

Status of Portland Metropolitan Area Land Use and Transportation Scenario Planning Efforts

Report to the Legislature Prepared by the Oregon Department of Transportation and the Department of Land Conservation and Development in consultation with Metro

EXECUTIVE SUMMARY

The Oregon Legislature, in 2009, passed the Jobs and Transportation Act (House Bill 2001, Chapter 865, Oregon Laws 2009). Section 38 of the Act requires that, on or before February 1, 2012, the Department of Land Conservation and Development (DLCD) and the Oregon Department of Transportation (ODOT) report to the House and Senate interim committees related to transportation on progress toward implementing the land use and transportation scenario planning described in section 37 of the Act. This report was developed by the two agencies in consultation with Metro to fulfill this commitment.

Section 37 of the Act requires Metro, the regional government of the Portland metropolitan area, to develop two or more alternative land use and transportation scenarios and adopt one preferred scenario. Section 37 also requires that local governments in the Portland region implement the adopted scenario. The scenarios are to accommodate planned population and employment growth while achieving a reduction in Greenhouse Gas (GHG) emissions from motor vehicles weighing 10,000 pounds or less (light vehicles).

To guide Metro's scenario planning work, the Land Conservation and Development Commission (LCDC) adopted, in May 2011, the Metropolitan Greenhouse Gas Reduction Targets Rule, OAR 660-044, as required by section 37 of the Act. Specifically, LCDC concluded that GHG emissions from light vehicle travel in the Portland metropolitan area need to be reduced by the year 2035 to 20 percent per capita below 2005 levels. This reduction is in addition to the reduction expected from improved vehicle technologies and fuels, and changes to the vehicle fleet mix. The reduction is needed to support state goals, adopted by the Oregon Legislature in 2007, as part of House Bill 3543 and codified as ORS 468A.205, to reduce the state's total GHG emissions from all sources by the year 2050 to 75 percent below 1990 levels.

Metro is undertaking scenario planning in three phases. The work builds on the land use and transportation strategies contained in the 2040 Growth Concept, the long-range vision adopted by the region in 1995. The project will likely identify additional policies and strategies needed to achieve the substantial GHG reductions. In addition, the project will evaluate how well different scenarios advance regional goals for making a great place: vibrant communities, economic prosperity, transportation choices, equity, clean air and water, and regional climate change leadership.

Metro has just completed **Phase 1**, *Understanding Choices* (2011). This phase consists of testing what combinations of land use and transportation strategies could meet the

20 percent per capita GHG reduction target. Phase 1 has focused on understanding the region's choices by conducting a review of published research and testing 144 regional scenarios. The work completed to date yielded the following Phase 1 scenarios findings:

- **Finding 1:** Current local and regional plans and policies are ambitious and provide a strong foundation for meeting the region's GHG reduction target.
- **Finding 2:** The reduction target is achievable but will take additional effort and new strategic actions.
- **Finding 3:** Most of the strategies under consideration are already being implemented, to varying degrees, in the region to achieve the 2040 Growth Concept vision and other important economic, social and environmental goals.
- **Finding 4:** A range of policy choices exists to reduce GHG emissions; the best approach is a mix of strategies.
- **Finding 5:** Community design and pricing play a key role in how much and how far people drive each day and provide significant GHG emissions reductions.
- **Finding 6:** Fleet, technology and pricing strategies provide similar significant GHG emissions reductions, but no single strategy is enough to meet the region's target.
- **Finding 7:** Road management and marketing strategies improve system and vehicle efficiency and reduce vehicle travel to provide similar, but modest, GHG emissions reductions.

In **Phase 2**, *Shaping the Direction* (2012), Metro, in collaboration with local partners and stakeholders, will design and evaluate more tailored alternative scenarios with an integrated suite of tools, applying the findings from Phase 1 and incorporating goals and strategies identified in local and regional planning efforts that are under way.

In **Phase 3**, *Building the Strategy* (2013–2014), Metro, engaging with local partners and stakeholders throughout the region, will evaluate alternative scenarios and adopt a preferred scenario that meets the target while taking into consideration differing local conditions and aspirations and other factors. During this phase there will be a more in-depth discussion of the trade-offs, co-benefits and feasibility of adopting policies that reflect effective strategies for local governments to reduce GHG emissions from light motor vehicle travel. Then local governments within the Metro area will amend their comprehensive plans and land use regulations to implement the adopted scenario.

Pursuant to section 38 of the Act, DLCD and ODOT will provide another progress report to the Legislature by February 1, 2014.

