



Climate Change and Transportation: A Federal View

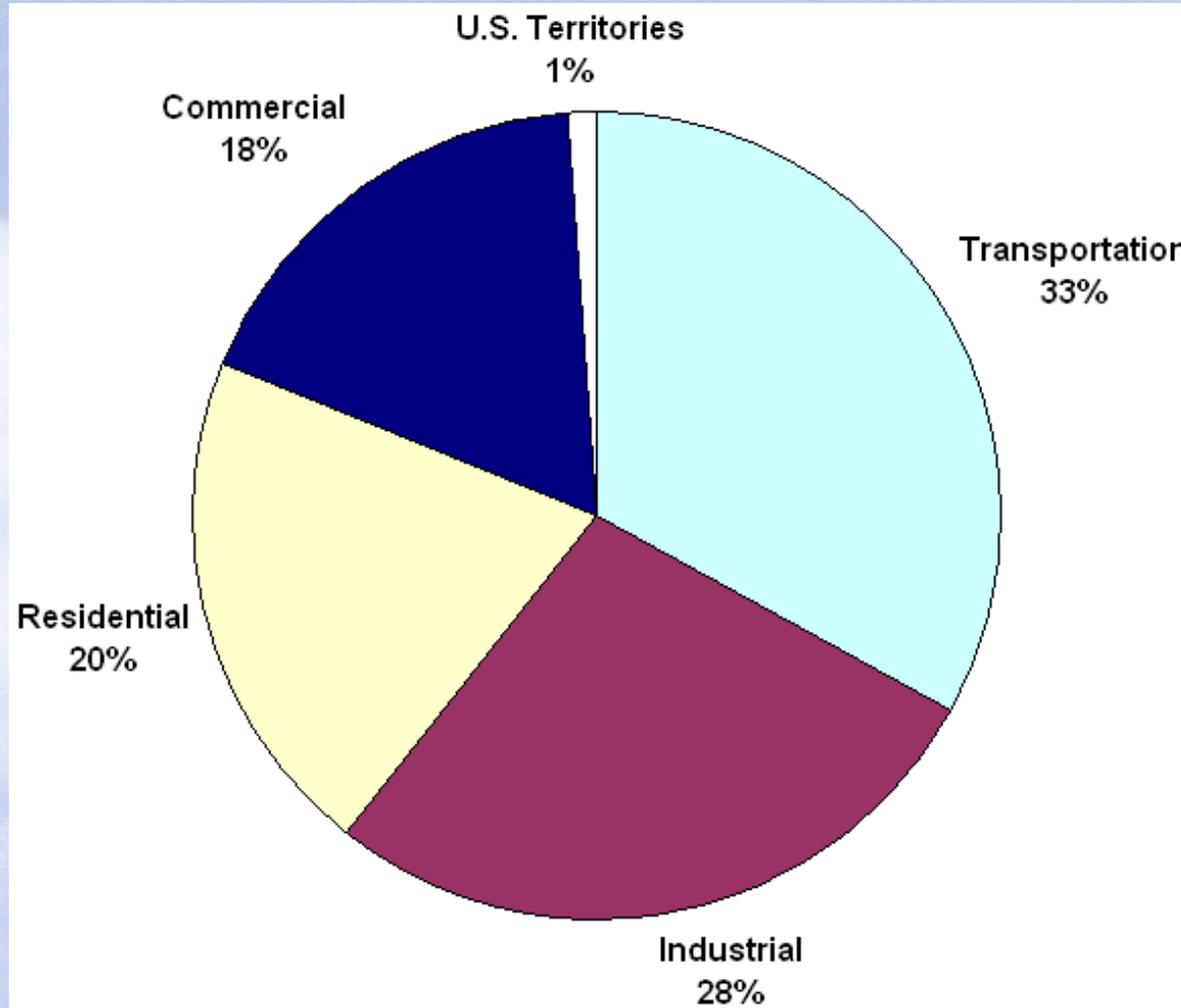
April Marchese
FHWA Office of Natural
And Human Environment
July 2008



U.S. Department of Transportation
Federal Highway Administration



WHY SHOULD WE CARE?



