Agenda

Metro
600 NE Grand Ave.
Portland, OR 97232-2736

Meeting: Transportation Policy Alternatives Committee (TPAC) and Metro Technical Advisory Committee (MTAC) Workshop
Date: Wednesday, July 11, 2018
Time: 9:30 a.m. – 12 p.m.
Place: Metro Regional Center, Council Chamber

9:30 am	**1.**		**Call To Order And Introductions**	**Tom Kloster, Chair**
9:40 am	**2.**		**Public Communications on Agenda Items**	
9:45 am	**3.**	*	**2018 Growth Management Decision: Overview of Draft 2018 Urban Growth Report** Purpose: Preview of the Draft 2018 Urban Growth Report (UGR), the compendium of the analytically-based decision-support information for Metro Council's 2018 Urban Growth Boundary decision. Summarized historic and future-oriented forecast data.	**Jeff Frkonja, Metro** **Ted Reid, Metro**
10:30 am	**4.**	*	**SW Corridor Equitable Development Strategy** Purpose: Update members on the work Metro is undertaking with partners in SW Corridor.	**Brian Harper, Metro** **Jeff Raker, Metro**
11:00 am	**5.**	*	**Draft Regional Transportation Plan Performance Results (Round 2)** Purpose: Transmit the public review draft 2018 Regional Transportation Plan, technical appendices and strategies for safety, transit, freight and emerging technology and discuss evaluation findings reported in Chapter 7 of the draft plan.	**Kim Ellis, Metro**
11:45 am	**6.**		**Adjourn**	**Tom Kloster, Metro**

Upcoming TPAC/MTAC Workshop Meetings:
- Wednesday, August 1, 2018
  TPAC/MTAC Workshop, 9:30 a.m. – 12 p.m.
- Wednesday, August 29, 2018
  TPAC/MTAC Workshop, 9:30 a.m. – 12 p.m.

* Material will be emailed with meeting notice
\# Material will be distributed at the meeting.

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Metro

August 2016

600 NE Grand Ave.
Portland, OR 97232-2736
oregonmetro.gov

2018 TPAC/MTAC Workshop Work Program

As of 6/29/18

NOTE: *Items in* ***italics*** *are tentative*

July 11, 2018 Comments from the Chair: • **Agenda Items:** • 2018 Growth Management Decision: Overview of Draft 2018 Urban Growth Report (Frkonja/Reid; 45 min) • SW Corridor Equitable Development Strategy (Brian Harper/Jeff Raker; 30 min) • Draft RTP Performance Results (Round 2) (Ellis; 45 min)	**August 1, 2018** Comments from the Chair: • **Agenda Items:** • Sherwood Urban Growth Management Proposal Decision (Julia Hajduk/Erika Palmer, City of Sherwood; 30 min) • *Transportation Resiliency and Regional Transportation Emergency Routes (Ellis; 45 min)* • *Introduce MAP-21 Performance Monitoring, Target Setting and Reporting (Ellis/ Collins; 45 min)*
August 29, 2018 Comments from the Chair: • **Agenda Items:** • Construction Careers Pathways Project (David Fortney; 30 min) • Accessory Dwelling Unit (ADU) Code Audit Work (Frankie Lewington; 20 min) • Proposed Amendments Identified by Staff in Response to Public Comments (Ellis; 45 min) • STIP Update – Business Cases and Leverage Opportunities Activity (Cho/Makler; 30 min)	**October 3, 2018** Comments from the Chair: • **Agenda Items:** • SW Corridor Light Rail Preferred Alternative (Malu Wilkinson/Chris Ford; 30 min) • Air Quality (AQ) Year in Review (Cho, 30 min) • *RTP Livable Streets Update (McTighe; 45 min)*
November 7, 2018 Comments from the Chair: • **Agenda Items:** • Mobility for All (Winter and others TBD; 45 min)	**December 5, 2018** Comments from the Chair: • **Agenda Items:** • State of Vision Zero Within the Region (McTighe; 45 min) • Discussion and Review of TPAC/MTAC Workshops (Kloster; 45 min)

Parking Lot

- HB2017 Electric Vehicle Rebate
- Portland Area Value Pricing
- DEQ-PSU Diesel Monitoring Project
- STIP Update (Feb. 2019, Jon Makler)

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Meeting minutes

Metro
600 NE Grand Ave.
Portland, OR 97232-2736

Meeting: Transportation Policy Alternatives Committee (TPAC) and Metro Technical Advisory Committee (MTAC) Workshop

Date/time: Wednesday, May 2, 2018 | 10 a.m. - noon

Place: Metro Regional Center, Council chamber

Attending	**Affiliate**
Tom Kloster, Chair	Metro
Brendon Haggerty	Multnomah Co. Health Department
Glenn Koehrsen	TPAC Community Member
Mary Kyle McCurdy	1000 Friends of Oregon
Gerry Mildner	Portland State University
Ramsay Weit	AHS, Housing Affordability
Carol Chesarek	Multnomah County
Bob Kellett	Portland Bureau of Transportation
Emily Lai	TPAC Community Member
Karen Perl Fox	City of Tualatin
Chris Deffebach	Washington County
Jon Makler	Oregon Department of Transportation
Kelly Betteridge	TriMet
Mark Lear	City of Portland, Bureau of Transportation
Jennifer Hughes	Clackamas County
Anna Slatinsky	City of Beaverton
Kay Durtschi	Multnomah County Citizen
Karen Buehrig	Clackamas County
Lidwien Rahman	Oregon Department of Transportation
Denny Egner	Clackamas County, City of Milwaukie
Don Odermott	Washington County, City of Hillsboro
Erika Palmer	Washington County, City of Sherwood
Julia Hajduk	Washington County, City of Sherwood
Raymond Eck	Washington County Representative
Chris Damgen	Multnomah County, City of Troutdale
Cory-Ann Wind	Oregon Department of Environmental Quality
Joanna Valencia	Multnomah County
Nancy Kraushaar	Clackamas County, City of Wilsonville
Talia Jacobson	Oregon Department of Transportation
Anne Debbaut	DLCD
Jessica Berry	Multnomah County

Metro Staff

Kim Ellis, Principal Transportation Planner	John Mermin, Senior Transportation Planner
Grace Cho, Associate Transportation Planner	Jamie Snook, Principal Transportation Planner
Grace Cho, Associate Transportation Planner	Cindy Pederson, Modeling & Research Manager
Marie Miller TPAC Recorder	

1. **Call to Order and Introductions**
   Chair Tom Kloster called the workshop meeting to order at 10 a.m., and welcomed everyone. Introductions were made.

2. **Public Communications on Agenda Items** - None

3. **Facility Plan for I-5 Boone Bridge in Wilsonville**
   Jon Makler and Talia Jacobson, ODOT, and Nancy Kraushaar, City of Wilsonville provided an overview of the Southbound I-5 Boone Bridge Congestion Study that addresses emerging bottleneck congestion, and seeks to improve conditions for motorized travel, including freight and transit, identify improvements to pair with future seismic retrofit, and implement 2014 RTP recommendation for the mobility corridor.

   Within the policy context of the plan, Federal and State looked at management of I-5 to provide safe, efficient, higher speed operations for longer distance trips. The 2014 RTP called for consideration of interstate lanes with six lanes, addressing peak period and mid-day congestion affecting freight reliability, mobility and travel patterns, and considering auxiliary lanes between Wilsonville interchanges. The City of Wilsonville supports industrial and commercial land uses with freight and jobs located near I-5, and more residential areas farther from the interstate. Wilsonville has noted impacts from delays on ramps, the creation of potential bottlenecks, and looked to find solutions to this issue.

   The I-5 Wilsonville Facility Plan evaluates existing and future conditions on I-5 southbound, and proposes a solution for the bottleneck. It implements the Oregon Highway Plan without amending the highway's classifications or changing the alignment of I-5. This facility plan seeks to move our region closer to attaining 2014 RTP performance targets, which include reducing severe and fatal crashes, and reducing vehicle hours of delay per person and per truck trip. In addition, it follows the RTP recommendation to consider providing auxiliary lanes between Wilsonville's on and off ramps.

   A review of land uses with city and county zoning plans was provided. It was noted that the residential area of Charbonneau was more recently added to the City of Wilsonville, but with one ramp access south of the bridge, it makes it challenging for planning with interstate transportation. Looking at existing traffic conditions during 4-5 p.m. peak hour, the annual average daily southbound traffic on the Boone Bridge is 63,590 vehicles. Freight trucks represent approximately 14% of daily volumes, higher than is typical for Portland metro area freeway segments. Multiple transit agencies run fixed-route transit along southbound I-5 in this area.

   Average travel speeds slow considerably over the course of the extended peak period and do not increase until after 6 p.m. Average speeds at I-5 southbound over Wilsonville Road at this bottleneck location drop to a low of 30 mph for close to an hour during the peak and have been gradually decreasing for at least three years. ODOT's study of freight delay areas determined that delays in this segment result in an annual economic cost of $746,000 per mile of I-5.

   Travel through the bottleneck area is highly unreliable as well as highly congested during the evening peak. On the most congested days each month, travel through the bottleneck area will take 3x as long as it does on the least congested days. Travelers making regular trips in the corridor must plan extra time for their trip to ensure they will not be late. This unpredictability can be more frustrating and costly for users than consistent and predictable congestion.

The study showed the impact of no local access bridge crossing and no nearby alternatives for crossing the river, and merging of traffic entering and exiting lanes. The study also reported on the impact to land use and local traffic conditions, seismic concerns and environmental resources. Considerations with future conditions is nothing is done to address these issues, I-5 volumes are expected to increase 15% or more by 2040, I-5 will fail to meet federal and state performance benchmarks, reliability and safety is expected to worsen, demand to use Wilsonville Road on-ramp will exceed current ramp meter by 30—40%, and long on-ramp queues will spill back onto the local system.

Ramp-to-ramp lanes (auxiliary lanes) was explained, that can improve operations between closely spaced interchanges, reduce weaving and merging conflicts, and known to reduce crashes. The study presented three build alternatives for southbound ramp-to-ramp lane over the Boone Bridge, and decided on Option 3, that adds a second exit lane to help resolve weaving conflicts. The reasons for this option recommendation:

1. Offers greatest operational benefits to I-5 (speeds stay above 50)
2. Resolves weaving conflicts in study area
3. Offers greatest safety benefits
4. Improves reliability
5. Reduces hours per day Wilsonville Road ramp meter is likely to activate
6. Reduces ramp meter queuing impacts to traffic flow on Wilsonville Road
7. Minimal cost differences between options
8. Environmental impacts likely to be similar for all three options

Public and stakeholder involvement with the plan has been undertaken from January this year. The Facility Plan is currently out for public comment, with the Wilsonville Planning Commission hearing and City Council resolution expected in June. The expected OTC adoption hearing is scheduled in July.

Once this plan is adopted, ODOT will submit Option C as a project for the 2018 RTP Financially Constrained Project list, for funding in the 2028-2040 time frame. The next step will be to secure funding for project development, which will include analysis of engineering alternatives and their potential environmental impacts.

ODOT's Bridge section will analyze the Boone Bridge seismic needs to determine what improvements would ensure the structure remains standing if a major quake occurs. Once those engineering recommendations are available, the operational and seismic work will be combined into one project. The French Prairie Bridge project was discussed with the differences on focus for bike/pedestrian and emergency route with commonalities to the Boone Bridge. The French Prairie Bridge is completing work, while this study is just beginning. Combinations of transportation modes may be further studied in time. It was noted that this project is still in the process of being adopted, and not currently in the RTP project list. A current STIP project of the Boone Bridge for seismic study for retrofit is being studied and may be determined as needed for a possible bridge replacement rather than simply strengthening in the event of major seismic activity.

Comments from the committee:

- Denny Egner asked if this extension to the Canby/Hubbard exit might induce more travel congestion and lead to further development. Travel patterns indicate more congestion in this area, and the study provided the best option, with partner input on land use and transportation. While there is no guarantee with growth challenges in UGB areas, this study helps to provide options for congestion in the area, and give OTC findings for direction.

- Carol Chesarek asked if any analysis of long-term impacts with greenhouse emissions had been made in the study. Both land and air impacts will need to be studied if a capital project moves forward as a result of this plan.
- Chris Deffebach commented on I-5 being a critical route that deserves attention, and appreciates this highlighted comprehensive corridor study. It was asked if connections with I-5 and the Dundee bypass forecasts any effect with growth of 99W. Attention has been given to designing corridors that address travel with safety issues, and looking at corridors as a whole.
- Don Odermott commented on the impact with freight travel on I-5, and addressing needs to seismic upgrades. It was asked if a comprehensive study had been done on the peak morning hours of bottlenecks as well. Northbound travel had emerged first in studies for congestion on I-5, including seismic structures and retrofit issues.
- Gerry Mildner asked if there were any cost estimates on the French Prairie Bridge and possible alternate arterial bridge crossing. The French Prairie Bridge is listed in the UPWP. The challenge with building an alternate arterial bridge in this area were environmental impacts with new structures and no easy options with current neighborhoods.
- Chris Damgen asked if signage might help with directional truck routes. ODOT is looking at examples of this, and working to get ahead of potential problems in as many ways as possible.

The committee was reminded of the draft report in their packets, and the link given to the online public comment page, which ends May 29.

4. 2018 Regional Transportation Plan

Kim Ellis provided an overview of refinements made to the RTP project list and draft RTP. Additional feedback is being sought from jurisdictional partners on the implementation chapter content and project lists updates. The updates focused on timing and adding safety and equity components. $24 billion in projects have been identified, with $16.8 billion on the constrained list, among which $7.6 billion slated for the first 10 years. It was noted that draft costs are preliminary, and do not reflect transit service operations and road maintenance. Preliminary technical and system analysis will be known in early June.

From initial staff review of refinements to project list projects, nearly 150 projects now include safety as a primary objective. This number has nearly tripled since the first round of projects. Portland now has 93 projects they updated adding safety as an objective. Portland also moved 13 active transportation projects to the first 10 years for addressing. Washington County moved 26 active transportation projects to constrained list, from strategic, and unbundled so they could be included in the system completion analysis. Multnomah County updated 15 projects to add safety as an objective. There were six active transportation and complete street projects moved to the first 10 years. Gresham focused on projects in high injury corridors and race/income equity focus areas, with 10 active transportation projects moved to the first 10 years. More changes occurred with ODOT and TriMet projects also, with more reporting on the project refinements at future meetings.

The draft RTP document under development with table of content chapters was reviewed. The chapters have been reorganized to become more useful and topical, with more chapters planned. Following the Executive Summary, draft chapters:

1. Toward A Connected Region
2. Our Shared Vision for Transportation

3. Transportation System Policies to Achieve Our Vision
4. Snapshot of Our Growing and Changing Region
5. Our Transportation Funding Outlook
6. Regional Programs and Projects to Achieve Our Vision (with project maps and better display of projects
7. Measuring Outcomes
8. Moving Forward Together

Following chapters, appendices and supporting documents will be placed that provide reference and support with compliance to State and Federal goals and requirements. It was suggested that potential disaster bridge failure and plans be noted in the RTP. Comments and further feedback on the RTP draft Table of Contents (dated May 2, 2018), handed out at the meeting and added to the online packet, are to be provided to Ms. Ellis by Friday, May 11.

5. Draft Regional Transportation Plan Implementation Chapter

Kim Ellis provided an overview of the proposed RTP implementation chapter reorganization and content. As part of the 2018 RTP update, staff completed a comprehensive review of Chapter 5 (Implementation) of the 2014 RTP to identify changes need to reflect:

- Policy direction and other actions adopted by JPACT and the Metro Council since July 2014
- New or revised information adopted by local agencies since July 2014
- Federal performance-based planning requirements enacted since July 2014
- State planning requirements and rulemaking enacted since July 2014

Based on the review, staff recommends reorganizing and updating the implementation chapter to sharpen its focus and better communicate the cooperative, and ongoing transportation planning and decision-making process used in the region. Sections of the proposed Chapter 8: Moving Forward Together, Implementation Chapter, was reviewed.

Section 1: Introduction. This section summarizes the purpose and content of the chapter.
Section 2: Updates and Amendments to the Regional Transportation Plan. This section summarizes federal and state requirements for preparing and updating the RTP and the process for making revisions to the plan between scheduled updates. A new 5-year update schedule is planned. Identifying and requesting major revisions (amendments) and minor revisions (administrative modifications) is summarized. Ongoing monitoring and reporting progress summarizes the region's approach implementing the RTP, regional Congestion Management Process, federal transportation performance-based planning and programming, Climate Smart Strategy, and State Implementation Plan.

Section 3: Planning and Programs. This section summarizes local, regional and state planning and programs that advance implementation of the plan. In local implementation, transportation system planning, subarea studies, land use and concept planning is included. Transit Service Planning summarizes annual transit service planning conducted by TriMet and SMART in coordination with Metro, cities, counties and other transit providers to implement the RTP, regional transit strategy and Coordinated Transportation Plan for seniors and People with Disabilities.

The Regional Programs and Planning section summarizes ongoing activities focused on implementing the RTP, including federally funded regional programs such as the Regional Travel Options program, Transportation System Management and Operations program and Transit Oriented Development program. It will also address unresolved issues identified through the 2018 RTP update including

Regional Mobility Policy Update, Regional congestion Pricing Technical Analysis, Jurisdictional Transfer Strategy for State Arterials, Enhanced Transit corridors Pilot Program Implementation, and Emergency Transportation Routes Project.

The Multimodal corridor refinement planning section identifies regional mobility corridors recommended for refinement planning to comprehensively plan and develop shared investment strategies for a regional mobility corridor to comply with the Oregon Transportation Planning Rule. Plans to link economic development, housing and other goals with multimodal management and capital solutions will be analyzed to create recommendations on strategies and phasing to catalyze investment. The draft table of contents dated May 2, 2018 (handout), page 3 details more of the region-wide planning and multimodal corridor refinement planning, including longer-term planning work, and specific corridor locations being identified. Feedback is asked on whether or not to include these, develop further, eliminate or clarify in which section of the draft RTP.

The Investment Areas Program section summarizes Metro's investment areas program which aims to comprehensively plan and develop shared investment strategies for subareas of the region to connect major transportation projects identified in the RTP with regional and community goals for equitable housing, economic development, environmental protection and access to nature to catalyze public and private sector investment.

Section 4: Projects summarizes major project development activities and the allocation of federal transportation funds to implement projects in the RTP at the regional and state level. Section 5: Data and Research summarizes data and research activities to address existing and emerging planning and policy priorities and innovative practices in transportation planning and analysis and ensure that the region has the resources to fulfill its transportation performance measurement and reporting responsibilities. Section 6: Conclusion will summarize key takeaways from the chapter.

Ms. Ellis asked for any feedback on the implementation chapter, noting that TPAC, MTAC and JPACT would be reviewing further draft policy and implementation chapters. The public comment period planned is June 29 to August 13.

Comments from the committee:

- Jon Makler commented on conversations toward transportation funding needing to be called out and connected to a possible regional bond measure with RTP projects, policies and plans.
- Chris Deffebach asked for clarification on funding projects with priorities, and if resources and projects change, how would these be funded. Ms. Ellis provided clarification on federal funding of UPWP projects known now. Value pricing will have need for funding but amounts are unknown yet. State owned arterials and jurisdictional transfer strategies are examples of the change in priorities in projects as safety became a focus with funding. The advancement of TSMO projects and Enhanced Transit corridors development also changes funding priorities.
- Nancy Kraushaar commented on the desire heard at meetings to look at the bigger picture, long-range vision with regional transportation.
- Emily Lai asked where these updates were reflected. Ms. Ellis explained these drafts were for the next RTP, which includes projects and issues not fully addressed in the current RTP. They could lead to amendments to the RTP, or be refined for drafts in the next RTP, 2023. Ms. Lai asked for clarity with wording of safety, including personal safety, racial profiling and

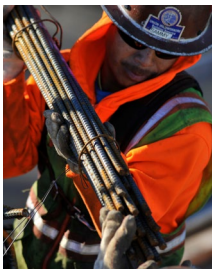
transportation planning safety. Safety in the RTP is tied to implementing Vision Zero, but also included in other strategies. Ms. Ellis welcomed comments and offered to share a link to this prior to the public review comment period at the end of June.

- Denny Egner asked why the region-wide planning section for the next five years appears different from updates in part 2. It also appeared that Climate Smart seems hidden in the draft outline, and need to be called out with more focus. Climate Smart is being implemented, but will be more highlighted, including the monitoring section that can direct further strategy work.
- Lidwien Rahman commented on funding of projects. It was noted that the UPWP was a one-year plan; the RTP was a 5-year plan. The UPWP can help identify projects and issues. It was noted that safety strategies have been given in policy chapters following workshops and meetings with encouragement to Metro to add, including those with equity strategies.
- Jon Makler commented on the challenges of having too many named corridors that diffuse focus on impacts to the 2040 Growth plan. There is a need to rationalize corridors and connections among our plans that provide benefit to regional planning. Selecting safety and other criteria with one or two significant projects rather than 10 projects could help provide this focus of implementation.
- Kay Durtschi commented on the definite need to identify areas of congestion in these corridors most significant for planning. It was noted that the mobility corridors conversation was tied to levels of service but had further emphasis. It was important to identify these corridors to advance for implementation.
- Chris Deffebach commented on section 8: Projects. How projects would be funded if different from past funding, given competition for dollars, selection criteria and prioritizing. Chair Kloster and Ms. Ellis discussed the need for projects to identify their impact and importance using a broad focus with criteria, with funding uncertain on the federal level. Reframing and clarifying project development in the RTP moving forward will focus on implementation.
- Karen Buehrig agreed that the multimodal refinement project lists need to be better defined. The refocus on investment areas is good, and recommends a TPAC presentation on the investment areas with selected projects identified and described. Relating to corridors, clarifying intent on what is needed, what has already been completed, and where other sections of corridors are in development stages with jurisdictions can help the committee make decisions with project priorities.
- Lidwien Rahman commented on the roles and responsibilities planning multimodal projects with different jurisdictions and agencies. There is a need to define who does what, and who to include in discussions of projects. Language inclusion of the term “do not preclude” is helpful when planning transit. It was recommended to implement the updates first, then see what’s left for further development projects.
- Emily Lai asked if there was a guide on how funding investments were made relative to available allocations and priorities. Ms. Ellis described the work Clifford Higgins, Communications Manager, is working on now that shows the relationship to federal funding with RTP projects. Ms. Ellis will provide this to her. More on the implementation of federal funds process will be included in the chapter as well.

6. Adjourn

There being no further business, workshop meeting was adjourned by Chair Kloster at 12:00 p.m.
Meeting minutes submitted by,
Marie Miller
TPAC Recorder

Item	Document Type	Document Date	Document Description	Document No.
1	Agenda	5/2/2018	May 2, 2018 TPAC/MTAC Workshop Agenda	050218T-01
2	Work Program	4/25/2018	2018 Combined TPAC/MTAC Workshop Work Program	050218T-02
3	Meeting Minutes	4/4/2018	Meeting minutes from April 4, 2018 TPAC/MTAC Workshop meeting	050218T-03
4	Report	April 2018	I-5 Wilsonville Facility Plan; Public Review Draft Oregon Department of Transportation & City of Wilsonville	050218T-04
5	Handout	4/4/2018	2018 Regional Transportation Plan: Goals, Objectives and Policies Discussion, MTAC/TPAC Workshop Summary	050218T-05
6	Memo	4/25/2018	To: TPAC/MTAC and interested parties From: Kim Ellis, RTP Project Manager RE: Draft Outline for 2018 RTP Implementation Chapter	050218T-06
7	Handout	N/A	2014 RTP, Chapter 5, Implementation	050218T-07
8	Handout	4/20/2018	Draft Outline of the 2018 RTP Table of Contents	050218T-08
9	Handout	5/2/2018	Draft Outline of the 2018 RTP Table of Contents	050218T-09
10	Handout	5/1/2018	2018 RTP Update, 2018 Council and Regional Advisory Committees Briefings	050218T-10
11	Presentation	5/2/2018	Southbound I-5 Boone Bridge Congestion Study	050218T-11
12	Presentation	5/2/2018	2018 RTP Implementation Chapter Preview	050218T-12



DISCUSSION DRAFT

2018 GROWTH MANAGEMENT DECISION

Urban Growth Report

Published July 3, 2018

oregonmetro.gov/ugb

Metro

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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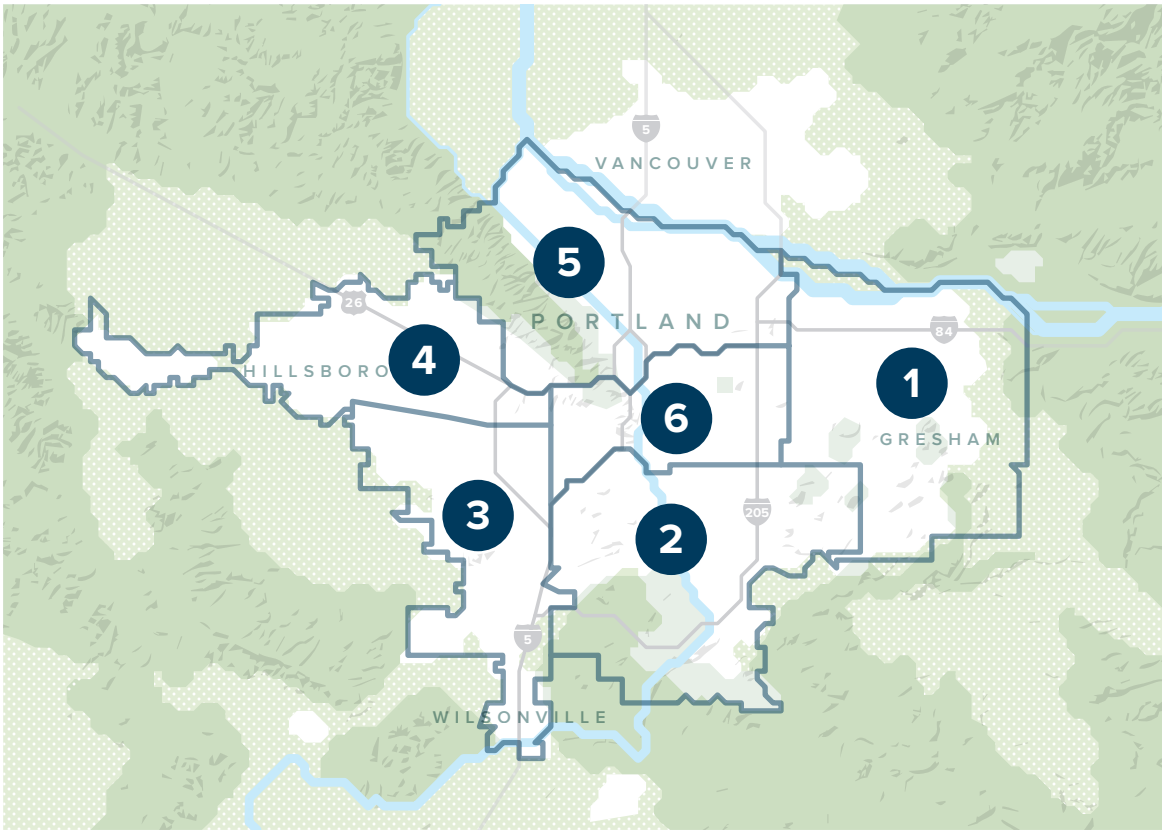

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Executive summary

A tradition of shaping the future to protect the quality of life

As people move here and businesses create jobs, greater Portland's urban growth boundary (UGB) protects farms and forests, promotes economic development, encourages equitable housing and supports development of new neighborhoods when needed.

Metro is working with residents, elected leaders, community groups and researchers to evaluate whether communities and existing land inside the growth boundary have enough room for the people and jobs we expect in 20 years. If we need to expand our urban footprint, we'll work with communities to grow where growth makes sense.

By the end of 2018, the Metro Council will decide whether there is enough land in greater Portland's urban area for 20 years of growth. If not, the council will decide what areas are the best suited to handle future development.

We need more housing and jobs to prepare for population growth

We need more housing, particularly housing that is affordable to people with modest means; we need a greater variety of housing to match our changing demographics; we need more middle-income jobs; and, we need to do a better job of engaging diverse communities in decision making.

Solutions won't be as simple as adding land to the UGB and hoping for the best. Real solutions lie in choices made at the federal, state, regional, county, city, neighborhood, and private sector levels. In that difficulty there's also good news – we each have choices we can make to improve things even when that progress feels incremental.

An outcomes-based approach

Land alone can't address housing needs, particularly for people making lower wages. Seeing this, the Metro Council has reoriented its growth management decisions to find the most viable and desirable ways to produce needed housing and job growth. For growth at the urban edge, it all starts with a strong city proposal for an expansion into an urban reserve.

For the 2018 decision, four cities have submitted proposals for UGB expansions into urban reserves. All four proposals are for housing.

Achieving desired outcomes

To guide its decision-making, the Metro Council, on the advice of the Metro Policy Advisory Committee (MPAC), adopted six desired outcomes, characteristics of a successful region:

- People live, work and play in vibrant communities where their everyday needs are easily accessible.
- Current and future residents benefit from the region's sustained economic competitiveness and prosperity.
- People have safe and reliable transportation choices that enhance their quality of life.
- The region is a leader in minimizing contributions to global warming.
- Current and future generations enjoy clean air, clean water and healthy ecosystems.
- The benefits and burdens of growth and change are distributed equitably.

The merits of these four proposals will be the focus of policy discussions in the summer of 2018. Generally, cities are expected to show that:

- The housing needs of people in the region, county and city have been considered.
- Development of the proposed expansion area is feasible and supported by a viable plan to pay for needed pipes, parks, roads and sidewalks.
- The city has reduced barriers to mixed-use, walkable development in their downtowns and main streets.
- The city has implemented best practices for preserving and increasing the supply and diversity of affordable housing in its existing urban areas.
- The city has taken actions to advance Metro's six desired outcomes, with a particular emphasis on meaningful engagement of communities of color in community planning processes.

Next steps

Through discussions in the summer of 2018, the Metro Council will come to a determination as to whether any of the four proposed expansions are needed to accommodate population growth.

- **July 2018**: Overview of draft 2018 Urban Growth Report at Council, the Metro Policy Advisory Committee, and the Metro Technical Advisory Committee
- **July 2018**: City Readiness Advisory Group provides feedback on the strengths and weaknesses of city-proposed expansions to Council and the Metro Policy Advisory Committee
- **Sept. 4, 2018**: Metro's Chief Operating Officer recommendation
- **Sept. 12, 2018**: Metro Policy Advisory Committee recommendation to the Metro Council
- **Sept. 20 and 27, 2018**: Metro Council public hearings and direction to staff on whether and where the UGB will be expanded (and any other policy direction)
- **Dec. 6, 2018**: Metro Council public hearing
- **Dec. 13, 2018**: Metro Council decision on growth boundary expansion

Introduction

A tradition of shaping the future to protect quality of life

As people move here and businesses create jobs, greater Portland's urban growth boundary (UGB) protects farms and forests, promotes economic development, encourages equitable housing and supports development of new neighborhoods when needed.

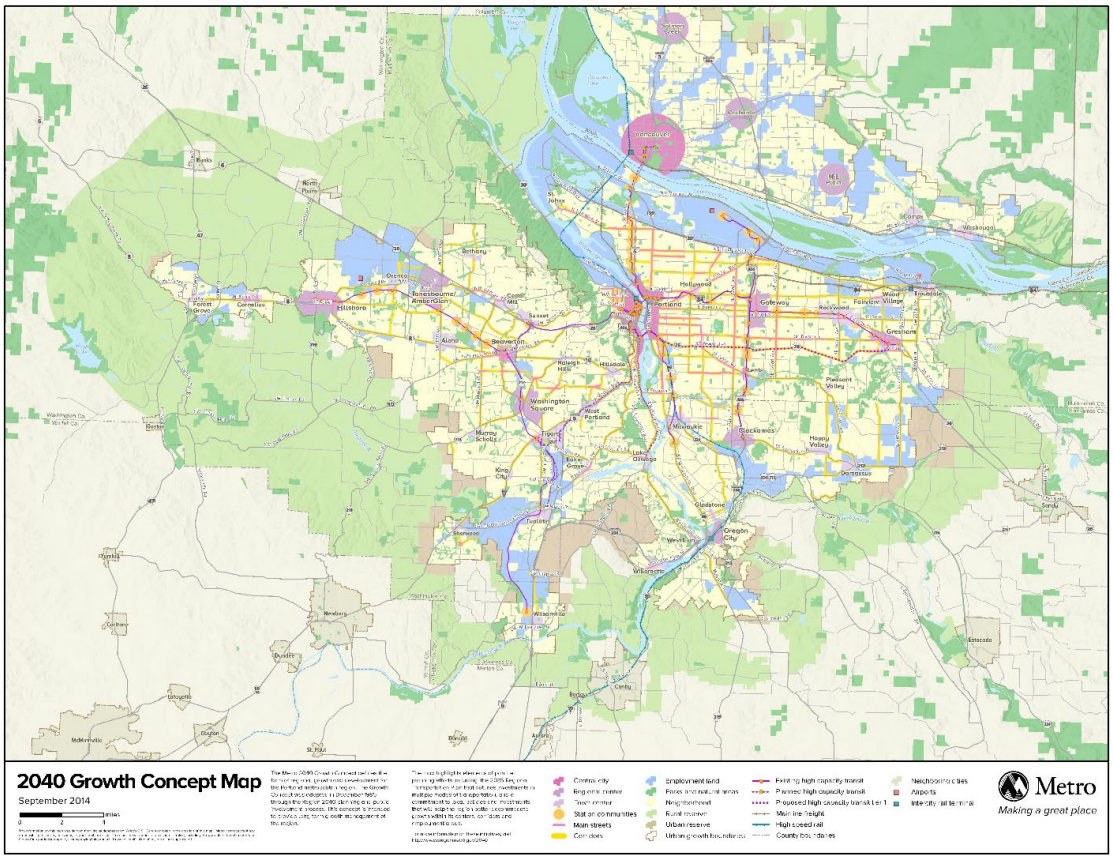
Oregonians have a long history of thinking ahead, trying to shape our destiny rather than simply reacting. This planning tradition demands good information about our past, present and future.

Metro is working with residents, elected leaders, community groups and researchers to evaluate whether communities and existing land inside the growth boundary have enough room for the people and jobs we expect in 20 years. If we need to expand our urban footprint, we'll work with communities to grow where growth makes sense.

By the end of 2018, the Metro Council will decide whether there is enough land in greater Portland's urban area for 20 years of growth. If not, the council will decide what areas are the best suited to handle future development.

These periodic decisions are an opportunity to continue our work on the 2040 Growth Concept, which calls for focusing most growth in existing urban centers and making UGB expansions into urban reserves – areas suitable for future development – after careful consideration of whether those expansions are needed.

Figure 1: The 2040 Growth Concept, the regional plan for focusing growth in existing urban centers and employment areas

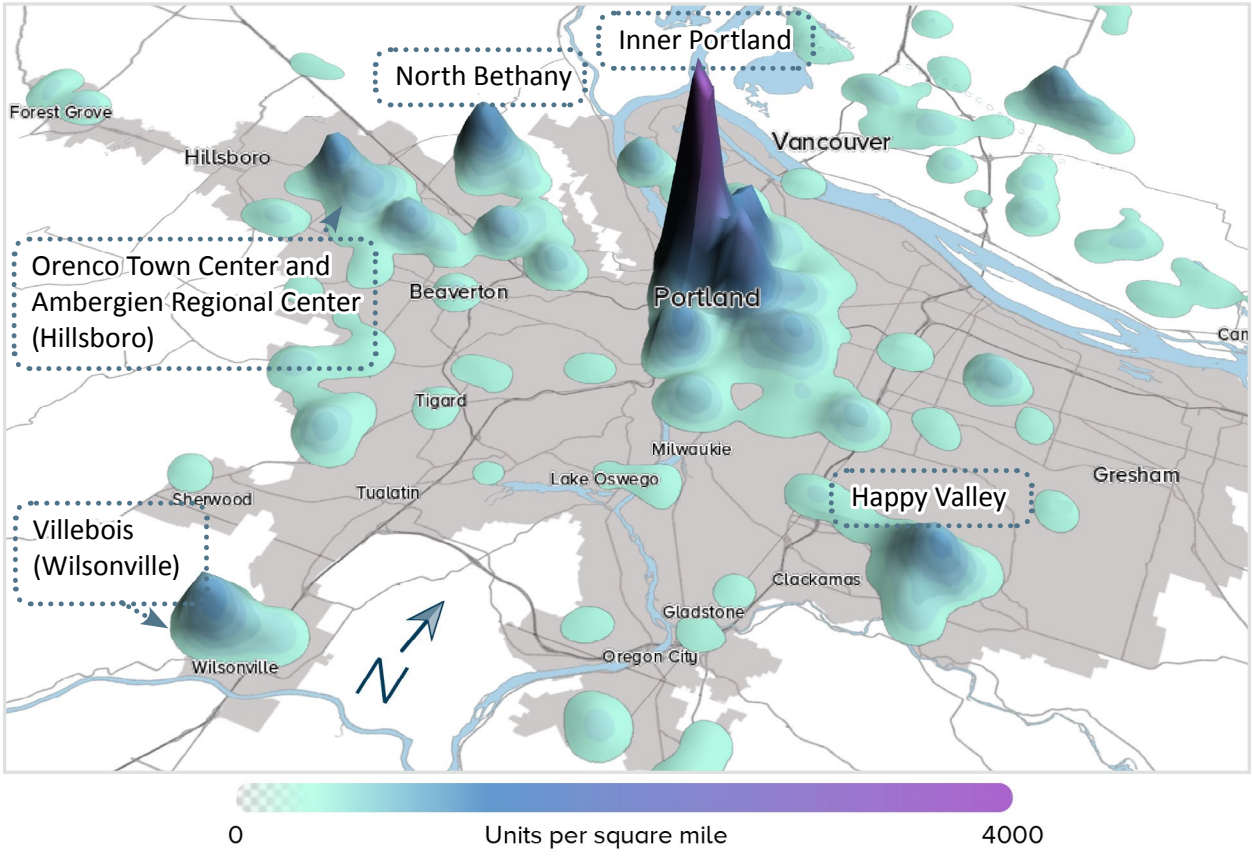


An outcomes-based approach

Learning from experience

In past growth management decisions, the process focused on theoretical projections, leading participants to debate the numbers rather than assessing the viability of development in UGB expansion areas. Discussions of the merits of actual UGB expansion options took a back seat. UGB expansions that lacked city governance and an infrastructure strategy failed to produce housing or jobs. Conversely, those that had those issues sorted out got developed into communities and job centers. At the same time, regional and local plans were being realized – record amounts of housing and job growth happened in existing urban areas, far outpacing previous estimates of redevelopment and infill potential.

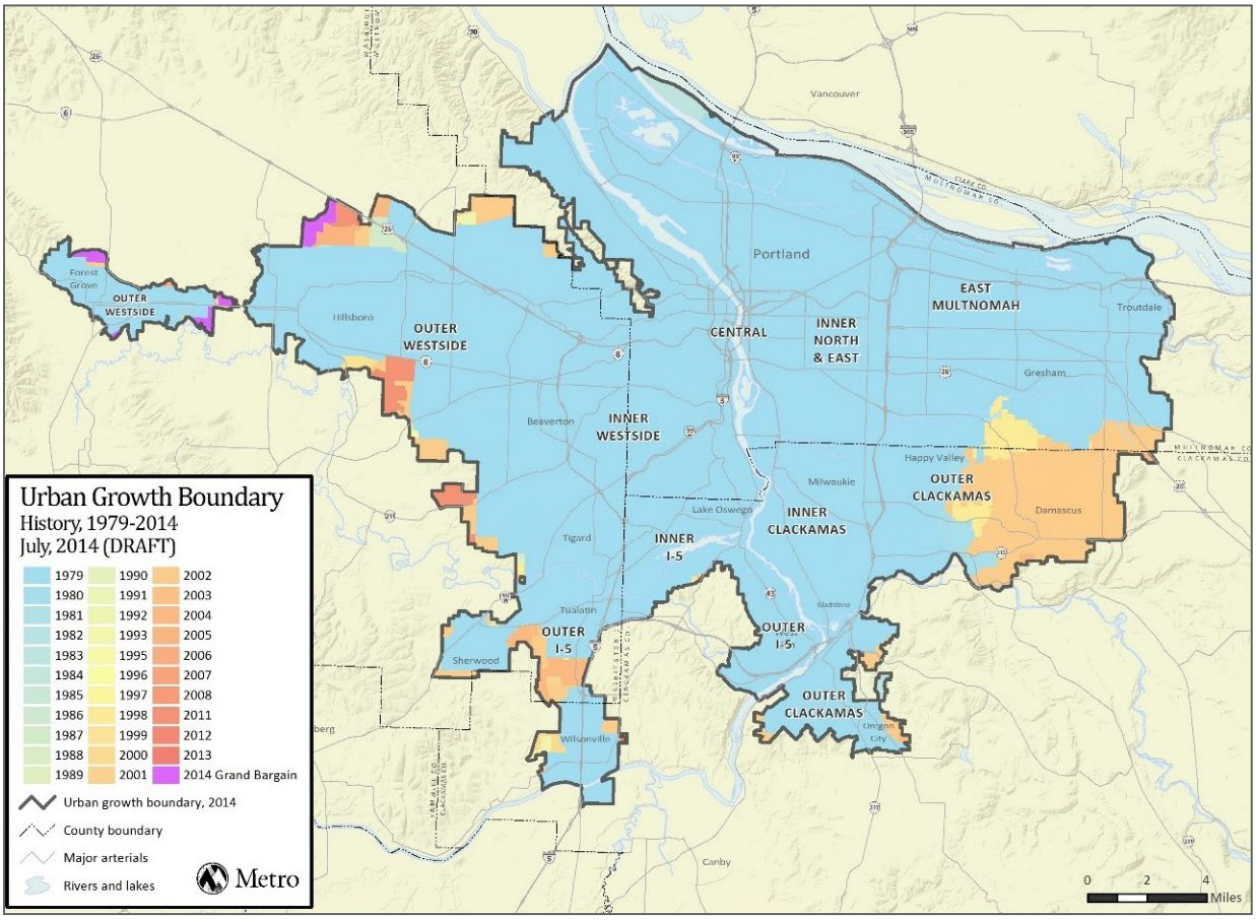
Figure 2: Housing permits in the Portland Metro area, 2009-2017 - units per square mile



The region's UGB was originally put into place in 1979. Since then, about 31,000 acres have been added to the boundary, mostly from 1998 onward. What has happened in those expansions has been informative. Homes and businesses were built in areas that addressed market demand and had governance and a means of paying for pipes, pavement and parks. Without those elements, little or no development happened. In the post-1998 UGB expansion areas, 16 percent of the planned housing has been built. It is clear that land readiness is more important than land supply for producing housing and job growth.

All of this leads to one big lesson that guides this year's growth management decision process: land alone can't address housing needs, particularly for people making lower wages. Seeing this, the Metro Council has reoriented its growth management decision process to implement the most viable ways to produce needed housing and job growth. For growth at the urban edge, it all starts with a strong city proposal for an expansion.

Figure 3: UGB expansions since adoption of the Metro UGB in 1979



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To guide its decision-making, the Metro Council, on the advice of the Metro Policy Advisory Committee (MPAC), adopted six desired outcomes, characteristics of a successful region:

- People live, work and play in vibrant communities where their everyday needs are easily accessible.
- Current and future residents benefit from the region's sustained economic competitiveness and prosperity.
- People have safe and reliable transportation choices that enhance their quality of life.
- The region is a leader in minimizing contributions to global warming.
- Current and future generations enjoy clean air, clean water and healthy ecosystems.
- The benefits and burdens of growth and change are distributed equitably.

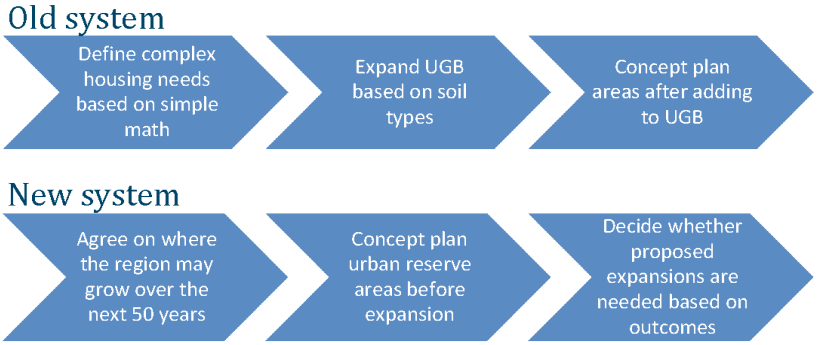
A better approach to making decisions

In 2010, based on those experiences and other factors, the Metro Council adopted a policy of taking an outcomes-based approach to urban growth management decisions. In each subsequent decision, the Council has moved closer to implementing this approach.

A basic conceptual underpinning of this approach is that growth could be accommodated in a number of ways that may or may not involve UGB expansions. Each alternative presents considerations and tradeoffs, but there is not one "correct" answer. For instance, different decisions could lead to somewhat different numbers of households choosing to locate inside the Metro UGB versus neighboring cities such as Vancouver or Newberg. Other decisions could lead to a slightly different housing mix.

An outcomes-based approach acknowledges that development will only occur when there is adequate governance, infrastructure finance, and market demand, and, therefore, any discussion of adding land to the UGB should focus on identifying areas with those characteristics. To further implement its policy direction, the Council will only expand the UGB into urban reserves that have been concept planned[1]. This report is grounded in the actual UGB expansions being proposed by cities.

Evolution of the Metro region's growth management process towards an outcomes-based approach



With an outcomes-based approach, there is also a greater recognition that – consistent with regional and local plans – most growth will happen in existing urban areas and that growth management decisions are an opportunity to gauge whether more could be done to remove barriers to housing and job creation.

1. This policy was adopted by the Metro Council in 2010.

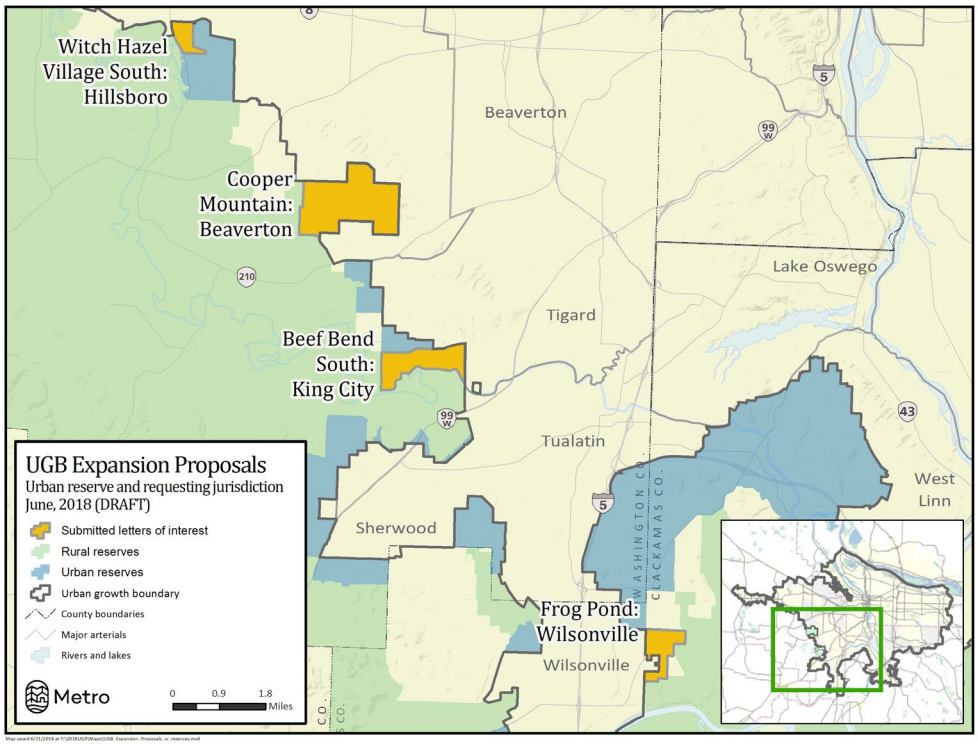
What are cities proposing for UGB expansions?

For the 2018 decision, four cities have submitted proposals for UGB expansions into urban reserves. All four proposals are for housing. Cities' narrative proposals can be found in Appendix 9. The four proposed expansions would total about 2,200 gross acres. After accounting for environmentally-sensitive areas, they include about 1,270 net buildable acres. The four cities' plans include about 9,200 homes at full build-out.

In the past, the region has added, on average, about 10,000 new households per year in the Metro UGB. The 9,200 homes in proposed expansion areas would address about an average year's household growth. Experience shows that adding more land beyond what cities are proposing would not produce more housing. This emphasizes the need to do all we can to encourage more housing production in existing urban areas.

Statewide Planning Goal 14 (Urbanization) lays out several factors that must be considered when determining where to expand the UGB. The Goal 14 "locational factor" analysis can be found in Appendix 7. The four urban reserve areas proposed for expansion by cities all compare favorably according to the factors described in Statewide Planning Goal 14. In light of those factors, it is appropriate for all four to advance for further consideration by the Metro Council.

Figure 4/Table 1: City-proposed UGB expansions for consideration in the 2018 decision



Proposing city	Name of urban reserve	Gross acres	Buildable acres	Homes planned
Beaverton	Cooper Mountain	1,232	600	3,760
Hillsboro	Witch Hazel Village South	150	75	850
King City	Beef Bend South	528	400	3,300
Wilsonville	Advance Rd. (Frog Pond)	271	192	1,325

"The U.S. is no longer a nation of pioneers building log cabins on the Western frontier. Nor is it a post-WWII nation of nuclear families buying tract homes in Levittown. We can't indefinitely rely on new construction of low density, single-family housing to accommodate population growth."

—Brookings Institution, 2018

The merits of these four proposals will be the focus of policy discussions in the summer of 2018. On the advice of the Metro Policy Advisory Committee (MPAC), the Metro Council has adopted code factors that describe expectations for cities proposing residential expansions. Those factors speak to the elements of the proposed expansion and to actions being taken by cities in their existing urban areas. Metro issued administrative guidance to assist cities in preparing proposals that address these code factors[2]. Generally, cities are expected to show that:

- The housing needs of people in the region, county and city have been considered
- Development of the proposed expansion area is feasible and supported by a viable plan to pay for needed pipes, parks, roads, and sidewalks
- The city has reduced barriers to mixed-use, walkable development in their downtowns and main streets
- The city has implemented best practices for preserving and increasing the supply and diversity of affordable housing in its existing urban areas
- The city has taken actions to advance Metro's six desired outcomes, with a particular emphasis on meaningful engagement of populations of color in community planning processes.

To provide new perspectives on the merits of city proposals, Metro convened a City Readiness Advisory Group in June. The group, which included experts in affordable housing, multi-modal transportation, mixed-use development, residential development and equity, discussed the strengths and weaknesses of city proposals. Those discussions will be summarized for the Metro Council, MPAC and the Metro Technical Advisory Committee (MTAC) in July.

2. See Appendix 9 for administrative guidance.

Possible outcomes of different growth options

Over the years, Metro has sought to improve its growth management analyses. In earlier iterations, the calculation of land need was relatively straightforward: land supply minus land demand equals land need. While that simple approach has an appeal, it glosses over a number of policy questions and market factors that deserve greater discussion. Inevitably, that approach led to debates about numbers and ideologies rather than discussions of practical options.

This analysis strives to highlight policy questions and make the practical options – a decision whether to make any of the four proposed UGB expansions – more evident. This approach leads to a conclusion that future growth could be accommodated with or without UGB expansions, but different choices will have different outcomes.

Is there a need for more land to support job growth?

Commercial land demand

Commercial employment is a broad category that includes all non-industrial employment, such as teachers, cooks, doctors, sales clerks, nurses, real estate agents, architects, counselors, coffee shop workers, insurance agents, and bankers. What all of these sectors have in common is that to prosper, they need to locate close to where clusters of people live. From a growth management perspective, this means that the needs of these sectors will be best met in existing urban locations either on vacant land or through increased redevelopment and infill.

For the 2018 decision, no cities have proposed UGB expansions for commercial uses aside from select nodes that would provide neighborhood services in proposed residential expansion areas. There is no indication that adding land to the UGB when it has not been proposed by a city would result in commercial employment. For these reasons, there does not appear to be a need for additional land to be added to the UGB for commercial employment.

Industrial land demand

As our nation's economy has evolved from farming roots through the industrial revolution and into a knowledge-based economy, several dynamics have been at play that influence the nature of industrial land demand:

- As technology has improved over the last century, industrial workers have become more productive. This means that industrial job growth is stagnant and that demand for space is driven less by employment than it was in the past.
- E-commerce has driven demand for close-in warehousing and distribution facilities to enable quick deliveries. This may increase the likelihood of redevelopment of some sites.
- Data centers have emerged as users of industrial land, but they provide relatively few jobs (instead, they pay franchise fees that benefit cities).
- Large industrial firms seeking new locations consider sites all around the country or world, making it impossible to forecast regional land demand for large industrial sites.
- Site requirements for industrial uses can be very specific. For instance, some industrial users require rail access, others require redundant power sources, others require an educated workforce, and others require manual laborers. Forecasting those specific requirements would imply more certainty about the future than is possible.
- Providing raw land is just one step of many for producing industrial jobs. Typically, infrastructure investments and site assembly are also required. Brownfield cleanup and wetland mitigation are also common needs.

These dynamics mean that it is challenging to estimate land needs based on an employment forecast. This difficulty is amplified by the additional uncertainty surrounding employment forecasts since job growth can be influenced – for better or worse – by international relations, monetary policy and many other factors that lie outside the control of cities, counties, the region or state.

For these reasons, determining industrial land needs is best understood as an exercise in economic development goal setting rather than forecasting. This is true at the regional level and even more so at the local level.

The peer-reviewed baseline employment forecast for the seven-county area shows a net decrease of about 9,000 industrial jobs during the 2018 to 2038 time period. While some new industrial firms may emerge and some existing industrial firms may grow, those gains are outweighed by expected employment decreases at other industrial firms. The expected net decrease in regional employment in industrial sectors such as manufacturing, warehousing and distribution means that there is not a regional need for more industrial land to support employment growth. Even under the high growth forecast, industrial employment remains essentially unchanged from 2018 to 2038, again pointing to no need for additional industrial land to support employment growth.

Likewise, for the 2018 decision, no cities have proposed UGB expansions for industrial uses. There is no indication that adding land to the UGB when it has not been proposed by a city would result in industrial employment. For all of these reasons, there is not a regional need for additional land to be added to the UGB for industrial employment, including employment on large industrial sites.

The Metro Council has put into place a process for considering specific non-residential UGB expansion proposals outside of the standard growth management cycle. If cities develop an employment concept plan for an urban reserve area, that "major amendment" process can address needs that aren't anticipated in the 2018 growth management decision.

Is there a need for more land to support household growth?

Urban growth scenarios

To inform the Metro Council's determination of whether there is a need for residential UGB expansions in 2018, Metro staff produced a number of scenarios that tested different permutations of a few assumptions:

- varying levels of population, household and employment growth (using the range forecast for the seven-county metropolitan area)
- different amounts of buildable land in the Metro UGB (varying amounts of redevelopment capacity)
- UGB expansions as proposed by four cities vs. no UGB expansion.

The scenarios are described in more detail in Appendix 3. Several general observations can be made about the scenarios:

The region is on track to continue using land efficiently

- Most capacity for housing production within the existing UGB comes through redevelopment and infill.
- Redevelopment and infill construction thrives when there is strong economic and population growth.

Increased spillover growth to neighboring cities does not appear to be a threat

- The original Metro UGB was adopted in 1979. Since then, about 61 percent of the new households in the larger seven-county metropolitan area have located inside the Metro UGB.
- In all scenarios, the share of the seven-county area's new households that locate in the Metro UGB (the "capture rate") is higher than historic rates, ranging from 63 to 72 percent.

- Barring unanticipated changes in the growth capacity of neighboring jurisdictions, a decision not to expand the UGB will not cause excessive spillover growth into neighboring jurisdictions like Sandy, Newberg, or Clark County, Washington.

More housing production is needed to keep up with household growth

- The region needs more housing production to keep up with population growth, particularly for households earning lower incomes.
- If development of the four proposed UGB expansions is viable, they can modestly increase housing production in the region.
- Regional scale analysis is not sensitive enough to distinguish between the effects of the individual proposed expansions.

Housing affordability will remain a challenge

- As in other regions around the country, housing affordability will remain a challenge.
- Encouraging more redevelopment and infill is the most effective means of keeping housing prices in check for renters.
- If developed, the four proposed UGB expansions would result in modest reductions[11] in housing prices for owner-occupied housing by providing additional housing supply.
- If developed, the four proposed UGB expansions would have little impact on prices for renter-occupied housing given that one-third of the planned housing in those areas would be multifamily.

Most housing will remain single-family housing, but most most growth capacity is for apartments and condominiums

- Currently, about 68 percent of all housing is single-family housing. All scenarios show that share decreasing in the future, with most resulting in about 60 percent single-family housing (still a majority).
- In keeping with regional and local plans, infrastructure funding realities and smaller household sizes, most growth capacity is for apartments and condominiums.
- If developed, the four proposed UGB expansions would result in a modest increase in choices for single-family housing for ownership.
- While demand for owned and single-family housing is strong, households appear willing to substitute rental and multifamily housing to a certain extent.

The region is on track to stay within the urban reserves "budget"

- There are approximately 23,000 gross acres of urban reserves that are candidates – if needed – for UGB expansions through the year 2045 (to address regional land needs to the year 2065).
- If urban reserves were added to the UGB at the average rate of about 850 acres per year, all urban reserves would be used (added to the UGB) by the year 2045.
- The four city-proposed expansions total 2,200 gross acres. At the above-described "budget" of 850 acres per year, this amounts to about 2.5 years of usage.

11. The amount of potential housing price reduction varies depending on other assumptions about redevelopment potential, household growth, and future UGB expansions (beyond the 2018 decision). All other things being equal, however, the proposed expansions could help moderate housing prices somewhat.

Changes in where we live and work
Where we stand today with housing

Greater Portland came roaring out of the Great Recession. In less than 10 years, the region grew its economy and added high-wage jobs at higher rates than almost any other large U.S. metro area. Median incomes went up. The poverty rate went down. Thousands of young, educated workers migrated to the region drawn by the high quality of life and the opportunity of a booming economy.

This influx of new affluence and new people brought both economic growth and new challenges , changing the dynamics of our housing market and shifting the geography of affordability in a short period of time.

But longer-term trends also shaped our housing supply, and those trends continue to challenge our ability to create housing choices that meet the needs of our changing region.

Housing construction came to a halt in the Great Recession, driving up housing costs

All around the country, housing construction came to a halt during the Great Recession. As the population continued to grow, demand intensified and housing prices rose – slowly at first, but gaining momentum with each passing year. Rent and home price increases were among the highest in the nation; vacancy rates, the share of unoccupied rental units, were among the lowest. This was true in greater Portland and dozens of other cities around the country.

Long-term residents living in rental housing found themselves priced out of their neighborhoods, while would-be homebuyers struggled to save for down payments that seemed to double overnight. Renters suffered the most, often facing substantial rent increases with little notice.

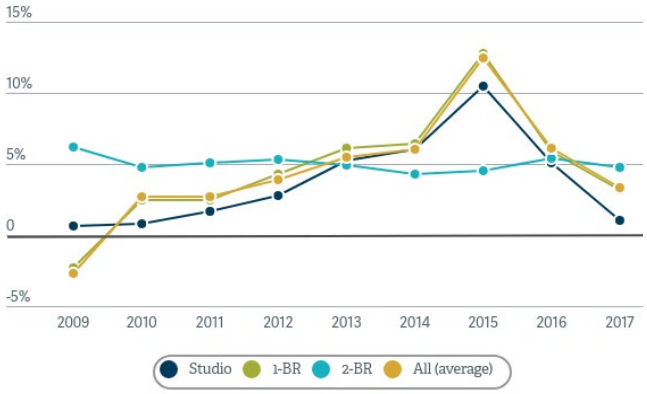
Like most regions, we are playing catch-up with housing construction

Housing construction took off again as the region emerged from the Great Recession. Increased housing supply has begun to temper housing rents and prices, which are still rising, but not as quickly.

Though it's of little consolation to people who work and struggle to keep a roof over their heads, rents here are similar to those in cities around the country. For one-bedroom apartments, the Portland region is in the same rental price range as Atlanta, Minneapolis, Nashville, Denver and Chicago. Rents are more expensive here than a number of other cities, but still represent a value compared to other coastal cities.

When it comes to rents, location matters. To live close to jobs, amenities, and transit, people have to pay a premium that is often out of reach.

Figure 5: Annual percentage change in rental unit costs by size, Portland metro area, 2009-2017.



Sourc: Data courtesy of CoStar commercial real estate company

3. See Appendix 5 for more information on historic residential development trends.

Figure 6: Median rent for a one bedroom apartment in 2009 (source: Rainmaker Insights)

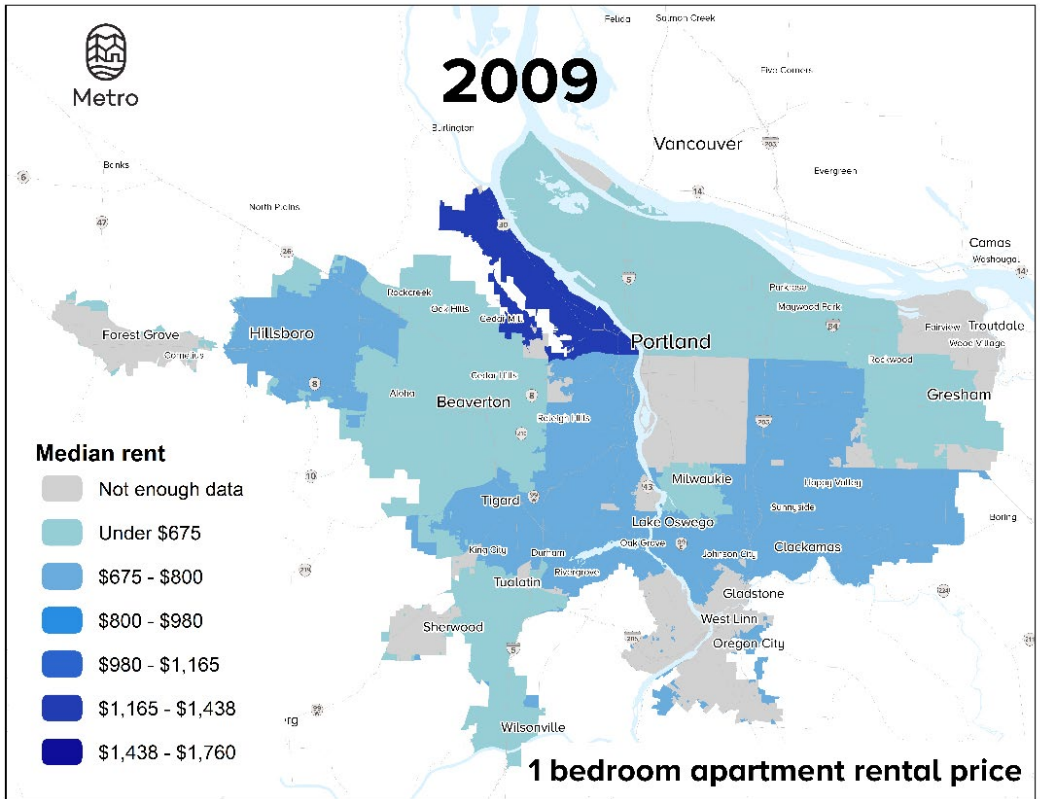
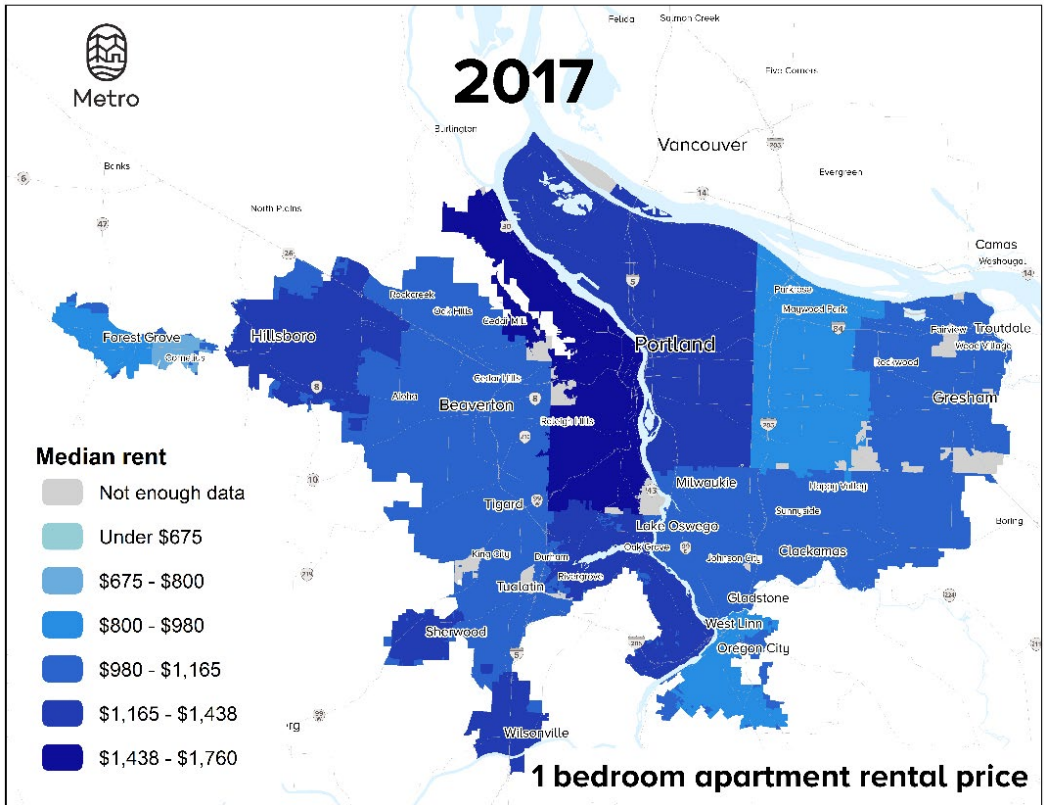


Figure 7: Median rent for a one bedroom apartment in 2017 (source: Rainmaker Insights)



What's helping to keep housing prices under control?

Simply put, the most straightforward way to keep housing prices in check is to build more housing. Without that housing supply, an ever-increasing population competes for a limited pool of housing, driving up prices. This is especially true in central locations with access to jobs, transit, services and amenities.

More than 20,000 new units of multifamily housing have been completed in the Portland metropolitan area since 2010[4]. More than half of those units were built in the past two and a half years.

Since 2015, developers submitted 25,000 permits for future multifamily buildings in greater Portland, meaning more apartments are in the pipeline[5].

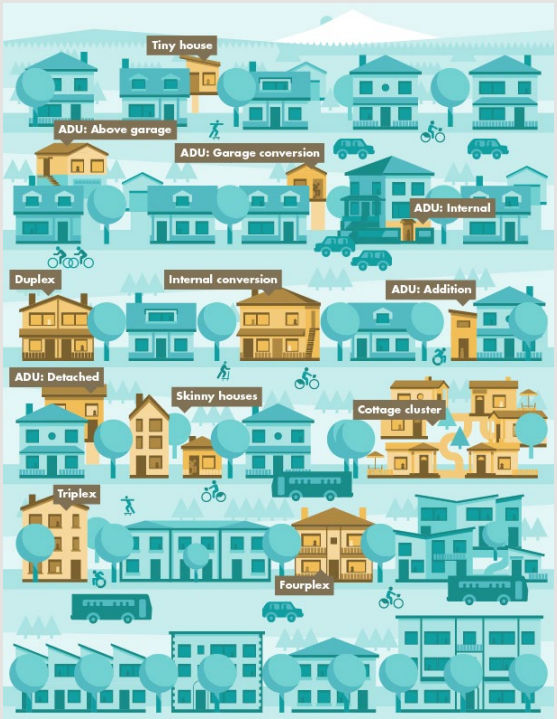
The increased available supply loosened regional apartment vacancy rates from a tight 4.6 percent in 2014 to a somewhat more comfortable 5.5 percent in 2017[6]. This growing availability of housing gives apartment-seekers more choices, generating competition among property managers who have moderated their asking rents accordingly.

Nearly 30,000 permits for new single-family units, including duplexes and triplexes, were submitted between 2010 and mid-2017[7].

"Missing middle" housing

Our grandparents, parents, kids, friends and neighbors have diverse housing needs, but for too long there has been little housing diversity.

There are solutions for diversifying housing options in our communities. "Missing Middle" housing refers to options that lie on the spectrum between single-family homes with yards and mid-rise housing, for example, accessory dwelling units, cottage housing, and triplexes. However, these choices are often not widely available in the locations that provide the greatest access to jobs, services and amenities.

