

Agenda



Metro

600 NE Grand Ave.
Portland, OR 97232-2736

Meeting: **RTP Transit work group meeting**
 Date: Wednesday, October 11, 2017
 Time: 1:30-3:30 p.m.
 Place: Metro Regional Center, Council Chambers
 Purpose: Focused discussion on Enhanced Transit corridors, criteria and process.
 Outcome(s): Shared understanding of Enhanced Transit goals and development on candidate corridors; feedback on potential criteria used in evaluating projects with a focus on equity and growth; and feedback on the proposed Enhanced Transit pilot work plan.

- | | | |
|-----------|---|--|
| 1:30 p.m. | Welcome & project updates
<i>Who have you talked to about this work? What have you heard?</i> | Everyone |
| 1:40 p.m. | What are the goals of Enhanced Transit
<i>Provide an overview of the goals of the Enhanced Transit Concept and how it fits into the Regional Transit Strategy</i> | Jamie Snook, Metro
Eric Hesse, TriMet |
| 2:00 p.m. | How the universe of projects were developed
<i>Describe the process that was used to define the universe of projects to be considered</i> | Eric Hesse, TriMet |
| 2:25 p.m. | Discuss the Enhanced Transit criteria
<i>Discuss the criteria used to evaluate and prioritize Enhanced Transit improvements with a focus on equity and growth</i> | Eric Hesse, TriMet |
| 3:00 p.m. | Enhanced Transit Pilot Program process discussion
<i>Share a proposed work plan for the Enhanced Transit Pilot Program process.</i> | Jamie Snook, Metro
Eric Hesse, TriMet |
| 3:25 p.m. | Next steps
<i>Discuss next steps</i> | Jamie Snook, Metro |
| 3:30 p.m. | Adjourn | |

Meeting Packet	Next Meeting
<ul style="list-style-type: none"> • Transit Work Group Agenda • September 2017 RTS meeting summary • ET draft plan memo with ETC Toolbox attachment • ET modeling assumptions memo 	November TBD Metro Regional Center

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 minutes

Meeting: **2018 RTP Transit work group meeting**
Date/time: Wednesday, September 13, 2017 | 1-3:30 p.m.
Place: Metro Regional Center, room 401
Purpose: Shared understanding of what is proposed for the 2018 RTP Update and transit assumptions identified; and feedback on applying the enhanced transit corridors concept regionally.

Work Group Attendees

Dan Bower
April Bertelsen
Dwight Brashear
Karen Buehrig
Mike Coleman
Scott France
Eric Hesse
Jay Higgins
Nicole Hendrix
Mauricio Leclerc
Randy Parker
Lidwien Rahman
Jamie Snook, Work Group Lead
Charlie Tso
Dyami Valentine

Affiliate

Portland Streetcar, Inc
City of Portland
SMART
Clackamas County
Port of Portland
Clackamas County
TriMet
City of Gresham
SMART
City of Portland
C-TRAN
Oregon Department of Transportation
Metro
City of Wilsonville
Washington County

Staff Attendees

Grace Cho, Metro
Lake McTighe, Metro
Julie Stringham, Metro

Welcome & introductions

The meeting was called to order by Jamie Snook. Ms Snook welcomed the group and there was a round of introductions. Ms Snook asked if there were any announcements to share with the group:

- Multnomah and Clackamas Counties received a TGM grant from ODOT for the Columbia to Clackamas Corridor for a transportation and land use study, including a transit element.
- Portland Bureau gave update on the Growing Transit Communities (GTC) work
- City of Wilsonville SMART completed their first on-board demographic survey, which also identified the number of riders that are transit dependent (no automobile access).
- Dwight Brashear announced that he will be the keynote speaker at the Oregon Transit Association conference in Pendleton
- Streetcar, Inc has also completed on-board survey, also determined that younger people riding streetcar likely do not own a vehicle.

I. Regional Transportation Plan update (Jamie Snook, Metro)

Ms Snook gave a quick update on the status of the 2018 RTP, providing a summary of the input received through the call for projects. There was a question regarding the public involvement plan for the rest of the RTP, particularly after the results of the first and second round of the RTP evaluation.

II. Transit service assumptions for the RTP (Eric Hesse, TriMet)

Eric Hesse, TriMet provided an overview of the transit assumptions being prepared for the transit evaluation for the 2018 RTP:

- TriMet is working with the Metro Travel Demand Modeling group on the transit assumptions to populate the Transit Network (TNET) for the travel demand model and evaluation.
- The transit component of the assumptions is built on TriMet's Service Enhancement Plans (SEPs)
- The transit component would also reflect the ETC concepts and identified lines, as well as increased frequency on the work horse lines due to the new revenue projections.
- TriMet and Metro are also validating the financial model relative to what service assumptions are being inputted into the travel model – validating for fiscal constraint.
- Mr. Hesse shared via the presentation projector, a draft proposal of the transit assumptions, particularly the new frequent service and the routes seeing increased frequency.
- The changes or increases in frequency will likely drive a policy conversation regarding how we define frequent service. The model analysis and results will help frame or support that conversation.
- Mr. Hesse explained that the TNET assumptions will help to test that in terms of generating estimated future ridership for purposes of financial stability and productivity.
- Mr. Hesse also explained how the different modes will be accounted for in the travel demand model (transit attractiveness, overlapping lines sharing portions of the same corridors, etc.).
- April Bertelsen expressed that there should be a differential on the transit attractiveness of the ETC lines, but willing to do this round of modeling assumptions and analysis as an initial test, but can be refined for round two.
- It was also mentioned that streetcar is also thought as enhanced transit
- Streetcar assumptions, especially regarding headway, may be the same or greater than enhanced transit.
- Eric also notes that the transportation package and the service being injected into the system is going on a different timeline than the first round of RTP analysis and should be reflected in round two, if not now.
- Dan Bower mentioned that an unintended consequence and something we should consider is there will be an additional need for drivers, mechanics and vehicles with the increase in service.

