


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Planning to Reduce Greenhouse Gas Emissions from the Transportation Sector

APA-OR 2010 Planning Conference
Climate Action Oregon Style
5/13/10
Brian Gregor, Oregon Dept. of Transportation


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***GHG Planning Requirements
A Short History of Events***

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
Key Legislative Events

- 2007 legislative session
 - HB 3545: greenhouse gas (GHG) emissions goals
- 2009 legislative session
 - HB 2001: Jobs and Transportation Act
 - HB 2186: greenhouse gas bill
- Between 2009 and 2010 sessions
 - MPO GHG Emissions Task Force
- 2010 legislative session
 - SB 1059: implementing task force report

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HB 2001: Jobs and Transportation Act (JTA)

- Work prior to session to develop a transportation funding bill that also addressed environmental considerations
- Negotiation during the session to include provisions for metropolitan area scenario planning to reduce GHG emissions

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HB 2001 Outcome

- JTA approved by the legislature
- Included several innovative policies
 - Least cost planning
 - STIP criteria to include GHG consideration
 - Electric charging stations at rest areas
 - Medium speed electric vehicles
 - Congestion pricing
- Only required metropolitan level GHG planning in Metro & Eugene/Springfield
 - Not satisfactory to all interested parties

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Using HB 2186 to Resolve the Metropolitan Area Planning Issue

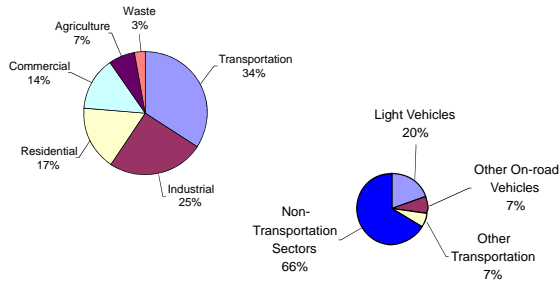
- HB 2186 authorized DEQ/EQC to address GHG emissions in a number of ways
- Political compromise to the metropolitan area planning issue added to HB 2186
 - Establishment of task force to study the issue and make recommendations to the 2010 legislature

Legislative Result of Task Force Work: SB 1059

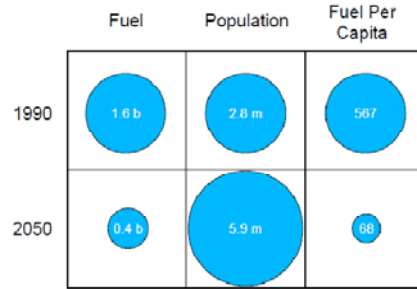
- Transportation Commission to develop statewide strategy for reducing GHG emissions from the transportation sector
- ODOT and DLCD to develop scenario planning guidelines and toolkit
- LCDC to adopt rules identifying light vehicle GHG targets for metropolitan areas
- Reporting to the legislature