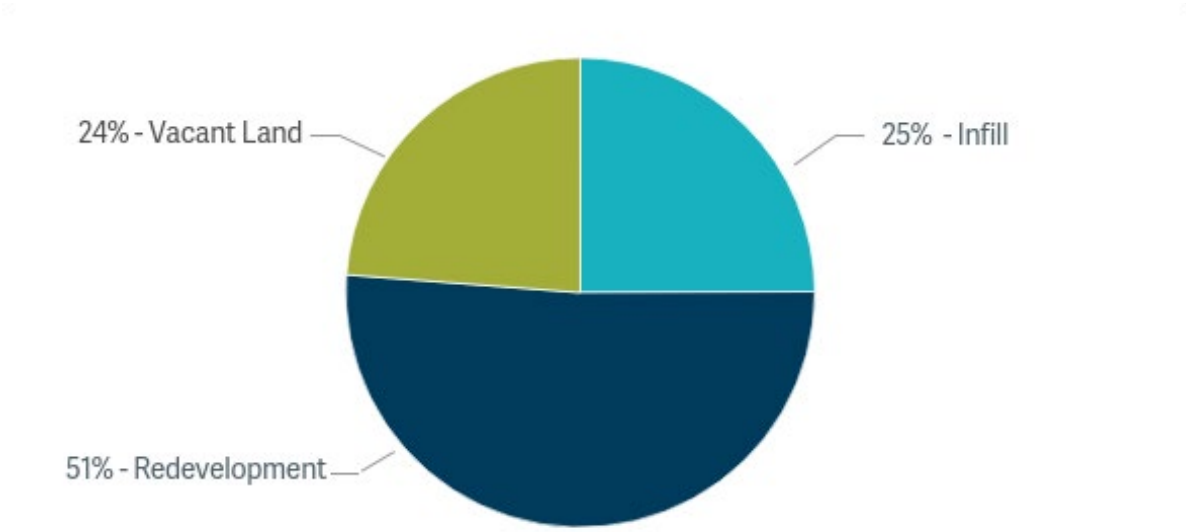


4. Source: CoStar
5. Construction Monitor
6. Source: CoStar
7. Source: Construction Monitor

Most new housing is being built in existing areas

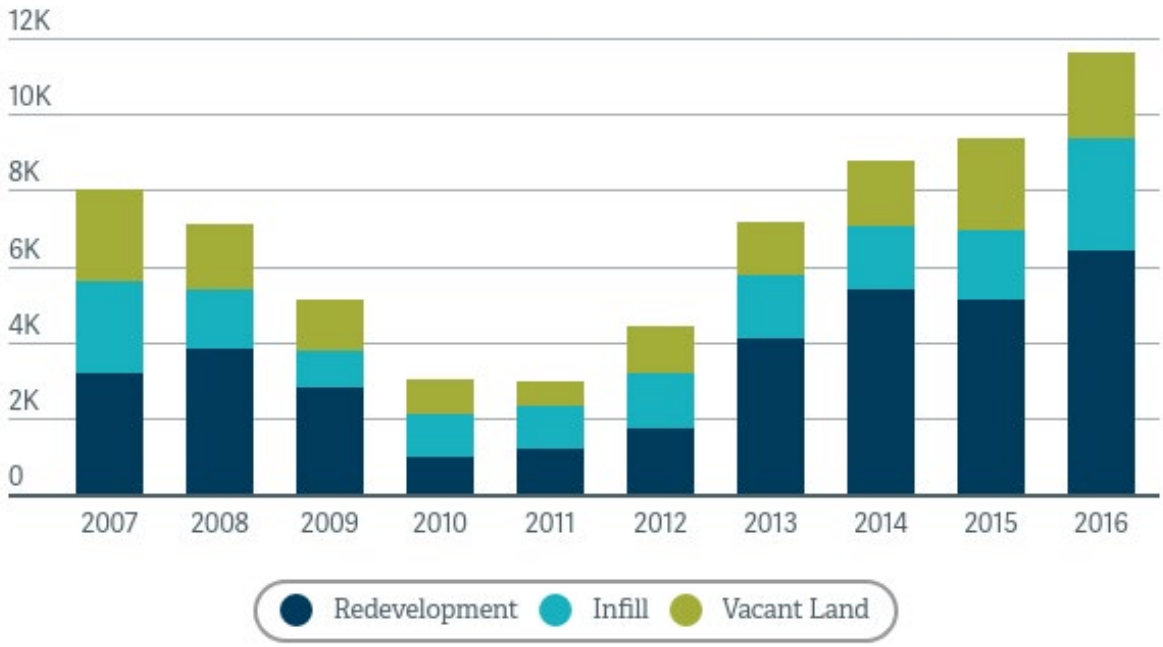
Long-standing plans, investments, and market conditions have resulted in three-quarters of new homes being built through redevelopment and infill in existing urban areas (in the Metro UGB from 2007 through 2016). This means that, as housing is built, we are making efficient use of land and public resources.

Figure 8: New units (total) built by development type, Metro UGB, 2007-2016



Source: Metro Land Development Monitoring System output dataset from May 2018 RLIS data input

Figure 9: New units built by year and development type, Metro UGB, 2007-2016



Source: Metro Land Development Monitoring System output dataset from May 2018 RLIS data input

The emergence of ADUs

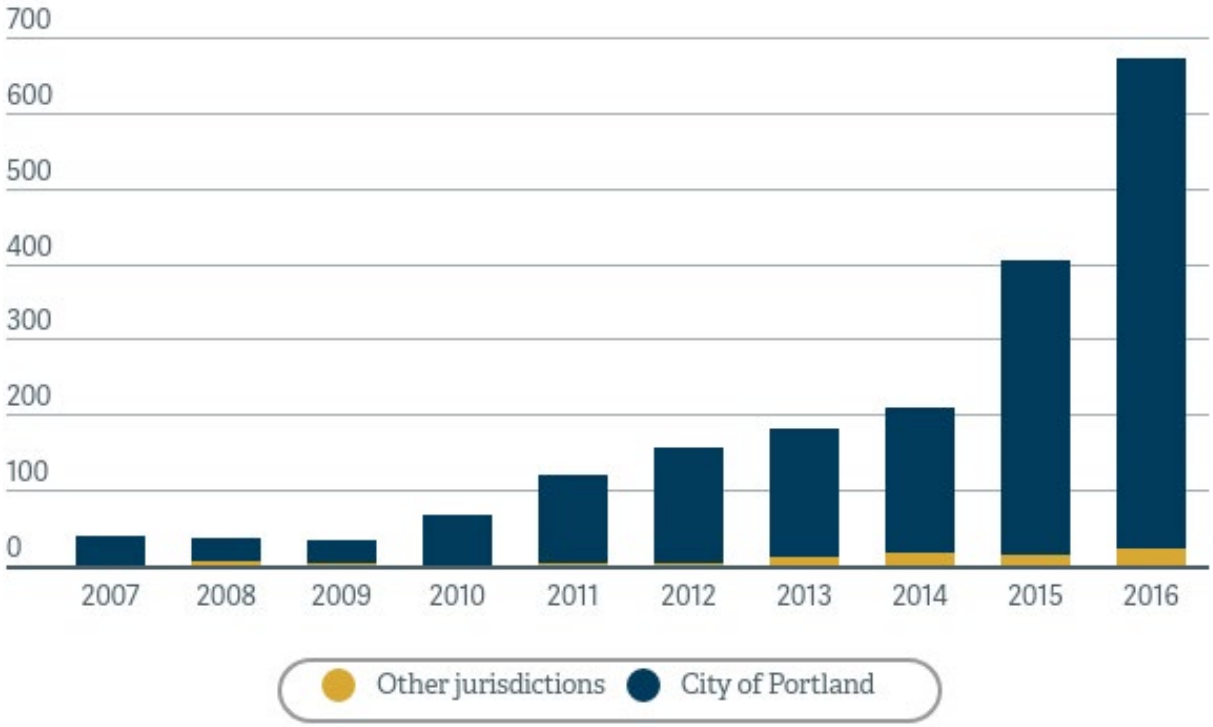
Since the mid-1990s, Metro has required that all cities in the region allow accessory dwelling units (also known as "ADUs," "granny flats" or "in-law" cottages) in single-family neighborhoods. Though it took several years, construction has taken off, particularly in the City of Portland, with several hundred ADUs built per year in the Metro UGB for several years now.

In 2017, ADUs made up 7 percent of the region's new housing. Among other factors, the City of Portland's waiver of system development charges for ADUs is credited with this uptick.

A common refrain about ADUs is that they only get used for short-term rentals such as Airbnb, so they don't contribute to the regional housing supply for residents. A 2017 survey of Portland ADU owners and tenants indicates that this is largely not the case. The survey was commissioned by Portland State University's Institute for Sustainable Solutions. Sixty percent of ADU owners surveyed reported that their ADU is used by someone as a primary residence, while 26 percent reported that the ADU is used as a short term rental[8].

Even when used as short-term rentals, ADUs may become long-term rentals over time as owners pay off ADU construction loans or grow tired of managing ever-changing guests. In a year-over-year comparison, about half of the Airbnb listings in Portland were no longer active (Brown, 2017).

Figure 10: Accessory dwelling units (ADUs) by year, Metro UGB, 2007-2016



Source: Metro Land Development Monitoring System output dataset from May 2018 RLIS data input

8. 14 percent reported that their ADU is vacant, used as extra space, or "other".

We're using land more efficiently for single-family housing

Today, a new single-family home uses about half as much land as one built in 1980. This trend of using land inside the UGB efficiently helps us to protect farms and forests. It also makes it more feasible to provide single-family neighborhoods with transit and other services.

What's holding housing back?

Getting enough housing built is not without its challenges and the reasons are varied, including:

- a lack of funding for pipes, pavement, parks and other facilities to make vacant lands development-ready
- neighborhood opposition to change that can slow or stop housing proposals
- uncertainty in permitting processes
- difficult access to financing for developers
- zoning codes that restrict "missing middle" housing
- depending on the location, achievable rents that are sometimes insufficient to spur redevelopment
- site specific challenges such as lot sizes and configurations, access, contamination, or property owners that don't want to develop or sell.

Land alone doesn't result in housing

The Metro Council made most of its UGB expansions from 1998 onward. Since then, the Metro Council has added about 27,000 acres or about 42 square miles to the UGB. For context, that's an area the about the size of two Beavertons, or 420 Oregon Zoos.

New construction in these expansion areas is a challenge. In addition to overcoming the normal financing and permitting hurdles, a city or developer must also build streets, sidewalks, sewers and other basic infrastructure to support a neighborhood. Infrastructure easily costs hundreds of millions of dollars. Since they were brought into the UGB, these areas have produced 16 percent of their planned housing

Figure 11: Single-family lot size and building size (annual medians), Metro UGB, 1980-2016

Source: Metro Land Development Monitoring System output dataset from May 2018 RLIS data input

(fewer than 11,000 approved or pending permits out of the expected 67,000).

In those cases where development readiness has been resolved – for example, Happy Valley, North Bethany, River Terrace, Villebois, Witch Hazel – housing has been built.

Aside from getting land ready for development, our region shares another challenge facing regions around the country: the private market often can't profitably build new housing that is affordable to people earning lower incomes. Without that potential for profit, affordable housing doesn't get built even if our community plans allow for it.

Cities proposing UGB expansions have been asked to describe how they are encouraging construction and preservation of affordable housing in their existing urban areas.

A shortage of cities

It matters, not just how much housing gets built, but where housing gets built. People in the greater Portland region were forward-thinking in the mid-1990s when they called for focusing most growth in existing downtowns and transportation corridors. That vision made our region more prepared for recent growth trends.

Cities around the country have seen a reversal of decades-long pattern of people moving away from urban centers (Edlund, Machado, & Sviatschi, 2015). Sales prices for central locations now reflect people's preference to live close to urban amenities like restaurants, grocery stores and cafes (Couture & Handbury, 2015). Construction of new housing in those locations is not keeping up with demand, leading economists and others to point to a "shortage of cities" (Cortright, Our Shortage of Cities, 2014).

This trend isn't restricted to central cities. Many people that live in the suburbs are seeking urban amenities – restaurants and transit, for instance – like those offered in Orenco and Tanasbourne in Hillsboro and The Round in Beaverton.

In the end, no one can predict future housing preferences, particularly when so much seems in flux. Regardless of preferences, there are significant headwinds for keeping up with population growth by building single-family homes. Those challenges include record levels of student loan debt, tighter lending standards, and high costs for new pipes and pavement that show up on a house's price tag.

Finding home

Cheranda Curtis calls her studio apartment her "sanctuary." Having an affordable place to live has given Curtis the opportunity to stay sober, hold a steady job and save for a house.

Patti Jay felt "exhausted with having to move again" after she received a no-cause eviction. She's grateful she found a place to live close to her son's high school, which means he didn't have to switch schools.

Displacement of people of color

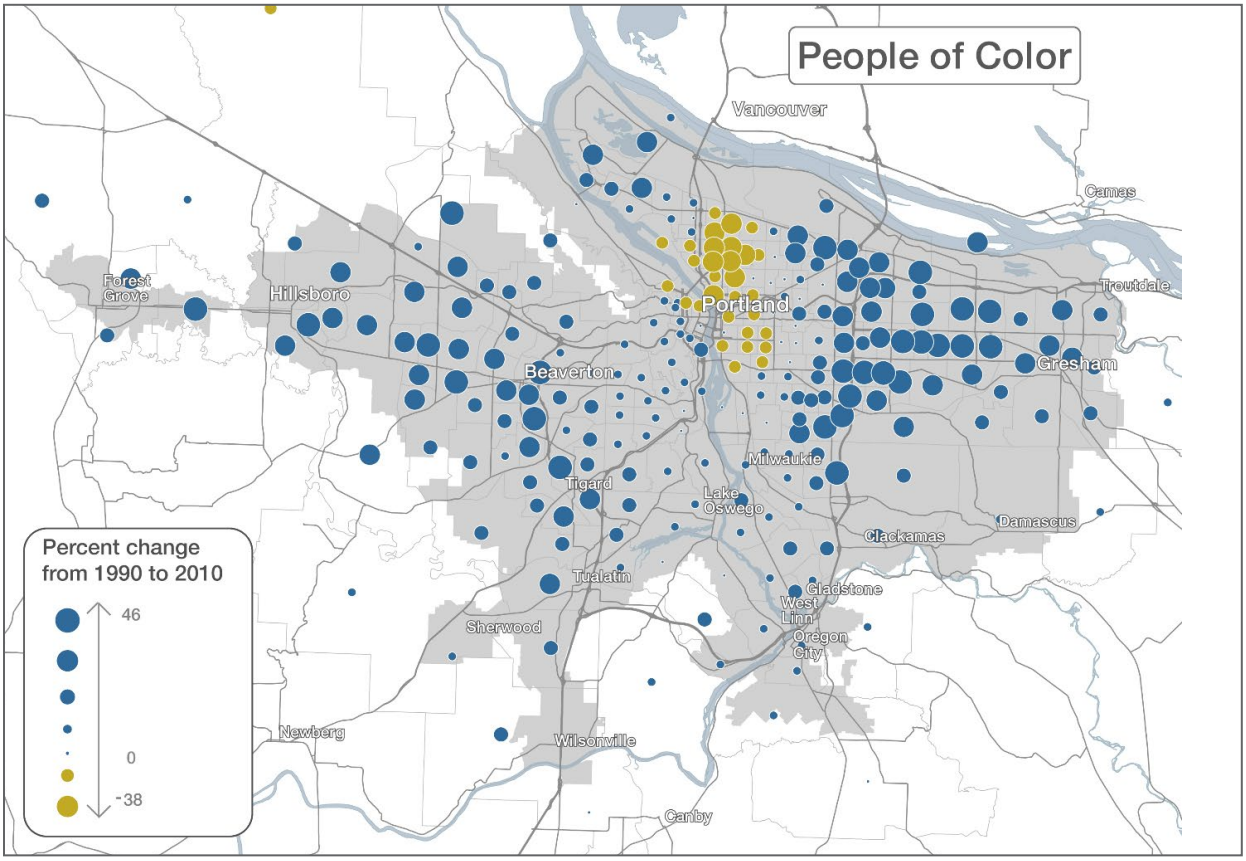
Unable to afford living in the region's urban centers, many people have moved to areas of the region with cheaper housing. Cheap housing comes with hidden costs, though. When you factor in the additional transportation costs – the increased costs of gas and car expenses or the extra time to bike, walk or take transit – a significant portion of the affordability benefits are lost if it requires long commutes.

Displacement has disproportionately affected communities of color, leading to a shift in the racial geography of the region over the last decade.

Displacement is a geographic consequence of a series of systemic inequities that would not be entirely solved with more abundant, affordable housing close to the region's city centers. But, not providing it exacerbates community divisions, by putting some people further from resources, jobs and opportunities readily available in more walkable, transit-served areas. Likewise, it disrupts the social institutions and networks that bind communities together.

And the impacts can be long-term. Displacement and housing stress can have wide-ranging impacts on health and well-being – impacts that can span generations.

Figure 12: Displacement and migration of communities of color, 1990-2010



Source: US Census

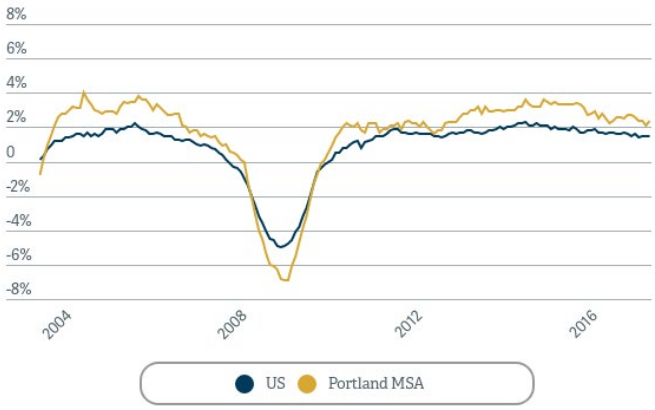
Where we stand today with jobs

Ascending out of the Great Recession

Our regional economy is the envy of many others. Educated, working-age people continue to migrate here in increasing numbers, providing local employers with a steady pool of skilled workers while also attracting employers in other regions to consider locating here[9]. And with a strong 4.6 percent increase in a measure of regional economic activity called gross domestic product (GDP), greater Portland had the 10th-fastest growing economy out of the nation's 100 largest metro areas in 2015 (State of Oregon Employment Department, 2016).

Job growth in the greater Portland region exceeds the national rate of job growth. In 2015, our region's jobs increased by 3.3 percent while the nation saw a 2 percent increase.

Figure 13: Annual percentage change in job growth, Portland metro area compared to the national average, 2004.-2018



Source: US Bureau of Labor Statistics

Manufacturing plays an outsized role in our economy

More than a quarter of greater Portland's economic output comes from the manufacturing sector. Nationally, manufacturing accounts for less than half that – just 12 percent of the nation's total economy (United States Bureau of Economic Analysis, 2018).

"In a region like this I don't think that there are a lot of barriers [to job growth]. You know, people want to live in a nice environment – you can't get much nicer than Portland. People want to live someplace where housing is affordable – let's hope we can keep it affordable.

By and large, across the board, these are people that are conscious of their communities, they like green energy systems, they like public transportation. These are all very important issues for our audience that we're targeting [for employee recruitment]."

—Dr. Lisa Coussens, OHSU, Knight Cancer Institute

9. See Appendix 4 for more information about employment trends.

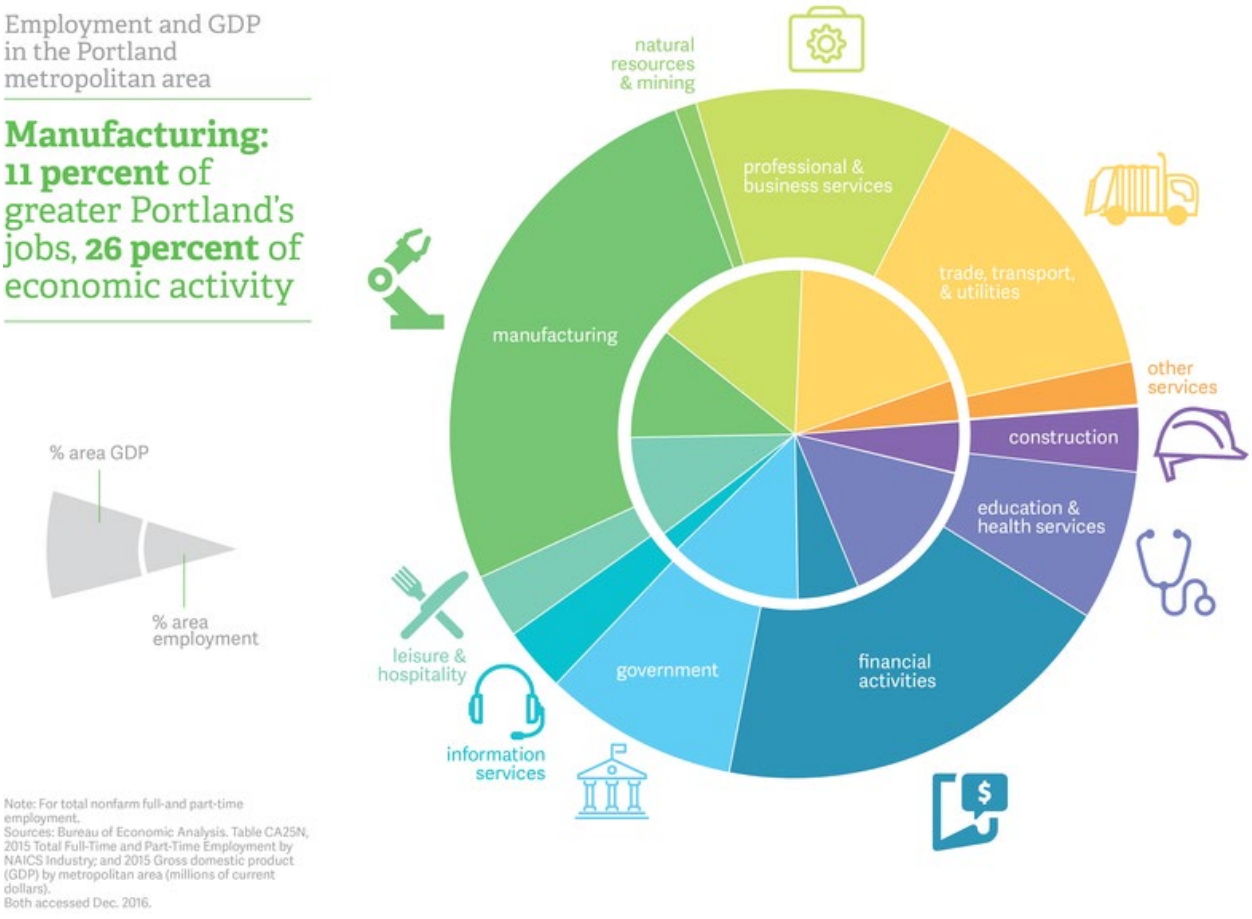
But economic activity doesn't always equal jobs: manufacturing accounts for just over a tenth of greater Portland's jobs.

Thanks largely to production of high-value products such semiconductors and electronics, the manufacturing sector contributes an oversized amount to the regional economy relative to its share of the workforce.

But despite its strong contribution to the region's economy, jobs in the manufacturing sector stagnated in 2016 – by December 2016, the industry had lost 1.4 percent of its Portland-area jobs relative to the year before.

Still, the large profit margins of the region's high-tech manufacturing exports means that the sector's earnings are substantial, even as the size of the manufacturing workforce is somewhat stagnant.

Figure 14: Employment and gross domestic product (GDP), Portland metropolitan area, 2015



Most jobs are in population-serving and other non-manufacturing employment

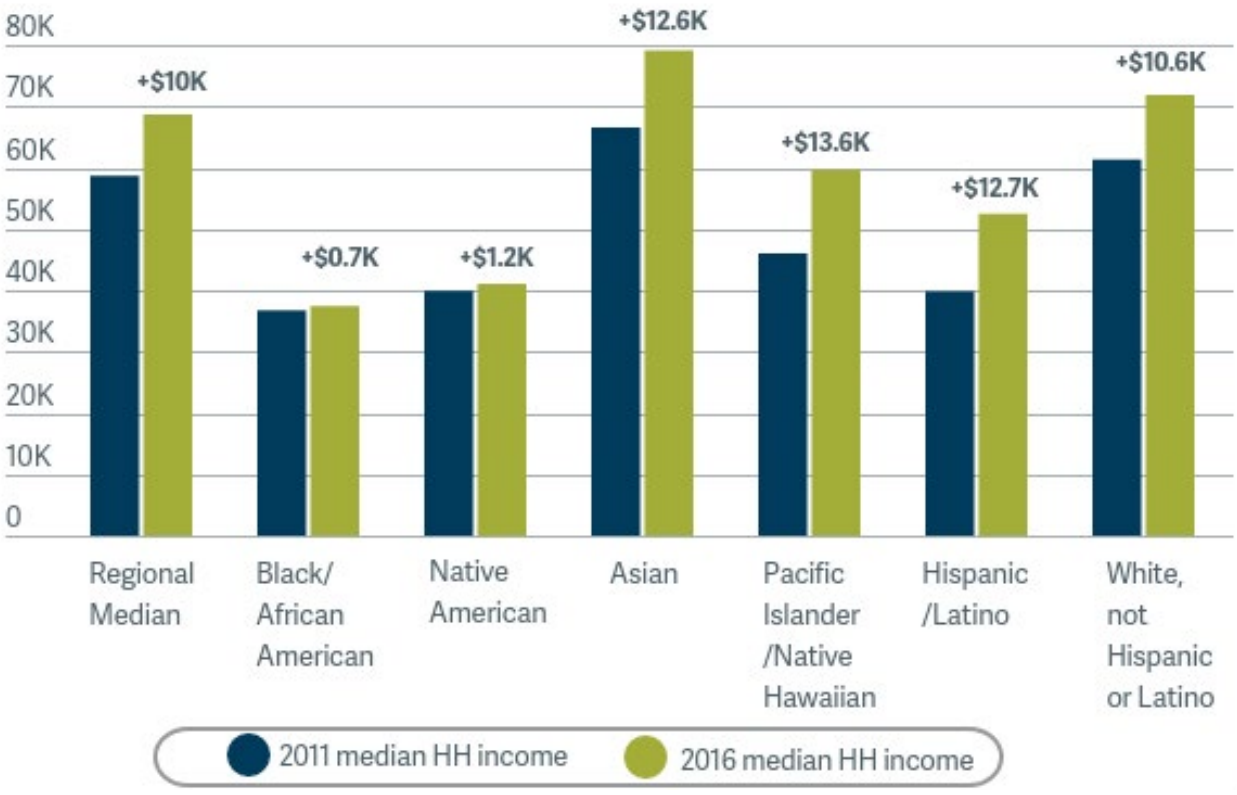
As in the past, a large portion of future employment is expected in jobs that serve the public: education and medicine, for instance. As the population grows, so too will employment in these sectors.

Likewise, sectors like professional and business services (attorneys, engineers, and architects, for example) and financial services (insurance agents, real estate agents, and bankers, for instance) will continue to make up much of our region's employment. What all of these sectors have in common is that they need to locate close to clusters of where people live . From a growth management perspective, this means that the needs of these sectors are best met in existing urban locations

Not everyone is benefiting from economic growth

Though the headlines about unemployment rates and productivity are good, not everyone is prospering. From 2011 through 2016, median household income in the greater Portland region increased by $10,000. However, Black and Native American households only saw an increase of about $1,000.

Figure 15: Change in median household income by race, seven-county Portland-Vancouver-Hillsboro MSA, 2011 vs. 2016



Source: 2011 and 2016 American Community Survey (1-year estimates)

Help wanted

"Last year, Millenials became the largest component of the American workforce. For many companies, attracting and retaining millenial workers seems to require having a downtown office. "Probably for the first time in history, instead of people moving where jobs are," says Tom Murphy, a senior fellow at the Urban Land Institute, "jobs are moving where the talent is."" (Wogan, 2016)

Photo credit: autodesk.blogs.com/between_the_lines/

Middle income jobs were slow to recover from the Great Recession

Wage polarization has been a long-term trend both locally and nationally and the recent recession only accelerated the shift toward more high and low wage jobs and a smaller share of middle wage jobs. As of 2007, middle wage occupations comprised nearly 65 percent of the jobs in the Portland metropolitan area, but that share was less than 58 percent by 2017.

Middle wage job growth has picked up in the last couple of years. As of 2017, the region finally recovered the number of middle wage jobs lost during the recession. But low and high wage jobs have fared much better, both during and after the recession, leading to increasing wage polarization. The polarization trend is expected to continue in the future for the region and the U.S. as a whole, in large part due to globalization and technological change.

Occupations within the middle wage category have also seen different trajectories over the last ten years. In the Portland metropolitan area, around 13,200 manufacturing production jobs were lost during the recession and only 4,600 of those jobs had been recovered as of 2017. Production workers face continuing pressure from globalization and automation in the manufacturing industry .

Administrative and office support occupations also saw significant job losses and weak recovery as advances in technology change the nature of office work and the need for support staff.

On the other hand, employment in several middle wage occupations that are primarily driven by population and demographic change continued to grow during and after the recession, including healthcare support workers, police officers, and teachers.

Changes in where businesses locate

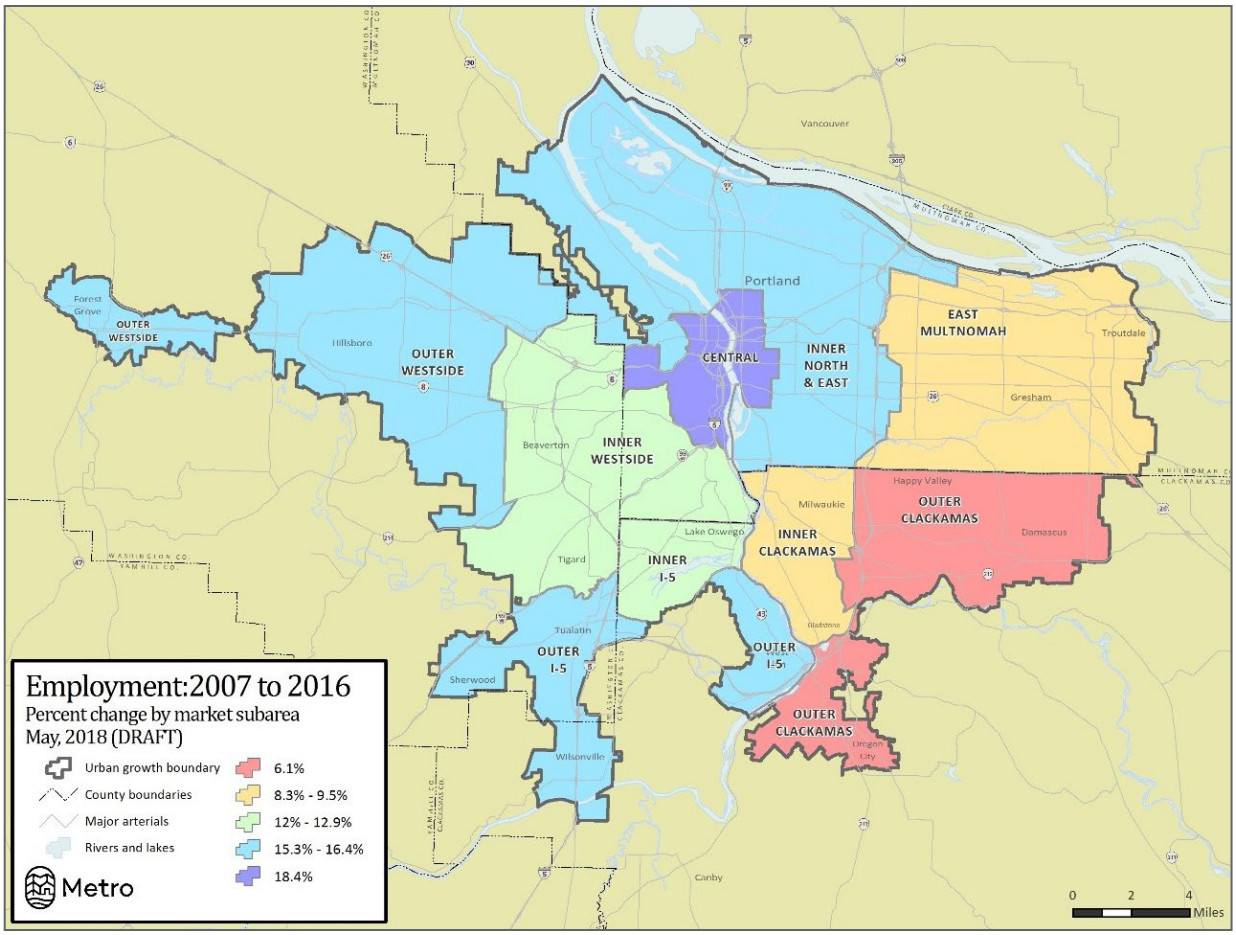
As we plan for future employment, we need to be aware of changes in where businesses locate and how they use space. Most of these trends point to more efficient use of land.

Nationwide, there has been a trend of businesses relocating from more remote campus settings to downtowns. Businesses are doing this to attract and retain an educated workforce that wants access to urban amenities like restaurants, bars, cafés and transit.

This is now a mainstream trend. In recent years, G.E. moved its headquarters from a suburban campus in Connecticut to a downtown Boston location. The new G.E. headquarters won't have a parking lot. McDonald's and Kraft Heinz both moved from suburban Chicago locations to downtown.

In the greater Portland region, these trends are evident. The highest rate of job growth in the region from 2007 to 2016 was in central Portland at 18.4 percent growth. This was followed by the outer west side, inner north and east, and the outer I-5 areas at 15.3 to 16.4 percent growth. Job growth in east Multnomah County and Clackamas County has lagged behind at 6.1 percent.

Figure 16: Percent change of employment by market subarea, 2007-2016



Our workplaces look different than they used to

Inside office buildings, workers are taking up less space than they used to. In many professions, gone are the days of private offices. Instead, a laptop and a chair are often more typical.

Among the increasing ranks of the "gig economy" (self-employed), work space can be co-working space that is leased by the hour or a seat at a coffee shop for the price of coffee refills.

In the medical sector, health care providers are following their patients. They see future demand for outpatient clinics close to where people live.

The "non-store retailers" category includes catalog and internet-based businesses that fulfill orders by mail as well as other non-store vendors. Regional employment by non-store retailers increased by nearly 27 percent from 2007 to 2017 (source: QCEW).

This retail trend has implications for other sectors in the greater Portland region. Shipping and delivery employment grew by 31 percent over the same period, while warehousing employment grew nearly 9 percent (source: QCEW). E-commerce's focus on quick deliveries means that demand for space is often in close-in locations.

For "brick and mortar" retail, the emergence of e-commerce and people shifting their consumption habits from retail goods to meals and entertainment portends the closing of malls and retail businesses in commercial corridors (Thompson, 2017). This trend can be seen in the closure of many Sears, J.C. Penney, Macy's, and Kmart stores and all Toys R Us stores in the U.S. Between 2007 and 2009, 400 of the U.S.'s largest 2,000 malls closed (Esri, 2014).

The construction of data centers has recently created more demand for industrial land. Policy makers may wish to consider what an appropriate land use planning response should be. While data centers play an important role in the modern economy, they tend to have few employees and will use large sites when vacant land is relatively abundant or inexpensive (Miller, 2017). This is not out of necessity, however. There are numerous examples of data centers in multistory buildings such as downtown Portland and Chicago and in northern Virginia and Silicon Valley. They locate there despite higher real estate and construction costs to save milliseconds on data transmission times (Miller, 2017).

From home to work and back

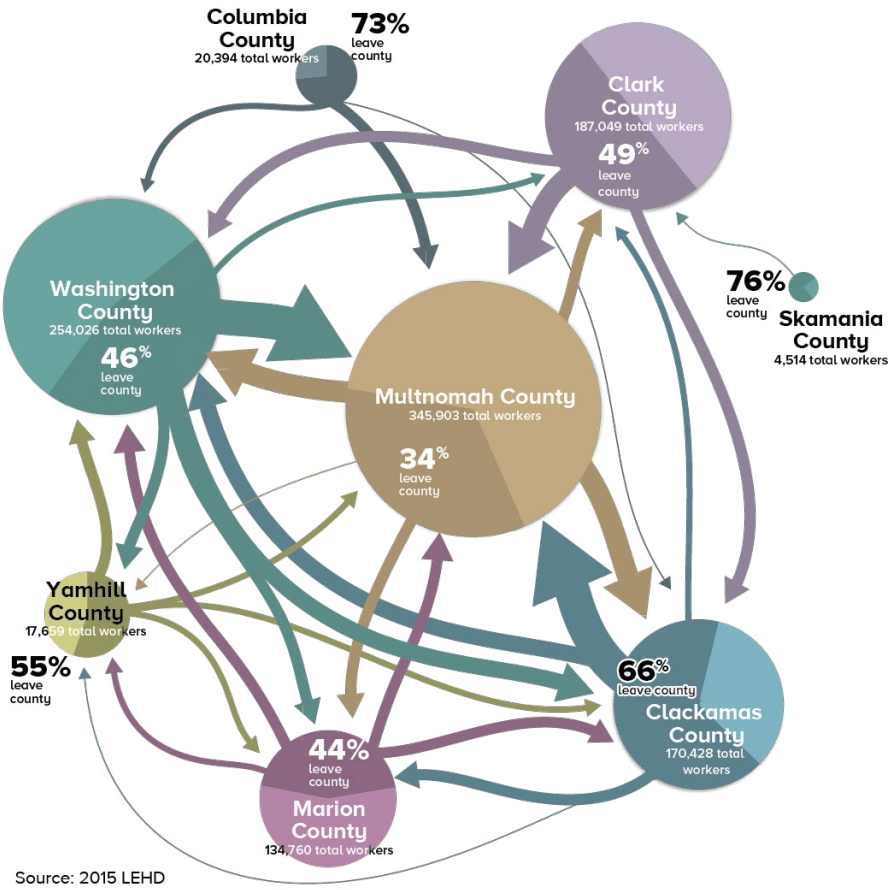
Ours is a regional economy that doesn't stop and start at state lines, the UGB, or county and city boundaries. People make complex decisions about where to live and work. Few of us choose the job closest to home or the home closest to our job. Rather, we consider other factors, which might include:

- whether jobs are a good match for our skills
- whether jobs pay enough
- whether our spouse or partner is also employed, but in a different location
- whether homes match our budget
- whether homes and neighborhoods match our preferences
- whether we can tolerate or afford longer commutes
- whether local schools meet our needs and preferences.

These choices are borne out in the data on commute patterns that show people commuting across city and county lines, Those patterns will not be changed by any UGB expansion for housing or jobs. The best course of action is to plan communities with a mix of uses that shorten our other trips – going to the grocery store, for example – and provide reliable and safe multimodal transportation options to link different parts of the region.

In the context of growth management decisions, these patterns influence the amount of housing and job growth that is likely to locate in the Metro UGB. Historically (since 1979), about 61 percent of the new households in the seven-county metropolitan area and 82 percent of the new jobs have located in the Metro UGB.

Figure 17: Where greater Portland area residents work by county, 2015 (source: US Census LEHD)



Good sources

Metro bases its forecast on the best sources available:

- U.S. Census
- U.S. Bureau of Labor Statistics
- U.S. Bureau of Economics
- Federal Reserve Board
- Portland State University's Population Research Center
- IHS Markit

Handling uncertainty

There is uncertainty in any forecast. Metro recognizes uncertainty by producing a probabilistic range forecast. The midpoint of the range is the most likely outcome. However, migration trends, federal monetary policy, technological change, recessions and international relations are all factors that may move actual growth higher or lower in the range.

Regional outlook

The communities inside the Metro UGB are a major part of a larger regional economy that extends over seven counties and across state lines. To understand housing and employment needs in the Metro UGB, we need to first understand what's happening in the larger seven-county metropolitan area. This larger area is the starting point for Metro's population, household and employment growth forecasts. This seven-county forecast is documented in Appendix 1.

Metro subjects its forecast model and the forecast results to a peer review process that includes public and private partners who are experts in economics and demographics. In the case of the draft forecast, the peer review panel found the forecast to be reasonable and in line with other projections. Documentation for the peer review process is included in Appendix 1.

To check how we're doing, Metro also provides comparisons of past forecasts and actual growth (see Appendix 1). Those comparisons show that Metro's forecasts have been accurate and reliable. Metro's 2010 forecast has held up well, slightly underestimating population growth and slightly overestimating employment growth in the seven-county area. After five years, the forecast was within three percent of actual estimates for population and employment, less than a one percent annual difference. It is also worth noting that the year 2015 "actual" numbers are estimates and also subject to error.

We expect more people in the region

Between 2018 and 2038, there could be between 365,000 (low) to 659,000 (high) additional people residing in the seven-county region. The most likely amount of growth is 524,000 more people in the seven-county region.

Table 2: Population forecast for the seven-county Metropolitan Statistical Area (2018 to 2038)

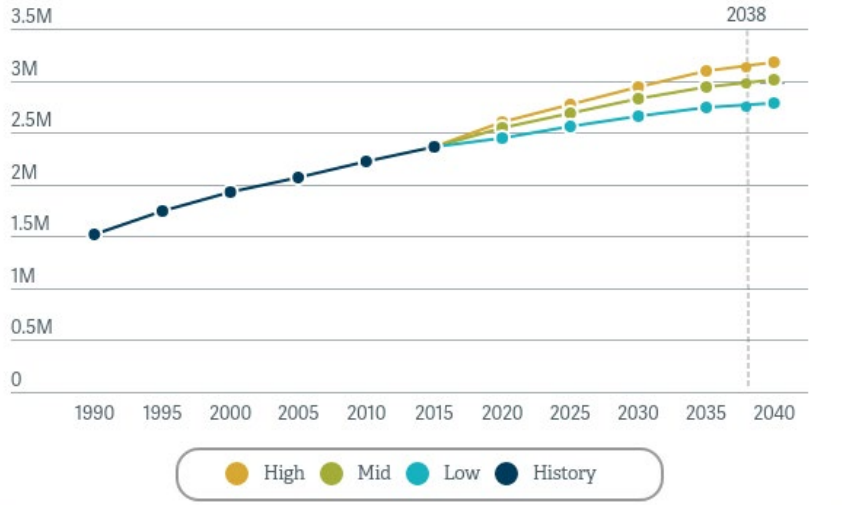
	2018	2038	Difference
Low growth	2,414,000	2,779,000	365,000
Most likely growth	2,481,000	3,005,000	524,000
High growth	2,516,000	3,175,000	659,000

The primary source of population growth in the region will

continue to be migration. Births represent an ever-shrinking source of population growth in our region and nation. In 2017, the U.S. saw the fewest births in 30 years and its lowest general fertility rate in history. (U.S. Department of Health and Human Services, 2018)

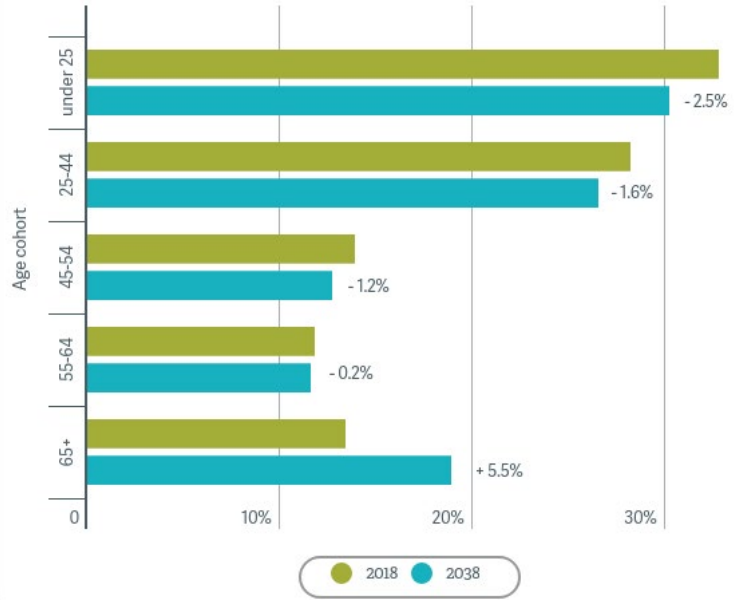
Along with declining birth rates, the region's population is aging. In 2018, about 13 percent of the population is 65 years or older. By 2038, about 19 percent of the population will be 65 years or older.

Figure 18: Population history and range forecast, seven-county Portland-Vancouver-Hillsboro MSA, 1990-2038.



Source: 2018-38 Portland-Vancouver-Hillsboro, OR-WA MSA Forecast, Metro Research Center, Nov 2017

Figure 19: Age cohorts as a percentage of total population, seven-county Portland-Vancouver-Hillsboro MSA, 2018 and 2038



Source: 2018-38 Portland-Vancouver-Hillsboro, OR-WA MSA Forecast, Metro Research Center, Nov 2017
Note: Age bracket size (i.e. the number of years per age bracket) varies by cohort.

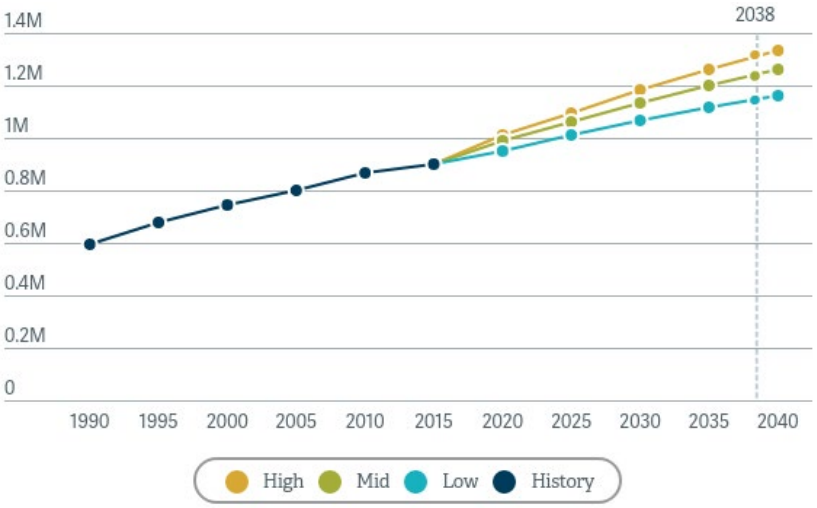
We expect more households in the region

Between 2018 and 2038, there could be between 212,000 (low) to 335,000 (high) additional households in the seven-county region. The most likely amount of growth is 279,000 more households in the seven-county region.

Table 3: Household forecast for the seven-county Metropolitan Statistical Area (2018 to 2038)

	2018	2038	Difference
Low growth	932,000	1,144,000	212,000
Most likely growth	958,000	1,237,000	279,000
High growth	972,000	1,307,000	335,000

Figure 20: Household history and range forecast seven-county Portland-Vancouver-Hillsboro MSA, 1990-2038



Source: 2018-38 Portland-Vancouver-Hillsboro, OR-WA MSA Forecast, Metro Research Center, Nov 2017

Figure 21: Household size history and forecast by share of total, seven-county Portland-Vancouver-Hillsboro MSA, 2018 to 2038

Source: 2018-38 Portland-Vancouver-Hillsboro, OR-WA MSA Forecast, Metro Research Center, Nov 2017

Because people are staying single longer and having fewer children, the average household size for the seven-county metropolitan area is expected to drop from 2.6 people per household in 2018 to about 2.4 people per household in 2038. Today (and in 2038), almost two-thirds of households consist of one or two people.

In 2018, about 23 percent of heads of households are 65 and older. By 2038, about 30 percent of heads of households will be 65 and older.

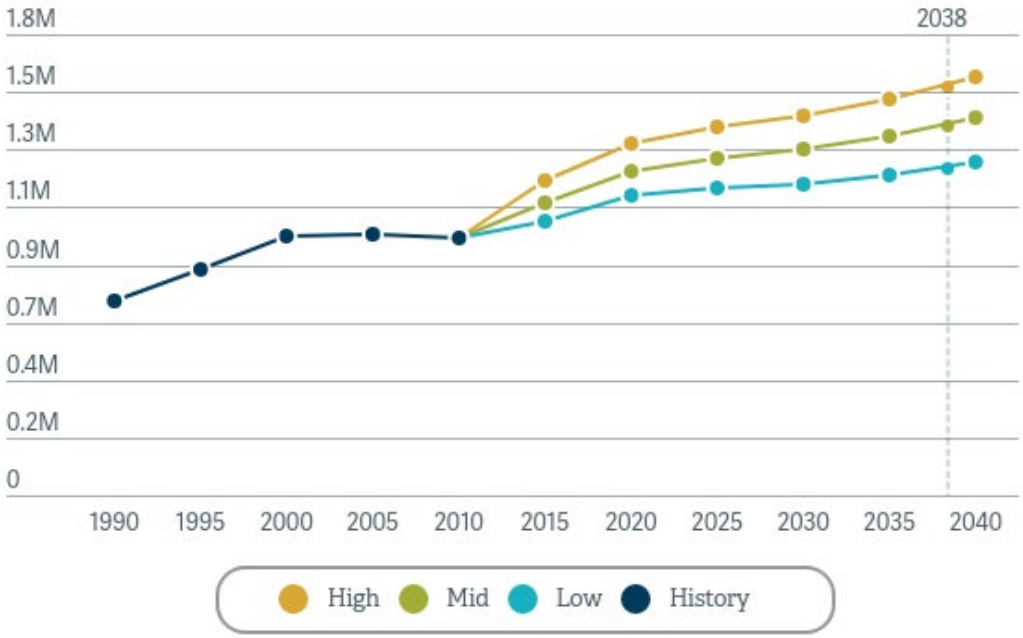
We expect more jobs in the region

Between 2018 and 2038, there could be between 135,000 (low) to 258,000 (high) additional jobs in the seven-county region. The most likely amount of growth is 209,000 more jobs in the seven-county region.

Table 4: Employment forecast for the seven-county Metropolitan Statistical Area (2018 to 2038)

	2018	2038	Difference
Low growth	1,108,000	1,243,000	135,000
Most likely growth	1,193,000	1,402,000	209,000
High growth	1,293,000	1,551,000	258,000

Figure 22: Employment history and range forecast seven-county Portland-Vancouver-Hillsboro MSA, 1990-2038



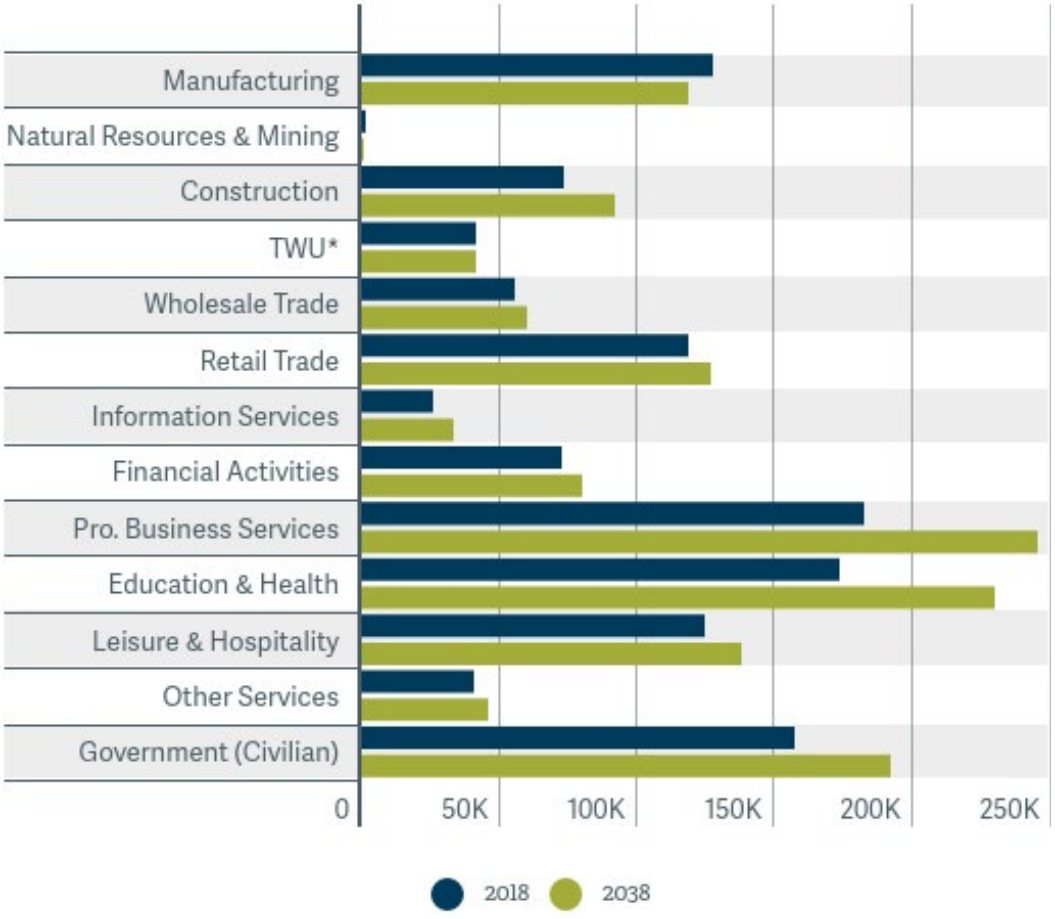
Source: 2018-38 Portland-Vancouver-Hillsboro, OR-WA MSA Forecast, Metro Research Center, Nov 2017

There is more uncertainty around the job forecast than the population forecast since the economy may be positively or negatively impacted by global events, innovations, and decisions that can't be predicted. Actual growth will not follow a smooth trend line, but will have ups and downs with business cycles.

There is yet more uncertainty when it comes to forecasting employment by sector, but most economists see continued strength in sectors like education and medicine that serve the growing population.

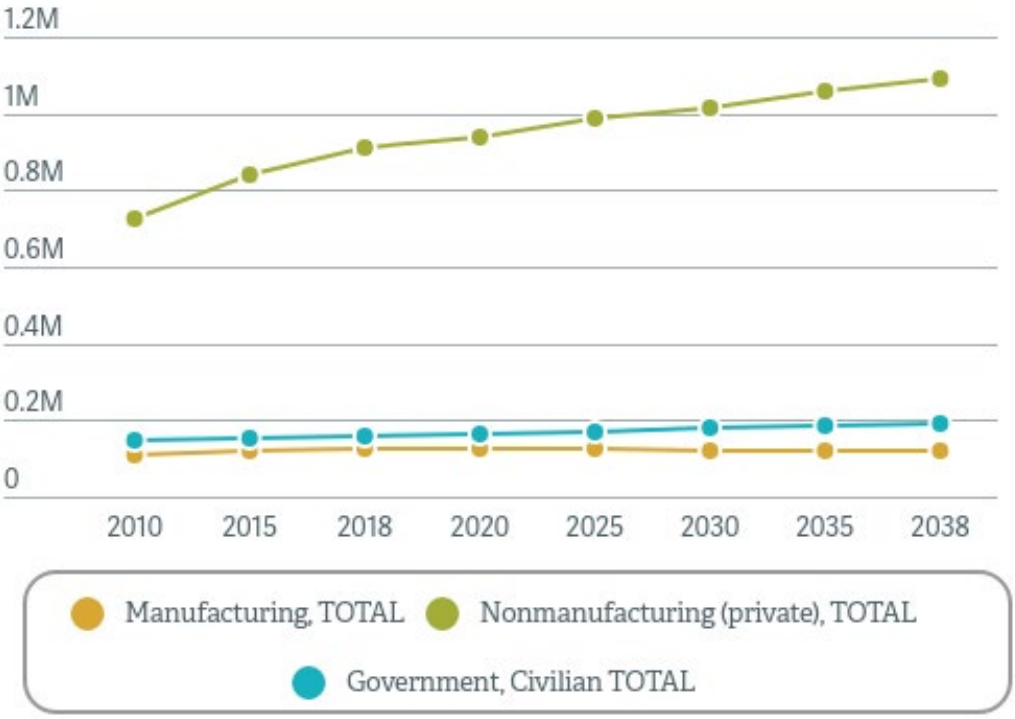
On the flip side, because of automation and other factors, many economists see slow or no job growth for industrial sectors – such as high-tech manufacturing and wood products – that have traditionally been strengths for Oregon (Lehner, Oregon's Industrial Structure and Outlook, 2018). Instead, going forward, employment growth in the high-tech sector is expected in software development (Lehner, Oregon High-Tech Outlook, 2018).

Figure 23: Employment by sector, current and baseline (likely) forecast seven-county Portland-Vancouver-Hillsboro MSA, 2018 and 2038



Source: 2018-38 Portland-Vancouver-Hillsboro, OR-WA MSA Forecast, Metro Research Center, Nov 2017
"TWU" = Transport, Warehousing and Utilities

Figure 24: Employment history and projections (by major sector)
seven-county Portland-Vancouver-Hillsboro MSA, 1990-2038



Source: 2018-38 Portland-Vancouver-Hillsboro, OR-WA MSA Forecast, Metro Research Center, Nov 2017
Forecast is for mid-range projection.

Where growth can happen

Redevelopment Development on a tax lot where the original structure has been demolished and there is a net increase in housing units or jobs.

Infill Additional development on a tax lot where the original structure has been left intact and the lot is considered developed.

Vacant land Land inside the UGB that's not developed.

Urban reserves Areas outside the current UGB designated by Metro and the three counties as the best places for future growth if urban growth expansions are needed over the next 50 years.

Neighbor cities Cities in the larger metropolitan area, but outside of Metro's jurisdiction: Vancouver, Newberg, Sandy, etc.

How much room is there for housing and job growth inside the UGB?

Committed to using land efficiently

To protect farms and forests, Oregon law encourages the efficient use of land already inside the UGB. This focus on making the most of what we have also keeps jobs, housing, shopping and services closer by. Future development will happen – not only on vacant land – but also through redevelopment or infill.

Redevelopment and infill have demonstrated their importance in recent years, accounting for 76 percent of the net new housing units in the Metro UGB in the 2007 to 2016 time period, far exceeding previous forecasts. This is an important reminder of several points:

- Existing urban locations that are close to services and amenities are in high demand, so much so that economists have cointed the phrase "a shortage of cities" (Cortright, Dow of Cities: Big data on the urban price premium, 2018).
- Encouraging redevelopment and infill is the means to address the shortage of cities and to reduce housing prices in these locations.
- Redevelopment and infill are not static. They are more likely in locations that are in high demand.

Buildable land inventory review process

Metro inventories buildable land through a comprehensive process that includes extensive review by city and county planning staff. Many local staff participated in Metro's Land Use Technical Advisory Group (LUTAG), which assisted in the inventory. LUTAG began meeting in the summer of 2017 and met regularly through spring of 2018.

Appendix 2 describes the methods that Metro used to estimate how much buildable land is inside the UGB. All cities and counties in the region had an opportunity to review the buildable land inventory used in this analysis. The inventory results are described in Appendix 2.

Though the inventory assumes that current zoning regulates allowable uses, it does not assume that all of that zoned capacity is viable in the next 20 years (there is zoned capacity for over 1.3 million homes in the UGB).

The inventory begins with aerial photos locating vacant land. Subsequent steps account for environmental constraints such as steep slopes and wetlands.

Aside from vacant land, additional housing and jobs are also expected on some already-developed lands. There are a variety of uncertain market factors that may influence long-term redevelopment and infill potential. For that reason, redevelopment and infill potential are expressed as a range.

Buildable residential land inside the UGB

The buildable land inventory for the Metro UGB includes capacity for 229,200 to 364,300 additional homes. The difference in the two numbers is attributable to redevelopment potential. Because of a variety of factors (infrastructure, market, neighborhood opposition, etc.), not all of this capacity may be development-ready in the 20-year planning period.

Table 5: Residential buildable land range (source: Metro, in coordination with cities and counties)

	Single-family homes	Multi-family homes	Total homes
Low	93,300	135,900	229,200
Medium	93,300	227,700	321,000
High	93,300	271,000	364,300

Note: single-family housing capacity is shown as a static number rather than a range since there are fewer market uncertainties than with multifamily redevelopment

Buildable employment land inside the UGB

Metro categorizes employment land as commercial or industrial according to adopted zoning. As documented in the 2014 Urban Growth Report, these categories are somewhat flexible and it is common to find commercial employment on industrial land.

Commercial (non-industrial) employment land

There are 2,150 to 2,530 net buildable acres of commercial employment land inside the Metro UGB. Because there is uncertainty around redevelopment of land in mixed-use zones, these buildable acres are expressed as a range.

Industrial employment land

There are 8,600 net buildable acres of industrial employment land inside the Metro UGB.

Large industrial sites

Expanding and attracting traded-sector businesses are important aspects to creating middle-income jobs. As an income tax dependent state, Oregon's higher wage jobs generate revenue to fund schools, parks and other public services. The greater Portland region competes globally to attract these coveted jobs, so it is important to have development-ready sites where businesses can locate.

The 2017 update of the Regional Industrial Site Readiness project inventoried large, vacant industrial sites (over 25-net buildable acres per site) and is included as Appendix 8. The inventory is a subset of the previously described industrial land inventory. It finds 65 large industrial sites inside the UGB and at varying stages of development readiness:

- There are 45 large industrial sites inside the UGB that may be available to the general market[10].
- An additional 20 large industrial sites inside the UGB that are held by existing firms for potential future expansion.

The focus of the Regional Industrial Site Readiness project is to identify actions that must be taken to make these sites development-ready to produce jobs. The project finds that many large industrial sites have extensive needs including:

- infrastructure needs, particularly transportation improvements
- site assembly
- brownfield cleanup
- wetland mitigation
- annexation by cities
- willing seller.

These challenges mean that, of the 45 large sites that aren't being held by existing businesses for future expansion:

- 10 sites are developable within a 6-month timeframe (Tier One)
- 11 sites will require 7 to 30 months to be made development-ready (Tier Two)
- 4 sites will require more than 30 months to be made development-ready (Tier Three).

Any sites added to the UGB would be Tier Three, requiring months of effort and substantial investment to make them development-ready.

10. The inventory identified 47 sites, but two of them outside the UGB, so they are not included here.

Policy considerations related to the need for proposed residential UGB expansions

Under state law, UGB expansions can only be made when there is a regional need for additional land. That determination of need must be based on historic development patterns on land inside the Metro UGB, as well as trends in development, demographics and the economy. Past development patterns and trends show that redevelopment and infill are the region's primary source of growth. Past experience also shows that UGB expansions produce housing when governance and infrastructure funding are addressed, but rarely without those elements. Looking forward, the scenarios described above illustrate that future household growth could be accommodated in a variety of ways. However, the quantity, location, type, and tenure of housing growth would vary slightly with different decisions.

After reviewing this analysis and the city expansion proposals, the Metro Council may wish to consider several policy questions to help reach a conclusion regarding whether some or all of the proposed UGB expansions are needed:

Efficient land use: The Council has policies to encourage efficient land use through redevelopment and infill to maintain a compact urban form.

1. Have the cities that submitted expansion proposals demonstrated that they are removing barriers to mixed-use development in their existing urban areas?
2. Would making the city-proposed UGB expansions position the region to make urban reserves last for their intended duration?
3. Do city concept plans for urban reserves make efficient use of land?

Viability of housing production in expansion areas: The Council has a policy to only expand the UGB into concept planned urban reserves to ensure that the expansions get developed as intended.

4. Have the cities that submitted expansion proposals (with concept plans) made the case that the expansions would result in housing production? Is there a viable plan for paying for needed pipes, streets, parks, and other public facilities and services?

Housing choices: The Council has policies to encourage a variety of housing choices.

5. Are the cities that are proposing expansions planning for a variety of housing types (citywide)?
6. Would the city-proposed UGB expansion provide additional housing choices that are desirable? In particular, are the city-proposed UGB expansions needed in order to provide more single-family housing choices in the context of the region's ongoing shift towards apartments and condos?

Housing affordability: The Council has policies to encourage housing choices for those households with the fewest choices.

7. Have the cities that submitted expansion proposals demonstrated that they are taking actions to increase and preserve their supply of affordable housing (citywide)?

Desired outcomes: The Council has policies to make decisions that advance the region's six desired outcomes.

8. Have the cities proposing expansions demonstrated that they are taking actions to advance the region's desired outcomes (citywide)?
9. Have the cities proposing expansions meaningfully engaged diverse communities in community planning (citywide)?
10. Have the cities proposing expansions taken actions to reduce racial inequities in social outcomes related to housing, jobs, transportation, and parks?

Next steps

This report, along with the four expansion proposals are intended to inform policy discussions in the summer of 2018. Through those discussions, the Metro Council will come to a determination as to whether any of the four proposed expansions are needed to accommodate household growth.

Timeline (subject to change)

- **Summer 2017 – Spring 2018:** Technical peer review of forecasts, buildable land inventory, modeling assumptions, etc.
- **Dec. 29, 2017:** Deadline for cities to submit letters of interest for growth boundary expansion proposals into adjacent urban reserves. Five cities – Beaverton, Hillsboro, King City, Sherwood and Wilsonville – submitted letters of interest
- **May 2018:** Cities submit full proposals for UGB expansions. Four cities – Beaverton, Hillsboro, King City and Wilsonville – submitted proposals
- **June 2018:** Cities proposing UGB expansions present those proposals to the Metro Council, the Metro Policy Advisory Committee, and the Metro Technical Advisory Committee
- **June 8 – July 9, 2018:** Online public comment period on city expansion proposals
- **July 3 2018:** Metro releases draft 2018 Urban Growth Report
- **July 2018:** Overview of draft 2018 Urban Growth Report at Council, the Metro Policy Advisory Committee, and the Metro Technical Advisory Committee
- **July 2018:** City Readiness Advisory Group provides feedback on the strengths and weaknesses of city-proposed expansions to Council and the Metro Policy Advisory Committee
- **Sept. 4, 2018:** Metro's Chief Operating Officer recommendation
- **Sept. 12, 2018:** Metro Policy Advisory Committee recommendation to the Metro Council
- **Sept. 20 and 27, 2018:** Metro Council public hearings and direction to staff on whether and where the UGB will be expanded (and any other policy direction)
- **Dec. 6, 2018:** Metro Council public hearing
- **Dec. 13, 2018:** Metro Council decision on growth boundary expansion

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Memo

Metro
600 NE Grand Ave.
Portland, OR 97232-2736

Date: July 3, 2018

To: Transportation Policy Alternatives Committee (TPAC), Metro Technical Advisory Committee (MTAC) and interested parties

From: Kim Ellis, RTP Project Manager

Subject: 2018 Regional Transportation Plan – Public Comment Materials and Evaluation Results

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PURPOSE

Transmit public review drafts of the 2018 Regional Transportation Plan (RTP), technical appendices and supporting strategies for safety, freight, transit and emerging technology.

ACTION REQUESTED

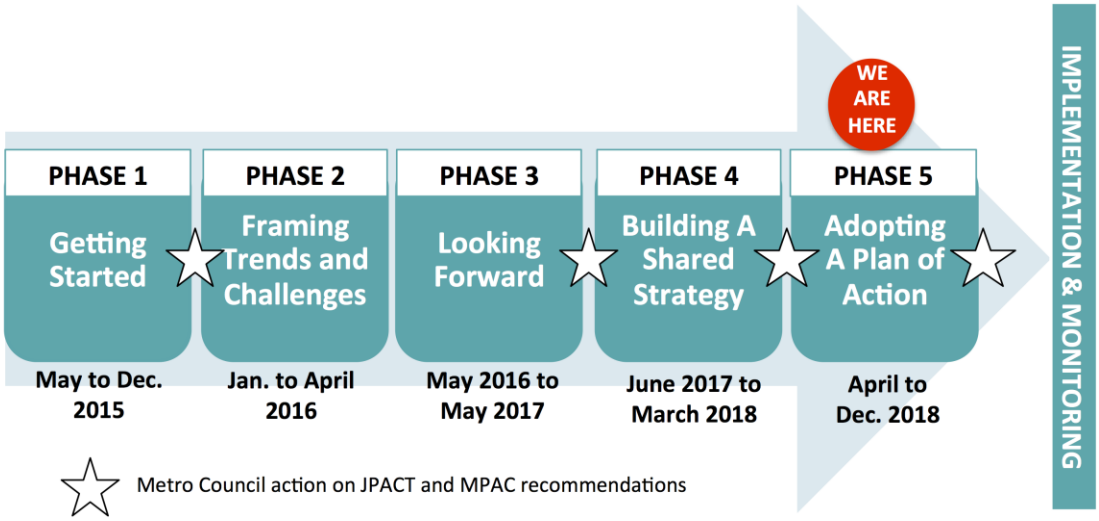
The July 11 workshop is an opportunity ask questions about the process for finalizing the 2018 RTP for consideration by the Metro Council in December and discuss the evaluation results reported in Chapter 7 (Measuring Outcomes) of the draft plan.

Members are also requested to review and comment on the full draft plan, technical appendices, and supporting strategies for safety, freight, transit and emerging technology by August 13 during the formal comment period.

BACKGROUND

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, reliable, healthy and affordable travel options. Through the 2018 RTP update, the Metro Council 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 for the next 25 years.

Shown in **Figure 1**, the region is in the final adoption phase for the 2018 Regional Transportation Plan (RTP) and draft strategies for safety, freight, transit and emerging technology.



A final 45-day public comment opportunity began on Friday, June 29 and will end on Monday, August 13, 2018. The Metro Council will hold a public hearing on August 2.

Metro staff will propose amendments to respond to public comments received by August 13 for consideration by the Metro Technical Advisory Committee (MTAC) and the Transportation Policy Alternatives Committee (TPAC) in September and October, respectively. In October, the Metro Policy Advisory Committee (MPAC) and the Joint Policy Advisory Committee on Transportation (JPACT) will be asked to make their respective recommendations to the Metro Council on adoption of proposed amendments and the 2018 RTP and strategies for safety, freight, transit and emerging technology. In December, the Metro Council will be asked to consider MPAC and JPACT's recommendations on adoption of the 2018 RTP and strategies for safety, freight, transit and emerging technology.

NEXT STEPS

Public review drafts are posted on the 2018 Regional Transportation Plan at www.oregonmetro.gov/rtp. Limited printed copies of the draft RTP and strategies will be available at the workshop.

Members are requested to review and comment on the draft RTP, technical appendices, and supporting strategies for safety, freight, transit and emerging technology by August 13 during the formal comment period.

/Attachments

1. Public Comment Opportunity on the 2018 RTP (5/25/18)
2. 2018 Council and Regional Advisory Committee Briefings Schedule (6/6/18)
3. 2018 RTP | Chapter 7 | Measuring Outcomes (6/29/18)

Metro

Public comment opportunity on the 2018 RTP

June 29 to Aug. 13, 2018

Your input today will help guide decision-makers as they finalize the policies, strategies and project lists in the Regional Transportation Plan before adopting it in late 2018.

