2018
REGIONAL
TRANSPORTATION
PLAN

Metro

FINALIZING OUR SHARED PLAN FOR THE REGION

A DISCUSSION GUIDE FOR POLICYMAKERS

GREATER PORTLAND REGION **MARCH 2018**

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Metro is the federally mandated metropolitan planning organization designated by the governor to develop an overall transportation plan and to allocate federal funds for the region.

The Joint Policy Advisory Committee on Transportation (JPACT) is a 17-member committee that provides a forum for elected officials and representatives of agencies involved in transportation to evaluate transportation needs in the region and to make recommendations to the Metro Council. The established decision-making process assures a well-balanced regional transportation system and involves local elected officials directly in decisions that help the Metro Council develop regional transportation policies, including allocating transportation funds.

Project web site: oregonmetro.gov/rtp

This report contains information that is intended for research purposes and does not necessarily reflect current or future policy decisions of the Metro Council, MPAC or JPACT.

The preparation of this report was financed in part by the U.S. Department of Transportation, Federal Highway Administration and Federal Transit Administration. The opinions, findings and conclusions expressed in this report are not necessarily those of the U.S. Department of Transportation, Federal Highway Administration and Federal Transit Administration.

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INTRODUCTION

Transportation planning means more than deciding where to build roads, sidewalks, bikeways and transit and freight routes. It's about taking care of what we have and building great communities.

It's about ensuring that no matter where you are or where you're going, you can have safe, reliable, healthy and affordable options to get there. It's about nurturing a strong economy, advancing equity and protecting the quality of life we all value.

The Regional Transportation Plan is a blueprint to guide investments for all forms of travel – driving, walking, biking and taking transit – and moving goods and freight throughout the greater Portland region. The plan identifies the region's transportation needs and investments needed to meet those needs with the funds the region expects to have available to make those investments a reality.

Since summer 2015, Metro has been working with local, regional and state partners and the public to update our region's shared transportation vision and investment strategy for the next 25 years.

Learn more about the 2018 Regional Transportation Plan at oregonmetro.gov/rtp.

About this guide

This discussion guide is designed to help elected, business, and community leaders and residents better understand the challenges and choices facing the greater Portland region. It will be used by community and business leaders and members of the Metro Policy Advisory Committee (MPAC) and Joint Policy Advisory Committee on Transportation (JPACT) to help shape the 2018 Regional Transportation Plan for the Metro Council to consider for adoption in December 2018.

This guide brings together the results of the analysis completed in early 2018 and background infomation to provide context for the choices facing policymakers as they shape an investment strategy that supports the region's shared values and helps make local and regional plans a reality. The analysis focused on the draft project lists submitted by cities, counties and other agencies in summer 2017.

The desired outcome for this discussion guide is that cities, counties and regional partners will understand the results of the analysis in preparation for a conversation about what adjustments may be needed to finalize the project priorities to be included in the 2018 Regional Transportation Plan.

Three funding scenarios in the 2018 Regional Transportation Plan

C10
2018–2027

10-year constrained funding scenario

This scenario shows the results of building the highest priority projects scheduled in the first 10 years of the draft constrained list.

C 2040
2018–2040

2040 constrained funding scenario

This scenario shows the results of building the highest priority projects by 2040 within the constrained budget.

S 2040
2018–2040

2040 strategic funding scenario

This scenario shows the results of building the projects of the constrained list plus additional strategic priority projects by 2040.

These scenarios were assessed for research purposes to inform refinement discussions and do not necessarily reflect current or future policy decisions of the Metro Council, MPAC or JPACT.

Defining terms

Constrained budget

The budget of federal, state and local funds the greater Portland region can reasonably expect through 2040 under current funding trends – presumes some increased funding compared to current levels

Constrained list

Projects that can be built by 2040 within the constrained budget

Strategic list

Additional priority projects to show what could be achieved with additional resources

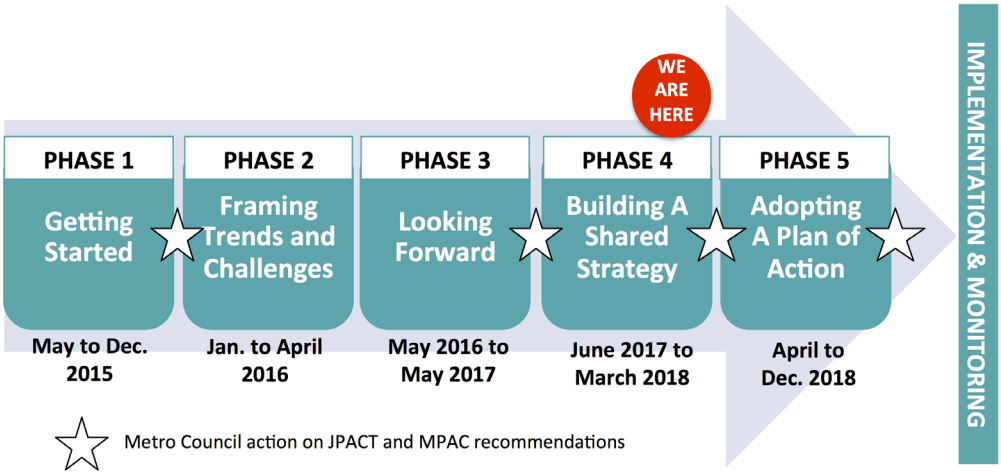
Today's choices shape the future

Shaping the future of transportation through the 2018 Regional Transportation Plan update

The greater Portland region's economic prosperity and quality of life depend on a transportation system that provides every person and business in the region with equitable access to safe, efficient, reliable, affordable and healthy travel options. Over the last two decades, the region has taken a collaborative approach to plan for and invest significant resources in the transportation system, making our region one of the most livable in the country. We have set our region on a wise course and experienced many successes, but there is still much to accomplish. Our region is growing, our travel needs are changing, and new state and federal requirements must be met.

Through the 2018 Regional Transportation Plan update, Metro is working with leaders and communities throughout the region to plan the transportation system of the future by updating the region's shared transportation vision and investment strategy through 2040.

JPACT and the Metro Council must approve a final Regional Transportation Plan by the end of December 2018 to ensure the region continues to meet federal requirements, maintaining the region's eligibility to receive federal transportation funding. 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 update is being completed in five phases.



March to June 2018

Finalize financial plan and project lists, produce public review draft Regional Transportation Plan and strategies for safety, freight, transit and emerging technologies

June 29 to Aug. 13, 2018

Public review and comment on the draft Regional Transportation Plan and strategies for safety, freight, transit and emerging technologies

August to December 2018

Final refinement and adoption process

October 2018

JPACT and MPAC make recommendations to the Metro Council on adoption of the 2018 Regional Transportation Plan and strategies for safety, freight, transit and emerging technologies

December 2018

Council considers action on final Regional Transportation Plan and strategies for safety, freight, transit and emerging technologies

Early 2019

Submit adopted Regional Transportation Plan to Land Conservation and Development Commission for approval in the manner of periodic review

Regional leadership forums

To address the challenges and trends facing our region, the Metro Council is convening a series of four regional leadership forums as part of the 2018 Regional Transportation Plan update.

1. **Exploring Big Ideas for Our Transportation Future** 4/22/16
2. **Building the Future We Want** 9/23/16
3. **Connecting Our Priorities to Our Vision** 12/2/16
4. **Finalizing Our Shared Plan for the Region** 3/2/18

Forum participants include members of MPAC, JPACT, state legislators, and community and business leaders from throughout the greater Portland region. Working side-by-side, regional and state leaders will bring the perspectives of their communities and constituents to the conversation around the challenges we are facing, our vision for the future and potential solutions for moving forward together.

The 2018 Regional Transportation Plan: Getting to here

Phase 1: Getting started The first phase began in Summer 2015. This phase consisted of engaging local, regional, state and community partners to prioritize the regional challenges to be addressed in the update and the process for how the region should work together to address them. This phase concluded in December 2015 with JPACT and Council approval of the work plan and public participation plan for the update. In addition to implementing the 2014 Climate Smart Strategy, the adopted work plan identified seven policy topics for the Regional Transportation Plan update to focus on – safety, equity, freight, transit, finance, performance, and design.

Phase 2: Framing trends and challenges The second phase began in January 2016 and concluded in April 2016. In this phase, Metro engaged the public, jurisdictional partners and business and community leaders to document key trends and challenges facing the region as well as priority outcomes for investment in the region's transportation system. This included publishing a Regional Snapshot on Transportation in April 2016. Metro staff worked with jurisdictional partners to forecast a budget of federal, state and local funds the greater Portland region can reasonably expect by 2040 under current funding trends.

The Metro Council convened members of MPAC, JPACT, state legislators, community and business leaders and other interests from across the region to discuss this information over three regional leadership forums.

In Regional Leadership Forums 1 and 2, there was consensus that a bold vision and more funding are needed to build a 21st century transportation system. In Forum 3, leaders discussed a shared vision for the future transportation system and potential near-term priorities for addressing regional transportation challenges in ways that supported the vision. Participants also identified actions to build a path to future funding.

Phase 3: Looking forward From May 2016 to May 2017 technical work and public engagement activities continued to focus on finalizing a shared vision statement for the plan, developing draft strategies for safety, transit and freight, and updating the evaluation framework and measures for evaluating plan performance. Staff also compiled background information to support jurisdictional partners as they updated their investment priorities for further evaluation and public review during Phase 4. Phase 3 concluded with Metro Council directing staff to release a Call for Projects to update the region's transportation near- and long-term investment priorities to support regional goals for safety, congestion relief, affordability, community livability, the economy, social equity, and the environment.

Phase 4: Building a shared strategy The fourth phase began in June 2017 with release of a second Regional Snapshot on Transportation and the Call for Projects for jurisdictional partners to update the plan's regional transportation project priorities. Agencies were asked to identify projects that address regional needs and challenges, reflect public priorities and maximize progress toward the region's agreed upon vision and goals for the future transportation system.

Local jurisdictions and county coordinating committees worked within a constrained budget and capital funding targets to determine the project priorities to put forward for inclusion in the plan in collaboration with Oregon Department of Transportation (ODOT), Metro, SMART and TriMet. All project submissions were required to have come from adopted plans or studies that provided opportunities for public input.

In summer 2017, Metro analyzed three scenarios – 10-year constrained, 2040 constrained and 2040 strategic funding scenarios. The analysis tested new and updated outcomes-based system performance measures to evaluate performance of the transportation system as a whole for each scenario to help inform finalizing the plan's project priorities in Phase 5. Safety, transit, freight and emerging technology strategies continued to be developed on parallel tracks.

The results of the analysis were released in November 2017 and are now summarized in this discussion guide. A fourth and final Regional Leadership Forum will be held in March 2018 to inform finalizing the plan during Phase 5, beginning in April 2018.

Phase 5: Adopting a plan of action The fifth, and final, phase of the process will focus finalizing and adopting the region's investment priorities and strategies recommended through 2040. The 2018 Regional Transportation Plan will be available for public review in summer 2018. JPACT and MPAC will make recommendations to the Metro Council in October 2018.

Metro Council will consider adoption of the final plan, project priorities and strategies for safety, transit, freight and emerging technologies in December 2018.

Greater Portland voices

"We loved our old neighborhood so we started looking there. Then we realized we couldn't afford anything we wanted…We got everything we wanted [in Tualatin]. The only thing that would make it better is if the commute was any less. I'm looking at 45 minutes and my wife is about an hour.
– *Brian, Tualatin resident*

"I commute from Forest Grove to Portland… If there is no traffic, 40 to 45 minutes I'll be downtown. But with traffic it takes at least an hour… If there will be anything faster, more reliable and affordable, I'll take it." – *Edna, Forest Grove resident*

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REGIONAL CONTEXT

Our region continues to grow and change

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

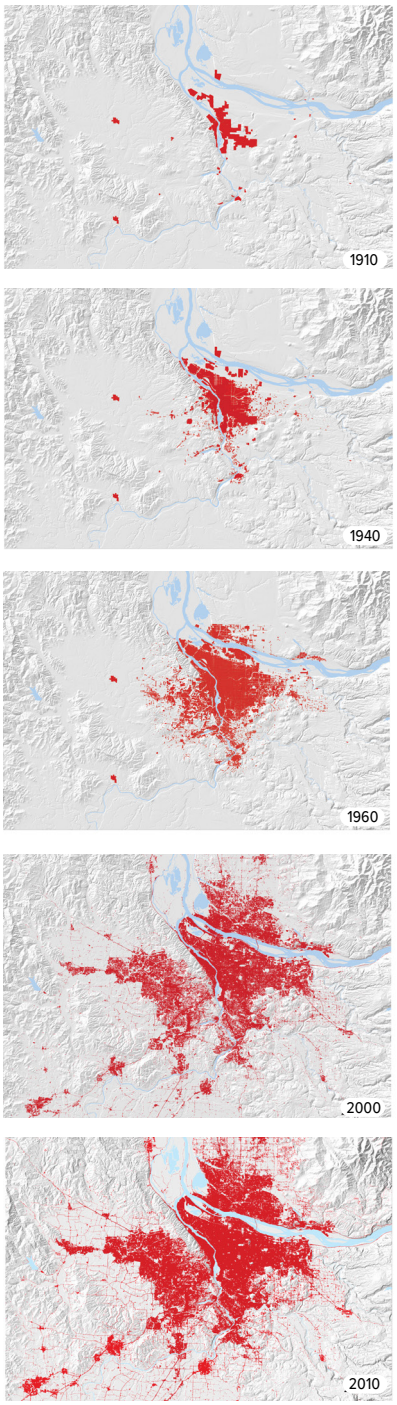
Because of our dedication to planning and working together to make local and regional plans a reality, we have set a wise course for managing growth – but times are challenging. The region is growing, our economy is expanding, and emerging technologies are changing how we do business and get around.

Housing affordability, climate change, racial disparities, traffic deaths and life changing injuries, and traffic congestion 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 complex and interrelated challenges at a regional scale.

The region expects to welcome more than 500,000 new residents – about half from growing families – and more than 350,000 new jobs within the urban growth boundary by 2040.

Land development, 1910-2010



Sources: Historic Metropolitan Planning Commission Maps, NOAA CCAP Landcover

Greater Portland voices

"Definitely there's more of a neighborhood feel now [in St. Johns]... It would be nice to see this place grow like North Williams, or Mississippi. You know, more of a place where I can raise a family... I hope they don't commercialize this place too much, though. I think that would be great." – *Narayan, North Portland resident*

"Having people who experience disabilities be involved in policymaking is great. I definitely want to improve public transportation because I don't have any other options. I'm going to be using public transportation for the rest of my life."

– *Kiersi, Tualatin*

Achieving desired regional outcomes

The 2018 Regional Transportation Plan will be a key tool for achieving the desired outcomes for a great region.

Attributes of great communities

Six desired outcomes for the region have been endorsed by MPAC and approved by the Metro Council. The 2018 Regional Transportation Plan seeks to help achieve the desired outcomes.

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.

Halfway to 2040

The 2018 Regional Transportation Plan is a key tool for implementing the 2040 Growth Concept.

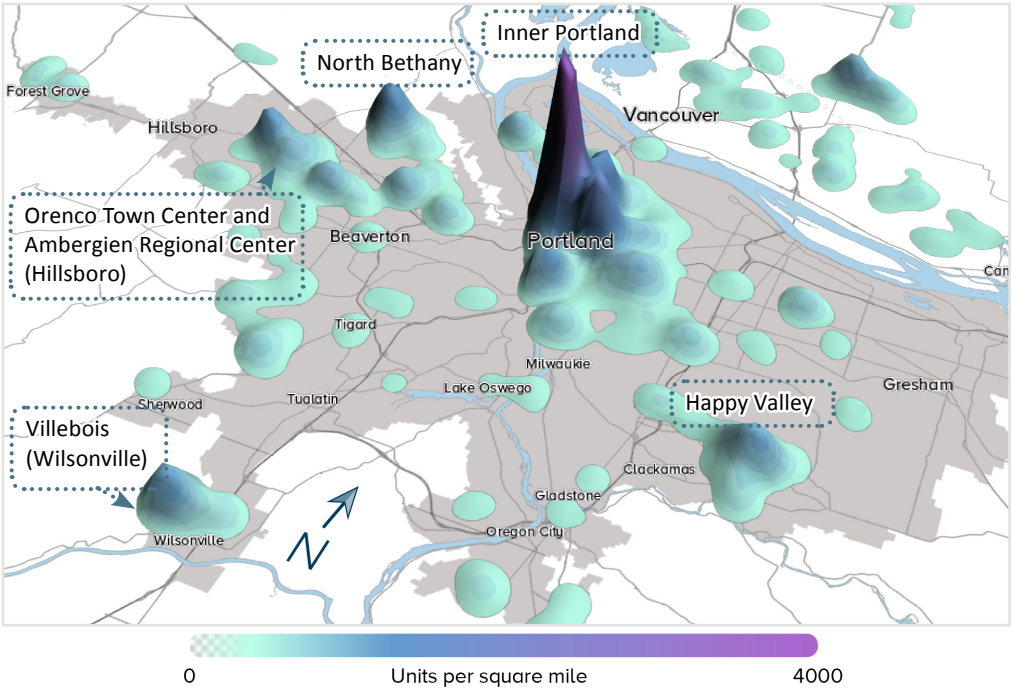
In 1995, the greater Portland region adopted the 2040 Growth Concept, the long-range plan for managing growth that integrates land use and transportation system planning to preserve the region's economic health and livability in an equitable, environmentally-sound and fiscally-responsible manner.

The 2040 Growth Concept includes land use and transportation building blocks that express the region's aspiration to incorporate population growth within existing urban areas as much as possible and expand the urban growth boundary only when necessary.

It concentrates mixed-use and higher density development in urban centers, station communities, corridors and main streets that are well-served by transit. It envisions a well-connected street network that supports biking and walking for short trips.

Employment lands serve as hubs for regional commerce and include industrial land and freight facilities for truck, marine, air and rail cargo sites that enable goods to be generated and moved in and out of the greater Portland region. Freight access to industrial and employment lands is centered on rail, the freeway system and other road connections.

Housing permits in the greater Portland, 2009-2017



Source: Construction Monitor data report Q1 2009-Q2 2017, created October 2017

Greater Portland voices

"In a sense, we're a little bit isolated because we don't have quick access to services or the park, so that's why I have to drive everywhere. There are other areas in Happy Valley that do have sidewalks. But those are all developments. And as I said, I don't live in a development." – *Katie, Happy Valley resident*

Did you know?

Since the adoption of the 2040 Growth Concept, the majority of new homes have been added in downtowns and centers across the greater Portland region.

Where we go from here matters

We know the greater Portland region will continue to grow – with more people and more jobs every day. But it's hard to imagine an abstract population forecast for the year 2040 means.

Several of our larger metropolitan peers were our size about 25 years ago. Their size today helps paint a picture of what we might expect and should prepare for.

Choices we make today about how we manage this growth and invest in our communities and transportation system will determine the region's economic prosperity and quality of life for generations to come.

Welcome to the big cities

Since the adoption of the 2040 Growth Concept in 1995, the greater Portland region has moved from a collection of interconnected towns to become a major metropolitan area.

If you include our connected Southwest Washington neighbors, we are the twenty-third largest metropolitan area in the United States, with 2.4 million people living here and using our system of throughways, roads, bridges, transit, bikeways, sidewalks and trails.

Portland, Ore. and Vancouver, Wash. metropolitan area

2.4 million ⇨ 3.1 million
2016 **2040** (projected)

Below is a sample of other metropolitan areas, when they reached 2.4 million people and what 20 years of growth looked like for them.

Phoenix, Ariz. metropolitan area: 2.4 million people by early 1990s

2.2 million ⇨ 4.2 million
1990 2010

San Diego County, Calif.: 2.4 million people by late 1980s

2.5 million ⇨ 3.1 million
1990 2010

Minneapolis-St. Paul, Minn. metropolitan area: 2.4 million people by late 1980s

2.6 million ⇨ 3.3 million
1990 2010

Seattle, Wash. metropolitan area: 2.4 million people by late 1980s

2.6 million ⇨ 3.4 million
1990 2010

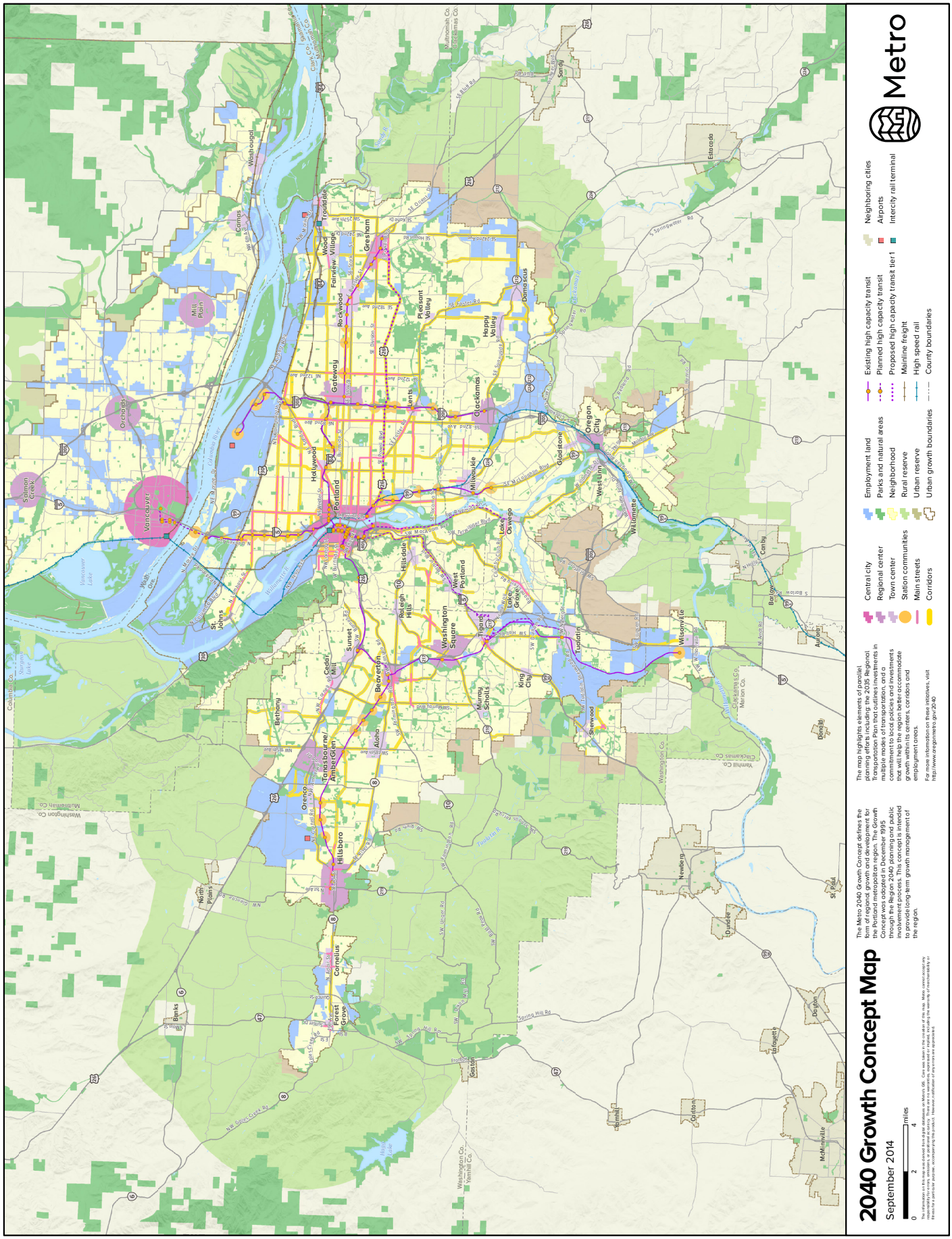
Atlanta, Ga. metropolitan area: 2.4 million people by mid-1980s

3.0 million ⇨ 5.3 million
1990 2010

Source: 2014 Metro Urban Growth Report, 1990 and 2010 U.S. Decennial Census and extrapolated estimates

Our shared strategy for managing growth: the 2040 Growth Concept

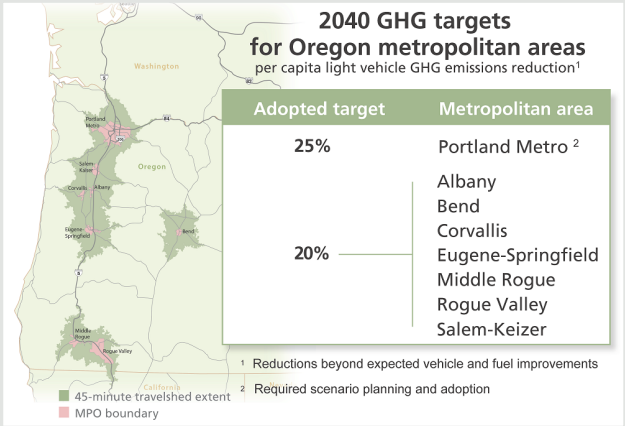
A land use and transportation strategy for building healthy, equitable communities and a strong economy.



Implementing the Climate Smart Strategy

The 2018 Regional Transportation Plan is a key tool for implementing the adopted Climate Smart Strategy and achieving a new 2040 target adopted by the Land Conservation and Development Commission in 2017.

In 2009, the Oregon Legislature required the greater Portland region to develop an approach to reduce per capita greenhouse gas emissions from cars and small trucks by 20 percent by 2035.



Source: Oregon Land Conservation and Development Commission

After working together with community, business and elected leaders across the region for four years, JPACT and the Metro Council adopted the Climate Smart Strategy in December 2014 with broad support. Adoption of the strategy affirmed the region's shared commitment to provide more transportation choices, keep our air clean, build healthy and equitable communities, and grow our economy – all while reducing greenhouse gas emissions. The Climate Smart Strategy will achieve a 29 percent reduction in per capita greenhouse gas emissions by 2035, if fully implemented.

The Climate Smart Strategy is built around ten policies to help the region reduce greenhouse gas emissions from cars and small trucks while making our transportation system safe, reliable, healthy and affordable. The strategy also includes supporting actions that can be taken by the state, Metro, cities, counties and others to support implementation and performance targets for monitoring our progress.

