



The Changing Federal Appetite for Action on Climate Change

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Changing Land Use to Mitigate Climate
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US EPA and Smart Growth

- The EPA's mission is to protect the environment and human health.
- How and where we build have direct and indirect effects on the natural environment and public health.
- Not all development affects the environment or human health the same way.
- The EPA's Smart Growth Program conducts research and policy development, outreach and education, and technical assistance on these issues.





Three Ages of Environmentalism



- Preserving America's wilderness: Creating the National Park System. [Early 1900s]
- Protection from polluters: Addressing the environment as a public health crisis. [Mid-1900s]
- Livability: Linking the environment with economic prosperity and quality of life. [Late 1900s to the present]





A Fourth Age of Environmentalism?



- Green Building
- Energy Efficiency
- *Sustainability*





Five Big Forces Affecting Land Use

1. Population Growth
2. Aging Population
3. International Economy: Current Conditions, Housing Collapse, and Resource Competition
4. Rising Energy Costs
5. Climate Change





More People, More Buildings

- U.S. Census estimates that U.S. population will grow by 50 million people by 2020 – and will exceed 400 million by 2050.
- By 2030, the U.S. will build half as much again as the nation has built to date.
- How and where this development takes place will profoundly affect the environment, especially as global competition increases for water, oil, forest products, farmland, etc.





Droughts



Simon Norfolk/NB Pictures, for The New York Times

If climate changes as expected:

- There is a 50 percent chance Lake Mead will be dry by 2021
- There is a 50 percent chance that reservoir levels will drop too low to allow hydroelectric power generation at Hoover Dam by 2017





Fires



Photo by John McColgan



Melting Ice

“About 150 glaciers existed when the park was established in 1910. Today ... a warming climate has reduced the number of moving glaciers to fewer than 30... The last one will probably disappear by the year 2030.”

-- *National Geographic*, September 2007



Glacier National Park

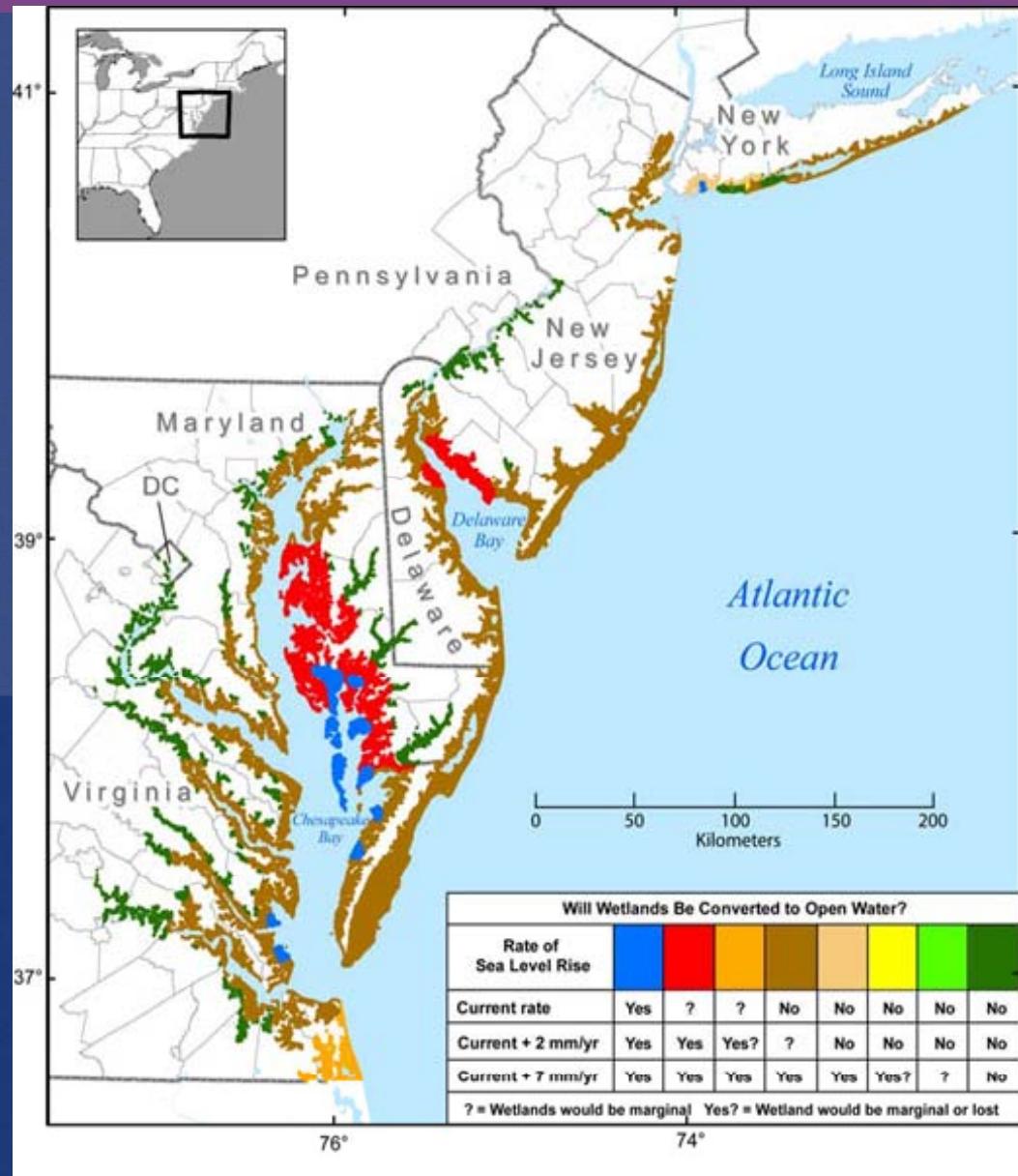




Floods



Sea Level Rise



Source: EPA Chesapeake Bay Program





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United States
Geological Survey
projection on
rising sea levels at
current sea level
change rates.

