



# Central Lane Scenario Planning

## Final Report

*June 2015*





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# Acronyms and abbreviations

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CLSP	Central Lane Scenario Planning
DLCD	Oregon Department of Land Conservation and Development
FTN	Frequent Transit Network
GHG	Greenhouse gas
HACSA	Housing and Community Services Agency of Lane County
HUD	US Department of Housing and Urban Development
ITHIM	Integrated Transport and Health Impact Modeling Tool
JTA	Jobs and Transportation Act
LTD	Lane Transit District
MPO	Metropolitan Planning Organization
ODOT	Oregon Department of Transportation
PAYD	Pay-as-you-drive
PMT	Project Management Team
RSPM	Regional Strategic Planning Model
SUV	Sport utility vehicle
TAC	Technical Advisory Committee
VMT	Vehicle miles traveled





## Background

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The Central Lane Scenario Planning (CLSP) process began in response to state legislation that required scenario planning in certain metropolitan regions of Oregon. “Scenario planning” is a process for considering alternative plausible futures, allowing for communities to understand how different choices might affect different outcomes, like economic vitality or greenhouse gas (GHG) emissions, among others. The communities within the Central Lane Metropolitan Planning Organization (MPO) boundaries looked at what might happen in the region if current transportation policies are continued, and what might happen if different policies – like encouraging greater use of transit – are considered.

The CLSP project partners were tasked with selecting a preferred scenario for the region that contains strategies for reducing GHG emissions from transportation. The region is not required to implement the preferred scenario. (Only the Portland metro area is required to engage in scenario planning, adopt a preferred scenario, and implement it.) However, through the scenario planning process, the region explored different policies and strategies that could guide future decisionmaking.

### Participants

The CLSP process was carried out by and for the communities of the Central Lane MPO. The cities of Eugene, Springfield, and Coburg; Lane County; the Lane Council of Governments; and Lane Transit District (LTD) all participated in the project. Only the local municipal governments – Eugene, Springfield, Coburg, and Lane County – were required to select a preferred scenario. The government partners formed a Project Management Team (PMT) comprised of senior staff from each jurisdiction to oversee the process.

### 2009 Jobs and Transportation Act

Oregon’s 2009 Jobs and Transportation Act (JTA) required the MPOs that serve the Eugene-Springfield and Portland metropolitan regions to conduct scenario planning. The scenario planning process is intended to explore ways that regions might reduce transportation-related GHG emissions. The Eugene-Springfield region is not required to implement the preferred scenario. This effort was supported with funds from the Oregon Department of Transportation (ODOT).

As part of rulemaking related to the JTA, the Oregon Department of Land Conservation and Development (DLCD) developed GHG-emissions-reduction targets for each metropolitan area. Only the Portland metro region is required to meet the target reduction. The other metropolitan regions, including the Central Lane MPO, must consider the GHG-emissions-reduction target during the scenario planning process, but do not have to meet it.

The region's GHG-emissions-reduction target for 2035 is a 20 percent reduction below 2005 emissions levels. There are several caveats that apply to the reduction rule:

- The target only applies to emissions from passenger vehicles, light duty trucks, and sport utility vehicles (SUVs). Freight, farm, and transit vehicles are excluded from the target.
- Emissions reductions due to improvements in vehicle technology and vehicle fuel economy may not be included in the region's target. In other words, the region could not count reductions associated with these improvements toward the 20 percent target.
- At least one scenario developed during the process must meet the GHG-emissions-reduction target, but the final selected scenario (the preferred scenario) does not have to meet the GHG-emissions-reduction target.

The region's target was set in pursuit of the state's ultimate goal to achieve a 75 percent GHG-emissions reduction below 1990 levels by 2050.

## Scenario planning process and outcomes

### What is scenario planning?

Over the next twenty years, the Central Lane MPO is likely to welcome more than 60,000 new residents. Plans like those currently being developed or recently adopted – *Envision Eugene*, *Springfield 2030*, *Coburg Crossroads*, and each community's transportation system plan – establish a local vision for how each community will accommodate new residents and jobs as well as establishing a blueprint for how residents will get around the region. Scenario planning does not predict the future, but is a process for looking at long-term community aspirations and developing different paths for achieving them. Scenario planning, therefore, complements the region's established plans and policies by allowing for exploration of new paths toward the region's goals.

### Regional vision

The communities of Coburg, Eugene, Springfield, and Lane County share a vision for an equitable, prosperous, and sustainable future. The region's vision provided the basis for developing the alternative scenarios and for selecting the preferred scenario. The region is notable for its compact urban form and protection of rural lands. One of the major goals of the region – expressed in *Metro Plan*, the regional comprehensive plan – is to integrate transportation and land use, and to provide a transportation system that supports choice in travel mode. From this regional vision, the communities participating in the CLSP process identified three major goals, in addition to the reduction of GHG emissions, that would be addressed by the process. Though the region is already performing well with respect to these goals, the scenario planning process provided an opportunity to explore new or enhanced transportation strategies that could help the region do even better.



## Scenario planning goals

As mentioned above, the scenario planning process goals were derived from land use, transportation, and other plans that guide the region, which in turn represent the desired outcomes for multiple stakeholders and the public. These goals are to:

- Foster economic vitality
- Improve public health
- Enhance equity

A full listing of the plans that informed the goals of the process can be found in **Appendix A**.

### Foster economic vitality

Transportation plays a critical role in the region's economy. The ability to quickly and easily move about the region is directly tied to the region's economic competitiveness. Residents already have access to many transportation options, and the region's compact growth over the last few decades means that most destinations are not far from most residents. On the other hand, congestion, traffic accidents, high healthcare costs associated with inactivity, and other inefficiencies put a drag on the local economy. Although the region performs well with respect to these issues, more congestion and a higher number of traffic fatalities are possible without intervention. The CLSP process looked at transportation strategies that could help alleviate these issues and in turn improve the economic well-being of the region.

The project team looked at four criteria to understand how different scenarios perform with respect to economic vitality:

- Driving costs as a percentage of household income
- Average household income by housing type
- Average parking costs
- Value of time lost to congestion

### Improve public health

Transportation and land use decisions have a demonstrated effect on public health outcomes. Increasingly, the discussion around efforts to increase bicycling and walking in communities has focused on the reduction in chronic disease and mortality that increased physical activity brings. Improving public health was one of the most compelling goals explored during the CLSP process – public input revealed that this goal was very important. The public health criteria evaluated during the process focused on the link between increased use of active transportation modes and positive health outcomes, including:

- Physical activity per capita
- Health benefits from increased walking and bicycling
- Cost savings due to reduced disease burden
- Change in the number of fatal or severe injury accidents

## Enhance equity

“Equity” refers to the distribution of benefits and burdens of policies and projects across the community – particularly vulnerable populations. The PMT convened a special technical advisory committee early in the process to provide input on equity considerations. Equity can be difficult to quantify. Even with the advanced modeling tools available during the CLSP process, it is difficult to understand exactly where or who might be disproportionately benefited or burdened by a policy. However, the project team evaluated two quantitative criteria related to equity during the process:

- Driving costs as a percentage of household income
- Average household income by housing type

These measures provide a snapshot of how different scenarios affect different economic groups.

