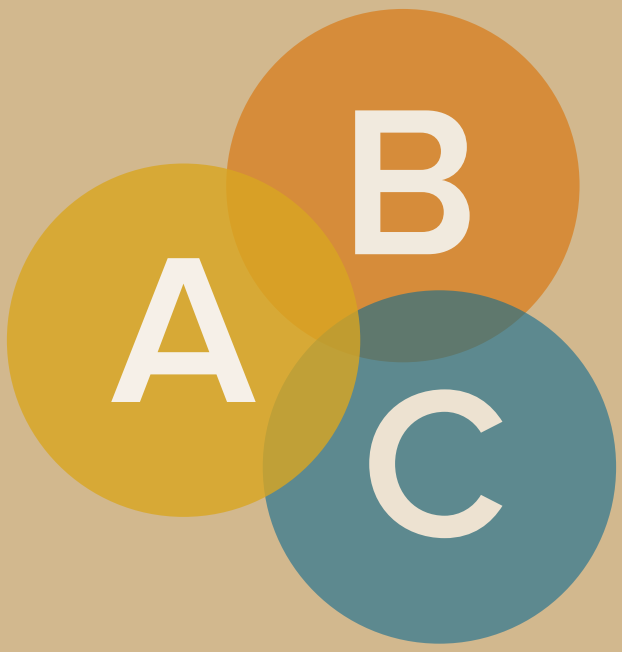
CLIMATE SMART COMMUNITIES SCENARIOS PROJECT

Metro

SHAPING THE PREFERRED APPROACH

A DISCUSSION GUIDE FOR POLICYMAKERS

PORTLAND METROPOLITAN REGION APRIL 2014



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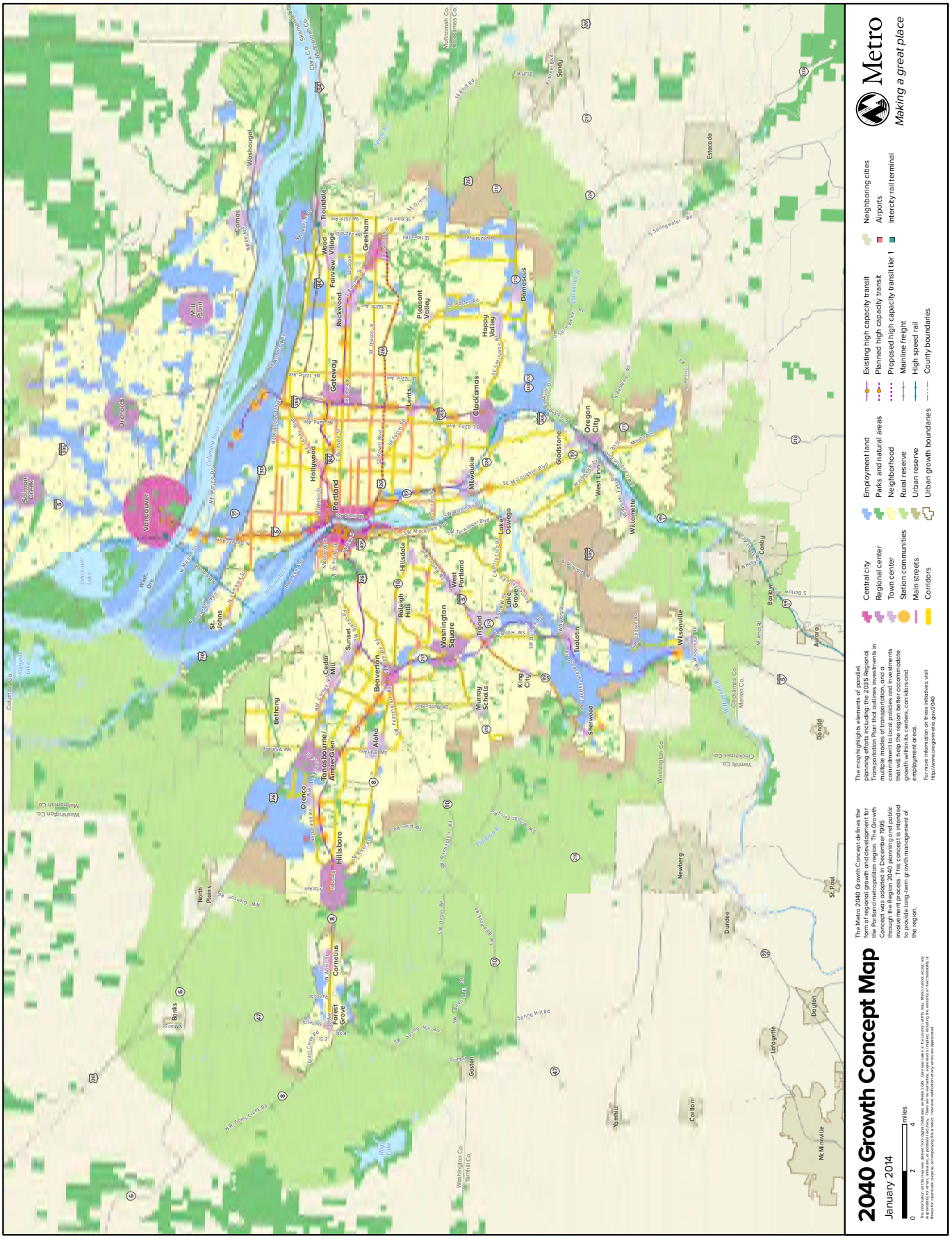
OUR SHARED VISION: THE 2040 GROWTH CONCEPT

An integrated land use and transportation vision for building healthy, equitable communities and a strong economy while reducing greenhouse gas emissions.



INTRODUCTION

CLIMATE SMART COMMUNITIES SCENARIOS PROJECT

Metro

The Climate Smart Communities Scenarios Project was initiated in response to a state mandate to reduce per capita greenhouse gas emissions from cars and small trucks by 2035.

The goal of the project is to engage community, business, public health and elected leaders in a discussion to shape a preferred approach that supports local plans for downtowns, main streets and employment areas; protects farms, forestland, and natural areas; creates healthy, livable neighborhoods; increases travel options; and grows the regional economy while reducing greenhouse gas emissions from cars and small trucks.

ABOUT THIS GUIDE

This discussion guide for policymakers is designed to help elected, business, and community leaders and residents better understand the challenges and choices facing the Portland metropolitan region. It will be used by members of the Metro Policy Advisory Committee (MPAC) and Joint Policy Advisory Committee on Transportation (JPACT) to help shape a preferred approach for the Metro Council to consider for adoption in December 2014.

This guide brings together the results of the analysis completed in late 2013 and background information on the choices facing policymakers as the Climate Smart Communities Scenarios Project moves forward to shape a preferred approach that supports the region's shared values and helps make local and regional plans a reality.

The desired outcome for this discussion guide is that together, cities, counties and regional partners will be prepared to decide which investments and actions from each scenario should be included in the preferred approach.

What the future might look like in 2035

SCENARIO A

Recent Trends

This scenario shows the results of implementing adopted land use and transportation plans to the extent possible with existing revenue.

SCENARIO B

Adopted Plans

This scenario shows the results of successfully implementing adopted plans and achieving the current Regional Transportation Plan, which relies on increased revenue.

SCENARIO C

New Plans and Policies

This scenario shows the results of pursuing new policies, more investment and new revenue sources to more fully achieve adopted and emerging plans.

The scenarios are tested for research purposes only and do not necessarily reflect current or future policy decisions of the Metro Council, MPAC or JPACT.

DESIRED REGIONAL OUTCOMES

ATTRIBUTES OF GREAT COMMUNITIES

The six desired outcomes for the region endorsed by the Metro Policy Advisory Committee and approved by the Metro Council:

Vibrant communities

People live and work in vibrant communities where their everyday needs are easily accessible.

Economic prosperity

Current and future residents benefit from the region's sustained economic competitiveness and prosperity.

Safe and reliable transportation

People have safe and reliable transportation choices that enhance their quality of life.

Leadership on climate change

The region is a leader in minimizing contributions to global warming.

Clean air and water

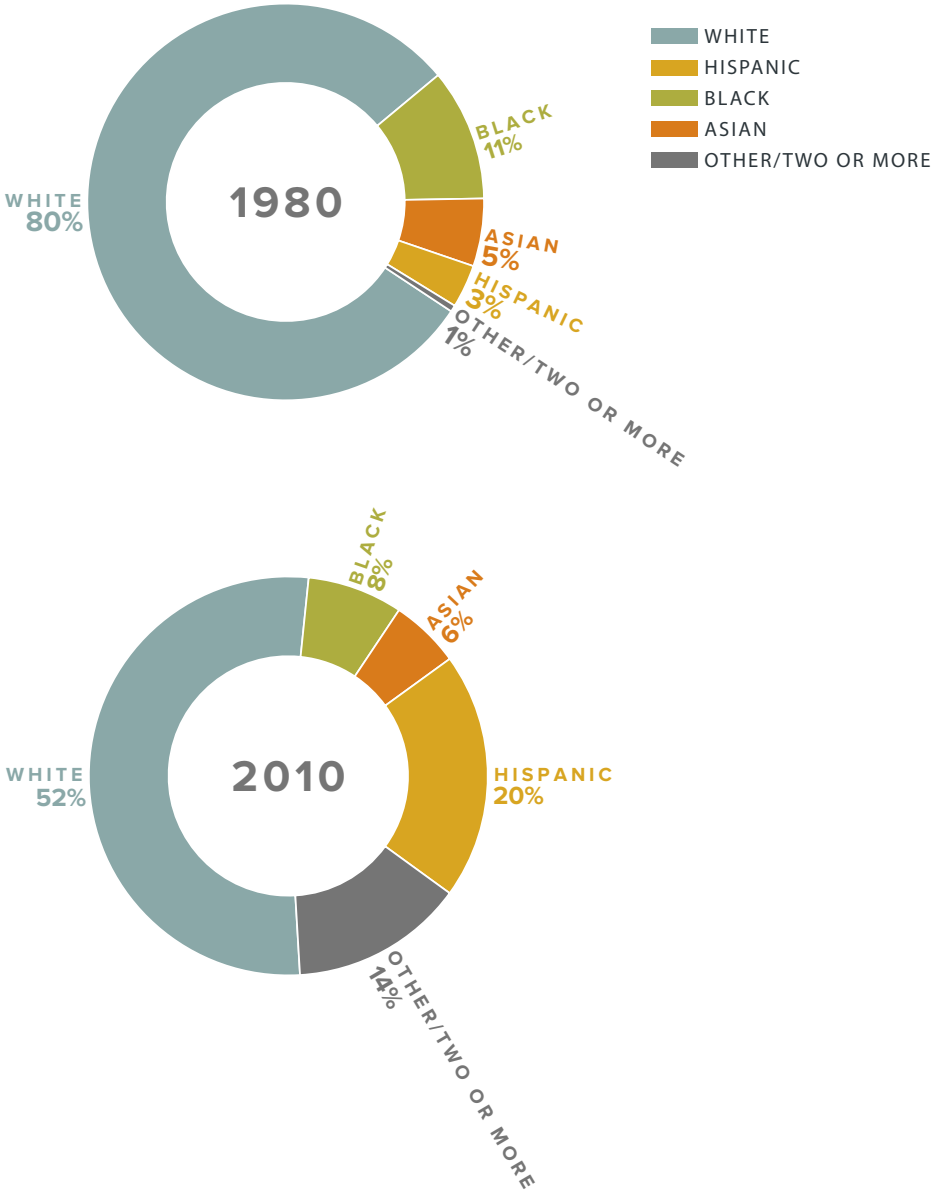
Current and future generations enjoy clean air, clean water, and healthy ecosystems.

Equity

The benefits and burdens of growth and change are distributed equitably.

People of color are an increasingly significant percentage of the Portland metropolitan region's population. Areas with high poverty rates and people of color are located in all three of the region's counties – often in neighborhoods with limited transit access to family wage jobs and gaps in walking and bicycling networks.

RACE AND ETHNICITY IN THE PORTLAND METROPOLITAN REGION



REGIONAL CONTEXT

OUR REGION IS CHANGING

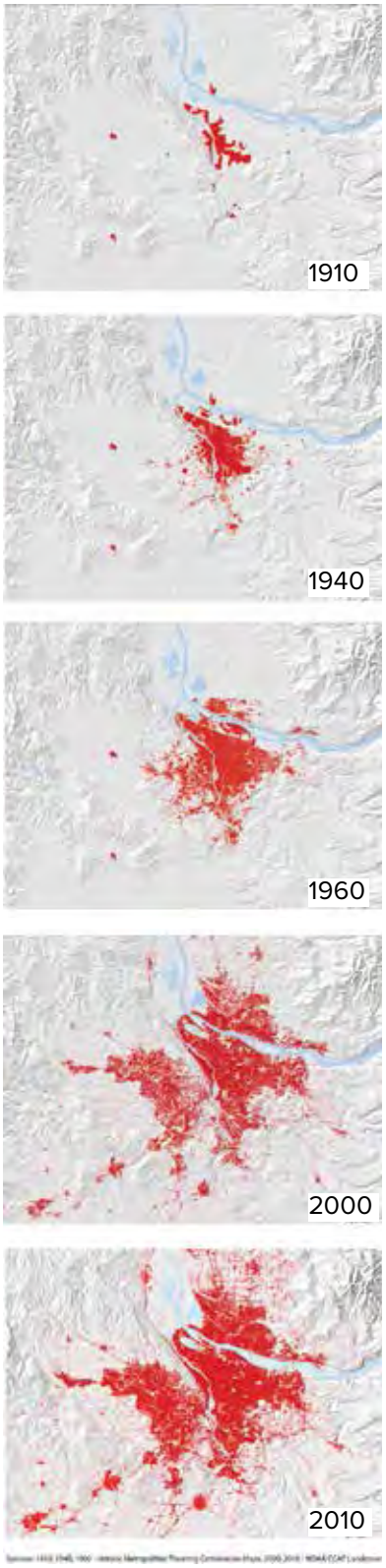
The Portland metropolitan region is an extraordinary place to call home. Our region has unique communities with inviting neighborhoods, a diverse economy and a world-class transit system. The region is surrounded by stunning natural landscapes and criss-crossed with a network of parks, trails and wild places within a walk, bike ride or transit stop from home. Over the years, the communities of the Portland metropolitan region have taken a collaborative approach to planning that has helped make our region one of the most livable in the country.

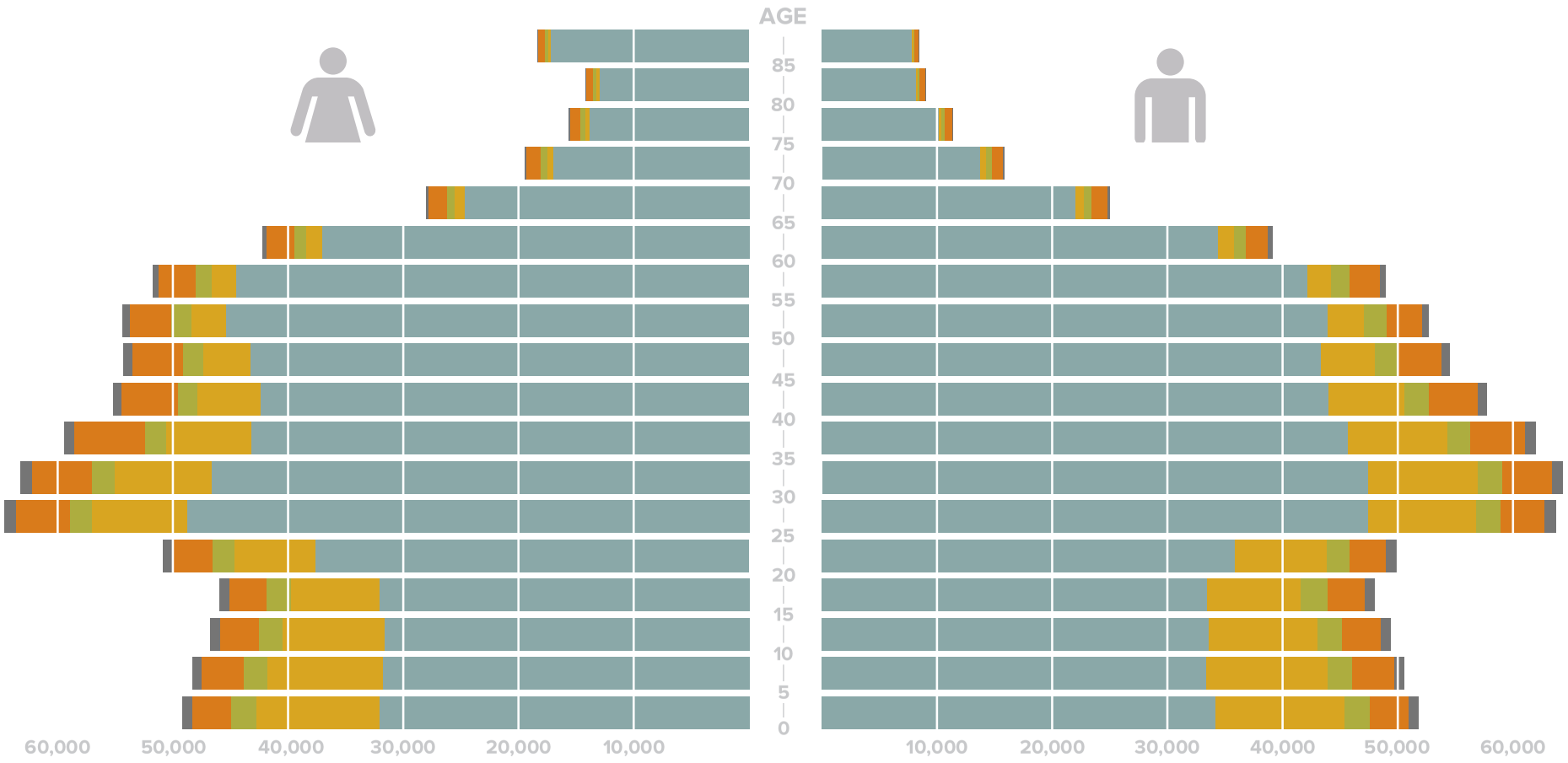
Because of our dedication to planning and working together to make local and regional plans a reality, we have set a wise course for managing growth – but times are challenging. With a growing and increasingly diverse population and an economy that is still in recovery, residents of the region along with the rest of the nation have reset expectations for financial and job security.

Aging infrastructure, rising energy costs, a changing climate, and global economic and political tensions demand new kinds of leadership, innovation and thoughtful deliberation and action to ensure our region remains a great place to live, work and play for everyone.

In collaboration with city, county, state, business and community leaders, Metro has researched how land use and transportation policies and investments can be leveraged to respond to these challenges.

The region expects to welcome nearly 500,000 new residents and more than 365,000 new jobs within the region's urban growth boundary by 2035.





2010 POPULATION: Age, gender and race/ethnicity
Share of 7-county households

INVESTING IN OUR COMMUNITIES

Oregon has been a leader among a handful of states in addressing climate change, with an ambitious goal to reduce greenhouse gas (GHG) emissions from all sources to 75 percent below 1990 levels by the year 2050. In 2009, the Oregon Legislature required the Portland metropolitan region to develop an approach to reduce per capita greenhouse gas emissions from cars and small trucks by 2035.

Because our community visions focus development and investment where it makes sense – in downtowns, main streets and employment areas – and support transportation options for getting to work, school, and destinations across the region, we already drive 20 percent fewer miles every day than residents of other regions of similar size.

