1. What does Sustainability mean to ODOT?
   • ODOT Sustainability Council
   • ODOT Sustainability Plan Volume I
2. Implementing Sustainability in our own backyard
   • ODOT Sustainability Plan Volume II
3. Planning for the Future: Sustainability and Planning
   • SB 2186 and SB 1059; Volume III in the works
4. Sustainability in Project Delivery
   • Greenroads
   • Sustainable Roadway Projects
**ODOT’s Definition of Sustainability**

Sustainability is using resources in a manner that enables people to meet their current needs while allowing for future generations to meet their needs.
Sustainability Program

Organizational Chart:

- ODOT Director’s Office
- Sustainability Council
  - Cross-divisional, -regional, and -functional
- Sustainability Program Manager
  - Internal ODOT Stakeholders
  - Conservation and Alternative Resource Teams (CART)
    - Ongoing teams to promote recycling, conservation, energy efficiency, and commute options in ODOT offices
  - Sustainability Project Teams
    - Convened as-needed to address specific sustainability projects and initiatives
- External Stakeholders
  - State & local agencies, Governor’s Office, Oregon Sustainability Board, industry, general public, etc.
Coordination and Partnerships

External

- Oregon Sustainability Board
- Interagency Sustainability Working Group
- Oregon Global Warming Commission
  - Transportation and Land Use Subcommittee
- Governor’s Task Force on Alternative Fuels

Internal

- ODOT Sustainability Council
- ODOT Climate Change Executive Committee
- ODOT Climate Change Technical Committee
- Handbook on Climate Change (draft)
ODOT’s Strategic Plan for Sustainability

- Volume I: Setting the Stage, the Vision for ODOT’s Sustainability
- Volume II: Sustainability Management for ODOT’s Internal Operations

More to come...

- Volume III: Sustainability Management for Oregon’s Transportation System
  - Greenroads: Design and Construction at the Project-level
Introduction to Focus Areas

(1) Health And Safety
(2) Social Responsibility
(3) Environmental Stewardship
(4) Land Use And Infrastructure
(5) Energy And Climate Change
(6) Material Resource Flows
(7) Economy
### Example from Volume 2

<table>
<thead>
<tr>
<th>Sub-Area</th>
<th>Long-Run Goal</th>
<th>Short-Run Goal</th>
<th>Performance Measures</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>(I-5-1) Building energy use</td>
<td>• Electricity use reduction: 50% below 2000 levels*</td>
<td>• Electricity use reduction: 10% below 2000 levels by 2010 (all-agency goal)</td>
<td>• Total electricity use (kWh)</td>
<td>• Use of renewable energy in grid mix</td>
</tr>
<tr>
<td></td>
<td>• 100% of state government’s total electricity met by new renewable energy sources by 2025 (<em>REAP</em>), or sooner if directed by executive order</td>
<td>• Electricity use reduction: 20% by 2015</td>
<td>• Renewable energy use as percentage of electricity grid mix</td>
<td>• Monitoring/ tracking of energy use</td>
</tr>
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<td></td>
<td></td>
<td>• 25% of state government’s total electricity needs will be met by new renewable energy sources by 2010 (<em>REAP</em>)</td>
<td></td>
<td>• Encourage efficiency measures &amp; conservation</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td>• Weatherization of windows and doors</td>
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<td></td>
<td></td>
<td></td>
<td>• Energy retrofits for existing buildings</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Switch lighting fixtures to LED’s or induction lighting</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>• On-site generation where appropriate (esp. PVs and solar hot water)</td>
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<td></td>
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<td>• Energy Star equipment</td>
</tr>
</tbody>
</table>
Current Success: Greening the Fleet

Idling Technology and Energy Savings
- Anti-idling technology in all new and some older 10 yard, 5-yard and 1 ton trucks
- Board lights and arrow board signs LED lights
- Cost-savings: A five percent reduction could save year in fuel and 730,000 lbs of CO2.

