Agenda

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

Meeting:	**2018 RTP Transit work group meeting**
Date:	Tuesday, June 27, 2017
Time:	1-3 p.m.
Place:	Metro Regional Center, Room 401
Purpose:	For Transit Work Group to share transit planning efforts from project partners around the region and agree on a transit system expansion policy framework
Outcome(s):	Share ideas and priorities from planning efforts by Washington County and City of Portland; discuss how the enhanced transit corridor concept could be applied throughout the region; and discuss and agree on the transit system expansion policy criteria and assessment framework.

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1 p.m.	**Welcome & project updates** *Who have you talked to about this work? What have you heard?*	Everyone
1:15 p.m.	**Washington County Transportation Futures Study and TV Highway planning effort** *Share the findings and priorities that emerged as part of the Washington County Transportation Futures Study and the initial concepts and ideas from the current TV Highway planning effort.*	Dyami Valentine
1:45 p.m.	**Enhanced Transit Corridors concepts** *Share the ideas and concepts that have emerged to date through the Enhanced Transit Corridor study conducted by the City of Portland and discuss how these concepts could apply to the broader region.*	April Bertelsen and Eric Hesse
2:15 p.m.	**RTP Call for Projects/TriMet priorities** *Update on the TriMet's current status of the RTP projects and priorities.* *More coordination to occur at coordinating committees.*	Eric Hesse
2:25 p.m.	**Update on the System Expansion Policy suggestions** *Share the updated transit system expansion policy framework based on May transit work group meeting* **Action:** *Looking for agreement on the criteria to move forward. Transit system expansion policy, with any changes from the transit work group, will be shared with the equity work group, TPAC (June), JPACT (July) and MPAC (July).*	Jamie Snook and Mathew Berkow
2:55 p.m.	**Next steps** *Discuss next steps*	Jamie Snook
3:00 p.m.	**Adjourn**	

Directions, travel options and parking information
Covered bike racks are located on the north plaza and inside the Irving Street visitor garage. Metro Regional Center is on TriMet bus line 6 and the streetcar, and just a few blocks from the Rose Quarter Transit Center, two MAX stations and several other bus lines. Visit our website for more information: http://www.oregonmetro.gov/metro-regional-center

Meeting Packet	Next Meeting
• Transit Work Group Agenda	September TBD Metro Regional Center
• May 2017 RTS meeting summary	
• Washington County Transportation Futures Study Executive Summary • http://wctransportationfutures.org/	
• Link to the Enhanced Transit corridor Plan Initial Evaluation results: https://www.portlandoregon.gov/transportation/article/640978 • Enhanced Transit Corridor Plan website: https://www.portlandoregon.gov/transportation/73684	
• Proposed Regional Transit Strategy/System Expansion Policy Criteria Table and process chart	

Meeting minutes

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

Meeting:	**2018 RTP Transit work group meeting**
Date/time:	Wednesday, May 24, 2017 | 1-3 p.m.
Place:	Metro Regional Center, room 401
Purpose:	For Transit Work Group to discuss the transit vision, transit supportive elements and the potential system expansion policy criteria.

Work Group Attendees	**Affiliate**
April Bertelsen	City of Portland
Dwight Brashear	SMART
Karen Buehrig	Clackamas County
Mike Coleman	Port of Portland
Steve Dickey	Cherriots Transportation System
Eric Hesse	TriMet
Jay Higgins	City of Gresham
Jon Holan	City of Forest Grove
Mauricio Leclerc	City of Portland
Kate McQuillan	Multnomah County
Luke Norman	Clackamas Community College
Jamie Snook, Work Group Lead	Metro
Gregg Snyder	City of Hillsboro
Dyami Valentine	Washington County

Interested Parties	**Affiliate**
Radcliffe Dacanay	City of Portland
Lidwien Rahman	Oregon Department of Transportation

Presenters
Matt Berkow, Nelson Nygaard, Inc.
Tom Brennan, Nelson Nygaard, Inc.

Staff Attendees
Grace Cho, Metro
Marie Miller, Metro
Cindy Pederson, Metro

Welcome & introductions
The meeting was called to order by Jamie Snook at 1:10 p.m. Snook provided an overview of the agenda; project timeline, Transit vision, Transit supportive elements, Transit system expansion policy. Snook reminded the work group that Transit related policies, including updating the transit expansion policies, are part of the work groups' tasks. The deadline for this is August/September 2017.

Other dates reviewed by the work group; Transportation Policy Alternatives Committee (TPAC) will hear more from Jamie Snook at the end of June on expansion policies. The RTP Call for Projects being June 1 and end July 21. Materials and information on this will be provided, including a pilot program.

The work group discussed possible meeting schedules to finish 2017. The group will meet June 27, but not meet in July or August. They will reconvene in September, October and November. During the summer, small group meetings would be possible. Luke Norman could host a small group meeting at Clackamas Community College with transit providers. Jurisdictions could benefit with the small group gatherings, with Jamie Snook offering to facilitate, TriMet participating, and transit parties attending.

The Transit vision was reviewed with three elements:
Operation improvements + Capital investments + Transit supportive elements = Total transit strategy

Capital investments were discussed, with this plan to be the focus, in local, regional and metropolitan area specific. The map showing group inputs shows new future corridors and lines of transit, but needs identified legends and correlations. HCT in still in the planning process, moving forward, but not adopted yet. The starting point for Vision is August/September 2017.

Capital investments:

- Previously defined HCT corridors
- Additional proposed high capacity/enhanced transit corridors
- Major maintenance projects
- Bottleneck improvements
- Locally funded transit improvements

Enhanced Transit Corridors
The group discussed Enhanced Transit Corridors. Enhanced Transit service could include elements:

- More frequent service
- Articulated buses or streetcar
- Wider stop spacing
- Improved shelters and amenities
- Transit signal priority
- Queue jumps
- Bus-only signals, and bypass lanes
- Right-turn-except-bus lanes or Business Access and Transit (BAT) lanes
- Exclusive transit lanes where feasible
- Access to Transit investments
- Policy commitments to support transit ridership

Discussion points:
Regarding the map, it would help to apply enhanced transit lines appropriate to other transit categories. Making this a region-wide basis was suggested. It was pointed out the legends in the maps needed refining. Snook agreed, with discussion on possible combinations or replacing corridors with future modeling and toolbox services. Eric Hesse added that TriMet was looking at the demand and opportunities for quality service. What will be the needs and benefits for these transit corridors?

The work group agreed that a list of services on the map for transit corridors would be helpful. Linking lines to job connections, housing and community services with future growth would be beneficial with plans for enhanced transit corridors. April Bertelsen reported that the City of Portland is studying equity

consideration for future growth with average weekly ridership, transit speed, and reliability and congestion elements. She offered to share draft materials with this study showing the methodology at the June 27 Transit work group meeting. Advance materials will be sent to the work group members before this meeting.

Jamie Snook reminded the work group that capital expansion meant expanding service. Jon Holan commented that for this long-term vision, a corridor perspective is helpful, with the Hillsboro to Forest Grove expect growth as an example. He reported that TV Highway congestion is expected to stay an issue. He recommended connection to Hillsboro, and not Cornelius Road.

Jamie Snook described enhanced transit concepts as an array of different types of improvements:

- **Local** enhanced transit improvements
    - Locally funded transit improvements targeted at specific transit (or transit related) needs and opportunities at specific spot locations, along a corridor or a portion of a transit line. These are more likely to fit into Level 0 and 1 of Enhanced transit investments.

  (local funding, local process, low level of investments, points or shorter segments on a map)
  Examples may include: Bus stop consolidation, queue jumps, sidewalk improvements, and bike access improvements.
- **Systems** enhanced transit improvements
    - Locally or regionally funded transit improvements targeted at specific transit system performance at specific locations or for specific needs. Such improvements may be a package of improvements to address multiple hot spots on multiple transit lines in the system. These are more likely to fit into Level 1 of Enhanced transit investments.

  (local or regional funding, local or regional process, low to moderate level of investments, systems of investments, multiple points on a map)
  Examples may include: Bus bottlenecks, transit signal priority, technology advancements.
- **Regional** enhanced transit investments
    - Regional or federally funded longer corridor or full transit line improvements targeted at transit investments likely to seek FTA Small Starts funding. These are more likely to fit into Level 2 of Enhanced transit investments.

  (regional or federal funding, regional process, moderate to high level of investments, line on a map)
  Examples may include: Enhanced transit corridors, Division BRT, Streetcar projects.
- Enhanced transit **Network**
    - A branded network of enhanced transit to provide a network of transit lines that operate frequently, with wider stop spacing and faster boarding, above the TriMet Frequent Service Network.

  (local, regional or federal funding, local or regional process, low to high level of investments, multiple lines on a map)
  Example is the Seattle Rapid Ride.

A question was asked how Division BRT improves Powell. Using the study of Powell that shows what was identified for needs, but also could be used as a starting point for identified enhanced transit investment. Corridor investments differentiate from board categories, which can be reflected on the

map. Spots/points with specific enhanced transit improvements on the map vs. system-wide vs. corridors. These collate with levels of investment. Enhanced transit corridors are transit services that provides increased capacity and reliability yet is relatively low-cost to construct, context-sensitive, and able to be deployed more quickly throughout the region where needed.

Scale and Level of Investment:
Level 0: Service Enhancement Plan Partnerships with Local Jurisdictions
Level 1: Small Scale Enhanced Transit $10-50 Million
Level 2: Medium to large scale enhanced transit $50-300 Million

A graphic was shown of the three levels of investment and where categories might fit. Discussion was held on where small start projects might fit in the investment levels. Corridors could get either way in the region; Federal guidelines and the planning process will help to identify. Suggestions with the graphic included brackets with categories at the bottom of page, show where the network system is placed, adding a fourth category at bottom for "network" showing the whole line of capital investment.

It was discussed how showing corridors in levels of investments in a toolbox. Placing "spots" or "multiple spots" could help reflect the investment. More planning is needed; example being bottlenecks, with moving the broad range to specific area. Regarding the vision process, would it be more beneficial to prioritize now or later. It was agreed to show the transit investments in the planning process. City of Portland and TriMet have been working on similar strategies, which could be tested with these transit levels/categories. More discussion was held on four categories to include on the map, making specific or generic, or clarifying which type of investment on the map. More discussion on this will be held in meetings.

Transit Supportive Elements
Jamie Snook briefly reviewed the elements with transit supportive elements:

- Shared mobility/ridesharing (lyft, turo, zipcar, uber)
- Technology Advancements (mobility on demand, TriMet's Rail Operations Optimized Technology) Eric Hesse offered to present a toolbox on how we can support transit elements. It was suggested to ask Tyler Frisbee to present possible automation regional plans.
- Programs and Plans (growing transit communities, RTO)
- Access to transit (sidewalks, safety)
- Land use (housing, parks, schools, community)

Potential System Expansion Policy Suggestions
Matt Berkow and Tom Brennan presented a summary of proposed evaluation approach for transit evaluation criteria and project readiness criteria, following input from the work group at the last meeting.
<u>Criteria 1: Current and/or future ridership</u>
Evaluation Method: Total daily ridership for project corridor
Changes or Clarifications:

- Existing ridership will be used in initial evaluations
- Future ridership will be incorporated once modeling begins in October 2017
- Consistent with FTA, existing and future ridership will be averaged

Criteria 2: Transit rider travel time benefit
Evaluation Method: Average travel time benefit per rider
Changes or Clarifications: None

Criteria 3: Land use supportiveness
Evaluation Method:

- Station area development and character
- Existing and planned ped/bike networks
- Parking policy and management
- Affordable housing

Changes or Clarifications:

- Aligned with FTA Land Use evaluation measure
- Includes Affordable Housing (formerly criteria #10)

Criteria 4: Supportiveness of Urban Form
Evaluation Method:

- Street density or block density

Changes or Clarifications: None

Criteria 5: Enhances connections to and between 2040 Growth Areas
Evaluation Method:

- 2040 Concept types:
    - Central city, Regional centers, Town centers
    - Freight and Passenger Intermodal Facilities
    - Employment areas, Industrial areas

Changes or Clarifications:

- Main streets, Station communities, Neighborhoods, and Corridors are not included

Criteria 6: Rebuilding/redevelopment opportunity
Evaluation Method:

- Area of vacant or redevelop able land

Changes or Clarifications:

- Modify, align with Metro market analysis, depending on data availability

Criteria 7: Operating cost (Operating cost per rider)
Criteria 8: Capital cost (Capital cost per rider)
Evaluation Method:

- Operating cost per rider
- Capital cost per rider

Changes or Clarifications:

- Based on a determined mode and operating plan for the project, or…
- If mode and/or operating plan have not been determined, use typical operating cost per hour and capital cost per mile for a range of potential modes (LRT/BRT, Arterial BRT, Commuter Rail and/or Streetcar)
- Use standardized assumptions for service span and frequency

Criteria 9: Low-income access to jobs and services

Evaluation Method:

- Previous TSEP criteria considered three communities of concern: Low-income or very low-income, Minority and/or Hispanic populations, Disabled and senior populations

Changes or Clarifications:

- SLC: Assessed whether project links these communities to regionally significant job, education, and health care centers?
- Align with RTP System Performance Measures:
    - Access to community places by transit in 30 minutes
    - Jobs accessible by 45 minutes by public transportation

Criteria 10: Affordable Housing

Evaluation Method: Affordable housing units

Changes or Clarifications:

- Eliminated – now measured as part of Criteria 3 (Land Use Supportiveness)
- An equity-related Readiness criteria looks at displacement potential and mitigation measures

Criteria 11: Reduction in Emissions

Evaluation Method: Change in annual VMT and emission levels for CO2 and other harmful pollutants

Changes or Clarifications: None

Criteria 12: Local Commitment and Partnerships

Evaluation Method:

- Community and local support
- Adopted population and employment growth targets to support project
- Plans to update land use policies to support project

Changes or Clarifications:

- Partnerships between agencies and municipalities that will need to be involved to implement the project?
- Equity:
    - Is a corridor currently at risk of gentrification and displacement?
    - Are partnerships, policies, and tools in place to prevent displacement or local residents and businesses?

Criteria 13: Funding Potential

Evaluation Method: Simulated scoring of projects that are likely to seek FTA funding in the near term (e.g. within this RTP cycle) e.g. cost-effectiveness, mobility improvements, congestion relief, etc.

Changes or Clarifications:

- Evaluated for highest scoring projects seeking federal funds

Discussion comments:

- Use criteria for all transit evaluations and project readiness (projects ready to go) criteria
- Data driven vs. political criteria
- HCT investments/transit corridors; criteria being applied to all

- The suggestion of tiers guided by corridors, much larger than RTC System with opportunity to process to advance some transit lines.
- This applies to the whole system; not for the Call for Projects
- There is more on the map than what is on the project list
- Line on the map are what will be evaluated; by end of the year this equates our Transit Vision.
- Fuzzy and dotted lines on map show we can't do all we want
- Regarding criteria 3 & 4, combine the two, consistent with FTA
- Strip local out to focus on Federal criteria
- Make Ped/Bike networks specific to Federal dollars
- Then assign to readiness criteria; have evaluation process priorities down the line
- Challenge could be buried in average separate structures. The importance for us? Prioritize Federal and Local dollars
- Where do we set the marker with capital investments for cost effectiveness?
- Approaches could be (10 simplify the matrix; HCT plan but losing opportunities, (2) hold in cost
- Travel times are hard to determine in limited time.
- Look for another measure that gives delay time/benefits
- Next round for the readiness evaluations; greatest benefit
- More evaluations can be best with investment
- Future network planning is a struggle for funding with evaluations
- Long range vs. performance value. Fuzzy filler lines until more known
- We need readiness, specific focus, which we can act on.
- Models will need more definition that clarify projects evaluations for Federal
- Is there a reason not to test lower in criteria? How they perform and future planning is significant
- Corridors tell a story; learn the XYZ for local jurisdictions, more to higher level officials that show performance
- RTP projects have limited dollars this cycle

In summary (1) More evaluations for corridors, (2) Clarity of the bigger picture, to include broader things, with 7 project criteria to give us success, and (3) project readiness jurisdictions ready to go, from regional to federal evaluations. Nelson Nygaard will continue their consultation services, and the Transportation Equity work group will be presented with this information at their meeting in June for further input.

Adjourn
There being no further business, meeting was adjourned at 3:15 p.m. by Jamie Snook.

Meeting summary respectfully submitted by
Marie Miller, Administrative Specialist

Next meeting of RTP Transit work group
Tuesday, June 27, 2017 | 1-3 p.m.
Metro Regional Center, room 401

Attachments to the Record:

Item	Topic	Document Date	Description
1	Agenda	5/24/2017	May 24, 2017 Meeting Agenda
2	Meeting Summary	4/26/2017	RTP Transit Work Group Summary, April 26, 2017
3	Table	5/24/2017	Transit System Expansion Policy, High Capacity Transit Investment Readiness and Performance Criteria Recommendation, Draft
4	Handout	5/24/2017	Summary of Proposed Evaluation Approach, and Alignment with RTP System Performance Measures
5	Presentation	5/24/2017	Regional Transit Strategy Presentation by Jamie Snook
6	Presentation	5/24/2017	Metro Transit System Expansion Policy Presentation by Nelson Nygaard, Inc.

Key Takeaways

- **The need for investment:** Future population and employment growth means traffic congestion will more than double. Delays for trucks will quadruple. Without major investments in driving, walking, bicycling and transit, traffic levels will be much worse than today.
- **Transit:** Transit demand will triple by 2055. Increased MAX frequency, more bus and shuttle-type service, faster service and better station access will be needed to meet increased intra-county and inter-county transit demands.
- **Major Roads:** Many arterials will be over capacity by 2055. Widening existing arterials and improving connectivity can improve safety and alleviate some congestion, but cannot meet traffic demands.
- **New Roadways:** North-south roads between the I-5/ Wilsonville area and US 26 and between US 26 and US 30 are expected to be over capacity by 2055. Two roadways were modeled: A limited-access road between Hillsboro and Wilsonville, and a "northern connector" between US 26 and North Portland. Both could significantly reduce traffic on adjacent streets and freeways and improve freight travel, but both have adverse environmental and land-use impacts.
- **Freeways:** Freeways will see the worst congestion. Adding lanes beyond those planned in each direction on I-5, US 26, I-205 and Hwy 217 could help reduce delays if the added lane is for exclusive use by trucks, bus and HOV vehicles. Tolling or other strategies may be needed to see additional benefits.
- **Biking and Walking:** Improving bicycle and pedestrian facilities on all major roads will help meet the increasing demands and safety needs for bikers and walkers. Trails can play an additional role.
- **Smart Technology:** Increased efficiencies of the existing system and measures to reduce demand will continue to be important parts of the transportation solution. Fast changing technology will require ever faster changing policies and analysis.

Next Steps

What happens now?

The County will use results from this Study to prepare for its long-term transportation needs. This may include further study of projects and policies. The County will also continue partnerships with other agencies and jurisdictions to further explore transportation options with a regional focus.

For more information

Visit **WCTransportationFutures.org** to learn more and to read the full Study Report.

Contact us

WCTS@co.washingon.or.us
(503) 846-6737

Washington County
Transportation Futures Study
Exploring options • Informing choices

February 2017

Executive Summary

The Washington County Transportation Futures Study evaluated long-term transportation strategies and investments needed to sustain the County's economic health and quality of life for decades to come. Funded by the Oregon Legislature in 2013, the Study assumed the County's Transportation System Plan (TSP) was implemented and looked further into the future, focusing on longer-term land use and transportation challenges and opportunities.

The Study offers insight into transportation needs and comparisons between policy choices on how to meet future travel needs. This is a study, not a plan. It will help decision-makers inform regional, county and local plans and priorities.

Taking Stock

Since the 1970s, Washington County has:

- Become more diverse
- Exceeded growth expectations
- Adopted land use plans consistent with state and regional goals
- Implemented transportation funding strategies
- Expanded roadway, transit, bicycle and pedestrian networks
- Seen decreases in vehicle miles traveled per capita.

The future of Washington County

Population & Employment

The County will be denser with more people per square mile than Portland has today. In 40–50 years, we can expect:

- A 40-55% increase in population. A 40% increase in population is the equivalent of another Hillsboro, Beaverton and Tigard combined.
- Downtown Beaverton, Tanasbourne, Tigard Triangle and other centers will continue to develop into a mix of residential, employment and commercial uses.
- A decline in vehicle miles traveled per person. The number will be less than in 2010.
- A 100-145% increase in employment.
- Employment growth to be focused on Hillsboro, Hwy 217 corridor and southern Washington County.
- More daily trips will be coming into the County than out of the County. The share of daily trips within the County will also increase.

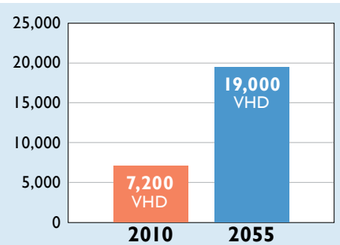
Traffic

More people and more jobs results in more trips. Traffic in 2055 will be worse even with changes in how we travel. We're anticipating:

- Transit, walking and bicycle trips will increase at a faster rate than auto trips. However, a 50% increase in people traveling by vehicle will result in about 3 million vehicle trips per day.
- Increased congestion throughout the day, especially on freeways and at regional access points. None of the Study's transportation options will eliminate or even reduce vehicle delays to today's levels.
- Congestion on major roads which will create more cut-through traffic on local roads.
- Traffic delays will more than double compared to today.
- Delays of freight traffic to increase over four-fold due to more trucks on the road and their dependence on the most congested freeways and roads.
- Improvements in bicycle, pedestrian, transit, highway and roads, smart technology and demand management are needed to meet increased travel demands.

Vehicle Hours of Delay

on Washington County roads during PM Peak Period



Washington County Trend Scenario Package A

What we learned

Three investment packages, three policy directions

The Study analyzed hundreds of transportation investment options and projects to address future travel needs. Options were organized into three packages that represent different policy directions. Each package includes significant investments in roads, transit, bicycling and walking facilities, smart technology and programs to reduce vehicle trips.

- **Package A:** Continuation of current policies and planned investments with additional investments in transit and demand management.
- **Package B:** Extension of current policies, with a focus on improving major roads (arterials).
- **Package C:** Beyond current policies focusing on the regional system by adding capacity on throughways, new roads and new transit facilities.

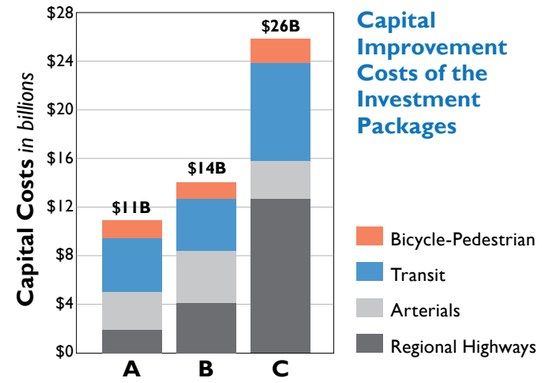
Relative Costs

The price of the future

The cost of studied investments could range from:

- **$11 billion** to build out the major urban streets with bike lanes and sidewalks on both sides of the street and implement enhanced transit services
- **$14 billion** for enhancing our existing roads
- **$26 billion** to build new roadways, added freeway lanes and transit in exclusive right-of-way.

These investments would cost more than planned resources could fund.



Capital Improvement Costs of the Investment Packages

EXISTING MAJOR ROADS (ARTERIALS)

Widening existing arterials, adding passing lanes, access management, and improving connections between arterials:
- ✓ Can reduce traffic delay by 5%
- ✓ Can improve safety
- ✓ Can shift traffic out of neighborhoods

✓ **New arterial connections** — such as connecting arterials for a route around Cooper Mountain between Roy Rogers and Cornelius Pass roads south of TV Hwy — could reduce traffic on adjacent arterials, such as 175th, up to 20%.

✗ **Cornelius Pass Road** remains the only alternative to US 26/I-405 and I-5 for trips to the airport and I-5 North. Even if it were four lanes, the demand for this route is expected to exceed capacity and increase the need for safety improvements.

✗ **Traffic on arterials** will increase in urban centers. Slower traffic speeds and installing more crossings and sidewalks can promote walkability and improve safety, but would reduce vehicle capacity through these areas.

BIKING AND WALKING

Bicycling and pedestrian trips could double by 2055 as urban areas develop. Planned investments would complete bike/pedestrian improvements on 60% of the County's major roads by 2035.
- ✓ With 100% of County roads complete with bicycle and pedestrian facilities, 80% of households will be within a quarter-mile of bicycle lanes and sidewalks.
- ✗ Increased traffic congestion could make bicyclists and pedestrians feel less safe.
- ✓ "Complete streets" with bike lanes and sidewalks and trails can improve traveler safety.

NEW ROADS

Increased demand is expected on:
- ✓ North-south roads between US 26, 99W and I-5
- ✓ Freight access to the airport and I-5 north
- ✓ East-west routes, especially US 26.

A "**northern connector**" tunneled between US 26 and US 30 with a bridge across the Willamette River to Columbia Blvd would:
- ✓ Attract 60% of the truck traffic on US 26 through the tunnel
- ✓ Reduce traffic on US 26, I-405 and I-5 through Portland
- ✓ Shorten truck trips and improve access to industrial areas and I-5 North
- ✓ Reduce traffic on Cornelius Pass and Germantown roads.

A **limited access road** between US 26 at Hillsboro and I-5/I-205 at Wilsonville would:
- ✓ Reduce future vehicle traffic delay
- ✓ Shift traffic from adjacent roads, such as TV Hwy, Hwy 219 and local roads
- ✓ Allow use of existing roads for farm and local traffic
- ✓ Have higher traffic volume in the urban area than it would outside the Urban Growth Boundary.

Faster speeds on the new roadways would:
- ✓ Attract traffic
- ✗ Increase vehicle trips
- ✗ Increase safety risks.

Construction of new roads would mean:
- ✗ Increased environmental and community impacts
- ✗ Impacts to natural, agricultural and developed communities.

More roads and highways could mean:
- ✗ Increased vehicle use
- ✗ Increased greenhouse gas emissions
- ✓ Improved air quality due to reduced delays.

PROGRAMS TO REDUCE VEHICLE TRIPS

Policies and programs that discourage driving alone and that encourage biking, walking and transit use can:
- ✓ Increase non-auto use by 50% in city centers
- ✓ Reduce the number of vehicles, particularly when congestion is high.

Pricing, either through toll lanes on freeways or new road-user charges, could:
- ✓ Reduce hours traveled by 15% or more, if implemented with higher charges at peak periods.

TRANSIT

Demand for transit in Washington County could almost triple by 2055. Transit trips to Portland will more than double, improving an alternative to the most congested routes. Implementing existing regional service expansion plans is not enough to meet this demand. The following investments can help:

- ✓ Increased bus and light rail service
- ✓ MAX trains running every six minutes or better in the US 26 and the I-5 corridors
- ✓ Faster light rail service and more park and rides, which could increase demand for transit up to 20% between Hillsboro and Portland
- ✓ With planned service improvements, 80% of households will be within a quarter-mile of transit.

✗ Buses will experience the same congestion levels as other vehicles, unless investments that prioritize buses are made.

FREEWAYS

Freeways (I-5, US 26, I-205 and Hwy 217) will see the worst congestion increase. Without improvements, delays will increase throughout most of the day and will result in cut-through traffic.

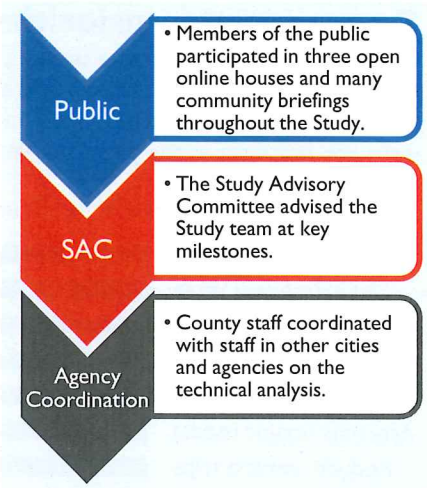
Adding a lane in each direction on these freeways and managing these lanes for trucks, buses and high-occupancy vehicles (HOV) could:
- ✓ Reduce truck delays up to 50% due to exclusive truck lanes
- ✓ Increase carpooling
- ✗ Result in new lanes filling up, even when limited to HOVs, transit and trucks
- ✗ Require more aggressive management, such as tolling, to create additional travel time savings in the added lanes.

Faster speeds with the added lanes would:
- ✗ Increase the total number of vehicle miles traveled
- ✗ Increase crash risk
- ✗ Contribute to greenhouse gas emissions, unless mitigated by safer and cleaner vehicles.

SMART TECHNOLOGY: SELF-DRIVING CARS?

Smart technology such as self-driving cars could:
- ✓ Allow vehicles to travel more closely together, allowing more cars to use the same road
- ✓ Reduce congestion and crashes and related delays
- ✗ Create more congestion if the number of vehicles on the roads increase.

Washington County
Transportation Futures Study
Exploring options • Informing choices



Public Comments on Study Findings

Public involvement was a central piece of the Washington County Transportation Futures Study. The County worked with community members at each Study milestone, including development of community values, understanding the county's transportation past and future trends, collecting transportation investment ideas, and evaluating the ideas in three packages. At each step, the County worked with jurisdictional partners and sought public feedback through online open houses, community briefings, advisory committees, and other activities.