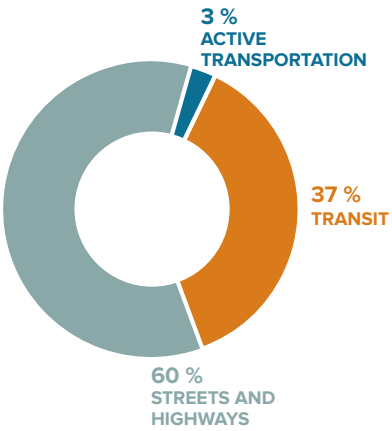
While our existing local and regional plans for growth can get us to the 2035 target, we still have work to do to make those plans a reality.

We know that investing in quality infrastructure is essential to a functioning, vibrant economy and healthy, livable communities. Investment in infrastructure is also needed to reduce greenhouse gas emissions. Past experience and analysis indicate that investments in centers, corridors and employment areas are an effective means of attracting growth to these areas, supporting community visions and values, and reducing greenhouse gas emissions.

Investments can take the form of expanding transit service; building new sidewalks, bikeways or street connections; using technology to actively manage the transportation system; managing parking; providing travel option programs; expanding existing roads; and other tools. Removing barriers to more efficient use of land and existing infrastructure can also help communities achieve their vision for the future while reducing greenhouse gas emissions as called for by the state.

The Oregon Legislature has required the Portland region to reduce per capita greenhouse gas emissions from cars and small trucks by 2035.

SHARE OF FEDERAL AND STATE CAPITAL INVESTMENTS IN THE PORTLAND METROPOLITAN REGION BY MODE (1995 – 2010)



AVERAGE ANNUAL AMOUNT OF STATE AND FEDERAL FUNDING SPENT ON CAPITAL INVESTMENTS IN THE PORTLAND METROPOLITAN REGION (1995 – 2010)

$10 million per year
active transportation

$141 million per year
transit

$225 million per year
streets and highway

Source: Metro 2010

PAYING FOR NEEDED INVESTMENTS

Our nation is investing less in infrastructure today than at any time in our history. The Portland metropolitan region is falling behind on making the investments needed to support our growing population and achieve community visions. Research in 2008 estimated the cost of building needed public and private infrastructure to be $27 to $41 billion by 2035. Traditional funding sources are expected to cover only half that amount.

Funding for transportation investments comes from many sources, including the U.S. Congress, the Federal Highway Administration, the Federal Transit Administration, the Oregon Legislature, ODOT, Metro, cities, counties, TriMet, South Metro Region Rapid Transit (SMART), the Port of Portland and developers.

Transportation funding has long been primarily a state and federal obligation, financed largely through gas taxes and other user fees. The purchasing power of federal and state gas tax revenues is declining as individuals drive less and fuel efficiency increases. The effectiveness of this revenue source is further eroded because the gas tax is not indexed to inflation. These monies are also largely dedicated to streets and highway – primarily maintenance and preservation – and to a limited extent, system expansion.

We also need to complete gaps in our region's transit, walking and biking networks to help expand affordable travel options, yet active transportation currently lacks a dedicated funding source. Expansion and operation of the transit system has relied heavily on payroll taxes for operations and competitive federal funding for high capacity transit. But the region's demand for frequent and reliable transit service exceeds the capacity of the payroll tax to support it.

Until the 2009 passage of the Jobs and Transportation Act (House Bill 2001) raised the state gas tax in 2011 by six cents, this revenue source had not increased since 1993. Similarly, the federal gas tax has not increased since 1993. This failure of fundraising to keep pace with infrastructure needs has been particularly acute in Oregon, as most states have turned to increased sales tax levies to cope with the decrease in purchasing power of federal transportation funding. Lacking a sales tax or other tools, Oregon has focused on bonding strategies based on future revenue at the state level and therefore has not developed a long-term strategy.

As the region's economy and its labor and housing markets continue to recover from the Great Recession, resources remain limited for making the investments needed to support our growing communities. Diminished resources mean reduced ability to maintain, improve and expand existing transportation infrastructure.

As a result, the existing transportation system is incomplete, overburdened and underfunded. Because federal and state funding is not keeping pace with infrastructure operation and maintenance needs, a substantial share of funding for future regional transportation investments has shifted to local revenue sources. Local governments in the Portland metropolitan region (like others in Oregon) have turned to increased tax levies, road maintenance fees, system development charges and traffic impact fees in attempt to keep pace, although some communities have been more successful than others.

The adopted Regional Transportation Plan calls for stabilizing existing transportation revenue sources while securing new and innovative long-term sources of funding adequate to build, operate and maintain the regional transportation system for all modes of travel.

At a time when local, state and federal resources needed to address our aging infrastructure are limited, we have a unique opportunity to find a better way to support our communities, attract new business, and grow the economy.

The Climate Smart Communities Scenarios Project has shown that the same kinds of investments that can help address these infrastructure needs can also help achieve our greenhouse gas emissions reduction goals. These kinds of investments will also help communities grow in ways that will support local economies for decades to come. Working together, we can develop the local, regional, state and federal partnerships needed to invest in our communities and realize our plans.

TODAY'S CHOICES SHAPE THE FUTURE

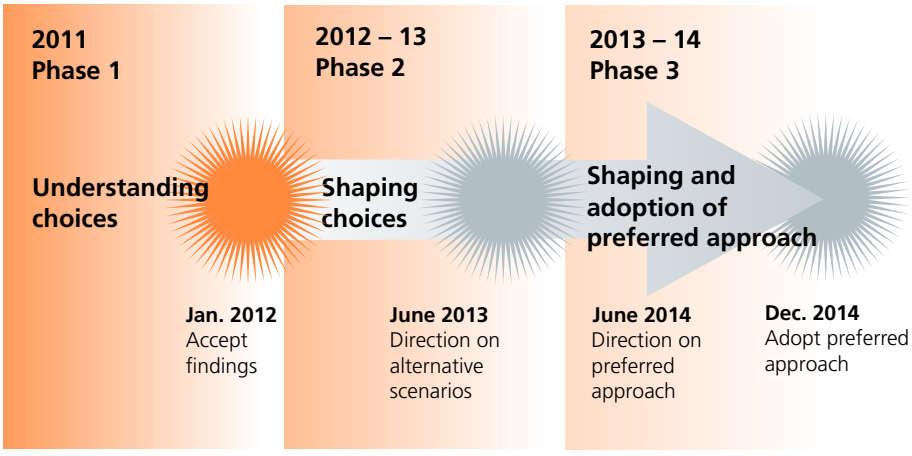
The region's charge from the state is to identify and adopt a preferred approach for meeting the target by December 2014. The choices we make today about how we live, work and get around will shape the future of the region for generations to come. The project is being completed in three phases – and has entered the third and final phase.

The first phase began in 2011 and concluded in early 2012. This phase consisted of testing strategies on a regional level to understand which strategies can most effectively help the region meet the state greenhouse gas emissions reduction mandate.

Most of the investments and actions under consideration are already being implemented to varying degrees across the region to realize community visions and other important economic, social and environmental goals.

As part of the first phase, Metro staff researched strategies used to reduce emissions in communities across the region, nation and around the world. This work resulted in a toolbox describing the range of potential strategies, their effectiveness at reducing emissions and other benefits they could bring to the region, if implemented.

Climate Smart Communities Scenarios Project timeline



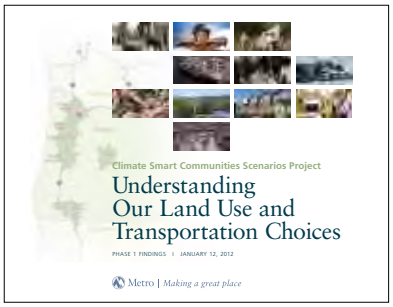
We found there are many ways to reduce emissions while creating healthy, more equitable communities and a vibrant regional economy, but no single solution will enable the region to meet the state's target.

Investing in communities in ways that support local visions for the future will be key to reducing greenhouse gas emissions. Providing schools, services and shopping near where people live, improving bus and rail transit service, building new street connections, using technology to manage traffic flow, encouraging electric cars and providing safer routes for walking and biking all can help.

The second phase began in 2012 and concluded in October 2013. In this phase, Metro worked with community leaders to shape three approaches – or scenarios – and the criteria to be used to evaluate them. In the summer, 2013, Metro analyzed the three approaches to investing in locally adopted land use and transportation plans and policies.

The purpose of the analysis was to better understand the impact of those investments to inform the development of a preferred approach in 2014. Each scenario reflects choices about how and where the region invests to implement locally adopted plans and visions. They illustrate how different levels of leadership and investment could impact how the region grows over the next 25 years and how those investments might affect different aspects of livability for the region.

The results of the analysis were released in fall 2013.



Three approaches that we evaluated in 2013

SCENARIO A

Recent Trends

This scenario shows the results of implementing adopted land use and transportation plans to the extent possible with existing revenue.

SCENARIO B

Adopted Plans

This scenario shows the results of successfully implementing adopted plans and achieving the current Regional Transportation Plan which relies on increased revenue.

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WHAT WE'VE LEARNED SO FAR

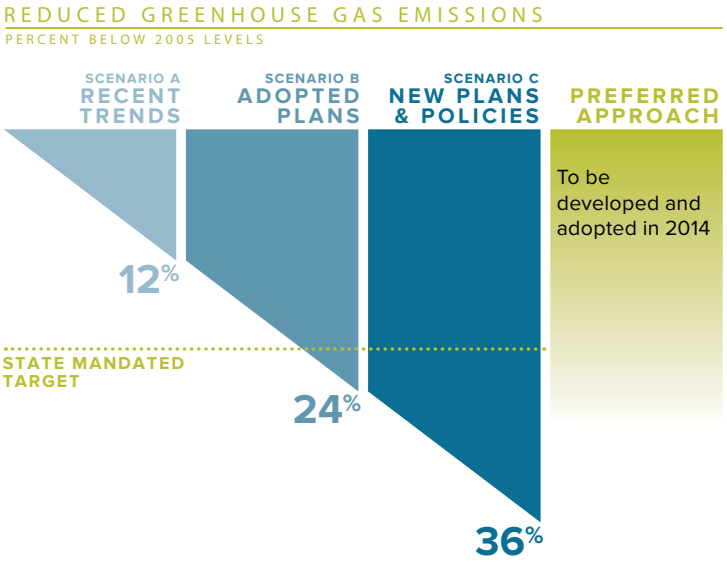
WE FOUND GOOD NEWS

Our Phase 2 analysis indicates that adopted local and regional plans can meet the state target for reducing greenhouse gas emissions – if we make the investments and take the actions needed to implement those plans and make them a reality.

The analysis also identified potentially significant benefits that can be realized by implementing adopted plans (Scenario B) and new policies and plans (Scenario C), including cleaner air, improved public health and safety, reduced congestion and delay, and travel cost savings that come from driving shorter distances and using more fuel efficient vehicles.

The analysis showed that if we continue investing at our current levels (Scenario A) we will fall short of what has been asked of our region, as well as other outcomes we are working to achieve – healthy communities, clean air and water, reliable travel options, and a strong regional economy.

More results are provided in the "Supplemental Materials" section of this guide.



The reduction target is from 2005 emissions levels after reductions expected from cleaner fuels and more fuel-efficient vehicles.

BUT THERE IS MORE WORK TO BE DONE

We're all in this together Local, regional, state and federal partnerships are needed to make the investments and take the actions needed to implement adopted local and regional plans and meet the state target. Our findings can help the region make the case for the increased investment and new partnerships that will be needed to implement the preferred approach the Metro Council considers for adoption in December 2014.

Implementation goes hand in hand with community engagement and participation We must continue working with community leaders to build capacity of organizations and their members to participate in ongoing local and regional planning and implementation efforts. This will help ensure ongoing, meaningful opportunities for participation of public health, social equity and environmental justice leaders and the communities they represent as we move forward to eliminate disparities.

A transition to cleaner fuels and more fuel-efficient vehicles is essential Oregon cannot achieve its greenhouse gas emissions reduction goals without the significant advancements in fleet and technology committed to by the state. It is critical for the Oregon Legislature and state commissions to prioritize investments and actions that will catalyze this transition to ensure assumptions used to set our region's emissions reduction target are realized.

Prioritizing investments that achieve multiple goals in combination with more funding will help us get there The greatest barrier to implementation is the lack of sufficient funding to make the investments needed for our local and regional plans to become a reality. More state funding is needed to leverage local and regional funding and assist future planning and implementation. With limited funding, it is even more important to prioritize investments that support, healthy, equitable communities and a strong economy, while reducing greenhouse gas emissions to create the future we want for the region.

But first, the Metro Council is asking cities, counties, regional partners and the public to weigh in on which investments and actions from each of the three scenarios should go forward into a preferred approach and how we should pay for the needed investments.

A one-size-fits-all approach won't meet the needs of our diverse communities. A combination of all of the investments and actions under consideration is needed to help us realize our shared vision for making this region a great place for generations to come.

The Portland metropolitan region pioneered approaches to land use and transportation planning in the past, and is uniquely positioned to address the state climate goals – mainly because the region has solid, well-integrated transportation and land-use systems in place and a history of working together to address complex challenges at a regional scale.

MOVING FORWARD

In the 1990s, regional policy discussions centered on how and where the region should grow to protect the things that make this region a great place to live, work and play. Those discussions led to the adoption of the region's long-range strategy, the 2040 Growth Concept. This strategy reflects shared community values and desired outcomes that continue to resonate today.

The preferred approach will not replace the 2040 Growth Concept nor be a stand-alone plan – instead it will be a set of recommended policies and actions for how the region moves forward to integrate reducing greenhouse gas emissions within ongoing efforts to create the future we want for our region.

THROUGH MAY 2014
Policymakers weigh in on which investments and actions should be included in the region's preferred approach

JUNE 2014
The Metro Council is asked to provide direction to staff on the draft preferred approach

SUMMER 2014
Evaluation of preferred approach and development of a near-term implementation plan

SEPTEMBER 2014
Final public review of preferred approach

DECEMBER 2014
Metro Council considers adoption of preferred approach

JANUARY 2015
Submit adopted approach to Land Conservation and Development Commission for approval

WHAT IS THE PREFERRED APPROACH?

The preferred approach will be a set of recommended policies and actions for how the region moves forward to integrate reducing greenhouse gas emissions with ongoing efforts to create the future we want for our region.

LEGISLATION The Metro Council will consider adoption of legislation signaling the region's commitment to the preferred approach through the ongoing implementation of the 2040 Growth Concept. The legislation will include:

POLICIES Regional Framework Plan (RFP) amendments

- Changes to refine existing RFP policies and/or add new policies to achieve the preferred approach.

ACTIONS Recommended actions

- Menu of investments and other tools needed to achieve preferred approach that can be tailored by each community to implement local visions.
- Near-term actions needed to implement and achieve preferred approach. This could include:
  - state and federal legislative agendas that request funding, policy changes or other tools needed to achieve preferred approach
  - identification of potential/likely funding mechanisms for key actions
  - direction to the 2018 Regional Transportation Plan update
  - direction to future growth management decisions
  - direction for functional plan amendments that guide local implementation, if needed.
- Monitoring and reporting system that builds on existing performance monitoring requirements per ORS 197.301 and updates to the Regional Transportation Plan.

Through this collaborative effort, we can identify how the region should work together to develop new kinds of leadership and the local, regional, state and federal partnerships needed to invest in communities to make local and regional plans a reality.

POLICY QUESTIONS FOR 2014

WHAT CHOICES HAVE BEEN MADE?

In February, the Metro Policy Advisory Committee and Joint Policy Advisory Committee on Transportation approved a path for moving forward with an eight-step process to shape and adopt a preferred approach in 2014. As recommended by MPAC and JPACT, the preferred approach will start with the plans cities, counties and the region have already adopted – from local zoning, capital improvement plans, and comprehensive, and transportation system plans to the 2040 Growth Concept and regional transportation plan – to create great communities and build a vibrant economy.

This includes managing the urban growth boundary through regular growth management cycles (currently every six years). In addition, MPAC and JPACT agreed to include assumptions for cleaner fuels and more fuel-efficient vehicles as defined by state agencies during the 2011 target-setting process. A third component they recommended be included in the preferred approach is the Statewide Transportation Strategy assumption for vehicle insurance paid by the miles driven.

WHAT CHOICES HAVE BEEN MADE?

In January and February of 2014, MPAC, JPACT and the Metro Council agreed these elements should be included in the draft preferred approach as a starting point:

- ☑ **Implement adopted regional and local plans**
  Implement the 2040 Growth Concept and local zoning, comprehensive and transportation plans and manage the urban growth boundary through regular growth management cycles.
- ☑ **Transition to cleaner fuels and fuel-efficient vehicles**
  Rely on state fleet and technology assumptions used when setting our region's target.
- ☑ **Promote vehicle insurance paid by the miles driven**
  Use state assumptions for pay-as-you-drive insurance.

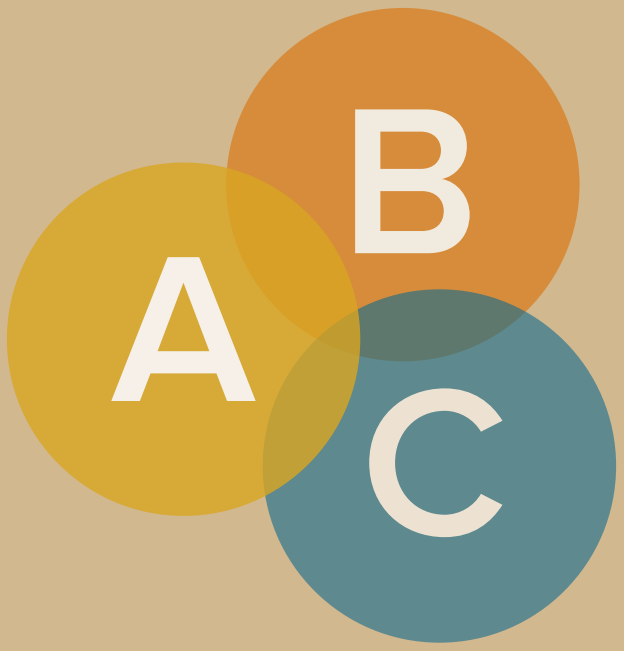
WHAT CHOICES DO WE STILL NEED TO MAKE?

Since January 2014, the Metro Council has engaged community and business leaders, local governments and the public on what mix of investments and actions best support their community's vision for healthy and equitable communities and a strong economy while reducing greenhouse gas emissions.

Through May 2014, policymakers will consider the results of the engagement activities and scenarios evaluation as they weigh in on these policy questions:

1. **How much transit should we provide by 2035?**
2. **How much should we use technology to actively manage the transportation system by 2035?**
3. **How much should we expand the reach of travel information programs by 2035?**
4. **How much of the planned active transportation network should we complete by 2035?**
5. **How much of the planned street and highway network should we complete by 2035?**
6. **How should local communities manage parking by 2035?**
7. **How should we pay for our investment choices by 2035??**

POLICY AREAS



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OVERVIEW OF POLICY AREAS

This section provides background information on the seven policy areas being considered by the region's policymakers:

- Make transit more convenient, frequent, accessible and affordable
- Use technology to actively manage the transportation system
- Provide information and incentives to expand the use of travel options
- Make biking and walking more safe and convenient
- Make streets and highways more safe, reliable and connected
- Manage parking to make efficient use of parking resources
- Identify potential ways to pay for our investment choices

The first three pages include a description of the policy, its potential climate benefit, cost, implementation benefits and challenges, and a summary of the how the policy is implemented for each scenario. The last page of each description summarizes emerging themes and specific comments provided during project public engagement activities.

EXPLANATION OF THE CLIMATE BENEFIT RATINGS

In Phase 1 of the project, staff conducted a sensitivity analysis to better understand the greenhouse gas emissions reduction potential of individual policies. The information derived from the sensitivity analysis was used to develop a five-star rating system for communicating the relative climate benefits of different policies. The ratings represent the potential effects of individual policy areas in isolation and do not capture variations that may occur from synergies between multiple policies.

