

**CLIMATE
SMART**
COMMUNITIES
SCENARIOS PROJECT

Draft Climate Smart Strategy

Public Review Draft

September 15, 2014

**MAKING A
GREAT
PLACE**



About Metro

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

A regional approach simply makes sense when it comes to providing services, operating venues and making decisions about how the region grows. Metro works with communities to support a resilient economy, keep nature close by and respond to a changing climate. Together we're making a great place, now and for generations to come.

Stay in touch with news, stories and things to do.

www.oregonmetro.gov/climatescenarios

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DRAFT CLIMATE SMART STRATEGY

This is presented for public review and comment from Sept. 15 to Oct. 30, 2014.

This document provides background information and illustrative maps that highlight key elements of the draft approach identified by the region to meet adopted targets for reducing greenhouse gas emissions from light vehicle travel. Three additional documents have also been prepared that present draft implementation recommendations. The implementation recommendations will guide how the region moves forward to integrate reducing greenhouse gas emissions from cars and small trucks with ongoing local and regional efforts to create healthy and equitable communities and a strong economy.

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BACKGROUND

The Climate Smart Communities Scenarios Project responds to a 2009 mandate from the Oregon Legislature for our region to develop a strategy to reduce per capita greenhouse gas emissions from cars and small trucks by 2035. Metro is the regional government and federally-designated metropolitan planning organization for the Portland metropolitan area, serving a population of 1.5 million people. In that role, Metro has been working together with community, business and elected leaders across the region to shape a draft Climate Smart Strategy that meets the state mandate while supporting economic prosperity, community livability and protection of our environment.

After a four-year collaborative process informed by research, analysis, community engagement and deliberation, a draft Climate Smart Strategy that meets the state target is being presented for your review and comment. The draft strategy relies on policies and investments that have already been adopted as local priorities in communities across the region and in the region's long-range transportation plan.

HOW TO PROVIDE YOUR INPUT

- Take an on-line survey at www.makeagreatplace.org.
- Submit comments by mail to Metro Planning, 600 NE Grand Ave., Portland, OR 97232, by email to climatescenarios@oregonmetro.gov, or by phone at 503-797-1750 or TDD 503-797-1804 from Sept. 15 through Oct. 30, 2014.
- Testify at a Metro Council hearing on Oct. 30 at 600 NE Grand Ave., Portland, OR 97232 in the Council Chamber.

WHAT'S NEXT?

The Metro Policy Advisory Committee and the Joint Policy Advisory Committee on Transportation are working to finalize their recommendation to the Metro Council on the draft approach and draft implementation recommendations.

Sept. 15 to Oct. 30 Public comment period on draft approach and draft implementation recommendations

Nov. 7 MPAC and JPACT meet to discuss public comments and shape recommendation to the Metro Council

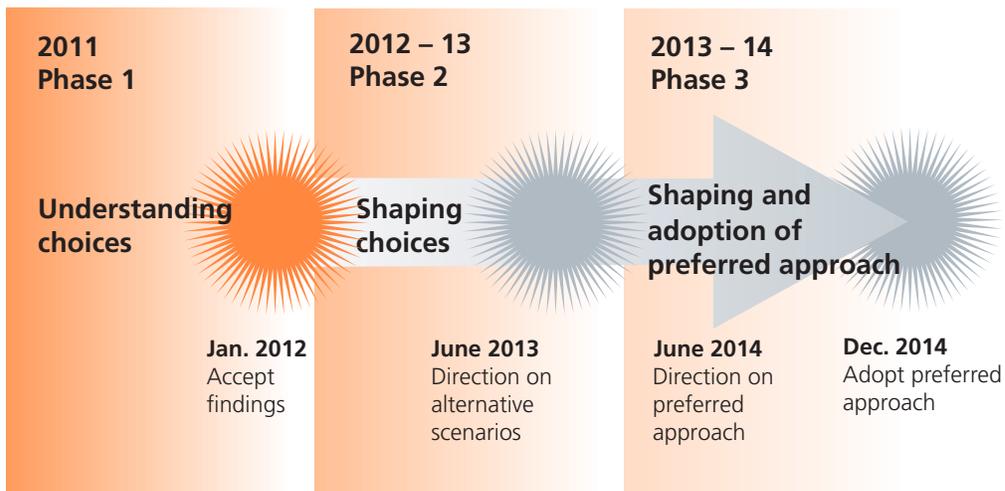
December 10 and 11 MPAC and JPACT make recommendation to Metro Council

December 18 Metro Council considers adoption of preferred approach

January 2015 Metro submits adopted approach to Land Conservation and Development Commission for approval

2015 and beyond Ongoing implementation and monitoring

Climate Smart Communities Scenarios Project timeline



WHERE CAN I FIND MORE INFORMATION?

