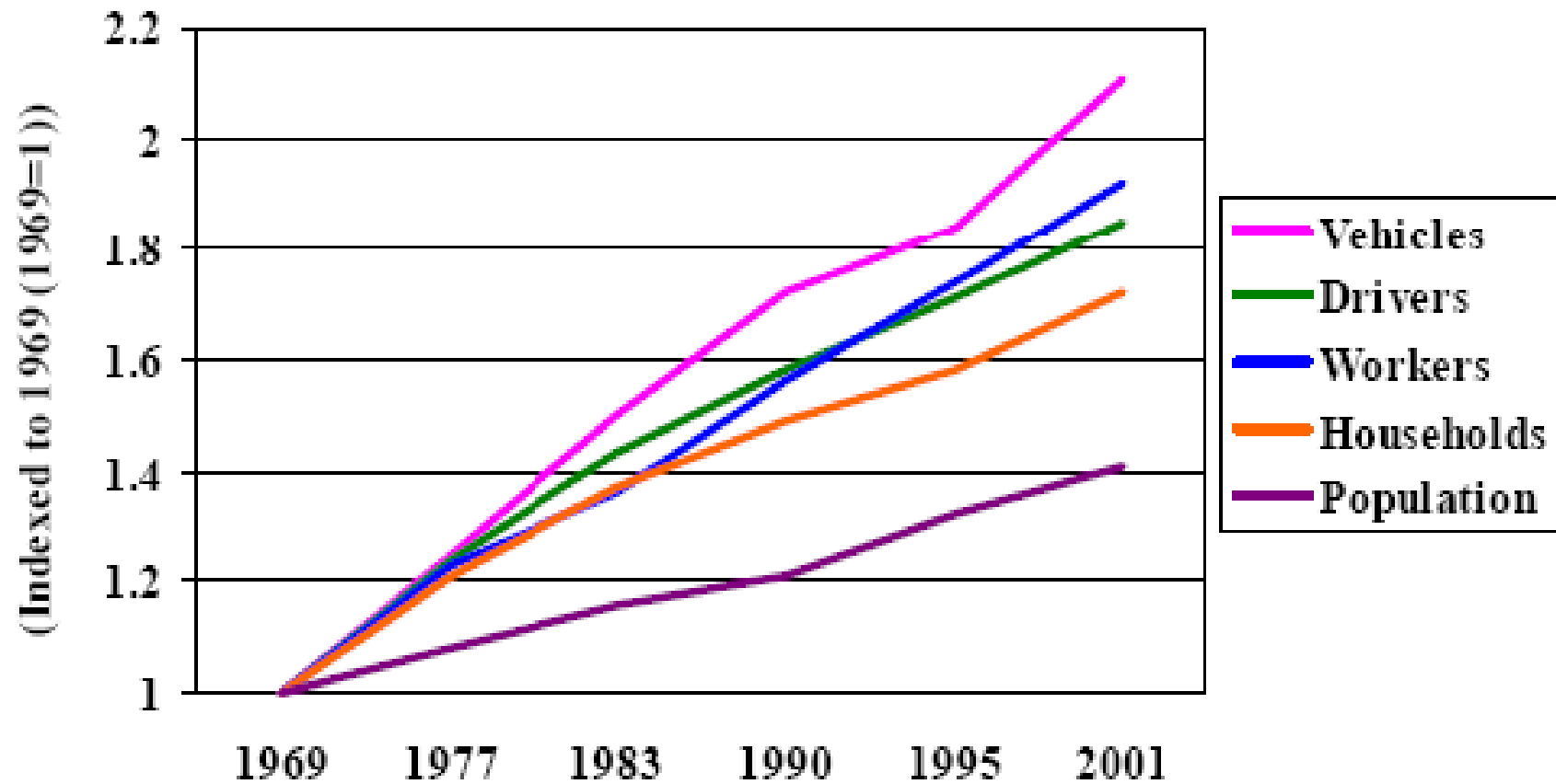


Some comments on data quality

- California: 3 state agencies VMT forecasts range from +40 to +70% by 2030
- Fuel sales data used for state GHG inventories are actually wholesale fuel sales that don't necessarily map to in-state consumption
 - » There are options for improving this, a previous IRS/DOE study was discontinued
- VMT changes hard to track without better tools
 - » In part because they're often imputed from changes in fuel use
 - » Need data at regional, local and corridor level to track policy effectiveness: passenger & freight

