Moving Washington Toward Sustainability:

WSDOT Planning Actions in Response to HB 2815 and EO 09–05

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WSDOT profile

WSDOT owns, manages, and maintains:

Highways
- 20,000 state highway lane miles (carries 86 million vehicle miles/day)
- 225 lane miles of a planned 320-mile HOV freeway system
- More than 3,600 bridges and structures

Ferries
- 22 ferry vessels, 20 terminals, and 500 daily sailings (carries 23 million passengers/year)

Passenger rail
- Partner in Amtrak *Cascades* state passenger rail (carries over 700,000 passengers/year)

Freight rail
- Grain Train (runs 89 grain cars)
- 492 miles of public owned short-line rail (including the WSDOT owned Palouse River and Coulee City Rail System)

Transit support
- Commute programs support more than 810,000 commuters statewide (61.5 million vehicle miles traveled reduced 2007 to 2009)
- Vanpool program includes more than 2,400 vans (Washington has the largest public vanpool fleet in the nation)

Aviation
- 17 WSDOT managed airports
- 138 public use airports

Funding
(includes 2010 supplemental budget)

$1.4 billion 2009-2011 operating program budget

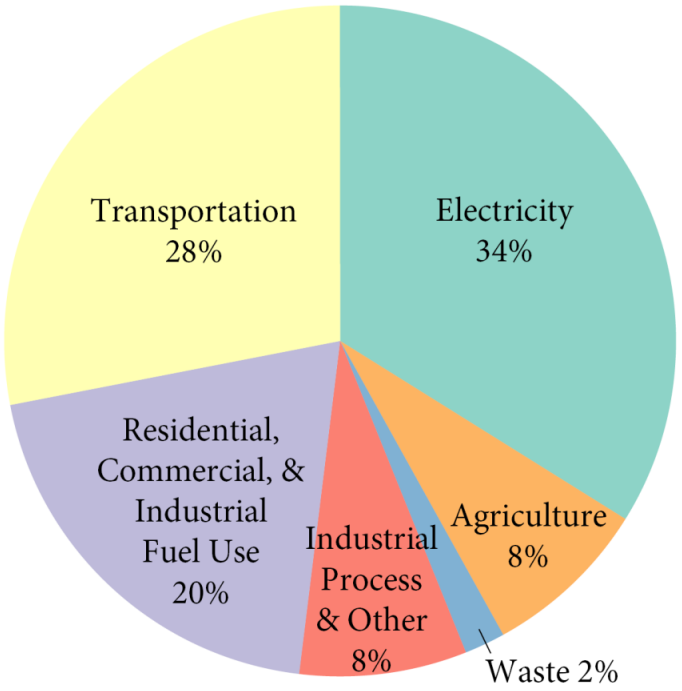
$5.3 billion 2009-2011 capital program budget
- **State dollars - $3.4 billion**
- **Federal dollars (non ARRA) - $1.0 billion**
- **ARRA dollars (highways and rail) - $0.9 billion**





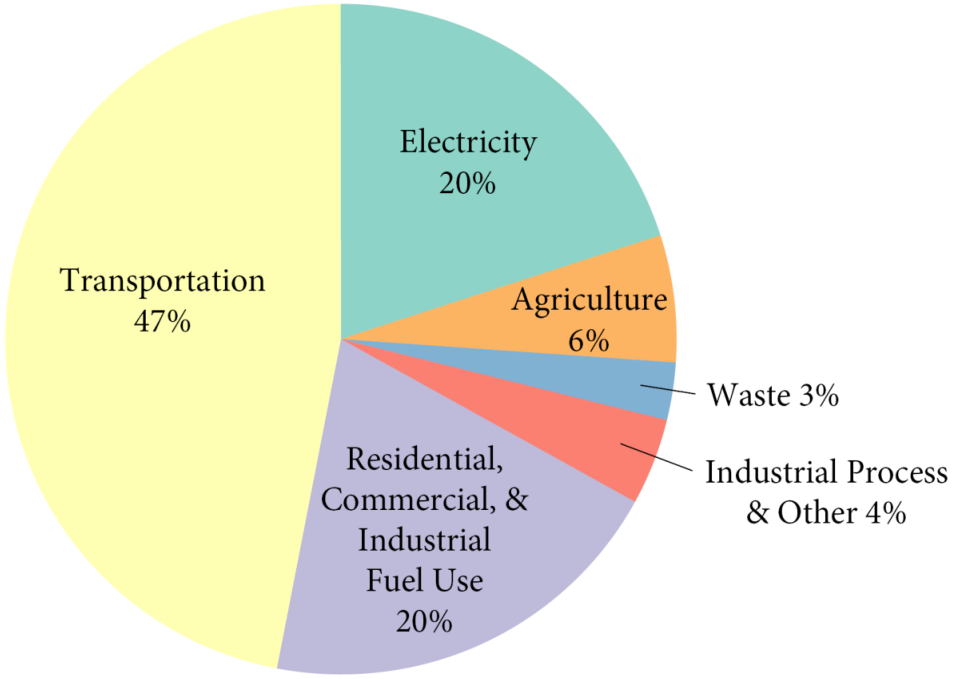
Transportation accounts for 47% of greenhouse gases in Washington