→0.3 meters/year

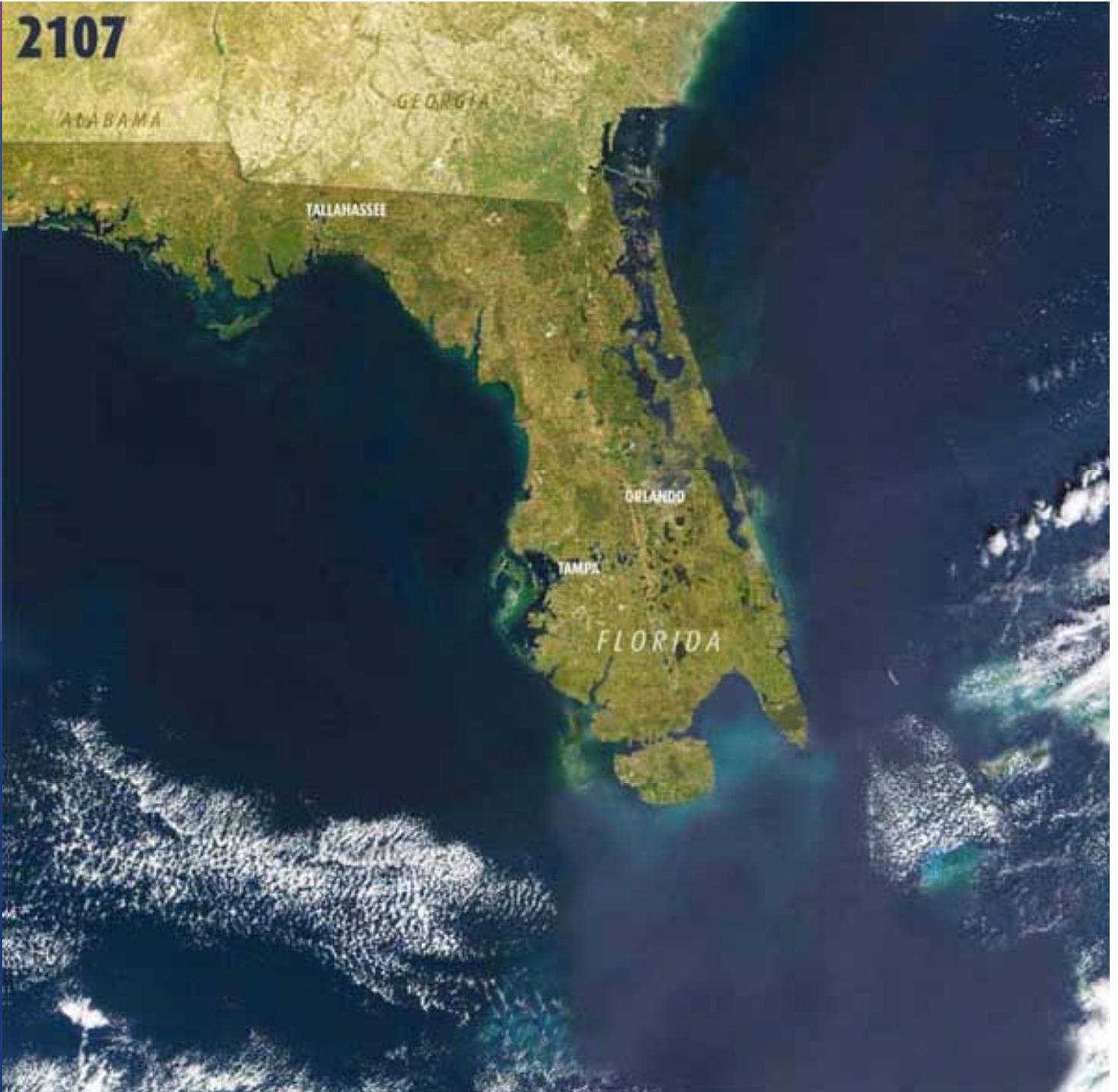
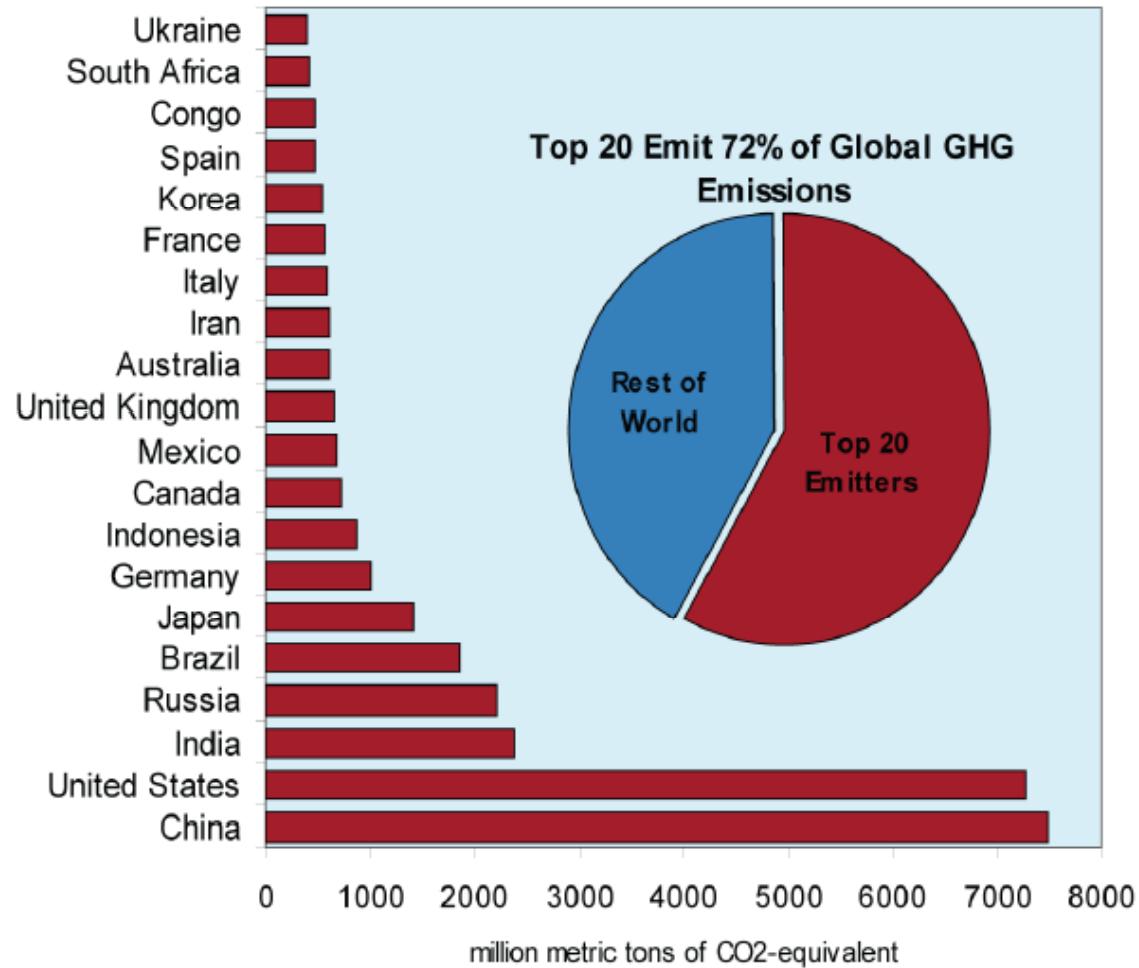