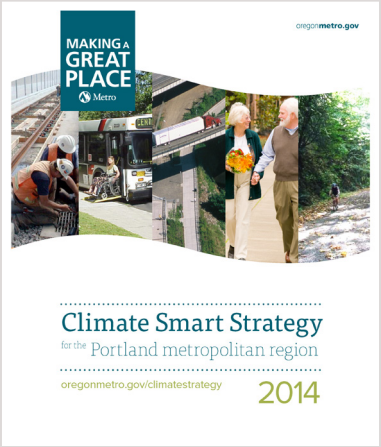
Climate Smart Strategy

1. Implement adopted local and regional land use plans
2. Make transit convenient, frequent, accessible and affordable
3. Make biking and walking safe and convenient
4. Make streets and highways safe, reliable and connected
5. Use technology to actively manage the transportation system
6. Provide information and incentives to expand the use of travel options
7. Make efficient use of vehicle parking and land dedicated to parking
8. Support Oregon's transition to cleaner fuels and more fuel-efficient vehicles
9. Secure adequate funding for transportation investments
10. Demonstrate leadership on reducing greenhouse gas emissions

Did you know?

Oregon and the greater Portland region have been leaders among the handful of states and metropolitan areas addressing climate change, with an ambitious goal to reduce greenhouse gas emissions from all sources to 75 percent below 1990 levels by the year 2050.

We drive 20 percent fewer miles every day than residents of other regions of similar size due to decades of focusing development in downtowns, main streets and employment areas and through support of transportation options for getting to work, school and destinations across the region.



Find information on the results, expected benefits and estimated costs of the Climate Smart Strategy at oregonmetro.gov/climatesmart.

Focusing on racial equity

The 2018 Regional Transportation Plan update offers opportunities to reduce barriers and disparities faced by communities of color and other historically marginalized communities.

Racial exclusion and bias

Oregon's history is rooted in racial bias, which has led to the greater Portland region having less racial diversity than other American cities. The history of Oregon's exclusionary laws dates back to 1848, when the Oregon Territory provisional government made it unlawful for Black people to live in the territory. The 1850 Donation Land Claim Act encouraged white settlers to move to the territory before any attempt was made to have the land ceded by the indigenous people – including the Multnomah, Clackamas, Tualatin and Chinook peoples of what would become the greater Portland region. In 1862, Oregon adopted a law requiring all African American, Chinese and Hawaiian people residing in Oregon to pay an additional annual tax. The Chinese Exclusion Act was passed in 1882 with the support of the state's full congressional delegation. Oregon's tensions around race continued to escalate and by the 1920s, Oregon had the nation's highest per capita membership in the Ku Klux Klan.

Through the 1940s, government policies prevented people of color from buying or renting homes outside of designated neighborhoods, while Japanese residents were relocated to internment camps during World War II. Through the 1960s and 70s – or later – real estate agents would discourage non-White clients from homes in White neighborhoods, and banks would often refuse loans for those properties when requested by a person of color. Meanwhile, banks would declare investments in homes in African American neighborhoods or other communities of color too risky and refuse loans for those properties.

Implicit and explicit practices of racial exclusion and bias extended to the development of the transportation system. People of color in Oregon had to pay additional surcharges on car insurance up until 1951. When Interstate 5 opened in the 1960s, the new freeway cut a swath through Portland's established African American neighborhoods, destroying at least 50 square blocks of homes and creating a barrier that still exists today.

Today, communities of color continue to point to issues of racial bias and inequity in enforcement of traffic laws and transit fares. Studies have also shown that drivers in the greater Portland region are significantly less likely to stop to allow an African American pedestrian to safely cross the street. Additionally, people of color are more likely to be victims of traffic fatalities and severe injuries.

Metro's strategic plan to advance racial equity, diversity and inclusion

In June 2016 with the support of MPAC, the Metro Council adopted an equity plan that leads with race, committing to concentrate on eliminating the disparities that people of color experience, especially in those areas related to Metro's policies, programs, services and destinations.

People of color share similar barriers with other historically marginalized groups such as people with low income, people with disabilities, LGBTQ communities, women, older adults and young people.

But people of color tend to experience those barriers more deeply due to the pervasive and systemic nature of racism. By addressing the barriers experienced by people of color, we will also effectively identify solutions and remove barriers for other disadvantaged groups.

The result of this racial equity focus will be that all people in the 24 cities and three counties of the greater Portland region will experience better outcomes.

Defining terms

Social equity

The removal of barriers to eliminate disparities faced by and improve equitable outcomes for historically marginalized communities, especially communities of color

Racial equity

The removal of barriers with a specific focus on eliminating disparities faced by and improving equitable outcomes for communities of color – the foundation of Metro's strategy with the intent of also effectively identifying solutions and removing barriers for other disadvantaged groups

Communities of color

Communities where the rate of people of color is greater than the regional average

Historically marginalized communities

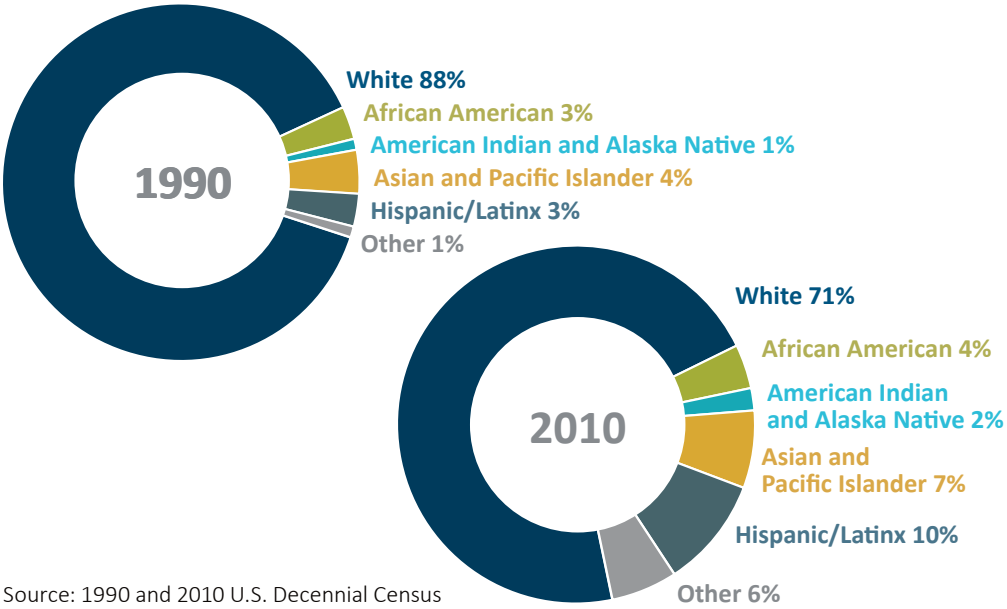
Communities where the rate of people of color, people in poverty, people with low English proficiency, older adults and young people – groups who have been denied access and/or suffered past institutional discrimination – is greater than the regional average

Our population – and communities – continue to change

While the greater Portland region historically has had less racial diversity than other American cities, the region increasingly reflects the diversity of the country. However, the specific historic and systemic exclusion of and bias against African Americans is still reflected in the makeup of our population. In 2010, the population of greater Portland was 71 percent White compared to 64 percent nationally, and 4 percent African American compared to 12 percent nationally.

Also of note is the difference in Hispanic/Latinx population (10 percent for the region, 16 percent nationally) and those whose racial/ethnic identity is not easily categorized by the U.S. Census categories (those grouped as "other": 6 percent for the region, 2 percent nationally).

Race and ethnicity in the greater Portland region

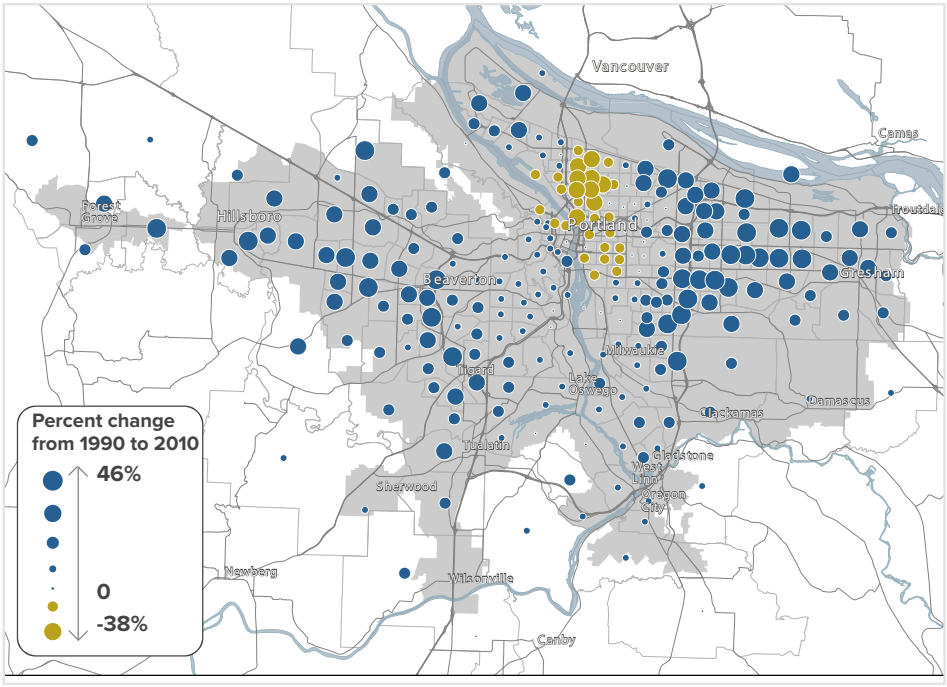


Source: 1990 and 2010 U.S. Decennial Census

Displacement affects communities as much as individuals

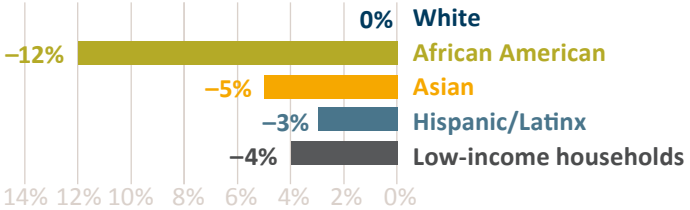
Displacement is often seen simply as a consequence of a growing population and an improving economy. Often unrecognized is a history that has concentrated communities of color into specific areas where they built strong community ties. Since these individuals and communities continue to face systemic inequities that limit access to the benefits of an improving economy, they are often priced out of these same areas as others gain stronger purchasing power. Not only does this displacement increase travel time and cost for individuals, it can create a cascading effect on the viability of community resources such as places of worship, community centers and culturally-focused businesses as members, users and customers lose convenient access.

Displacement and migration of communities of color, 1990-2010



Source: 1990 and 2010 U.S. Decennial Census

Access to jobs in the greater Portland region: percent change in number of jobs within typical commute distance, 2000 to 2012



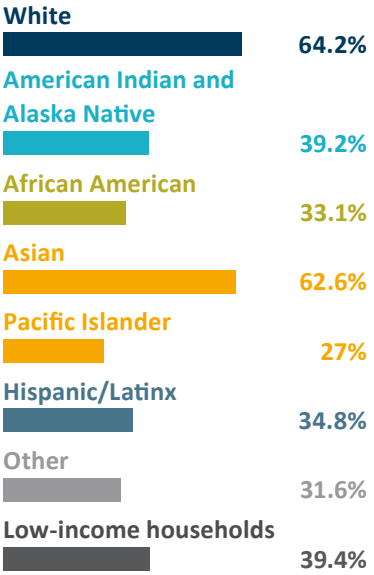
Original source did not provide information for American Indians or Pacific Islanders. Source: Brookings Institution

Historically marginalized populations

As part of developing the Regional Transportation Plan, Metro evaluated social equity outcomes of proposed project lists for five regional populations: people of color, people with low income, people with limited English proficiency, older adults and youth.

The map on the following page shows census tracts with higher than the regional average concentrations of one or more of these populations.

Homeownership rates in the greater Portland region



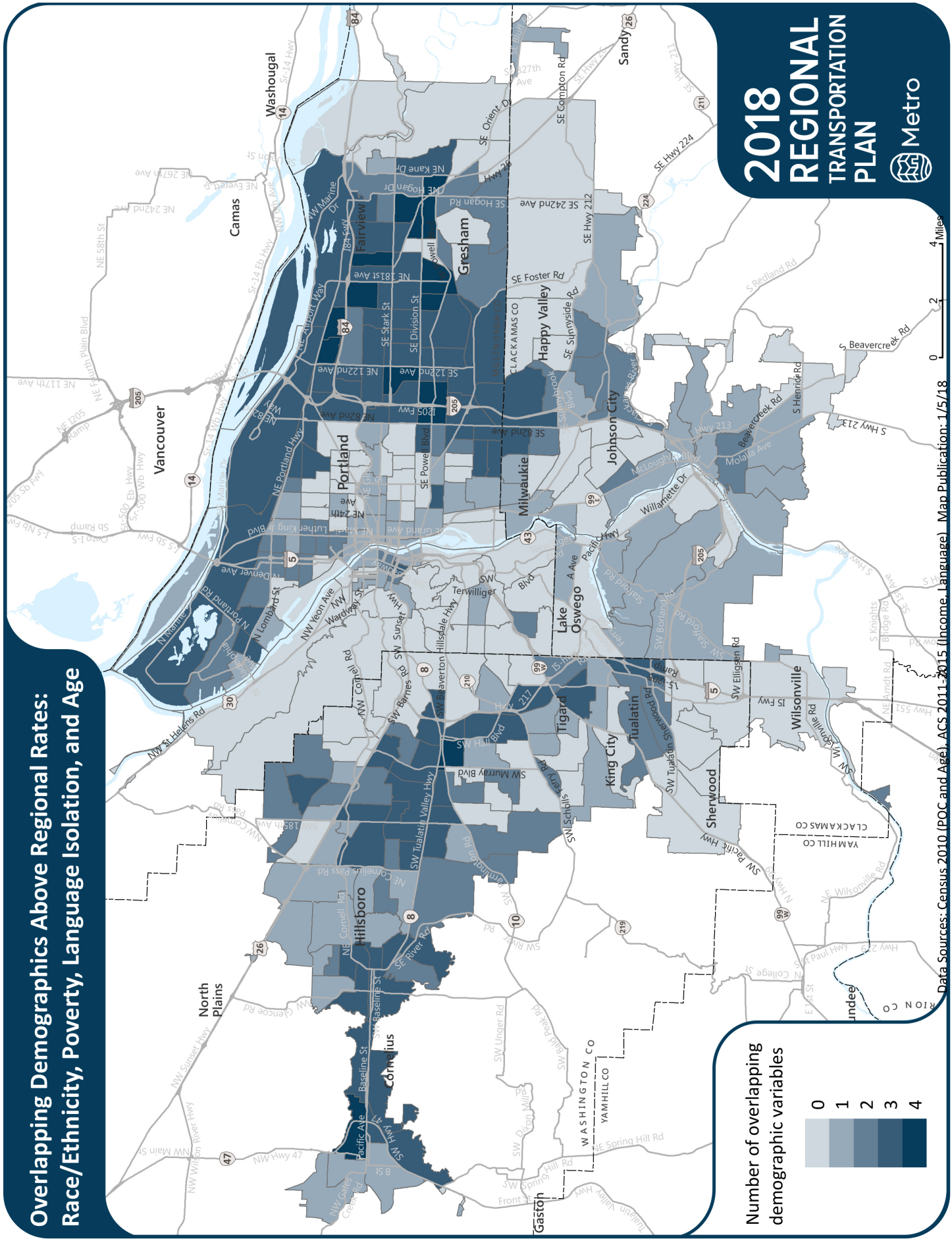
Source: 2010 U.S. Decennial Census

The cycle of inequity

Homeownership is cited as a key tool in both personal and family wealth development and community stabilization.

Not only do people of color face issues of inequity in access to education and pay, the legacy of systemic racism is reflected in current homeownership rates, which differ greatly by race.

As housing costs increase, families who own homes benefit from increased home value, while people who rent are forced to move farther from job centers and the community resources they rely on, increasing their daily travel cost and time.


Overlapping Demographics Above Regional Rates:
Race/Ethnicity, Poverty, Language Isolation, and Age
2018 REGIONAL TRANSPORTATION PLAN
Metro
Number of overlapping demographic variables
0
1
2
3
4
0
2
4 Miles
Data Sources: Census 2010 (POC and Age), ACS 2011-2015 (Income, Language). Map Publication: 1/5/18
Washougal
Camas
Vancouver
Portland
Gresham
Fairview
Happy Valley
Milwaukie
Johnson City
Lake Oswego
Tigard
Tualatin
King City
Sherwood
Wilsonville
Hillsboro
Cornelius
North Plains
Gaston
Sandy
Beaverton
Terwilliger
CLACKAMAS CO
MULTNOMAH CO
WASHINGTON CO
YAMHILL CO

Implementing Vision Zero

The 2018 Regional Transportation Plan update offers opportunities to eliminate traffic deaths and life changing injuries.

Traffic related deaths and severe injuries are critical and preventable public health and equity issues in the greater Portland region. Between 2011 and 2015 there were more than 116,000 traffic crashes in the region resulting in more than 300 deaths and 2,100 people severely injured.

On average, 62 people die each year on the region's roadways and 420 people experience a life changing injury. Sixty percent of these fatal and severe injury crashes occur on just 6 percent of the region's roadways. These are our high injury corridors and intersections. They are also where we tend to travel the most, where we run to catch the bus, cross the street to get to schools and shops, ride our bikes or drive.

Traffic crashes are a leading cause of death and injury in the region and are a major public health issue that is considered preventable. Traffic deaths and life changing injuries impact the lives of our families, friends, neighbors and community members. They also have a major economic cost – estimated at $1 billion a year for our region.

While the greater Portland region has one of the lowest crash rates in the country, MPAC, JPACT and the Metro Council have supported a Vision Zero framework and target for the 2018 Regional Transportation Plan because no loss of life on our roadways is acceptable.

Vision Zero – named for the multi-national traffic safety project – is a strategy to eliminate all traffic deaths and severe injuries, while increasing safe, healthy and equitable mobility for all. Vision Zero uses a safe systems approach and proposes a new way of thinking about safety.

Traditional approach	VS	Vision Zero
Traffic deaths are INEVITABLE		Traffic deaths are PREVENTABLE
PERFECT human behavior		Integrate HUMAN FAILING in approach
Prevent COLLISIONS		Prevent FATAL AND SEVERE CRASHES
INDIVIDUAL responsibility		SYSTEMS approach
Saving lives is EXPENSIVE		Saving lives is NOT EXPENSIVE

Safety projects in the 2018 Regional Transportation Plan on the region's high injury corridors and intersections will make it safer to walk, catch the bus, drive, and ride a bicycle. They will address streets with high risk characteristics and prevent crashes from happening. Programs will educate and inform people on safer behaviors and connect people with travel options that reduce driving, thereby reducing exposure to traffic crashes.

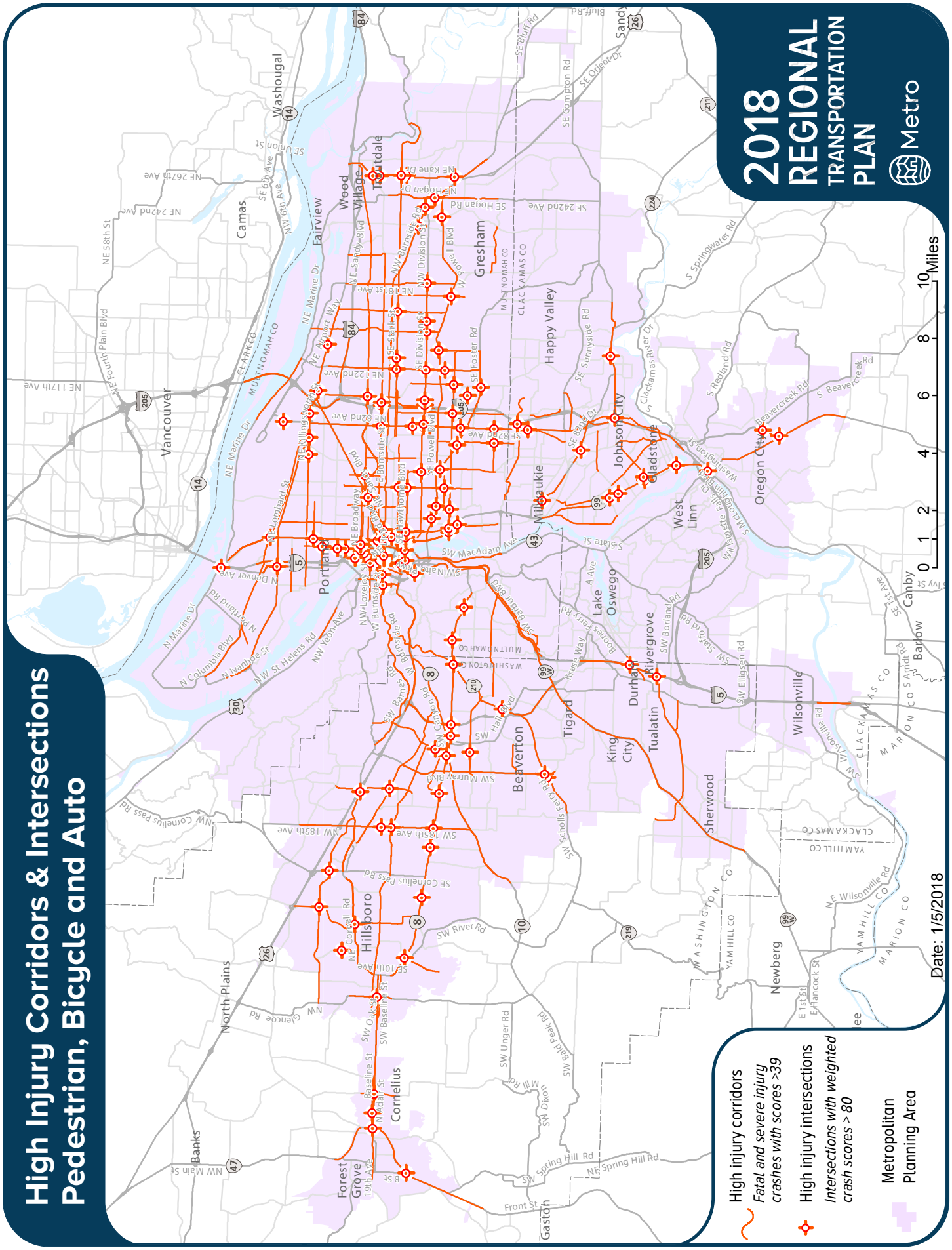
Defining terms

High injury corridors

Major travel routes with higher occurrences of fatal and severe injury crashes across all modes of travel

Did you know?

Traffic safety is an equity issue. A majority of the high injury corridors and intersections – and a majority of pedestrian deaths and severe injuries – are in areas with higher concentrations of people of color, people with low incomes and English language learners.


High Injury Corridors & Intersections
Pedestrian, Bicycle and Auto
2018 REGIONAL TRANSPORTATION PLAN
Metro
High injury corridors
Fatal and severe injury crashes with scores >39
High injury intersections
Intersections with weighted crash scores > 80
Metropolitan Planning Area
0 1 2 4 6 8 10 Miles
Date: 1/5/2018
Vancouver
Washougal
Camas
Fairview
Wood Village
Troutdale
Gresham
Happy Valley
Portland
Milwaukie
Johnson City
Gladstone
West Linn
Oregon City
Lake Oswego
Durham
Rivergrove
Tigard
Tualatin
King City
Beaverton
Sherwood
Wilsonville
Canby
Barlow
Newberg
Hillsboro
North Plains
Cornelius
Forest Grove
Banks
Gaston
Sandy

Managing congestion to improve reliability

The 2018 Regional Transportation Plan update offers opportunities for new tools to manage congestion and improve travel reliability.

Congestion has many causes, but mostly results from too much traffic for the physical capacity of a road to handle (bottlenecks) or periodic events like crashes, vehicle breakdowns, road work, storms and special events (parades, major sporting events). For drivers, this is usually described as routine congestion, which typically occurs daily, versus traffic incidents that are unexpected and difficult to predict.

Drivers can usually plan their day around routine congestion and the typical bottlenecks. Much of the throughway system (our major highways and freeways) is routinely congested during the morning and evening rush hour, and drivers know their trip will be slower during this period. But the traffic incidents and other non-routine events are difficult to plan for, and make it more difficult for drivers to plan commutes or for businesses to plan shipments.

Focusing on system reliability

For this reason, efforts to address congestion in our growing region have started to focus on improving reliability, or the degree to which congestion in a given travel corridor is affected by these non-routine events. Reliability is about predictability and dependability – and being able to count on knowing about how long it will take to get to school, work or activities. Improving reliability means that travelers don't have to budget as much extra time in order to arrive on time at their destinations, even when routine congestion exists on our major throughways.

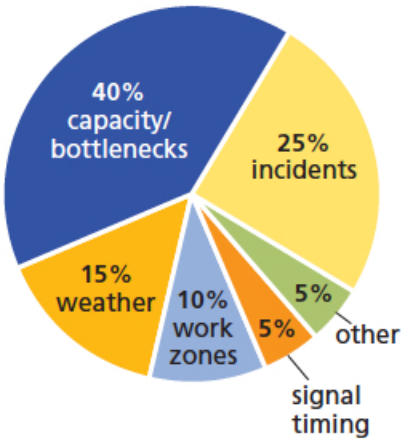
The Regional Transportation Plan calls for strategic widening of existing roads and throughways to address bottlenecks, increasing street network connectivity, expanding travel options, and using system and demand management strategies to help improve reliability and better connect goods to market and support travel across the region.

ODOT report shows growth in congestion

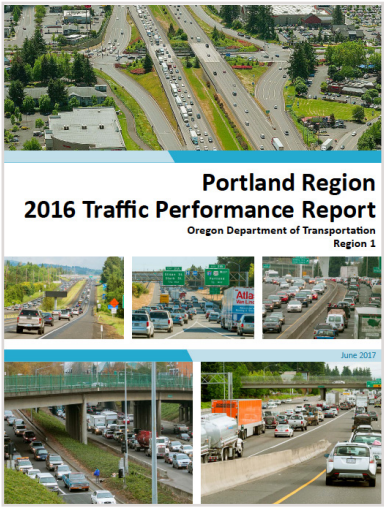
ODOT's 2016 *Traffic Performance Report* shows what many of us have experienced: traffic congestion in the greater Portland region today can occur at any time of the day or week, and is no longer only a weekday peak hour problem. In 2013, about 11 percent of all travel in the greater Portland region occurred during congested periods. This increased to nearly 14 percent in 2015. This increase in congestion is a reflection of the both the region's continued growth, including our substantial economic rebound from the Great Recession that began in 2008.

Did you know?

Causes of congestion



More than half of all congestion is caused by incidents and other sources that can be addressed using system management operational strategies.



Find the 2016 Traffic Performance Report at oregon.gov/ODOT/Regions/Documents/Region1/2016_TPR_FinalReport.pdf.