## Reduce greenhouse gas emissions

The state adopted a GHG-emissions-reduction goal that seeks to reduce emissions 75 percent below 1990 levels by 2050. Each metropolitan region in the state was assigned a transportation emissions-reduction goal, but only the Portland metro area is required to meet its goal.

According to the Central Lane MPO’s 2010 *Regional Greenhouse Gas Inventory*, 31 percent of regional GHG emissions are produced from transportation in the Eugene-Springfield metropolitan area. GHG-emissions reduction was not the only goal of the process. However, it served to frame much of the scenario planning work and aided in selecting policies that are not only effective at reducing emissions, but also impart other benefits.

## Evaluation criteria

The scenario planning process considered outcomes across a range of different evaluation criteria. The table below shows the criteria used to evaluate different scenarios during the project, all derived from the goals described above. The regional partners used these criteria to evaluate initial scenarios, evaluate the draft preferred scenarios, and refine and select the final preferred scenario.

CATEGORY	CRITERIA	UNIT OF MEASURE
<b>Economy and prosperity</b>	Driving costs as percentage of household income <sup>1</sup>	% of average household income
	Average household income by housing type	2005 \$
	Parking costs	Average regional daily parking cost (2005 \$)
	Value of time lost to congestion <sup>2</sup>	\$ per person per year (2005 \$)

<sup>1</sup> Includes both average annual vehicle ownership and operating costs.

<sup>2</sup> Value of time for personal trips is assumed to be \$12.50 per hour. From US Department of Transportation (2011).

CATEGORY	CRITERIA	UNIT OF MEASURE
<b>Energy consumption and GHG emissions</b>	Greenhouse gas (GHG) emissions per capita	Tons CO <sub>2</sub> per year
	State GHG-emissions-reductions target	Meets or does not meet target
	Petroleum fuel consumption	Gallons per capita per year
<b>Transportation</b>	Vehicle miles traveled (VMT)	VMT per capita (daily)
	Transit service	Revenue miles per capita (daily)
	Bicycle travel <sup>3</sup>	Bicycle miles traveled per capita (daily)
	Pedestrian travel	Walk trips per capita (annual)
	Transit ridership	Total annual ridership
	Vehicle ownership	Average no. of vehicles per household
	Hours of congestion	Hours per capita per year
<b>Air quality</b>	Criteria air pollutant emissions	% reduction or increase in pollutants (compared to Reference Case)
<b>Feasibility</b>	Legal, legislative, or regulatory barriers to implementation	Qualitative assessment
	Public/private infrastructure costs	Qualitative assessment
	Local revenue from VMT fee or gas tax	Annual \$ per capita
	Political or public acceptability	Qualitative assessment
<b>Health</b>	Physical activity per capita	Number of walk and bike miles per week
	Health benefits from increased walking and biking	Annual number of premature deaths avoided due to physical activity
	Chronic illness incidence	% reduction or increase
	Annual cost savings due to reduced disease burden	\$
	Annual change in fatal or injury accidents	Increase in number of fatal or injury crashes over base year
<b>Equity</b>	Driving costs as percentage of household income	% of average household income
	Average household income by housing type	\$

<sup>3</sup> This criterion represents the number of miles “diverted” from car travel and instead travelled by bike.

## Timeline

The CLSP process began in 2011, with convening of the PMT and technical advisory committees (TACs) that provided guidance on specific topics, like equity and public health. The PMT, comprised of representatives of all local governments participating in the process as well as staff from LTD and the Central Lane MPO, guided the project and made key decisions throughout the process. A parallel public process that included public workshops, a project website, a scenario planning tool, and surveys provided key input that helped regional decisionmakers understand community desires and needs.

2013	2014	2015
<b>UNDERSTAND</b>	<b>TEST &amp; LEARN</b>	<b>REFINE &amp; SELECT</b>
<i>Understand existing policies</i>	<i>Develop alternative scenarios</i>	<i>Refine scenarios</i>
<i>Develop evaluation measures</i>	<i>Evaluate and compare</i>	<i>Tailor individual choices for each jurisdiction</i>
<i>Determine baseline for comparison</i>		<i>Cooperatively select a preferred scenario</i>

Parallel to the CLSP process, the region received a Sustainable Communities grant through the US Department of Housing and Urban Development (HUD). The grant allowed the region to explore best practices and develop a “toolkit” for addressing scenario planning goals – like equity – and explore issues around transportation and land use. This work helped to inform the goals for the process and provided a valuable foundation for the CLSP process. The products resulting from the HUD work are included in **Appendix B**.

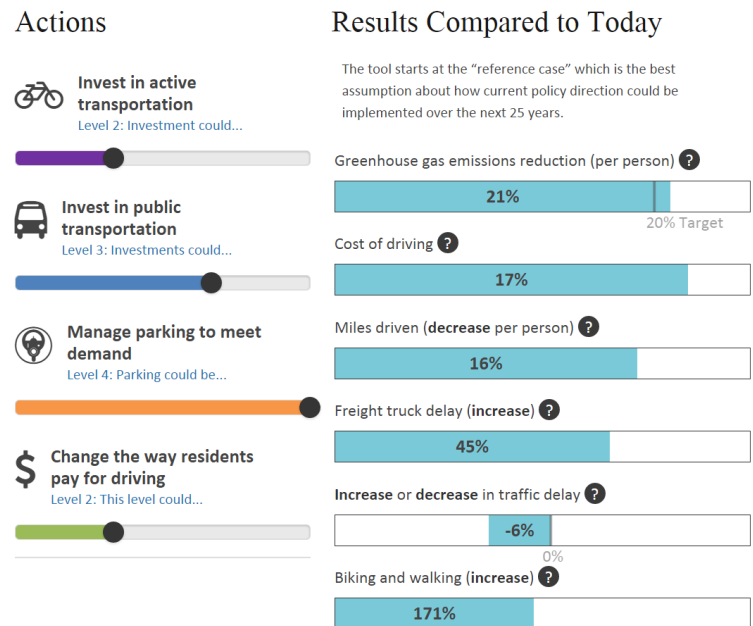
## Public outreach and stakeholder engagement

The CLSP project partners worked to involve interested stakeholders and the general public at each major step of the CLSP process. **Appendix C** contains sample public involvement materials. Outreach methods included the following:

- **Public workshops:** the project team hosted three workshops to gather public input on the three main phases of the project. The initial workshops focused on explaining the CLSP process and goals and engaged the public on brainstorming strategies for reducing GHG emissions from transportation. The final workshop asked for input on the level of effort the region should take in each of the four major policy areas considered during the process. An online survey was also created for each workshop for those who were unable to attend in person.