Figure 2. Estimated Top 20 Emitters of Greenhouse Gases in 2005



Source: CRS graphic with emission estimates from International Energy Agency, op. cit.; data extracted May 5, 2008.

Source: *Climate Change: Current Issues and Policy Tools*, Congressional Research Service, March 6, 2009



down the prices of these items. You get one of today's greatest bargains

ETHYL CORPORATION New York 17, N. Y.

Colliers Magazine, 1955

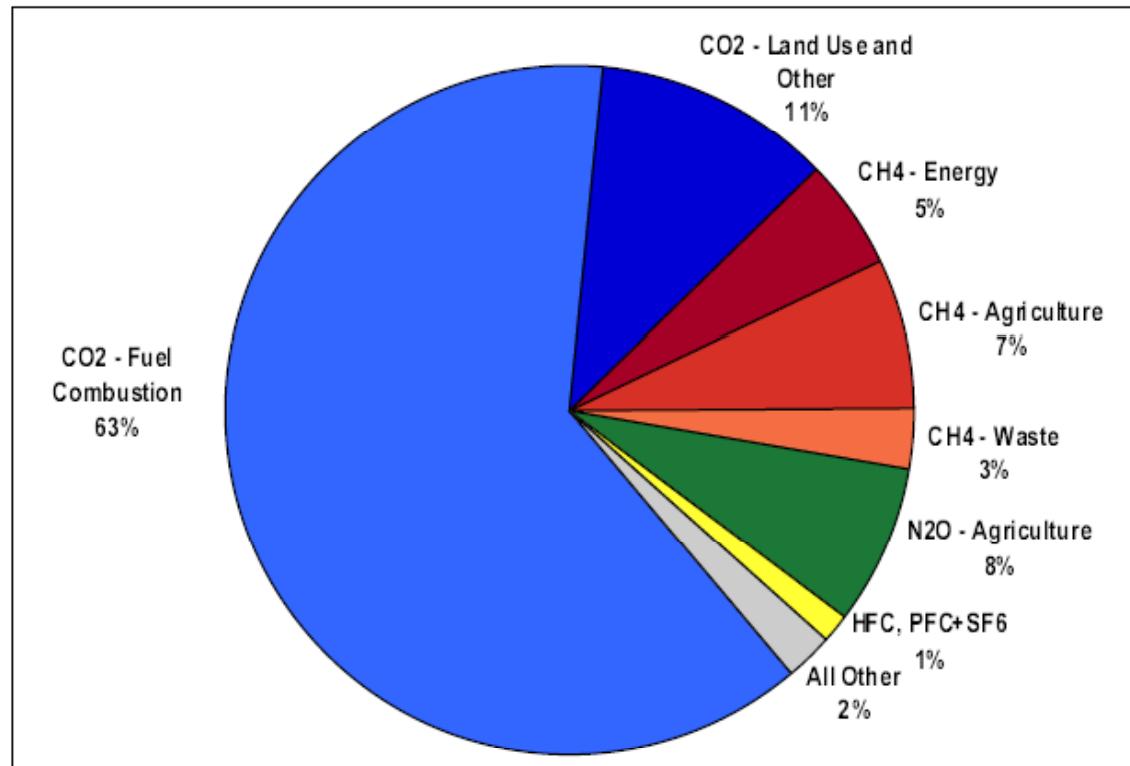


Photos courtesy of Dover, Kohl & Partners

BY THE SEA: Seaside towns have a special lure for travelers. The picturesque sight



Figure 1. Estimated Sectoral and Greenhouse Gas Shares of Global Emissions in 2005



Source: CRS graphic with estimates from International Energy Agency, CO₂ Emissions from Fuel Combustion 1971-2005, 2007, online database. Data extracted January 16, 2008.

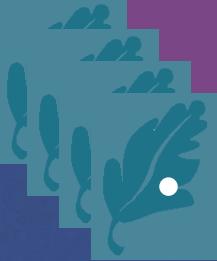
Source: *Climate Change: Current Issues and Policy Tools*,
Congressional Research Service, March 6, 2009





Smart Growth = Balance

- For half a century, the development playing field has been:
 - Tilted away from city centers toward urban fringe
- Thesis Behind Smart Growth
 - If we can shift toward a more balanced development pattern, it will have tremendous environmental and economic benefits.