The 2018 Regional Transportation Plan provides the opportunity to update the investments we will make in roads, sidewalks, bikeways, transit and freight routes to support communities today and in the future. This update is an opportunity to define how we will create a safe, reliable, healthy and affordable transportation system for the next 25 years.

Your voice is important

The Metro Council and other decision-makers want to hear from you to help them make a recommendation on the 2018 Regional Transportation Plan and supporting policies, strategies and projects by the end of the year.

You are invited to provide feedback on the plan during the **public comment period from June 29 through Aug. 13, 2018.** We want to hear your thoughts on:

- 2018 Regional Transportation Plan
- 2018 Regional Transit Strategy
- 2018 Regional Freight Strategy
- 2018 Regional Safety Strategy
- 2018 Regional Emerging Technology Strategy

SHARE YOUR THOUGHTS June 29 to Aug. 13

Take the survey at:

oregonmetro.gov/rtp

Your input will be shared with regional decision-makers as they work together to finalize the policies, strategies and project lists in the 2018 RTP.

Regional policy committees will make final recommendations to the Metro Council in October. The Metro Council will consider adoption in December.

Learn more about the 2018 RTP at oregonmetro.gov/rtp

WAYS TO COMMENT

June 29 to Aug. 13
Comments will be accepted through Mon., Aug. 13, 2018

Write a letter
Metro Planning
600 NE Grand Ave
Portland, OR 97232

Email comments
transportation@oregonmetro.gov

Attend public hearing
Comment in person before the Metro Council on Aug. 2 at 2 p.m.

Location:

600 NE Grand Ave
Portland, OR 97232

Call
503-797-1750
503-797-1804 TDD

Take the survey
oregonmetro.gov/rtp

Follow oregonmetro

Metro

2018 Regional Transportation Plan

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, reliable, healthy and affordable travel options.

During this comment period, the Metro Council will ask for public review and comment on the draft policies in the 2018 RTP, draft strategies for transit, freight, safety and emerging technology, and the projects recommended to address the region's significant and growing transportation needs.

Overview of draft strategies

Transit

As the region continues to grow, it's important that our transportation system provides a variety of travel options to meet the needs of everyone who calls this place home.

The purpose of the Regional Transit Strategy is to provide a coordinated vision and a set of policies to make transit service more convenient, frequent, accessible and affordable for everyone in the greater Portland region.

Freight

The greater Portland region is the trade and transportation gateway for Oregon and provides market access for many southwest Washington businesses.

The purpose of the Regional Freight Strategy is to define a set of policies and strategies aimed at increasing economic prosperity and stewardship of the multimodal freight network throughout the greater Portland region.

Safety

Traffic related deaths and severe injuries are a critical and preventable public health and social equity issue in the greater Portland region.

The purpose of the Regional Safety Strategy is to provide a specifically urban-focused overarching data-driven framework for increasing traffic safety in the greater Portland region. The plan focuses on strategies and actions drawn from best practices and proven to reduce traffic related deaths and serious injuries.

Emerging technology

Technology is already transforming our region's transportation system; the way the region's residents access, experience and use the transportation system has changed dramatically in the past five years.

The purpose of the Emerging Technology Strategy is to provide a framework for the region to harness new developments in transportation technology to ensure it is equitable, accessible and affordable to all people in the greater Portland region.

Printed on recycled-content paper.
6/12/2018

2018 RTP UPDATE | 2018 Council and Regional Advisory Committees Briefings

(dates are subject to change)

Metro
oregon**metro.gov/rtp**

Month	Who	When	What
June	TPAC	6/1	• Draft RTP (focus on policy and implementation chapters)
	Metro Council	6/5	• Draft Emerging Technology Strategy
	JPACT	6/21	• Draft RTP (focus on policy and implementation chapters)
	Metro Council	6/21	• **Direction to staff** to release Draft 2018 RTP and draft strategies for freight, transit, safety and emerging technology for public review
	Comment period begins	6/29	• 45-day public comment period on Draft 2018 RTP and draft strategies for freight, transit, safety and emerging technology, including public hearing (June 29 to Aug. 13)
July	TPAC/MTAC workshop	7/11	• Draft RTP Performance Results (Round 2)
	Metro Council	7/17	• Emerging Technology Strategy – **Direction to staff on initial implementation actions**
August	TPAC/MTAC workshop	8/1	• Transportation Resiliency and Emergency Routes *(tentative)* • MAP-21 Performance Monitoring, Target Setting and Reporting *(tentative)*
	Metro Council	8/2	• **Public hearing** on draft 2018 RTP and draft strategies for freight, transit, safety and emerging technology
	TPAC	8/3	• Preview of RTP adoption package (Ordinance, Resolutions & Exhibits)
	Consultation	8/6	• **Consultation** with tribes and federal and state agencies *(tentative)*
	Comment period ends	8/13	• 45-day public comment period ends
	TPAC/MTAC workshop *(from 9/5)*	8/29	• Discuss proposed amendments identified by Metro staff in response to public comments
September	TPAC	9/7	• Discuss proposed amendments in response to public comments
	Metro Council	9/18	• Overview of proposed amendments in response to public comments
	MTAC	9/19	• **Make final recommendation to MPAC** on proposed amendments in response to public comments
	JPACT	9/20	• Overview of TPAC recommendation on proposed amendments in response to public comments
	MPAC	9/26	• Overview of MTAC recommendation on proposed amendments in response to public comments
October	NOTE	10/4	• DLCD notice due (35 days before 1st evidentiary hearing)
	TPAC	10/5	• **Make final recommendation to JPACT** on proposed amendments in response to public comments
	MPAC	10/10	• **Make final recommendation to Council** on adoption of 2018 RTP and strategies for freight, transit, safety and emerging technology
	JPACT	10/18	• **Make final recommendation to Council** on adoption of 2018 RTP and strategies for freight, transit, safety, and emerging technology
November	Metro Council	11/6	• Discuss JPACT and MPAC recommendations and provide direction to staff on finalizing adoption package for Council consideration
	Metro Council	11/8	• **Public hearing** (1st evidentiary hearing) on Ordinance No. 18-1421
December	Metro Council	12/6	• **Public hearing and consider final action** on 2018 RTP (by Ordinance) and strategies for freight, transit, safety and emerging technology (by separate Resolutions)

PUBLIC REVIEW DRAFT

2018 Regional Transportation Plan

Chapter 7

Measuring Outcomes

June 29, 2018

TABLE OF CONTENTS

FIGURES AND TABLES

7.1 INTRODUCTION

Cities and regions around the country are facing important choices about how and where they want to grow and invest in their communities. Faced with limited funding and significant infrastructure needs, the desire for getting the most out of our transportation investments has increased. Performance-based planning has emerged over the past decade as an effective way to understand the consequences and benefits of the choices facing regions. Performance measurement is a way to build accountability and transparency into the transportation planning and decision-making process.

Why performance evaluation matters

The greater Portland region's economic prosperity and quality of life depend on a transportation system that provides every person and business with access to safe, reliable, affordable and healthy travel options.

The Regional Transportation Plan (RTP) purposefully lays out a vision and supporting goals, objectives, performance measures (and targets) and policies that guide transportation planning and decision-making in the region to achieve desired outcomes. Evaluation of the planned regional transportation system projects and programs against a set of outcomes-focused performance measures and targets provides valuable information to the public and decision-makers, including:

- Measurement of how well investment priorities submitted to the Regional Transportation Plan by local agencies, the Oregon Department of Transportation, TriMet, SMART and special districts achieve RTP goals and objectives;
- Improved communication of regional transportation needs and priorities, which is especially important given limited available funding; and
- Increased transparency and accountability throughout the analysis and decision-making process.

When used effectively, performance measures can enable more comprehensive evaluation across multiple issue areas and help communicate tradeoffs and funding decisions to stakeholders. It allows stakeholders and decision-makers to understand whether the region's investment priorities are achieving agreed upon desired outcomes. Applied effectively, performance measurement can be a powerful tool for building public confidence that the available funds are well spent.

7.1.1 Chapter organization

This chapter reports on the expected system performance of the region's investment priorities and documents whether the region achieves regional performance targets in 2040.

7.1. Introduction: This section introduces the chapter.

7.2 Performance-Based Planning and the RTP: This section describes performance-based planning and provides a snapshot of performance outcomes from the evaluation of the RTP projects lists described in Chapter 6.

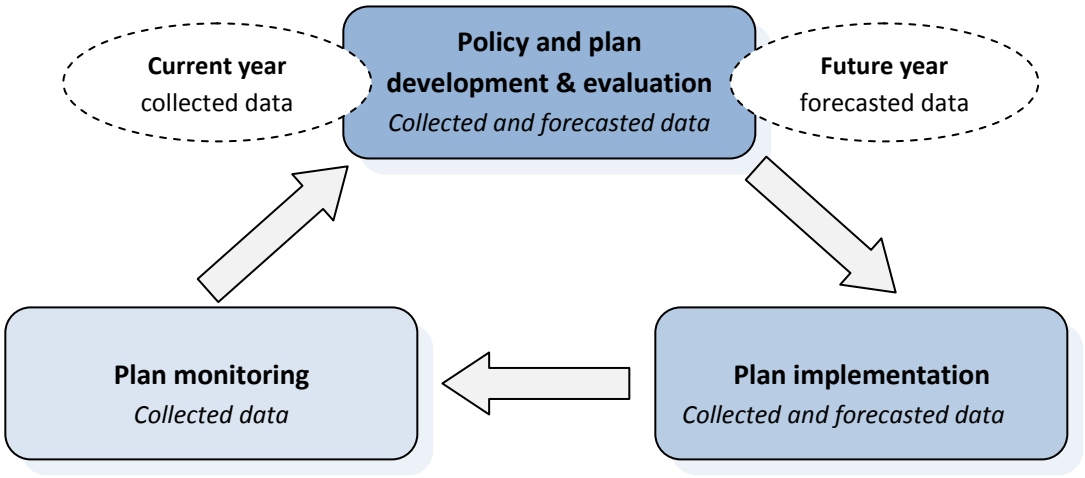
7.3 RTP System Evaluation Framework: This section describes the framework used to conduct the performance evaluation. It describes how transportation equity is measured to understand how disparities are reduced and to meet federal requirements. It describes the different geographical areas that the performance measures are reported on. It describes the investment strategies that were evaluated (the different project lists) and it provides a guide on how to read the performance measure outcomes.

7.4 How the System Performs: This section goes through each of the performance measures for which forecasted data is available and describes the outcomes of each measure.

7.2 PERFORMANCE-BASED PLANNING AND THE RTP

Performance measures serve as the dynamic link between Regional Transportation Plan (RTP) goals and plan implementation. The RTP refers to the cyclical process of plan development, evaluation, plan implementation and monitoring as the Performance Measurement System, as shown in **Figure 7.1**.

Figure 7. 1 Regional Transportation Plan Performance Measurement System



This chapter reports the evaluation of plan performance. Through an evaluation of performance of the transportation system the region can better understand the extent to which investments in the transportation system will achieve desired outcomes and provide the best return on public investments.

This chapter also satisfies performance measures and benchmarks mandated by the Oregon Transportation Planning Rule (TPR), greenhouse gas emissions reduction targets and related monitoring defined in the Metropolitan Greenhouse Gas Reduction Targets Rule and federal requirements to assess potential impacts on environmental resources, historic and cultural resources and tribal lands.

Plan monitoring in support of the region's federally-required Congestion Management Process reporting between the RTP update cycles is addressed in Chapter 8 and Appendix L. Some of the plan monitoring measures overlap with the performance targets and system evaluation measures, but rely on collected (observed) data rather than forecasted data.

Table 7.1 lists the RTP performance measures used for plan evaluation, linking them to the RTP goals they support.

System evaluation

The RTP is primarily evaluated using **forecasted data** from the travel model, however, outcomes for some performance measures cannot currently be forecasted (affordability and safety) and these measures are not included in the system evaluation. Metro is working with federal, state and local partners to develop tools for future RTP updates that will support evaluating how the plan impacts affordability and safety in the region.

Table 7.1 How RTP System Evaluation Measures Support Meeting RTP Goals

RTP Performance Measures ● = measure highly correlated with achieving goal ◒ = measure somewhat correlated with achieving goal ○ = measure partially supports achieving goal		RTP Goals										
		Vibrant Communities	Shared Prosperity	Transportation Choices	Reliability and Efficiency	Safety and Security	Healthy Environment	Healthy People	Climate Protection	Equitable Transportation	Fiscal Stewardship	Transparency and Accountability
	How much do households spend on housing and transportation in our region? (*Evaluation measures under development for next RTP.*)											
n/a	Affordability*	●	●	◒	◒	○	○	●	○	●		
	How safe is travel in our region? (*Evaluation measures under development for next RTP.*)											
n/a	Safety*	●	◒	●	●	●	◒	●	◒	●		
	How much do people and goods travel in our region?											
1	Multimodal Travel	●	◒	●	●	◒	●	●	●	●		
2	Active Transportation and Transit Mode Share	●	◒	●	●	◒	●	●	●	●		
	How easily, comfortably and directly can we access jobs and destinations in our region?											
3	Access to Travel Options – system completeness *	●	◒	●	●	●	●	●	●	●		
4	Access to Jobs*	●	●	●	○	○	○	◒	◒	●		
5	Access to Community Places*	●	◒	●	○	○	●	●	◒	●		
6	Access to Bicycle and Pedestrian Parkways	●	●	●	○	●	●	●	●	●		
7	Access to Transit	●	●	●	◒	○	●	◒	●	●		
8	Access to Industry and Freight Intermodal Facilities	○	●	○	○	○	○	○	○	○		
	How efficient is travel in our region?											
9	Multimodal Travel Times	●	●	●	●	○	○	○	○	○		
10	Congestion	◒	●	○	●	●	◒	◒	◒	○		
11	Transit Efficiency and Ridership	●	○	●	●	○	◒	○	○	○		
	How will transportation impact climate change, air quality, the environment and public health?											
12	Climate Change	○	●	●	○	○	●	●	●	○		
13	Clean Air	○	●	●	○	○	●	●	◒	●		
14	Potential habitat Impact	◒	○	○	○	○	●	●	◒	●		
15	Potential historical, cultural and tribal lands impact	●	◒	○	○	○	○	◒	○	○		
16	Public health	◒	◒	○	○	○	●	●	●	○		

There are no system evaluation measures for the Ensure Fiscal Stewardship and Deliver Accountability goals.

Performance measures with an asterix (*) reflects the transportation priorities identified by historically marginalized communities and serve as the basis for the federally-required Title VI Benefits and Burdens analysis.

7.2.4 Performance measure outcomes at-a-glance

This section provides a snapshot of the various performance measures used to assess the performance of the RTP – some of the measures are included in the system evaluation in **Section 7.4,** others are not, because there is no method yet to forecast outcomes, but they are reported on here based on observed data.

As a frame of reference for the differences between 2015 and 2040, **Table 7.2 RTP System Evaluation Results Summary** provides a summary of projected changes in demographic, travel and air quality in 2040within the Metropolitan Planning Area.

Table 7.2 RTP System Evaluation Results Summary

2018 RTP System Evaluation Results Summary
Totals are for travel within the metropolitan planning area for the greater Portland region and assume the 2040 Constrained Projects.
Demographics
Travel
Air Quality
Population (2,178,848)
Households (896,451)
Employment (1,240,653)
Total person trips (8,387,620)
Daily auto trips (6,586,163)
Daily biking trips (347,874)
Daily walking trips (649,729)
Daily transit trips (612,526)
Daily truck trips (45,649)
Average trip length (miles) (5 miles)
Average commute length (miles) (8 miles)
Daily VMT per capita (12.4 miles)
Pounds of primary exhaust ($PM_{2.5}$) emissions (281 lbs/day)
Tons of transportation-related CO_2 emissions (1.7 annual tons/capita)
36%
41%
39%
35%
29%
50%
41%
137%
73%
1%
3%
-3%
-82%
-21%
-80%
-60%
-40%
-20%
0%
20%
40%
60%
80%
100%
120%
Percent change from 2015

Table 7.3 provides an "at-a-glance" overview of 2018 RTP performance measures and progress made towards targets, or desired direction. Not all performance measures have a performance target. If a performance measure does not have a target, the desired direction is indicated. Performance measures for affordability and safety are included in the system evaluation because the plan does not yet have methods or tools to forecast performance for affordability or safety; therefore, observed data is cited.

Table 7.3 Results of 2018 RTP Target/Direction Assessment for the 2040 Constrained Projects

Plan meets target or desired direction

Plan does not meet target but is moving in the right direction

Plan does not meet target and is moving in the wrong direction

Measure	Target or desired direction	Performance within the metropolitan planning area	Performance in historically marginalized communities	Plan direction
How much do households spend on housing and transportation in our region?				
Affordability	By 2040, reduce the combined housing and transportation expenditure for lower-income households by 25% compared to 2015 combined housing and transportation expenditure levels.	Plan does not forecast affordability or provide system evaluation results. Observed data shows that the region needs to make big strides to reduce disparities in affordability.	Observed data shows that the region needs to make big strides to reduce disparities in affordability for people of color.	Not applicable.
How safe is travel in our region?				
Safety	By 2035 eliminate transportation related fatalities and serious injuries for all users of the region's transportation system, with a 50% reduction by 2025 and a 16% reduction by 2020 (as compared to the 2015 five year rolling average).	Plan does not forecast safety performance and does not provide system evaluation results. Observed data from the last five years indicates that the region is not moving in the right direction to achieve target.	Annual average fatal and severe injury crashes for all modes increased or remained flat since the 2014 RTP, and are higher for people of color and people with low incomes.	Not applicable.
How much do people and goods travel in our region?				
Multimodal travel	By 2040, reduce vehicle miles traveled per person by 10% compared to 2015.	Plan reduces vehicle miles traveled per person but does not meet target. In 2040, vehicle miles traveled per person decline 5% below 2015 levels.	Not included in transportation equity analysis.	

Measure	Target or desired direction	Performance within the metropolitan planning area	Performance in historically marginalized communities	Plan direction
Active transportation and transit mode share	By 2040, triple walking, biking and transit mode shares compared to 2015 modeled mode shares.	Plan increases walking, biking and transit mode share from 14% to18% of all trips, but does not meet target.	Not included in transportation equity analysis.	
How easily, comfortably and directly can we access jobs and destinations in our region?				
Access to travel options – system completeness	By 2040, complete 100% of the regional network of sidewalks, bikeways, and trails.	Plan makes progress towards meeting the target, but does not reach target of completing 100% of the regional active transportation network. In 2040, 71% of sidewalks, 65% of on-street bikeways, and 47% of regional trails are complete on the regional active transportation network.	Plan makes greater progress towards meeting the target in equity focus areas compared to non-equity focus areas, but does not reach target of completing 100% of the regional active transportation network in equity focus areas.	 Region and equity focus areas
Access to jobs	No target for this measure. The desired direction is to increase the number of low and middle-wage jobs accessible to the average household in equity focus areas compared to the average household in non-equity focus areas.[1]	Measure is for historically marginalized communities in equity focus areas, see next column.	The average household in an equity focus area sees an increase in the number of jobs, including low and middle wage jobs that can be reached by transit compared to the rest of the region and non-equity focus areas. For other forms of travel (driving, biking, and walking) the increase in the number of jobs the average household in equity focus area can reach is less than what the average household in the region and in non-equity focus areas can reach in a reasonable commute time.	 Region  Equity focus areas
Access to community places	No target for this measure. The desired direction is to increase to the number of community places accessible to the average household in equity focus areas compared to the average household in non-equity areas. [2]	Measure is for historically marginalized communities in equity focus areas, see next column.	The average household in equity focus areas sees a greater increase in the number of community places reached in a short transit trip compared to the average household in the region and non-equity focus areas. The region and non-equity focus areas see a greater increase in the number	 Region 

[1] Metro will update performance measure with a target and develop evaluation methods to measure the disparities gap in access to low and middle-wage jobs for households in equity focus areas in the next RTP update.

[2] This measure replaces the 2014 RTP essential destinations target. Metro will update performance measure with a new target and develop evaluation methods to measure the disparities gap in access to community places for households in equity focus areas in the next RTP update.

Measure	Target or desired direction	Performance within the metropolitan planning area	Performance in historically marginalized communities	Plan direction
			of community places reached within a short trip of driving, biking or walking compared to households in equity focus areas.	Equity focus areas
Access to bicycle and pedestrian parkways	No target for this measure. The desired direction is an increase in the number and share of households within a ¼ mile of a bicycle or pedestrian parkway.	Plan increases access to bicycle parkways to 79% of all households in 2040, and decreases access to pedestrian parkways decreases from 86% in 2015 to 85% in 2040.	Not included in transportation equity analysis.	
Access to transit	No target for this measure. The desired direction is an increase in the number and share of households, low-income households and employment near high capacity or frequent transit service by 2040.	Plan achieves desired direction. By 2040, 66% of households are within the desired distance to frequent all day transit; 79% of jobs are within the desired distance to frequent transit.	Plan increases access to transit in equity focus areas by 2027 and 2040.	
Access to industry and freight intermodal facilities	There is no target for this measure. The desired direction is to reduce truck hours of delay on the freight network that provide access to intermodal facilities and industrial lands in 2040.	Plan performance is inconclusive due to limited analysis area in initial performance evaluation. To be updated in final RTP.	Not included in transportation equity analysis.	TBD
		How efficient is travel in our region?		
Multimodal travel times	There is no target for this measure. The desired direction is to maintain or reduce travel times for transit, freight, bicycle, and motor vehicle trips.	Plan generally improves or maintains transit, truck and bicycle travel times. Auto travel times increase in most corridors.	Not included in transportation equity analysis.	
Congestion - *National Highway System reliable travel*	By 2040, increase the TBD% of reliable person-miles traveled on the Interstate System and on the non-Interstate National Highway System.	To be added to final RTP.	Not included in transportation equity analysis.	TBD
Congestion - *Vehicle hours of delay per person*	By 2040, reduce vehicle hours of delay per person by 10%.	To be added to final RTP.	Not included in transportation equity analysis.	TBD

Measure	Target or desired direction	Performance within the metropolitan planning area	Performance in historically marginalized communities	Plan direction
Congestion - *Interim Regional Mobility Policy*	By 2040, meet the Interim Regional Mobility Policy for level of service on locations of throughways, arterials, and regional freight network facilities.[3]	Plan does not meet policy in all locations.	Not included in transportation equity analysis.	
Congestion - *Freight delay*	By 2040, reduce vehicle hours of delay per truck trip by 10% compared to 2015.	Plan does not meet target. Truck delay increases 358% by 2040, but this a third less delay than if the plan is not implemented.	Not included in transportation equity analysis.	
Congestion - *Total cost of delay on freight network*	There is no target for this measure. The desired direction is to reduce growth in cost of delay (in constant dollars) on the regional freight network compared to the 2040 No Build strategies.	Plan decreases cost of delay 65-70% compared to not implementing the plan by 2040.	Not included in transportation equity analysis.	
Congestion - *Freight reliability*	By 2040, increase TBD% of Interstate System miles with reliable truck travel times.	To be added to final RTP.	Not included in transportation equity analysis.	TBD
Transit efficiency and ridership	There is no target for this measure. The desired direction is an increase in hours of transit service and ridership.	Plan doubles total boardings and increases hours of transit service 60% by 2040.	Not included in transportation equity analysis.	
How will transportation impact climate change, air quality, the environment and public health?				
Climate change	Meet or exceed Climate Smart monitoring targets to reduce greenhouse gas emissions per capita.[4] Reduce per capita greenhouse gas emissions from cars and small trucks by 20% by 2035 and 25% by 2040, compared to 2005 levels.[5]	Plan meets or exceeds most monitoring targets by 2040. It makes progress towards, but does not meet, targets to complete the active transportation network. Plan includes 9,513 transit service revenue hours, which exceeds the Climate Smart Strategy level of 9,400 hours. By 2040 annual per capita emissions	Not included in transportation equity analysis.	

[3] Refer to Chapter 3 of the 2018 RTP for Interim Regional Mobility Target thresholds.
[4] Refer to Appendix J for Climate Smart Strategy monitoring targets and performance
[5] Target was set based on GreenSTEP model. Metro uses MOVES model which does not correspond to some of the assumptions/inputs included in GreenSTEP (such as technology advances or transportation system management and operations). Therefore, performance outputs of MOVES are different and cannot be compared to GreenSTEP.

Measure	Target or desired direction	Performance within the metropolitan planning area	Performance in historically marginalized communities	Plan direction
		decrease by 21%. [6]		
Clean air	By 2040, maintain or reduce air pollution (pounds, tons, grams) from mobile sources compared to 2015.	Plan meets target and reduces the amount of mobile source emissions of all criteria pollutants and air toxics by 2040. Certain pollutants see significant reductions.	Not included in transportation equity analysis.	
Potential habitat impact	There is no target for this measure. The desired direction is to identify projects that overlap with sensitive high value habitats and define potential mitigation strategies.	Plan includes 528 projects overlap or cross regionally identified high value habitats. Mitigation strategies are addressed specifically during the project development phase as part of the environmental and land use review, consultation and permitting processes all construction projects must undergo.	Not included in transportation equity analysis.	
Potential historical and cultural resources and Tribal Lands impact	There is no target for this measure. The desired direction is to identify projects that overlap with historical and cultural resources and tribal lands, and define potential mitigation strategies for historical and cultural resources and avoid tribal lands.	Plan includes 62 projects located within 100 feet of historic properties listed in the National Register. Mitigation strategies are addressed specifically during the project development phase as part of the environmental and land use review, consultation and permitting processes all construction projects must undergo. No tribal lands were identified within or adjacent to the metropolitan planning area.	Not included in transportation equity analysis.	
Public health	There is no target for this measure. The desired direction is to increase lives saved, years lived and avoid health care costs.	Plan decreases premature death and disease and avoids over $31 million in annual health care costs.	Not included in transportation equity analysis.	

[6] Output from MOVES model and cannot be accurately assessed against target set by GreenSTEP. Based on predicted outcomes of Climate Smart Strategy monitoring target, Metro predicts that per person greenhouse gas emission reduction targets for autos and small trucks will be achieved by 2040.

7.3 RTP SYSTEM EVALUATION FRAMEWORK

The evaluation element of the Regional Transportation Plan Performance Measurement System (see **Figure 7.1)** applies during periodic plan updates, which occur at least every five years. During plan updates, the region reviews its goals and objectives for the transportation system and develops and refines an investment strategy comprised of infrastructure projects and programs submitted by local agencies, the Oregon Department of Transportation, TriMet, SMART, and special districts.

The Regional Transportation Plan (RTP) development and evaluation has two levels: performance targets and system performance evaluation. As previously described in Chapter 2, RTP performance targets are the highest order evaluation measures in the outcomes-based policy framework. The performance targets set quantifiable goals for the achieving the region's desired policy outcomes (though not all goals have targets). In comparison, system evaluation measures evaluate changes between current conditions (in 2015) and the set of transportation investments the region has chosen to pursue (the funding investment strategies described below). There is some overlap between the targets and the measures but they serve different functions. The performance targets are listed in Chapter 2.

Figure 7.2 2018 RTP Evaluation Framework

For the 2018 RTP update, Metro conducted two rounds of system evaluations. In the first round Metro provided system evaluation results to the public, regional policymakers and to agencies responsible for developing the project lists. Regional leaders provided policy direction based on the results of the first system evaluation results to refine the project list. Metro issued a second "call for projects" and agencies revised the original project list to better meet near-term regional priorities for safety, equity, travel options, Climate Smart Strategy implementation and congestion. The system evaluation that follows in Section 7.4 reports the results of the updated projects and programs submitted by jurisdictional partners.

7.3.1 Measuring transportation equity

As part of the 2018 RTP, Metro conducted a transportation equity evaluation of the financially constrained 2018 RTP investment strategy. The equity evaluation satisfies federal requirements for Environmental Justice Impact Analysis.

The purpose of the transportation equity evaluation was to look at how well the region's planned long-range transportation investments performed relative to transportation priorities identified by historically marginalized communities. These identified transportation priorities subsequently shaped transportation-related equity goals, objectives, and performance measures in the Plan.

The transportation equity evaluation takes a system-wide look at the region's long-term investment strategy, to determine whether: 1) progress is being made towards transportation priorities expressed by historically marginalized communities; 2) to determine whether the financially constrained long-range transportation investment strategy, in totality, is disproportionately impacting historically marginalized communities and if mitigation measures are necessary; and 3) continue to learn from the assessment to propose technical refinements for future transportation equity evaluations.

The 2018 RTP transportation equity evaluation worked to incorporate and reflect previous recommendations from the 2014 Civil Right Assessment, other agency strategic direction, federal corrective actions, as well as the latest research and best practices – drawing from national experts, think tanks, engagement, and academic partnerships. These different sources shaped and informed further how to measure equity within the context of the transportation system.

Through engagement with historically marginalized communities, the outcomes historically marginalized communities identified as priorities for the transportation system include (not in order): [7]

- accessibility
- affordability

[7] Due to capacity constraints and additional resource needs, the affordability system evaluation measure was deferred and recommended for development prior to the 2023 RTP.

- safety
- environmental health

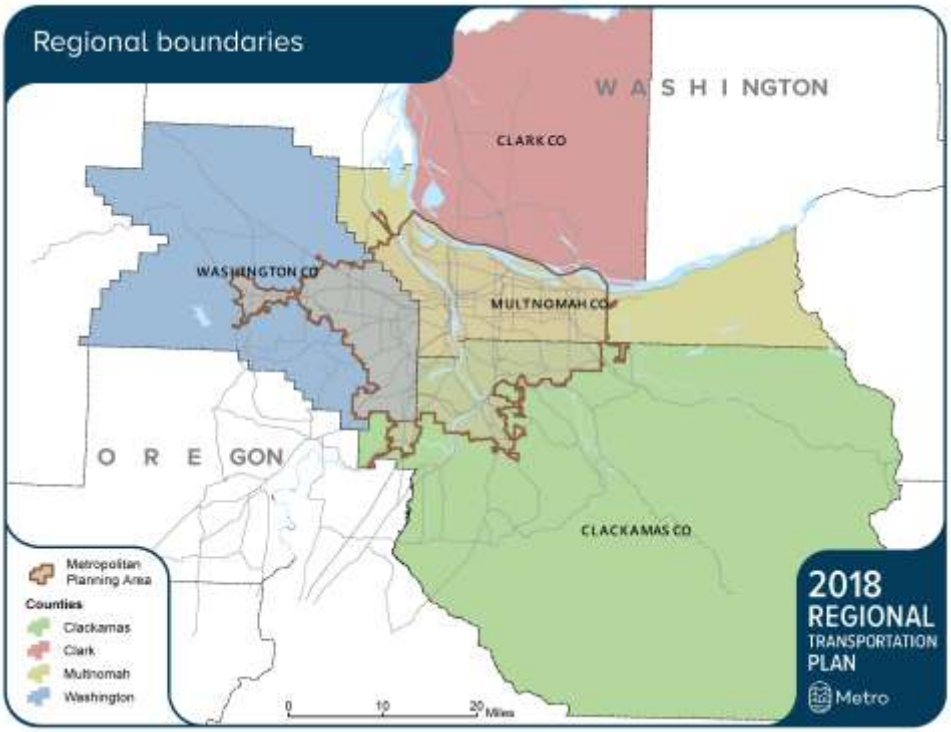
These topic areas were translated into system performance measures, which were guided by the input of a technical work group, comprised of community-based organizations, social justice advocates, public health agencies, and jurisdictional partners. A foundational element of the transportation equity evaluation of the 2018 RTP investment strategy was based on defining equity focus areas, which served as the main geography of comparisons of performance relative to the region and the non-equity focus areas. The equity focus areas identify census tracts where there is a significant residential presence of three historically marginalized demographic groups: people of color, people in poverty/with lower-incomes, and English language learners.

Lastly, as recipient of federal transportation funds, Metro is responsible for successful integration of environmental justice (EJ) and civil rights (Title VI) standards into its transportation program and planning activities. Any program or activity receiving federal financial assistance cannot discriminate against people based on race, color, national origin, age, sex, disability, religion or income status nor prohibit a person from participating in regional activities. The programmatic evaluation of the 2018 RTP investments serves as part of demonstrating the planning of federal investments into the regional transportation system complies with federal non-discriminatory and disproportionate impact regulations.

Further detail about the 2018 RTP transportation equity system evaluation can be found in Appendix E: 2018 RTP Transportation Equity Evaluation.

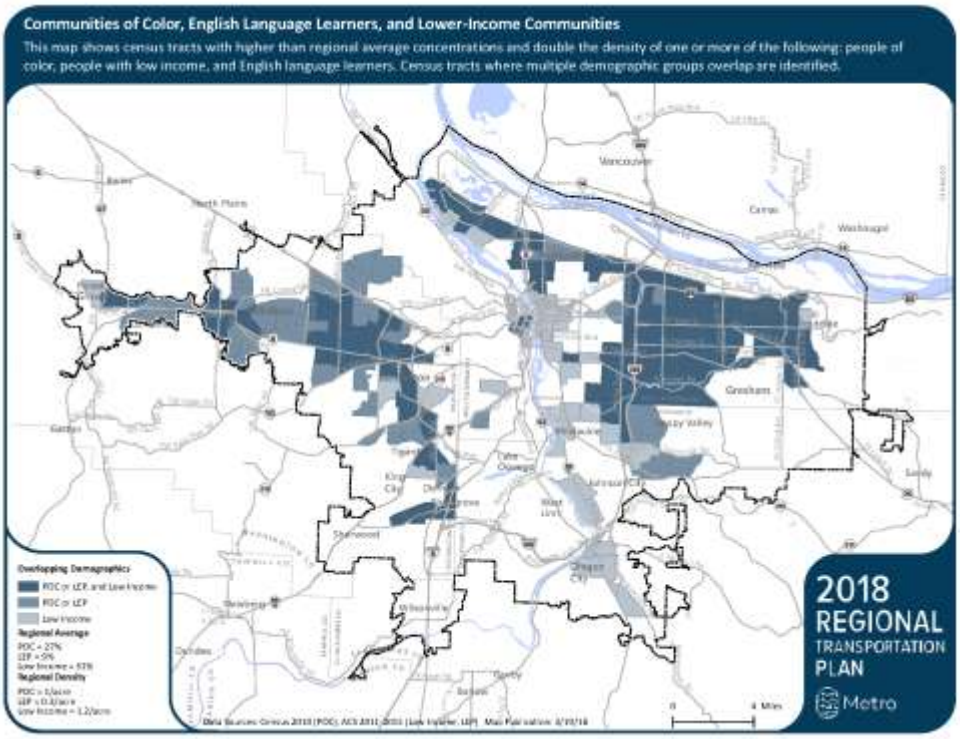
7.3.2 Evaluating system performance for different geographical areas

Metro evaluated the performance of the transportation system for the following geographical areas: 4-County Region and Metropolitan Planning Area. Within the Metropolitan Planning Area (MPA), some measures were also evaluated in equity focus areas, sub-regions, regional centers and Mobility Corridors.



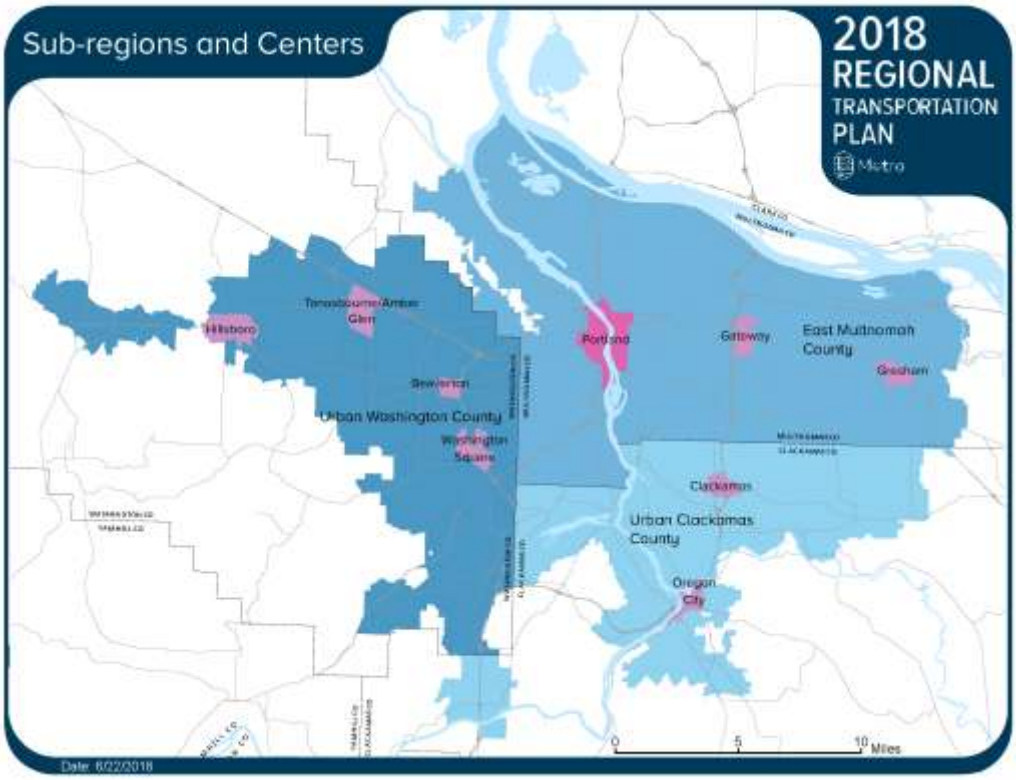
4-County Region
This area includes all of Clackamas, Multnomah, Washington and Clark Counties.

Metropolitan Planning Area Boundary (MPA)
The primary geographic area for the evaluation. Refer to Chapter 1 for a map and definition of the MPA boundary, often referred to as "the greater Portland region."



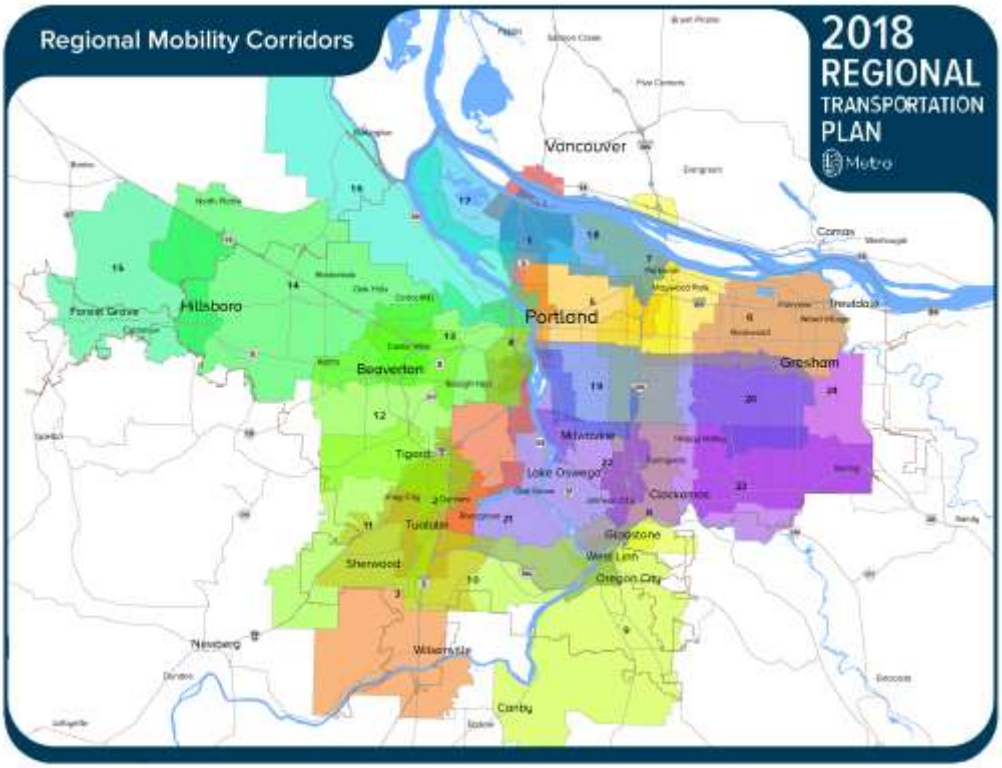
Within the MPA some measures were analyzed for sub-geographies:

Equity Focus Areas
For evaluation measures that included an equity impact analysis the evaluation compares non-equity populations to equity populations. Refer to the Equity Focus Areas maps in Chapter 4**.**



Within the MPA some measures were analyzed for sub-geographies:

Sub-Regions and Centers Some evaluation measures include findings for three sub-regions: Portland, Urban Clackamas County, East Multnomah County and Urban Washington County, and for the 2040 Centers.



Within the MPA some measures were analyzed for sub-geographies:

Mobility Corridors Some evaluation measures include findings by Mobility Corridor.

7.3.3 Evaluating system performance for different investment strategies

Metro evaluated the performance of the transportation system for six different investment strategies. Refer to Chapters 5 and 6 for additional information on the investment strategies and the project lists. Refer to Appendix M for detailed information on the regional travel forecast modeling assumptions for each of the strategies.

- **2015 Base Year –** This is the "existing conditions" strategies against which the other funding assumptions are compared, and uses 2015 population and employment numbers. All transportation projects completed by 2015 are included in the Base Year.
- **2027 No Build** – This strategy assumes only projects with committed funding are built by 2027 and uses 2027 projected population and employment numbers.
- **2027 Constrained** - This strategy assumes that all projects and programs identified in the first ten years of the Regional Transportation Plan are completed by 2027 and uses 2027 projected population and employment numbers.
- **2040 No Build**– This strategy assumes only projects with committed funding are built by 2040 and uses 2040 projected population and employment numbers.
- **2040 Constrained**– This strategy assumes that all projects and programs on the full Constrained list are completed by the year 2040 and uses projected 2040 population and employment numbers.
- **2040 Strategic** – This strategy assumes that all projects on the full Constrained list and all of the projects on the full Strategic list are completed by 2040 and uses projected 2040 population and employment numbers. Funding has not been identified for projects on the Strategic list, and therefore evaluation results are not shown for the Strategic investment strategies in this Chapter. Refer to Appendix I: Performance Evaluation Summary Tables for an overview of system evaluation measure outcomes for the Strategic investment strategies.
- **2035 Climate Smart Strategy** – For purposes of comparison the Climate Smart Strategy is included when data is available. This strategies reflects 2014 RTP constrained projects and programs plus additional transit service and system and demand management investments. This strategy uses projected 2035 population and employment numbers assumed in the 2014 Regional Transportation Plan.

7.3.4 How to read the system evaluation measures

Each system evaluation measure provides the same set of information. **Table 7.X** provides a quick guide on the type of information that is provided for each evolution measure.

Title of Evaluation Measure

Data source: This identifies where the data comes from. The performance measures rely on data generated by the regional travel demand forecast mode (Metro travel forecast model), Metroscope, the regional land use model, and GIS analysis (Metro RLIS) to generate current and future year findings.

Description: This provides a brief description of what the system evaluation measure is and how the data was analyzed. Refer to Appendix X for a complete description of the methodologies.

Target or desired direction: Not every measure has a target; if it does, direction towards achieving the target is described here. If the measure does not have a target, then the desired direction or outcome of the measure (such as increase or decrease).

Findings: This provides a description of what the data evaluation is telling us.

Equity findings: If the evaluation measure evaluated the equity impact those findings are provided here.

7.4 HOW THE SYSTEM PERFORMS

This section describes the findings for each of the following system evaluation measures.

System Evaluation Measures

Affordability –The RTP does not currently have forecast affordability. Evaluation measure(s) and tools will be developed and tested in the next update of the RTP if available.

Safety - The RTP does not currently have forecast crashes. Evaluation measure(s) and tools will be developed and tested in the next update of the RTP if available.

1. **Multimodal travel**
2. **Active transportation and transit mode share**
3. **Access to travel options – system completeness**
4. **Access to jobs**
5. **Access to community places**
6. **Access to bicycle and pedestrian parkways**
7. **Access to transit**
8. **Access to industry and freight intermodal facilities**
9. **Multimodal travel times**
10. **Congestion**
11. **Transit efficiency and ridership**
12. **Climate change**
13. **Clean air**
14. **Potential habitat impact**
15. **Potential historic and cultural resources and tribal lands impact**

7.4.1 Multimodal travel

Data source: Metro travel forecast model

Description: System-wide # of miles traveled (total and share of overall travel) within the Metropolitan Planning Area Boundary (MPA)

- Person miles traveled *(total and per capita)*
- Vehicle miles traveled (VMT) *(total, per capita, per employee)*
- Transit miles traveled *(total, per capita, per employee)*
- Bicycle miles traveled *(total, per capita, per employee)*
- Pedestrian miles traveled *(total, per capita, per employee)*
- Freight miles traveled *(total)*

Target or desired direction: By 2040, reduce vehicle miles traveled per person by 10% compared to 2015.

Findings: Overall travel (person miles traveled – all modes) per capita is increasing in future strategies while vehicle miles traveled per capita decreases over 5 percent between 2015 and the 2040 Constrained strategies – making progress towards the target but not reaching it. That means that other modes such as transit and bicycling are increasing. In the 2040 Constrained strategies transit miles traveled per person increases by 82 percent from 1.1 to 2.0, and bicycle miles travel per person increases by 20 percent, from 0.50 to 0.60 between 2015 and 2040. Miles traveled by any mode are higher per employee than per capita.

Equity findings: Not included in transportation equity analysis.

Figure 7.3 Vehicle miles traveled per person each day

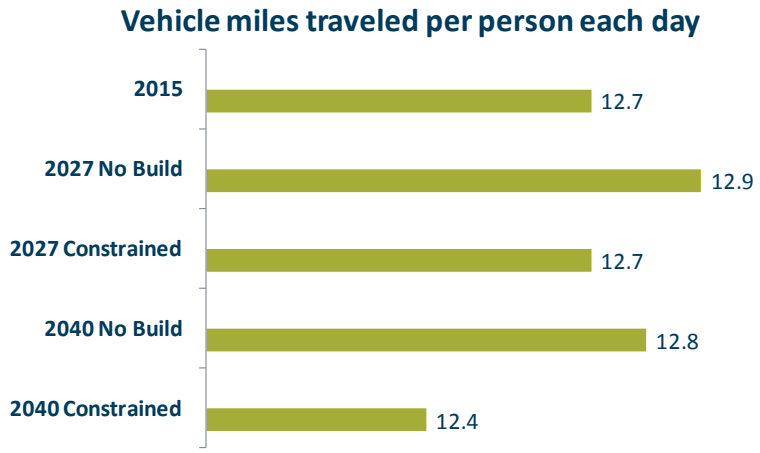


Table 7.4 Daily person miles traveled per person

Person Miles Traveled	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained	Climate Smart Strategy
Total	30,403,023	36,272,364	36,639,935	41,359,645	30,403,023	N/A
Per Person	18.9	19.0	19.2	19.0	19.3	

Table 7.5 Daily vehicle miles traveled per person

Vehicle Miles Traveled	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained	Climate Smart Strategy
Total VMT	20,798,618	24,534,300	24,128,244	27,879,927	27,080,813	N/A
Per person	12.7	12.9	12.7	12.8	12.4	
Per employee	23	23	23	23	22	

Table 7.6 Daily transit miles traveled per person

Transit Miles Traveled	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained	Climate Smart Strategy
Total	1,814,208	2,537,005	3,212,334	3,033,836	4,449,821	N/A
Per person	1.1	1.3	1.7	1.4	2.0	
Per employee	2.0	2.4	3.0	2.4	3.6	

Table 7.7 Daily bicycle miles traveled per person

Bicycle Miles Traveled	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained	Climate Smart Strategy
Total	750,707	970,434	997,531	1,198,724	1,231,182	N/A
Per person	0.5	0.5	0.5	0.6	0.6	
Per employee	0.8	0.9	0.9	1.0	1.0	

Table 7.8 Daily pedestrian miles traveled per person

Pedestrian Miles Traveled	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained	Climate Smart Strategy
Total	262,288	311,833	317,059	362,741	371,304	N/A
Per person	0.2	0.2	0.2	0.2	0.2	
Per employee	0.3	0.3	0.3	0.3	0.3	

Table 7.9 Daily freight truck miles traveled

Freight Miles Traveled	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained	Climate Smart Strategy
Total	361,770	501,027	500,799	651,897	651,127	N/A

7.4.2 Active transportation and transit mode share

Data source: Metro travel forecast model

Description: Evaluates percent of non-driving trips (daily walking, bicycling, and transit trips) at multiple levels (system wide, sub region, mobility corridor, central city and al centers). The data is categorized by 'trips within' and 'all trips'. 'Trips within' encompasses

all trips that occur within the center or subarea. 'All trips' encompasses trips to, from and within the center, sub region or corridor.

Target or desired direction: Increase non-driving mode share at all geographic levels. Triple walking, biking and transit region wide by 2040 compared to 2015 levels.

Findings: Findings for mode share are provided below for sub regions, centers, and mobility corridors.

Equity findings: Not included in transportation equity analysis

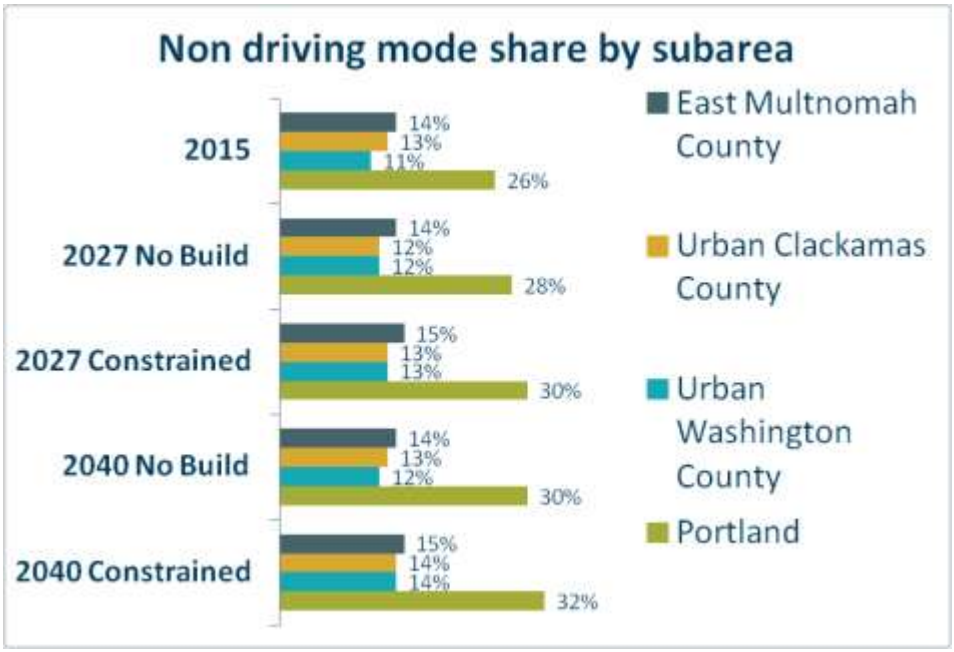
System wide (within MPA boundary)
Plan does not meet target of tripling walking, biking and transit region wide (within the MPA) between 2015 and 2014.

Table 7.10 Active transportation mode share within the MPA

Active transportation mode share	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained	Climate Smart Strategy
Walk	7.4%	7.4%	7.6%	7.5%	7.7%	N/A
Bike	3.7%	3.9%	4.0%	4.1%	4.1%	
Transit	4.2%	4.9%	6.1%	5.2%	7.3%	

Sub-regions
As the figure below shows, there are relatively large increase from 2015 to 2040 Constrained for travel within the City of Portland (from 26 percent to 32 percent) and urban Washington County (11 percent to 14 percent), with more moderate increases within other sub regions. However, non-driving modes do not triple.

Figure 7.4 Non driving mode share by sub-region



Centers

Centers across the region display relatively large increases in non-driving mode share (transit, biking and walking) between 2015 and 2040. Note - "All trips" includes all travel to, from, or within the center. This measure addresses the Transportation Planning Rule's requirement to lower drive alone mode share within centers.

Table 7.11 Non driving mode share within regional 2040 centers

Centers Non Driving mode share	2015 Base Year		2027 No Build		2027 Constrained		2040 No Build		2040 Constrained	
	Trips Within	All Trips	Trips Within	All Trips	Trips Within	All Trips	Trips Within	All Trips	Trips Within	All Trips
Portland central city	65%	38%	71%	44%	73%	48%	74%	47%	78%	54%
Amberglen regional center	40%	12%	41%	13%	44%	15%	41%	14%	48%	19%
Beaverton regional center	40%	12%	41%	13%	44%	16%	42%	13%	46%	18%
Clackamas regional center	33%	11%	34%	12%	39%	15%	35%	13%	43%	17%
Gateway regional center	37%	13%	38%	15%	41%	17%	39%	16%	43%	20%

Centers Non Driving mode share	2015 Base Year		2027 No Build		2027 Constrained		2040 No Build		2040 Constrained	
	Trips Within	All Trips	Trips Within	All Trips	Trips Within	All Trips	Trips Within	All Trips	Trips Within	All Trips
Gresham regional center	31%	13%	32%	13%	35%	16%	33%	13%	38%	17%
Hillsboro regional center	47%	18%	49%	19%	52%	22%	49%	19%	55%	24%
Oregon City regional center	25%	7%	26%	7%	28%	8%	28%	7%	30%	10%
Vancouver, WA central business district	43%	15%	48%	18%	50%	18%	50%	19%	53%	22%
Washington Square regional center	29%	9%	31%	10%	35%	12%	32%	10%	39%	14%

Mobility Corridors

Non-driving increases in most mobility corridors across the region. A corridor that shows an especially large increase is Corridor 2 - Portland to Tigard/Tualatin which increases from 15 percent to 21 percent (for trips within corridor) between the 2040 No Build and 2040 Constrained. This is likely due to the major investment in the SW Corridor High-Capacity Transit and associated projects. See Appendix I – Performance Evaluation Summary Tables for results for all mobility corridors.

7.4.3 Access to travel options – system completeness

Data source: State and local agency Geographic Information System (GIS) data for sidewalk, bikeway, regional trail and street projects. Regional Land Inventory System (RLIS) GIS data of existing (constructed) sidewalks, bikeways, trails, and streets. Regional Transportation Plan GIS data of the planned pedestrian, bicycle, transit and roadway networks.

Description: Evaluates completeness of sidewalks, bikeways, regional trails and roadways.

- Access to transit – Sidewalks, bikeways, regional trails and new streets completed within ½ mile from light rail stops, 1/3 mile from street car stops, and ¼ mile from bus stops; existing and planned stops.

- Sidewalks - miles completed and percent complete on the Regional Pedestrian Network (refer to map in Chapter 3); within 2040 centers, on existing arterial roadways, and in equity focus areas.

- Bikeways (on-street) - miles completed and percent complete on the Regional Bicycle Network (refer to map in Chapter 3); within 2040 centers, on existing arterial roadways, and in equity focus areas.

- Trails (regional) - miles completed and percent complete on the Regional Bicycle and Pedestrian Networks (refer to maps in Chapter 3), and in equity focus areas.

- New Streets - miles completed and percent complete on the Regional Motor Vehicle Network (refer to map in Chapter 3); within 2040 centers, and in equity focus areas.

Target or desired direction:

- Hundred percent completion of the regional pedestrian and bicycle networks by 2040.

- Completion of new street projects in the 2018 Regional Transportation Plan project list.

- Increase completion of sidewalks, bikeways and trails near transit to increase access.

Findings: See below. Findings for equity focus areas are provided at the end.

Access to transit

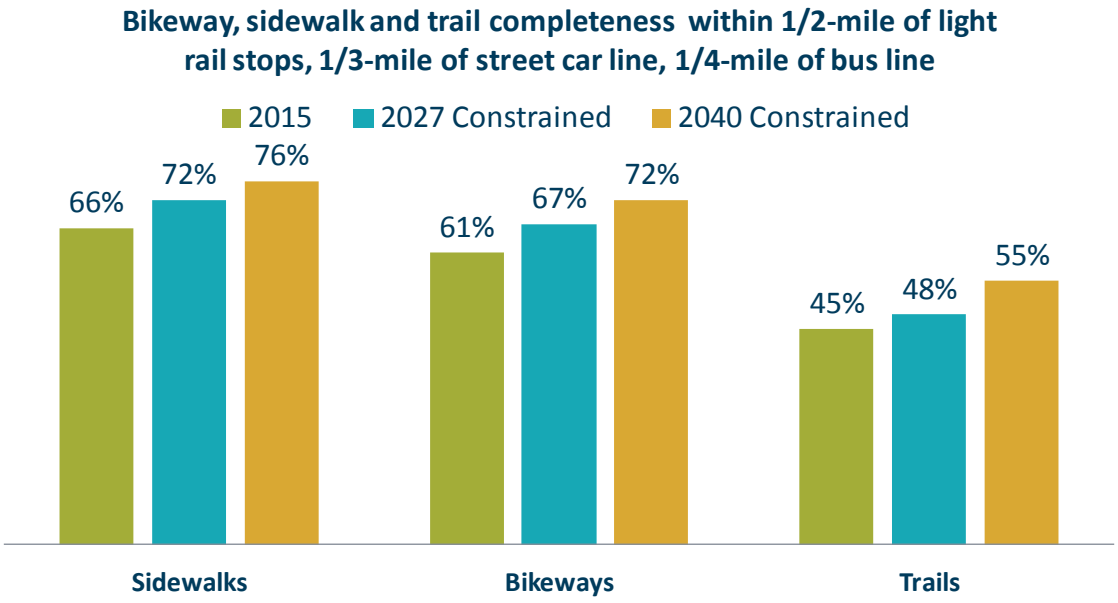
While progress is made in filling gaps in sidewalks, bikeways and trails to access transit, not all gaps are filled. By 2040, 76 percent of sidewalks are completed, 72 percent of all bikeways are completed and 55 percent of regional trails are completed within ½-mile from light rail stops, 1/3-mile from street car stops, and ¼-mile from bus stops.

Greater progress is made in increasing access to transit compared to region-wide. For example, while 76 percent of sidewalks are completed near transit, only 62 percent of sidewalks on arterial roadways are completed. This indicates that policies prioritizing access to transit are working.

Table 7.12 Access to travel options – access to transit

Access to transit	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained	Climate Smart Strategy
Percent **sidewalks** completed within ½ mile from light rail stops, 1/3 mile from street car stops, and ¼ mile from bus stops	66%	66%	72%	66%	76%	Not evaluated
Within equity focus areas	74%	74%	81%	74%	85%	Not evaluated
Percent **bikeways** completed within ½ mile from light rail stops, 1/3 mile from street car stops, and ¼ mile from bus stops	61%	61%	67%	61%	72%	Not evaluated
Within equity focus areas	64%	64%	71%	64%	76%	Not evaluated
Percent **trails** completed within ½ mile from light rail stops, 1/3 mile from street car stops, and ¼ mile from bus stops	45%	45%	48%	45%	55%	Not evaluated
Within equity focus areas	44%	44%	49%	44%	55%	Not evaluated

Figure 7. 5 Access to transit



Sidewalk completeness

While progress is made, the target of completing 100 percent of the regional pedestrian sidewalk network is not met. Seventy-one percent of sidewalks on the regional pedestrian network are completed in 2040 in the plan.

Additionally, the plan makes progress towards completing sidewalks in 2040 centers and on arterial roadways, but does not all gaps are filled.

By 2040, the plan completes 51 percent sidewalks within 2040 centers.

By 2040, the plan completes 62 percent of sidewalks on arterial roadways in the region (481 miles out of 773 miles).

Table 7.13 Access to travel options – sidewalk completeness

Sidewalk completeness	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained	Climate Smart Strategy
Miles complete: Percent complete: **Planned network**	477 60%	477 60%	529 66%	477 66%	565 71%	Not evaluated
Miles complete: Percent complete: **Planned network within equity focus areas**	300 71%	300 71%	330 78%	300 71%	350 82%	Not evaluated
Miles complete: Percent complete: **Centers**	772 48%	772 48%	797 49%	772 48%	822 51%	Not evaluated
Miles complete: Percent complete: **Centers within equity focus areas**	578 55%	578 55%	596 56%	578 55%	614 58%	Not evaluated
Miles complete Percent complete: **Arterial roadways**	394 51%	394 51%	445 58%	394 51%	481 62%	Not evaluated
Miles complete: Percent complete: **Arterials within equity focus areas**	250 67%	250 67%	280 75%	250 67%	296 79%	Not evaluated

Figure 7.6 Percent of sidewalks completed on the planned regional pedestrian network

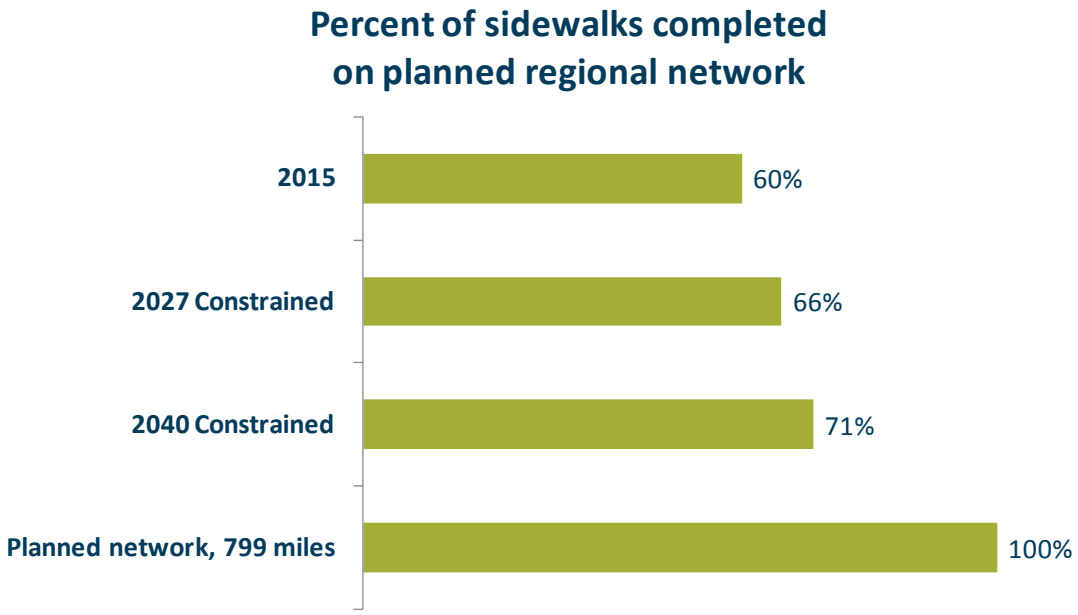
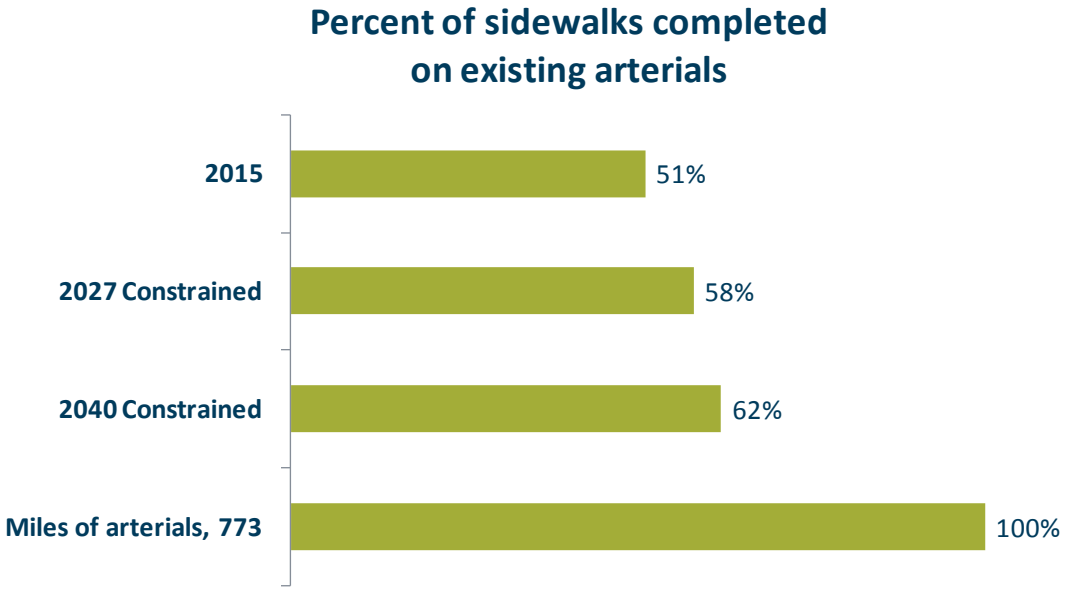


Figure 7.7 Percent of sidewalks completed on existing arterial roadways



Bikeway (on-street) completeness

While some progress is made, the target of completing 100 percent of the regional pedestrian sidewalk network is not met. By 2040, the plan completes 65 percent of the planned regional bikeway network (644 out of 997 miles).

Additionally, the plan makes progress towards completing bikeways in 2040 centers and on arterial roadways, but not all gaps are filled.

By 2040, the plan completes 30 percent of bikeways within 2040 centers.

By 2040, the plan completes 48 percent of bikeways on arterial roadways in the region.

Table 7.14 Access to travel options – bikeway completeness

Bikeway (on-street) completeness	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained	Climate Smart Strategy
Miles complete: Percent complete: **Planned network**	538 54%	538 54%	598 60%	538 54%	644 65%	421 93%
Miles complete: Percent complete: **Planned network within equity focus areas**	295 60%	295 60%	332 68%	295 60%	355 78%	Not evaluated
Miles complete: Percent complete: **Centers**	433 27%	433 27%	462 28%	433 27%	487 30%	Not evaluated
Miles complete: Percent complete: **Centers within equity focus areas**	320 30%	320 30%	345 33%	320 30%	361 34%	Not evaluated
Miles complete Percent complete: **Arterial roadways**	280 36%	280 36%	331 43%	280 36%	372 48%	Not evaluated
Miles complete: Percent complete: **Arterials within equity focus areas**	164 44%	164 44%	196 52%	164 44%	213 57%	Not evaluated

Figure 7.8 Percent of bikeways completed on the planned regional bike network

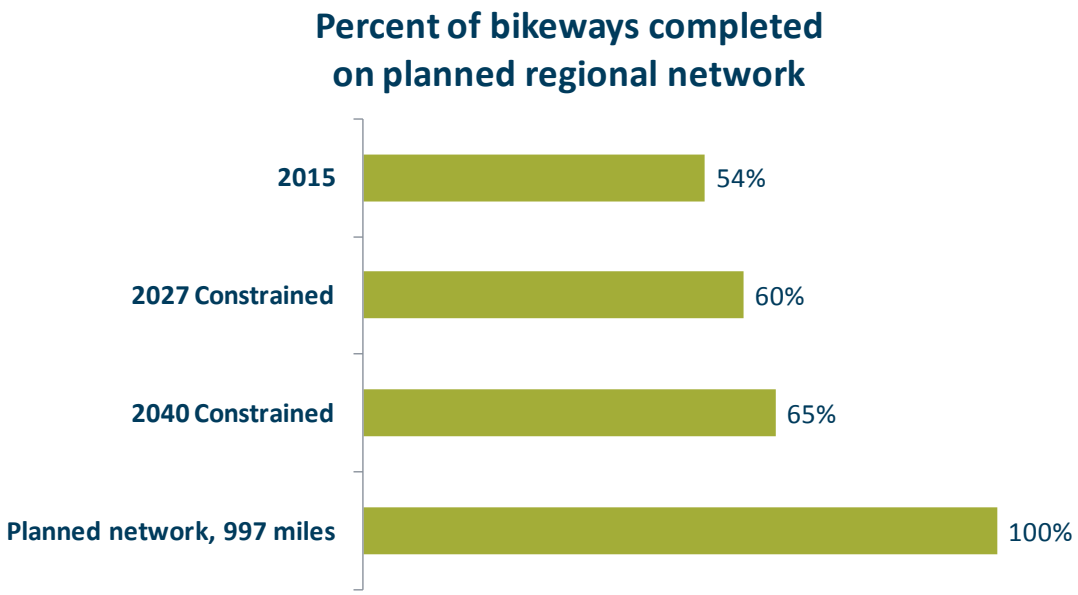
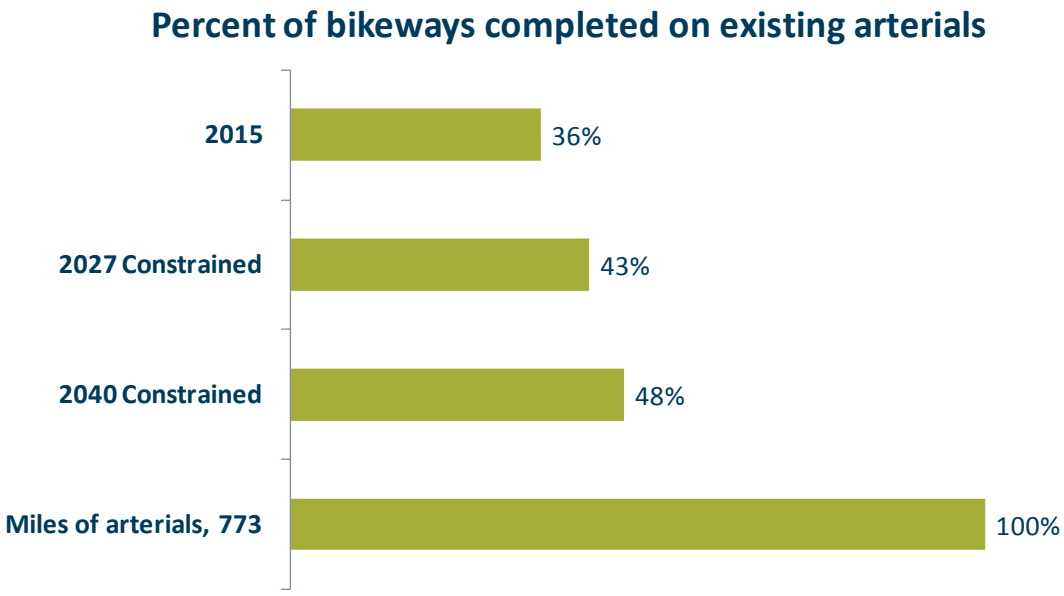


Figure 7.9 Percent of bikeways completed on existing arterial roadways

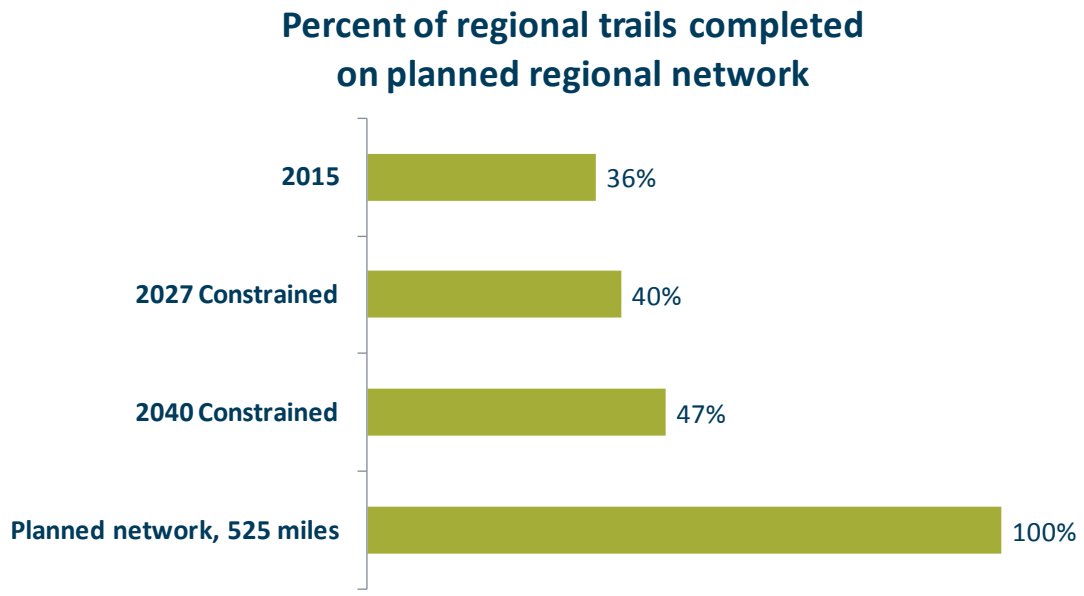


Trails (regional) completeness

While some progress is made, the target of completing 100 percent of the trail network is not met. By 2040, the plan completes 47 percent of the planned regional trail network that is identified on the regional pedestrian and bicycle networks (241 out of 525 miles).