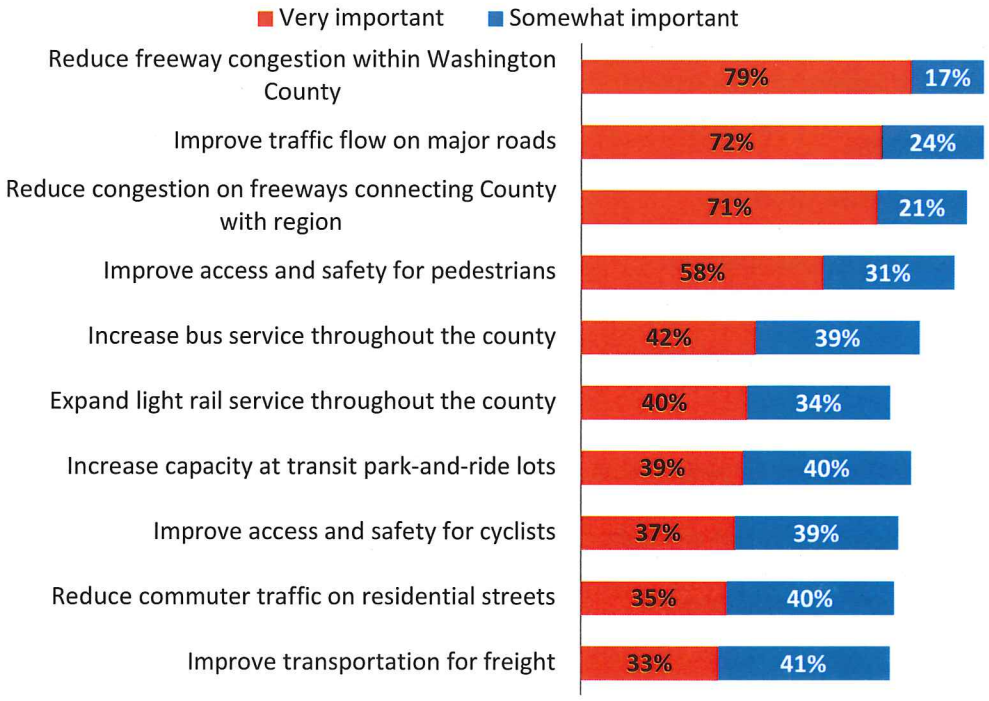
This report provides a snapshot of public feedback on the Study findings. Input was gathered through **two key efforts**:

- **Online open house and survey** that were available to anyone and advertised via mailed postcard to all County residents. It provided detailed Study findings and educational information and asked corresponding questions. *(A representative sample with over 5,400 participants. 94% said they live in the County and 61% work in the County.)*
- **Telephone survey** among a representative random sample of County residents age 18 years and older. This short 15-minute survey did not provide Study findings. It focused on asking about opinions on transportation priorities, select projects and willingness to pay for investments. *(400 participants, margin of error +-5%)*

Transportation Concerns

Phone survey: Almost all County residents (88%) **expect transportation will be a problem** in Washington County in the future. 79% say reducing congestion on freeways within the County is very important and 71% say reducing congestion on freeways leading to the County is very important.

How important is it for the County to achieve these values and goals?



Willingness to pay and support for funding sources

Phone survey: Residents are willing to pay to improve transportation. The polling shows that **3 in 4 people are willing to pay** $100 per year to improve transportation in the County. Nearly half would be willing to pay up to $300 per year.

Online survey: **People support traditional ways of paying for improvements**. 2 in 3 support or strongly support a gas tax, and over half support/strongly support paid parking. There is less support for user charges (46%) and tolling (44%).

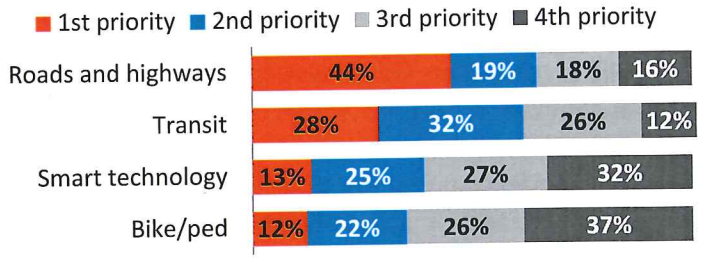
Transportation priorities

The results of both the online survey and the phone survey demonstrate **support for a multimodal system.** Online survey participants gave highest priority to transit improvements, followed closely by freeways. They said the highest values are improved traffic flow, followed by transportation alternatives and access to essential destinations. Roads, highways and public transportation were top priorities in the phone survey, but active transportation and technology are also important.

Transportation Priorities: *Online Survey*

Online Survey: *Participants were given 28 points to distribute among seven transportation investment areas.*

Transportation Priorities: *Phone Survey*



Phone survey: *Participants were asked to rank first to fourth the priority they would give to four investment areas.*

Online Survey: Transportation Investments

The online survey asked participants to provide their levels of support for a wide range of potential transportation investments:

Transit enhancements: People strongly support transit improvements. Between 82-91% support/strongly support each of the following: completing planned bus services, more frequent bus service, more MAX trains, express MAX, and park and rides and shuttle connections.

Only about half support/strongly support investments that would impede vehicle traffic flow (buses priority at intersections and separated bus lanes).

Bicycle & pedestrian enhancements: Approximately 3 in 4 people support or strongly support each of the bike/ped investments:

- Complete bike lanes and sidewalks system.
- Protected bikeways on major roads.
- Network of off-road facilities.
- Safety and amenities for bicycles and pedestrians.

Smart technology: 80% support/strongly support exploring ways to use smart technologies to reduce the need for widening or building new roads.

Projects to reduce vehicle trips: 80-90% support/strongly support programs to increase telecommuting and ride sharing and manage parking. There less support for tolls (43%) or user charges (39%).

Arterial network: People showed mixed support for proposed investments to enhance the arterial network:

- 81% support/strongly support connecting existing arterials with new arterials, and 75% support/strongly support expanding existing arterials with additional vehicle lanes.
- 68% support/strongly support managing driveway access and reducing the number of intersections on key arterials.
- There is less support for reducing traffic speeds (52%).

New freeway lanes: Participants showed mixed support for proposals to add a new lane on the County's major freeways.

- 62% support/strongly support restricting one new freeway lane to freight, bus and HOV only.
- 52% support/strongly support widening freeways for general purpose traffic, without any traffic priority.
- 46% support/strongly support charging tolls on new lanes.

Support for New Roads

Both the online survey and telephone polling asked participants to provide their levels of support for two potential new roads. Results were similar for both. Online survey showed high levels of support, but also greater uncertainty compared to other investments.

Northern Connector

60% of people phone surveyed said they strongly or somewhat favor building a new limited access road connecting Highway 26 with Highway 30 and North Portland, and 16% were undecided. Online survey results were similar: 76% support/strongly support the road and 15% were undecided.

Reducing congestion on US-26 and the Sunset Tunnel dominates as the primary reason people favor it. People who are opposed or undecided question whether the road is necessary, and cost was a concern.

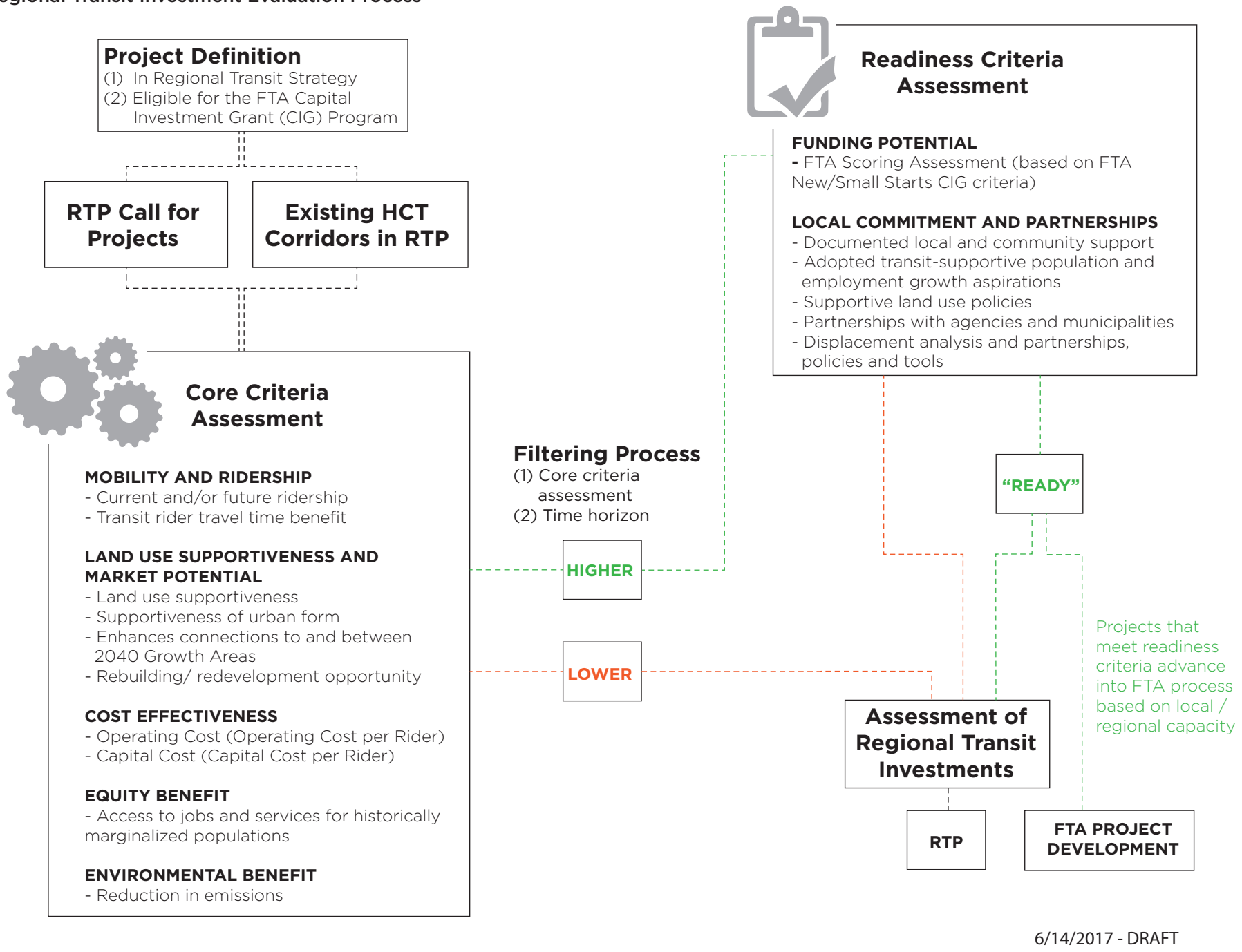
North/South road

68% of people phone surveyed said they strongly or somewhat favor building a new limited-access north/sound road through rural Western Washington County connecting Hillsboro and Wilsonville, and 9% were undecided. Online survey results were similar: 64% support/strongly support the road and 16% were undecided.

Reducing congestion and improving the flow of traffic dominate as the primary reasons people favor building the road. Those opposed are concerned that it doesn't do enough to relieve traffic on Hwy 217 and about effects on the environment and farmland.

Support is similar whether the road is located inside or outside the Urban Growth Boundary.

Regional Transit Investment Evaluation Process



6/14/2017 - DRAFT

Figure 4 Proposed Evaluation Criteria

					Alignment				Regional Transit Strategy Goals			
#	Recommended Criteria	Notes	Method of Evaluation	Notes	System Performance Measures	6 Desired Outcomes	Climate Smart Policy #2	Federal CIG	Frequent	Convenient	Accessible	Affordable
Mobility and Ridership												
1	Current and/or future ridership	▪ Rationale: Ridership is a core measure of transit project benefit. ▪ Former Criteria #: D4. Ridership ▪ Current and/or future population (formerly C1) and jobs (formerly EC3) provided as supporting data. ▪ Alignment with RTP system performance measure as data point: Proximity of households, low-income households and employment with a ¼ mile of transit and frequent service transit. ▪ Metro Model Output	▪ Total daily ridership for the entire project corridor; generated from the Regional Travel Demand Model. ▪ Consider allowing existing ridership to be used for the mobility and cost-effectiveness ratings in corridors with strong existing ridership (e.g., similar to warrants in the FTA process). ▪ Existing ridership will be used in initial evaluation; future ridership will be incorporated once the modeling begins in October 2017 ▪ Consistent with FTA, average existing and future ridership	▪ Regional travel model requires assumptions for the following transit project elements: route, mode, frequency, amount of dedicated right of way, stop location, dwell time, travel time for dedicated right of way (TriMet), and park and ride assumptions ▪ Arterial BRT (e.g. speed and reliability improvements not in a dedicated ROW) can be modeled	X	X	X	X				
2	Transit rider travel time benefit	▪ Rationale: Travel time benefit to the user (former C13) demonstrates the effectiveness of the project and is an important part of attracting ridership. ▪ Former Criteria #: C13/C14. Transportation efficiency or travel time benefit to individual user/all corridor users ▪ Alignment with RTP system performance measure as data point: 'Motor vehicle and transit travel time parity between key origin-destination for mid-day and 2-hour PM peak' calculated as ratio of transit to auto travel time. ▪ Metro Model Output	▪ Average travel time benefit per rider		X	X		X		X		
Land Use Supportiveness and Market Potential												
3	Land use supportiveness	▪ Rationale: Align with FTA Land Use evaluation measure. ▪ Former Criteria #: N/A; new criterion.	▪ New criterion aligned with FTA Land Use evaluation measure: – Existing corridor and station area development and character [pop. and empl. as well as urban design characteristics that exist today] – Existing corridor and station area parking supply [consolidated parking supply and parking pricing are indicators of transit success]; [depending on data availability] – Proportion of existing "legally binding affordability restricted" housing within ½ mile of station areas to the proportion of "legally binding affordability restricted" housing in counties through which the project travels [local or national data]	▪ There is only limited data available regarding parking supply and pricing at major 2040 land use areas ▪ Metro has a regulated affordable housing database for use in this measure		X		X				
4	Supportiveness of urban form	▪ Rationale: Street and block density impacts transit access. ▪ Former Criteria #: C3. Place-making and urban form; renamed to be more intuitive ▪ Propose incorporating C10, which measured the comprehensiveness of pedestrian and bicycle networks.	▪ Quality of urban composition and public space function to support transit access; Possible measures include: Street Density (street miles per corridor mile), Block Density (blocks per corridor mile) ▪ Comprehensiveness of existing and planned pedestrian and cycling networks (source: RLIS data and submitted RTP projects). FTA evaluates existing station area pedestrian facilities, including access for person with disabilities [direct routes, continuous sidewalks, crossings]			X	X	X			X	

					Alignment				Regional Transit Strategy Goals			
#	Recommended Criteria	Notes	Method of Evaluation	Notes	System Performance Measures	6 Desired Outcomes	Climate Smart Policy #2	Federal CIG	Frequent	Convenient	Accessible	Affordable
5	Enhances connections to and between 2040 Growth Areas	▪ Rationale: Transit is a key component of supporting the 2040 Growth Concept. ▪ Former Criteria #: C5. Support of regional 2040 Growth Concept; Re-named C5 to be more explicit in what it measures. ▪ Metro Model Output	▪ Central City, Regional Centers, Town Centers, Freight and Passenger Intermodal facilities ▪ Employment areas, Industrial areas ▪ Consider adapting measure to evaluate network connections using HCT + frequent network. This approach could illustrate how the corridor investment benefits the major O-D pairs between the growth centers connected, (e.g., weight by actual travel demand between growth centers rather than counting the number of centers served by the project).	▪ Per bullet 3 in previous column, regional travel model has O-D pairs identified as part of the Performance Measures methodology and will be able to provide transit travel time and ridership between pairs, but these cannot be attributed to a particular project. Depending on resource availability, Metro may be able to model small groups of projects together to isolate benefits. If not, this measure would be a function of the 2040 Growth Areas served, but would not reflect actual ridership/demand that could be served by the transit project.		X		X	X			
6	Rebuilding/ redevelopment opportunity	▪ Rationale: Catalyzing redevelopment is a benefit of investment in high quality transit. ▪ Former Criteria #: EC4. Rebuilding/redevelopment opportunity	▪ Measure of the total area of vacant and rebuildable land within a half mile buffer of project corridors ▪ Consider aligning with existing Metro GIS data sources (e.g., TOD Strategic Plan).	▪ The precise method will depend on the timing/availability of an Economic Impact Analysis GIS data source currently under development at Metro.		X		X	X			
Cost Effectiveness												
7	Operating Cost (Operating Cost per Rider)	▪ Rationale: Aligns with FTA Cost-Effectiveness criterion. ▪ Former Criteria #: EC1. Transportation efficiency (operator); Total operating cost (D3) is no longer a separate measure. This eliminates a duplicative measure. ▪ Metro Model Output	▪ Operating cost per rider, based on operating and maintenance costs and Ridership (Criteria #1) ▪ If mode and/or operating plan has not been determined, use typical operating cost per hour for a range of potential modes (LRT, BRT, Arterial BRT, Commuter Rail, and Streetcar) and an assumed service plan	▪ To model the general transit project type (e.g., LRT, BRT, Arterial BRT, Commuter Rail, and Streetcar), the regional travel model requires the following assumptions: mode, route, dedicated right of way, stop spacing, frequency.				X				
8	Capital Cost (Capital Cost per Rider)	▪ Rationale: Aligns with FTA Cost-Effectiveness criterion. ▪ Former Criteria #: EC2. Transportation efficiency (user); Total capital cost (D1) and total capital cost per mile (D2) are no longer separate measures. This eliminates duplicative measures. ▪ Metro Model Output	▪ Annualized capital cost per rider; based on total project capital cost and Ridership (Criteria #1) ▪ If mode has not been determined, use typical capital cost per mile for a range of potential modes (LRT, BRT, Arterial BRT, Commuter Rail, and Streetcar) ▪ Federal measure is only based on federal share; so could have an assumed federal share for the purposes of evaluation.					X				

#	Recommended Criteria	Notes	Method of Evaluation	Notes	Alignment				Regional Transit Strategy Goals			
					System Performance Measures	6 Desired Outcomes	Climate Smart Policy #2	Federal CIG	Frequent	Convenient	Accessible	Affordable
Equity Benefit												
9	Access to jobs and services for historically marginalized populations	▪ Rationale: The equity benefit of transit investments is an important value in the Portland and peer regions and CIG evaluation. ▪ Former Criteria #: C9. Equity Benefit ▪ Measure revised to consider not only equity populations near project, but also whether a project connects people to jobs and services. ▪ Alignment with RTP system performance measure: The access to jobs and services will align with the following two system performance measures – Access to Community Places within 30 minutes by public transportation for the region and historically marginalized communities; – Access to jobs within 45 minutes by public transportation for the region and historically marginalized communities. ▪ Metro Model Output	▪ Does project serve areas with large concentrations of disadvantaged people? – Align with current RTP System Performance Measures: propose to utilize Communities of color, Lower-income communities, Limited English proficiency populations; Older adults and Youth included in access to services but not access to jobs, consistent w System Performance Measures. – Previous TSEP criteria considered three communities of concern: Low-income or very low income, Minority and/or Hispanic populations, Disabled and senior populations. ▪ Does the project link people to Community Places and Jobs? – Align with RTP System Performance Measure: Utilize the same destination types in the Community Places measure (civic/health, essential retail, financial/retail, food, medical). – Align with RTP System Performance Measure: Utilize the same methodology as the Job Access measure. Note that the 2018 RTP criteria #4 (Equity and Access to Opportunity) defines as: Access to job areas which have or are forecasted to have more than 50% low- and/or middle-wage related employment ▪ During testing phase, consider if #9 is sufficient to indicate if there are populations on the corridor we want to serve	▪ Access to Jobs measure can distinguish between low, middle and high wage jobs	X	X	X	X				X
Environmental Benefit												
10	Reduction in emissions	▪ Rationale: Aligning transit service with demand and land use is cost-effective way to reduce emissions. ▪ Former Criteria #: EN1. Reduction in emissions and disturbance. ▪ This criterion is directly related to ridership but is maintained as a separate measure to reflect the relationship to the Climate Smart Strategy. ▪ Metro Model Output	▪ Change in annual VMT and resulting emission levels for CO2 and other harmful pollutants such as NOx and SOx.	▪ Because all projects are being modeled together, the change in annual VMT cannot be attributed to a particular project. Depending on resource availability, Metro may be able to model small groups of projects together to isolate benefits.		X		X	X			

#	Recommended Criteria	Notes	Method of Evaluation	Notes	Alignment				Regional Transit Strategy Goals			
					System Performance Measures	6 Desired Outcomes	Climate Smart Policy #2	Federal CIG	Frequent	Convenient	Accessible	Affordable
Funding Commitment/Partnerships/Local Support (Readiness Phase)												
11	Local Commitment and Partnerships	▪ Rationale: Local commitment and partnerships between jurisdictions and agencies are essential for the implementation of large regional transit projects. ▪ Former Criteria #: C2 Local Aspirations; Partnerships are added as an element of this criteria.	Political desire for corridor communities (in aggregate) to accommodate land use density and to promote urban form that is supportive of HCT and meets the region's 2040 growth management objectives. Qualitative scoring based on the following four equally weighted points: ▪ Is there documented community and local support for the proposed high capacity transit project? ▪ Does the jurisdiction have adopted population and employment growth aspirations for that would support the high capacity transit project? ▪ Does the local jurisdiction have plans to update land use policies to help support the high capacity transit project? ▪ Are partnerships in place with the various agencies and municipalities that will need to be involved to implement the project? ▪ Is a corridor currently or at risk of gentrification and displacement of residences and businesses? Local or regional analysis? – Are partnerships, policies, and tools in place to prevent displacement of local residents and businesses? ▪ Feasibility assessment to evaluate if there has been some level of agreement with the owner(s) of the roadway about the stated right of way assumptions.	▪ Metro's equity group will be having conversations this fall that will inform how displacement risk is evaluated, by whom, and potential measures, relationships and partnerships to put in place to support a pro-active (rather than re-active) approach to displacement. ▪ The forthcoming Technical Memorandum #6 will include recommendations for the equity component of this criterion.		X		X	X			
12	Funding Potential	▪ Rationale: For projects that would seek federal funding, assess project strength based on the CIG program criteria. ▪ Former Criteria #: D5. Funding Potential ▪ As identified in the Federal CIG column, the CIG program includes criteria similar to many of the proposed criteria. ▪ This measure will only be evaluated for a limited set of the highest scoring projects that are seeking federal funds.	This is an assessment of each corridor's potential to qualify for federal funding under Federal Transit Administration (FTA) program guidelines. FTA funding of guideway capital investments requires demonstration of cost-effectiveness, mobility improvements, and congestion relief potential of the project. Data generated for the following other evaluation criteria are part of the inputs of this measure: ▪ Ridership (Criteria 1) ▪ Transit rider travel time benefit (Criteria 2) ▪ Land use supportiveness (Criteria 3) ▪ Operating and maintenance costs (Criteria 7 data point) ▪ Project capital cost (Criteria 8 data point) ▪ Reduction in emissions (Criteria 11)	▪ To be efficient with limited resources, the readiness evaluation will begin with the Local Commitments and Partnerships Measures (criterion 11), proceeding to criterion 12 only if commitment and partnerships are in place. ▪ The regional travel model is used to develop information for the FTA CIG criteria evaluation, though some criteria includes data outside of the model.							

Getting there

by transit

Regional Transit Strategy

a component of the 2018 RTP

Metro

Regional Transit Strategy Work Group

Meeting #13

June 27, 2017

Today's presentation…

Washington County Futures Study and TV Highway planning efforts

Enhanced Transit Corridor planning efforts

TriMet's RTP priorities

Transit system expansion policy

Next steps

Testing the assessment and readiness criteria **this summer** with the RTP Call for Projects.

Updating the transit network/vision map **this summer/fall**

Updating the transit related policies **this fall**

Updating the system expansion policy **this summer/fall**

Thank you

Transit Findings:

Transportation Futures Study & Aloha Tomorrow

Washington County
Department of Land Use & Transportation

Transit Working Group
June 27, 2017

Washington County

Transportation Futures Study

Exploring options • Informing choices

WASHINGTON COUNTY OREGON

2013 Legislative Charge

"…evaluate the long-term transportation strategies and investments needed to sustain the county's economic health and quality of life in the coming decades"

Public Process Shaped Study

Public

- **Online open houses and community briefings**

Advisory Committee

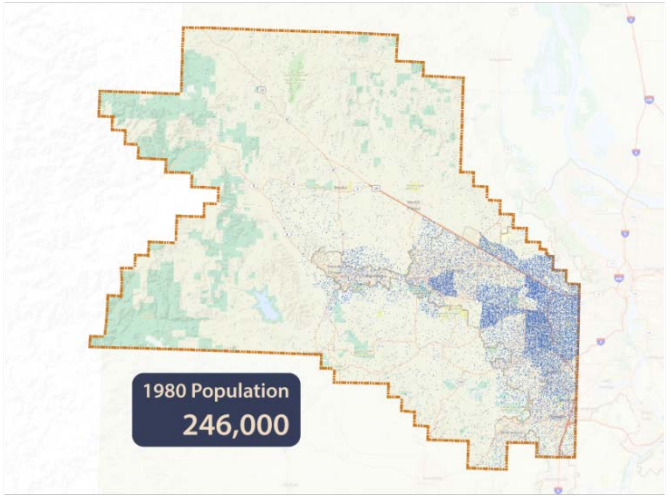
- **Advised project team throughout the study**

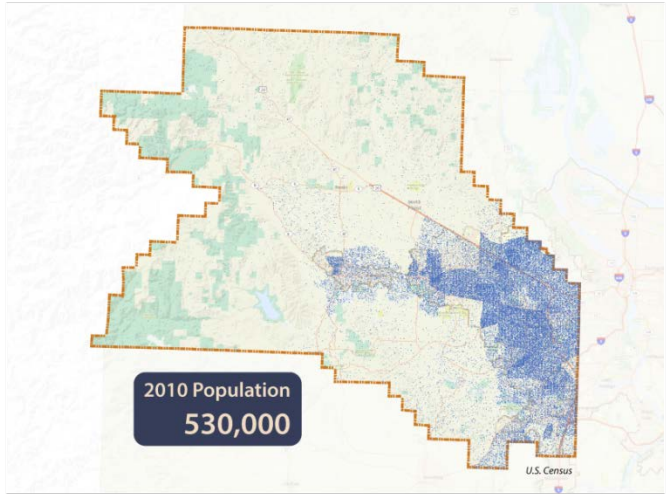
Agency Coordination

- **Reviewed approach and analysis**

Our Past: Growth and Transition

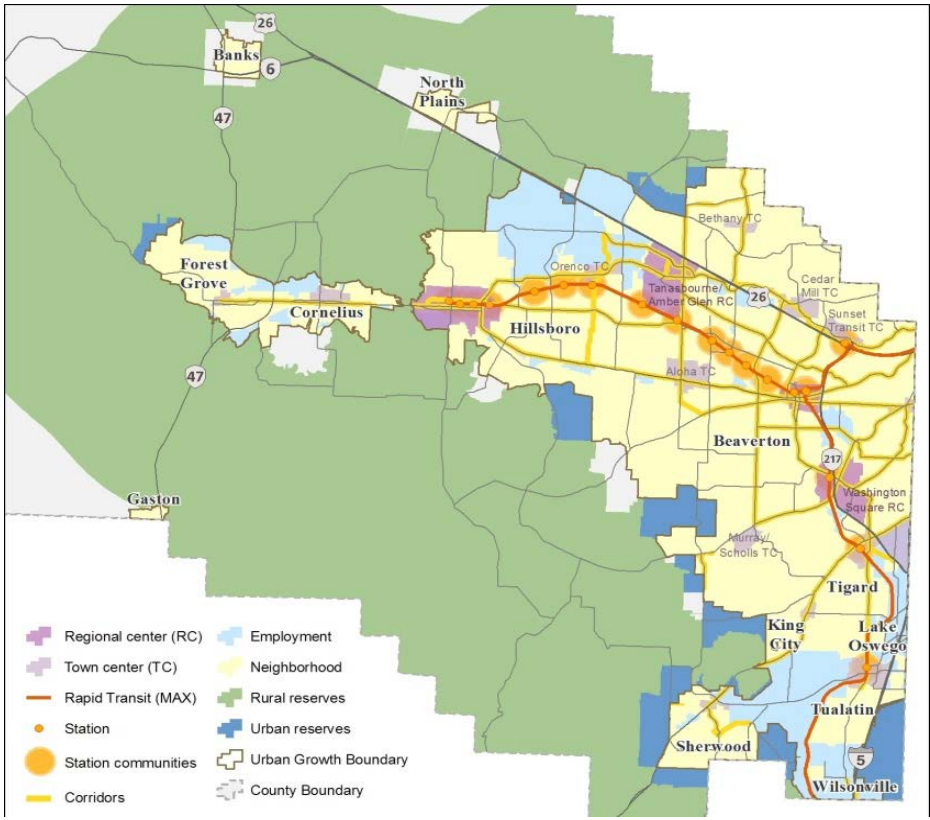
- Grew faster than predicted
- Much more ethnically diverse
- Land use plans responded to changing community values and economic conditions
- Implemented transportation funding strategies





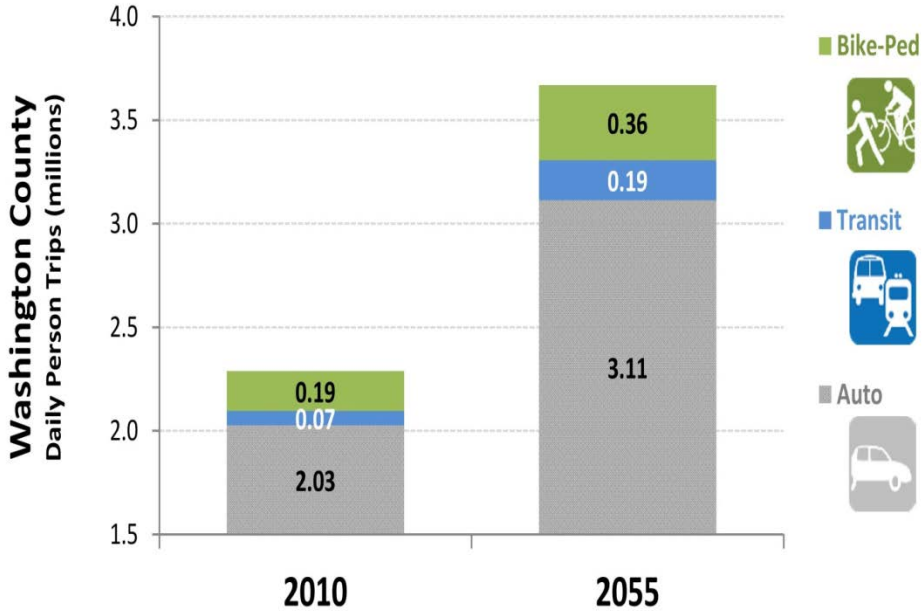
Our Future: Urban Form Takes Hold

- Growth scenarios based on:
  - Local plans and 2040 Growth Concept
  - Urban and Rural Reserves
  - Changing demographics and technology
- Two scenarios
  - Current Trends
  - Increased Trade and Technology