Federal Timeline on Climate Change

- 1997 – Kyoto Protocol created, but U.S. never ratifies it.
- 2003 – Ten states, wanting to regulate GHG themselves, sue the federal government for the authority.
- 2005-06 – Public sentiment shifts following Hurricane Katrina, “An Inconvenient Truth,” and U.S. Mayor’s Climate Protection Agreement.
- 2007 – U.S. Supreme Court rules that Bush Administration must consider regulating GHG from motor vehicles as pollutants under Clean Air Act.
- April 2008 - President Bush announces new national goal: Halt increases in U.S. GHG emissions by 2025, and EPA issues notice of potential GHG rulemaking.





States Address Climate Change

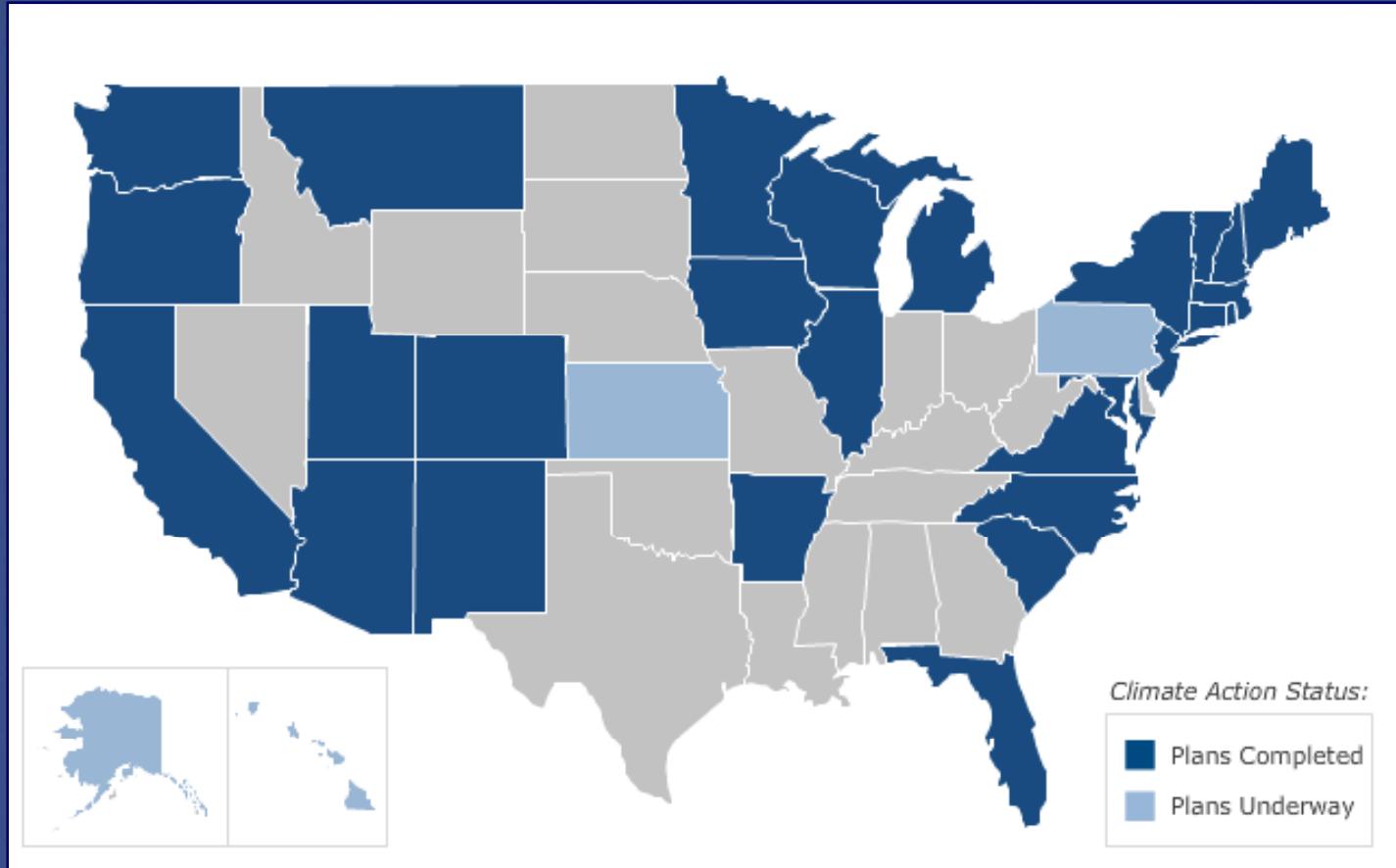
Unwilling to await federal action, many states and localities have initiated their own climate change plans:

- States: Arizona, California, Colorado, Maine, Maryland, Montana, New Mexico, Utah, others;
- Cities and counties: New York City, Seattle, King County, Wash., others;
- Regional state associations: West, Northeast, Midwest.



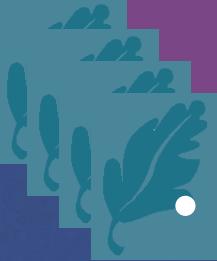


States with Climate Action Plans Completed or Underway



Source: Center for Climate Strategies





Federal Timeline on Climate Change

- 2008 – Congress enacts legislation directing EPA to develop a mandatory GHG reporting program.



January 2009 – Barack Obama inaugurated President.

