

# The Nexus Between Mitigation and Adaptation

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USDOT Climate Adaptation and Mitigation Workshop  
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# Adaptation and Mitigation

## *Finding Alignment*

DC Metro Green Line, July 2012



Washington Post

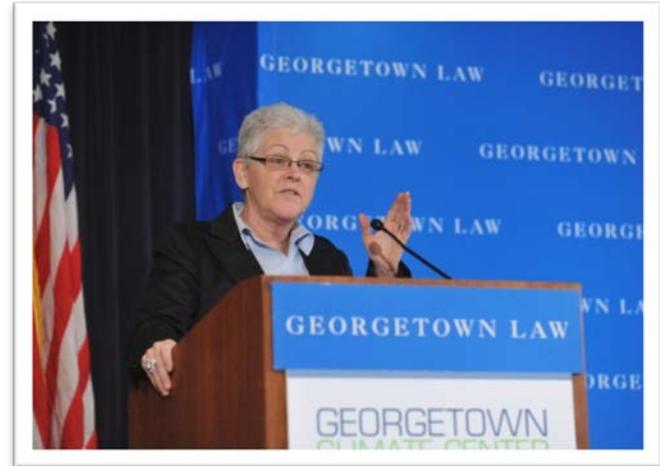
Nuremburg-Munich High Speed Line



Wikimedia Commons

# GEORGETOWN CLIMATE CENTER

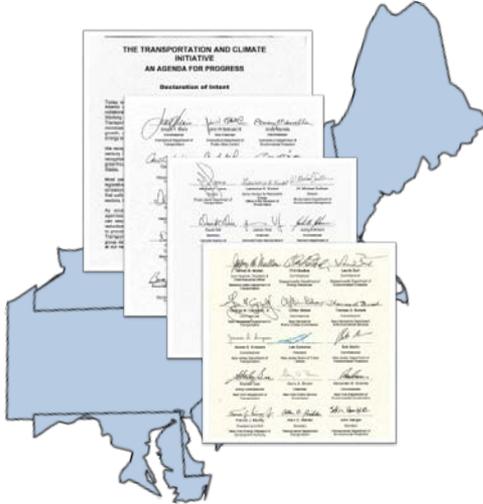
- Convenes and serves as resource to states on climate and energy issues
- Brings together academics and policymakers to improve climate policy
- Informs the development of:
  - Legislation
  - Regulation
  - Transportation policy
  - Adaptation policy



# Reducing Emissions & Energy Use



**TRANSPORTATION &  
CLIMATE INITIATIVE**  
Of the Northeast and Mid-Atlantic States



# Programs & Policies

## Research and Resources

- **Clean Vehicles**
  - Planning guidance
  - Legal and policy research
- **Sustainable Communities**
  - Sustainable communities indicators
  - State policy survey and best practices
- **Freight flow study**



## Identifying and Removing Barriers

- Patent troll

## Supporting Collaboration

- Multiple agencies
- State peer information sharing
- State-local partnerships

# Adapting to climate impacts

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A Leading Resource for State and Federal Policy



**PREPARING OUR COMMUNITIES FOR CLIMATE IMPACTS**

Recommendations for Federal Action

Recommendations to the State, Local and Tribal Leaders Task Force  
for Climate Preparedness and Resilience



# California Climate and Energy Profile

Adapting to Climate Change

Clean Energy and Reducing Carbon Pollution

## Overview of California's Climate Change Preparations

This page provides an overview of the steps California is taking to prepare for the impacts of climate change.

California is engaged in both directly planning for climate impacts and incorporating climate adaptation into its existing policies and programs. On November 14, 2008, Governor Schwarzenegger required the California Natural Resources Agency (CNRA) to develop a state Climate Adaptation Strategy in coordination with local, regional, state and federal public and private entities ([Executive Order S-13-08](#)). CNRA organized state agencies into seven resource-based sector working groups. Each working group identified both short- and long-term adaptation goals and periodically reports on their progress.

CNRA released a comprehensive statewide [Climate Adaptation Strategy](#) in December 2009. The 2009 plan summarizes climate change impacts and recommends adaptation goals for seven sectors: public health, biodiversity and habitat, oceans and coastal resources, water, agriculture, forestry, and transportation and energy.

CNRA released an update to the 2009 plan in July 2014, [Safeguarding California: Reducing Climate Risk: An update to the California Climate Adaptation Strategy](#), in coordination with other state agencies. The 2014 update highlights progress the state has made implementing the 2009 plan, and includes new and refined adaptation goals for the state. In a second phase of research, the Georgetown Climate Center will update this assessment of California's progress to include goals completed under both the 2009 and 2014 plans.

[Read More](#)



[VIEW STATE ADAPTATION PLAN STATUS](#)



[VIEW ALL COMPLETED GOALS](#)

## California



### California Climate Adaptation Strategy (2009)

Finalized: 2009



● 48 out of 345 Goals Completed

● 251 out of 345 Goals in Progress



[SUBMIT AN UPDATE ABOUT THIS STATE'S PROGRESS](#)



[RECEIVE EMAILS ABOUT THIS STATE'S PROGRESS](#)

