



Cost-Effective GHG Reductions through Smart Growth and Improved Transportation Choices

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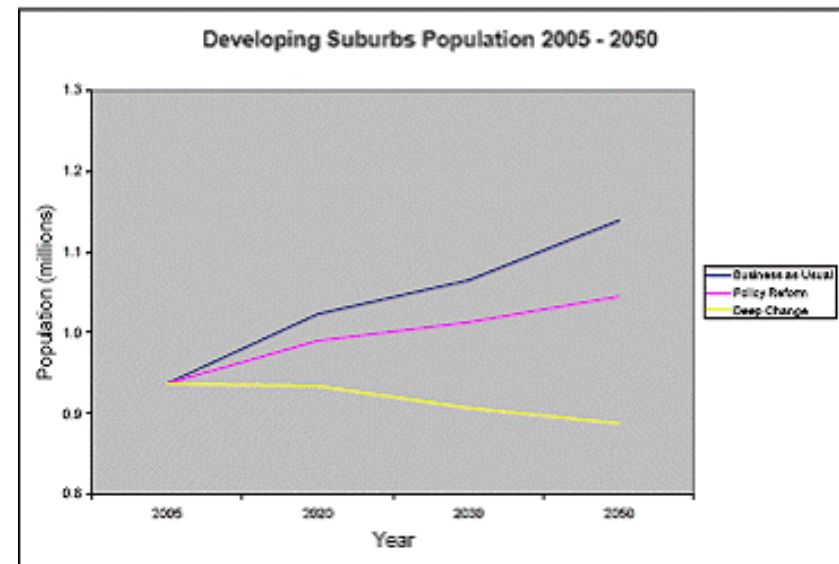
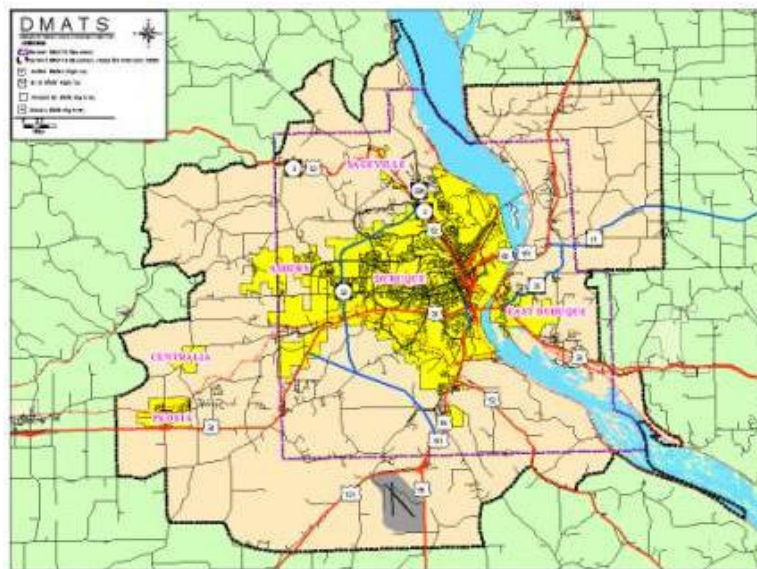
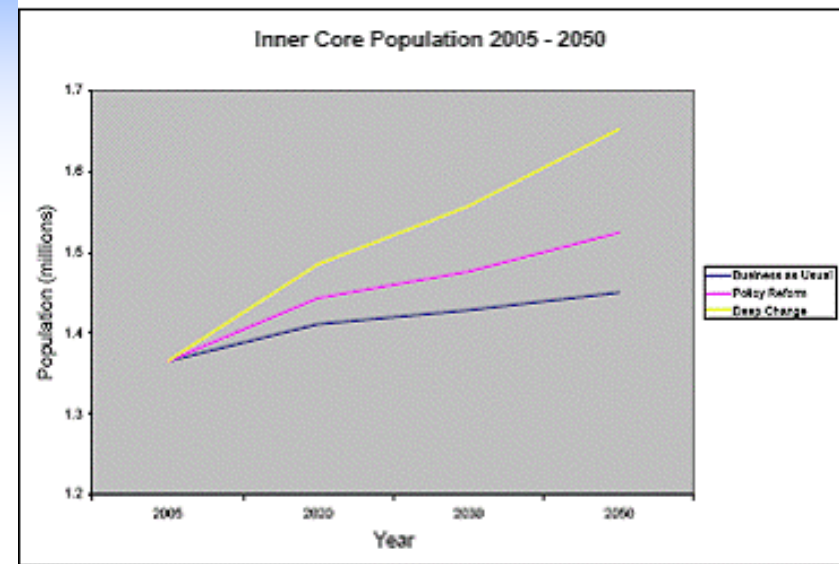
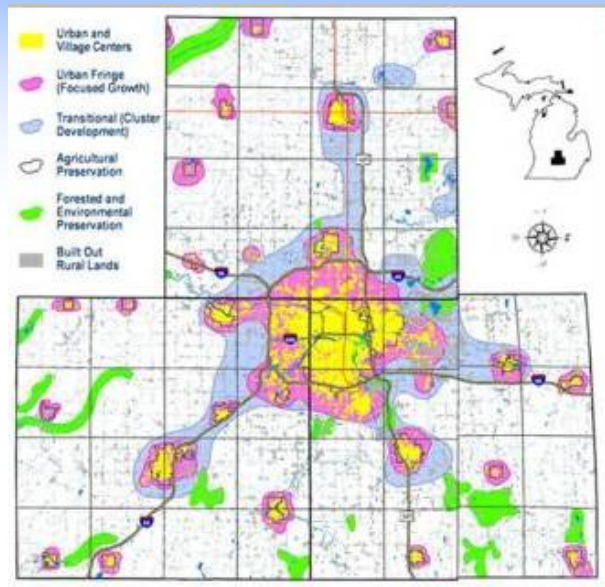
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What does CCAP do?