- **Project website:** early on in the process, the project team established a project website to provide general information on the project. The website provided information about upcoming public events, links to online surveys, and the *Future Builder* scenario planning tool.

- **Future Builder online scenario planning tool (right):** in the later stages of the project, the team developed an online tool that allowed the public to explore different transportation strategies. The tool showed the predicted impacts of different scenarios across eight outcomes, like regional GHG emissions and public cost. Users could submit their favorite scenario, which provided the team valuable input on what strategies and outcomes people were most interested in.



- **Social service community engagement:** to understand more fully the potential impacts, both positive and negative, to communities of concern, the project team met with several social service organizations, including Lane County Public Health, St. Vincent DePaul, and the local housing authority (Housing And Community Services Agency [HACSA] of Lane County). The team discussed policies and strategies with these social service providers to hear their perspectives on what impacts to vulnerable populations might occur, and what could be done to mitigate any potential negative impacts.
- **Telephone survey:** a telephone survey asked respondents in the region about their attitudes toward policies and strategies under consideration, and their interest in potential new revenue ideas to implement the strategies. The survey used a random sample of regional residents and produced statistically significant results on residents' attitudes toward different policies. **Appendix D** contains full telephone survey results.

## Modeling the future

The CLSP process made use of powerful new modeling tools that aided in understanding the impacts different transportation policy choices might have on the region.

## Regional Strategic Planning Model (formerly “GreenSTEP”)

ODOT developed the Regional Strategic Planning Model (RSPM) as a way to forecast GHG emissions from transportation. RSPM, which performs high-level, strategic assessments of potential GHG-emissions-reduction strategies, was used extensively during the CLSP process. The model assesses the likely transportation sector GHG effects (as well as effects on congestion, household travel spending, air quality, and others) of a large variety of policies and factors. RSPM provided information on the potential impacts of different scenarios during the CLSP process and was the primary tool used to evaluate scenarios. RSPM can evaluate strategies in the following subject areas:

- Community design: includes households living in mixed-use areas, transit use, miles traveled by bike, etc.
- Pricing: includes different methods for paying for one’s driving, including per-mile fees, license registration fees, and gas taxes.
- Education and marketing: includes programs that educate citizens about travel options and programs that provide incentives to change travel behavior.
- Roads management: includes strategies like access management on arterial streets and ramp metering on highways.
- Vehicle fleet and technology: includes assumptions about average fleet fuel economy and fleet mix (e.g., number of electric vehicles). In setting the GHG-emissions-reduction target for both the state and metropolitan areas, the DLCD accounted for vehicle fleet and technology changes at the state level, so the CLSP process focused on the impacts and benefits of other policy changes.

These five policy areas framed the policies and strategies considered during the scenario planning process. More information on RSPM can be found in **Appendix B**.

### What is “active transportation?”

Active transportation refers to any form of human-powered transportation – walking, cycling, skating, etc. Public transit is also often included as an “active” mode because users typically walk or bike to and from their bus or train stops.

### Integrated Transport and Health Impact Modeling Tool (ITHIM)

ITHIM is a tool for evaluating the morbidity and mortality effects of different transportation policies. ITHIM, developed by the United Kingdom Public Health Research Center, was used to model the public health outcomes related to physical activity, safety, and air pollution. Changes in physical activity through policies supporting active transportation provide many health benefits to users, including reductions in chronic

diseases (heart disease, cancer) and reduced mortality. Safety benefits are realized from policies that decrease vehicle miles traveled (VMT). Chronic diseases related to air pollution are also

reduced with less fossil fuel combustion. ITHIM estimates the combined effects of these public health factors and monetizes<sup>4</sup> the total health care cost savings.

## Sensitivity testing



*The project team tested different policy scenarios to understand which combinations of policies were most effective in reducing regional greenhouse gas emissions. It also showed which combinations of policies reached the region’s greenhouse gas emissions reduction target.*

To understand how effective different policies are at reducing GHG emissions, the project technical team conducted sensitivity testing with RSPM. Sensitivity testing was conducted with respect to only one variable – GHG emissions. Other impacts – public health, equity, or the economy – were not quantified with RSPM or other models. Sensitivity testing gave the PMT a sense of how policies interact to reduce GHG emissions from transportation, and what level of aggressiveness is needed to achieve state emissions targets.

This testing showed that Pricing strategies (changing the way residents pay for driving and/or increasing the cost of driving) are very effective by themselves at reducing GHG emissions. Community Design strategies, like increasing transit service, bicycling, and walking, were also effective when applied alone. The testing found that only Roads Management strategies were not very effective at reducing emissions. This testing showed that the region cannot meet its GHG-emissions-reduction goal without applying a mix of strategies.

POLICY AREAS	EXAMPLE STRATEGY
<b>COMMUNITY DESIGN</b>	<i>Implement a bike sharing program</i>
<b>PRICING</b>	<i>Support increases in the state or local gas tax</i>
<b>MARKETING/INCENTIVES</b>	<i>Expand car-sharing in the region</i>
<b>ROADS</b>	<i>Coordinate traffic signal timing</i>
<b>FLEET &amp; TECHNOLOGY</b>	<i>Support the state’s low-carbon fuel standard</i>

<sup>4</sup> “Monetization” means that the value of health benefits and reduced mortality – in terms of reduced health care costs, willingness to pay for reduced mortality risk, and other factors – are added up to produce the total dollar benefits to the region.

## Scenario development

### Reference scenario

As part of the first step of the scenario planning process, the project team developed and refined a 2035 reference scenario.<sup>5</sup> The reference scenario is the baseline by which alternative scenarios are compared; it approximates the future if current policy direction is carried out without significant changes. The reference scenario represents the best representation about how current policy direction could be implemented over the next 25 years<sup>6</sup>. This work formed the baseline against which alternative future scenarios were compared.