Light Vehicle GHG Emissions and Influencing Factors

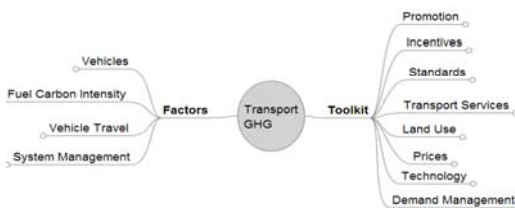
GHG Emissions By Sector



75% Reduction in Transportation GHG in Fuel Consumption Terms

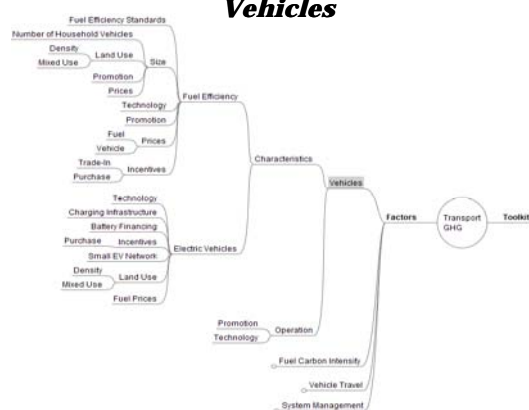


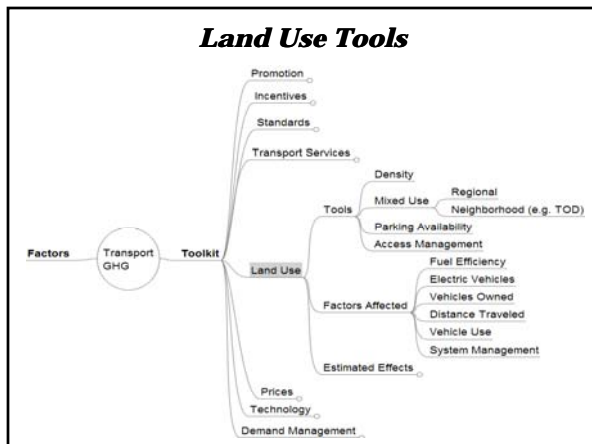
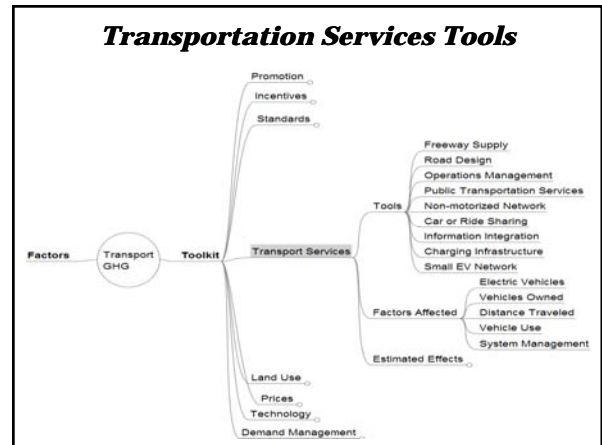
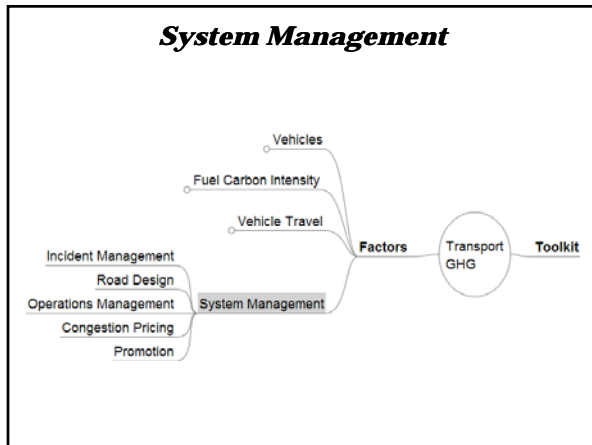
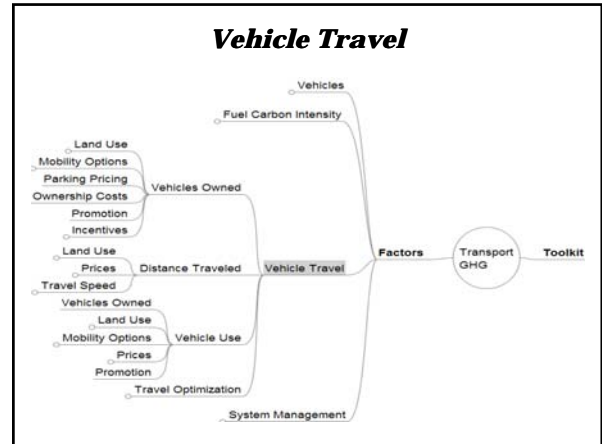
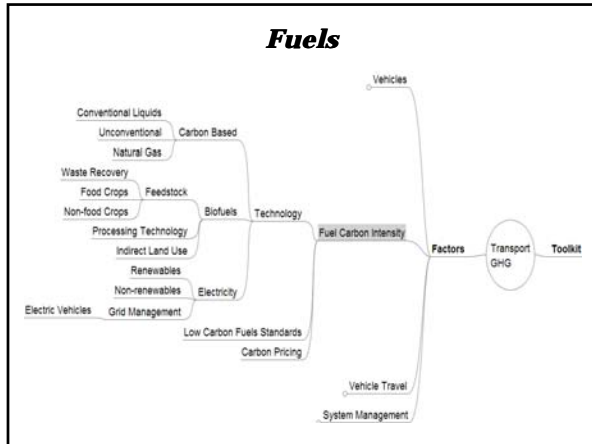
Light Vehicle GHG Mindmap



<http://www.oregon.gov/ODOT/TD/TP/docs/HB2186page/freemindbrowser.html>

Vehicles





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Modeling Transportation GHG Emissions