Interim regional mobility policy

Originally adopted by JPACT and the Metro Council in 2000 and amended into the Oregon Highway Plan in 2002, the interim regional mobility policy reflects a level of performance that regional policymakers and the Oregon Transportation Commission deemed tolerable at the time of its adoption, but was also recognized as an incremental step toward a more comprehensive set of measures that consider system performance, as well as financial, social equity, environmental and community impacts.

The policy allows for more congestion during the peak period in locations that have good travel options available, such as high capacity transit, while aiming to protect the off-peak period for freight mobility.

	A.M./P.M. 2-Hour Peak		
Location	Preferred	Acceptable	Exceeds
Centers and main streets	E/E	F/E	F/F
Regional Corridors	E/D	E/E	F/E
Regional Highways	E/D	E/E	F/E

After the 2018 Regional Transportation Plan update, Metro, ODOT and other regional partners will work together to update the current regional mobility policy to better align with Regional Transportation Plan outcomes, public expectations, and funding availability.

This work will be informed by the ODOT value pricing study underway and help the region develop long-term strategies to address roadway congestion, given limited transportation funding and potential social equity, environmental and community impacts.

Level of service motor vehicle traffic flow characteristics

A: Virtually free flow; completely unimpeded
B: Stable flow with slight delays; reasonably unimpeded
C: Stable flow with delays; less freedom to maneuver
D: High density but stable flow
E: Operating conditions at or near capacity; unstable flow
F: Forced flow, breakdown conditions
> F: Severely congested - demand exceeds roadway capacity, limiting volume than can be carried and forcing excess demand onto parallel routes and extending the peak period

Data from the ODOT report for the region's six major throughways (Interstate 5, Interstate 84, Interstate 205, Interstate 405, U.S. 26 and OR 217) shows increasing congestion, decreasing travel speeds, greater delays and unreliable trip times on these major travel routes. The graphic to the right identifies the top recurring bottlenecks in the region.

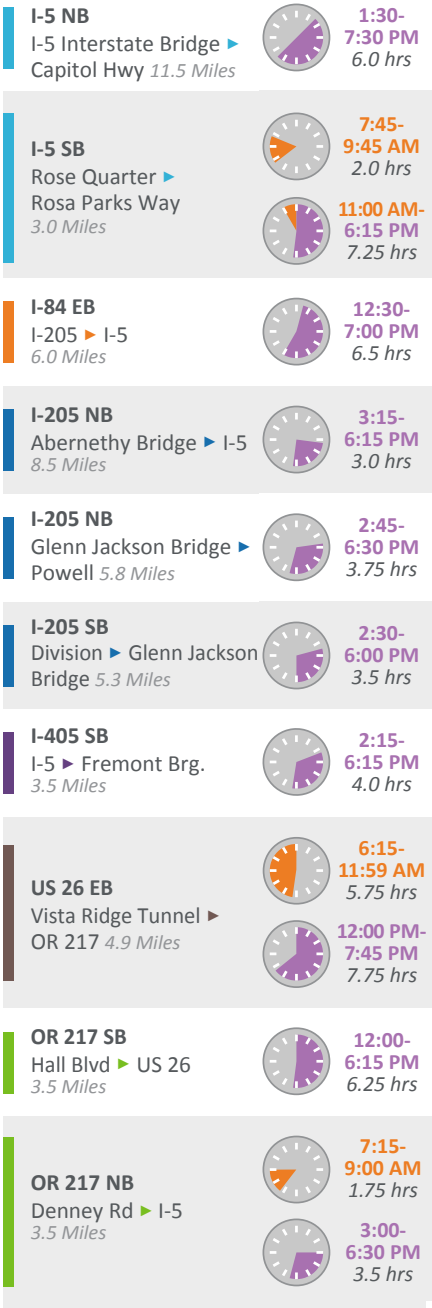
Congestion on these routes also affects freight in the region, as most of our local goods move by truck today, a trend that is expected in future. With congestion beginning to spread beyond commute periods and into the off-peak in the middle of the day, the ability to move freight during this relatively congestion-free period is being impacted. As the mid-day becomes more unreliable, freight in our region is having more problems meeting delivery schedules, and the cost of shipping is increasing. These shipping costs are typically passed on to businesses and consumers, and could impact the region's competitiveness in the global economy.

The ODOT report also found that crashes on our throughways are increasing at a rate equal to the increase in congestion, but shows that recent ODOT investments in traveler information signage and adding auxiliary lanes have slowed the rate of crashes at specific bottleneck locations. While not a long-term solution for growing congestion, an auxiliary lane adds capacity in the form of a dedicated lane from an on-ramp to the next off-ramp, helping to reduce crashes caused by drivers merging and weaving between exits.

Oregon Legislature commits to addressing congestion in the greater Portland region

In 2017, the Oregon Legislature approved HB 2017 (discussed in the next section), which provides funding for additional targeted safety and congestion projects that can help address the issues found in the ODOT report. The Legislature also directed the Oregon Transportation Commission (OTC) to develop a proposal for value pricing on I-5 and I-205 from the Columbia River to the junction of the two freeways in the southern part of the region, with the stated purpose of reducing congestion. The OTC must seek approval from the Federal Highway Administration to implement value pricing no later than December 31, 2018. If FHWA approves, the commission is required to implement value pricing. An ODOT-led study is underway to meet this deadline. More information can be found at oregon.gov/ODOT/Pages/ Value-Pricing.aspx.

Top recurring bottlenecks, 2015



Source: FHWA NPMRDS, ODOT

Paying for needed investments

The 2018 Regional Transportation Plan will help make the case for more investment and funding to build, operate and maintain the regional transportation system we need for all modes of travel.

Our nation is investing less in building and maintaining our transportation system today than at any time in our history. As federal funding for all types of transportation projects declines, the greater Portland region is falling behind in making the investments needed to support our growing population and our vision for a 21st century transportation system.

Transportation funding has long been primarily a state and federal obligation, financed largely through gas taxes and other user fees such as a vehicle registration fee. 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 largely dedicated to streets and highways – primarily maintenance and preservation – and, to a limited extent, building more roads.

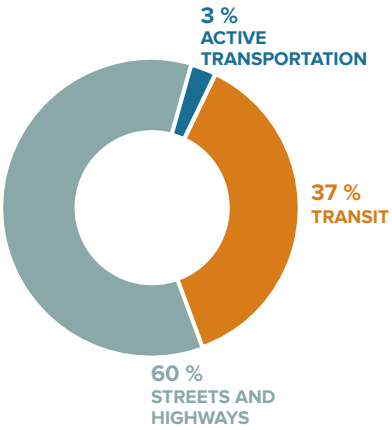
Although Oregon's HB 2001, Jobs and Transportation Act raised the state gas tax in 2011 by six cents, this revenue source had not increased since 1993. Similarly, the federal gas tax has not increased since 1993. This failure of fundraising to keep pace with infrastructure needs has been particularly acute in Oregon, as other places have responded by increasing revenues through local and regional tax measures to cope with the decrease in purchasing power of federal transportation funding. Lacking a sales tax or other tools, the greater Portland region has focused on bonding strategies based on future revenue and, therefore, has not developed a long-term strategy to fund our transportation system.

We 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. 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 local payroll tax to support it.

How state and federal dollars for transportation projects has been spent in the greater Portland region, by mode

Average annual amount of state and federal funding spent on capital investments in the greater Portland region (1995 – 2010):

- $225 million per year in streets and highway
- $141 million per year in transit
- $10 million per year in active transportation



Source: Metro 2010

At a time when there is limited local, state and federal resources to address our aging infrastructure, we have a unique opportunity to find a better way to support our communities, attract new business and grow the economy in ways that all residents and communities benefit and prosper.

HB 2017 begins to address the gap in maintenance and transit service funding for our region, but there is still a significant gap in funding for capital investments.

Because federal and state funding has not kept 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 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. Other regions have responded by increasing local investment through local and regional tax measures.

A change in the funding outlook – but more is needed

The Oregon Legislature continues to make significant commitments to investment in transportation across all of Oregon's communities. HB 2017, Keep Oregon Moving increases the gas tax and vehicle title and registration fees over a seven year period. The motor fuels tax (30 cents per gallon in 2017) increased by 4 cents in January 2018. It will also increase 2 cents in 2020, 2022 and 2024, subject to ODOT meeting accountability and reporting requirements.

The annual registration fees and title fees will be tiered based on vehicle fuel efficiency in order to ensure that more efficient vehicles that pay little gas tax contribute their fair share for use of the roads. In addition, the weight-mile tax on heavy trucks will increase to ensure that trucks pay their fair share for their wear and tear on the roads. All of these funds are constitutionally dedicated to the State Highway Fund and can only be used for roads. In addition, Keep Oregon Moving creates three new taxes.

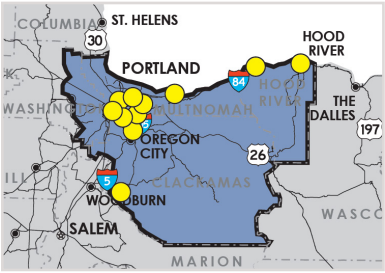
Did you know?

The Keep Oregon Moving payroll tax equates to $1 per week for the average Oregon worker and is anticipated to provide about, on average from 2018 through 2040, $71 million* per year to support tri-county service expansion.

This is a 10-year projected estimate from the Oregon Legislative Revenue Office and subject to change as HB 2017 is implemented.

Find online

A summary of projects in the region and other communities in ODOT Region 1 can be found at oregon.gov/ODOT/Get-Involved/HB2017FactSheets/HB2017_Region1ACT.pdf.



Keep Oregon Moving taxes

Tax	Amount	To fund
Vehicle dealer privilege tax on new car sales	0.5%	Rebates to encourage sales of electric vehicles, multimodal Connect Oregon program
Employee payroll tax	0.1%	Transit in rural and urban communities
New bicycles with tires over 26 inches and cost $200 or more	$15	Off-road walking and biking paths that serve commuters

Source: Oregon Department of Transportation, oregon.gov/odot/pages/hb2017.aspx

About half of the additional State Highway Fund provided by Keep Oregon Moving will go to local governments, who will receive a 50 percent increase in the amount they get from the State Highway Fund for local road and street maintenance and improvements. Keep Oregon Moving also included a new Safe Routes to School program to provide better ways for children to bike and walk safely to school; this program is funded statewide at $10 million per year initially and grows to $15 million per year and will complement Metro's Regional Safe Routes to School program.

The Legislature specified a number of projects that will be built around the state, but the majority of the funding coming to ODOT will go to fix bridges and roads, making them safer and resilient to a major earthquake. Several projects are located in the greater Portland region, including the I-5/Rose Quarter project and adding new auxiliary lanes on OR 217 and I-205 within the city of Portland.

Despite the significance of HB 2017 to Oregon and the greater Portland region, resources remain limited to build the system we need to support our growing economy, labor force and communities. Diminished resources mean reduced ability to improve, enhance and expand infrastructure for a safe, reliable, healthy and affordable system. More funding will be needed to address the region's transportation challenges and build a 21st century transportation system as envisioned in community and regional plans.

Regional Transportation Plan vision and goals

A shared vision for the region's transportation system

The vision statement represents an aspirational view of the future of the region's transportation system and reflects the values and desired outcomes expressed by the public, policymakers and community and business leaders engaged in development of the 2018 Regional Transportation Plan.

> In 2040, everyone in the Portland metropolitan region will share in a prosperous, equitable economy and exceptional quality of life sustained by a safe, reliable, healthy and affordable transportation system with travel options.
>
> Approved by the Metro Policy Advisory Committee, Joint Policy Advisory Committee on Transportation and Metro Council in May 2017.

This shared vision for the future provides direction for building a transportation system that serves all people and businesses in the greater Portland region. Our vision and supporting goals serve as a foundation for identifying our investment priorities and measuring progress toward building the transportation future we want.

Outcomes-based goals to realize our vision

In order to realize our vision for a transportation system that serves all people and businesses, we need goals to keep us focused and moving forward. The Regional Transportation Plan goals were first adopted by the Metro Council and JPACT in 2010 after significant engagement with communities, residents, businesses and stakeholders throughout the region. In 2014, the Metro Council and JPACT approved the addition of a goal to reduce greenhouse gas emissions.

The adopted outcomes-based goals guide the region's transportation planning and decision-making and include specific objectives and performance targets to help measure the progress we are making toward our vision for our transportation future.

Regional Transportation Plan goals

1. Foster vibrant communities and efficient urban form
2. Sustain economic competitiveness and prosperity
3. Expand transportation choices
4. Emphasize efficient management of the transportation system
5. Enhance safety and security
6. Promote environmental stewardship
7. Enhance public health
8. Demonstrate leadership on reducing greenhouse gas emissions
9. Ensure equity
10. Ensure fiscal stewardship
11. Deliver accountability

The greater Portland region pioneered approaches to land use and transportation planning that make the region uniquely positioned to address complex challenges at a regional scale and in ways that support community visions and other important social, economic and environmental goals. Prioritizing investments that achieve multiple goals in combination with working together to secure more funding will help get us there.

Regional transportation challenges

- Aging infrastructure
- Climate change and air quality
- Congestion and unreliable travel
- Crashes and fatalities
- Earthquake vulnerability
- Gaps in transit, biking and walking connections
- Housing and transportation affordability and displacement
- Social inequity and disparities
- Technological change

Addressing our most urgent needs through our investments

We know the transportation funding landscape is changing, and building a world-class transportation system requires steady, long-term investment. But we don't have the resources to invest at the levels needed to address all of the challenges the region faces and achieve our shared vision and goals for the transportation system.

The sidebar summarizes the challenges that have been identified from in-person and online engagement activities from 2015 to 2017, Regional Leadership Forum discussions, technical research and interviews with businesses and community leaders.

A combination of all the investment strategies under consideration is needed to address these challenges and help us make this region a great place for generations to come. Identifying the most urgent challenges for the region to focus on in the next 10 years is the first step in shaping an investment strategy to build the future we want. Our investment priorities reflect our values and – as they are refined through early 2018 – will determine how much progress we make toward our shared vision and goals over the next 10 years and through 2040. Prioritizing investments that achieve multiple goals in combination with working together to secure more funding will help get us there.

Since January 2018, the Metro Council has engaged community and business leaders and the public on the priorities they want to see in the 2018 Regional Transportation Plan. Through March 2018, policymakers will consider the results of the engagement activities and scenarios evaluation as they work together to consider potential refinements to the near- and long-term project priorities given limited funding.

Overview of the draft project list

Why the constrained project list matters

The Regional Transportation Plan comprises two main parts: the policy section and the project lists. The policy section sets the vision, goals, performance targets and guidelines for the greater Portland region's system of throughways, roads, bridges, bikeways, sidewalks, and transit and freight routes.

The project lists are priority projects from local, regional or state planning efforts that provided opportunities for public input. Last summer, Metro issued a call for projects to its regional partners to begin updating the region's transportation investment priorities. Clackamas, Multnomah and Washington counties and cities within each county recommended priority projects for their jurisdictions at county coordinating committees. ODOT, the Port of Portland, TriMet, SMART and other agencies worked with county coordinating committees and the City of Portland to recommend priority projects. The City of Portland recommended projects after reviewing priorities with its community advisory committees. These projects were provided to Metro to build the Regional Transportation Plan.

The project lists are separated into two categories:

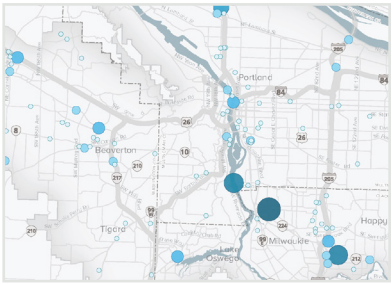
1. the projects that fit within a **constrained** budget of federal, state and local funds the greater Portland region can reasonably expect through 2040 under current funding trends
2. additional **strategic** priority investments (not constrained to the budget based on current funding trends) that could be built with additional resources.

In order to be eligible for federal or state transportation funding, a project must be included on the "constrained" list.

Refining the project list

The next pages summarize the projects in the constrained list and provide key takeaways on how these investments are expected to affect how our system of throughways, roads, bridges, bikeways, sidewalks and transit and freight routes will perform. This information is provided to assist the public and decision-makers in determining if the project priorities are making enough progress toward our desired outcomes, especially over the next 10 years, to set the greater Portland region on the right trajectory and build momentum for a transportation system that works for everyone.

Did you know?



Since the last update in 2014

Of the 1,256 projects listed in the 2014 Regional Transportation Plan, 132 have been built or will be completed by 2019 – a total of $3.15 billion invested in the region's transportation system

Defining terms

Constrained budget

The budget of federal, state and local funds the greater Portland region can reasonably expect through 2040 under current funding trends – presumes some increased funding compared to current levels

Constrained list

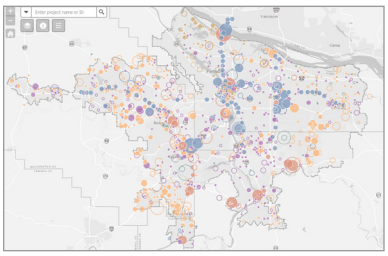
Projects that can be built by 2040 within the constrained budget

Strategic list

Additional priority projects to show what could be achieved with additional resources

Explore online

Find out about individual projects with an interactive project map at oregonmetro.gov/2018projects.



Defining terms

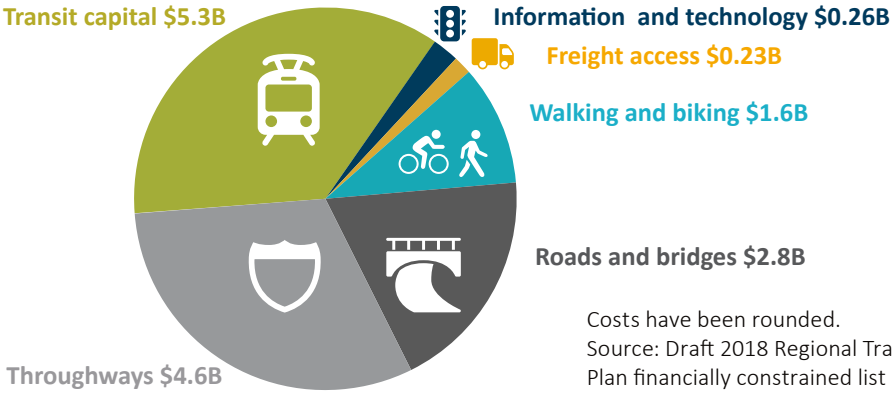
Throughways

Controlled access (on-ramps and off-ramps) freeways and major highways

In spring 2018, regional decision-makers will discuss these findings, new funding information and public input to provide direction for additional refinements to the list of project priorities. In summer 2018, the refined project lists will be available for further public review and feedback.

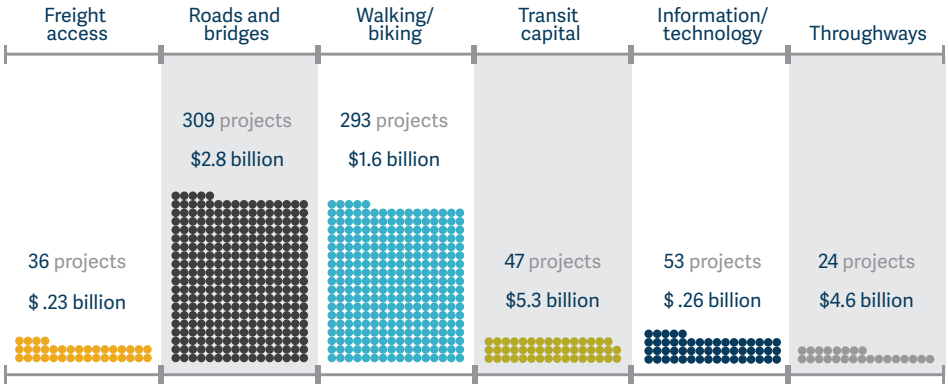
Types of projects

A complete and efficient transportation system must meet multiple needs and offer options for people and goods to get around. The draft constrained list represents a $14.8 billion investment in the region's transportation system, with over half of that going to throughways, roads and bridges. *Note: Road and transit operations and maintenance costs are not included in the project list or information presented here.*



Costs have been rounded.
Source: Draft 2018 Regional Transportation Plan financially constrained list

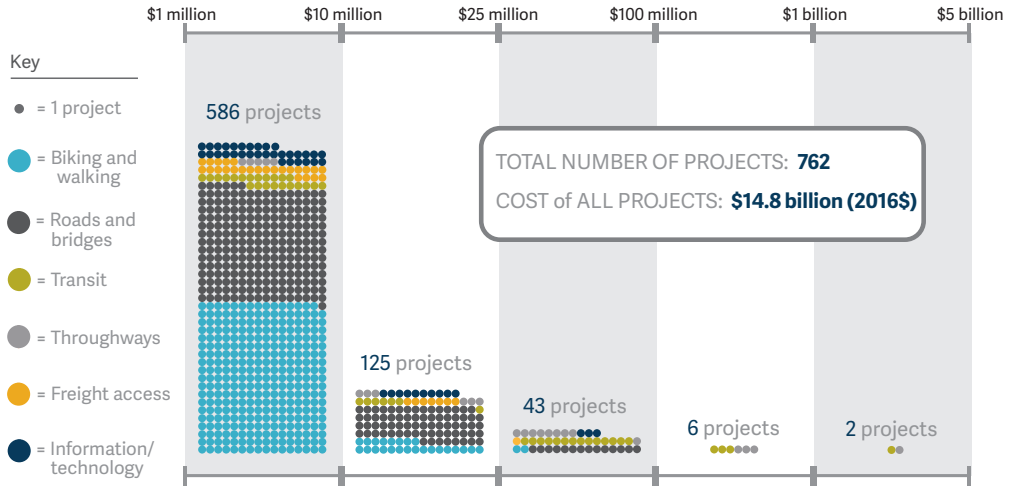
Roads, bridges, and walking and biking connections have the most projects in the draft 2018 Regional Transportation Plan constrained list, though the cost of projects vary greatly, as shown on the next page.



Costs have been rounded. Source: Draft 2018 Regional Transportation Plan financially constrained list

Types of projects by cost

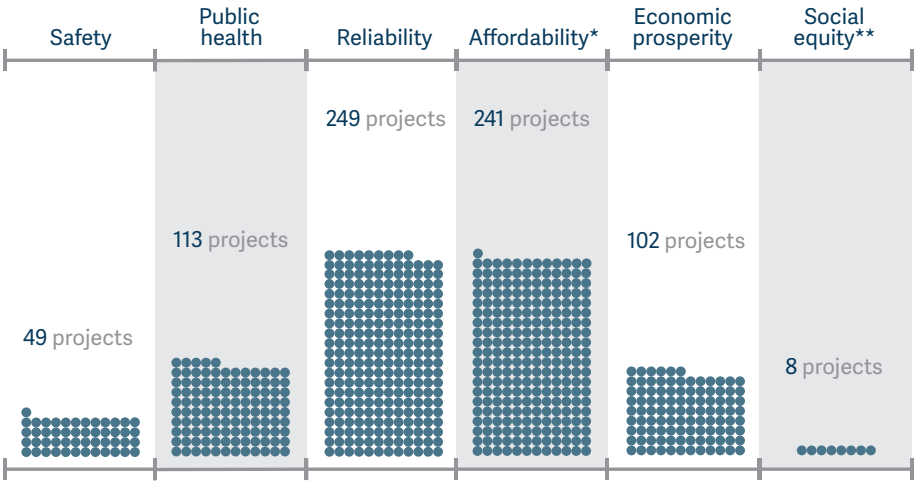
Projects in the draft 2018 Regional Transportation Plan constrained list range from $1 million to nearly $3 billion.



Source: Draft 2018 Regional Transportation Plan financially constrained list

Primary purpose of projects

The vision for the 2018 Regional Transportation Plan is that by 2040, everyone in the greater Portland region will share in a prosperous, equitable economy and exceptional quality of life sustained by a safe, reliable, healthy and affordable transportation system with travel options. Most projects will serve multiple outcomes; for discussion purposes, a high level review of the primary purpose of the projects in the draft constrained list shows what key outcomes the region can expect from building these projects.



* Affordability projects consist of projects focused on providing travel options, including improved access to transit

**Projects in other outcome categories may also help improve social equity.

Source: Draft 2018 Regional Transportation Plan financially constrained list

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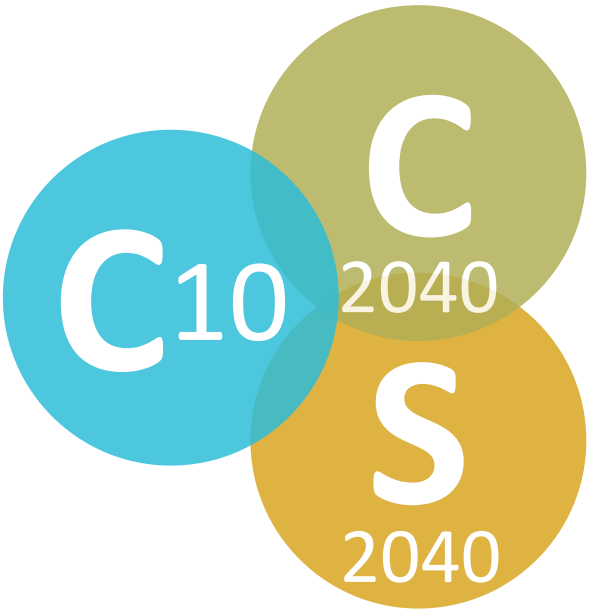
WHAT WE LEARNED



What we learned

Key takeaways on what the projects will do for our transportation system

The following information is provided to assist the public and decision-makers in determining if the project priorities are making enough progress toward our desired outcomes, especially over the next 10 years, to set the greater Portland region on the right trajectory and build momentum for a transportation system that works for everyone.

The vision for the 2018 Regional Transportation Plan is that by 2040, everyone in the greater Portland region will share in a prosperous, equitable economy and exceptional quality of life sustained by a safe, reliable, healthy and affordable transportation system with travel options.

Focusing on the main outcomes of the vision, there are four key takeaways from the analysis of the draft constrained list of projects.

- Safety is a priority in high injury corridors and communities of color.
- Congestion will not ease, but investments will improve reliability.
- Increased physical activity and reduced emissions will help people live healthier lives, but the region will fall short of its adopted greenhouse gas reduction commitment.
- Affordability will improve with better access to travel options, but not everyone will see the same level of benefit.

Social equity

Social equity in the future is very difficult to forecast and analyze due to the margin of error present in existing data and modeling tools that are used. However, given community feedback and the continued history of disparity, it is important that the region's decision-makers continue to focus on social equity. This means working to meet the needs of communities of color and other historically marginalized communities and to better understand the potential impacts and benefits of investments for these communities.