III. Transit System Expansion Policy update (Jamie Snook, Metro)

Ms. Snook gave an update on the transit system expansion policy update and in terms of the process and next steps for this work. She mentioned it is on pause until fall 2017 to allow for the RTP system evaluation and then get picked back up for evaluation and informing the policy in the fall.

Karen Buehrig asked a general question about the projects TriMet submitted for the pilot project evaluation. She wanted to know if there was some detailed information that can be gleaned from the projects which were selected for evaluation in the pilot. Mr. Hesse responded in saying that because the pilot project evaluation is primarily GIS driven, most of the results and analysis is really getting driven by the route/alignment. Other information to be provided from the system evaluation will include mode split, ridership, and outputs around reaching GHG emissions reduction targets.

IV. Applying the Enhanced Transit Corridor concept to the region (Eric Hesse)

Mr. Hesse provided an overview of the Enhanced Transit concept expansion to the rest of the region. However, there isn't currently sufficient scope (under the current contract) to understand how to identify potential ETC corridors regionwide. Mr. Hesse described that the three corridors building off PBOT's work are being studied to help further inform Enhanced Transit corridors and potential operational improvements, surface improvements, etc. Enhanced Transit needs further study and work. TriMet is looking to see if they have the resources to do workshops to filter different corridors and nominate corridors for further project development and analysis to expand the ETC work region-wide. Mr. Hesse walked through the initial process and thinking about Enhanced Transit.

Ms. Buehrig asked about timing and when would an enhanced transit corridor selection happen for further indepth operational and traffic analysis and possible initial design work. Mr. Hesse responded that we would be looking to identify those corridors in the fall of 2017 and Spring of 2018. He further explained that enhanced transit corridors are initially defined by operational issues, followed by growth and equity as additional criteria.

Mr. Hesse walked through Eric walk through some of the operational indicators which help to inform potential enhanced transit corridors. He mentioned time point segments (and handed out a map) and ridership (he handed out a map) and also a couple of other components. He then explained how equity and growth considerations are being filters in identifying enhanced transit corridors as candidates to take to workshop and other further narrow to corridors for indepth analysis and design.

Jay Higgins asked for greater clarity on understanding the equity and growth lens being applied. Mr Hesse responded and explained that the growth and equity lens could help to identify enhanced transit corridors in the next step in selection and prioritization. This could potentially be predicated on partnership and readiness. Essentially, any enhanced transit corridor would be advancing equitable outcomes and addressing future growth projections and issues. Maurico LeClerc mentioned that equity considerations in operations are tricky because the effects in one area can be seen in another area.

Adjourn

There being no further business, meeting was adjourned at 3:35 p.m. by Jamie Snook.

Meeting summary respectfully submitted by
Jamie Snook, Principal Planner/Transit Work Group Lead

Next meeting of RTP Transit work group

November 2017 | TBD
Metro Regional Center

Attachments to the Record:

Item	Topic	Document Date	Description
1	Agenda	9/13/2017	September 13, 2017 Meeting Agenda
2	Meeting Summary	6/2017	RTP Transit Work Group Summary, June 2017
3	Summary	8/25/2017	2018 Regional Transportation Plan Call for Project Summary
4	Timeline	6/1/2017	2018 Regional Transportation Plan Schedule and timeline for building the 2018 RTP Investment Strategy
5	Project list	8/28/2017	2018 Regional Transportation Plan transit project list from the call for projects list
6	Handout	9/13/2017	Draft table of potential transit frequencies for Enhanced Transit Corridors, Frequent Service and New Frequent Service lines
7	Handout	9/13/2017	Draft TriMet Bus Service Map showing the variability in weekday operating speeds between peak and off-peak.
8	Handout	9/13/2017	Draft TriMet Bus Service Map showing average weekday passenger load by segment



Memo

Date: Monday, October 9, 2017
To: 2018 Regional Transportation Plan Update Transit Work Group and Equity Work Group
From: Jamie Snook, Principal Planner, Metro
Subject: Enhanced Transit Concept Pilot Proposed Work Plan (DRAFT)

The purpose of this memorandum is to provide a summary of the proposed work plan for the Enhanced Transit Concept Pilot.

Enhanced Transit Concept Goals:

- Increase transit ridership to level sufficient to meet regional and local mode split goals by improving transit reliability, speed, and capacity through hotspot bottleneck locations in congested corridors and throughout the region through moderate capital and operational investments from both local jurisdictions and transit agencies.
- Identify, design and build a set of Enhanced Transit projects, either as hotspot bottlenecks or across whole congested corridors or, in partnership with local jurisdictions where improvements are most needed and can be deployed quickly to produce immediate results.
- Develop a pipeline of Enhanced Transit projects so they are ready to advance for additional funding.

Process and Timeline:

This is envisioned as a 1-year process and pilot project to develop Enhanced Transit projects across the region, led by Metro and TriMet in partnership with local jurisdictions. Metro will also work with SMART to develop their approach, as appropriate. There will be a local Request for Interest (RFI) this December-January. Most of the work leading up to the RFI will be through the Regional Transit Working Group (TWG) and workshops, with local jurisdiction representatives. There are several decision points where Metro and TriMet will return to TPAC.