U.S. Greenhouse Gas Emissions



Source: Washington State Department of Ecology, 2005

Washington Greenhouse Gas Emissions



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Climate Change Legislation

Legislation in 2008 and 2009 specify sustainable transportation, GHG emissions and vehicle miles traveled (VMT) requirements of WSDOT:

- RCW 19.27A.190 directs WSDOT to report energy usage to assess the need for energy audits.
- RCW 43.16.648 (4) requires WSDOT to install outlets for electric vehicle charging in our state's fleet parking and maintenance facilities.
- RCW 43.21M.010 instructs the department to participate in the development of a statewide integrated climate change response strategy.
- RCW 47.01.440 established VMT reduction benchmarks and assigns specific implementation, monitoring, economic assessment and analysis tasks to WSDOT.
- RCW 70.235.020 established GHG emissions reduction goals for the state.
- RCW 70.235.050 directs WSDOT to quantify and reduce our GHG emissions to achieve state agency's mandatory targets.

GHG/VMT Reduction Goals

- **2007 Senate Bill 6001** (RCW 70.235.020)
  - Target reduction of Washington's greenhouse gas emissions to:
    - 1990 levels by 2020
    - 25% below 1990 levels by 2035
    - 50% below 1990 levels by 2050

    State's baseline = *94.6 million metric tons CO2 equivalent*

- **2008 House Bill 2815** (RCW 47.01.440)
  - State to reduce per person VMT

    (for vehicles under 10,000 lbs)
    - 18% by 2020
    - 30% by 2035
    - 50% by 2050

Governor's Executive Order 09-05

(a) In consultation with the Departments of Ecology and Commerce, and in collaboration with local governments, business, and environmental representatives,

- Estimate current and future state-wide VMT,
- Evaluate VMT benchmarks to address low- or no-emission vehicles, and
- Develop additional transportation GHG reduction strategies
- Report findings and recommendations to the Governor by December 31, 2010

(b) Work with the Puget Sound Regional Council, Spokane Regional Transportation Council, Southwest Washington Regional Transportation Council and Thurston Regional Planning Council to cooperatively develop and adopt regional transportation plans that will:

- Provide transportation alternatives and choices,
- Reduce greenhouse gases, and
- Achieve the VMT benchmarks
- By December 1, 2011, report to the Governor on which regional transportation planning organizations have developed, or are developing, plans with greenhouse gas strategies, which strategies have the greatest potential to achieve the benchmarks, and what policy or funding issues need to be resolved.

Carrying out the EO

- Created an EO Working group in October 2009---MPOs/RTPOs, Cities and Counties, trade associations, transit, Transportation Choices, AAA
- Formed ad hoc technical advisory groups to work with staff analyses
- Using teleconferencing and videoconferencing for statewide collaboration while respecting time and resource constraints and reducing CO2 footprint—4 meetings to date

Executive Order 09-05 – Preliminary Vehicle Miles Traveled Findings and Recommendations- 1

- **Current Vehicle Miles Traveled**
  - The HPMS provides an established, consistent method for tracking VMT at the state level
  - HPMS data quality is best for state highways, then county roads, then city streets
  - Metropolitan Planning Organizations have their own ways of tracking and modeling VMT
- **Estimating Future Vehicle Miles Traveled**
  - Previous estimates based on long-range revenue forecasts are unreliable
  - A newly developed VMT forecast tool is estimating lower future year VMT than the current 2020 vehicle miles traveled benchmark in the RCW
  - Benchmarks should be based on actual data from an historic year

Executive Order 09-05 – Preliminary Vehicle Miles Traveled Findings and Recommendations- 2

- WSDOT looked at recent studies of potential VMT reduction strategies to:
  - Highlight the types of promising strategies and ranges of reductions.
  - Provide a high level indication of potential greenhouse gas reductions that may be needed from other strategies beyond vehicle miles traveled reduction to meet state greenhouse gas reduction goal.
- Did not assess feasibility or cost of implementing strategies.
- All studies acknowledge considerable uncertainty.
- There can be a great degree of variability in:
  - How strategies are implemented.
  - Where strategies are implemented.
  - Effectiveness based on the above.
- The future may differ from the past:
  - People may respond and change behavior in unexpected ways.
  - Highlights importance of performance monitoring to refine our path in response to changing circumstances.