- Non-partisan, objective guidance for crafting and implementing climate policy
- Stakeholder dialogues: International, United States, VMT & Climate Policy
- Urban Leaders Adaptation Initiative
- Research: Economic Benefits of Smart Growth
- International Climate Policy and Transportation

Smart Growth is Informed Growth



American planning is local planning.



An aerial, black and white photograph of a sprawling suburban residential area. The image shows a dense grid of streets and numerous houses, illustrating the concept of urban sprawl. The text is overlaid in the center of the image.

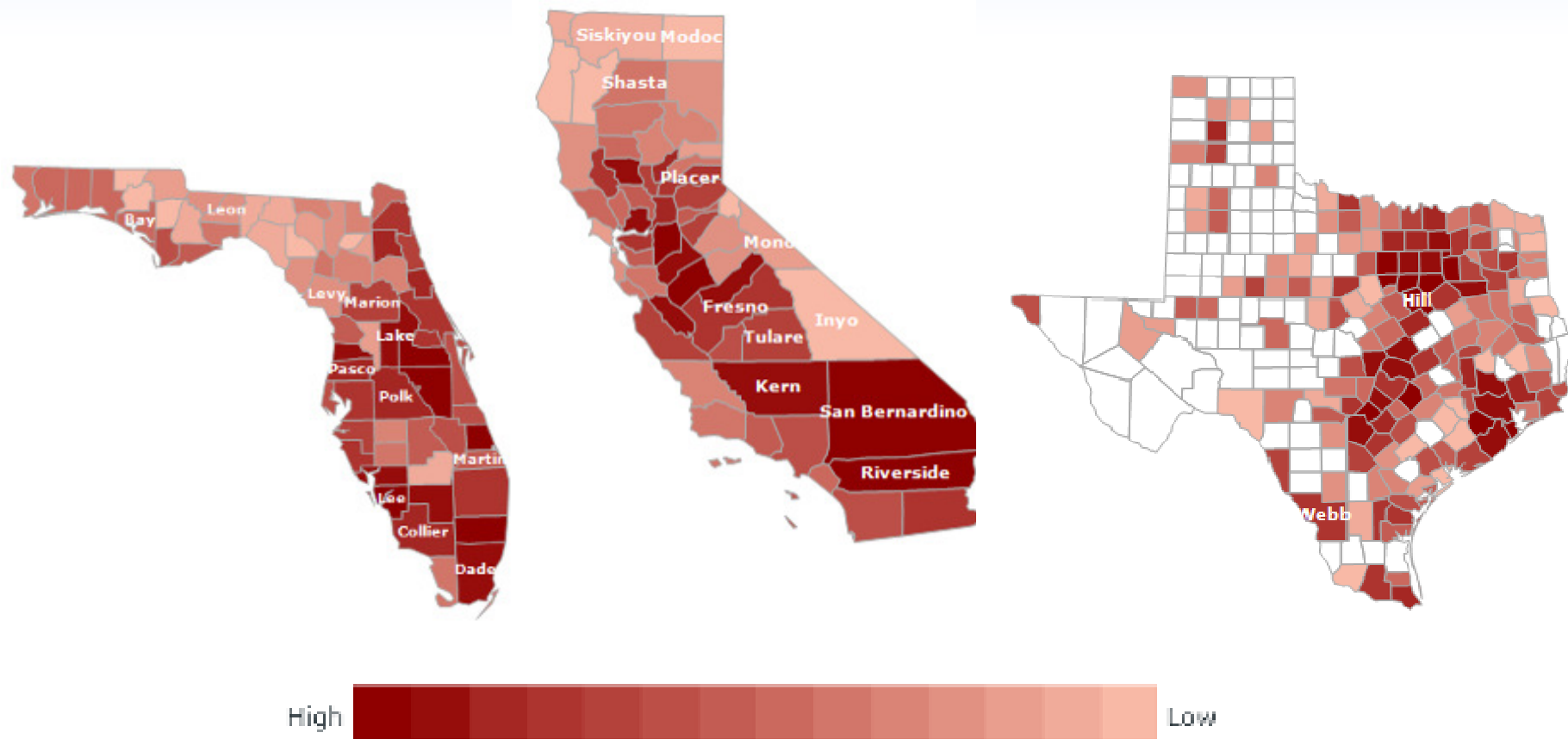
**Sprawl has costs,
and the bill is coming due.**

An aerial photograph of a suburban residential development. The image shows a grid of streets with houses on either side. In the center, there is a large, open, undeveloped lot. The overall layout is typical of low-density suburban sprawl.