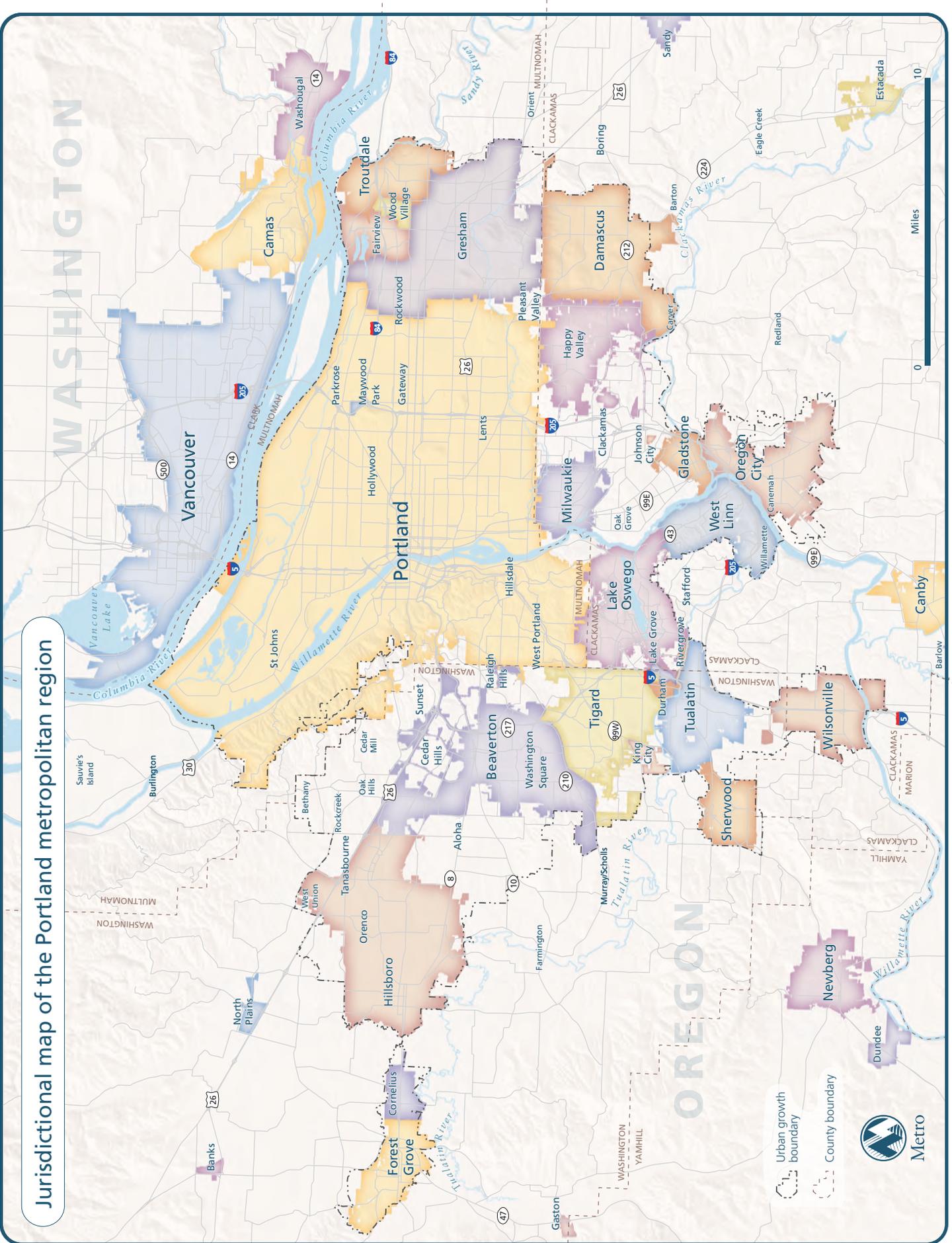
Public review materials and other publications and reports can be found at oregonmetro.gov/climatescenarios. For email updates, send a message to climatescenarios@oregonmetro.gov.



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Jurisdictional map of the Portland metropolitan region



INTRODUCTION

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

The project has engaged community, business, public health and elected leaders to shape a draft approach that supports local plans for downtowns, main streets and employment areas; protects farms, forestland, and natural areas; creates healthy and equitable communities; increases travel options; and grows the economy while reducing greenhouse gas emissions.

The Metro Policy Advisory Committee (MPAC) and Joint Policy Advisory Committee on Transportation (JPACT) are working to finalize their recommendation to the Metro Council on the draft Climate Smart Strategy and implementation recommendations ((Regional Framework Plan amendments, toolbox of possible actions and performance monitoring approach) in December 2014.

But first, you are invited to provide feedback on the draft Climate Smart Strategy and implementation recommendations that will guide how the region moves forward.



ATTRIBUTES OF GREAT COMMUNITIES

The six desired outcomes for the region endorsed by the Metro Policy Advisory Committee and approved by the Metro Council in 2010.

The draft Climate Smart Strategy and implementation recommendations support all six of the region's desired outcomes.



ABOUT THE DRAFT APPROACH



Our analysis demonstrates significant benefits can be realized by implementing the draft approach. More information on the results, expected benefits and estimated costs is available at :

oregonmetro.gov/draftapproach

The results are in and the news is good. After a four-year collaborative process informed by research, analysis, community engagement and deliberation, the region has identified a draft approach that achieves a 29 percent reduction in per capita greenhouse gas emissions. The draft approach does more than just meet the target. Analyses shows it supports many other local, regional and state goals, including clean air and water, transportation choices, healthy and equitable communities, and a strong economy.

This overview is designed to help elected, business, and community leaders and residents better understand the draft approach. Metro Policy Advisory Committee (MPAC) and Joint Policy Advisory Committee on Transportation (JPACT) are working to finalize their recommendation to the Metro Council on the draft approach and implementation recommendations in December 2014.

The desired outcome for this overview is that together, cities, counties, regional partners and the public can weigh in on the draft approach and implementation recommendations (Regional Framework Plan amendments, Toolbox of possible action and performance monitoring approach). The documents are presented for public review and comment.

After a four-year collaborative process informed by research, analysis, community engagement and deliberation, the region has identified a draft approach that achieves a 29 percent reduction in per capita greenhouse gas emissions and supports the plans and visions that have already been adopted by communities and the region.

WHAT IS THE DRAFT APPROACH?

The draft approach is 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 draft 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 add new policies to achieve the draft approach.

TOOLBOX OF POSSIBLE ACTIONS Recommended actions

- Menu of investments and other tools needed to achieve the draft approach that can be tailored by each community to implement local visions.
- Near-term actions needed to implement and achieve the draft approach. This could include:
 - state and federal legislative agendas that request funding, policy changes or other tools needed to achieve draft 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 to review regional functional plans that guide local implementation to determine if changes are needed.

PERFORMANCE MONITORING Recommended monitoring approach

- Monitoring and reporting system that builds on existing performance monitoring requirements per ORS 197.301 and updates to the Regional Transportation Plan and Urban Growth Report.