Executive Order 09-05 – Preliminary Vehicle Miles Traveled Findings and Recommendations- 3

- **Studies/Analysis Included**
  - **Washington Climate Action Team transportation policy options analysis** (December, 2007);
  - ***Transportation Role in Reducing U.S. GHG Emissions*: *Report To Congress*** (April, 2010)
  - ***Moving Cooler*** (July, 2009)
  - Harvard Kennedy School Belfer Center for Science and International Affairs Study, ***Analysis of Policies To Reduce Oil Consumption and Greenhouse-Gas Emissions from the US Transportation Sector*** (February, 2010)
  - ***EPA Analysis of the Transportation Sector Greenhouse Gas and Oil Reduction Scenarios*** (February, 2010)
  - U.C. Berkeley Study: ***Review of Modeling Analysis of Transit, Land Use, and Auto Pricing Strategies to Reduce VMT and GHG Emissions***, C. Rodier, for CARB and Caltrans (October, 2009)
  - **PSRC T-2040 Modeling Analysis**

Executive Order 09-05 – Preliminary Vehicle Miles Traveled Findings and Recommendations- 4

- **Vehicle Miles Traveled and Greenhouse Gas Reduction Benchmarks**
  - Reducing inefficient travel is necessary for getting the most out of the transportation system and reducing greenhouse gases.
  - Focusing just on reducing VMT is a blunt instrument for reducing GHGs and is not equally practical in all areas of the state
  - The VMT benchmarks don't take into account Low emission vehicles (i.e. Prius) and zero emission vehicles (i.e. Plug-ins) greenhouse gas reduction strategies and need to be adjusted for their likely market penetration
  - Limiting vehicle miles traveled and greenhouse gas reduction goals to just Light Duty Vehicles ignores the significant emissions from Heavy Duty Vehicles

Executive Order 09-05 – Preliminary Vehicle Miles Traveled Findings and Recommendations- 5

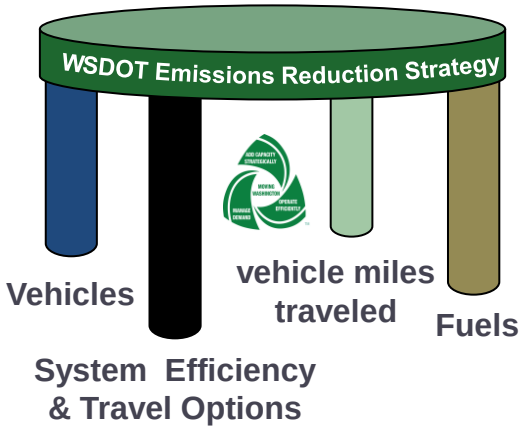
- **Pricing:**
  - Moderate to major reductions possible, particularly when combined with land use and transit strategies.
  - Major VMT reductions require broad-based pricing signals with equivalent fuel prices increase of several dollars a gallon.
  - An economy-wide carbon price of $30-$60 per ton of CO_2 alone increases fuel prices only modestly doing little to curb transportation sector emissions.
  - In addition to reducing VMT, pricing signals could encourage the transition to a more greenhouse gas efficient vehicle fleet (these greenhouse gas benefits could exceed the vehicle miles traveled reduction greenhouse gas benefits).

Executive Order 09-05 – Preliminary Vehicle Miles Traveled Findings and Recommendations- 6

- **Overall Vehicle Miles Traveled reductions:**
  - Considerable uncertainty in the range of VMT reductions possible.
    - Most studies imply 2050 VMT reductions from future baseline ranging from about **~7%** to as high as **~33%** may be possible.
    - Higher VMT reductions would likely require widespread pricing signals equivalent to an additional fuel cost of several dollars a gallon, along with supportive bold and transformative land use and transit strategies.
  - Reducing transportation GHGs consistent with our state's greenhouse gas reduction goal will require additional transportation strategies, along with VMT reduction. These other strategies include a faster transition to low/no emission vehicles/fuels, and operational efficiency improvements.