Table 7.15 Access to travel options – regional trail completeness

Regional trail completeness	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained	Climate Smart Strategy
Miles complete Percent complete: Planned network	185 36%	185 36%	202 40%	185 36%	241 47%	369 70%
Within equity focus areas	68 39%	68 39%	77 44%	68 39%	85 49%	Not evaluated



New streets completeness

Note: This section and table to be completed in the final RTP once the Motor Vehicle planned system map has been updated.

Table 7.16 Access to travel options – new street completeness

New streets completeness	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained	Climate Smart Strategy
Miles complete: Percent complete: **Planned network**						
Miles complete: Percent complete:						

Centers
Within equity focus areas

Equity findings: Equity focus areas see a higher rate of active transportation (i.e. sidewalk, on-street bikeway, off-street bikeway, and trail completion compared to the overall completion rate for the region and in non-equity focus areas. In general, completion rates for planned miles of sidewalks, bicycle paths, and trails exceed region and non-equity areas 1 percent - 3 percent. When looking more closely at specific facilities, such as arterials, a slightly greater rate active transportation system completion in equity focus areas is planned compared to the overall regional active transportation network. Arterials see between 12 percent-14 percent increase in miles of sidewalk and on street bicycle completion, which is slightly greater than the region overall at 12 percent-13 percent as well as near transit and in 2040 centers. The results illustrate that in the refinement phase, partners placed further focus to complete the active transportation network in equity focus areas while also balancing considerations like urban arterial facility and in proximity to a transit stop.

Furthermore, what is also observed is that greater rates of completion are in equity focus areas within the first 10-years (2018-2027) of the 2018 RTP investment strategy. In general, a greater proportion of the active transportation investment relative to other types of transportation investment is in the first 10-years of the plan (28.8 percent of 2018-2027 investment; 14.9 percent of 2028-2040 financially constrained). Then when looking at completion rate of the on-street bicycle network in equity focus areas by 2040, the increase is 12 percent, and the first 8 percent of that growth in miles of completed on-street bicycle network is slated between 2018-2027. The remaining 4 percent growth in miles of on-street bicycle network is set for the outer years of the investment strategy. This is a change from what was observed in the first round of performance evaluation of the 2018 RTP where more active transportation investments were planned for the outer years. Jurisdictional partners responded to leadership direction to advance and further complete the active transportation network in the first 10-years of the 2018 RTP. The one area where this statistic diverges slightly is with regional trails, where a steady rate (6 percent) of completion is observed in the first 10-years and the out part (2028-2040) of the plan.

Nonetheless, the active transportation network does not see 100 percent completion in any category. Sidewalk completion, with the highest rate of completion, tops out at 83 percent in communities of color and communities with limited English proficiency region wide. When looking further, sidewalk completion in proximity to transit stops (e.g. bus, streetcar, or light rail) see 86 percent (with the 2040 financially constrained investment strategy) through 87 percent (with the 2040 strategic investment strategy) completion. The overall 2018 RTP investment level in active transportation ranges between $1.84 billion (in the 2040 financially constrained) to $2.98 billion (in the 2040 strategic). This

range makes up between 10.7 percent – 12.4 percent of the overall 2018 RTP investment strategy. While falling short of the region's target to complete the active transportation network, the focus on advancing active transportation projects in the first ten years of the Plan and placing active transportation investments in equity focus areas at a greater levels than the non-equity focus areas indicate there is not an disproportionate or disparate impact.

Figure 7.10 Percent sidewalks completed on planned network in equity focus areas

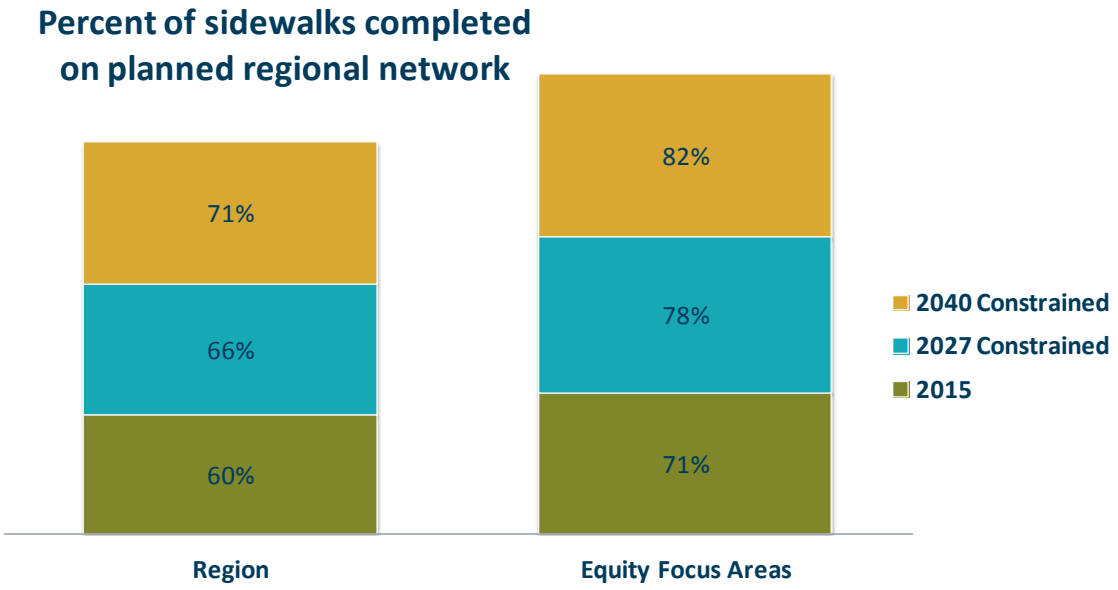
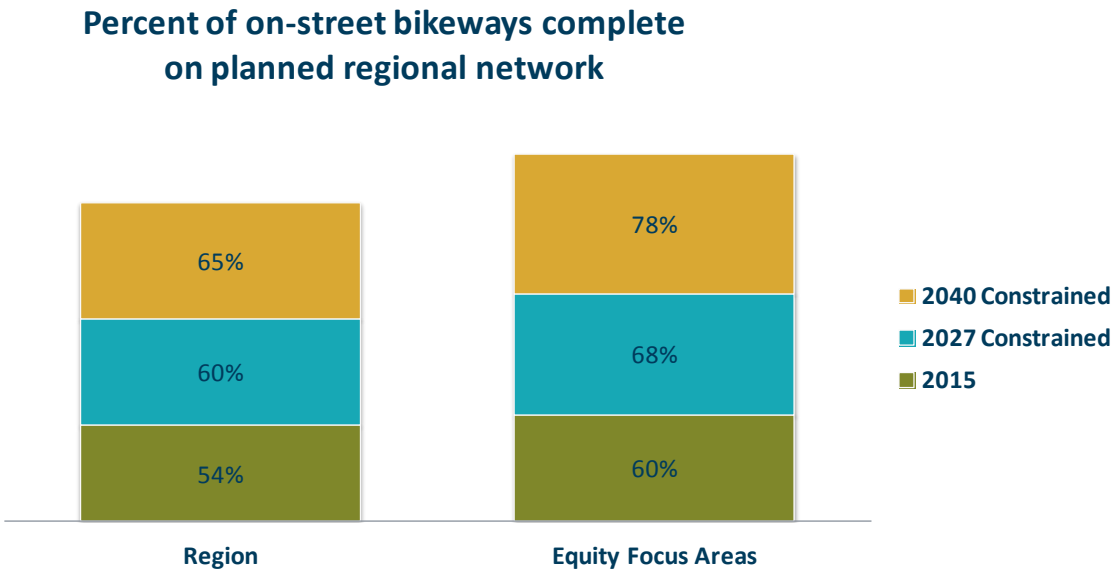


Figure 7.11 Percent bikeways completed on planned network in equity focus areas



7.4.4 Access to jobs

Data source: Geospatial project information for proposed transportation projects provided by project sponsors and forecasted employment/jobs from MetroScope. Projections of jobs and geographic distribution of employment is based on underlying U.S. Bureau of Labor Statistics data (Quarterly Census of Employment and Wages) and assumptions regarding growth for the employment industries in MetroScope, and Metro travel forecast model

Description: Number and percent change of jobs (classified by wage groups – low, middle, and high) accessible by driving, transit, bicycling, and walking - region- wide, in equity focus areas (people of color, English language learners and lower income), and in non-equity focus areas within the following commute times:

- 30 minutes by auto*
- 45 minutes by transit*
- 30 minutes by bike
- 20 minutes by walking

*Includes access and egress times.

Target or desired direction: No target. Desired direction is to increase the number of jobs accessible to the average household within a reasonable commute, with a focus on increasing middle and low-wage job access for the average household in equity focus areas compared to non-equity focus areas and the region by 2040.

Per recommendation by the transportation equity work group, Metro will update performance measure with a target and develop evaluation methods to measure the disparities gap in access to low and middle-wage jobs for households in equity focus areas for the next update of the RTP.

Findings: In general, the 2018 RTP investment strategy increases the number of jobs the average household can reach within a commute time adjusted by travel mode. With the first ten years of investment outlined in the 2027 Constrained investment strategy, the average household will see a range of 18 more jobs by walking to 21,000 more jobs by transit accessible due to the investment strategy. (See Table 7.17) The additional number of jobs accessible means the average household in the region is able to reach upwards of 49percent of all the jobs in the region within a typical commute time, depending on the form of travel. Interesting to note is that the average household is able to reach approximately 10percent of the region's 1 million projected jobs by either transit, during the rush hour, or by bicycle within their respective commuting times (45 minutes for transit, 30 minutes for bicycling). By far, the investment in transit in the 2040 Constrained investment strategy show larger gains in the number of jobs accessible, where nearly 25 percent more jobs become accessible to the average household within a 45 minute transit trip. Comparatively, driving and biking saw closer to .8percent (biking) to 1.6percent (driving) increased job access in the typical 30 minute commute time. This illustrates the

multimodal investments in the 2027 Constrained investment strategy is making a positive impact in increasing the number of jobs accessible across different forms of travel, giving households more options for commuting to work.

While the 2027 Constrained investment strategy see increases in the number of jobs accessible, the additional investment slated for 2028 through 2040 in the full 2040 Constrained investment strategy only further increases the number of jobs the average household can reach within a typical commute time. For driving, transit, and walking, the increase in the number of jobs at a minimum doubles with some cases the increase being 3 or 4 times greater than the gains seen within the first ten years. The one exception is bicycling, where a decrease in the number of jobs accessible within a 30 minute bicycle ride is projected. The decrease may be due to the greater number of route and facilities options available for bicycle commutes and as a result creating further out of direction travel or longer than 30 minute bicycle commute trips. In general the average household will see a range 70 more jobs by walking to over 40,000 more jobs by transit, accessible due to the long-range investment strategy. Similar to the first 10 years, transit will see the greatest increase in the number of jobs accessible within a 45 minute transit commute at upwards of 42 percent more jobs.

Table 7.17 Change in the Number of Jobs Accessible Within a Typical Commute Time (adjusted by form of travel) in the 2027 Constrained Investment Strategy

Change in Total Number of Jobs Accessible in 2027 Constrained compared to 2027 No Build						
	Auto Rush Hour	Auto Non Rush Hour	Transit Rush Hour	Transit Non Rush Hour	Bike	Walk
All Jobs	15,169	8,460	21,448	19,371	907	18
Low Wage Jobs	7,194	4,040	10,197	9,192	411	9
Middle Wage Jobs	4,168	2,318	5,883	5,322	258	5
High Wage Jobs	3,807	2,102	5,368	4,857	239	4
Change in Total Number of Jobs Accessible in 2040 Constrained compared to 2040 No Build						
	Auto Rush Hour	Auto Non Rush Hour	Transit Rush Hour	Transit Non Rush Hour	Bike	Walk
All Jobs	36,268	37,062	40,694	40,185	-509	70
Low Wage Jobs	17,118	17,512	18,671	18,452	-255	32
Middle Wage Jobs	10,017	10,223	10,929	10,829	-131	20
High Wage Jobs	9,165	9,362	10,065	9,960	-122	18

Table 7.18 Change in the Number of Jobs Accessible, by Wage Profile, Within a Typical Commute Time for Different Communities (adjusted by form of travel)

	Change in Total Number of Jobs Accessible in 2027 Constrained compared to 2027 No Build					
	All Jobs					
	Auto Rush Hour	Auto Non Rush Hour	Transit Rush Hour	Transit Non Rush Hour	Bike	Walk
Region	15,169	8,460	21,448	19,371	907	18
Equity Focus Areas	13,210	7,534	24,155	21,549	365	11
Non-Equity Focus Areas	16,694	9,087	17,157	15,797	1,467	25
	Low Wage Jobs					
	Auto Rush Hour	Auto Non Rush Hour	Transit Rush Hour	Transit Non Rush Hour	Bike	Walk
Region	7,194	4,040	10,197	9,192	411	9
Equity Focus Areas	6,277	3,595	11,502	10,235	162	5
Non-Equity Focus Areas	7,906	4,343	8,138	7,486	667	13
	Middle Wage Jobs					
	Auto Rush Hour	Auto Non Rush Hour	Transit Rush Hour	Transit Non Rush Hour	Bike	Walk
Region	4,168	2,318	5,883	5,322	258	5
Equity Focus Areas	3,621	2,067	6,622	5,919	103	3
Non-Equity Focus Areas	4,596	2,488	4,711	4,341	417	6

Equity findings: For the average household within an equity focus area, the number of jobs accessible within a typical commute time by different forms of travel is expected to increase. The average household in an equity focus area will see upwards of 11 more jobs within a 20-minute walk to over 24,000 more jobs in a 45 minute transit trip due to the investment strategy with the 2018 RTP investment strategy through 2027. With the addition of the 2018 RTP investment strategy beyond 2027 to 2040, the increase in the number of jobs accessible for the average household in equity focus areas goes up to 65 more jobs within a 20-minute walk to over 44,000 more jobs in a 45-minute transit trip. When looking more specifically at low-wage and middle-wage jobs, as a result of the 2018 RTP investment strategy the average household in equity focus areas see the number of

middle and low wage jobs accessible in a 45-minute transit commute increase 42 percent by 2040.

The positive take away from the 2018 RTP investment strategy is there is an increase in the number of jobs accessible to the average household in the equity focus areas within a typical 45-minute transit commute trip. This patterns hold true regardless of the time of day (e.g. rush hour travel, where typically more transit service is out on the streets, or non-rush hour travel which is any other time of day). Additionally, what is also seen is with the 2018 RTP investment through 2027, an increase of 21,000 more jobs are accessible in a 45-minute transit commute for the average household in an equity focus area. But by 2040, the additional investment increases the number of jobs accessible within a 45-minute transit commute to over 44,000 for the average household in the equity focus areas. A similar pattern is observed when looking at both low and middle wage jobs. The number of low and middle wage jobs accessible within a 45-minute transit commute for the average household in equity focus areas increases by a little over 10,000 (low wage) and a little under 6,000 (middle wage) in 2027 to just over 21,000 (low wage) and over 12,300 (middle wage) jobs. The result shows the region is focusing transit investments in equity focus areas to support the travel needs of historically marginalized communities.

Nonetheless, in some cases, the average household in the region and the average household in non-equity focus areas see a greater increase in the number of jobs within a typical driving, bicycling or walking commute compared to the equity focus areas. For example, with the 2018 RTP investments through 2027, the non-equity focus areas see an increase of 1,467 more jobs accessible by bicycle in a 30-minute commute, whereas equity focus areas see an increase of 365 more jobs in a 30-minute commute due to the first ten years of investment. This same pattern of non-equity areas seeing an increase in the number of jobs accessible is observed when looking at jobs by their wage profile (low, medium, high) primarily in driving, bicycling, and walking with investment through 2027 and with the investments through 2040 identified in the 2018 RTP.

There are some potential different reasons for why the average household in the region and in non-equity focus areas see a greater increase in the number of jobs accessible within a typical driving, biking, or walking commute, regardless of wage profile of job type. For driving, the issue of traffic congestion may be impacting why equity focus areas may see a lesser increase in the number of jobs accessible within a 30-minute driving commute. Another factor may also be the changing land use mix of the region where the typical commute distance to work is getting longer and therefore resulting in longer travel time. For walking and bicycling, it is possible as more transportation investments build out the active transportation network, specifically in equity focus areas, more active transportation route options become available which are more attractive for riding. From the results of Access to Travel Options performance measure, the region did focus active transportation investments in equity focus areas. The increased number of available route options may encourage people commuting to work to bike a little bit further or slightly out

of direction to access a better bicycling or walking facility. The result is more time spent in active travel, which may be an indirect benefit. Whereas in the non-equity focus area, especially in the less developed areas of the region, a new bicycle facility which may have not existed and without other route options would vastly open up access for commuting, The results may illustrate the swings or a decrease in the number of jobs accessible within a 20-minute walk commute or 30-minute bicycle commute is not a detrimental result because it is impacting travel behavior and choice. More analysis would be needed to fully understand these results.

While it is disappointing to see equity focus areas seeing lesser increases of number of jobs accessible by driving, bicycling, and walking compared to the region overall and non-equity focus areas, one consideration to take into account is that equity focus areas have a greater number of jobs accessible within a typical commute across all forms of travel. For example, in 2027 without the 2018 RTP investment strategy, the average household in equity focus area can reach a little over 107,000 jobs, which is about 10 percent of all the region's jobs by transit in a 45-minute commute. For the non-equity focus areas, the average household can reach a little over 57,000 jobs and the average household in the region can reach a little over 86,000 jobs by transit in the same 45-minute window. This means the region has already been focusing on placing transportation investments in equity focus areas and only trying to further gain more efficiency.

The mixed results demonstrate that more investigation is necessary to understand how to improve and increase the number of jobs accessible in a reasonable commute for the average household in equity focus areas across all forms of travel. While the 2018 RTP investment strategy has determined the successful approach for transit and placing transit service, it is necessary to dig in and understand how to increase the number of jobs accessible by bicycling and walking in particular. This is because historically marginalized communities tend to use transit, bicycling, and walking for more of their travel trips. In addition to further investment, other strategies may be necessary, such as land use strategies, travel options education and demand management. But more analysis is necessary to understand the results further and determine the appropriate set of strategies to make improvements. Additionally, the mixed results indicate further investigation is necessary to determine whether there is a potential disproportionate or disparate impact.

7.4.5 Access to community places

Data source: Geospatial project information for proposed transportation projects from project sponsors; U.S. Bureau of Labor Statistics – Quarterly Census of Employment and Wages (2013) and Select North American Industry Classification System (NAICS) codes, and Metro travel forecast model

Description: Measure access by bicycling, walking, transit, and driving – region wide, in equity focus areas (people of color, English language learners and lower income), and in non-equity focus areas within the following travel times:

- Automobile – 20 minutes*
- Transit – 30 minutes*
- Bicycle – 20 minutes
- Walk – 20 minutes

*Includes access and egress times.

Analysis is based on the locations of existing community places and does not factor in possible additional community places as a result of population and employment growth. MetroScope spatially distributes non-residential land uses and employment at a coarse granularity; finer detail on the locations of community places is necessary to predict future community places growth. As a result, the increase in the number of community places which can be reached within a short driving, transit, walking, or bicycling trip may be greater than discussed in the findings.

Target or desired direction: No target. Desired direction is that by 2040, increase the number of community places accessible for the average household in equity focus areas compared to the average household in non-equity focus areas.

Per recommendation by the transportation equity work group, Metro will update performance measure and develop evaluation methods to measure the disparities gap in access to community places for households in equity focus areas for the next update of the RTP.

Findings: Region wide, the 2040 Constrained investment strategy increases the number of community places accessible within a short driving and transit trip. With the 2018 RTP investments through 2027, the average household in the region can get to 33 to 57 more community places in a short driving trip, or 78 to 100 more community places in a short transit trip depending on the time of day. With further investment slated for after 2028, the 2018 RTP investment strategy further increases the number of community places reached in a short driving or transit trip to upwards of 76 to 143 more community places accessible to the average household.

While the 2040 Constrained investment strategy is showing positive progress in the greater number of places accessible, little or no change in the number of community places accessible in a short walking or bicycling trip is observed as a result of the investment strategy. In general, the average household in the region can reach 66 community places in a short walk and 360 community places in a short bicycle ride. (See Attachement of Appendix E for full accessibility tables.) Nonetheless, individual investments in active transportation may have a more significant impact in increasing the number of community places reached for an individual community than what the system wide evaluation is showing.

Table 7.19 Change in the Number of Community Places Accessible Within a Typical Commute Time for Different Communities (commute time adjusted by form of travel)

Change in Total Number of Community Places Accessible in 2027 Constrained Compared to 2027 No Build						
	All Community Places					
	Auto Rush Hour	Auto Non Rush Hour	Transit Rush Hour	Transit Non Rush Hour	Bike	Walk
Region	57	33	100	78	1	0
Equity Focus Areas	52	31	120	90	1	0
Non-Equity Focus Areas	59	35	72	60	1	1
Change in Total Number of Community Places Accessible in 2040 Constrained Compared to 2040 No Build						
	All Community Places					
	Auto Rush Hour	Auto Non Rush Hour	Transit Rush Hour	Transit Non Rush Hour	Bike	Walk
Region	114	76	143	139	0	1
Equity Focus Areas	101	69	165	161	0	0
Non-Equity Focus Areas	123	79	109	105	1	1

Equity findings: When looking more closely at the analysis in the equity focus areas, the 2018 RTP 2027 Constrained and 2040 Constrained investment strategies result in more community places which can be reached in a short transit trip compared to the region and non-equity focus areas. This means the average household in the equity focus areas see a greater increase in the number of community places reached in a short transit trip compared to the average household in the region or in non-equity focus areas as a result of the investment strategy. The equity focus areas see an increase of 90 to 120 more community places reached in a 30-minute transit trip, depending on the time of day in the 2027 Constrained investment strategy. The number of community places further increases to 165 more reached with the 2018 RTP investments slated for the 2040 Constrained investment strategy. Whereas, the region and non-equity areas see an increase range from 60 to 109 (non-equity focus areas) and 78 to 143 (region) with the 2018 RTP investment strategy.

While the significant increases in the number of community places reached in a short transit trip for the average household in a equity focus area is a positive sign, when it comes to other forms of travel (i.e. driving, walking, and bicycling), the region and non-equity focus areas see a greater increase in the number of community places reached within a short trip. For example, in a 20 minute drive, depending on the time of day, the average household in the region can reach 114 more community places in 2040 as a result of the 2018 RTP investments. This is 13 more community places than the average household in an equity focus area. This means the average household in the region and in a non-equity focus area is seeing greater benefit in reaching community places in a short trip as a result of the 2018 RTP investment strategy compared to the average household in an equity focus area.

As described earlier in this section, minimal change was observed in the number of community places reached in a short bicycle or walking trip in the region. The same result is seen in non-equity focus areas and in equity focus areas. While the change is a difference of one more community place reached within a short bicycle or walking trip, the increase was generally observed more consistently in non-equity focus areas than equity focus areas. As described earlier in this section, the results may not fully show the increased numbers of community places reached as a result of the investment strategy since the analysis did not account for future community places to open as a result of population and employment growth creating new demand for places like grocery stores, doctors/dental offices, and other retail or services.

Additionally, as described more fully in the Access to Jobs analysis, the results for the number of community places reached within a short trip (15 minutes for bicycling, 20 minutes for walking) may not fully capture the benefits being gained by implementing the active transportation investments in the 2018 RTP. As new sidewalks and bikeways get built, new route options become available which may attract more out of direction travel to have a more pleasant walking or bicycling experience. This may result in trips taking longer than 15 or 20 minutes to get to different destinations, but more time spent in active travel and the associated health benefits.

The mixed results from the access to community places evaluation measure for the equity focus areas indicate further investigation is necessary to determine whether there is a potential disproportionate or disparate impact.

7.4.6 Access to bicycle and pedestrian parkways

Data source: Metro Regional Land Inventory System, Geographic Information Systems

Description: Evaluates Number and percent of households within ¼-mile of a bicycle or pedestrian parkway (the highest level regional bicycle and pedestrian facilities – typically built as regional multi-use trails or along arterials. See Chapter 4 for more detail on these routes).

Target or desired direction: No target for this measure. The desired direction is an increase in the number and share of households within a ¼ mile of a bicycle or pedestrian parkway

Findings: In the 2015 base year over 75 percent of households in the planning area are within ¼-mile of a regional bicycle parkway. This increases to over 77 percent in the 2027 Constrained system and slightly more in the 2040 Constrained and 2040 Strategic investment strategy.

Table 7.20 Number of households with access to regional bicycle parkways

Regional bicycle parkways	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained	Climate Smart Strategy
# of HH	477,937	573,569	602,046	655,960	706,232	712,351
% of HH	75%	74%	78%	73%	79%	79%

In the 2015 base year 86 percent of households in the planning area are within ¼-mile of a regional pedestrian parkway. This percent decreases slightly to 84 percent in the 2027 Constrained investment strategy, rising slightly to 85 percent in the 2040 Constrained and the 2040 Strategic investment strategy. One reason that the percent decreases in the future is that the RTP project list does not include many projects to complete pedestrian parkways in some of the newer growth areas on the edges of the region. As many of the pedestrian parkways are frequent-service transit routes, this reflects the difficulty of providing access to high-quality transit in these areas.

Table 7.21 Number of households with access to regional pedestrian parkways

Regional pedestrian parkways	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained	Climate Smart Strategy
# of HH	543,926	648,066	653,831	738,896	762,485	765,136
% of HH	86%	83%	84%	82%	85%	85%

7.4.7 Access to transit

Data source: Metro travel forecast model

Description: Number and share of households within 1/4-mile of bus, 1/3-mile from streetcar and ½-mile high capacity transit or frequent service transit, region-wide, and in equity focus areas households (POC and LEP) and (POC, LEP and LI)

Number and share of jobs within 1/4-mile of bus, 1/3 mile from streetcar and ½ mile high capacity transit or frequent service transit, region-wide and by subareas

Target or desired direction: Per the Climate Smart Strategy, the 2035 monitoring targets for access to transit are:

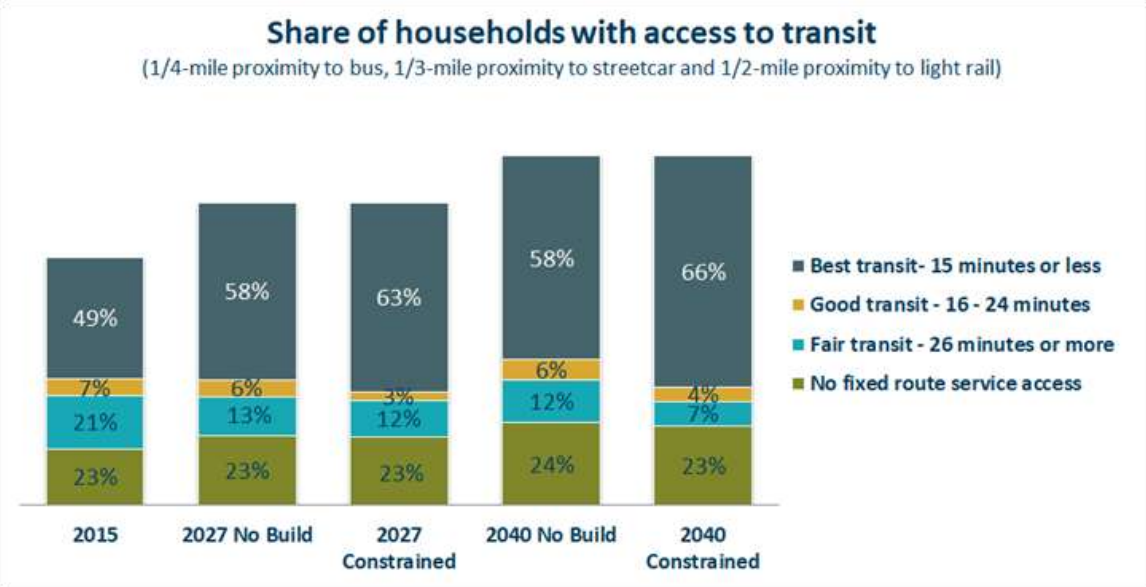
- 37 percent of households are within ¼-mile of all day frequent service
- 49 percent of low-income households are within ¼-mile of all day frequent service
- 52 percent of employment is within ¼-mile of all day frequent service:

Findings: Determining the ease, comfortableness, and directness of our transit system is no easy task, but the analysis shows that at the very least we are headed in the right direction. Under each of the investment strategies, the majority of the households and jobs in the region have access to 15-minute better transit service. Between 70-85 percent of the jobs in the region would be accessible by frequent service transit in 2040. The majority of the households, 60 -70 percent, in the region would also have access to frequent service transit. There would be a higher percentage of jobs and households with access to frequent service transit during the peak rush hours and off peak hours.

Equity findings: Low-income households region wide and in the equity focus areas would have greater percentage of households with access to frequent service compared to the region as a whole. Across the 2027 Constrained, 2040 Constrained and 2040 Strategic investment strategies transit access is expected to increase access for historically marginalized communities and communities of color are expected to outperform the region as a whole, something that puts the region one step closer to establishing a more equitable transit system.

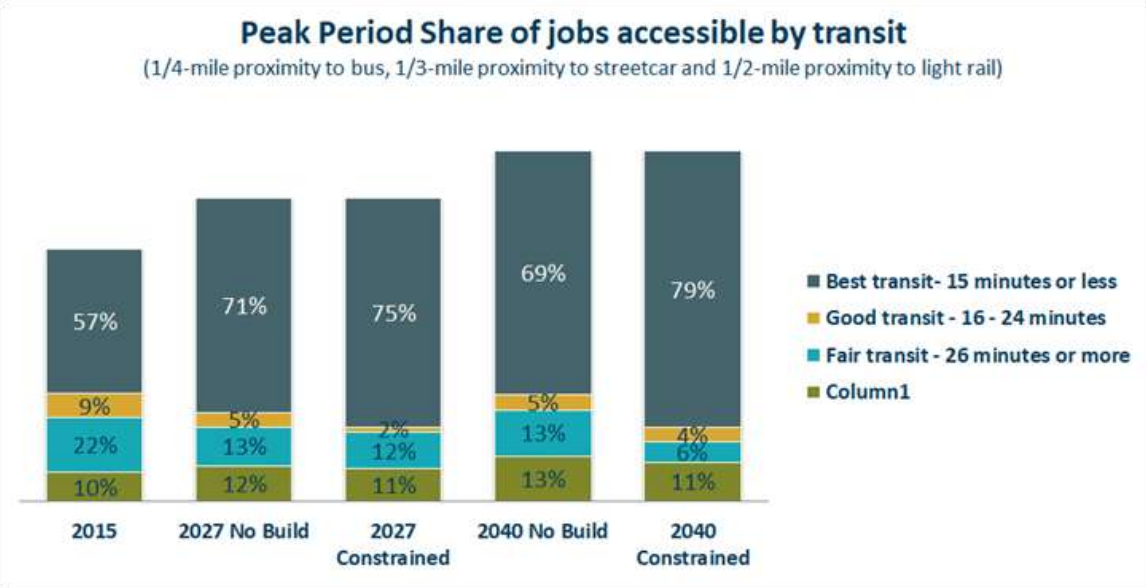
Proximity to stations: There is no motivation to use transit if it's geographically inaccessible, and even if it's geographically accessible there's no point in using it if it doesn't take you where you want to go. Good transit planning considers these concepts of access concurrently. The good news is that the future looks bright for both qualifiers of access. As the graph below highlights we can expect more than 3/4th of the region's households to have access (proximity) to transit by 2040, the majority being classified as "best transit" operating at 15-minute or better intervals. Additionally, 90 percent of the jobs in the region are accessible by transit. Figure 12 and 13 shows the percentages of households and jobs with access and frequencies to transit. Figures 14 through 17 present the access and frequencies for jobs, households, low-income households and low-income households in communities of color for various timeframes analyzed.

Figure 7.12 Share of households with access to transit



More than three-quarters of the households in the region are expected to be near higher frequency transit. The number of households with 15-minutes or better transit service increases significantly between today and the future 2040 financially constrained investment strategies. The jobs in our region see even higher rates of transit access.

Figure 7.13 Share of jobs with access to transit

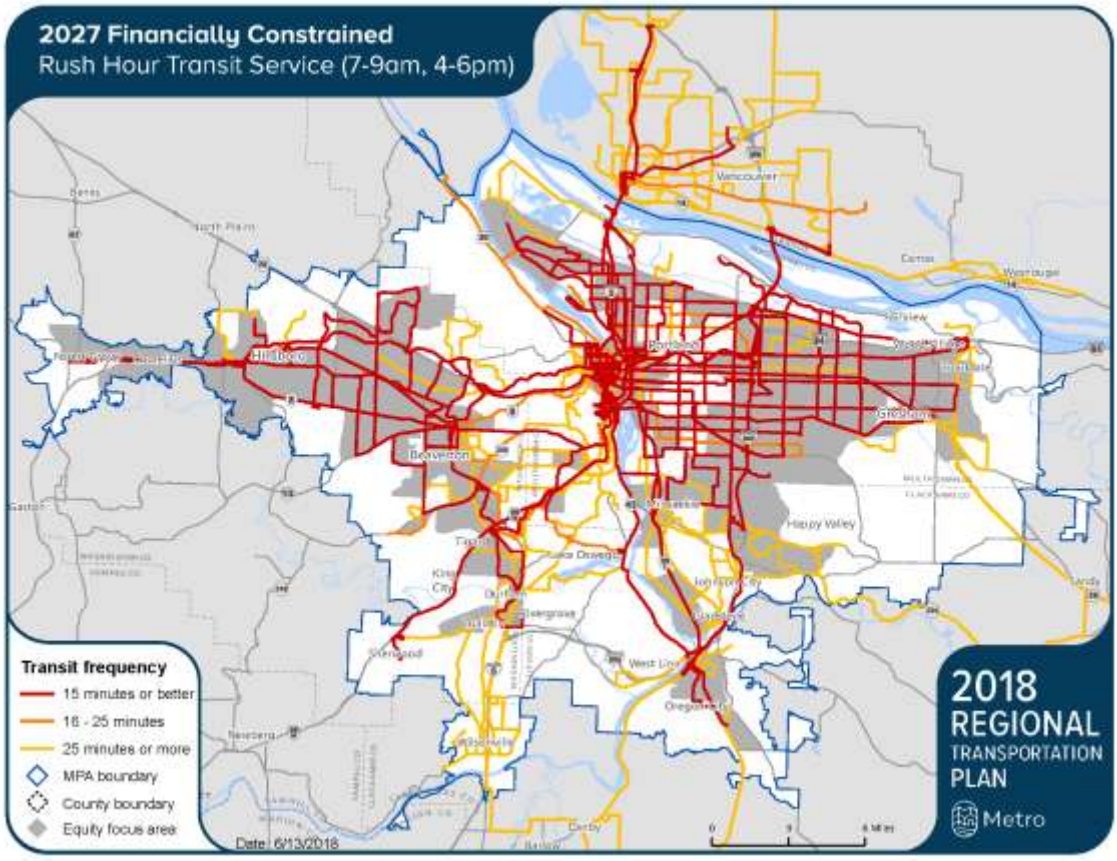


Approximately 90 percent of the jobs in the region are located near transit. As shown in the figure above, the number of jobs accessible by 15-minute or better transit service increases significantly between today and the 2040 financially constrained investment

strategies. The increase in transit service and frequencies means that more people are able to access job opportunities.

The following figures show transit service by Investment Strategy.

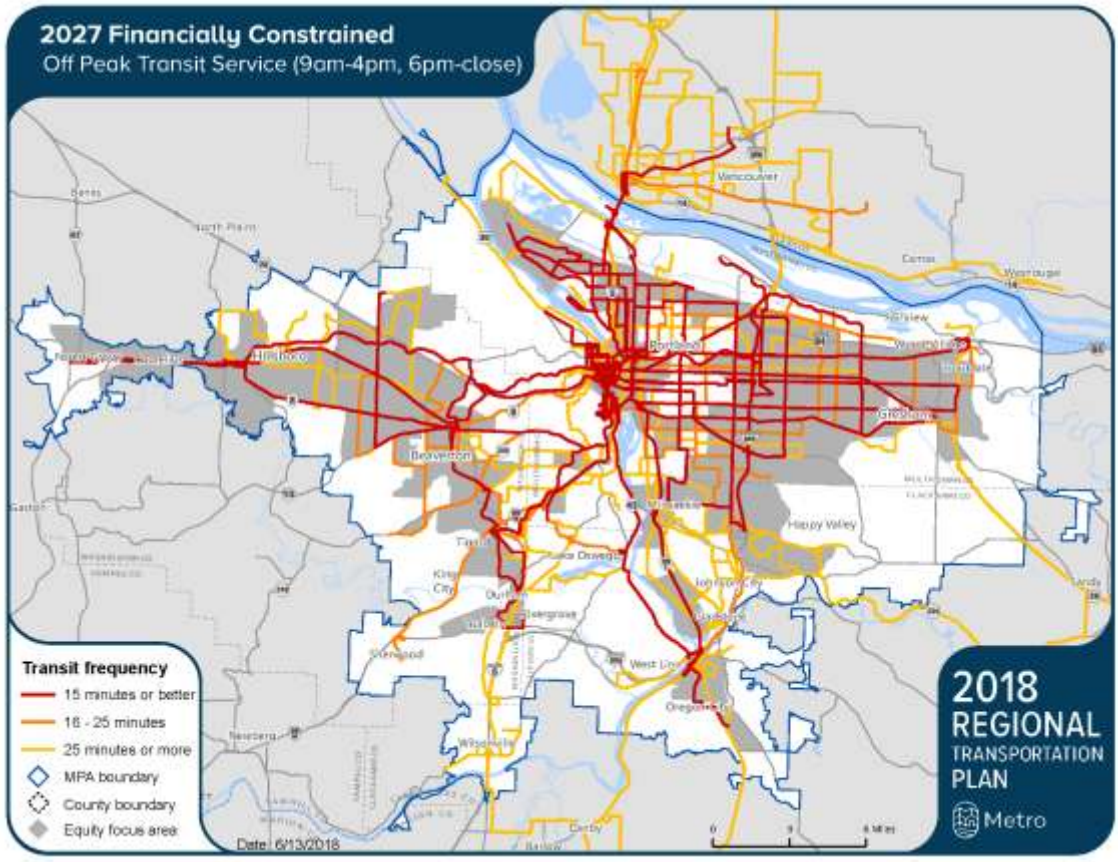
Figure 7.14 2027 Constrained Rush Hour Transit Service



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

- 75% of jobs
- 63% of households
- 72% of low-income households
- 82% of low-income households in the equity focus areas

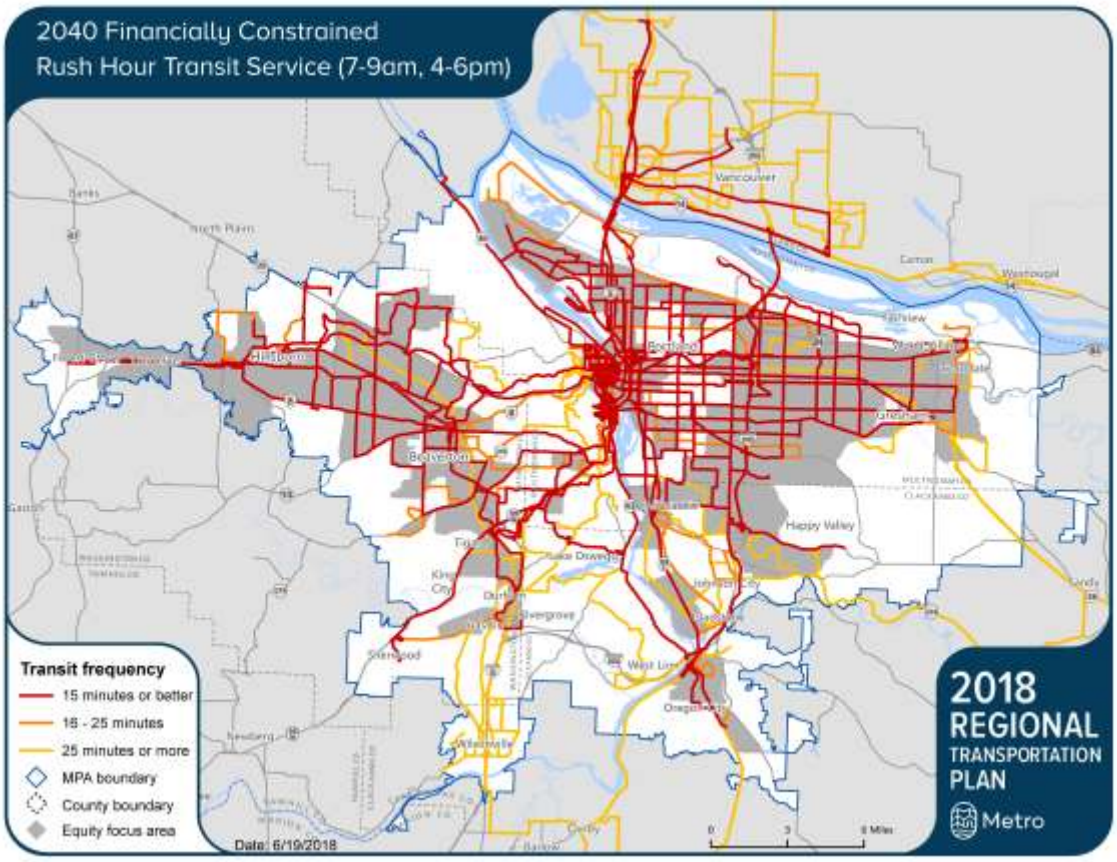
Figure 7.15 2027 Constrained Off-peak Transit Service



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

- 67% of jobs
- 53% of households
- 63% of low-income households
- 72% of low-income households in the equity focus areas

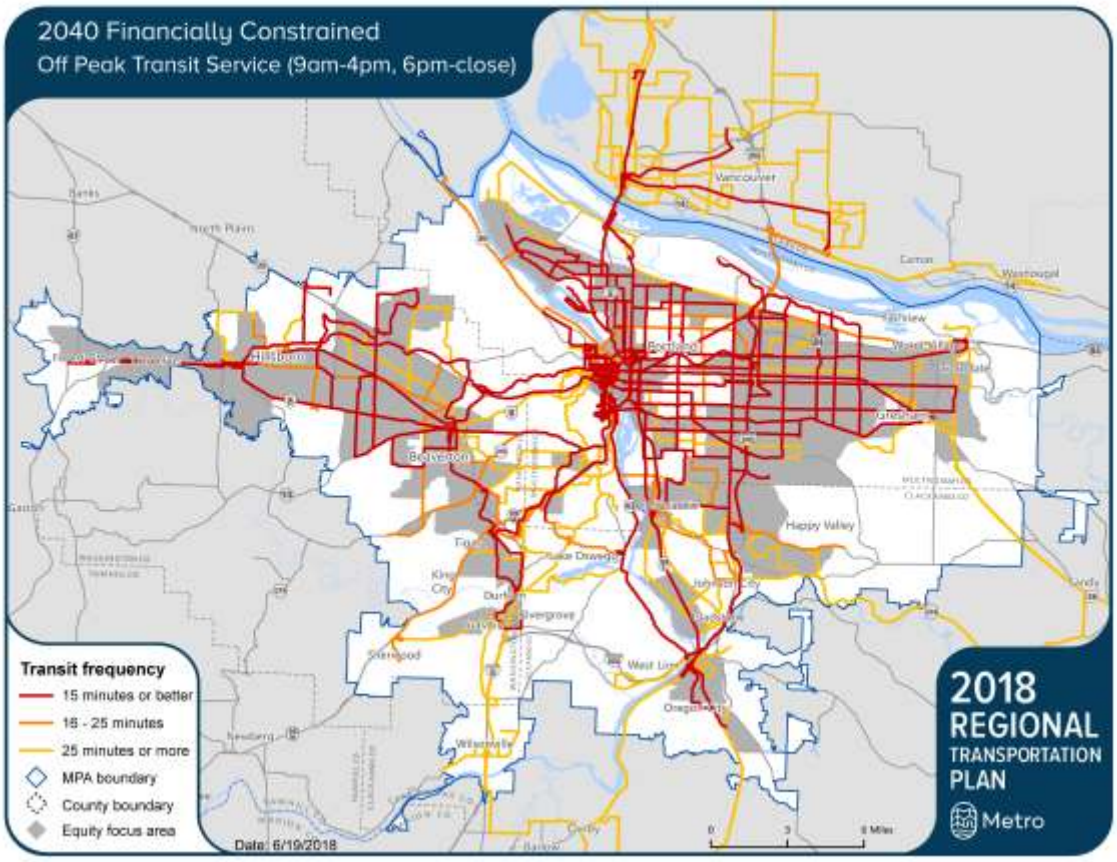
Figure 7.16 2040 Constrained Rush Hour Transit Service



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

- 79% of jobs
- 66% of households
- 75% of low-income households
- 85% of low-income households in the equity focus areas

Figure 7.17 2040 Constrained Off-Peak Transit Service Access



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

- 72% of jobs
- 58% of households
- 69% of low-income households
- 79% of low-income households in the equity focus areas

7.4.8 Access to industry and freight intermodal facilities

Data source: Metro travel forecast model

Description: Extent that industrial land and freight intermodal facilities are transportation constrained. This measure was developed and tested, but not fully implemented or evaluated. The intent is to measure the number of trucks that are coming from or going to freight intermodal facilities or industrial land within each of the Regional Mobility Corridors, and determine the hours of truck delay they are experiencing on the regional freight network. The times of day that were measured include the AM peak (7-9 AM), the mid-day for trucks (1-3 PM) and the PM peak (4-6 PM). The two areas chosen to test were the Tualatin and Sherwood Industrial Area off Tualatin-Sherwood Road (in mobility corridor 11); and the Marine Terminals 5 and 6, and the rail yards off Marine Drive (in mobility corridor 17).

Target or desired direction: There is no target for this measure. The desired direction is to reduce truck hours of delay on the freight network that provide access to intermodal facilities and industrial lands in 2040.

Findings: Incomplete and inconclusive due to testing being limited to two areas with freight intermodal facilities/rail yards or industrial land. Intermodal Facilities and rail yards are not the only places that attract large numbers of freight trucks. According to the truck model, in 2015 the Tualatin and Sherwood Industrial Area generates 30 percent more truck trips (regardless of time period) than does the North Portland industrial area that includes Marine Terminals 5 and 6, and two rail yards. By 2040, that difference increases to about 33 percent more truck trips regardless of time period.

Equity findings: Not included in transportation equity analysis.

7.4.9 Multimodal travel times

Motor Vehicle Travel Times

Data source: Metro travel forecast model

Description: Evaluates mid-day and pm peak travel time between 20 regional origin-destination pairs.

Target or desired direction: No target. Maintain motor vehicle travel times between key origin-destinations.

Findings: With the exception of the Central City to Vancouver corridor, motor vehicle travel time increases, generally by a few minutes, for all three 2040 investment strategies compared to the 2015 Base Year, for both travel periods and all origin-destinations. Evening peak travel times grow at a faster pace the mid-day travel times.

Overall, the 2040 Constrained and the 2040 Strategic investment strategies decrease motor vehicle travel time when compared to the 2040 No Build. Central City to Vancouver shows a 4-6 minute improvement in travel time in the 2040 Constrained.

Refer to Appendix I for tables showing travel times for each of the mobility corridors.

Equity findings: Not included in transportation equity analysis.

Transit Travel Times

Data source: Metro travel forecast model

Description: Evaluates mid-day and pm peak transit travel times between 18 origins and destinations across the region.

Target or desired direction: No target. Reduce transit travel times between key origin-destinations.

Findings: In general, most corridors see a decrease or maintaining of travel times in from 2015 Base Year to the 2040 Constrained; some corridors see decreases in transit time between 10 and 46 minutes. There are modest increases in transit travel times during the PM peak travel period from 2015 Base Year to the 2040 Constrained in some corridors. For example:

- Gateway to Vancouver Mall - decrease in travel time of 15.4 minutes in the 12-1 travel period and an decrease of 13.2 minutes in the 4-6 PM peak.
- Gateway to Oregon City - decrease in travel time of 12.4 minutes in the 12-1 travel period and an decrease of 12.8 minutes in the 4-6 PM peak.
- Clackamas Town Center to Oregon City- decrease in travel time of 13.4 minutes in the 12-1 travel period and an decrease of 9.5 minutes in the 4-6 PM peak.
- Tualatin to Oregon City - decrease in travel time of 35.3 minutes in the 12-1 travel period and an decrease of 12.4 minutes in the 4-6 PM peak.
- Tigard to Sherwood decrease in travel time of 10.5 minutes in the 12-1 travel period and an increase of 6.2 minutes in the 4-6 PM peak.
- Tualatin to Sherwood - decrease in travel time of 46.4 minutes in the 12-1 travel period and an decrease of 26.9 minutes in the 4-6 PM peak.

Refer to Appendix I for tables showing travel times for each of the mobility corridors.

Equity findings: Not included in transportation equity analysis.

Freight Travel Times

Data source: Metro Travel Forecast Model

Description: Evaluates the one hour mid-day (12-1 PM), mid-day for trucks (2-3 PM) and PM peak (5-6 PM) truck travel times for 24 routes (one for each mobility corridor) that use the regional freight network, and start and/or end at a major industrial site (rail yard, intermodal facility, major industrial site, etc.).

Target or desired direction: No target. Maintain or decrease truck travel times for routes on the regional freight network within mobility corridors.

Findings: The following modeled results for major freeways are for the percent reduction in truck travel time for the 2040 Financially Constrained (FC) and 2040 Strategic (S) compared to the 2040 No Build:

- CEID to Vancouver CBD: 12-1 PM = 20-21% less; 2-3 PM = 18-19% less
- CEID to Vancouver CBD: 5-6 PM = 23-24% less
- I-5 @Morrison Bridge to Tualatin Industrial: 12-1 PM = 7% less; 2-3 PM = 2-3% less
- I-5 @Morrison Bridge to Tualatin Industrial: 5-6 PM = 2% less
- I-84/I-205 to Fed Ex Troutdale: 12-1 PM & 2-3PM = stay the same
- I-84/I-205 to Fed Ex Troutdale: 5-6 PM = stay the same
- I-5 @Morrison Br. to Hillsboro Industrial: 12-1 PM = 3% less; 2-3 PM = stay the same
- I-5 @Morrison Br. to Hillsboro Industrial: 5-6 PM = stay the same

Due to the Columbia River Crossing/I-5 capacity project and the I-5 Rose Quarter project, truck travel times between the Central Industrial Eastside District (CEID) and downtown Vancouver, Washington improve by 18 – 24 percent over the 2040 No Build strategies. However, for the other 3 major freeway corridors in the region (I-5 south, I-84 east of I-205 and US 26 west of Hillsboro) the truck travel times stay virtually the same or have only a slight reduction (3-7 percent) during off-peak travel times.

Refer to Appendix I for tables showing travel times for each of the mobility corridors.

Equity findings: Not included in transportation equity analysis.

Bicycle travel times

Data source: Metro Travel Forecast Model

Description: Evaluate changes in bicycle travel times between key origins and destinations.

Target or desired direction: No target. Decrease or maintain bicycle travel times between key origins and destinations.

Findings: Bicycle travel times do not change significantly in most corridors – bicycle travel times remain reliable. One notable exception is that the travel time between Lake Oswego and the Park Avenue MAX Station reduces by over 68 percent (from approximately 39

minutes to 12 minutes) due to the RTP project that will construct a bicycle and pedestrian bridge over the Willamette River between Lake Owego and Oak Grove. See Appendix I for a table showing bicycle travel times within all origin/destination pairs.

Refer to Appendix I for tables showing travel times for each of the mobility corridors.

Equity findings: Not included in transportation equity analysis.

7.4.10 Congestion

National Highway System Travel Reliability

Data source: TBD

Description: Measures the change in reliable person-miles traveled on the Interstate System and on the non-Interstate National Highway System

Target or desired direction: By 2040, increase the TBD% of reliable person-miles traveled on the Interstate System and on the non-Interstate National Highway System.

Findings: This measure is under development and will be reported as the RTP is finalized.

Vehicle Hours of Delay Per Person

Data source: Metro travel forecast model

Description: Measures the change in vehicle hours of delay (VHD) per person within congested throughway corridors in the region compared to the 2040 No Build.

Target or desired direction: By 2040, reduce vehicle hours of delay per person by 10%, within the metropolitan planning area (MPA).

Findings: This measure is under development and will be reported as the RTP is finalized.

Interim Regional Mobility Policy

Locations of throughways, arterials, and regional freight network facilities that do not meet regional mobility policy.

Data source: Metro travel forecast model

Description: Identifies number and percent of network miles and locations within the Metropolitan Planning Area (MPA) that exceed the interim regional mobility policy for congestion in the one hour mid-day and two hour pm peak. Note that the mileage calculation is based on the length of the modeled network link associated with the point of congestion. It does not include the length of the queuing that occurs as a result of the congested link. Refer to Chapter 3 for interim regional mobility policy thresholds for congestion.

Target or desired direction: No Target. Desired direction is to reduce total miles of throughways and arterials that exceed the interim regional mobility policy thresholds for congestion.

Findings: All three 2040 investment strategies (2027 and 2040 Constrained and 2040 Strategic) see an increase the number of network miles that are congested, compared to the 2015 Base year.

Total congested miles (.v/c= 0.9 to <1.0) in the 2040 No Build strategies are 50 miles greater during the mid day one hour and 71 miles greater during the two hour peak than they are in the 2015 Base. Total severely congested miles (v/c >= 1.0) in the 2040 No Build strategies are 14 miles greater during the mid-day one hour and 76 miles greater during the two hour peak than they are in the 2015 Base. In 2040,total congested miles in the region are reduced by 41 percent in the mid day one hour in the 2040 Constrained compared to the 2040 No Build. Total severely congested miles in the region are reduced by 26 percent in the mid day one hour in the 2040 Constrained compared to the 2040 No Build.

The following tables show the number of miles of throughways and arterials that are congested or severely based on the volume/capacity ratio. Though congested, many of these miles meet the interim regional mobility policy. For example, in the 2040 Constrained investment strategy there are 53 throughway miles that are congested in the 4-6 PM time period, but only 33.7 of those miles do not meet the interim regional mobility policy at some point during the 4-6 PM commute time period. For all three 2040 investment strategies (2027 Constrained and 2040 Constrained and 2040 Strategic) there is an increase in the number of throughway and arterial network miles that do not meet the mobility policy, compared to the 2015 Base year.

Table 7.22 Congested Throughway Network Miles

	2015 Base Year		2027 No Build		2027 Constrained		2040 No Build		2040 Constrained	
	Mid Day (12-1)	PM Peak (4-6)	Mid Day (12-1)	PM Peak (4-6)	Mid Day (12-1)	PM Peak (4-6)	Mid Day (12-1)	PM Peak (4-6)	Mid Day (12-1)	PM Peak (4-6)
Total Congested Throughway Miles (.v/c= 0.9 to <1.0)	8	30	12	44	12	41	34	50	17	53
Total Severely Congested Throughway Miles (v/c >= 1.0)	2	15	5	25	5	19	9	31	6	23

Table 7.23 Congested Arterial Network Miles

	2015 Base Year		2027 No Build		2027 Constrained		2040 No Build		2040 Constrained	
	Mid Day (12-1)	PM Peak (4-6)	Mid Day (12-1)	PM Peak (4-6)	Mid Day (12-1)	PM Peak (4-6)	Mid Day (12-1)	PM Peak (4-6)	Mid Day (12-1)	PM Peak (4-6)
Total Congested Arterial Miles (.v/c= 0.9 to <1.0)	4	30	10	56	10	47	27	82	18	74
Total Severely Congested Arterial Miles (v/c >= 1.0)	3	16	5	38	5	34	10	60	8	50

The following tables identify number of miles of throughways and arterials that do not meet the interim regional mobility policy. Mileage is counted twice if both directions of a throughway or arterial segment do not meet the mobility policy. In the tables below "Both hours 4-6 PM" means the miles of throughways or arterials that do not meet the mobility policy during the full two hour peak period. Segments that do not meet the policy in only the 4-5 or 5-6 PM hours are not included in the miles of segments in the "Both hours 4-6 PM hours."

Table 7.24 Throughway Network Miles Not Meeting Regional Mobility Policy

Travel period	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained
12 -1 PM	2.2	10.1	8.2	30.7	15.4
Both Hours 4-6 PM	4.7	21.0	12.9	27.6	17.7
One hour 4-5 PM*	9.7	13.0	13.6	14.1	13.0
One Hour 5-6 PM*	5.1	3.5	1.1	1.7	3.0
Total miles 4-6 PM	19.6	37.4	27.6	43.5	33.7

**Not included in "Both Hours 4-6 PM" network miles*

Table 7.25 Arterial Network Miles Not Meeting Regional Mobility Policy

Travel period	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained
12 -1 PM	5.8	11.2	12.1	28.9	19.1
Both Hours 4-6 PM	14.4	34.0	29.1	58.9	46.0
One hour 4-5 PM*	2.4	4.0	4.0	4.1	5.1
One Hour 5-6 PM*	2.8	7.3	5.9	6.6	7.1
Total miles 4-6 PM	19.6	45.3	39.0	69.6	58.1

**Not included in "Both Hours 4-6 PM" network miles*

Table 7.26 Percent Throughway Network Miles Not Meeting Regional Mobility Policy

Travel period	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained
12 -1 PM	1.46%	2.82%	3.04%	7.25%	4.73%
Both Hours 4-6 PM	3.61%	8.53%	7.32%	14.76%	11.36%
One hour 4-5 PM*	0.61%	1.00%	1.00%	1.04%	1.26%
One Hour 5-6 PM*	0.71%	1.83%	1.48%	1.64%	1.74%
Total miles 4-6 PM	4.93%	11.36%	9.80%	17.44%	14.36%

**Not included in "Both Hours 4-6 PM" network miles*

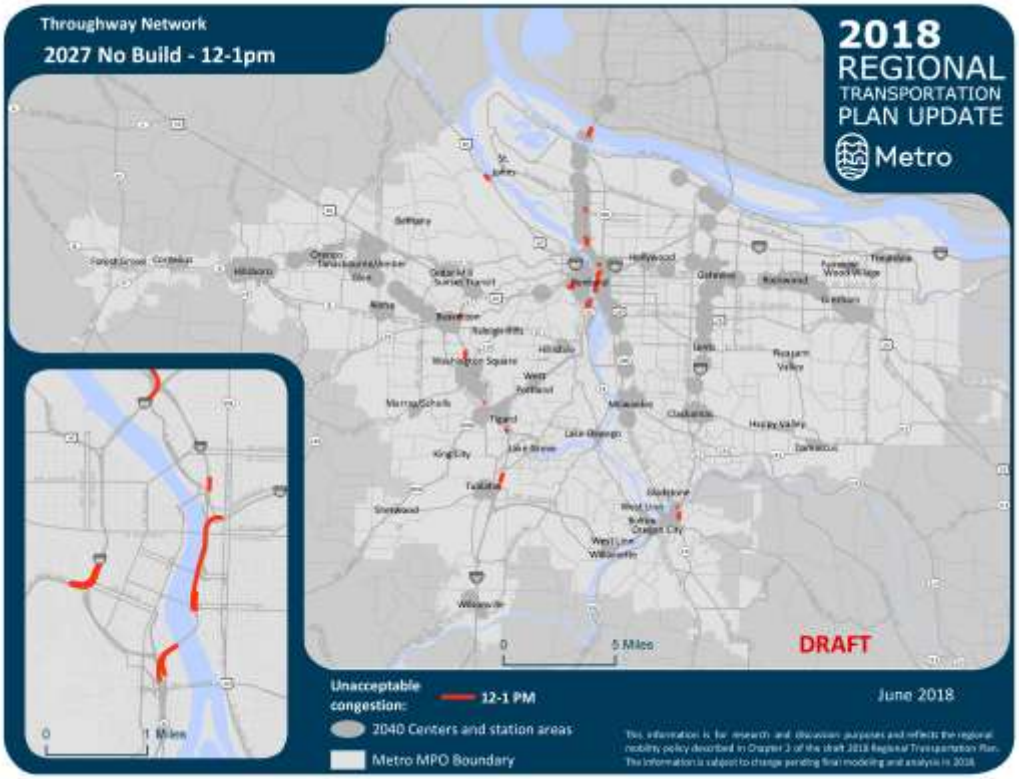
Table 7.27 Percent Arterial Network Miles Not Meeting Regional Mobility Policy

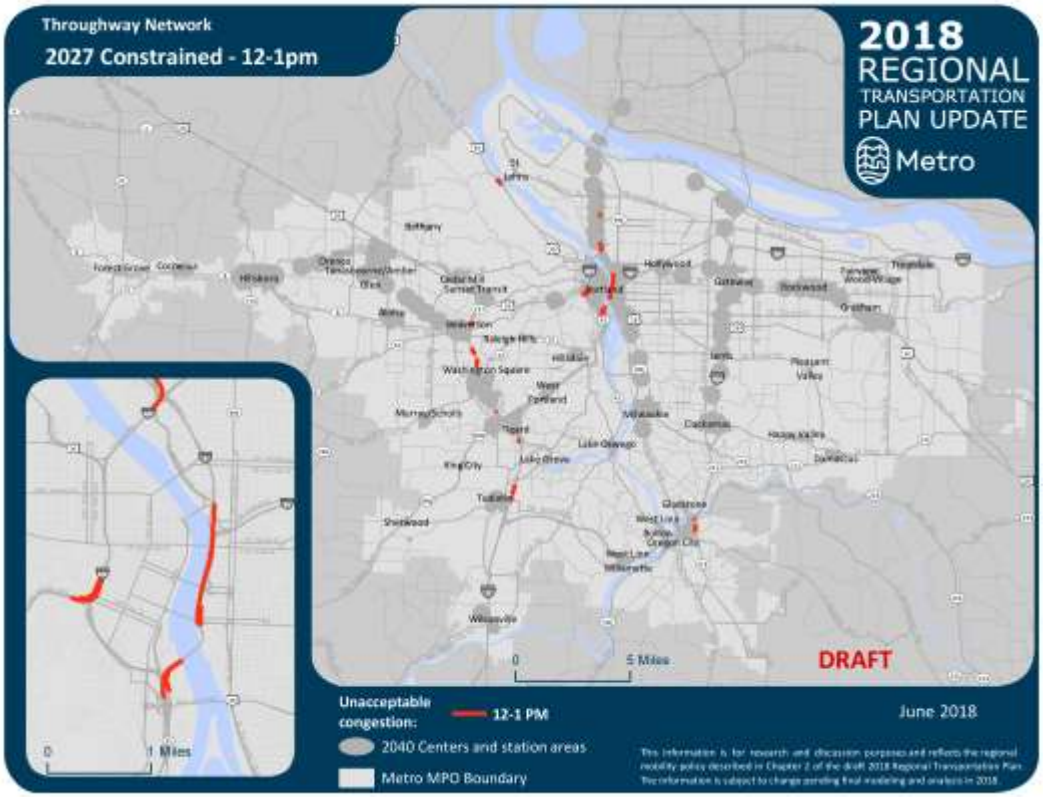
Travel period	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained
12 -1 PM	0.06%	0.26%	0.21%	0.80%	0.39%
Both Hours 4-6 PM	0.12%	0.54%	0.33%	0.71%	0.45%
One hour 4-5 PM*	0.25%	0.34%	0.35%	0.37%	0.33%
One Hour 5-6 PM*	0.13%	0.09%	0.03%	0.05%	0.08%
Total miles 4-6 PM	0.51%	0.97%	0.71%	1.13%	0.86%

**Not included in "Both Hours 4-6 PM" network miles*

Findings: The percent of throughway network miles not meeting the regional mobility policy, for total miles during 4-6 PM, climbs from 4.93% in the 2015 Base to 11.36% in 2027 and 17.44% in 2040 with the No Build strategies. However, the 2027 Constrained and 2040 Constrained improves those numbers to 9.5% and 14.36% respectively. Overall, the percent of throughway network miles not meeting the regional mobility policy keeps going up over time due to the large increases in regional population, and constrained investment strategies help reduce those increases, but are still greater than 2015.

The following maps highlight locations exceeding the mobility policy in either direction (identified as "unacceptable congestion"), showing the most congested segments in red.