Estimated reductions assumed in climate benefits ratings	
less than 1%	★
1 – 2%	★★
3 – 6%	★★★
7 – 15%	★★★★
16 – 20%	★★★★★

Source Memo to TPAC and interested parties on Climate Smart Communities: Phase 1 Metropolitan GreenSTEP scenarios sensitivity analysis (June 21, 2012)

EXPLANATION OF THE RELATIVE COST RATINGS

Like the relative climate benefit ratings, the cost ratings provide a quick reference for comparing the relative cost of investments between policy areas. The estimated cost of each policy area for each scenarios is provided below.

The relative climate benefit and cost ratings are provided to simplify information presented for purposes of discussion.

ESTIMATED COSTS FOR EACH SCENARIO BY POLICY AREA (2014$)

	SCENARIO A	SCENARIO B	SCENARIO C
Transit capital	$590 million	$1.9 billion	$5.1 billion
Transit operations	$4.8 billion	$5.3 billion	$9.5 billion
Technology	$113 million	$135 million	$193 million
Information	$99 million	$124 million	$234 million
Active transportation	$57 million	$948 million	$3.9 million
Streets and highways capital[1]	$162 million	$8.8 billion	$11.8 billion
Parking	n/a	n/a	n/a
Total costs	**$6 billion**	**$17 billion**	**$31 billion**


RELATIVE CLIMATE BENEFIT

★★★★★

RELATIVE COST

$ $ $

Make transit more convenient, frequent, accessible and affordable

There are four key ways to make transit service more convenient, frequent, accessible and affordable. The effectiveness of each will vary depending on the mix of nearby land uses, the number of people living and working in the area, and the extent to which travel information, marketing and technology are used.

Frequency Increasing the frequency of transit service in combination with transit signal priority and bus lanes makes transit faster and more convenient.

System expansion Providing new community and regional transit connections improves access to jobs and community services and makes it easier to complete some trips without multiple transfers.

Transit access Building safe and direct walking and biking routes and crossings that connect to stops makes transit more accessible and convenient.

Fares Providing reduced fares makes transit more affordable; effectiveness depends on the design of the fare system and the cost.

Transit is provided in the region by TriMet and South Metro Area Rapid Transit (SMART) in partnership with Metro, cities, counties, employers, business associations and non-profit organizations.

BENEFITS

- improves access to jobs, the workforce, and goods and services, boosting business revenues
- creates jobs and saves consumers and employers money
- stimulates development, generating local and state revenue
- provides drivers an alternative to congested roadways and supports freight movements by taking cars off the road
- increases physical activity
- reduces air pollution and air toxics
- reduces risk of traffic fatalities and injuries

CHALLENGES

- transit demand outpacing funding
- enhancing existing service while expanding coverage and frequency to growing areas
- reduced revenue and federal funding, leading to increased fares and service cuts
- preserving affordable housing options near transit
- ensuring safe and comfortable access to transit for pedestrians, cyclists and drivers
- transit-dependent populations locating in parts of the region that are harder to serve with transit

How much transit should we provide by 2035?

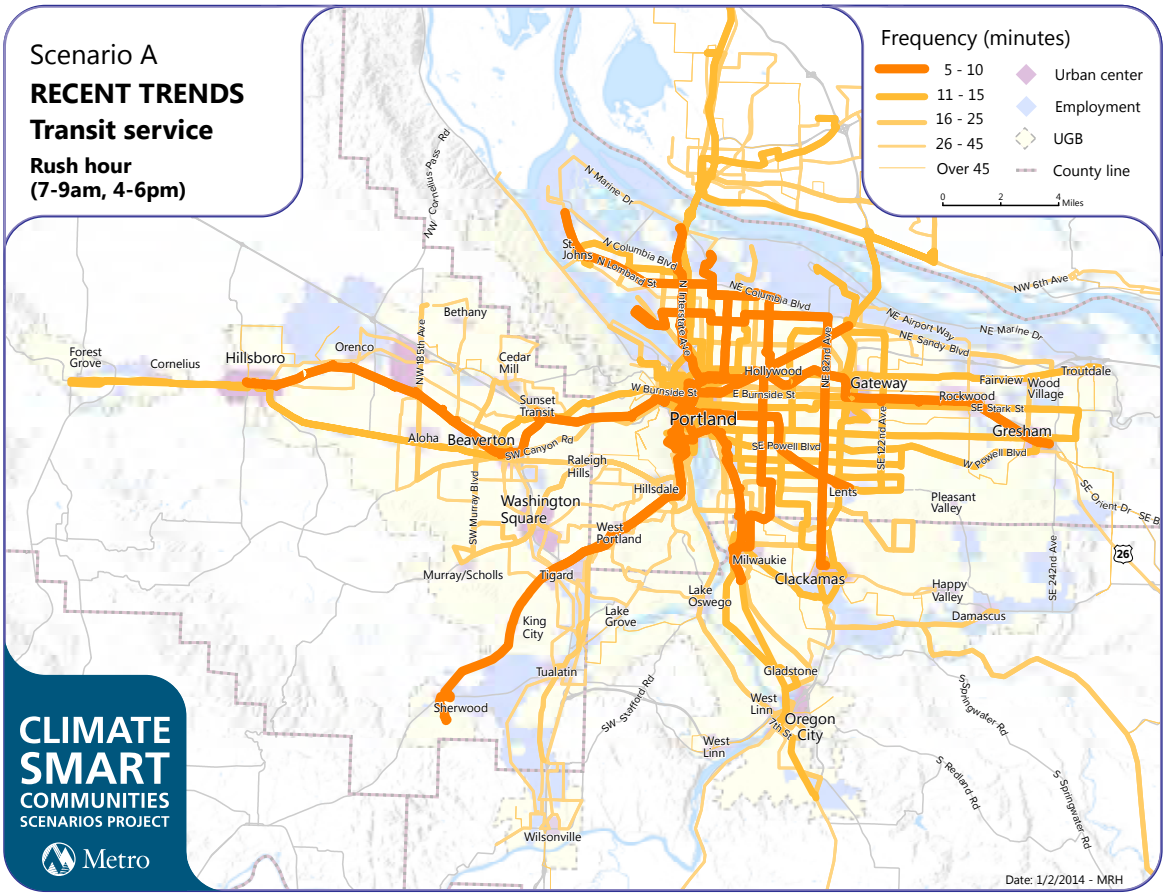
TRANSIT AT A GLANCE

	SCENARIO A	SCENARIO B	SCENARIO C
Daily revenue hours	5,600	6,200	11,200
Service expansion *(increase from 2010 level)*	14% increase	27% increase	129% increase
Rush hour frequency	10-minute service on 10 routes	10-minute service on 13 routes	10-minute service on 37 routes
Off-peak frequency	30-minute service on most routes	20-minute service on most routes	15 or 20-minute service on most routes
New high capacity transit connections	None	Planned connections completed, such as the extension to Vancouver, WA	All regional centers and more town centers served Priority high capacity transit system plan and Southwest Corridor completed
Other service enhancements	Westside Express Service (WES) and Portland streetcar operate at 2010 frequencies	Same as Scenario A, plus more planned Portland streetcar connections completed	WES operates all day with 15-minute service Locally-developed Service Enhancement Plans (SEPs) and the planned Portland Streetcar System Plan mostly completed
Public and private shuttles	Existing private shuttles continue to operate between large work sites and major transit stops	Additional major employers and some community-based organizations work with TriMet to operate shuttles	More major employers and some community-based organizations work with TriMet to operate shuttles
Fares	Reduced fares provided to youth, older adults and disabled persons	Same as Scenario A	Same as Scenario A, plus reduced fares provided to low-income families
Estimated capital cost* (2014$)	**$590 million**	**$1.9 billion**	**$5.1 billion**
Estimated service operating costs (2014$)**	**$4.8 billion**	**$5.3 billion**	**$9.5 billion**

* Capital costs reflect HCT capital costs plus fleet replacement and expansion costs.

** Operating costs for TriMet service were calculated by annualizing the daily revenue hours proposed for each scenario and applying TriMet's average operating cost per revenue hour, with cost by mode weighted by the proportion of service provided on each mode. SMART operating costs were calculated by assuming SMART's FY 11-12 annual operating costs are maintained through 2035.

(See Supplemental materials section, Phase 2: Transit Access at a Glance.)



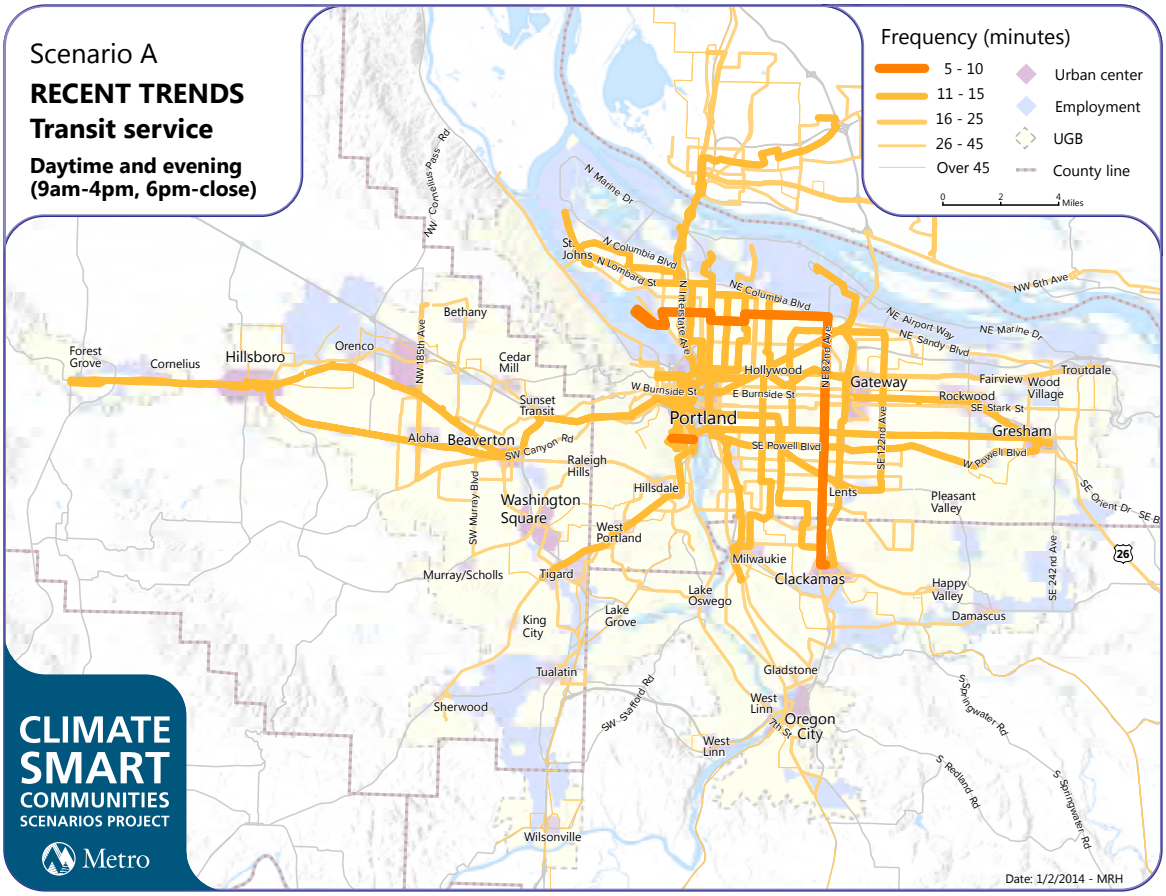
SCENARIO A

Recent Trends

This scenario shows the results of implementing adopted land use and transportation plans to the extent possible with existing revenue.

17% jobs
24% households
31% low-income households

Estimated jobs and households within ¼-mile of 10-minute or better service by 2035



6% jobs
4% households
5% low-income households

Estimated jobs and households within ¼-mile of 10-minute or better service by 2035

Note These maps are for research purposes only and do not reflect current or future policy decisions of the Metro Council, MPAC or JPACT.

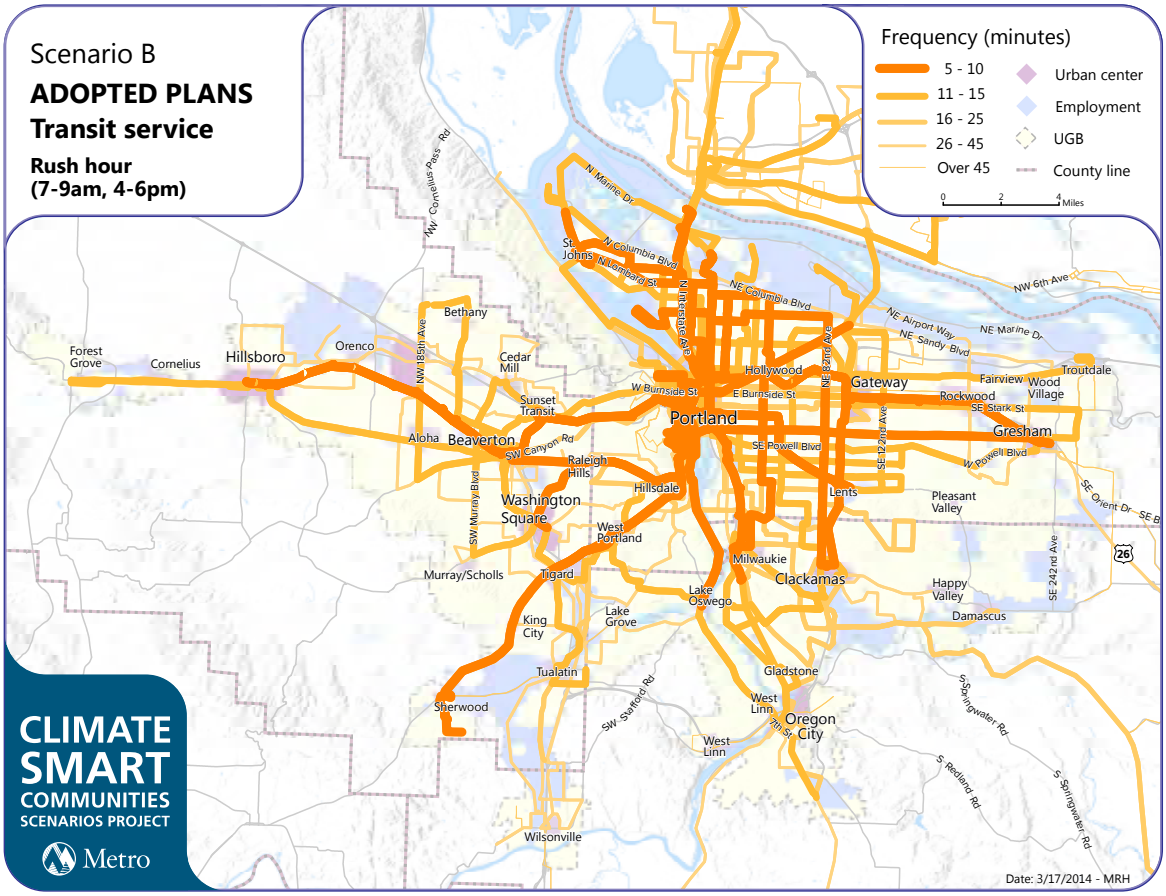
SCENARIO B

Adopted Plans

This scenario shows the results of successfully implementing adopted plans and achieving the current Regional Transportation Plan, which relies on increased revenue.

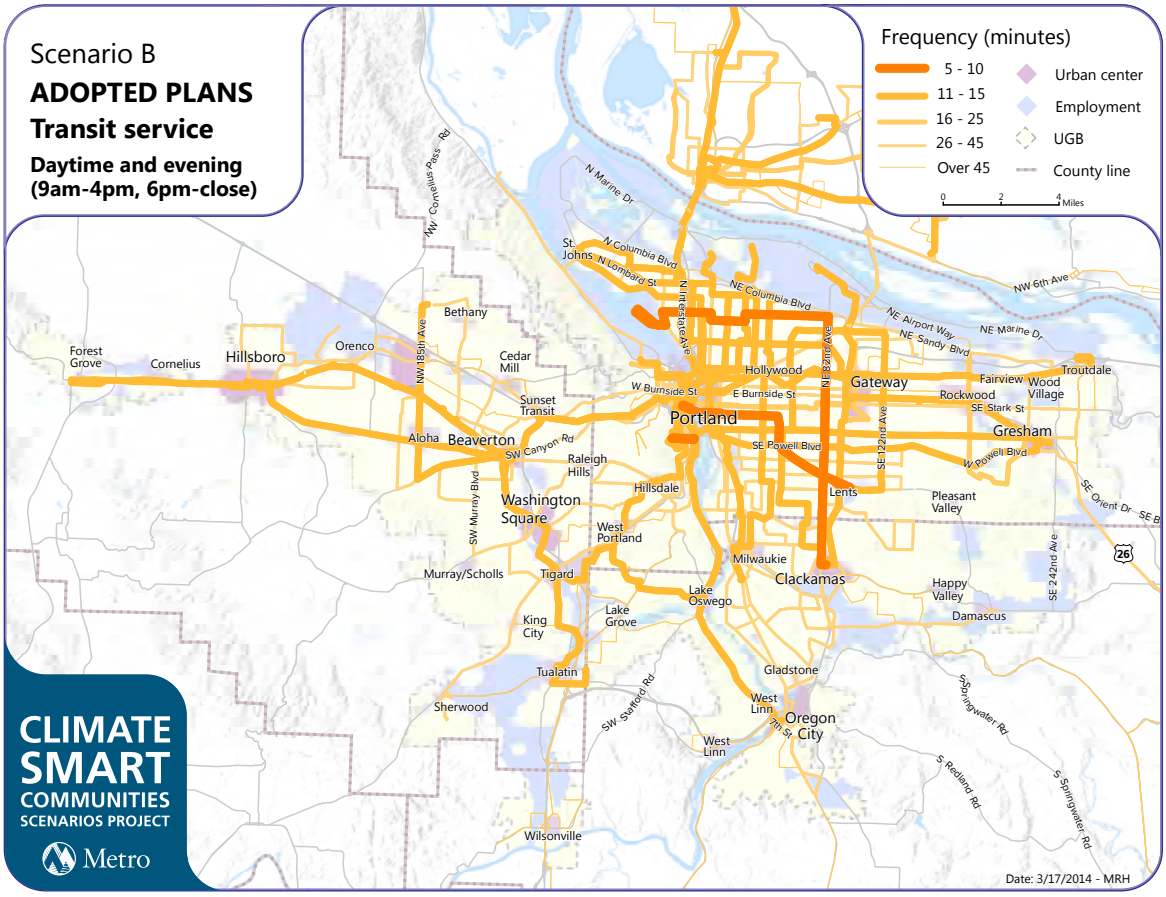
36% jobs
27% households
34% low-income households