With the draft constrained list, we are making progress toward improving equity in some areas, but there is still more to do. The region will invest in historically marginalized communities at higher rates than the region as a whole for safety, access to transit and walking and biking investments. For the measures for access to jobs and community places, the results were less optimistic – historically marginalized communities experienced slightly less improvement in access to jobs and communities places when compared to the region as a whole.

This is especially challenging, considering these communities start with worse service and access, so any gap in the rate of improvement for any measure has the potential to continue to leave these communities behind.

Vision for the 2018 Regional Transportation Plan

In 2040, everyone in the greater Portland region will share in a prosperous, equitable economy and exceptional quality of life sustained by a safe, reliable, healthy and affordable transportation system with travel options.

Approved by the Metro Policy Advisory Committee, Joint Policy Advisory Committee on Transportation and Metro Council in May 2017.

Greater Portland voices

"I use a mobility scooter if there's a long distance in between places I'm traveling... I do have to drive on the streets sometimes, because the sidewalks are bad. I mean, there are places where there are no sidewalks and it leaves the necessity to ride in the road with a mobility scooter, or even with a walker." – *Annadiana, Forest Grove resident*

" The [MAX] ride from Milwaukie doesn't vary much at all. That's one of the best things about having the Orange Line. When I took the bus, the time to work was entirely dependent on the traffic" – *Adria, Milwaukie resident*

Safety is a priority in high injury corridors and communities of color

While the region is a leader in transportation safety, we still average 482 deaths and life changing injuries each year for people driving, walking and biking. **Based on the draft constrained list, the region can expect:**

- **One third of projects will directly address safety.** While all projects will be designed with safety in mind, more than 35 percent of projects in the draft constrained list identify addressing a safety issue as a primary or secondary objective. A majority of these projects are planned to be implemented in the next 10 years.
- **A majority of projects directly addressing safety will be located in historically marginalized communities and in high injury corridors.** People of color, people with low incomes and English language learners are disproportionately impacted from traffic crashes. A majority of high injury corridors and a majority of fatal and severe injury pedestrian crashes occur in these communities.
- **Most projects will be in high injury corridors.** Nearly 60 percent of all projects in the draft constrained list are located in high injury corridors. While not all of these projects are identified as safety projects, they present an opportunity to make travel safer for all modes.

Congestion will not ease, but investments will improve reliability

With 500,000 more people and 350,000 more jobs in the region by 2040, we'll see more economic activity and more people and goods traveling on the region's transportation system than today. This means more freight, more traffic and congestion, busier buses, and more people walking and biking. **Based on the draft constrained list, the region can expect:**

- **The region will not achieve the adopted regional mobility policy within current funding levels or with the mix of investments included in the analysis.** There will be a 32 percent increase in daily vehicle miles traveled. The forecasted increase in population and jobs will mean more driving in the region, despite significant increases in biking, walking and transit travel.
- **Autos, buses and freight will spend more time in traffic than today.** The projects in the draft constrained list will not eliminate or even reduce vehicle delay from today's levels, but without these major investments for driving, walking, bicycling and using transit, traffic levels will be much worse. Buses and freight trucks will experience the same congestion levels as other vehicles – unless projects that prioritize their movement are built.

- **Throughways will see the most congestion.** While only 4 percent of all roads and throughways will be congested or severely congested in 2027, 28 percent of the region's throughways will experience congestion or severe congestion during the 4-6 p.m. rush hour. This will increase to 32 percent by 2040. While many people driving during rush hour will not experience significant delay, those driving on the most congested roads and throughways could experience a considerable increase in delay. Congestion pricing – as well as other system and demand management strategies to increase efficiencies and reduce demand – will be needed to further address congestion.
- **Truck delay will increase, raising the cost of daily freight movement.** Delays for freight trucks will increase significantly by 2040, for both the peak and off-peak time periods. This could reduce the attractiveness of the region as a business location.

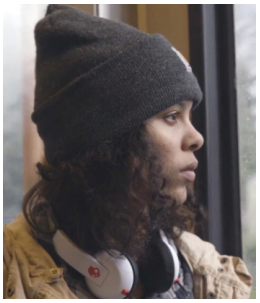
Increased physical activity and reduced emissions will help people live healthier lives, but the region will fall short of its greenhouse gas reduction commitment

Access to healthy travel options for commuting or recreation are a priority for people, and emissions from motor vehicles are becoming a larger concern – from their role in increasing asthma rates to accelerating climate change. Transportation investments can help people live healthier lives, while reducing emissions. **Based on the draft constrained list, the region can expect:**

- **People will walk, bike and use transit more.** By 2040, healthier modes of travel – walking, bicycling and using transit – will increase at a higher rate than driving. Total trips overall will increase by 35 percent. While the number of auto trips will increase by 31 percent, the number of transit trips will more than double, trips by bicycle will increase by 54 percent, and walking trips will increase by 39 percent. Increased physical activity and reduced emissions will help people live healthier lives.
- **More physical activity and less air pollution will save lives and reduce illness.** By 2040, 24 people are expected to avoid premature deaths, based on analysis conducted by the Oregon Health Authority and Multnomah County Public Health. The majority of lives saved are expected to be attributable to improved air quality. The analysis also found the reduction in chronic illness will be 24 percent greater than it would be without the constrained list of projects. More than 70 percent of the reductions in chronic illness are expected to be due to improved physical activity – and will result in people living healthier lives and provide direct and indirect health care cost savings. Strategies that reduce per capita vehicle miles traveled and increase biking, walking and use of transit on a regular basis will improve our region's health, reduce premature deaths and lower health care costs.

Greater Portland voices

"I think traffic in general [is a problem], depending on the area. My commute can be anywhere from 40 minutes to an hour and a half." – *Adam, Cornelius resident*



"My ideal transportation experience would be one where I didn't necessarily have to transfer from route to route so often, because that's where I tend to miss more buses and have to wait for longer periods of time." – *Tana, Portland resident*

Greater Portland voices

"I wish the government could do more to increase the number of buses, extending lines for the MAX, and putting in more bicycle lanes."
–Martín, Hillsboro resident

- **Employer- and community-based programs will encourage and promote physical activity.** These programs are anticipated to include the use of commuter programs, Open Streets events, individualized marketing approaches, Safe Routes to School and other types of activities aimed at providing a safe environment for people to walk and ride their bikes.
- **The region may miss opportunities to further increase walking, biking and transit use.** More than two-thirds of biking and walking projects will not be built until 2028 or later. This means many sidewalk gaps, deficient pedestrian crossings, missing trail connections, incomplete bikeways – including those that complete key connections to transit – will not be addressed for 10 years or more. In 2027, only 57 percent of arterial roadways will have completed sidewalks, and only 43 percent will have completed bikeways. This will increase to 61 and 50 percent, respectively by 2040. Other projects in the draft constrained list might be leveraged to address some additional gaps and deficiencies in the walking and biking networks.
- **The region will fall short of its greenhouse gas reduction commitment.** Transportation will contribute less air pollution and greenhouse gases, though this is mostly due to vehicle technology and fuel economy improvements. While the draft constrained list does not have enough focus on biking, walking, transit, smart technology and demand management programs, it does make progress toward implementing local plans. To meet the region's greenhouse gas reduction commitment adopted in the 2014 Climate Smart Strategy, more funding is needed.

Affordability can improve with better access to travel options, but not everyone will see the same level of benefit

From gas prices to car insurance and maintenance, parking fees, bus fares and ride service (e.g., Uber, Lyft) costs, how we get around and how far we need to go affects the cost to get there. This can be a critical challenge for people who need to live farther from jobs and community places due to rising housing costs. **Based on the draft constrained list, the region can expect:**

- **Demand for transit will grow.** The demand for bus, MAX, streetcar and commuter rail service will more than double by 2040. Increased MAX frequency, more bus and shuttle-type service, faster service and better station access will help meet the increased transit demand throughout the region.
- **More people will have access to transit.** Sixty percent of the region's households – and nearly 70 percent of low-income households – will live near 15-minute or better rush hour transit service by 2040.
- **More sidewalk connections, bikeways and trails are planned near transit stops.** This means better access to transit – and jobs, school, shopping and other destinations – overall.

Defining terms

Community places

Key local destinations such as schools, libraries, grocery stores, pharmacies, hospitals and other medical facilities, general stores, and other places which provide key services and/or daily needs

- **The investments will help us achieve regional targets for the percent of drive-alone auto trips in and to centers throughout the region.** Investments will be focused in employment, business and urban centers. This will result in better access to more affordable travel options – walking, bicycling and using transit – where there are jobs and services.
- **Not everyone will benefit equally with better access to community places.** Overall, more community places will be within a reasonable driving, transit, bicycling, and walking trip. For communities of color, a greater number of community places within a short trip will be available to these communities than the region as a whole. However, over the first 10-years, areas with a greater rate of people with low income, English language learners, older adults and young people will see slightly less benefit in reaching community places than the region as a whole.
- **More jobs will be near transit.** Jobs near 15-minute or better transit service during the rush hour will grow to 76 percent by 2040.
- **Not everyone will benefit equally with better access to jobs.** Overall, more jobs are expected to be within a reasonable driving, transit, bicycling, and walking commute in the future, but the rate of increase in jobs within that reasonable commute is slightly less for communities of color, people in poverty and English language learners. This has the potential to mean there is a disproportionate impact to, or less benefit for, these communities.
- **Partnerships will help employers provide information and incentives to expand the use of travel options.** These programs include paying some or all of transit pass or vanpool costs, providing secure bicycle parking and locker rooms for walking and bicycle commuters, and providing flexible-parking pricing options to encourage workers to use these resources.

Economic prosperity

A strong economy relies on a safe, reliable, healthy and affordable system of throughways, roads, bikeways, sidewalks and transit and freight routes to get people to work and school and get goods to market and delivered to consumers.

Analysis of the draft constrained list, shows people will drive less each day, meaning less time spent in traffic, risk of traffic crashes, greenhouse gas emissions and air pollution than would occur if these projects are not implemented. Households will save money by driving fewer miles and biking, walking and using transit more, allowing people to spend money on other priorities; this is particularly important for households of modest means. Spending less time in traffic and reduced delay on the system saves businesses money, supports job creation, and promotes the efficient movement of goods and a strong economy. Fewer emissions help people live healthier lives and will lower healthcare costs.

Greater Portland voices

"La bicicleta es más económico. Es un poco más rápida, con precaución conducirla. Y pues ahorra tiempo, dinero y – pues no quiere decir esfuerzo, pero si eh – también relaja, ósea también es saludable. Me gusta mucho andar en bicicleta porque puedo disfrutar de los paisajes que hay al mí alrededor. Disfruto ver los cambios de las estaciones del año. La primavera, el otoño, el invierno, y por supuesto, mi favorito es el verano. | Commuting by bike is inexpensive and a little faster, of course, as long as you bike safely. So it saves time and money and – I don't want to say effort – but it's also relaxing. It's also healthy. I enjoy biking so much because I get to enjoy the scenery around me. I love seeing the seasons change: spring, fall, winter, and, of course my favorite, summer." – *Francisca, Portland resident*

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Overview of evaluated RTP investment strategies

This section provides background information on the investment strategies being considered by the region's policymakers as part of updating the 2018 Regional Transportation Plan to:

- Implement adopted local and regional plans.
- Make transit frequent, convenient, accessible and affordable.
- Make roads, bridges and throughways safe, reliable and connected.
- Move freight in a safe, reliable, connected and sustainable way.
- Make biking and walking safe and convenient.
- 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.

In summer 2017, local jurisdictions and county coordinating committees worked within a constrained budget and funding targets to put forward project priorities for inclusion in the plan in collaboration with Metro, ODOT, TriMet, SMART and the Port of Portland. All projects were to have come from adopted plans or studies that provided opportunities for public input.

Metro analyzed the performance of three scenarios to help inform finalizing the plan's project priorities in spring 2018.

Three funding scenarios in the 2018 Regional Transportation Plan

C10
2018–2027

10-year constrained funding scenario

This scenario shows the results of building the highest priority projects scheduled in the first 10 years of the draft constrained list.

C 2040
2018–2040

2040 constrained funding scenario

This scenario shows the results of building the highest priority projects by 2040 within the constrained budget.

S 2040
2018–2040

2040 strategic funding scenario

This scenario shows the results of the building the projects of the constrained list plus additional strategic priority projects by 2040.

Defining terms

Constrained budget

The budget of federal, state and local funds the greater Portland region can reasonably expect through 2040 under current funding trends – presumes some increased funding compared to current levels

Constrained list

Projects that can be built by 2040 within the constrained budget

Strategic list

Additional priority projects to show what could be achieved with additional resources

The table below provides a quick reference for comparing the relative cost of investment strategies across the 10-year constrained, full constrained and strategic scenarios. For comparison and context, information is provided from the adopted Climate Smart Strategy to help decision-makers understand how much of the region's commitment will be implemented.

Estimated costs for investment strategies (2016$)

	Climate Smart Strategy 2010-2035	C10 2018–2027	C 2040 2018–2040	S 2040 2018–2040
Transit capital	$4.7 billion	$3.4 billion	$5.3 billion	$6.8 billion
Transit operations and maintenance	$8.5 billion	$4.7 billion	10.9 billion	$13.1 billion
Throughways capital	$4.1 billion	$650 million	$4.6 billion	$6.1 billion
Roads and bridges capital	$5.2 billion	$1.3 billion	$2.8 billion	$4.7 billion
Roads and throughways operations and maintenance	$12.8 billion	$6 billion	$13 billion	$13 billion
Freight access	*not evaluated*	$132 million	$227 million	$475 million
Active transportation	$2.1 billion	$675 million	$1.6 billion	$2.7 billion
Technology - system management	$219 million	$68 million	$150 million	$259 million
Information - travel options	$197 million	$65 million	$111 million	$193 million
Total estimated cost (2016$)	$59 billion	$17 billion	$39 billion	$48 billion

For purposes of analysis, the table reflects investments made within the Metropolitan Planning Area, the jurisdiction for Metro's transportation planning functions. Costs have been rounded.

These scenarios were assessed for research purposes to inform refinement decisions and do not necessarily reflect current or future policy discussions of the Metro Council, MPAC or JPACT.

Total estimated costs do not include Transit-Oriented Development Program and metropolitan planning organization planning or program.

Operations and maintenance costs are preliminary and will be further updated as plan is finalized. 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, Portland Streetcar and C-TRAN operating costs were calculated by applying each agency's FY17 annual operating costs.

The information that follows is provided to frame a regional discission about what adjustments may be needed to shape the final Regional Transportation Plan with a particular focus on the first 10 years of the plan. It is important to note that some projects in the first 10 years have committed local, state and federal funding that cannot be used for other projects.

Implement adopted local and regional plans

Since the adoption of the 2040 Growth Concept in 1995, cities and counties across the region have updated their comprehensive plans, development regulations and transportation system plans to implement the 2040 Growth Concept in locally tailored ways.

The Regional Transportation Plan provides a long-range blueprint for implementing the transportation element of the 2040 Growth Concept and presents the overarching vision, policies and goals, system concepts for all modes of travel and strategies for funding and local implementation for the region. Projects submitted to the Regional Transportation Plan are from adopted local, regional or state planning efforts that provided opportunities for public input. Cities and counties are responsible for creating transportation system plans that are periodically updated to stay consistent with the Regional Transportation Plan and reflect local transportation priorities and needs. Each city and county develops its own process for engaging the public in the development of the plans.

Most communities throughout the region have an adopted transportation system plan that serves as the transportation element of a comprehensive plan consistent with the Regional Transportation Functional Plan (RTFP). Under state law, the RTFP directs jurisdictions within the metropolitan planning area boundary as to how to implement the Regional Transportation Plan through local transportation system plans and associated land use regulations.

Updates may be focused on addressing specific issues—safety, climate change, modal considerations (e.g., bicycle and pedestrian planning)–developing an up-to-date financially constrained project list or responding to an update to the Regional Transportation Plan or RTFP.

Benefits

- compact urban form that uses land and public investments efficiently
- generates jobs and business opportunities
- protects air quality, farms, forests and natural areas
- provides a balanced transportation system to move people and goods
- supports housing for people of all income levels
- ensures safe and stable neighborhoods

Challenges

- lack of sufficient funding for investments needed to implement adopted plans
- housing affordability and displacement
- social inequities and disparities
- not all designated growth areas have developed as planned
- lack of civic amenities, such as public gathering places and parks in some centers

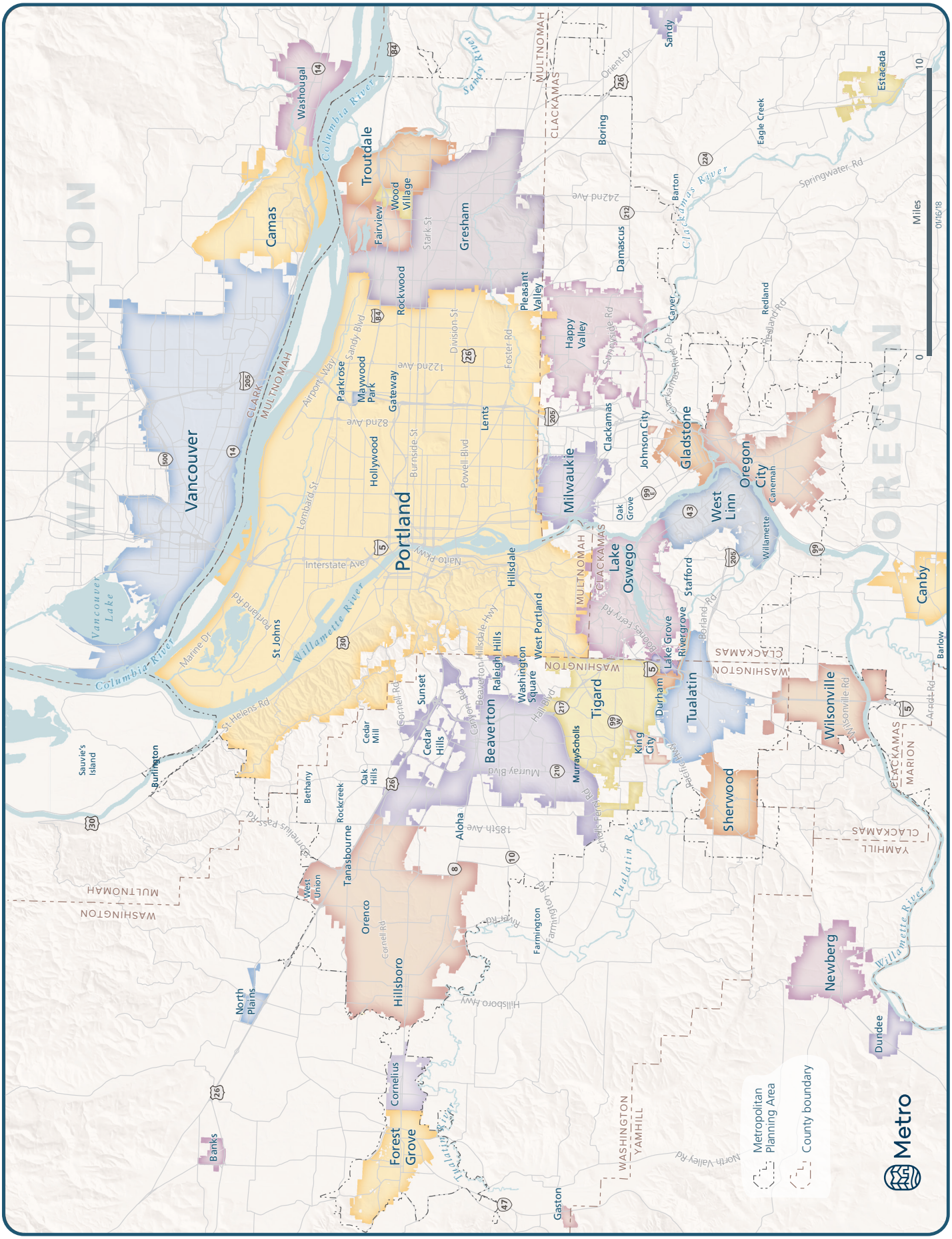
Latest transportation system plan updates

Though there is no set schedule for these plans to be updated, they are typically updated every four to seven years.

Cities with populations of less than 10,000 may qualify for a whole or partial exemption.

- Beaverton, 2010
- Clackamas County, 2013
- Cornelius, 2018 (*scheduled*)
- Durham, *exempt*
- Fairview, 2017
- Forest Grove, 2014
- Gladstone, 2017
- Gresham, 2013
- Happy Valley, 2014
- Hillsboro, 2018 (*scheduled)*
- Johnson City, *exempt*
- King City, *exempt*
- Lake Oswego, 2014
- Maywood Park, *eligible for exemption*
- Milwaukie, 2015
- Multnomah County, 2016
- Oregon City, 2013
- Portland, 2016
- Rivergrove, *exempt*
- Sherwood, 2014
- Tigard, 2010
- Troutdale, 2013
- Tualatin, 2013
- West Linn, 2016
- Wilsonville, 2013
- Washington County, 2014
- Wood Village, 2017

Jurisdictional map of the greater Portland region



Make transit frequent, convenient, accessible and affordable

There are proven approaches to making transit service more convenient, frequent, accessible and affordable. The effectiveness of each will vary depending on the mix and transit-supportiveness of nearby land uses, the number of people living and working in the area, and the extent to which biking, walking and other first- and last-mile connections, travel information, marketing and technology are provided and used.

Frequent Align frequency and type of transit service to meet existing and projected demand and transit needs and in support of local and regional land use and transportation aspirations.

Convenient Make transit more convenient and competitive with driving by improving transit speed and reliability through transit priority treatments (e.g., signal priority, bus lanes, queue jumps, etc.) and other strategies. Improve customer experience by ensuring seamless connections between various transit providers, including transfers, information and payment.

Accessible Provide safe and direct biking and walking routes and crossings that connect to stops to make transit more accessible. Improve accessibility for older adults and persons with disabilities. Expand the system to improve access to jobs and essential destinations and daily needs.

Affordable Ensure transit remains affordable, especially for those dependent on it.

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
- 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 or less financially feasible to serve with transit

How much transit will be provided?

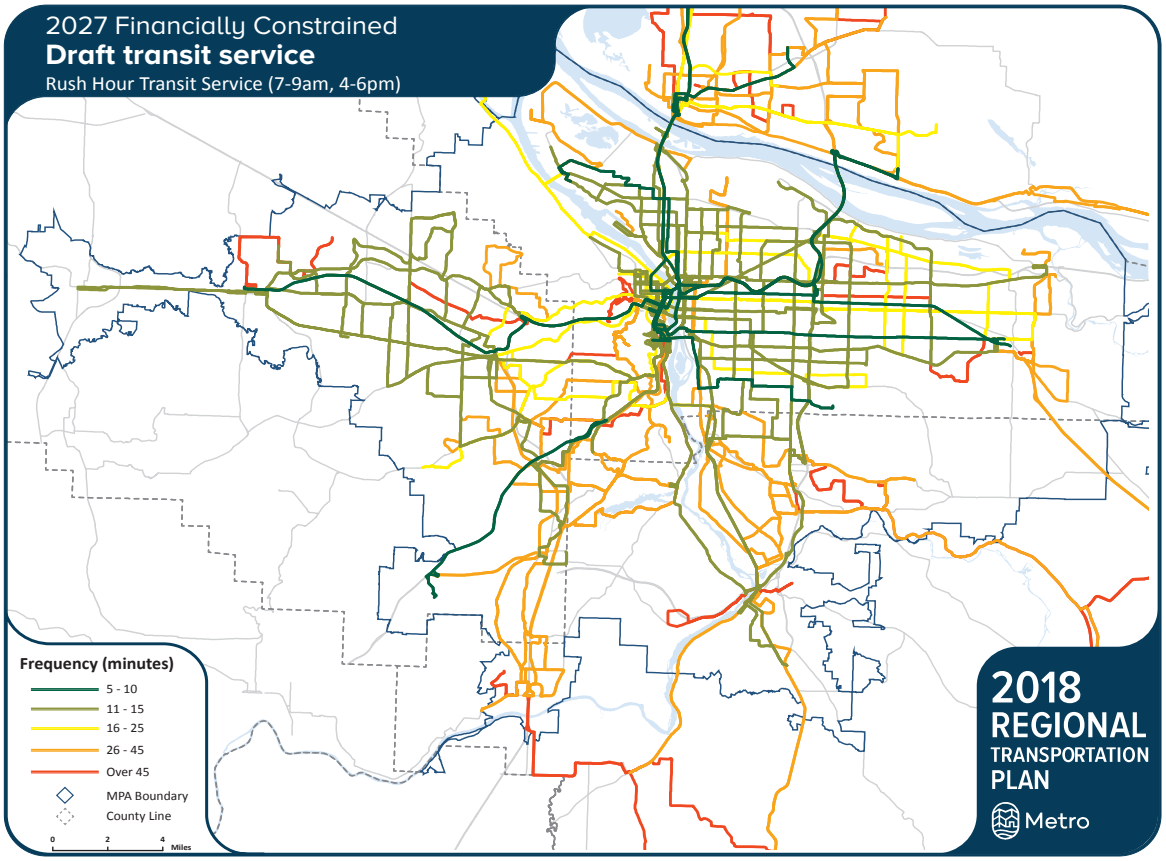
Transit at a glance

	Climate Smart Strategy 2010-2035	C10 2018–2027	C 2040 2018–2040	S 2040 2018–2040
Daily revenue hours	9,400	8,600	8,700	10,300
Service expansion	44% increase from 2015	31% increase from 2015	33% increase from 2015	58% increase from 2015
Rush hour frequency	32 routes with 10-minute service 75 routes with 15-minute service	9 routes with 10-minute service 50 routes with 15-minute service	16 routes with 10-minute service 51 routes with 15-minute service	30 routes with 10-minute service 60 routes with 15-minute service
Daytime and evening (off-peak) frequency	12 routes with 10-minute service 43 routes with 15-minute service	1 route with 10-minute service 31 routes with 15-minute service	2 routes with 10-minute service 32 routes with 15-minute service	20 routes with 10-minute service 39 routes with 15-minute service
New high capacity transit connections	MAX extension to Vancouver, Wash., WES operates all day with 15-minute service and bus rapid transit in five corridors: Southwest Corridor, Division Street, I-205 South, Tualatin Valley Highway to Forest Grove, and McLoughlin Boulevard to Oregon City	3 high capacity transit projects, including Division Transit, Southwest Corridor and the Red Line extension	2 additional (from C10) high capacity transit projects: connecting Portland to Vancouver, Wash. improvements on the Steel Bridge	5 additional (from C2040) high capacity transit projects, including WES all day service, connections along Sunset Highway and to Oregon CIty and Forest Grove, improving bottlenecks downtown Portland
Other service enhancements	4 new streetcar connections, further implementation of locally-developed SMART and TriMet service enhancement plans	5 enhanced transit projects Streetcar extension to Montgomery Park	11 additional (from C10) enhanced transit projects Streetcar extension to Hollywood	5 additional (from C2040) enhanced transit projects 3 streetcar projects: Amber Glen, extension on MLK Boulevard, to Johns Landing
Public and private shuttles	More major employers and some community-based organizations work with TriMet to operate shuttles	*To be determined as part of finalizing the Regional Transit Strategy*		
Fares	Reduced fares provided to youth, older adults, people with disabilities and low-income families	Reduced fares provided to youth, older adults, people with disabilities and low-income families	Reduced fares provided to youth, older adults, people with disabilities and low-income families	Reduced fares provided to youth, older adults, people with disabilities and low-income families
Estimated capital cost* (2016$)	$5.1 billion	$3.4 billion	$5.3 billion	$6.8 billion
Estimated service operating costs** (2016$)	$9.5 billion	$4.7 billion	$10.9 billion	$13.1 billion

For purposes of analysis, the table reflects investments made within the Metropolitan Planning Area, the jurisdiction for Metro's transportation planning functions. Climate Smart Strategy information provided for comparison and context. Costs have been rounded.