The technical team initially developed the reference scenario assumptions based on policies in current and recently completed land use and transportation plans in the region. The project team translated the vision, goals, and objectives from these plans – as well as assumptions about future levels of funding – into specific inputs for use in RSPM. The project team used state assumptions from a similar planning effort for the future vehicle fleet, fuel mix, and other technologies. RSPM was then used to estimate future GHG emissions, miles driven per capita, hours of vehicle delay, and other performance measures.

The reference scenario revealed that the region is making progress in many areas. Key findings include the following:

- Under current policy direction, the region’s per capita GHG emissions from light vehicles decrease by 3 percent from 2005 levels (the state target is 20 percent).
- Biking and walking increase, and air pollution and fuel consumption decrease. The project team used existing community goals for walking and biking to model rates of biking and walking in 2035.
- While vehicle ownership and maintenance costs increase, vehicle operations costs for households decrease.
- Per capita vehicle miles traveled stays about the same and delay increases on the transportation system.

A memo describing full reference scenario results is included in **Appendix E**.

### Alternative scenario development

The reference scenario provides a baseline for comparing alternative scenarios. The project team initially created alternative scenarios based on several themes. The “themes” were created by the project team to organize different strategies and understand how different policies interact

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<sup>5</sup> The Department of Land Conservation and Development chose 2035 as the target year in establishing GHG-emissions-reduction targets. The 2035 reduction targets are intended to help the state reach 2050 emissions-reduction goals.

<sup>6</sup> The CLSP team used 2010 as the “current year” to coincide with the data inputs in the modeling software used for the process.



to reduce GHG emissions. The themes, like “individual action” and “transit friendly, walkable communities,” added more context to the sensitivity testing and helped to organize the policies into more realistic packages.

Each of these themes contained a mix of strategies. For example, the “transit friendly, walkable communities” theme contained strategies that increased transit service and improved bicycling and walking infrastructure. The results of these themes were instructive, and allowed the PMT to craft two alternative scenarios to

fully test with the RSPM and ITHIM tools. The two alternative scenarios – Scenario B (Enhance Existing Policies) and Scenario C (Explore New Policies) – represent maximizing actions consistent with current policy direction and implementing new policies, respectively. The reference scenario (Scenario A) and



Scenarios B and C were evaluated with respect to a full range of evaluation criteria.

Scenario B met the state’s GHG-emissions-reduction target and Scenario C exceeded the target. Both Scenarios B and C would generate considerable public health benefits. For example, both scenarios resulted in an excess of \$30 million in reduced health care spending due to decreases in the prevalence of some chronic diseases. Full evaluation results are contained in **Appendix H**.

The results of analyzing Scenarios A (reference scenario), B, and C – in addition to public input – provided the full context needed for decisionmakers in the Central Lane MPO to develop the preferred scenario.





## The preferred scenario

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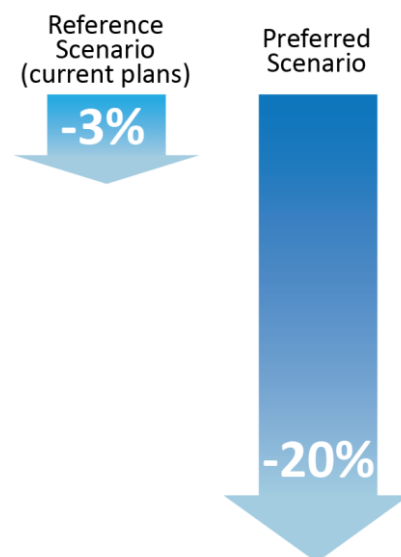
The JTA requires the local governments in the Central Lane MPO to cooperatively select a “preferred scenario.” The JTA also requires local governments to consider at least one scenario that accommodates planned population and employment growth while achieving a reduction in GHG emissions from passenger vehicles. The preferred scenario was developed based on testing a variety of scenarios, comparing those scenarios to local goals, and gathering input from local decisionmakers and the public. The preferred scenario is comprised of strategies in seven policy areas – active transportation (bicycling and walking), transit, fleet and fuel changes, pricing, parking management, education and marketing, and roads – that could meet regional goals and the state’s GHG-emissions-reduction target. With the preferred scenario, the region could expect a 20 percent per capita reduction in GHG emissions from light vehicles over 2005 levels, meeting the state’s GHG-emissions-reduction target for the region. The region can expect about a 3 percent reduction in per capita emissions if current plans and policies are implemented (the “reference scenario”).

The local governments – Lane County and the cities of Coburg, Eugene, and Springfield – are not required to implement the preferred scenario and are not mandated to select any particular set of strategies that support the preferred scenario.

Within each policy area, there are land use and transportation strategies that could be employed by one or more jurisdictions to move in the direction of the preferred scenario. The strategies are intended to be flexible and should be reconsidered over time. **Most importantly, the preferred scenario is not a statement of regional policy and the strategies are not intended to be directive and are not regulatory.**

The elements of the preferred scenario are interrelated. For example, expansion of the transit system can result in more walking and biking, and greater public health benefits. In addition, encouraging drivers to switch to other travel modes only works if they have viable options (such as robust transit, walking, and bicycling infrastructure).

### How much does the preferred scenario reduce greenhouse gas emissions?



## A balanced approach

The preferred scenario represents a balanced approach toward investment in the following seven areas:

- Active transportation
- Fleet and fuels
- Transit
- Pricing
- Parking management
- Education and marketing
- Roads

The preferred scenario includes:

- A significant investment in transit, active transportation, and education and marketing programs
- Some change in the way drivers pay to use the system
- Continued investment in optimizing roadways in the region
- Continued support for the state’s assumptions about changes to vehicle and fuel technology
- Continued policies related to parking pricing and availability

The preferred scenario is most aggressive in “education and marketing” strategies, which are relatively inexpensive, but magnify benefits from investments in other areas like active transportation and transit. The preferred scenario assumes modest investment in roadway optimization strategies that feature strongly in current plans and policies. Investment in other strategies lies in between these two. The preferred scenario does not rely too heavily on any one policy area. Instead, it is a realistic and balanced mix of investments that would make significant progress toward regional goals.

### **Challenges to advancing the preferred scenario**

While the preferred scenario will support positive outcomes, current funding for transportation programs, infrastructure, and operations would not support the preferred scenario’s increased level of investment. New revenue sources – local, regional, or federal – would be required to make the necessary investments to support the preferred scenario. While, the strategic analysis that supported the scenario planning process represents a sophisticated way of understanding how policies interact, the analysis was conducted at a regional level and considered policy areas broadly. Before changing policy, jurisdictions may want to explore tradeoffs not included in this analysis, such as developing cost estimates, a detailed cost-benefit analysis, or a targeted analysis of the geographic distribution of benefits and impacts.