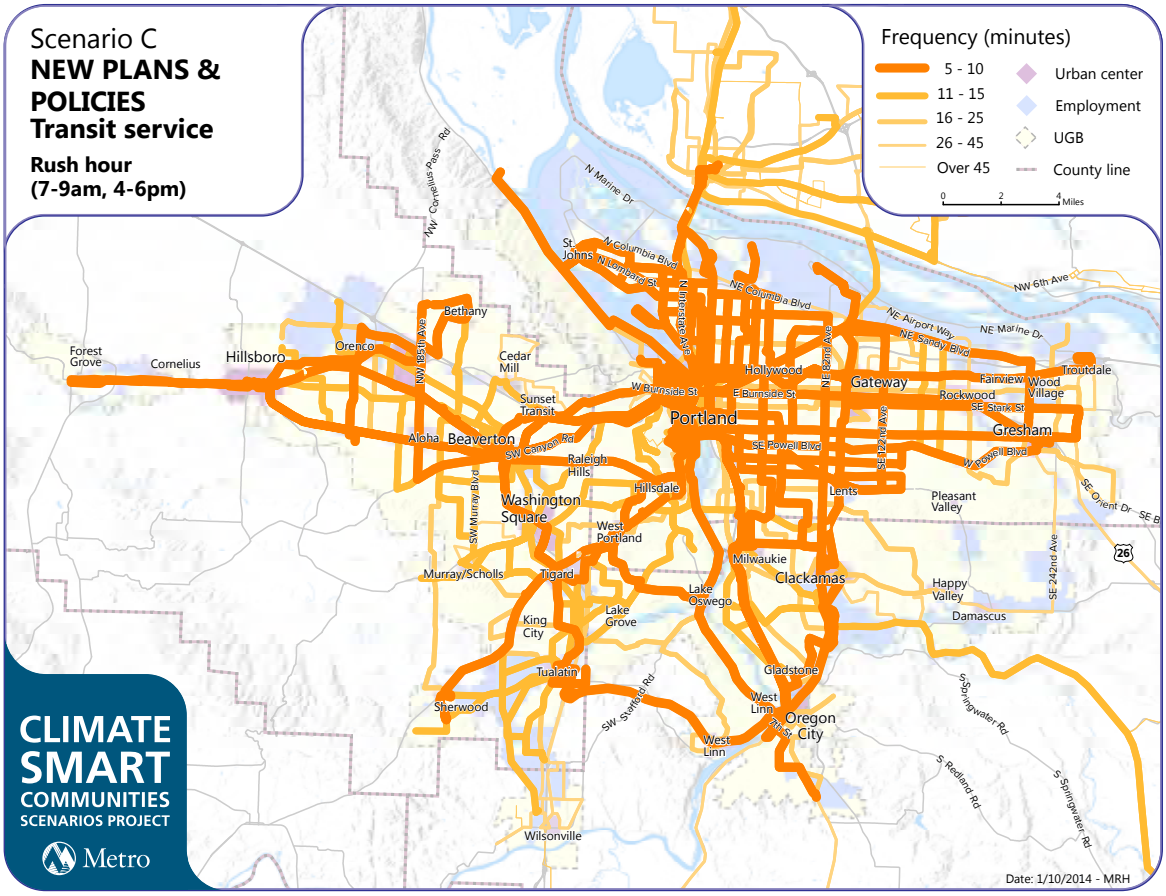
Estimated jobs and households within ¼-mile of 10-minute or better service by 2035



9% jobs
4% households
6% low-income households

Estimated jobs and households within ¼-mile of 10-minute or better service by 2035





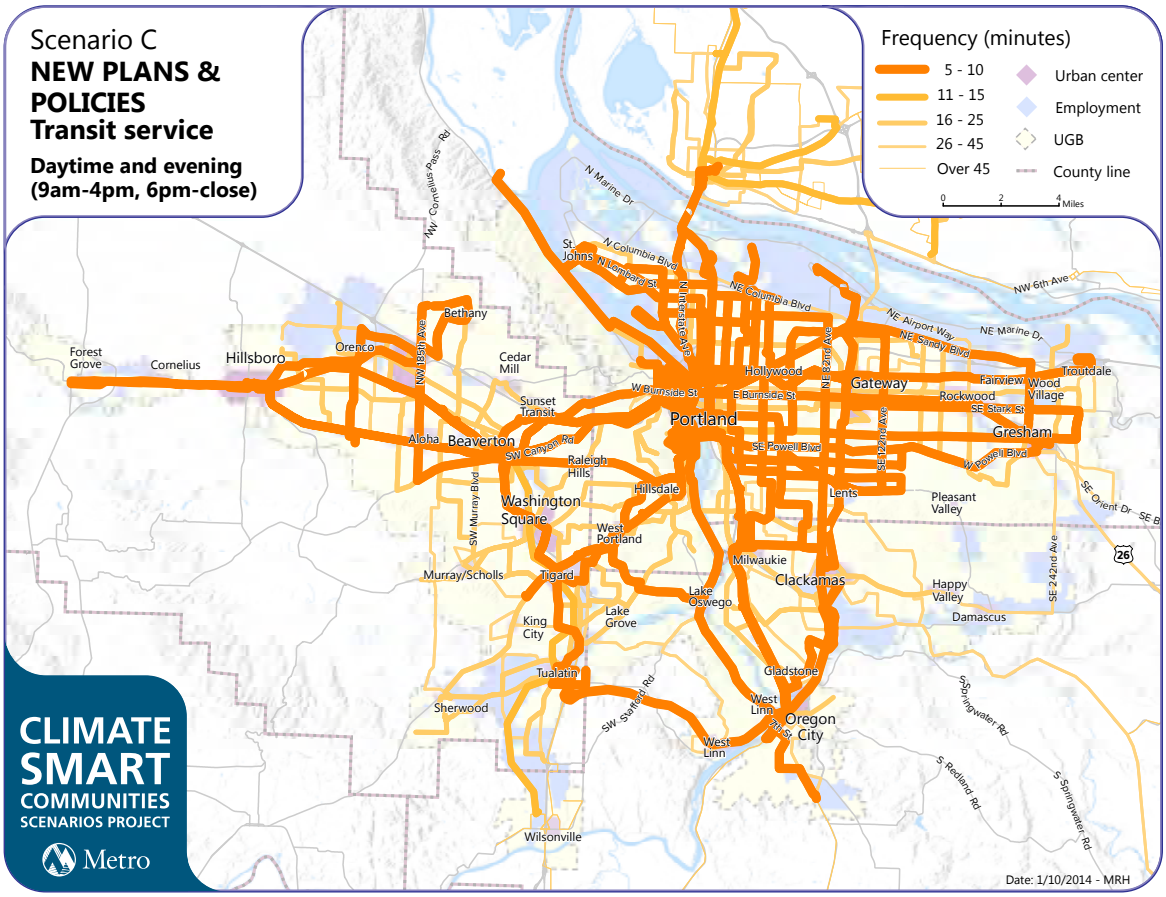
SCENARIO C

New Plans and Policies

This scenario shows the results of pursuing new policies, more investment and new revenue sources to more fully achieve adopted and emerging plans.

63% jobs
32% households
40% low-income households

Estimated jobs and households within ¼-mile of 10-minute or better service by 2035



63% jobs
20% households
26% low-income households

Estimated jobs and households within ¼-mile of 10-minute or better service by 2035

What people are saying

Transit needs to be more frequent, affordable and connected to more places people want to go.

To increase the accessibility and affordability of public transit is just paramount.

I think we would have great results if we added more to the bus system…because the bus system is very efficient.

Emerging themes

- Transit was universally seen as the highest priority investment area because of its high potential to reduce emissions while improving access to jobs and services and supporting other community goals.
- The cost of transit must be kept affordable, particularly for people with disabilities, youth, older adults and those with limited incomes.
- Integration with land use, active transportation, information, technology and a well-connected street system will help transit be more convenient and accessible for more people.
- Important to seek creative local transit service options and partnerships that fit the needs of smaller communities, including shuttles to support crucial last-mile connections.
- Prioritize low-income communities for bus service improvements and ensure that affordable housing and transportation options remain after major transit investments are made in a community.
- More funding for transit is needed.

Key takeaways to share with others

RELATIVE CLIMATE BENEFIT

★★★★★

RELATIVE COST

$$$

Use technology to actively manage the transportation system

Using technology to actively manage the Portland metropolitan region's transportation system means using intelligent transportation systems (ITS) and services to reduce vehicle idling associated with delay, making walking and biking more safe and convenient, and helping improve the speed and reliability of transit. Nearly half of all congestion is caused by incidents and other factors that can be addressed using these strategies.

Local, regional and state agencies work together to implement technologies. Agreements between agencies guide sharing of data and technology, operating procedures for managing traffic, and the ongoing maintenance and enhancement of technology, data collection and monitoring systems.

Arterial corridor management includes advanced technology at each intersection to actively manage traffic flow. This may include coordinated or adaptive signal timing; advanced signal operations such as cameras, flashing yellow arrows, bike signals and pedestrian count down signs; and communication to a local traffic operations center and the centralized traffic signal system.

Freeway corridor management includes advanced technology to manage access to the freeways, detect traffic levels and weather conditions, provide information with variable message signs and variable speed limit signs, and deploying incident response patrols that quickly clear breakdowns, crashes and debris. These tools connect to a regional traffic operations center.

Traveler information includes using variable message and speed signs and 511 internet and phone services to provide travelers with up-to-date information regarding traffic and weather conditions, incidents, travel times, alternate routes, construction, or special events.

BENEFITS

- provides near-term benefits
- reduces congestion and delay
- makes traveler experience more reliable
- saves public agencies, consumers and businesses time and money
- reduces air pollution and air toxics
- reduces risk of traffic fatalities and injuries

CHALLENGES

- requires ongoing funding to maintain operations and monitoring systems
- requires significant cross-jurisdictional coordination
- workforce training gaps

How much should we use technology to actively manage the transportation system by 2035?

TECHNOLOGY AT A GLANCE

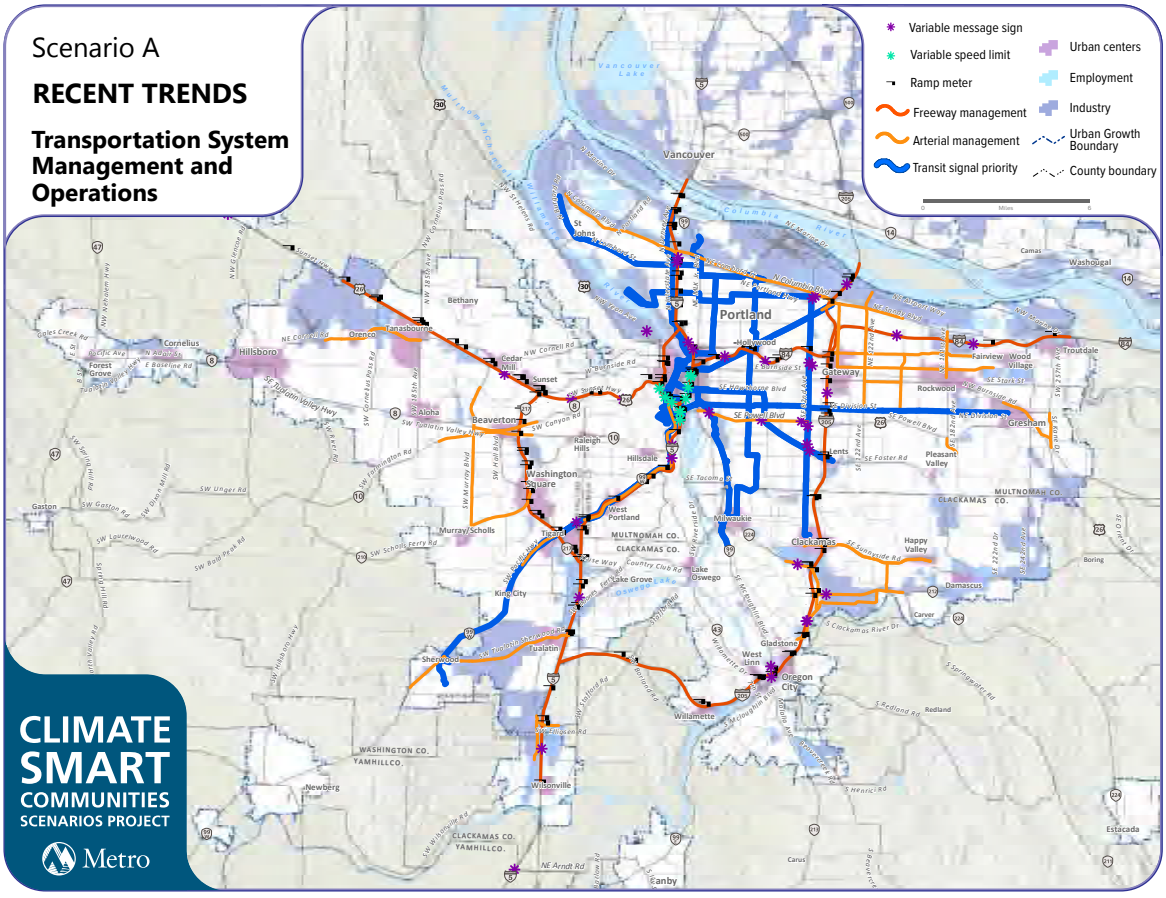
	SCENARIO A	SCENARIO B	SCENARIO C
Advanced traffic signal operations	Traffic signals on some major arterials	Traffic signals on many major arterials	All traffic signals are connected to a centralized system
Transit signal priority	Some bus routes with 10-minute service	All bus routes with 10-minute service	All bus routes with 10-minute service
Freeway ramp meters	Most urban interchanges	Same as Scenario A	All urban interchanges
Freeway variable speed signs	None	Deployed in most high incident locations	Deployed in all high incident locations
Incident response patrols	Some incident response patrols are deployed on area freeways	More incident response patrols are deployed on area freeways	Incident response patrols are deployed on area freeways and major arterials adjacent to freeways
Estimated cost (2014$)	**$113 million**	**$135 million**	**$193 million**

SCENARIO A

Recent Trends

This scenario shows the results of implementing adopted land use and transportation plans to the extent possible with existing revenue.

10% on arterials and freeways
Estimated delay reduction by 2035



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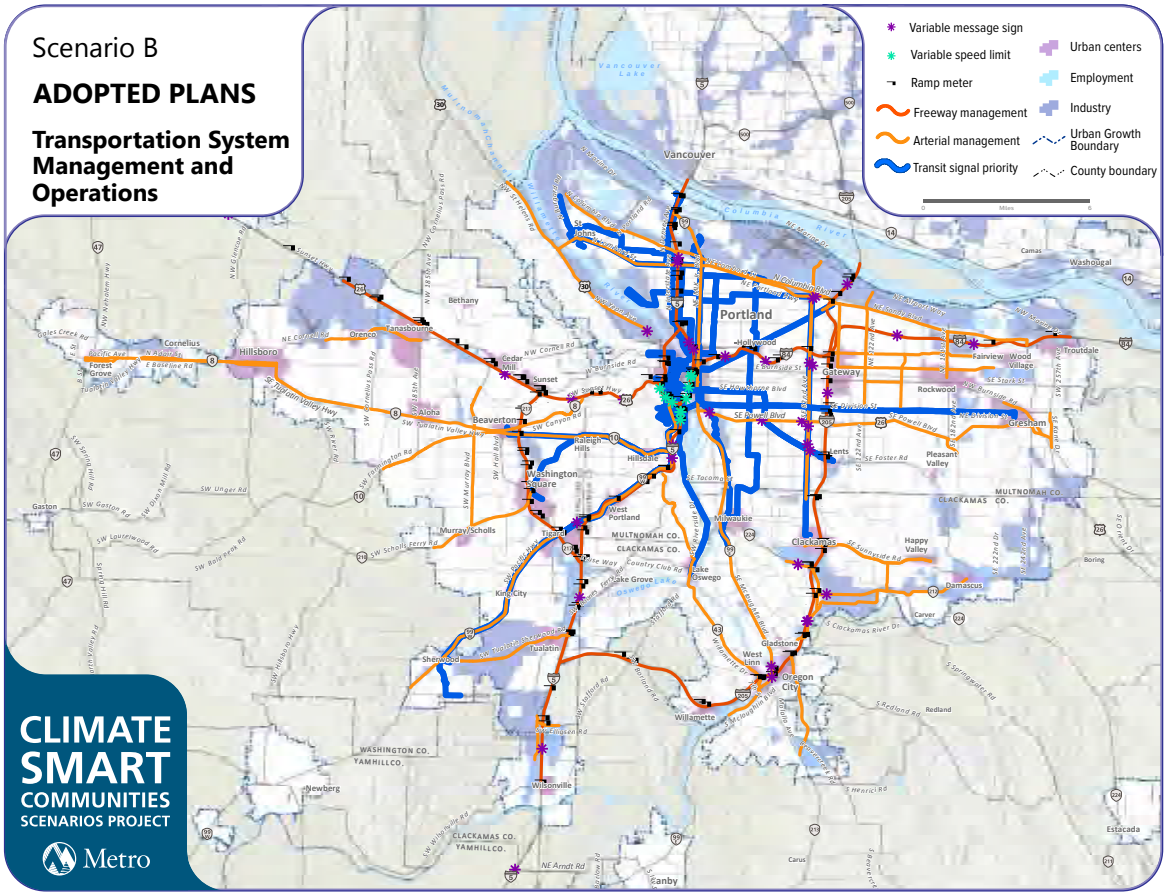
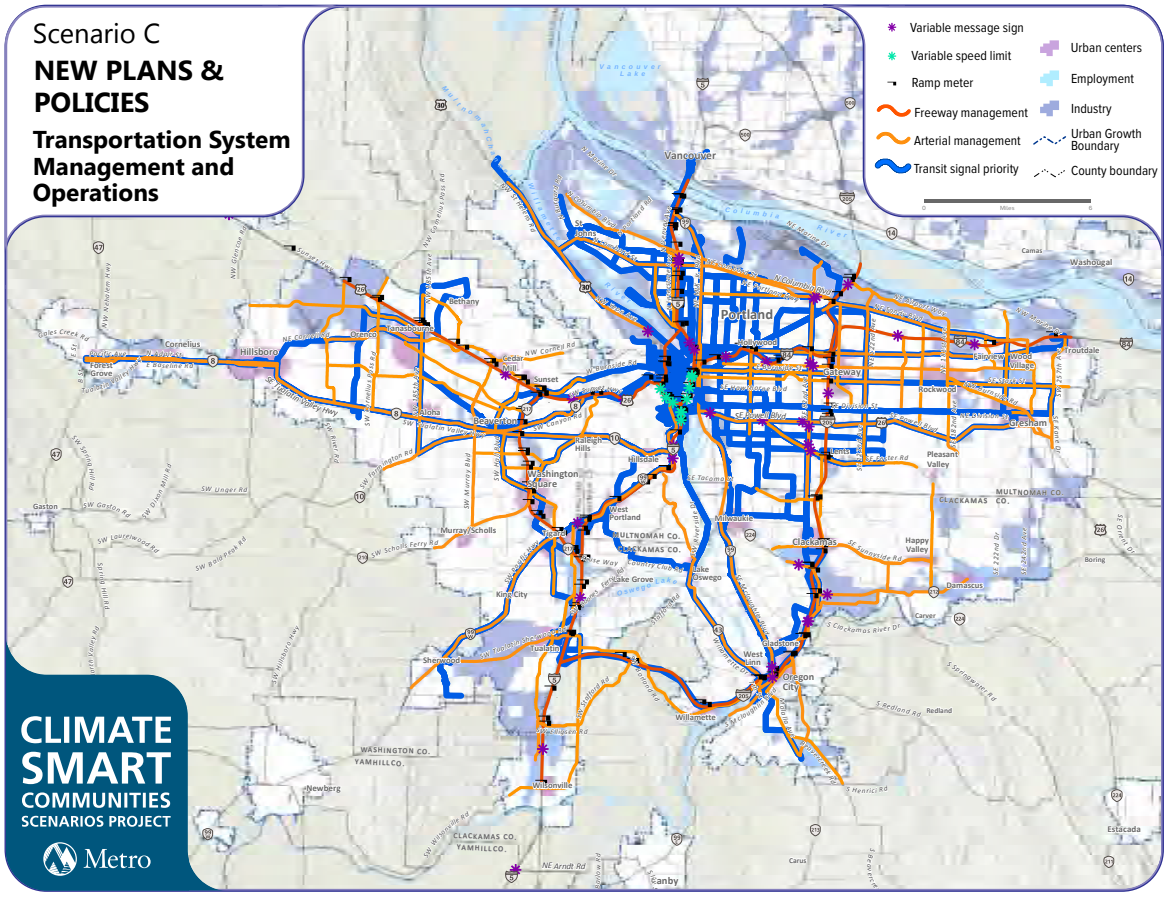


SCENARIO B

Adopted Plans

This scenario shows the results of successfully implementing adopted plans and achieving the current Regional Transportation Plan, which relies on increased revenue.