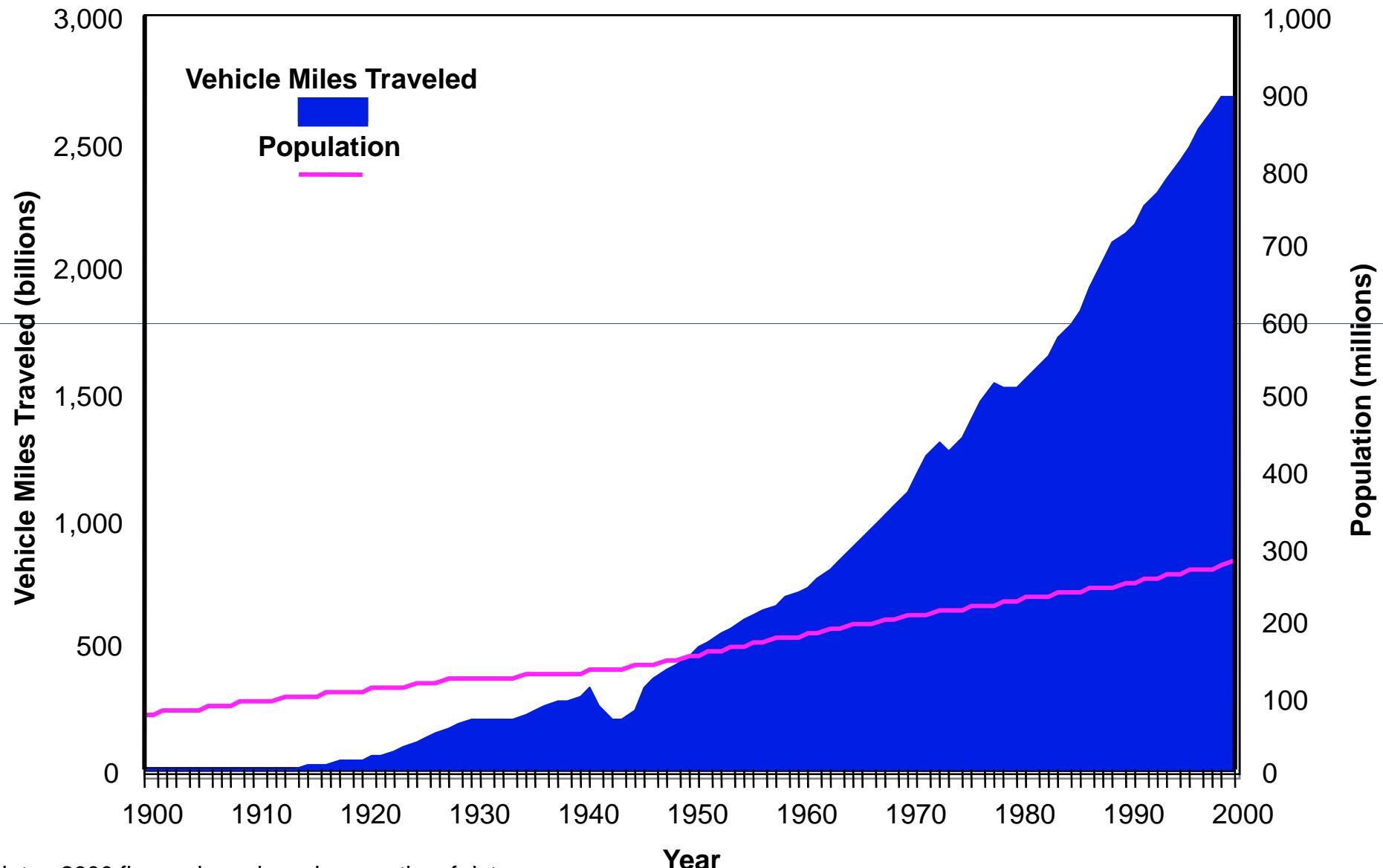
April 2009 – EPA Administrator Lisa Jackson declares carbon dioxide and other GHGs pose a danger to the public's health and welfare.

April 2009 – First hearings on Waxman-Markey GHG cap-and-trade legislation.





Trends in Vehicle Miles Traveled



Note: 2000 figures based on nine months of data
Source: Dana Beach, Pew Oceans Commission