Throughway Network
2027 No Build - 12-1pm
2018
REGIONAL
TRANSPORTATION
PLAN UPDATE
Metro
DRAFT
Unacceptable congestion:
12-1 PM
2040 Centers and station areas
Metro MPO Boundary
June 2018


Throughway Network
2027 Constrained - 12-1pm
2018
REGIONAL
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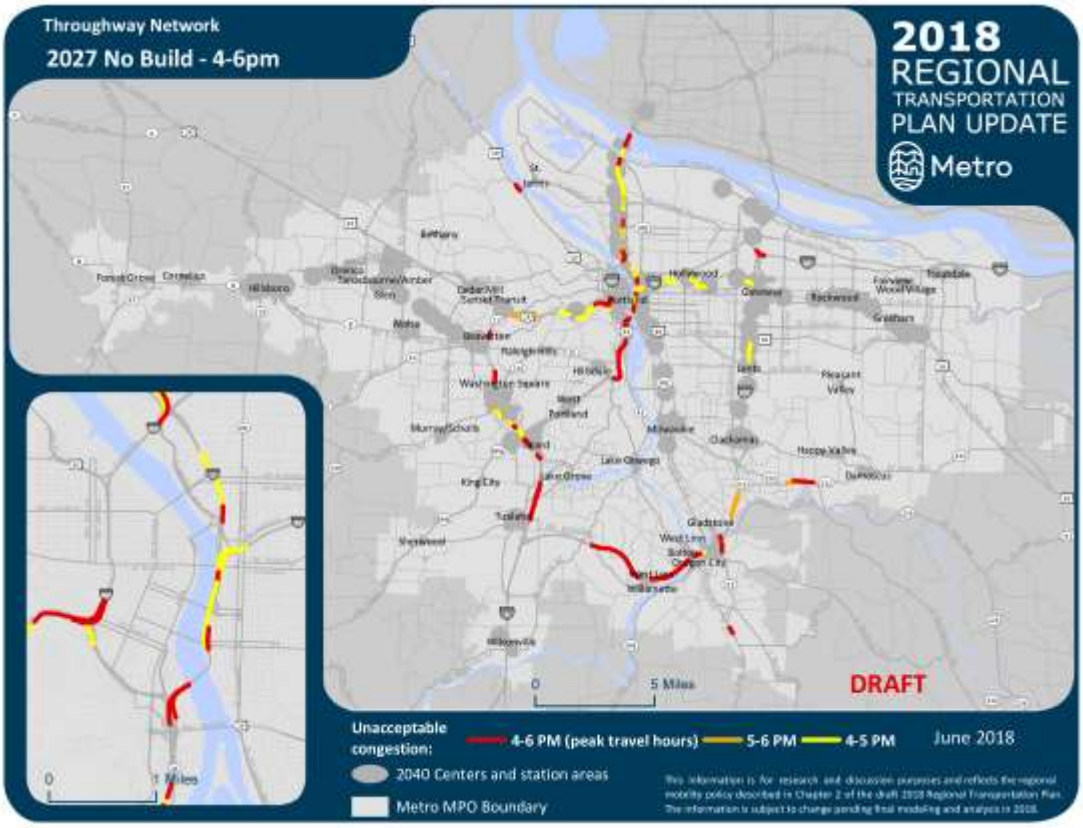
Metro MPO Boundary
June 2018


Throughway Network
2027 No Build - 4-6pm
2018
REGIONAL
TRANSPORTATION
PLAN UPDATE
Metro
0
5 Miles
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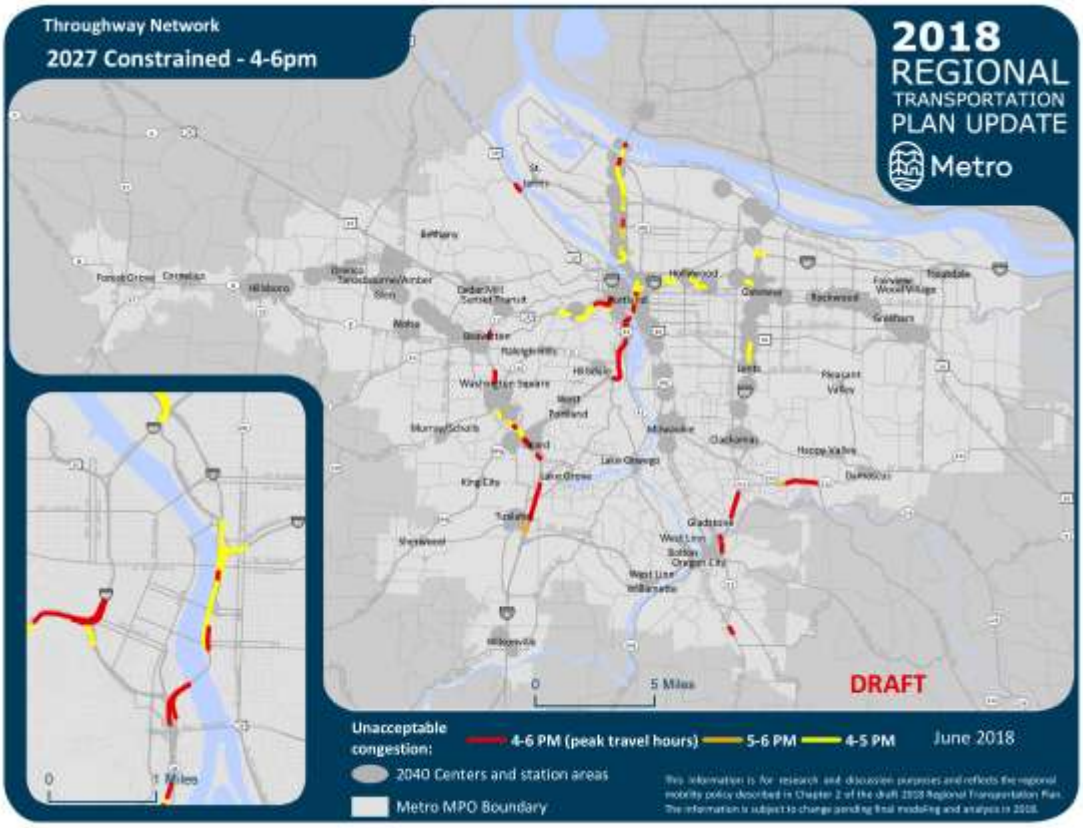
Unacceptable congestion:
4-6 PM (peak travel hours)
5-6 PM
4-5 PM
June 2018
2040 Centers and station areas
Metro MPO Boundary
0
1 Miles


Throughway Network
2027 Constrained - 4-6pm
2018
REGIONAL
TRANSPORTATION
PLAN UPDATE
Metro
0
5 Miles
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Unacceptable congestion:
4-6 PM (peak travel hours)
5-6 PM
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June 2018
2040 Centers and station areas
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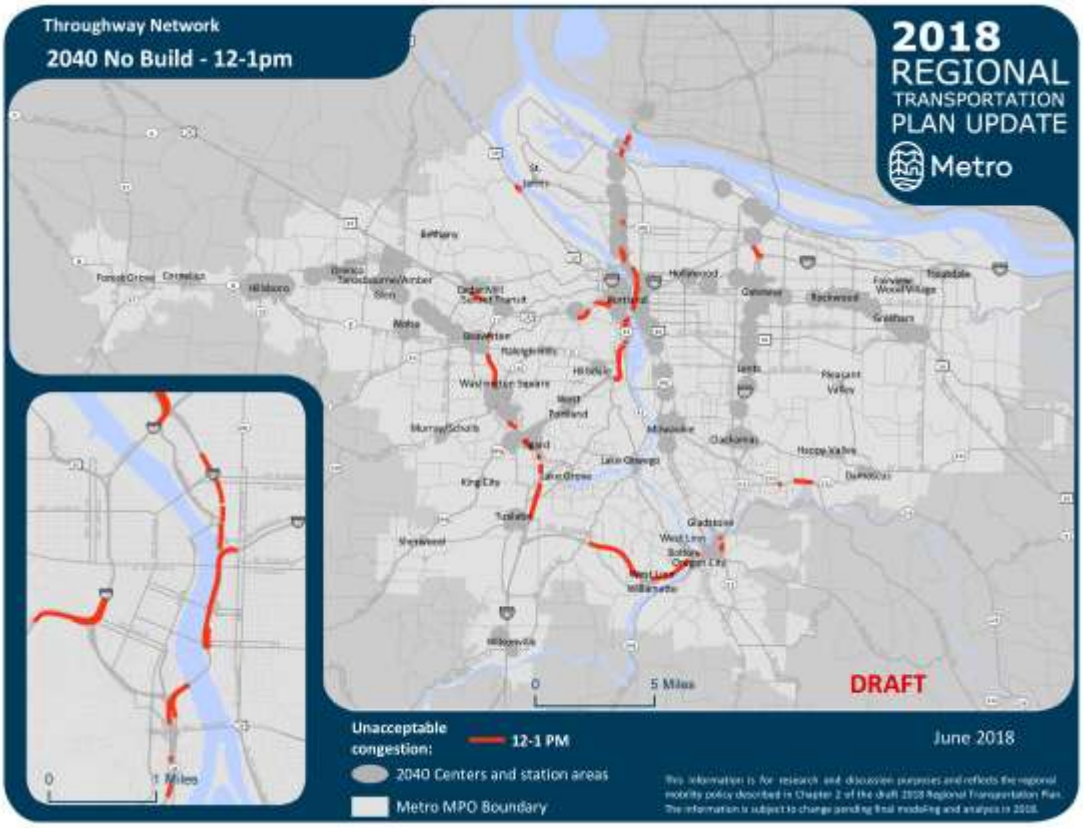
0
1 Miles


Throughway Network
2040 No Build - 12-1pm
2018
REGIONAL
TRANSPORTATION
PLAN UPDATE
Metro
0
5 Miles
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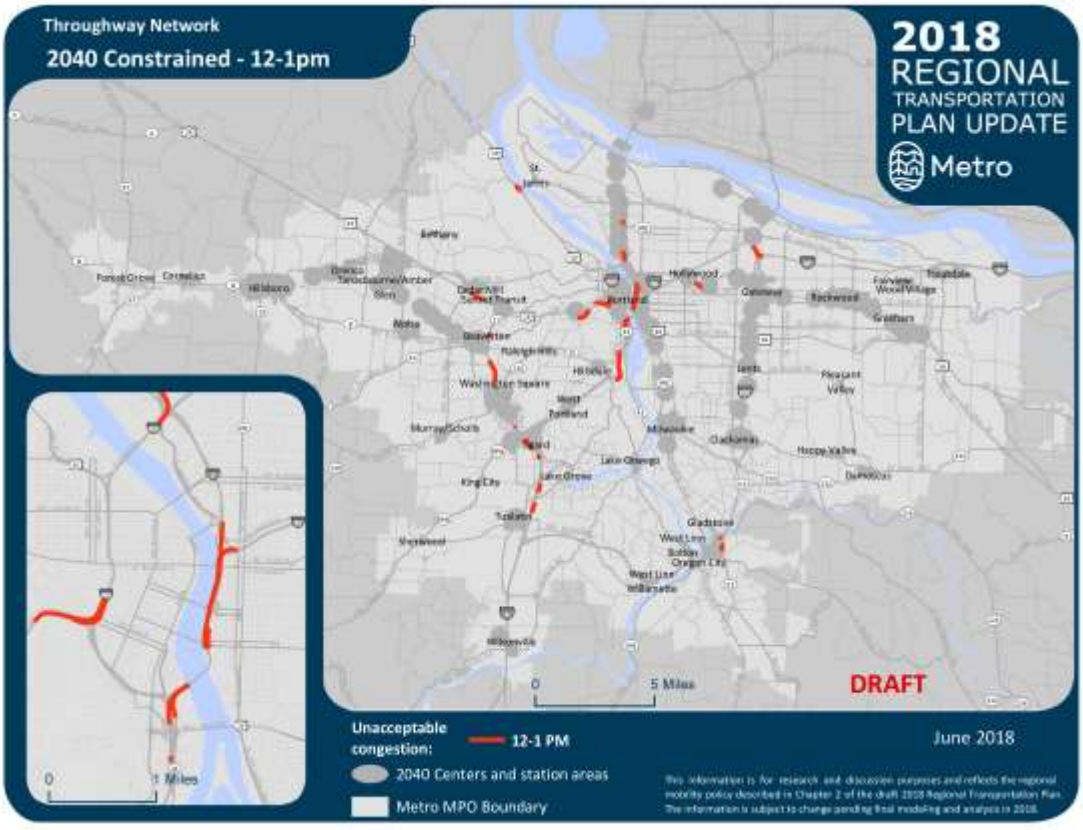
Unacceptable congestion:
12-1 PM
2040 Centers and station areas
Metro MPO Boundary
June 2018


Throughway Network
2040 Constrained - 12-1pm
2018
REGIONAL
TRANSPORTATION
PLAN UPDATE
Metro
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5 Miles
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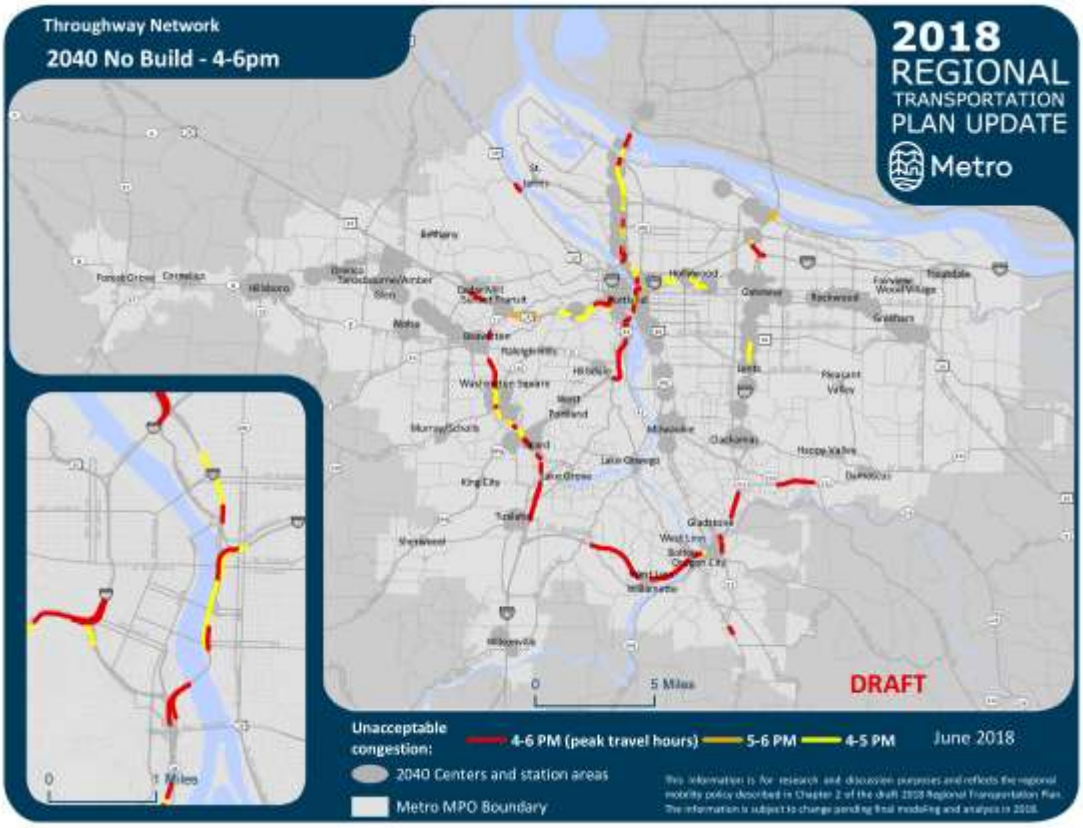
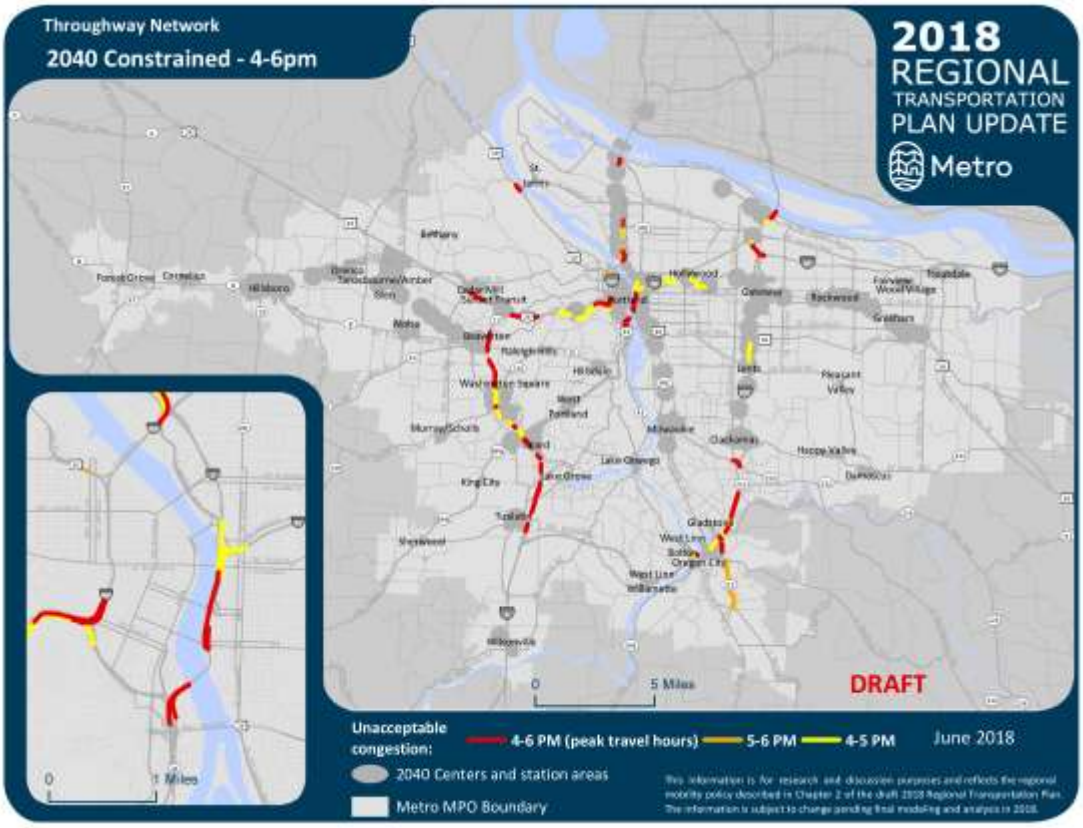
Unacceptable congestion:
12-1 PM
2040 Centers and station areas
Metro MPO Boundary
June 2018


Throughway Network
2040 No Build - 4-6pm
2018
REGIONAL
TRANSPORTATION
PLAN UPDATE
Metro
0
5 Miles
DRAFT
Unacceptable congestion:
4-6 PM (peak travel hours)
5-6 PM
4-5 PM
June 2018
2040 Centers and station areas
Metro MPO Boundary
0
1 Miles


Throughway Network
2040 Constrained - 4-6pm
2018
REGIONAL
TRANSPORTATION
PLAN UPDATE
Metro
0
5 Miles
DRAFT
Unacceptable congestion:
4-6 PM (peak travel hours)
5-6 PM
4-5 PM
June 2018
2040 Centers and station areas
Metro MPO Boundary
0
1 Miles

Findings: On the throughway network during the PM peak, the 2027 Constrained on I-205 from Stafford Road to Highway 99E meets the regional mobility policy, where the 2027 No Build failed to meet the mobility policy in that segment of I-205 during both hours from 4-6 PM. The segment of I-5 between I-84 and the Freemont Bridge has more segments that meet the regional mobility policy in the 2027 Constrained that in the 2027 No Build. In the 2027 No Build the length of I-5 that does not meet the mobility policy during the 4-5 PM hour is much longer than in the 2027 Constrained, and a short segment fails to meet the policy during both hours from 4-6 PM.

On the throughway network during the PM peak, the 2040 Constrained on Highway 224 from 122nd to Rock Creek Junction (224/212 split) meets the regional mobility policy, where the 2040 No Build failed to meet the mobility policy in that segment of Highway 224 during both hours from 4-6 PM.

Freight Truck Delay

Data source: Metro travel forecast model

Description: Evaluates truck delay for freight movement using the regional freight roadway network in the two-hour AM peak (7-9 AM), the two-hour mid-day travel period (1-3 PM) and in the two-hour pm rush hour (4-6 PM). Figure 2.15 provides a map of the regional freight system which includes the roadway network. The hours of delay are reported in the table below for trucks. The truck delay is only accrued when the volume of all vehicles exceeds 90 percent of the roadways capacity.

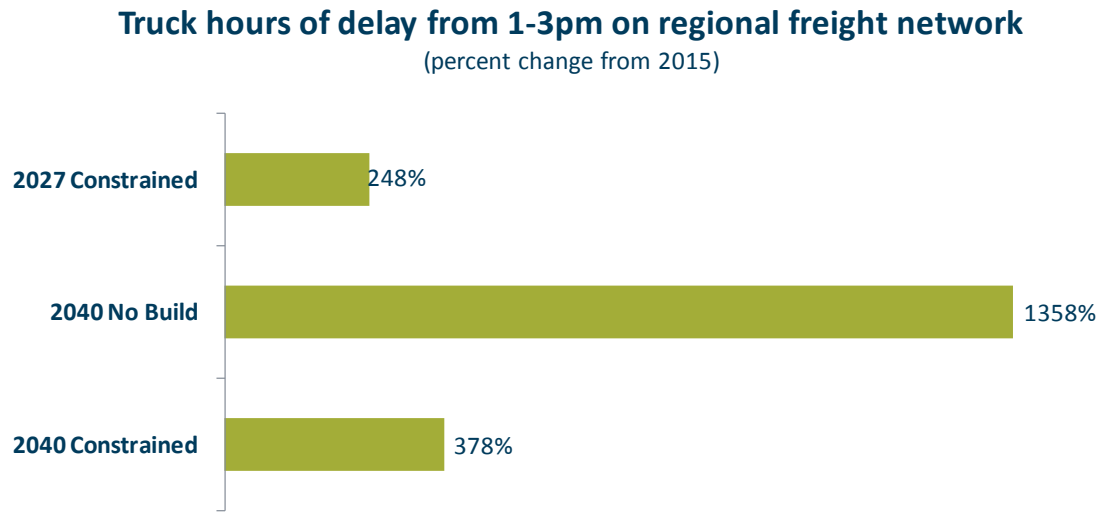
Target or desired direction: By 2040, reduce vehicle hours of delay per truck trip by 10% compared to 2015.

Findings: Between 2015 and 2040, truck delay on the regional freight network increases significantly for all investment strategies during all three time periods. However, when compared with the 2040 No Build both 2040 RTP investment systems show a slower pace of growth in delay in each travel period (example is 1-3 PM as shown in bar chart below). In the two-hour mid-day (1-3 PM) the 2040 Financially Constrained truck delay is 65 percent less than the 2040 No Build and the 2040 Strategic truck delay is 69 percent less than the 2040 No Build. In the two-hour pm peak (4-6 PM) the 2040 Financially Constrained and the 2040 Strategic truck delay is less than the than 2040 No Build by 27 percent and 29 percent, respectively.

Table 7.28 Truck Vehicle Hours of Delay (VHD) on the Regional Freight Network

Travel period	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained
7-9 AM peak hours of delay	219	456	393	724	500
1-3 PM Mid-day hours of delay	55	217	164	802	263
4-6 PM peak hours of delay	154	364	290	576	409

Figure 7.18 Percent change in truck hours of delay on the regional freight network, 1-3 pm



Total Cost of Traffic Delay on Freight Network

Data source: Metro travel forecast model

Description: Evaluates average cost of delay for freight movement in the two hour am peak period (7-9am), the two-hour mid-day travel period (1-3pm) and in the two-hour pm peak period (4-6pm). Values of time are taken from ODOT report The Value of Travel-Time: Estimates of Hourly Value of Time for Vehicles in Oregon in 2016.The cost of delay takes into account both auto and truck delay that occurs on the regional freight network. Auto value of time is calculated at $23.68 per hour. The value of time for trucks include both time of the driver as well as operating expenses. The travel forecast model distinguishes medium and heavy trucks. Medium trucks are identified as two-axle, six-tire, single-unit vehicles (Class 5). The value of time for medium trucks is calculated at $28.20 per hour. Heavy trucks are vehicles with 3 or more axle single unit or trailers (Class 6 and above). The value of time for heavy trucks is calculated at $30.72 per hour. The travel

forecast model allocates 35 percent of trucks to medium category and 65 percent to heavy category. All values are held constant for both 2015 and 2040.

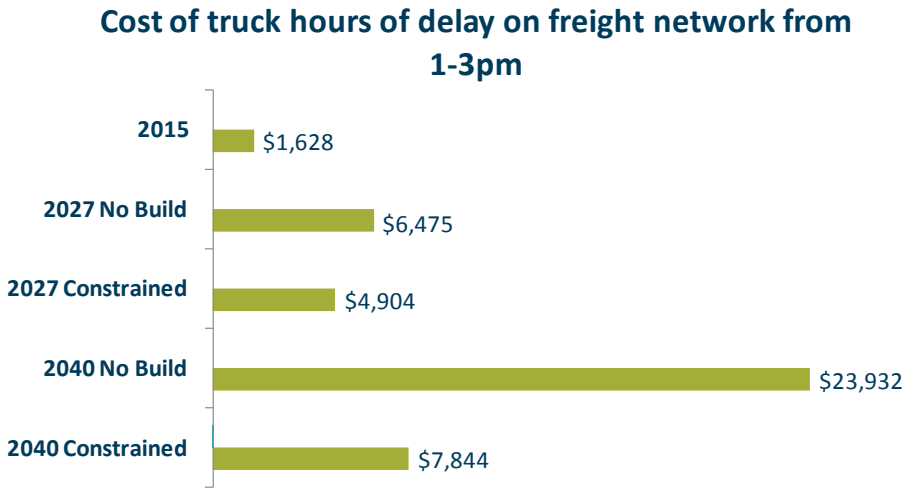
Target or desired direction: No target. Desired direction is to reduce growth in cost of delay (in constant dollars) on the regional freight network in the two-hour mid-day and two-hour pm peak as compared to the 2040 No Build strategies.

Findings: In the 2040 No Build, the cost of delay on the regional freight network increases almost four fold during the two-hour pm peak compared to the 2015 Base Year. For the 2040 No Build, the cost of delay on the regional freight network increases almost 15 fold during the two-hour mid-day period. However, implementation of the 2040 RTP Federal Priorities or the 2040 Investment Strategy results in a 65 percent - 70 percent decrease in the cost of delay for the mid-day peak period compared to the 2040 No Build strategy. For the two-hour pm peak travel period the 2040 RTP Federal Priorities or 2040 Investment Packages reduce cost of delay by 27 percent -29 percent compared to the 2040 No Build.

Table 7.29 Cost of Truck Vehicle Hours of Delay (VHD) on the Regional Freight Network within the MPA (delay accrued where v/c exceeds 0.9)

Travel period	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained
7-9 AM peak hours Cost of delay	$6,534	$13,604	$11,715	$21,598	$4,921
1-3 PM Mid-day Cost of delay	$1,628	$6,475	$4,904	$23,932	$7,844
4-6 PM peak hours Cost of delay	$4,594	10,852	$8,646	$17,185	$12,203

Figure 7.19 Cost of truck hours of delay on the freight network, 1-3 pm



7.4.11 Transit efficiency and ridership

Data source: Metro Travel Forecast Model and area transit agencies

Description: Evaluates average weekday (AWD) transit boarding rides per revenue hour for high capacity transit and bus combined.

Target or desired direction: No Target. Increase AWD transit boarding rides and revenue hours of service

Findings: Total boardings and revenue hours of transit service both increase dramatically between 2010 and 2040. The 2027 and 2040 Financially Constrained Investments Strategies show and increase in AWD boardings and revenue hours of service over the 2027 and 2040 No Build reflecting the addition of new high capacity transit and expanded bus service.

Table 7.30 Transit productivity

Transit productivity	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained	Climate Smart Strategy
Total Boardings	428,740	615,330	769,150	740,000	1,084,520	Not evaluated
Daily Revenue Hours	6,430	7,390	8,880	7,560	10,290	9,400
AWD transit boardings/revenue hour*	65	80	85	100	105	Not evaluated

*For the entire region including transit agencies serving Clark, Clackamas, Multnomah and Washington counties

Figure 7.20 Boardings per revenue hour

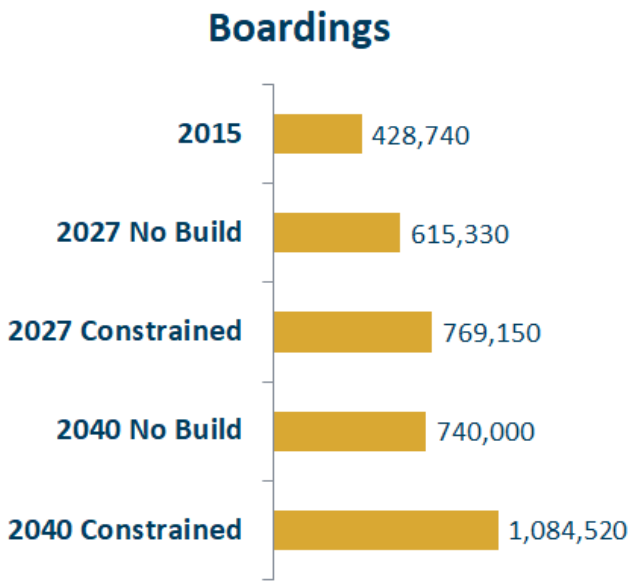


Figure 7.21 Revenue hours of service

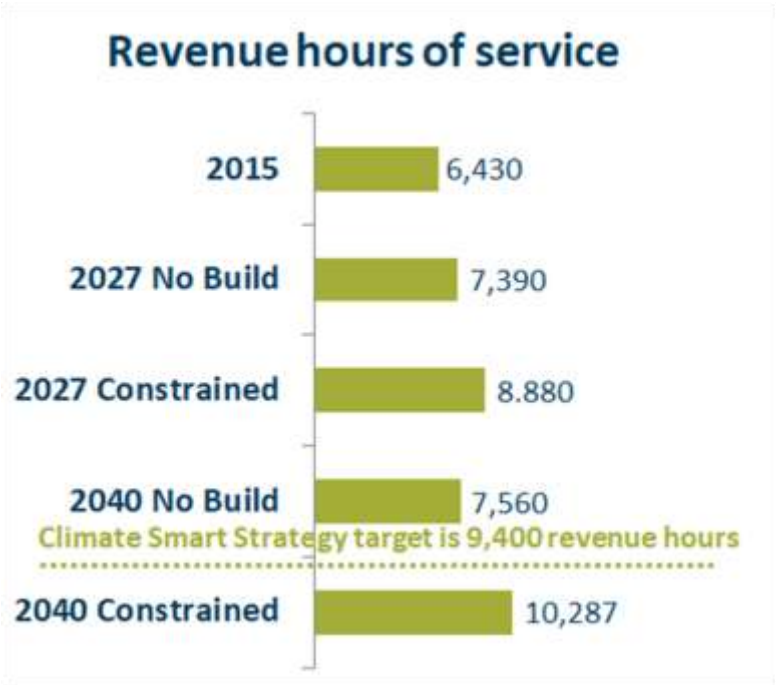


Figure 7.22 Average Weekday (AWD) Transit Boardings per Revenue Hour

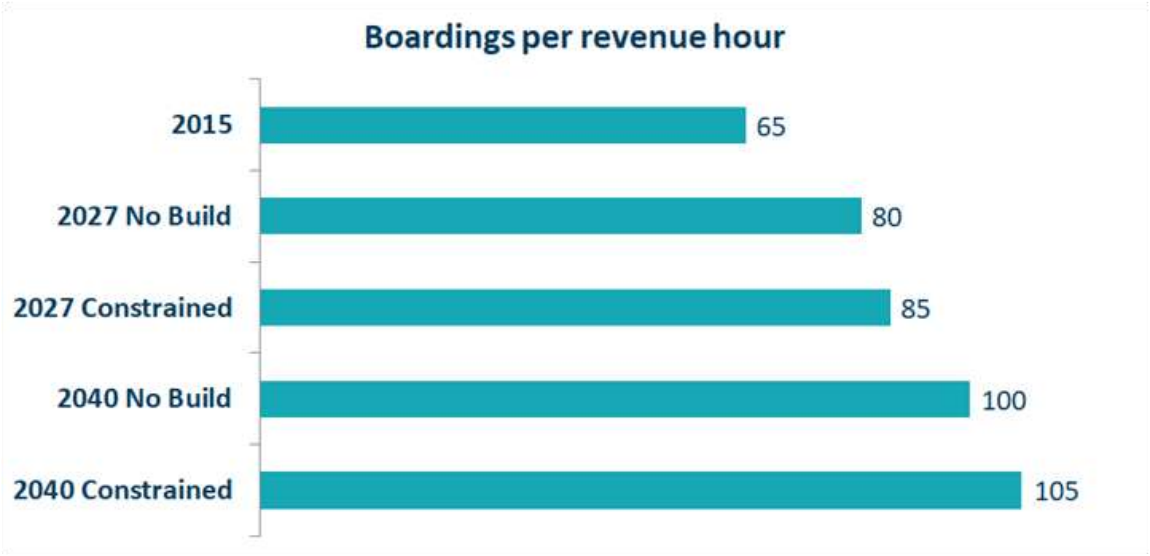
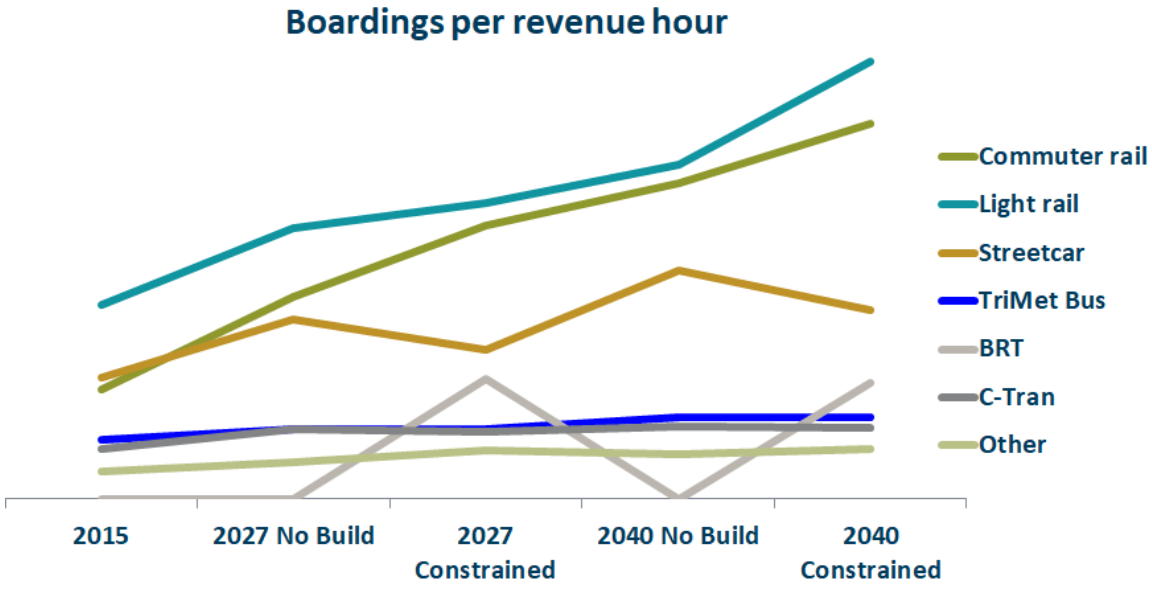


Figure 7.23 Average Weekday (AWD) Transit Boardings per Revenue Hour by transit mode



7.4.12 Climate change

Data source: Transportation project information input into Metro's travel demand model for outputs to be included in the U.S. EPA approved MOVES2014a emission model.

Description: Evaluates projected mobile source emissions of carbon dioxide (CO2) a primary greenhouse gas pollutant. Determines greenhouse gas emissions per capita in the base year and for 2027 and 2040 to determine if greenhouse gas emissions are declining per capita.

Metro estimates future mobile source greenhouse gas emissions by using existing and proposed transportation project information and inputting the project information into the travel demand model to understand the travel behavior in the region with and without proposed investments at key times in the future. Key travel behavior outputs include trip generated, mode split (i.e. percentage of trips taken by different transportation modes), trip distances, and vehicles miles traveled. This information is then taken into a post-processing emissions model (known as MOVES2014a) which includes information about vehicle fleet mix, fuel composition, and emissions rates to determine what the projected emissions of greenhouse gases would be with and without the proposed transportation investments for the Portland airshed in 2027 and 2040. Then the emissions are divided by projected population estimates to understand emissions per capita and ultimately the reduction level.

Target or desired direction: The target adopted in the 2014 Climate Smart Strategy is to reduce per capita greenhouse gas emissions from cars and small trucks by 20 percent by 2035 and 25 percent by 2040, compared to 2005 levels.

To assess progress towards the target, the region's Climate Smart Strategy calls for the implementation of nine key land use and transportation policies to reduce greenhouse gas emissions and meet a regionally set target of 29 percent below 2005 emissions levels. Monitoring targets are used to track progress. One of the most significant transportation strategies outlined in the Climate Smart Strategy is increasing transit service hours. The Climate Smart Strategy called for 9,400 transit service revenue hours to meeting the region's greenhouse gas reduction target. Refer to Appendix J for details on the monitoring targets and performance outcomes.

Findings: The 2018 RTP investment strategy reduces daily tons of greenhouse gas emissions from 2015 by 12 percent in 2027 and 19 percent by 2040. Annual per capita tons of greenhouse gas emissions go down in the 2027 and 2040 Constrained investment strategies. The 2040 Constrained investment strategies does not quite reach the Climate Smart Strategy of a 25 percent reduction by 2035, but the 2040 Strategic strategies does, with a 27 percent reduction of annual green house gas emissions per person. This indicates that additional funding and prioritization of Climate Smart Strategy policies may be needed to achieve greenhouse gas emission targets by 2035.

The reduction in greenhouse gas emissions is a positive sign recognizing the region is expected to grow by over 500,000 people and 300,000 more jobs by 2040. In general the mix of multimodal transportation projects combined with fleet turnover, technology, and fuel economy assumptions is making progress in addressing climate change and helping to achieve the region's Climate Smart Strategy.

By 2040 it is expected that the region's transit system will be delivering 9,513 transit service revenue hours, exceeding the Climate Smart Strategy monitoring target of 9,400 transit service hours.

Equity findings: Not included in transportation equity analysis.

Table 7.31 Projected Mobile Source Greenhouse Gas Emissions by Investment Strategy

	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained	Climate Smart Strategy
Average daily transportation-source GHG emissions (Carbon dioxide (in tons, measured in summer)	14,420	12,774	12,627	11,944	11,673	11,596
Percent Reduction Per/Day	N/A	11%	12%	17%	19%	20%
Annual Per Person Reduction from 2015 (Tons)	N/A	.3	.3	.4	.5	.5
Annual Per Person Reduction from 2015 (Percent)		-10%	-12%	-16%	-21%	-20% in 2035 -25% in 2040

Note: Annual per person greenhouse gas emissions in 2015 were 3.3 tons

7.4.13 Clean air

Data source: Transportation project information input into Metro's travel demand model for outputs to be included in the U.S. EPA approved MOVES2014a emission model.

Description: Evaluates projected mobile source emissions of criteria pollutants: carbon monoxide (CO), nitrogen oxide (NO_X), volatile organic compounds (VOC), and particulate matter (PM_{10} and $PM_{2.5}$) and transportation-related air toxics.[8]

Metro estimates future mobile source emissions by using existing and proposed transportation project information and inputting the project information into the travel demand model to understand the travel behavior in the region with and without proposed investments at key times in the future. Key travel behavior outputs include trip generated, mode split (i.e. percentage of trips taken by different transportation modes), trip distances, and vehicles miles traveled. This information is then taken into a post-processing emissions model (known as MOVES2014a) which includes information about vehicle fleet mix, fuel composition, and emissions rates to determine what the projected

[8] Nitrogen oxide and volatile organic compounds are precursors to Ozone. Transportation-related air toxics are: Acrolein, Arsenic, Benzene, 1,3-Butadiene, Chromium 6, Diesel particulate matter plus diesel exhaust organic gases (Diesel PM), Formaldehyde, Naphthalene, Polycyclic organic matter

emissions of individual air pollutants would be with and without the proposed transportation investments for the Portland airshed in 2027 and 2040.

Target or desired direction: Decrease the amount (e.g. grams, ounces, pounds, or tons) of mobile source air pollutants in the 2027 Constrained and 2040 Constrained compared to the 2015 Base Year.

Findings: The 2018 RTP investment strategy in 2027 and 2040 show a significant reduction of criteria pollutants and transportation-related air toxics mobile source pollution compared to 2015 base year emissions. Certain pollutants including carbon monoxide, volatile organic compounds, benzene, and naphthalene gas see significant reductions in the pounds or grams of emissions reduced by 2027 and further in 2040. In looking more closely, the investment strategy also provides further reductions from the no-build conditions in 2027 and 2040, meaning despite projected population growth and economic activity, the region's investment in a multimodal transportation system is making progress in reducing mobile source air pollution emissions.

Equity findings: Not included in transportation equity analysis.

Table 7.32 Projected Mobile Source Emissions by Investment Strategy and by Air Pollutant

Average daily pollutant emissions	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained	Climate Smart Strategy
Carbon monoxide (CO) (Winter)(pounds)	223,827	147,341	146,386	77,891	77,256	Not evaluated
Nitrogen oxide (NOX) (Summer) (pounds)	61,159	14,558	14,466	8,630	8,535	
Volatile organic compounds (VOC) (Summer) (pounds)	13,309	4,273	4,219	3,024	2,936	
Particulate Matter 10 exhaust (PM_{10}) (Winter) (pounds)	1,739	566	562	319	314	
Particulate matter 2.5 exhaust ($PM_{2.5}$) (Winter) (pounds)	1,575	509	505	285	281	
Acrolein (Summer) (pounds)	16	5	5	3	3	
Arsenic (Summer)(grams)	68	79	79	90	88	
Benzene (Summer) (pounds)	356	83	82	46	45	

Average daily pollutant emissions	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained	Climate Smart Strategy
1,3-Butadiene (Summer) (pounds)	41	5	5	2	2	
Chromium 6 (Summer)(grams)	0.4	0.4	0.4	0.5	0.4	
Diesel Particulate Matter* (Summer) (pounds)	621.7	145.0	143.8	53.1	52.4	
Formaldehyde (Summer) (pounds)	252	85	84	65	64	
Naphthalene Gas (Summer)(grams)	14,398	3,953	3,913	2,470	2,410	

Note: Results show Summer or Winter pollution

Figure 7.24 Projected Mobile Source Criteria Pollutant Emissions by Investment Strategy

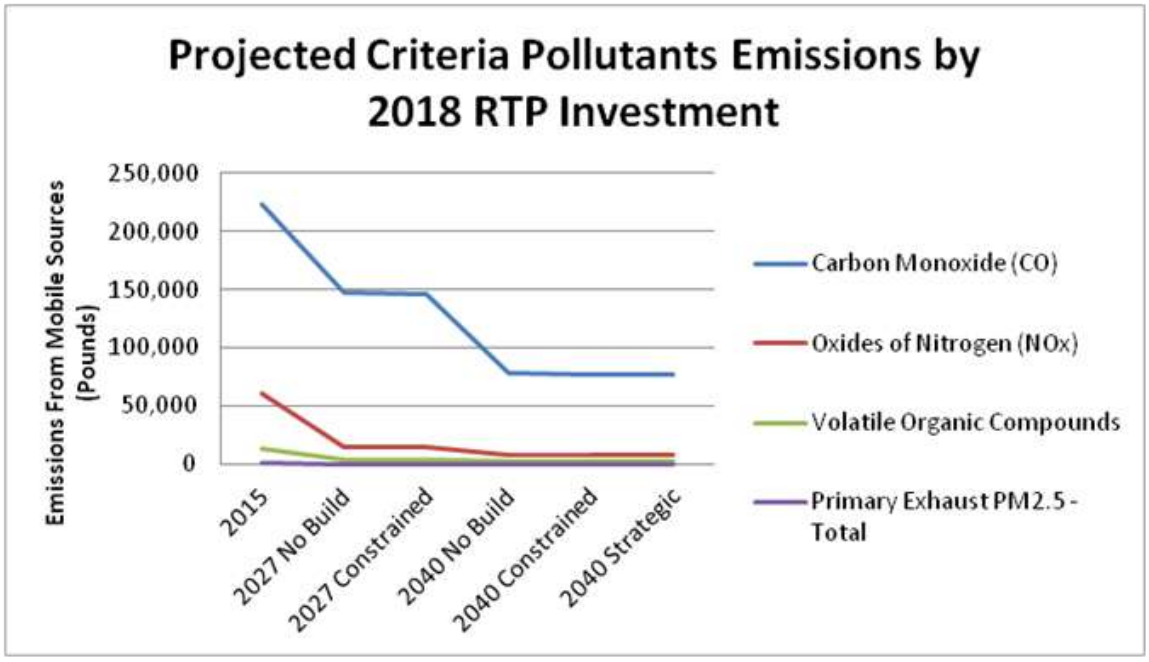
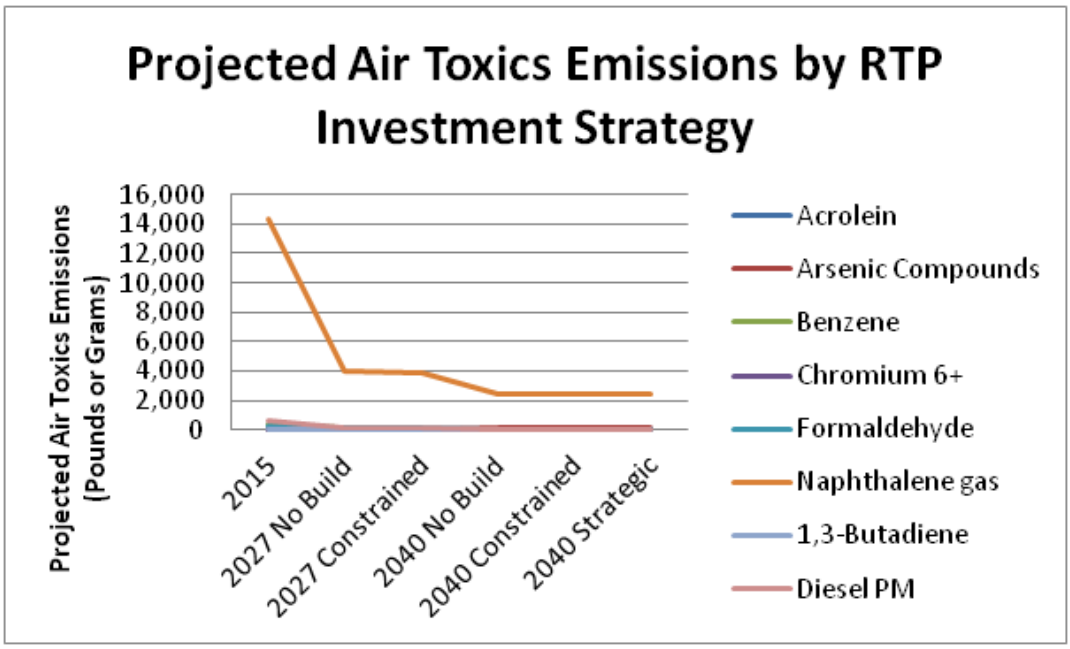


Figure 7.25 Projected Mobile Source Air Toxics Pollutant Emissions by Investment Strategy



7.4.14 Potential habitat impact

Data source: Regional Conservation Strategy data developed and maintained by the Intertwine Alliance in partnership with Metro.[9]

Description: Evaluates the potential impacts of transportation projects on identified regional and urban high value habitat areas defined in the Regional Conservation Strategy.[10]

This analysis used the Regional Conservation Strategy's high value habitat as its basis. The Regional Conservation Strategy serves as a framework for efforts to conserve biodiversity within the greater Portland-Vancouver region. Data was developed from 2010 to 2013 by the Intertwine – a broad coalition of public, civic, private, and nonprofit organizations. The analysis considered many features, including existing vegetation, wetlands, hydric soils, floodplains, habitat patch size and shape, distance from streams and wetlands, and the presence of roads. High Value areas ranked in the top quarter of all areas because of the type, location, and size of their habitat.

The RTP project lists in Appendix A, B and C identify projects that intersect with high-value habitat areas. It is important to note a project's inclusion on this list does not guarantee the project will impact a given environmental resource; rather, the agency

[9] Information about development of the Regional Conservation Strategy and data can be found at: www.regionalconservationstrategy.org
[10] A map of the regional and urban high value habitat areas can be found at: www.regionalconservationstrategy.org/document/8

responsible for the project should be aware of its potential impacts and work to mitigate any potential issues during the project development phase. Potential environmental mitigation activities are described in Chapter 3 of the Plan.

Target or desired direction: There is no target for this measure. The desired direction is to avoid sensitive habitats

Findings: Potential project impacts are shown in **Table 7.31** for each investment strategies. A total of 508 projects in the 2040 Constrained list intersect with high value habitats identified in the Regional Conservation Strategy. Overall, these projects make up nearly 60 percent of the total 2018 RTP investment strategy, excluding operations and programmatic projects.

While many RTP projects overlap with identified high value habitats, it is important to note that the potential alignments for many proposed projects are conceptual until more detailed project development work is conducted. Projects that intersect high value areas should consider alignment options that avoid the resource area as well as environmental mitigation strategies during future project development as described in Chapter 3 of the Plan. Identifying these areas of potential conflict early in the transportation planning process allows for more meaningful consideration of mitigation strategies, including project alignment, design and construction features that avoid or minimize impacts on the resource area. Many of these strategies are addressed specifically during the project development phase as part of the environmental and land use review, consultation and permitting processes all construction projects must undergo.

Table 7.33 Potential Habitat Impact Analysis

	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained	Climate Smart Strategy
Number of projects that intersect high value habitat areas	N/A	N/A	245	N/A	508	Not evaluated
Percent of all RTP projects that intersect high value habitat areas	N/A	N/A	35%	N/A	73%	Not evaluated

Note: Operations and programmatic projects were not included in this analysis.

Table 7.34 2040 Constrained RTP Projects Potentially Impacting Environmental Resources by Project Type

Type of capital project	High value habitat areas
Roads and bridges	199
Throughways	22
Transit capital	22
Freight	13
Bike and pedestrian	225
Transportation System Management	27

Note: Operations and programmatic projects were not included in this analysis.

7.4.15 Potential impacts to historic and cultural resources and tribal lands

Data source: Tribal lands data from the Bureau of Indian Affairs and listed historic properties data from the National Register of Historic Places.

Description: Evaluates the potential impacts of proposed RTP projects on listed historic and cultural resources and tribal lands identified in the metropolitan planning area.

Target direction: None.

Findings: Metro reviewed tribal lands data available from the Bureau of Indian Affairs to identify potential federally recognized tribal lands in the planning area. No tribal lands were identified within or adjacent to the metropolitan planning area.

In addition, Metro reviewed data from the National Register of Historic Places. More than 650 historic places and structures have been listed in the National Register in the planning area. The data is available upon request from the Metro Research Center. [11]

Using Geographic Information System (GIS) mapping software and data from National Register of Historic Places, the analysis identified 72 projects within the planning area that are located within 100 feet of historic properties listed in the National Register, of which 62 projects are in the 2040 Constrained list.

[11] For more information on each site visit www.nationalregisterofhistoricplaces.com/or/state.html and click on Clackamas, Multnomah or Washington County.

Table 7.35 2040 Constrained RTP Projects Potentially Impacting Historical and Cultural Resources by Project Type

Type of capital project	Number of projects located within 100 feet of listed historic and cultural resources	Number of projects located on tribal lands
Roads and bridges	21	0
Throughways	1	0
Transit capital	17	0
Freight	1	0
Bike and pedestrian	17	0
Transportation System Management	5	0

Note: Operations and programmatic projects were not included in this analysis.

The historic and aesthetic value of the built environment is also recognized as key to the quality of life of the region's residents. Where transportation improvements are developed which may impact on such resources, appropriate mitigation and design elements should be addressed. Section 106 of the National Historic Preservation Act (NHPA) requires all federal agencies to take into account the effects of their undertakings on historic properties. All properties listed in the National Register are protected by the Oregon State Historic Preservation Office (SHPO).

Oregon Revised Statute (ORS) 358.653 requires state agencies and all "political subdivisions" of the state—including counties, cities, universities, school districts and local taxing districts—to consult with the Oregon State Historic Preservation Office to avoid inadvertent impacts to historic properties for which they are responsible. Impacts are usually the result of construction projects, but may also include the transfer of properties out of public ownership.

Potential transportation project related impacts to historic and cultural resources may include physical changes to historic transportation infrastructure, effects of road widening on historic settings or structures, effects on historic roadside elements, effects of air pollution on resources due to increased traffic, and disturbance or infringement on cultural landscapes. The nature of these impacts is highly location and project specific, and the information about historic and cultural resources is constantly evolving. It is important for each project to be evaluated in the specific context and timeframe in which it is designed with up-to-date information. Typically mitigation activities include the preservation and documentation of these assets along with context-sensitive design of new or renovated infrastructure to complement existing streetscape or architectural features as closely as possible. Identifying these areas of potential conflict early in the

transportation planning process allows for more meaningful consideration of mitigation strategies, including project alignment, design and construction features that avoid or minimize impacts on the historic and cultural resources in the project area. Many of these strategies are addressed specifically during the project development phase as part of the environmental and land use review, consultation and permitting processes all construction projects must undergo.

7.4.16 Public health

Data source: Integrated Transport and Health Impacts Model (ITHIM), MOVES model and regional travel model, Oregon Health Authority vital statistics

Overall description: Metro partnered with Multnomah County Public Health and the Oregon Health Authority to estimate the health effects of regional transportation investments using the Integrated Transport and Health Impacts Model (ITHIM). ITHIM uses information about travel behavior to estimate changes in chronic disease and premature deaths associated with lack of physical activity and from air pollution – two documented leading causes of death and chronic disease in the greater Portland region. (Metro and the Oregon Health Authority (OHA) used ITHIM in a series of Health Impact Assessments (HIAs) during the Climate Smart Strategy planning process that concluded in 2014.)

For the 2018 RTP, Metro, Multnomah County Public Health and the OHA used ITHIM to estimate changes in death and disease resulting from a change in travel behavior attributed to the investments proposed in the 2018 RTP. Three key pieces of information are needed to run ITHIM: average minutes of walking and cycling per person per week, and change in fine particle (PM2.5) pollution.

Metro modeled travel behavior for the Base Year and each of the investment strategies; walking and cycling minutes include trips accessing transit stops. Using the MOVES model, Metro estimated change in the mass of fine particulate matter (PM2.5) released by mobile sources for each scenario. MOVES outputs are in units of mass (e.g. grams per year), but ITHIM uses a concentration to estimate health benefits. Although there is not a standard practice for converting a mass estimate to a concentration, the analysis used a recent PM2.5 inventory provided by the Oregon Department of Environmental Quality for Multnomah County suggesting that on-road emissions account for approximately 11% of fine particle pollution. Using 2015 monitor data from three air monitors in the region, an average baseline concentration was calculated. The final step was applying the percentage changes from MOVES to the portion of PM2.5 attributable to on-road sources in the region, resulting in estimates for each investment strategy. These estimates do not account for changes in particle pollution from other sources, such as residential wood combustion or industrial point sources.

2015 Base Year death and burden of disease estimates for each disease were compiled from Oregon Health Authority vital statistics. Number of deaths between 2011-2015 were

downloaded from the Oregon Public Health Assessment Tool (OPHAT) and averaged for the five year period. Disability Adjusted Life Years (DALY) are calculated by summing Years of Life Lost (YLL) and Years of Living with a Disability (YLD) for each disease. DALYs are a unit of disease burden that combine years of life lost with years of living with a disability. When summed across a population, changes in DALYs can be thought of as changes in the burden of disease within that population. YLL are calculated using the World Health Organization (WHO) DALY Template from number of deaths by age group, gender and life expectancy at the time of death. YLD are imputed for the Metropolitan Planning Area from WHO Global Burden of Disease 2010 estimate for the US.

For future years, population numbers changed but the age distribution was kept the same across all investment strategies. This enables more direct comparisons with 2027 Constrained investment strategy and isolates the effect of changes in travel behavior.

As in most scenario modeling exercises, these results should be interpreted primarily as a way to compare investment strategies, as opposed to a prediction of what will likely come to pass. The results reported here are not a comprehensive estimate of health effects. ITHIM omits several diseases and causal pathways that are related to transportation, but for which no model module has been created. Among the effects not modeled are diseases and deaths associated with traffic noise, non-particle air pollution, and traffic injuries. Both noise and air pollution are associated with cardiovascular disease and diabetes (Babisch, 2014; Dzhambov, 2015). The estimate of risks from air pollution are not adjusted for noise. Although ITHIM includes a model for injuries, the input data necessary to use it was not available. This shortcoming is notable because of the high burden of death and disability from traffic crashes. Unintentional injuries were the fourth leading cause of death in the 3-county area from 2012-2016. Including traffic crashes could therefore substantially alter estimates of health impacts from the RTP. Finally, estimates are based on present disease rates, not projected rates based on estimated trends.

Overall findings: The burden of premature death and disease decreases under all investment strategies, with the 2040 Strategic slightly outperforming the 2040 Constrained in comparison to the 2040 No-Build Scenario. The 2040 Constrained investment strategy achieves substantially greater benefits than the 2040 No Build, a 26% larger reduction in the burden of disease. Benefits from reduced air pollution accrue mostly in the first 10 years of the planning period, resulting in minimal additional benefits between 2027 and 2040.

The bulk of the health benefits from the proposed RTP are attributable to the reductions in air pollution. This is a departure from past studies and is a result of relatively small changes in total physical activity estimated by the travel model. Air pollution reductions are primarily driven by improvements in vehicle efficiency anticipated under current regulations, which is why health benefits are seen even in the No Build investment strategies. Health benefits from air quality could increase if vehicle emissions became further curtailed through regulation, infrastructure investment, or by faster than anticipated adoption of technologies such as electric vehicles. Similarly, health benefits

could be greater if additional pollution reductions occur outside of the transportation sector – changes not modeled for this measure.

Average per person weekly minutes of biking and walking

Description: The regional travel model estimates an average # of weekday miles traveled walking and biking per person. This is converted to an average weekly minutes per person spent walking or biking.

Target or desired direction: No target for this measure. The desired directions to increase weekly minutes of biking and walking, ideally to reach the recommended 150 minutes of moderate intensity physical activity.

Findings: As shown in **Table 7.36** the 2040 Constrained investment strategy increases weekly minutes of biking and walking per person to 59.4 minutes, compared to 48 minutes in the 2015 Base Year, a 24 percent increase. Though beneficial, the increase does not meet national guidelines, as published by the US Dept of Health & Human Services (2008), which recommend at least 150 minutes per week of moderate intensity physical activity.

Table 7.36 Average per person weekly minutes of biking and walking

	2015 Base Year	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained	Climate Smart Strategy
Average per person weekly minutes walking	31.6	33.4	36.5	34.4	39.6	Not comparable
Average per person weekly minutes of biking	16.4	17.8	18.3	19.3	19.8	Not comparable
Total average per person weekly minutes of biking and walking	48	51.2	54.8	53.7	59.4	Not comparable

Estimated lives saved annually from increased physical activity and reduced air pollution

Description: For physical activity, ITHIM first converts time spent walking and biking into metabolic equivalent tasks (METs), a consistent unit of energy expenditure from exercise. For air pollution, the model uses average annual PM2.5 concentrations to estimate disease related to air pollution. The outputs of ITHIM are expressed as change in deaths and change in disability adjusted life years (DALYs).

Target or desired direction: No target for this measure. The desired directions to increase the number of lives saved and increase the number of years lived.

Findings: The burden of premature death and disease decreases under all investment strategies, with the 2040 Strategic investment strategy outperforming the 2040 Constrained in comparison to the 2040 No-Build Scenario. As detailed in **Table 7.36**, the 2040 Constrained Scenario achieves substantially greater benefits than the 2040 No Build, a 26% larger reduction in the burden of disease. Benefits from reduced air pollution accrue mostly in the first 10 years of the planning period, resulting in minimal additional benefits between 2027 and 2040.

Table 7.37 Estimated lives and years saved from increased physical activity and reduced mobile source air pollution

	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained	Climate Smart Strategy
Estimated lives saved annually	15	17	19	22	Not comparable
Estimated Disability Adjusted Life Years (DALY)	209	260	272	354	Not comparable

Healthcare costs saved

Description: ITHIM uses a cost-of-illness approach consistent with the method used for the Climate Smart Strategy HIAs (Iroz-Elardo et al. 2014) and the US EPA (US EPA, 2007). This method uses large-scale studies of the cost of treating specific illnesses in the US and estimates the regional share of that cost. In this case, we used the CDC Chronic Disease Cost Calculator to arrive at estimates for direct (medical treatment) and indirect (absenteeism) costs of illness for the greater Portland region in 2027 and 2040. The Chronic Disease Cost Calculator does not provide estimates for specific cancers, nor for dementia. Therefore this method does not estimate avoided costs associated with dementia or cancer (lung, breast, and colon) even though it estimates the change in the burden of these diseases. This means that the total cost estimate is an underestimate. Consistent with methods from previous studies, it applies the population attributable fraction (percent change in DALYs from baseline) to arrive at an estimated change in treatment cost.

Target or desired direction: Lower healthcare costs

Findings: Over $30 million in health care costs are avoided in the 2040 Constrained and 2040 Strategic investment strategies.

Table 7.38 Health care costs avoided ($2017)

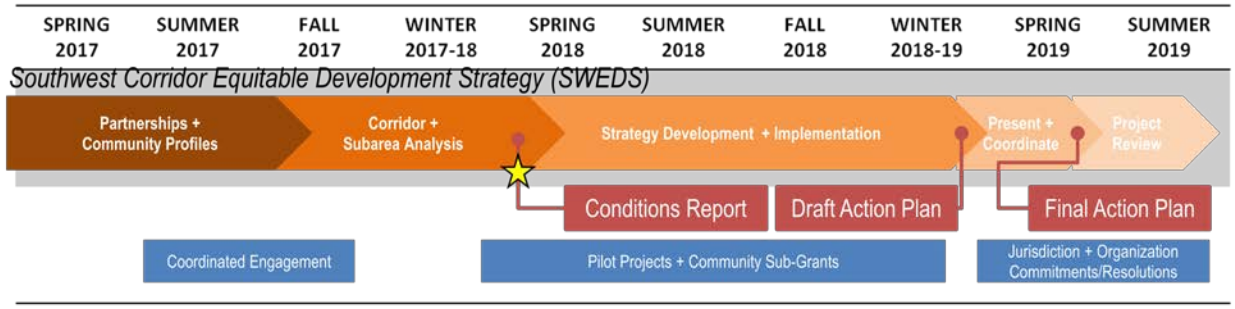
	2027 No Build	2027 Constrained	2040 No Build	2040 Constrained	Climate Smart Strategy
Annual health care costs saved	$17 million	$20 million	$26 million	$31 million	Not comparable

Note: Estimates rounded to the nearest million

Materials after this page were distributed at the meeting.

Southwest Corridor Equitable Development Strategy

April 20, 2018 update



Project Background

The Southwest Corridor Equitable Development Strategy strives to ensure that individuals and families continue to live, work and thrive in the Southwest Corridor as we invest in a proposed 12-mile MAX light rail line from downtown Portland to Tigard and Tualatin, along with walking, biking and roadway projects to help people access stations. This means making sure SW Corridor neighborhoods have:

- different choices for where to live for people of all incomes
- a range of jobs for people of all backgrounds
- learning opportunities that prepare people for those jobs
- wages that support people's desire to live and work in the corridor.

Project Oversight Committee

A Project Oversight Committee, made up of various public/private/non-profit partners from the Southwest Corridor provides advice to Metro and project partner staff. This committee advises staff on implementing the work and allocating resources to Pilot Projects. The Project Oversight Committee has finalized a set of Equitable Development Principles (see below) to guide work on the SW Corridor Equitable Development Strategy. The Principles were utilized in selecting a set of early implementation pilot projects and will be used to define and filter the actions included in the Strategy.

Equitable Development Goals

Seven equitable development goals have been established to target key issues project partners are interested in measuring as part of a corridor conditions report, clarify components of social equity the project focuses on as we proceed with coordinated engagement efforts, guides what targets are established for the final Strategy and Action Plan, and provides a rationale for establishing jurisdiction and organizational endorsements and commitments.

- Address residential and business displacement
- Reduce disparities and improve conditions for affected people
- Preserve and expand affordable housing
- Advance economic opportunity for all and build community capacity for wealth creation
- Promote transportation mobility and connectivity
- Develop healthy and safe communities
- Expand the breadth and depth of influence among affected people

Equitable Development Pilot Projects:

Equitable Development Pilot Projects are intended to inform this Strategy while supporting community-driven initiatives that prepare communities for the changes and opportunities light rail and other investments would bring to the SW Corridor. Eleven applicants were considered for these sub-granting

opportunities, with six awarded full or partial funding. The projects were chosen by a Selection Committee made up of various staff and members of the Project Oversight Committee. The projects include:

- Mercy Corps NW- establishing services and targeted assistance to help stabilize and prepare underserved entrepreneurs to minimize the pressures they will face during light rail construction. Project will include enhanced business education and individualized business counseling sessions to people of color and historically marginalized populations in the SW Corridor.
- Immigrant & Refugee Community Organization- identifying lower-wage, lower-skilled diverse individuals (people of color and other historically marginalized populations) from the SW Corridor who work in entry-level roles at Oregon Health Science University, and training them for middle-skill health care roles. This work fills a critical need for diverse front-line health care workers while helping to ensure that these SW Corridor residents will have access to higher-wage employment in a steady growth industry.
- Community Partners for Affordable Housing- adjusting a site design process for existing and future properties and elevating lessons from engagement with community organizations that will inform future housing development design beyond unit size, to include culturally relevant employment and health services that should be within close proximity or co-located with affordable housing developments.
- Home Forward- addressing potential displacement by supporting 43 ethnic groups (around 3,000 people) associated with Muslim Education Trust by assisting the community in navigating the maze of government programs and agencies providing housing support services. Project will also gather input about health care and employment service needs that will inform service provisions at existing properties and co-location of services in new construction.
- Proud Ground- addressing permanently affordable homeownership opportunities through: targeted outreach with existing non-profit partners, working with Habitat for Humanity and other development partners to secure permanent affordability among the pipeline of units available to households between 35-80% AMI, and developing a business plan that focuses on the creation of a land bank model for SW Corridor.
- Momentum Alliance- strengthening capacity among historically marginalized communities (communities of color, immigrants and refugees, and low-income renters) in the SW corridor through leadership development and engagement. The goal is for a youth/adult cohort to participate in the process of defining and implementing equitable development outcomes and establishing a filter to judge whether actions and recommendations will meet these objectives, expanding the breadth and depth of influence among communities that previously did not have the access or resources to take part in shaping these decisions.

2018 Regional Transportation Plan

Finalizing the 2018 Regional Transportation Plan

A briefing book for policymakers

July 11, 2018

oregonmetro.gov/rtp

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Metro provides services or accommodations upon request to persons with disabilities and people who need an interpreter at public meetings. If you need a sign language interpreter, communication aid or language assistance, call 503-797-1700 or TDD/TTY 503-797-1804 (8 a.m. to 5 p.m. weekdays) 5 business days before the meeting. All Metro meetings are wheelchair accessible. For up-to-date public transportation information, visit TriMet's website at www.trimet.org.

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

The preparation of this briefing book 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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Foreword: from Metro Council President Tom Hughes

These are remarkable and challenging times for the greater Portland region. We continue to attract new residents, jobs and industries. Our communities are becoming more culturally diverse, bringing rich cultural activity to neighborhoods. A new generation is growing to adulthood as others move toward retirement. Advances in technology are changing how we connect, how we work, and increasingly, how we travel, move goods and provide services. As population increases in the region, we find ourselves facing new challenges—regionally and globally—and are beginning to recognize longstanding issues facing communities that have been marginalized. These changes and challenges impact how we use and what we expect from our transportation system.

Every resident and business – those with roots in the region that run generations deep to new residents – have a stake in our system of highways, roads, bridges, sidewalks, bikeways and transit and freight routes. This Regional Transportation Plan is accountable to each of them. Through the update of this plan we have built new partnerships to bring new voices to the process and focused our efforts to make more near-term progress on these regional priorities – equity, safety, travel options and congestion.

We are facing new and longstanding challenges

The greater Portland region is facing global and regional challenges. As more and more people come to our region to enjoy the things that have contributed to our high quality of life, that high quality of life is at risk. Congestion, maintenance needs and safety issues are expected to grow as a half-million more people join the region by 2040.

At the same time, the climate is changing, and we need to continue to work for clean air and clean water. Systemic inequities mean that communities have not equally benefited from public policy and investments, and some perspectives have long been ignored or actively suppressed. The economy is changing, and the pace of technology increasing. Congestion is at an all-time

Learn more about the 2018 Regional Transportation Plan and opportunities to provide feedback on the draft plan from June 29 through Aug. 13 at oregonmetro.gov/rtp.

The Metro Council consists of a president, elected regionwide, and six councilors who are elected by district every four years in nonpartisan races. The council works with community leaders and constituents across city and county boundaries to shape the future of the greater Portland region.

The Metro Council shares decision-making authority over regional transportation planning and policies with the Joint Policy Advisory Committee on Transportation, or JPACT, which comprises 17 members that serve as elected officials or representatives of transportation agencies across the region.

In addition, the Metro Council is advised on land use issues by the Metro Policy Advisory Committee, or MPAC, which comprises 21 voting members representing cities, counties, special districts and the public, and six non-voting members. Three Metro Councilors also participate as non-voting liaisons.

high on our system – a reflection of the pace at which people have moved here as well as where people live relative to where they work. In 2015, only one-third of workers in the region lived and worked in the same city.

Meanwhile, the funding gap between the needs of a growing region and an aging system of highways, transit, roads and bridges and an incomplete network of sidewalks, bikeways and transit routes continues to worsen. We need a plan that serves our growing and changing region – one that anticipates population and employment growth, our region's changing demographics (including an aging population), the shifting nature of work, new transportation technologies and services, the impacts of pollution and climate change.

We have a vision for our future – and for how our transportation system will work

The plan sets out a vision that in the 21st century, our region has a continuously improving economy and shared quality of life with the foundation of a safe, reliable, healthy and affordable transportation system. A system that is well-maintained, environmentally responsible, efficiently moves products to market, and connects all people to the education and work opportunities they need to thrive and prosper.

More than $42 billion is planned to be invested in the region's transportation system over the next 25 years to serve our future population of over 2 million people. This Regional Transportation Plan identifies current and future transportation needs, priority investments to meet those needs, and federal, state, regional and local funding the region expects to have available through 2040. It lays out nearly $27 billion in funding for maintenance, preservation, and operations of the transportation system. $15 billion is planned for capital projects that optimize and expand the region's highway and transit systems, improve access to freight destinations, complete gaps in biking and walking connections and regional trails that provide important access to transit, downtowns, schools, services and other community destinations.

The 2018 Regional Transportation Plan provides us an opportunity to move toward that vision

Decades of thinking ahead and implementing bold strategies to meet the transportation challenges of the 20th century has put the greater Portland region ahead of the curve. With a focus on a compact urban area, growth in town centers and along major roadways, efficient transit and options for

biking, walking and busing, the region has not dealt with the same crisis of gridlocked traffic, dependence on driving and freight delays of other growing regions. However, as our growth continues, we have to leverage and build upon our previous investments to ensure that new investments advance more equitable outcomes. Through this we can avoid a cresting dilemma like those faced by places like Los Angeles, Seattle and the Bay Area. This Regional Transportation Plan update builds on the tradition of multimodal investment and creative thinking to create partnerships that develop innovative and equitable solutions to the challenges we currently face now and in the future.

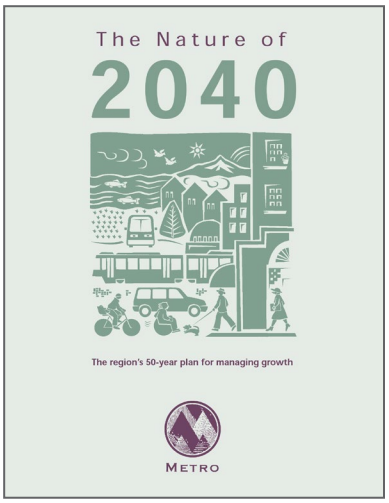
Delivering outcomes to build public trust

On behalf of the Metro Council, I invite you to review the Draft 2018 Regional Transportation Plan and supporting draft strategies for safety, transit, freight, and emerging technology that have been developed over the past 3 years. Together they represent the choices that we need to create an equitable transportation system that supports a high quality of life, a prosperous economy and a protected environment. I hope you agree that the planned investments demonstrate a wise use of resources and, if we choose to execute them, will result in a safe, reliable, healthy and affordable transportation system for all communities.