## Achieving the preferred scenario

While the preferred scenario is intended to be a broad statement of shared goals, it is important to understand what it might take to get to those goals. The following sections describe the level of investment in each strategy area and potential strategies that support that level of investment. These strategies are intended to be flexible and to allow each jurisdiction to choose how to support the goals defined in the preferred scenario.

## Active transportation: Invest beyond existing plans

Bicycling and walking (along with other “active” ways of getting around) are important ways for residents of central Lane County to get around the region. Eleven percent of regional trips are made by bicycling and walking today. The preferred scenario calls for significant investments in active transportation. Changing demographics, including lower car ownership rates among Millennials, may contribute to this shift. However, the magnitude of change called for in the preferred scenario would require behavior change as well as new infrastructure and creative uses of fixed rights-of-way. For this reason, education and marketing strategies may be as important as active transportation strategies in achieving the levels of biking and walking envisioned in the preferred scenario.

### Active transportation strategy #1: Build bicycling and walking projects in local 20-year plans.

The recently updated Coburg and Springfield Transportation System Plans and the Eugene Pedestrian and Bike Master Plan include biking and walking investments. To achieve the biking and walking mode shift envisioned in the preferred scenario, the 20-year plans for biking and walking improvements would need to be fully implemented. Special focus would need to be directed toward “separated” bicycle facilities, like bicycle tracks and off-street paths. These types of facilities are the most comfortable for riders to use.

#### Active transportation: What would it take?

The preferred scenario could be supported by major increases – between three and five times current rates – in biking and walking in all cities in the region. Achieving this would require a combination of new biking and walking facilities and supportive programs to educate people about active transportation opportunities and making active modes more convenient. It might require creative use of available rights-of-way to accommodate all road users.

### Active transportation strategy #2: Dedicate a larger share of local transportation dollars to constructing and maintaining biking and walking projects.

Currently, less than 5 percent of regional transportation funds are spent on biking and walking projects that are not associated with a roadway project. To fully implement local plans, additional funding would need to be spent on biking and walking projects. In addition to capital funding to build new infrastructure, local governments would also need to identify additional funding for maintenance and operations of active transportation facilities. This may require

identifying new funding sources, using a greater share of existing funds for biking and walking projects, or expanding existing programs like ConnectOregon that fund multimodal projects. Depending on the funding source, this may mean working with state officials to remove barriers to using some kinds of transportation funding on active transportation projects.

### **Active transportation strategy #3: Implement a bike share program.**

To provide residents with more transportation choices, particularly for short trips, the region could implement a bike share program. Bike share programs enable more people to choose bicycling for some trips by providing easy access to bikes in areas where bike trips might make sense because parking is limited or distances are short.

### **Active transportation strategy #4: Developer incentives to construct high-quality bike and pedestrian infrastructure.**

As new areas are developed, Eugene, Springfield, Coburg, and Lane County could choose to require or encourage (through incentives) developers to build high-quality bike and pedestrian infrastructure like off-street paths, bicycle tracks, buffered/protected bike lanes, and wide sidewalks in new master planned areas.

### **Active transportation strategy #5: Expand Safe Routes to Schools programs.**

Safe Routes to Schools programs encourage students to bike and walk to school. Currently, Eugene and Springfield partner with Eugene 4J School District, Bethel School District, and Springfield School District to encourage students to choose active options for getting to and from school. With this strategy, local governments could expand this program by supporting partners in applying for Safe Routes to Schools grants; constructing infrastructure projects that make biking and walking near schools safe; or increasing funding for Safe Routes to Schools programs in the region.

### **Active transportation strategy #6: Encourage development of healthy, walkable neighborhoods.**

Local land use plans call for the development of healthy, walkable neighborhoods where residents can meet many of their daily needs by walking or biking. Local governments could encourage development of these types of neighborhoods consistent with their current comprehensive plans through developer incentives such as tax exemptions, reduced parking requirements, restructured system development charges, and programs that allow additional density for development that meets certain requirements.

## **Fleet and fuels: Invest in existing plans**

A key strategy for reducing light-duty vehicle fuel consumption and subsequent GHG emissions is for the vehicle fleet to become more fuel efficient. Federal fuel-efficiency standards have already increased fuel economy and will continue to do so into the future. Advanced vehicle technologies like electric and plug-in electric are making up a greater share of vehicle sales each year. This trend is being supported by a multi-state effort, which includes Oregon, through the

*Multi-State Zero Emissions Vehicle Action Plan.*<sup>7</sup> In addition, the state of Oregon’s Low Carbon Fuel standard seeks to decrease the carbon intensity of conventional gasoline and diesel fuel, helping to reduce emissions.

## **Transit: Invest beyond existing plans**

The communities of the Central Lane MPO benefit from accessible, frequent, and convenient transit service. Transit service provided by the LTD is more productive than most of its peer agencies. Improving transit service provides many community benefits. As part of the preferred scenario, Lane County and the cities of Coburg, Eugene, and Springfield would need to support major investments in the transit system to achieve an increase in per capita transit service and in ridership.

### **Transit strategy #1: Support a stable source of funding for transit capital investments.**

As state and federal dollars become scarcer, LTD may need to rely more heavily on local sources of revenue for major capital investments. Federal grant funding is becoming more competitive, meaning LTD may need to provide up to 50 percent matching funds for capital projects (instead of 10 or 20 percent). If implemented, the local governments in the region would need to support LTD in identifying a stable source for future capital funding.

### **Transit strategy #2: Support LTD in identifying a stable source of funding for transit operations and maintenance.**

The payroll tax, in addition to fare revenue, funds most of LTD’s operations and maintenance costs. To achieve the level of transit ridership envisioned in the preferred scenario, LTD would need a stable, sustainable source of funding beyond the current payroll tax. If implemented, the local governments in the region would need to support LTD in identifying a stable source for future transit operations and maintenance funding.

### **Transit strategy #3: Support full implementation of the Frequent Transit Network (FTN) described in LTD’s Long Range Transit Plan.**

LTD’s Frequent Transit Network (FTN) consists of transit routes with service frequencies of every 15 minutes or better all day, service at least 16 hours of the day, and other distinct features. The FTN is the backbone of LTD’s system, providing high-quality, high-frequency service. To achieve the level of transit ridership envisioned in the preferred scenario, LTD would need to implement the FTN. This includes seven EmX lines and improved transit service on other high-performing routes, as well as redesigned local transit service.