Transportation GHGs: Three Legs of a Stool

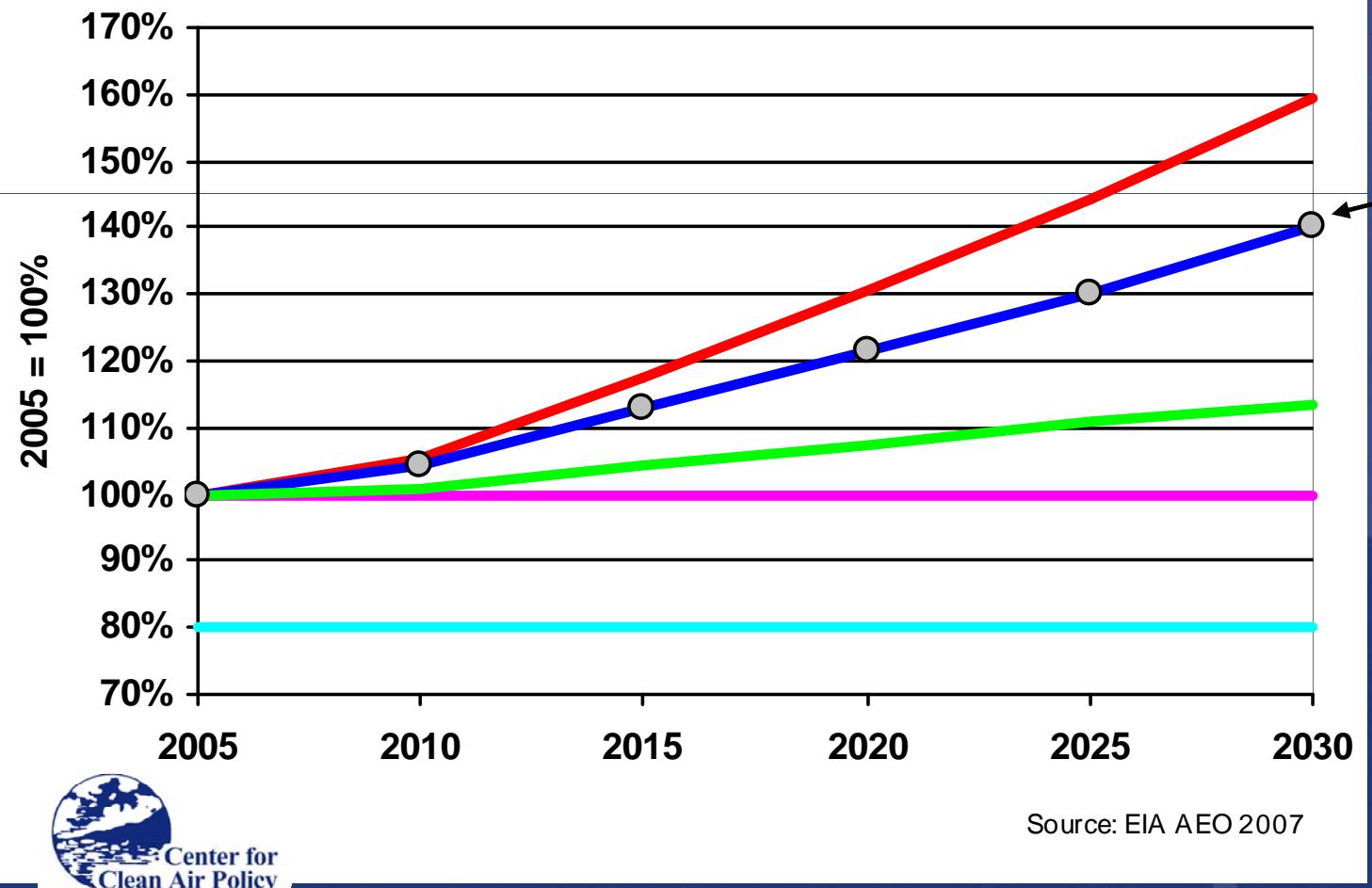
Vehicle Miles
Traveled
(VMT)

Fuel Greenhouse
Gas content
(Fuel GHG)

Vehicle Efficiency
(mpg)

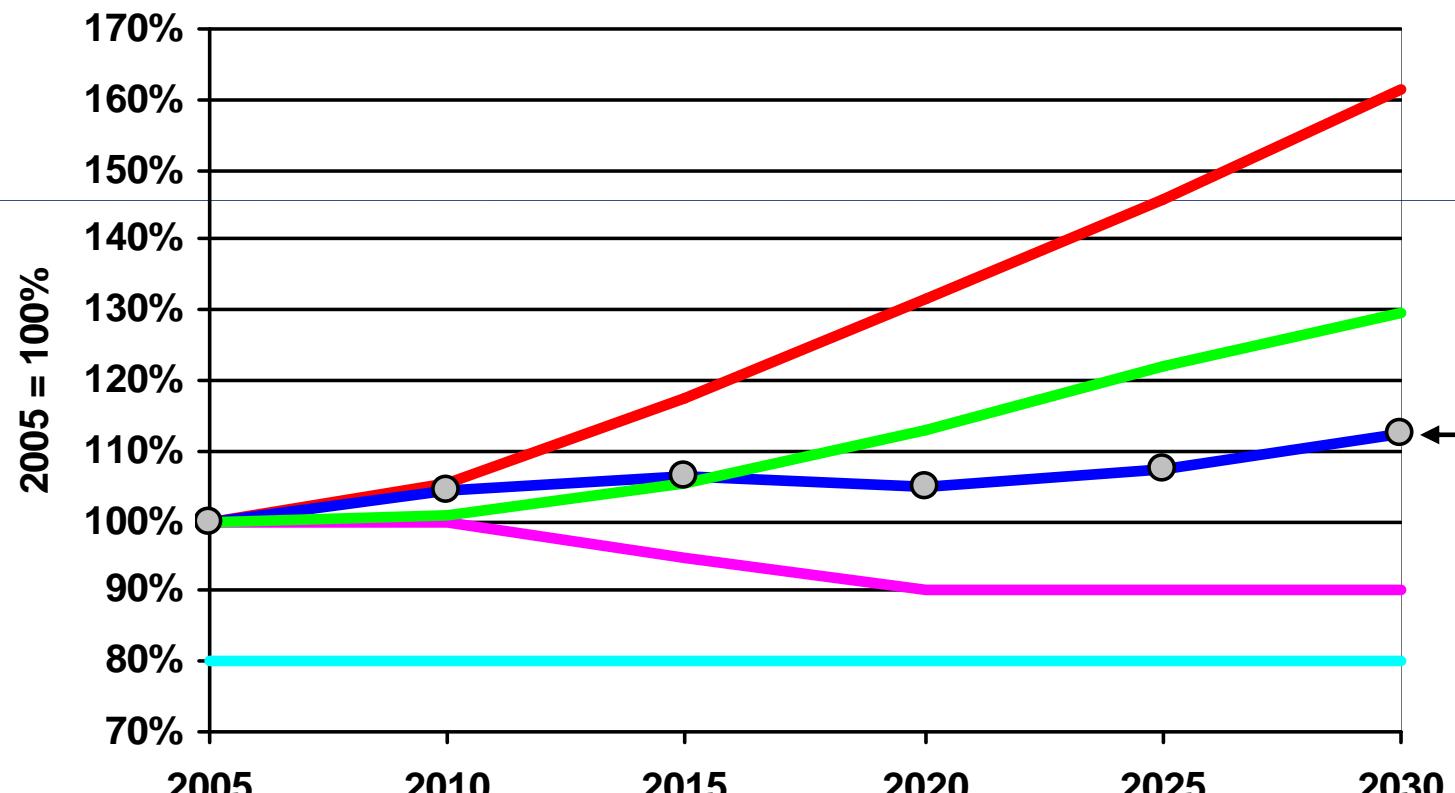


U.S. VMT Growth Projected to Outpace Vehicle & Fuel Improvements



CAFE (35 mpg) + Low Carbon Fuel Standards (-10%)