The Costs of Sprawl

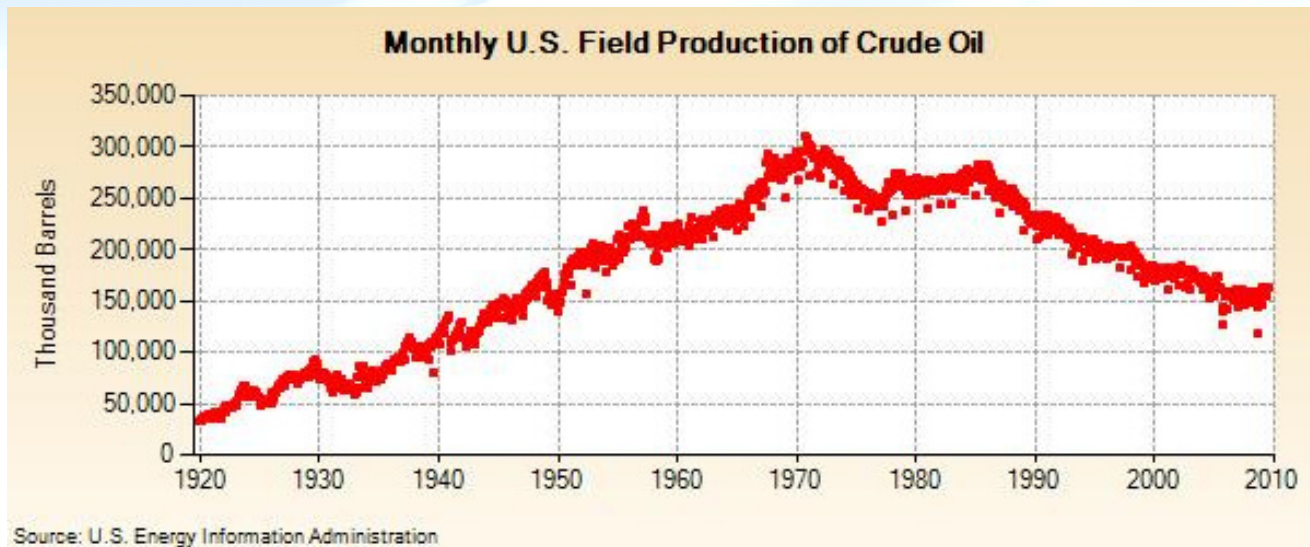
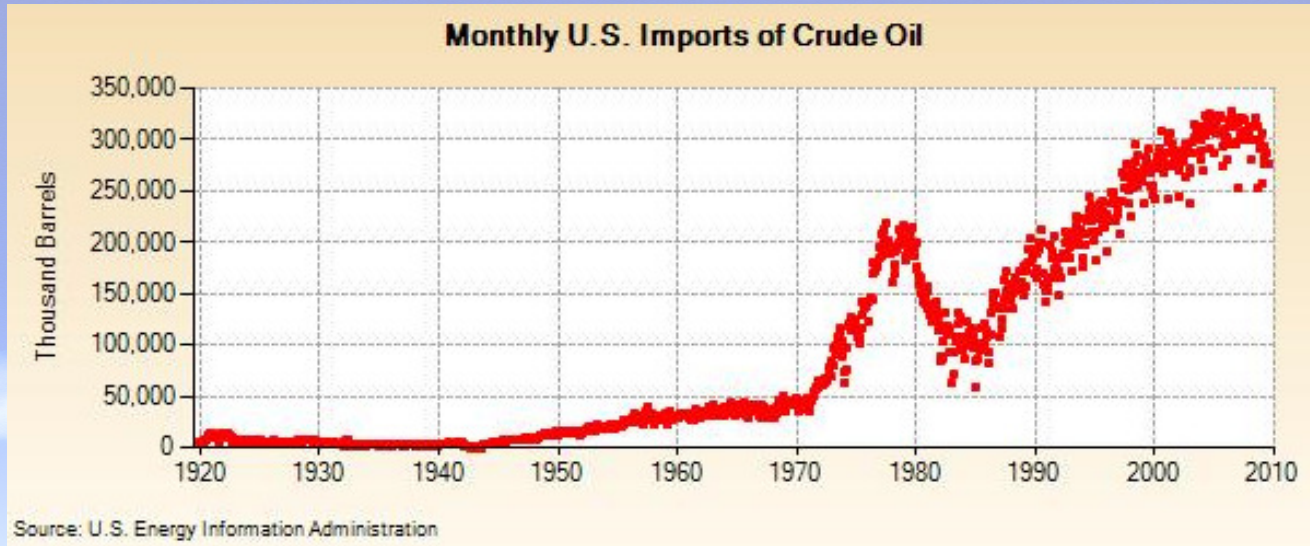
In 2002, a National Academy of Sciences study concluded that low density suburban development cost \$11,000 per residence more in urban service costs than compact development.

Smart Growth = Low Foreclosure Rates?