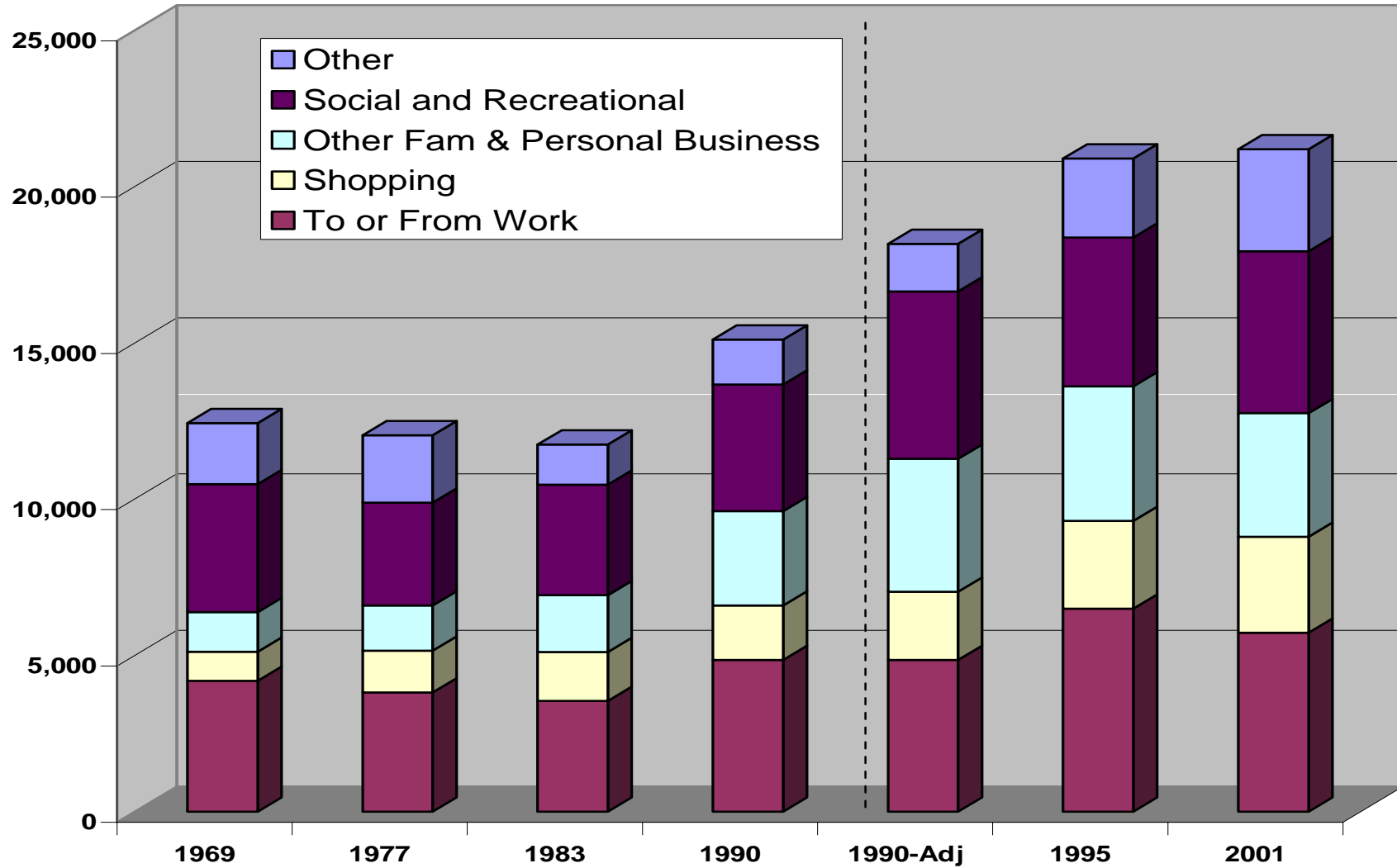
Changes in Summary Demographics

1969, 1977, 1983, 1990, 1995 NPTS, and 