

Moving Massachusetts Forward.
massDOT



Massachusetts Department of Transportation

Reducing Transportation Greenhouse Gas Emissions
Through the GreenDOT Policy

**Boston Region Metropolitan Planning Organization
Regional Transportation Advisory Council Meeting**

July 14, 2010

GreenDOT Policy Directive

GreenDOT is the Massachusetts Department of Transportation's comprehensive sustainability policy

- **GreenDOT Vision and Goals**
- **GreenDOT Policy Framework**
- **GreenDOT Initiatives**
- **Regional Planning Issues**

GreenDOT Vision

“The Massachusetts Department of Transportation be a national leader in promoting sustainability in transportation sector. Through the full range of activities, from strategic planning to construction system operations, MassDOT will promote economic development, protect the natural environment, and enhance the quality of life for all the Commonwealth’s residents and visitors. This enable MassDOT to use resources in a manner that serves its existing customers while preserving our resources for future generations.”

GreenDOT Goals

The following three mutually-reinforcing goals form foundation of GreenDOT:

- **Reduce greenhouse gas (GHG) emissions**
- **Promote the healthy transportation modes of bicycling, and public transit**
- **Support smart growth development**

Why a GreenDOT Policy?

- **Coordinated approach to sustainability**
- **Integrate sustainability into responsibilities and decision-making of all MassDOT employees**
- **Comprehensive response to a range of state and MassDOT laws, policies and initiatives**
 - Global Warming Solutions Act
 - Green Communities Act
 - Healthy Transportation Compact
 - Leading by Example
 - youMove Massachusetts
 - Complete Streets

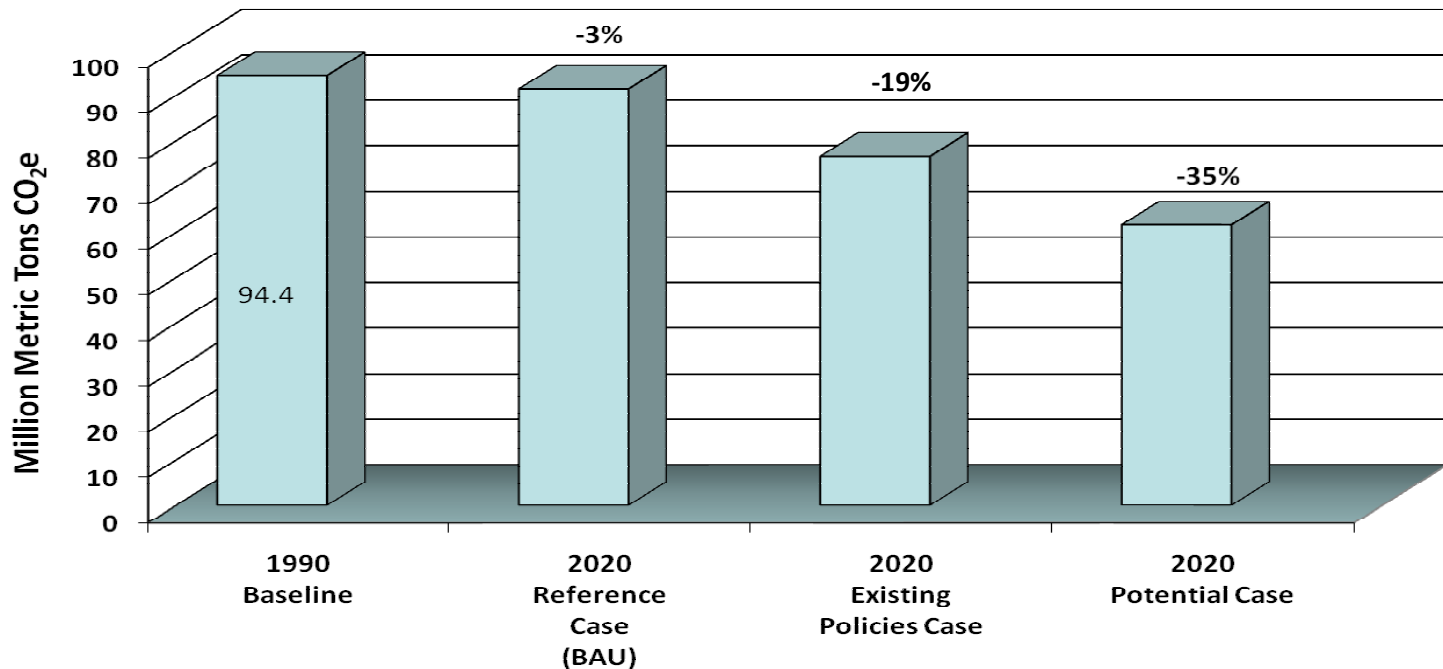
Global Warming Solutions Act

- **In August 2008, Governor Patrick signed the Climate Protection and Economy Act, aka the Global Solutions Act**
- **Requires Massachusetts to reduce economy-wide GHG emissions:**
 - 10% - 25% reduction below 1990 level by 2020
 - 80% reduction below 1990 level by 2050
- **Secretary of Energy & Environmental Affairs Ian Bowles will adopt implementation plan by January 1, 2011**