September 29: TPAC meeting, seek recommendation for RFFA Phase II IGA, which allocates funding capacity for a regional ETC pilot.

Early October: Internal TriMet work to get to proposed universe of hotspots and corridors, based on transit operations analysis. Metro works with SMART to develop their approach, if appropriate.

October 11: RTP Transit Working Group workshop, in conjunction with interested members of RTP Equity Working Group

- Discuss criteria, with focus on equity and growth
- How universe of potential projects was developed,
- Overall pilot process, and
- Goals of ETC

October 19: JPACT meeting, seek approval of RFFA Phase II IGA, which allocates funding capacity for a regional ETC pilot.

October 27: TPAC briefing and approval of workplan.

Early/Mid November: Table Setting Workshops (all jurisdictional partners and their traffic teams).

- Discuss the goals of ETC program
- Discuss regional mode split goals and the benefit of faster and more reliable transit
- Explain the toolbox and its applicability in various contexts (See Attachment A)
- Explain the data-based criteria for developing proposed universe of projects
- Display local and national examples of implementing the tool in the toolbox
- Overview of TriMet's work plan on stop consolidation, all door boarding and articulated buses
- Overview of ETC process, how local jurisdictions will identify and put forward their priorities (drawn from proposed universe of projects), and how projects will move from prioritization and evaluation to design/implementation

November/December: Local Workshops (focused on the proposed universe of projects in a jurisdiction based on transit delay, ridership potential, growth, and equity concerns).

These workshops are designed to assess the applicability of various Enhanced Transit tools in the locations identified in each jurisdiction, with the intent of informing what project elements could be appropriate to advance towards design and implementation.

- Washington County w/ODOT
- Clackamas County w/ODOT
- Multnomah County w/ODOT
- City of Portland w/ODOT
- Other jurisdictions
- Other?

December 2017: Based on learnings from workshop(s), local jurisdictions identify their priorities and what local commitments work for them.

January 2018: Request for Interest (RFI). This the opportunity for local jurisdictions to propose projects that have made it through Filters 1 and 2 described below, and to indicate the policy and funding commitments they will make to each project as it nears completion.

January-March 2018: Filter 3 applied to projects submitted through the RFI; design to 15%

April-September 2018: Design to 100% for identified projects coming out of Filter 3 described below.

Enhanced Transit Concept filtering process

Filter 1

- **Purpose:** Potential projects are identified through assessment of potential applicability of ETC toolkit to locations within proposed universe through Local Workshops. Potential projects are located along a Frequent Service route or a route identified as future Frequent Service (in SEP or RTP) on TriMet system, or corollary on SMART system, and have potential for high ridership.
- **Result:** Local partners can choose to advance projects further based on toolkit applicability and merit identified through workshop

Filter 2 (Presumes project is a priority based on Filter 1)

- **Purpose:** Local support (ripeness) to pursue is identified by local jurisdiction, including what project elements to advance further through the process, considering potential tradeoffs with other modes
 - As part of Filter 2, jurisdictions indicate their local commitments to support the project, including financial commitments, policy changes such as roadway engineering changes and local parking policy changes, and their committed public outreach process
- **Result:** Local partners can choose to submit through RFI

Filter 3 (Applies only to projects submitted through RFI)

- Project fills the Enhanced Transit niche between Frequent Service and High Capacity Transit (i.e., small scale capital investments and/or supportive policies will produce sufficient ROI)
- Projects fitting this niche go to 15% design, after which they will be sorted into four categories:
 1. Local Project: Ripe and Ready
 - Definition: Local jurisdiction and transit agency agree project has merit and support
 - Result: Advances to 100 % design using RFFA funding and enters funding pipeline
 - Lead: TriMet or SMART with local jurisdiction and ODOT, as appropriate
 2. Local Project: Ripe but not Ready
 - Definition: Local jurisdiction and transit agency agree project has merit but does not currently have support to advance, either due to lack of funding capacity or willingness to
 - Result: Part of future pipeline of potential projects for consideration when funding becomes available and/or willingness to address tradeoffs changes
 - Lead: Metro and local jurisdiction
 3. Local Project: Not Ripe
 - Definition: Project does not meet the goals of the ETC pilot program or otherwise insufficient interest in moving the project forward by the local jurisdiction or the transit agency
 - Result: Project not in future pipeline
 - Lead: Local jurisdiction, as appropriate

4. Regional Project:

- Definition: Project does not align with goals of ETC (i.e., investments required are too significant in order to produce sufficient ROI or ROI is sufficient but more appropriate to pursue as New Starts/Small Starts due to scale)
- Result: Transit System Expansion Policy Process for projects seeking federal funds
- Lead: Metro

Proposed Process and Timeline Summary

Timing	Activity	Lead
9/25-10/6	Determine on-call mechanism, scope and NTP	TriMet & Metro
10/2-10/13	“Proposed Universe” TriMet internal workshop	TriMet with TriMet Consultant SMART with SMART Consultant
10/11 & 10/27	Transit and Equity WG workshop and TPAC Briefing and request to approve approach	TriMet & Metro
10/13-10/27	Table Setting Workshop content development and scheduling	TriMet & Metro with Metro Consultant SMART & Metro with SMART Consultant
10/30-11/13	Table Setting Workshop	Metro and TriMet and SMART
11/13-12/15	Local workshops to assess toolkit applicability in “Proposed Universe”	TriMet & Metro & SMART with Metro Consultant and
11/30-12/15	Subset of the “Ripe Universe” coming out of workshops	TriMet & Metro with Metro Consultant
1/5-1/19	RFI to advance to 15% using RFFA funds (projects that make it out of Filter 1 and 2)	Metro (with TriMet, SMART input)
1/22-3/23	15% design, traffic analysis and benefit/cost estimation	TriMet Consultant, SMART Consultant
3/30	TPAC Presentation of results of Filter 3	Metro & TriMet
4/2-4/13	Post 15% understand which advance to IFC	TriMet & Metro & SMART
4/16-9/30	15-100% design and traffic analysis and benefit/cost estimation	TriMet Consultant, SMART Consultant
September - December ‘18	Capital dollars allocated to best suited projects designed to 100%	Local jurisdiction