Alternative Fuels
- Increased gallons of biodiesel used by 24% from FY 2006 to FY2009.
- Met and exceeded the Governor’s Goal of 25% alternative fuels by July 2010

Alternative Vehicles
- Replacing light fleet with hybrids or cars that use bio-diesel
- Pursuing funding for electric cars and electric trucks
Current Success: Facilities

All new major facilities are built to Leadership in Energy and Environmental Design (LEED) Standards

The new Maintenance Yard in Baker City, District # 13, Region 5 is currently being built (in background picture).

- Solar panels
- LEED equivalence rating
- Exterior colors selected for head rejection/retention
- Premium quality electric motors for greatest efficiency
- R30 insulation and R17 insulated overhead doors
- Motion sensor lighting
- High efficiency water well pumps
- Commercial sand filter sewage treatment
- Biofilter site drainage treatment
Planning for the Future: Sustainability and Planning

- SB 2186 and SB 1059;
  Volume III in the works
Sustainable Transportation

“We have three challenges before us. First, we must identify the needs of a transportation system that meets the demands of a 21st century economy.

Second, we must do so in a way that complements our efforts to reduce our carbon footprint.

Third, as we turn more and more to alternate modes of transportation - and less on fuel-run vehicles - we must also explore alternative ways to fund our transportation system in a way that is sustainable for the long-term.”

Governor Ted Kulongoski, August 30, 2007
Oregon Transportation Plan: Goal 4

“To provide a transportation system that meets present needs without compromising the ability of future generations to meet their needs from the joint perspective of environmental, economic and community objectives. This system is efficient and offers choices among transportation modes. It distributes benefits and burdens fairly and is operated, maintained and improved to be sensitive to both the natural and built environments.”
How does Sustainability relate to Climate Change?

Sustainability, in a broad sense, is the ability to maintain a certain process or state.

Mitigation for impacts of Climate Change involve strategies to reduce and conserve energy and material use.

Sustainability balances social, economic and environmental needs in the on-going process of achieving ODOT’s goals. The reduction and conservation of carbon-emitting energy sources and materials are part of that process.
Overview: Transportation and Climate Change

- 33 percent of emissions in the US are from the transportation sector
- According to EPA, CO2 accounts for 95% of the GHG impact from transportation
  - Other transportation GHGs (CH4, N2O, air conditioning gases) have much higher global warming potentials than CO2, but are emitted in very small amounts relative to CO2
Oregon is Building Its Four-legged Stool

**Vehicle Efficiency**
- Truck Efficiency and Idling
- Electric Vehicles

**Low Carbon Fuels**
- HB 2186 - Oregon’s Low Carbon Fuel Standard
- Oregon DOE Incentives

**System Efficiencies**
- Congestion Pricing Pilot
- PAYD insurance Pilot
- Road User Fee study

**VMT Reduction**
- STIP Criteria
- Least Cost Planning
- SB 1059 Planning for GHG reductions from transportation sector
Many factors affect GHG emissions from the transportation sector
# Oregon Transportation and GHG Legislation from 2009 and 2010 Sessions

<table>
<thead>
<tr>
<th>Bill</th>
<th>Description</th>
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</thead>
</table>
| **HB 2001** | • Least Cost Planning  
• STIP Criteria Revision  
• VMT Reduction Goals for Portland and Eugene/Springfield  
• Practical Design |
| **HB 2186** | • Truck Efficiency and Idling*  
• Low Carbon Fuel Standard*  
• Greenhouse Gas Metropolitan Organization Planning |
| **SB 1059** | • State-level Strategy to reduce GHG emissions from transportation  
• Toolkit  
• MPO Scenario Planning  
• Outreach and Education  
• GHG reduction goals for MPO |

*Oregon DEQ is the lead
Least Cost Planning

“A process of comparing direct and indirect costs of demand and supply options to meet transportation goals and/or policies to identify the most cost-effective mix of options”

- HB 2001, Sec. 6 (2009)
STIP Selection Criteria

- Improve travel times
- Enhance safety
- Increase operational reliability
- Must be consistent with State’s GHG reduction goals
OREGON TRANSPORTATION
GHG EMISSION REDUCTION PLANNING

Statewide Transportation Strategy
Statewide strategy for reducing GHG emissions from the transportation sector to aid in achieving legislated GHG reduction targets. To be adopted by the Oregon Transportation Commission.
- Policy Committee
- Technical Advisory Committee

Technical Info for LCDC Rulemaking
ODOT, DEQ, and ODOE provide estimates of 1990 light vehicle GHG emissions and forecasts of future vehicle fleet and fuel characteristics.