2001 NHTS



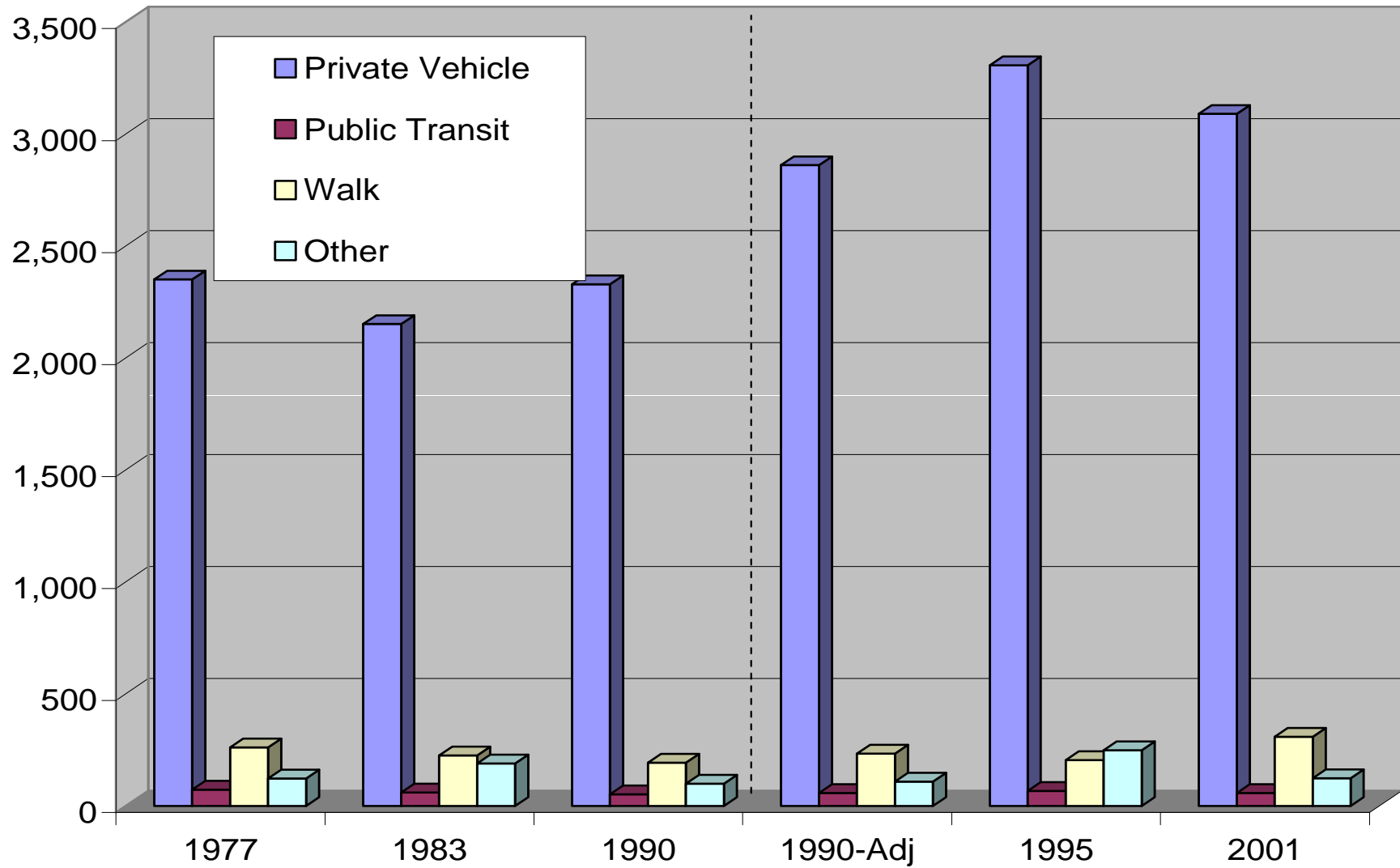
Average Annual VMT per Household by Trip Purposes