U.S. Carbon Emissions 2006

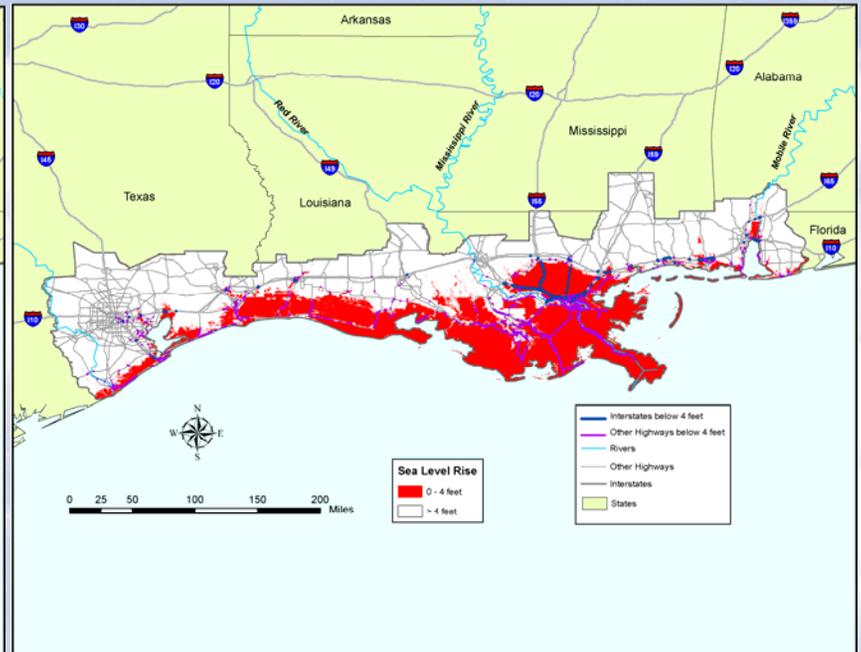
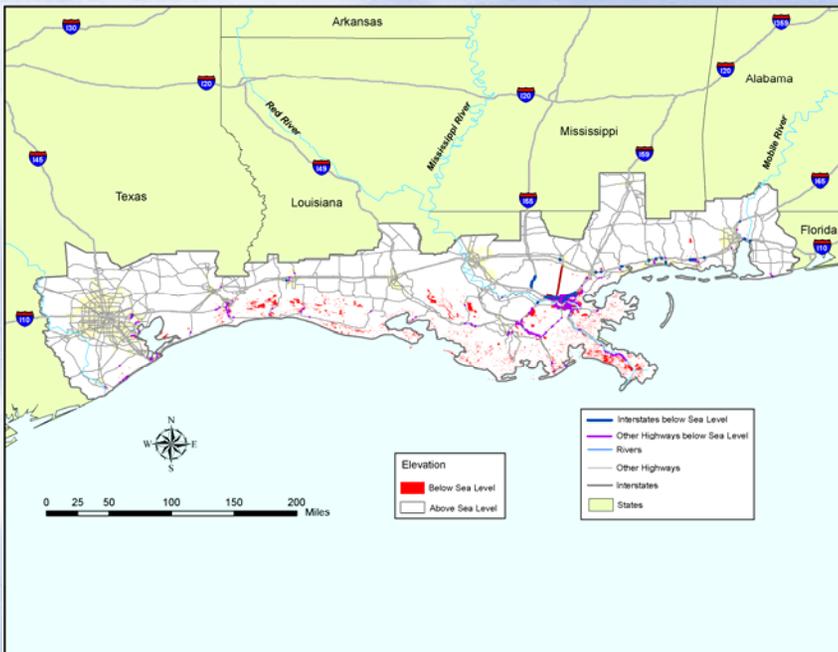
Source: U.S. EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2006



IMPACTS ON TRANSPORTATION INFRASTRUCTURE

Baseline (Present Day)

4 Feet of Sea Level Rise



Source: Cambridge Systematics analysis of U.S. DOT Data.

Highways Potentially Vulnerable to Sea Level Rise



LIKELY CONGRESSIONAL ACTION



- ***Lieberman-Warner:***
Transit as the Solution
- ***Boxer Amendment:***
Transportation Planning
Process overseen by
EPA Administrator
- ***GREAN-TEA:***
Conformity for GHGs
- Over 100 bills in
Congress



MANY SOLUTIONS ARE TRANSPORTATION SOLUTIONS





WHAT CAN WE DO?

- *REGIONAL APPROACHES:* Consider GHG reduction strategies in planning process
 - ❖ VMT, Land Use, Systems Efficiencies
 - ❖ Working with EPA on model
 - Pilots in NY and Puget Sound
 - ❖ FHWA has a report under development regarding how to incorporate climate change in planning

Climate Change and Transportation Planning

PLANNING FACTOR	CLIMATE CHANGE
(E) Protect and enhance the environment, promote energy conservation...	...Reducing fuel consumption to reduce GHGs
(G) Promote efficient system management and operation...	...More efficient system uses less fuel and produces less GHGs
(H) Emphasize the preservation of the existing system...	...Adapting to impacts of climate change necessary to preserve the system



WHAT CAN WE DO?