*Capital costs reflect high capacity transit and other service related capital costs, including fleet replacement and expansion.

**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, Portland Streetcar and C-TRAN operating costs were calculated by applying each agency's FY17 annual operating costs.



SCENARIO

C10

2018–2027

10-year constrained

Results of projects scheduled in the first 10 years of the draft constrained list

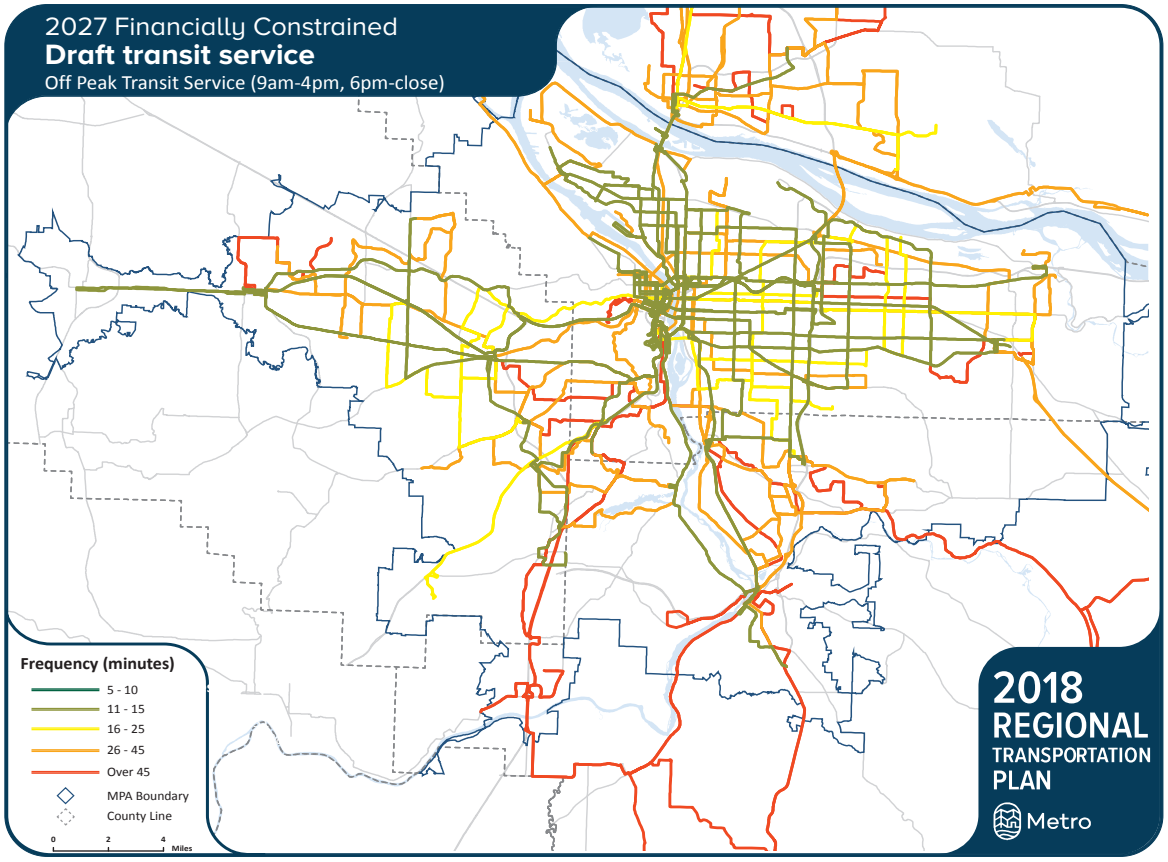
Estimated jobs and households near 15-minute or better rush hour service by 2027:

73% jobs

60% households

69% low-income households

78% low-income households in communities of color



Estimated jobs and households near 15-minute or better daytime and evening service by 2027:

66% jobs

51% households

60% low-income households

69% low-income households in communities of color

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

SCENARIO

C

2040

2018–2040

2040 constrained

Results of projects in the full draft constrained list

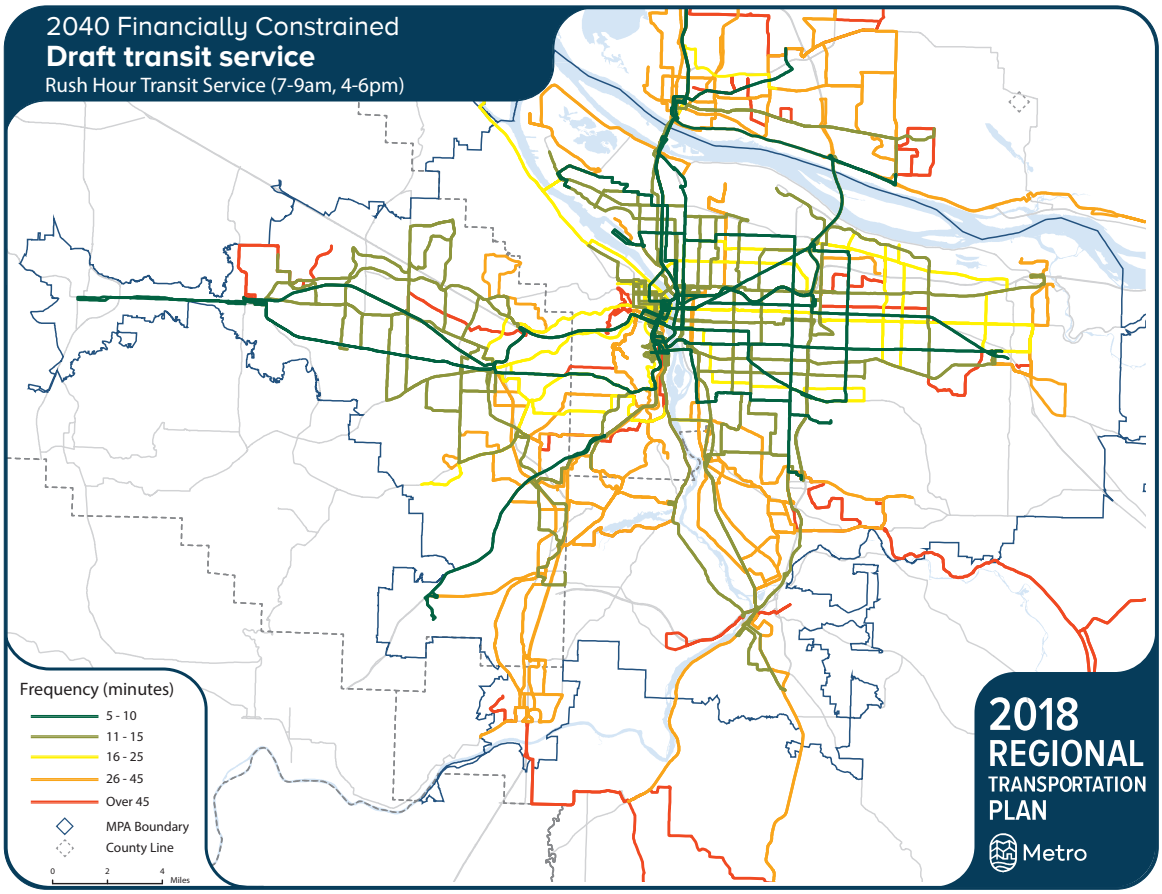
Estimated jobs and households near 15-minute or better rush hour service by 2040:

72% jobs

60% households

69% low-income households

78% low-income households in communities of color



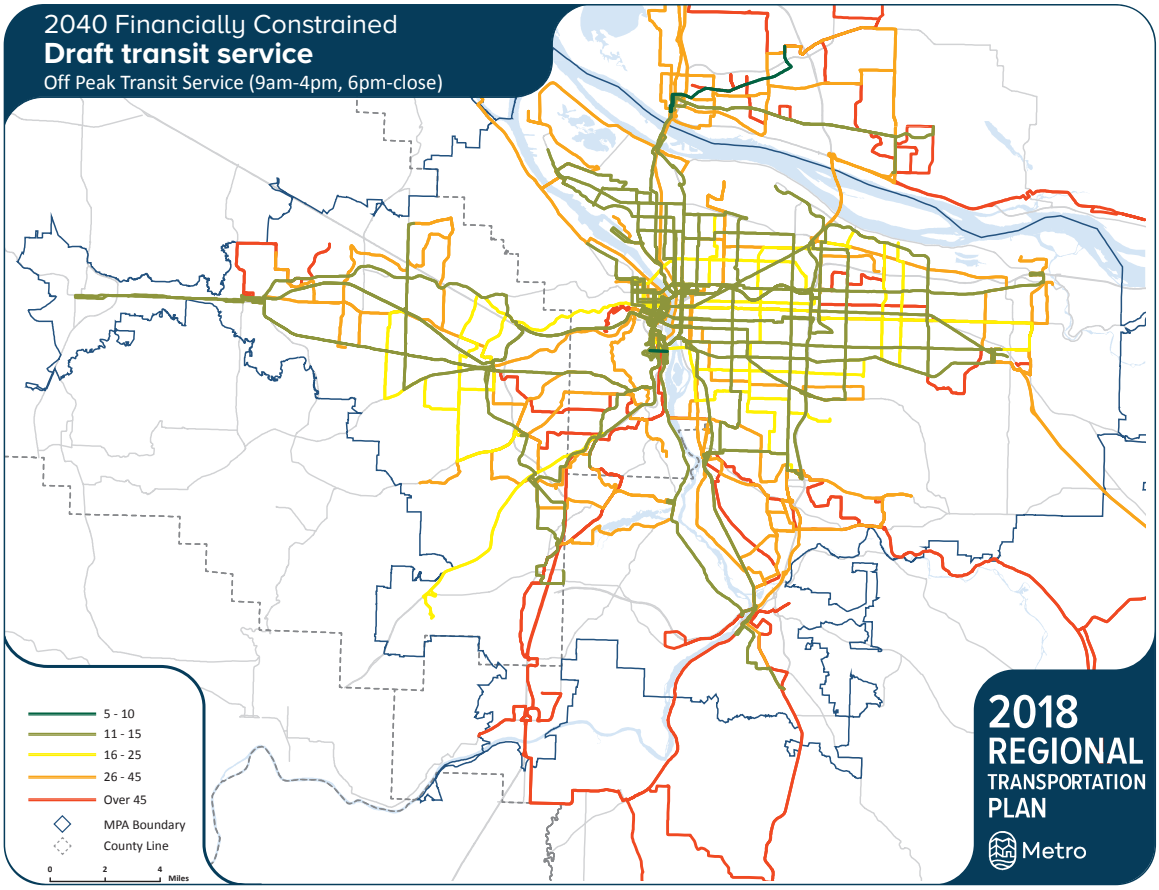
Estimated jobs and households near 15-minute or better daytime and evening service by 2040:

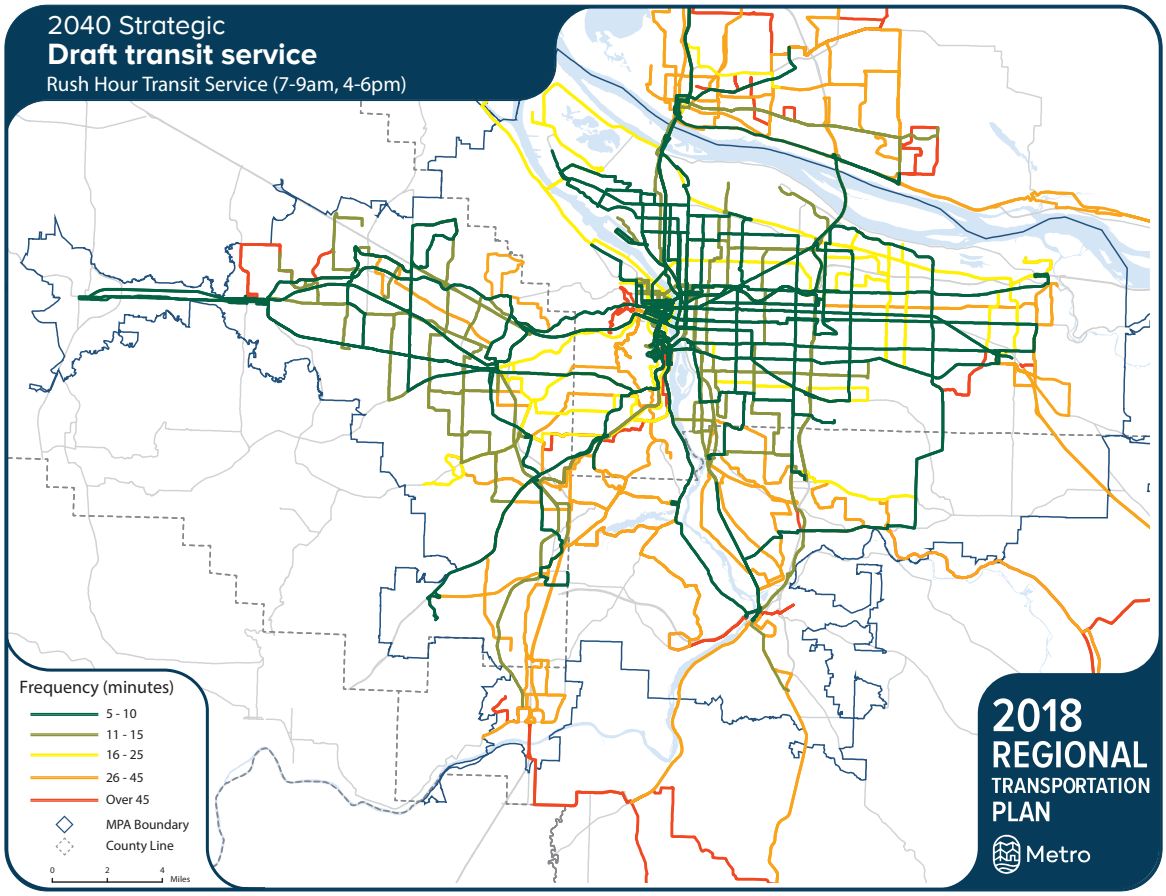
65% jobs

52% households

61% low-income households

70% low-income households in communities of color





SCENARIO

S
2040

2018–2040

2040 strategic

Results of projects in the full draft constrained list and additional strategic priority investments

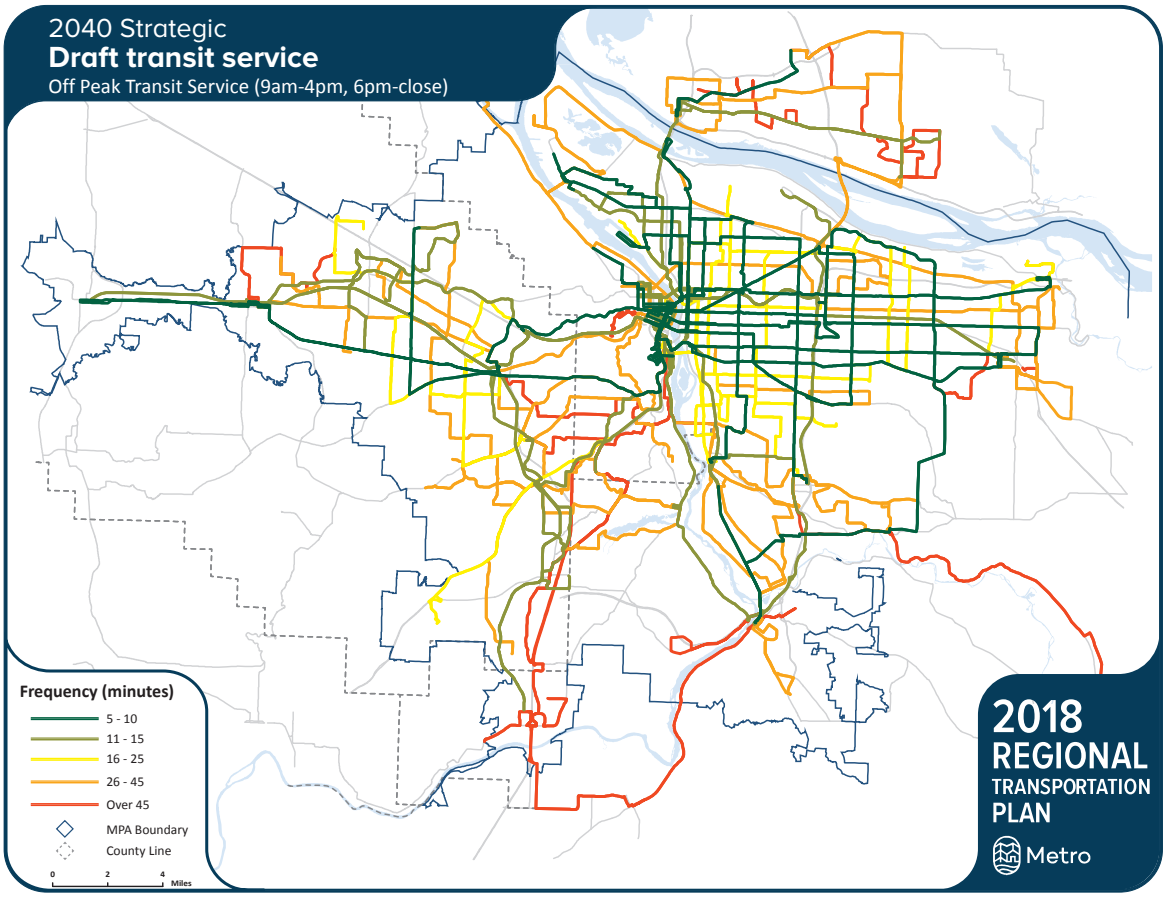
Estimated jobs and households near 15-minute or better rush hour service by 2040:

76% jobs

65% households

73% low-income households

82% low-income households in communities of color



Estimated jobs and households near 15-minute or better daytime and evening service by 2040:

69% jobs

56% households

65% low-income households

73% low-income households in communities of color

Transit access at a glance

Household access to transit: share of total households near* transit

	Climate Smart Strategy 2010-2035		C10 2018–2027		C 2040 2018–2040		S 2040 2018–2040	
Service frequency	Rush hour	Daytime & evening	Rush hour	Daytime & evening	Rush hour	Daytime & evening	Rush hour	Daytime & evening
every 10 minutes	31%	10%	25%	0%	36%	1%	55%	41%
11-15 minute service	18%	27%	35%	51%	24%	51%	10%	15%
16-25 minute service	9%	6%	5%	8%	5%	8%	4%	7%
more than 25 minutes	16%	27%	12%	15%	11%	14%	9%	14%
no fixed-route service	26%	30%	23%	25%	24%	26%	22%	23%

*1/4-mile proximity to bus, 1/3 mile proximity to streetcar, 1/2-mile proximity to light rail

Low-income household access to transit: share of total low-income households** near transit

	Climate Smart Strategy 2010-2035		C10 2018–2027		C 2040 2018–2040		S 2040 2018–2040	
Service frequency	Rush hour	Daytime & evening	Rush hour	Daytime & evening	Rush hour	Daytime & evening	Rush hour	Daytime & evening
every 10 minutes	39%	14%	31%	0%	44%	0%	63%	50%
11-15 minute service	23%	35%	38%	60%	25%	61%	10%	15%
16-25 minute service	7%	6%	5%	8%	5%	8%	4%	7%
more than 25 minutes	14%	25%	10%	12%	9%	12%	7%	12%
no fixed-route service	17%	20%	17%	18%	17%	19%	15%	16%

**annual income of $24,999 per year or less

Low-income household in communities of color access to transit: share of total low-income households in communities of color near transit

	Climate Smart Strategy 2010-2035		C10 2018–2027		C 2040 2018–2040		S 2040 2018–2040	
Service frequency	Rush hour	Daytime & evening	Rush hour	Daytime & evening	Rush hour	Daytime & evening	Rush hour	Daytime & evening
every 10 minutes	*not evaluated*		35%	0%	51%	0%	72%	56%
11-15 minute service	*not evaluated*		43%	69%	27%	70%	10%	17%
16-25 minute service	*not evaluated*		5%	10%	5%	9%	5%	7%
more than 25 minutes	*not evaluated*		4%	8%	4%	7%	2%	7%
no fixed-route service	*not evaluated*		13%	14%	13%	14%	11%	12%

Jobs access to transit: share of jobs near transit

	Climate Smart Strategy 2010-2035		C10 2018–2027		C 2040 2018–2040		S 2040 2018–2040	
Service frequency	Rush hour	Daytime & evening	Rush hour	Daytime & evening	Rush hour	Daytime & evening	Rush hour	Daytime & evening
every 10 minutes	31%	21%	36%	2%	44%	2%	64%	48%
11-15 minute service	24%	31%	37%	64%	28%	63%	12%	21%
16-25 minute service	10%	4%	4%	5%	4%	5%	5%	5%
more than 25 minutes	20%	25%	11%	16%	11%	16%	9%	13%
no fixed-route service	15%	19%	12%	13%	13%	15%	11%	12%

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Make roads, bridges and throughways safe, reliable and connected

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, based on the 2011 Oregon Household Activity Survey. 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 safe, reliable and connected for people walking, driving biking and taking transit.

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, also, summary on using technology to actively manage the transportation system.)

Street connectivity and complete streets Building a well-connected network of complete streets including new local and major street connections shortens trips, improves overall network efficiency, 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. However, targeted widening of roads and throughways, along with connectivity and system and demand management strategies, can help 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

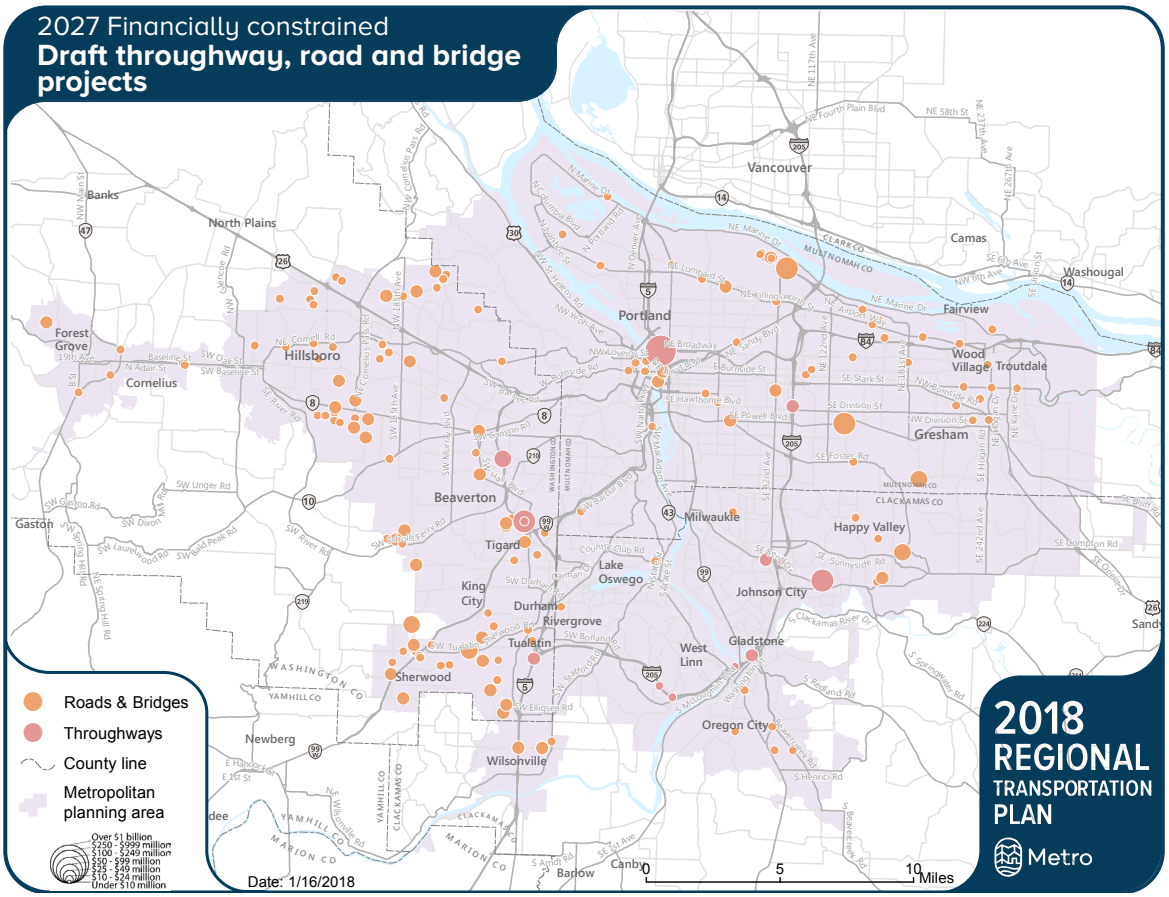
- declining purchasing power of existing funding sources, growing maintenance backlog and rising construction costs
- may induce more traffic
- potential community impacts, such as displacement and noise
- concentration of air pollutants and air toxics in major travel corridors

How much of the planned roads, bridges and throughway network will be completed?