EXPECTED BENEFITS OF THE DRAFT APPROACH

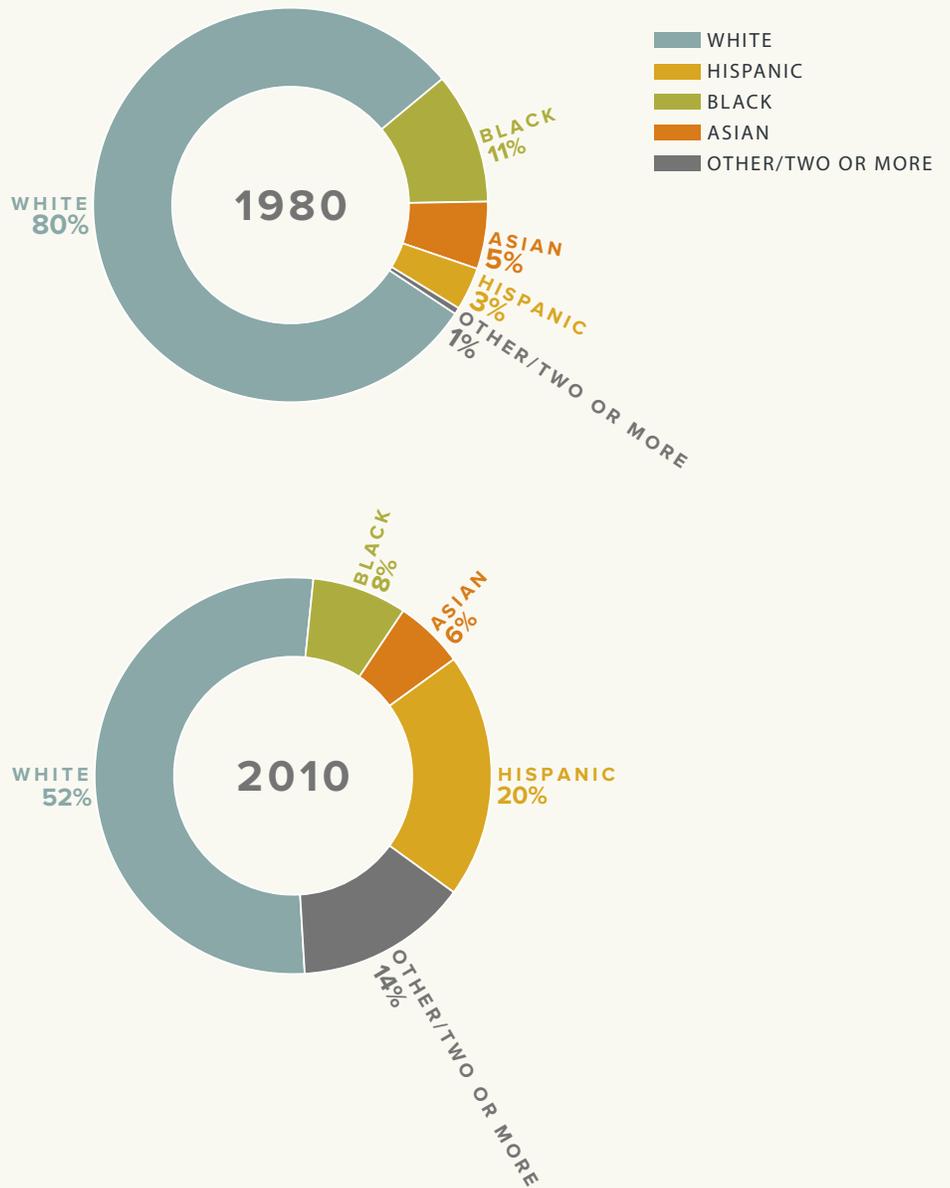
By 2035, the draft approach can help people live healthier lives and save businesses and households money through benefits like:

- Reduced air pollution and increased physical activity can help reduce illness and save lives.
- Less air pollution also means fewer environmental costs. This helps save money that can be spent on other priorities.
- Spending less time in traffic and reduced delay on the system saves businesses money, supports job creation, and promotes the efficient movement of goods.
- Households save money by driving more fuel-efficient vehicles fewer miles and walking, biking and using transit more. This allows people to spend money on other priorities, of particular importance to households of modest means.



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

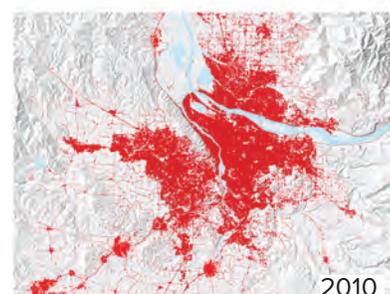
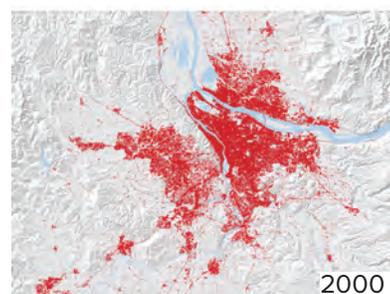
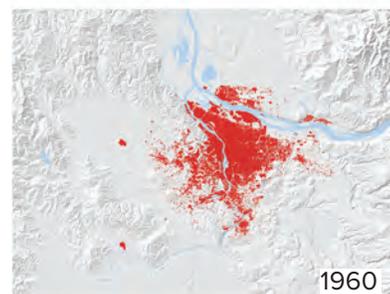
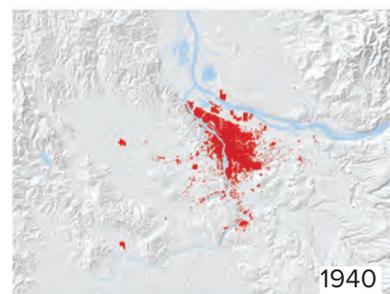
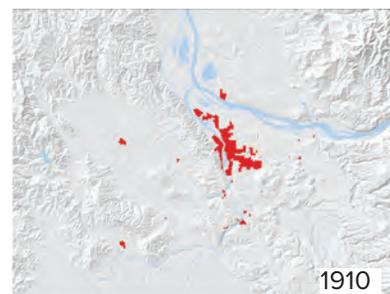
The Portland metropolitan region is an extraordinary place to call home. Our region has unique communities with inviting neighborhoods, a diverse economy and a world-class transit system. The region is surrounded by stunning natural landscapes and criss-crossed with a network of parks, trails and wild 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 and meet state targets for reducing greenhouse gas emissions from cars and small trucks.

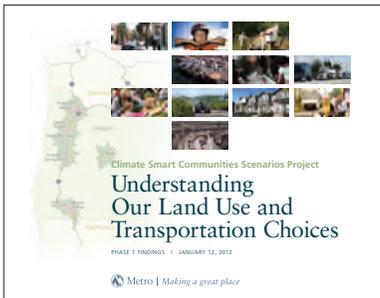
The region expects to welcome nearly 500,000 new residents and more than 365,000 new jobs within the urban growth boundary by 2035.



Sources: 1910, 1940, 1960 - Historic Metropolitan Planning Commission Maps, 2000, 2010 - NOAA CCAP Landcover

PROJECT BACKGROUND

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 is in 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.