- *PROJECT LEVEL:*
 - ❖ Consider GHG reduction as part of mitigation
 - ❖ Explain GHG benefits of projects where they exist
- No current requirement to measure GHG emissions at project level



Three Goals in One Project

<i>Project Type</i>	<i>Congestion Relief</i>	<i>Environ. Mitigation</i>	<i>GHG Reduction</i>
Pricing	✓	✓	✓
Transit	✓	✓	✓
HOV Lanes	✓	✓	✓
Traffic Calming	✓	✓	✓
Compact Dev.	✓	✓	✓
Bike/Ped	✓	✓	✓

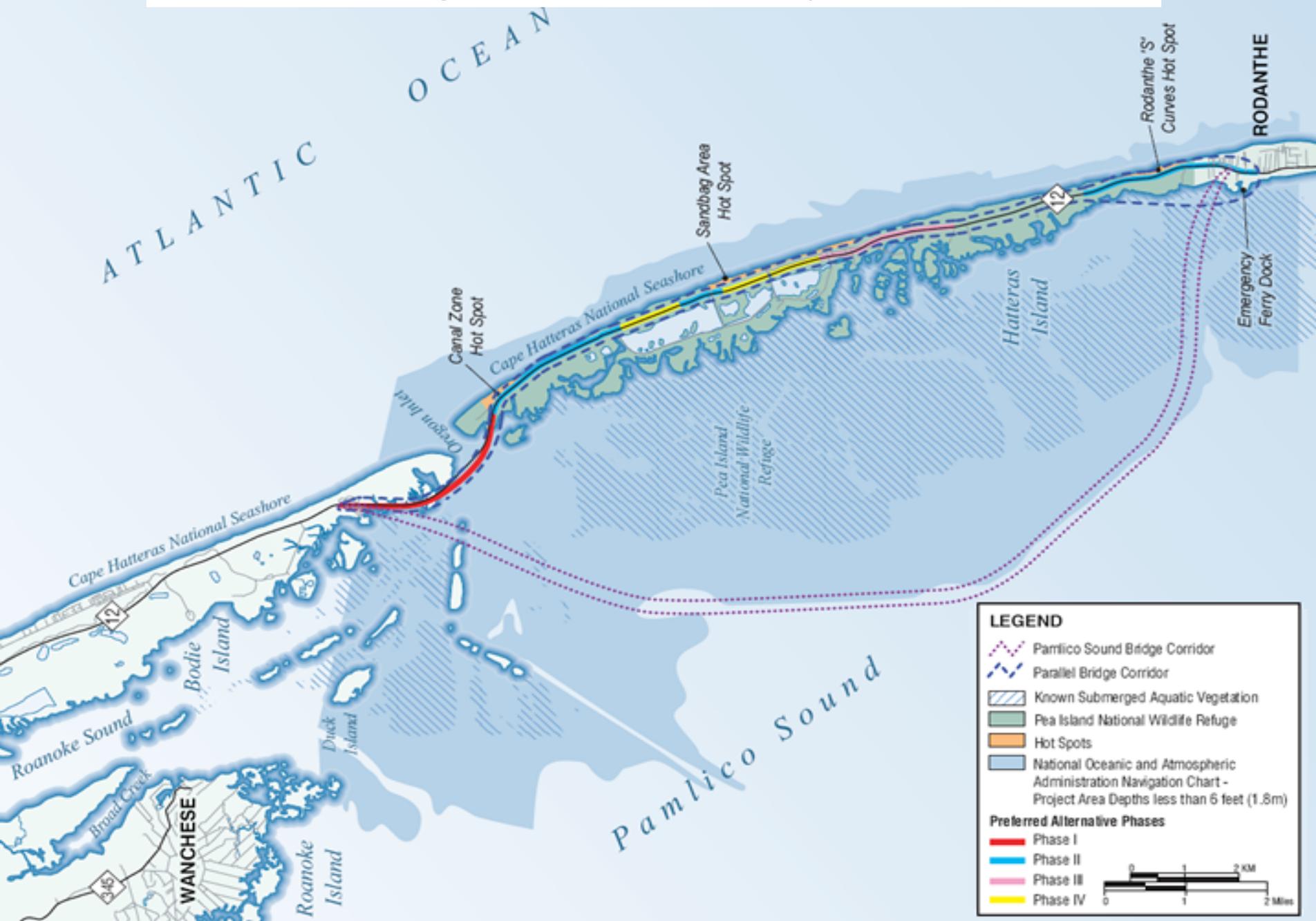


WHAT CAN WE DO?