More People + More Jobs = More Trips

- Total trips increase up to 60%
- Driving trips to increase by 50%
- Walking and biking trips increase by nearly 100%



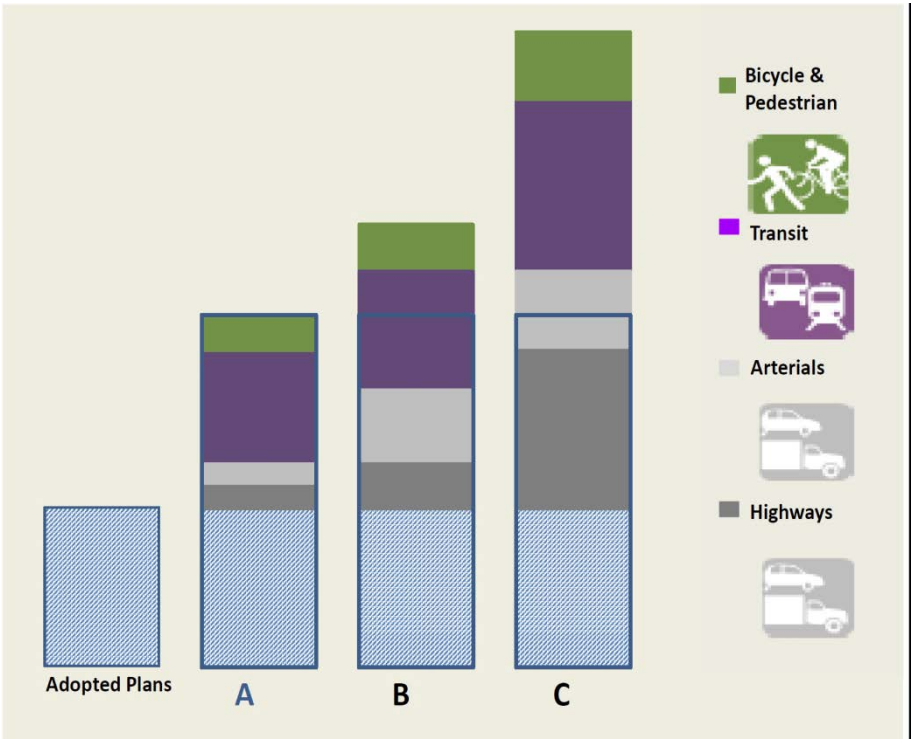
- Transit trips increase by over 200%

Transportation Investment Packages

A. Adopted Plans, Enhanced Transit and Demand Management

B. Builds upon A with an Enhanced Arterial Network

C. Builds upon A with New Major Roadway and Transit Capacity

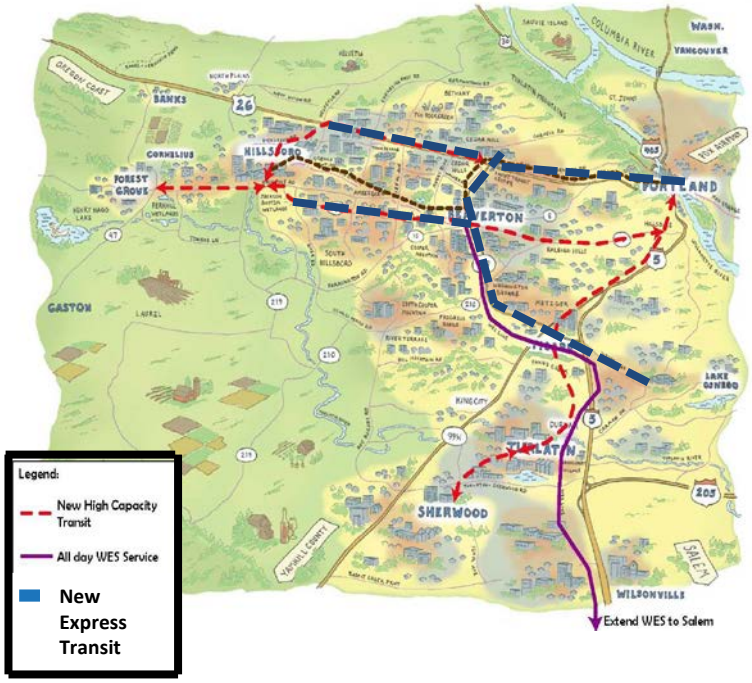


Centers + Corridors = Fewer Vehicle Trips

- VMT per person trip continue to decline
- Improved street connectivity, parking management, and commuter programs
- Increase non-auto use by 50% in centers
- More roads = more VMT

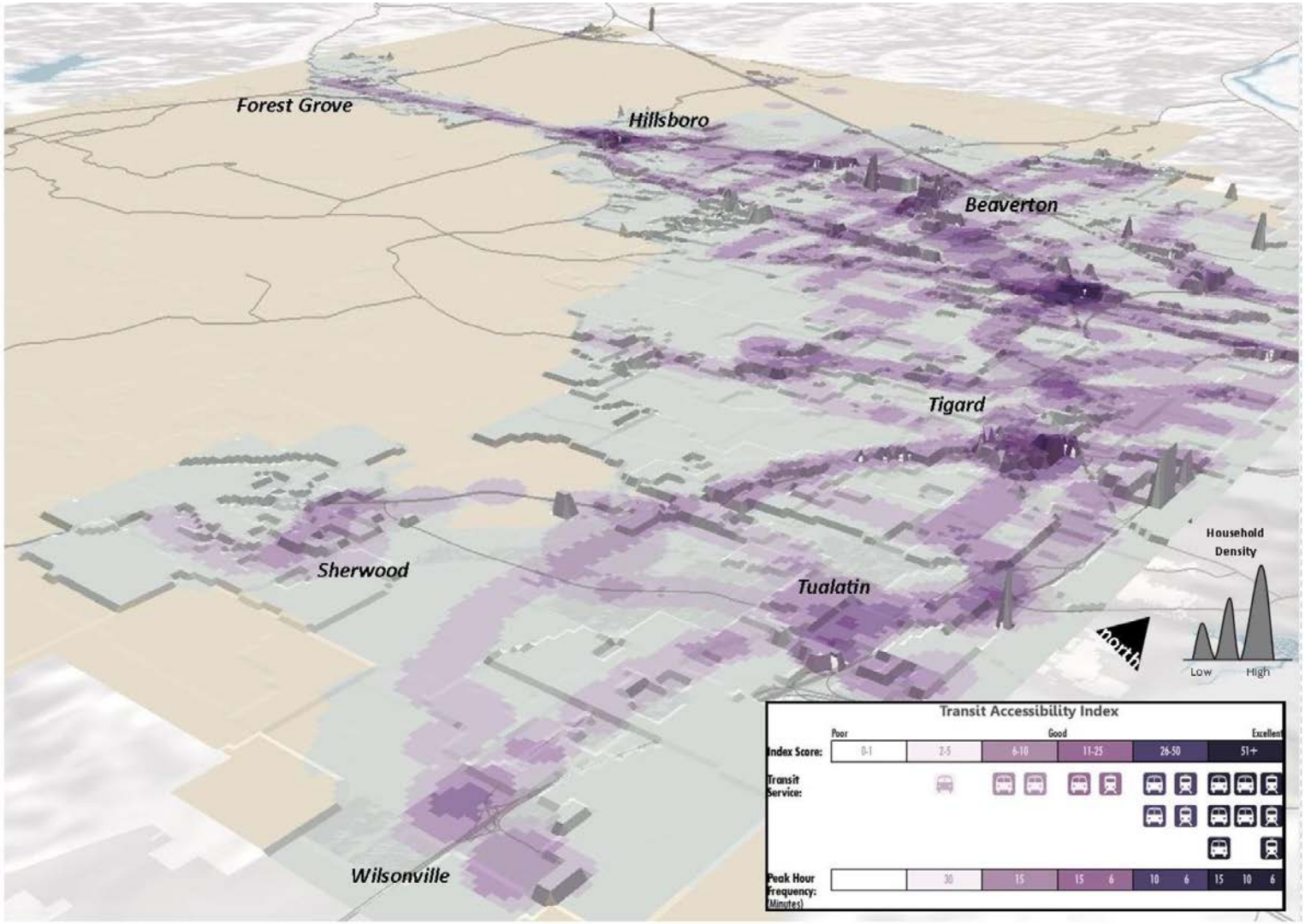
More People + More Jobs = More Transit Demand

- Portland transit trips more than double
- Transit trips within county increase by nearly 300%
- Transit demand increases an additional 20% with express service and park & ride



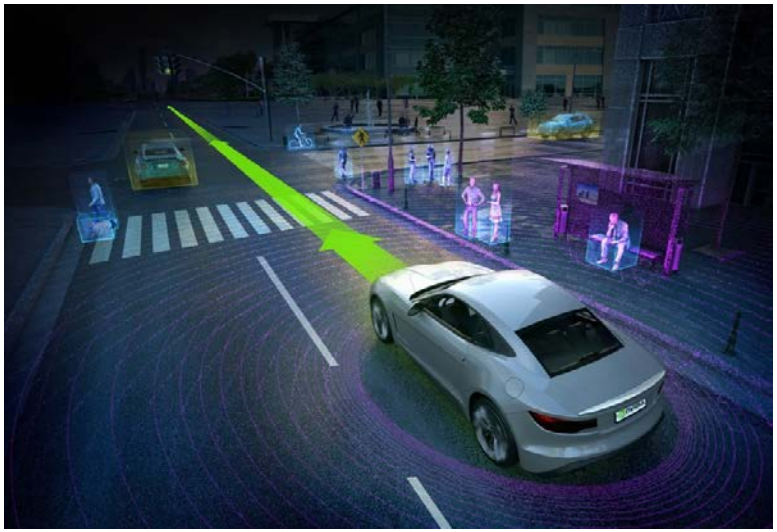
- 80% of households within ¼ mile of transit
- More than 80% of low-income households within ¼ mile

Transit Index



Smart Technology = Better Efficiency and Safety

- Increased efficiency with smart streets (signal and communications technology)



- Improved safety, and reliability with smart cars (connected/ autonomous vehicles)

- May increase VMT

Managed Highway Lanes = Improved Travel Times

- Managed lanes for trucks, transit and carpool could:
  - Reduce delay for trucks by over 40%
  - Increase carpooling

- Demand stills exceed capacity

What Does the Public Think?

How did the County Get Input?

Online Open House

- 5,319 People participated (Also, 42 participated in Spanish-language survey)
- BIG INCENTIVE!

Random Sample Phone Survey

- Telephone survey among 400 Washington County residents age 18 years and older
- Margin of error +-5%

Transportation Priorities

Overall

- People support a multimodal system
- Improving traffic flow is top objective

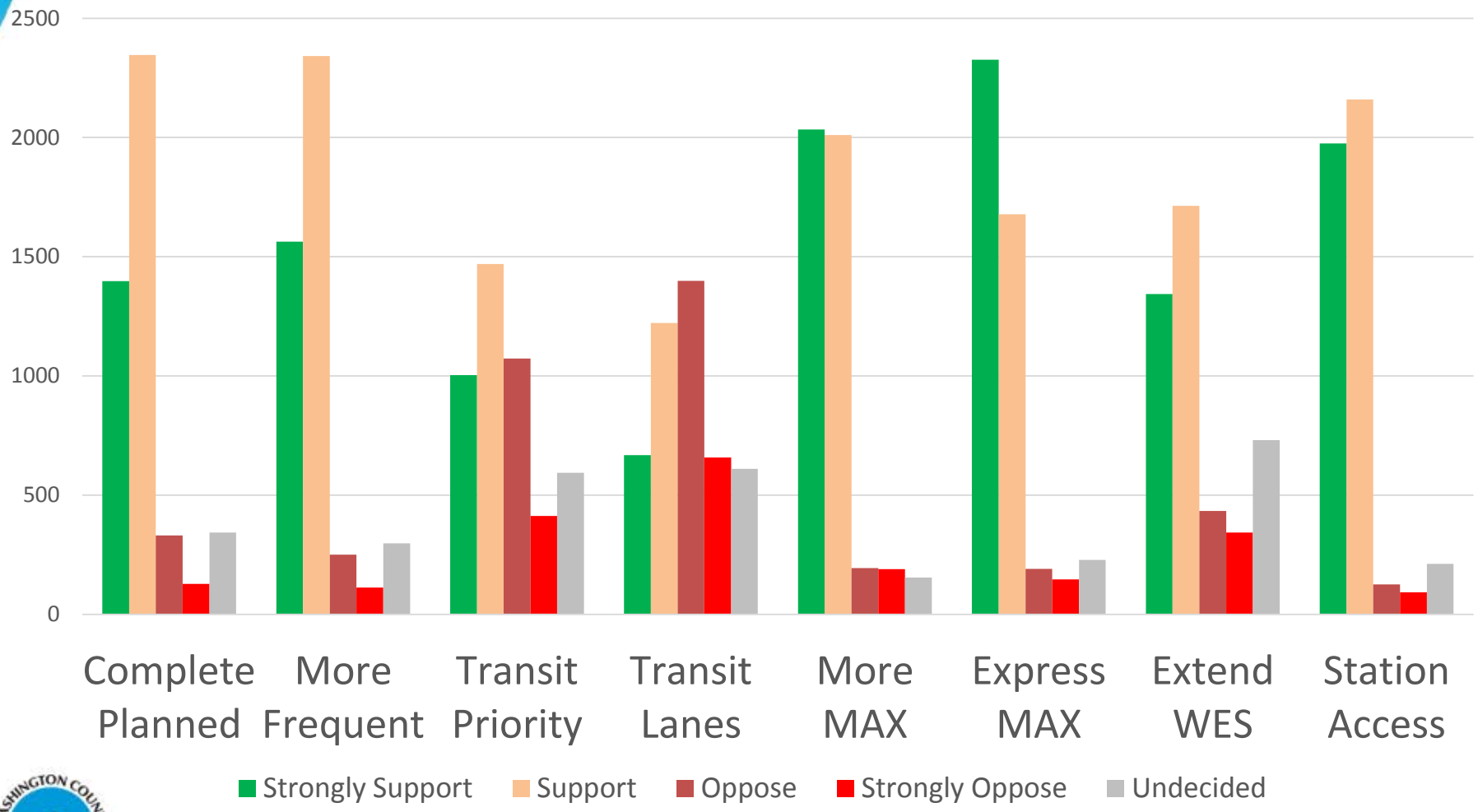
Online Open House

- Ranked transit as top priority; closely followed by new freeway lanes

Random Sample Phone Survey

- Ranked roads and highways as top priority; closely followed by transit

Transit Results from Online Open House



What's Next?

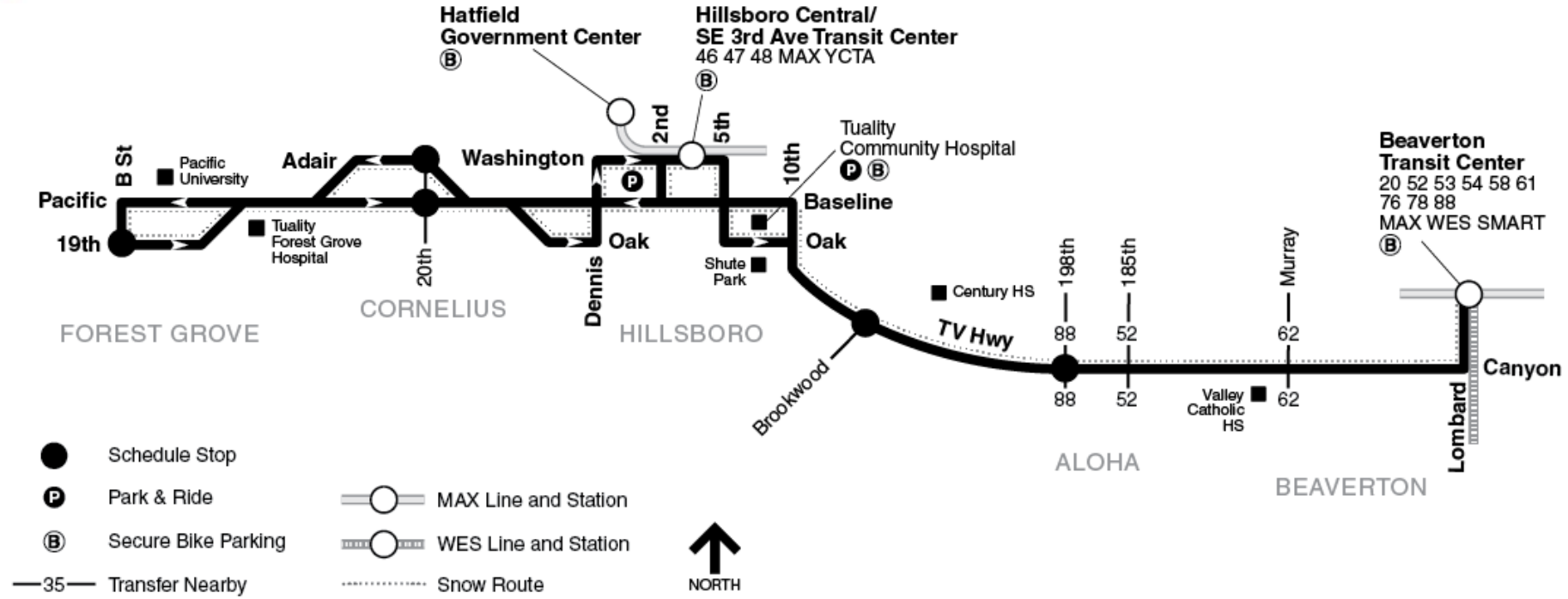
- Continued review of the findings
- Collect input on next steps:
  - Investments
  - Studies
  - Policies
  - Partnership

Aloha Tomorrow

Community Visioning • Safety • Mobility

WASHINGTON COUNTY OREGON

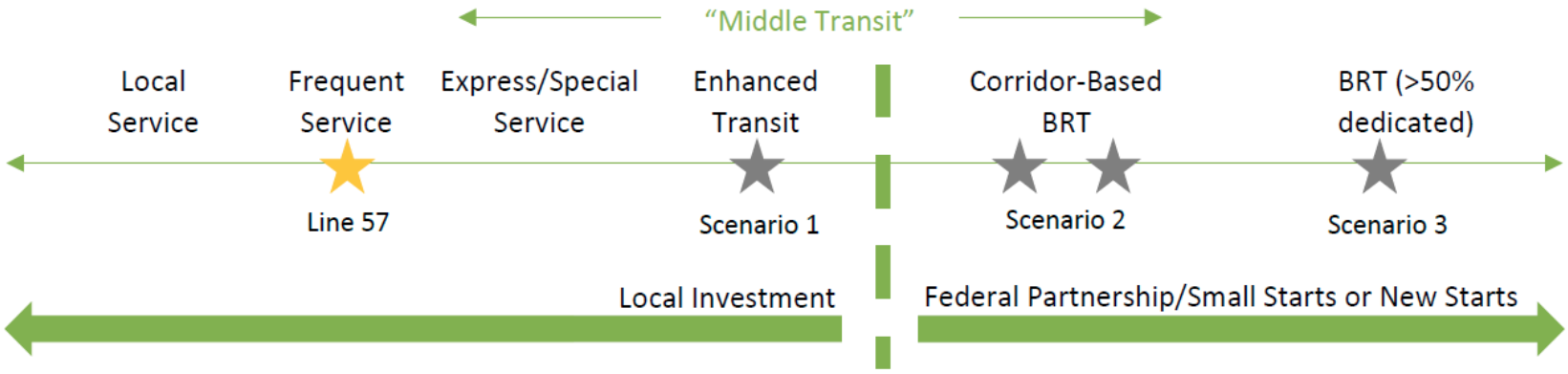
Line 57 Bus Service Today



Line 57 Bus Service Today

- Line 57 is Frequent Service Line
  - 22 hours of service on weekday
  - Frequency of about 15 minutes
- Service is fairly reliable, is slowed by congestion at intersections
- Access to transit stops is a challenge
- Ridership (average daily boardings)
  - 7,540 from Forest Grove to Beaverton
  - 5,000 from Beaverton TC to Hillsboro TC
- Line 57 is TriMet's 9th highest ridership route

TV Highway Transit Concepts



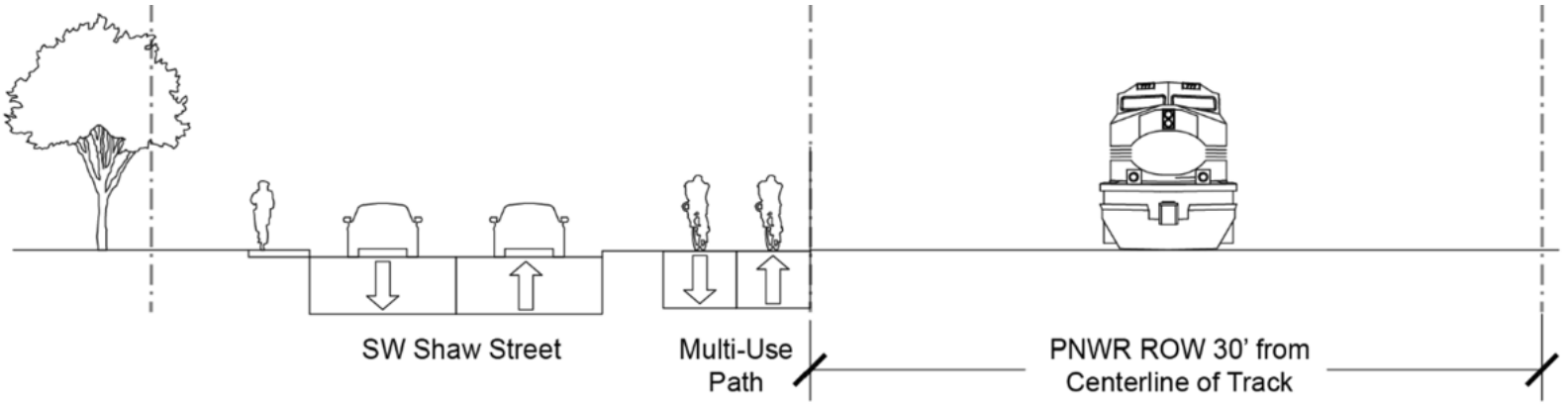
- Three multimodal conceptual alternatives developed for TV Hwy
  - Service enhancements
  - Access to transit improvements

Scenario 1

- Approximately $8M total
- Focus on safety enhancements
  - Illumination, sidewalk connections, crossing improvements
- Station amenities and consolidation
- Transit signal priority

Shaw Street Multi-Use Path

- Two-way MUP on north side of Shaw Road
  - Alternative alignment on TV Highway
- Potential overcrossing at 185th Ave
- Proposed cost: $6M



Alexander Street

- Proposed complete streets concept
- New main street for Aloha Town Center
- Potential to catalyze development

Next Steps

- TV Highway Transit Concepts and Access Plan
- Shaw Street MUP Feasibility
- Alexander Street Town Center Focus

Enhanced Transit Corridors Plan

Metro Regional Transit Working Group *April Bertelsen* *June 27, 2017*

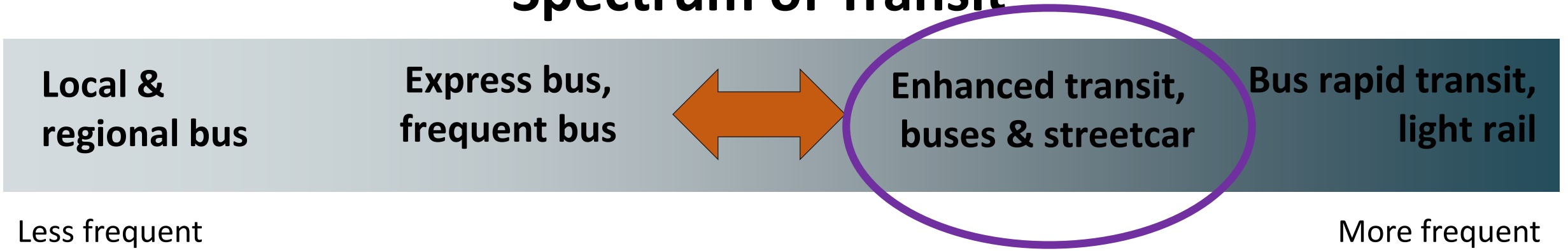
WE KEEP PORTLAND *MOVING.*

PBOT
PORTLAND BUREAU OF TRANSPORTATION

What is Enhanced Transit Corridors?

Calibrating the strategy to our needs

Spectrum of Transit



Less frequent
Less capacity
Operates in mixed traffic
Streetscape doubles as stop or station
Supports linear development
Connects home, work, school and play
Locally funded

More frequent
More capacity
All or majority of operation in exclusive guideway
High investment in station access
Supports nodal development
Connects regional and town centers
Federally funded

Characteristics of Enhanced Transit

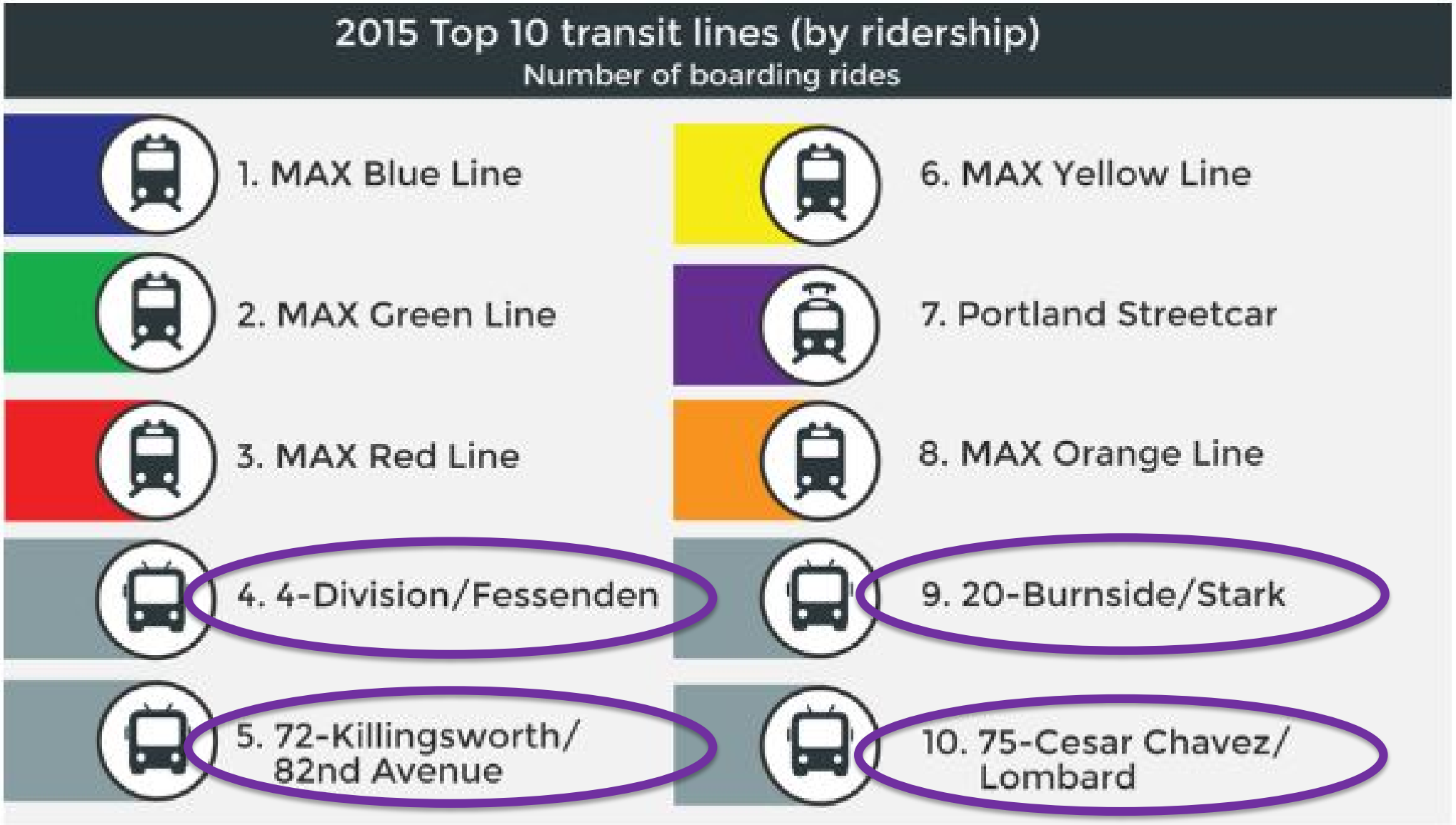
- Increased capacity, reliability and transit travel speed
- Moderate capital and operational investments
- Flexible and context sensitive
- Can be deployed relatively quickly
- Could be a hot spot, corridor or full line
- Can include bus or streetcar

The Vine recently opened in Vancouver, WA

Why Enhanced Transit Corridors?