# FHWA/GCC Case Study

## Paso Robles, CA



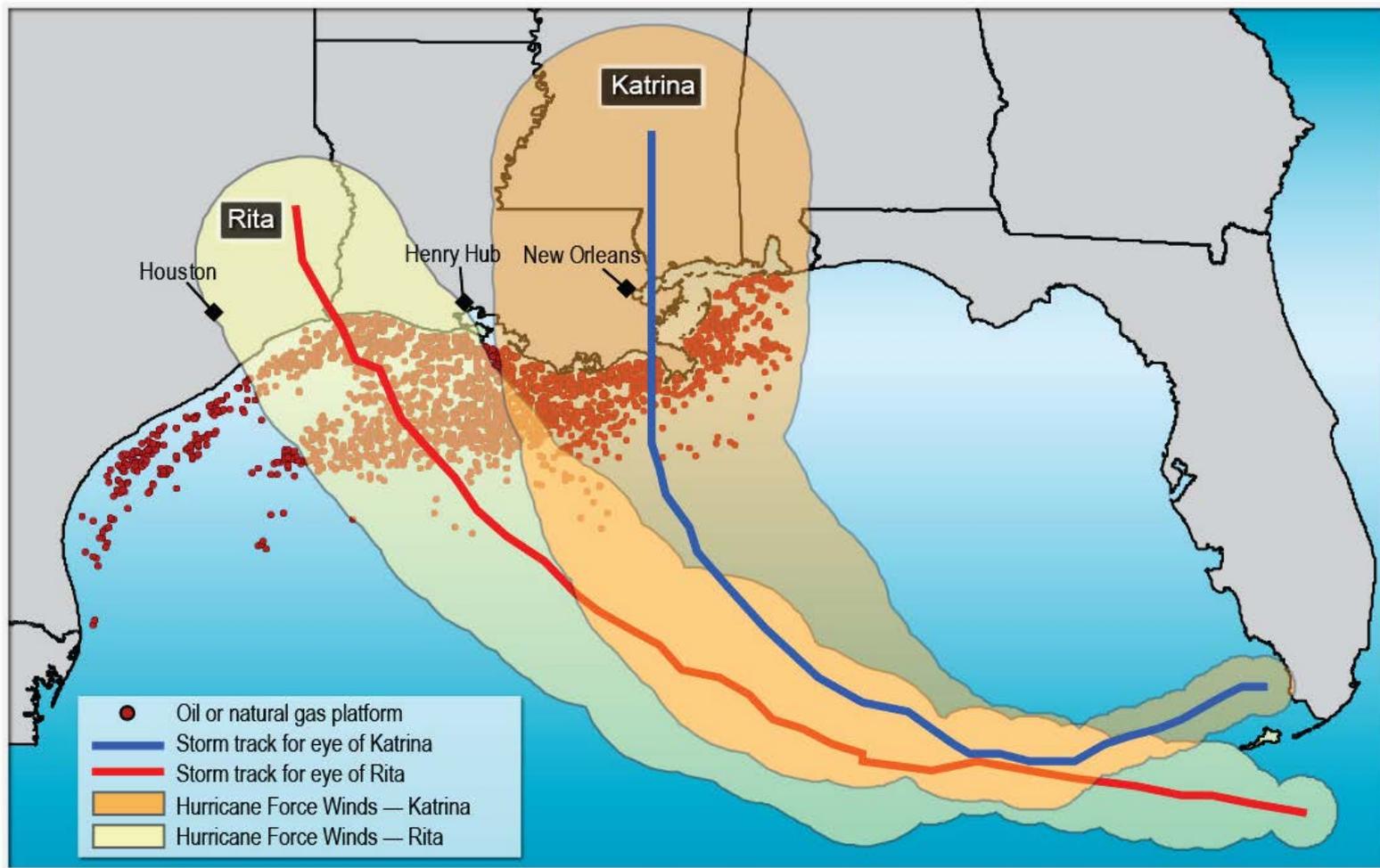
SvR Design Company



**Katrina, 2005 – \$81 Billion**  
**Rita, 2005 – \$12 Billion**



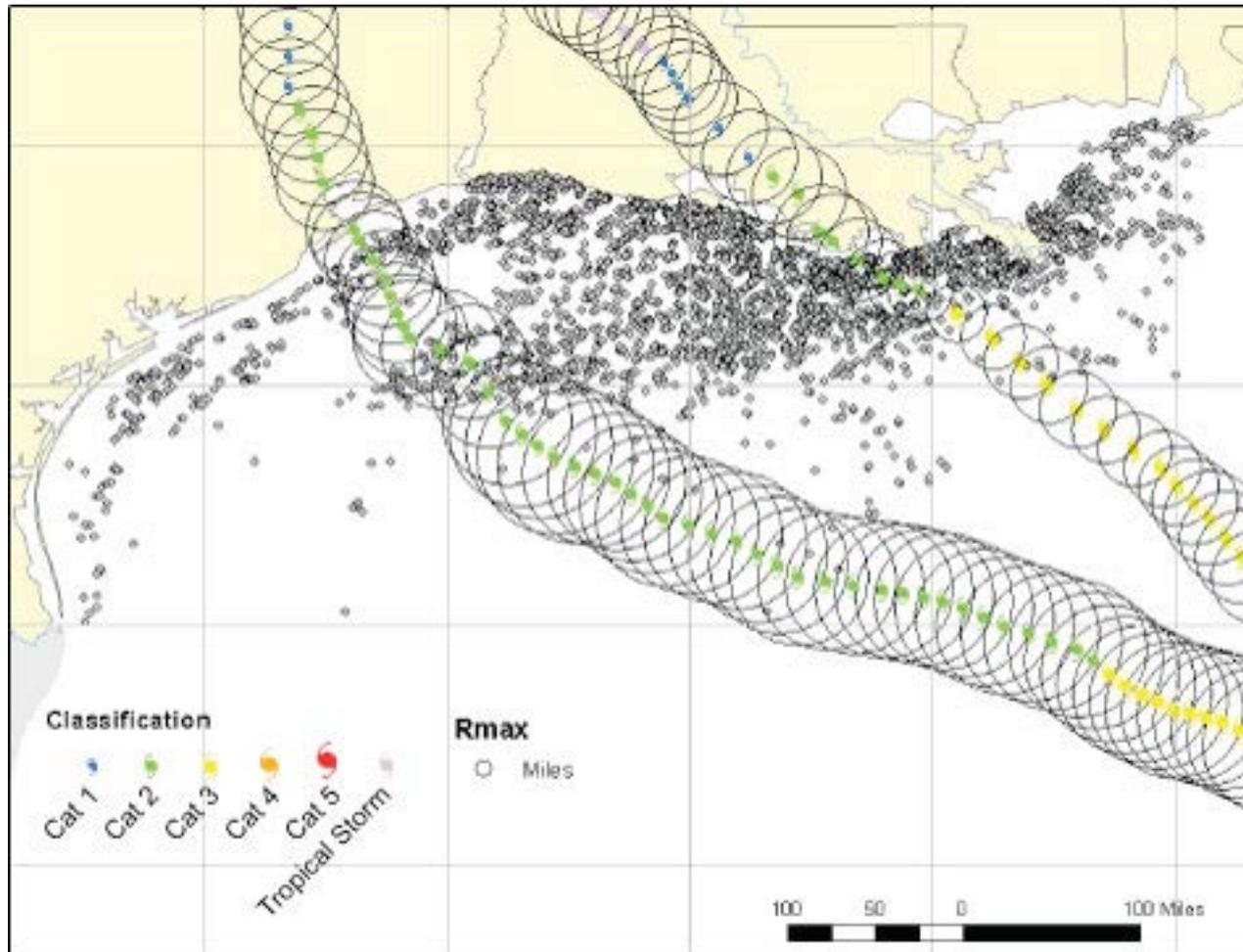
# Paths of Hurricanes Katrina and Rita Relative to Energy Production Facilities



Source: GAO analysis of data provided by the National Weather Service and the Minerals Management Service.

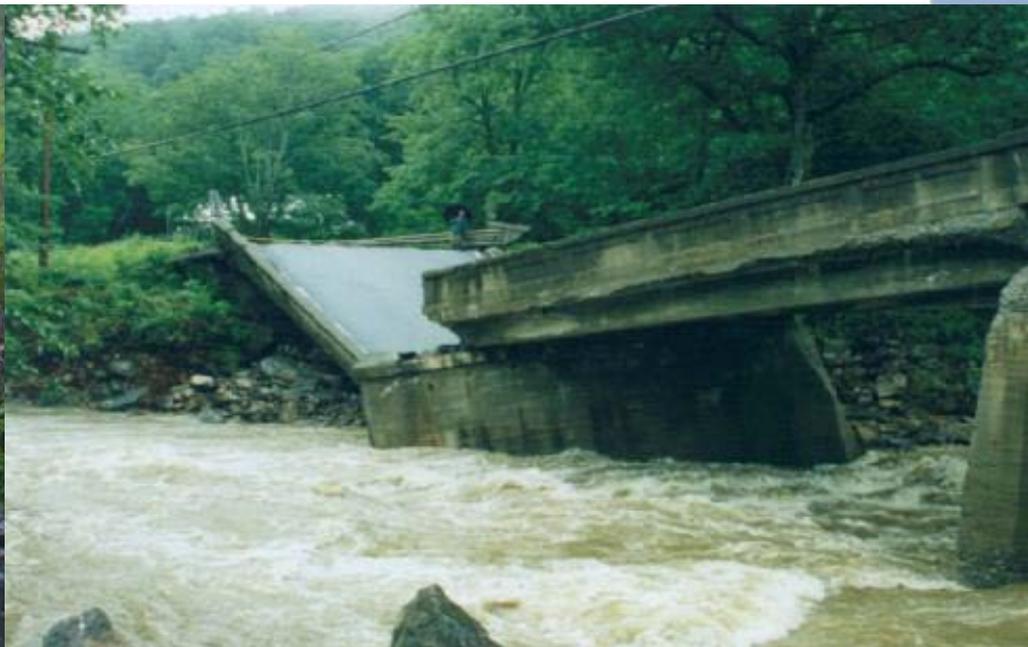
A Leading Resource for State and Federal Policy