Still 30% Above 1990 Levels in 2030



Sources: VMT: EIA with 10%rebound MPG: US Senate, Fuels: CARB





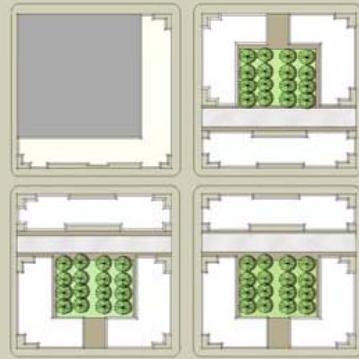
DCED Projects to Help Reduce VMT: *Changing Rules*

- Stormwater permitting project creates incentives for infill that would reduce VMT
- Technical assistance helps identify barriers and leads to new research ideas
- Helping Institute of Transportation Engineers revise street design standards
- Governors Institute for Community Design helps states change development rules
- Revised school siting guidelines



The Importance of Parking Regulations

One Example of Changing the Rules

2.2 Parking Spaces per unit	1.1 Parking Spaces per unit
 A detailed diagram showing a parking layout for 2.2 spaces per unit. It includes a large grey rectangular area representing a building footprint, a central green area with a grid of green circles representing trees, and four smaller rectangular areas representing parking spaces. The parking spaces are arranged in a 2x2 grid, with one space on the left and one on the right of the central green area.	 A detailed diagram showing a parking layout for 1.1 spaces per unit. It includes a large grey rectangular area representing a building footprint, a central green area with a grid of green circles representing trees, and four smaller rectangular areas representing parking spaces. The parking spaces are arranged in a 2x2 grid, with one space on the left and one on the right of the central green area.
 A 3D perspective rendering of a building complex. The buildings are light grey with dark grey roofs. There are several green trees scattered throughout the complex, and a paved area in front of the buildings.	 A 3D perspective rendering of the same building complex as the first image, but with a different layout. The buildings are light grey with dark grey roofs. There are several green trees scattered throughout the complex, and a paved area in front of the buildings.
Total Area: 8 acres	Total Area: 8 acres
Total Units: 801	Total Units: 963

Source – Cervero, Arrington et al (2008) TCRP Report 128, pg. 107





DCED Projects to Help Reduce VMT: *Research and Data*

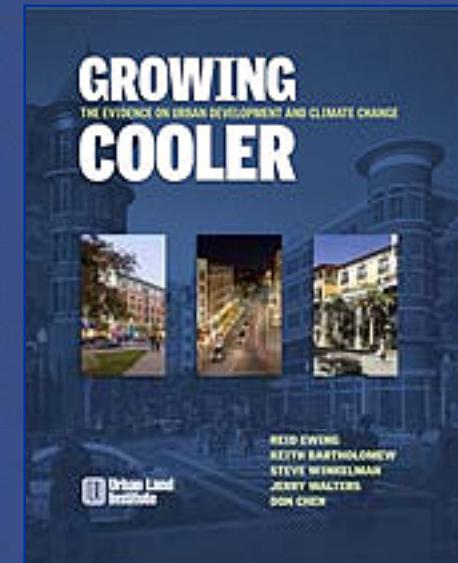
- Research on school travel
- LEED for Neighborhood Development
- Research showing the market benefits to builders of smart growth communities
- *Transportation & Air Quality Impacts of Infill* showed that shifting homes and jobs to infill locations reduced regional emissions
- Revamping Institute of Transportation Engineers' trip generation handbook





Growing Cooler

- EPA funded the research portion of this report to answer:
 - What VMT reduction is possible with compact development?
 - What reduction in CO₂ emissions will accompany such a reduction in VMT?





The Obama Era

“The days where we’re just building sprawl forever? Those days are over. I think that Republicans, Democrats... everybody recognizes that that’s not a smart way to design communities.”

--President Barack Obama

- Established White House Office on Urban Affairs
- Named former EPA Administrator Carol Browner as national climate change adviser.
- Re-energizing the Council on Environmental Quality.





Changes at EPA

Under Administrator Lisa P. Jackson:



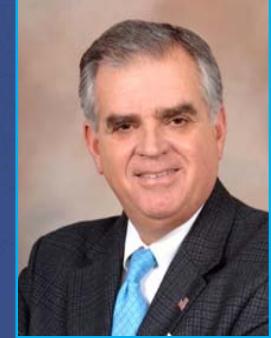
- Renewed emphasis on using science to guide action.
- Renewed emphasis on regulation in accordance with federal law.
- New agency-wide approach to Climate Change issues.

"Environmental protection is not often something that people associate with urban issues. When you say EPA or raise the issue of climate change, people tend to think more about wildlife and wilderness than they do about cities and suburbs. It's essential for our environment and our economy that we begin to change and expand the perception of cities and the environment – right now."



Changes at U.S. Department of Transportation

- Secretary Ray LaHood has launched a DOT “Livability Agenda.”
- DOT is studying climate effects on transportation facilities;
- Obama Administration now backing new high speed rail network.
- And, has named “smart growth” advocates to high DOT posts.



“How a community is designed – including the layout of its roads, transit systems and walkways – has a huge impact on its residents... Integrating transportation planning with community development and expanding transportation options will not only improve connectivity and influence how people choose to travel, but also enable communities to consider the design of transportation and land use together.”