20% on arterials and freeways
Estimated delay reduction by 2035



SCENARIO C

New Plans and Policies

This scenario shows the results of pursuing new policies, more investment and new revenue sources to more fully achieve adopted and emerging plans.

35% on arterials and freeways
Estimated delay reduction by 2035

What people are saying

Do as much as you can with technology before widening or building new roads to help save money.

Intelligent transportation systems help freight move more efficiently and reliably.

Drivers need to get the info about delays before they begin their trip.

Emerging themes

- This is a low-cost strategy with immediate benefits that support other capital investments and should be moved forward.
- When compared to traditional capital investments, such as new transit service, roads or additional lanes, these kinds of solutions offer high returns for a comparatively low cost, and can delay or remove the need for additional capital-intensive infrastructure.
- Reducing delay and increasing reliability of the freight network is critical for the health our regional economy.
- Provide comprehensive real-time traveler information to people and businesses before they begin their trip.

Key takeaways to share with others

RELATIVE CLIMATE BENEFIT

★★★★★

RELATIVE COST

$$$

Provide information and incentives to expand use of travel options

Public awareness, education and travel options support tools are cost-effective ways to improve the efficiency of the existing transportation system through increased use of travel options such as walking, biking, carsharing, carpooling and taking transit. Local, regional and state agencies work together with businesses and non-profit organizations to implement programs in coordination with other capital investments. Metro coordinates partners' efforts, sets strategic direction, evaluates outcomes, and manages grant funding.

Public awareness strategies include promoting information about travel choices and teaching the public about eco-driving: maintaining vehicles to operate more efficiently and practicing driving habits that can help save time and money while reducing greenhouse emissions.

Commuter programs are employer-based outreach efforts that include (1) financial incentives, such as transit pass programs and offering cash instead of parking subsidies; (2) facilities and services, such as carpooling programs, bicycle parking, emergency rides home, and work- place competitions; and (3) flexible scheduling such as working from home or compressed work weeks.

Individualized Marketing (IM) is an outreach method that encourages individuals, families or employees interested in making changes in their travel choices to participate in a program. A combination of information and incentives is tailored to each person's or family's specific travel needs. IM can be part of a comprehensive commuter program.

Travel options support tools reduce barriers to travel options and support continued use with tools such as the ***Drive Less. Connect.*** online carpool matching; trip planning tools; wayfinding signage; bike racks; and carsharing.

BENEFITS

- increases cost-effectiveness of capital investments in transportation
- saves public agencies, consumers and businesses time and money
- preserves road capacity
- reduces congestion and delay
- increases physical activity and reduces health care costs
- reduces air pollution and air toxics

CHALLENGES

- program partners need ongoing tools and resources to increase outcomes
- factors such as families with children, long transit times, night and weekend work shifts not served by transit
- major gaps exist in walking and biking routes across the region
- consistent data collection to support performance measurement

How much should we expand the reach of travel information programs by 2035?

TRAVEL INFORMATION PROGRAMS AT A GLANCE

	SCENARIO A	SCENARIO B	SCENARIO C
Individualized marketing participation	30% of households	Same as Scenario A	60% of households participate Same as Scenario B plus the addition of Safe Routes to school and equity-based campaigns
Commuter program participation	20% of employees reached (same as 2010) Oregon Employee Commute Options (ECO) rules require work sites with more than 100 employees to have work-place programs	Same as Scenario A	40% of employees reached ECO rules now include work sites with more than 50 employees
Public awareness marketing campaign	50% of public reached Existing ongoing and short-term campaigns lead to more awareness of *DriveLess. Connect.*	Same as Scenario A plus added resources promote new travel tools, regional efforts and safety education	60% of public reached Scenario B plus regionally specific campaigns dedicated to safety and underserved communities
Eco-driving participation	0% of households reached (same as 2010) Statewide program is newly launched	30% of households reached	60% of households reached
Provisions of travel options support tools	2010 program funding levels allow for completion of several new wayfinding signage and bike rack projects	Same as Scenario A plus public-private partnerships to create new online, print and on-street travel tools	Same as Scenario B plus better public-private data integration and more resources for more support tools
Estimated cost (2014$)	**$99 million**	**$124 million**	**$234 million**

SCENARIO A

Recent Trends

This scenario shows the results of implementing adopted land use and transportation plans to the extent possible with existing revenue.

SCENARIO B

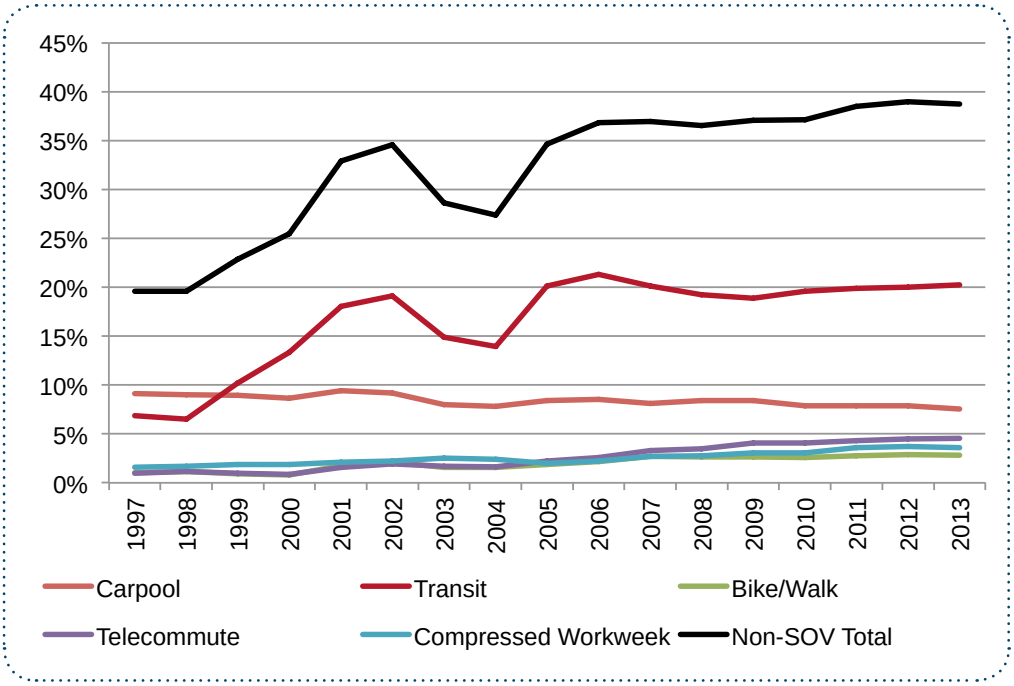
Adopted Plans

This scenario shows the results of successfully implementing adopted plans and achieving the current Regional Transportation Plan, which relies on increased revenue.

SCENARIO C

New Plans and Policies

This scenario shows the results of pursuing new policies, more investment and new revenue sources to more fully achieve adopted and emerging plans.



EFFECTIVENESS OF EMPLOYER COMMUTER PROGRAMS (1997 – 2013)

The TriMet, Wilsonville SMART and TMA employer outreach programs have made significant progress with reducing drive-alone trips. Since 1996, employee commute trips that used non drive-alone modes (transit, bicycling, walking, carpooling/vanpooling and telecommuting) rose from 20% to over 39% among participating employers.

EFFECTIVENESS OF COMMUNITY AND NEIGHBORHOOD PROGRAMS

Community outreach programs such as Portland Sunday Parkways and Wilsonville Sunday Streets encourage residents to use travel options by exploring their neighborhoods on foot and bike without motorized traffic. Sunday Parkways events have attracted 400,000 attendees since 2008 and the Wilsonville Sunday Streets event attracted more than 5,000 participants in 2012.

Other examples of valuable community outreach and educational programs include the Community Cycling Center's program to reduce barriers to biking and Metro's Vámonos program, both of which provide communities across the region with the skills and resources to become more active by walking, biking, and using transit for their transportation needs.

In 2004, the City of Portland launched the Interstate TravelSmart individualized marketing project in conjunction with the opening of the MAX Yellow Line. Households that received individualized marketing made nearly twice as many transit trips compared to a similar group of households that did not participate in the marketing campaign. In addition, transit use increased nearly 15 percent during the SmartTrips project along the MAX Green Line in 2010. Follow-up surveys show that household travel behavior is sustained for at least two years after a project has been completed.



What people are saying

Tailored and personalized marketing campaigns can be more individualized – making them more effective.

Success depends on the availability of transit and other options.

Work trips are only 30% of all trips – so we need to focus beyond work place campaigns.

Emerging themes

- Incentives need to be marketed through employers.
- Travel information needs to be leveraged electronically to take advantage of how many people prefer to access and receive information, such as smart phone apps, the internet and social media..
- Information and marketing campaigns should be culturally relevant, sensitive to different languages and cultures and respond to changing demographics in the region.
- Incentives and investment in end-of-trip facilities are important to encourage greater use of commute options among employees, such as secure bike parking, showers and changing rooms for employees.

Key takeaways to share with others




RELATIVE CLIMATE BENEFIT

★★★★★

RELATIVE COST

$$$

Make biking and walking more convenient

Active transportation is human-powered travel that engages people in healthy physical activity while they go from place to place. Examples include walking, biking, pushing strollers, using wheelchairs or other mobility devices, skateboarding, and rollerblading. Active transportation is an essential component of public transportation because most of these trips begin and end with walking or biking.

Today, about 50 percent of the regional active transportation network is complete. Nearly 18 percent of all trips in the region are made by walking and biking, a higher share than many other places. Approximately 45 percent of all trips made by car in the region are less than three miles and 15 percent are less than one mile. With a complete active transportation network supported by education and incentives, many of the short trips made by car could be replaced by walking and biking. (See separate summary on providing information and incentives to expand use of travel options.)

For active travel, transitioning between modes is easy when sidewalks and bicycle routes are connected and complete, wayfinding is coordinated, and transit stops are connected by sidewalks and have shelters and places to sit. Biking to work and other places is supported when bicycles are accommodated on transit vehicles, safe and secure bicycle parking is available at transit shelters and community destinations, and adequate room is provided for walkers and bicyclists on shared pathways. Regional trails and transit function better when they are integrated with on-street walking and biking routes.

BENEFITS

- increases access to jobs and services
- provides low-cost travel options
- supports economic development, local businesses and tourism
- increases physical activity and reduces health care costs
- reduces air pollution and air toxics
- reduces risk of traffic fatalities and injuries

CHALLENGES

- major gaps exist in walking and biking routes across the region
- gaps in the active transportation network affect safety, convenience and access to transit
- many would like to walk or bike but feel unsafe
- many lack access to walking and biking routes
- limited dedicated funding is declining

How much of the planned regional active transportation network should we complete by 2035?

ACTIVE TRANSPORTATION AT A GLANCE

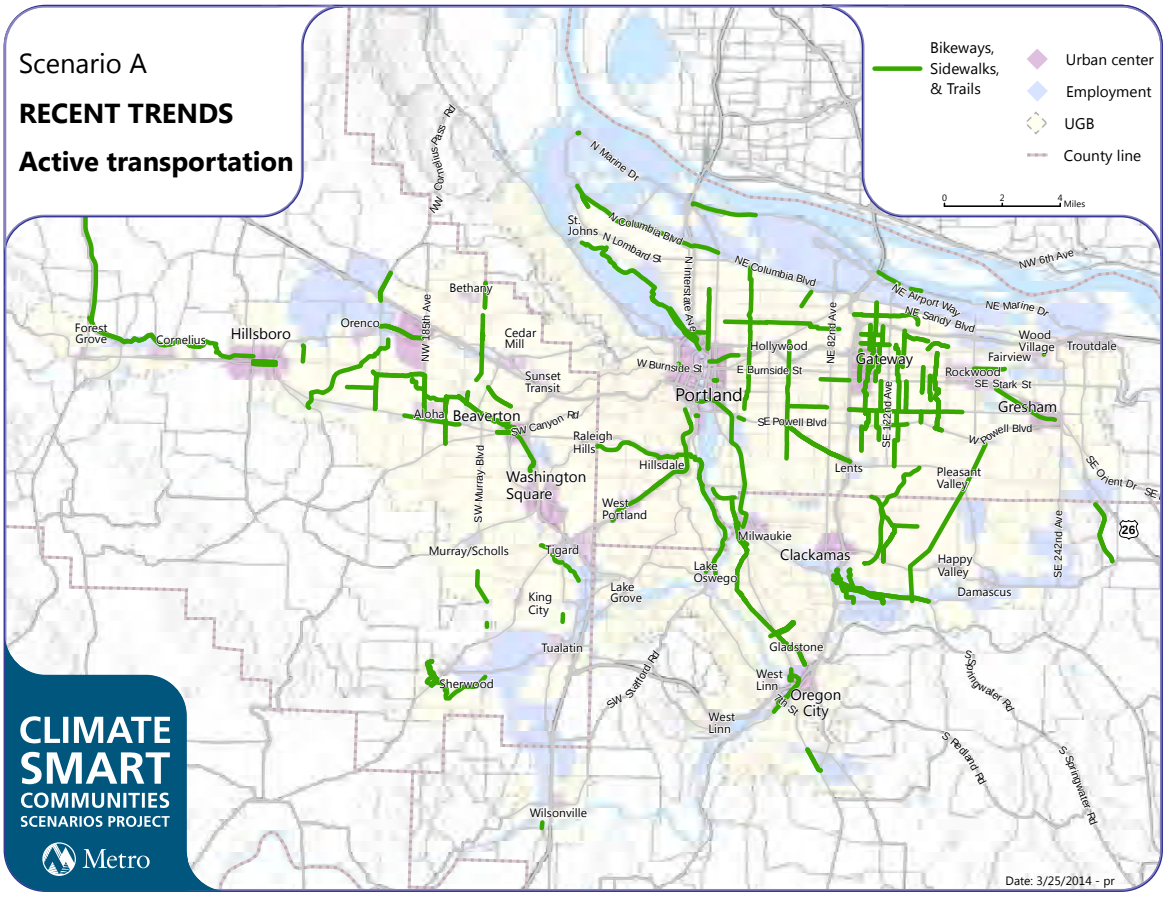
	SCENARIO A	SCENARIO B	SCENARIO C
Completion of regional active transportation network	Federally funded planning and capital projects reflecting existing funding are largely dedicated to transit and road investments	Same as Scenario A, plus planned off-street trails and on-street sidewalk and bikeway projects, such as bicycle lanes, cycle tracks, bicycle boulevards, sidewalks and crossing improvements included in financially constrained RTP	Same as Scenario B, plus full build-out of planned off-street trails, on-street sidewalk and bikeway projects, and improvements to existing facilities
Trails	38% completed	79% completed	100% completed
Bikeways	63% completed	84% completed	100% completed
Sidewalks	54% completed	62% completed	100% completed
Estimated cost (2014$)	**$57 million**	**$948 million**	**$3.9 billion**

SCENARIO A

Recent Trends

This scenario shows the results of implementing adopted land use and transportation plans to the extent possible with existing revenue.

58
Estimated lives saved annually from increased physical activity by 2035



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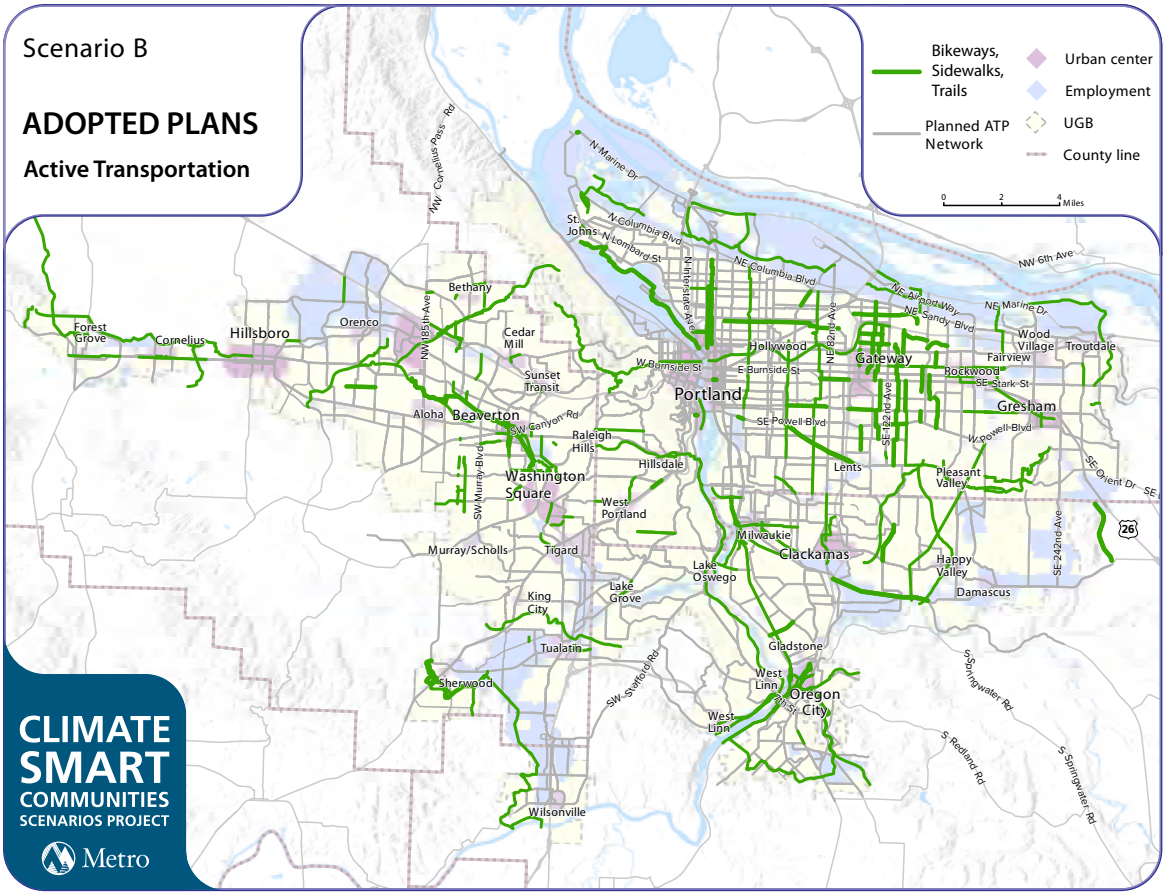


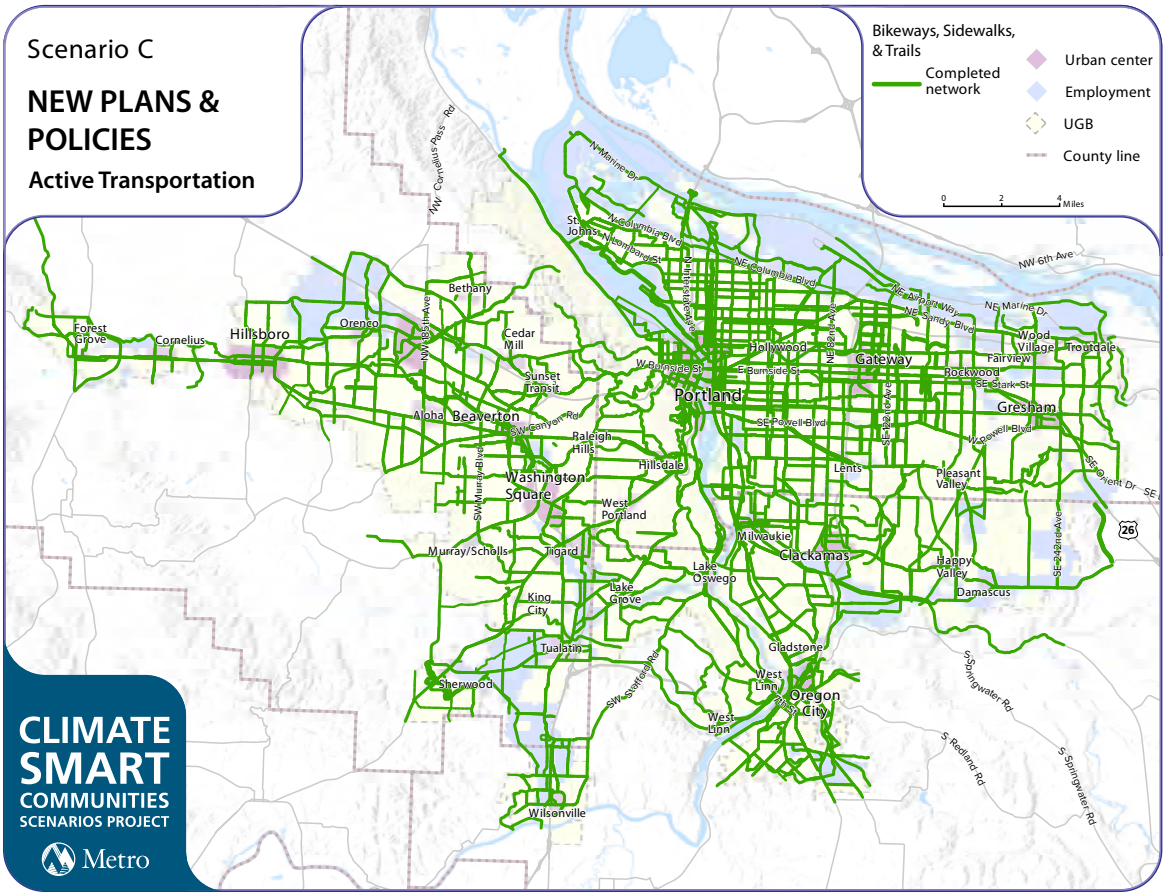
SCENARIO B

Adopted Plans

This scenario shows the results of successfully implementing adopted plans and achieving the current Regional Transportation Plan, which relies on increased revenue.