Roads and throughways at a glance

	Climate Smart Strategy 2010-2035	C10 2018–2027	C 2040 2018–2040	S 2040 2018–2040
Arterial roadway capacity	386 new lane miles	136 new lane miles	262 new lane miles	362 new lane miles
Share of arterial roads congested/severely congested, 4-6 PM	*not evaluated*	2.4%	3.5%	3.2%
Throughway capacity – includes auxiliary lanes	52 new lane miles	13 new lane miles	49 new lane miles	54 new lane miles
Share of throughways congested/severely congested, 4-6 PM	*not evaluated*	28%	32%	32%
Roads, bridges and throughway maintenance	Adequately meet maintenance and preservation needs	Some maintenance backlogs grow	Adequately meet maintenance and preservation needs	Adequately meet maintenance and preservation needs
Vehicle hours of delay, 4-6 PM and 12-1 PM	*not evaluated*	9,800 730	12,360 1,000	11,720 930
Daily vehicle miles traveled per person	*not evaluated*	12.5	12.3	12.2
Daily transportation greenhouse gas emissions (% change from 2015)	*not comparable*	–12%	–18%	–19%
Daily primary exhaust PM2.5 emissions (% change from 2015)	*not comparable*	–68%	–82%	–82%
Equity: Access to jobs by driving	*not evaluated*	Increase in the number of jobs accessed regionwide, but lower rate of increase in historically marginalized communities	Increase in the number of jobs accessed regionwide, but lower rate of increase in historically marginalized communities	Increase in the number of jobs accessed regionwide, but lower rate of increase in historically marginalized communities
Roads and bridges estimated cost (2016$)	$5.2 billion	$1.3 billion	$2.8 billion	$4.7 billion
Estimated cost of biking and walking investments included in road and bridge projects ($2016)	*not evaluated*	$94 million	$108 million	$338 million
Throughways estimated cost ($2016)	$4.1 billion	$650 million	$4.6 billion	$6.1 billion

For purposes of analysis, the table reflects investments made within the Metropolitan Planning Area, the jurisdiction for Metro's transportation planning functions. Climate Smart Strategy information provided for comparison and context. Costs have been rounded.



SCENARIO

C10

2018–2027

10-year constrained

Results of projects scheduled in the first 10 years of the draft constrained list

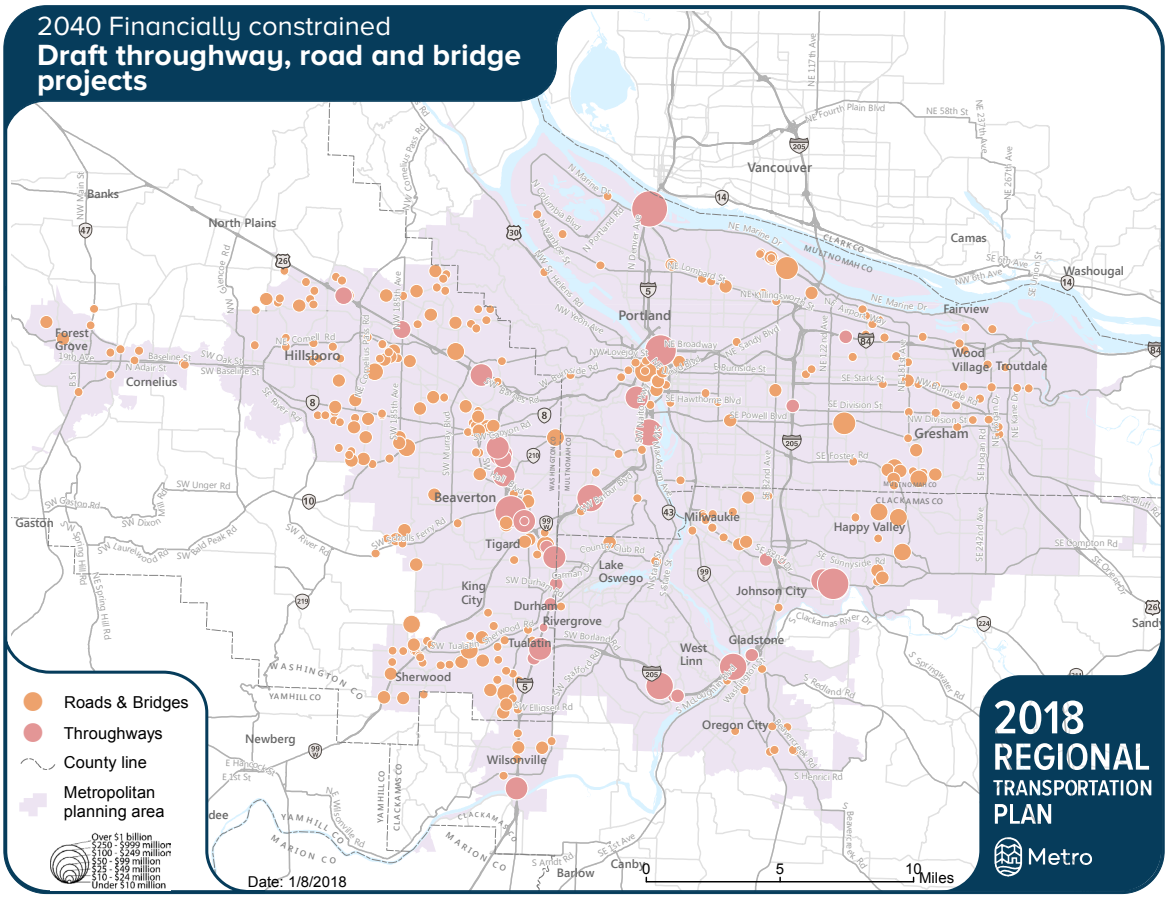
149

New road and throughway miles added by 2027

New major throughway capacity:

I-5 Rose Quarter

OR 217 and I-205 auxiliary lanes



SCENARIO

C 2040

2018–2040

2040 constrained

Results of projects in the full draft constrained list

311

New road and throughway miles added by 2040

New major throughway capacity:

I-5 Columbia River crossing

Abernethy Bridge and I-205 widening

I-5 auxiliary lanes

SCENARIO

S
2040

2018–2040

2040 strategic

Results of projects in the full draft constrained list and additional strategic priority investments

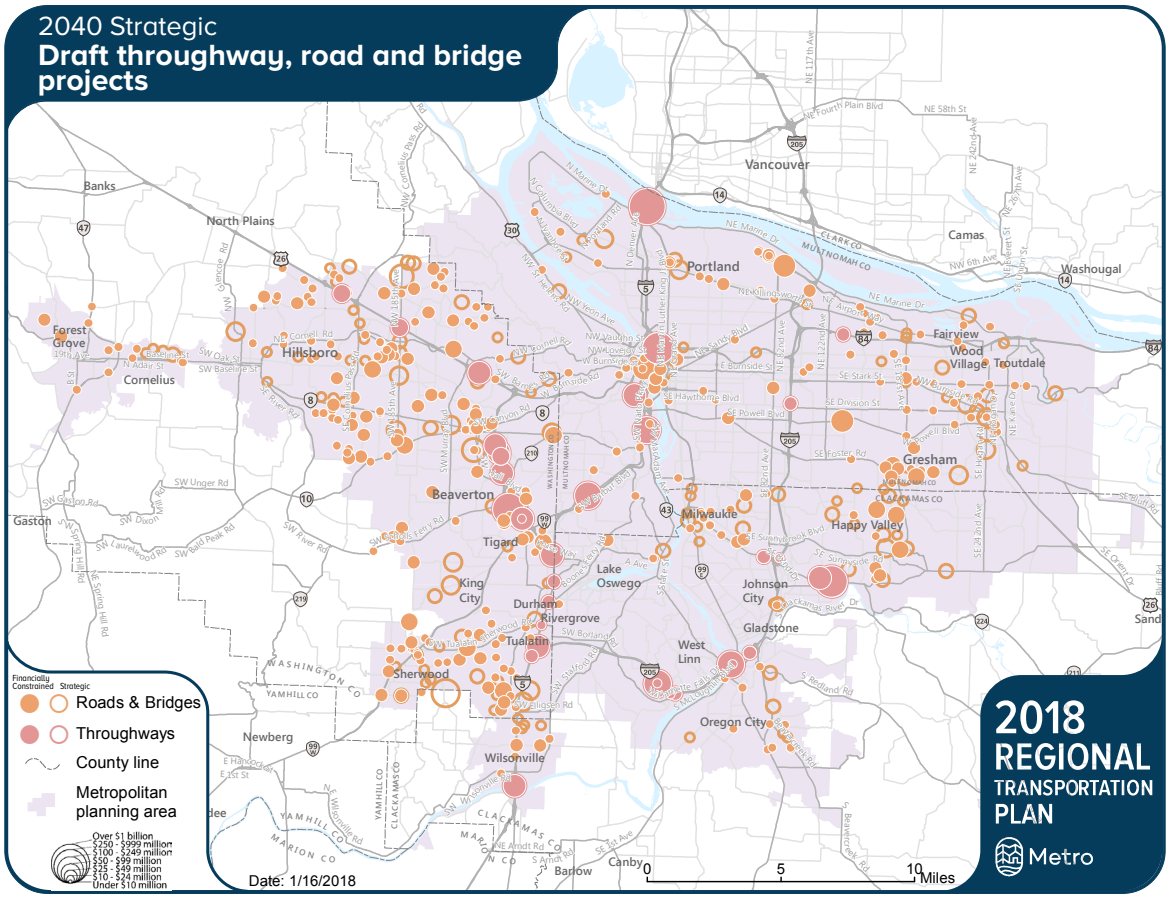
416

New road and throughway miles added by 2040

New major throughway capacity:

OR 217 widening

Sunrise Project, phase 3



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

Move goods in safe, reliable, connected and sustainable ways

The greater Portland region is the trade and transportation gateway for Oregon and provides market access for many southwest Washington businesses. Our prosperity is directly tied to the investments we make in our transportation system, including the region's freight infrastructure. These investments make consumer goods readily available to us; provide air, ship, rail and road systems that help our businesses efficiently reach global and domestic marketplaces; and create family-wage jobs across the region.

Freight reliability and safety Facilitate the safe, reliable and efficient movement of goods by better utilizing existing road and freight rail infrastructure and capacity, separating freight traffic from other modes to increase safety and minimize conflicts, and strategically investing in the regional freight network to eliminate road and rail bottlenecks that create serious freight congestion.

Freight network connectivity Provide shippers with the ability to transfer freight seamlessly between different modes of transportation, as well as efficient access to local freight clusters and delivery points and regional, domestic and global markets.

Intermodal freight facilities and connectors Invest in intermodal facilities and freight intermodal connectors (e.g., reload facilities, marine ports, rail yards, freight access roads, etc.) that reduce highway demand for freight.

Smart technology Make use of intelligent transportation systems and emerging technologies to improve traffic flow along goods movement corridors.

Benefits

- saves consumers and businesses time and money
- more competitive shipping rates for our local businesses
- facilitates retention or expansion of existing industrial businesses
- attracts new businesses to the region
- increases productivity and goods movement

Challenges

- population growth contributes to congestion and unreliable shipping travel times
- growing congestion, capacity constraints and barriers on road and freight rail networks cause delays that impede the region's ability to compete domestically and globally
- at-grade railroad crossings cause traffic impacts on roadways
- increasing air freight demand with limited access to the air freight facilities
- limited depth of Willamette River Channel

How much delay will freight experience face? How much of the planned freight network will be completed?

Freight at a glance

	Climate Smart Strategy 2010-2035	C10 2018–2027	C 2040 2018–2040	S 2040 2018–2040
Daily total truck trips (% change from 2015)	*not evaluated*	35,670 (+35%)	45,650 (+73%)	45,650 (+73%)
Freight network lane miles	*not evaluated*	1,892	1,955	1,979
Truck hours, 4-6 PM	*not evaluated*	1,659	2,254	2,239
Truck hours, 1-3 PM	*not evaluated*	2,410	3,320	3,280
Truck vehicle hours of delay, 4-6 PM (% change from 2015)	*not evaluated*	361 (120%)	454 (180%)	439 (170%)
Truck vehicle hours of delay on freight network, 4-6 PM (% change from 2015)	*not evaluated*	336 (120 %)	417 (180%)	401 (170%)
Truck vehicle hours of delay, 1-3 PM	*not evaluated*	231	321	282
Truck vehicle hours of delay on freight network, 1-3 PM (% change from 2015)	*not evaluated*	184 (250%)	275 (420%)	241 (360%)
Estimated cost 'throughways' investments (2016$)	*not evaluated*	$650 million	$4.6 billion	$6.1 billion
Estimated cost 'freight' investment category (2016$)	*not evaluated*	$140 million	$230 million	$480 million
Estimated cost 'roads and bridges' investments primarily to benefit freight movement (2016$)	*not evaluated*	$440 million	$910 million	$ 1.6 billion
Estimated total cost of all projects benefiting freight (2016$)	*not evaluated*	$1.20 billion	$5.7 billion	$8.1 billion

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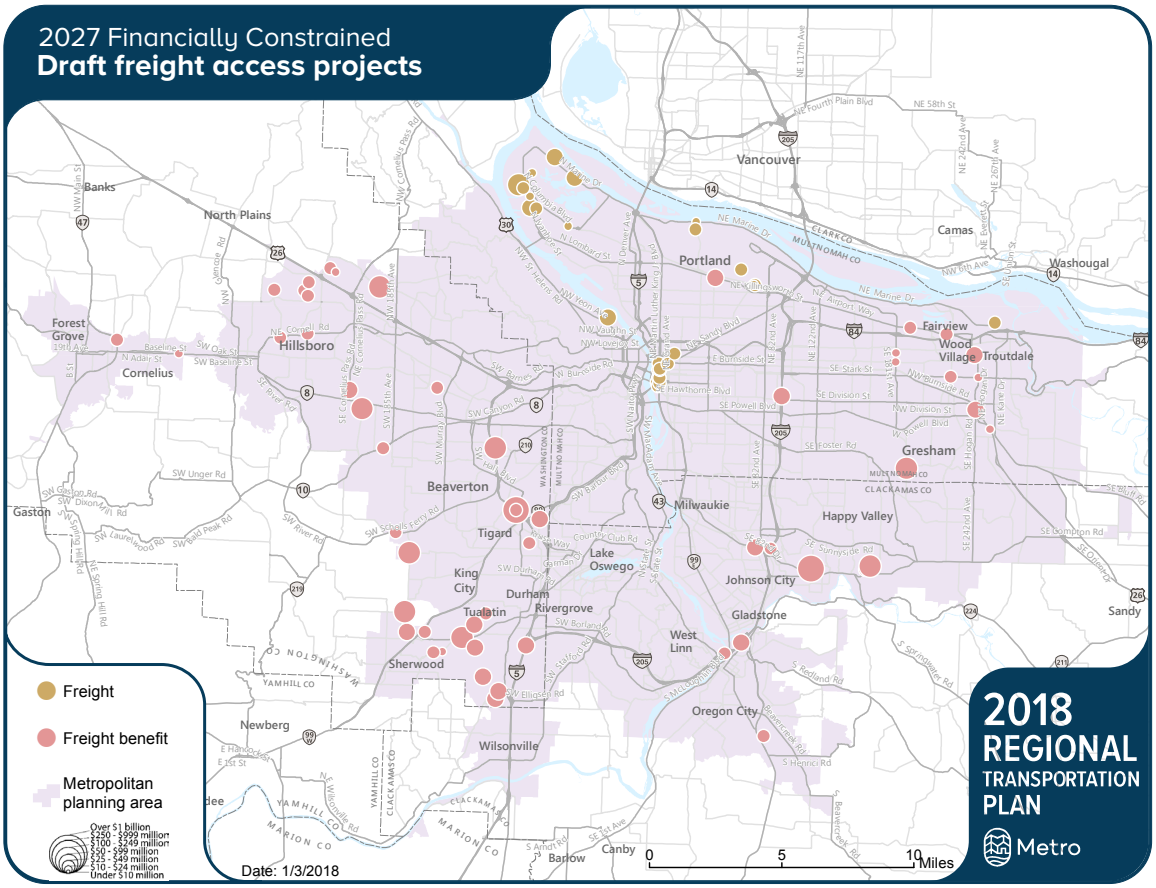


SCENARIO

C10

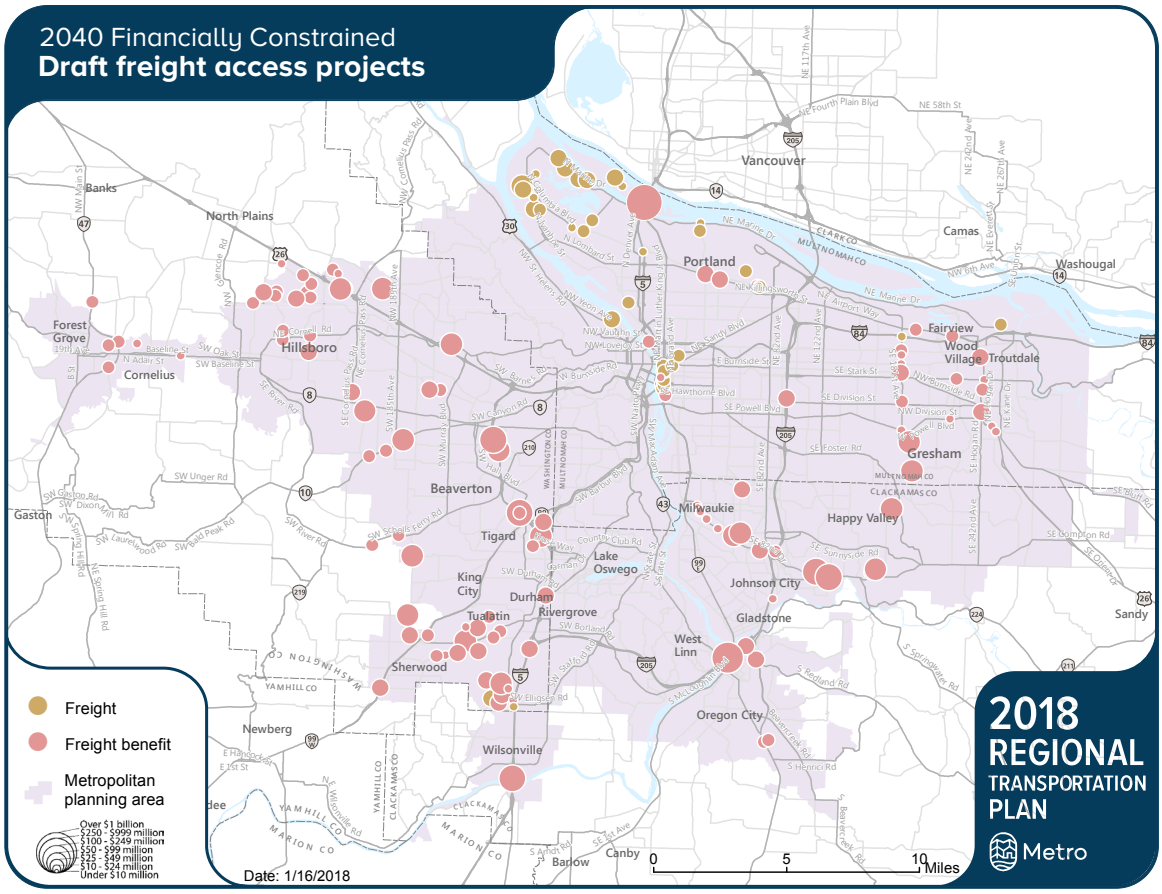
2018–2027

10-year constrained

Results of projects scheduled in the first 10 years of the draft constrained list

184

Truck hours of delay on freight network from 1-3 PM by 2027



SCENARIO

C 2040

2018–2040

2040 constrained

Results of projects in the full draft constrained list

275

Truck hours of delay on freight network from 1-3 PM by 2040

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

SCENARIO

S 2040

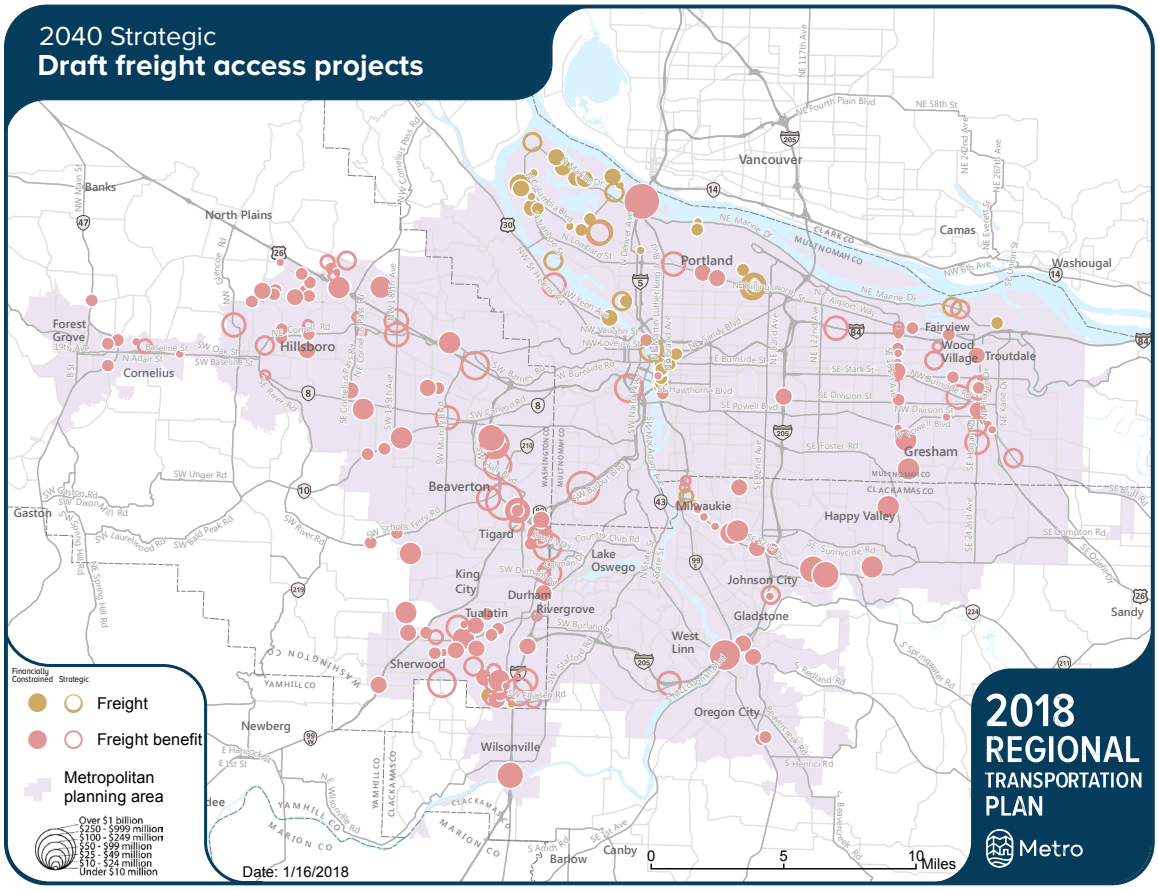
2018–2040

2040 strategic

Results of projects in the full draft constrained list and additional strategic priority investments

241

Truck hours of delay on freight network from 1-3 PM by 2040



Make biking and walking safe and convenient

Making it safe and convenient to walk, ride a bicycle and get to public transit benefits people and the environment in multiple ways. Active transportation is good for business, for household pocket books, for cleaner air and water, for public health and safer streets.

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, according to the 2011 Oregon Household Activity Survey. With complete walking and biking routes supported by education and incentives, many of the short trips made by car today could be replaced by walking and biking. There are four key ways to make biking and walking safe and convenient for people of all ages and abilities in our region.

Fill the gaps Completing missing sidewalks, pedestrian crossings, bikeways and multi-use paths creates complete streets and better connectivity, removes barriers; adds routes across highways, railroads and waterways; makes high injury locations safer; and shortens trip distances and travel time.

Design for safety Designing bikeways and walking routes with greater separation and buffers from traffic increase safety and reduce the risk of traffic deaths. Making it safer for people walking and biking makes travel safer for all modes.

Meet the demand Upgrading high demand bikeways and walking routes and prioritizing active travel in high demand areas provides reliable travel options in congested corridors, reduces the need to drive and increases livability.

Safe Routes to School Providing programs and safe walking and biking routes to schools is proven to reduce driving trips and create healthy options for kids.

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/injuries
- low cost
- provides options for those who cannot drive

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
- dedicated funding is limited and in decline

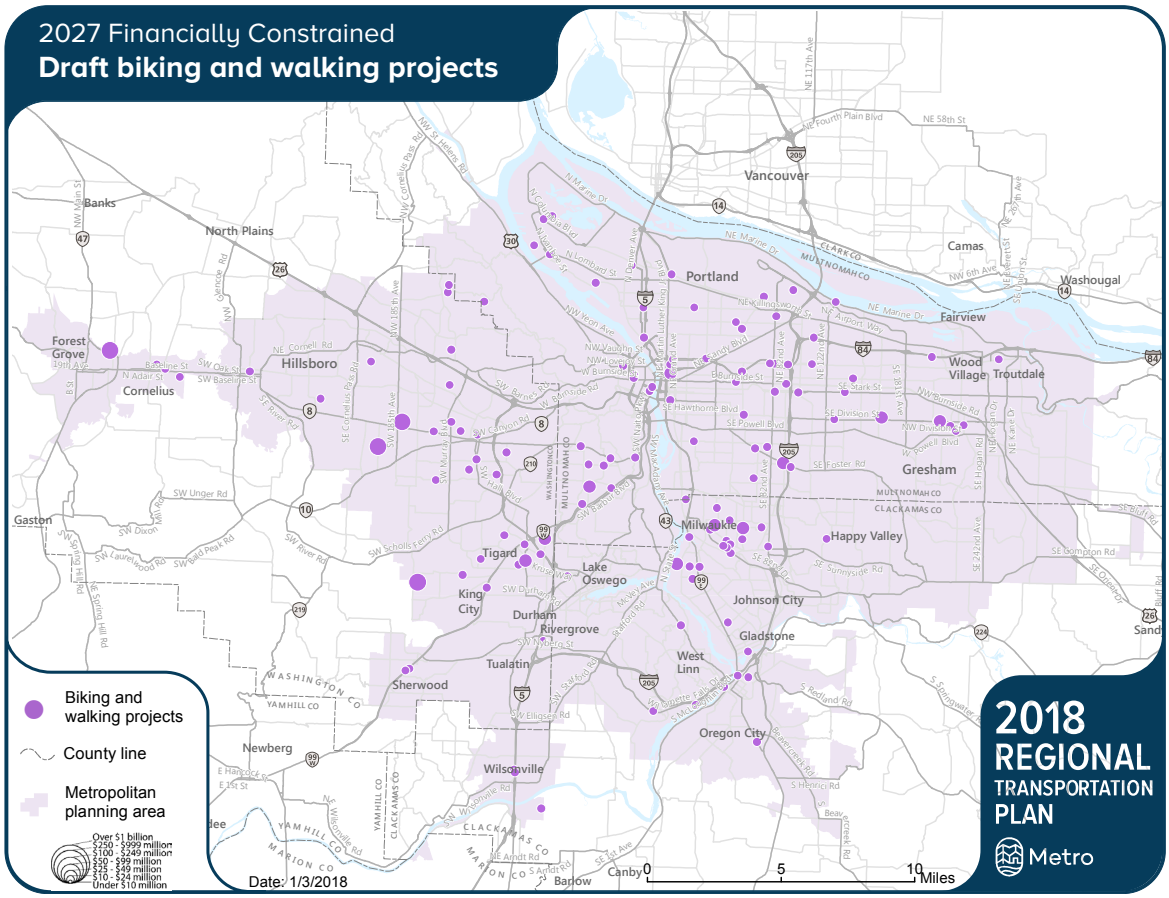
How much of the planned active transportation network will be completed?