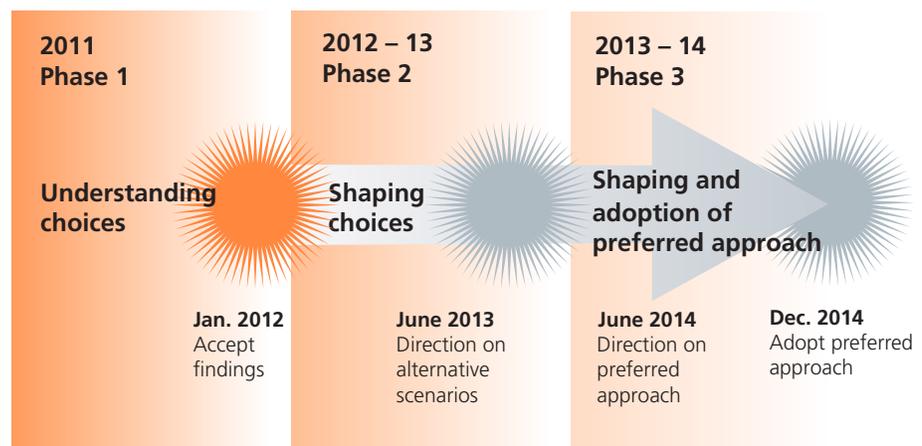
As part of the first phase, Metro staff researched strategies used to reduce emissions in communities across the region, nation and around the world. This work resulted in a toolbox describing the range of potential strategies, their effectiveness at reducing emissions and other benefits they could bring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



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

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

Climate Smart Communities Scenarios Project timeline



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 used to evaluate them. In 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, and summarized in a Discussion Guide For Policymakers.



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

Three approaches that we evaluated in 2013

SCENARIO



Recent Trends

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

SCENARIO



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

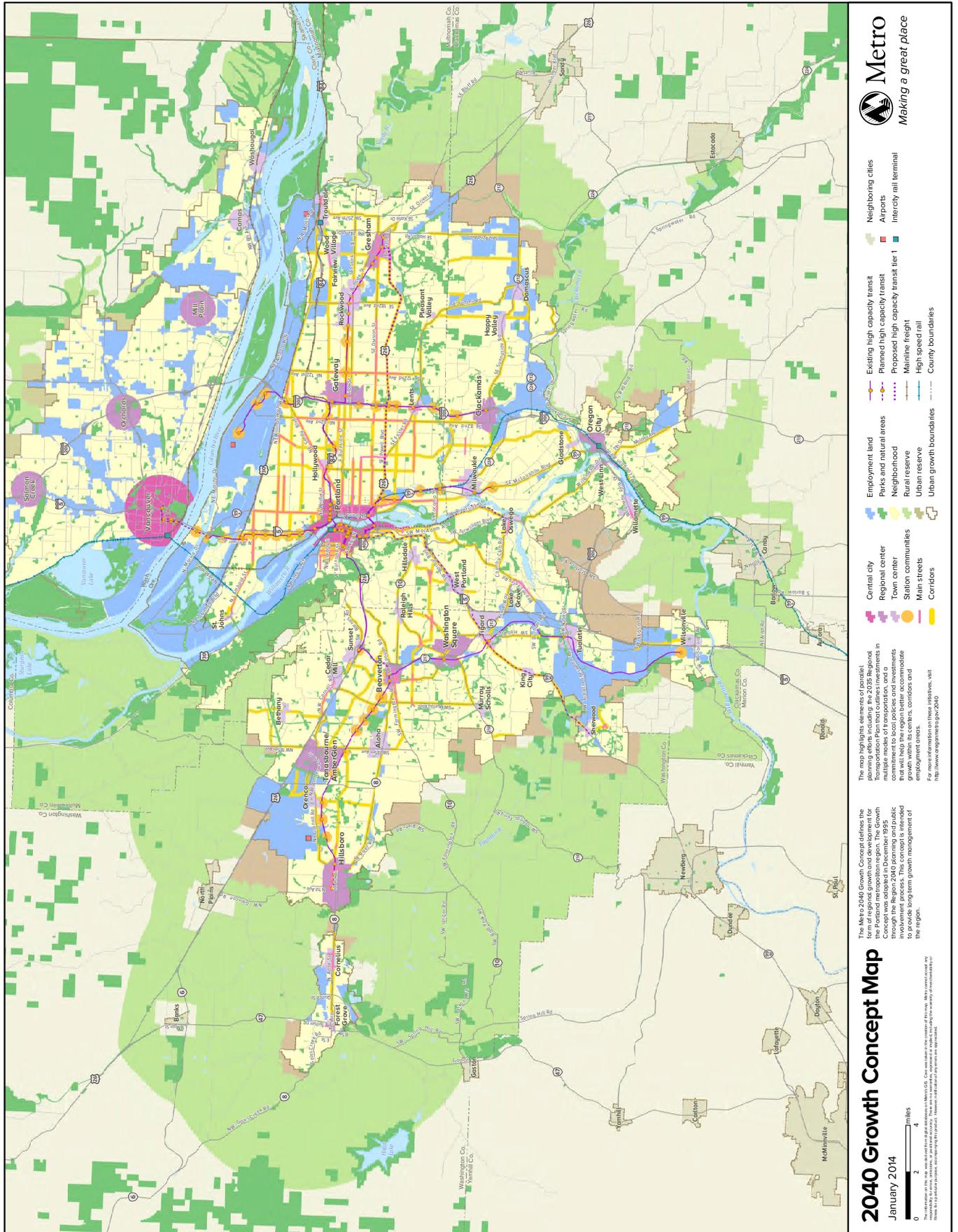


New Plans and Policies

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

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.



WHERE WE ARE TODAY

Building on the previous analyses and engagement, in February 2014, the Metro Policy Advisory Committee and Joint Policy Advisory Committee on Transportation approved a path for moving forward to shape and adopt a preferred approach in 2014.

As recommended by MPAC and JPACT, the draft approach started with the plans cities, counties and the region have already adopted – from local zoning, capital improvement, comprehensive, and transportation system plans to the 2040 Growth Concept and regional transportation plan – to create great communities and build a strong 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 draft approach is the Statewide Transportation Strategy assumption for pay-as-you-drive vehicle insurance.

From January to May 2014, the Metro Council 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.

In May 2014, policymakers considered the results of prior engagement activities and analyses, and their February 2014 policy direction to recommend a draft approach for testing during summer 2014. Their recommendation was organized around six key policy areas.



The draft approach includes assumptions for cleaner fuels and more fuel-efficient vehicles as defined by state agencies during the 2011 target-setting process.

.....



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.

OVERVIEW OF POLICY AREAS

This section provides an overview of the six key policy areas recommended in the draft approach:

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

Each section includes a description of the policy, its potential climate benefit, cost, implementation benefits and challenges, and a summary of the how the policy is implemented in the draft approach.