1969, 1977, 1983, 1990, 1995 NPTS, and 2001 NHTS

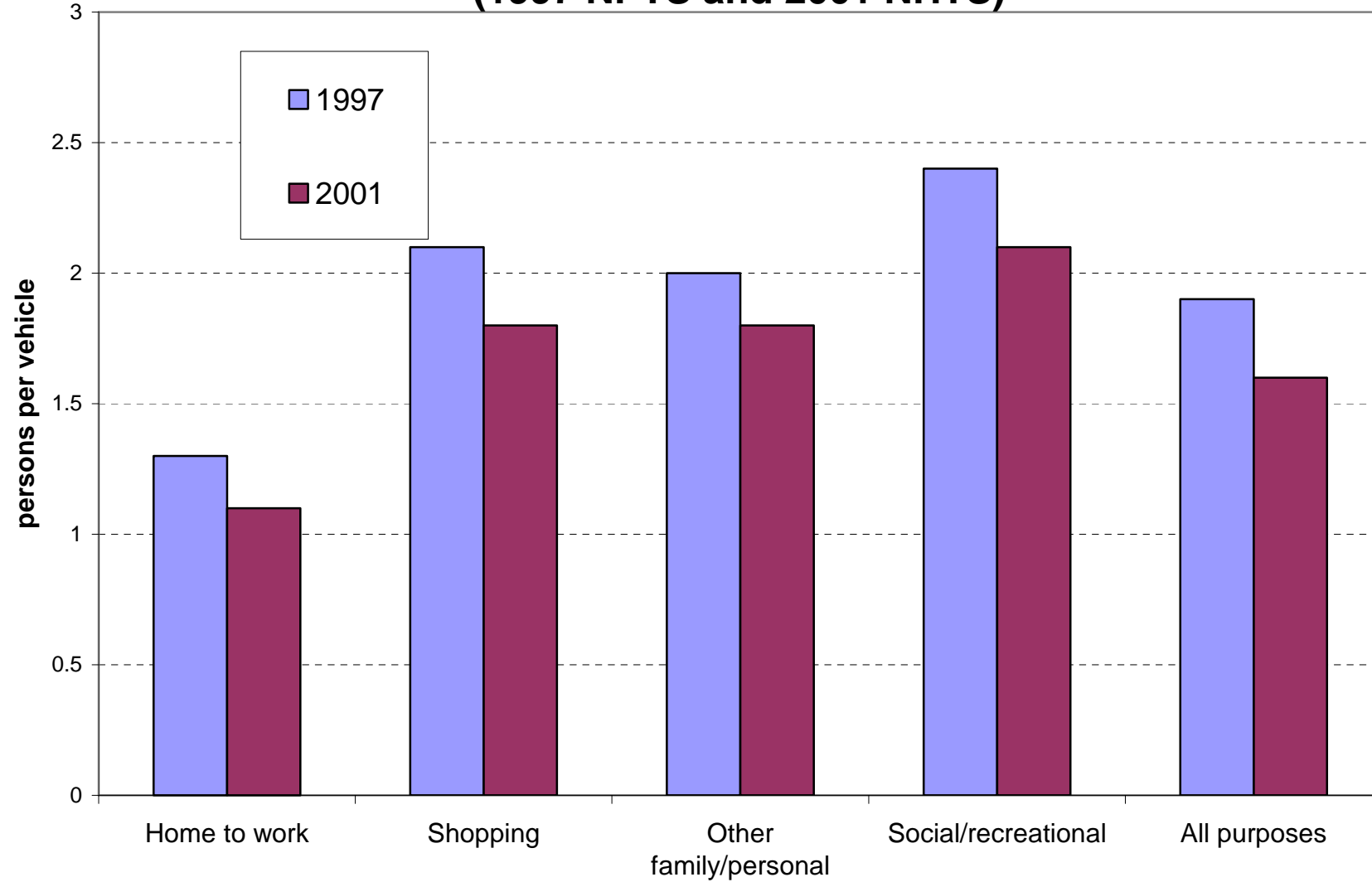


Average Annual Person Trips per Household by Mode

1969, 1977, 1983, 1990, 1995 NPTS, and 2001 NHTS



Average Vehicle Occupancy by Trip Purpose (1997 NPTS and 2001 NHTS)



Resurrect Travel Data Sources

Restore/improve surveys that are gone or scaled back:

- **HPMS**: Need to improve consistency and coverage
 - » urban/rural, local/interstate, vehicle type car, LT, motorcycle
- **NHTS**: Every 1-3 years
 - » Currently every 5-7 years. Funding not stable.
- **VIUS** (Vehicle Inventory and Use Survey): Reinstate.
 - » We now have no single measure of vehicle use.
- **BTS Travel Needs Survey**: Wasn't funded. TRB 2007 report). Fund and/or follow up on.
- Reattach vehicle use survey to the **household energy survey**
- Conduct travel surveys in census years

Need Comprehensive Study on Improving US Travel Data

- Analyze multiple sources
 - » Travel surveys
 - » Automatic traffic counters
 - » Odometer data
 - » Transponders, cell phones
- Highway Performance Monitoring System
 - » How many sensors, and where, necessary for a valid sample to get accurate total US VMT?
 - » What would it cost to install enough sensors and improve analysis?

Other Needed Studies on Improving Travel Data (NAS/TRB, GAO)

- Design of new national panel survey on vehicle use and vehicles in use
 - » All vehicles classes
 - » International best practices?
- Shortcomings on travel data for GHG emissions planning and policy, with recommendations
- Improving travel data by vehicle classes
 - » Need for consistency in categorizations
- Improving Inter-regional travel data
 - » car, bus, air, rail
- Improving freight data

Telling the Story

- Few care about good travel data
 - » At best their bored by it
- Need strategic discussion on major disconnect between data users and policy makers
- Need compelling narrative to explain benefits
 - » Past successes.
 - » Map to issues people care about and want to track
 - » Making the case for good data as a core part of climate, energy, transportation, economic policies
- How can you help US?

Questions? Comments? Thank You!

For more information:

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Transportation: www.ccap.org/transp.htm

Adaptation: www.ccap.org/domestic/ULAI.htm

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Additional Material

State & Local Efforts on Smart Growth & Climate

- California
 - » SACOG and MTC regional transportation plans
 - Placer vineyards analysis: project too small!
 - » CARB and CEC working out how to regulate and incent
 - » Atty General: lawsuits and letters
 - » SB 375: incentives for smart growth planning
 - » Leverage \$40 billion in infrastructure bonds
- MA: Large projects must report and mitigate CO2
- PlaNYC: Congestion pricing + transit + land use
- King County, WA: asking what reductions are needed

National Climate Policy

- Use allowance auction revenues to support transit, smart growth, capacity building
 - » Lieberman-Warner: ≈\$1 billion per year for transit
 - » Important to include \$ for smart growth, bike/walk
 - » State, regional, local capacity building on smart growth planning: data, tools, scenario analyses
- Opportunity to set the stage for climate-friendly transportation bill

Green-TEA

A Legacy for the Planet?

- Business as usual policy will increase VMT
 - » Funding formulas *reward* VMT, fuel use, lane miles
- **Will the next transportation bill make the climate problem better or worse?**
 - » Policy choice: build upon GHG savings from Energy Bill or cancel them out?
- Federal government must be accountable for how the next \$250-300 billion is spent
 - » Nested responsibilities: Federal, state, regional, local
- Contribute to national GHG reduction targets
 - » E.g., 30 by 30: 30% below 1990 levels by 2030