Active transportation at a glance

	Climate Smart Strategy 2010-2035	C10 2018–2027	C 2040 2018–2040	S 2040 2018–2040
Active transportation projects (bikeways, sidewalks and trails)	663 miles added	183 miles added	412 miles added	554 miles added
Completion of gaps in 2040 Growth Concept centers*	*not evaluated*	49% of sidewalks 29% of bikeways	50% of sidewalks 30% of bikeways	51% of sidewalks 31% of bikeways
Completion of gaps on major roads*	*not evaluated*	57% of sidewalks 43% of bikeways	61% of sidewalks 48% of bikeways	64% of sidewalks 53% of bikeways
Completion of gaps near transit stops and stations*	*not evaluated*	71% of sidewalks 67% of bikeways	75% of sidewalks 72% of bikeways	77% of sidewalks 76% of bikeways
Active transportation and roadway projects with primary objective of reducing crashes	*not evaluated*	27	15	6
Equity: Access to jobs by walking and bicycling	*not evaluated*	Increase in the number of jobs accessed regionwide, but lower rate of increase in historically marginalized communities	Increase in the number of jobs accessed regionwide, but lower rate of increase in historically marginalized communities	Increase in the number of jobs accessed regionwide, but lower rate of increase in historically marginalized communities
Estimated lives saved annually from increased physical activity	*not comparable*	5	7	8
Average per person weekly minutes of biking and walking	*not comparable*	53	58	59
Estimated cost of active transportation projects (2016$)	$2.1 billion	$675 million	$1.6 billion	$2.7 billion
Estimated annual investment needed to complete projects (2016$)	*not evaluated*	$64 million (2018-2027)	$139 million (2028-2040)	$222 million (2028-2040)

For purposes of analysis, the table reflects investments made within the Metropolitan Planning Area, the jurisdiction for Metro's transportation planning functions. Climate Smart Strategy information provided for comparison and context. Costs have been rounded. Physical activity estimates are preliminary.

*Analysis did not include upgrades to deficient facilities.



SCENARIO

C10

2018–2027

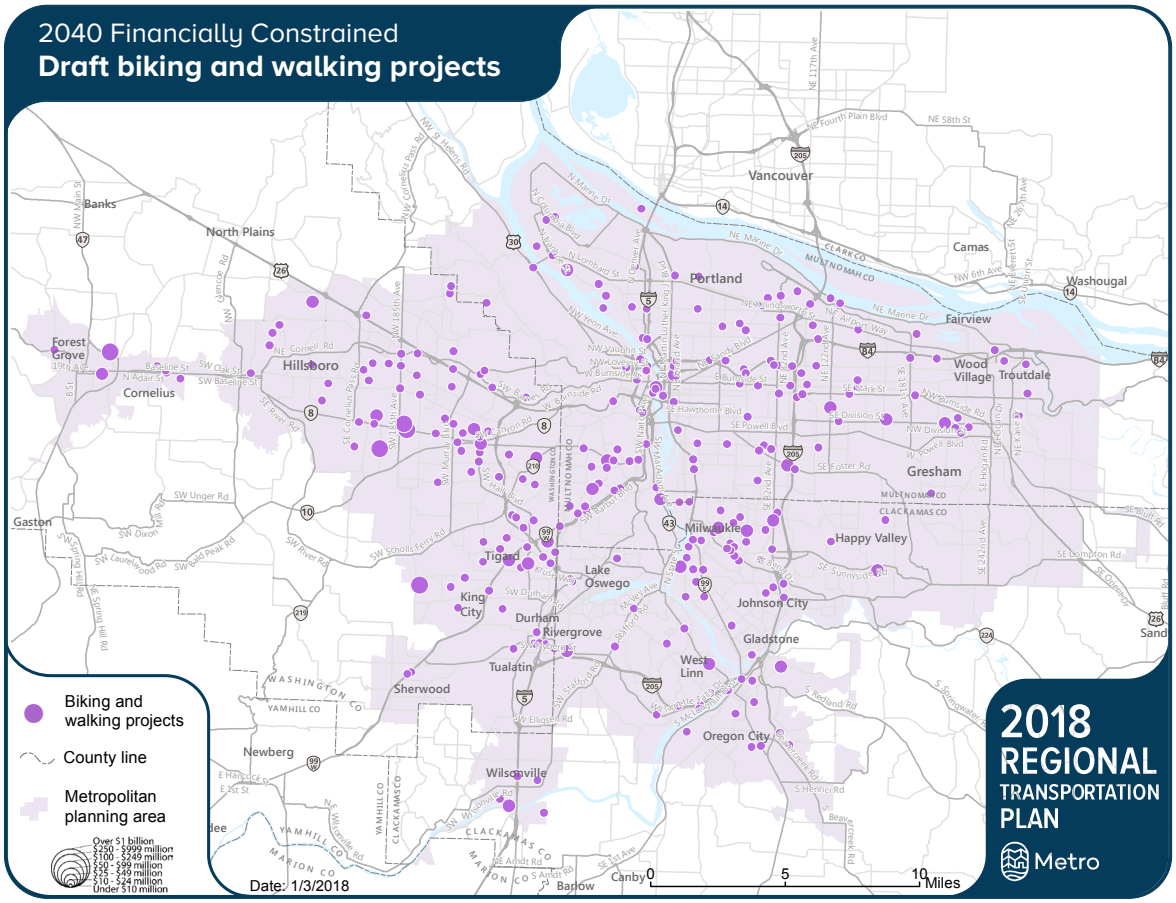
10-year constrained

Results of projects scheduled in the first 10 years of the draft constrained list

5

Estimated number of lives saved annually from increased physical activity by 2027

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



SCENARIO

C 2040

2018–2040

2040 constrained

Results of projects in the full draft constrained list

7

Estimated number of lives saved annually from increased physical activity by 2040

SCENARIO

S
2040

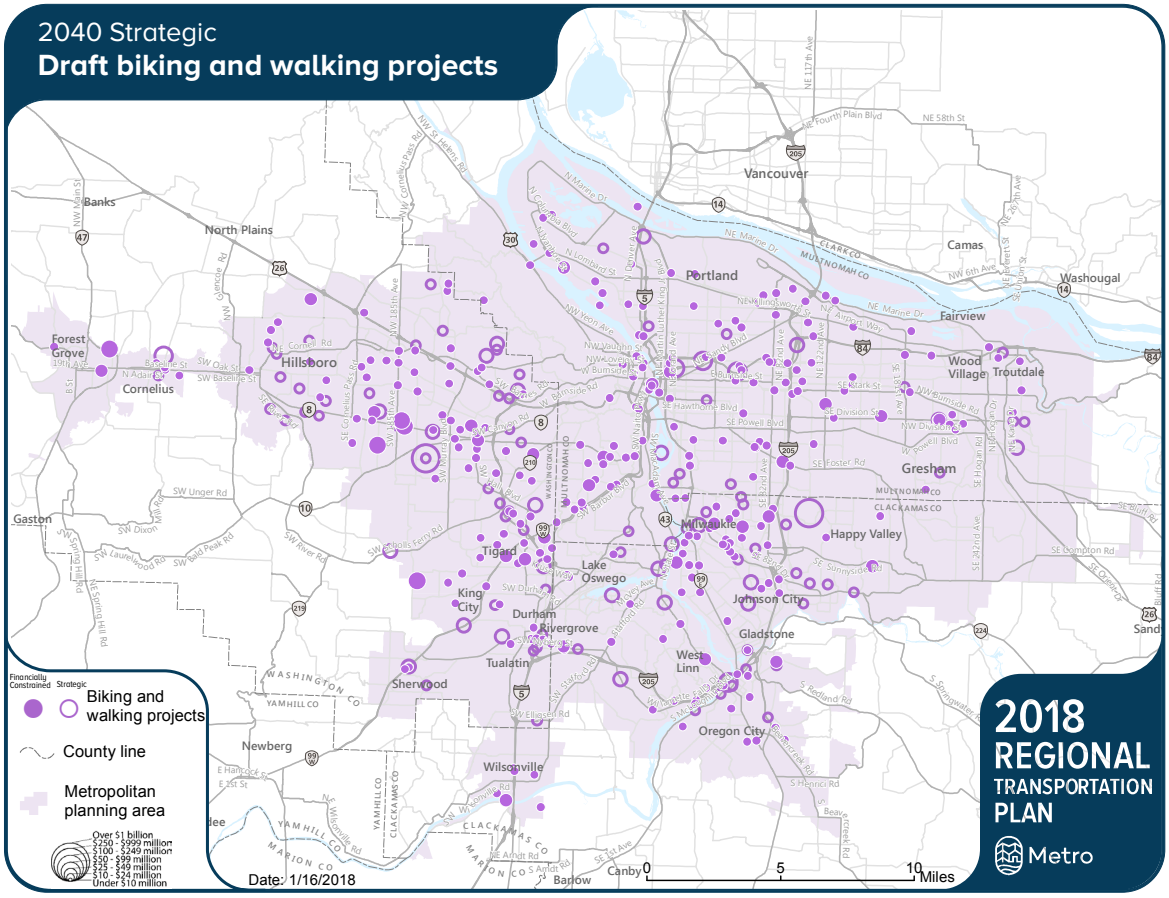
2018–2040

2040 strategic

Results of projects in the full draft constrained list and additional strategic priority investments

8

Estimated number of lives saved annually from increased physical activity by 2040



Use technology to actively manage the transportation system

Using technology to actively manage the greater Portland region's transportation system means using intelligent transportation systems and services to reduce vehicle idling associated with delay and help 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 Advanced technology at each intersection actively manages 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 Advanced technology manages access to the freeways, detects traffic levels and weather conditions, provides information with message signs and variable speed limit signs, and deploys incident response patrols that quickly clear breakdowns, crashes and debris. These tools connect to a regional traffic operations center.

Traveler information Variable message and speed limit signs and 511 internet and phone services provide travelers with up-to-date information regarding traffic and weather conditions, incidents, travel times, alternate routes, construction and 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 will we use technology to actively manage the transportation system?

Technology at a glance

	Climate Smart Strategy 2010-2035	C10 2018–2027	C 2040 2018–2040	S 2040 2018–2040
Provide real-time and forecasted traveler information		Information on current travel conditions and alerts are available to the public and third party developers	Current conditions data is used by operators to forecast changing travel conditions	Current conditions data and operators' forecast for changing travel conditions is used by travelers and shippers
Multimodal Integrated Corridor Management	Agencies integrate operations strategies in some of the region's major travel corridors	Agencies integrate operations strategies in a few of the region's major travel corridors	Agencies integrate operations strategies in many of the region's major travel corridors	Agencies integrate operations strategies in all of the region's major travel corridors
Advanced traffic signal operations	All traffic signals are interconnected in a centralized system	Traffic signals are interconnected in some industrial areas and major travel corridors	Traffic signals are interconnected in all industrial areas and major travel corridors	All traffic signals are interconnected to a centralized system
Transit signal priority	All bus routes with 10-minute service	Some frequent bus routes	Most frequent bus routes	Same as C2040, plus all bus routes with 10-minute service
Freeway ramp meters	All urban interchanges	All urban interchanges	All urban interchanges	All urban interchanges
Freeway variable speed signs	All high incident locations	Some high incident locations	Most freeways	All freeways
Incident response vehicles	Incident response vehicles monitor all area freeways and major arterials adjacent to freeways	Incident response vehicles monitor some high incident locations	Incident response vehicles monitor all area freeways	Incident response vehicles monitor all area freeways and major arterials adjacent to freeways
Estimated cost (2016$)	$219 million	$68 million	$150 million	$259 million

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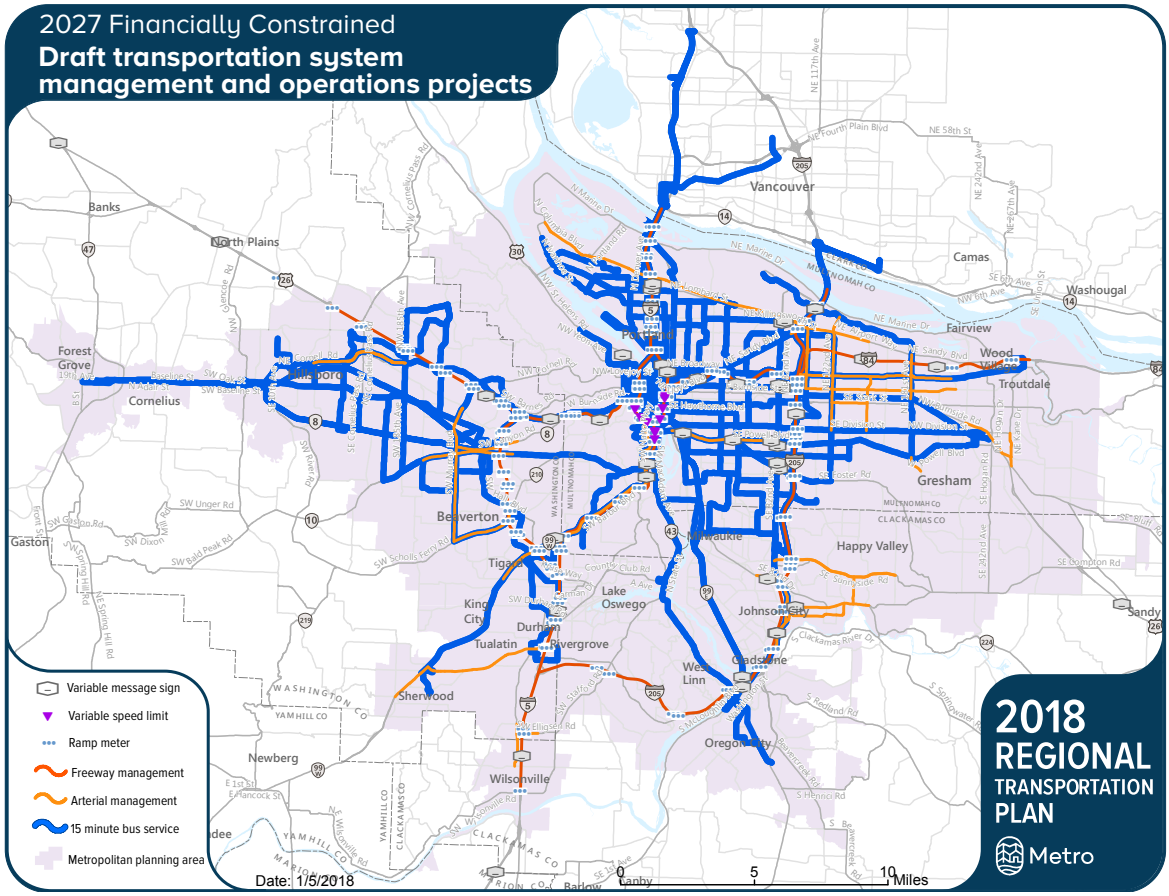


SCENARIO

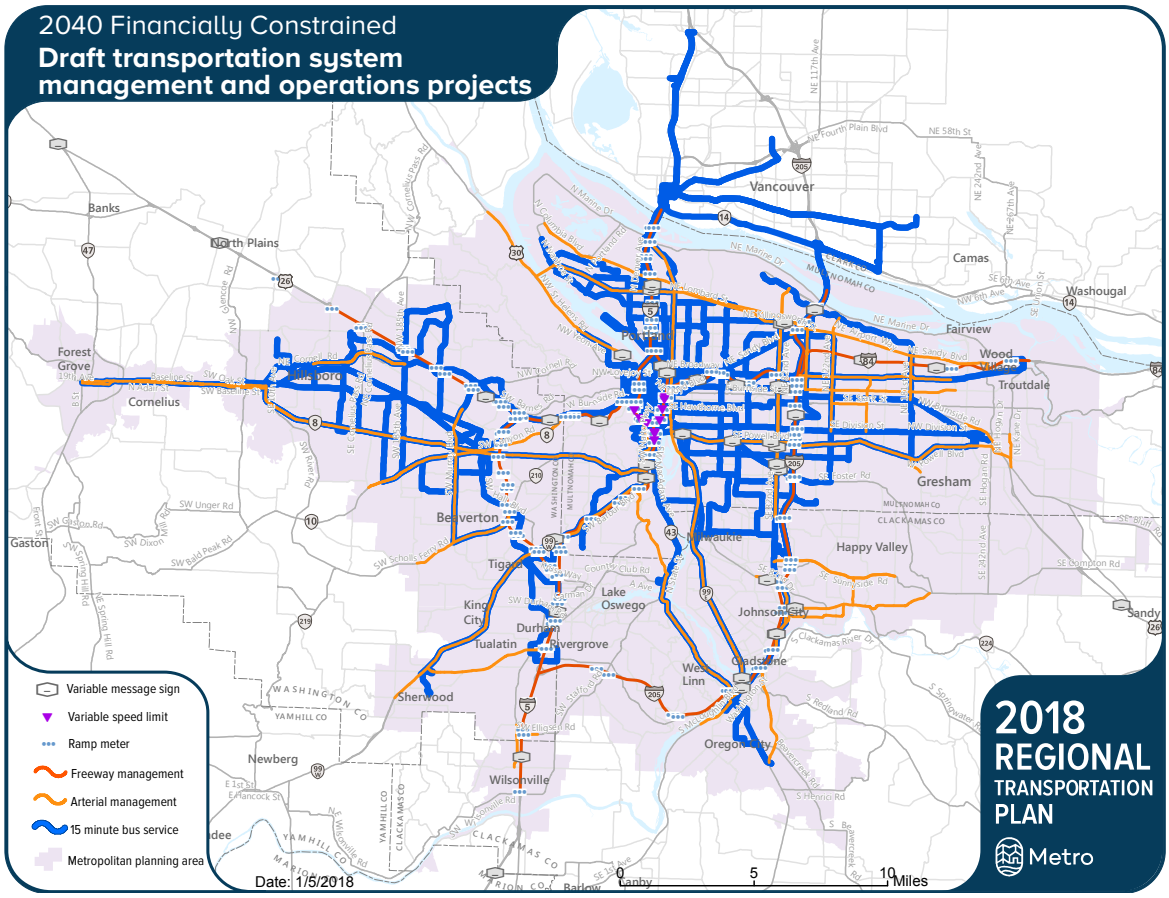
C10

2018–2027

10-year constrained

Results of projects scheduled in the first 10 years of the draft constrained list

Some frequent bus routes have transit signal priority and incident response vehicles monitor high incident locations on area freeways.



SCENARIO

C 2040

2018–2040

2040 constrained

Results of projects in the full draft constrained list

Most frequent bus routes have transit signal priority and incident response vehicles monitor all area freeways.

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SCENARIO

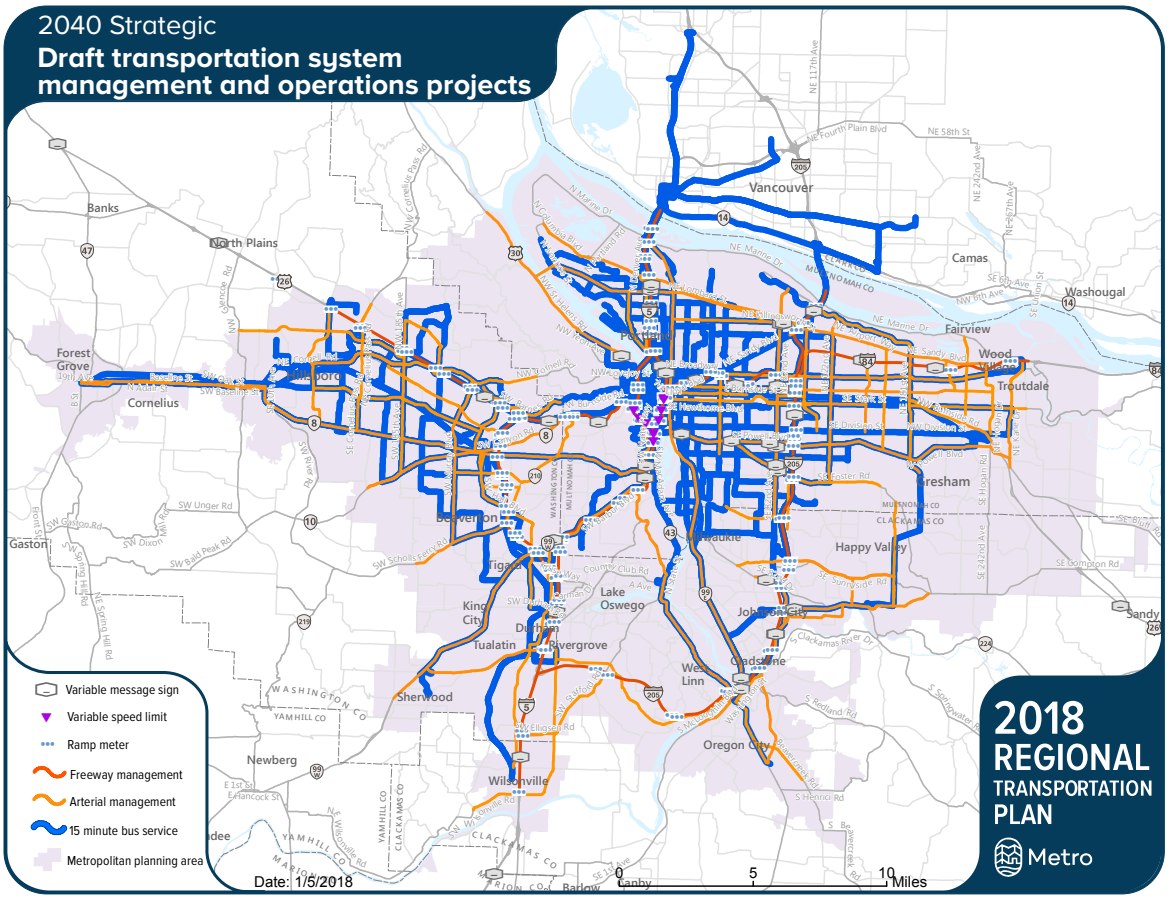
S
2040

2018–2040

2040 strategic

Results of projects in the full draft constrained list and additional strategic priority investments

All frequent bus routes have transit signal priority and incident response vehicles monitor all area freeways and adjacent major arterials.



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 Events and other outreach strategies provide information about and encourage the public's use of travel options.

Commuter programs Employer-based commuter outreach efforts include: financial incentives, such as transit pass programs and offering cash instead of parking subsidies; facilities and services, such as carpooling programs, bicycle parking, emergency rides home and work-place competitions; and flexible scheduling such as working from home or compressed work weeks.

Individualized marketing Focused outreach 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. This outreach 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 online rideshare matching, trip planning tools, wayfinding signage, bike racks and carsharing.

Benefits

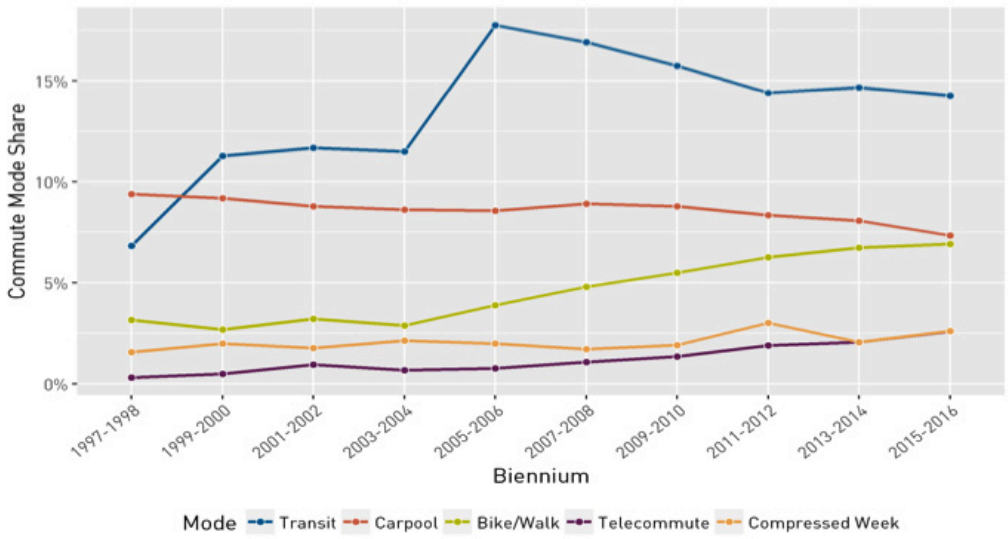
- increases cost-effectiveness of capital investments in transportation
- saves public agencies, consumers and businesses time and money
- maximizes use of road capacity
- provides people with alternatives to driving in congestion
- increases physical activity and reduces health care costs
- reduces 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 or parts of the region 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 – 2016)

The TriMet, Wilsonville SMART and transportation management association 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 percent to over 39 percent 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 competing with motorized traffic. Sunday Parkways events have attracted 119,000 participants, 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.

In 2015, a unique partnership between Metro, the City of Milwaukie and ODOT engaged residents along the last three stops of the new MAX Orange Line. More than 25 percent of residents participated in the program to learn about new travel options, resulting in a reduction of more than 1.3 million single occupant vehicle miles driven the year after the opening of the line.

How much will we expand the reach of travel information programs?