89

Estimated lives saved annually from increased physical activity by 2035



SCENARIO C

New Plans and Policies

This scenario shows the results of pursuing new policies, more investment and new revenue sources to more fully achieve adopted and emerging plans.

116

Estimated lives saved annually from increased physical activity by 2035

What people are saying

Bike improvements should be strategic and provide convenient, efficient access to places people want to go.

Make the healthy choice, the easy choice.

Create integrated networks and complete streets to leverage existing funding.

Emerging themes

- A high priority for nearly all communities and interest groups because it provides many benefits, particularly improved public health and access.
- Investments should focus on completing gaps and making street crossings more safe.
- More dedicated, separate paths for biking are needed because some people will never feel safe biking in vehicle traffic.
- "Complete streets" should include green designs, such as bioswales and street trees as part of street design and can be part of a broader climate adaptation strategy.
- Demographics are changing – as youth and older adults choose to drive less, it is important to invest more in active transportation options that connect to transit and that link neighborhoods to services.
- A dedicated, stable funding source is needed.

Key takeaways to share with others

RELATIVE CLIMATE BENEFIT

★ ★ ★ ★ ★

RELATIVE COST

$ $ $

Make streets and highways more safe, reliable and connected

Today, nearly 45 percent of all trips made by car in the region are less than three miles, and 15 percent are less than one mile. When road networks lack multiple routes serving the same destinations, short trips must use major travel corridors designed for freight and regional traffic, adding to congestion.

There are three key ways to make streets and highways more safe, reliable and connected to serve longer trips across the region on highways, shorter trips on arterial streets, and the shortest trips on local streets.

Maintenance and efficient operation of the existing road system Keeping the road system in good repair and using information and technology to manage travel demand and traffic flow help improve safety, and boost efficiency of the existing system. With limited funding, more effort is being made to maximize system operations prior to building new capacity in the region. (See separate summaries describing the use of technology and information.)

Street connectivity Building a well-connected network of complete streets includes new local and major street connections shortens trips, improves access to community and regional destinations, and helps preserve the capacity and function of highways in the region for freight and longer trips. These connections include designs that support walking and biking, and, in some areas, provide critical freight access between industrial areas, intermodal facilities and the interstate highway system.

Network expansion Adding lane miles to relieve congestion is an expensive approach, and will not solve congestion on its own. Targeted widening of streets and highways along with other strategies helps the region connect goods to market and support travel across the region.

BENEFITS

- improves access to jobs, goods and services, boosting business revenue
- creates jobs and stimulates development, boosting the economy
- reduces delay, saving businesses time and money
- reduces risk of traffic fatalities and injuries
- reduces emergency response time

CHALLENGES

- declining purchasing power of existing funding sources and growing maintenance backlog and construction costs
- may induce more traffic
- potential community impacts, such as displacement and noise
- concentration of air pollutants and air toxics in major travel corridors

How much of the planned street and highway network should we complete by 2035?

STREET AND HIGHWAYS AT A GLANCE

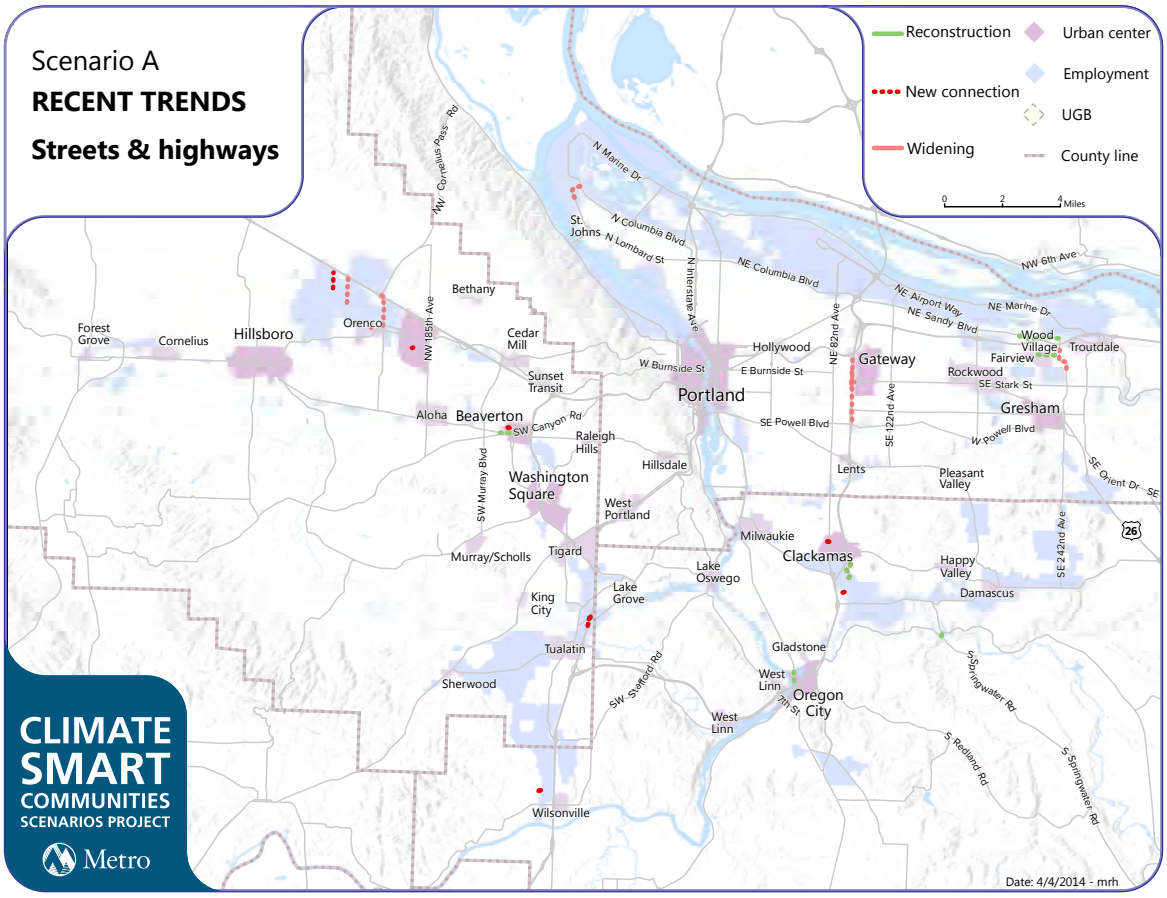
	SCENARIO A	SCENARIO B	SCENARIO C
Arterials and freeways	Maintain the existing system and complete committed projects	Same as Scenario A, plus complete financially constrained RTP projects such as • planned connections to further build out the regional street grid and improve access to industrial areas and freight facilities • widening some major streets and freeways to address bottlenecks	Same as Scenario B plus additional projects in the RTP On-going regional traffic operations center monitoring and incident response patrols are deployed on area freeways and major arterials adjacent to freeways
Maintenance	Some maintenance backlogs grow	Fully meet maintenance and preservation needs	Same as Scenario B
Estimated capital cost (2014$)	**$162 million**	**$8.8 billion**	**$11.8 billion**

SCENARIO A

Recent Trends

This scenario shows the results of implementing adopted land use and transportation plans to the extent possible with existing revenue.

9
Lane miles added by 2035



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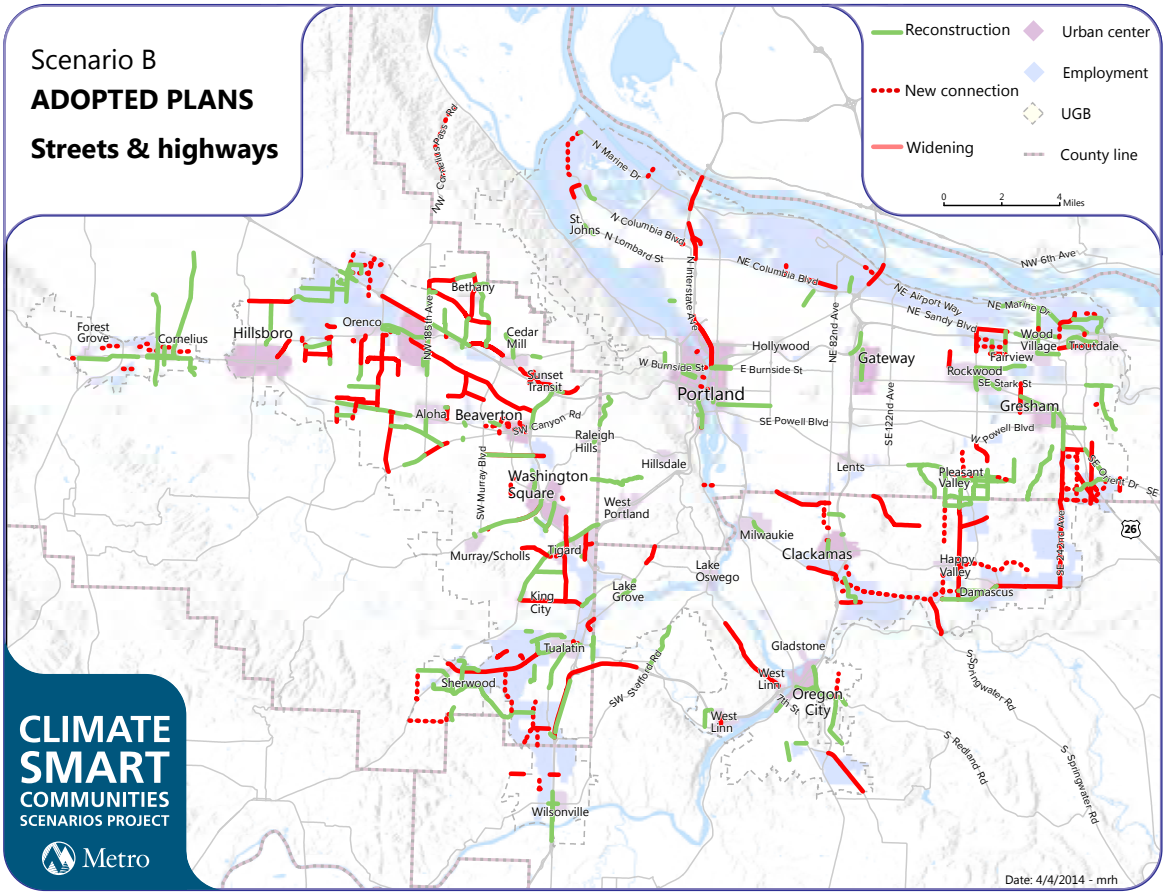
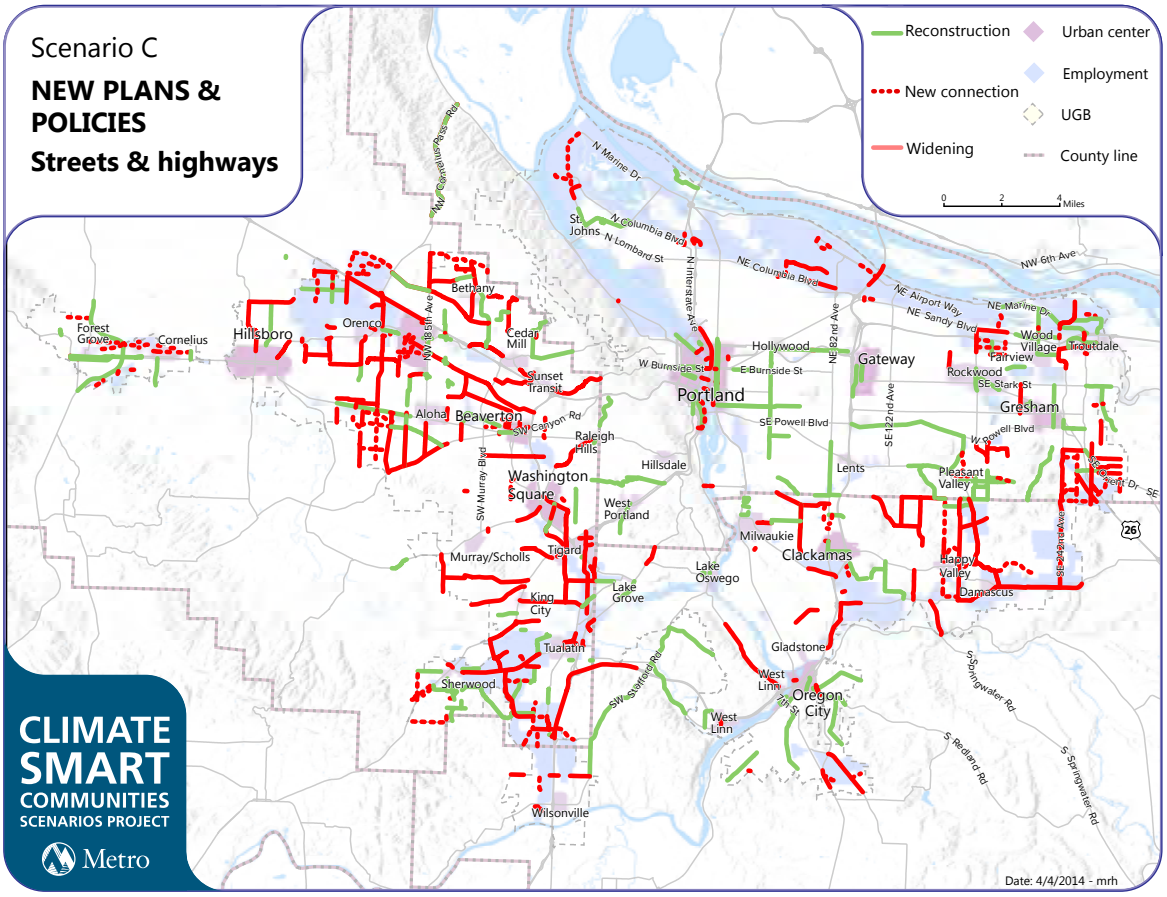


SCENARIO B

Adopted Plans

This scenario shows the results of successfully implementing adopted plans and achieving the current Regional Transportation Plan, which relies on increased revenue.

81
Lane miles added by 2035



SCENARIO C

New Plans and Policies

This scenario shows the results of pursuing new policies, more investment and new revenue sources to more fully achieve adopted and emerging plans.

105
Lane miles added by 2035

What people are saying

Street and highway improvements are needed to help move freight more efficiently to make the region more economically competitive.

Make road investments that improve access and efficiency for all users – bike, pedestrian, auto, transit and freight.

Investments in transit, walking and biking can help freight more efficiently because they help reduce the need to drive for some trips.

Emerging themes

- Keeping existing roads and highways in good condition is a higher priority than adding capacity or building new roads.
- Improved connectivity is a priority for suburban communities.
- Build a well-connected network of complete streets that prioritize safe and convenient pedestrian and bicycle access; respecting existing communities and the natural environment.
- Maximize system operations by implementing management strategies prior to building new motor vehicle capacity, where appropriate.

Key takeaways to share with others

RELATIVE CLIMATE BENEFIT

★★★★★

RELATIVE COST

$ $ $

Manage parking to make efficient use of parking resources

Parking management refers to various policies and programs that result in more efficient use of parking resources. Parking management is implemented through city and county 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.

Planning approaches include conducting assessments of the parking supply to better understand needs. A typical urban parking space has an annualized cost of $600 to $1,200 to maintain, while structured parking construction costs averages $15,000 per space.

On-street parking approaches include spaces that are timed, metered, designated for certain uses or have no restriction. Examples of these different approaches include charging long-term or short-term fees, limiting the length of time a vehicle can park, and designating on-street spaces for preferential parking for electric vehicles, carshare vehicles, carpools, vanpools, bikes, public use (events or café "Street Seats") and freight truck loading/unloading areas.

Off-street parking approaches include providing spaces in designated areas, unbundling parking, preferential parking (for vehicles listed above), shared parking between land uses (for example, movie theater and business center), park-and-ride lots for transit and carpools/vanpools, parking garages in downtowns and other mixed-use areas that allow surface lots to develop as other uses.

BENEFITS

- allows more land to be available for development, generating local and state revenue
- reduces costs to governments, businesses, developers and consumers
- fosters public-private partnerships that can result in improved streetscape for retail and visitors
- generates revenues where parking is priced
- reduces air pollution and air toxics

CHALLENGES

- inadequate information for motorists on parking and availability
- inefficient use of existing parking resources
- parking spaces that are inconvenient to nearby residents and businesses
- scarce freight loading and unloading areas
- low parking turnover rate
- lack of sufficient parking
- parking oversupply, ongoing costs and the need to free up parking for customers

How should local communities manage parking by 2035?