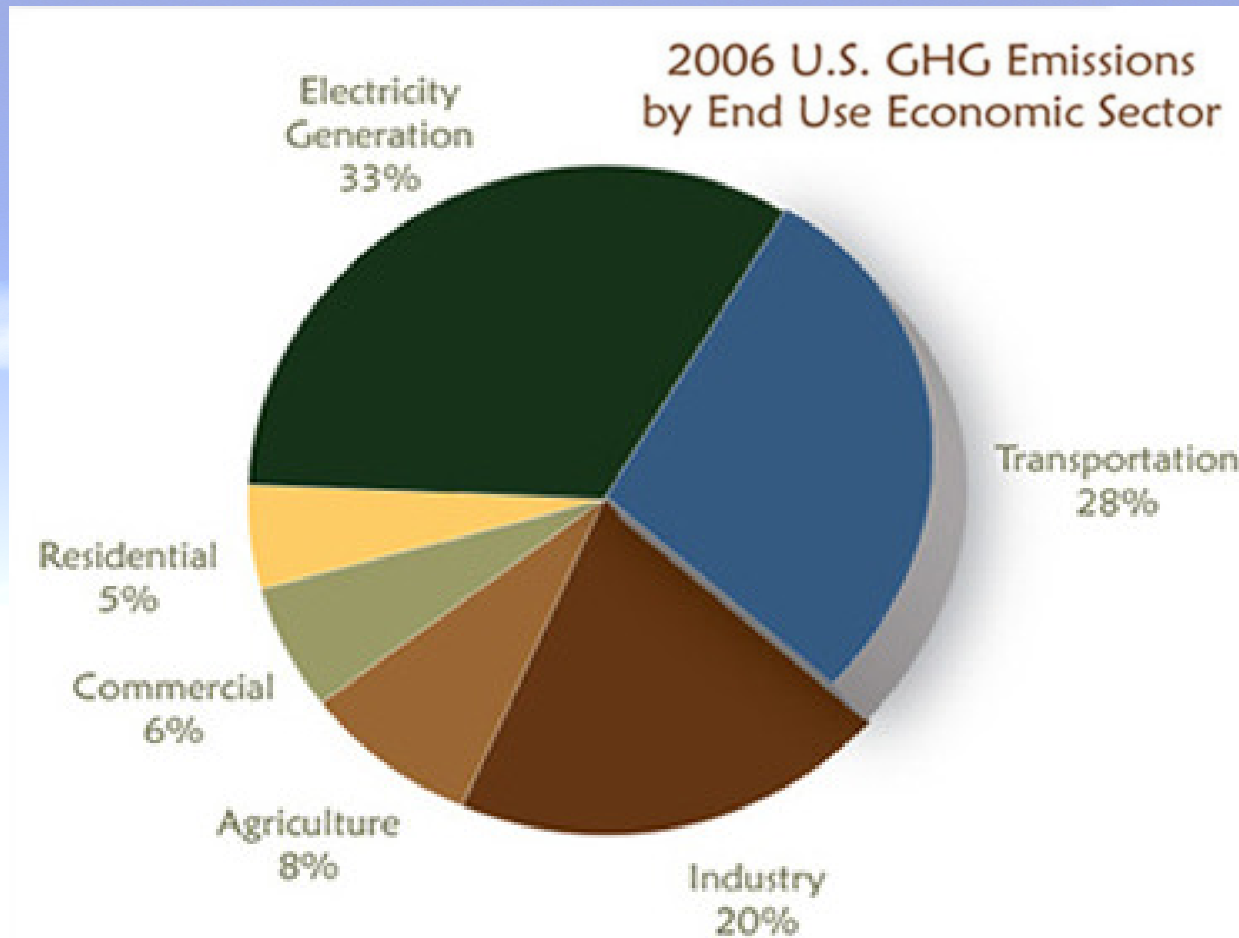


Foreclosure Maps from RealtyTrac.com

Transportation and Energy Security



GHG and Vehicle Miles Traveled (VMT)



Transportation produces almost 1/3 of US greenhouse gases.