Travel information programs at a glance

	Climate Smart Strategy 2010-2035	C10 2018–2027	C 2040 2018–2040	S 2040 2018–2040
Local program implementation (through dedicated staff or contractors and programs)	n/a	All cities with >30K population lead travel options efforts, covering about 80% of regional population	All cities with >20K population lead travel options efforts, covering about 90% of regional population	All cities lead travel options efforts or participate in regional efforts, covering 100% of regional population
Individualized marketing participation*	60% of households Plus the addition of Safe Routes to school and equity-based campaigns	Current program reaches about 3% of households	10% of households reached	40% of households reached
Commuter program participation*	40% of employees reached Oregon Employee Commute Options rules include work sites with more than 100 employees to have workplace programs	20% of employees reached (same as 2015) Oregon Employee Commute Options rules require work sites with more than 100 employees to have workplace programs	25% of employees reached	35% of employees reached
Public awareness marketing campaign	60% of public reached Existing ongoing and short-term campaigns lead to more awareness of *DriveLess. Connect.* plus added resources promote new travel tools, safety education and regionally specific campaigns dedicated to safety and underserved communities	15% of public reached Existing ongoing and short-term campaigns increase awareness of *DriveLess. Connect.*	30% of public reached Additional resources promote new travel tools, regional efforts and safety education	50% of public reached Additional resources allow for regionally specific campaigns dedicated to safety and underserved communities
Provisions of travel options support tools	2010 program funding levels allow for completion of several new wayfinding signage and bike rack projects plus public-private partnerships to create new online, print and on-street travel tools, and other support tools	2015 program funding levels allow for completion of several new wayfinding signage and bike rack projects	Additional resources allow for public-private partnerships to create new online, print and on-street travel tools	Additional resources allow for better public-private data integration and more resources for more support tools
Estimated cost (2016$)	$185 million	$65 million	$111 million	$193 million

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*There are about 900,000 households and 700,000 employees in greater Portland per the American Community Survey.

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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, though it is less effective in areas where transit or bicycle and pedestrian infrastructure is lacking.

Planning approaches Conduct 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 Parking spaces may be 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 Provide spaces in designated areas, unbundling parking (separating the cost to rent a parking space from the cost to rent an apartment or office), 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
- parking spaces that are inconvenient to nearby residents and businesses
- scarce freight loading and unloading areas
- low parking turnover rate
- lack of sufficient parking in some areas and oversupply in others
- ongoing costs and the need to free up parking for customers

How much will local communities manage parking?

Parking management at a glance

	Climate Smart Strategy 2010-2035	C10 2018–2027	C 2040 2018–2040	S 2040 2018–2040
Parking management	Communities expand the flexibility of development codes and develop parking plans for all downtowns and centers served by high capacity transit 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	Existing locally-adopted development codes remain the same as 2015 Free parking is available in most areas	Communities expand the flexibility of development codes and develop parking plans for all downtowns and centers served by high capacity transit 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 2040 constrained
Share of trips to areas with actively managed parking	30% work trips 30% other auto trips	16% work trips 5% other auto trips	32% work trips 23% other auto trips	Same as 2040 constrained

For purposes of analysis, the table reflects investments made within the Metropolitan Planning Area, the jurisdiction for Metro's transportation planning functions. Climate Smart Strategy information provided for comparison and context.

SCENARIO

C10

2018–2027

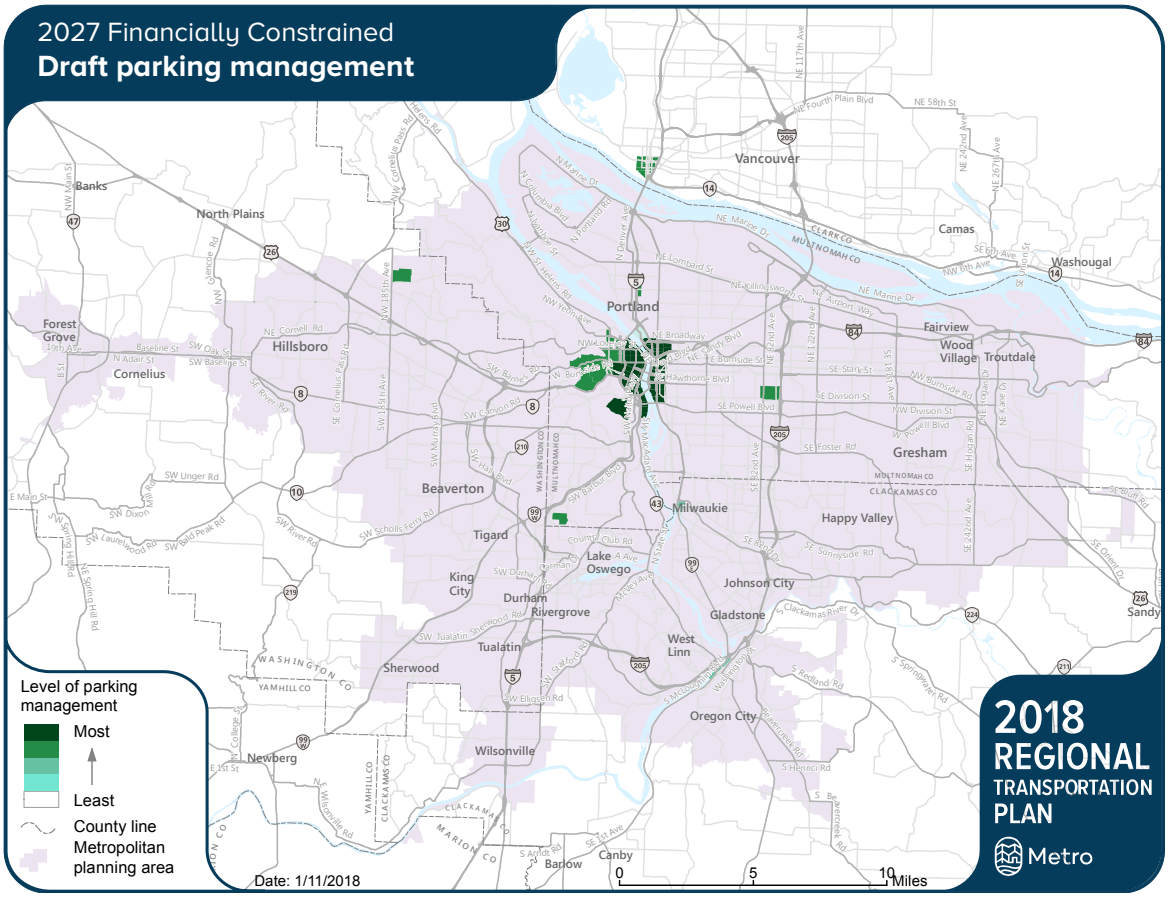
10-year constrained

Results of parking policy over the first 10 years.

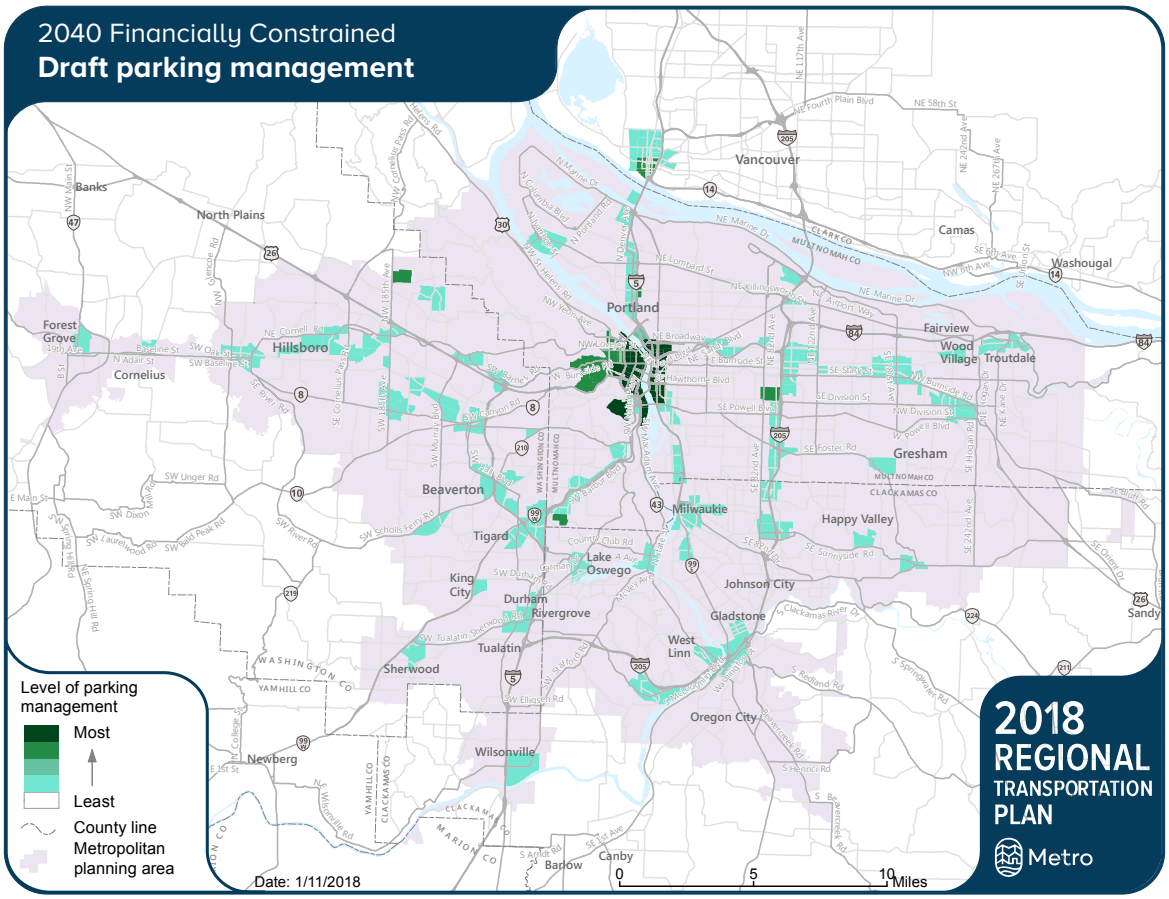
16% work trips

5% other auto trips

Estimated share of trips to areas with actively managed parking



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



SCENARIO

C 2040

2018–2040

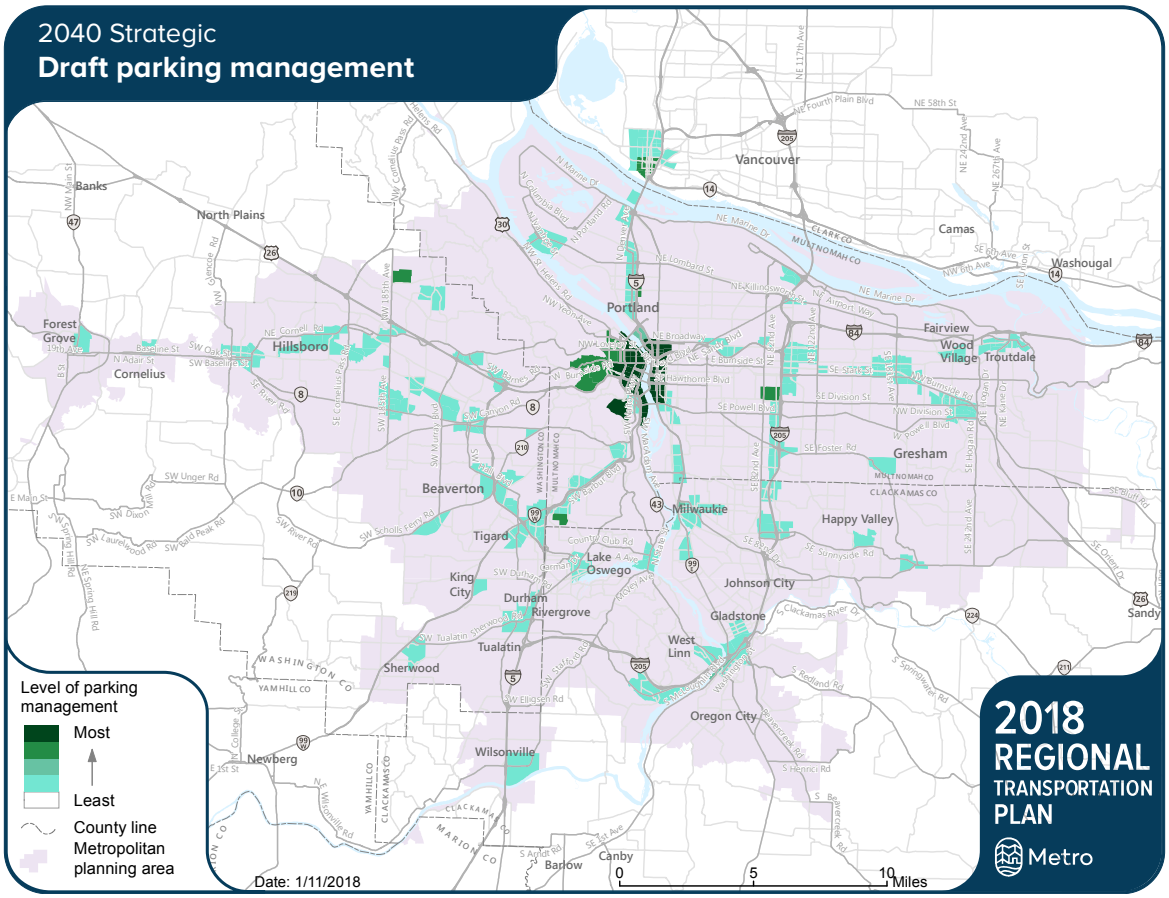
2040 constrained

Results of parking policy by 2040.

32% work trips

23% other auto trips

Estimated share of trips to areas with actively managed parking



SCENARIO

S 2040

2018–2040

2040 strategic

(same as 2040 constrained)

Results of parking policy by 2040.

32% work trips

23% other auto trips

Estimated share of trips to areas with actively managed parking

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Glossary

Active transportation Non-motorized forms of transportation including walking and biking.

Arterial A class of street that interconnect and support the throughway system. Arterials are intended to provide general mobility for travel within the region. Correctly sized arterials at appropriate intervals allow through trips to remain on the arterial system thereby discouraging use of local streets for cut-through travel. Arterial streets link major commercial, residential, industrial and institutional areas. Major arterials serve longer distance through trips and serve more of a regional traffic function. Minor arterials serve shorter, more localized travel within a community. As a result, major arterials usually carry more traffic than minor arterials. Arterial streets are usually spaced about one mile apart and are designed to accommodate bicycle, pedestrian, truck and transit travel.

Auxiliary lane An auxiliary lane provides a direct connection from one interchange ramp to the next. The lane separates slower traffic movements from the mainline, helping smooth the flow of traffic and reduce the potential for crashes.

Carsharing A membership-based system of short-term automobile rental. 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.

Climate change Any change in climate over time, whether due to natural variability or as a result of human activity that persists for an extended period.

Complete streets A transportation policy and design approach where streets are designed, operated and maintained to enable safe, convenient and comfortable travel and access for users of all ages and abilities, regardless of their mode of transportation.

Communities of color Communities where the rate of people of color is greater than the regional average.

Community places Key local destinations such as schools, libraries, grocery stores, pharmacies, hospitals and other medical facilities, general stores, and other places which provide key services and/ or daily needs.

Congestion pricing *See* value pricing.

Constrained budget The budget of federal, state and local funds the greater Portland region can reasonably expect through 2040 under current funding trends – presumes some increased funding compared to current levels.

Constrained list Projects that can be built by 2040 within the constrained budget.

Delay The additional travel time required by all travelers, as measured by the time to reach destinations at posted speed limits (free-flow speed) versus traveling at a slower congested speed. Delay can be expressed in several different ways, including total delay in vehicle hours, total delay per vehicle miles traveled (VMT) and share of delay by time period, day of week or speed range. Delay is measured in the Regional Transportation Plan as time accrued when the volume-to-capacity ratio exceeds 0.90.

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.

Employment lands Areas of mixed employment that include various types of manufacturing, distribution and warehousing uses, and may include commercial and retail development.

Forecast Projection of population, employment or travel demand for a given future year.

Geometric changes to add capacity Road design and engineering strategies to help alleviate bottlenecks, such as the addition or reconfiguration of turning lanes, strategic lane widening, realignment of intersecting streets, auxiliary lanes between interchange ramps, removal of a physical constriction that delays travel, such as widening an underpass, providing lane continuity (i.e., replacing a two-lane bridge that connects pieces of four-lane roadway), or eliminating a sight barrier. Such strategies may be applied to highways, arterials, or local streets.

Greenhouse gas emissions The six gases identified by the Oregon Greenhouse Gas Mandatory Reporting Advisory Committee as contributing to global climate change: carbon dioxide (CO2), nitrous oxide (N2), methane (CH4), hydrofluorocarbons (HFCs), perfluorocarbons (PFC s), and sulfur hexafluoride (SF6). More information is available at epa.gov/climatechange.

House Bill 2001 (Oregon Jobs and Transportation Act) Passed by the Legislature in 2009, this legislation provided specific directions to the Portland metropolitan region to undertake scenario planning and develop two or more land use and transportation scenarios 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, was also required to adopt a preferred scenario, called the Climate Smart Strategy. Following adoption of the Climate Smart Strategy, 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. More information can be found at oregonlegislature.gov/bills_laws/lawsstatutes/2009orLaw0865.html.

Health A condition of complete physical, mental and emotional well-being, not merely the absence of disease.

Health impact assessment A combination of procedures, methods, and tools by which a policy, program or project may be evaluated as to its potential effects on the health of a population, and the distribution of these effects within the population.

High injury corridors Major travel routes with higher occurrences of fatal and severe injury crashes across all modes of travel.
Description of methodology:

As shown in the map on page 20 of this guide, high injury corridors – where 60 percent of all fatal and serious crashes occurred between 2010 and 2014 – were identified by using the following methodology: All crashes for all modes are joined to the regional roadway network; Fatal and Injury A (serious) crashes are given a weight of 10; roadways are analyzed in mile segments; if a segment has only one Fatal or Injury A crash it must also have at least one B/C (minor injury) crash, for the same mode, to be included in the analysis; roadway segments are assigned an N-score (or "crash score") by calculating the weighted sum by mode and normalizing it by the roadway length; to reach 60 percent of fatal and serious crashes, roadway segments had to have an N-score of 39 or higher; intersections with the highest weighted crash scores were also identified; 5 percent of intersections had an N-score (or "crash score") higher than 80 and are also shown on the map.

Historically marginalized communities Communities where the rate of people of color, people in poverty, people with low English proficiency, older adults and young people – groups who have been denied access and/or suffered past institutional discrimination – is greater than the regional average.

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.

Induced demand Refers to the process whereby improvements in the transportation system intended to alleviate congestion and delay result in additional demand for the transportation segment, offsetting some of the improvement's potential benefits. For instance, when a congested roadway is expanded from 2 to 3 lanes, some drivers will recognize the increased capacity and take this roadway though they had not done so previously.

Intelligent transportation systems Refers to advanced communications technologies that are integrated with transportation infrastructure and vehicles to address transportation problems and enhance the movement of people and goods. ITS can include both vehicle-to-vehicle communication (which allows cars to communicate with one another to avoid accidents) and vehicle-to-infrastructure communication (which allows cars to communicate with the roadway to identify congestion, crashes or unsafe driving conditions).

Level of service (LOS) A tool for evaluating system performance and identifying deficiencies for roadways, transit and other motorized and non-motorized modes of travel. For example, roadway measures of level-of-service often assign criteria based on volume-to-capacity ratios. A level of service definition describes operational conditions in terms of speed and travel time, freedom to maneuver, and traffic interruptions. LOS is rated on a scale of A through F:

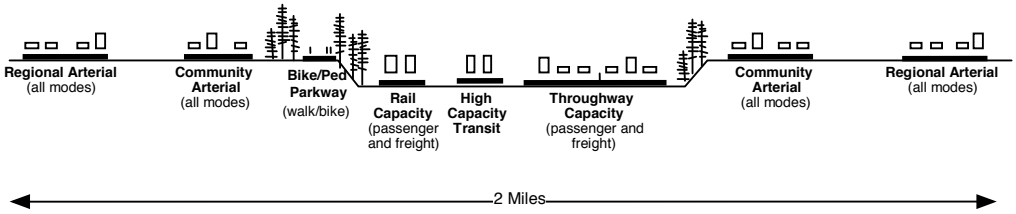
Level of service motor vehicle traffic flow characteristics

Rating	Characteristics
A	Virtually free flow; completely unimpeded
B	Stable flow with slight delays; reasonably unimpeded
C	Stable flow with delays; less freedom to maneuver
D	High density but stable flow
E	Operating conditions at or near capacity; unstable flow
F	Forced flow, breakdown conditions
>F	Severely congested - demand exceeds roadway capacity, limiting volume than can be carried and forcing excess demand onto parallel routes and extending the peak period

Sources: 1985 Highway Capacity Manual (A through F descriptions), Metro (>F description)

Mixed-use development Refers to portions of urban areas where commercial (e.g., retail, office, entertainment) and non-commercial uses (such as residential space), are located near one another. Different uses may be mixed vertically (e.g., housing above retail) or horizontally (e.g., housing within walking distance of retail). Mixed-use development reduces demand for motorized transportation by locating common destinations near residences where transit, pedestrian and bicycle access is convenient.

Mobility corridor Mobility corridors represent sub-areas of the region and include all regional transportation facilities within the sub-area as well as the land uses served by the regional transportation system. The corridors includes freeways and highways and parallel networks of arterial streets, regional bicycle parkways, high capacity transit, and frequent bus routes. The function of this network of integrated transportation corridors is metropolitan mobility – moving people and goods between different parts of the region and, in some corridors, connecting the region with the rest of the state and beyond. This framework emphasizes the integration of land use and transportation in determining regional system needs, functions, desired outcomes, performance measures, and investment strategies. Twenty-four mobility corridors have been identified in the Regional Transportation Plan. More information can be found at oregonmetro.gov/mobility-corridors-atlas.



Source: 2014 Regional Transportation Plan

Off-peak period The hours outside of the highest motor vehicle traffic period, generally between 9 a.m. and 3 p.m. and between 6 p.m. and 7 a.m.

Parking management Strategies that encourage more efficient use of existing parking facilities, improve the quality of service provided to parking facility users, and improve parking facility design. Examples include developing an inventory of parking supply and usage, reduced parking requirements, shared and unbundled parking, parking-cash-out, priced parking, bicycle parking and providing information on parking space availability. More information can be found at vtpi.org/park_man.pdf

Peak period The period of the day during which the maximum amount of travel occurs. It may be specified as the morning (a.m.) or afternoon or evening (p.m.) peak. Peak periods in the Portland metropolitan region are currently generally defined as from 7-9 a.m. and 4-6 p.m.

Racial equity The removal of barriers with a specific focus on eliminating disparities faced by and improving equitable outcomes for communities of color – the foundation of Metro's strategy with the intent of also effectively identifying solutions and removing barriers for other disadvantaged groups

Ramp meter A traffic signal used to regulate the flow of vehicles entering the freeway. Ramp meters smooth the merging process resulting in increased freeway speeds and reduced crashes. Ramp meters are automatically adjusted based on traffic conditions.

Regional mobility policy Describes operational conditions that are used to evaluate the quality of service of the motor vehicle network, using the ratio of traffic volume to planned capacity (referred to as the volume/capacity ratio) of a given roadway. The policy is used to diagnose the extent of vehicle congestion during different times of the day in order to identify deficient roadway facilities and services. In 2000, JPACT and the Metro Council adopted the policy, agreeing that building a regional arterial and throughway network to accommodate all motor vehicle traffic during peak travel periods is not practical nor would it be desirable considering potential financial, social equity, environmental and community impacts. The RTP mobility policy can be found on page 2-20 of the 2014 Regional Transportation Plan.

Reliability Refers to consistency or dependability in travel times, as measured from day to day and/or across different times of day. Variability in travel times means travelers must plan extra time for a trip.

Rideshare A transportation demand management strategy where two or more people share a trip in a vehicle to a common destination or along a common corridor. Private passenger vehicles are used for carpools, and some vanpools receive public/private support to help commuters. Carpooling and vanpooling provide travel choices for areas underserved by transit or at times when transit service is not available.

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

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

Social equity The removal of barriers to eliminate disparities faced by and improve equitable outcomes for historically marginalized communities, especially communities of color.

Strategic list Additional priority projects to show what could be achieved with additional resources

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

Throughways Controlled access (on-ramps and off-ramps) freeways and major highways.

Traffic incident management Planned and coordinated processes followed by state and local agencies to detect, respond to, and remove traffic incidents quickly and safely in order to keep highways flowing efficiently.

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.

Transportation management associations (TMA) Non-profit coalitions of local businesses and/or public agencies, and residences such as condo Home Owner Associations all dedicated to reducing traffic congestion and pollution while improving commuting options for employees, residents and visitors.

Transportation system management and operations (TSMO) A set of strategies for increasing travel flow on existing facilities through improvements such as ramp metering, traffic signal synchronization and access management.

Travel (or transportation) demand management (TDM) The application of techniques that affect when, how, where, and how much people travel, done in a purposeful manner by government or other organizations. TDM techniques include education, policies, regulations, and other combinations of incentives and disincentives, and are intended to reduce drive alone vehicle trips on the transportation network.

Travel time reliability Refers to consistency or predictability in travel times, as measured from day to day and/or across different times of day. Variability in travel times means travelers must plan extra time for a trip.

TripCheck An Oregon Department of Transportation website that displays real-time data regarding road conditions, weather conditions, camera images, delays due to congestion and construction, and other advisories. Additionally, TripCheck provides travelers with information about travel services such as food, lodging, attractions, public transportation options, scenic byways, weather forecasts, etc. This information is also available through the 511 travel information phone line.

Unbundled parking A policy tool to encourage or require that residential or commercial parking be rented or sold separately, rather than automatically included with building space. Separate pricing can help reduce demand for parking as well as the combined housing/transportation costs for residents or business owners since occupants only pay for the parking they need. Unbundling can be done in several ways:

- Parking can be bought or rented separately when the apartment, condo, or office space is bought or leased.
- Renters can be offered a discount on their rent for not using parking spaces.
- Parking costs can be listed as a separate line item in lease agreements to show tenants the cost and enable them to negotiate reductions.

Unbundling can be encouraged informally by creating a market for available parking spaces; building managers can keep a list of tenants or owners with excess spaces available for rent.

Value pricing A demand management strategy that involves the application of market pricing (through variable tolls, variable priced lanes, area-wide charges or cordon charges) to the use of roadways at different times of day. Also called congestion pricing or peak period pricing.

Vision Zero Strategy An action plan for eliminating traffic fatalities and serious injury crashes for all modes of travel. The action plan typically includes a combination of enforcement, improved engineering, operations, design and emergency response, public education campaigns that identify dangerous or unsafe behavior on roads and streets to improve safety, and performance monitoring to track progress. Examples of adopted strategies can be found at: nyc.gov/html/visionzero/pdf/nyc-vision-zero-action-plan.pdf and mdt.mt.gov/homepage/articles/vision-zero.shtml.

Wayfinding Signage, maps, street markings, and other graphic or audible methods used to convey location and directions to help travelers orient themselves and reach destinations easily.

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If you picnic at Blue Lake or take your kids to the Oregon Zoo, enjoy symphonies at the Schnitz or auto shows at the convention center, put out your trash or drive your car – we've already crossed paths.

So, hello. We're Metro – nice to meet you.

In a metropolitan area as big as Portland, we can do a lot of things better together. Join us to help the region prepare for a happy, healthy future.

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