Climate Change and Transportation

Addressing Climate Change in the Absence of Federal Guidelines

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Presentation Outline

• Federal Guidance so far
• Washington State overview
• WSDOT efforts
• Next steps
Federal Guidance

• EPA
  – April 2007, Supreme Court ruled CO2 a pollutant that can be regulated under CAA
  – March 20, 2009, EPA sent report to OMB with finding that GHG emissions are an endangerment to the public’s health and welfare.
  – MOVES model expected for beta release in mid-2009

• Nothing concrete from USDOT
  – Indications that FHWA guidance will focus on planning-level approach to GHG
  – Effect on transportation projects/planning unclear
Washington State
Washington State

U.S. Greenhouse Gas Emissions
- Transportation: 28%
- Electricity: 34%
- Residential, Commercial, & Industrial Fuel Use: 20%
- Industrial Process & Other: 8%
- Waste: 2%

Washington Greenhouse Gas Emissions
- Electricity: 20%
- Transportation: 47%
- Residential, Commercial, & Industrial Fuel Use: 20%
- Agriculture: 6%
- Industrial Process & Other: 4%
- Waste: 3%


WSDOT Efforts

• Climate Change Team
• Project Level GHG Approach
• Planning Level GHG Approach
• Alternative Fuels Corridor
• Recent legislation and research
WSDOT Efforts: Climate Change Team

- Executive support
- Headed by WSDOT Public Transit
- Multi-disciplinary
  - Environmental
    - Air Quality, Biology, Wetlands, Policy
  - Ferries, Fleet, Utilities, Facilities, Traffic, Planning, Design, Maintenance, Communications, and others
- Subgroups on Adaptation, VMT, Legislation, etc.
- Coordination with outside agencies: Dept Ecology, MPO/RTPOs, Counties, Transit, NGOs
WSDOT Efforts: Project Level GHG

• Internal/external interest for addressing GHG emissions at the project level
  – Disclosure
  – 2008 HB 2815: GHG and “green-collar” jobs
  – Streamlining process for future federal guidance

• Previous: GHGs in EIS Energy Reports
  – Vague methodology allowed for multiple approaches
  – SR 520 HIA, Columbia River Crossing DEIS

• Focus on State Environmental Policy Act (SEPA)
  – Accompanies NEPA documentation
  – Focus on WSDOT Lead/Co-Lead Project

• Interim Approach
  – Strongly recommended but not formal guidance
WSDOT Efforts: Project Level GHG

• Goals of Interim Project Level Approach
  – “Rational” and consistent
  – Informative
  – Useful across jurisdictions
  – Treated as a “Cumulative Effect”

• Coordination
  – Formal coordination
    • PSRC Technical Working Group
  – Informal
    • FHWA, TRB, AASHTO, other state DOT’s


WSDOT Efforts: Project Level GHG

<table>
<thead>
<tr>
<th>Type of emission</th>
<th>CE</th>
<th>DCE/Checklist/EA</th>
<th>EIS</th>
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<tbody>
<tr>
<td>Operational</td>
<td>No</td>
<td>Qualitative</td>
<td>Quantitative</td>
</tr>
<tr>
<td>Construction</td>
<td>No</td>
<td>Qualitative</td>
<td>Quantitative</td>
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<tr>
<td>Embodied/Lifecycle</td>
<td>No</td>
<td>No</td>
<td>Qualitative</td>
</tr>
</tbody>
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- Also recommends that some highly visible and/or controversial projects consider a “basic” quantitative GHG analysis of operational GHG emissions for SEPA DNS/MDNS or NEPA EA documents.
WSDOT Efforts: Project Level GHG

• Operational
  – Vehicles using project roadways
  – Depends on the fuel type, vehicle efficiency, vehicle speeds, distance traveled, and the number of vehicles on a road
  – Approx. 72% from on-road transport (passenger and freight)