### **Transit strategy #4: Encourage new development along FTN corridors.**

Eugene and Springfield each have existing policies that support employment and residential development along the FTN. To encourage redevelopment in these areas and to achieve needed

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<sup>7</sup> <http://www.deq.state.or.us/aq/orlev/>

densities to support increased transit and commercial services, Eugene and Springfield could provide incentives such as tax exemptions, reduced parking requirements, restructured system development charges, and density bonuses for new housing, retail, or employment in designated corridors. Both cities are already implementing many of these strategies. In addition, design considerations like wide sidewalks, landscaping, street lighting, and others contribute to successful transit streets. These programs and design considerations are likely to encourage walking and biking, as well as transit use.

### **Transit strategy #5: Improve transit access by focusing bicycling, walking, and safety improvements near transit stops and enhancing options for linking biking and transit trips.**

For transit service to work in the region, residents need safe access to transit stops on foot or bike. Local governments could support this access by focusing on bicycling and walking investments such as new bike facilities, wayfinding signage, sidewalks, and improved pedestrian crossings near transit stops. LTD and local governments could also work together to enhance opportunities for community members to link biking and transit trips by offering secured bike storage at transit stops or more capacity for carrying bikes on buses. Integrating bike share programs with transit can also help bridge the “last mile” for transit users. In other words, bike share can allow transit users to quickly span the last part of their journey to their destination once they have gotten off the bus.

### **Transit strategy #6: Support increased service frequencies and support expanded service hours.**

LTD currently has limited weekend and evening service on many routes and operates some routes with limited frequency. With this strategy, local governments could support LTD in identifying how to build partnerships to support transit, and identifying funding sources for transit operations to allow for new routes and increased service hours and frequencies.

### **Transit strategy #7: Improve rider experience.**

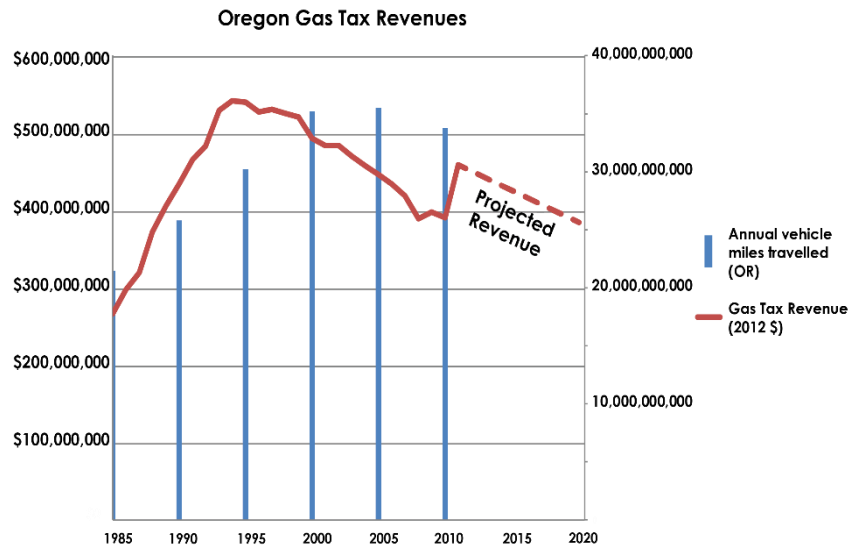
Transit amenities like comfortable shelters, real-time traveler information, and electronic fare collection can make transit use easier and more comfortable. Other strategies, like adequate lighting, improve rider perceptions of safety. Local governments could support LTD in improving rider amenities by creating land use codes that allow LTD to place shelters along routes and supporting other LTD initiatives.

## **Pricing: Invest beyond existing plans**

Changing the way residents pay for driving by charging a different combination of taxes and fees could provide increased revenue for investing in the multimodal transportation system. The central Lane County region, along with most other jurisdictions in Oregon and the US, have long relied on federal and state revenues to fund construction of the transportation system. However, revenues from both these sources (which, in large part, come from user fees like fuel taxes) are stagnating or declining.



Funds for operating and maintaining the system are even more constrained. As new vehicle technologies like plug-in hybrid and electric vehicles become more common, traditional user fees like fuel taxes will become less viable and less equitable. Restructuring the way we pay for maintaining and improving the transportation system can support the investments that would be required to realize the preferred scenario. In addition to enhancing revenues, restructuring transportation user fees can also encourage drivers to use other transportation modes for more of their trips, and help ensure that everyone pays for their use of the transportation system. The preferred scenario may be supported by a gradual change from the existing gas tax to a vehicle miles traveled fee, as well as new taxes and fees that provide additional local revenues to pay for transportation projects. Parking pricing is considered separately as its own strategy.



**Pricing strategy #1: Support state efforts to implement a vehicle miles traveled fee.**

The State of Oregon has been exploring a vehicle miles traveled fee through the Road Use Charge program. While local governments in the region cannot implement a vehicle miles traveled fee, they could support the state’s implementation efforts.

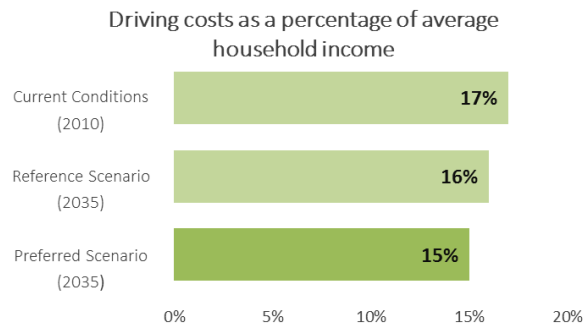
**Pricing strategy #2: Support Lane County’s efforts to raise funds for transportation operations and maintenance.**

Counties, under Oregon law, are able to enact a local vehicle registration fee. Lane County could seek an increase in the vehicle registration fee or other means to increase funds available for maintenance and operation of the region’s transportation system.

**Pricing: What would it take?**

Without changes to the current fuel tax system and rate, Oregon will have less to invest in our transportation system in the future. Introduction of a vehicle miles traveled fee is one way of maintaining a user fee for our roadways as electric and plug-in hybrid cars become more ubiquitous on the state’s roadways.

### Pricing strategy #3: Support the private sector in fuller roll-out of pay-as-you-drive insurance.



Pay-as-you-drive (PAYD) insurance is a newer form of automotive insurance that bases premiums on miles traveled instead of charging customers a lump sum each month. This flexibility allows drivers an incentive for choosing non-driving options, resulting in cost savings for people who drive fewer miles. Prior to implementation, this strategy would need to be evaluated in terms of the impact on the state's insurance market.