INTRODUCTION

In 2009 the Oregon Legislature passed House Bill 2001 (Chapter 865, Oregon Laws 2009), also known as the Jobs and Transportation Act. Section 37 of the Act requires Metro, the metropolitan service district for the Portland area, to develop two or more alternative land use and transportation scenarios that accommodate planned population and employment growth while achieving a reduction in greenhouse gas emissions from motor vehicles with a gross vehicle weight rating of 10,000 pounds or less (light vehicles).

Under section 38 of the Act, DLCD and ODOT are required to report to the House and Senate interim committees related to transportation on progress toward implementing the land use and transportation scenario planning described in section 37 of the Act (see Appendix).

This report was prepared by ODOT and DLCD in consultation with Metro. The report will provide background about sections 37 and 38 of the Act; describe LCDC's adoption of a Metropolitan GHG Reduction Target to guide the development of scenarios; and summarize the status of Metro's land use and transportation scenario planning.

LEGISLATIVE BACKGROUND

In 2007, the Legislative Assembly established goals for reducing Oregon's GHG emissions through section 2 of House Bill 3543, codified as ORS 468A.205, which follows:

468A.205 Policy; greenhouse gas emissions reduction goals. (1) The Legislative Assembly declares that it is the policy of this state to reduce greenhouse gas emissions in Oregon pursuant to the following greenhouse gas emissions reduction goals:

(a) By 2010, arrest the growth of Oregon's greenhouse gas emissions and begin to reduce greenhouse gas emissions.

(b) By 2020, achieve greenhouse gas levels that are 10 percent below 1990 levels.

(c) By 2050, achieve greenhouse gas levels that are at least 75 percent below 1990 levels.

(2) The Legislative Assembly declares that it is the policy of this state for state and local governments, businesses, nonprofit organizations and individual residents to prepare for the effects of global warming and by doing so, prevent and reduce the social, economic and environmental effects of global warming.

(3) This section does not create any additional regulatory authority for an agency of the executive department as defined in ORS 174.112. [2007 c.907 §2]

In 2009, the Legislature passed the Jobs and Transportation Act, House Bill 2001. This Act directed LCDC, in consultation with the Oregon Transportation Commission (OTC), to adopt rules by June 1, 2011 identifying the reduction in GHG emissions caused by light vehicles that the Portland metropolitan area would need to achieve by 2035 to be consistent with the targets in HB 3543.

To inform LCDC's rulemaking, the Legislative Assembly directed ODOT, the Oregon Department of Environmental Quality (DEQ) and the Oregon Department of Energy (ODOE) to provide technical data to LCDC. This was accomplished in an *Agencies' Technical Report*. (<http://www.oregon.gov/LCD/docs/rulemaking/2009-11/TRAC/TechRpt.pdf>).

The Act requires Metro, by January 1, 2012, to develop two or more alternative land use and transportation scenarios for the Portland metropolitan area that accommodate planned population and employment growth while achieving the needed reduction in GHG emissions from light vehicles identified by LCDC. Metro, after public review and consultation with local governments, is to select a preferred scenario. Following selection of a preferred scenario, the local governments within the Metro jurisdiction are to amend their comprehensive plans and land use regulations to be consistent with the preferred scenario.

To support Metro's work, the Legislative Assembly directed ODOT and DLCD to provide technical assistance, guidance and grant support from available funds. ODOT entered into an agreement to reimburse Metro for the portion of the work they are required to do to fulfill the Act's requirements. Metro is also contributing funding for work that relates to their long-range planning.

METROPOLITAN GREENHOUSE GAS REDUCTION TARGET

In response to House Bill 2001, LCDC adopted rules in May 2011 that set a GHG reduction target for the Portland metropolitan area. The rules are codified as OAR chapter 660 division 44, http://arcweb.sos.state.or.us/pages/rules/oars_600/oar_660/660_044.html

Rulemaking Process

In June 2010, LCDC appointed the Target Rulemaking Advisory Committee (TRAC) to advise and assist LCDC in developing a draft administrative rule and to recommend proposed targets. The TRAC included elected officials from the state's metropolitan areas, as well as representatives from key state agencies and other stakeholder groups. The TRAC met between September 2010 and March 2011 to develop recommendations to LCDC.

In developing its recommendations, the TRAC considered relevant statutory requirements, reviewed information from ODOT, DEQ and ODOE in their *Agencies' Technical Report* about needed reductions and expected changes in vehicle technologies and fuels, and evaluated how targets might be met through land use and transportation scenario planning.

Agencies' Technical Report

As required in the Jobs and Transportation Act, ODOT, DEQ, and ODOE delivered an *Agencies' Technical Report* to LCDC on March 1, 2011, to assist in setting the GHG reduction targets. The agencies were tasked with providing estimates of GHG reduction from metropolitan light vehicle transportation needed in 2035 to aid Oregon in achieving its year 2050 statewide GHG reduction goal.