Green-TEA

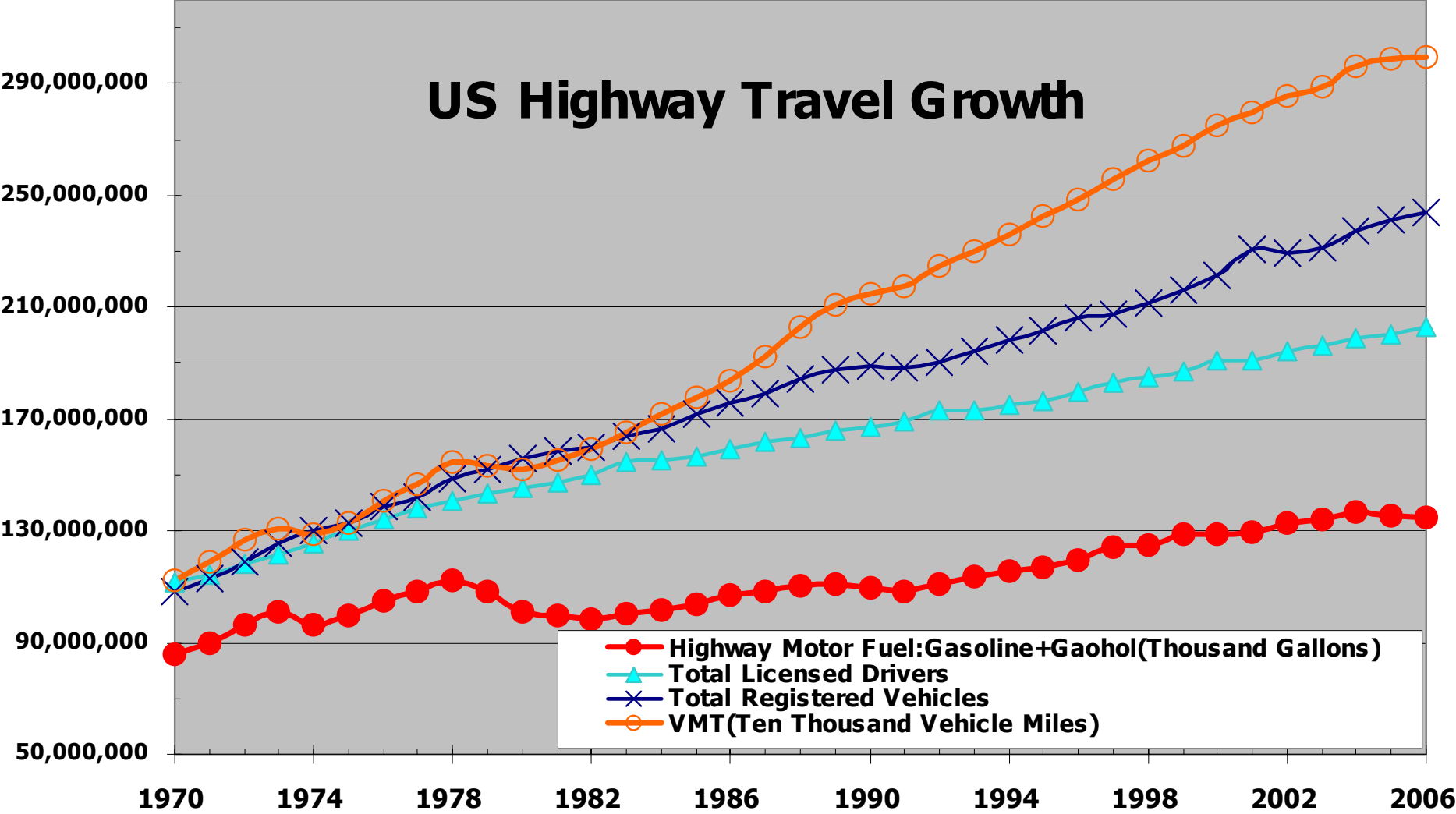
Key Principles

- **Tie funding to GHG performance**
 - » Rework apportionment formulae to reward GHG savings and increase transportation choices for all communities.
 - » Same match, requirements for transit and road
- **Increased planning support, state/local capacity bldg**
- **Set State and/or MPO VMT/GHG Targets**
 - » Consistent, in aggregate, with national GHG goals
 - » Reflect existing conditions and growth projections
 - » CCAP technical/policy workshop in April
- **Require alternative transportation and land use scenario analyses for transportation programs and long range plans**

By how much can Smart Growth slow VMT growth?

- ***Growing Cooler: The Evidence on Urban Development and Climate Change (ULI)***
(Ewing, Bartholomew, Winkelman, Walters, Chen)
 - » 4% national VMT reduction by 2030 (from trend)
 - » \$260 billion fuel cost savings through 2030
 - » 80 MMTCO₂ savings: 50% of 35 MPG CAFE
 - » Just from land use -- excludes pricing, other policies
- **Cowart/NRDC: -23% VMT by 2030**
 - » Pay-as-you-drive insurance, smart growth, transit, parking measures, TDM, bike/walk
- **AASHTO goal: -117% by 2055**
 - » 4.5 trillion instead of 8 trillion VMT in 2055 (from 3T now)

US Highway Travel Growth



Prepared by the Office of Highway Policy Information, FHWA, US DOT
Data Sources: TVT, TMAS, HPMS, and HS from OHPI/FHWA