### Pricing strategy #4: Support increases in the state and local fuel tax.

While replacing the state and local gas tax with a vehicle miles traveled fee is a long-term goal, local governments could support increases to the state fuel tax, including indexing the state fuel tax to inflation. In addition, local governments could consider increasing local fuel taxes and indexing local fuel taxes to inflation to increase funding for roadway operations and maintenance.

## Parking management: Invest in existing plans

Managing parking both for commuters and for other trips (like shopping downtown) is an effective tool for making more efficient use of the limited parking supply and reducing the need for additional parking. Parking management is implemented through local development codes.

Managing parking works best when used in a complementary fashion with other strategies; it is less effective in areas where transit or bicycle and pedestrian infrastructure is lacking. The preferred scenario calls for managing parking consistent with existing plans.

### Parking management strategy #1: Increase fees for long-term parking in some areas.

Commuters already pay to park in downtown Eugene and the area around the University of Oregon. Eugene and Springfield may choose to expand the areas where commuters pay to park or to raise parking fees for publicly owned parking.

### Parking management strategy #2: Allow developers greater flexibility in providing parking.

Local governments generally require developers to provide on-site parking for new development. Local governments may choose to revise development codes to remove minimum parking requirements or to encourage developers to decouple parking costs from rent costs for both residential and commercial properties. These changes would allow developers to respond to market demand for parking and reward households and businesses that do not need parking.

## Education and marketing: Invest beyond existing plans

Education and marketing programs are effective ways to change driver behavior and to make other investments, such as those in transit and active transportation, more effective. Education and marketing programs could include workplace commuting programs, individual marketing programs (like SmartTrips), as well as encouraging expansion of car sharing programs. Other education programs encourage “eco driving” practices (like keeping tires inflated and accelerating slowly from stops) to reduce vehicle fuel consumption and emissions. (ODOT currently has a program called “EcoDrive” to encourage these habits.)

### Education and marketing strategy #1: Expand individual marketing programs like SmartTrips.

Eugene and Springfield have already launched effective SmartTrips programs. These programs could be expanded to more households and possibly targeted to populations like Spanish-speaking households.

### Education and marketing strategy #2: Support eco driving practices.

Eco driving practices (like choosing low rolling resistance tires, keeping tires properly inflated, choosing to drive the household’s most efficient vehicle for most trips, and accelerating slowly from stops) help to reduce emissions. The local governments in the region could support widespread adoption of these practices through education and marketing campaigns.

#### Education and marketing: What would it take?

With the preferred scenario, more than half of households and employees would participate in trip-reduction programs. This would require expanding programs as well as improving the effectiveness of those programs.

### Education and marketing strategy #3: Expand car sharing in the region.

Many residents need access to a car for some trips. Expanded car sharing, implemented by the private sector, could reduce the need for vehicle ownership and encourage residents to use biking, walking, transit, and ridesharing for more trips. Expanded car sharing could include support for peer-to-peer car sharing or for traditional car sharing in dense areas.

### Education and marketing strategy #4: Expand participation in workplace commute reduction programs.

Workplace commute reduction programs could include incentives for walking, biking, and taking transit to work, or for encouraging compressed work weeks or telecommuting. The region could support businesses in expanding workplace commute reduction programs by providing information to employers and, possibly, incentives to employers that participate.

### Education and marketing strategy #5: Expand transit pass programs.

Currently, 65 percent of LTD riders have some sort of transit pass or pay an otherwise reduced fare. Transit pass programs are an effective way to increase transit ridership. For example, youth

passes promote transit use habits that make them more likely to be adult transit riders. Local governments could support expanded transit pass programs by supporting residential pass programs or student pass programs.

### **Education and marketing strategy #6: Support implementation of the Regional Transportation Options Plan and the state's Transportation Options plan.**

The Regional Transportation Options Plan defines regional goals and strategies to support walking, biking, transit, and ridesharing. The state's Transportation Options plan sets a similar policy context for state support of transportation options. Local governments could support these plans by adopting supportive policies in transportation system plans; funding projects and programs to support transportation options; and encouraging employees to explore alternatives to driving alone to work.

### **Roads: Invest in existing plans**

Many people in the region will continue to get around primarily by driving. State, regional, and local transportation plans call for optimizing the existing transportation system before expanding roadways in the region. The preferred scenario calls for implementing these existing plans and implementing roadway optimization projects such as the following:

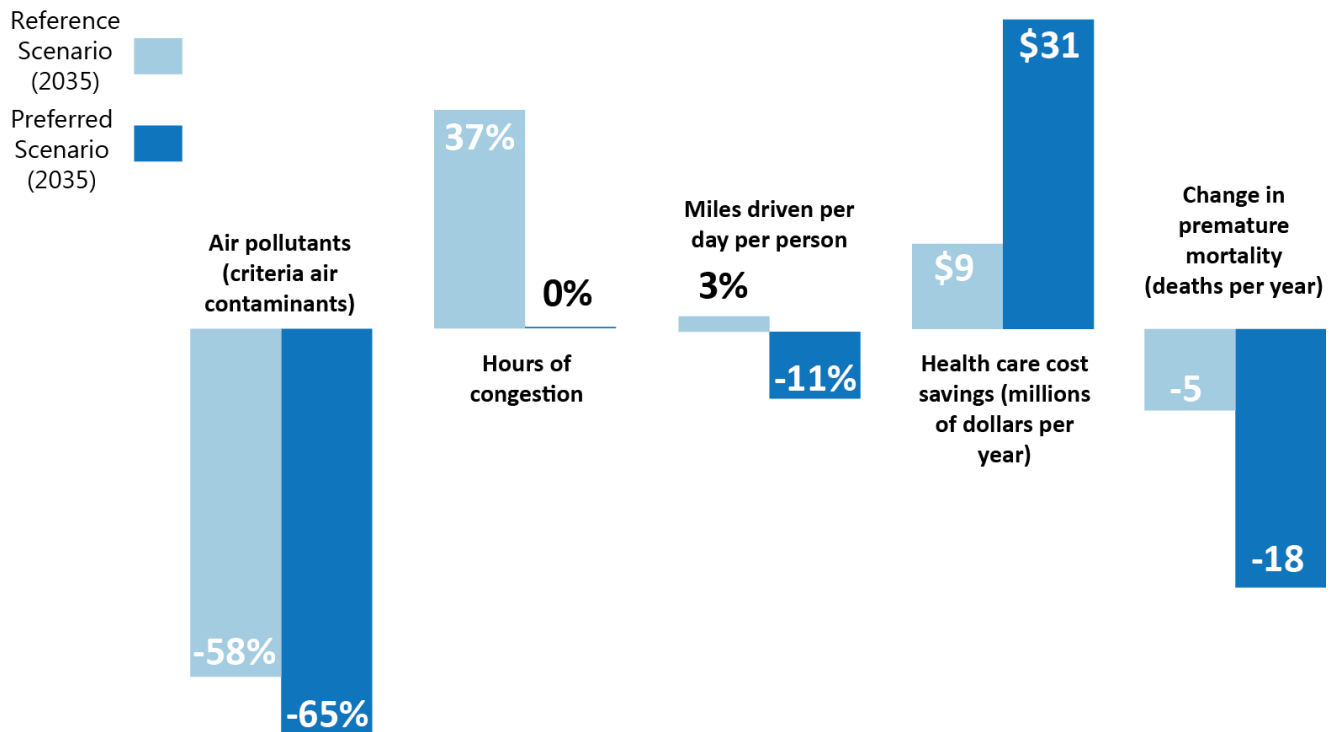
- Installing ramp meters on limited access highways
- Improving intersections by replacing signals with roundabouts or linking signals to allow for better traffic flow
- Managing access from private properties to arterial roadways
- Improving incident response to reduce congestion