The *Agencies' Technical Report* included the following information:

- Estimate of 1990 light vehicle miles traveled (VMT) for metropolitan areas (ODOT);
- Estimate of 1990 GHG emissions from light vehicles for metropolitan areas (DEQ/ODOE);
- Forecast of the 2035 light vehicle fleet for metropolitan areas (ODOT);
- Forecast of average GHG emissions of light vehicle fleet in 2035 for metropolitan areas (DEQ/ODOE);
- Estimate of the percentage reduction in light vehicle emissions to the year 2035 needed to achieve 2050 GHG goals (DEQ/ODOE); and
- Estimate of reduction in vehicle emissions likely to result by 2035 from use of improved vehicle technologies and fuels (DEQ/ODOE).

TRAC Recommendations

Utilizing the information from the *Agencies' Technical Report*, the TRAC reached the following conclusions and recommendations:

- Total emissions from light vehicle travel in metropolitan areas need to be reduced to 52% below 1990 levels by 2035 in order to be on track to meet the 2050 goal. To account for expected population growth, emissions per capita need to be reduced to 74% below 1990 levels by 2035.
- Using a range of plausible alternatives for the use of improved vehicle technologies and fuels, the TRAC recommended that LCDC assume ambitious but reasonable mid-level baseline assumptions for changes in vehicle technologies and fuels and changes in vehicle fleet. These improvements to vehicle technologies and fuels, and changes to the vehicle fleet, are expected to accomplish roughly four-fifths of the reductions needed to meet the 2035 goal.
- Targets should specify additional reductions needed beyond baseline assumptions, which are to be accomplished through a combination of local, state and federal efforts outlined in a land use and transportation scenario.
- Targets should be expressed as percentage reductions per capita to equitably account for differences in population growth rates.
- Targets should be measured from the reference year 2005, for which better data is available.
- LCDC should review the targets by June 1, 2015, in light of new information available at that time.

Adopted Greenhouse Gas Reduction Target

In May 2011, LCDC adopted the TRAC's recommended GHG reduction target of 20 percent per capita by 2035 from 2005 levels. This reduction is over and above reductions reasonably expected to result from the use of improved vehicle technologies and fuels. As explained above, the target identifies the level of reduction in GHG emissions per capita from light vehicle travel that is needed in the metropolitan area by 2035 to support meeting the state's long-term goal of a 75 percent reduction in the state's total GHG emissions by 2050.

Through scenario planning, the Portland metropolitan area can explore methods to reduce GHG emissions by testing land use development patterns along with alternative transportation systems and services, and review how efficiently they work together within the metropolitan area. This scenario planning effort helps areas identify those actions that would be most effective, and estimate the costs and potential benefits of different choices to substantially reduce emissions and potentially meet their target.

STATUS OF SCENARIO PLANNING EFFORTS IN THE PORTLAND METROPOLITAN AREA

Profile of Portland Metropolitan Region

Metro is the regional government for the Portland, Oregon metropolitan area. Its boundaries extend from the northern Willamette Valley, north to the Columbia River at the Washington border. Metro is the largest of Oregon's six metropolitan planning organizations (MPOs), containing the greatest proportion of the state's population and encompassing 25 cities and the urban portions of three counties (see table below).

Number		Description
Counties	3	Clackamas, Multnomah, Washington
Cities	25	Beaverton, Cornelius, Damascus, Durham, Fairview, Forest Grove, Gladstone, Gresham, Happy Valley, Hillsboro, Johnson City, King City, Lake Oswego, Maywood Park, Milwaukie, Oregon City, Portland, Rivergrove, Sherwood, Tigard, Troutdale, Tualatin, West Linn, Wilsonville, Wood Village

Planning Background: 2040 Growth Concept and the Six Desired Outcomes

In 1995, the Portland metropolitan region established a vision for its future development with the adoption of the 2040 Growth Concept. The 2040 Growth Concept provided a guide for how to actively manage the growth of the region by encouraging development in downtowns, main streets, transit corridors and employment areas and maintaining a tight urban growth boundary. Since its adoption, Metro and its partners have collaborated to help communities realize their local aspirations while moving the region toward its goal of becoming a great place to live, work and play and balancing growth with sound

environmental, social and economic strategies. The efforts of the 2040 Growth Concept provide a good basis for the GHG scenario planning work required of Metro.

In 2010, Metro continued to support the 2040 vision and community aspirations by adopting an outcomes-based blueprint for the future—the Community Investment Strategy. This provides the policy foundation for better integrating land use decisions with transportation investments to achieve the region’s 2040 vision and six desired outcomes, as well as the state climate goals.