- *ADAPTATION*: Consider impacts of climate change in project planning, development and design

- Key Reports:
 - ❖ USDOT Gulf Coast Study
 - ❖ Atlantic Coast Sea Level Rise Analysis
 - ❖ TRB Report: Potential Impacts of Climate Change on U.S. Transportation

Bonner Bridge: A Case Study In Adaptation





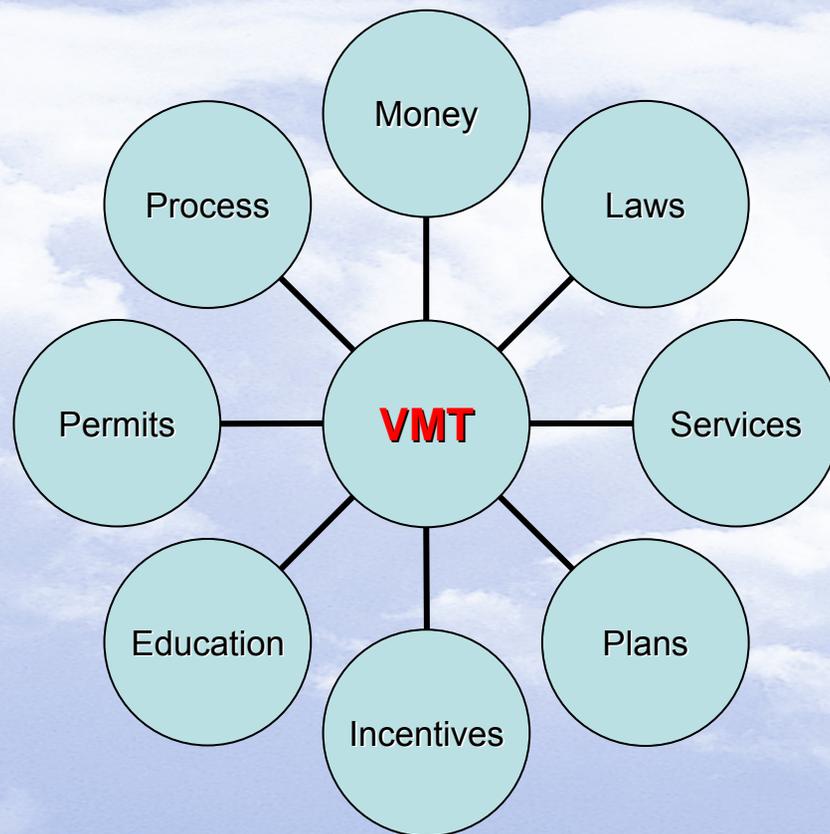
FHWA ACTIVITIES

- **OUTREACH AND EDUCATION:**
 - ❖ Peer Exchanges
 - ❖ Federal Interagency meeting
 - ❖ Outreach to Experts
 - ❖ Web-based Clearinghouse



Federal Interagency Meeting on Transportation, Land Use and Climate Change

- EPA Office of Air
- EPA Office of Water
- Department of Energy
- National Parks Service
- Federal Transit Administration
- Housing and Urban Development
- US Forest Service
- US Army Corps of Engineers
- US Fish and Wildlife





FHWA ACTIVITIES

- RESEARCH AND STUDIES:
 - ❖ DOT Center for Climate Change
 - Climate Change Impact
 - Mitigation strategies
 - Report to Congress
 - ❖ MPO Pilot Project
 - ❖ Pilot to sequester carbon in right-of-way



FHWA Carbon Sequestration Pilot: New Mexico



- Substantial acreage available for carbon sequestration
- Potentially significant cost savings from reduced mowing
- Can this be sold as “carbon credits”?



THIS SHOULD BE ABOUT SOLVING A PROBLEM, NOT ASSIGNING BLAME

- ***Tell our story—***
 - ❖ Many of our projects already reduce GHGs.
- ***Use our experience—***
 - ❖ FHWA has expertise in many of the solutions.
- ***Incorporate solutions—***
 - ❖ Consider climate change in plans and projects
- ***Practice Innovation—***
 - ❖ Look for new opportunities to reduce GHGs