Answer:
We need to do more to support transit in Portland

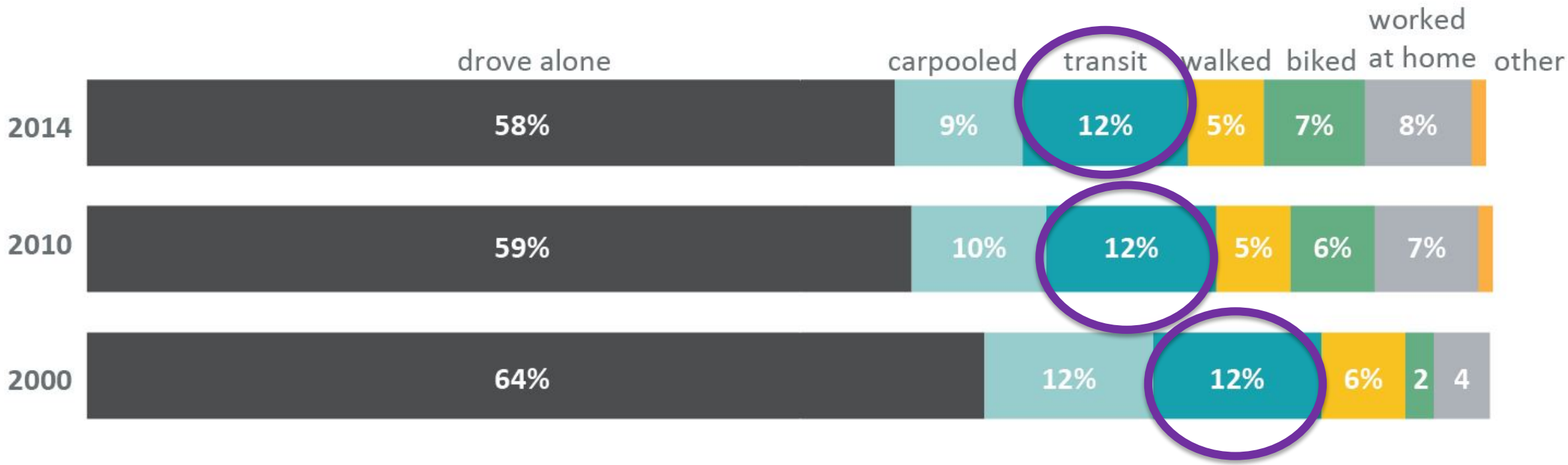
Buses are a “work horse” and carry significant ridership regionally, up there with MAX



Transit ridership is not growing adequately to support growth.

Mode Split: How Portland residents got to work

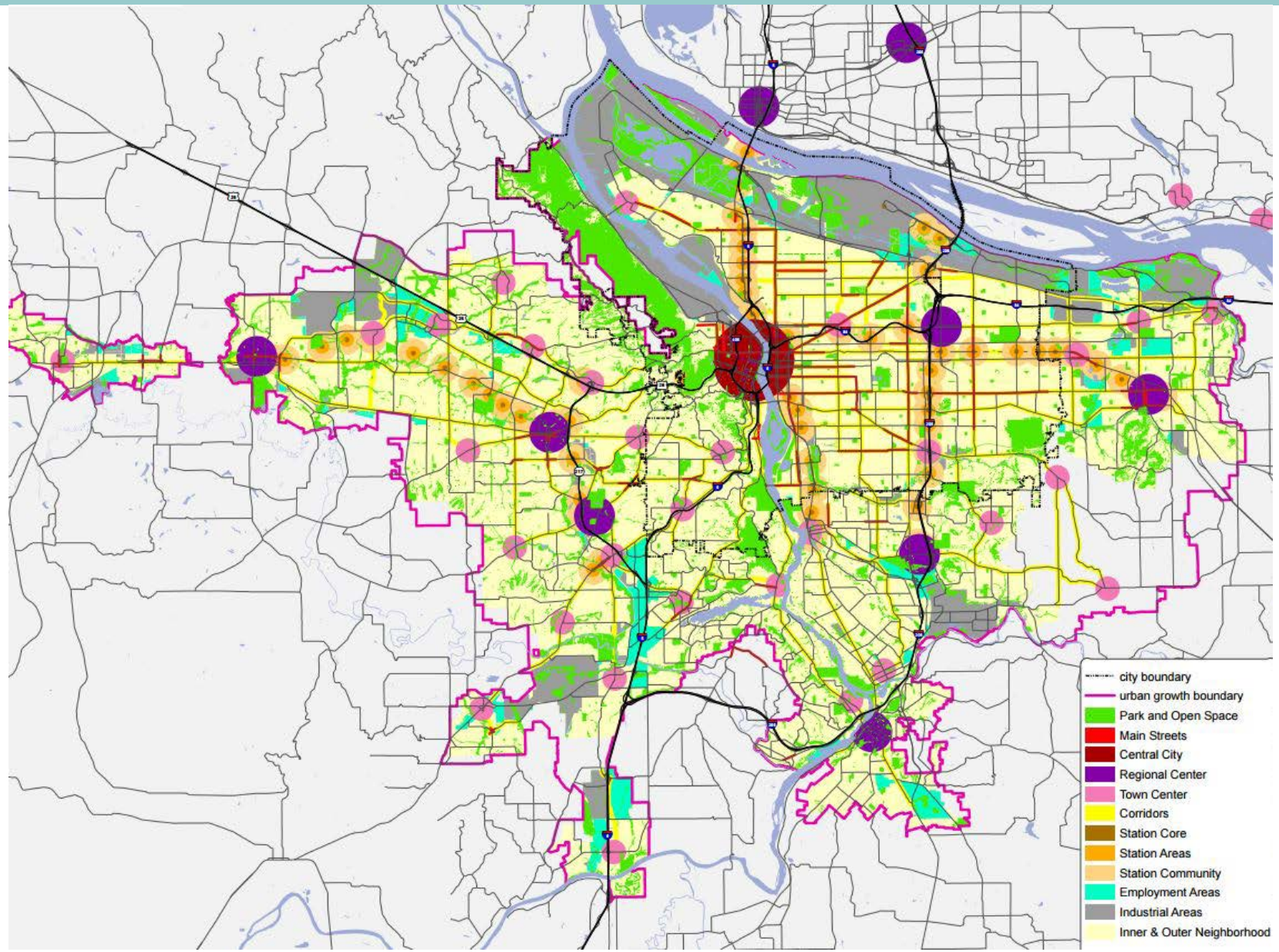
Sources: Census 2000, American Community Survey 2010, 2014



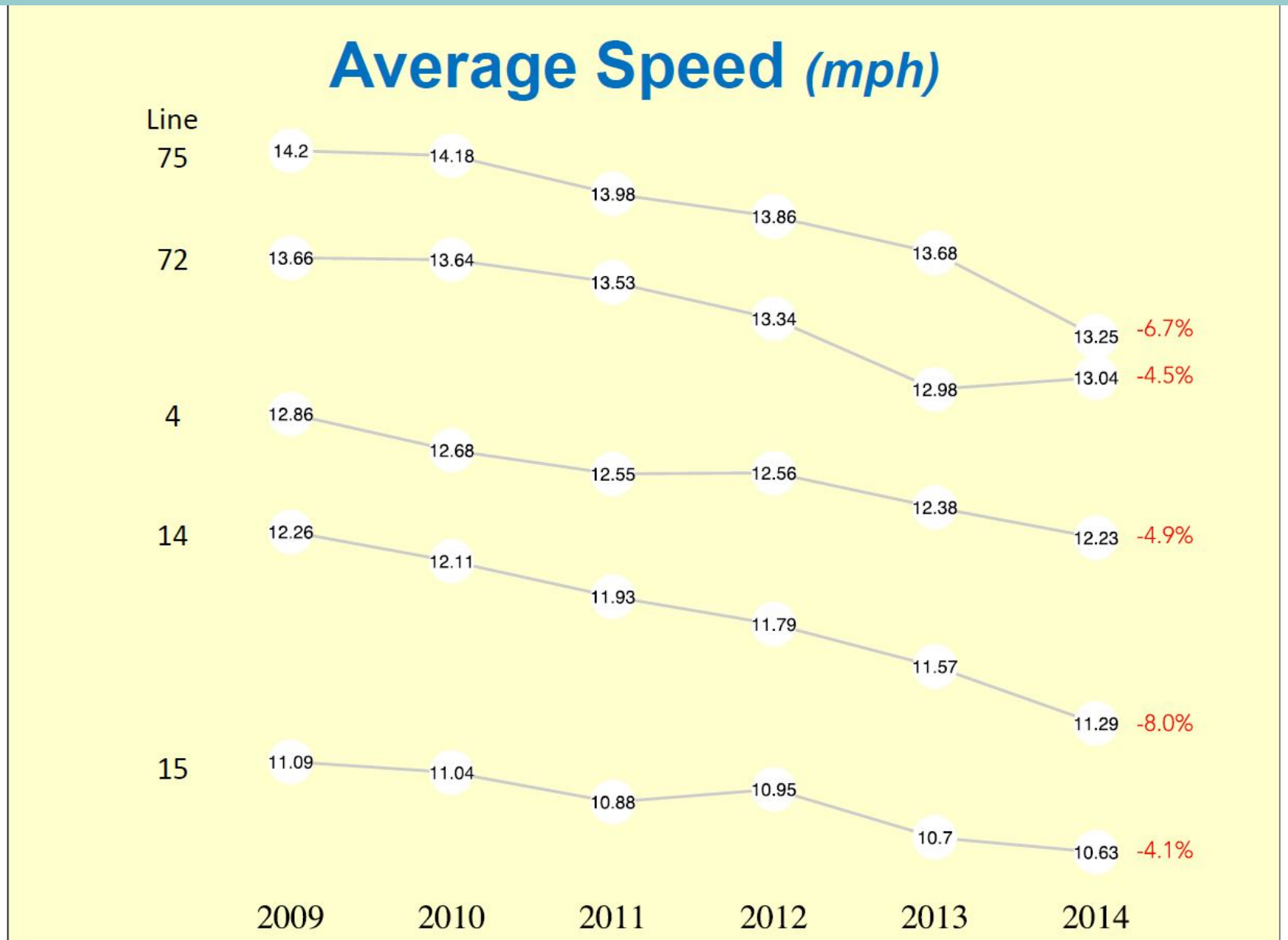
New growth is happening in areas in need of better transit service and access.

We are growing….

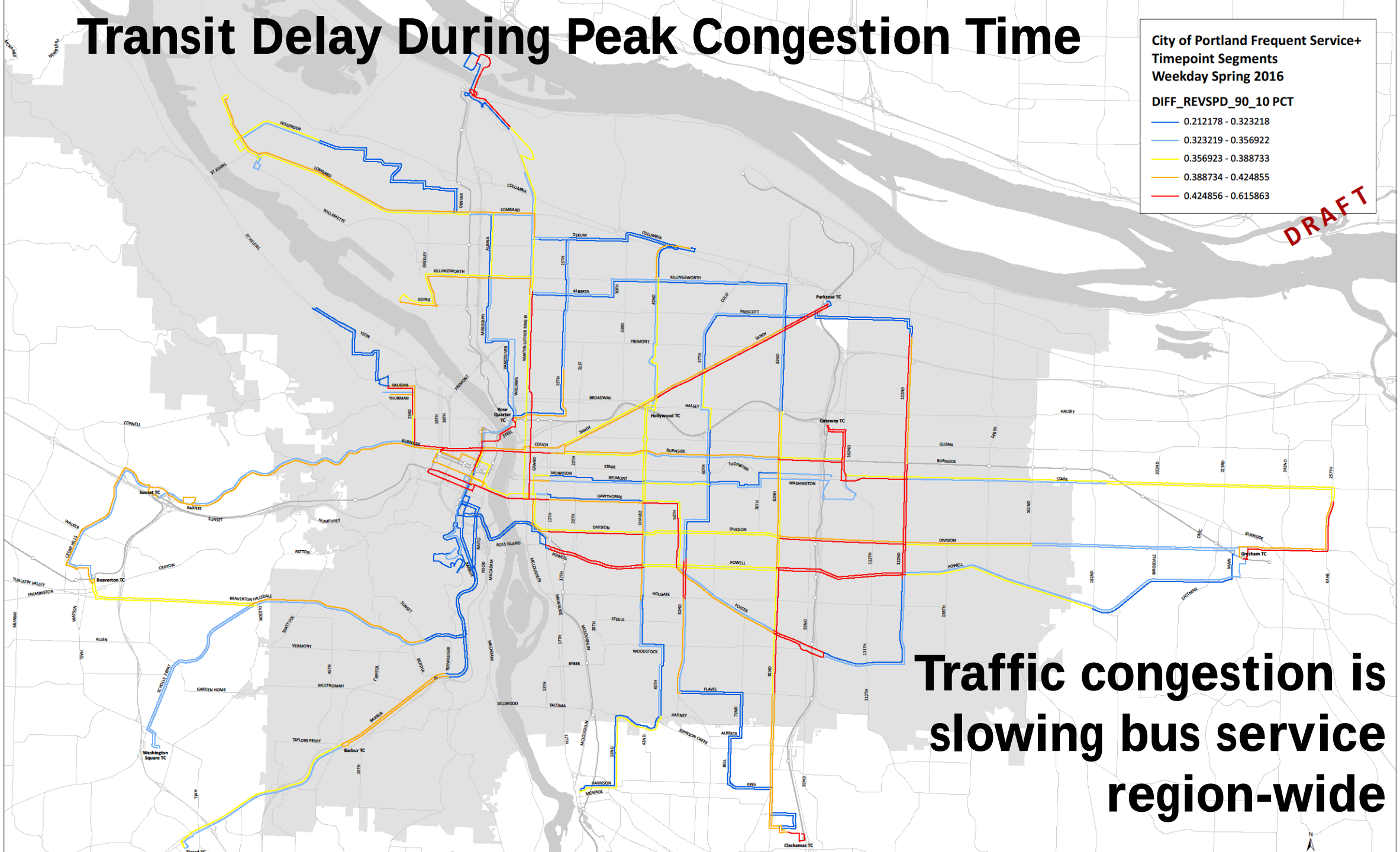
Metro 2040 Growth Concept



Buses are getting stuck in traffic and trips take longer



Transit Delay During Peak Congestion Time

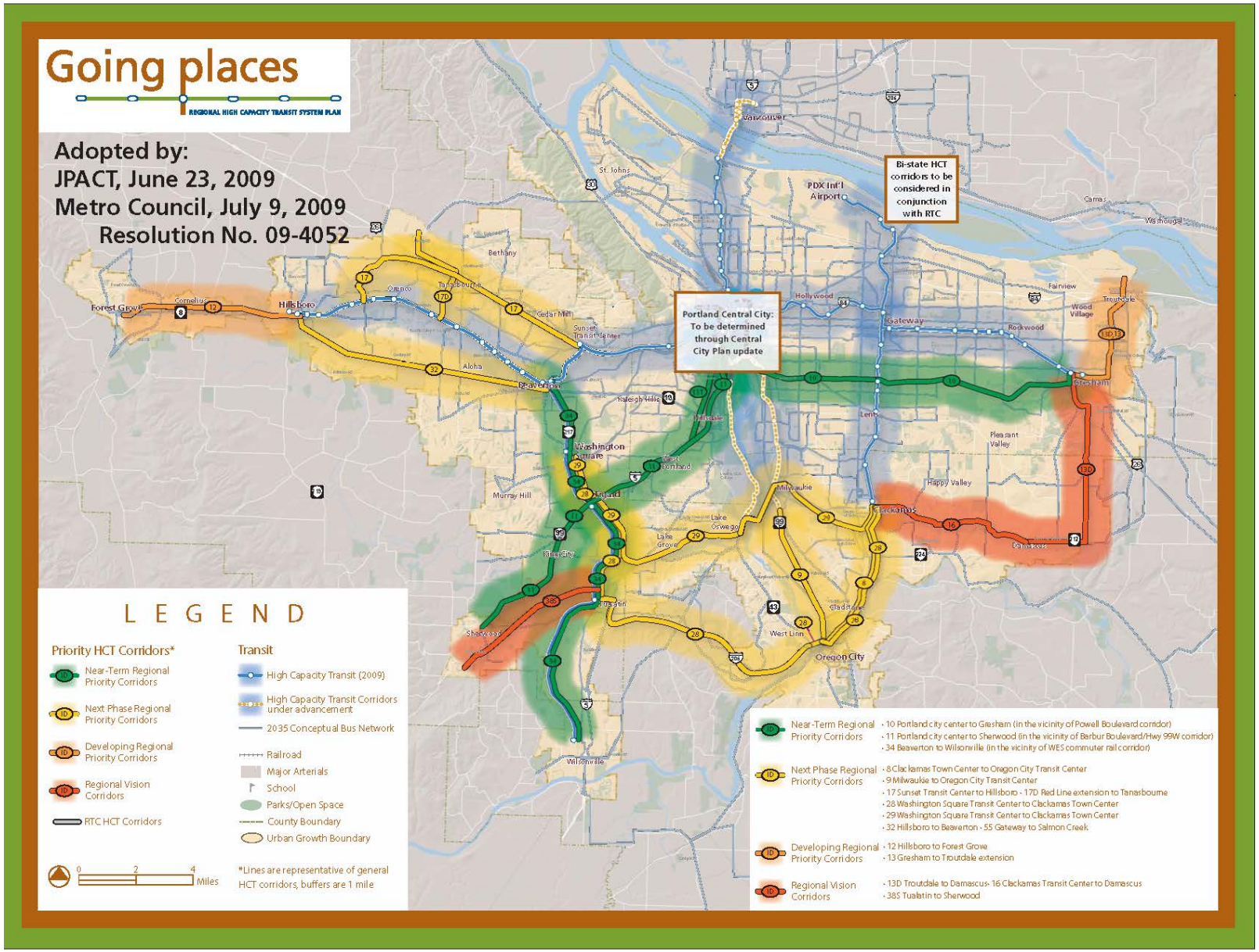


Traffic congestion is slowing bus service region-wide

Regional Transportation Plan (RTP) & High Capacity Transit Plan

This map will be updated as part of the 2018 RTP Update and Regional Transit Strategy

New transit strategies and projects will be identified, including "Enhanced Transit"

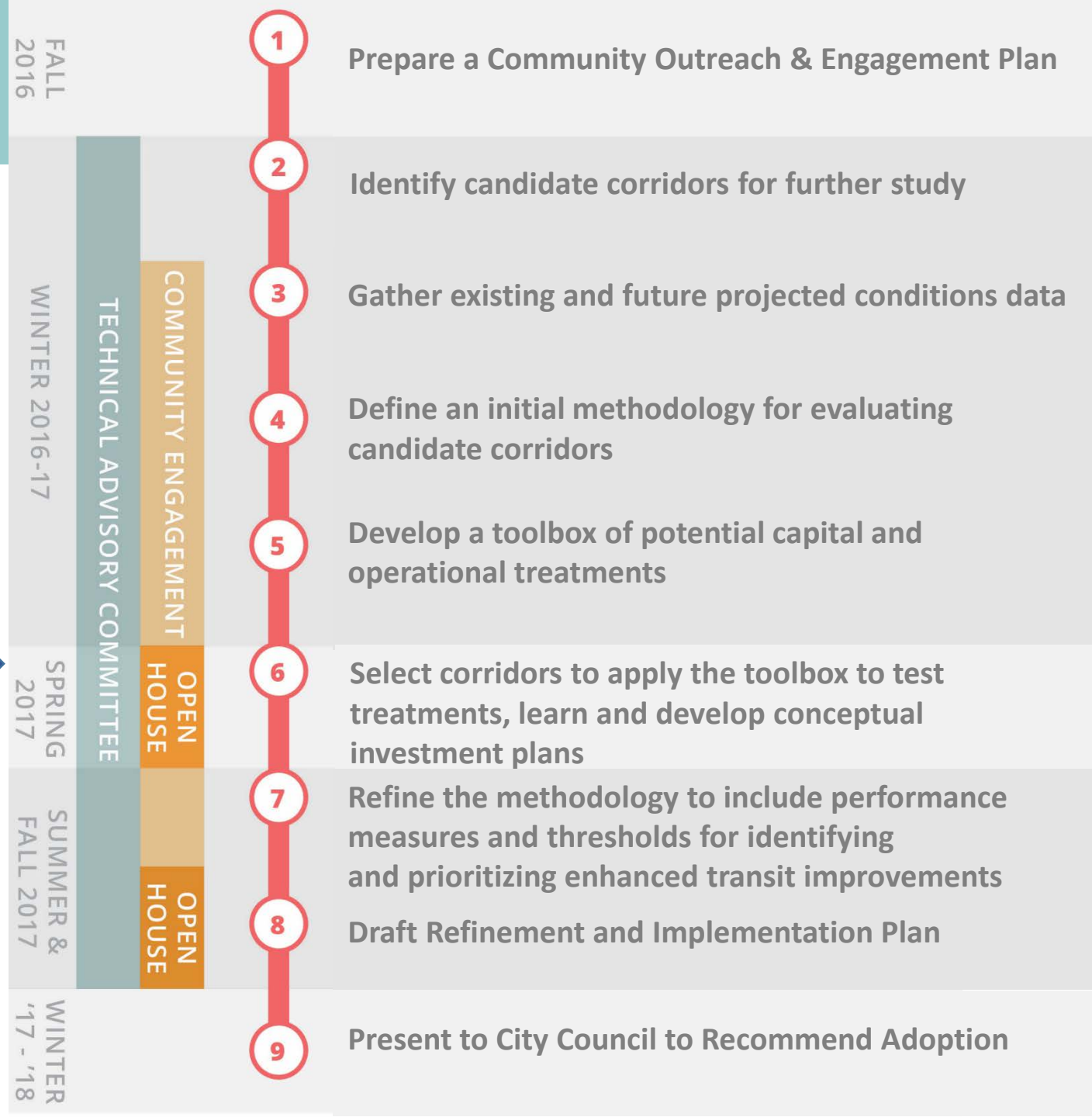


ETC Plan Goals

- Increase transit ridership.
- Support planned growth in centers and along corridors consistent with the City's Comprehensive Plan update.
- Define and identify "Enhanced Transit Corridors" in Portland.
- Establish clear and objective operational performance measures and thresholds to define what success looks like for the most heavily used Frequent Service lines.
- Guide the prioritization of capital and operational investments in Enhanced Transit Corridors.

ETC Process & Timeline

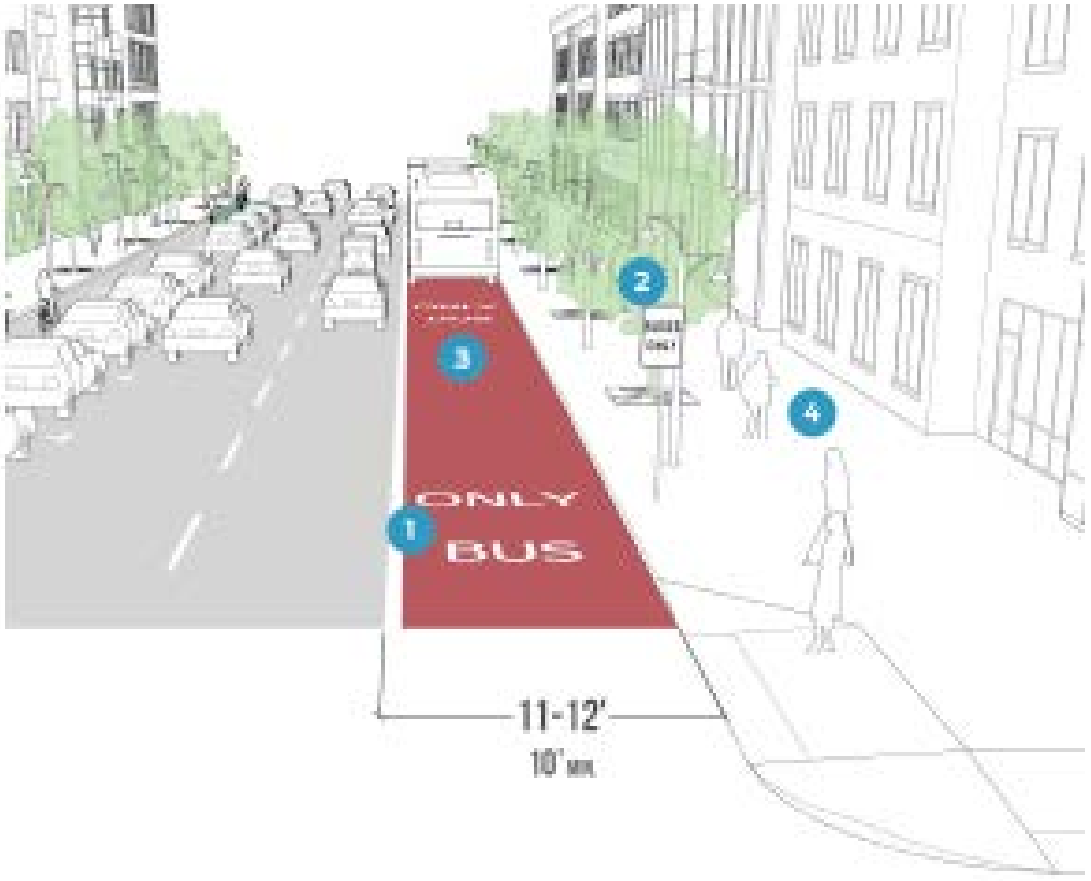
We are here



Capital/Operational Toolbox

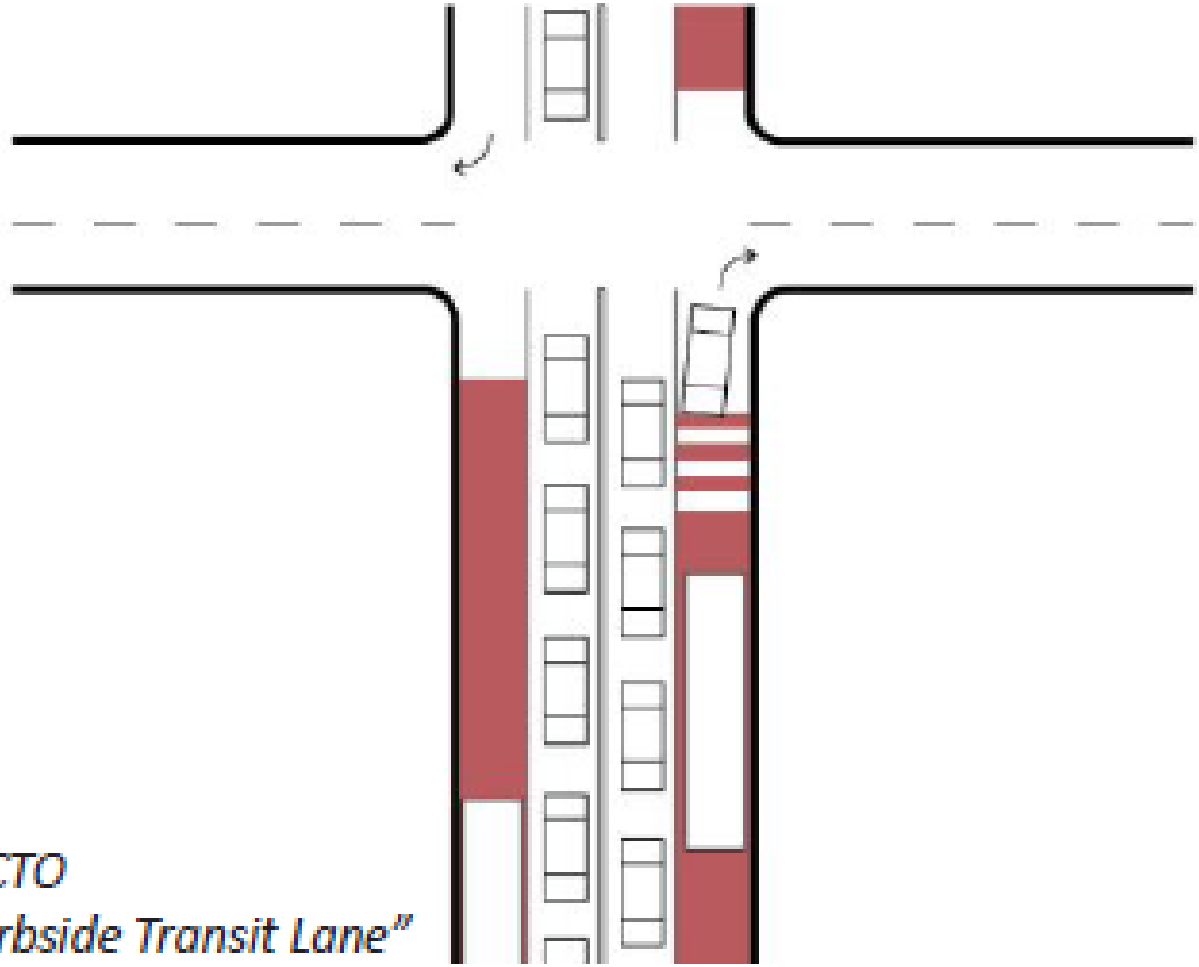
Laneways and Intersection Treatments

Dedicated Bus Lane



NACTO "Curbside Transit Lane"