Laneways and Intersection Treatments		Reliability	Transit Speed	Dwell Time	Context/Applicability
	Dedicated Bus Lane	●	●		Most effective in high-volume, highly-congested corridors or hot spots; cost and impacts vary depending on context and available space.
	Business Access and Transit (BAT) Lane	●	●		Provides partially dedicated bus lane while maintaining business and residence access. May be applicable where there is more than one lane in each direction.
	Intersection Queue Jump/Right Turn Except Bus Lane	●	●		Most effective at high-traffic intersections; general purpose right-turn lane enables bus to bypass traffic backups and move through intersection more quickly.
	Transit-Only Aperture	●	●		Best suited for intersections where the benefit of prioritizing transit (and bicycles) is great and the impacts of limiting vehicle traffic are lower – often where a large multi-lane street changes character to a smaller neighborhood street.
	Pro-Time (Peak Period Only) Transit Lane	●	●		Used in highly-congested locations where restricting parking during peak hours can move transit more quickly through time-limited traffic backups (e.g. access to bridgeheads during rush hour).
	Bus on Shoulder	●	●		Can be applied on freeways and highways with adequate shoulder width (10 feet or more); signage and re-striping can create a low-cost dedicated transit lane.
Multi-Modal Interaction					
	Bikes Behind Station		●	●	Most appropriate on heavily-used transit routes that are also heavily-used or protected bikeways. May require reallocation of existing roadway space, or acquisition of additional right-of-way.
	Left-Side Bike Lane	●	●	●	Appropriate for one-way streets with heavily used transit routes where traffic speed and volume requires separated bicycle facilities. Can minimize or eliminate bus/bike conflicts for right-side boarding.
	Dedicated Bike Signal	●		●	Can be applied on heavily used bicycle routes where transit/bicycle interactions present safety challenges or impact transit performance; organizes interaction among modes and can improve safety but does not necessarily improve transit travel time.
	Shared Bus/Bike Zone		●		Not a preferred treatment, but can be applied in transit stop/station areas where full separation between buses and bikes is not feasible.
Stops and Stations					
	Curb Extensions for Stations/Stops	●	●	●	Typically applied where there is on-street parking. Applicable in both mixed-flow and dedicated transit lane conditions; can be installed mid-block or at intersections.
	Level Boarding	●	●	●	Application varies based on adjacent building entrance locations, right-of-way widths and availability, and integration with the sidewalk environment; cost varies widely depending on the need for new platforms or rolling stock.
	All-Door Boarding	●	●	●	Can be combined with off-board fare collection and/or on-board electronic fare technology at each door to facilitate quick entry and compliant fare payment.
	Far-Side Bus Stop Placement	●	●	●	Stop placement depends on corridor land use, street/intersection design, sidewalk availability, driveway locations, and other conditions; most effective when used in combination with transit signal priority (TSP).
	Bus Stop Consolidation	●	●	●	May be appropriate in corridors with a large number of closely spaced stops where roadway and pedestrian conditions allow for safe access to consolidated stops.
Operations/Other					
	Rolling Stock Modification			●	Longer vehicles can accommodate more passengers, and/or on-board amenities; this may help address crowding. Modern low-floor vehicles enable level boarding and all-door boarding. May require new or retrofitted maintenance facilities.
	Street Design Traffic Flow Modifications	●	●		Applicability dependent on context and conditions.
	Transit Signal Priority and Signal Improvements	●	●		Signal adaptations may include extending a green light, triggering a transit priority phase, and/or progression changes to improve conditions for all traffic.
	Headway Management	●			Strategies may include monitoring/management for specific lines or groups of lines, or headway-based service that operates without published schedules. Often requires new software, hardware and staff.

Memo



Metro

600 NE Grand Ave.
Portland, OR 97232-2736

Date: Monday, October 9, 2017
To: 2018 Regional Transportation Plan Update Transit Work Group and Equity Work Group
From: Jamie Snook, Principal Planner, Metro
Subject: Enhanced Transit Concept modeling assumptions

The purpose of this memorandum is to provide an overview of the proposed modeling assumptions for the Enhanced Transit Concept.

Enhanced Transit is a fairly new concept being introduced into the Regional Transit Strategy. Because of this, there was a need to define how Enhanced Transit was going to be reflected in Metro's Regional Travel Demand model. Since this is new, we are eager to see how the sensitive the model is to Enhanced Transit.

