Oregon GHG Planning with the RSPM Tool

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State GHG Planning with RSPM

Oregon GHG requirements called for a new "Strategic" Planning Tool ....GreenSTEP/RSPM

❑**Goal-oriented**. Complement other tools.

❑**Quick Runtimes**. Many scenarios to explore uncertainties and tradeoffs.

❑**Breadth over Depth**.

❑**Simple**. Time available for using outputs.

❑**Visual/interactive**. Exploration by policy makers/public.

Factors Considered at the Household Level

Forecasts Made at the Household Level

OUTPUT REPORTING

Statewide GreenSTEP summarizes results at the county and metropolitan area level.

Metropolitan RSPM summarizes results at regional and district levels.

Regional Strategic Planning Model

RSPM evaluates a full range of factors that affect household travel and emissions.

Regional Context	Local Actions		Collaborative Actions	
	Community Design	Marketing & Incentives	Vehicles & Fuels	Pricing
• Demographics • Income Growth • Fuel Price	• Future Housing (Single- & Multi-Family) • Parking Fees • Transit Service • Biking	• TDM (home & work-based) • Car Sharing • Education on Driving Efficiency • Intelligent Transportation Systems	• Vehicle Fuel Economy (mpg) • Fuels • Commercial Fleets	• Pay-As-You-Drive Insurance • Gas Taxes • Road User Fee

Sensitivity Test Viewer (CAMPO)

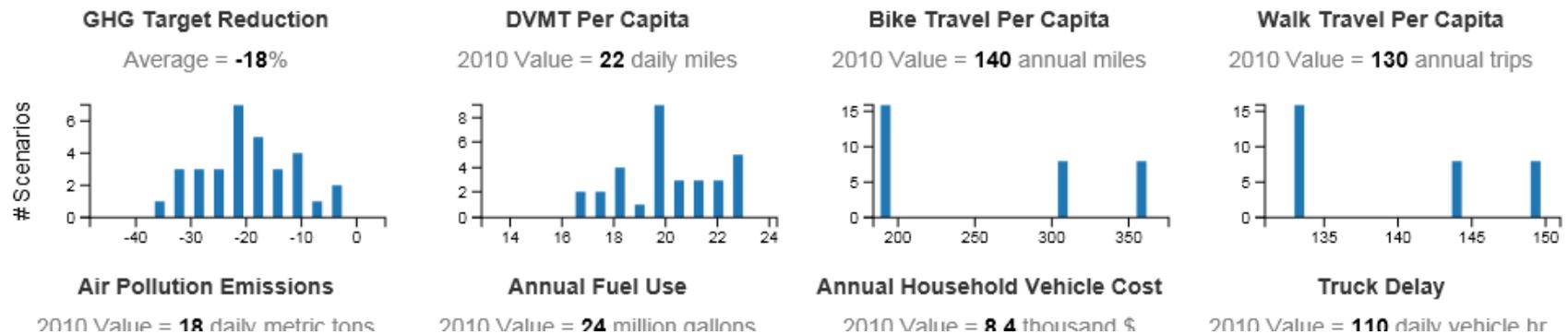Corvallis Metropolitan Planning Area Scenario Viewer

About This Effort | Quick Start | Detailed Instructions

Scenario Input Levels | Clear All Selections

Model Outputs: 32 scenarios selected out of 288 scenarios | Clear All Selections

Regional Strategic Planning Model

RSPM

Inputs

- Regional Context
- Community Design
- Marketing & Incentives
- Fleet & Technology
- Pricing

1. **Create MPO Households**

2. **Estimate Daily VMT**

Re-calculate to balance VMT & travel costs

3. **Add Vehicles & Estimate Greenhouse Gas Emissions**

Outputs

- Mobility
    - Vehicle miles traveled
- Land Use
    - Mixed Use
    - Housing Type
- Economy
    - Travel delay
- Equity
    - Household travel costs
- Environment
    - Air Quality
    - Greenhouse gas emissions

Oregon GHG Planning with RSPM
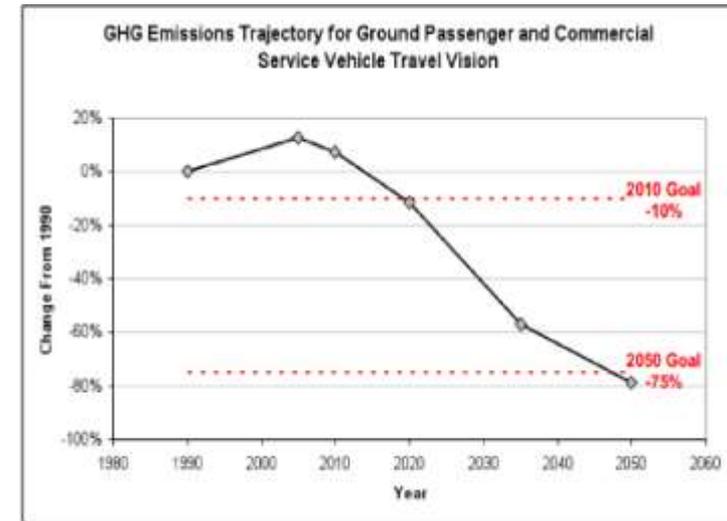
- ❑ **Oregon State GHG Goals**
  - Stop emissions growth by 2010
  - Reduce emissions by 10% by 2020
  - Reduce emissions by 75% by 2050