PARKING MANAGEMENT AT A GLANCE

	SCENARIO A	SCENARIO B	SCENARIO C
Parking management	Existing locally-adopted development codes remain the same as 2010 Large employers offer preferential parking Free parking is available in most areas	Same as Scenario A plus communities expand the flexibility of development codes and develop parking plans for all downtown and centers served by high capacity transit as assumed in adopted RTP Parking facilities are sized and managed so spaces are frequently occupied, travelers have information on parking and travel options, and some businesses share parking Free and timed parking is available in many areas	Same as Scenario B plus communities expand the flexibility of development codes to support public-private partnerships in areas served by 10-minute transit service Medium-size employers offer preferential parking Local codes allow for unbundled parking Free and timed parking is available in some areas

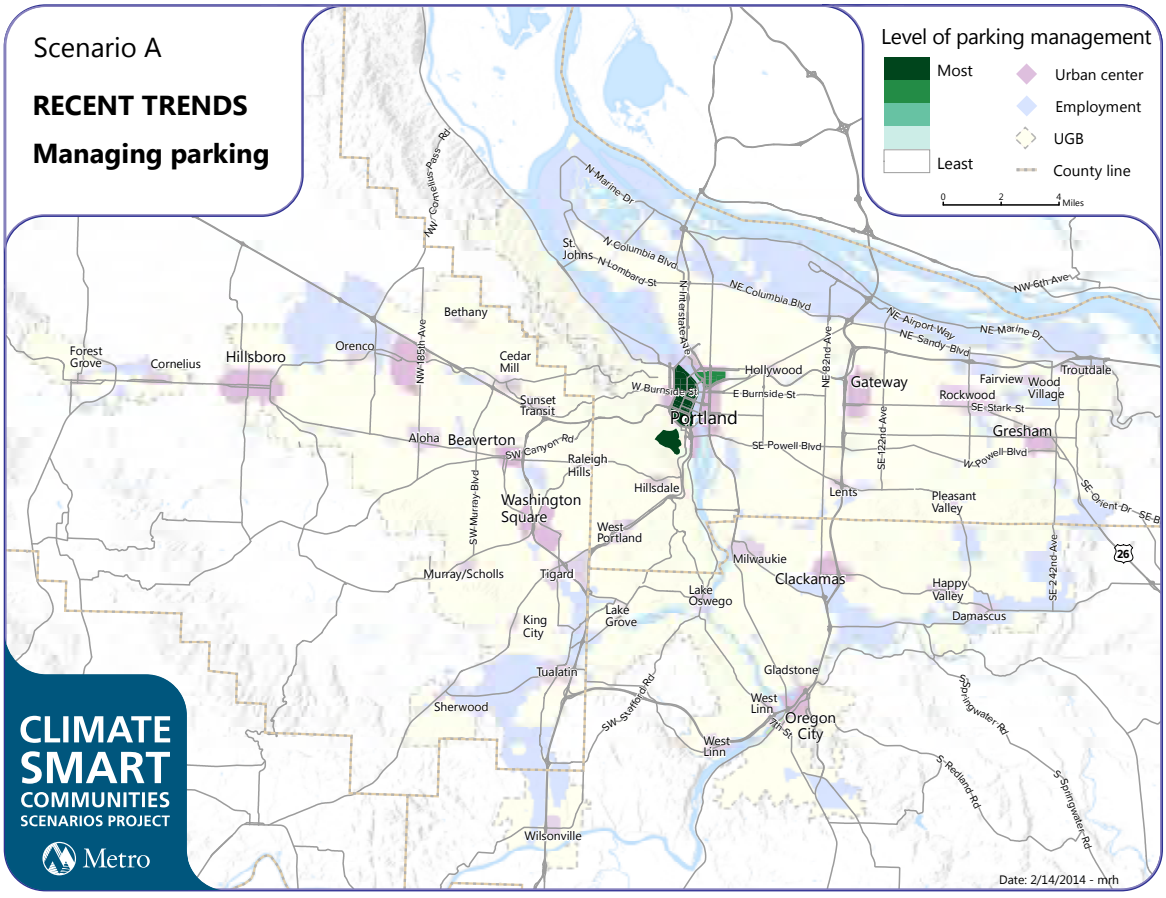
SCENARIO A

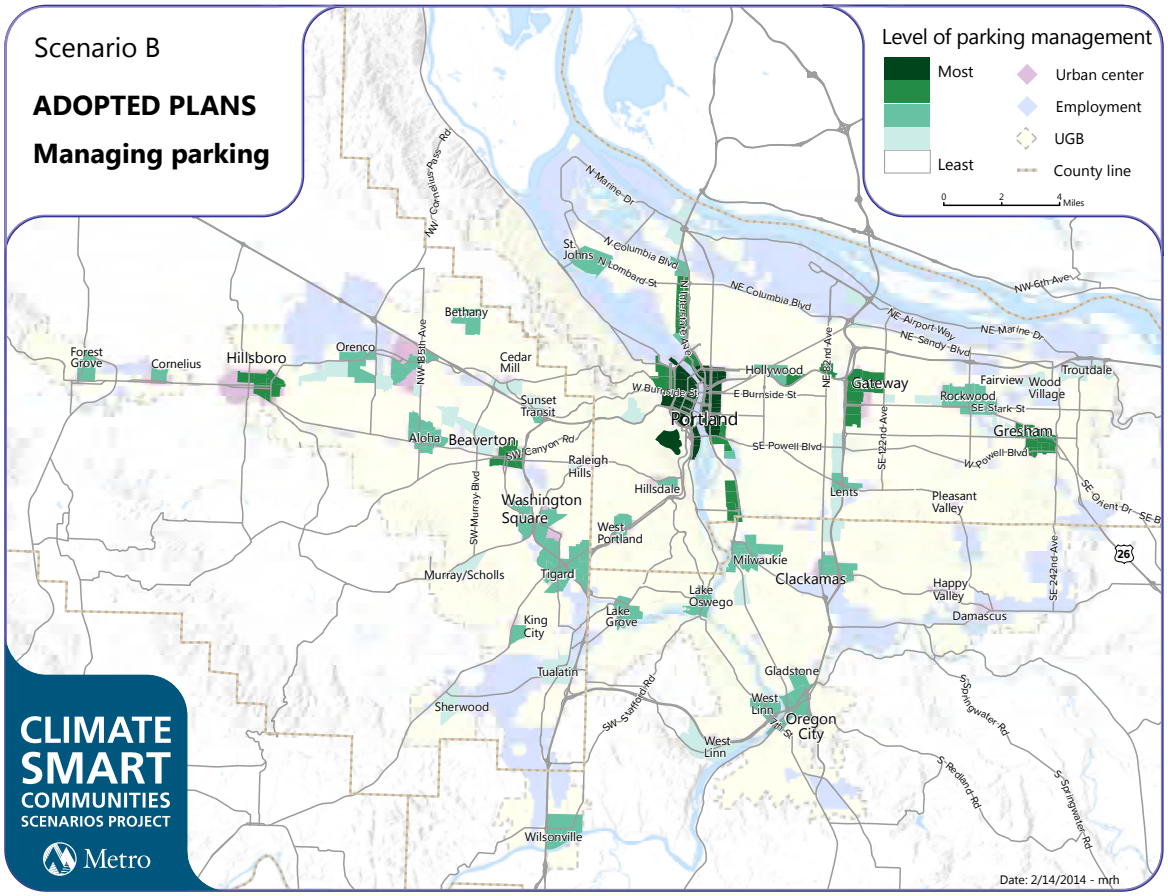
Recent Trends

This scenario shows the results of implementing adopted land use and transportation plans to the extent possible with existing revenue.

13% work trips
8% other trips
Estimated share of trips to areas with actively managed parking

Note These maps are for research purposes only and do not reflect current or future policy decisions of the Metro Council, MPAC or JPACT.



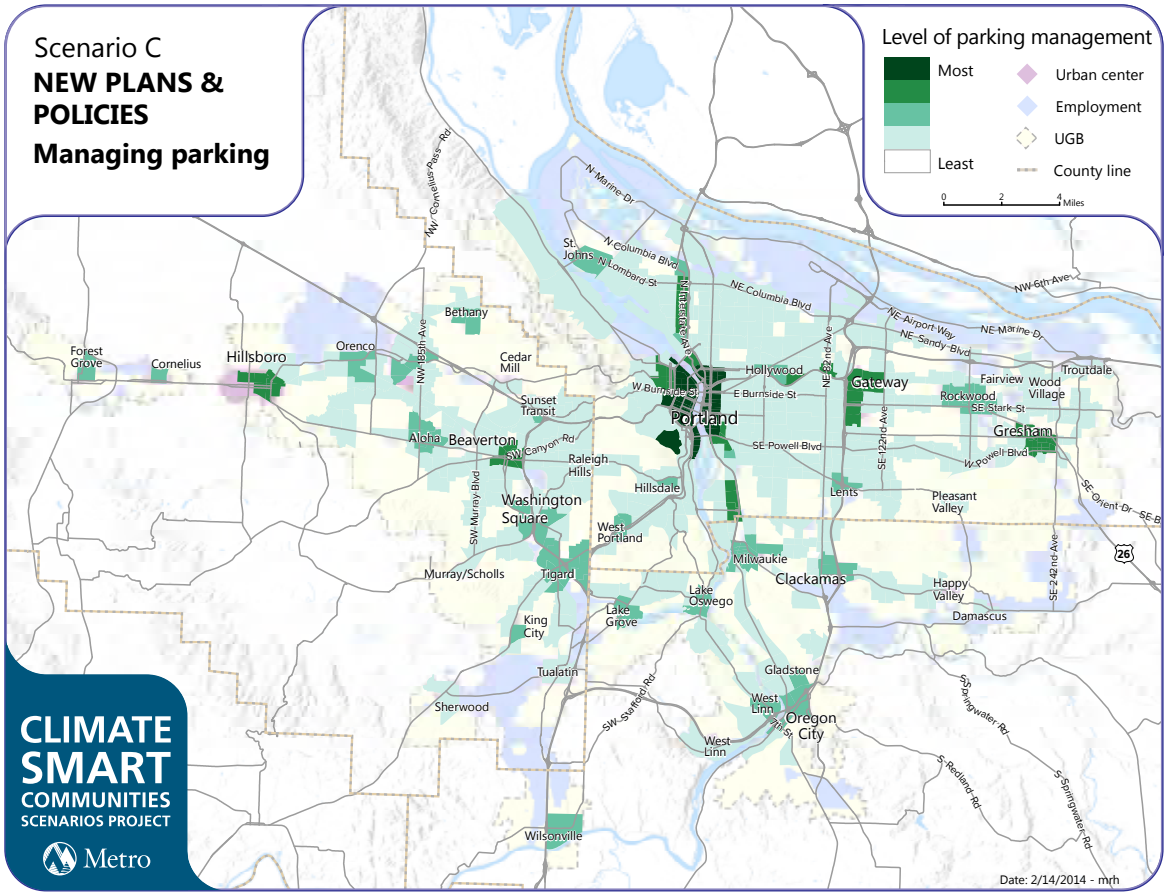


SCENARIO B

Adopted Plans

This scenario shows the results of successfully implementing adopted plans and achieving the current Regional Transportation Plan, which relies on increased revenue.

30% work trips
30% other trips
Estimated share of trips to areas with actively managed parking



SCENARIO C

New Plans and Policies

This scenario shows the results of pursuing new policies, more investment and new revenue sources to more fully achieve adopted and emerging plans.

50% work trips
50% other trips
Estimated share of trips to areas with actively managed parking

What people are saying

"Free parking" is never free – it's just a question of how it is being subsidized and by whom.

Parking fees area can have a disproportionate impact on drivers with limited incomes.

Businesses need to be part of the parking conversation.

Emerging themes

- Parking management is the most controversial and lowest priority for most interest groups and residents.
- Many people agree that parking management solutions should be flexible and tailored by each community to fit local needs.
- Parking management needs to begin with data about what the needs are, what might work, and available travel options in the area.
- Implementation of parking management may require broadening how parking problems and solutions are addressed and activities to improve enforcement and addressing potential spillover impacts.
- If paid parking is implemented, the there needs to be a corresponding investment in transit and other travel options so that people have choices.

Key takeaways to share with others

RELATIVE CLIMATE BENEFIT

N/A

RELATIVE COST

N/A

Identify potential ways to pay for our investment choices

Transportation funding has long been primarily a federal and state responsibility, financed largely through gas taxes and other user fees. The purchasing power of federal and state gas tax revenues is declining as individuals drive less and fuel efficiency increases. The effectiveness of this revenue source is further eroded as the gas tax is not indexed to inflation.

Diminished resources mean reduced ability to expand, improve and maintain existing transportation infrastructure. Federal and state funding is not keeping pace with infrastructure operation and maintenance needs, so a substantial share of funding for future RTP investments has shifted to local revenue sources.

Local governments in Oregon have increasingly turned to tax levies, road maintenance fees, system development charges and traffic impact fees in attempt to keep pace, although some communities have been more successful than others. Expansion and operation of the transit system has relied heavily on payroll taxes and competitive federal funding for high capacity transit capital projects. But the region's demand for frequent and reliable transit service exceeds the capacity of the payroll tax to support it.

The adopted Regional Transportation Plan calls for stabilizing existing transportation revenue sources while securing new and innovative long-term sources of funding adequate to build, operate and maintain the regional transportation system for all modes of travel.

BENEFITS

- transforms community visions into reality
- improves access to jobs, goods and services, boosting business revenues
- creates jobs and stimulates development, boosting the regional economy
- reduces delay, saving businesses time and money
- reduces air pollution and air toxics
- reduces risk of traffic fatalities and injuries

CHALLENGES

- declining purchasing power of existing funding sources due to inflation and improvement in fuel efficiency
- potential disproportionate impact of higher taxes and fees on drivers with limited travel options
- limited public support for higher fees and taxes
- patchwork of funding sources
- statutory or constitutional limitations on how different funding sources can be raised or used

How should we pay for our investment choices by 2035?

FUNDING MECHANISMS AT A GLANCE

	SCENARIO A Recent Trends	SCENARIO B Adopted Plans	SCENARIO C New Plans and Policies
Overview of revenue sources	Existing revenues at 2012 levels	Same as Scenario A, plus federal, state and local revenues assumed in the financially constrained RTP	Same as Scenario B, plus new user-based fees in place of the state gas tax
Gas tax	Federal and state gas taxes are 18 cents and 30 cents per gallon, respectively Multnomah and Washington counties levy a per gallon gas tax and share revenue with the cities within their boundaries Four cities – Tigard, Milwaukie, Happy Valley and Cornelius – implement a gas tax that is predominately used for maintenance[1]	Same as Scenario A, plus the state gas tax increases by $0.01 per year to cover growing operations, maintenance and preservation (OMP) costs at the state, regional and local level	Same as Scenario A, but state gas tax is replaced by a fee based on miles driven
Mileage-based road use fee	None	None	$0.03 per mile (the equivalent of the Scenario B state gas tax assumption)
Carbon fee	None	None	$50 per ton
Other sources[1]	Other federal, state and local revenues at 2010 levels	Other federal, state and local revenues at financially constrained RTP levels	Other federal, state and local revenues at full RTP levels
Potential revenues generated (2005$)	**$4.7 billion**	**$5.4 billion**	**$12.7 billion**

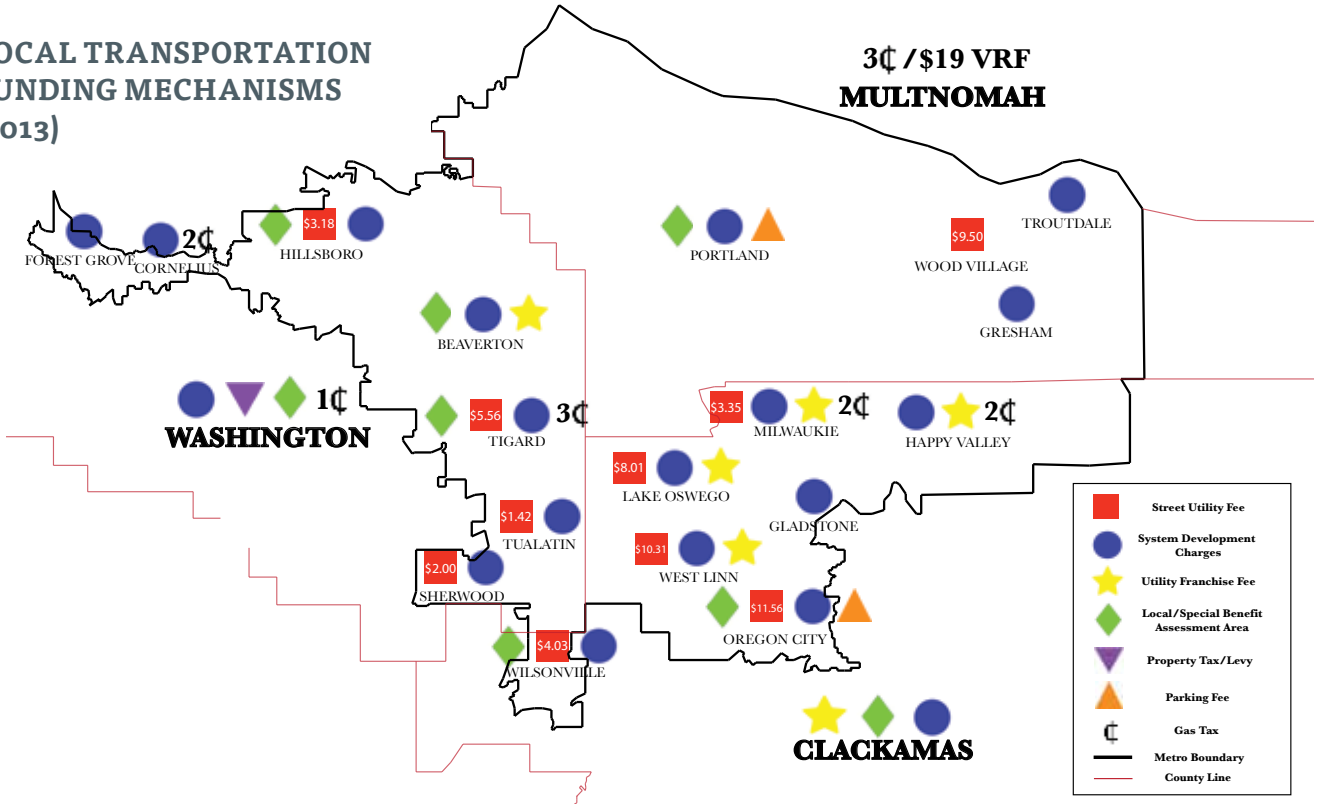
[1]Not accounted for in potential revenues generated, but included in the Regional Transportation Plan financial assumptions

FUNDING MECHANISMS ASSUMED IN 2014 REGIONAL TRANSPORTATION PLAN AND POTENTIAL NEW FUNDING MECHANISMS FOR CONSIDERATION

EXISTING FUNDING MECHANISM	SOURCE		
	Federal	State	Local
Federal Highway Trust Fund[1]	●		
Federal Transit Fund	●		
Gas tax	●	●	●
Vehicle fees (e.g. registration, licensing fees)		●	●
Heavy truck weight-mile fee		●	
Local portion of State Highway Trust Fund[2]			●
Development-based fees[3]			●
Payroll tax			●
Transit passenger fares			●
Special funds and levies[4]			●
Tolls (I-5 Columbia River Crossing)		●	
POTENTIAL NEW FUNDING MECHANISM			
Carbon fee	●	●	
Mileage-based road user fee	●	●	

[1]The Federal Highway Trust Fund includes federal gas tax receipts and other revenue.
[2]The State Highway Trust Fund includes state gas tax receipts, vehicle fees and heavy truck weight-mile fees.
[3]Development-based fees include system development charges, traffic impact fees, urban renewal districts and developer contributions.
[4]Special funds and levies include tax levies (e.g. Washington County MSTIP), local improvement districts, vehicle parking fees, transportation utility fees and maintenance districts (e.g. Washington County Urban Road Maintenance District).

LOCAL TRANSPORTATION FUNDING MECHANISMS (2013)



What people are saying

The gas tax is not a sustainable funding mechanism – alternatives are needed.

The greatest barrier to implementation is the lack of sufficient funding.