# Hurricane Paths for Gustav and Ike (2008)



# Vermont after Irene

## Impacts to Transportation Assets



Old



7' Pipe

New



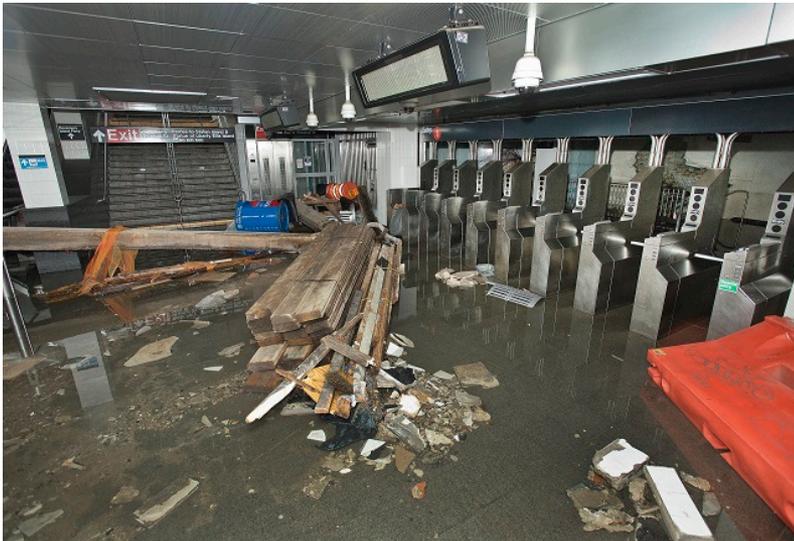
16' x 8' Precast Arch

Image Sources: State of Vermont

**Sandy, 2012 – \$65 Billion**



# Transit Post-Sandy



New York City MTA



New York City MTA



New York City MTA

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# NJ TransitGrid



New Jersey Governor's Office

# Resilient Smart Growth

## *New York*

### **NYS 2100 COMMISSION**

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Recommendations to Improve  
the Strength and Resilience of  
the Empire State's Infrastructure



# Rebuild by Design

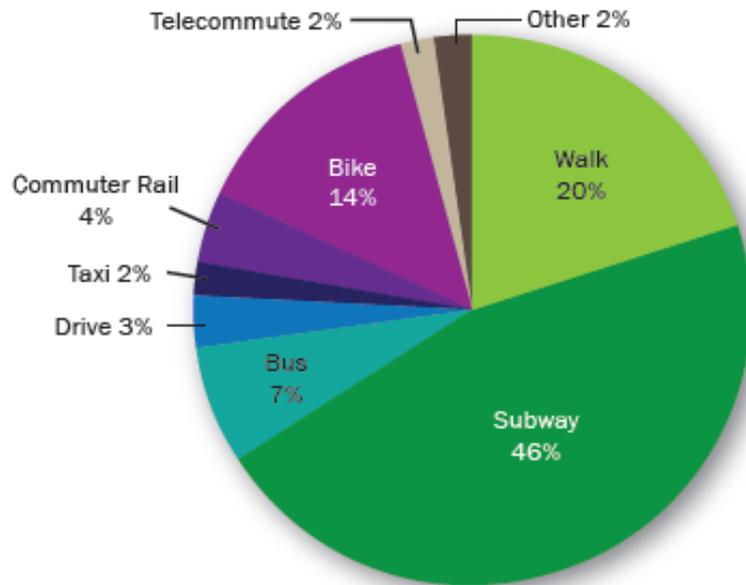
## *New Meadowlands*



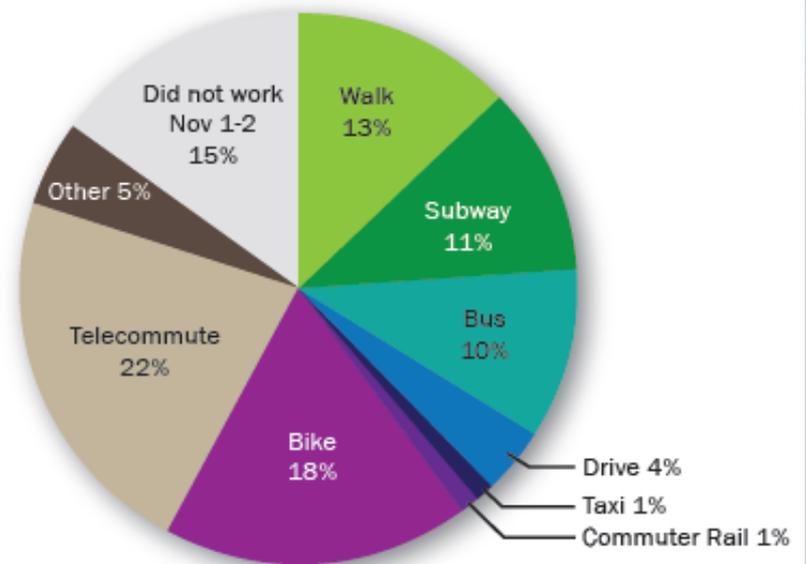
*New Meadowlands Design Team/MIT CAU*

# Importance of options

Travel Mode, Pre-Sandy



Travel Mode, Post-Sandy



Source: NYU, *Transportation During and After Hurricane Sandy*



New York Times/Benjamin Norman



# Complete & Green Streets



Boston Complete Streets

# Boston's Design Guidelines

## Boston Complete Streets

Design Guidelines  
2013

Mayor Thomas M. Menino  
City of Boston  
Commissioner Thomas J. Tirin  
Boston Transportation Department



[www.bostoncompletestreets.org](http://www.bostoncompletestreets.org)



Boston Complete Streets

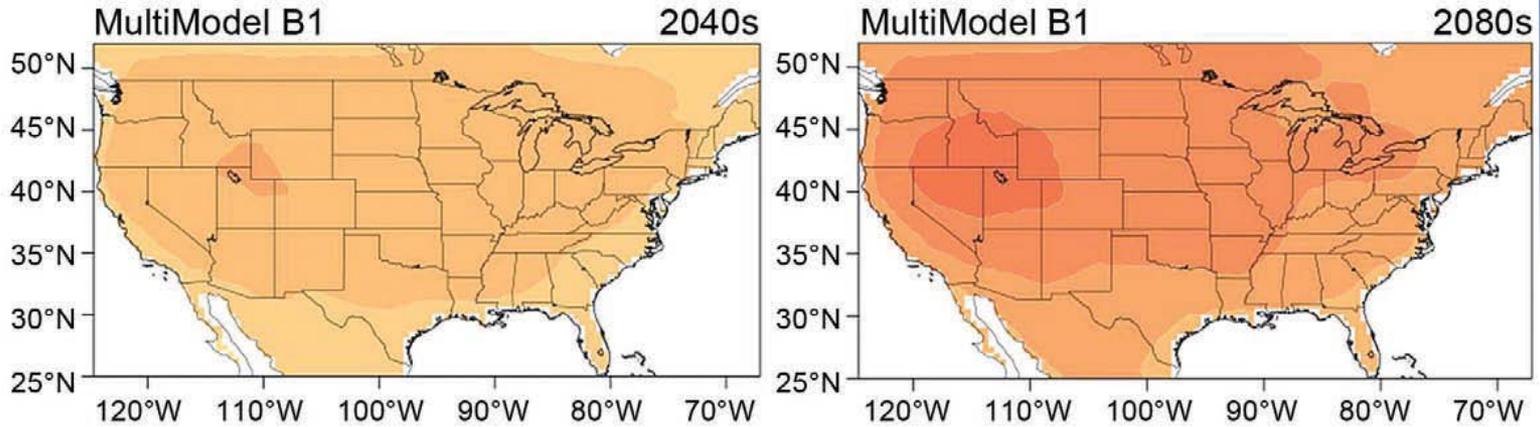
## Importance of Options: Clean Fuel Vehicles and Resilience