While the Draft 2018 Regional Transportation Plan and supporting strategies reflect an extensive amount of input and feedback already, these drafts will inform public engagement through the fall of 2018. The feedback received from residents, businesses, community organizations, jurisdictional partners and others will be incorporated into a final version of the Plan, which will be considered by the Metro Policy Advisory Committee and the Joint Policy Advisory Committee on Transportation in October prior to being submitted to the Metro Council for approval in December.

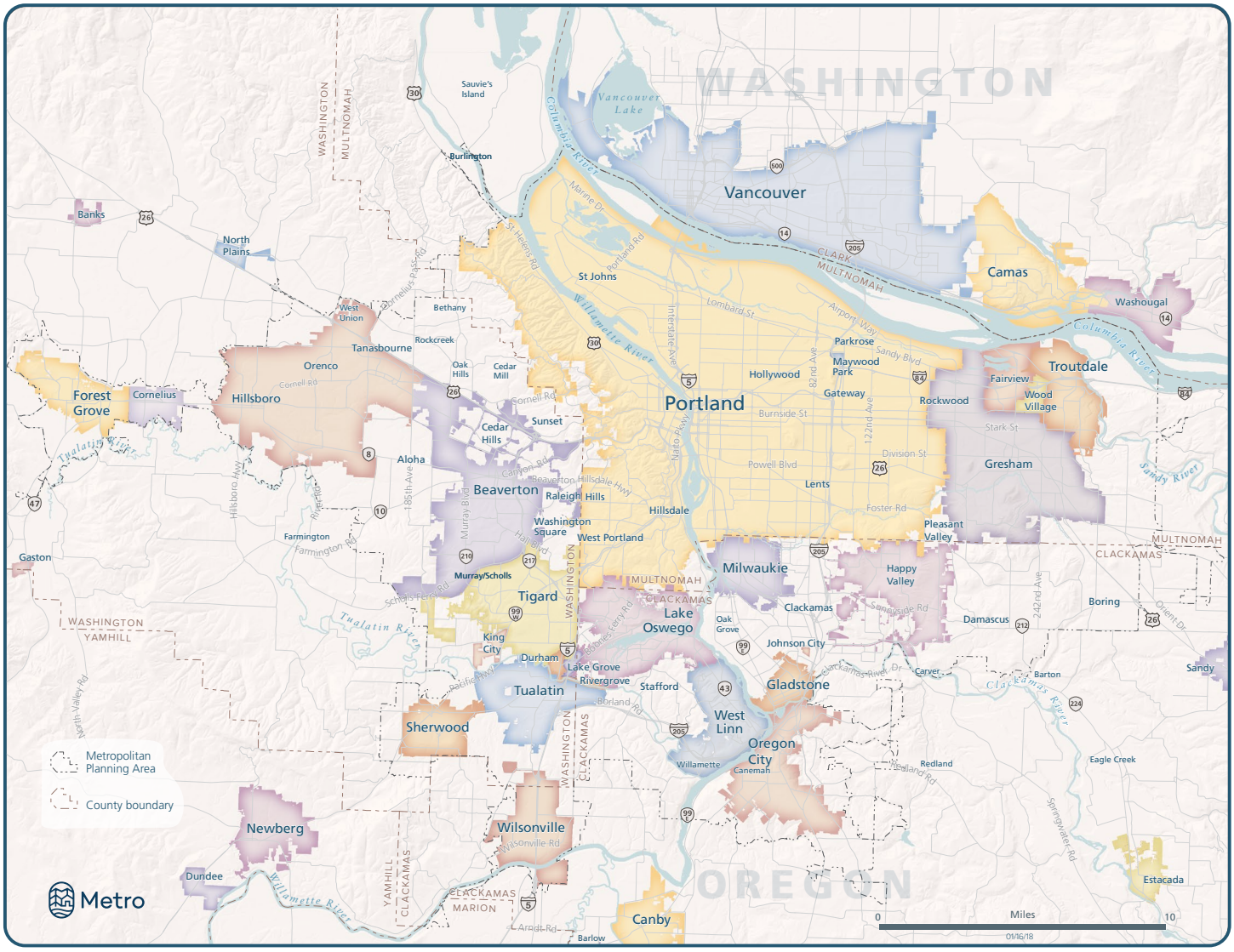
We look forward to hearing what you think!

Metro Council President Hughes



Find out about the 2040 Growth Concept, A land use and transportation strategy for building healthy, equitable communities and a strong economy, at oregonmetro.gov/2040.

The engagement activities produced more than 18,000 touch points with regional partners, community and business leaders and residents of the region to inform development of the draft 2018 Regional Transportation Plan.



Metro serves more than 1.5 million people in Clackamas, Multnomah and Washington counties. The agency's boundary encompasses Portland, Oregon and 23 other cities – from the Columbia River in the north to the bend of the Willamette River near Wilsonville, and from the foothills of the Coast Range near Forest Grove to the banks of the Sandy River at Troutdale.

Among its other responsibilities, Metro is authorized by Congress and the State of Oregon to coordinate and plan investments in the transportation system for the three-county area. Metro uses this authority to expand transportation options, make the most of existing streets and improve public transit service. As the designated metropolitan planning organization, Metro works collaboratively with cities, counties and transportation agencies to decide how to invest federal highway and public transit funds within its service area. It creates a long-range transportation plan, leads efforts to expand the public transit system and helps make strategic use of a small subset of transportation funding that Congress sends directly to metropolitan planning organizations.

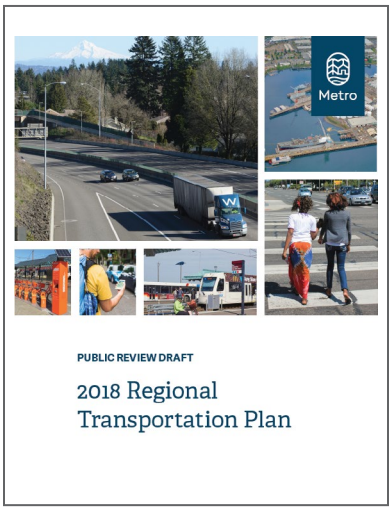
Introduction

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 most urgent transportation needs and priorities for investing in all parts of the system with the funds the region expects to have available. It also establishes policies to help meet those needs and guide priority investments. More resources will be needed to achieve our vision and address the challenges of a growing, thriving region.

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.



Throughout the three year development of the draft 2018 Regional Transportation Plan and implementation strategies for safety, freight, transit and emerging technology, Metro extensively engaged and collaborated with regional partners – cities, counties, transit providers, ODOT and other public agencies – and community leaders in public health, environmental protection, business, housing, racial equity, environmental justice and transportation advocacy.

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*

About this briefing book

This briefing book is designed to provide context for the choices facing policymakers as they finalize the investment strategy, policies and implementation strategies for the 2018 Regional Transportation Plan. It updates information provided in the discussion guide published in February 2018 (Shaping our shared plan for the region: A discussion guide for policymakers), bringing together:

- the results of the additional analysis completed in spring 2018
- the Regional Transportation Plan vision and goals
- related strategies for transportation safety, transit, freight and emerging technology strategies
- additional background information.

This briefing book is meant to help elected, business, and community leaders and residents better understand the challenges and opportunities facing the greater Portland region as the 2018 Regional Transportation Plan is finalized.

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.

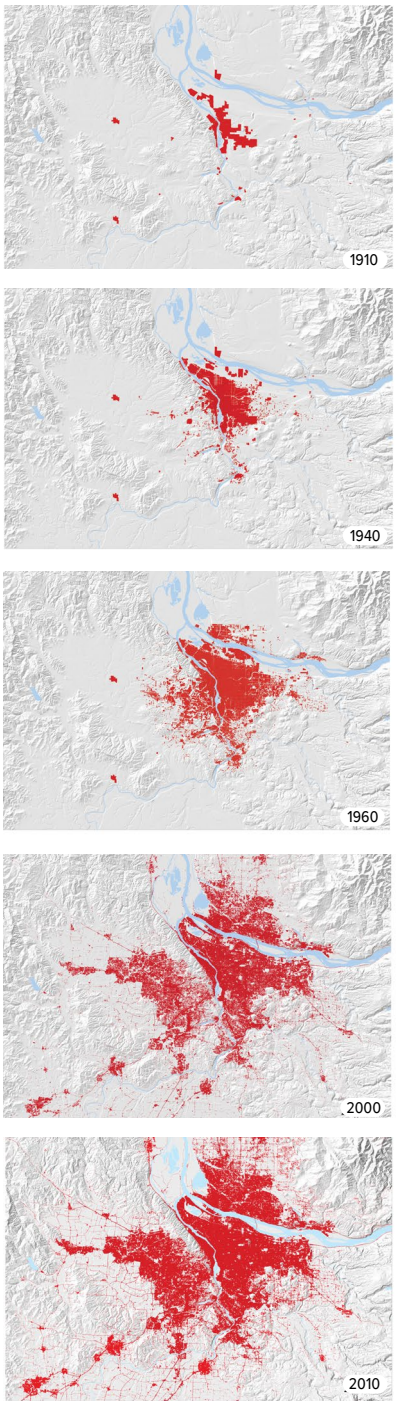
Because of our dedication to planning and working together to make local and regional plans a reality, we have set a wise course for managing growth – but times are challenging. The region is growing, our economy is expanding, and emerging technologies are changing how we do business and get around.

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

"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

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.

Halfway to 2040

The 2018 Regional Transportation Plan is a key tool for implementing the 2040 Growth Concept to achieve our desired outcomes for a great region.

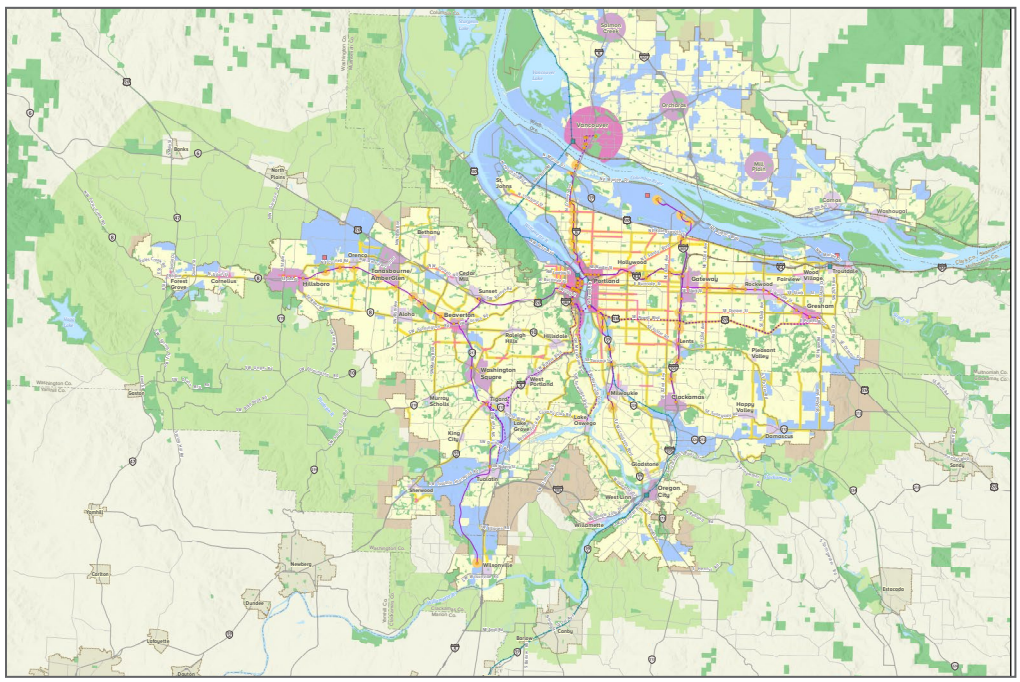
In 1995, the greater Portland region adopted the 2040 Growth Concept, the long-range plan for managing growth that integrates land use and transportation system planning to preserve the region's economic health and livability in an equitable, environmentally-sound and fiscally-responsible manner.

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, light rail 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 are clustered along our major highways 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.

Our shared strategy for managing growth: the 2040 Growth Concept



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

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.

Finalizing the plan

The 2018 Regional Transportation Plan will be finalized and considered for adoption by the Metro Council by the end of 2018:

June 29 to Aug. 13, 2018

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

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 transportation safety, freight, transit and emerging technology

December 2018

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

Early 2019

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

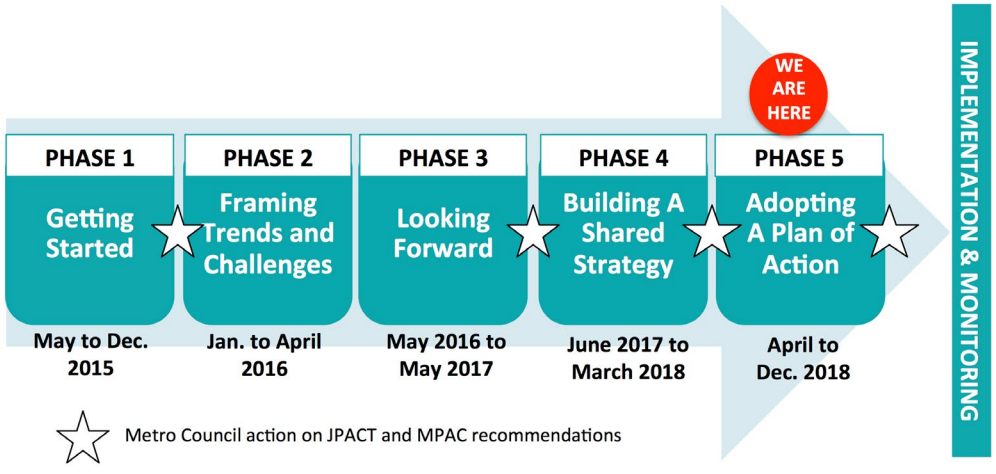
Today's choices shape the future

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.



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.

Regional Transportation Plan goals

1. Vibrant communities
2. Shared prosperity
3. Transportation choices
4. Reliability and efficiency
5. Safety and security
6. Healthy Environment
7. Healthy people
8. Climate leadership
9. Equitable transportation
10. Fiscal stewardship
11. Transparency and accountability

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 clear 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.

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 has fallen short of meeting our growing needs, 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 2018, Regional Leadership Forum discussions, technical research and interviews with businesses and community leaders and others.

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 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.

Through fall 2018, policymakers will consider systemwide modeling and evaluation and feedback from the public as they work together to finalize the Regional Transportation Plan policies, associated strategies, and 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 policies 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. In 2017 Metro issued a call for projects to its regional partners to begin updating the region's transportation investment priorities in support of the Regional Transportation Plan vision and goals. 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 submitted to Metro to build the Regional Transportation Plan.

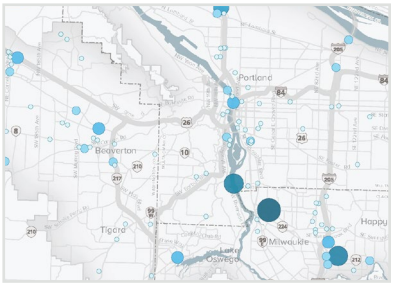
The project lists are separated into two categories:

1. **constrained project list** 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. **strategic project list** additional strategic investments that go beyond the constrained project list and could be built with additional funding.

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

Metro completed an initial analysis of these projects in early 2018. Based on the analysis and subsequent feedback from policymakers, business and community leaders and the public, the Metro Council recommended refinements to the draft project list (see next page).

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 combined 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 that could be achieved with additional resources

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*

Spring 2018: refining the draft project list

The list below summarizes the seven overall recommendations from the system performance evaluation results and priorities from policymakers, business and community and leaders and the public. The recommendations served as direction to jurisdictional partners for refining how the draft projects lists for each funding scenario.

Make more near-term progress on key regional priorities – equity, safety, travel options and congestion. Advance projects that address these outcomes to the 10-year list to make travel safer, ease congestion, improve access to jobs and community places, attract jobs and businesses to the region, save households and businesses time and money, and reduce vehicle emissions.

Make more near-term progress to reduce disparities and barriers that exist for historically marginalized communities. Advance projects that improve safety and expand travel options to the 10-year list to reduce disparities and barriers, especially for people of color and households of modest means.

Prioritize projects that focus on safety in high injury corridors. Advance projects in high injury corridors to the 10-year list and ensure all projects in high injury corridors address safety to reduce the likelihood and severity of crashes for all modes.

Accelerate transit service expansion and improve speed and frequency. Increase transit service as much as possible beyond Climate Smart Strategy investment levels. Focus new and enhanced transit service to connect transit to underserved communities to jobs and community places, in congested corridors and in areas with more jobs and housing.

Make more near-term progress to tackle congestion and manage travel demand. Advance lower cost projects to the 10-year list that use designs, travel information, technologies, and other strategies to support and expand travel options and maximize use of the existing system. It will be important to ensure that lower income households are not financially burdened by strategies to make road use more efficient.

Prioritize completion of biking and walking network gaps in the near-term. Advance projects that fill gaps for biking and walking in high injury corridors or that provide connections to transit, schools, jobs and 2040 centers to the 10-year list.

Continue to build public trust through inclusive engagement, transparency and accountability. Continue to engage the region's diverse communities in the planning and implementation of projects to achieve desired outcomes, including equity, safety, reliability affordability and health. Report back whether projects deliver (or don't deliver) anticipated outcomes and adjust course as needed.

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.

Metro Council: Focus on racial equity

Equity analysis on the initial draft project list aggregated the populations of multiple historically marginalized communities: people of color, people with low income, English language learners, older adults and youth. Responding to community feedback and the continued history of disparity, 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.

Based on direction of the Metro Council, the equity analysis for the updated project list is narrowed to people of color, English language learners and lower-income households to understand the benefits and impacts for those communities who have historically been most impacted by – or have not seen as much benefit from – transportation planning and investment decisons.

This focus leads with race explicitly but not exclusively and is an important next step in supporting Metro's Strategic Plan for Racial Equity, Diversity and Inclusion.

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

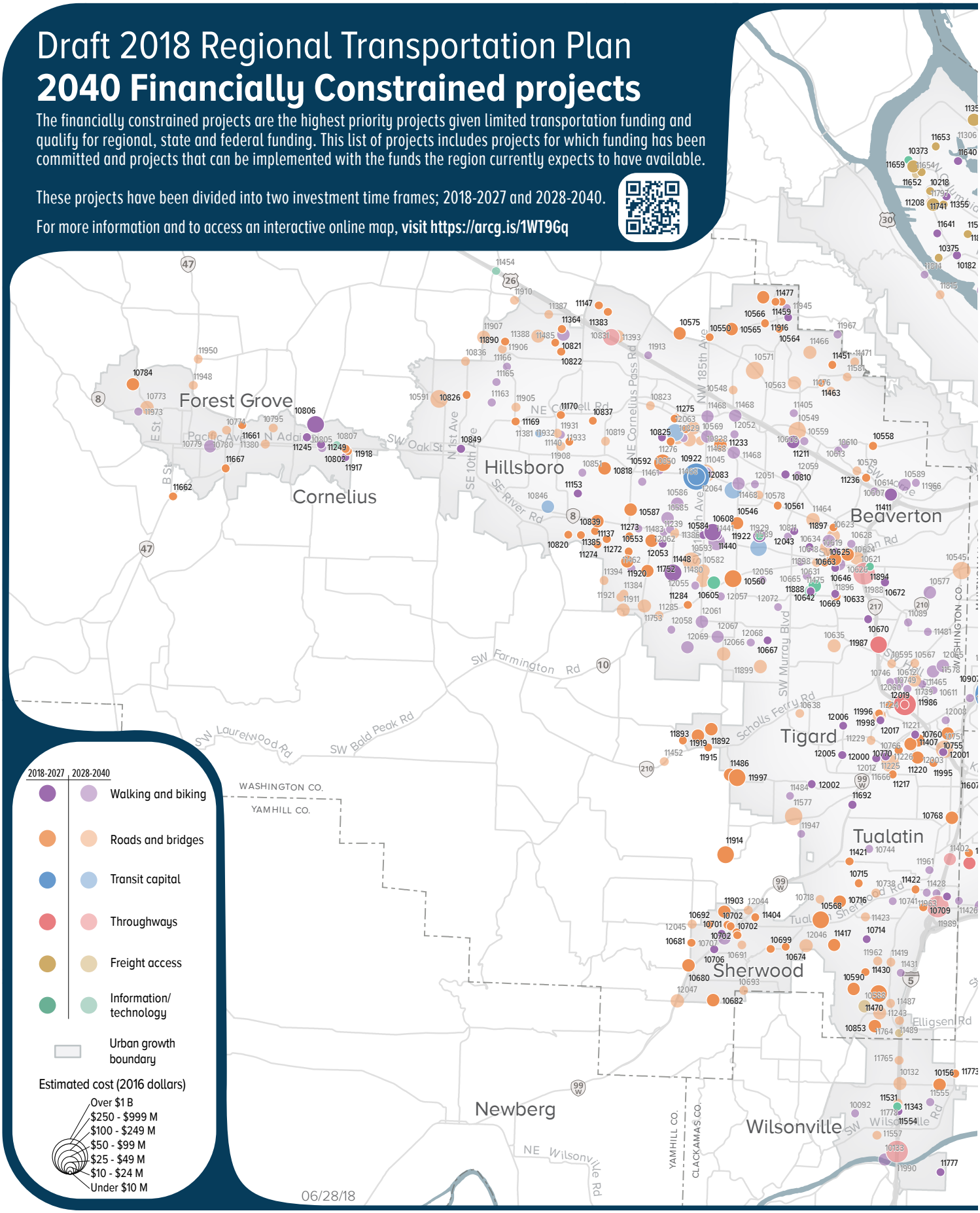
Draft 2018 Regional Transportation Plan

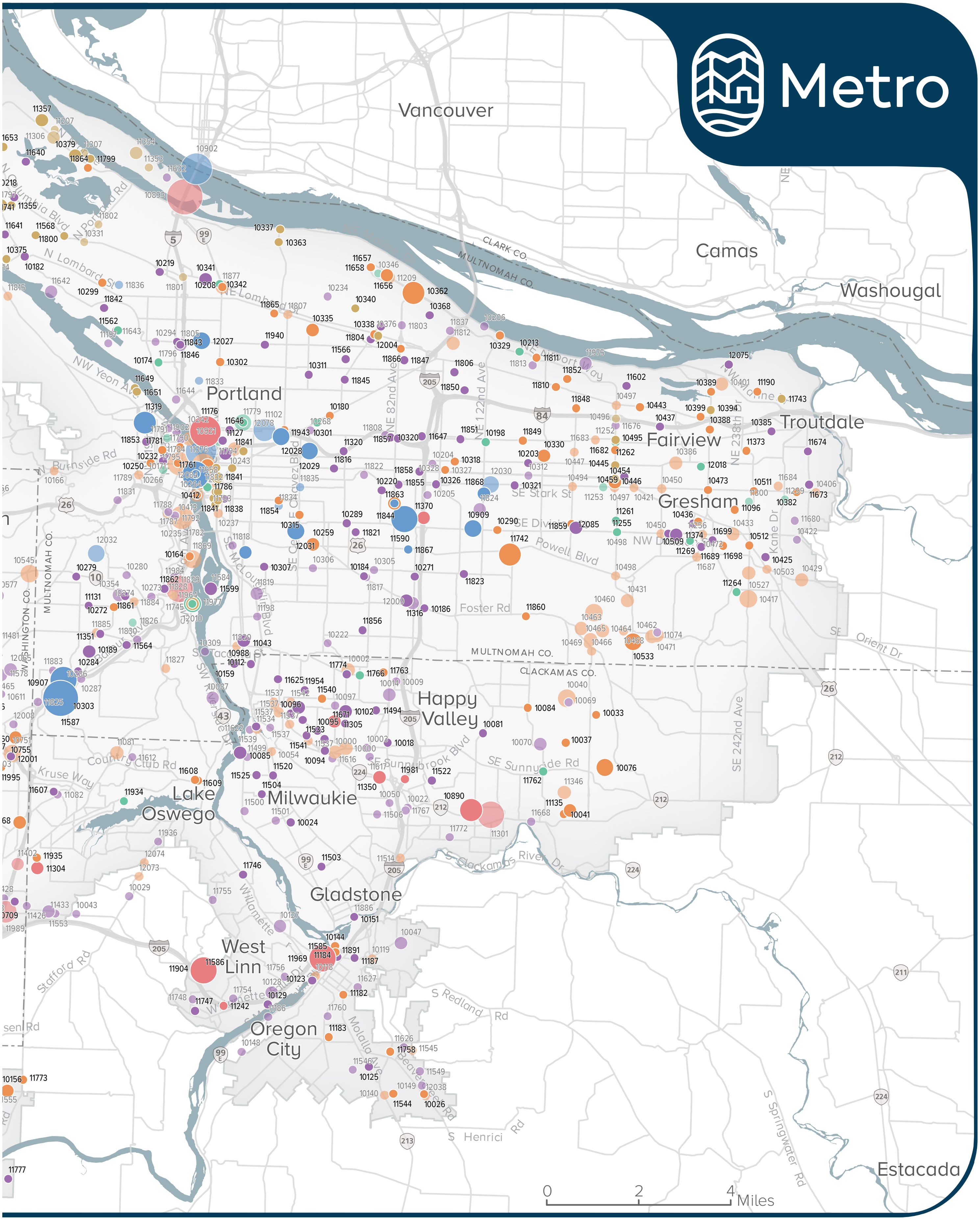
2040 Financially Constrained projects

The financially constrained projects are the highest priority projects given limited transportation funding and qualify for regional, state and federal funding. This list of projects includes projects for which funding has been committed and projects that can be implemented with the funds the region currently expects to have available.

These projects have been divided into two investment time frames; 2018-2027 and 2028-2040.

For more information and to access an interactive online map, **visit https://arcg.is/1WT9Gq**




Metro
Vancouver
Camas
Washougal
Portland
Troutdale
Fairview
Gresham
Happy Valley
Lake Oswego
Milwaukie
Gladstone
West Linn
Oregon City
Estacada
CLARK CO.
MULTNOMAH CO.
CLACKAMAS CO.
WASHINGTON CO.
N Lombard St
NE Lombard St
NW Yeon Ave
W Burnside Rd
NE 82nd Ave
NE 122nd Ave
NE 238th Dr
SE Stark St
SE Division St
Powell Blvd
Foster Rd
SE Sunnyside Rd
SE Sunnybrook Blvd
SE 242nd Ave
Kane Dr
SE Orient Dr
Country Club Rd
Kruse Way
Stafford Rd
S Redland Rd
S Henrici Rd
S Springwater Rd
Willamette
Clackamas River Dr
Molalla Ave
NE Airport Way
0
2
4
Miles

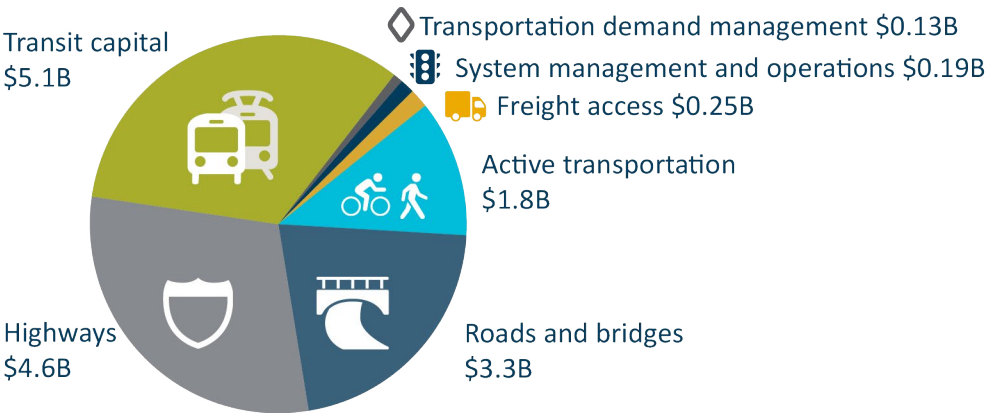
Capital projects

$15.4 billion

Estimated amount to be spent on capital transportation projects in the greater Portland region, 2018-2040

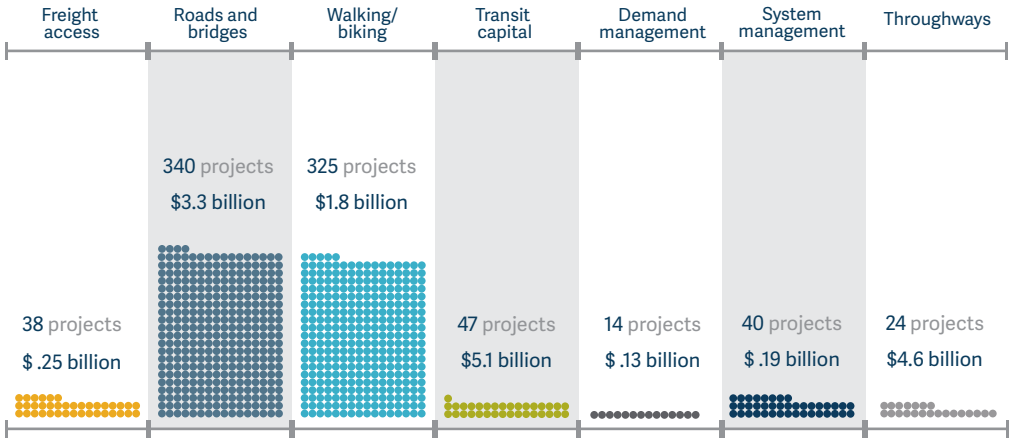
Types of capital projects

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 $15.4 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 addressed separately on the following page.*



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.



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

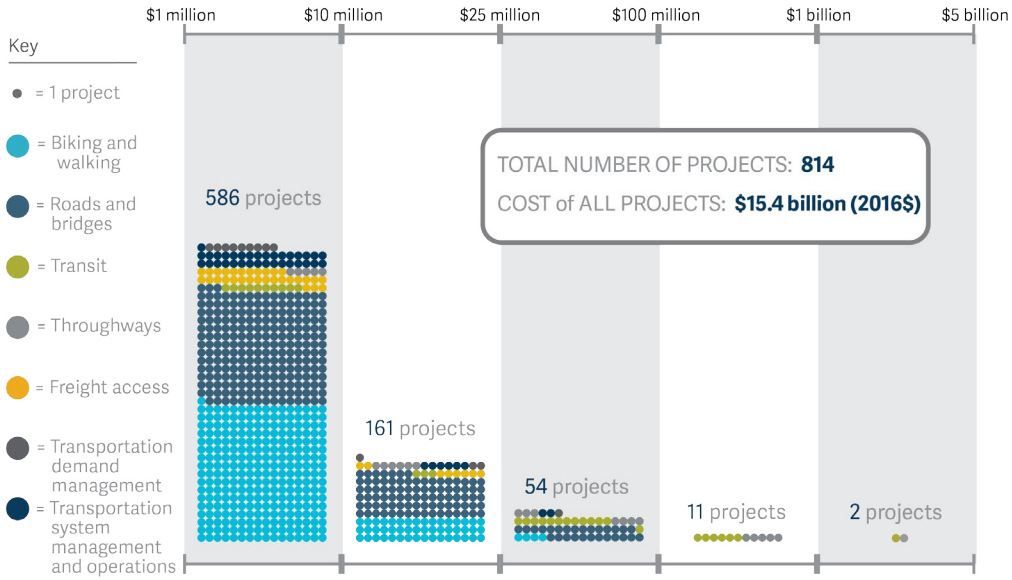
Defining terms

Throughways

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

Types of capital projects by cost

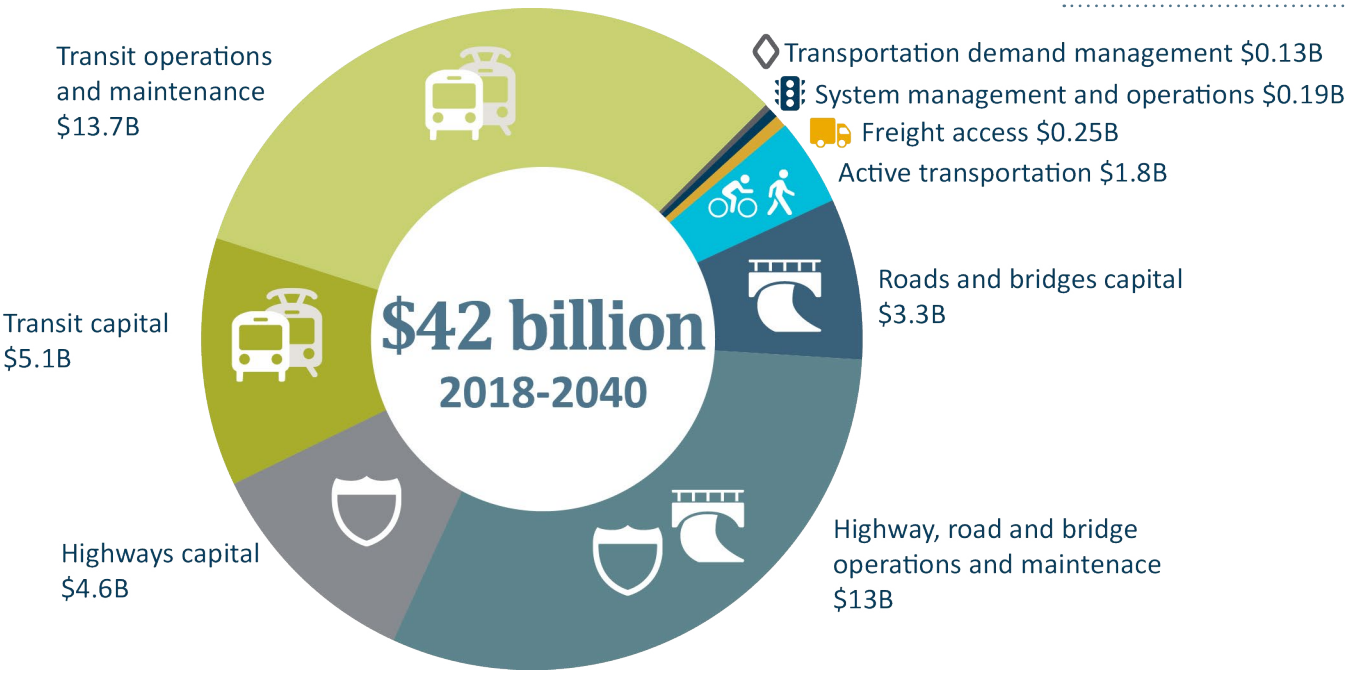
Projects in the draft 2018 Regional Transportation Plan constrained list range from $1 million to nearly $3 billion.



Source: Draft 2018 Regional Transportation Plan financially constrained list

Capital, operation and maintenance investments

Taking the constrained project list with the estimated amount to be spent on highway, road, bridge and transit operations and maintenance means the greater Portland region expects to spend $42 billion on our transportation system through 2040.



Highway, road and bridge operations and maintenance

$13 billion

Estimated amount to be spent on road operations and maintenance in the greater Portland region, 2018–2040. This does not include maintenance of local streets

Transit operations and maintenance

$13.7 billion

Estimated amount to be spent on transit operations and maintenance and service related capital costs in the greater Portland region, 2018–2040. This does not include C-TRAN operations and maintenance costs.

Outcomes of the draft plan

Key takeaways from the 2018 Regional Transportation Plan

By 2040, the region is expected to have 500,000 more people and 350,000 more jobs. After a three-year collaborative process, the region is considering an updated plan that will invest the combined federal, state and local funds expected through 2040. The proposed investments have been analyzed to determine how well they support our vision for a transportation system that is safe, reliable, healthy and affordable.

The results are in and the news is mostly good. The investments in the draft 2018 Regional Transportation Plan are expected to expand travel options, improve transit access to jobs and community places for marginalized communities, help people live healthier lives and save businesses and households money. However, the region is expected to fall short of some of our desired outcomes, including easing congestion.

Defining terms

Equity focus areas

Areas where people of color, English language learners or people with low-income reside at a higher proportion and twice the density than the greater Portland region as a whole

Most of these areas also include higher than regional average concentrations of other historically marginalized communities, including young people, older adults and people living with disabilities.

Social equity

With the draft constrained list, the greater Portland region is making progress toward improving equity in some areas, but there is still more to do. Where partners could redirect and advance active transportation completeness and safety investments, they did.

- In total, 307 transportation projects are in equity focus areas in the first 10 years of the plan; that number grows to 588 transportation projects by 2040, about 44 percent of the total constrained list.
- In the first 10 years, $3.9 billion dollars of active transportation and transit capital investment is expected in equity focus areas; through 2040, there will be $6.5 billion of active transportation and transit capital investments.
- The constrained list is increasing the number of jobs and community places, like the grocery store, libraries, banks and medical facilities, the average household in equity focus areas can reach within a short transit trip. This reflects the significant investment in transit, both on the capital side and in service hours.
- When it comes to bicycling, walking or driving, the average household in equity focus areas is seeing an increase in the number of jobs and community places within a short trip, though not as much of an increase as the average household in other areas.

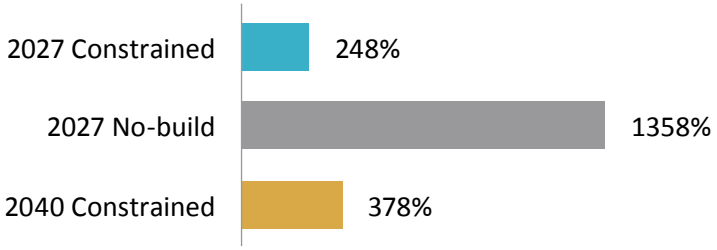
Safety

Two-thirds of the projects in the constrained list will help improve safety. Three-quarters of those projects with safety benefits are in equity focus areas, which are also the same areas with the highest incidents of crashes causing death or life-changing injuries. *See* map on page 23 for locations of projects with a safety benefit.

Congestion and reliability

Traffic is expected to grow and congestion will get worse than today, especially on the region's throughways. However, people will spend significantly less time in traffic and delay than if investments in the plan aren't made. Congestion pricing as well as other management strategies – will be needed to improve reliability and reduce demand to further address congestion to help save businesses money, support job creation, and promote the efficient movement of goods.

Truck hours of delay, 1-3pm, on regional freight network
(percent change from 2015)

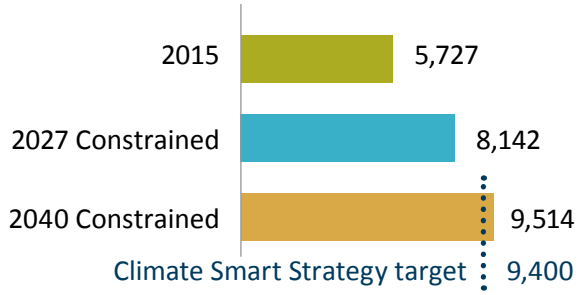


Health

Expanded transit service coupled with growing demand for transit, biking and walking will reduce pollution from automobiles to help protect the region's clean air and meet the region's greenhouse gas emissions reduction commitment. The plan is expected to result in a 21 percent reduction in annual greenhouse gas emissions per person by 2040 – short of the 25 percent reduction called for by state law.

Reduced air pollution and increased physical activity will help reduce illness, save lives and lower healthcare costs. In 2010, our region spent $5 to 6 billion on healthcare costs related to illness alone. By 2040, the region is expected to save $32 million per year by implementing the plan.

Transit revenue hours of service



Affordability

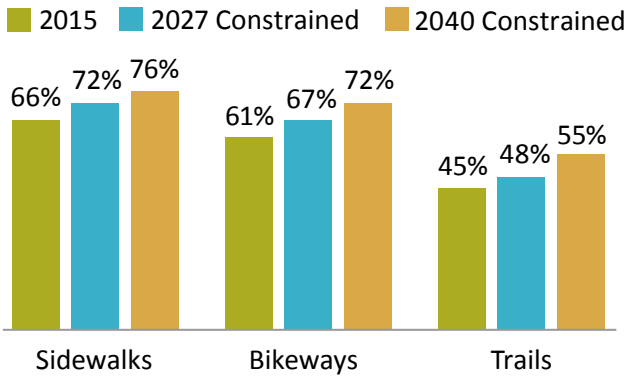
While more affordable travel options will be available throughout the region, especially in centers and equity focus areas, more funding is needed to complete gaps in biking, walking and off-street trail networks.

Expanded transit service and access to transit will increase access to jobs and community places, particularly for households in equity focus areas.

Households will save money by driving fewer miles in more fuel-efficient vehicles while walking, biking and using transit more. This allows people to spend money on other priorities, of particular importance to lower-income households.

See chapter 7, Measuring Outcomes of the draft 2018 Regional Transportation Plan for more information.

Sidewalk, bikeway and trail completeness near transit

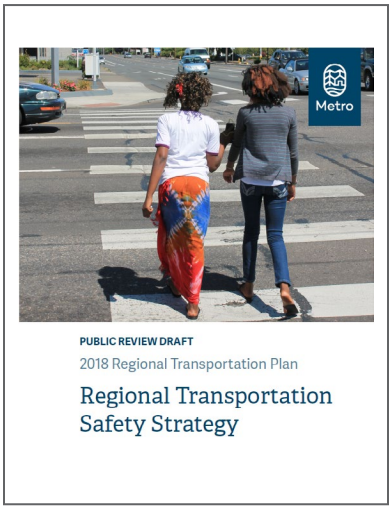


*within 1/2-mile of light rail stations, 1/3 mile of street car line, 1/4-mile of bus line

Source: Draft 2018 Regional Transportation Plan fiscally constrained list

Implementation strategies

As part of the 2018 Regional Transportation Plan update, implementation strategies for transportation safety, transit, freight and emerging technology were developed.



Regional Transportation Safety Strategy

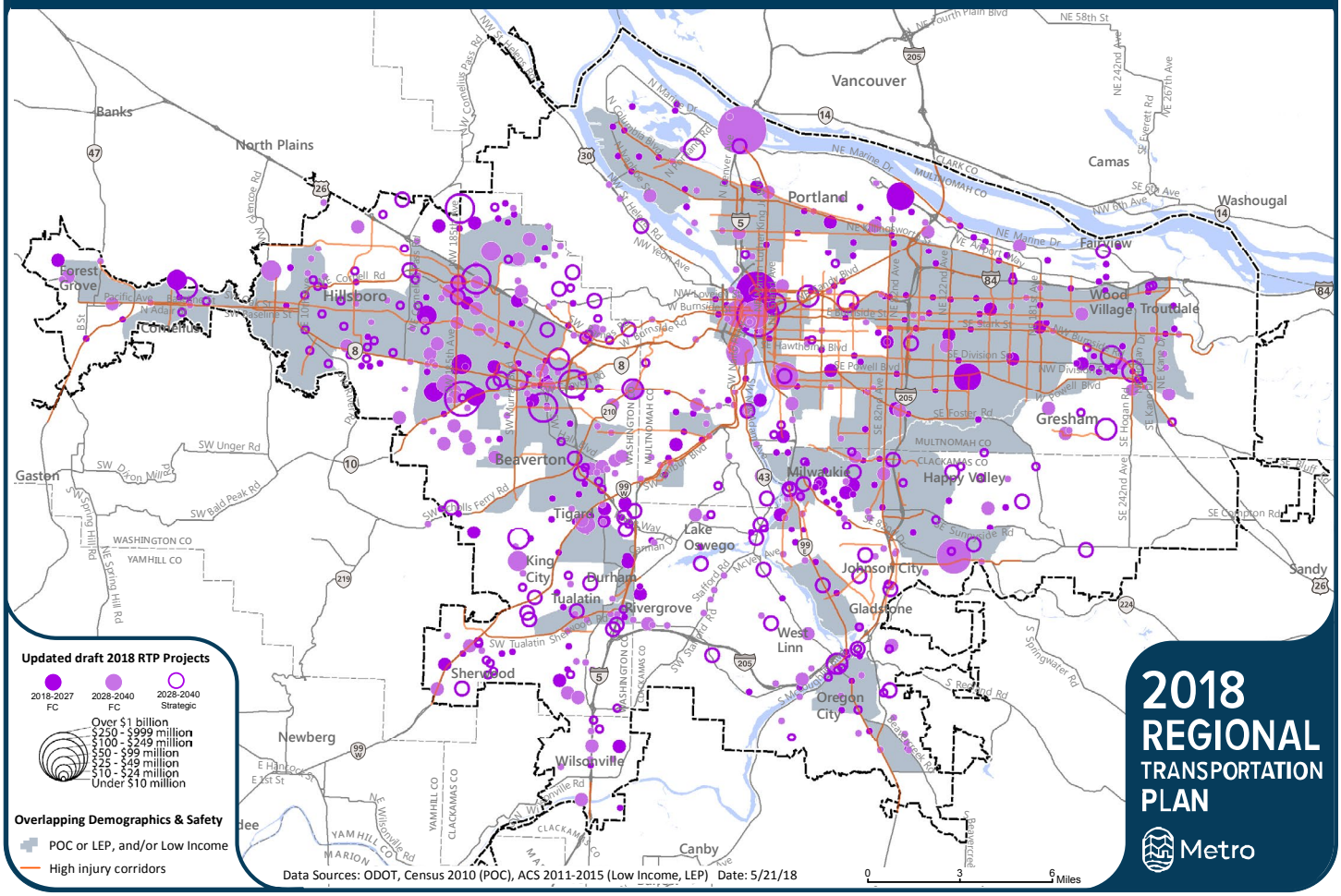
oregonmetro.gov/safety

A cornerstone of this Regional Transportation Plan update is safety. The updated Regional Transportation Safety Strategy includes the ambitious safety goal of Vision Zero. Metro's updated target is zero traffic-related deaths and life-changing injuries in the greater Portland by 2035. The strategy includes new regional transportation safety and security policies and updated actions to address the contributing factors in fatal and life-changing traffic crashes identified for the greater Portland region.

The updated strategy uses the "safe system" approach which leads with the premise that no loss of life from traffic crashes is acceptable and that all fatal and life changing injuries are preventable. With the safe system approach, the transportation system is designed so that when mistakes occur they do not result in a death or life-changing injury. Human frailty is acknowledged and the transportation system is designed to protect all users including people walking, driving, taking transit, riding bicycles and using mobility devices. Current data show only one out of 10 pedestrians hit by a person driving 40 miles per hour would survive.

The updated transportation safety strategy includes analysis of crash data that identifies regional high injury corridors. Sixty percent of fatal and life-changing injury crashes occur on just 6 percent of the roadways in the greater Portland region. Metro and partners can target these areas to reduce traffic related deaths and life-changing injuries.

2018 Regional Transportation Plan Projects with a Safety Benefit: This map shows projects in the 2018 Regional Transportation Plan that provide a safety benefit, overlapped with regional high injury corridors and census tracts with higher than regional average concentrations and double the density of one or more of the following: people of color or English language learners, and/or people with low income. Safety benefit projects are projects that increase safety for one or more roadway user. These projects may not necessarily address an identified safety issue at an identified high injury or high risk location, but they do include design treatments known to increase safety and reduce serious crashes.

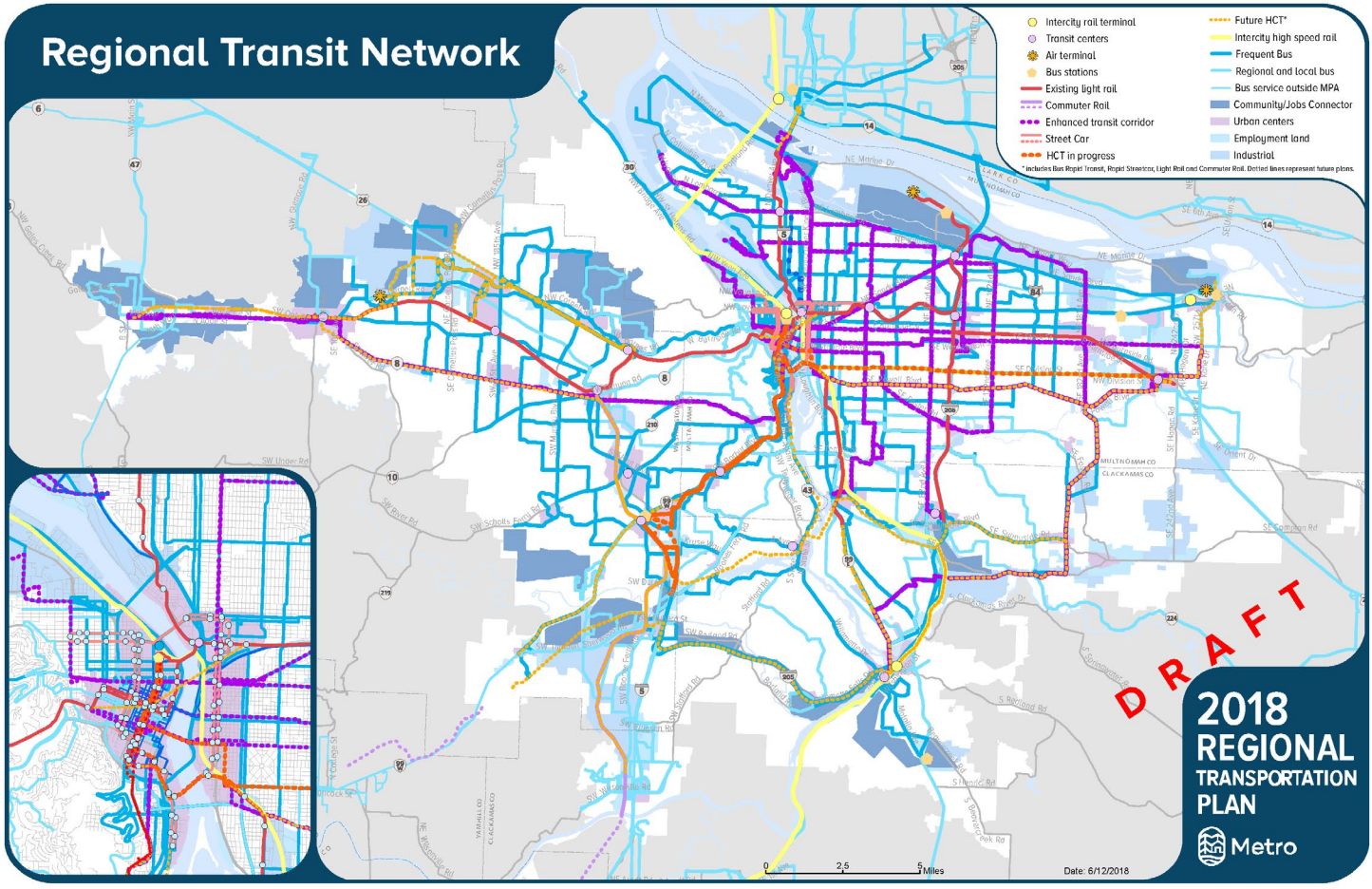


Regional Transit Strategy

oregonmetro.gov/transit

A key part of the 2018 Regional Transportation Plan update included development of the region's first regional transit strategy. The strategy defines a comprehensive vision, policies and investments needed to help make the region's transit system frequent, convenient, accessible and affordable for everyone. The new strategy brings the visions of communities and multiple transit providers together, including TriMet, South Metro Area Regional Transit (SMART), C-TRAN, Salem-Keizer Transit, Canby Area Transit, Sandy Area Metro and Ride Connection, to provide important connections between urban centers, jobs, schools and other destinations.

In addition, the strategy updates and replaces the regional High Capacity Transit System Plan vision adopted in 2009, looking beyond high capacity transit projects like light rail or bus rapid transit to expand the range of transit options available to meet travel needs throughout the region. New to the region's vision and policies for transit is the Enhanced Transit Concept. The Enhanced Transit Concept includes the implementation of small- to moderate-scale solutions, such as bus only lanes and transit priority signals at intersections, to improve speed and on-time performance in the region's most congested and unreliable frequent transit network segments.

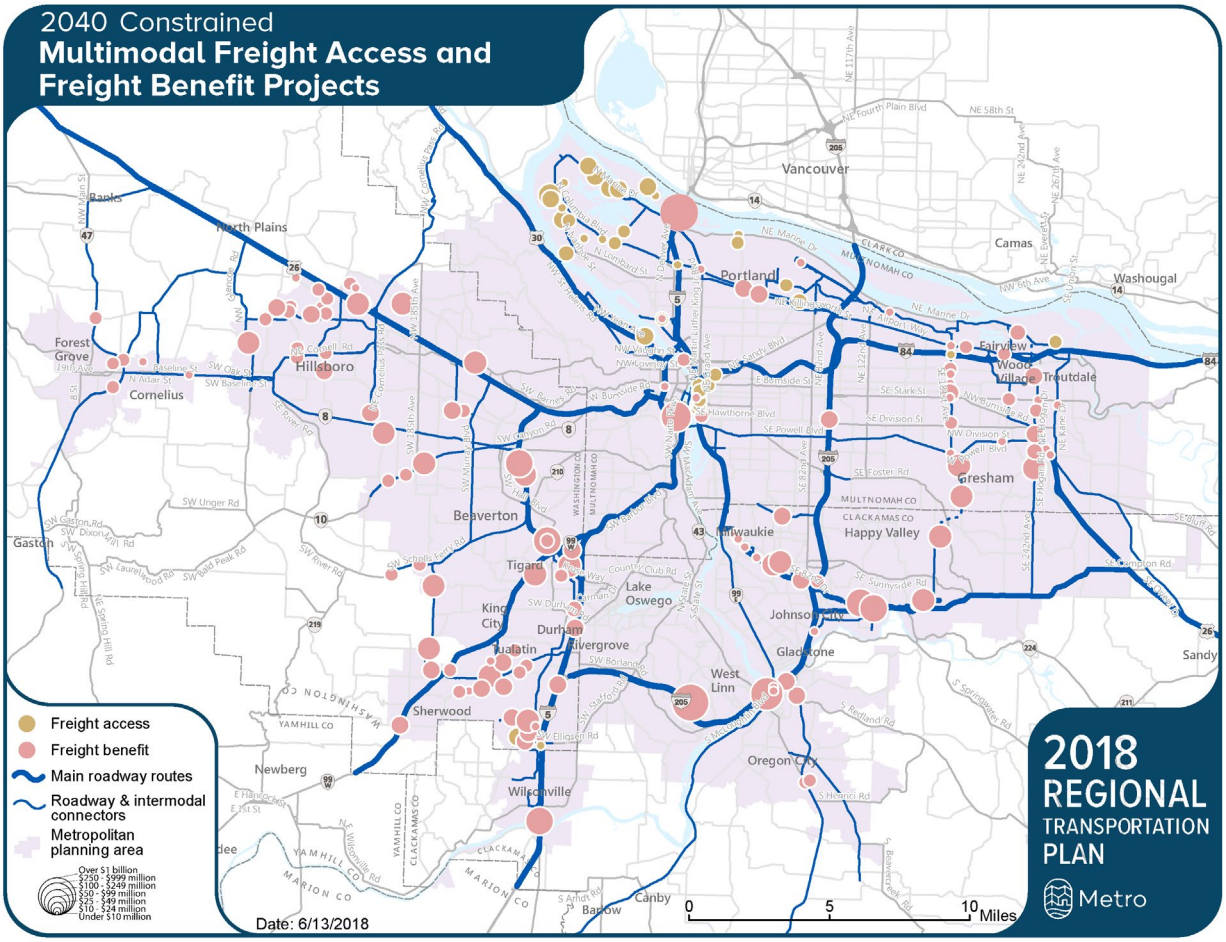


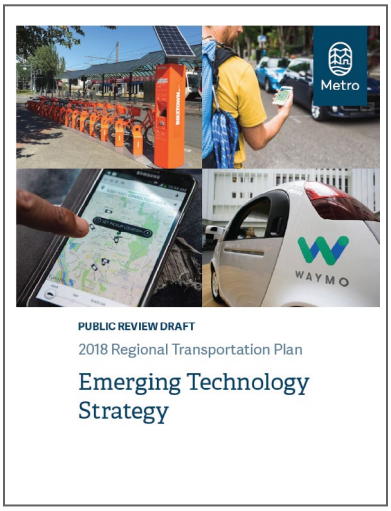
Regional Freight Strategy

oregonmetro.gov/freight

The 2018 Regional Transportation Plan update also resulted in updates to the Regional Freight Strategy adopted in 2010. The strategy provides an updated vision, policies and investments that support the greater Portland region's role as the freight transportation and trade gateway for the state of Oregon and many southwest Washington businesses.

A variety of products are exported from or travel to this region, like the crops shipped from Willamette Valley farms or microchips manufactured in Hillsboro. In addition, nearly all foods, clothing, construction materials, medical supplies, etc. that residents and businesses rely on daily come from outside the region. Forecasts predict twice as much freight will travel within and through the greater Portland region by 2040. New freight policies seek to help improve safety and better manage roads that provide critical access to and connections between industrial centers, ports, rail yards, shipping facilities and the Interstate and state highway system. Implementation of freight projects and actions identified in the strategy will expand shipping choices, improve safety and reliability and reduce delays in the flow of goods and services throughout the region.





Emerging Technology Strategy

oregonmetro.gov/rtp

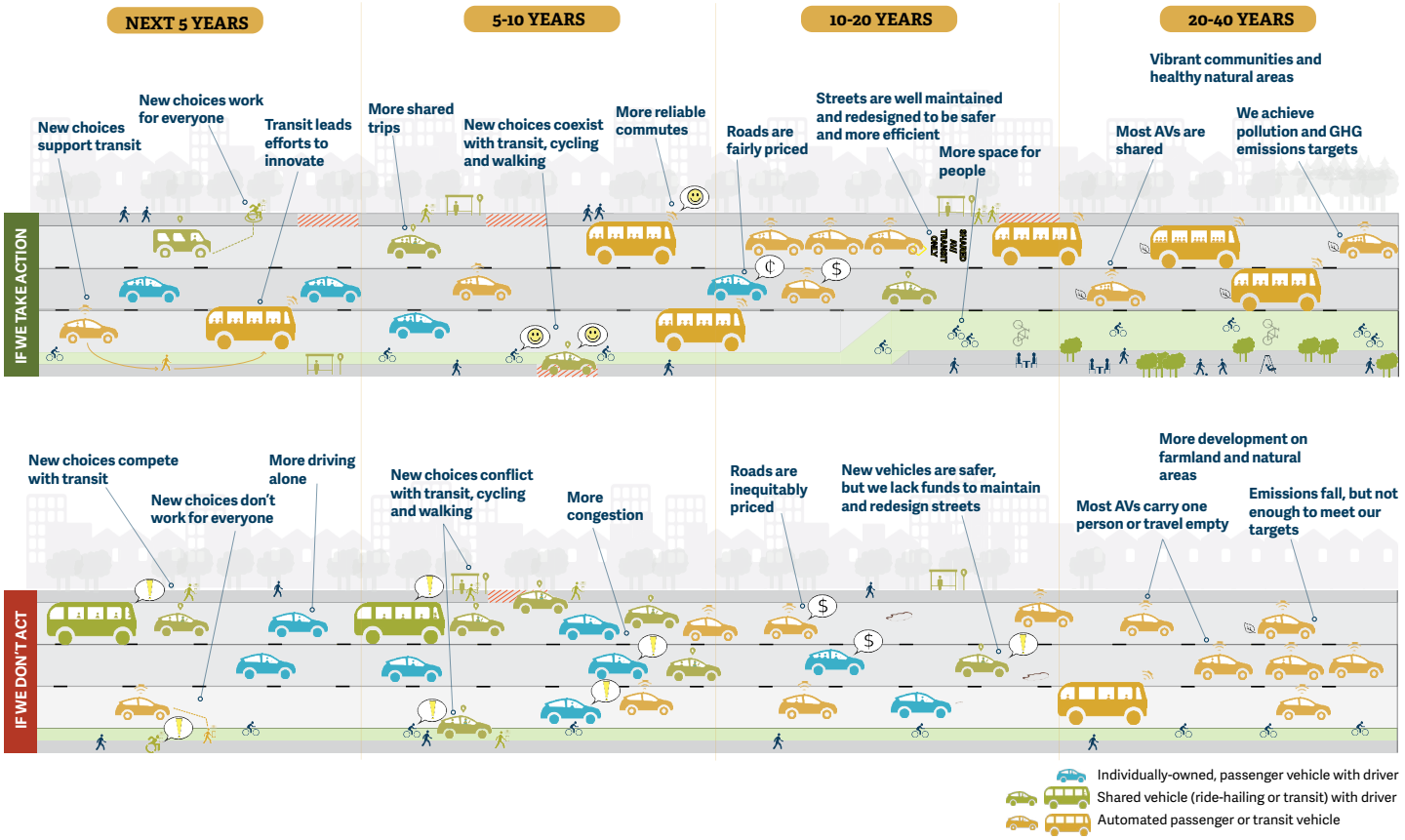
Technology is already changing the way people get around in greater Portland. Ride-hailing services, such as Uber and Lyft, provided over 10 million rides in Portland in 2017. Biketown, the City of Portland's bike-share service, logged more than 300,000 trips in its first year of operation.

The emerging technology strategy is new to the Regional Transportation Plan. It examines the effects of current technologies and developing ones, such as the first generation of driverless cars that will likely share the roads within the next five years.

The strategy lays out a long-term vision of how technology can support Metro's goals to make the region a more livable and equitable place. New policies call for public agencies in the region to:

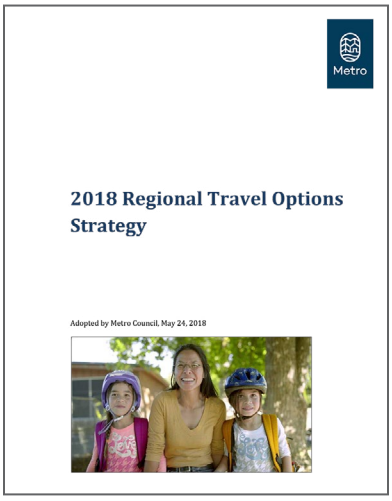
- help make emerging technologies accessible to all
- use technology to support equitable, shared, and active travel choices
- advance the public interest through innovation.

How emerging technology could impact the greater Portland region's future



Other implementation strategies

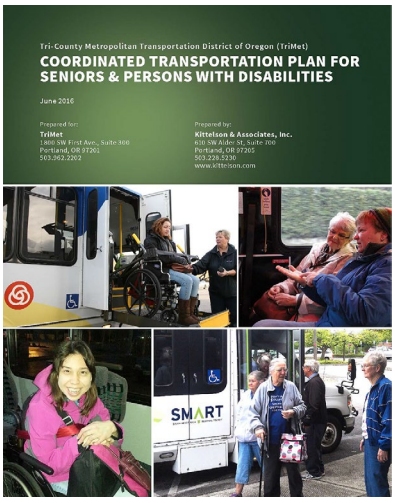
There are several implementation strategies for the Regional Transportation Plan that were not updated as part of the 2018 Regional Transportation Plan. These strategies continue to inform policy development and investment in our transportation system and will be informed by the updated policies of the 2018 Regional Transportation Plan.



Regional Travel Options Strategy (May 2018)

oregonmetro.gov/traveloptionsstrategy

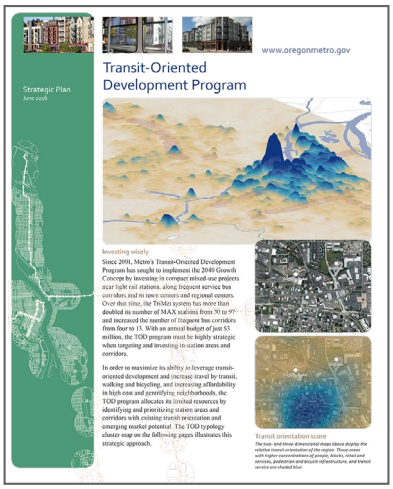
The Regional Travel Options Strategy maps out a plan for reducing reliance on driving alone through employer outreach programs, traveler education and incentives for using alternatives to driving. The updated strategy provides direction for the program into the next ten years. It builds on the historic success of the program, addresses challenges, and responds to community needs. This Strategy offers policy direction for establishing a new regional Safe Routes to School program, adapting to new technologies, and prioritizing projects and programs that address inequities. It addresses the need for the Regional Travel Options program to work with new partners to reach more residents throughout the region.



Coordinated Transportation Plan for Seniors and People with Disabilities (TriMet; June 2016)

trimet.org/meetings/stfac/pdfs/ctp.docx

Prepared by TriMet, the coordinated transportation plan defines priorities and actions to support a cost-effective, efficient and high-quality transportation system that serves the needs of seniors and persons with disabilities. It identifies current and future needs, calling for investments and actions to help ensure people have access to medical care and other essential services. The plan recognizes seniors will represent the fastest growing segment of our population in years to come and defines a continuum of services that takes into account people's abilities as they transition through various stages of age and ability.



Transit-Oriented Development Strategic Plan (June 2016)

oregonmetro.gov/tod

Metro's Transit-Oriented Development Program implements the 2040 Growth Concept by investing in compact mixed-use projects near light rail stations, along frequent service bus corridors and in town centers and regional centers. The program has an increased focus on providing affordable housing near transit and services.

Climate Smart Strategy (December 2014)

oregonmetro.gov/climatesmart

The Climate Smart Strategy defines policies, strategies and near-term actions to guide how the region moves forward to integrate reducing greenhouse gas emissions with ongoing efforts to create the future we want for our region.

Regional Active Transportation Plan (July 2014)

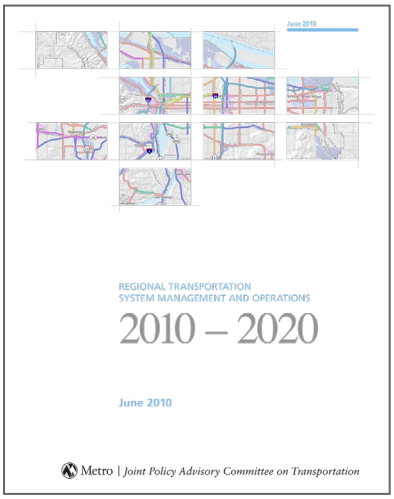
oregonmetro.gov/activetransportationplan

The Regional Active Transportation Plan defines a vision and policies that will make it easier to walk, ride a bike and access transit to work, school, parks and other destinations throughout the region.

Transportation System Management and Operations Plan (June 2010)

oregonmetro.gov/tsmo

The Transportation System Management and Operations Plan defines policies, strategies and investments for managing demand and improving how the transportation system operates. It identifies cost effective, multimodal solutions that relieve congestion, optimize infrastructure investments, promote travel options and reduce greenhouse gas emissions and air pollution. This plan will be updated in 2019.



How we got here

From start to finish, development of the 2018 Regional Transportation Plan has been about meaningful engagement with the community and business leaders and our elected officials working together to craft a common vision for the greater Portland region's transportation system.

Phase 1: Getting started

Beginning in summer 2015, the first phase consisted of engaging local, regional, state, business 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 engagement included:

- interviews with 31 stakeholders
- discussion groups in partnership with Metro's diversity, equity and inclusion team with communities of color and youth on priorities and issues related to racial equity
- a partnership with PSU's Center for Public Service and 1000 Friends of Oregon to explore components of inclusive public engagement to develop an approach to better reach underrepresented communities
- a public involvement retrospective that summarized previous feedback from communities of color on transportation planning and project development
- an online survey with more than 1,800 participants to help identify the top transportation issues facing the greater Portland region.

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:

- an online survey with more than 5,800 participants responding to the questions
- a Regional Snapshot on transportation, published in April 2016.

Also in April 2016, the Metro Council convened members of MPAC, JPACT, state legislators, community and business leaders and other interests from

Regional leadership forums

To address the challenges and trends facing our region, the Metro Council convened a series of four regional leadership forums to shape development of the 2018 Regional Transportation Plan.

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 included members of MPAC, JPACT, state legislators, and community and business leaders from throughout the greater Portland region. Working side-by-side, local, regional and state leaders brought 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 discussions shaped the update to the plan's vision, goals, policies and projects.

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*

across the region to discuss the key trends and challenges facing the region during the first of four regional leadership forums.

Metro staff also worked with the Oregon Department of Transportation's (ODOT) economist and jurisdictional partners, individually and through a technical work group, to forecast a budget of federal, state and local funds the greater Portland region can reasonably expect by 2040.

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. The engagement for this phase included:

- a round of follow up discussion groups in partnership with Metro's diversity, equity and inclusion team with communities of color and youth to review actions and priorities for the agency's racial equity strategy
- focus and discussion groups on transportation priorities for communities of color and strategies to improve engagement with underrepresented groups
- an online survey focusing on priorities for communities of color
- an online survey with more than 2,600 participants weighing in on investment priorities and funding
- discussion groups with communities of color on hiring practices and priorities related to the Planning and Development department-specific equity plan.

The Metro Council also hosted its second and third 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.

Staff also compiled background information and online resource guide maps to support jurisdictional partners as they updated their investment priorities for further evaluation and public review during Phase 4. In addition, staff launched the RTP Project Hub – an online visual database – for jurisdictional partners to use to update project information and collaborate with other jurisdictions. 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 ODOT, Metro, South Metro Area Regional Transit (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 funding scenarios: 10-year constrained project priorities, 2040 constrained project priorities and 2040 strategic project priorities. 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.

Metro staff also prepared an interactive map of proposed projects and lists that was made available on the project website for the public and partners to use to learn more about the projects under consideration. Safety, transit, freight and emerging technology strategies continued to be developed on parallel tracks. Jurisdictions also piloted project-level evaluation criteria on 50 projects; the pilot project evaluation will be advanced during the next RTP update.

The results of the analysis were released in November 2017. Engagement activities included:

- a community leaders' forum for feedback on the results
- Metro Councilor briefings to business and community groups
- an online survey with more than 2,900 participants.