GHG Emissions Trajectory for Ground Passenger and Commercial Service Vehicle Travel Vision

- ❑ **Metropolitan GHG Reduction Targets**
  - Covers 6 metropolitan areas for 2035
  - Covers light duty vehicles (cars and trucks)
  - Scenario Planning – required in 2 largest MPOs

- ❑ **Oregon Sustainable Transportation Initiative (OSTI)**
  - Interagency program (ODOT & DLCD/Land Use & DOE & DEQ)
  - Statewide Transportation Strategy (STS)
  - Development of new planning tools (RSPM, toolkit, etc.)
  - MPO Scenario Planning
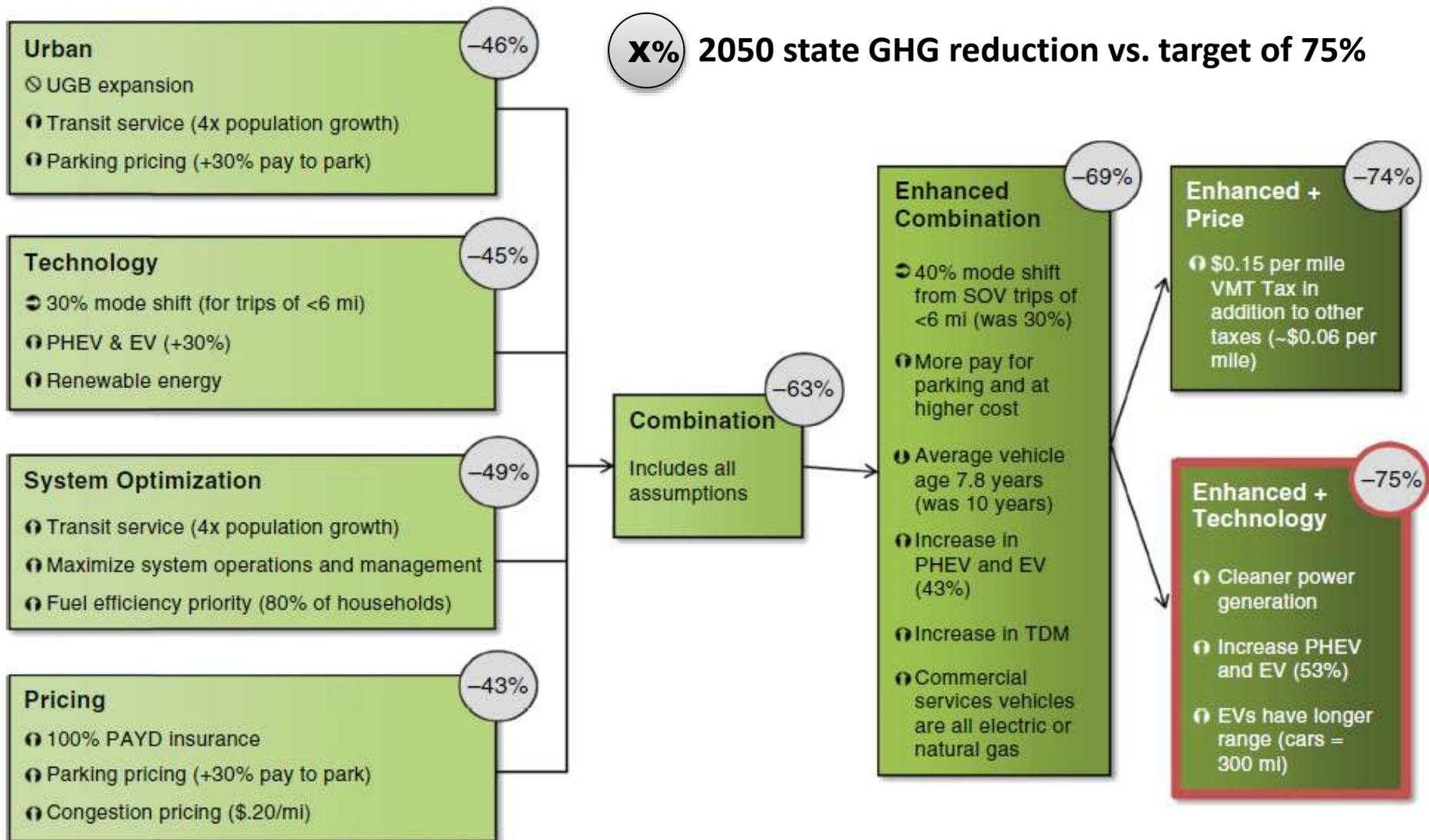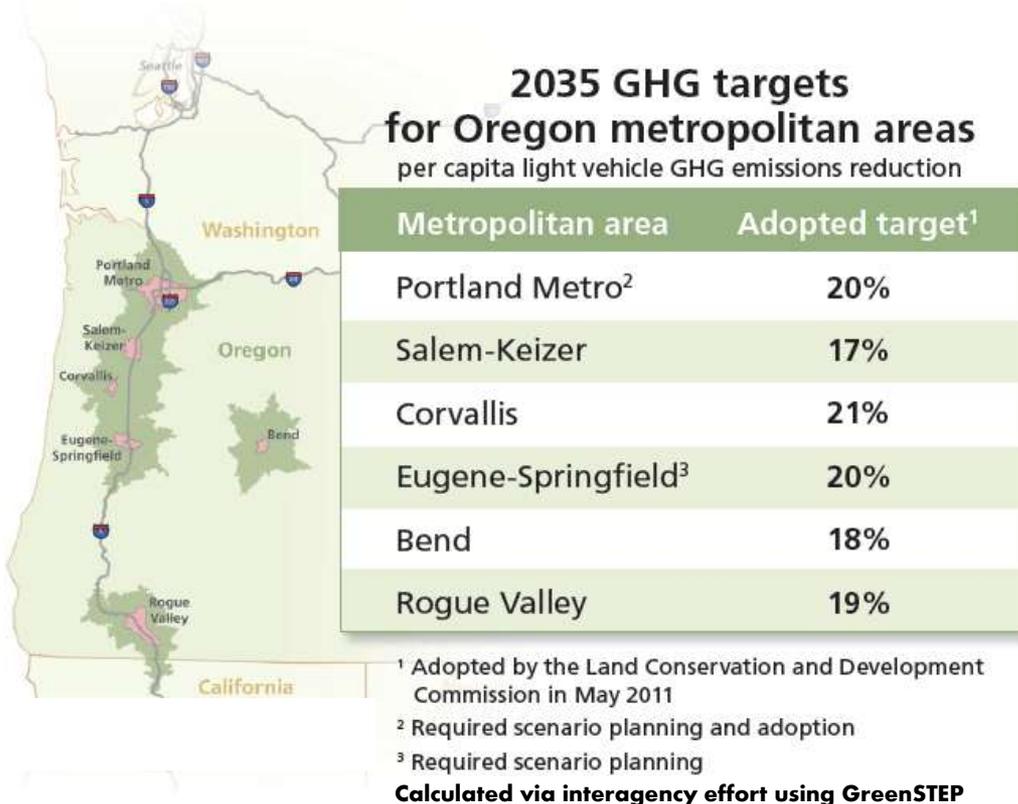
State GHG Planning with RSPM