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)



RELATIVE CLIMATE BENEFIT



ESTIMATED COST TO IMPLEMENT BY 2035 (2014\$)

Capital \$4.4 billion

Operations \$8 billion

Make transit 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

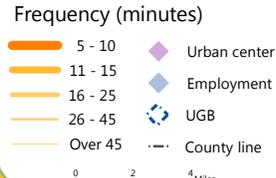
- improves access to jobs, the workforce, and goods and services, boosting business revenues
- creates jobs and saves consumers and employers money
- stimulates development, generating local and state revenue
- provides drivers an alternative to congested roadways and supports freight movements by taking 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

DRAFT APPROACH
Transit service
Rush hour
(7-9am, 4-6pm)

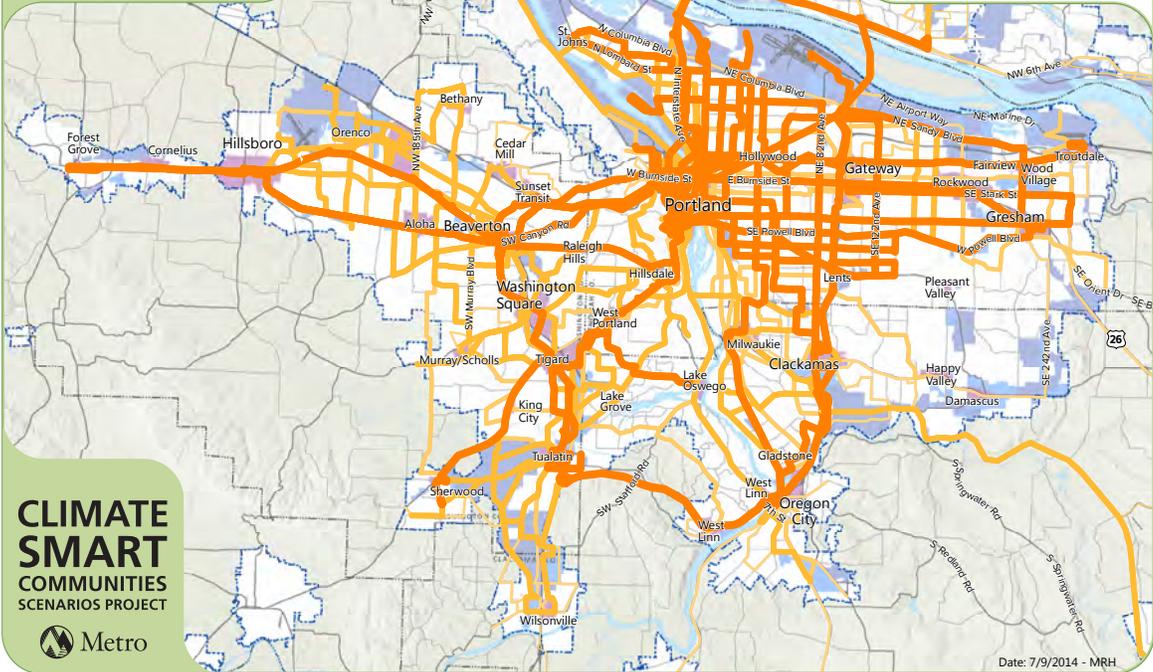
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55% jobs
49% households
62% low-income households

Estimated jobs and households within ¼-mile of 15-minute or better service by 2035

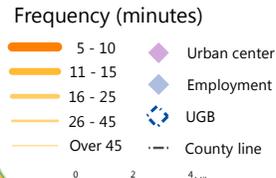
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Transit service
Daytime and evening
(9am-4pm, 6pm-close)

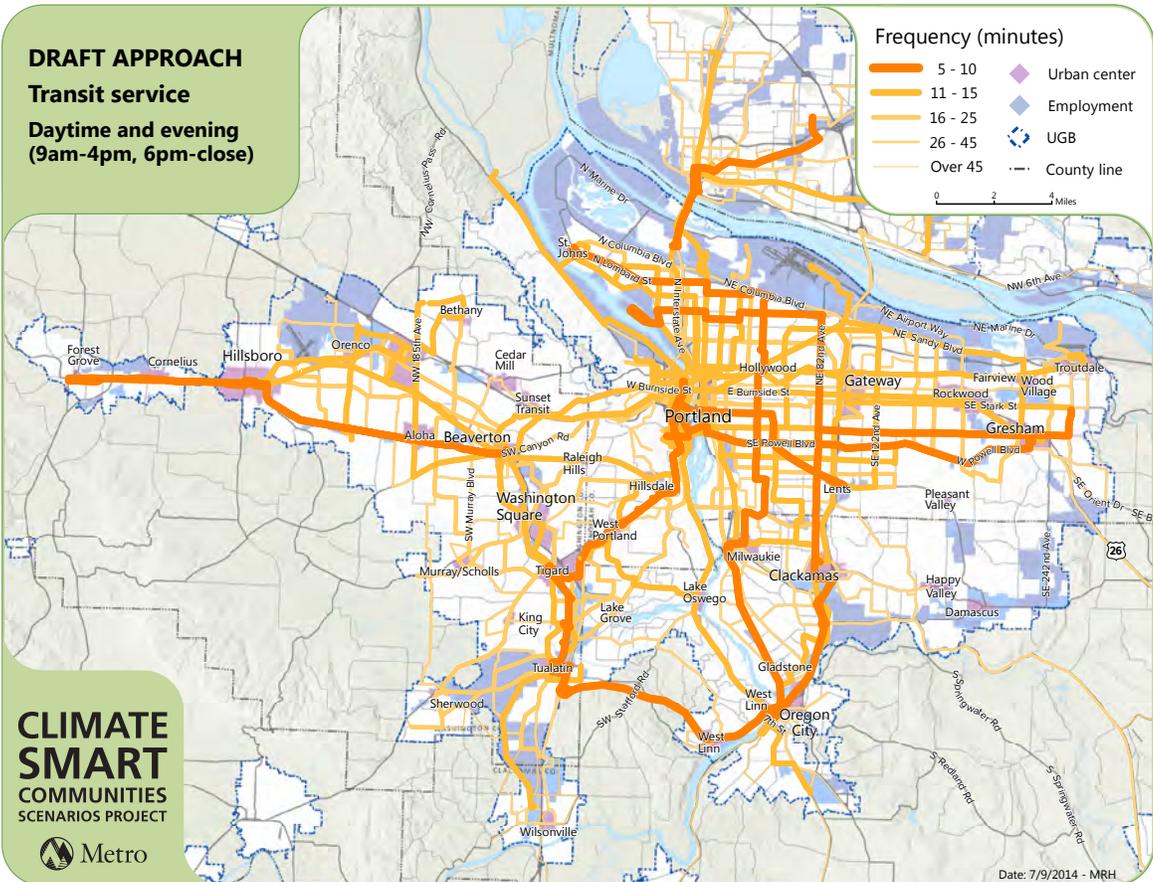
52% jobs
37% households
49% low-income households

Estimated jobs and households within ¼-mile of 15-minute or better service by 2035



Note: The maps and cost estimates reflect the transit service operations and frequencies adopted in the full 2014 RTP and transit capital investments adopted in the constrained RTP plus additional capital to support operations level.