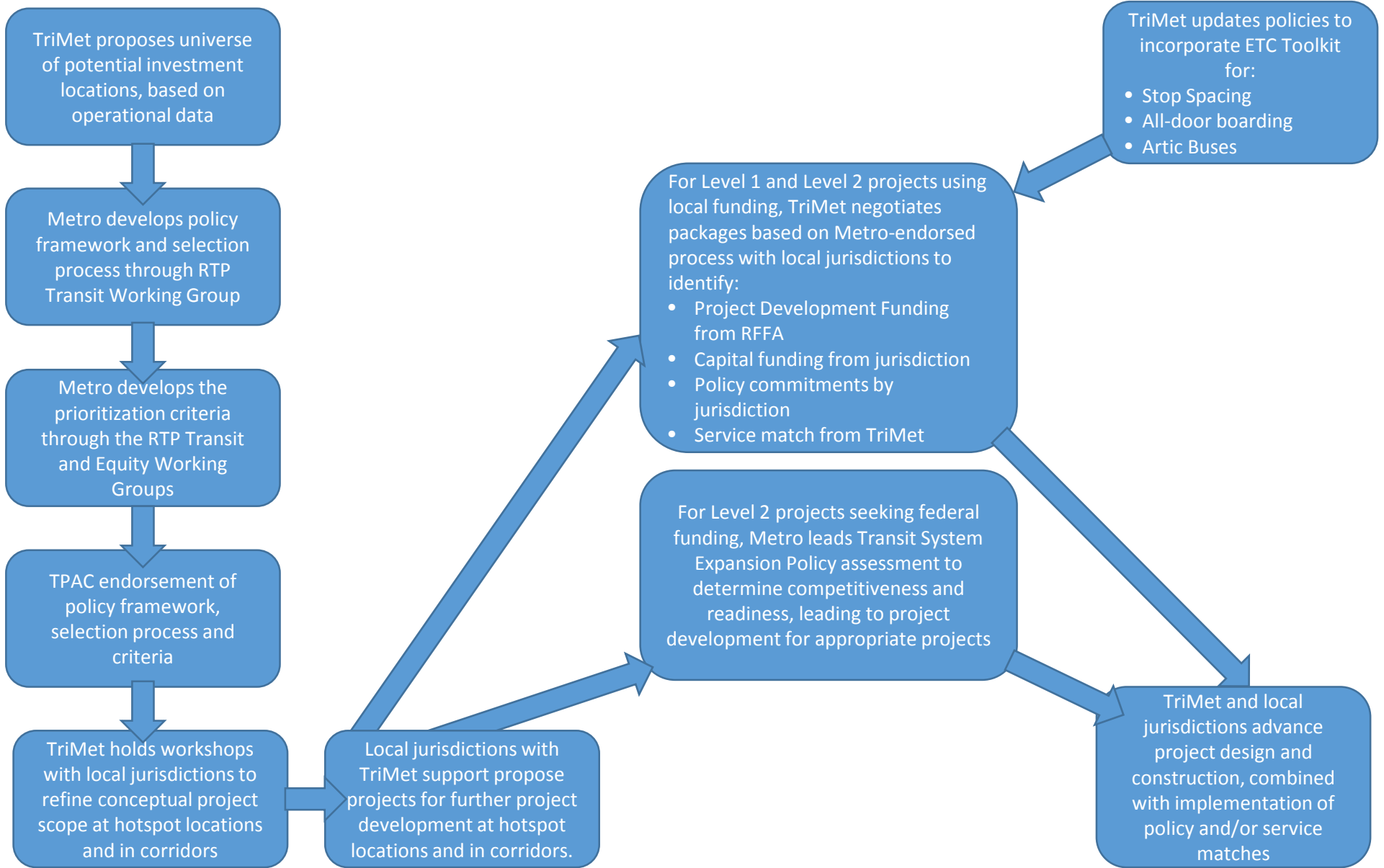
Enhanced Transit Concept is not High Capacity Transit, in the traditional sense and it operates faster with more reliability than frequent service. There are generally four inputs into the model that can help represent Enhanced Transit operations:

1. Mode – for the most part, it's bus. Other options include streetcar or BRT (upper end of ETC)
2. Frequency - I was also using the frequency table discussed yesterday at our Transit Work Group (see attached). Different for different years is also noted in attached spreadsheet.
3. Speed – Frequent service bus is 90% of auto and Division (upper end of ETC) is 95%-120% of auto. So we split the difference and gave ETC 93% of auto.
4. Dwell – we assumed a 20 sec/stop dwell