*Transportation
GHG*

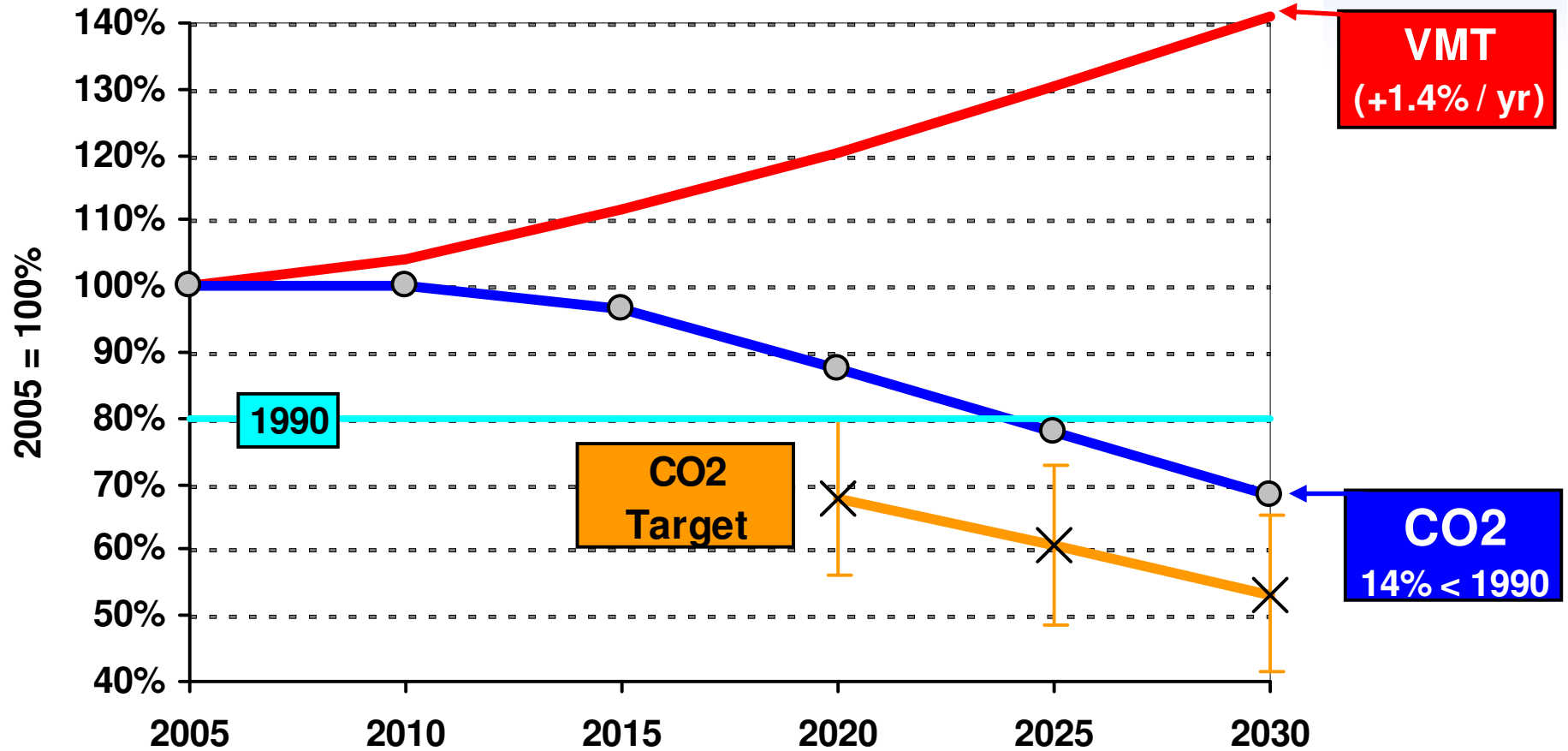
Vehicles

Fuels

VMT

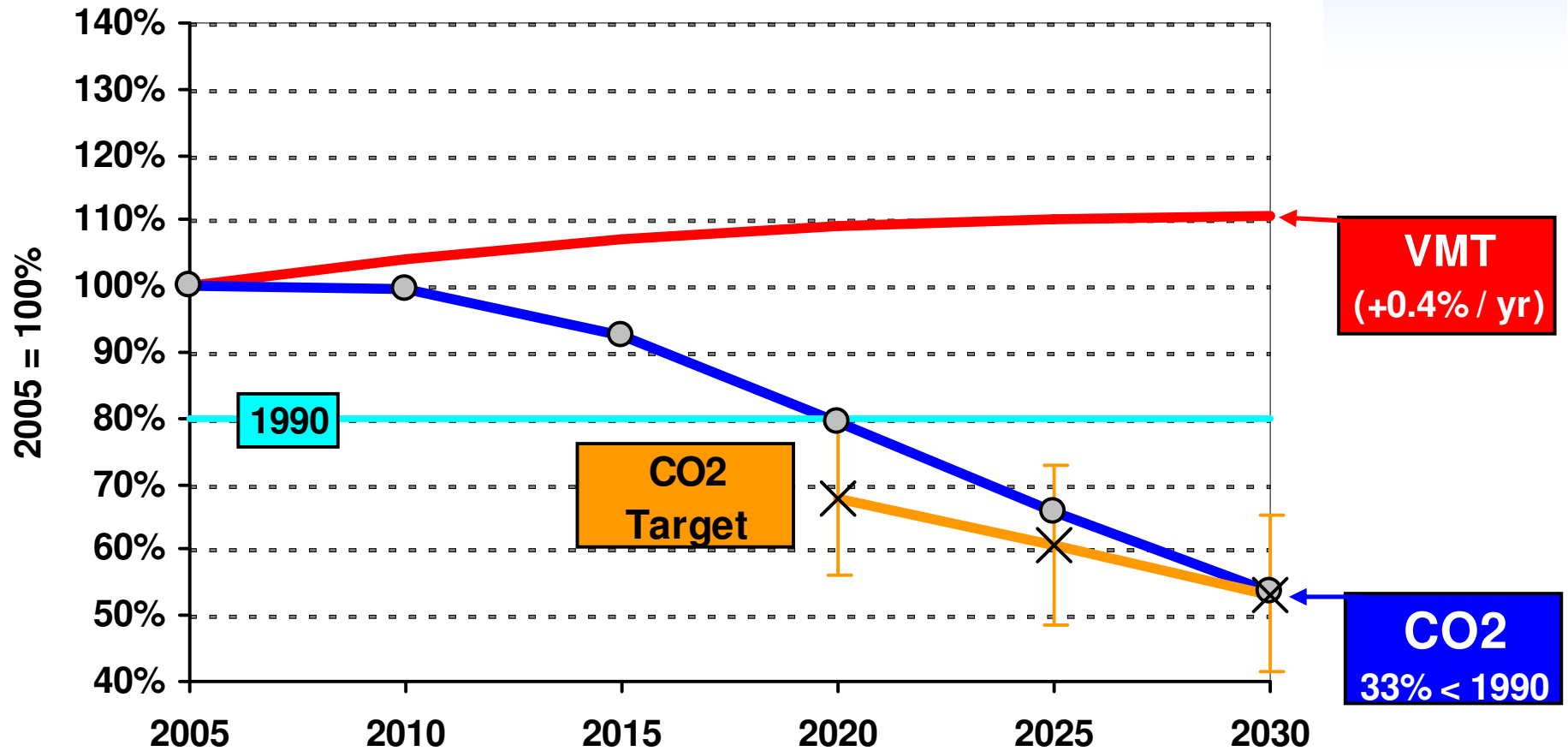


*if VMT increases 15% per capita
 (=1.4%/yr, w/ 55 mpg CAFE & -15% GHG)*