CLIMATE SMART COMMUNITIES SCENARIOS PROJECT
 Metro





RELATIVE CLIMATE BENEFIT



ESTIMATED COST
TO IMPLEMENT BY 2035
(2014\$)

\$2 billion

Make biking and walking safe and 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

**DRAFT
APPROACH**

**DRAFT APPROACH
Active transportation**

663

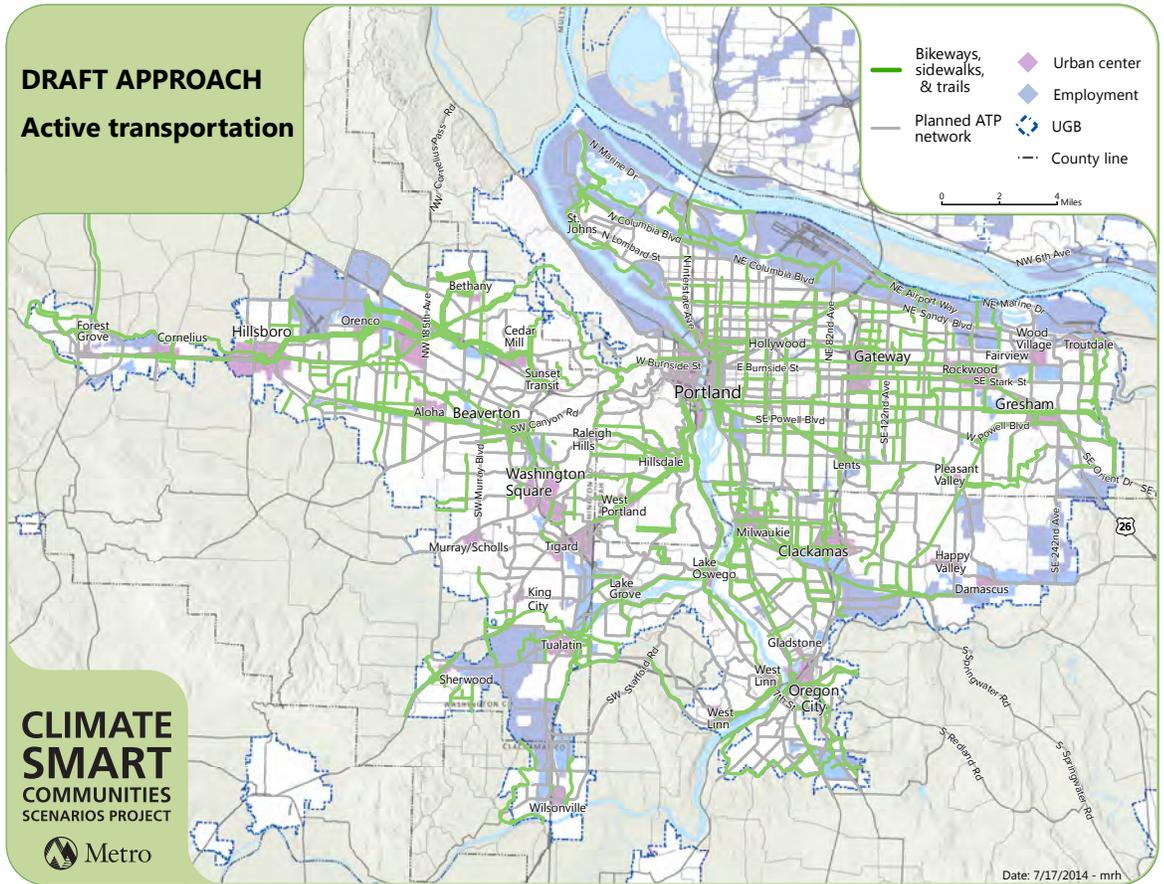
Miles of bikeways, sidewalks and trails added by 2035

61

Estimated lives saved annually from increased physical activity by 2035

\$500 million

Estimated savings per year by 2035 from the lives saved each year



Note: The map and estimated cost reflect the active transportation investments adopted in the constrained 2014 Regional Transportation Plan.



RELATIVE CLIMATE BENEFIT



ESTIMATED COST
TO IMPLEMENT BY 2035
(2014\$)

Capital \$8.8 billion

Operations, maintenance,
and preservation (OMP)
\$12 billion

Make streets and highways safe, reliable and connected

Today, nearly 45 percent of all trips in the region made by car 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 including 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 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, growing maintenance backlog, and rising 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