The analysis was also summarized in a larger discussion guide for decision-makers that also relayed key issues and the results of the call for projects. A fourth and final Regional Leadership Forum was held in March 2018 to discuss findings and recommendations from the technical analysis and public

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*

"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*

Connecting with people to create a better plan

Nearly 18,000 individual touch points from 2015-18

4 Regional Leadership Forums

10 community and business briefings

1 consultation meeting with tribes and resource agencies*

2 Community Leaders Forums

5 TPAC/MTAC workshops

5 online surveys

17 equity discussion groups

61 stakeholder interviews

64 technical workgroup meetings

76 regional advisory committee meetings

22 Metro Council meetings

3 hearings*

Coordination committee briefings

*planned during comment period

engagement. Recommendations from the forum provided further direction for finalizing the plan during Phase 5.

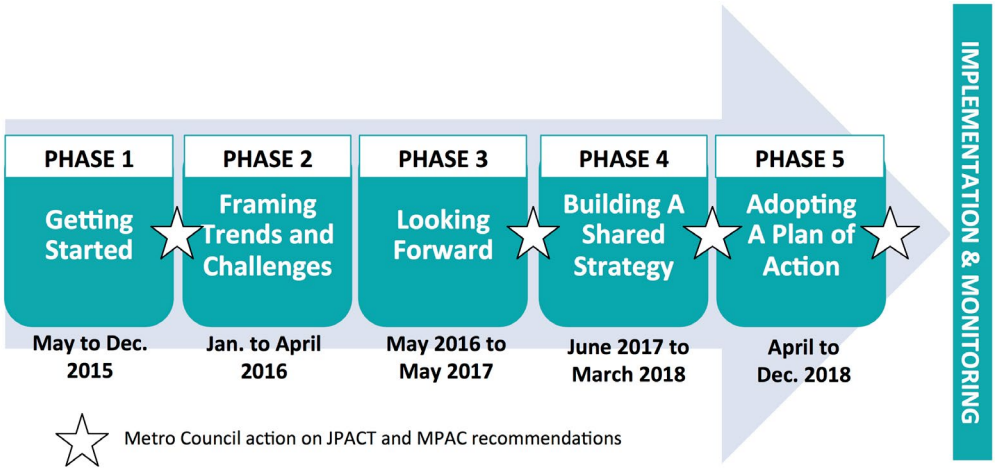
Phase 5: Adopting a plan of action

The fifth and final phase of the process began in April 2018 and is focused on finalizing and adopting the region's investment priorities and strategies recommended through 2040. The 2018 Regional Transportation Plan is available for public review and feedback from June 29 through Aug. 13. For this comment period, engagement activities include:

- an online survey with a high level summary of the plan
- an interactive map of projects, project lists and a briefing book that provides a more in-depth survey
- draft documents, including the 2018 Regional Transportation Plan and safety, transit, freight and emerging technology strategies, available for review and comment.

The Metro Council will hold a hearing on Aug. 2, 2018. All comments received during the comment period will be summarized in a public comment report. Recommend changes to the draft materials to respond to all substantive comments received during the comment period will be summarized in a public comment log that will be considered by MPAC, JPACT and the Metro Council during the adoption process.

JPACT and MPAC will make recommendations to the Metro Council in October 2018. The Metro Council is scheduled to hold legislative hearings on Nov. 8 and Dec. 6. The Metro Council will consider adoption of the final plan, project priorities and strategies for safety, transit, freight and emerging technology in December 2018.



Metro

Public comment opportunity on the 2018 RTP

June 29 to Aug. 13, 2018

Your input today will help guide decision-makers as they finalize the policies, strategies and project lists in the Regional Transportation Plan before adopting it in late 2018.

The 2018 Regional Transportation Plan provides the opportunity to update the investments we will make in roads, sidewalks, bikeways, transit and freight routes to support communities today and in the future. This update is an opportunity to define how we will create a safe, reliable, healthy and affordable transportation system for the next 25 years.

Your voice is important

The Metro Council and other decision-makers want to hear from you to help them make a recommendation on the 2018 Regional Transportation Plan and supporting policies, strategies and projects by the end of the year.

You are invited to provide feedback on the plan during the **public comment period from June 29 through Aug. 13, 2018.** We want to hear your thoughts on:

- 2018 Regional Transportation Plan
- 2018 Regional Transit Strategy
- 2018 Regional Freight Strategy
- 2018 Regional Safety Strategy
- 2018 Regional Emerging Technology Strategy

SHARE YOUR THOUGHTS June 29 to Aug. 13

Take the survey at:

oregonmetro.gov/rtp

Your input will be shared with regional decision-makers as they work together to finalize the policies, strategies and project lists in the 2018 RTP.

Regional policy committees will make final recommendations to the Metro Council in October. The Metro Council will consider adoption in December.

Learn more about the 2018 RTP at oregonmetro.gov/rtp

WAYS TO COMMENT

June 29 to Aug. 13
Comments will be accepted through Mon., Aug. 13, 2018

Write a letter
Metro Planning
600 NE Grand Ave
Portland, OR 97232

Email comments
transportation@oregonmetro.gov

Attend public hearing
Comment in person before the Metro Council on Aug. 2 at 2 p.m.

Location:

600 NE Grand Ave
Portland, OR 97232

Call
503-797-1750
503-797-1804 TDD

Take the survey
oregonmetro.gov/rtp

Follow oregonmetro

Metro

2018 Regional Transportation Plan

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, reliable, healthy and affordable travel options.

During this comment period, the Metro Council will ask for public review and comment on the draft policies in the 2018 RTP, draft strategies for transit, freight, safety and emerging technology, and the projects recommended to address the region's significant and growing transportation needs.

Overview of draft strategies

Transit

As the region continues to grow, it's important that our transportation system provides a variety of travel options to meet the needs of everyone who calls this place home.

The purpose of the Regional Transit Strategy is to provide a coordinated vision and a set of policies to make transit service more convenient, frequent, accessible and affordable for everyone in the greater Portland region.

Freight

The greater Portland region is the trade and transportation gateway for Oregon and provides market access for many southwest Washington businesses.

The purpose of the Regional Freight Strategy is to define a set of policies and strategies aimed at increasing economic prosperity and stewardship of the multimodal freight network throughout the greater Portland region.

Safety

Traffic related deaths and severe injuries are a critical and preventable public health and social equity issue in the greater Portland region.

The purpose of the Regional Safety Strategy is to provide a specifically urban-focused overarching data-driven framework for increasing traffic safety in the greater Portland region. The plan focuses on strategies and actions drawn from best practices and proven to reduce traffic related deaths and serious injuries.

Emerging technology

Technology is already transforming our region's transportation system; the way the region's residents access, experience and use the transportation system has changed dramatically in the past five years.

The purpose of the Emerging Technology Strategy is to provide a framework for the region to harness new developments in transportation technology to ensure it is equitable, accessible and affordable to all people in the greater Portland region.

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.

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

If you have a disability and need accommodations, call 503-220-2781, or call Metro's TDD line at 503-797-1804. If you require a sign language interpreter, call at least 48 hours in advance.

Metro
600 NE Grand Ave.
Portland, OR 97232-2736
503-797-1700
503-797-1804 TDD
503-797-1795 fax

2018 Regional Transportation Plan

safe • reliable • healthy • affordable

For more information, visit
oregonmetro.gov/rtp

What do you think?

Comment on the draft 2018 Regional Transportation Plan June 29 through Aug. 13, 2018.

Submit comments:

- online at oregonmetro.gov/rtp
- by mail to Metro Planning
  600 NE Grand Ave.
  Portland, OR 97232
- by email to transportation@oregonmetro.gov
- by phone at 503-797-1750 or TDD 503-797-1804.

Explore the interactive project map and other information at oregonmetro.gov/2018projects.

Printed on recycled-content paper

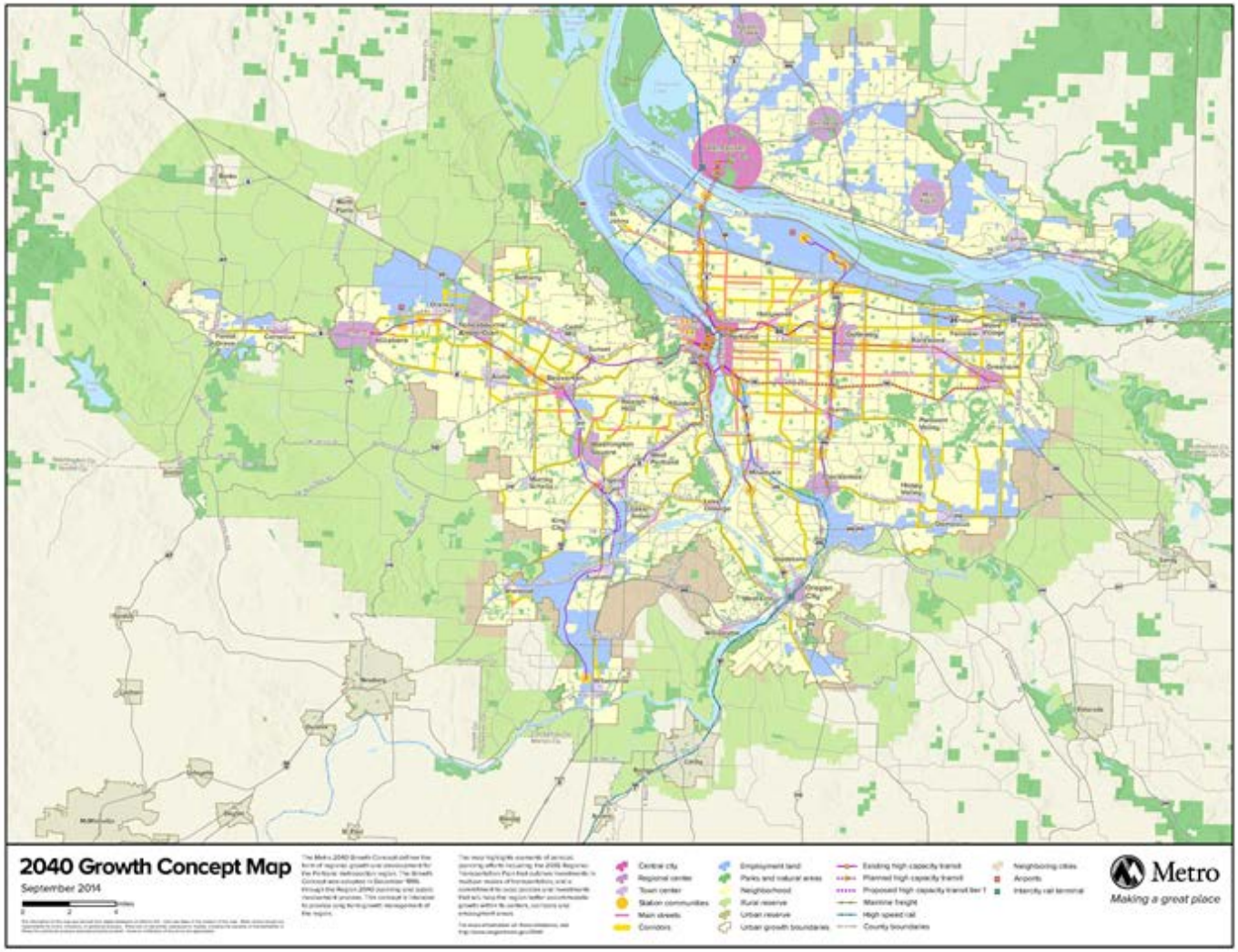
July 11, 2018

2018 Urban Growth Management Decision
MTAC/TPAC Workshop July 11, 2018

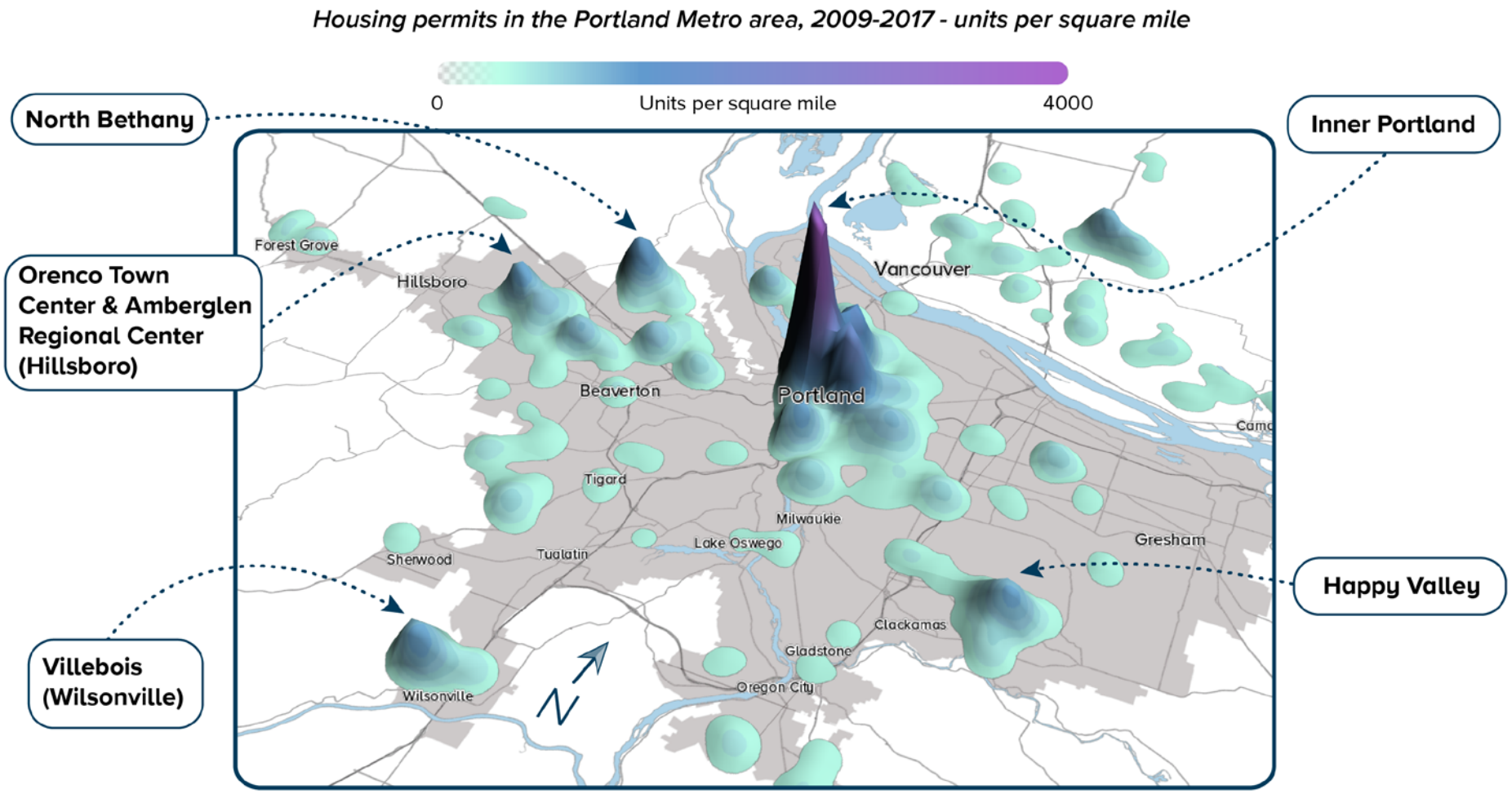
Policy context, draft analysis and next steps

Photo: OR Tour & Travel Alliance

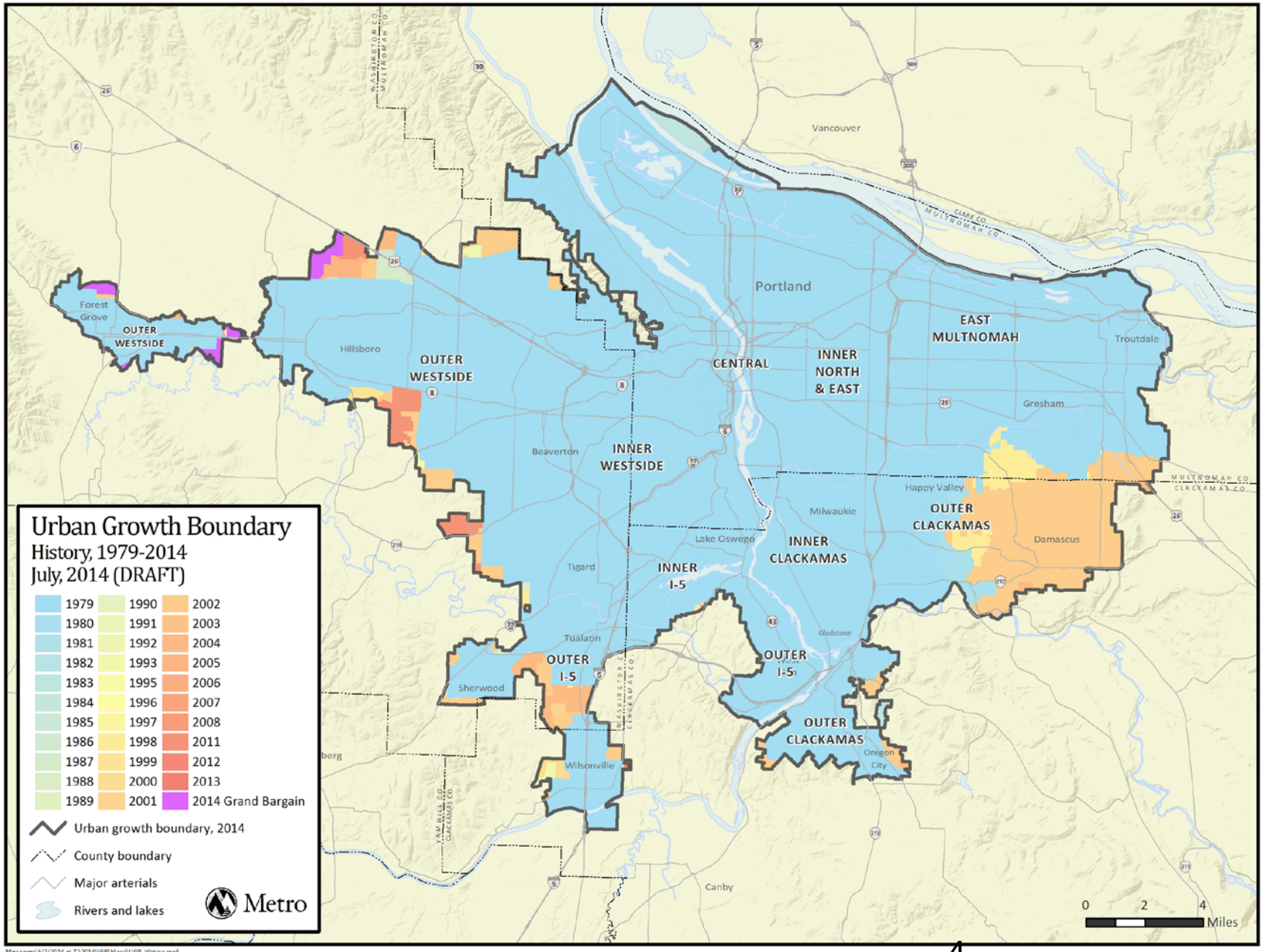
A regional plan for protecting farms and forests and making the most of what we have.



Growth is happening where intended



Source: Construction Monitor data report Q1 2009 - Q2 2017. Created October 2017


Urban Growth Boundary
History, 1979-2014
July, 2014 (DRAFT)
1979
1980
1981
1982
1983
1984
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1986
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1988
1989
1990
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2007
2008
2011
2012
2013
2014 Grand Bargain
Urban growth boundary, 2014
County boundary
Major arterials
Rivers and lakes
Metro
Vancouver
Portland
Forest Grove
Hillsboro
Beaverton
Tigard
Tualatin
Sherwood
Wilsonville
Canby
Lake Oswego
Milwaukie
Happy Valley
Gresham
Troutdale
Damascus
Oregon City
Gladstone
OUTER WESTSIDE
OUTER WESTSIDE
INNER WESTSIDE
CENTRAL
INNER NORTH & EAST
EAST MULTNOMAH
INNER I-5
OUTER I-5
OUTER I-5
INNER CLACKAMAS
OUTER CLACKAMAS
OUTER CLACKAMAS
0
2
4
Miles

Why we changed our approach to managing growth

UGB expansions only produce jobs or housing when governance, infrastructure and market are addressed.

The region has evolved its growth management process

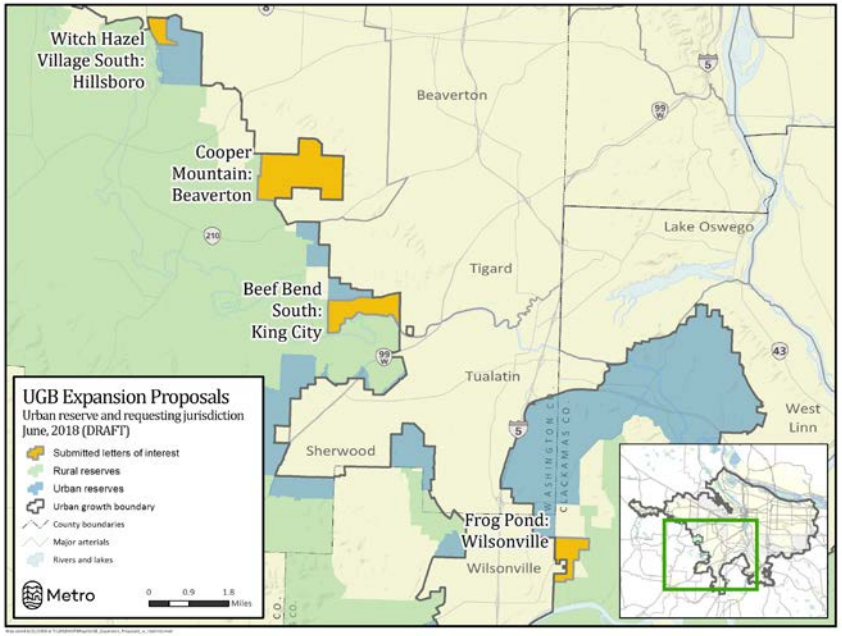
Old system

- Define complex housing needs based on simple math
- Expand UGB based on soil types
- Concept plan areas after adding to UGB

New system

- Agree on where the region may grow over the next 50 years
- Concept plan urban reserve areas before expansion
- Decide whether proposed expansions are needed based on outcomes

Factors that the Council considers when reviewing city proposals



- Development viability
- Focus on existing centers
- Affordability
- Six desired outcomes:
  - Vibrant communities
  - Economic prosperity
  - Safe and reliable transportation
  - Leadership on climate change
  - Clean air and water
  - Equity

Draft 2018 UGR Analytics Overview

Today

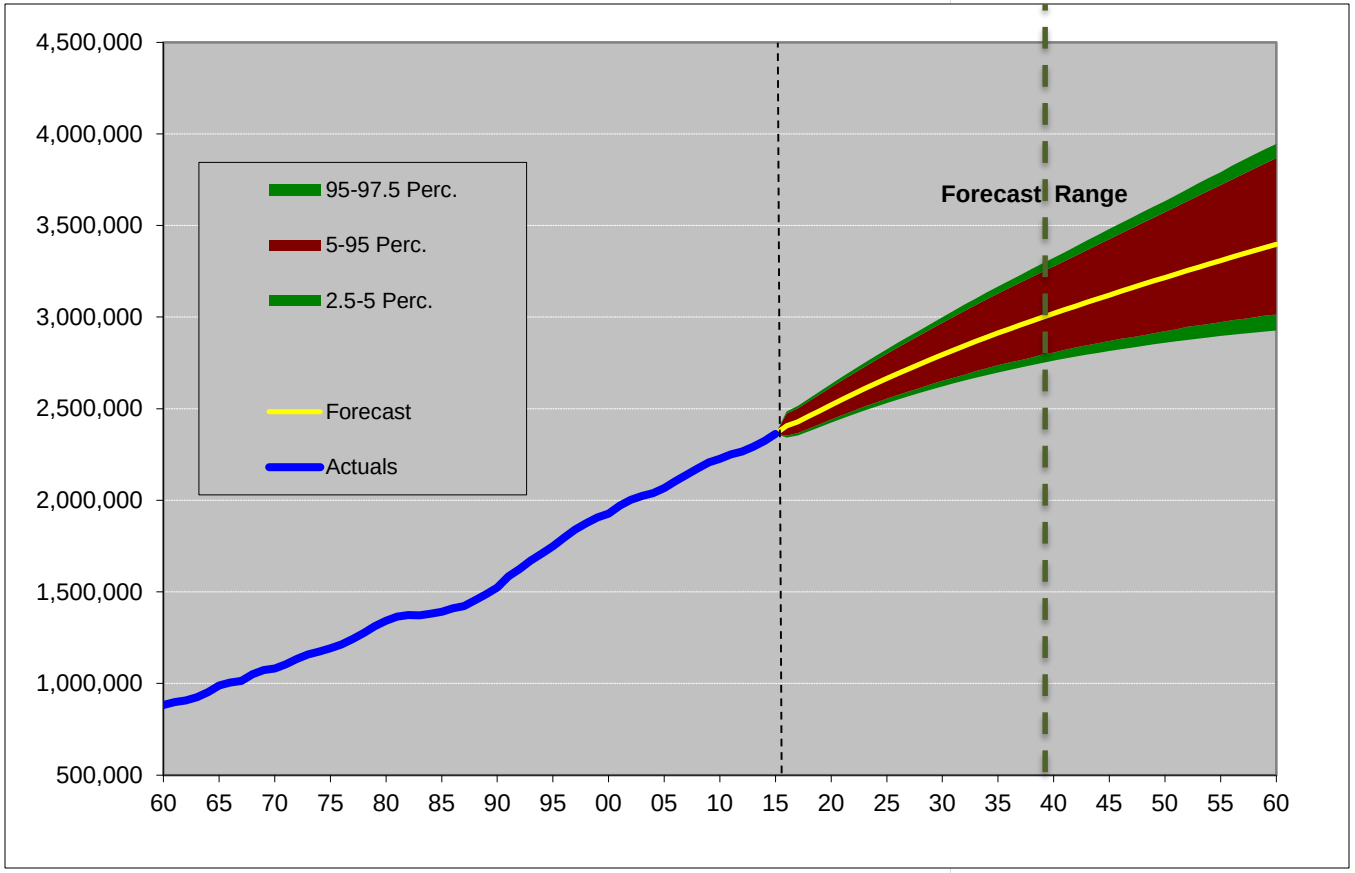
- Historical Highlights
- Draft forecast findings
- Implications of Council's options

More coming later to Council…

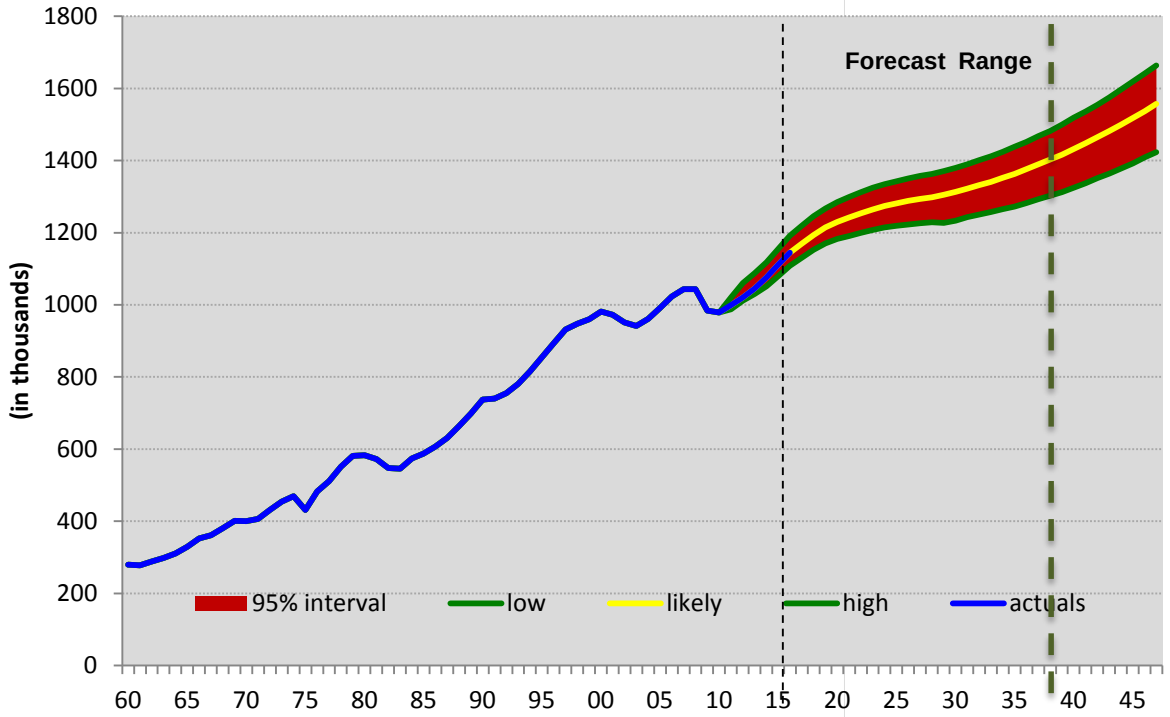
- City expansion proposal review
- Final UGR, discussing "need" if applicable
- COO Recommendation

History First

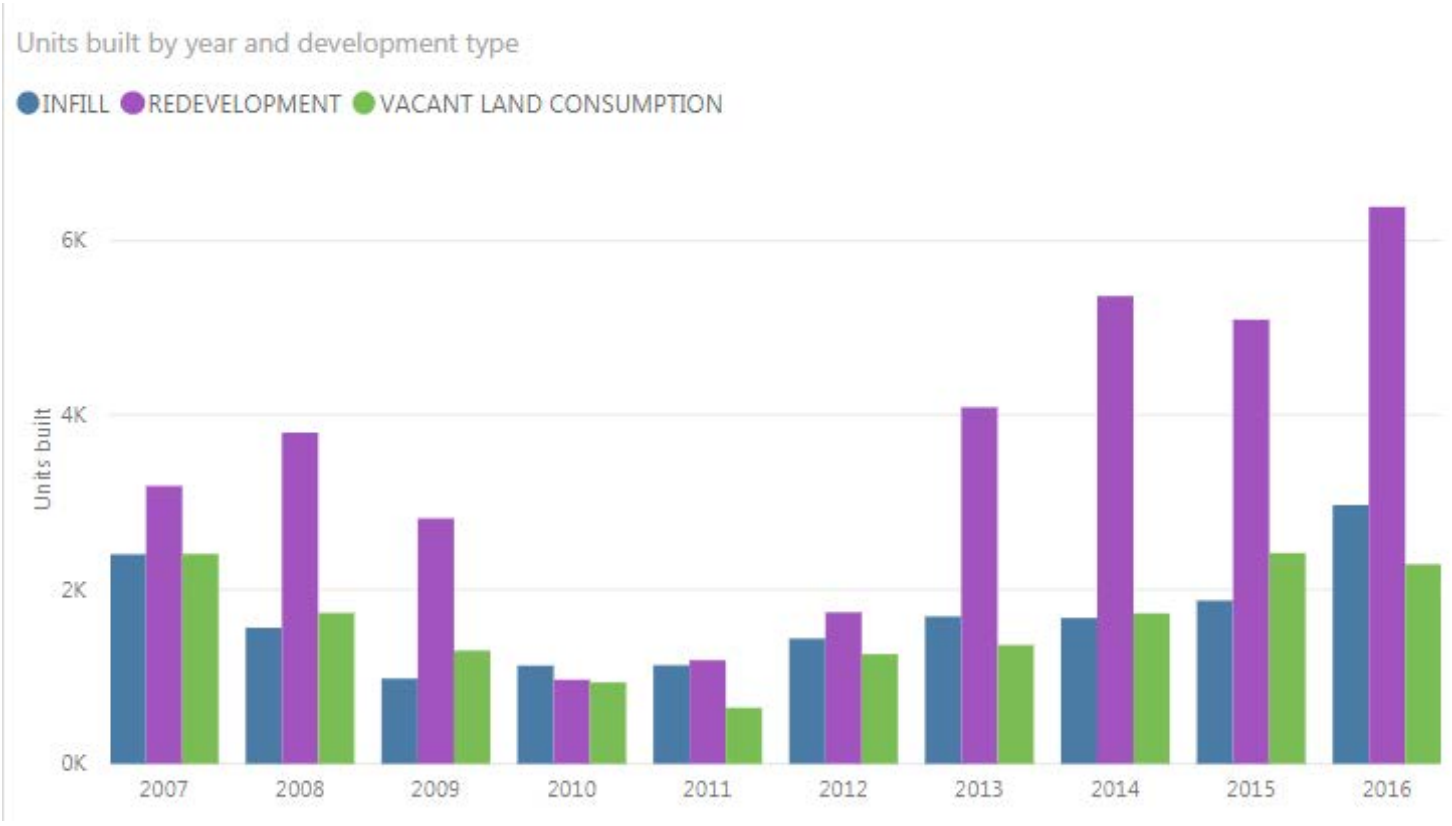
Likely MSA population growth mostly tracks history…



Likely MSA job growth tracks with national job trends



UGB housing production increasingly depends on infill and redevelopment

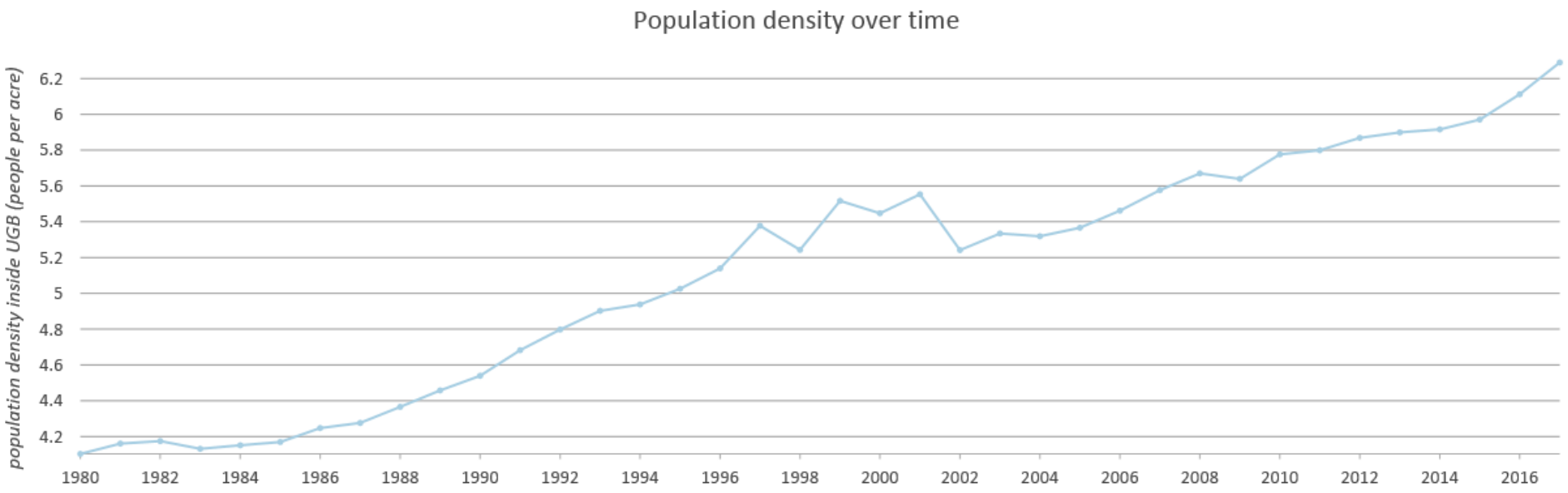


About 67,500 units built 2007 through 2016

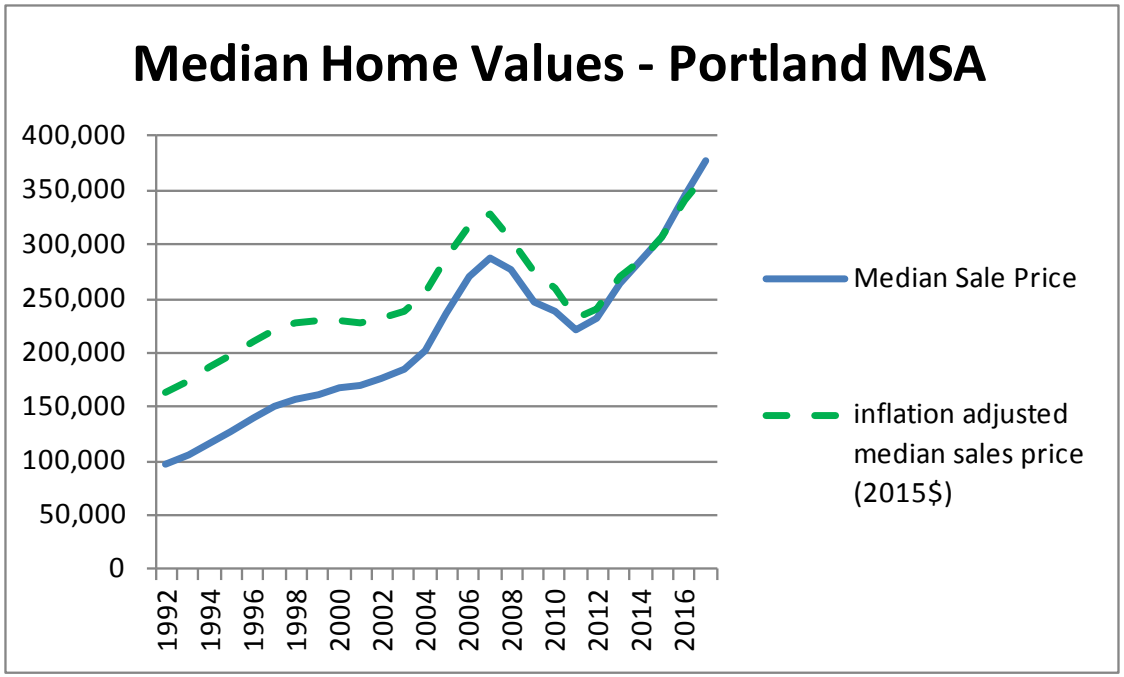
¾ from infill + redevelopment

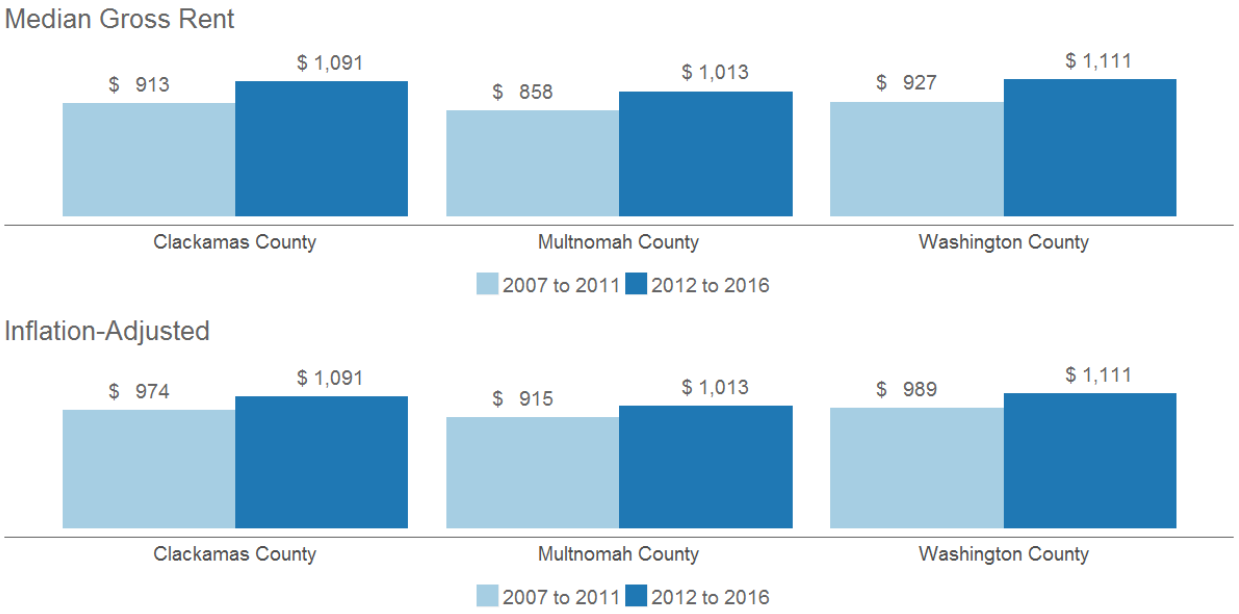
Source: Metro 2017 Land Development Monitoring System

UGB is making more efficient use of land



Sources: Metro Research Center, U.S. Census, ESRI





Housing affordability has become an issue

Sources: RMLS (home values), U.S. Census (rents)

There are some disparities in housing benefits and challenges

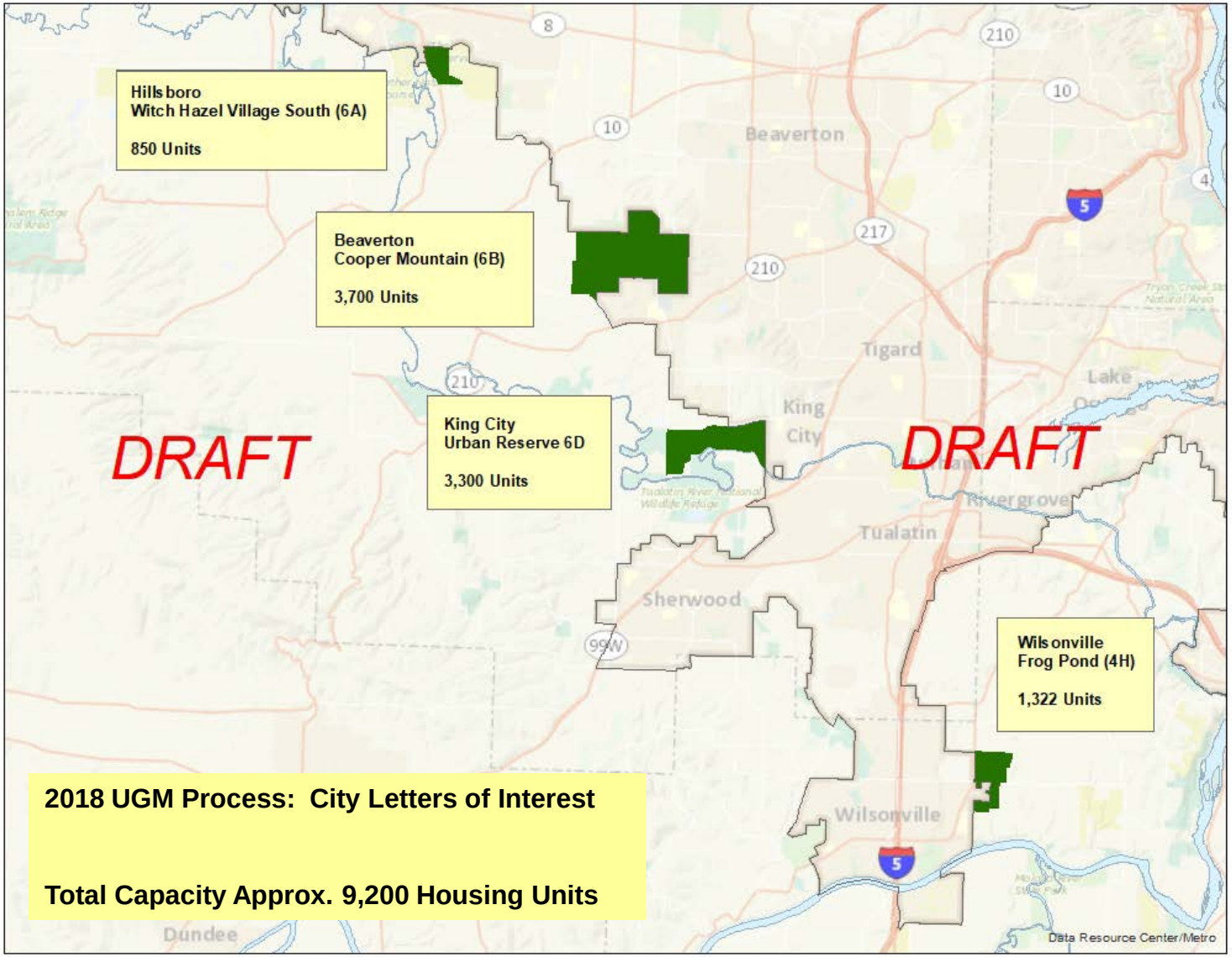
- MPA households of color are 20% of all MPA households but only 15% of those owning homes
- MPA households of color are 28% of all renters but 30% of cost-burdened renters
- MPA households of color are 15% of all homeowners but 18% of cost-burdened owners

Source: Comprehensive Housing Affordability Strategy (CHAS), from U.S. Dept. of Housing and Urban Development (HUD)
See also: : https://www.oregonmetro.gov/news/you-are-here-snapshot-housing-affordability-greater-portland

Future Scenario "Ingredients" Create Options for Council

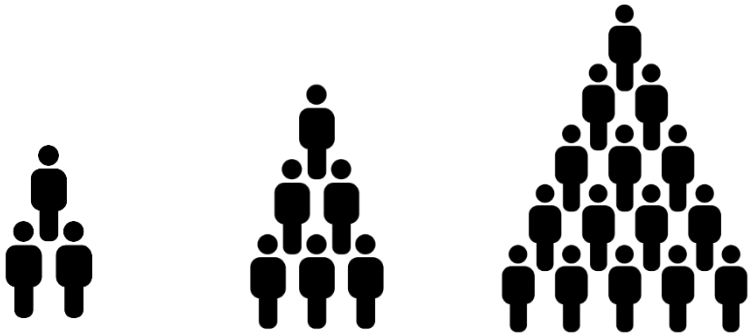
What options has Council for the UGB?

- –No expansion
- –One or more of four city proposals



Type	Units	% of total
SF	6,063	66%
MF	3,106	34%
Total	**9,169**	

Growth options



Low Medium* High

How much growth to plan for?

Metro forecasts that the MSA will add a little less than one Portland's worth of people (about 524,000 people and 209,000 new jobs) in the years 2018 to 2038…

… give or take 150,000 new residents and up to 75,000 jobs

* *Baseline or most statistically likely*

Existing Capacity options

Low* Medium High

Metro's Buildable Lands Inventory forecasts existing capacity for between roughly 228,000 and 363,000 new housing units within current UGB

How much existing housing capacity should we depend on?

* *Most statistically likely option, historically speaking*

Staff examined many indicators to identify four tenable scenarios

14 scenarios tested, many indicators* examined:

- Market demand for SF and MF types;
- Market demand for owned vs. rented tenures;
- Price response in the SF and MF markets;
- …and more.

* *Note that state law specifies many indicators, or at least topics*

Forecast Findings Disclaimers

- Forecast statistics built on observed past behavior*
- Do not account for outside-7-county locations
- Do not explicitly consider race/ethnicity
- Best used for *comparison* (not absolute numbers) of long-term options

**…but* DO *account for demographic shifts (e.g. HH size, income) and market factors (e.g. supply)*

Forecast Findings

General findings from forecasting across all scenarios

The region likely needs more housing than historic markets produce, especially for lower-income segments

Options for increasing production:

- assume more redevelopment than historic trends
- add one to four city-proposed expansions

If region grows at high end of range it likely will need even *more* housing production than tested to date

General findings, continued

- Affordability will likely remain challenging
- If region (and neighbors) produce housing as tested we will likely sustain or increase our region's historic share of 7-county growth

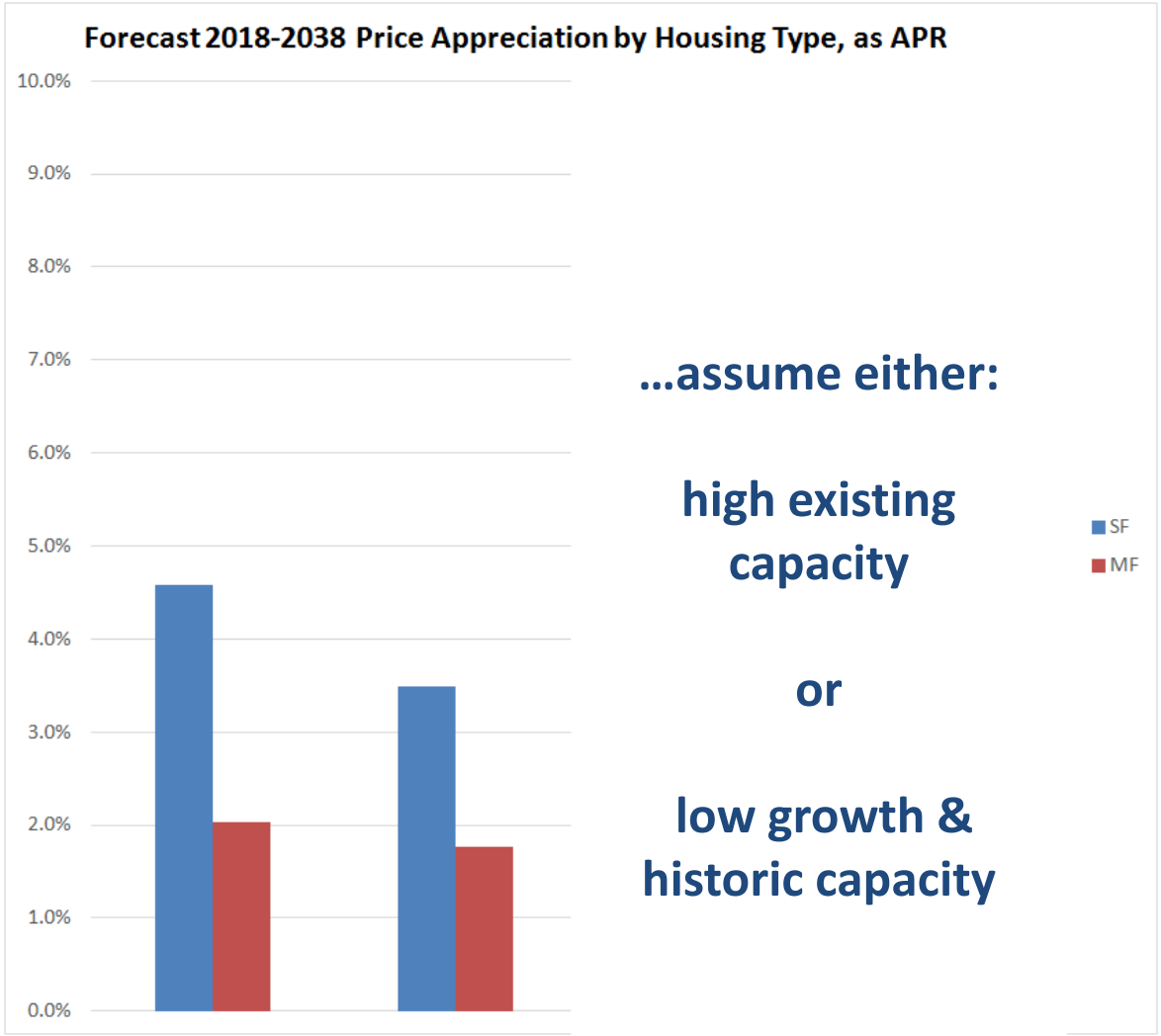
The mix matters: SF/MF and Own/Rent balances have an effect

- Households will substitute MF for SF…to a certain extent
- More MF supply lowers MF price appreciation…and mitigates SF price increases somewhat too
- More SF supply helps lowers SF price appreciation…and mitigates MF price increases somewhat too
- More SF/owned increases ownership rate

Housing produced within city-proposed expansions marginally affects regional indicators

- Increase ownership somewhat
- Lower single-family price appreciation somewhat
- Lower multi-family price appreciation slightly

No-Expansion tenable scenarios…



…assume either:

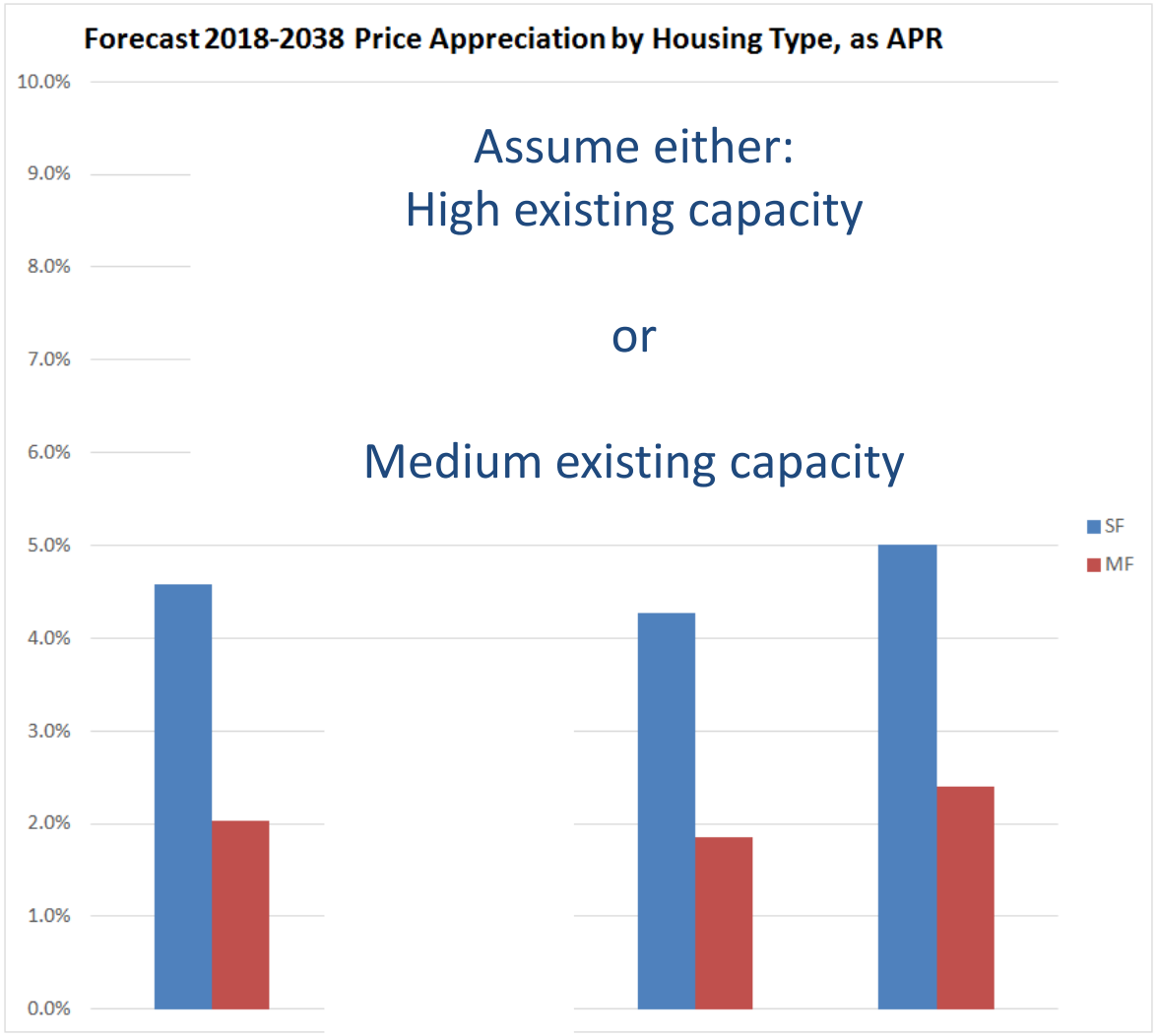
high existing capacity

or

low growth & historic capacity

Growth:	Medium	Low
Capacity:	High	Low
Expand:	None	None

City-proposed expansion tenable scenarios…

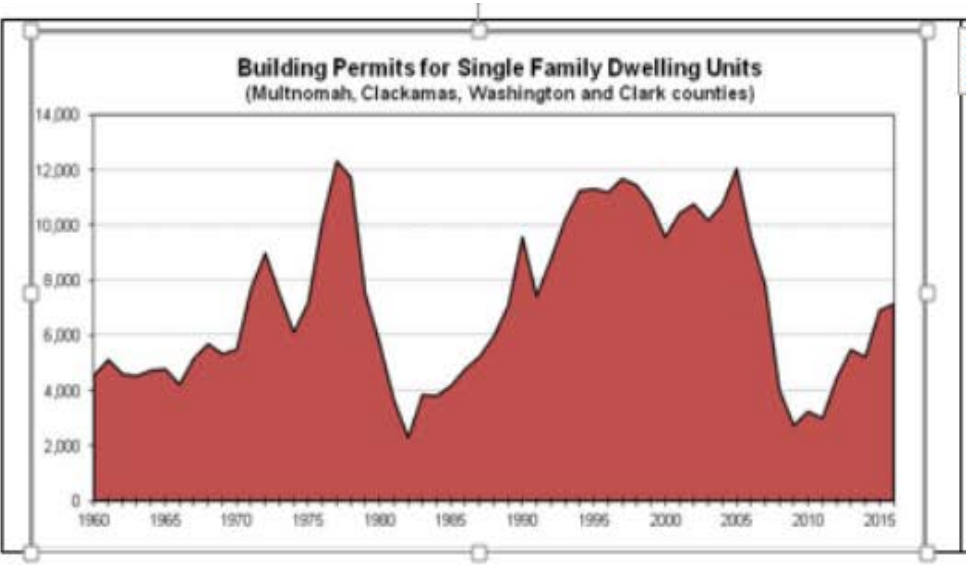


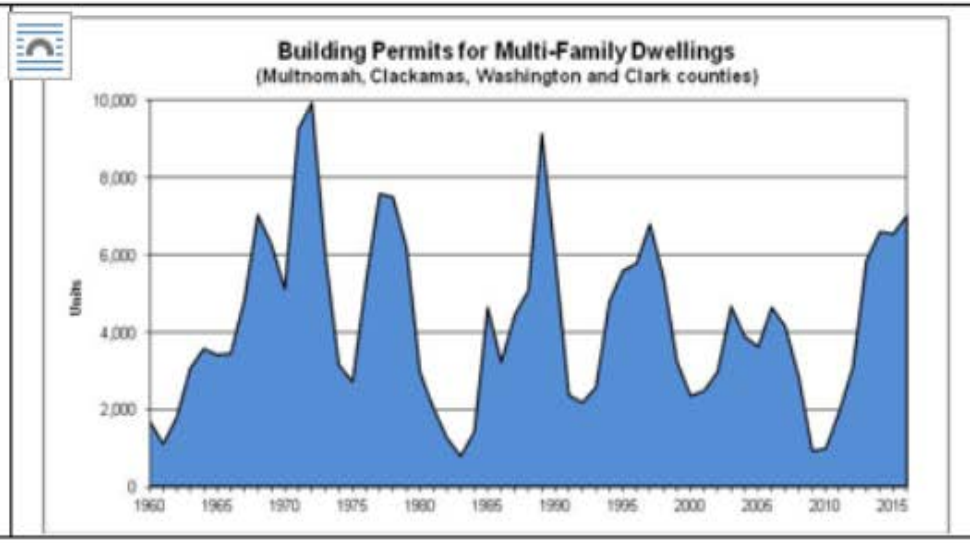
Growth:	Medium
Capacity:	High
Expand:	None

Medium	Medium
High	Medium
All City	All City

A few implications to be aware of

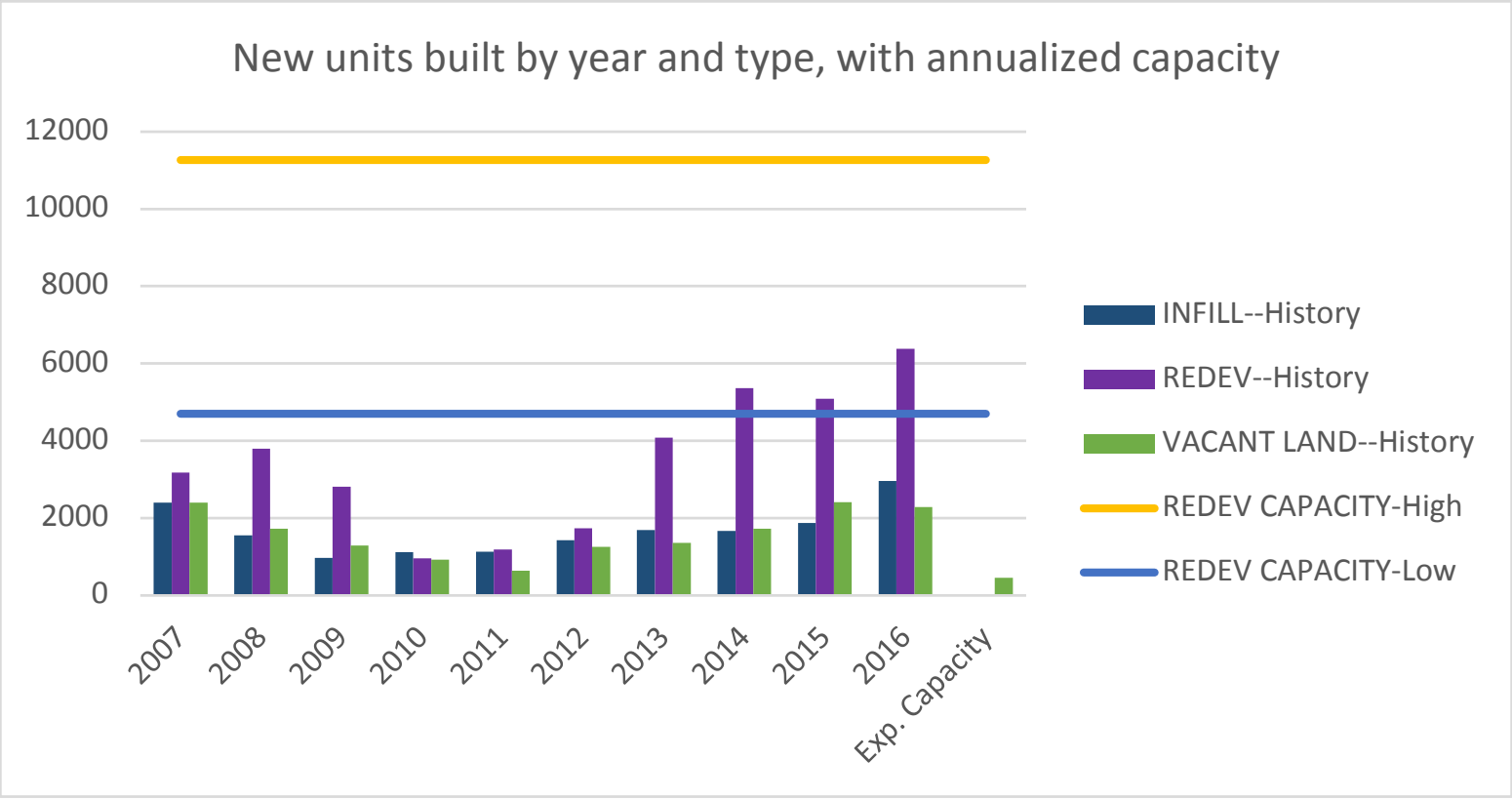
MF construction has historically been more volatile than SF





Source: U.S. Census (Permits include Clackamas, Multnomah, Washington and Clark)

Existing Capacity Choice Depends on your Economic Prognostication



- Low option based on 2007-2015 history
- High option needs 2016 performance-plus to continue on

Source: Metro 2017 Land Development Monitoring System

Next analytic steps

- Additional details (e.g. indicators by income group)
- Determining “need” for expansions consistent with new Metro process and state law

Questions?

Handout Slides Follow

Forecasts born out by recent activity

By **Elliot Njus**, enjus@oregonian.com
The Oregonian/OregonLive

Portland-area home prices pushed further into record territory in February, but their growth slowed to the lowest level in more than two years.

Home prices jumped 6.7 percent in February compared with a year earlier, according to the S&P CoreLogic Case-Shiller home price index, the smallest annual jump since October 2014. The Portland metro saw prices climb 0.4 percent during the month.

zumper Search for apartments in...

–Portland, OR one bedroom rent climbed 5.1%, settling at $1,440, and up 3 spots to become the 19th priciest in the nation. Two bedrooms saw a similar trend, growing 5% to $1,670.