Business Access and Transit (BAT) Lane



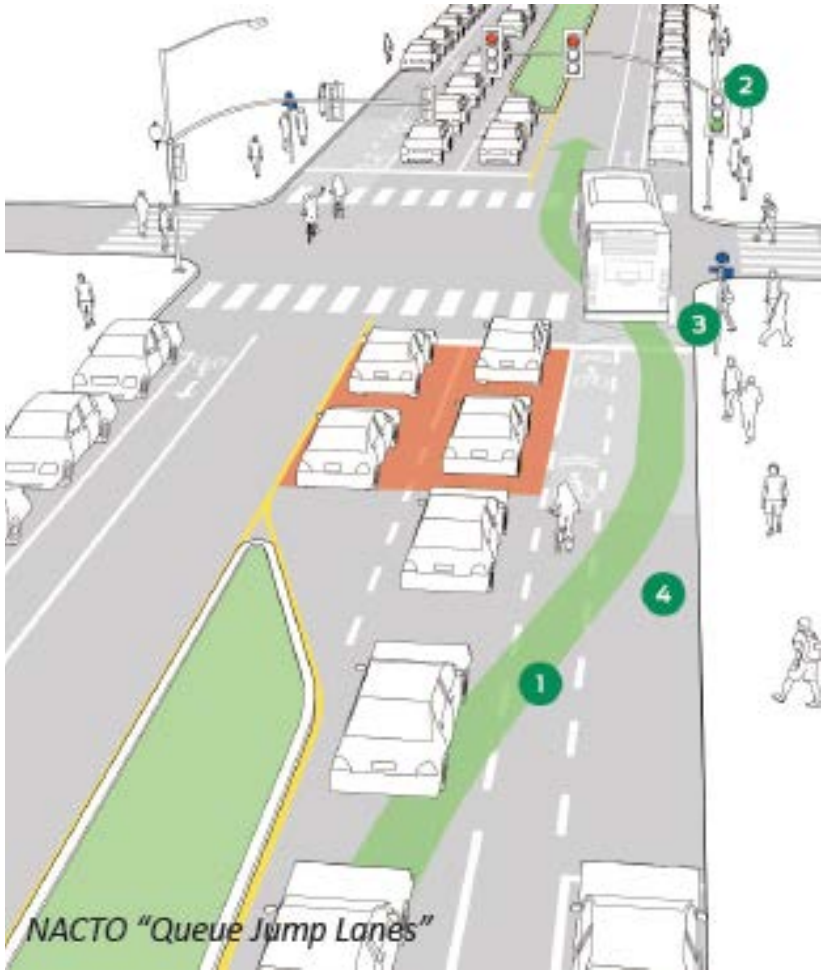
NACTO "Curbside Transit Lane"

Laneways and Intersection Treatments

Pro-Time (Peak Period Only) Transit Lane

SE Madison morning peak hour

Intersection Queue Jump/Right Turn Except Bus Lane



Stops and Stations

Curb Extension for Stops/Stations

Level Boarding

Stops and Stations

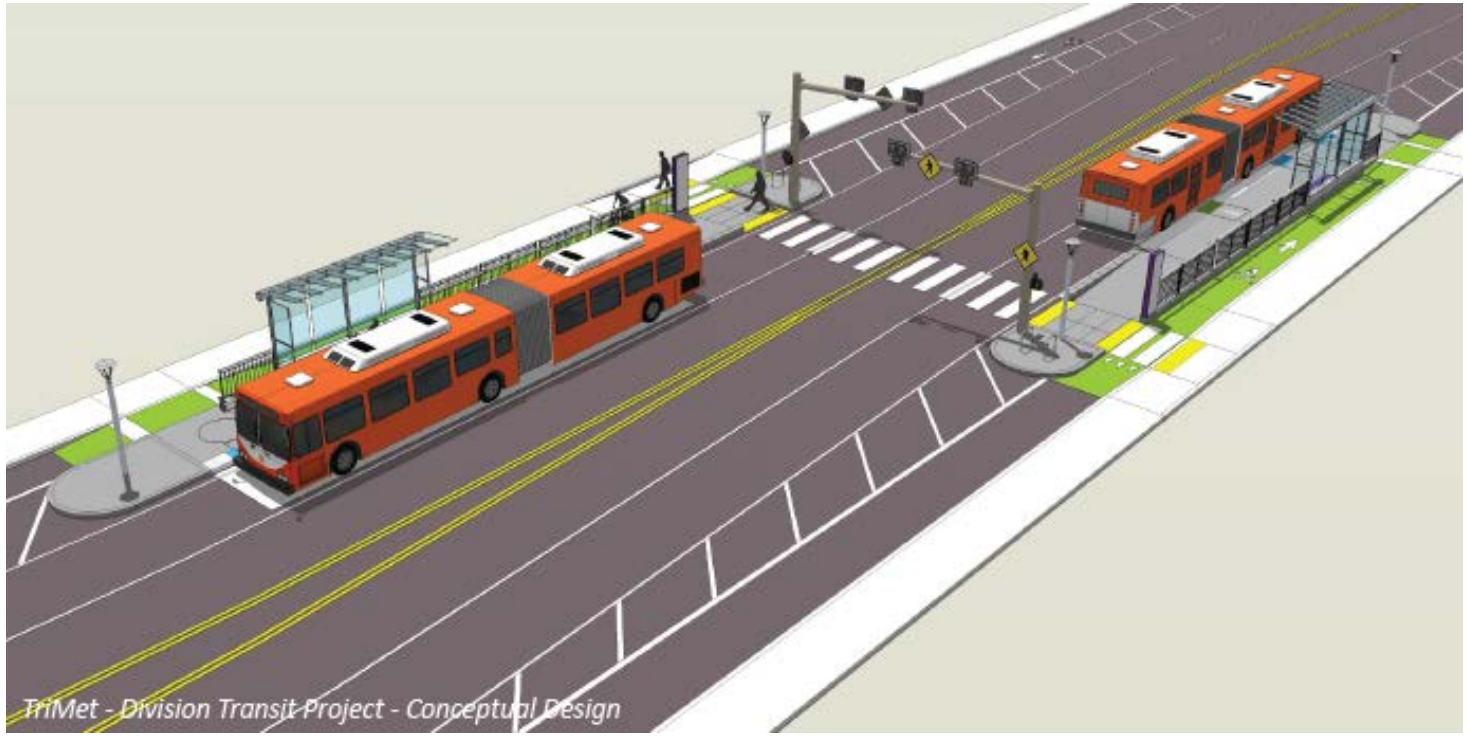
Far-Side Bus Stop Placement

Local Example

Westbound Stop at SE Division Street and 148th Avenue (Portland, OR)

Multi-Modal Interaction

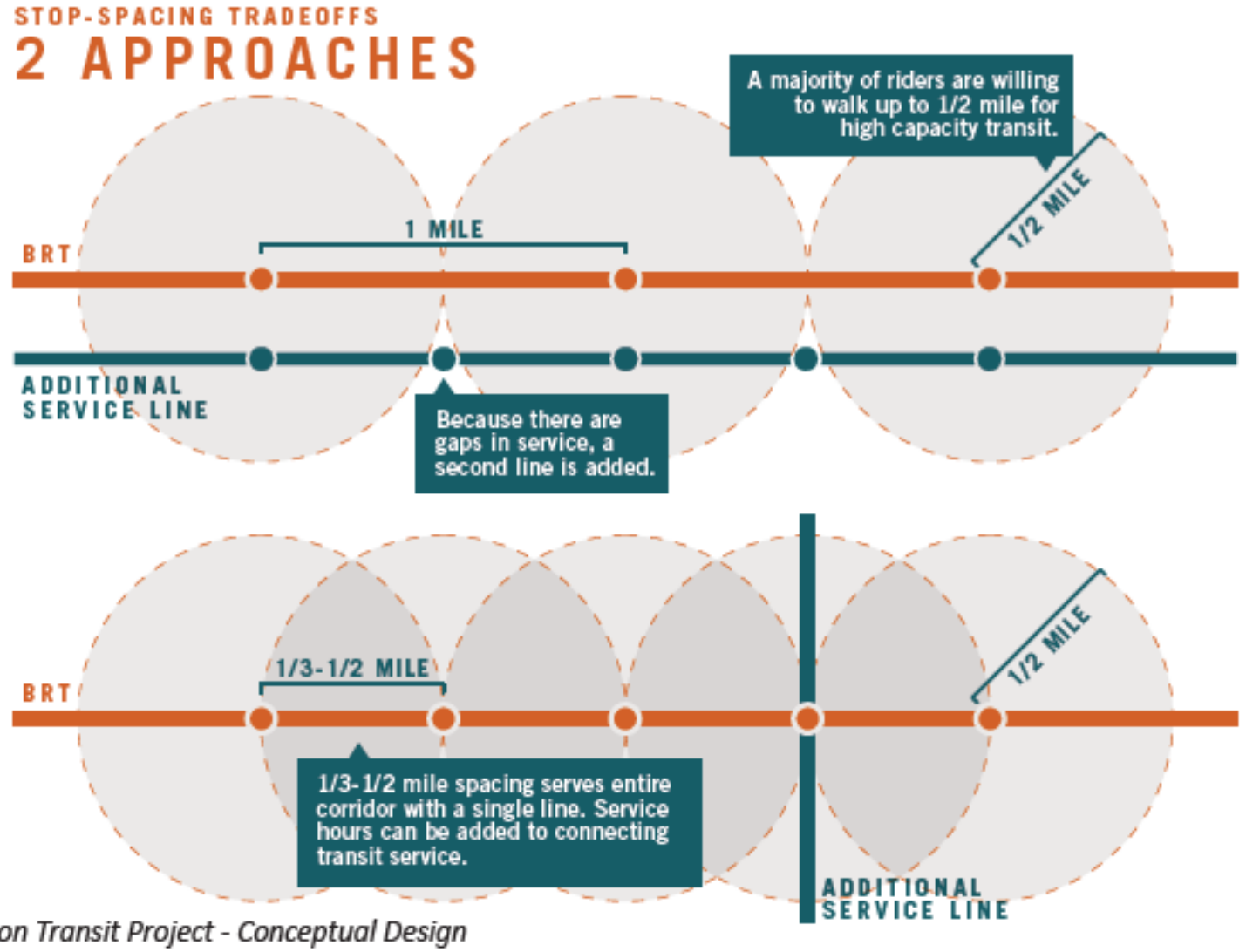
Bikes Behind Station



Left-Side Bike Lane

Stops and Stations

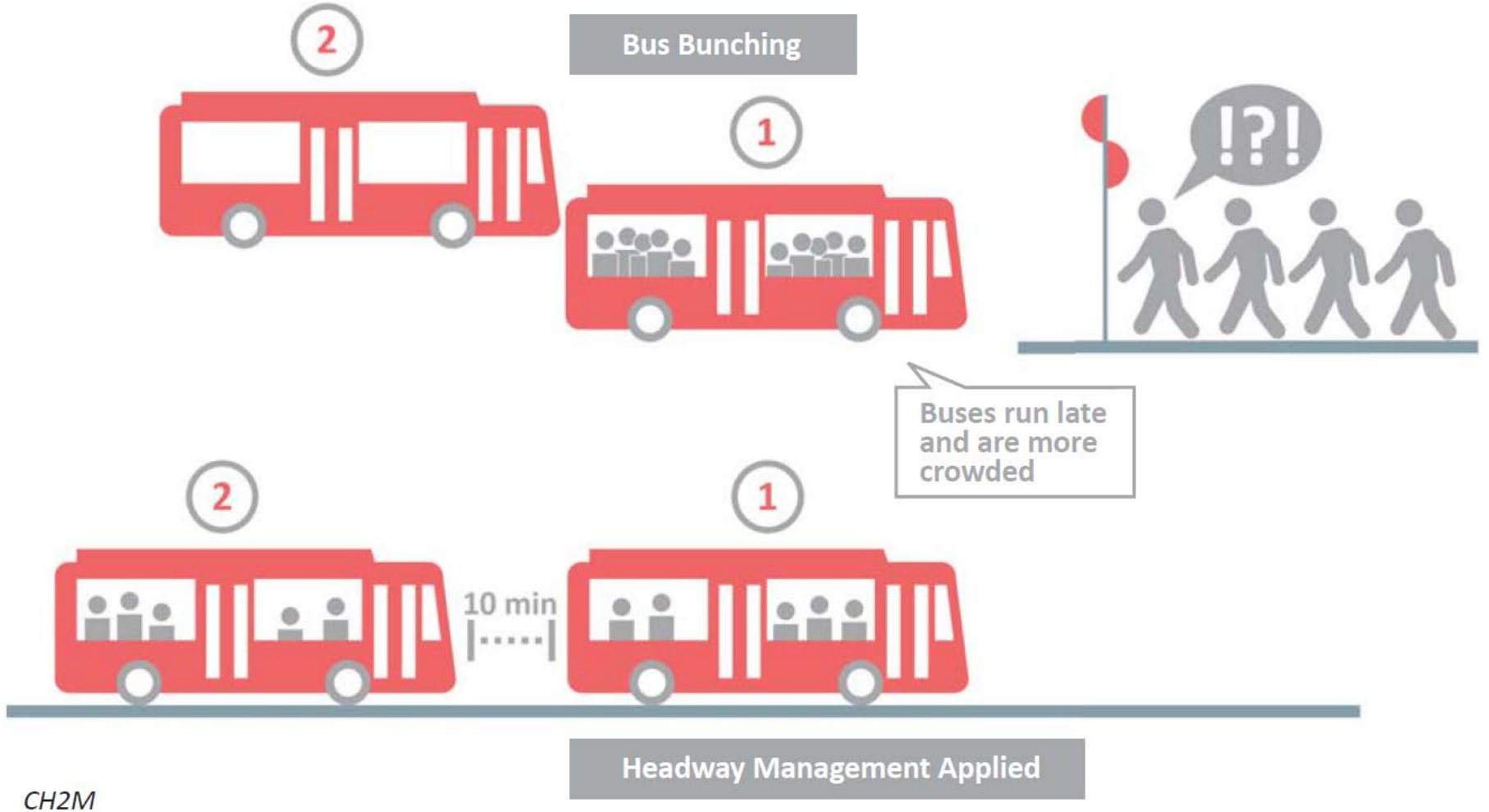
Bus Stop Consolidation



TriMet - Division Transit Project - Conceptual Design

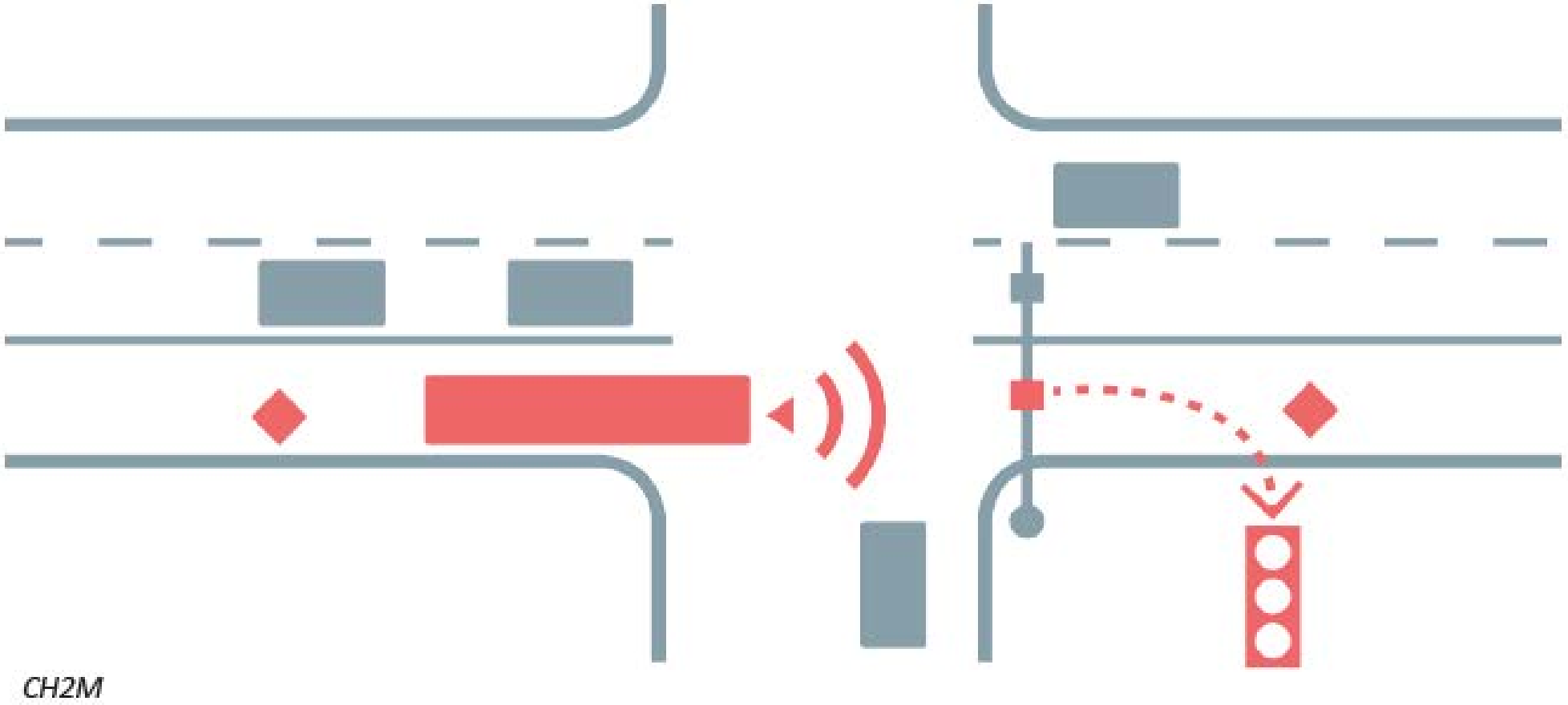
Operations/Other

Headway Management



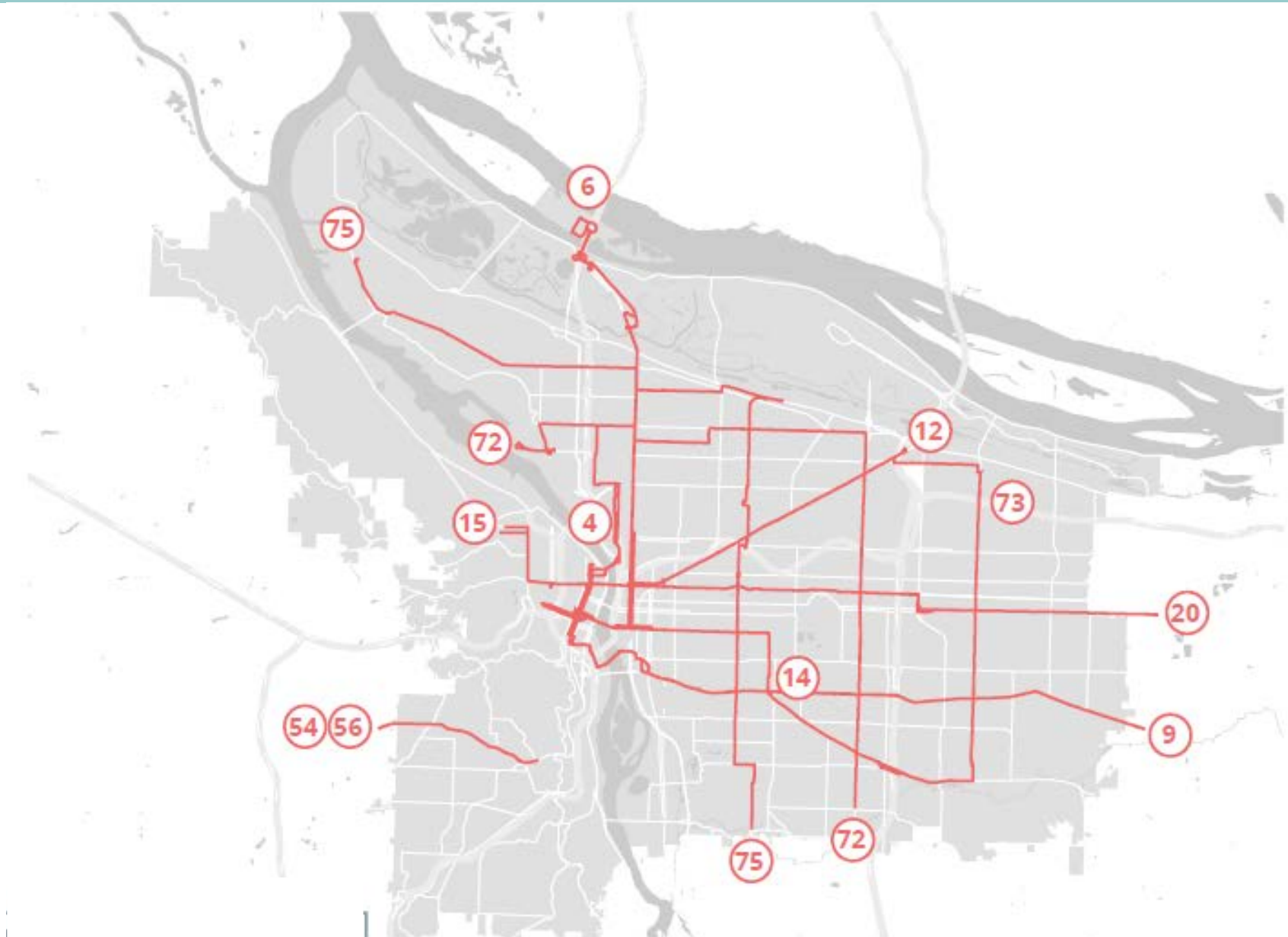
Operations/Other

Transit Signal Priority and Signal Improvements



Existing Conditions & Initial Evaluation Methodology

Candidate Corridors for Further Study



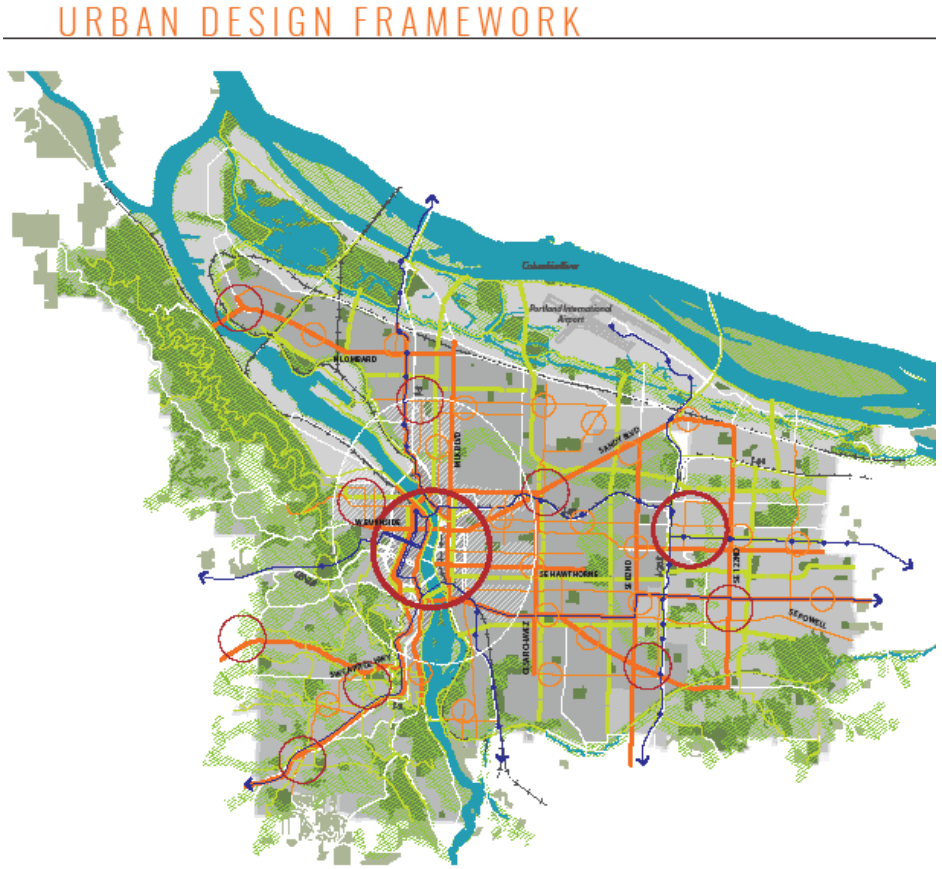
Candidate Corridors for Further Study

1. **Line 4 Segment** – N Vancouver/Williams from Rose Quarter to N Killingsworth
2. **Line 6** – MLK Jr Blvd/Jantzen Beach
3. **Line 9** – SE Powell Blvd
4. **Line 12** – NE Sandy Blvd
5. **Line 14** – SE Hawthorne/Foster Rd
6. **Line 15 Segment** – West of downtown – W Burnside and NW 23rd up to Vaughn
7. **Line 20** – E Burnside/SE Stark St
8. **Line 54/56 Segment** – Beaverton-Hillsdale Hwy, both lines combine to provide Frequent Service
9. **Line 72** – Killingsworth/82nd Ave
10. **Line 73** – 122nd Ave
11. **Line 75** – Cesar Chavez/Lombard

Enhanced Transit Corridors - Approach

Grounded in understanding transit operations.

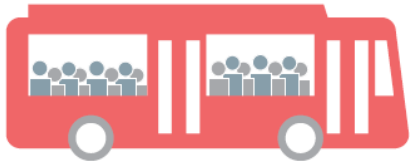
Guided by policy and ridership demand.



- TriMet has a wealth of data to analyze
- Portland Comprehensive Plan provides policy guidance
- This all shapes our criteria for evaluating and prioritizing candidate corridors

Initial Criteria and Measures/Analysis Indicators

- **Average Existing Weekday Transit Trips** (Entering load + boardings)
- **Reliability** (90^{th} to 10^{th} Percentile Speed Variance)
- **Transit Speed** (Average Operating Speed to Speed Limit)
- **Dwell Time** (Dwell to Run Time)
- **Equity** (Low income, people of color, LEP)
- **Growth** (Change in HH/Emp Density)

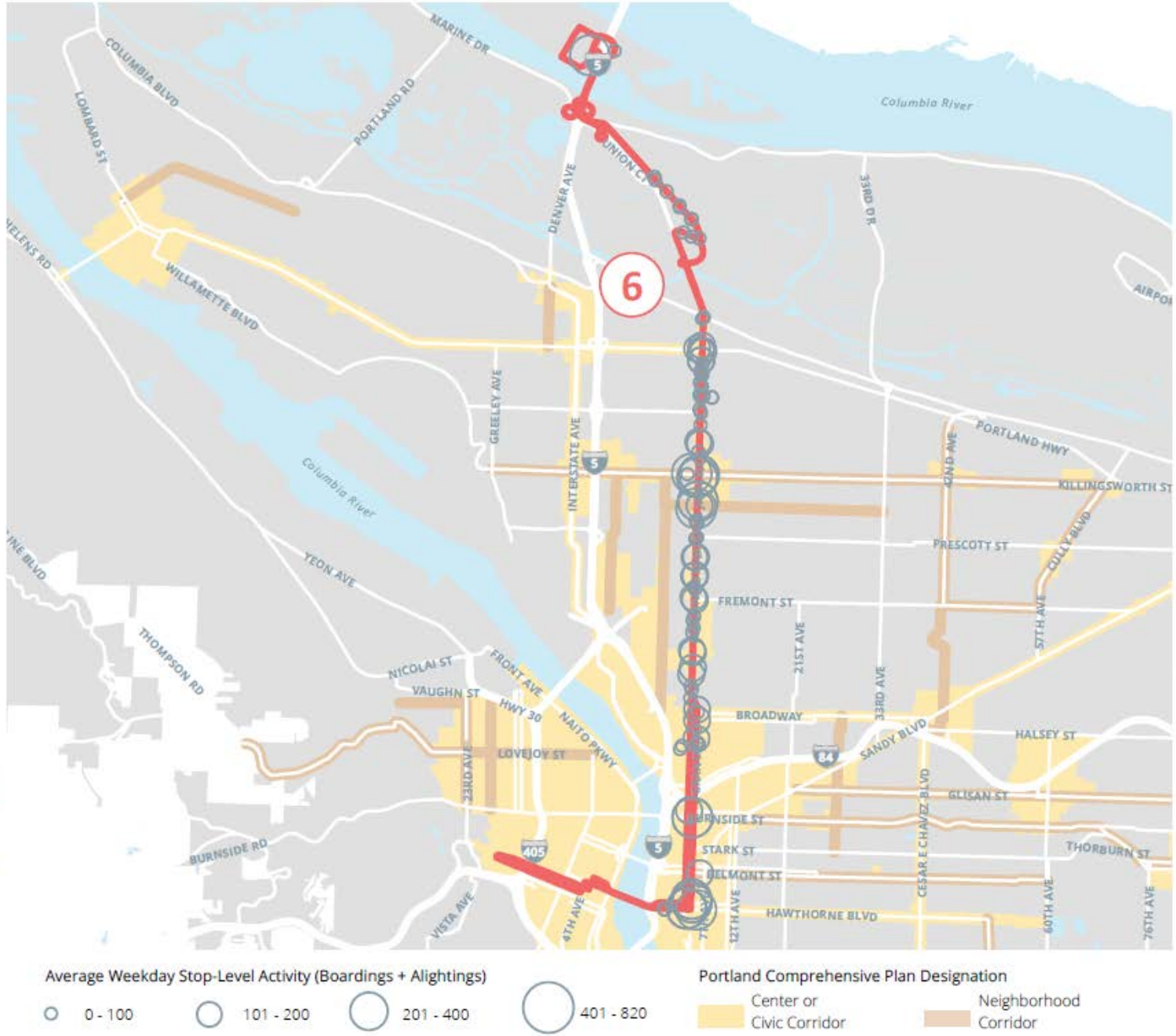



Line 6 Martin Luther King Jr Blvd

One-way length:
Approximately 10.5 miles

Termini:
SW 18th & Goose Hollow MAX Station to Jantzen Beach Main Stop

Primary alignment:
Martin Luther King Jr Blvd



Average Weekday Stop-Level Activity (Boardings + Alightings)

0 - 100 | 101 - 200 | 201 - 400 | 401 - 820

Portland Comprehensive Plan Designation

Center or Civic Corridor | Neighborhood Corridor

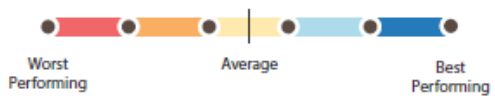
Line 6 Martin Luther King Jr Blvd

Corridor-wide Transit Operations Performance Summary

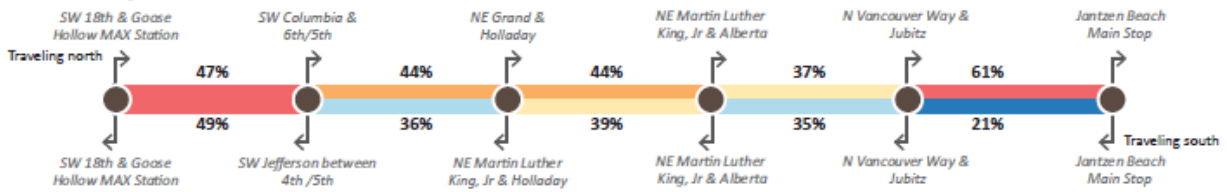
Performance Measure		Key Findings	
Average Existing Weekday Transit Trips Entering load plus stop-level boardings in each direction	5,929	Greatest from NE MLK & Alberta to NE Grand & Holladay	Least from N Vancouver Way & Jubitz to Jantzen Beach Main Stop
Transit Speed Average speed as percentage of posted speed limit	54%	Fastest from N Vancouver Way & Jubitz to Jantzen Beach Main Stop	Slowest from SW Jefferson between 4th/5th to SW 18th & Goose Hollow MAX Station
Reliability Percent difference between 90th and 10th percentile revenue speeds	41%	Most reliable from Jantzen Beach Main Stop to N Vancouver Way & Jubitz	Least reliable from N Vancouver Way & Jubitz to Jantzen Beach Main Stop
Dwell Time Time stopped at bus stops as percentage of total runtime	12%	Least from N Vancouver Way & Jubitz to Jantzen Beach Main Stop	Greatest from NE MLK & Holladay to NE MLK & Alberta

Performance Breakdown by Segment

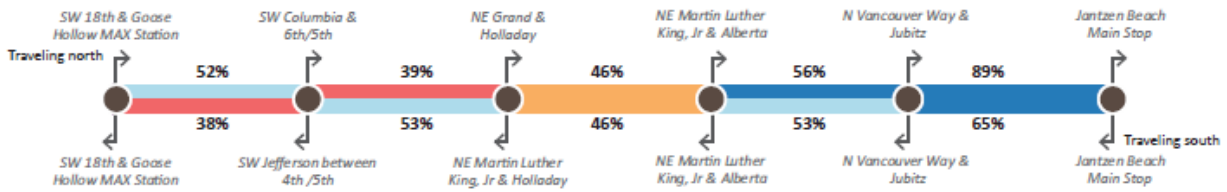
Displays corridor Reliability and Transit Speed performance by segment, from north to south and back. The color scale represents 20th percentile breaks in the data. Quintiles are calculated from the universe of performance scores for all Enhanced Transit Corridors.