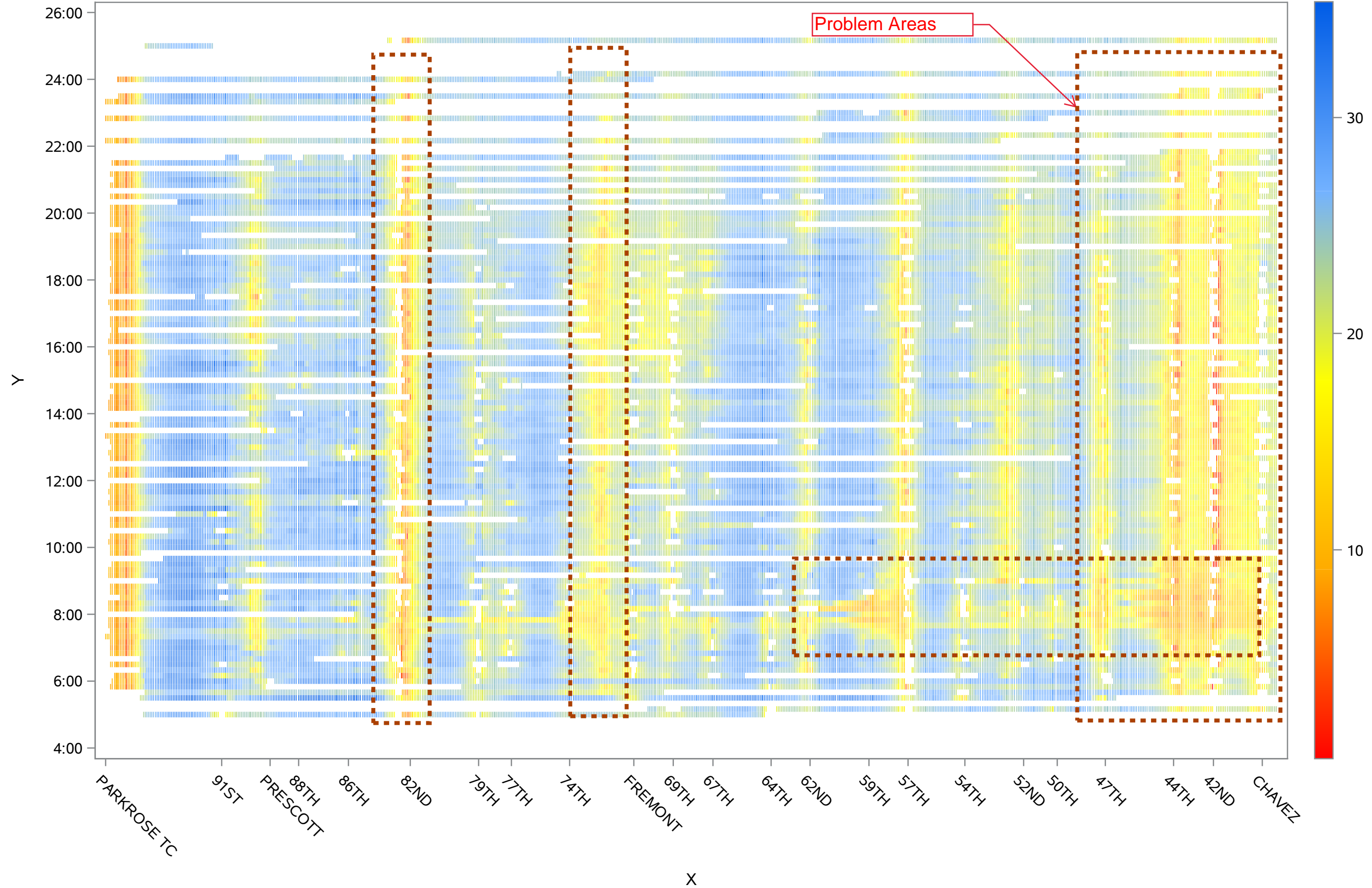
Because the Enhanced Transit Corridor projects identified in the 2018 Regional Transportation Plan Update Call for Projects are not described or developed in detail, the assumptions for the regional travel demand model are also general in nature. The following tables identifies the input assumptions and methodology for developing for Enhanced Transit in the regional travel demand model.

Model inputs needed	Assumptions for the model
Mode (commuter rail, light rail, BRT, streetcar, bus)	Some corridors are already identified as streetcar. Some corridors could be BRT Other corridors will be bus
Frequency (headways, how often does the transit mode run during peak and off-peak periods)	This still needs to be worked out. TriMet is working on the future networks for the model. After that is done, we can review the ETC corridors and define the appropriate headways.
Alignment (route of the transit operations)	Follows the existing (or future) frequent service network Or other routes to be defined as needed
Number of stops and stop locations (only needed for HCT and bus service with limited stops)	Without a plan or design, it is unknown how many stops and where. By increasing the speed assumptions and decreasing the dwell time assumptions, this assumes there is some level of stop consolidation or level style boardings (to be determined during the planning/project development phase)
Amount of dedicated right of way	Without a plan or design, it is unknown how much dedicated right of way is included. By increasing the speed assumptions and decreasing the dwell time assumptions, this assumes there is some transit priority to treatments (to be determined during the planning/project development phase)
Speed of vehicle while in dedicated right of way	Same as above
Speed assumption while in mixed traffic (what percentage of the surrounding auto traffic speed; this is usually based on mode and route location, determined by modeling staff)	We assume bus and frequent service bus operates at 90% of the auto speed. BRT is assumed at 95%-125% of the auto speed (depending on design) ETC is assumed at 93% of auto speed (better than bus but not as fast as BRT)
Dwell time at stops (e.g. 20 sec/stop)	Thaya is going to calculate the dwell time for the Division Transit project (inner Portland and outer Portland) and compare that with the dwell per mile for frequent service (inner Portland and outer Portland). ETC will likely be somewhere in the middle between these two calculations.
Park and ride (number of spots and locations)	ETC is not likely to have park and ride facilities.
Any changes to the surrounding transit network	Generally, ETC builds off of the frequent service networks.
Year of construction for the proposed project	As identified in the call for projects for the RTP

Materials following this page were distributed at the meeting.



Line 12 - Southbound - Excludes Service Stops - Median Speeds



TriMet's Transit Equity Index

Overview

TriMet's Department of Diversity & Transit Equity has developed a Transit Equity Index to aid in planning transit service investments. The Index evaluates potential investments across ten measures pertaining to a route's service area:

1. **Minority population**
2. **Low-income population**
3. **Limited English Proficiency (LEP) population**
4. **Senior population**
5. **Youth population**
6. **People with disabilities**
7. **Limited vehicle access households**
8. **Low and medium wage jobs**
9. **Affordable housing units**
10. **Key retail/human/social services**

FAQ

Why develop a Transit Equity Index?

As a recipient of funds from the federal government, TriMet is required to ensure that major service decisions do not discriminate on the basis of race or income. However, TriMet aims to take this a step further by proactively incorporating equity into planning and rolling out service.

How was the Index created?

A combination of research, collaboration with the TriMet Transit Equity Advisory Committee, internal staff review/testing, and leadership guidance have resulted in the current version of the Index.

How is the Index being used?