Climate Smart Communities Scenarios Project

Regional and local leaders agreed that the Portland region must provide leadership in addressing climate change. The Climate Smart Communities Scenarios project (Scenarios Project) supports this goal by supplementing state actions with a collaborative regional effort that will also advance local aspirations and the implementation of the 2040 Growth Concept. In this spirit, the Metro Council and the region’s transportation and land use policy committees agreed upon six principles to guide this scenario planning effort:

Principle 1: Focus on outcomes and benefits.

The strategies that are needed to reduce GHG emissions can help save individuals, local governments and the private sector money, grow local businesses, create jobs and build healthy, livable communities. The multiple benefits should be emphasized and are central to the evaluation and communication of the results.

Principle 2: Build on existing efforts and aspirations. Start with existing local and regional plans that include strategies to achieve the six desired outcomes for a successful region.

Principle 3: Show cause and effect. Provide sufficient clarity to discern cause and effect relationships between strategies tested and progress toward the realization of regional outcomes.

Principle 4: Be bold, yet plausible and well-grounded. Explore a range of futures that may be difficult to achieve but are possible in terms of market feasibility, public acceptance and consistency with local aspirations.

Principle 5: Be fact-based and make information relevant, understandable and tangible. Develop and organize information so decision-makers and stakeholders can understand the choices, consequences (intended and unintended) and tradeoffs. Use



Figure 1. The region’s six desired outcomes—endorsed by city and county elected officials and adopted by the Metro Council on December 16, 2010.

case studies, visualization and illustration tools to communicate results and make the choices real.

Principle 6: Meet state climate goals. Demonstrate what is required to meet the state GHG emissions reduction target for cars, small trucks and SUVs, recognizing reductions from other emissions sources must also be addressed in a comprehensive manner.

Scenario Planning: A Three-Phase Approach

There are three phases to the Scenarios Project, leading to adoption of a preferred scenario in 2014 (see Figure 2). ODOT, DLCD and Metro recognize that significant community outreach will be required in each phase to meaningfully engage policymakers, local government staff and other affected stakeholders.

Phase 1, *Understanding Choices* (2011) consists of testing GHG emissions reduction strategies to learn the GHG emissions reduction potential of current plans and policies and what combinations of land use and transportation strategies will enable the region to meet the region's GHG reduction target. The research and findings from this work will inform subsequent project phases. Metro will seek guidance on the tradeoffs and issues that should be addressed in Phase 2.

Phase 2, *Shaping the Direction* (2012) includes developing and evaluating a small number of more tailored theme-based scenarios designed to achieve the region's GHG reduction target while taking into consideration differing local conditions and other factors. The scenarios will be informed by the findings from Phase 1 and build on community aspirations, local and regional implementation of the 2040 Growth Concept and other on-going related state work. The analysis will result in a more refined evaluation of alternative scenarios for consistency with the region's six desired outcomes and present a draft "preferred" scenario that will be subject to further analysis and public review in Phase 3.

Phase 3, *Building the Strategy* (2013–2014) includes adopting a preferred scenario after public review and consultation with local governments. This phase will define the policies, investments and actions needed to achieve the preferred scenario which will inform the next Regional Transportation Plan update and amendments to other regional plans as needed. Under House Bill 2001, the area's local governments are required to adopt comprehensive plans and land use regulations that are consistent with the adopted regional scenario.