Reliability



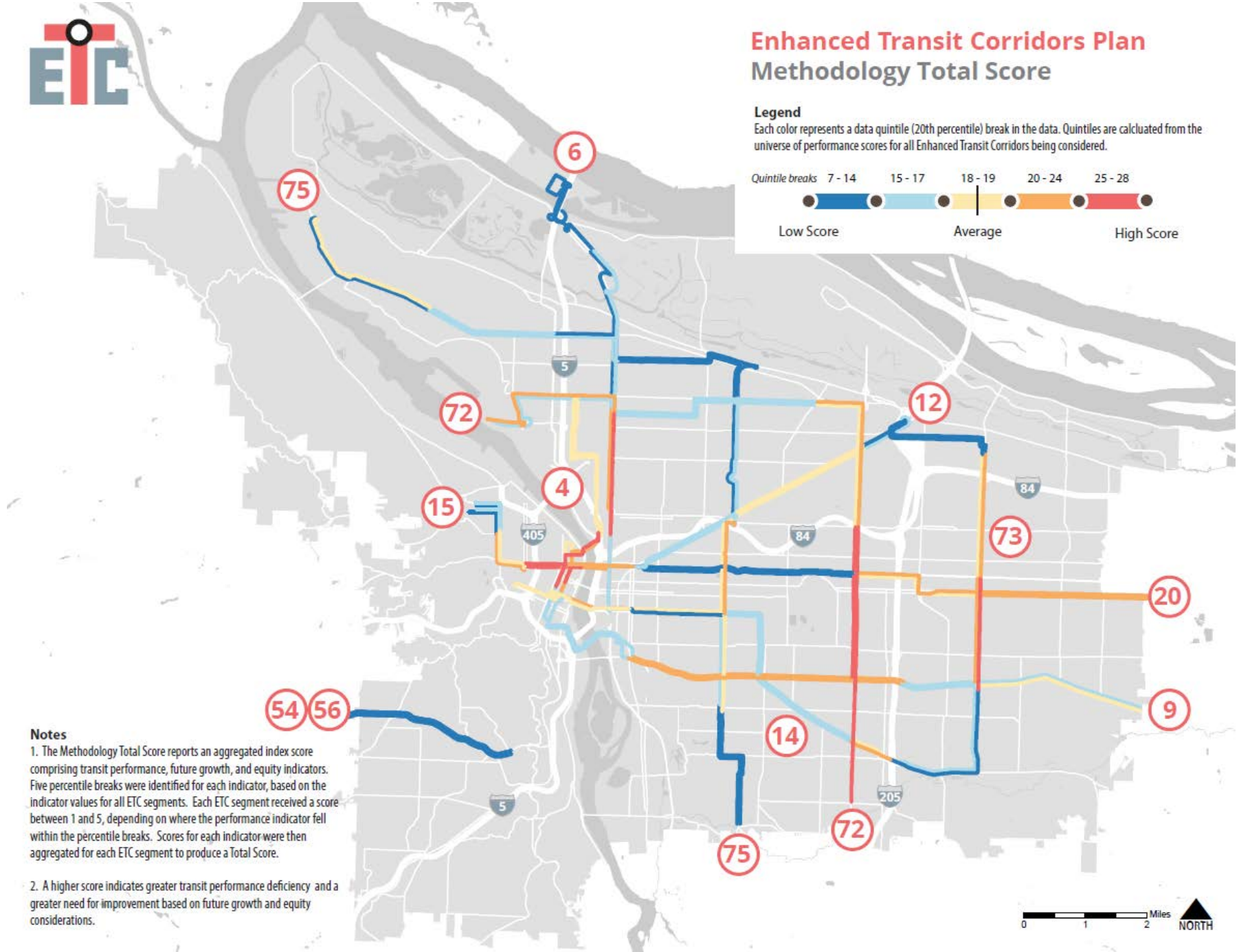
Transit Speed



Equity and Future Growth

- The Line 6 corridor falls in the 25th - 50th percentile among ETC corridors and is above the city-wide average for people of color and low-income populations.
- Between 2010 and 2035, the City forecasts households and jobs to grow by approximately 57,649 within a quarter mile of the corridor.
- 43 percent of the corridor is within a Portland Comprehensive Plan designated Center, and 38 percent is within a Civic or Neighborhood Corridor.

Enhanced Transit Corridors Plan
Methodology Total Score



Notes

1. The Methodology Total Score reports an aggregated index score comprising transit performance, future growth, and equity indicators. Five percentile breaks were identified for each indicator, based on the indicator values for all ETC segments. Each ETC segment received a score between 1 and 5, depending on where the performance indicator fell within the percentile breaks. Scores for each indicator were then aggregated for each ETC segment to produce a Total Score.

2. A higher score indicates greater transit performance deficiency and a greater need for improvement based on future growth and equity considerations.

Prioritization Methodology Summary

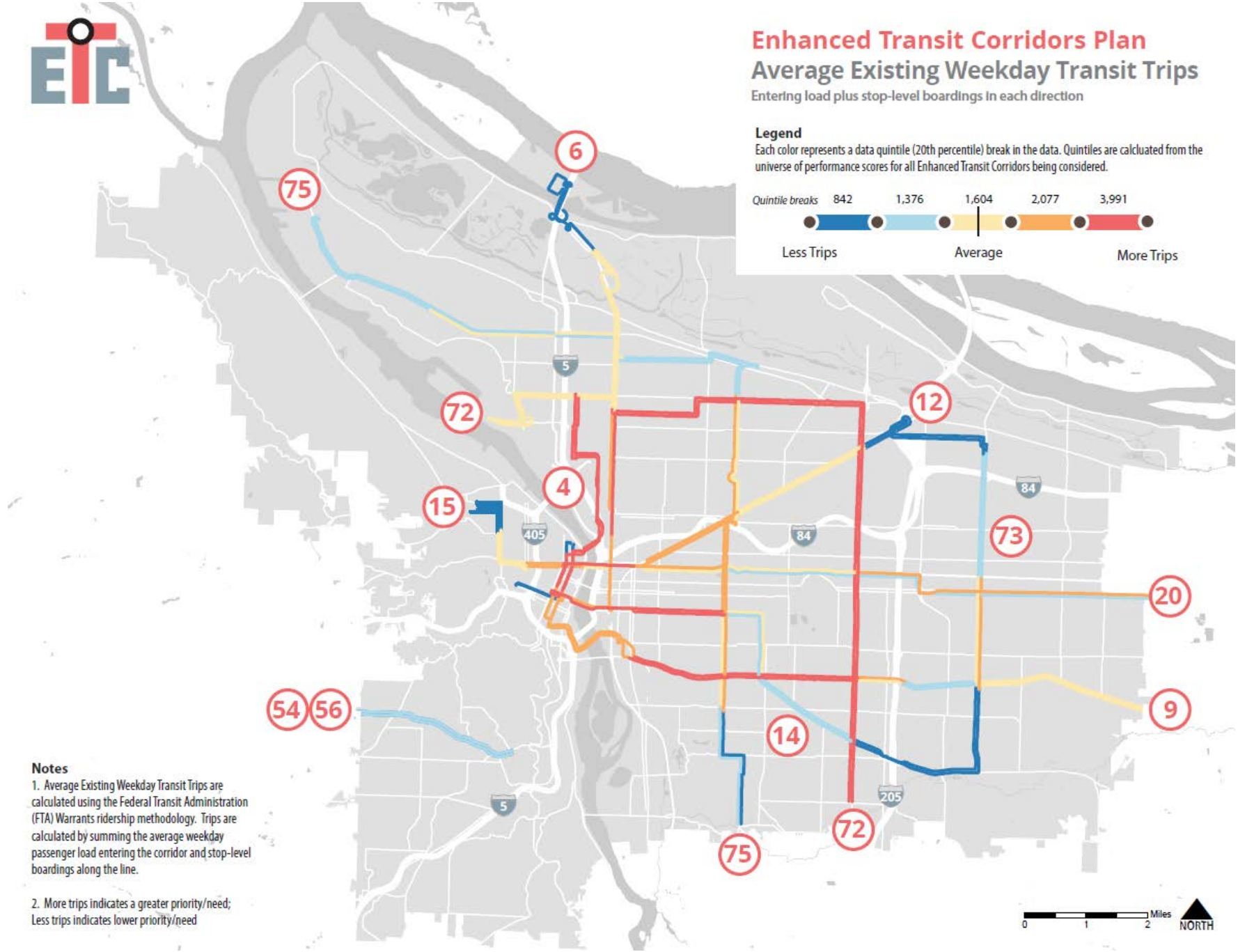
- It's all Relative!
- Scoring 1-5 for each segment
- Aggregated Scores are normalized based on length of segment
- Segments, corridors, lines ranked to prioritize

	Indicator Values						Individual Indicator Scores						Weighting			
ROUTE_NUMBE	Transit_Riders_FTA	DIFF_REVSPD_90_10_P	REV_SPEED_50_NoDw	Percent_Dwell	Equity_PBOT	Growth Value_HH	Transit Trips	Reliability	Limit Variance	Dwell	Equity	Growth	Sum Score	Weighted Score	Seg_Dist	Percent_Total
4	2621	30%	52%	17%	4	12335	5	1	2	4	3	5	20.00	13.70	2.70808	68%
4	2705	31%	47%	20%	2	17646	5	1	4	5	2	5	22.00	6.93	1.24662	32%
4	2551	41%	44%	20%	2	19941	5	4	5	5	2	5	26.00	8.57	1.3395	33%
4	2599	34%	53%	13%	4	13600	5	2	2	2	3	5	19.00	12.74	2.72461	67%
6	479	47%	52%	17%	3	9593	1	5	2	4	3	4	19.00	1.20	0.64644	6%
6	1428	44%	39%	13%	3	27845	3	4	5	2	3	5	22.00	4.90	2.2779	22%
6	1993	44%	46%	17%	3	16069	4	4	4	4	3	5	24.00	4.89	2.08352	20%
6	1377	37%	56%	11%	4	3050	3	3	1	2	3	2	14.00	4.17	3.05049	30%
6	261	61%	89%	1%	5	1616	1	5	1	1	4	1	13.00	2.76	2.17667	21%
6	408	21%	65%	3%	5	1271	1	1	1	1	4	1	9.00	2.34	2.82232	26%
6	1433	35%	53%	16%	4	3289	3	2	2	4	3	2	16.00	4.44	3.01001	28%
6	2135	39%	46%	23%	3	15768	5	3	4	5	3	5	25.00	4.56	1.98153	18%
6	1987	36%	53%	11%	3	26633	4	2	2	1	3	5	17.00	3.61	2.30741	21%
6	611	49%	38%	7%	2	10164	1	5	5	1	2	5	19.00	1.29	0.73721	7%
9	546	36%	46%	21%	2	13818	1	2	4	5	2	5	19.00	1.13	0.73301	6%
9	1913	26%	46%	9%	1	25146	4	1	4	1	2	5	17.00	3.82	2.76605	22%
9	2353	48%	49%	20%	2	4288	5	5	3	5	2	3	23.00	2.91	1.55851	13%
9	2242	39%	47%	17%	7	3773	5	3	3	4	4	3	22.00	3.84	2.14626	17%
9	1784	62%	38%	14%	9	3004	4	5	5	3	5	2	24.00	1.47	0.7557	6%
9	1308	50%	57%	14%	9	2254	2	5	1	3	5	1	17.00	1.76	1.27247	10%
9	1443	38%	56%	13%	8	2770	3	3	1	2	4	2	15.00	3.75	3.07704	25%
9	1384	35%	52%	17%	8	2904	3	2	2	4	4	2	17.00	4.21	3.06412	25%

Enhanced Transit Corridors Plan

Average Existing Weekday Transit Trips

Entering load plus stop-level boardings in each direction



Notes

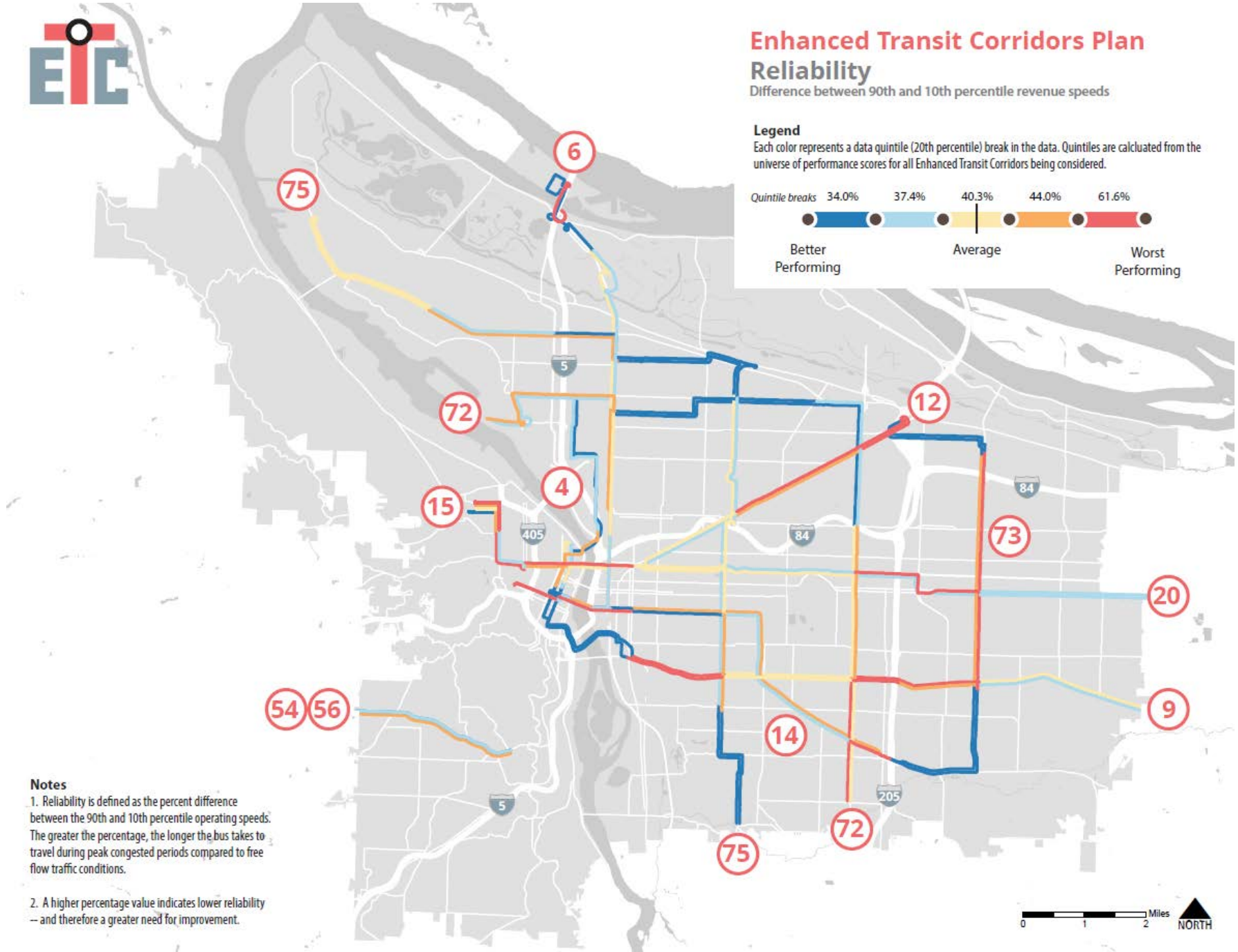
1. Average Existing Weekday Transit Trips are calculated using the Federal Transit Administration (FTA) Warrants ridership methodology. Trips are calculated by summing the average weekday passenger load entering the corridor and stop-level boardings along the line.

2. More trips indicates a greater priority/need; Less trips indicates lower priority/need

Enhanced Transit Corridors Plan

Reliability

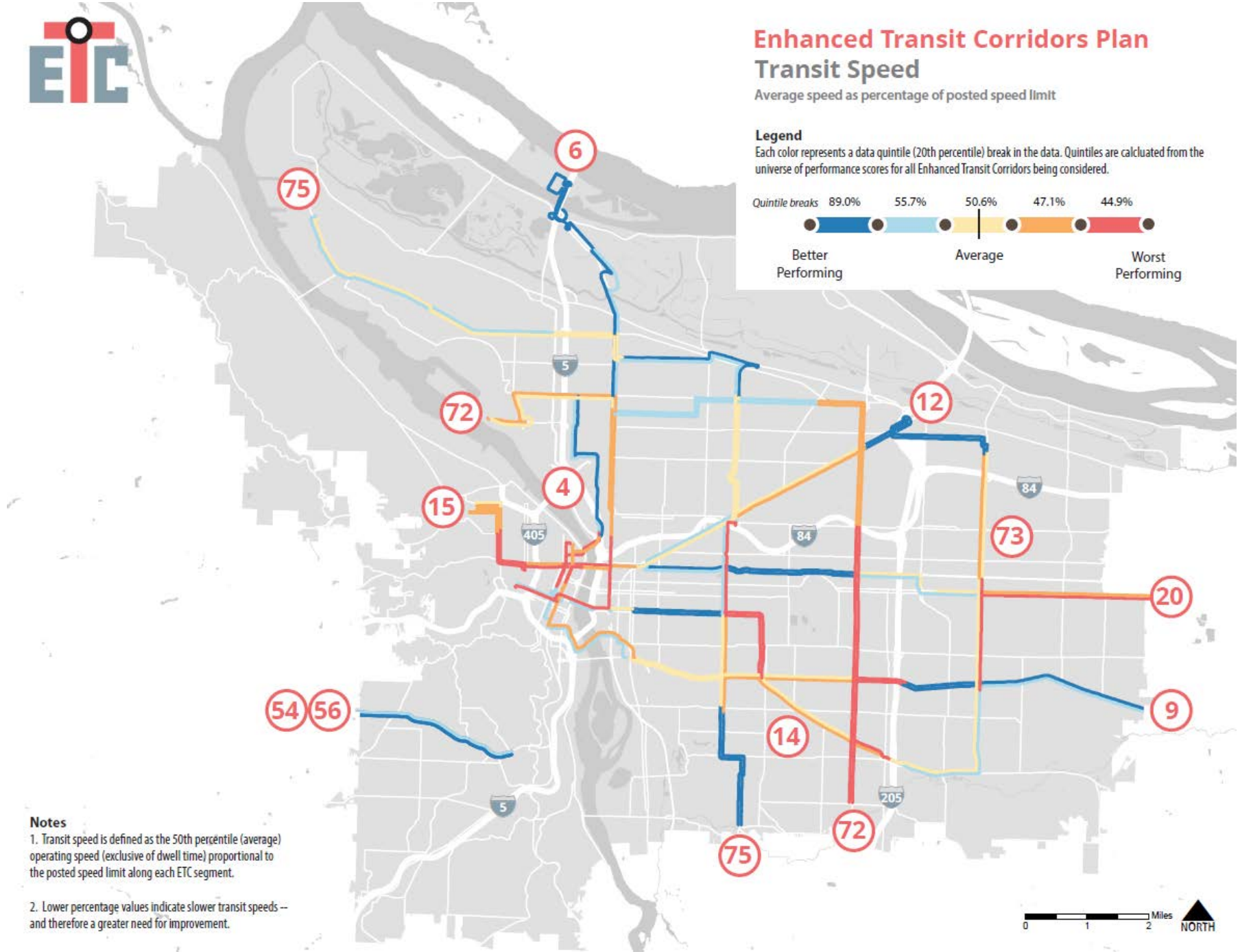
Difference between 90th and 10th percentile revenue speeds



Enhanced Transit Corridors Plan

Transit Speed

Average speed as percentage of posted speed limit



Notes

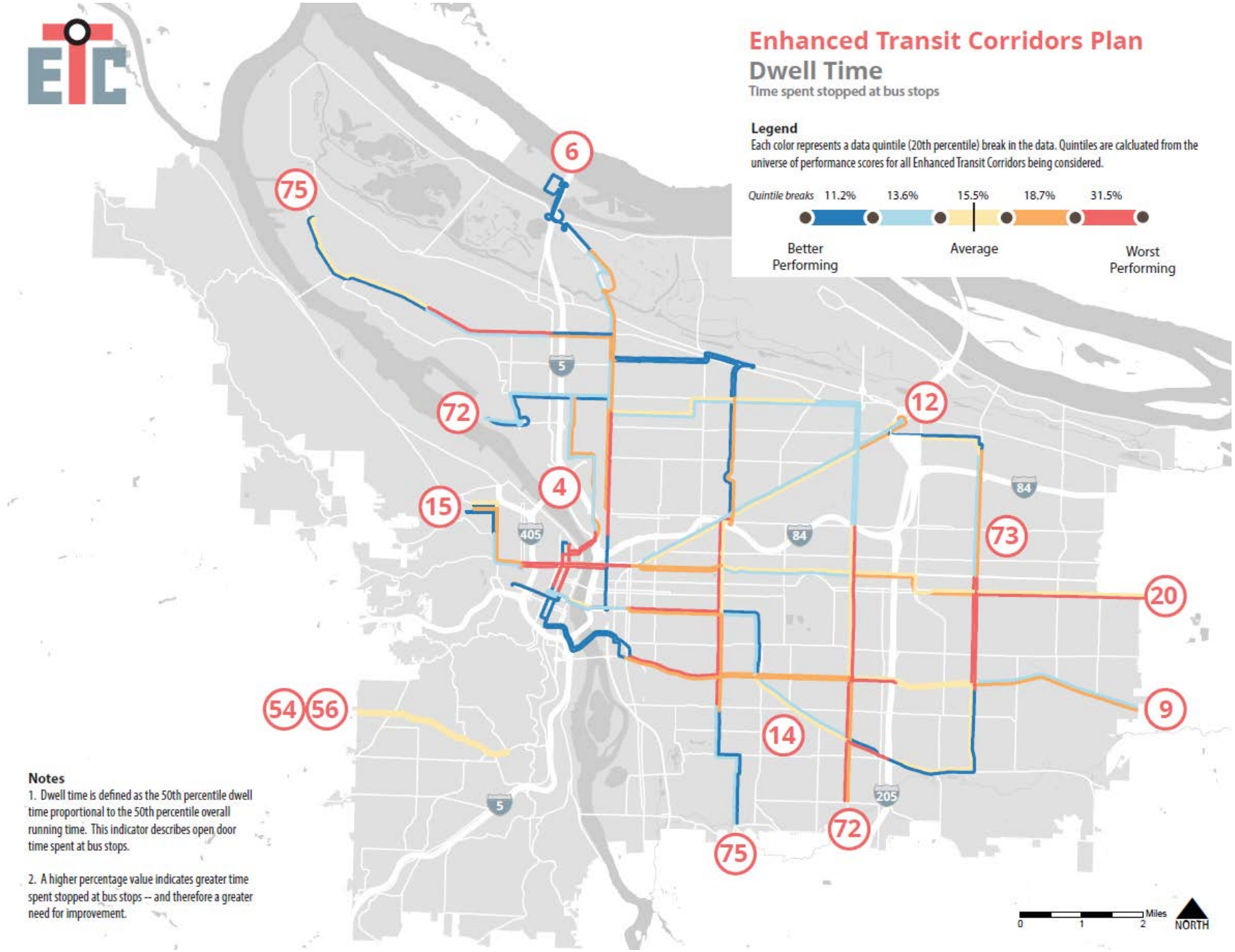
1. Transit speed is defined as the 50th percentile (average) operating speed (exclusive of dwell time) proportional to the posted speed limit along each ETC segment.

2. Lower percentage values indicate slower transit speeds -- and therefore a greater need for improvement.

Enhanced Transit Corridors Plan

Dwell Time

Time spent stopped at bus stops



Notes

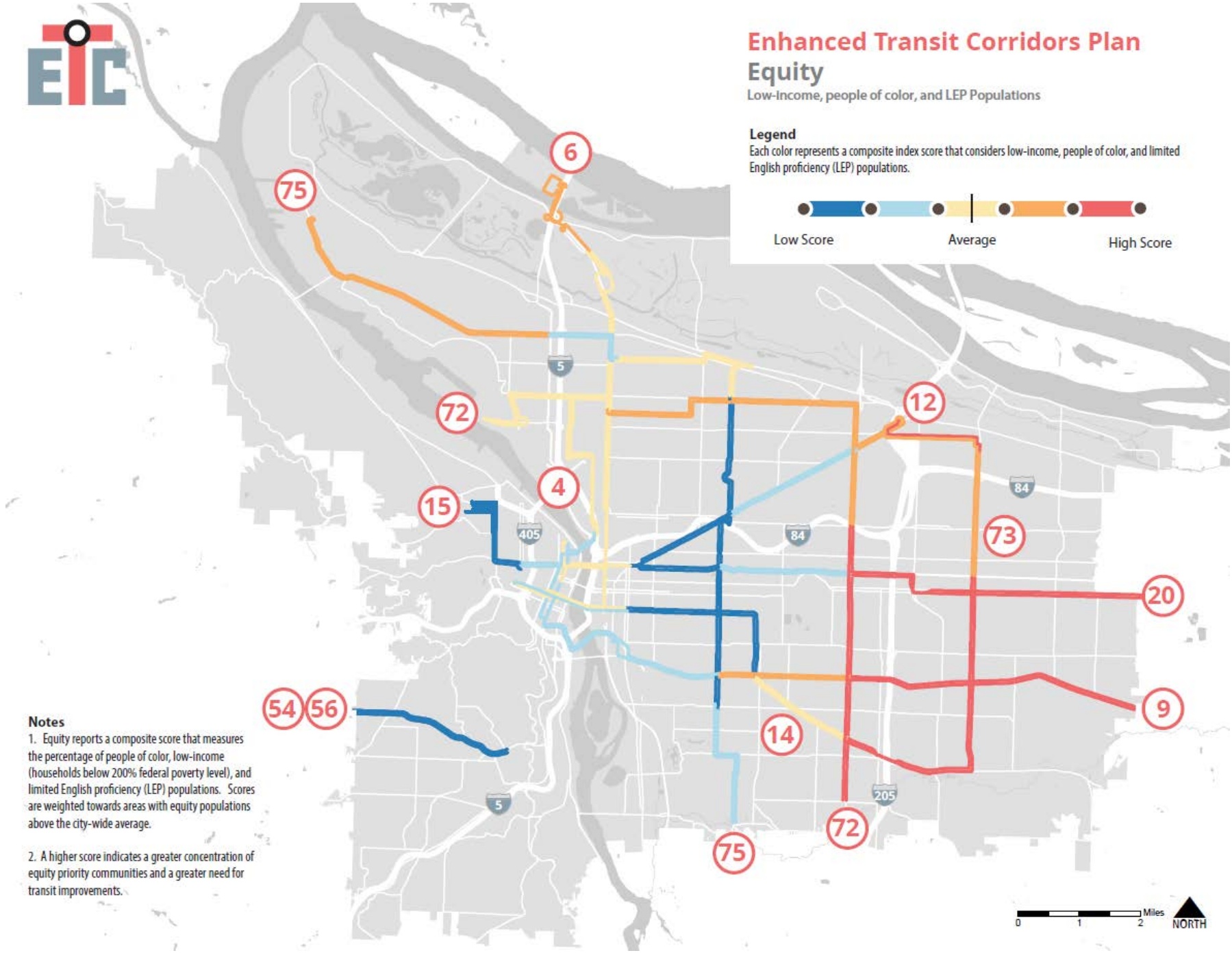
1. Dwell time is defined as the 50th percentile dwell time proportional to the 50th percentile overall running time. This indicator describes open door time spent at bus stops.

2. A higher percentage value indicates greater time spent stopped at bus stops -- and therefore a greater need for improvement.