- In the aftermath of Hurricane Sandy, gasoline and diesel were in limited supply
- Alternative-fueled vehicles in New Jersey, New York, and Connecticut were able to assist with evacuation and recovery
- EV users bypassed lines

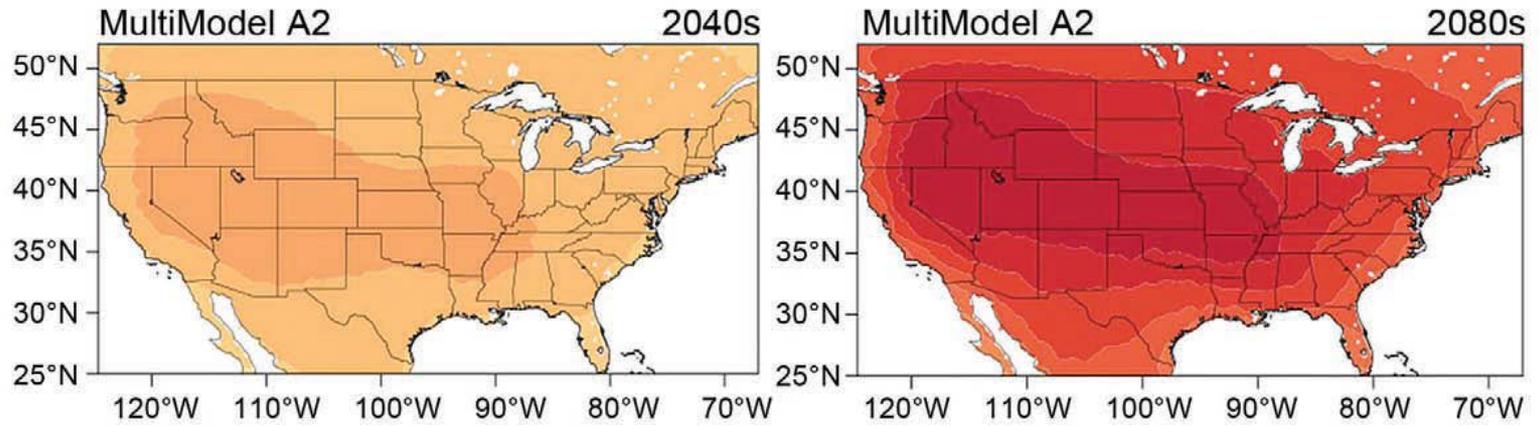


# Heat waves: The new normal

Low Emissions Scenario



High Emissions Scenario



# Urban Heat Island Interventions

## Percent Impervious Surface Plus Respiratory Illness



### SUSTAINABLE DC PLAN

#### WHAT IS SUSTAINABLE DC?

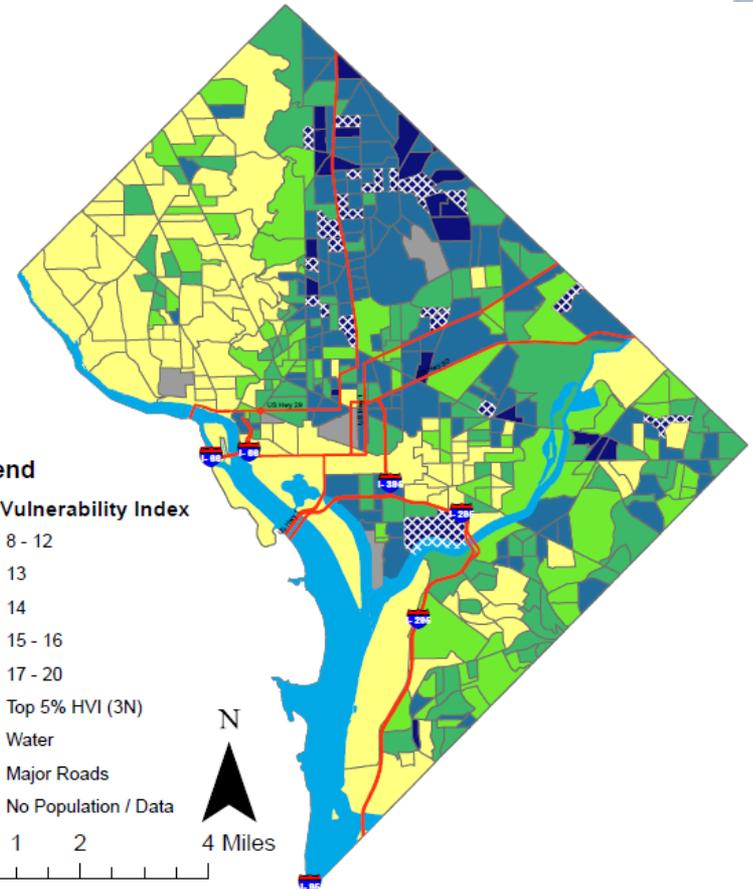
Sustainable DC is a District Government-led plan to make the city the healthiest, greenest, and most livable city in the United States. It is a citywide initiative crafted for and by the city's diverse community with the ultimate goal of making DC more socially equitable, environmentally responsive, and economically prosperous.

#### Legend

##### Heat Vulnerability Index

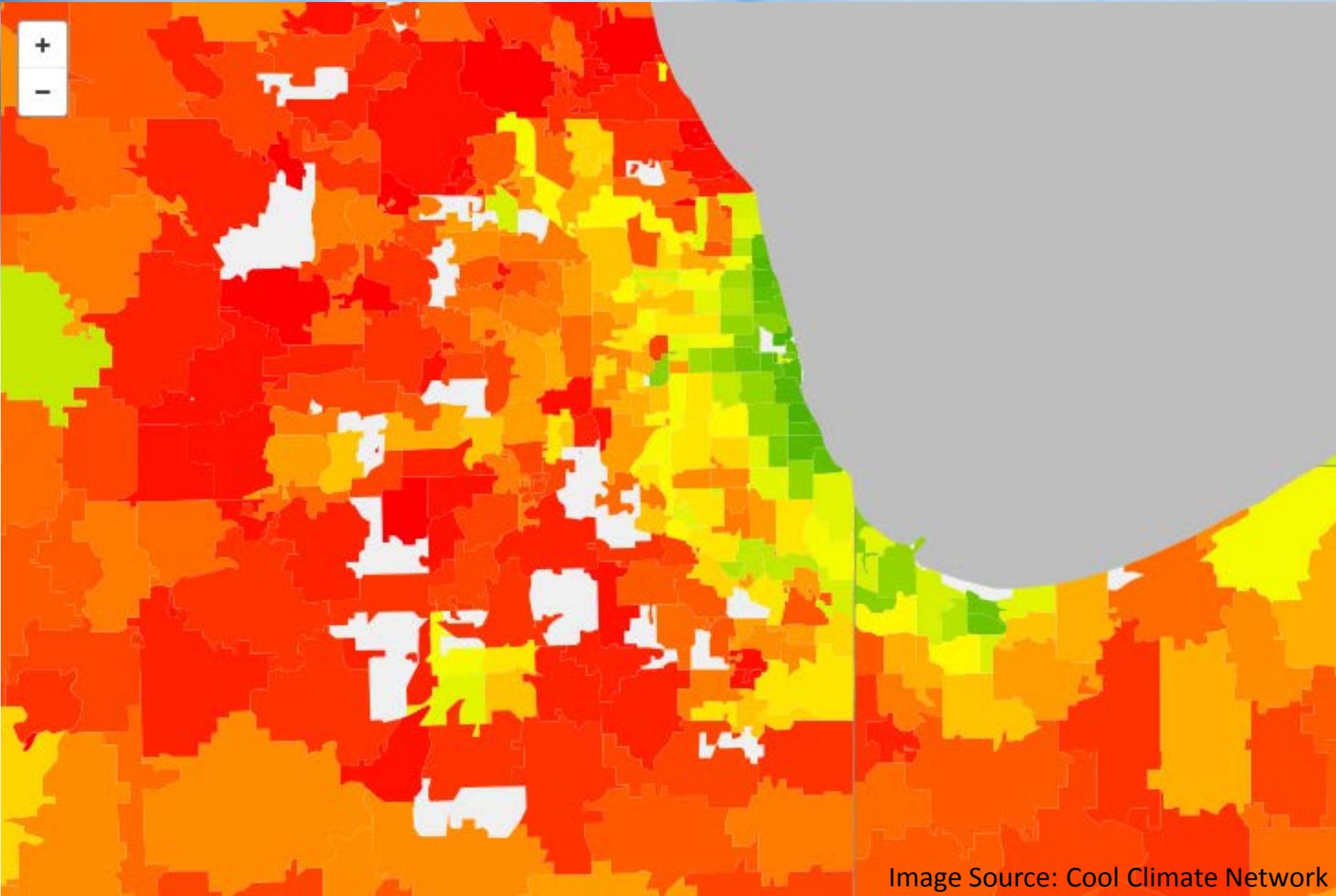
- 8 - 12
- 13
- 14
- 15 - 16
- 17 - 20
- Top 5% HVI (3N)
- Water
- Major Roads
- No Population / Data