TriMet's Policy & Planning Department developed long-term visions (Service Enhancement Plans) for future transit in the Portland Metropolitan region. These visions include proposals to increase service on current bus routes and create new routes where coverage is lacking. The aforementioned improvements to bus service are part of an ongoing 10-year expansion of transit which kicked off in 2016. The Transit Equity Index is being used to help prioritize which service increases should be rolled out first as resources become available.

Are there other examples of tools like this?

Applying an equity index to transit service is a relatively new concept, but there are some models. A [project](#) led by the University of Illinois-Chicago in 2009 developed an equity index to help determine where to extend the region's famed 'L' system, and in 2013 Northeastern University created an ["eTOD" rating system](#) to identify areas with high potential to encourage transit ridership, equity, and accessibility.

What's next?

TriMet staff continue to test and refine the tool in order to ensure that the data is as reliable and accurate as possible, and to make the tool more user-friendly.

	Minority Population	Youth Population	Senior Population	Low-income Population	Aff Housing Units	Low/med wage jobs	Services	People w Disabilities	Poor Vehicle Access	HHs	LEP Population	Total Equity Index Pts
9-Powell Blvd	3	3	3	3	3	3	3	3	3	3	3	26
4-Division/Fessenden	3	3	3	3	3	3	3	3	3	3	3	25
87-Airport Way/181st	3	3	3	3	3	3	3	3	3	3	3	25
MAX Blue Line	3	3	3	3	3	3	3	3	3	3	3	25
MAX Green Line	3	3	3	3	3	3	3	3	3	3	3	25
17-Holgate/Broadway	3	3	3	3	3	3	3	3	3	3	3	24
20-Burnside/Stark	3	3	3	3	3	3	3	3	3	3	3	24
57-TV Hwy/Forest Grove	3	3	3	3	3	3	3	3	3	3	3	22
77-Broadway/Halsey	3	3	3	3	3	3	3	3	3	3	3	22
MAX Red Line	3	3	3	3	3	3	3	3	3	3	3	22
15-Belmont/NW 23rd	3	3	3	3	3	3	3	3	3	3	3	21
21-Sandy Blvd/223rd	3	3	3	3	3	3	3	3	3	3	3	21
25-Glisan/Rockwood	3	3	3	3	3	3	3	3	3	3	3	21
73-122nd Ave	3	3	3	3	3	3	3	3	3	3	3	21
MAX Yellow Line	3	3	3	3	3	3	3	3	3	3	3	21
10-Harold St	3	3	3	3	3	3	3	3	3	3	3	20
72-Killingsworth/82nd Ave	3	3	3	3	3	3	3	3	3	3	3	20
99-Macadam/McLoughlin	3	3	3	3	3	3	3	3	3	3	3	20
19-Woodstock/Glisan	3	3	3	3	3	3	3	3	3	3	3	19
30-Estacada	3	3	3	3	3	3	3	3	3	3	3	19
33-McLoughlin/King Rd	3	3	3	3	3	3	3	3	3	3	3	19
76-Beaverton/Tualatin	3	3	3	3	3	3	3	3	3	3	3	19
78-Beaverton/Lake Oswego	3	3	3	3	3	3	3	3	3	3	3	19
23-San Rafael	3	3	3	3	3	3	3	3	3	3	3	18
52-Farmington/185th	3	3	3	3	3	3	3	3	3	3	3	18
6-Martin Luther King Jr Blvd	3	3	3	3	3	3	3	3	3	3	3	18
94-Pacific Hwy/Sherwood	3	3	3	3	3	3	3	3	3	3	3	18
MAX Orange Line	3	3	3	3	3	3	3	3	3	3	3	18
22-Parkrose	3	3	3	3	3	3	3	3	3	3	3	17
291-Orange Night Bus	3	3	3	3	3	3	3	3	3	3	3	17
35-Macadam/Greeley	3	3	3	3	3	3	3	3	3	3	3	17
44-Capitol Hwy/Mocks Crest	3	3	3	3	3	3	3	3	3	3	3	17
45-Garden Home	3	3	3	3	3	3	3	3	3	3	3	17
54-Beaverton-Hillsdale Hwy	3	3	3	3	3	3	3	3	3	3	3	17
81-Kane/257th	3	3	3	3	3	3	3	3	3	3	3	17
8-Jackson Park/NE 15th	3	3	3	3	3	3	3	3	3	3	3	17
12-Barbur/Sandy Blvd	3	3	3	3	3	3	3	3	3	3	3	16
14-Hawthorne	3	3	3	3	3	3	3	3	3	3	3	16
71-60th Ave	3	3	3	3	3	3	3	3	3	3	3	16
75-Cesar Chavez/Lombard	3	3	3	3	3	3	3	3	3	3	3	16
92-South Beaverton Express	3	3	3	3	3	3	3	3	3	3	3	16
16-Front Ave/St Helens Rd	3	3	3	3	3	3	3	3	3	3	3	15
53-Arctic/Allen	3	3	3	3	3	3	3	3	3	3	3	15
56-Scholls Ferry Rd	3	3	3	3	3	3	3	3	3	3	3	15
58-Canyon Rd	3	3	3	3	3	3	3	3	3	3	3	15
68-Marquam Hill/Collins Circle	3	3	3	3	3	3	3	3	3	3	3	15
80-Kane/Troutdale Rd	3	3	3	3	3	3	3	3	3	3	3	15
88-Hart/198th	3	3	3	3	3	3	3	3	3	3	3	15
WES Commuter Rail	3	3	3	3	3	3	3	3	3	3	3	15
152-Milwaukie	3	3	3	3	3	3	3	3	3	3	3	14
29-Lake/Webster Rd	3	3	3	3	3	3	3	3	3	3	3	14
51-Vista	3	3	3	3	3	3	3	3	3	3	3	14
62-Murray Blvd	3	3	3	3	3	3	3	3	3	3	3	14
96-Tualatin/I-5	3	3	3	3	3	3	3	3	3	3	3	14
11-Rivergate/Marine Dr	3	3	3	3	3	3	3	3	3	3	3	13
1-Vermont	3	3	3	3	3	3	3	3	3	3	3	13
48-Cornell	3	3	3	3	3	3	3	3	3	3	3	13
79-Clackamas/Oregon City	3	3	3	3	3	3	3	3	3	3	3	13
34-Linwood/River Rd	3	3	3	3	3	3	3	3	3	3	3	12
36-South Shore	3	3	3	3	3	3	3	3	3	3	3	12
38-Boones Ferry Rd	3	3	3	3	3	3	3	3	3	3	3	12
47-Baseline/Evergreen	3	3	3	3	3	3	3	3	3	3	3	12
55-Hamilton	3	3	3	3	3	3	3	3	3	3	3	12
70-12th/NE 33rd Ave	3	3	3	3	3	3	3	3	3	3	3	12
84-Powell Valley/Orient Dr	3	3	3	3	3	3	3	3	3	3	3	12
24-Fremont	3	3	3	3	3	3	3	3	3	3	3	11
32-Oatfield	3	3	3	3	3	3	3	3	3	3	3	11
59-Walker/Park Way	3	3	3	3	3	3	3	3	3	3	3	11
93-Tigard/Sherwood	3	3	3	3	3	3	3	3	3	3	3	11
156-Mather Rd	3	3	3	3	3	3	3	3	3	3	3	10
61-Marquam Hill/Beaverton	3	3	3	3	3	3	3	3	3	3	3	10
43-Taylor's Ferry Rd	3	3	3	3	3	3	3	3	3	3	3	9
46-North Hillsboro	3	3	3	3	3	3	3	3	3	3	3	9
85-Swan Island	3	3	3	3	3	3	3	3	3	3	3	9
155-Sunnyside	3	3	3	3	3	3	3	3	3	3	3	8
67-Bethany/158th	3	3	3	3	3	3	3	3	3	3	3	8
154-Willamette/Clackamas Heights	3	3	3	3	3	3	3	3	3	3	3	6
18-Hillside	3	3	3	3	3	3	3	3	3	3	3	6
37-Lake Grove	3	3	3	3	3	3	3	3	3	3	3	6
63-Washington Park/Arlington Hts	3	3	3	3	3	3	3	3	3	3	3	6
97-Tualatin-Sherwood Rd	3	3	3	3	3	3	3	3	3	3	3	6
39-Lewis & Clark	3	3	3	3	3	3	3	3	3	3	3	5
64-Marquam Hill/Tigard	3	3	3	3	3	3	3	3	3	3	3	5
50-Cedar Mill	3	3	3	3	3	3	3	3	3	3	3	4
66-Marquam Hill/Hollywood	3	3	3	3	3	3	3	3	3	3	3	4
65-Marquam Hill/Barbur Blvd	3	3	3	3	3	3	3	3	3	3	3	3