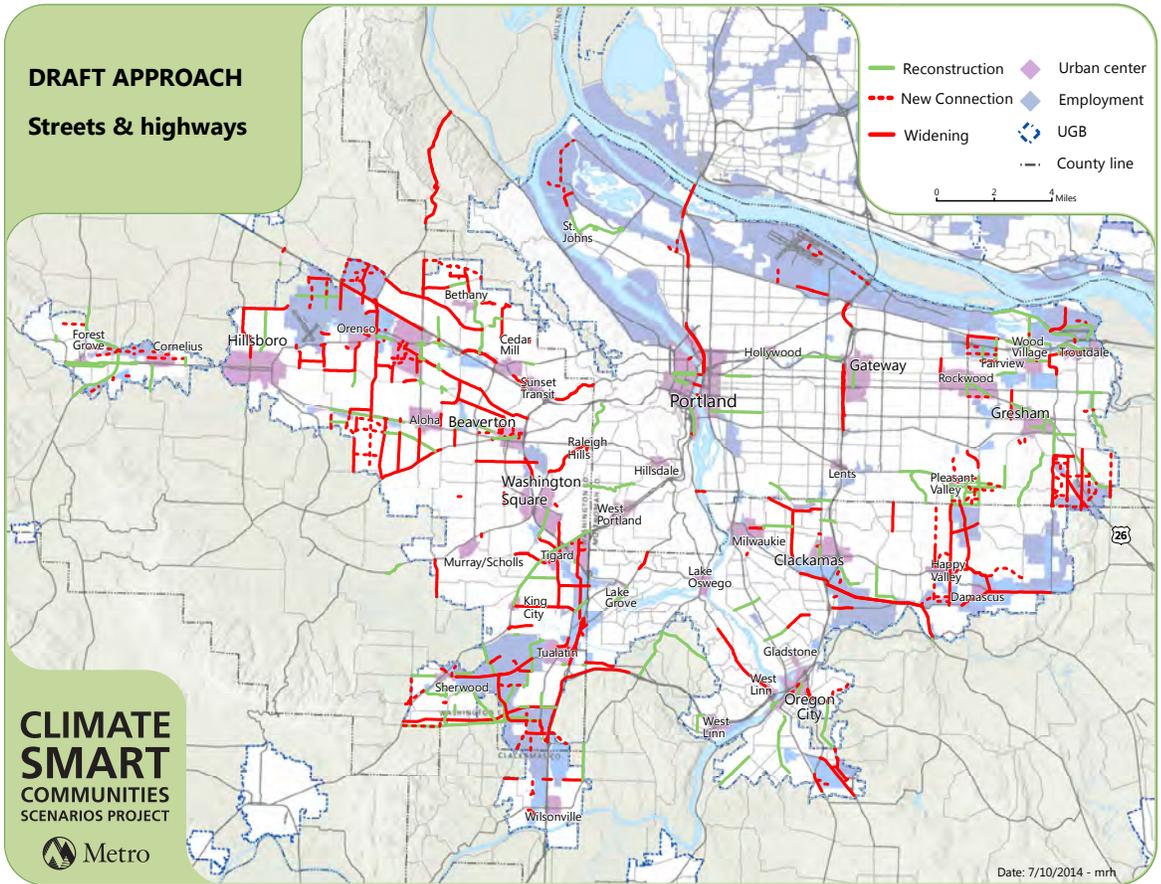
DRAFT APPROACH

52

Lane miles of freeways added by 2035 to support people and goods movement

386

Lane miles of arterials added by 2035, nearly two-thirds of which include bike and pedestrian improvements



Note: The map reflects capital investments adopted in the constrained 2014 Regional Transportation Plan for streets, highways and bridges in the region. The estimated costs includes capital costs adopted in the constrained 2014 RTP and preliminary estimates for local and state road-related operations, maintenance and preservation needs in the region.



RELATIVE CLIMATE BENEFIT



ESTIMATED COST
TO IMPLEMENT BY 2035
(2014\$)

\$206 million

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 transportation system 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

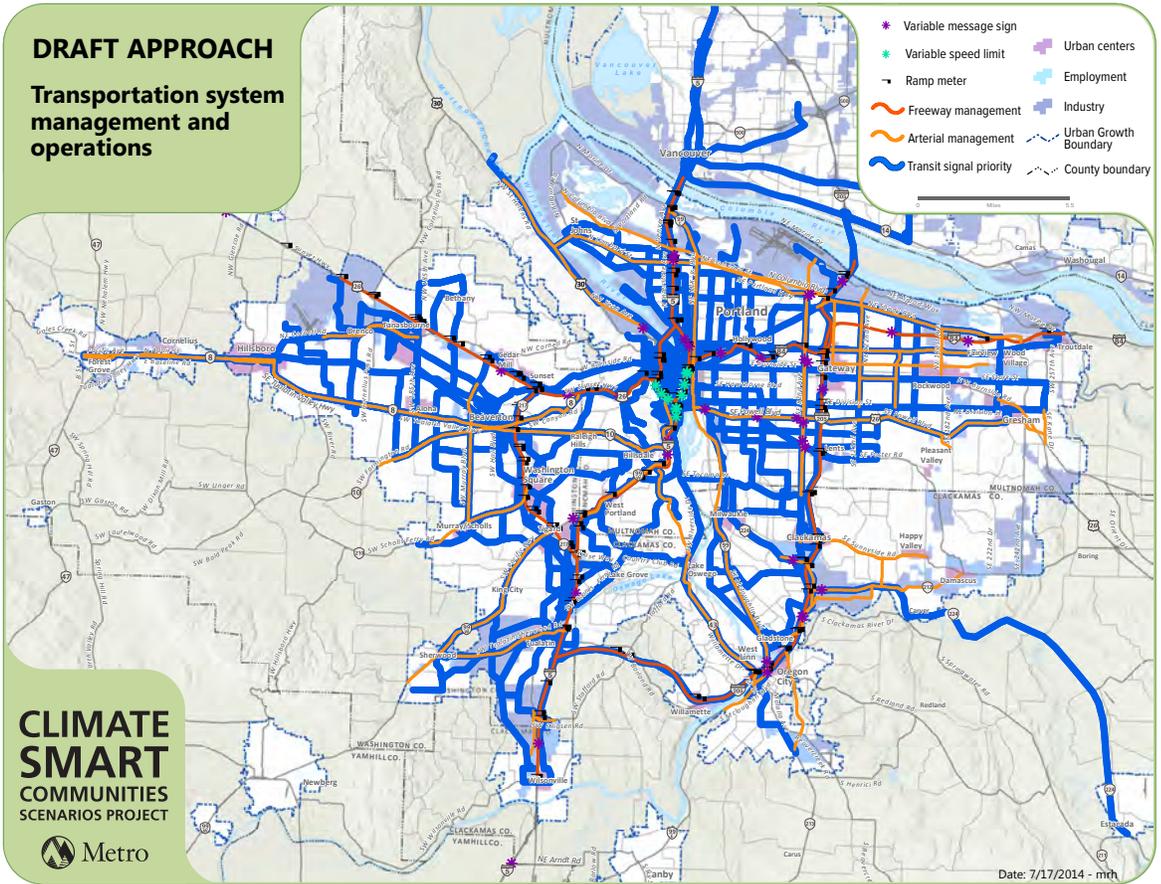
- provides near-term benefits
- reduces congestion and delay
- makes traveler experience more reliable
- saves public agencies, consumers and businesses time and money
- reduces air pollution and air toxics
- reduces risk of traffic fatalities and injuries

CHALLENGES

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

**DRAFT
APPROACH**

**.35% on arterials
and freeways**
Estimated delay
reduction by 2035



Note: The map and estimated cost reflect the full 2014 Regional Transportation Plan transportation system management and operations investments plus additional investments to support expanding incident response and transit signal priority across the region.



RELATIVE CLIMATE BENEFIT



ESTIMATED COST TO IMPLEMENT BY 2035 (2014\$)

\$185 million

Provide information and incentives to expand the 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.