• Construction
  – Primarily fuel burned in the equipment used to build a project
  – Also, increased traffic congestion caused by construction

• Embodied
  – “Cradle to site”
  – Sourcing raw materials and conversion into usable form

• Lifecycle
  – “Cradle to grave”
  – Embodied emissions plus those released throughout facility life
  – Includes demolition and disposal
WSDOT Efforts: Planning Level GHG

• Likely focus of future FHWA Guidance
  – Project assessment connected to transportation plans

• WSDOT
  – Multi-disciplinary internal group established
  – “Brainstorming” stage
WSDOT Efforts: GHG Inventory

• Inventory: Accounting of emissions released by an organization during a specific time period

• 2008 HB 2815
  – Requires fleet and entity reporting of GHG
  – State and private sector

• Fleet emissions > 2,500 MT CO2
  – Entity emissions > 10,000 MT CO2
  – WSDOT exceed both
  – Ecology developing rules
WSDOT Efforts: GHG Inventory

• The Climate Registry
  – Facilitated by World Resources Institute
  – International collaboration
    • Unified greenhouse gas emissions reporting
    • 40 states, provinces and tribes
    • United States, Canada, and Mexico
  – Establish common infrastructure and best practices
    • Across sectors and geographic regions

• WSDOT is a founding member

• Report 2009 agency emissions in 2010
  – Matches 2008 HB 2815 reporting timeline
WSDOT Efforts: GHG Inventory

• Emissions included
  – Carbon dioxide (CO2), Nitrous oxide (N20), Methane (CH4)

• Three scopes of emissions:
  – Scope 1: direct emissions, e.g. tailpipe or smokestack
  – Scope 2: indirect emissions from purchased energy (primarily electricity)
  – Scope 3 (optional): other indirect emissions – released by others in production of a good (e.g., paper) or service (such as an airline flight) used by the reporter

Scope 1
  85%

Scope 2
  15%
WSDOT Efforts: GHG Inventory

• Trial run using 2007 emissions
  – Identify data gaps
  – Streamline collection methods
    • 50,000 utility payments on over 5,000 separate accounts
  – Better understand current energy use and potential for improvements

• Lessons Learned
  – Utility management software needed!
  – Scope 1: Ferry activity
    • Largest ferry fleet in nation
  – Scope 2: Traffic services
    • E.g. traffic lights/signs, ITS
WSDOT Efforts: Alternative Fuels Corridor

- Exploring opportunities for public/private partnerships
- Establish/promote alternative refueling facilities
  - Major interstate highways in WA, particularly I-5
- 2008 Memorandum of Understanding
  - Washington, Oregon and California
  - Develop distribution network for alt. fuels along I-5
WSDOT: Other

- Climate Action Team 2007/2008 (public and private stakeholders)
  - Transportation Implementation Working Group (IWG)
  - SEPA IWG
- 2009 Legislation (pending)
  - Cap and Trade
  - Electric Vehicles
  - GHG emissions from the built environment
  - Renewable energy production
WSDOT: Next Steps

• Continue to update and refine Interim Approach to Project Level GHG Emissions
  – Approximately monthly updates

• Develop an Interim Planning Level Approach

• Work with agency partners on issues of adaptation and mitigation

• And wait…
  – Federal: FHWA guidance
  – State: legislative session close to determine effects of new legislation
Questions?

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References

• SR 520 Health Impacts Assessment:  

• Climate Action Team recommendations:  
  http://www.ecy.wa.gov/climatechange/2008cat_overview.htm

• King County Climate Change Impacts Worksheet:  
  www.cascadeagenda.com/files/cacitys/Climatechangeimpactsworksheet_KC.pdf

• WSDOT Alternative Fuels Corridor:  
  http://www.wsdot.wa.gov/Funding/Partners/Projects/AlternativeFuels/default.htm

• WSDOT Climate Change webpage:  
  http://www.wsdot.wa.gov/environment/climatechange/