Enhanced Transit Corridors Plan

Equity

Low-Income, people of color, and LEP Populations



Notes

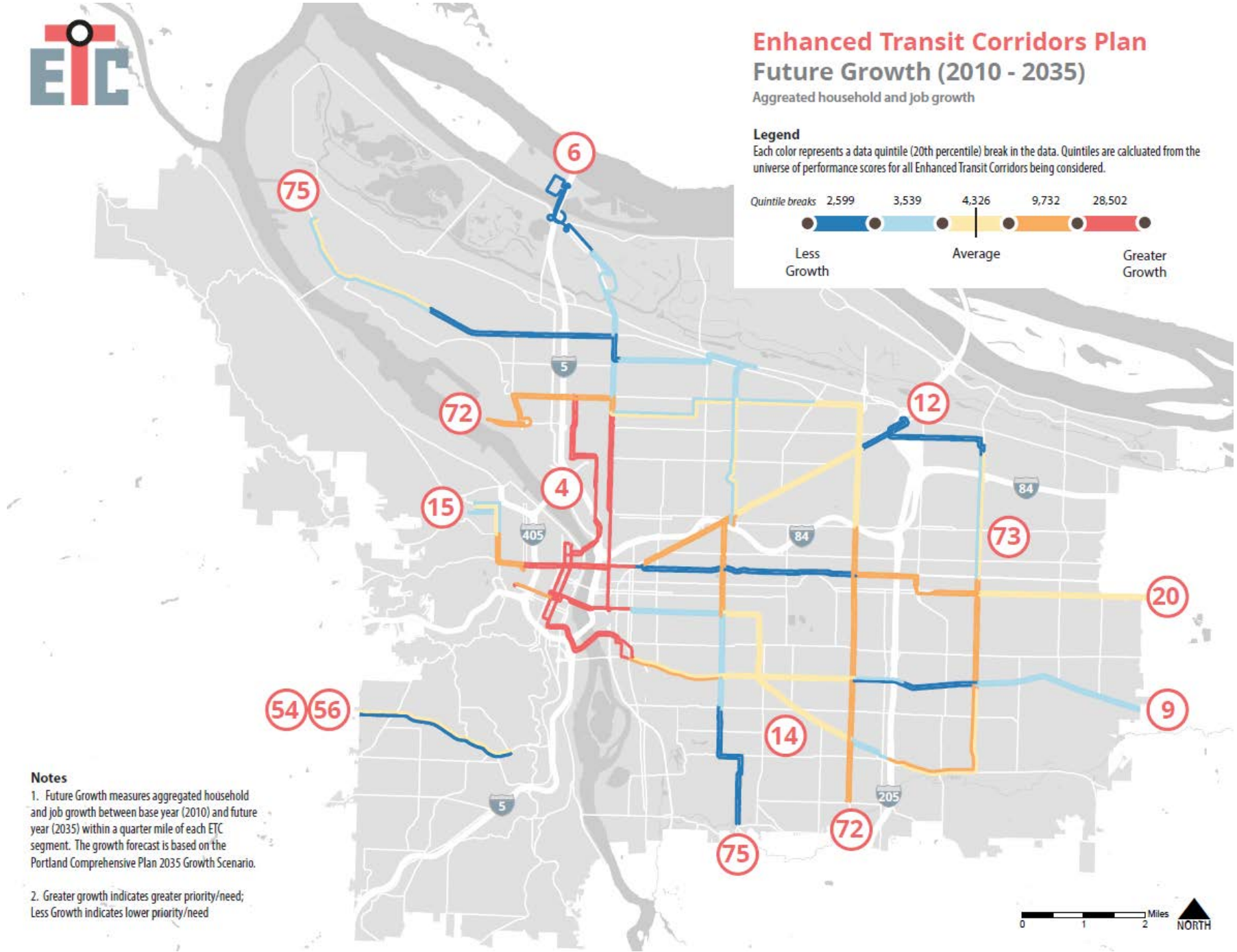
1. Equity reports a composite score that measures the percentage of people of color, low-income (households below 200% federal poverty level), and limited English proficiency (LEP) populations. Scores are weighted towards areas with equity populations above the city-wide average.

2. A higher score indicates a greater concentration of equity priority communities and a greater need for transit improvements.

Enhanced Transit Corridors Plan

Future Growth (2010 - 2035)

Aggreated household and job growth



Notes

1. Future Growth measures aggregated household and job growth between base year (2010) and future year (2035) within a quarter mile of each ETC segment. The growth forecast is based on the Portland Comprehensive Plan 2035 Growth Scenario.

2. Greater growth indicates greater priority/need; Less Growth indicates lower priority/need

Staff Recommendation for where to focus more with toolbox in the next phase

Staff Recommendation

- Select up to three corridors to explore applying the toolbox and develop conceptual investment plans:
  - **Line 72** – Killingsworth/82nd Ave, with a focus on 82nd Ave
  - **Line 12** – NE Sandy Blvd
  - **Line 6** – MLK Jr Blvd/Jantzen Beach (if resources allow)
- Potential opportunity to focus on portions of candidates through other planning efforts:
  - **Line 73** - through the 122nd Ave Safety Improvement Project planning process
  - **Line 20** - through an Outer SE Stark Safety and Access planning process
  - **Key bottlenecks**, including in the Central City

ETC Plan Next Steps

- City Council hearing July 13, 2 PM
- Refine the methodology to identify, monitor and prioritize Enhanced Transit improvements
- Include on-going performance measures and thresholds
- More public outreach in fall 2017
- Complete the recommended plan in winter 2018

PRESERVE what we have built and **OPERATE** it well

Embrace **VISION ZERO**

BUILD A FUTURE where all can grow and thrive

Effectively **MANAGE CITY ASSETS**

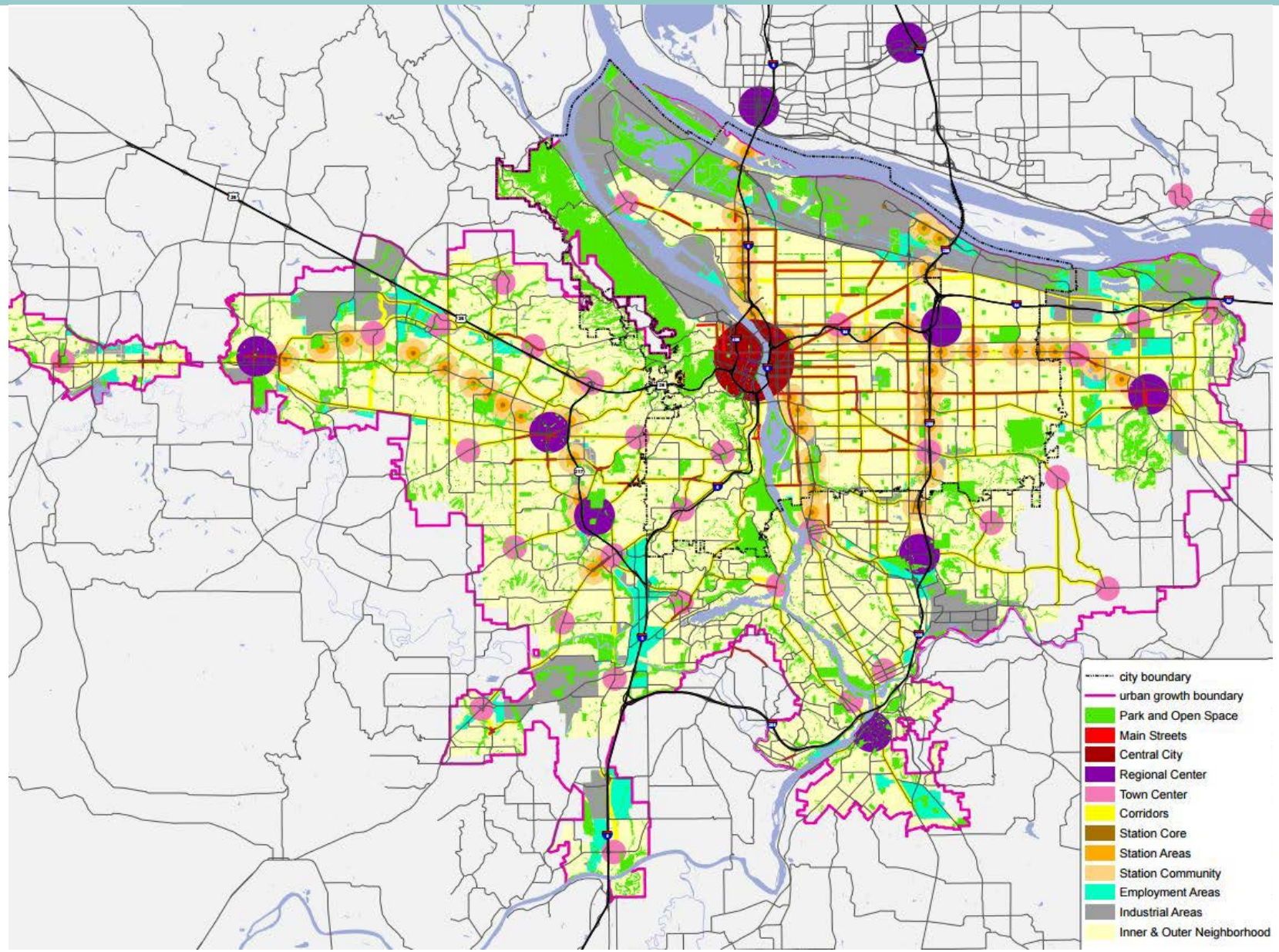
Contribute to the **HEALTH AND VITALITY** of our people and our planet

Learn more.

www.portlandoregon.gov/transportation

The Current Regional Transit Vision

Metro 2040 Growth Concept

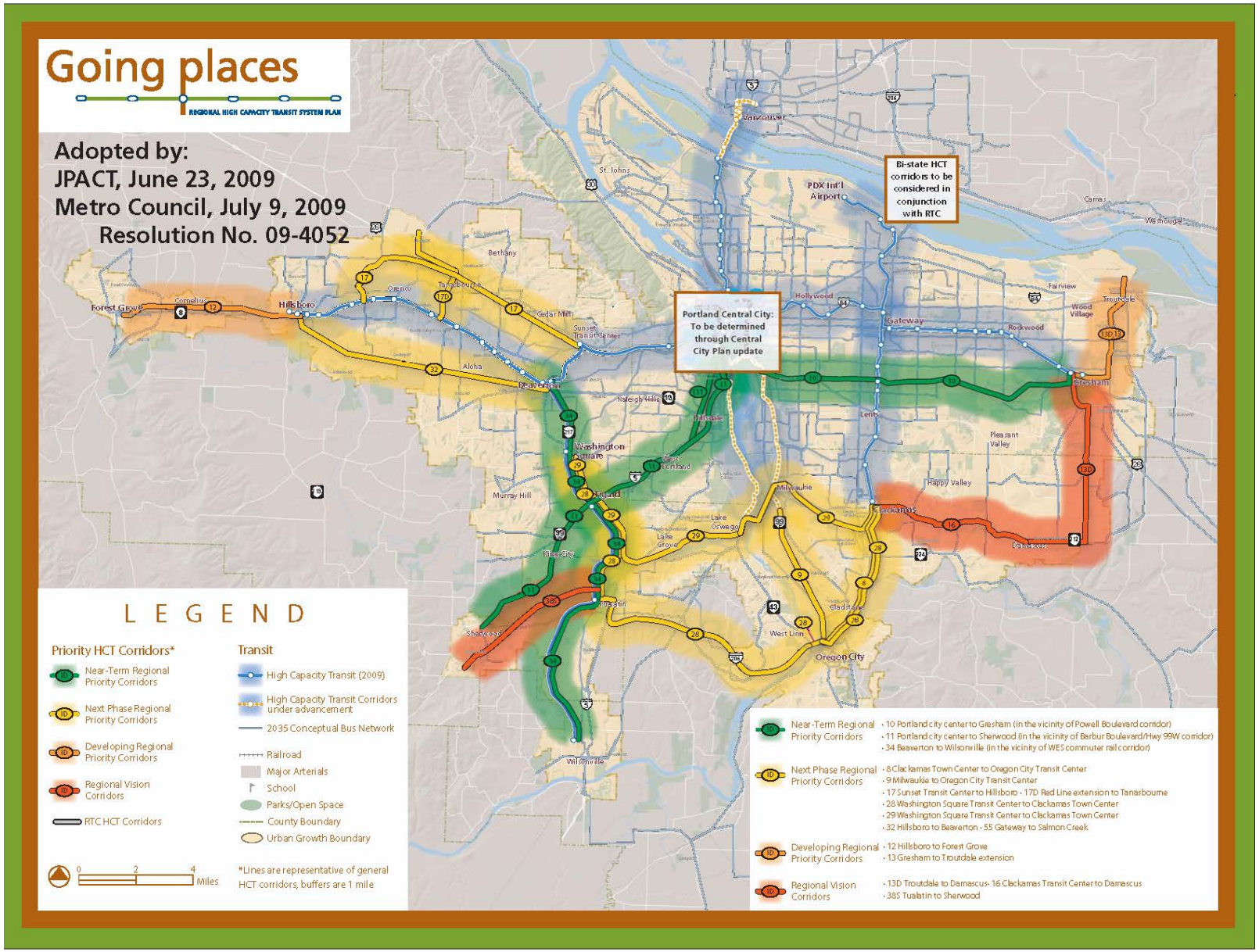


Regional Transportation Plan (RTP) & High Capacity Transit Plan

This map will be updated as part of the 2018 RTP Update and Regional Transit Strategy.

We are moving beyond just High Capacity Transit.

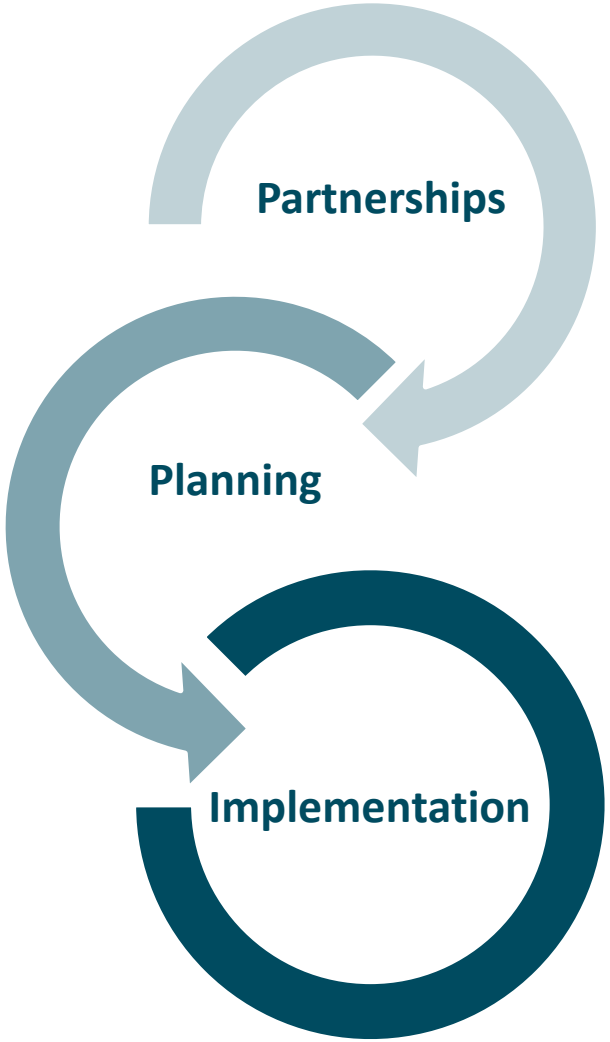
New transit strategies and projects, including "Enhanced Transit."



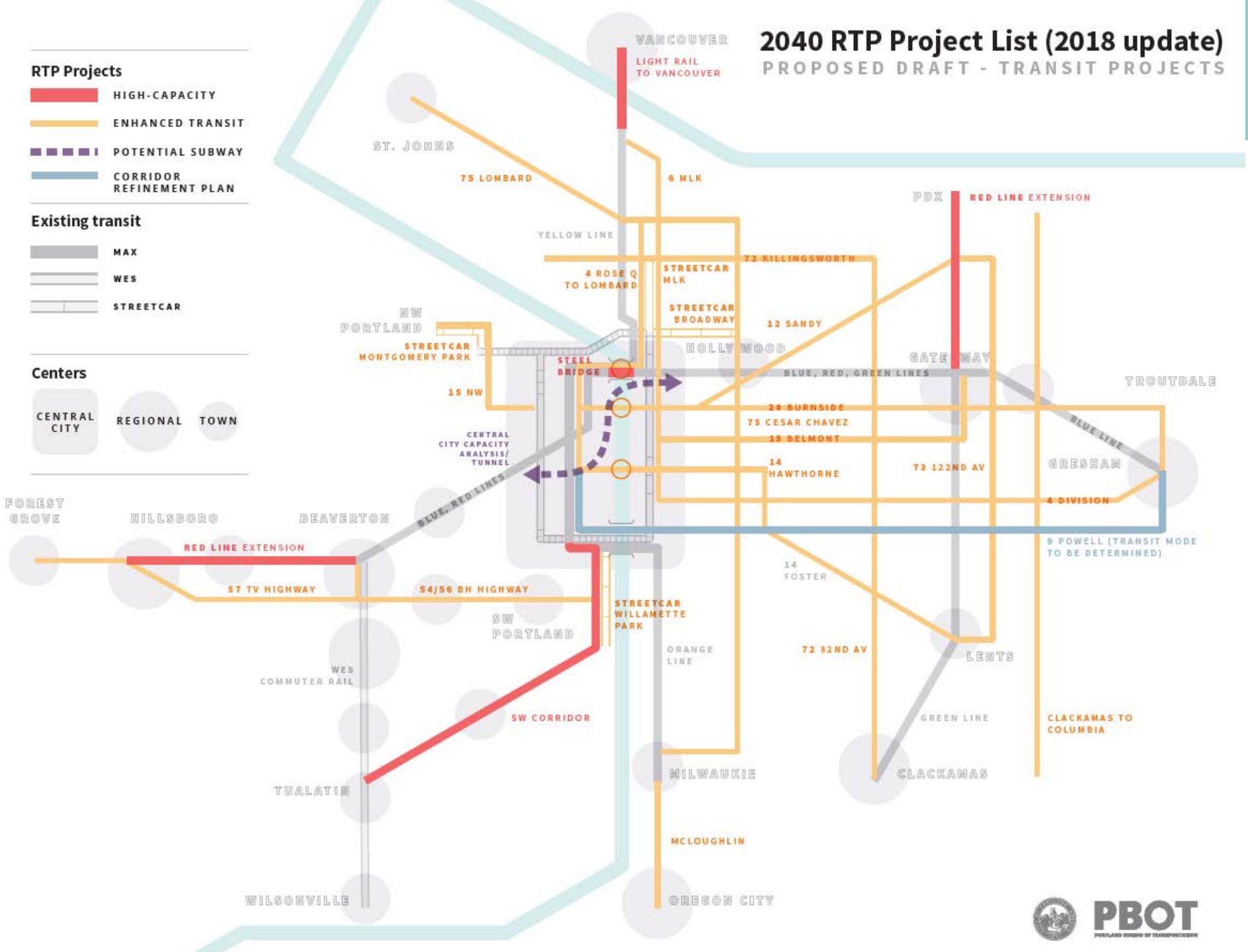
A Proposed New Transit Vision

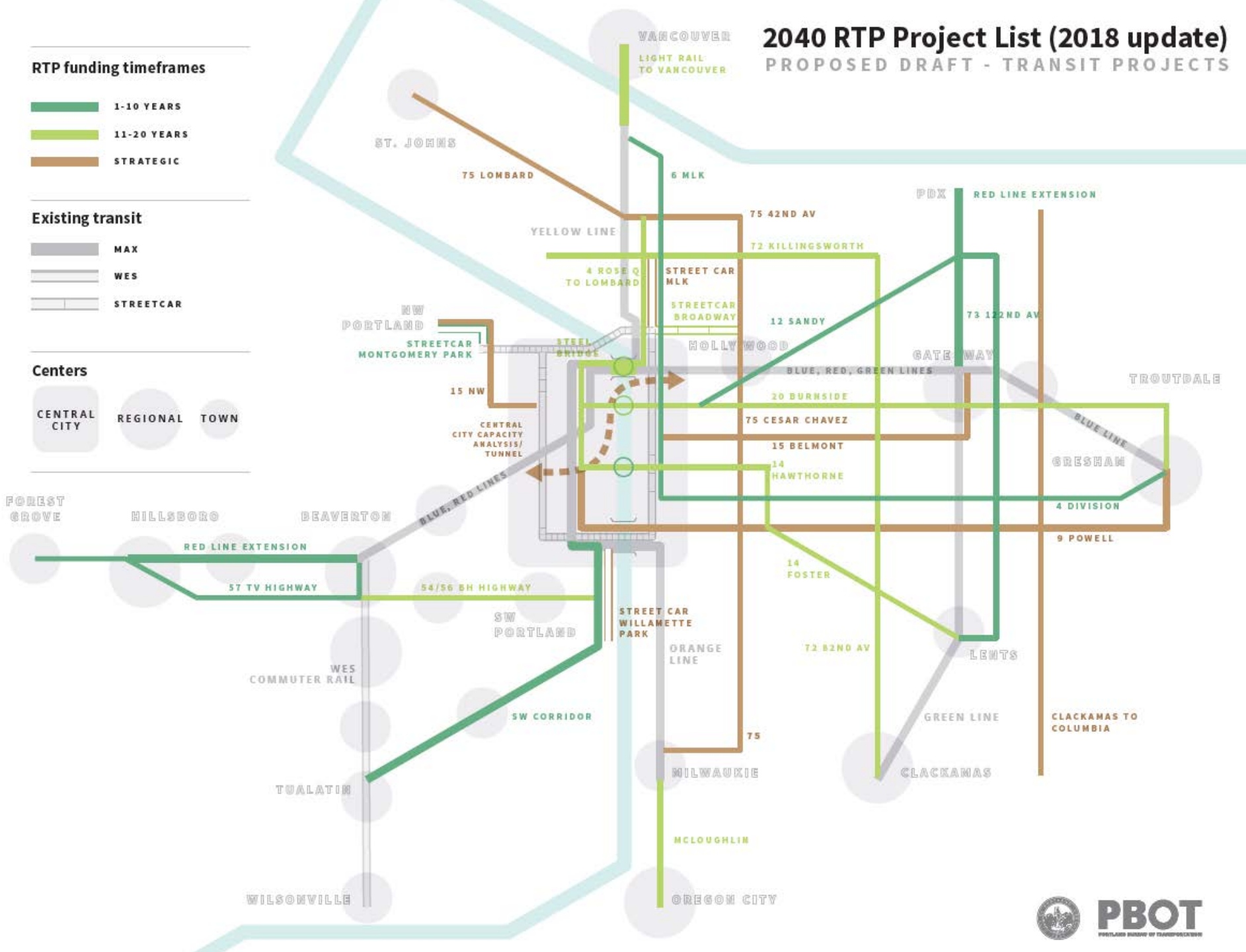
Regional Transit Vision

To make transit more frequent, convenient, accessible and affordable for everyone



- **Add Enhanced Transit**
  - **Streetcar**
  - **Buses**
- **Extend MAX lines**
- **Address transit bottlenecks**
- **Powell Corridor (mode TBD)**





1-10 Year Constrained

11-20 Year Constrained

Strategic

PBOT

Enhanced Transit Corridors Plan

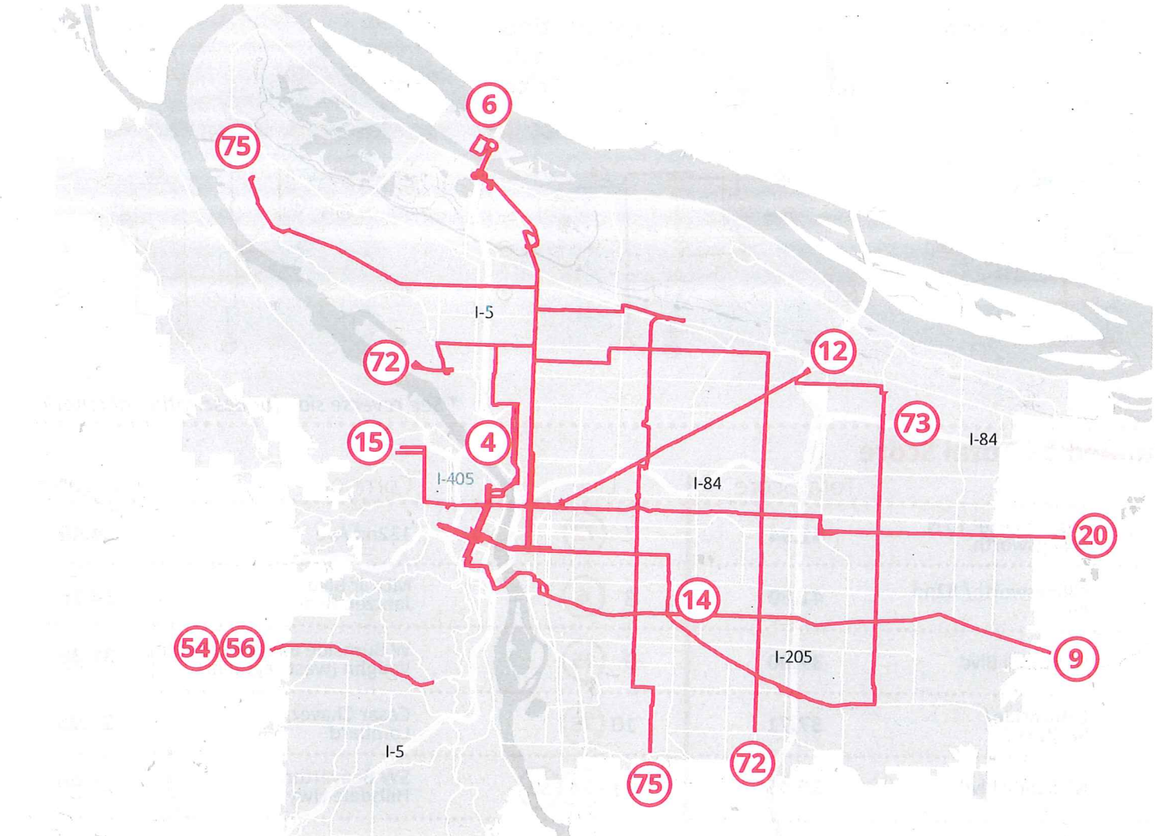
Project Description

The Portland Bureau of Transportation (PBOT) is leading a planning process in coordination with TriMet to develop the Enhanced Transit Corridors Plan. This plan will help identify where transit priority, streamlining, and access treatments could be most beneficial on the planned TriMet Frequent Service network within the City of Portland. Such improvements can help make transit a more attractive and reliable option for people to get to work, school, and to meet their daily needs, especially for people who depend upon transit.

Characteristics of Enhanced Transit

- Increased capacity, reliability and transit travel speed
- Moderate level of capital and operational investment
- Flexible and context sensitive
- Can be deployed relatively quickly

Map of Recommended Candidate Corridors



Source: PBOT Staff recommendation on eleven candidate corridors for Enhanced Transit and selection process (January 18, 2017)

Project Goals and Activities

- Support planned growth in centers and along corridors consistent with the City's Comprehensive Plan update
- Guide the prioritization of capital and operational investments in Enhanced Transit Corridors
- Define and identify "Enhanced Transit Corridors" in Portland
- Establish clear and objective operational performance measures and thresholds to define what success looks like for the most heavily used Frequent Service lines

Initial Evaluation Criteria and Measures

Transit Performance Measures

Average Existing Weekday Transit Trips

This measure is calculated using the Federal Transit Administration (FTA) Warrants ridership methodology.

Reliability

Describes travel speed variability over the course of the day and helps identify the influence of traffic congestion on transit during peak periods. Reliability is defined as the percent difference between the 90th and 10th percentile operating speeds.

Transit Speed

This indicator identifies the overall operating speed and reveals a number of operating deficiencies across all time periods. Transit speed is defined as the 50th percentile average operating speed (exclusive of dwell time) proportional to the posted speed limit along each segment.

Dwell Time

This indicator describes open door time spent at bus stops, and helps to identify the influence of bus stop delay. Dwell time is defined as the 50th percentile dwell time proportional to the 50th percentile overall running time.

Future Growth (2010 – 2035)

Based on the Portland Comprehensive Plan 2035 Growth Scenario, this measure shows aggregated household and job growth between 2010 and 2035 within a quarter mile of a transit line.

Equity

Equity measures the percentage of households in each corridor with people of color, low income (households below 200% of the federal poverty level), and limited English proficiency (LEP) households; the score is a composite index of scores for these three demographic factors.

Website and Contact Info

Visit our website:
www.portlandoregon.gov/transportation/ETCplan

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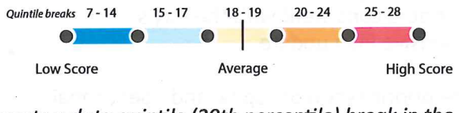
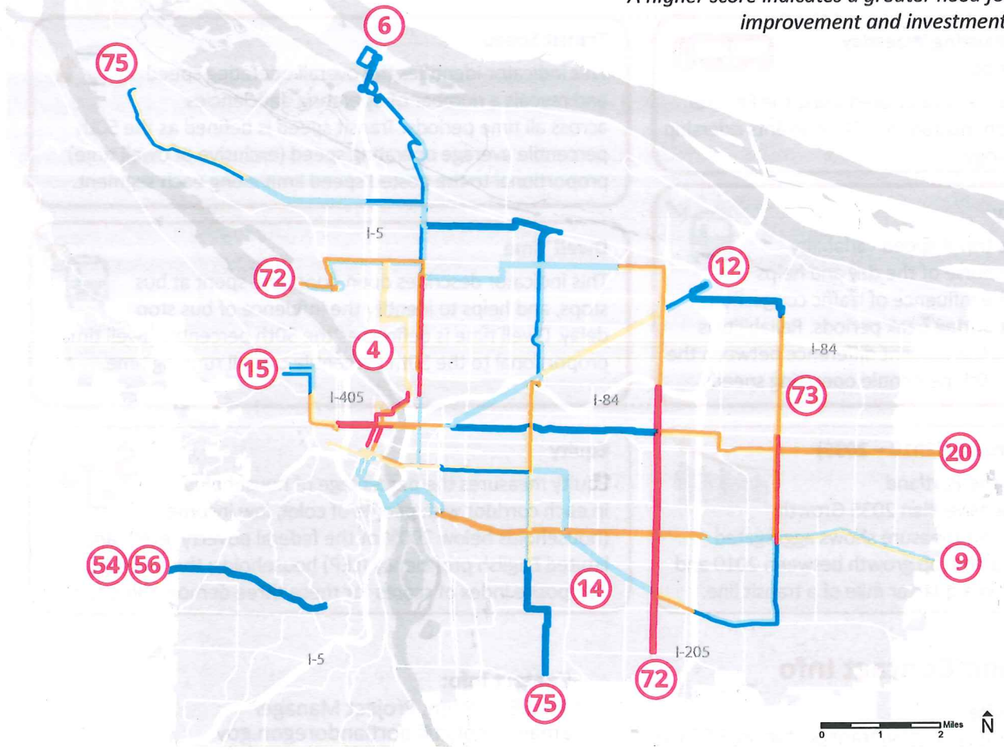
Enhanced Transit Corridors Plan

Total Scores by Corridor Segment

Methodology Total Scores Map



Each color represents a data quintile (20th percentile) break in the data. Quintiles are calculated from the universe of performance scores for all Enhanced Transit Corridors being considered. A higher score indicates a greater need for improvement and investment.