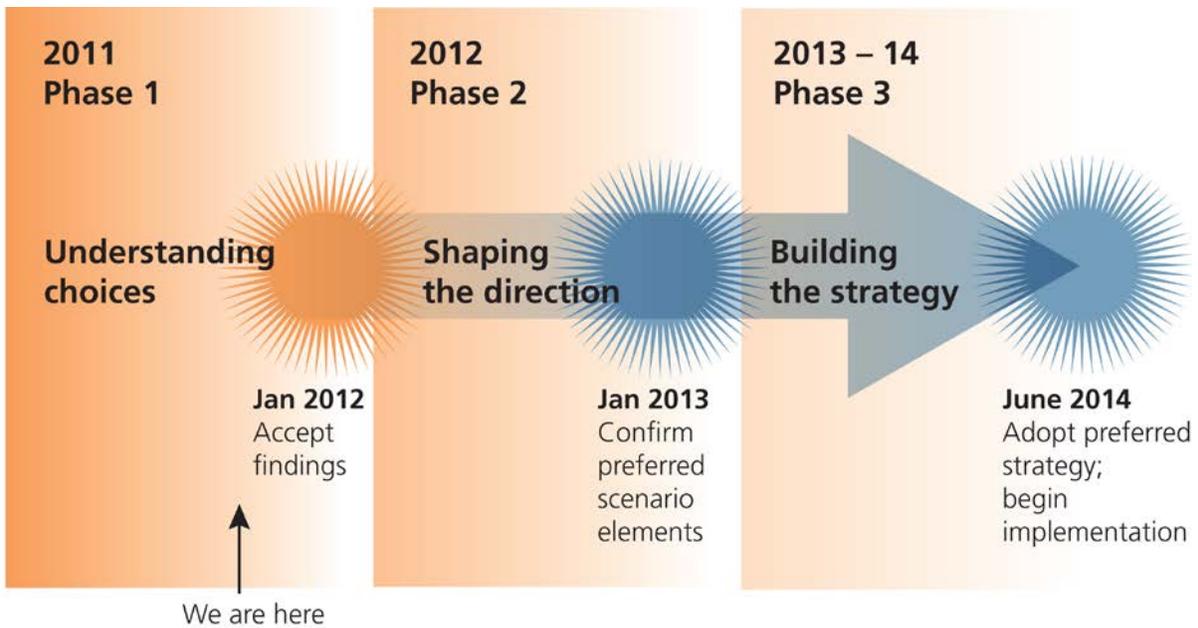


Figure 2. Climate Smart Communities Scenarios Project Timeline.

Overview of Phase 1 Research and Analysis—Understanding Choices

Metro just completed Phase 1 of the Scenarios Project, which is focused on understanding the region’s choices by testing broad-level, regional scenarios to learn the GHG emissions reduction potential of current plans and policies and what combinations of land use and transportation strategies are needed to meet the region’s GHG reduction target. Figure 3 illustrates the policy area strategies tested and their level of ambition for Phase 1. While some strategies are new to the region, many of the strategies tested are already being implemented to some extent to realize the 2040 Growth Concept and the aspirations of communities across the region.

Phase 1: building blocks for regional scenarios

Testing combinations of plausible strategies



Strategies tested

- **Community design:** Complete neighborhoods and mixed-use areas, urban growth boundary, transit service, bike travel, parking
- **Pricing:** Pay-as-you-drive insurance, gas tax, road use fee, carbon fee
- **Marketing and incentives:** Eco-driving, individualized marketing programs, employer commute programs, car-sharing
- **Roads:** Freeway and arterial capacity, traffic management
- **Fleet:** Fleet mix and age
- **Technology:** Fuel economy, carbon intensity of fuels, electric and plug-in hybrid electric vehicle market share

Figure 3. Policy areas and strategies tested.

Metro staff used a regionally tailored version of ODOT’s Greenhouse Gas Strategic Transportation Energy Planning (GreenSTEP) model to conduct the analysis. Using GreenSTEP—the same model used to set the region’s GHG emissions reduction target—ensures compatibility with the state’s planning efforts and provides a common GHG emissions reporting tool across the state. (GreenSTEP is a new model developed by ODOT to estimate GHG emissions at the individual household level. It estimates GHG emissions associated with vehicle ownership, vehicle travel and fuel consumption, and is designed to operate in a way that allows it to show the potential impacts of different policies and other factors, e.g. gas prices, that have synergistic effects on vehicle emissions.)

In May 2011, a work group of members from the Portland Metropolitan Area’s Transportation Policy Advisory Committee (TPAC) and the Metro Technical Advisory Committee (MTAC) were charged with helping Metro staff develop the Phase 1 scenarios assumptions. Those assumptions are consistent with the guiding principles and evaluation framework endorsed by the Metro Council, the Joint Policy Advisory Committee on Transportation (JPACT) and the Metro Policy Advisory Committee (MPAC) in June 2011.

The technical work group defined the scenarios to be tested while Metro and ODOT staff continued to develop tools to support the analysis in the summer of 2011. The model development work concluded in September 2011, and the initial metropolitan GreenSTEP model runs were completed in October.

The foundation of this work is the development of a Base Case—the existing conditions for 2010; and a Reference Case—a forecast of how the region will perform in 2035 based on projected population and demographic trends. The Reference Case assumes the realization of existing plans and policies and represents the Level 1 assumptions for each policy area. The remaining 143 scenarios test combinations of six policy areas that include land use and transportation strategies.

Including the Reference Case, a total of 144 scenarios have been analyzed at a preliminary level for their GHG emissions reduction potential. In addition to the scenarios analysis, Metro staff completed the Strategy Toolbox report.¹ This report summarizes published local, national and international research on strategies that can help reduce transportation-related GHG emissions and meet other policy objectives. The report complements the Phase 1 scenarios analysis, providing supplemental information about the GHG emissions reduction potential of different strategies, other benefits they may provide to a community, synergies between strategies and implementation considerations to be addressed in Phase 2.