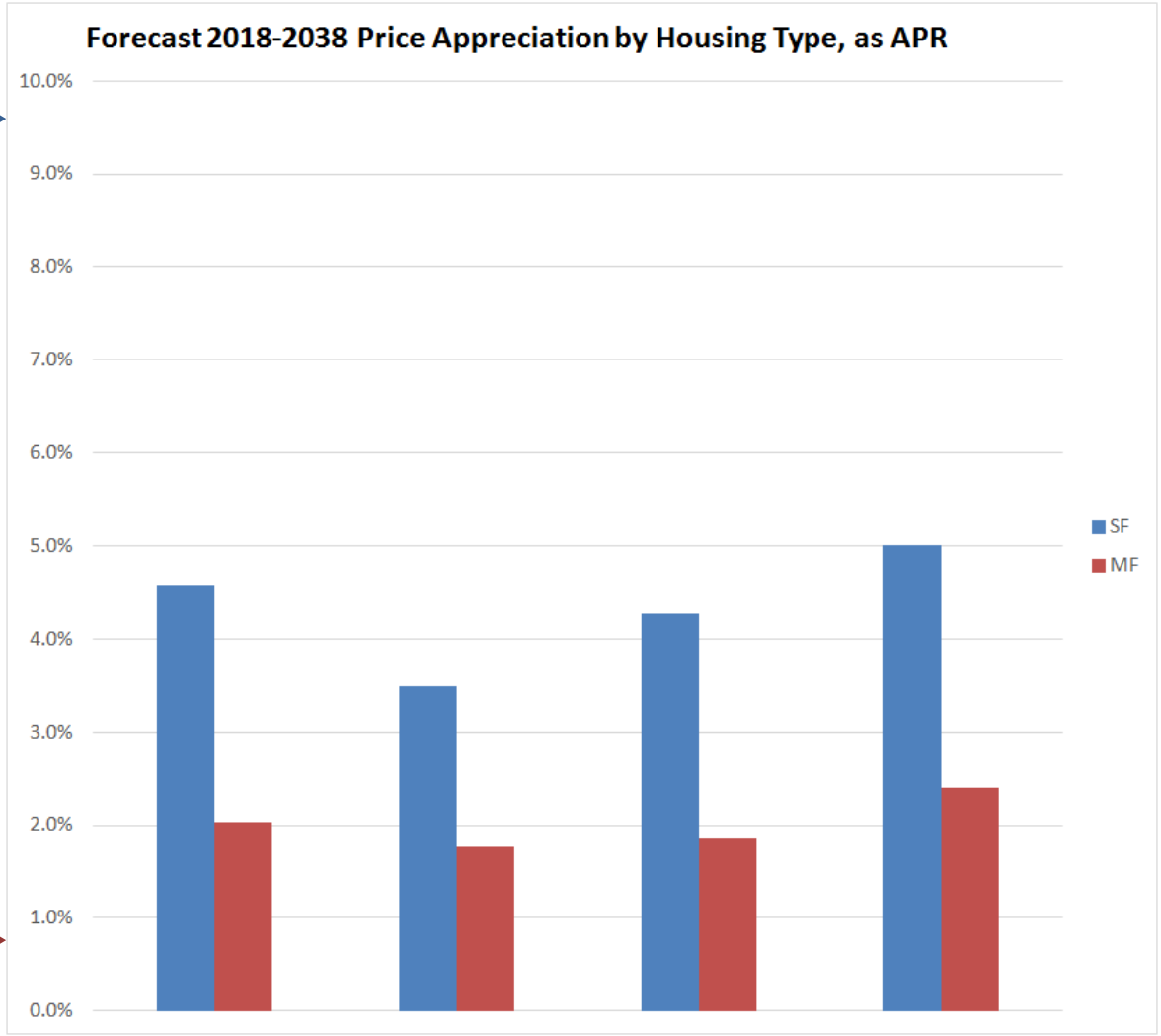
20-Year Price Response of Four Selected UGM Scenarios

2016-2017 SF price APR = 9.6% (RMLS)

2016-2017 MF rent APR% ~ 5% (Zumper)

1997-2017 SF price APR = 4.7% (RMLS)

1990-2010 MF rent APR% = 0.8%

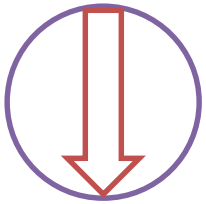


Growth:	Medium	Low	Medium	Medium
Capacity:	High	Low	High	Medium
Expand:	None	None	All City	All City

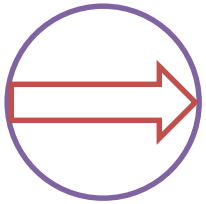
Historic Redevelopment: Four Significant Factors

- All variables highly statistically significant
- Factors affect redevelopment in same *direction* regionwide but vary in *scale* inside vs. outside Portland
  - Higher taxlot value→ *less* likely
  - Higher-value neighborhood → *less* likely
  - Larger lot → *more* likely
  - Closer to city center → more likely (Portland only)

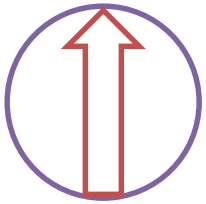
Three growth options tested



Low =222,700 new 7-county HH by 2038



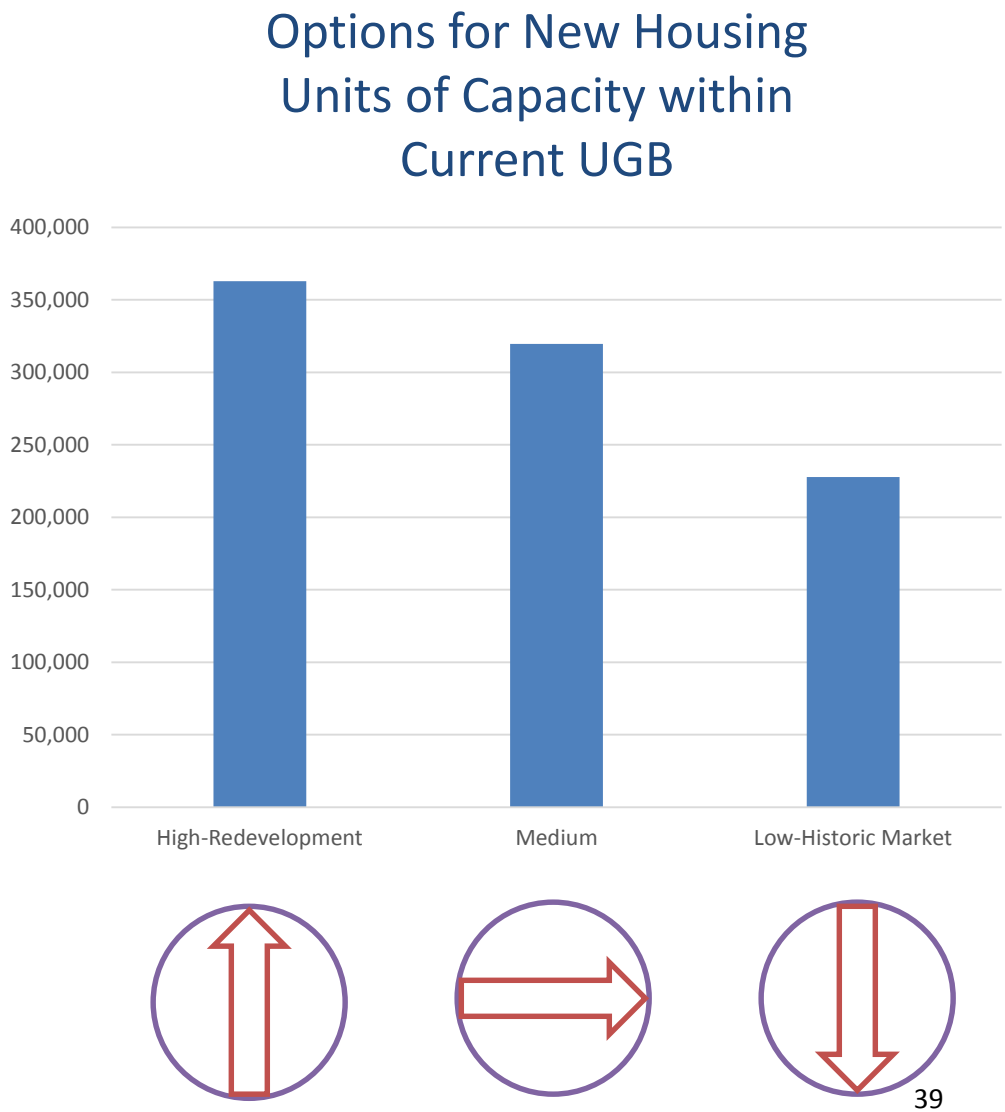
Likely =319,500 new 7-county HH by 2038



High = 362,800 new 7-county HH by 2038

Source: Metro 2017 Regional Economic Forecast

Three existing capacity options tested

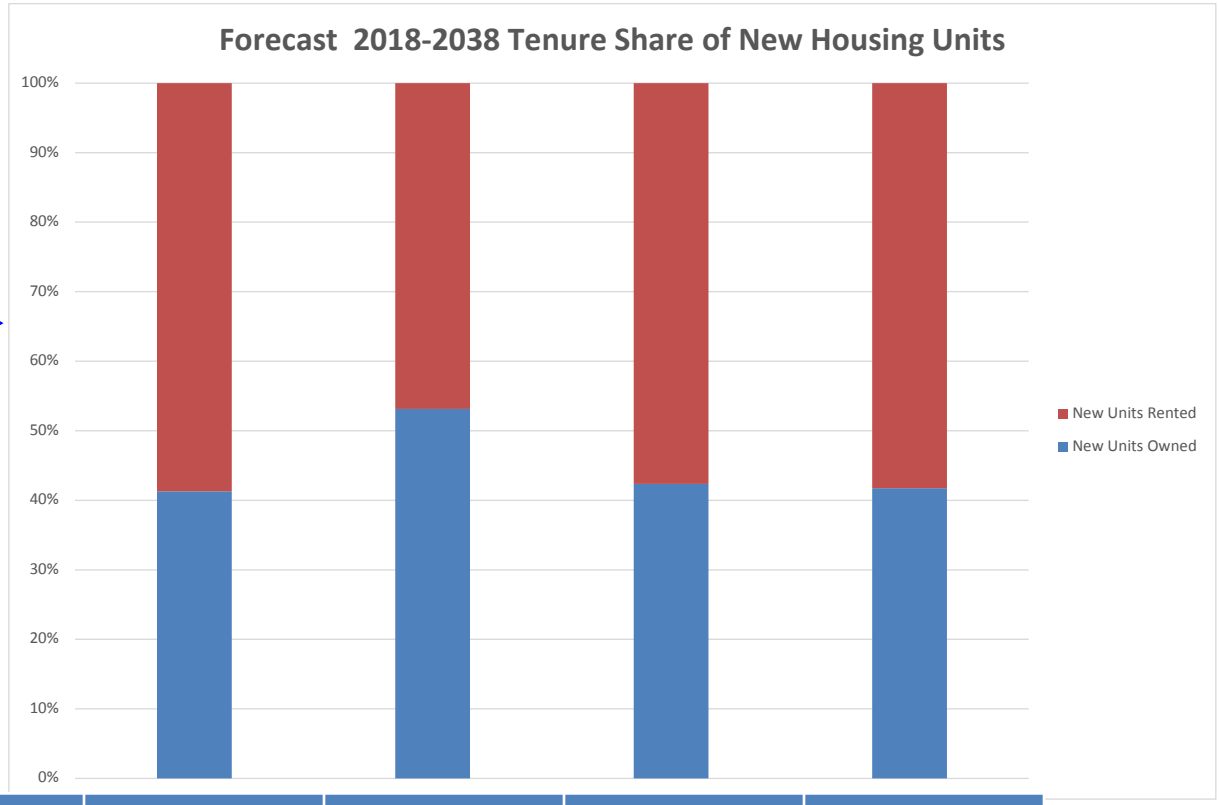


It is Council's choice whether to depend upon historic market performance or higher-performing redevelopment

Source: Metro 2018 Preliminary UGM Forecasting

DRAFT Forecast UGB new HH tenure choice 2018-2038

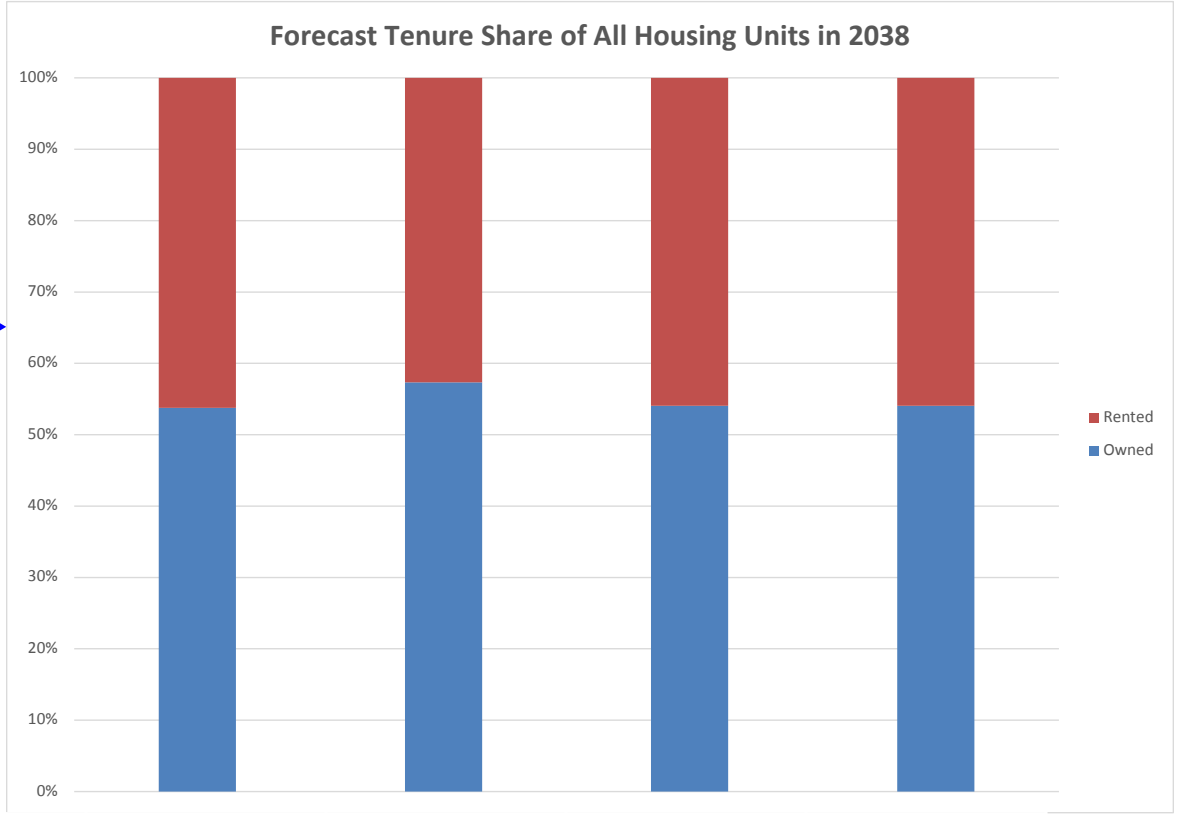
1990-2010 homeownership margin



Growth:	Medium	Low	Medium	Medium
Capacity:	High	Low	High	Medium
Expand:	None	None	All City	All City

DRAFT Forecast UGB Tenure Share in 2038

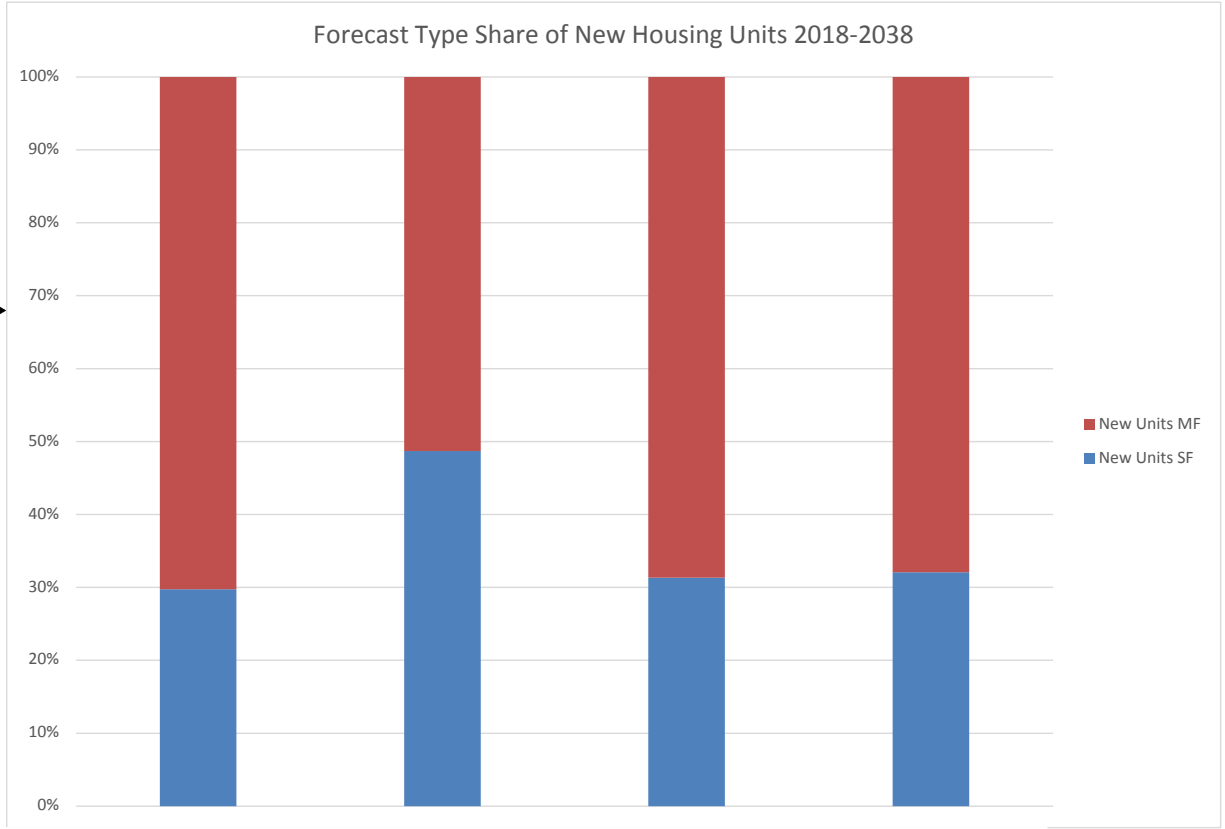
1990-2010
SF marginal



Growth:	Medium	Low	Medium	Medium
Capacity:	High	Low	High	Medium
Expand:	None	None	All City	All City

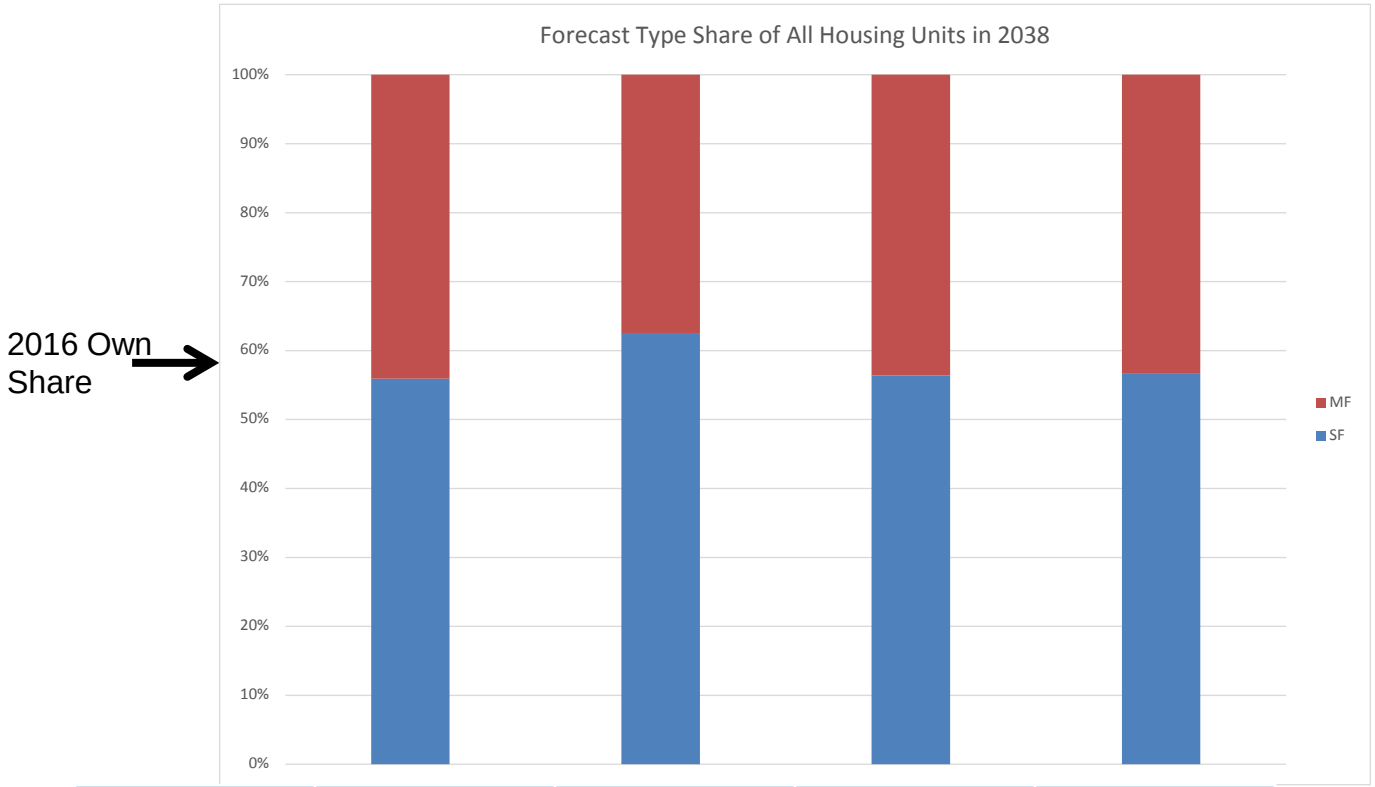
DRAFT Forecast 2018-2038 New HH type mix

2016 SF Mix →



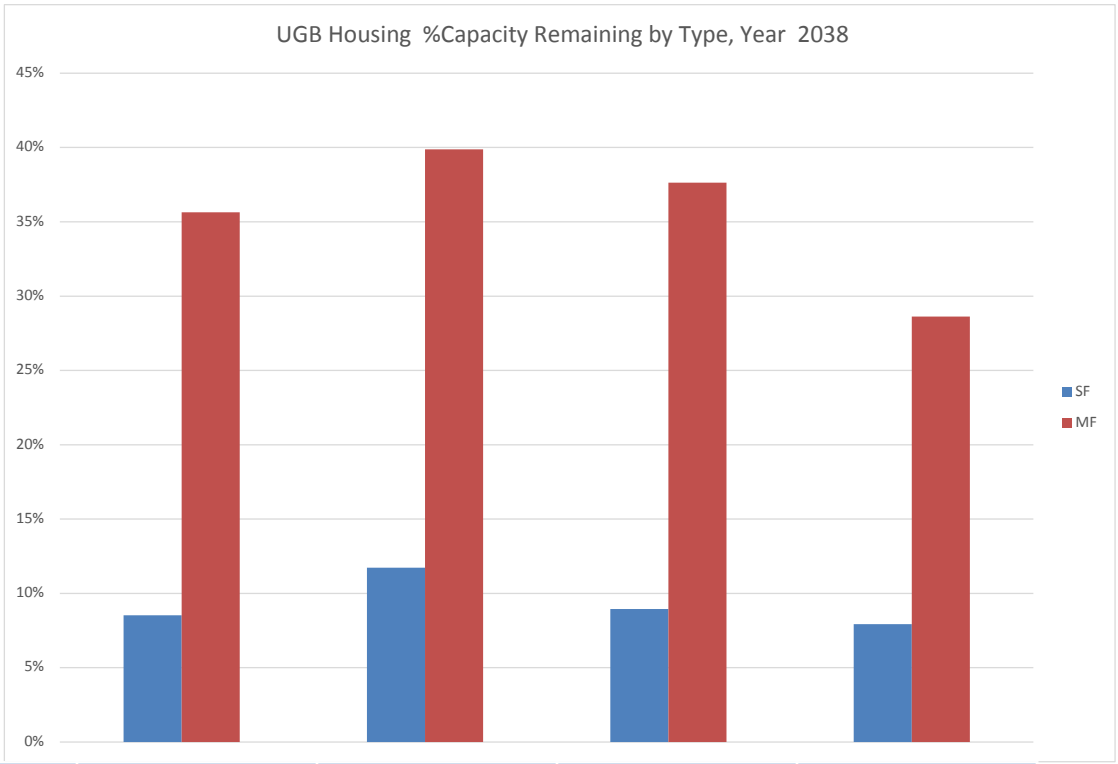
Growth:	Medium	Low	Medium	Medium
Capacity:	High	Low	High	Medium
Expand:	None	None	All City	All City

DRAFT Forecast UGB 2038 HH type mix



Growth:	Medium	Low	Medium	Medium
Capacity:	High	Low	High	Medium
Expand:	None	None	All City	All City

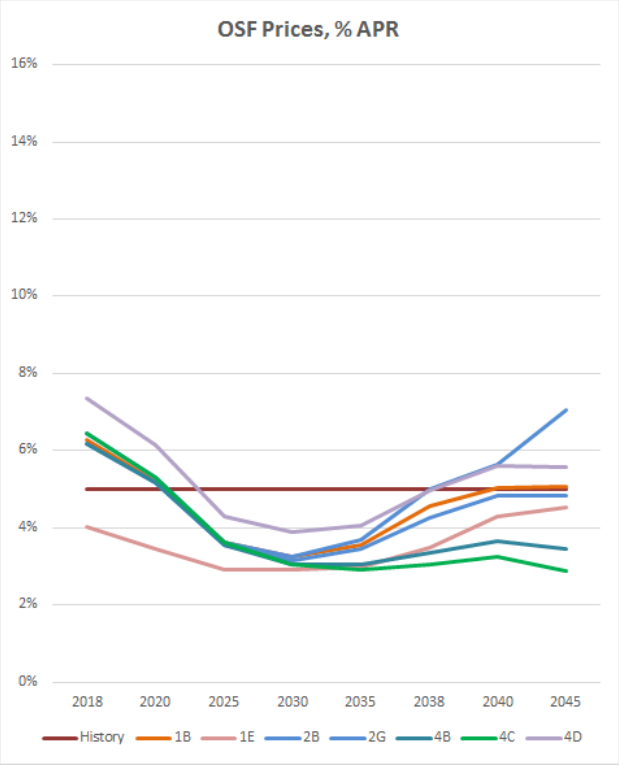
DRAFT UGB capacity remaining (%)

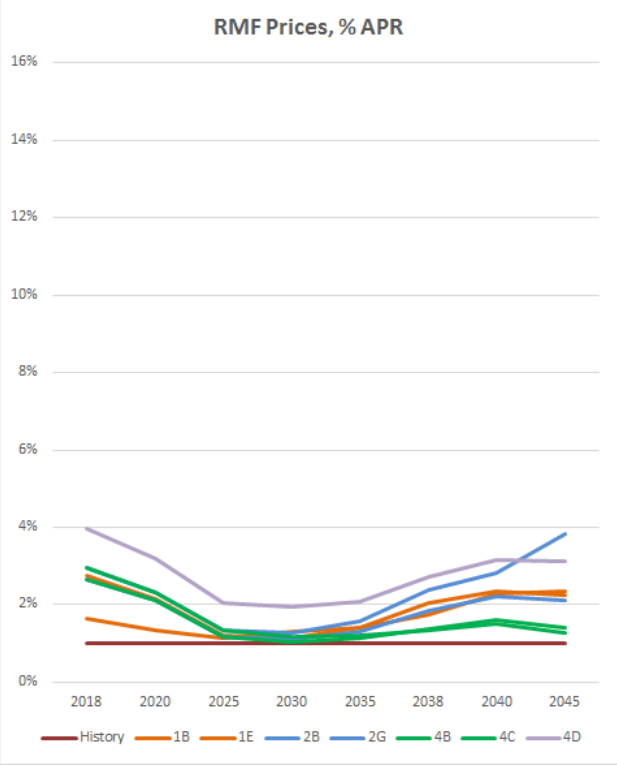


Growth:	Medium	Low	Medium	Medium
Capacity:	High	Low	High	Medium
Expand:	None	None	All City	All City

How did staff filter scenarios?

Looking for indicators in the range of historical performance

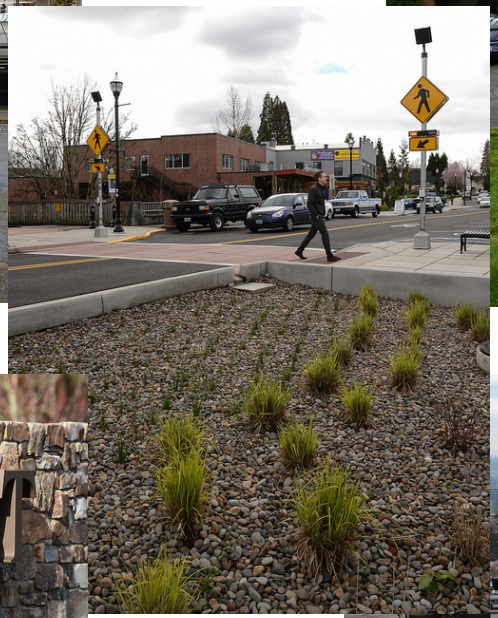




Source: Metro 2018 UGM Preliminary Forecasts

GREAT PLACES
SW Corridor Plan

SW Corridor Equitable Development Strategy



GREAT PLACES SW Corridor Plan

Equitable Development Strategy

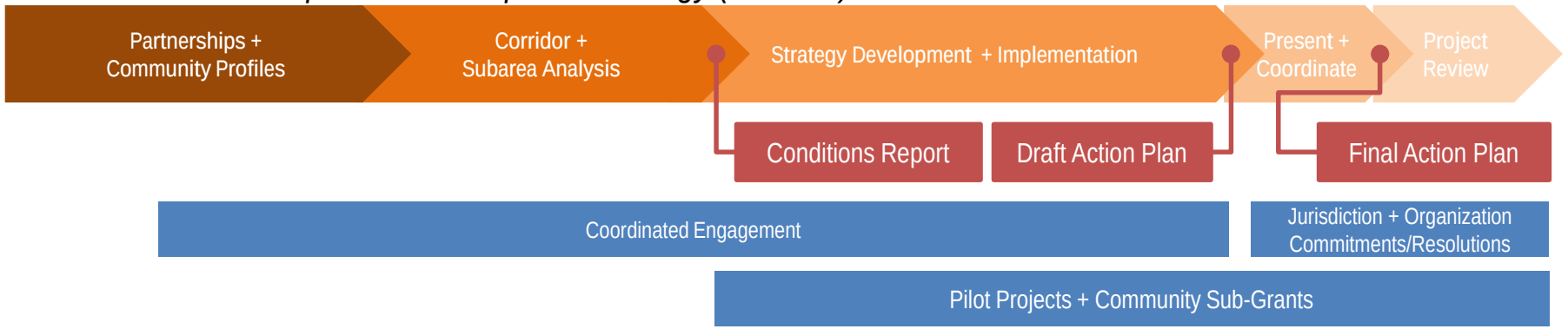
- $895,000 FTA Grant
- 2 year implementation timeline
- Goals:
  - to ensure that the residents of the SW Corridor have access to the opportunities that light rail will bring and concurrently address the impacts associated with this major infrastructure investment

GREAT PLACES SW Corridor Plan

Timeline

SPRING 2017	SUMMER 2017	FALL 2017	WINTER 2017-18	SPRING 2018	SUMMER 2018	FALL 2018	WINTER 2018-19	SPRING 2019	SUMMER 2019

Southwest Corridor Equitable Development Strategy (SWEDS)



GREAT PLACES SW Corridor Plan

Equitable Development Principles

1. Address residential and business displacement
2. Reduce disparities and improve conditions for affected people
3. Preserve and expand affordable housing
4. Advance economic opportunity for all and build community capacity for wealth creation
5. Promote transportation mobility and connectivity
6. Develop healthy and safe communities
7. Expand the breadth and depth of influence among affected people

GREAT PLACES SW Corridor Plan

Snapshot of households earning less than 30% of Area Median Income

Disability
$8,820 per year (17% AMI)

Household: 1 adult
Education: High school graduate
Tenure: Renter
Housing Costs: $350 per month w/ Section 8 voucher
Commute time: 65 minutes by transit

Meets Self Sufficiency Standard: No
At Risk for Displacement: Yes
Affordable Monthly Housing Expense: $220

Small business owners
$22,000 per year (24% AMI)

Household: 3 adults (1 grandparent), 4 children (2 school aged, 1 preschool, 1 infant)
Education: High school graduates
Tenure: Renter
Housing Costs: $1,000 per month
Commute time: 15 minutes by car

Meets Self Sufficiency Standard: No
At Risk for Displacement: Yes
Affordable Monthly Housing Expense: $550

Retail worker
$23,400 per year (29% AMI)

Household: 1 adult, 4 children (3 school age, 1 preschool aged)
Education: High school graduate
Tenure: Renter
Housing Costs: $750 per month
Commute time: 55 minutes by transit

Meets Self Sufficiency Standard: No
At Risk for Displacement: Yes
Affordable Monthly Housing Expense: $585

Transitioning out of homelessness
$12,500 per year (24% AMI)

Household: 1 adult
Education: High school graduate
Tenure: Renter
Housing Costs: $310 per month w/Section 8 voucher
Commute time: 60 minutes by transit

Meets Self Sufficiency Standard: No
At Risk for Displacement: Yes
Affordable Monthly Housing Expense: $310

Edwards family, SW Portland

The Edwards family waiting for the bus along Barbur Boulevard

Manuela (Tigard) & Humberto (Beaverton)

Humberto Rodriguez and Manuela Martinez Espinoza

Johnnie Shepherd, SW Portland

To hear more about the people living, working, or going to school in the SW Corridor:

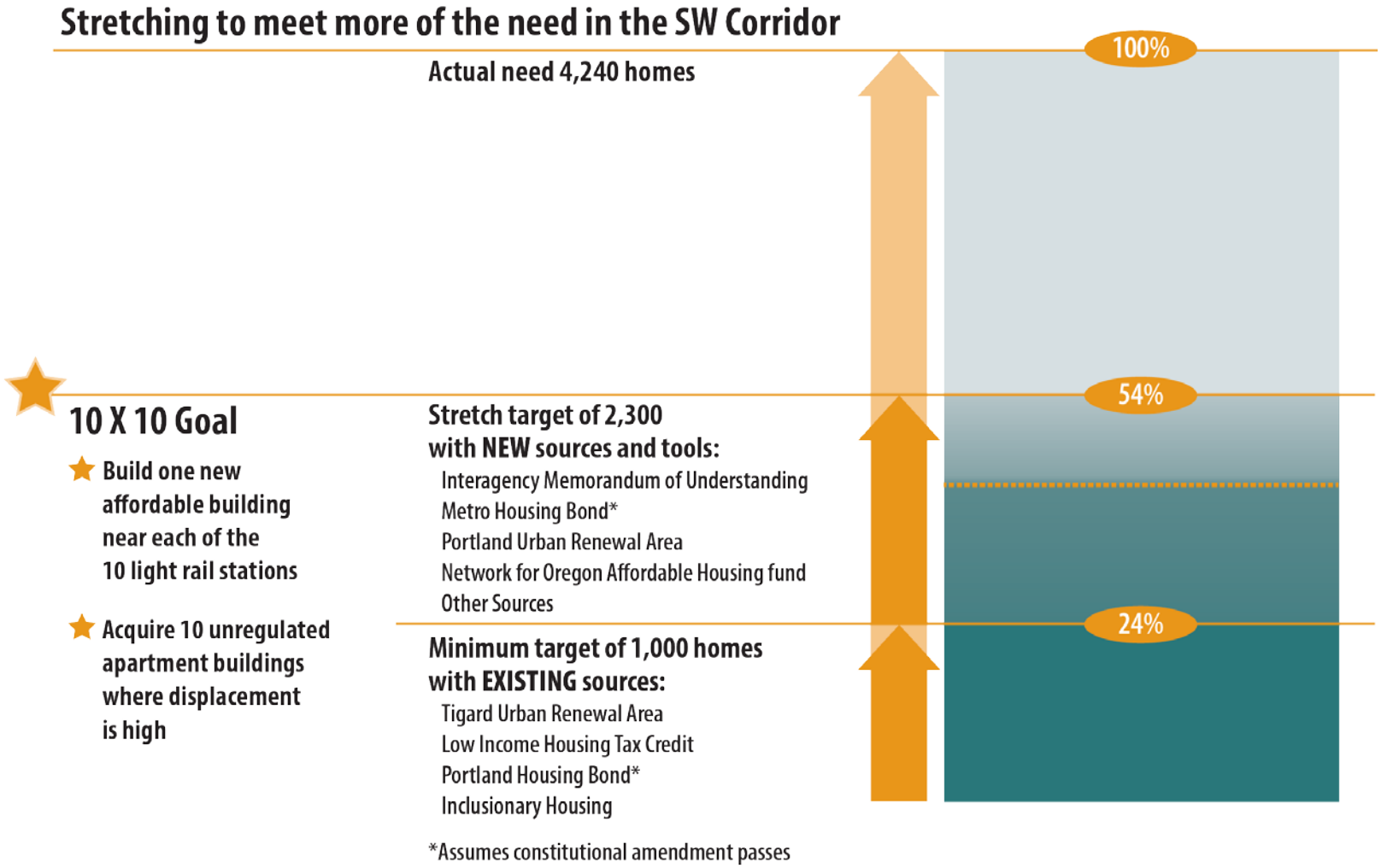
https://www.oregonmetro.gov/news/faces-southwest-corridor-people

SW Corridor Equitable Housing Strategy

Big ideas and bold action will be needed to achieve our housing and transit goals

Anti-displacement services and protections + Acquisition and preservation of existing housing + New housing construction and supportive land use = Housing and transit goals

SW Corridor Targets and Funding Strategies for Affordable Homes



Goals

Strategies

Goal 1

Commit early financial resources to address near-term housing crisis and long-term needs

- **Strategy 1-1: Grow new resources for the long-term**
  - Form a SW Portland Urban Renewal Area
  - Fully Capitalize the Network for Oregon Affordable Housing's Housing Acquisition Fund +
  - Support a Metro regional housing bond +
  - Support region-wide workforce housing real estate investment trust
  - Explore an employer-assisted housing and corridor employer fund +
- **Strategy 1-2: Prioritize existing resources early on**
  - Prioritize competitive resources for the SW Corridor +
  - Promote existing incentives available to all multi-family development +
- **Strategy 1-3: Strengthen partners to steward the strategy**
  - Form a lasting community-centered organizational structure to champion and implement the strategy +

Goal 2

Prevent residential and cultural displacement

- **Strategy 2-1: Preserve existing unregulated affordable rental housing**
  - Acquire and convert up to ten unregulated affordable multi-family apartment buildings into income/rent restricted buildings +
  - Provide tax exemptions for existing unregulated affordable housing +
- **Strategy 2-2: Strengthen tenant protections and provide anti-displacement services**
  - Fund an anti-displacement services package +
  - Strengthen tenant protections +

Goal 3

Increase choices for new homes for all household types and incomes

- **Strategy 3-1: Secure and develop opportunity sites for new construction of equitable transit-oriented development (TOD)**
  - Develop TOD-scale (100+ homes) affordable multi-family buildings in each of the ten station areas in Portland and Tigard +
  - Execute an interagency Equitable TOD Memorandum of Understanding +
  - Inclusionary zoning receiving site(s) agreement
  - Recruit community land trusts to the corridor +
  - Identify opportunities for community benefits agreements +
- **Strategy 3-2: Regulate land use and zoning to create affordable and market rate housing**
  - Incentivize equitable TOD through zoning +
  - Incentivize equitable TOD through development agreements +
  - Adopt middle housing tools and policies that work for low-income households +

GREAT PLACES SW Corridor Plan

Pilot Projects

- Early implementation opportunity
- Focus on allowing community to define the projects
- Test case for what works as we develop the final equitable development strategy
- $275,000 budget
- 11 applications for $770,000
- 6 projects recommended for awards by Selection Committee

Business & Workforce Awards

- Mercy Corps NW
  - Getting minority and women-owned businesses ready to weather the impact of Light Rail construction
- IRCO & OHSU
  - Providing immigrants, people of color, and other marginalized communities access to career advancement opportunities in healthcare

GREAT PLACES SW Corridor Plan

Equity & Housing Awards

- Community Partners for Affordable Housing
  - Engaging historically marginalized communities in the design of existing and future affordable housing developments
- Home Forward
  - Helping the Muslim community in SW Corridor navigate and influence affordable housing opportunities

Equity & Housing Awards

- Proud Ground
  - Helping targeted communities access affordable homeownership opportunities in the SW Corridor
- Momentum Alliance
  - Enhancing the ability of communities of color to participate and influence the SW Corridor Plan

GREAT PLACES SW Corridor Plan

Learn more at:

swcorridorplan.org

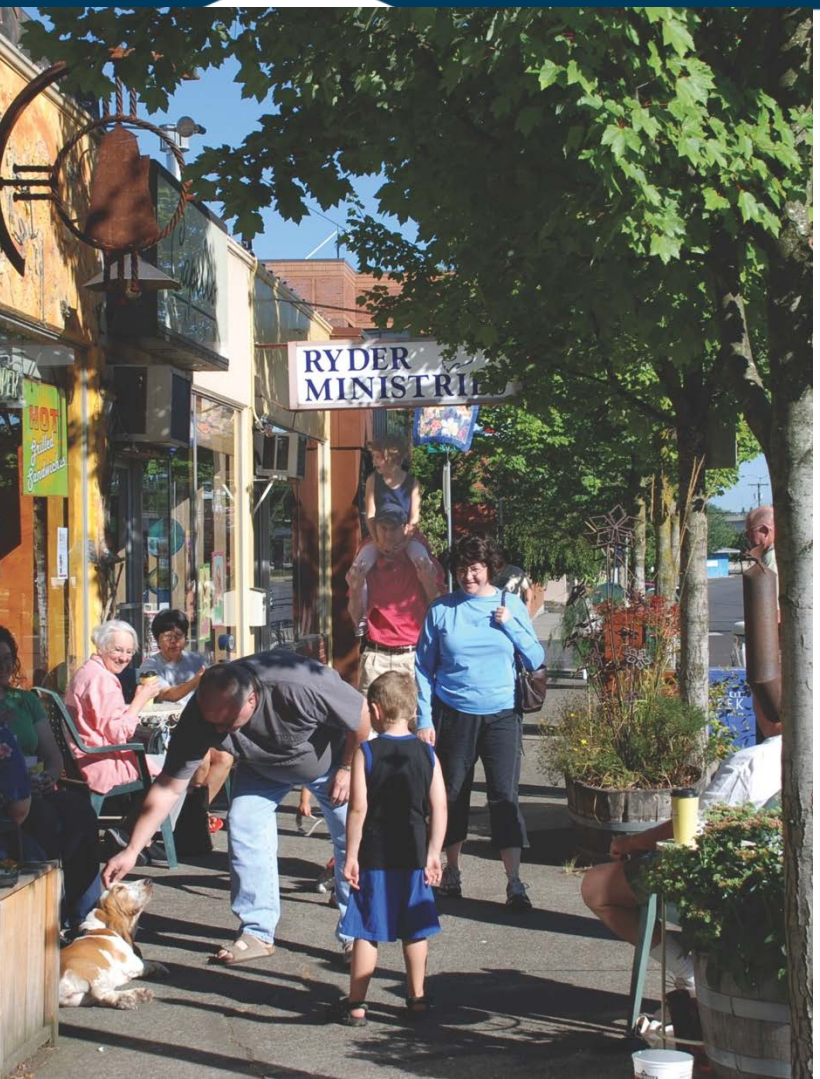
Metro

2018 Regional Transportation Plan

Final Public Comment Period

TPAC and MTAC Workshop | July 11, 2018

Today's purpose



Provide overview of final public comment period on draft RTP and strategies for safety, freight, transit and emerging technology

Report on key outcomes of the draft plan

Regional Transportation Plan

Sets the course for moving the region safely, reliably and affordably for decades to come

Establishes priorities for federal, state and regional funding

Required every 5 years (after this RTP)

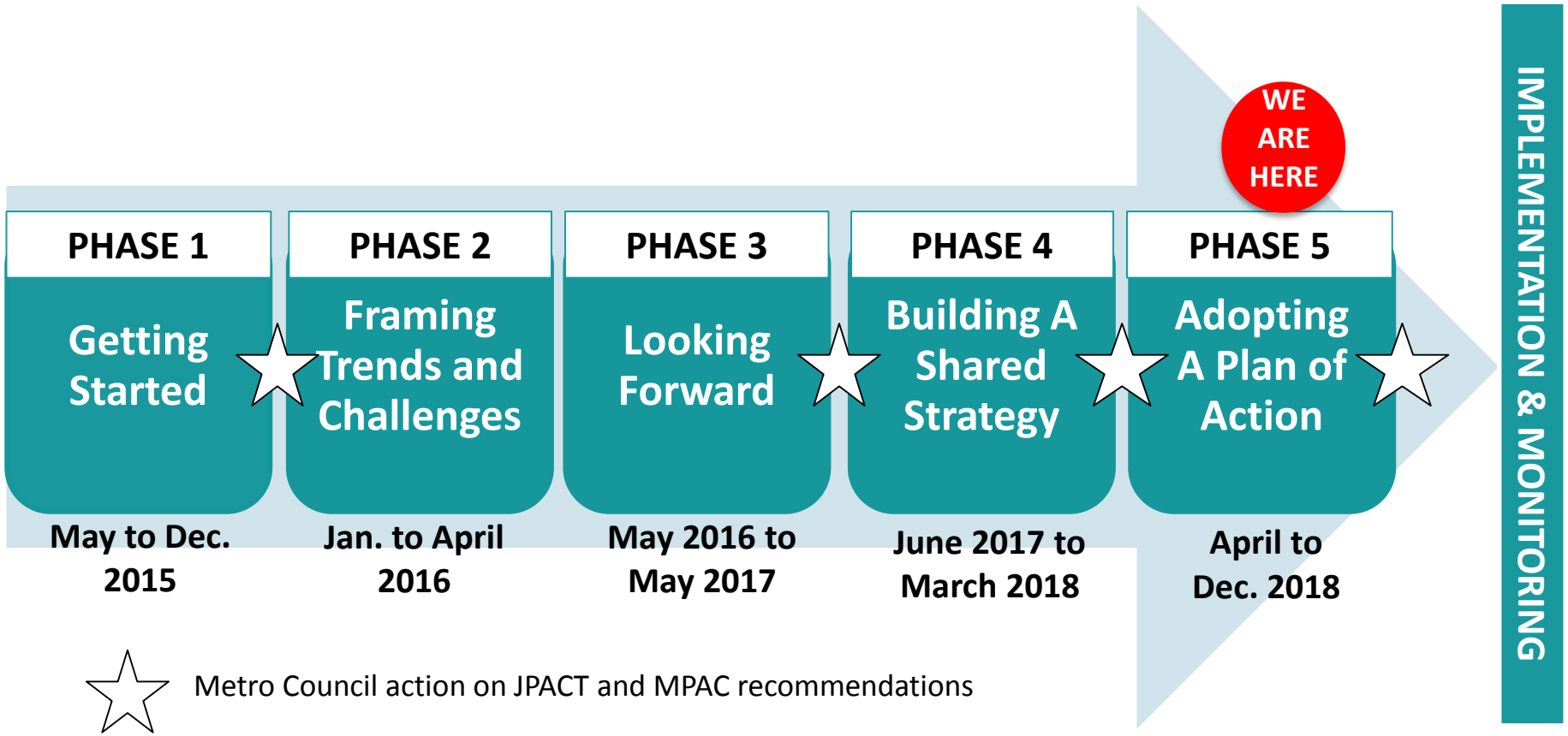
Plan context

Our region is growing and changing

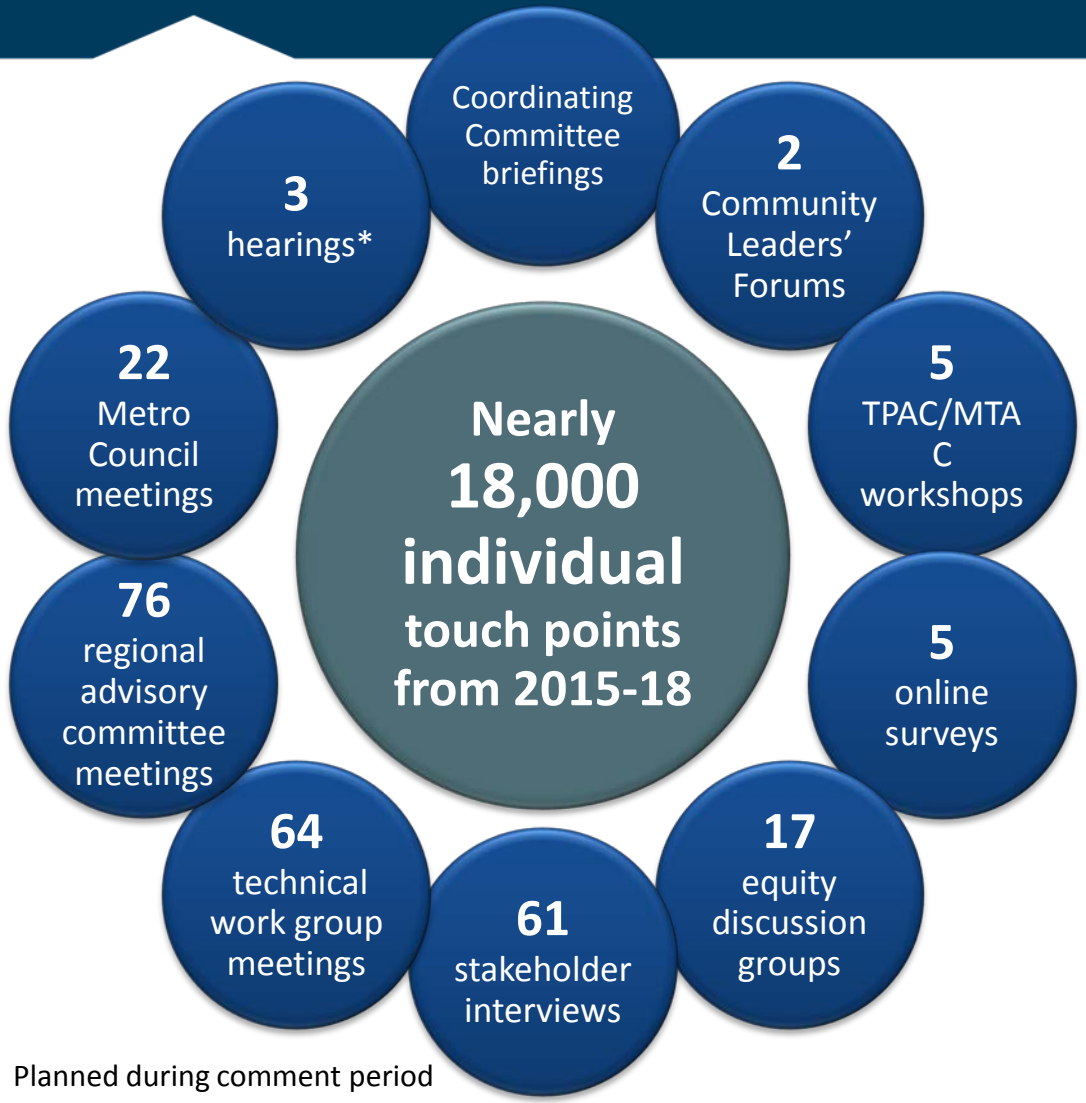
Insufficient transportation funding to meet our needs today and in the future

Project priorities came from adopted local, regional and state plans in support of regional vision, goals and policies

RTP timeline



Meaningful, ongoing engagement



4 Regional Leadership Forums

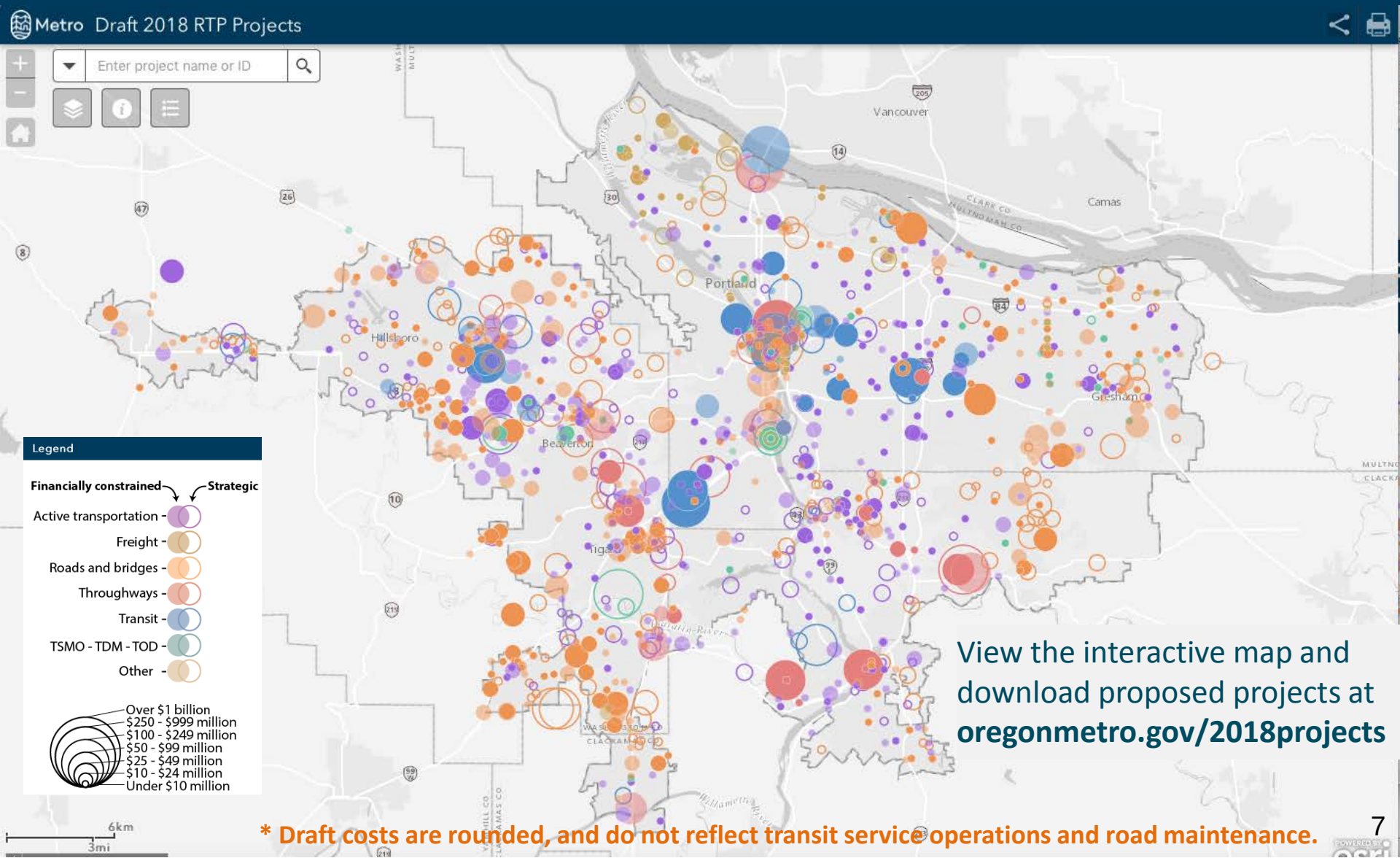
10 Community and business briefings

1 Consultation with tribes and resource agencies*

* Planned during comment period

More than $22 billion planned through 2040

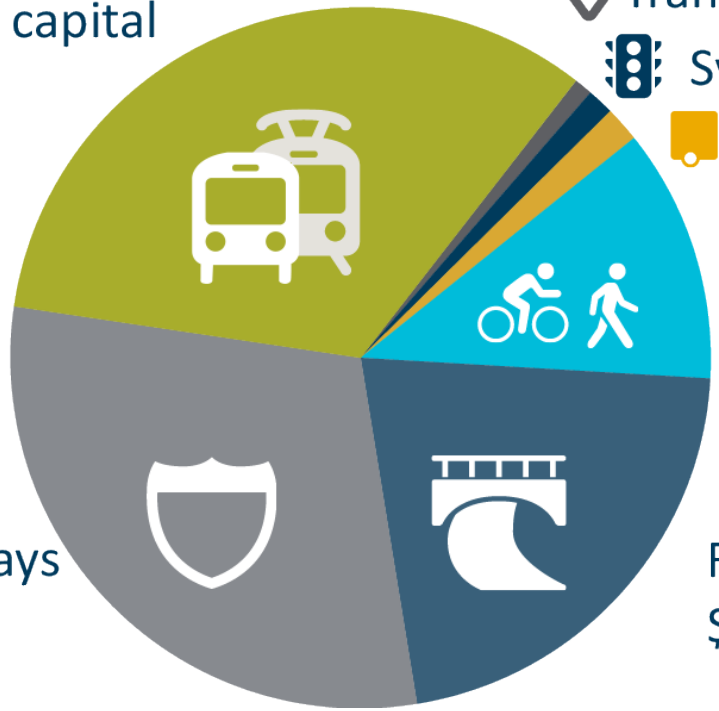
$15.4 billion on Constrained List



* Draft costs are rounded, and do not reflect transit service operations and road maintenance.

Draft RTP Constrained priorities

submitted by cities, counties, ODOT, TriMet, SMART and other jurisdictions from adopted plans and studies



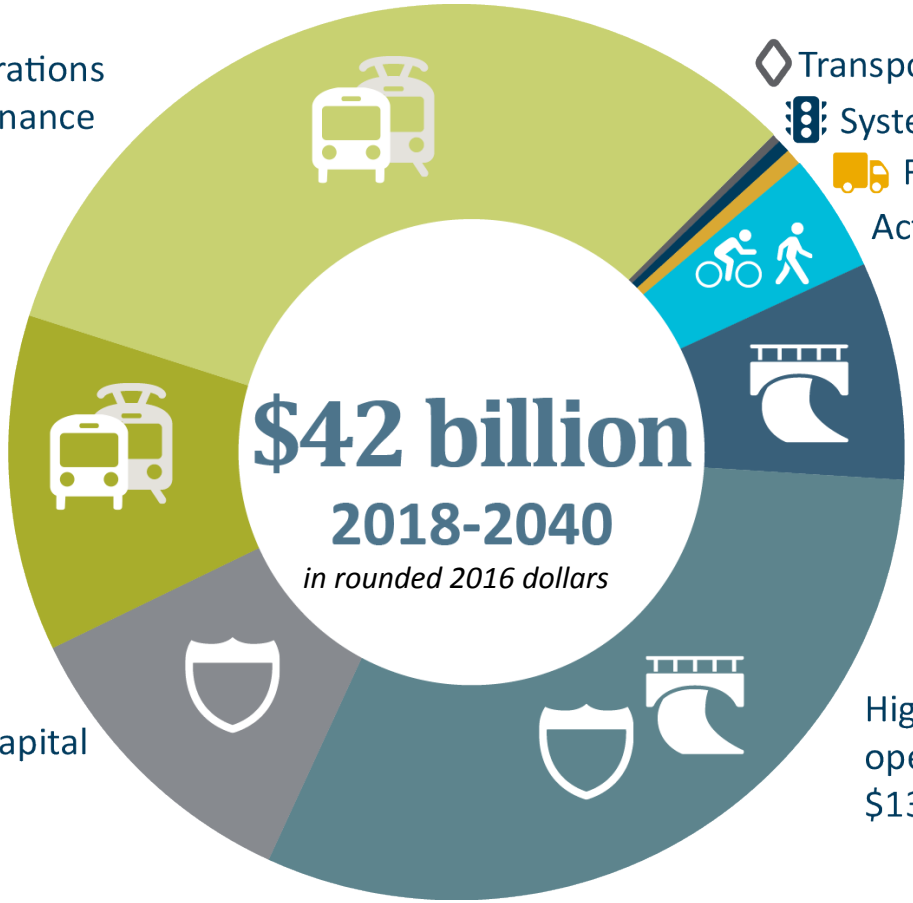
$15.4 billion

draft RTP constrained project list (capital projects only)

in rounded 2016 dollars

Draft RTP Constrained priorities

Total estimated investment by 2040



Transit operations and maintenance $13.7B

Transportation demand management $0.13B

System management and operations $0.19B

Freight access $0.25B

Active transportation $1.8B

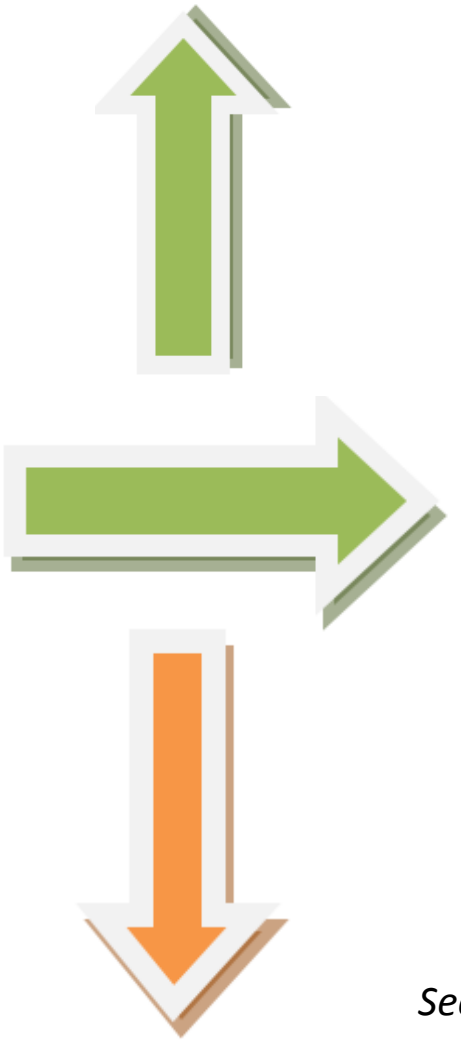
Roads and bridges capital $3.3B

Transit capital $5.1B

Highways capital $4.6B

Highway, road and bridge operations and maintenace $13B

Draft RTP Constrained priorities
Measuring outcomes of the plan



Plan meets target or moves in desired direction

Plan does not meet target but is moving in the right direction

Plan does not meet target and is moving in the wrong direction

See Chapter 7 (Measuring Outcomes) for more information

Draft RTP Constrained priorities
Equity outcomes

Access to travel options

Region and equity focus areas

Plan **expands transit service** and **makes progress toward completion of gaps** in biking, walking and off-street trail networks in equity focus areas.

Access to jobs and community places

Region *Equity focus areas*

Expanded transit service **increases access to more jobs and community places** within a short trip, particularly for households in equity focus areas.

When it comes to biking, walking or driving, households outside of equity focus areas see greater increase in access to jobs and community places **than households in equity focus areas**.

Draft RTP Constrained priorities
Climate outcomes

Climate Smart implementation

Plan **meets or exceeds <u>most</u> Climate Smart monitoring targets** by 2040, including Climate Smart transit service investment levels.

Access to travel options

Greenhouse gas emissions

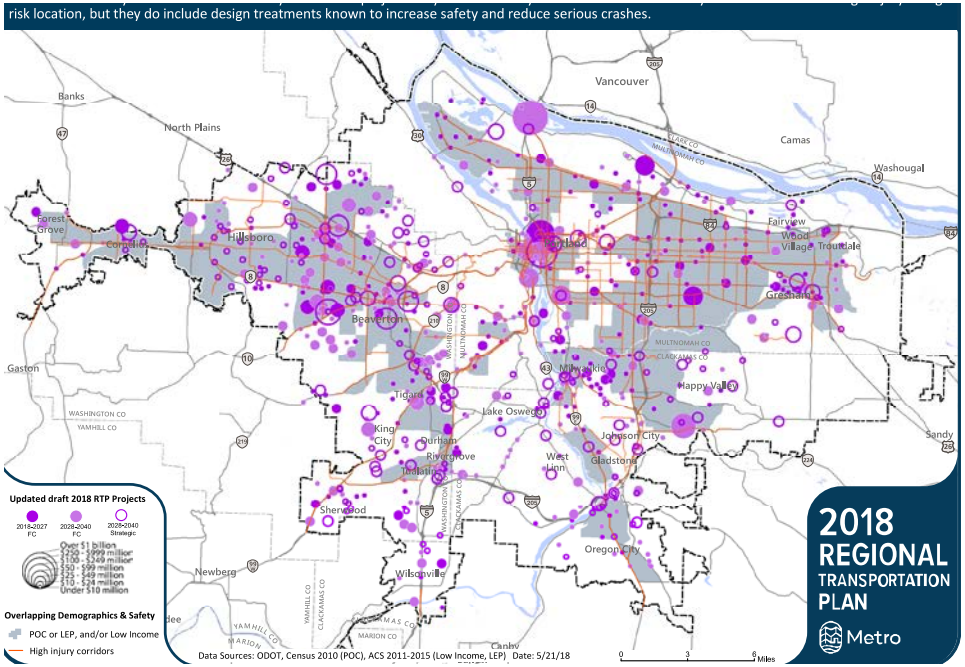
Plan **makes progress but does not meet targets to complete the regional active transportation network** by 2040.

Plan **reduces annual per capita carbon emissions by 21 percent by 2040 – falling short of 25 percent reduction** called for by state law.

Draft RTP Constrained priorities
Safety outcomes

More than **60 percent of projects improve safety** and **three-quarters of those projects are located in equity focus areas** – areas with the highest incidents of crashes causing death or life-changing injuries.

While the number of projects improving safety is moving in the right direction, observed crash data from last five years indicates that the region is moving in the wrong direction to achieve Vision Zero target.



Draft RTP Constrained priorities
Congestion and reliability outcomes

Multimodal travel times

Plan generally **improves or maintains travel times for transit, truck and bicycle travel**.

Freight truck delay

Congestion

Plan **does not meet truck delay reduction target.** Truck delay in 2040 is 4.5 times more than in 2015 – but a third less than if the plan is not implemented.

Plan **does not meet mobility policy in all locations**. Congestion and auto travel times will be worse than in 2015 in most corridors, especially on the region's throughways.

Draft RTP Constrained priorities
Health outcomes

Public health

Expanded transit service coupled with increased use of transit, walking and biking will reduce pollution from automobiles to help protect the region's clean air.

Reduced pollution and increased physical activity will help reduce illness, save lives and lower healthcare costs.

Plan **decreases premature death and disease and avoids more than $31 million in annual healthcare costs** by 2040.

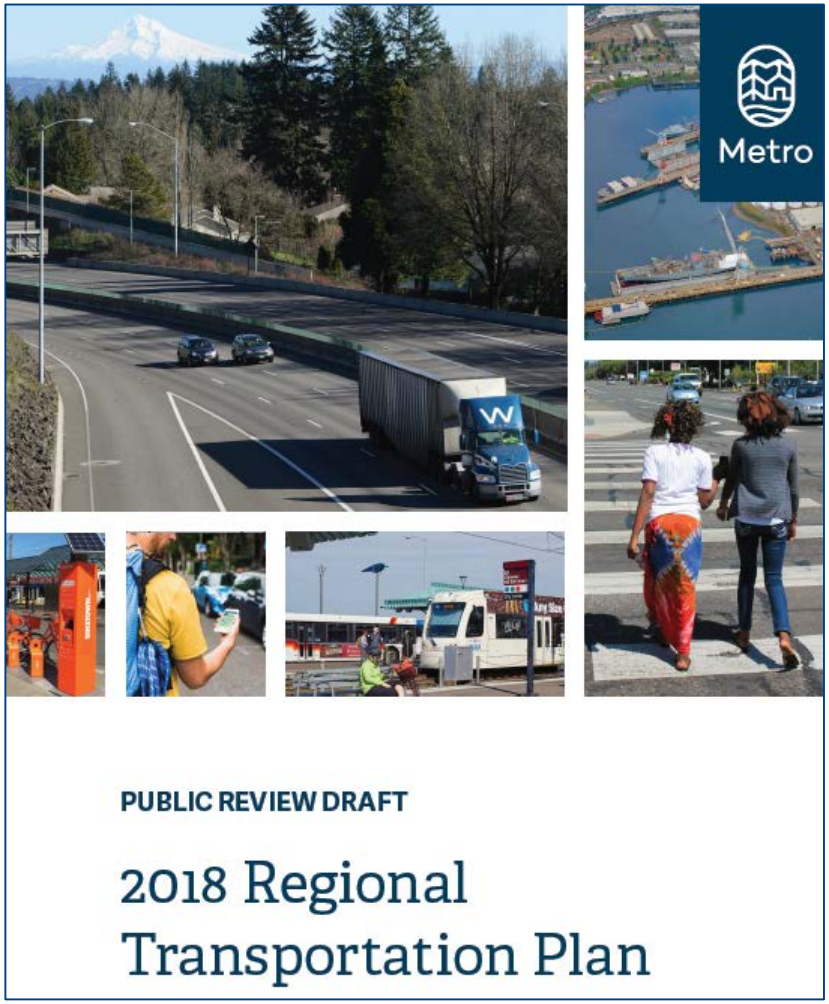
Draft RTP Constrained priorities
Affordability outcomes

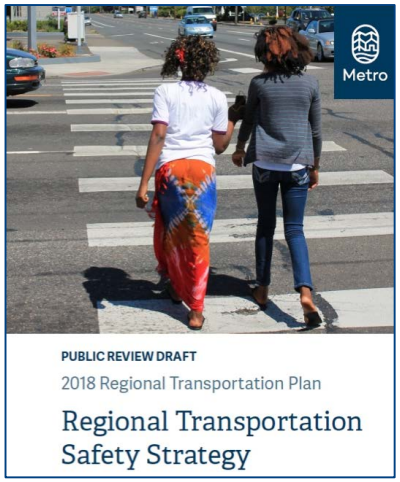
While the increase in affordable travel options is moving in the right direction, observed data shows that the region needs to big strides to reduce disparities in affordability, particularly for people of color and lower-income households.

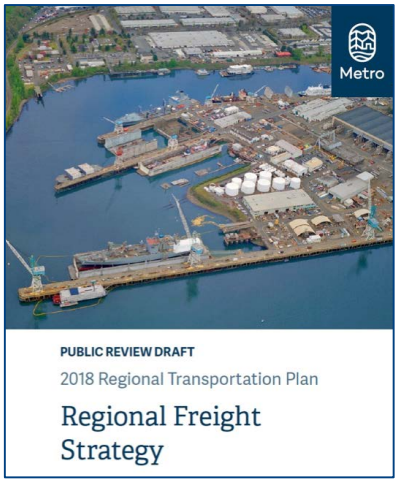
Plan **makes progress increasing access to more affordable travel options throughout region, especially in centers and equity focus areas**, but more funding is needed to accelerate completion of gaps in the regional active transportation network.

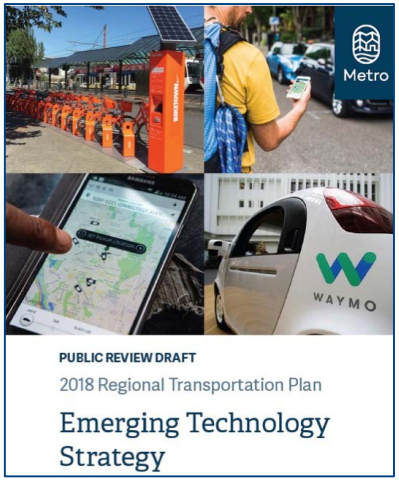
Households will save money by **driving fewer miles** in more **fuel-efficient vehicles** and **walking, biking and using transit more**. This allows people to spend money on other priorities, of particular importance to lower-income households.

Public review materials available since June 29 at www.oregonmetro.gov/rtp

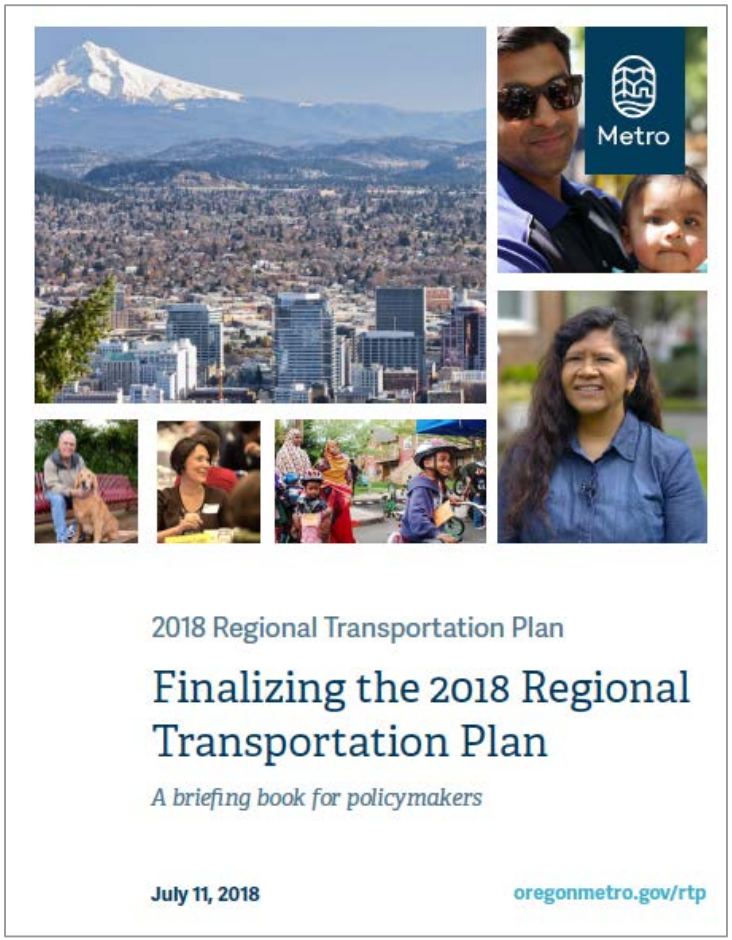








Briefing book for policymakers available on July 11



Ways to comment through Aug. 13

Write a letter
Metro Planning
600 NE Grand Ave, Portland, OR 97232

Email comments
transportation@oregonmetro.gov

Attend public hearing
Comment in person before the Metro Council on Aug. 2 at 2 p.m. at Metro Regional Center

Call
503-797-1750
503-797-1804 TDD

Take the survey
oregonmetro.gov/rtp

Photo courtesy of Street Trust

Next steps

June 29 to Aug. 13	**Public comment period**
Aug. 2	**Metro Council public hearing**
Aug. 29	**TPAC/MTAC workshop on proposed amendments** in response to comments
Sept. 19	**MTAC recommendation to MPAC**
Oct. 5	**TPAC recommendation to JPACT**
Sept. – Oct.	**MPAC considers MTAC recommendation**
	JPACT considers TPAC recommendation on Metro Council adoption of RTP and strategies
Nov. - Dec.	**Metro Council considers MPAC and JPACT recommendations**

Discussion

Questions about:

- Timeline or process for finalizing the 2018 RTP and strategies?
- MTAC and TPAC roles in adoption process?
- Local implementation through TSPs?
- Performance outcomes of draft plan?