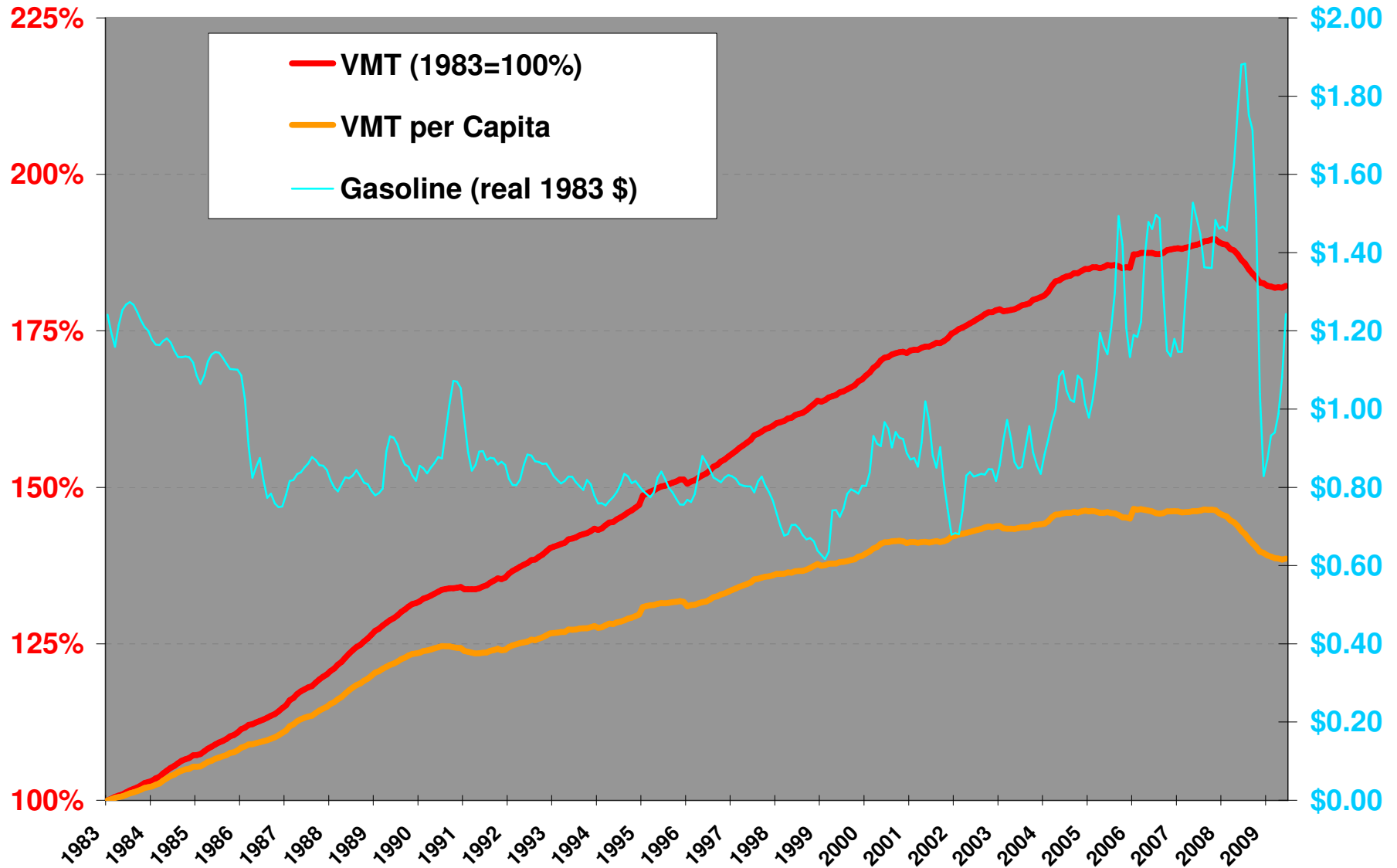
S. Winkelman, CCAP. 2030: 55 mpg CAFE & -15% Fuel GHG.

if VMT declines 10% per capita
 (= 0.4%/yr, w/ 55 mpg CAFE & -15% GHG)