Summary of Phase 1 Findings

Phase 1 of the Scenarios Project has focused on understanding the region's choices by conducting a review of published research and testing 144 regional scenarios.² It was designed to understand the GHG emissions reduction potential of current plans and policies, and what combinations of plausible land use and transportation strategies may be needed to reduce GHG emissions from light vehicles by 20 percent per capita below 2005 levels by 2035. The region's decision-makers will use this information to direct development of draft alternatives in Phase 2.

The work completed to date yielded the following Phase 1 scenarios findings:

Finding 1: Current local and regional plans and policies are ambitious and provide a strong foundation for meeting the region's GHG reduction target. If realized, they will result in substantial reductions of GHG emissions from 2005 levels. However, a continued shift in consumer preferences and significant investment, commitment and leadership are needed to realize these aspirations.

¹<http://rim.oregonmetro.gov/webdrawer/rec/230836/view/Planning%20and%20Development%20-%20Regional%20Trans~s%20reduction%20strategies%20and%20the%20benefits%20to%20the%20region-%20October%20202011.pdf>

²<http://rim.oregonmetro.gov/webdrawer/rec/231744/view/Planning%20and%20Development%20-%20Regional%20Trans~g%200yr%20Land%20Use%20and%20Transportation%20Choices%20-%20Phase%201%20Findings%20-%20January%202012%202012.pdf>

Finding 2: The reduction target is achievable but will take additional effort and new strategic actions. Ninety-three of the 144 scenarios tested meet the 20 percent per capita GHG emissions reduction target. Various combinations of strategies evaluated in those 93 scenarios achieved GHG emissions reductions ranging from 20 percent to 53 percent below 2005 levels.

Finding 3: Most of the strategies under consideration are already being implemented, to varying degrees, in the region to achieve the 2040 Growth Concept vision and other important economic, social and environmental goals. Driving less conserves energy, reduces fuel consumption and keeps money in the region that consumers and businesses can spend on other things to help stimulate the region's economy. Supporting infrastructure investments such as bike lanes, sidewalks, new transit service, and electric vehicle charging stations will help expand travel options for everyone.

Finding 4: A range of policy choices exists to reduce GHG emissions; the best approach is a mix of strategies. Light duty vehicle emissions are a function of vehicle efficiency, technology, fuel content and vehicle travel. While improving vehicle and fuel efficiency achieves significant reductions in GHG emissions, per capita vehicle travel must be reduced to meet the target.

Finding 5: Community design and pricing play a key role in how much and how far people drive each day and provide significant GHG emissions reductions. The analysis revealed that community design or pricing must be more ambitious than current policies to meet the target. However, pricing and community design together yield the largest GHG reductions per capita.

Finding 6: Fleet, technology and pricing strategies provide similar significant GHG emissions reductions, but no single strategy is enough to meet the region's target. Pricing, when combined with the most ambitious fleet and technology strategies, meets the target.

Finding 7: Road management and marketing strategies improve system and vehicle efficiency and reduce vehicle travel to provide similar, but modest, GHG emissions reductions. Combining these strategies with community design provides additional emissions reductions that can help meet the region's GHG reduction target.

SUMMARY AND CONCLUSION

The preliminary results of Metro's Phase 1 scenario work indicate that the region's existing plans through 2035, if realized, would result in substantial reductions of GHG emissions from the 2005 levels. The Phase 1 scenarios were intended to show whether it is possible for the region to reduce GHG emissions enough to meet the region's target. The results show that 93 of the scenarios tested achieve the additional reductions needed to meet the region's GHG reduction target. While these preliminary findings are encouraging and offer a variety of ways to meet the state target, many of the inputs that went into the scenario

runs would require additional effort and new actions on the part of Metro, local governments, the state and federal government.

Each strategy presents its own opportunities and challenges. The cost, level of effort and type of actions needed, will vary by policy and strategy. The process of defining a preferred approach must be inclusive and engage stakeholders from diverse backgrounds to allow a variety of perspectives to be shared and considered. On the other hand, the actions needed to reduce the region's GHG emissions also offer great opportunity to realize many community aspirations, as expressed to Metro in the past few years. Many of these desired outcomes would come in the form of benefits of the GHG reduction strategies. These fall into three categories: economic, public health and environmental. Examples include job opportunities, consumer and municipal savings, increased physical activity, enhanced public safety, lower pollution levels, and less use of energy.

Phase 1 research serves as a basis for continuing a regional dialogue on how best to reach the region's GHG reduction target while advancing local and regional efforts to build livable, prosperous and equitable communities. The challenge of determining which strategies should be used and where to implement them will occur in Phase 2, as Metro further engages its local partners and stakeholders throughout the region. During this period, there will be in-depth discussions of the cost-effectiveness, impacts, benefits and feasibility of adopting policies that reflect effective strategies for local governments to use in reducing GHG emissions. This work will also consider fiscal, equity and economic implications of different strategies. Phase 3 will continue this work and result in the region moving forward with a preferred alternative that is adopted into regional and local plans. While Metro is responsible for coordinating regional land use and transportation planning and implementation, scenario planning involves evaluation of policies and strategies that are the responsibility of all levels of governments. A collaborative planning and decision-making model allows agreement to be reached at each level.