0 1 2 4 Miles





# Lower Per Capita Emissions in Cities



# OBAMA ADMINISTRATION Fuel Economy Standards

In the year 2025

The fleet-wide average will be

 **54.5**  MPG



Consumers will have saved  
**\$1.7 TRILLION**  
at the pump over the  
life of the program.



A family that purchases a new  
vehicle in 2025 will save

**\$8,200**

in fuel costs when compared with  
a similar vehicle in 2010.

Over the life of the program, the standards will:

Save **12** billion  
barrels  
of oil.



Eliminate **6** billion  
metric  
tons  
of carbon dioxide pollution.

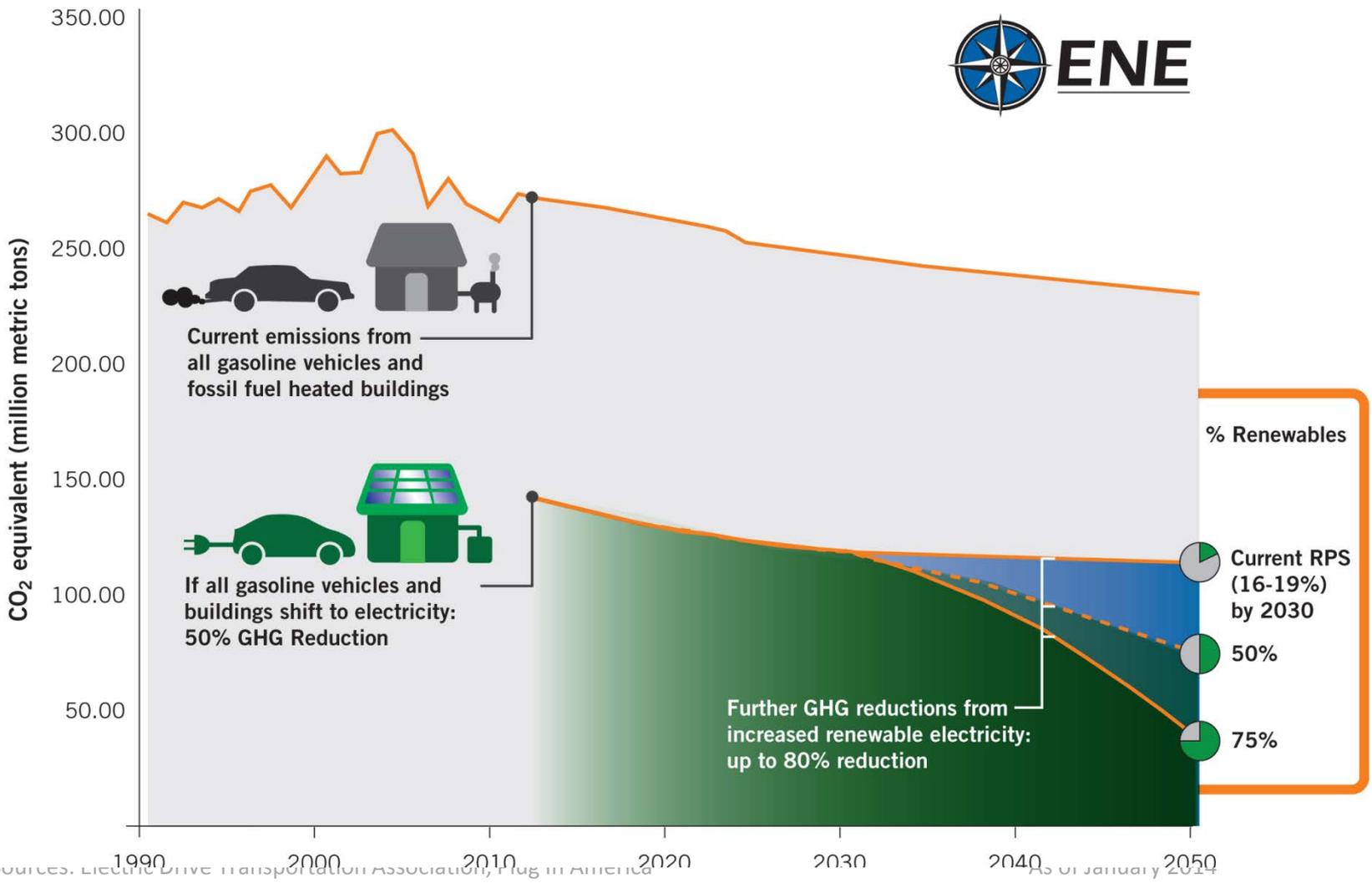


**NORTHEAST  
ELECTRIC  
VEHICLE  
NETWORK**

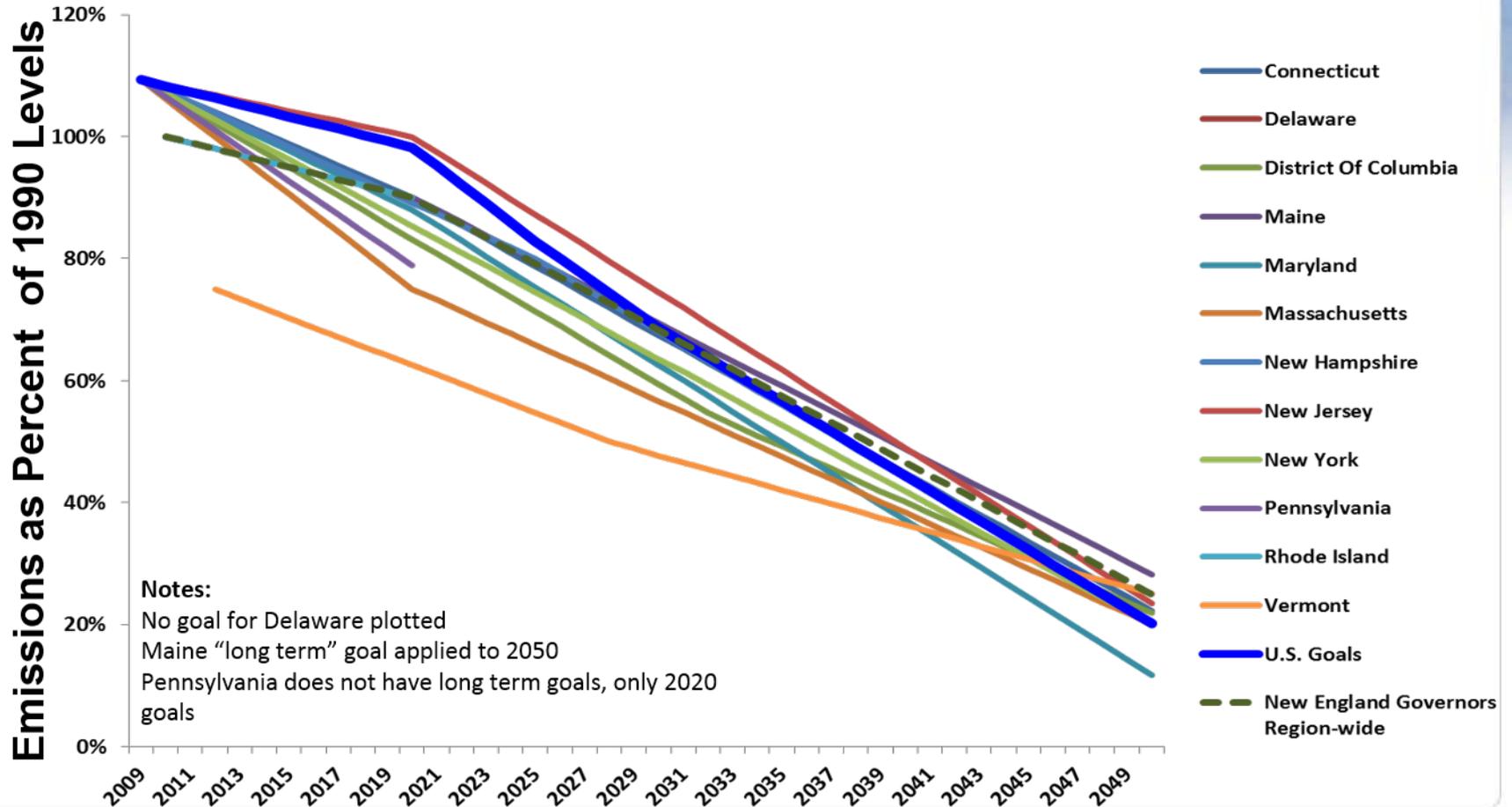


**State Zero-Emission Vehicle Programs  
Memorandum of Understanding**

# Electric Vehicles and a Cleaner Grid



# TCI State Economy-Wide Greenhouse Gas Reduction Goals



# Current Climate Impacts Already Increasing Transportation Costs

- **Hurricane Sandy - \$65 billion**
  - NJ Transit - \$450 million
  - NY MTA - \$4.75 billion
- **Hurricane Irene - \$11.7 billion**
  - NY State - \$297 million
  - VT Highways - \$175 to \$250 million
- **Predicted national investment gap of \$1.1 trillion by 2020**

