Greenhouse Gas Emission Reduction

Corvallis Area MPO

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CAMPO’s Planning Area
In 2007 Oregon Legislature required reducing GHG emissions by 75% from the 1990 level by 2050

HB2001 (2009) and SB 1059 (2010) directed ODOT to develop Oregon Sustainable Transportation Initiative (OSTI) and Statewide Transportation Strategy (STS)

ODOT and DLCD worked with MPOs to develop Guidelines, Targets and Tools for MPOs.

Portland Metro and Eugene were required to perform Scenario Planning for GHG Reduction
State developed GHG Emission Model (GreenSTEP-RSPM), provided fund and expertise.

CAMPO deliberated the issue and evaluated all benefits and encumbrances of the task.

CAMPO volunteered to undertake GHG Emission Reduction Planning
Phase I - Strategic Assessment

- GHG Emission of all current policies and plans in place, if implemented by 2035
- About 37% of GHG in Oregon comes from the Transportation Sector
- CAMPO provided local land use, transportation data (current & projected)
**Strategic Assessment Model (RSPM)**

**Inputs**
- Regional Context
- Vehicles & Fuels
- Pricing
- Parking Policies
- Alternative Modes
- Community Design
- Marketing & Incentives

1. Create MPO Households
2. Estimate Daily VMT
3. Add Vehicles & Estimate Greenhouse Gas Emissions

**Outputs**
- Environment
  - Greenhouse gases
  - Air quality
- Land Use
  - Mixed Use
- Mobility
  - Vehicle miles traveled
- Economy
  - Travel costs
  - Travel delay

Recalculate to balance VMT and travel costs
SA Key Findings:

Finding #1 – Greenhouse gases per capita decline

<table>
<thead>
<tr>
<th>Output</th>
<th>2010</th>
<th>2035</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual GHG emissions per capita from light vehicles including reductions from vehicle changes (metric tons)</td>
<td>2.2</td>
<td>0.9</td>
<td>-61%</td>
</tr>
<tr>
<td>Reduction in GHG emissions per capita</td>
<td>n/a</td>
<td>n/a</td>
<td>Adopted Plans: 2.1%</td>
</tr>
</tbody>
</table>

Key Factors:
- Vehicle fuel efficiency
- Fuel price
Finding #2 – Transportation energy use is expected to decline, significantly.

Key Factors:
- Cleaner vehicles and buses
- Fareless transit

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<th>Output</th>
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<tbody>
<tr>
<td>Annual fuel consumption per capita (gallons)</td>
<td>374</td>
<td>173</td>
<td>-54%</td>
</tr>
<tr>
<td>Annual vehicle miles per gallon</td>
<td>24</td>
<td>54</td>
<td>122%</td>
</tr>
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</table>
Finding #3 – Vehicle miles traveled increase slightly

Key Factors:
- Income growth
- Vehicle fuel efficiency
- Fuel price

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<tr>
<td>Household daily vehicle miles traveled per capita</td>
<td>22.0</td>
<td>22.7</td>
<td>3%</td>
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</table>
Daily Vehicle Miles Traveled Per Capita

2010
Average = 22.0 Miles

2035 Adopted Plans
Average = 22.7 Miles
SA Key Findings:

**Finding #4** – Household transportation costs are likely to increase

**Key Factors:**
- Shift to new vehicles with shorter turnover
- Fuel efficiency offset by fuel price increase
- Parking costs

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<tr>
<td>Annual household vehicle operating costs</td>
<td>$2,369</td>
<td>$2,684</td>
<td>13%</td>
</tr>
<tr>
<td>(fuel, taxes, parking)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual household vehicle ownership</td>
<td>$5,975</td>
<td>$7,198</td>
<td>20%</td>
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SA Key Findings:

**Finding #5 – Public health is likely to improve**

**Key Factors:**
- Cleaner vehicles
- Local efforts related to walking and bicycling
- Walk to transit
- Safer vehicles

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<th>2035</th>
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<tr>
<td>Clean Air Act criteria pollutants (millions kilograms per day)</td>
<td>17.7</td>
<td>7.1</td>
<td>-60%</td>
</tr>
<tr>
<td>Annual walk trips per capita</td>
<td>131</td>
<td>134</td>
<td>2%</td>
</tr>
<tr>
<td>Daily miles traveled by bicycle per capita</td>
<td>0.4</td>
<td>0.5</td>
<td>35%</td>
</tr>
</tbody>
</table>
Finding #6 – Social costs from driving are likely to decline

Key Factors:
- Cleaner vehicles
- Safer vehicles
- Less noise, water pollution

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<tr>
<td>Annual external social costs per capita</td>
<td>$1,062</td>
<td>$819</td>
<td>-26%</td>
</tr>
<tr>
<td>(unpaid)</td>
<td></td>
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**Finding #7 –**
Reaching the target is feasible and requires combinations of strategies.
SA Key Findings

Finding #8 – Changes to pricing or ambitious changes to vehicles and fuels are critical
Finding #9 – The region has multiple options to consider
Finding #10 – The region has multiple options to consider

Community Design:
- Land Use
- Transit
- Bicycles
- Parking

Marketing & Incentives:
- Driving Efficiency / ITS
- Demand Management / C

Pricing:
- Pricing (VMT, PAYD, Soci

Vehicles & Fuels:
- Vehicles / Fuels (3)
Phase II - Scenario Analysis

- **Purpose** - What are the land use and transportation decisions that would get us to our target

- **Approach** - Worked with planners and leaders to identify community issues and values

- **Scenarios:**
  - Increase/decrease density in central area
  - Increase investment in alternative modes
  - New developments in form of Mixed Use
  - Increase Parking Management and Fee
  - Home-based & work-based marketing
  - Car share program
Scenario Planning

- Scenario’s will be evaluated by yardsticks:
  - GHG Emission Reduction
  - Public Health
  - Equity
  - Sustainability

- CAMPO demonstrated a small MPO can partner with a large agency to perform a big project.
- Helped other MPOs to voluntarily engage in the process.
Questions?

Comments?
Key Findings in 2035

- GHG per capita declines (2.2%-18.5)
- Transportation energy use is expected to decline significantly
- Per capita VMT will increase slightly
- Household transportation cost will increase (13%)
- Public Health will likely improve
- Social cost of driving will likely decline
- Reaching target is feasible and requires a combination of strategies
- Change to pricing or ambitious change to technology and fuel are critical
- The region has multiple options to consider