S. Winkelman, CCAP. 2030: 55 mpg CAFE & -15% Fuel GHG.

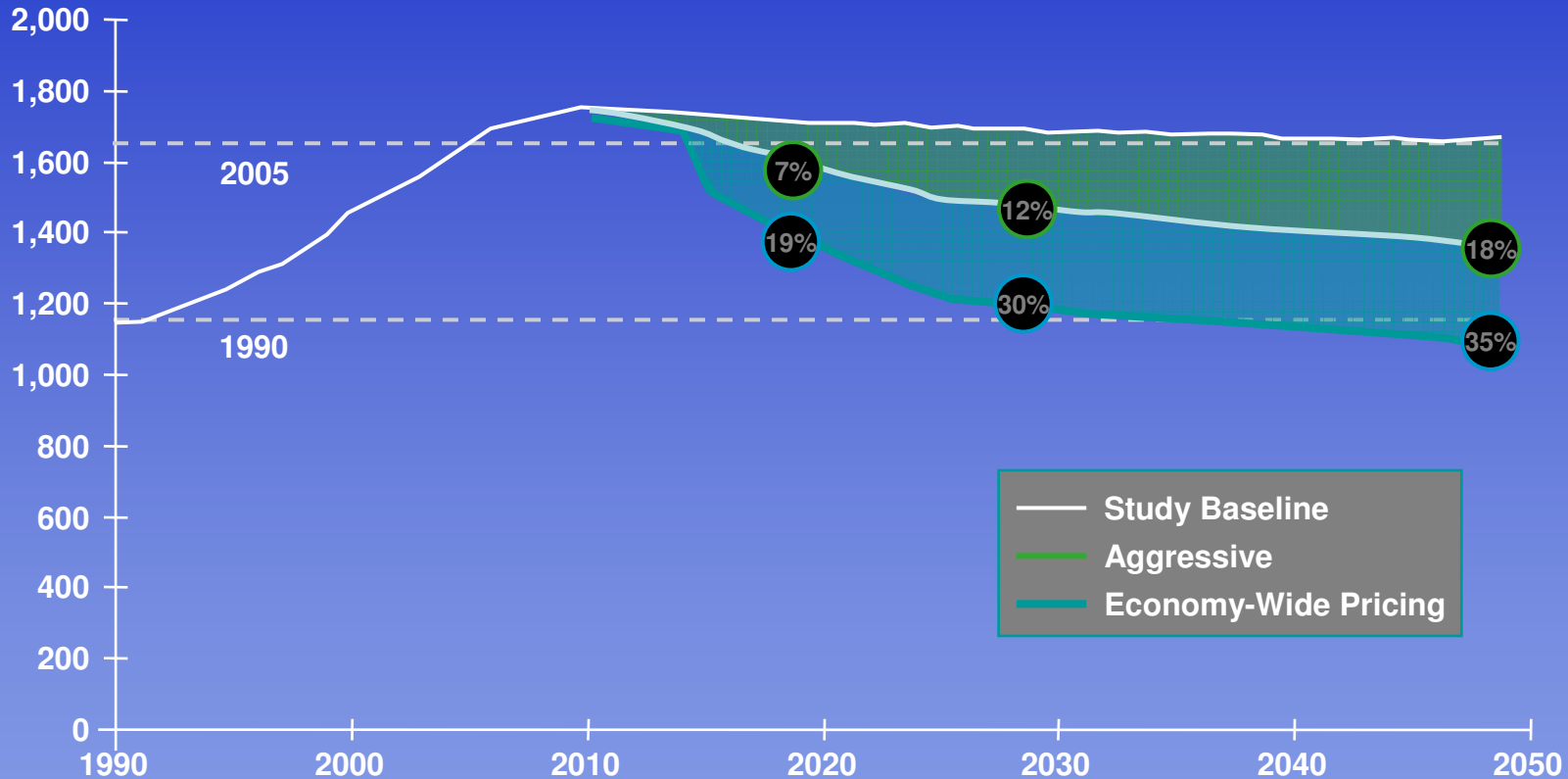
VMT & Gasoline Prices: 1983 - 2009



Economy-Wide Price Signals

Total Surface Transportation Sector GHG Emissions (MMT)

Moving Cooler



1990 & 2005 GHG Emissions – Combination of DOE AEO data and EPA GHG Inventory data

Study Baseline – Annual 1.4% VMT growth combined with 1.9% growth in fuel economy

Aggressive Scenario – GHG emissions from bundle deployed at aggressive level without economy wide pricing measures

Short-term Measures

OECD/IEA “Saving Oil in a Hurry”

- Quickly cut oil use by 14% at less than \$3 per of ton CO₂, via:
 - Car-pooling
 - Telecommuting
 - Compressed work week
 - Eco-driving
- Enforcing 55 mph highway speed limits:
 - Additional 2.4% savings
 - \$39/ton CO₂

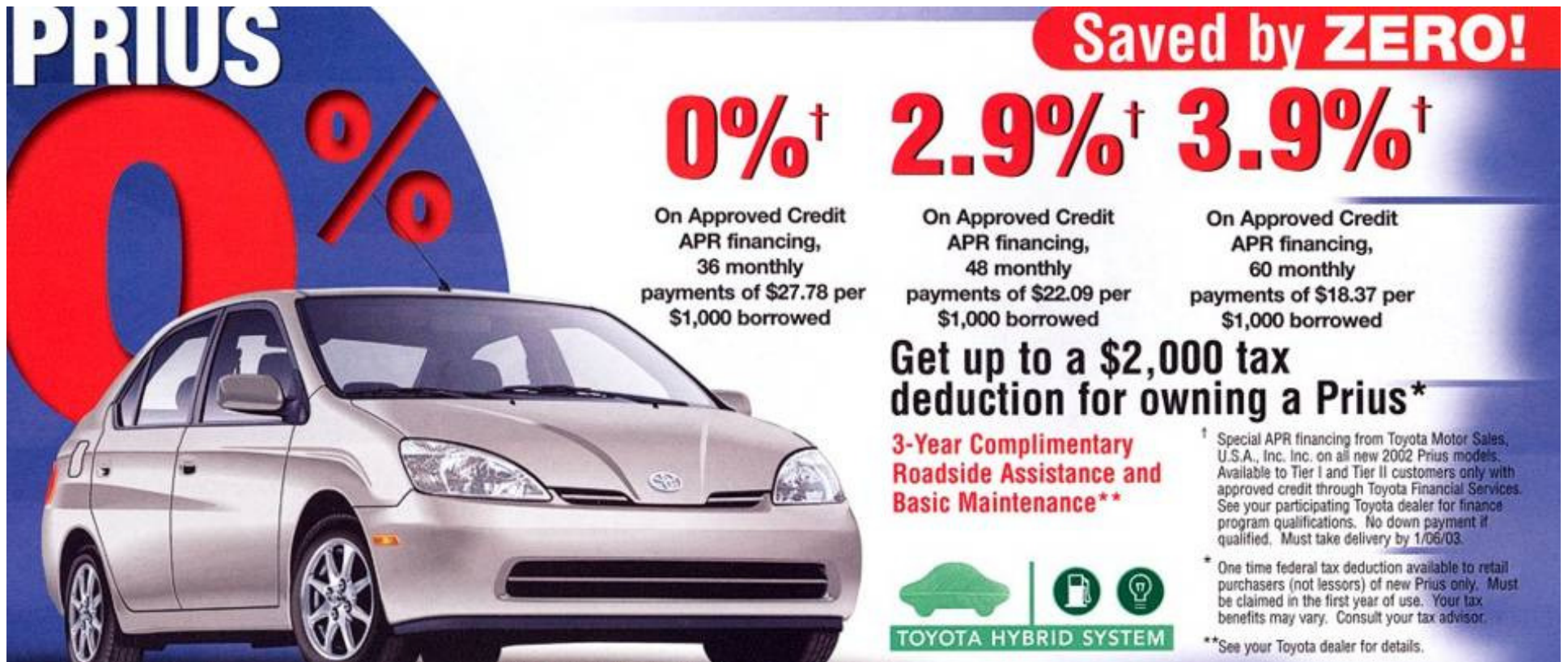
Pricing Example: Mileage Based Insurance