FIGURE 1 Evolution of STS scenarios for on-ground passengers (SOV = single-occupant vehicle, TDM = transportation demand management, UGB = urban growth boundary).

MPO GHG Planning with RSPM

2035 GHG targets for Oregon metropolitan areas
per capita light vehicle GHG emissions reduction

Metropolitan area	Adopted target[1]
Portland Metro[2]	20%
Salem-Keizer	17%
Corvallis	21%
Eugene-Springfield[3]	20%
Bend	18%
Rogue Valley	19%

[1] Adopted by the Land Conservation and Development Commission in May 2011
[2] Required scenario planning and adoption
[3] Required scenario planning
Calculated via interagency effort using GreenSTEP

MPO Scenario Planning Process
Proposed approach: Regional Transportation Plan meets GHG target
- Assess adopted plans
- Evaluate more ambitious strategies
- Adopt a preferred scenario
- Monitor progress

As implemented:
Requirements vary by MPO size
For smaller MPOs, voluntary process

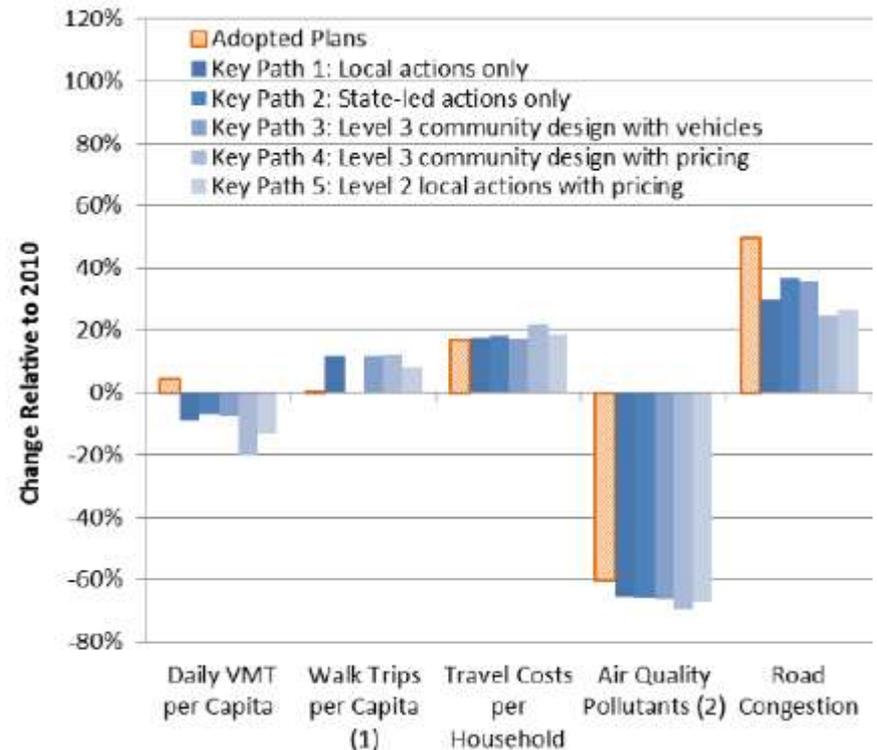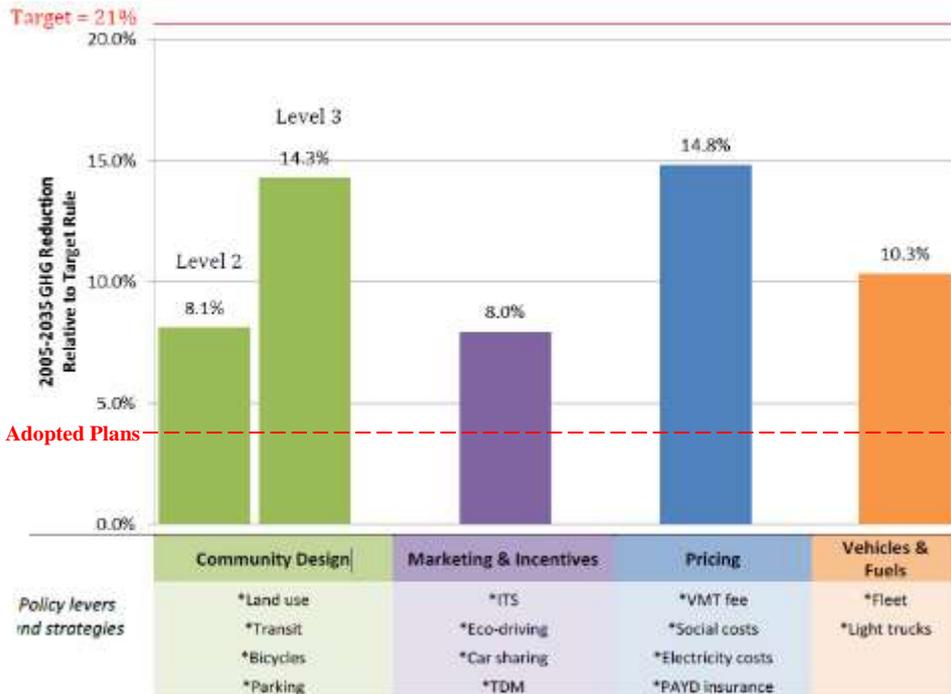Broadening to more "targets" (e.g., health, equity, etc.) results in…
Performance-Based Planning

MPO GHG Planning with RSPM

RSPM Inputs:

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	Community Design	**Marketing & Incentives**	**Vehicles & Fuels**	**Pricing**
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Corvallis Area MPO Results:

VisionEval Open Source Project
GreenSTEP family of Models

RSPM
Regional Strategic
Planning Model

Oregon
FHWA

RPAT
Rapid Policy Assessment Tool
(formerly SmartGAP)

EERPAT
Energy and Emissions
Reduction Policy
Analysis Tool

Tool advantages

- Broad set of community outcomes
- Broad set of old/new policy inputs
- HH Budget constraints good for pricing
- Quicker setup than traditional tools
- Short runtimes allows for 1000s of runs
- Open source and modular construction
- 4 tools on Common Framework will allow improvements by a community of developers (COMING SOON!)

Tool limitations

- Less detail relative to other planning tools
- What-if Tool can't tell you how to get there
- Built for understanding GHG/Vehicle Travel, not mode shifts

GreenSTEP
Greenhouse gas Strategic
Transportation Energy Planning

COSMER Open Source Project (Collaborative Open Strategic Model Environment in R)