The GreenSTEP Model

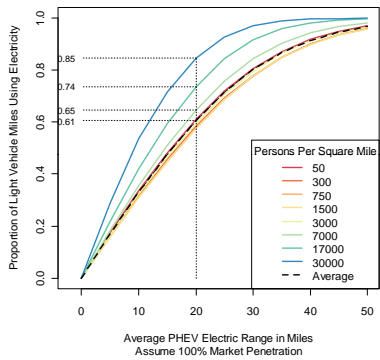
Background

- GreenSTEP = Greenhouse gas State Transportation Emissions Planning model
- Work started (2008) at the request of the Oregon Global Warming Commission (OGWC) for a model to evaluate a broad range of GHG policies
- GreenSTEP will be used to support the development of the statewide strategy for reducing GHG emissions from the transportation sector

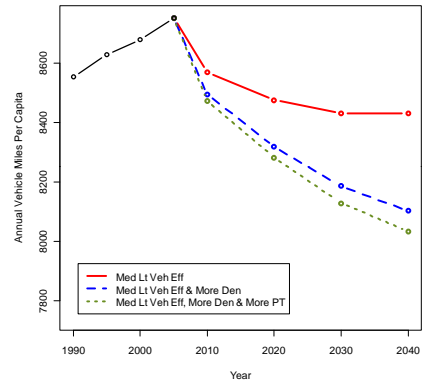
GreenSTEP Policy Sensitivity

- Demographic and income changes
- Relative amounts of development occurring in urban and rural areas
- Metropolitan and other urban area densities
- Urban form
- Amounts of metropolitan area public transit service
- Highway capacity
- Vehicle proportions: autos, light trucks, EVs, plug-in HEVs, lightweight EVs
- Vehicle ages
- Vehicle fuel efficiency
- Pricing of fuel, carbon, VMT, parking
- TDM and eco-driving
- Effects of congestion on fuel economy
- Lifecycle carbon content of fuels
- CO2 production from electrical power use for transportation

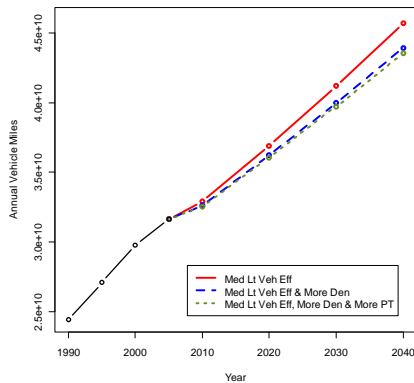
Electric Vehicle Travel by Average PHEV Electric Range As Applied to Survey Households



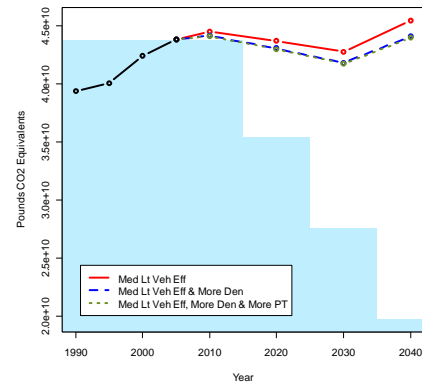
Per Capita Light Vehicle VMT Density Scenarios

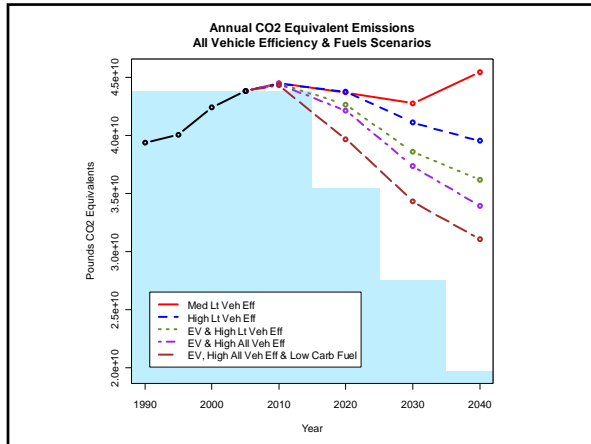


Total Statewide Light Vehicle VMT Density Scenarios



Annual CO2 Equivalent Emissions Density Scenarios





Next Steps: GreenSTEP and Statewide Strategy

- GreenSTEP
 - Complete version 2 of the light vehicle model
 - Complete long-distance travel model
 - Develop multimodal freight model
- Statewide Strategy
 - Organization things: committees, consultants, etc.
 - Develop & model baseline and reference case
 - Model plausible ranges of policy & other variables
 - Develop & model composite scenarios
 - Produce report on light vehicles GHG for LCDC
 - Model freight and long-distance travel scenarios
 - Complete strategy

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Questions ???

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