Brookings Studies:

- Changing all car insurance policies to “pay as you drive” (PAYD) can save the US \$50-60 billion/year.
- Universal PAYD system in California would:
 - Reduce VMT by 8%
 - Reduce annual fuel use by 1.2 billion gallons
 - 2/3 of households in California would have lower premiums,
saving an average of **\$276 per vehicle per year**

What Next?

Correcting the market failure of years of externalized energy costs will not be free.



PRIUS

0%

0%†

On Approved Credit
APR financing,
36 monthly
payments of \$27.78 per
\$1,000 borrowed

2.9%†

On Approved Credit
APR financing,
48 monthly
payments of \$22.09 per
\$1,000 borrowed

3.9%†

On Approved Credit
APR financing,
60 monthly
payments of \$18.37 per
\$1,000 borrowed

Get up to a \$2,000 tax deduction for owning a Prius*

3-Year Complimentary Roadside Assistance and Basic Maintenance**

TOYOTA HYBRID SYSTEM

† Special APR financing from Toyota Motor Sales, U.S.A., Inc. on all new 2002 Prius models. Available to Tier I and Tier II customers only with approved credit through Toyota Financial Services. See your participating Toyota dealer for finance program qualifications. No down payment if qualified. Must take delivery by 1/06/03.

* One time federal tax deduction available to retail purchasers (not lessors) of new Prius only. Must be claimed in the first year of use. Your tax benefits may vary. Consult your tax advisor.

** See your Toyota dealer for details.

Smart Growth is not risky or expensive.
It's just effective.



Best Practices can cut VMT per capita by 10%.

- Portland region: -9% VMT/capita (1990-2007)
 - Pop +14%, grew as economic center.
- Arlington, VA: -25% VMT/capita (1980-2005)
 - 60% lower VMT than regional avg – household \$ savings
- Atlantic Station: -50% VMT/capita
- NYC: -1% traffic pop +2%, jobs +6% (2002-7)
 - transit +8%, bike +70%
- Sidewalks can be as sexy as hybrid cars
 - Efficient communities can absorb growth

Economic Benefits of Smart Growth detailed in *Growing Wealthier*

- Smart growth, done well, can:
 - Meet market demand for walkable areas
 - Protect housing values in a downturn
 - Reduce net infrastructure costs
 - Increase walking and biking
 - Reduce overall household costs
 - Leverage private investments in communities
 - Reduce energy and water consumption
 - Improve U.S. energy security
 - Improve quality of life

It's the Economy...

Because the co-benefits are additive, smart growth and travel efficiency can reduce CO2 at a net cost **savings**.
(CCAP 2009)

Local Example: Atlantic Station

- 138 acre brownfield redevelopment project in Atlanta, compact and transit-oriented
- Average daily VMT 50-60% lower than regional average
 - Based on initial measurements
 - EPA had projected 38% VMT reduction
- 0.63 MMTCO₂ over 50 years (CCAP projection)
- Loan: \$195 million. Increased tax revenues: \$30 million/yr
 - Additional consumer savings of 73 million gallons of gasoline
- Will likely result in **zero cost** or a **net savings** per ton CO₂ due to future revenue and savings.



Regional Example: Sacramento

- SACOG spent \$4 million on Blueprint Plan determining the public's regional vision
- The adopted smart growth scenario is projected to:
 - Save 7.2 MMTCO₂ through 2050
 - Infrastructure savings: -\$9.4 billion
 - Increased transit operating costs: +\$121 million/year
 - Consumer fuel savings: -\$380 million/year
- CCAP calculates NPV: \$1.4 billion
- **Net savings of \$198/ton**



State Example: Georgia

- McKinsey and Company study:
Investments in transit, HOV/HOT, demand management, and the freight system could yield net economic benefits.
- Economic benefits: **\$400 billion** over 30 years
 - 320,000 jobs over 20 years
- VMT savings of **7% per capita** 2010-30
- CCAP calculates cumulative transportation GHG savings of 18 MMTCO₂.
 - Economic benefit equal to **\$22,000 per ton CO₂**



Helping Attract Private Investment

Street Cars & Economic Development

- Portland: \$103 million direct public investment, helped attract \$3.5 billion in private investments within two blocks
- Little Rock: \$20 million attracted \$200 million
- Tampa: \$60 million attracted \$1 billion

Source: Center for Transit Oriented Development, *Street Smart*



CCAP Recommends...





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Communities can **Do. Measure. Learn.**

Do: Implement directionally correct measures

- Smart growth, transit, ITS, TDM, NMT...

Measure: See what happens

- VMT, fuel sales, traffic flow

Learn: Where and why did it happen?

- Apply lessons to ongoing policy refinement

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