Scenario Planning Guidelines
Guidelines and process for metropolitan areas to develop land use and transportation scenarios to meet GHG reduction targets.
- Technical Advisory Committee

Toolkit
Information on actions and programs local governments may undertake to reduce GHG emissions from light vehicles.

Public Education
Statewide public outreach and education about the need to reduce GHG emissions from light vehicles and about the costs and benefits of reducing GHG emissions.

LCDC Rulemaking to Set Metropolitan Area Light Vehicle GHG Emissions Targets
- Target Rulemaking Advisory Committee

Scenario Planning Financial Report
Joint ODOT, DLCD, local governments report to 76th Legislative Assembly on financing scenario planning

Progress and Recommendations Report
Joint ODOT & DLCD report to 77th Legislative Assembly regarding SB 1059 progress.

www.oregon.gov/ODOT/TD/TP/SB1059.shtml
Oregon Climate Change Goals

- 2007: Oregon legislature set statewide goals:
  - 10% below 1990 GHG levels by 2020
  - 75% below 1990 GHG levels by 2050

- 2008: Governor’s Climate Change Integration Group: A Framework for Addressing Rapid Climate Change
  - A “framework for making intelligent and well-informed choices” To “lead the world to an environmentally sustainable and globally competitive state economy”
What does reducing our GHG means in 2050 in terms of fuel reduction?
Origin of GHG emissions from LDV

Circle areas are proportional to household travel GHG emissions
GreenSTEP = Greenhouse gas State Transportation Emissions Planning Model

- Developed by the Oregon Department of Transportation
- GreenSTEP will be used to support the development of Oregon’s statewide strategy for reducing GHG emissions from the transportation sector
- FHWA is funding tests for deploying GreenSTEP in another state and a metropolitan area
Preliminary Testing of Land Use and Public Transportation Policies

Year

Pounds CO2 Equivalents

CO2e Targets

Med Lt Veh Eff
Med Lt Veh Eff & More Den
Med Lt Veh Eff, More Den & More PT
Energy Alternatives
System Optimization

Example Strategies
Use of More Efficient Modes
Cleaner, Smaller, More Efficient Vehicles
Reinvigorate Rail
CLIMATE SUMMIT

WHAT IF IT’S A BIG HOAX AND WE CREATE A BETTER WORLD FOR NOTHING?

• ENERGY INDEPENDENCE
• PRESERVE RAINFORESTS
• SUSTAINABILITY
• GREEN JOBS
• LIVABLE CITIES
• RENEWABLES
• CLEAN WATER, AIR
• HEALTHY CHILDREN
• ETC. ETC.
4. Sustainability in Project Delivery

- Greenroads
- Sustainable Roadway Projects
Green Construction and Design

Sustainability at the project-level

Construction is both internal and external to ODOT

Currently, ODOT is practicing sustainability in:

- OTIA III Bridge Delivery
- Recycling and reuse of materials

More work to be done in 2010 and 2011

- Greenroads Research TAC
- Committee: Sustainability in Project Delivery
**Greenroads Rating System**

What is it?
- A rating system designed to distinguish high performance sustainable new or redesigned/rehabilitated roads.

What does it do?
- It awards credits for approved sustainable choices and can be used to certify projects based on total point value.

How does it help?
- Provides a straightforward means of understanding and quantifying sustainability in roadway design and construction.
Greenroads: Lava Butte Case Study

- U.S. 97 Lava Butte South Century Drive project team and construction team used the Greenroads checklist to guide them.
- The hope is that this will become the first project in Oregon to be Greenroads certified.
- This project earned innovation points by installing a creative wildlife crossing under the highway.
Questions?

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