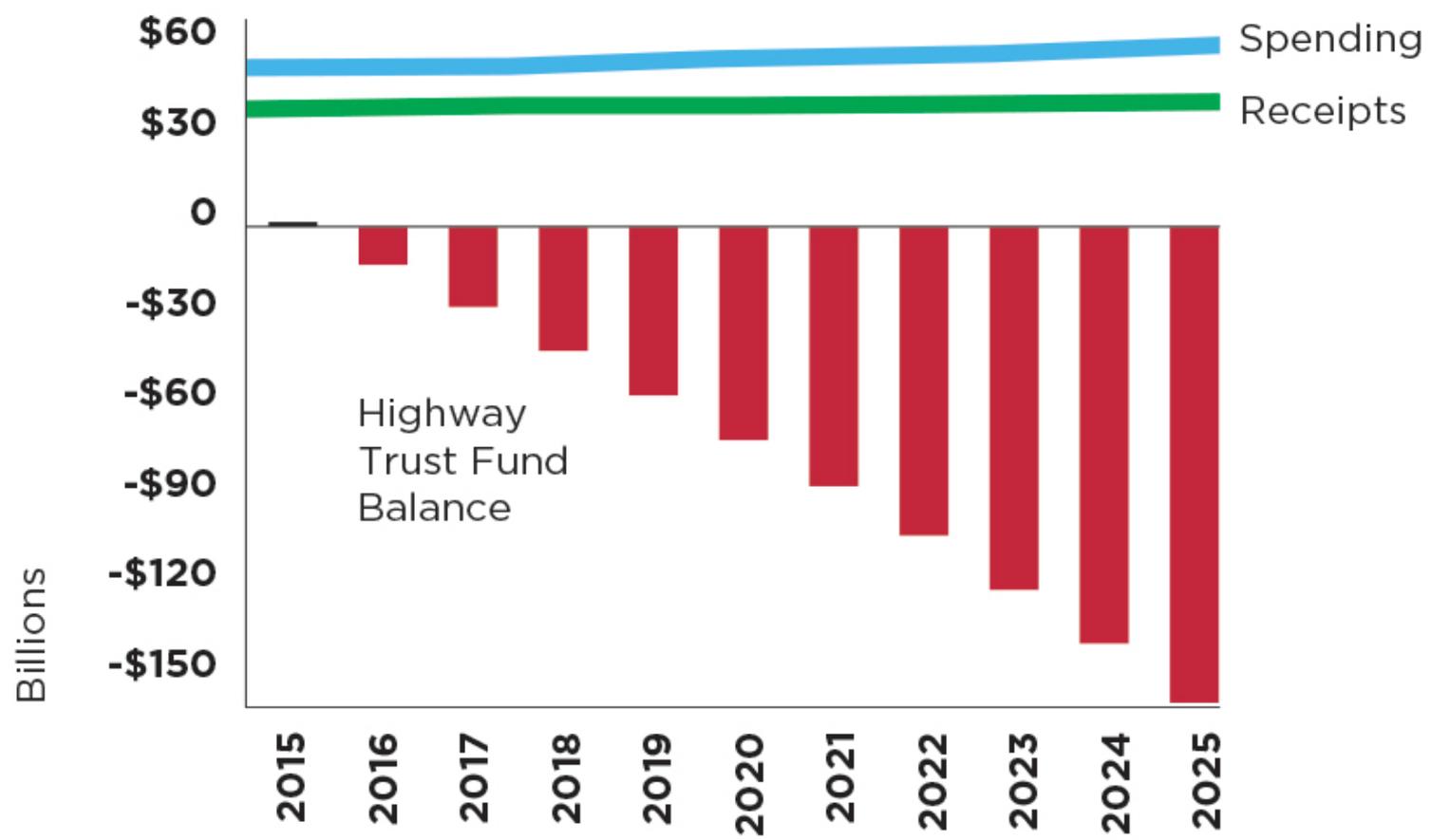


Mark Wilson / Getty Images in The New York Times



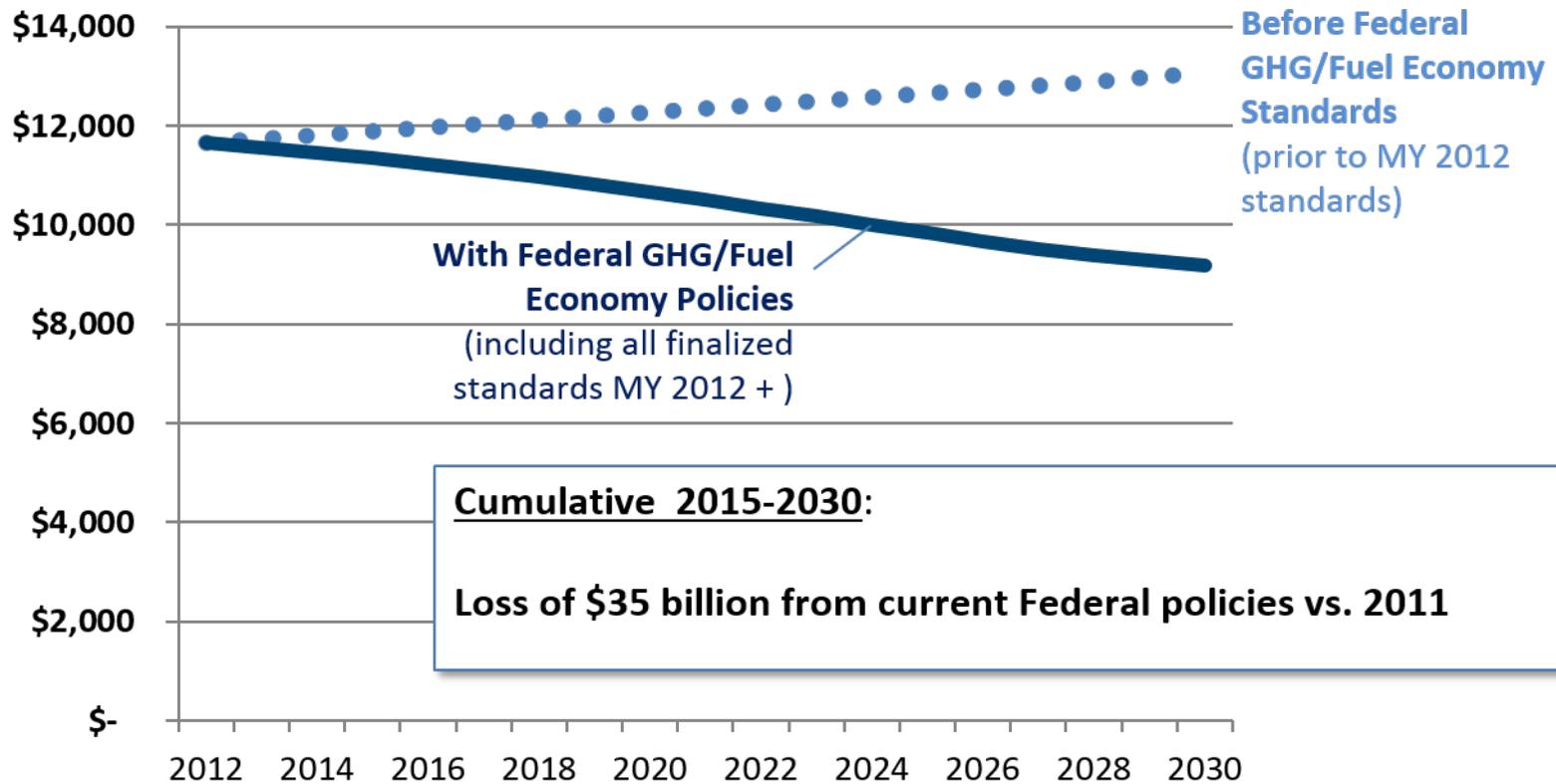
Matthew Cavanaugh for The New York Times

## Highway Trust Fund Shortfalls (2015 - 2025)



# Existing Federal Policies will Reduce State Transportation Funding

TCI Region Federal + State Motor Fuel Tax Revenue (\$billions)