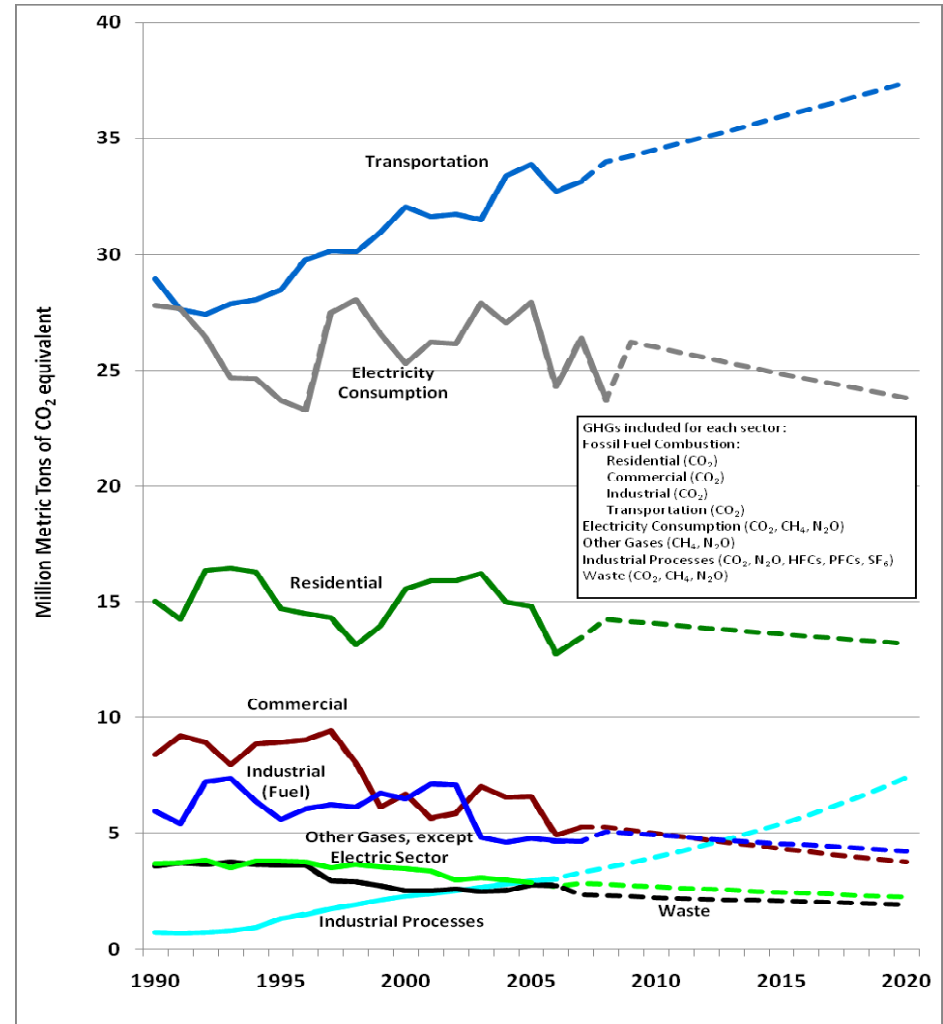
Global Warming Solutions Act

- Existing state and federal policies reduce GHG by 19% reduction below 1990
- Technically feasible, cost-effective measures reduce emissions by an additional 16%



Global Warming Solutions Act

- **Transportation sector is largest GHG emitter**
 - 31% of 1990 emissions
 - 38% of 2020 emissions



How Can MassDOT Reduce GHG and Promote Sustainability?

MassDOT will integrate the three GreenDOT goals and pursue sustainability through the full range of its activities.

- **Transportation Planning**
- **Project Prioritization and Selection**
- **Project Design**
- **Project Construction**
- **System Operations**
- **Facilities Management**
- **Customer Service**

Transportation Planning

MassDOT's statewide planning activities will reflect GreenDOT goals, sustainability measures

- **State Rail Plan**
- **State Freight Plan**
- **State Bicycle Transportation Plan**
- **youMove Massachusetts**
- **Massachusetts Strategic Multi-Modal Transportation Plan**