All those involved in the transportation-related GHG scenario planning work and other state efforts around GHG emissions reduction planning recognize that there are many unknowns and there will be a need to monitor and adapt as the work moves forward. This can be achieved but will require strong partnerships and close collaboration with local, regional, state and federal partners as well as encouraging individuals and businesses to take action. Key to achieving the goals is an agile and iterative process to best respond to and take advantage of what is learned at each step.

Appendix

House Bill 2001, 2009 Jobs and Transportation Act (Chapter 865, Oregon Laws 2009), Sections 37 and 38 (The text was reformatted for readability):

SECTION 37. (1) As used in this section:

(a) "Comprehensive plan" has the meaning given that term in ORS 197.015.

(b) "Land use regulation" has the meaning given that term in ORS 197.015.

(c) "Metropolitan service district" means a metropolitan service district established under ORS chapter 268.

(2)(a) Except as provided in subsection (5) of this section, on or before January 1, 2012, a metropolitan service district, in accordance with rules adopted under subsection (6) of this section, shall develop two or more alternative land use and transportation scenarios that accommodate planned population and employment growth while achieving a reduction in greenhouse gas emissions from motor vehicles with a gross vehicle weight rating of 10,000 pounds or less.

(b) A metropolitan service district, in accordance with rules adopted under subsection (8) of this section, shall select, after public review and comment on the scenarios and in consultation with local governments within the jurisdiction of the metropolitan service district, one scenario described in paragraph (a) of this subsection as a part of its planning responsibilities under ORS 268.390.

(3) Except as provided in subsection (5) of this section, a local government within the jurisdiction of the metropolitan service district shall amend its comprehensive plan and land use regulations implementing the plan to be consistent with the scenario adopted by a metropolitan service district in a manner provided by rules adopted under subsection (8) of this section.

(4)(a) The Department of Transportation and the Department of Land Conservation and Development shall provide technical assistance and guidance for the land use and transportation scenarios and local planning described in subsection (2) and (3) of this section.

(b) The Department of Transportation and the Department of Land Conservation and Development shall provide grant support to each government entity required to carry out the provisions of subsection (2) and (3) of this section in amounts sufficient to fully reimburse the entities for any costs incurred in carrying out the provisions of subsection (2) and (3) of this section.

(c) The Department of Transportation and the Department of Land Conservation and Development shall provide funds for rulemaking, technical assistance and grants under this section from available funds.

(5) A metropolitan service district and local governments within the jurisdiction of the district are not required to comply with subsection (2) and (3) of this section unless the district and local governments receive sufficient funds for reimbursement of costs in carrying out the provisions of subsection (2) and (3) of this section.

(6) On or before June 1, 2011, the Land Conservation and Development Commission, in consultation with the Oregon Transportation Commission, shall adopt rules for

metropolitan service districts. The rules must identify each district's needed reduction by 2035 in those greenhouse gas emissions caused by motor vehicles with a gross vehicle weight rating of 10,000 pounds or less, based upon the goals stated in ORS 468A.205 and taking into consideration the reductions in vehicle emissions that are likely to result by 2035 from the use of improved vehicle technologies and fuels. On or before March 1, 2011, the Department of Transportation, the Department of Environmental Quality and the State Department of Energy shall provide the Land Conservation and Development Commission with the information or projections necessary to determine the proposed greenhouse gas emissions reduction goals for 2035.

(7) In order to carry out the responsibilities described in subsection (6) of this section:

(a) The Department of Transportation shall provide the Department of Environmental Quality and the State Department of Energy with an estimate of the vehicle miles traveled in the metropolitan service district in 1990 by motor vehicles with a gross vehicle weight rating of 10,000 pounds or less, based on available records;

(b) The Department of Transportation shall provide the Department of Environmental Quality and the State Department of Energy with an estimate of the rate at which new vehicles will replace existing vehicles among the vehicles described in paragraph (a) of this subsection;

(c) The Department of Environmental Quality and the State Department of Energy shall estimate the greenhouse gas emissions for 1990 for each metropolitan service district resulting from the travel by motor vehicles described in paragraph (a) of this subsection, using available records of the average emissions per mile emitted by motor vehicles in 1990 and the estimates provided by the Department of Transportation under paragraph (a) of this subsection;