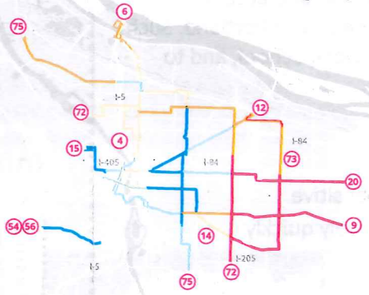


ETC Plan Next Steps

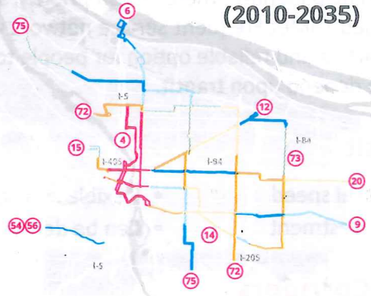
- Select up to three corridors for development of Conceptual Investment Plans
- Identify recommended revisions to existing projects or new projects for Metro's Regional Transportation Plan (RTP)
- Refine the methodology to identify, monitor, and prioritize transit lines for Enhanced Transit

Evaluation Results by Individual Criteria

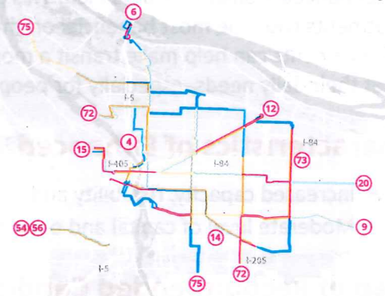
Equity



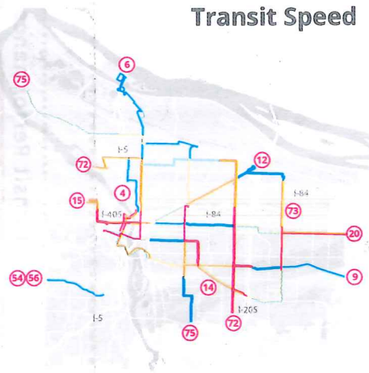
Future Growth (2010-2035)



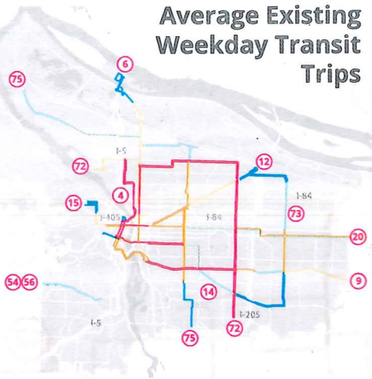
Reliability



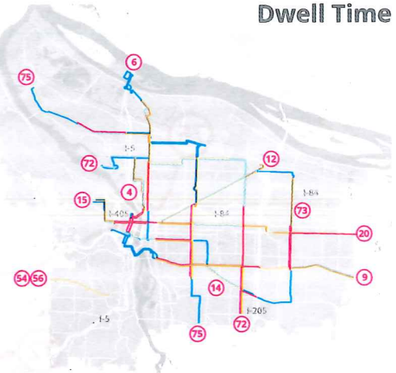
Transit Speed



Average Existing Weekday Transit Trips



Dwell Time



** See reverse side for description of criteria*

Corridors Ranked by Total Score

Line	Corridor	Total Score
1 (4)	Rose Quarter to N Killingsworth	**41.94**
2 (72)	Killingsworth/ 82nd Ave	**41.80**
3 (9)	SE Powell Blvd	**37.90**
4 (20)	E Burnside/ SE Stark St	**37.71**
5 (12)	NE Sandy Blvd	**36.46**
6 (14)	SE Hawthorne/ Foster Rd	**34.85**
7 (73)	122nd Ave	**34.40**
8 (6)	MLK Jr Blvd/ Jantzen Beach	**34.16**
9 (15)	W Burnside and NW 23rd to Vaughn (west segment)	**31.36**
10 (75)	Cesar Chavez/ Lombard	**27.95**
11 (54) (56)	SW Beaverton-Hillsdale Hwy	**21.99**

Back Page

Regional ETC ***** DRAFT *******
Dwell time
(50th percentile dwell time proportional to 50th percentile overall running time.)**

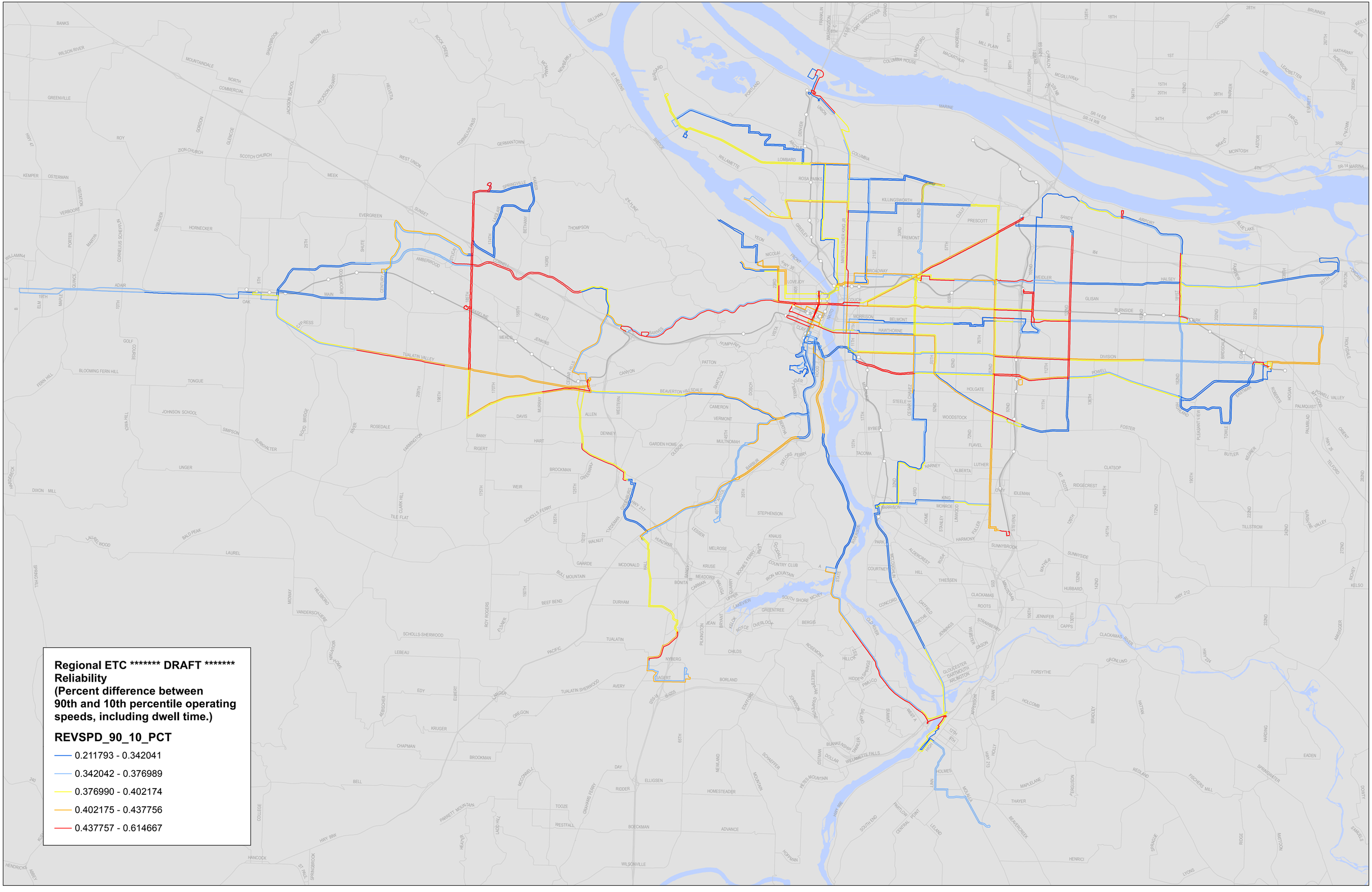
DWELL50_RT50

- 0.000000 - 0.071057
- 0.071058 - 0.105469
- 0.105470 - 0.129456
- 0.129457 - 0.161252
- 0.161253 - 0.312715

Regional ETC ***** DRAFT ******* Average daily passenger load (50th percentile maximum load multiplied by total number of weekday trips in the segment.)**

modified_segments_load

- 0.000000 - 345.000000
- 345.000001 - 682.000000
- 682.000001 - 1008.000000
- 1008.000001 - 1240.000000
- 1240.000001 - 2376.000000


Regional ETC ******* DRAFT *******
Reliability
(Percent difference between 90th and 10th percentile operating speeds, including dwell time.)
REVSPD_90_10_PCT
0.211793 - 0.342041
0.342042 - 0.376989
0.376990 - 0.402174
0.402175 - 0.437756
0.437757 - 0.614667

TriMet 2018 RTP Project List - DRAFT

2018-2027 HCT Constrained List

- Division Transit Project ($175M)
- Southwest Corridor ($2.4B, includes $600M from Regional Measure)
- Red Line extension, including Gateway and Airport Improvements ($200M)
- Arterial BRT[1]/Enhanced Transit Corridor(s) as informed by TriMet analysis, partner priorities and System Expansion Policy (up to $100M)[2]

2028-2040 HCT Constrained List

- $700M – Steel Bridge Improvements
- I-5 Bridge Replacement Project ($850M from New Starts, other funding assumptions carried forward)
- $400M in Small Starts – What are priorities for ETC/Arterial BRT Network?

2018-2040 HCT Strategic List

- $2.4B in New Starts/Core Capacity – Downtown Tunnel? WES Frequency?
- $300M in Small Starts – Additional Arterial BRT/ETC?

2018-2027 Operating Capital Projects Constrained List

- North Downtown Transit Mall terminal for bus layover (DTP and other)
- Improvements to Powell Garage (to support DTP and service expansion)
- Additional operations facilities expansion to support service increases

2018-2040 Operating Capital Constrained List

- Preventative maintenance and expansion/enhancement of system assets, organized in programmatic buckets for:
    - Safety & Security – Safety enhancements, CCTV, Transit Police
    - Infrastructure – Signals, switches, etc.
    - Facilities – Ongoing refurbishment, not new facilities or redesign
    - Fleet – Replacement/expansion bus, light rail and LIFT vehicles
    - Equipment – MOW and shop tools
    - IT – Communication systems

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[1] *Arterial BRT are not at the investment level of DTP. $2-3M/mile, w/o vehicles.*

[2] *30% local match required to be identified from local and/or TriMet budgets.*

Placeholder Buckets for Future Grants to mitigate RTP amendments

- Bus and Bus Facilities (5339 Discretionary)
  - Powell, Phases 2-4
  - Low-No, Electric Bus Fleet
- ITS
  - More Smart Cities/Next Gen TSP/MOD Sandbox type of things
- Other grant placeholders

TriMet Red Line Extension Project

Project Description

This project would extend the Red Line MAX an additional 10 stations between Beaverton and the Fairplex/Hillsboro Airport station. It would also increase system capacity and improve operations on the entire TriMet MAX system through capital improvements in the following locations

- **Fair Complex**: Track and switch work, signalization, and construction of an operator break facility.
- **Gateway:** Track work to convert single-track section to double-track and construction of a new Red Line-only MAX Station.
- **Portland Airport:** Track work to convert single-track section to double-track.

Project purpose and need

TriMet's Red Line currently has two single-track sections which result in inbound and outbound Red Line trains near the airport having to wait for each other when one train is off schedule. The schedule is becoming increasingly difficult to meet as three rail lines currently pass through the Gateway Station several miles south of the Portland International Airport (PDX). If one Red Line train is delayed, it can impact both the Green Line and Blue Line trains which pass through Gateway. This impact has a ripple effect which can then impact the entire rail system as those trains cross the Steel Bridge and may impact the Orange/Yellow Line, creating delays that can approach 15 minutes and take hours to recover from.

Additionally, because the current Red Line only serves as far west as the Beaverton station, all passengers traveling beyond Beaverton must take Blue Line trains which are now frequently overloaded.

This project would have the following benefits:

- **More access and more frequent service for Beaverton and Hillsboro.** By adding Red Line service to 10 MAX stations, these locations would provide double the existing frequencies for most of the day throughout the week. The extension would also provide single-seat rides to the Portland International Airport for these 10 additional station areas, which include a Transit Center, access to high tech employment centers, and rapidly developing areas in Hillsboro.
- **Increased capacity on west side of region**. The MAX Blue Line parallels the Red Line between downtown and Beaverton Transit Center and extends substantially further to the west to its terminus in Hillsboro. The Blue Line is currently at capacity traveling westbound in the PM peak, and TriMet already experiences challenges with on-time performance and throughput of trains due to system congestion at Gateway. Extending the Red Line further west will relieve overcrowding on the Blue Line and provide new access to the Red Line for 10 stations.
- **Systemwide improvements to reliability**. TriMet currently schedules its entire rail system around the Red Line because of the two single-track sections. Improving those sections will improve Red Line on-time performance and address current Red Line impacts on the rest of the system, which in turn will improve the reliability of the entire system.

- **Decreased travel time for Red Line riders**. In addition to significantly reduced headways, the new track work at Gateway Transit Center could save up to 2 minutes of travel time for Red Line riders traveling through Gateway.
- **Significant increase in ridership**. Initial model runs estimate there will be an increase in Red Line ridership of almost **17,000 trips** per day in 2035—a more than 50% increase in ridership on the Red Line. See additional information below.

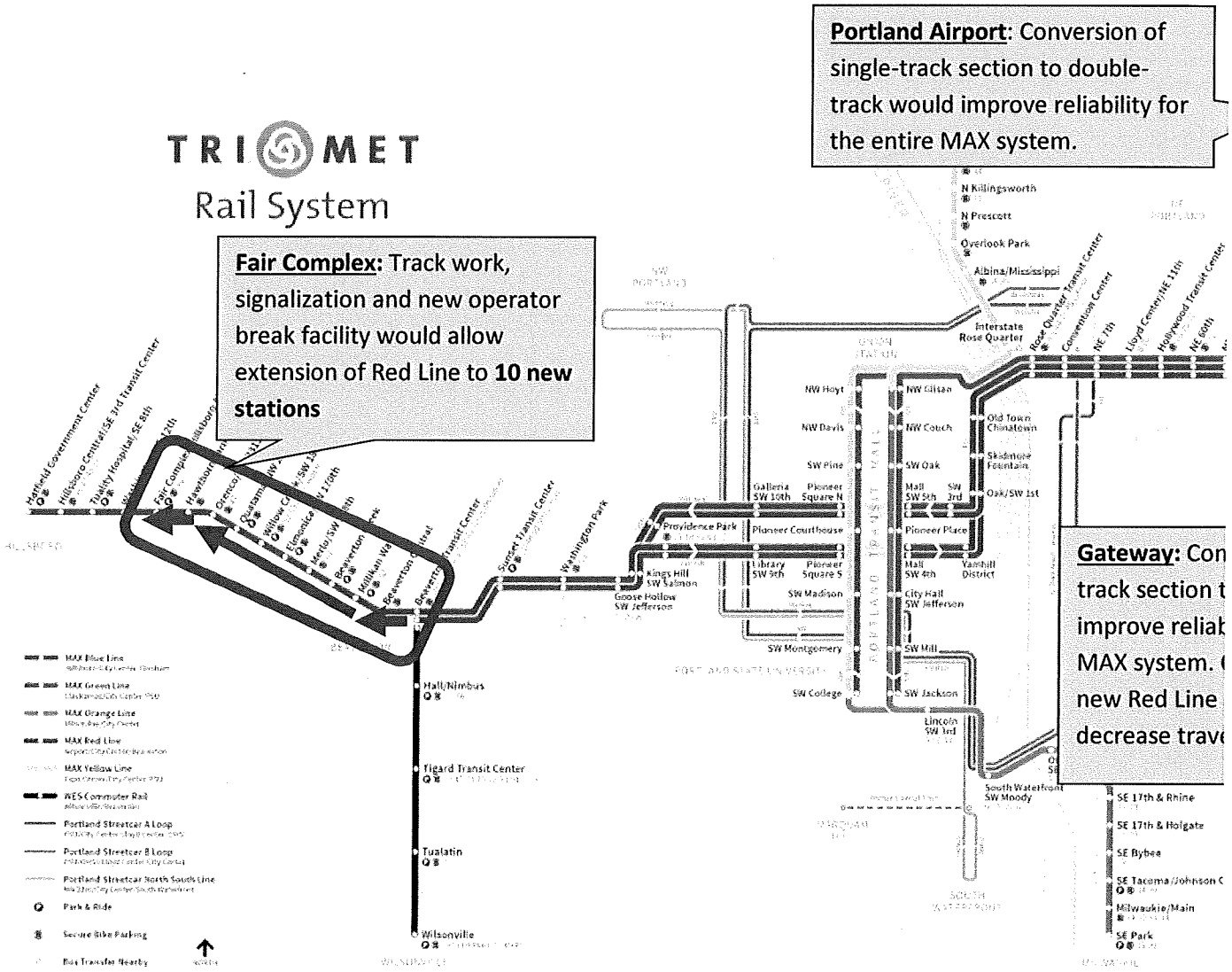
Cost estimate

Conceptual cost estimates for the improvements described above are provided in Table 1.

Table 1: Conceptual Cost Estimates

Location	**Major components**	**Estimated Cost (fully loaded in YOE)**
Fair Complex	• New tracks • New signals • Operator break facility	$10M
Gateway	• Double track Red Line • New Red Line station	$165M
PDX	• Double track Red Line	$20M
Vehicles and storage/maintenance	• LRVs, number TBD • Additional capacity at Ruby Junction yard	$30 - $50M
Total		$225-245M

Figure 1: Existing Rail System and Proposed Extension and Capital Improvements



Metro Transit System Expansion Policy

Presented by:
Matt Berkow
Oren Eshel
Jamie Snook

June 2017

Metro

NELSON NYGAARD

Preliminary Proposed Criteria

Overview

- Final edits to transit project criteria for testing phase
  - Process diagram illustrating inputs and outputs
  - Sample output: Scorecard Approach
- Defining general project types
  - Feasibility assessment added to Readiness Phase
- Next Steps = Testing Phase
- Transit supportive elements update

Assessment of Regional Transit Investments

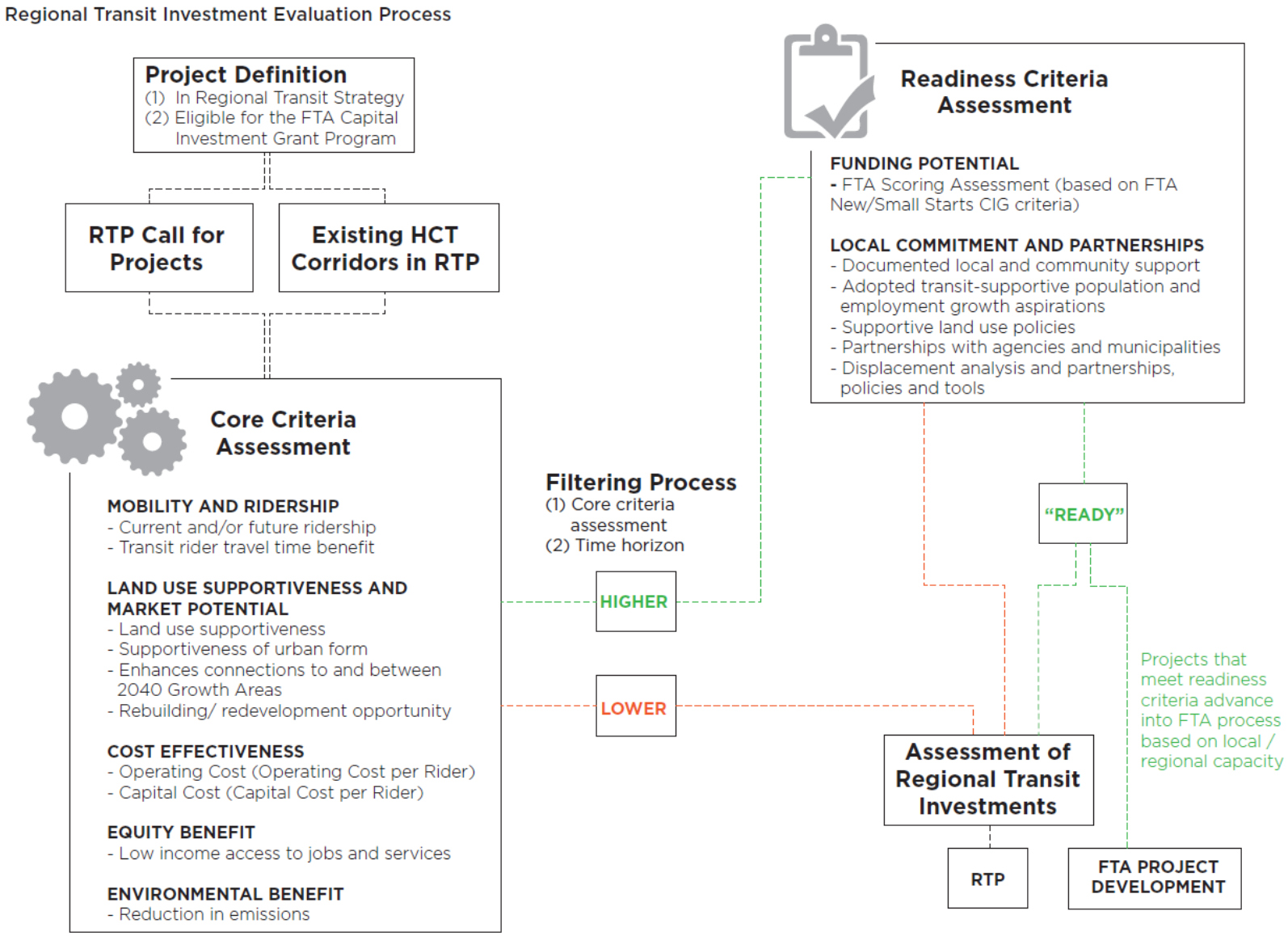
Transit Evaluation Criteria	Project Readiness Criteria
Mobility and Ridership ▪ (1) Current and/or future ridership ▪ (2) Transit rider travel time benefit Land Use Supportiveness and Market Potential ▪ (3) Land use supportiveness ▪ (4) Supportiveness of urban form ▪ (5) Enhances connections to and between 2040 Growth Areas ▪ (6) Rebuilding/ redevelopment opportunity Cost Effectiveness ▪ (7) Operating Cost (Operating Cost per Rider) ▪ (8) Capital Cost (Capital Cost per Rider) Equity Benefit ▪ (9) Low income access to jobs and services Environmental Benefit ▪ (10) Reduction in emissions	▪ (11) Funding Potential – FTA Scoring Assessment (based on FTA New/Small Starts CIG criteria) ▪ (12) Local Commitment and Partnerships – Documented local and community support – Adopted transit-supportive population and employment growth aspirations – Supportive land use policies – Partnerships with agencies and municipalities – Displacement analysis and partnerships, policies and tools – Feasibility assessment to evaluate level of agreement with owner(s) of roadway about stated right of way assumptions

Output: Draft Scorecard Approach

PORTLAND METRO TRANSIT CORRIDOR CAPITAL PROJECTS - EVALUATION RESULTS - DISCUSSION DRAFT

TYPE	PROJECT	SOURCE/ STATUS	CORE CRITERIA ASSESSMENT										READINESS CRITERIA ASSESSMENT					
			MOBILITY & RIDERSHIP		LAND USE SUPPORTIVENESS & MARKET POTENTIAL				COST-EFFECTIVENESS		EQUITY BENEFIT	ENVIRONMENTAL BENEFIT	FUNDING POTENTIAL	LOCAL COMMITMENT & PARTNERSHIPS				
			Ridership	Travel Time Benefit	Land Use	Urban Form	2040 Growth Areas	Economic Development	Operating Cost per Rider	Capital Cost per Rider	Access to Jobs & Services	Reduction in Emissions	FTA Scoring Assessment	Community Support	Pop & Emp Growth Targets	Land Use Policies	Partnerships	Anti-Displacement Actions
FIXED GUIDEWAY	Project X (Commuter Rail)		●●●	●●○	●●○	●●○	●●○	●●○	$	$	●○○	●●●	●●○	✓	✓	✓	✓	✓
	Project X (LRT)																	
	Project X (BRT)																	
	Project X (LRT or BRT)																	
	Project X (Rapid Streetcar)																	
CORRIDOR-BASED BRT	Project X																	
CORE CAPACITY	?																	

Proposed Process



Which Projects Are Evaluated?

Figure 2 **Corridor based transit projects that meet the minimum criteria for FTA funding will be run through the Regional Transit Investment Evaluation Process**

FTA Project Type	Example	Minimum criteria for FTA Funding
Fixed Guideway	Commuter Rail LRT BRT Streetcar	▪ Separate right-of-way for the exclusive use of public transportation. ▪ For fixed guideway BRT, over 50 percent of route must operate in separated right-of-way dedicated for transit during peak periods. Other traffic can make turning movements through the separated right of-way. ▪ Separate and consistent brand identity for stations and vehicles.
Corridor Based BRT	Enhanced bus transit corridors Streetcar	▪ Speed and reliability improvements that provide substantial travel time benefits; separated right-of-way not required. ▪ Provides faster travel through congested intersections using active signal priority in separated guideway if it exists, and either queue-jump lanes or active signal priority in non-separated guideway. ▪ Separate and consistent brand identity for stations and vehicles.
Core Capacity		▪ Substantial corridor-based investments within existing fixed guideway system; in a corridor currently at or over capacity or projected to meet or exceed capacity within five years; ▪ Must increase corridor's capacity by at least 10%; ▪ Cannot include project elements designated for maintaining a state of good repair

Project Type

- Criteria 1 (Ridership) – model assumes:
  - Route, mode, dedicated right of way, stop spacing, frequency
- Criteria 7 (Operating Cost) and Criteria 8 (Capital Cost)
  - Based on a determined mode and operating plan for the project, or…
  - Typical operating cost per hour and capital cost per mile for a range of potential modes
    - LRT/BRT, Arterial BRT, Commuter Rail and/or Streetcar
  - Standardized assumptions for service span and frequency
- Feasibility
  - To evaluate if there has been some level of agreement with owner(s) of roadway about stated right of way assumptions

Criteria 11: Local Commitment and Partnerships

Evaluation Method	Changes or Clarifications
▪ Community & local support ▪ Adopted population & employment growth targets to support project ▪ Plans to update land use policies to support project	▪ **Partnerships** between agencies & municipalities that will need to be involved to implement the project ▪ **Equity**: Partnerships, policies, & tools in place to prevent displacement of local residents and businesses ▪ **Feasibility:** To evaluate if there has been some level of agreement with owner(s) of roadway about stated right of way assumptions

Transit-Supportive Elements

What are Transit Supportive Elements?

- Land Use / TOD
- Affordable and Equitable Housing
- System Access
- TDM Policies and Programs
- Technology (e.g., Transit Priority, Information, etc.)
- Fare Programs (i.e., Affordability, Convenience)

Source: TriMet

When can Transit Supportive Elements be considered?

- Prior to project selection
  - Local actions to improve project readiness and scoring
  - E.g., Zoning, Bike/Pedestrian Network, Parking Policies

When can Transit Supportive Elements be considered?

- Evaluated as part of project selection criteria
  - Land Use / TOD
    - Existing context
      - Criteria 1 (Ridership)
    - Supportive Planning & Policies
      - Criteria 3 (Land use supportiveness)
    - Transformation potential
      - Criteria 6 (Rebuilding/redevelopment opportunity)
    - Commitment to Corridor Investment
      - Criteria 12 (Local Commitment and Partnerships)

When can Transit Supportive Elements be considered?

- Evaluated as part of project selection criteria
  - Affordable and Equitable Housing
    - Analysis of displacement potential and mitigation strategies
      - Criteria 12 (Local Commitment and Partnerships)
    - Existing or planned land uses
      - Criteria 3 (Land Use Supportiveness) incudes Affordable Housing
  - System Access
    - Bicycle and pedestrian network completion
      - Criteria 4 (Urban Form)

When can Transit Supportive Elements be considered?

- Post-Project
  - Locate affordable housing, services, etc., along HCT/frequent service network
  - Other funding processes can prioritize investments that support HCT/frequent service network (e.g., active transportation projects, shared mobility options, mobility hubs)

Next Steps

Next Steps

- Recommended Criteria (Tech Memo #5)
- Transit supportive elements (Tech Memo #6)
- Testing Phase

Thank You!

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