Project Prioritization and Selection

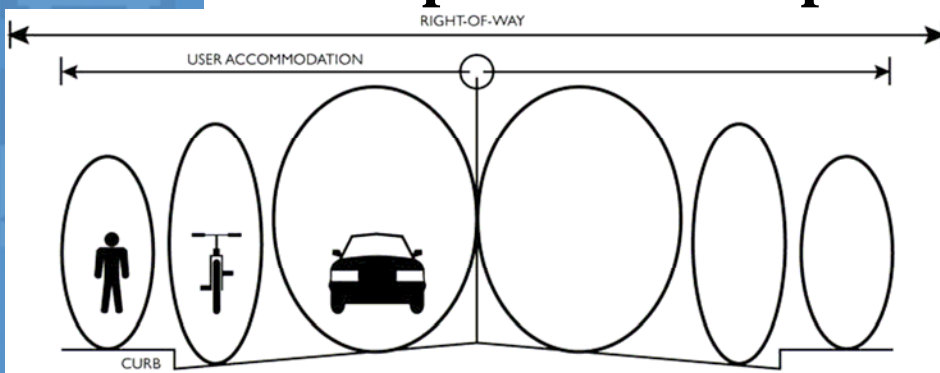
MassDOT will work with MPOs to

- **Integrate GreenDOT goals, sustainability criteria into regional planning documents**
 - Regional Transportation Plans
 - Transportation Improvement Programs
- **Reduce GHG emissions from project program**
 - Establish GHG reduction targets for 2020, other appropriate target years
 - Compile GHG impacts from RTP and TIP project programs
- **Balance of roadway maintenance, roadway public transit, pedestrian, and bicycle projects**

Transportation Project Design

Complete Streets

- Core design philosophy of MassDOT's *Project Development and Design Guide*
 - Accommodation for all users
 - Design roadways “from the outside in”
- Complete Streets design required for recipients of discretionary funds (PWED, TOD) and access permits
- MassDOT will develop design aids and training to promote Complete Streets design as standard



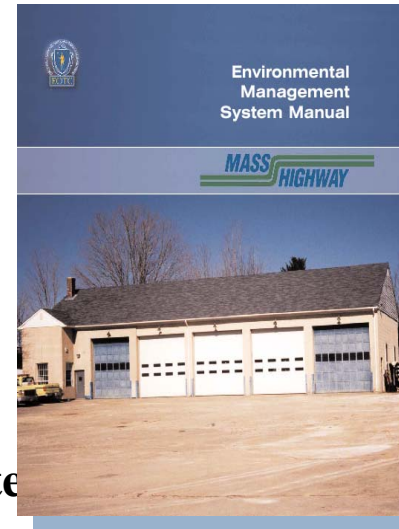
Transportation Project Construction

- **Pavement**
 - Recycled materials – recycled asphalt, recycled tires, and manufacturers waste shingles
 - Warm mix asphalt
- **Drainage and water resources**
 - Best management practices for construction projects
 - Remediation and retrofit where needed
- **Lighting – LED traffic signals, potential expansion of use**
- **Facilities – LEED certification for new and rehabilitated facilities**
- **Construction vehicles –MassDOT contractors have retrofit over 800 private diesel construction vehicles**



Transportation System Operation

- **Fleet operations**
 - MBTA fleet – low-emission fleet, procurement of diesel-electric hybrid buses
 - MassDOT fleet – procurement and retrofit of low-emission vehicles
 - Diesel retrofit of school buses, regional transit buses
 - MassDOT bike pool
- **Facilities operations**
 - MassDOT Highway and MBTA environmental management systems
 - Waste, material and energy reduction initiatives
- **Renewable power – expansion of existing renewable power installations in MassDOT ROW, facilities**
- **Travel Demand Management – new ridematching system to be launched this fall**
- **Eco-Driving – internal and external education and promotion**



GHG Reductions from GreenDOT Policy

- **GreenDOT reductions are in addition to existing policies**
- **GreenDOT reductions are for GHG impacts direct or indirect MassDOT actions**
- **This does not include GHG reductions from other potential policies that MassDOT does control (e.g. federal policies, consumer choice of energy efficient cars)**

GreenDOT Policy Goals	Principal Actions	GHG Reduction
Reduce Greenhouse Gas Emissions	<ul style="list-style-type: none"> •Construction •Fleet •TDM •Eco-driving 	1.53 MMTCO ₂ e* (5.3%)
Promote Healthy Transportation Modes of Bicycling and Public Transit	Transportation investments that enable increased use of these modes	0.20 MMTCO ₂ e (0.7%)
Support Smart Growth Development	Change in travel behavior due to growth development patterns	0.38 MMTCO ₂ e (1.3%)
Total		2.11 MMTCO ₂ e (7.3%)

* Million metric tons of CO₂ equivalent,
% relative to 1990 = 28.9 MMTCO₂e

Next Steps

- **Action plan for GreenDOT implementation**
 - Regional transportation planning
 - Complete Streets outreach and training
 - Review of construction and procurement practices
- **Sustainability performance measures**