# Infrastructure Finance

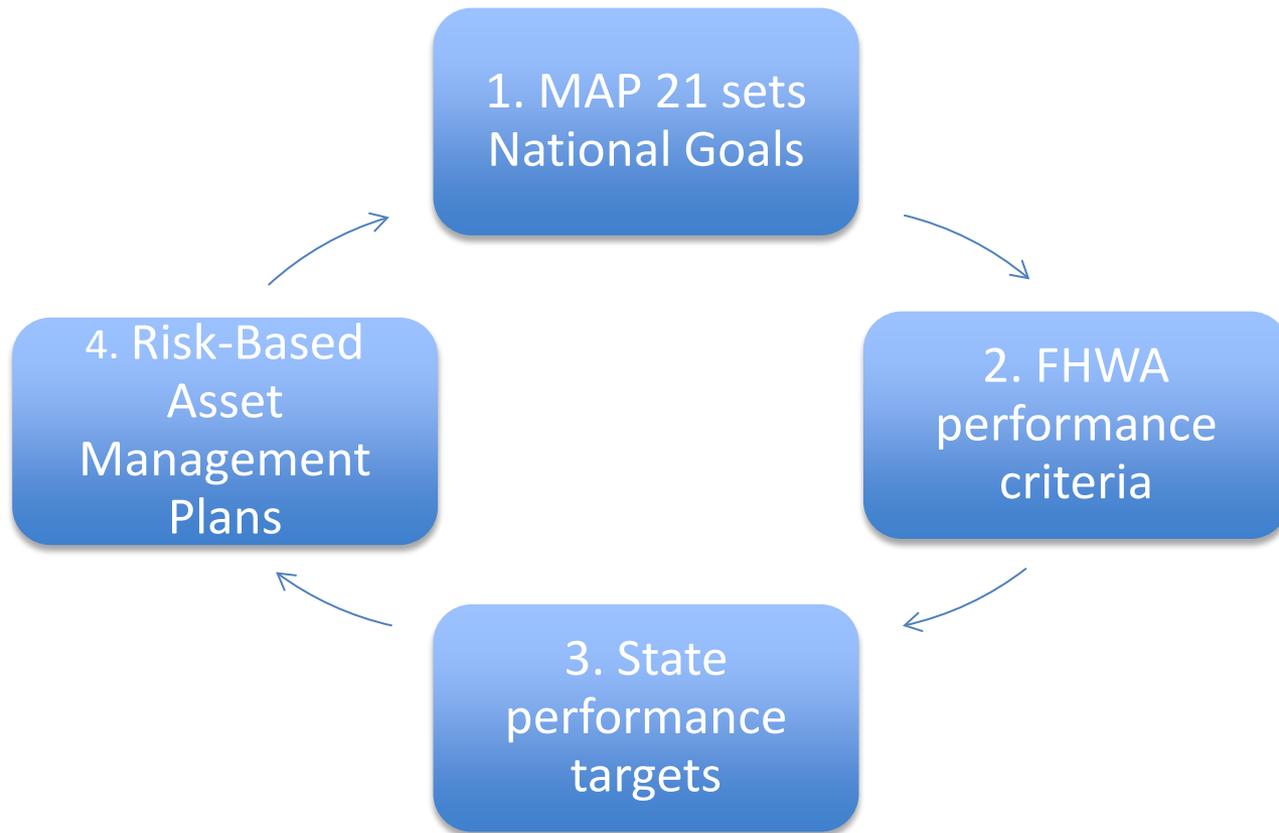


**New York  
Infrastructure  
Bank**

**USDOT Build America**

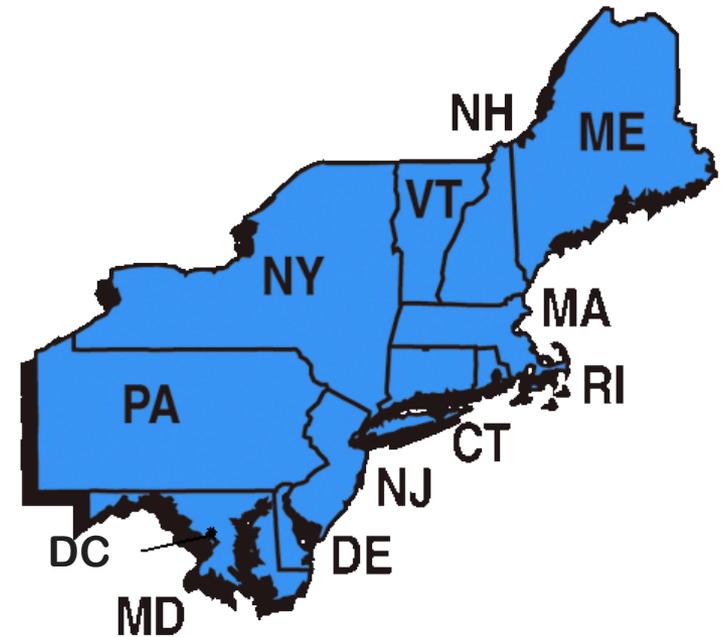


# MAP-21: Performance-Based Planning



# Transportation and Climate Initiative

- 11 northeast and mid-Atlantic states and the District of Columbia
- Formed in 2010
- Working together to reduce energy use and GHG emissions in transportation



# Regional Collaboration



CAPITAL REGION  
CLIMATE READINESS  
COLLABORATIVE



SIERRA  
CAMP



BAY AREA CLIMATE & ENERGY  
RESILIENCE PROJECT

SOUTHEAST FLORIDA  
REGIONAL COMPACT

CLIMATE  
CHANGE



Western  
Adaptation  
Alliance

Alliance  
of Regional  
Collaboratives  
for Climate  
Adaptation



LARC  
Los Angeles Regional Collaborative  
for Climate Action and Sustainability

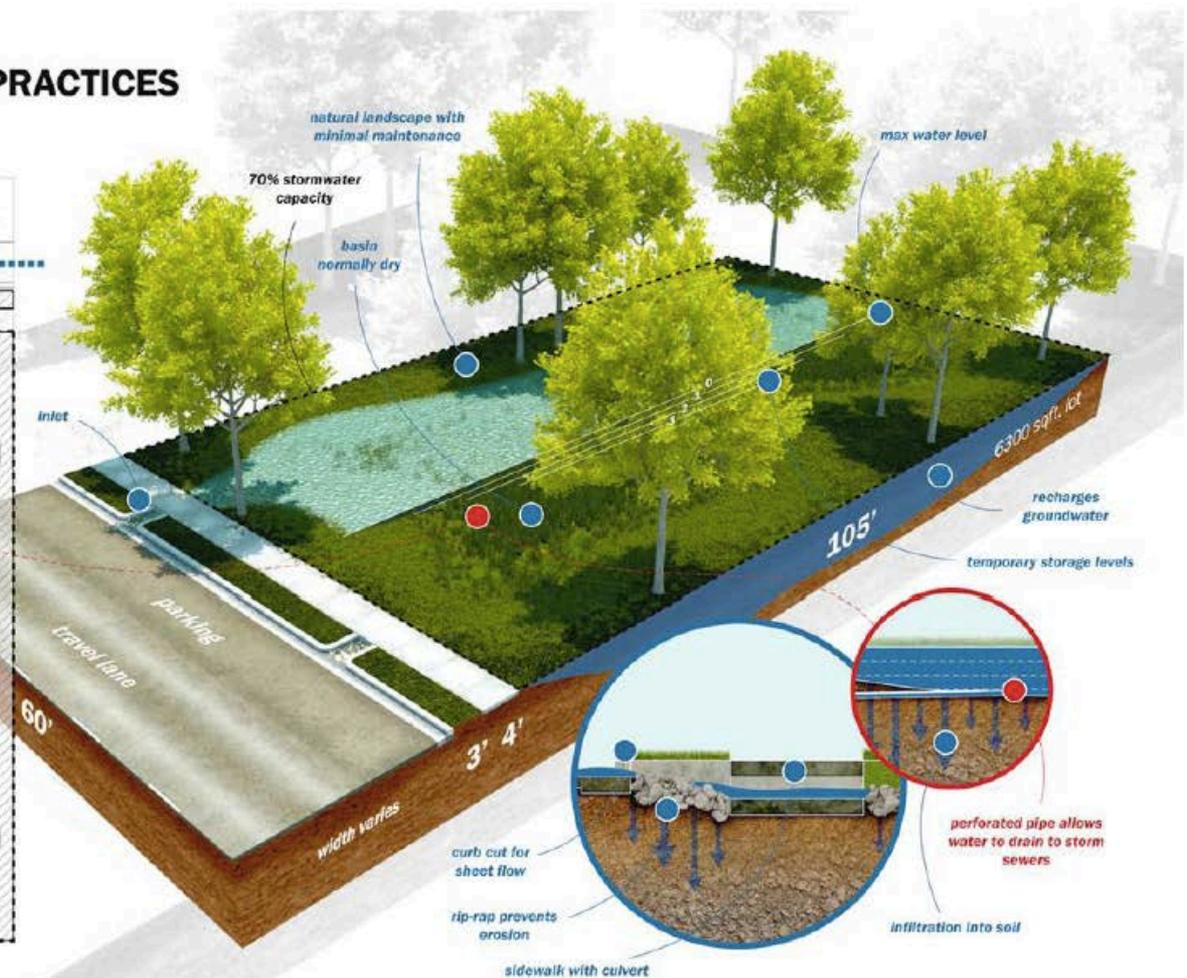
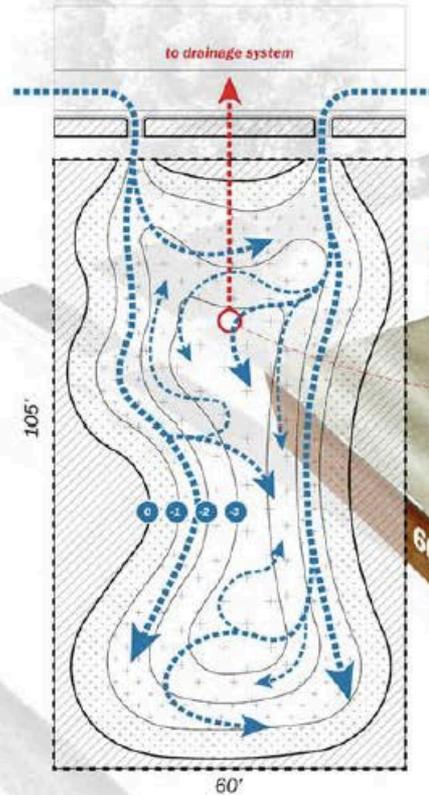
Climate  
Collaborative  
SAN DIEGO REGION



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# Sharing Best Practices

## BEST MANAGEMENT PRACTICES STORMWATER LOT - DRY Approx. 6300 sqft.



# Final thoughts/recommendations

- Continue leadership on adaptation and preparedness (FHWA, FTA) – not just post disaster (though that is important!)
- Integrate opportunities to reduce GHG emissions and impacts into these conversations and investment decisions
- Support and engage in dialogues across silos horizontally (within DOT and across agencies) and vertically (convening together?)
- Continue to support pilots and sharing best practices through convenings, reports, and databases that share these insights
- Incentivize regional and other collaborations to leverage resources
- Set goals related to GHG reduction and adaptation and develop implementation plans & strategies to get there
- Support efforts to think creatively about other funding streams
- Ask the climate question when investments/decisions are made

Thank you!

For more information:

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[www.GeorgetownClimate.org](http://www.GeorgetownClimate.org)

[www.AdaptationClearinghouse.org](http://www.AdaptationClearinghouse.org)