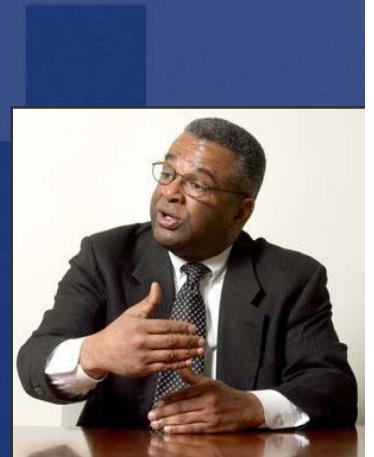




Changes at Housing

- Secretary Shaun Donovan has launched a “Sustainability Agenda.”
- Named Washington state Smart Growth advocate Ron Sims as Deputy.
- Advocating HUD-DOT and HUD-FTA partnerships.
- Seeking DCED assistance in developing criteria for housing policies.

"When you buy a car," Donovan said, "you know very clearly what the energy efficiency of that is because there's a number on the window. It says: Here's the gas mileage. We don't know that for housing."



Coordination with other Federal Agencies

- Federal Emergency Management Agency



- Centers for Disease Control
- National Oceanic and Atmospheric Administration
- Department of Energy





Waxman-Markey Climate Legislation

Goal: about 80% reduction below 2005 levels by 2050

- 1) Clean Energy (renewables, low-carbon fuels, electric vehicles, smart grid/electricity transmission)
- 2) Energy Efficiency (buildings, appliances, transportation, and industry)
- 3) Global Warming (reducing GHG emissions, offsets)
- 4) Transition to Clean Energy Economy (green jobs, climate adaptation)
 - Includes provisions to encourage states/ regional planning organizations to adopt Smart Growth elements such as walking, biking, transit use and updating zoning





Climate Change in Federal Transportation Re-authorization

- Every five years the Federal Highway Trust Fund is “re-authorized.” (current bill expires in FY 2009)
- Basic structure allocates roughly \$30 billion a year.
- Work underway to draft replacement bill.
- Unlike prior years, climate change will be a key consideration.





DCED Climate-Related Projects

Tools to Help Locals Evaluate Options

- Location Efficiency Map.
- Create tool local governments can use to assess total GHG footprint of a proposed development project.
- Cost-Per-Ton – Tool helps locals assess the cost-effectiveness of specific redevelopment projects (puts it in economic, public investment terms).





DCED Climate-Related Projects *Tools to Help Locals Evaluate Options*

- Local technical assistance (Iowa, Louisiana);
- State policy assistance through GICD (Va., Az.);
- New school siting guidelines;
- Demonstrating buyer demand for Smart Growth;
- Research on growing attractiveness of infill (fed by demographics, high gas prices, longer commutes)
- Suggesting infrastructure spending criteria (fix it first, location efficiency, etc.)





What Might Happen at the Federal Level?

- Federal approach likely to be modeled after most successful state efforts (e.g., California)
- Question is how to take state efforts and connect them to a national policy.
- Obama and Congress calling for reducing GHG emissions by more than 80% from 2005 levels by mid-century.
- EPA could now push to regulate GHG under the Clean Air Act. But more public involvement, buy-in by pushing legislation before Congress.





What Might Happen at the Federal Level?

- Whether it is through Clean Air Act or something like the Waxman/Markey cap and trade bill, it now appears likely something will happen, possibly this year.
- Any effort to attack GHGs and Climate Change will have to include multiple approaches.
- Smart Growth is only one wedge in that much larger pie, but an important one.
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 EPA Parking Spaces /
Community Places
Finding the Balance through
Smart Growth Solutions

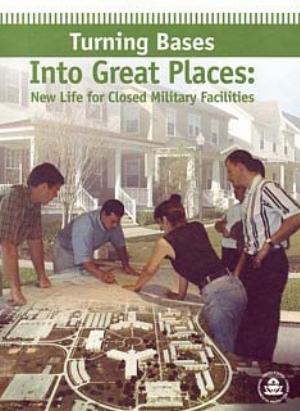


 EPA

Using Smart Growth Techniques as
Stormwater Best
Management Practices

 EPA

United States
Environmental Protection
Agency
Growing Toward More Efficient Water Use:
Linking Development, Infrastructure,
and Drinking Water Policies

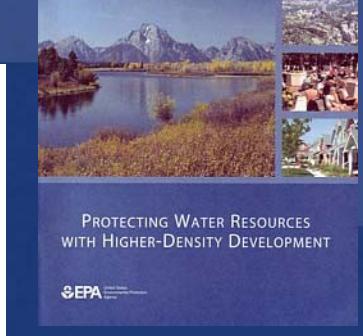
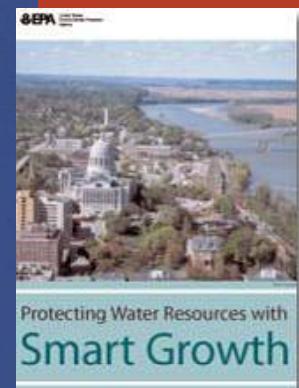


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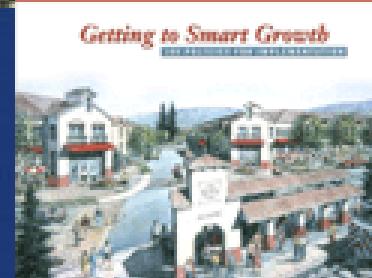
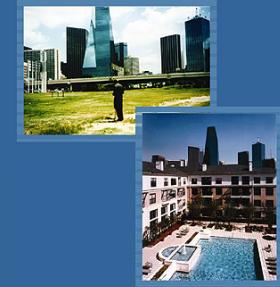
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www.epa.gov/smartgrowth



Measuring the Air Quality and Transportation
Impacts of Infill Development



Getting to Smart Growth
Smart Growth Implementation Guide

PROTECTING WATER RESOURCES
WITH HIGHER-DENSITY DEVELOPMENT

 EPA