(d) The Department of Environmental Quality and the State Department of Energy shall estimate the predicted average greenhouse gas emissions by motor vehicles described in paragraph (a) of this subsection predicted to comprise the motor vehicles on the highways in 2035 based on the predicted rate of replacement of the vehicles as described in paragraph (b) of this subsection and based on available reasonable estimates provided by public or private entities of the improvements in vehicle technologies that will be available for use by 2035;

(e) The Department of Environmental Quality and the State Department of Energy shall recommend to the Land Conservation and Development Commission a percentage by which the emissions from motor vehicles described in paragraph (a) of this subsection should be reduced below their estimated 1990 emission levels by 2035 in order to achieve a reduction in emissions from the vehicles as part of the overall achievement of total carbon reduction set for 2050 by ORS 468A.205 and shall explain their reasons for any recommendations other than the midpoint between the 2020 and the 2050 emission reduction targets established by ORS 468A.205;

(f) The Department of Environmental Quality and the State Department of Energy shall calculate the estimated miles of travel by motor vehicles described by paragraph (a) of this subsection predicted to be traveled and that may be accommodated in 2035 in each metropolitan service district based on the estimates performed under paragraphs (a) to (d) of this subsection and the recommendation required by paragraph (e) of this subsection;

(g) The Department of Transportation, the Department of Environmental Quality and the State Department of Energy shall recommend to the Land Conservation and

Development Commission modeling tools or other methods by which a metropolitan service district may adjust the district's recommended target number of miles of travel described in paragraph

(f) of this subsection to account for additional greenhouse gas emissions resulting from increased traffic congestion or reductions in such emissions resulting from measures that reduce traffic congestion; and

(h) On or before March 1, 2011, the Department of Transportation, the Department of Environmental Quality and the State Department of Energy shall submit the information required by paragraphs (a) to (g) of this subsection to the Land Conservation and Development Commission, including but not limited to citations to sources relied on and calculations made.

(8) On or before January 1, 2013, the Land Conservation and Development Commission, in consultation with the Oregon Transportation Commission, shall adopt rules that establish a process for cooperatively selecting a land use and transportation scenario for each metropolitan service district to achieve the greenhouse gas emissions reductions identified in the rules adopted pursuant to subsection (6) of this section and a process for the adoption of regional or local plans to implement the scenario. The rules shall:

(a) Identify minimum planning standards for achieving reductions in greenhouse gas emissions through comprehensive plans and transportation system plans;

(b) Identify planning assumptions and approaches to meet minimum planning standards identified in paragraph (a) of this subsection that ensure the Department of Land Conservation and Development can approve the changes to the regional framework plan, comprehensive plans and land use regulations implementing the comprehensive plans;

(c) Establish a cycle for initial adoption and updating of the transportation and land use scenario required by this section, including planning periods beyond 2035, relating the cycle to periodic review under ORS 197.628 to 197.650 and to urban growth boundary planning under ORS 197.296 or 197.298; and

(d) Ensure that local standards and criteria for land uses and for land development and transportation plans that implement the scenarios selected under subsection (2)(b) of this section:

(A) Are contained in the amendments to regional framework plans, functional plans, comprehensive plans and land use regulations required by subsection (3) of this section; and

(B) Do not have the effect of preventing, discouraging or delaying the implementation of the scenarios, except as necessary to protect the public health and safety.

(9) The Land Conservation and Development Commission may extend the deadline for adoption of the rules required under subsection (6) of this section for up to 90 days if the commission determines that the extension will not delay a metropolitan service district's completion of land use and transportation scenarios as described in subsection (2) of this section.

SECTION 38. (1) As used in this section, "metropolitan service district" means a metropolitan service district established under ORS chapter 268.

(2) On or before February 1, 2012, the Department of Land Conservation and Development and the Department of Transportation shall report to the House and Senate interim committees related to transportation on progress toward implementing the land

use and transportation scenario described in section 37 of this 2009 Act. The report must include:

(a) The scenarios of a metropolitan service district that are described in section 37 (2) of this 2009 Act; and

(b) The rules adopted pursuant to section 37 (6) of this 2009 Act.

(3) On or before February 1, 2014, the Land Conservation and Development Commission and the Department of Transportation shall report to the House and Senate interim committees related to transportation on progress toward implementing the land use and transportation scenario described in section 37 of this 2009 Act. The report must include:

(a) The rules adopted pursuant to section 37 (8) of this 2009 Act;

(b) A description of the completed planning and work remaining to be completed; and

(c) Recommendations as to how the planning requirements of section 37 of this 2009 Act should be extended to metropolitan planning organizations serving areas with populations of more than 200,000 or to cities located outside the boundaries of metropolitan planning organizations that have significant levels of commuting trips to destinations within the boundaries of a metropolitan planning organization.