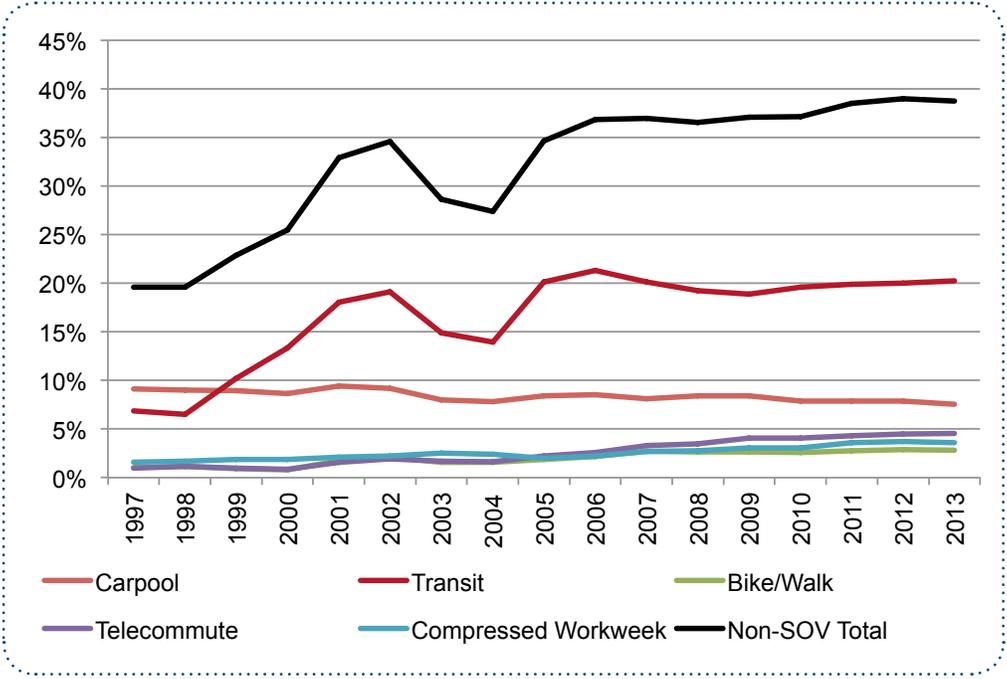
Travel options support tools reduce barriers to travel options and support continued use with tools such as the *Drive Less. Connect.* online carpool matching; trip planning tools; wayfinding signage; bike racks; and carsharing.

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



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.





RELATIVE CLIMATE BENEFIT



ESTIMATED COST TO IMPLEMENT BY 2035 (2014\$)

No cost estimated. This policy area is primarily implemented through local development codes.

Manage parking to make efficient use of land and parking spaces

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, and parking garages in downtowns and other mixed-use areas that allow surface lots to be developed for 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

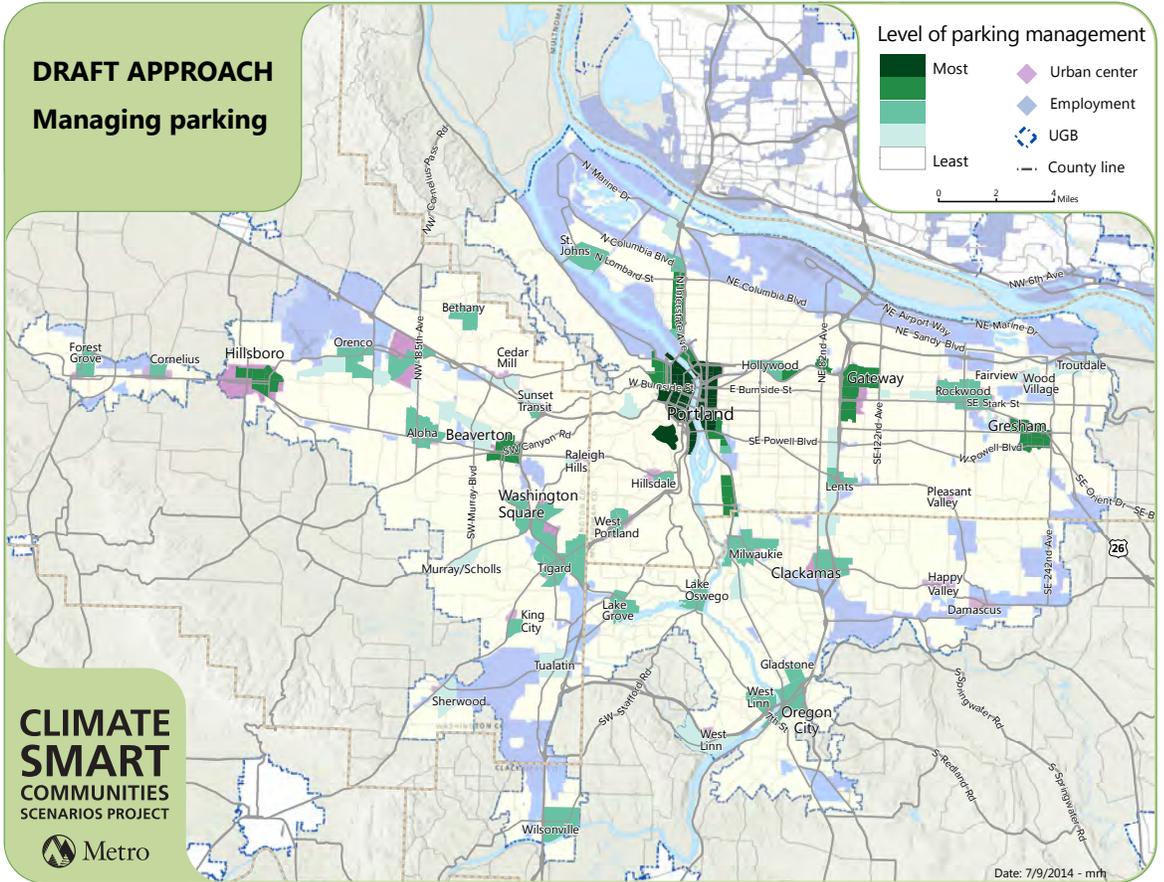
- inadequate information for motorists on parking and availability
- inefficient use of existing parking resources
- parking spaces that are inconvenient to nearby residents and businesses
- scarce freight loading and unloading areas
- low parking turnover rate
- lack of sufficient parking
- parking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

DRAFT APPROACH

30% work trips
30% other trips

Estimated share of trips to areas with actively managed parking

Note: The map reflects the constrained 2014 Regional Transportation Plan parking assumptions



GLOSSARY

Carsharing 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. Zipcar and car2go are local examples.

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.

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. Metro, after public review and consultation with local governments, is to adopt a preferred scenario. Following adoption of a preferred scenario, the local governments within the Metro jurisdiction are to amend their comprehensive plans and land use regulations as necessary to be consistent with the preferred scenario. For more information go to: http://www.oregonlegislature.gov/bills_laws/lawsstatutes/2009orLaw0865.html

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 (CO₂), which is a greenhouse gas. 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 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 carsharing.

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.