Greenhouse Gas Reduction Strategies

Four Legs of the Stool Plus Land Use

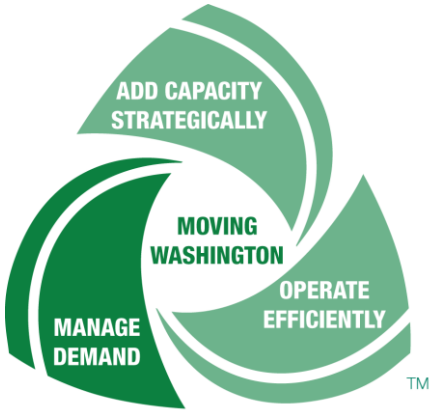


- **Improve fuel**
  - Lowering the carbon content of fuels
- **Advance Vehicle Technology**
  - Support improved vehicle technology
- **System Efficiency**
  - Operate our transportation system to maximize efficiency and improve traffic flow
- **Increase Options and reduce Vehicle Miles Traveled**
  - Support efficient transportation options like carpooling; working from home; riding a bus, train or bicycle; walking; or telecommuting.

PLUS

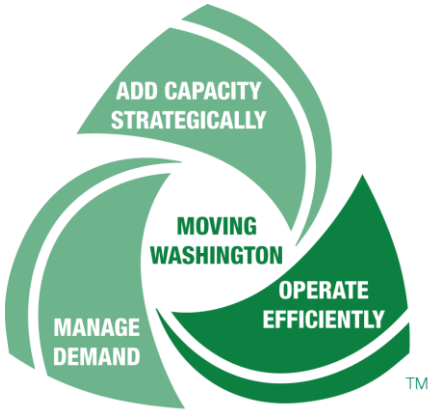
- **Land Use**
  - Leveraging transportation investments to encourage land uses that are accessible to alternative travel options

Moving Washington – We manage and operate a sustainable transportation system to complement the future we want.



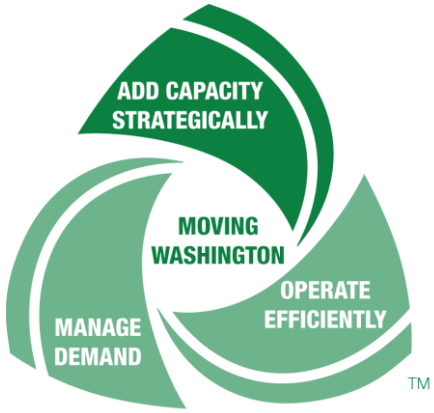
Managing Demand

Providing more travel choices and options for people and freight helps improve the efficiency and effectiveness of our transportation system



Operating Roadways Efficiently

Moving Washington improves the system's performance and generates revenue through variable pricing and other traffic management tools



Adding Capacity Strategically

Adding new capacity to our currently over-stressed transportation system is a critical component of Moving Washington

Moving from Climate Change to Sustainable Transportation:

Sustainable transportation is a system that preserves the environment, is durable and takes into account how we build it and the materials we use. We manage and operate a sustainable transportation system to complement the future we want.

WSDOT is already engage in many activities in the following areas to make our department, and our transportation system sustainable.

- **Economic Vitality and Stewardship**
- **Preservation and Maintenance**
- **Safety**
- **Mobility and Traffic Operations**
- **Environment and Adaptation**
- **Community Partnerships**
- **Fuels and Energy**
- **Design and Construction**

Lessons Learned-1

- Climate change is storm water, wetlands, endangered species, air quality, conformity, NEPA and historic preservation for the 21st century
  - Transportation community needs to understand the issue and its own relationship to the causes and cures
  - DOT Culture needs to get past disbelief, resistance, defensive herd response, and to establish credibility with positive action—AASHTO is setting a good example, and many DOTs are reacting positively
- VMT vs. GHG emission reductions--public debate over VMT, land use strategies will be technically, emotionally, legally and politically complex—already have first legal challenge of an updated MTP

Lessons Learned-2

- Need to get to the table early
  - Climate Change strategies most often defined by environmental interests
  - Even though transportation is a major source, often not at the table initially
- Need to own the issue
  - Climate Change too narrowly defined for many internal and external stakeholders
  - “Sustainability” defines a series of smart business actions in terms of customer focus, efficient operations, reduced costs and reduced environmental exposure
  - Who wants to be seen “unsustainable” and as the problem, not the solution
- Need to advertise actions and successes
  - DOTs are already supporting increased system efficiency and sustainable practices

Future Issues and Challenges

- Addressing Climate Change meaningfully in transportation plans and projects, NEPA and state environmental documents
- Transportation Funding in a reduced carbon footprint world where funding currently depends on the size of your shoe
- Developing balanced adaptation strategies in facility and system rehabilitation and development

Questions or comments?

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