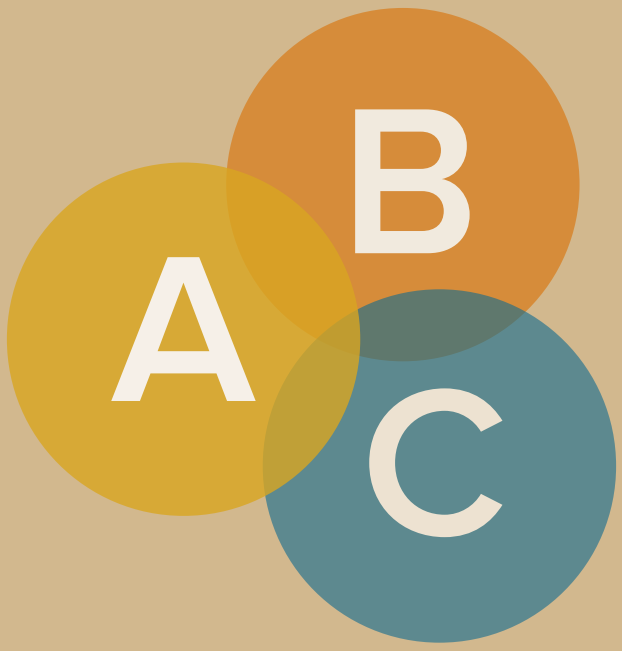
We should focus investments on how we want people to travel in 50 years.

Emerging themes

- User-based funding mechanisms had more support so the fees are directly connected to the service received.
- Prioritize limited funding on investments that achieve multiple goals.
- More state funding is needed to leverage local and regional funding.
- Implementation of fees should take into account the ability of people with limited incomes to afford and other options available.
- More funding should be dedicated to low carbon travel options; current statutes limit how some funding sources can be used.

Key takeaways to share with others

SUPPLEMENTAL INFORMATION



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PHASE 2: SELECTED RESULTS AT A GLANCE

The scenarios tested are for research purposes only and do not necessarily reflect current or future policy decisions of the Metro Council, MPAC or JPACT.

WHAT WE LEARNED ABOUT TRAVEL AND MOBILITY

DAILY VEHICLE MILES TRAVELED

PER PERSON

TIME SPENT IN TRAFFIC

% OF LIGHT VEHICLE TRAVEL TIME SPENT IN TRAFFIC

Discussion points:

- Adopted plans help reduce how far people drive and time spent in traffic.
- Adopted plans provide opportunities for more people living and working in centers and corridors, a more connected road system, using technology such as traffic signal timing, clearing incidents more quickly, more transit and walking, and biking all help the transportations system operate more efficiently which in turn helps save time spent in traffic.
- Adopted plans reduce the amount of time spent in traffic by 20 percent over recent trends.
- Reduced delay is expected to support goods movement, job creation and the region's economy.

Discussion points:

- All scenarios improve health outcomes by improving air quality and increasing physical activity.
- Improving air quality and increasing the number of people who regularly exercise by choosing to bike and walk to community destinations can reduce chronic diseases and premature deaths, and lower health care costs.
- Adopted plans increase the level of physical activity over recent trends, saving nearly 90 lives annually by 2035.
- Adopted plans reduce air pollutants by at least 10 metric tons per day over recent trends; an important health benefit of greenhouse gas reduction.
- Reductions in per capita vehicle miles traveled improve traffic safety for drivers in all scenarios.
- Further investment can significantly improve these outcomes.

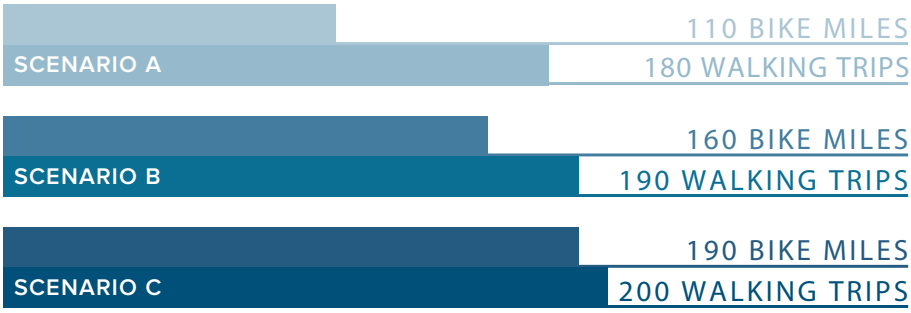
WHAT WE LEARNED ABOUT PUBLIC HEALTH AND SAFETY

AIR POLLUTANTS

METRIC TONS PER DAY

PHYSICAL ACTIVITY IMPROVES HEALTH

PER PERSON PER YEAR



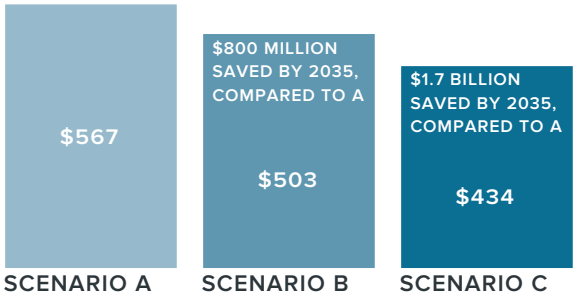
LESS AIR POLLUTION, MORE PHYSICAL ACTIVITY & IMPROVED SAFETY HELP SAVE LIVES

LIVES SAVED EACH YEAR BY 2035

WHAT WE LEARNED ABOUT THE ECONOMY

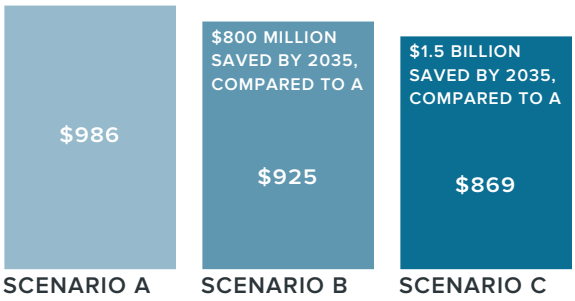
$ OUR ECONOMY BENEFITS FROM REDUCED EMISSIONS

ANNUAL ENVIRONMENTAL COSTS IN 2035 (MILLIONS, 2005$)



$ BUSINESSES AND OUR ECONOMY BENEFIT FROM REDUCED DELAY

ANNUAL FREIGHT TRUCK COSTS DUE TO DELAY IN 2035 (MILLIONS, 2005$)



Discussion points:

- Adopted plans reduce the environmental costs associated with air pollution, vehicle fluids and severe storms, flooding and drought expected from climate change.
- Adopted plans reduce the amount of time freight trucks spend in traffic over recent trends.
- Freight truck travel cost savings can be passed on to businesses and consumers.
- Further investment can increase these savings from reduced emissions and delay.

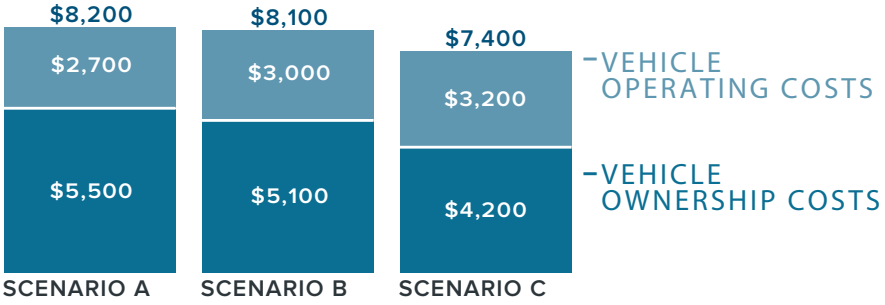
Discussion points:

- Adopted plans can reduce the average annual vehicle ownership and operating costs over recent trends.
- Vehicle ownership costs decrease as households drive less and own fewer vehicles.
- Scenario C results in the lowest vehicle costs, which helps reduce the share of household income spent on vehicle travel for all households, including households with limited incomes.

WHAT WE LEARNED ABOUT HOUSEHOLD COSTS

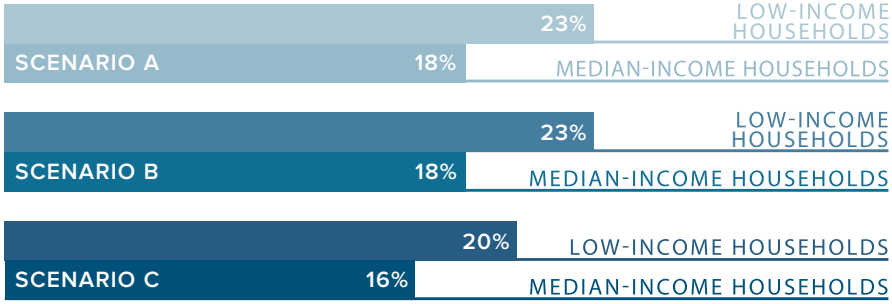
OVERALL VEHICLE-RELATED TRAVEL COSTS DECREASE DUE TO LOWER OWNERSHIP COSTS

AVERAGE ANNUAL HOUSEHOLD VEHICLE OWNERSHIP & OPERATING COSTS



LOWER VEHICLE COSTS HELP HOUSEHOLD BUDGETS

SHARE OF ANNUAL HOUSEHOLD INCOME SPENT ON VEHICLE TRAVEL



PHASE 2: TRANSIT AT A GLANCE

HOUSEHOLD ACCESS TO TRANSIT AT A GLANCE

Share of total households within ¼-mile of transit

SERVICE FREQUENCY	SCENARIO A		SCENARIO B		SCENARIO C	
	Rush hour	Daytime & evening	Rush hour	Daytime & evening	Rush hour	Daytime & evening
Every 10 minutes	24%	4%	27%	4%	32%	20%
11 – 15 minute service	20%	29%	21%	32%	17%	18%
16 – 25 minute service	9%	5%	8%	4%	9%	7%
More than 26 minute service	18%	28%	17%	28%	16%	26%
No fixed-route service	29%	34%	28%	32%	26%	29%

LOW-INCOME HOUSEHOLD ACCESS TO TRANSIT AT A GLANCE

Share of low-income households* within ¼-mile of transit

SERVICE FREQUENCY	SCENARIO A		SCENARIO B		SCENARIO C	
	Rush hour	Daytime & evening	Rush hour	Daytime & evening	Rush hour	Daytime & evening
Every 10 minutes	31%	5%	34%	6%	40%	26%
11 – 15 minute service	27%	39%	26%	42%	21%	23%
16 – 25 minute service	8%	5%	7%	5%	7%	7%
More than 26 minute service	16%	28%	15%	27%	14%	24%
No fixed-route service	19%	22%	18%	21%	17%	20%

* $24,999 per year or less

JOB ACCESS TO TRANSIT AT A GLANCE

Share of jobs within ¼-mile of transit

SERVICE FREQUENCY	SCENARIO A		SCENARIO B		SCENARIO C	
	Rush hour	Daytime & evening	Rush hour	Daytime & evening	Rush hour	Daytime & evening
Every 10 minutes	17%	6%	36%	9%	63%	63%
11 – 15 minute service	34%	37%	28%	43%	14%	2%
16 – 25 minute service	19%	3%	5%	1%	4%	13%
More than 26 minute service	27%	32%	16%	28%	4%	7%
No fixed-route service	4%	22%	16%	20%	15%	15%

PHASE 2: ASSUMPTIONS AT A GLANCE

March 30, 2014

Phase 2: 2010 base year and alternative scenario inputs

The inputs are for research purposes only and do not represent current or future policy decisions of the Metro Council.

Strategy		2010	2035		
		Base Year Reflects existing conditions	**Scenario A** Recent trends	**Scenario B** Adopted plans	**Scenario C** New plans and policies
Community design	Households in mixed use areas (percent)	26%	36%	37%	37%
	Urban growth boundary expansion (acres)	2010 UGB	28,000 acres	12,000 acres	12,000 acres
	Drive alone trips under 10 miles that shift to bike (percent)	9%	10%	15%	20%
	Transit service (daily revenue hours)	4,900	5,600	6,200 (RTP Financially Constrained)	11,200 (RTP State + more transit)
	Work/non-work trips in areas with parking management (percent)	13% / 8%	13% / 8%	30% / 30%	50% / 50%
Pricing	Pay-as-you-drive insurance (percent of households participating)	0%	20%	40%	100%
	Gas tax (cost per gallon 2005$)	$0.42	$0.48	$0.73	$0.18
	Road user fee (cost per mile)	$0	$0	$0	$0.03
	Carbon emissions fee (cost per ton)	$0	$0	$0	$50

March 30, 2014

The inputs are for research purposes only and do not represent current or future policy decisions of the Metro Council.

	Strategy	2010 Base Year Reflects existing conditions	2035 Scenario A Recent trends	2035 Scenario B Adopted plans	2035 Scenario C New plans and policies
Marketing and incentives	Households participating in eco-driving (percent)	0%	0%	30%	60%
	Households participating in individualized marketing programs (percent)	9%	30%	30%	60%
	Workers participating in employer-based commuter programs (percent)	20%	20%	20%	40%
	Car-sharing in high density areas (participation rate)	One car share per 5000 vehicles	Twice the number of car share vehicles available	Same as Scenario A	Four times the number of car share vehicles available
	Car-sharing in medium density areas (participation rate)	One car share per 5000 vehicles	Same as today	Twice the number of car share vehicles	Same as Scenario B
Roads	Freeway and arterial expansion (lane miles added)	N/A	9 miles	81 miles (RTP Financially Constrained)	105 miles (RTP State)
	Delay reduced by traffic management strategies (percent)	10%	10%	20%	35%
Fleet	Fleet mix (percent)	auto: 57% light truck: 43%	auto: 71% light truck: 29%		
	Fleet turnover rate	10 years	8 years		
Technology	Fuel economy (miles per gallon)	auto: 29.2 mpg light truck: 20.9 mpg	auto: 68.5 mpg light truck: 47.7 mpg		
	Carbon intensity of fuels	90 g CO_2e/megajoule	72 g CO_2e/megajoule		
	Plug-in hybrid electric/all electric vehicles (percent)	auto: 0% / 1% light truck: 0% / 1%	auto: 8% / 26% light truck: 2% / 26%		

GLOSSARY

Car-sharing A model similar to a car rental where a member user rents cars for short periods of time, often by the hour. Such programs are attractive to customers who make only occasional use of a vehicle, as well as others who would like occasional access to a vehicle of a different type than they use day-to-day. The organization renting the cars may be a commercial business or the users may be organized as a company, public agency, cooperative, or peer-to-peer. The Portland region has Zipcar – *http://www.zipcar.com/*

Eco-driving A combination of public education, in-vehicle technology and driving practices that result in more efficient vehicle operation and reduced fuel consumption and emissions. Examples of eco-driving practices include avoiding rapid starts and stops, matching driving speeds to synchronized traffic signals, and avoiding idling. Program are targeted to those without travel options and traveling longer distances.

Employer-based commute programs Work-based travel demand management programs that can include transportation coordinators, employer-subsidized transit pass programs, ride-matching, carpool and vanpool programs, telecommuting, compressed or flexible work weeks and bicycle parking and showers for bicycle commuters.

Fleet mix The percentage of vehicles classified as automobiles compared to the percentage classified as light trucks (weighing less than 10,000 lbs.); light trucks make up 43 percent of the light-duty fleet today.

Fleet turnover The rate of vehicle replacement or the turnover of older vehicles to newer vehicles; the current turnover rate in Oregon is 10 years.

Greenhouse gas emissions According to the Environmental Protection Agency, gases that trap heat in the atmosphere are called greenhouse gases emissions. Greenhouse gases that are created and emitted through human activities include carbon dioxide (emitted through the burning of fossil fuels), methane, nitrous oxide and fluorinated gases. For more information see *www.epa.gov/climatechange/emissions/index.html.*

GreenSTEP GreenSTEP is a new model developed to estimate GHG emissions at the individual household level. It estimates greenhouse gas 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 effects of different policies and other factors on vehicle travel and emissions. Metropolitan GreenSTEP travel behavior estimates are made irrespective of housing choice or supply; the model only considers the demand forecast components – household size, income and age – and the policy areas considered in this analysis.

House Bill 2001 (Oregon Jobs and Transportation Act) Passed by the Legislature in 2009, this legislation provided specific directions to the Portland metropolitan area to undertake scenario planning and develop two or more land use and transportation scenarios by 2012 that accommodate planned population and employment growth while achieving the GHG emissions reduction targets approved by LCDC in May 2011. Then 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. For more information go to: *http://www.leg.state.or.us/09reg/measpdf/hb2000.dir/hb2001.en.pdf.*

Individualized marketing Travel demand management programs focused on individual households. IM programs involve individualized outreach to households that identify household travel needs and ways to meet those needs with less vehicle travel.

Light vehicles Vehicles weighing 10,000 pounds or less, and include cars, light trucks, sport utility vehicles, motorcycles and small delivery trucks.

Low Carbon Fuel Standard In 2009, the Oregon legislature authorized the Environmental Quality Commission to develop low carbon fuel standards (LCFS) for Oregon. Each type of transportation fuel (gasoline, diesel, natural gas, etc.) contains carbon in various amounts. When the fuel is burned, that carbon turns into carbon dioxide (CO_2), which is a greenhouse gases. The goal is to reduce the average carbon intensity of Oregon's transportation fuels by 10 percent below 2010 levels by 2022 and applies to the entire mix of fuel available in Oregon. Carbon intensity refers to the emissions per unit of fuel; it is not a cap on total emissions or a limit on the amount of fuel that can be burned. The lower the carbon content of a fuel, the fewer greenhouse gas emissions it produces.

Pay-as-you-drive insurance (PAYD) This pricing strategy converts a portion of liability and collision insurance from dollars-per-year to cents-per-mile to charge insurance premiums based on the total amount of miles driven per vehicle on an annual basis and other important rating factors, such as the driver's safety record. If a vehicle is driven more, the crash risk consequently increases. PAYD insurance charges policyholders according to their crash risk.

Oregon Sustainable Transportation Initiative (OSTI) An integrated statewide effort to reduce GHG emissions from the transportation sector by integrating land use and transportation. Guided by stakeholder input, the initiative has built collaborative partnerships among local governments and the state's six Metropolitan Planning Organizations to help meet Oregon's goals to reduce GHG emissions. The effort includes five main areas: Statewide Transportation Strategy development, GHG emission reduction targets for metropolitan areas, land use and transportation scenario planning guidelines, tools that support MPOs and local governments and public outreach. For more information, go to *www.oregon.gov/odot/td/osti*

Scenario A term that is used to describe a possible future, representing a hypothetical set of strategies or sequence of events.

Scenario planning A process that tests different actions and policies to see their affect on GHG emissions reduction and other quality of life indicators.

Statewide Transportation Strategy The strategy, as part of OSTI, will define a vision for Oregon to reduce its GHG emissions from transportation systems, vehicle and fuel technologies and urban form by 2050. Upon completion, the strategy will be adopted by the Oregon Transportation Commission. For more information go to: *http://www.oregon.gov/ODOT/TD/OSTI/STS.shtml.*

System efficiency Strategies that optimize the use of the existing transportation system, including traffic management, employer-based commute programs, individualized marketing and car-sharing.

Traffic incident management A coordinated process to detect, respond to, and remove traffic incidents from the roadway as safely and quickly as possible, reducing non-recurring roadway congestion.

Traffic management Strategies that improve transportation system operations and efficiency, including ramp metering, active traffic management, traffic signal coordination and real-time traveler information regarding traffic conditions, incidents, delays, travel times, alternate routes, weather conditions, construction, or special events.

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Clean air and clean water do not stop at city limits or county lines. Neither does the need for jobs, a thriving economy and good transportation choices for people and businesses in our region. Voters have asked Metro to help with the challenges that cross those lines and affect the 25 cities and three counties in the Portland metropolitan area.

A regional approach simply makes sense when it comes to protecting open space, caring for parks, planning for the best use of land, managing garbage disposal and increasing recycling. Metro oversees world-class facilities such as the Oregon Zoo, which contributes to conservation and education, and the Oregon Convention Center, which benefits the region's economy.

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For more information, visit
www.oregonmetro.gov/climatescenarios

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