# Preferred scenario outcomes

The investments and strategies in the preferred scenario are likely to have many positive impacts on the region. The CLSP team used sophisticated modeling tools to understand the potential effects of implementing the preferred scenario across a range of different outcomes. **Appendix G** contains a summary of different tools that pair with the preferred scenario to help achieve these outcomes.

This section reviews the anticipated outcomes of the preferred scenario, compared to outcomes expected if current plans and policies were carried forward. Though the preferred scenario produces many benefits, the preferred scenario could also result in potential negative impacts related to equity. However, these negative impacts can be mitigated or prevented entirely, depending on implementation of the preferred scenario. See the “equity considerations” section below for further discussion of this issue.

## Change as compared to today (2010)



## Outcomes in 2035

The preferred scenario would help the region make progress in several different regional goal areas. The preferred scenario is compared to both current conditions and a “reference scenario.” The reference scenario, which represents what is expected to occur if existing plans and policies are implemented, makes significant progress toward regional goals. The preferred scenario would make further gains in the following goal areas:

- Public health
- Transportation
- Air quality and greenhouse gas emissions
- Economy
- Equity considerations

### Public health

The preferred scenario would significantly improve public health outcomes across the region compared to today. Chronic disease, premature death, and health care costs would all decline due to more residents using active transport modes, like bicycling and walking. Some of this benefit also comes from residents driving less and therefore experiencing fewer crashes. For a detailed discussion of public health methodology and results, see **Appendix H**.

### Transportation

Even with a 25 percent expected increase in population over the next 20 years, with the preferred scenario, congestion would not increase over today’s condition. Freight delay would be less with the preferred scenario than with the reference scenario. The number of miles driven per person, on average, would decrease by about 11 percent over today.

### Air quality and greenhouse gas emissions

Air quality would improve, with common air pollutants decreasing by two-thirds compared to today. Per capita GHG emissions would decrease significantly. Emissions would decrease significantly due to improved fuel efficiency, new vehicle technologies, and transportation fuels becoming less carbon intensive. Additional policy actions included in the preferred scenario would reduce emissions even further.

### Economy

Time lost to congestion would stay about the same as today, but would decrease compared to the reference scenario. Household driving costs, as a percentage of income, would stay about the same as today. Freight delay would be less than in the reference scenario. The preferred scenario could save more than \$50 million in annual fuel expenses. With no petroleum, production, or refining facilities in the region or the state, it is possible that much of these savings would stay in the local economy.

## Equity considerations

Equity outcomes would be dependent on how policies and strategies might be implemented. For example, if bicycling and walking facilities are constructed in low-income parts of the region, equitable access to active transportation is likely to improve. Pricing and parking strategies included in the preferred scenario could have neutral or positive effects on equity if mitigation measures are implemented.

“Equity” involves the fair distribution of benefits and harms from an action. Equity is a concern with transportation projects, programs, and policies. The preferred scenario is likely to have a variety of equity impacts – good, bad, and neutral. Some of the positive or neutral impacts expected include the following:

- The overall cost to drive is unlikely to increase much under the preferred scenario. The cost to drive, as a percentage of household income, is unlikely to change significantly.
- Physical activity is likely to increase for all residents in the region, due to greater investment in bicycling and walking facilities. This would lead to a reduction in chronic illness and death for the entire region.
- The number of residents who have access to frequent transit service is likely to increase.

However, these benefits are not guaranteed. Implementation is very important for ensuring that disadvantaged groups receive their share of these benefits and do not receive a disproportionate share of harms. Some important implementation considerations include the following:

- The location of new transportation improvements in the community is critical. New projects and programs should be distributed equitably throughout the community to ensure equal access and mobility for vulnerable populations.
- Ensuring the availability of transportation options in all communities will mitigate for any potential increases in the cost to drive.
- The distribution of affordable housing in the community affects how far vulnerable populations need to travel to meet their daily needs. Special attention should be given to the siting of new affordable housing within the region for this reason.

## Outcomes in 2050

The preferred scenario includes policies and strategies intended to achieve a reduction in GHG emissions from transportation by 2035. Even though 2035 is 20 years in the future as of this writing, many strategies are unlikely to reach peak effectiveness (in terms of both GHG-emissions reductions and other outcomes) for years after that. The project team looked at how outcomes might change in 2050 to get a fuller picture of how the preferred scenario might affect the region. The project team created a 2050 reference scenario to see how the future might look if current policies are carried forward to 2050, and a 2050 preferred scenario to project what would happen if the strategies in the preferred scenario are carried forward to 2050. For

reference, the region is expected to grow by over 80,000 residents by 2050, compared to the 60,000 new residents expected by 2035.

- The 2050 reference scenario results in a 23 percent decrease in per capita GHG emissions over today. The 2050 preferred scenario goes further, with an expected 35 percent reduction compared to today (2010).
- With the 2050 reference scenario, annual passenger vehicle traffic delay is expected to increase by 57 percent compared to today. Delay is expected to increase with the 2050 preferred scenario as well, but by a lesser amount – about a 20 percent increase over today.
- Per capita air pollution (like ozone and other criteria air pollutants<sup>8</sup>) would stay about the same for both the 2050 reference scenario and the 2050 preferred scenario. Both would result in nearly a two-thirds decrease in per capita pollutants compared to today.
- The number of miles driven per day per person would increase slightly (by about 6 percent) compared to today for the 2050 reference scenario, while the 2050 preferred scenario would result in a 10 percent *decrease* in miles driven per day per person.

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<sup>8</sup> “Criteria air contaminants” are those air pollutants regulated by the federal Clean Air Act.