Point System

- 3 pts
- 2 pts
- 1 pt
- 0 pts

Equity Indicators & Data Sources

1. People of Color ("Pct_Min")
 - Pct. population non-white and/or Hispanic/Latino
 - Source: 2011-2015 American Community Survey
 - Geographic scale: Block Group
 - Basis: Title VI/Environmental Justice definition
2. Low-income Households ("Pct_LowInc")
 - Pct. households below 200% federal poverty level
 - Source: 2011-2015 American Community Survey
 - Geographic scale: Block Group
 - Basis: Metro definition of low-income
3. LEP Persons ("Pct_LEP")
 - Pct. population speaking English less than "very well"
 - Source: 2011-2015 American Community Survey
 - Geographic scale: Census Tract
 - Basis: TriMet definition
4. People with Disabilities ("Pct_Disabled")
 - Pct. population with a disability
 - Source: 2011-2015 American Community Survey
 - Geographic scale: Census Tract
 - Basis: Committee decision
5. Older Adults ("Pct_Over65")
 - Pct. population age 65 and over
 - Source: 2011-2015 American Community Survey
 - Geographic scale: Block Group
 - Basis: TriMet Honored Citizen age
6. Youth ("Pct_Under21")
 - Pct. population age 21 or under
 - Source: 2011-2015 American Community Survey
 - Geographic scale: Block Group
 - Basis: Multnomah Youth Commission 2014 Youth Summit recommendation
7. Households w/ Poor Vehicle Access ("Pct_PVA")
 - Pct. households with zero vehicles OR 2+ workers and one vehicle
 - Source: 2011-2015 American Community Survey
 - Geographic scale: Census Tract
 - Basis: Committee decision
8. Access to Affordable Housing ("AffordableUnits")
 - Rental housing w/ rent under \$900 (B25056 Contract Rent & B25061 Rent Asked)
 - Source: 2011-2015 American Community Survey
 - Geographic scale: Block Group
 - Basis: UC Davis Center for Regional Change Jobs/Housing Fit Analysis, modified for higher housing costs in Portland metro
 - Affordable owner-occupied or available for sale valued at \$175,000 or less (B25075 Value & B25085 Price Asked)
 - Source: 2011-2015 American Community Survey
 - Geographic scale: Block Group
 - Basis: UC Davis Center for Regional Change Jobs/Housing Fit Analysis, modified for higher housing costs in Portland metro
9. Access to Low/Medium Wage Jobs ("JobsUnder3333")
 - Jobs with earnings of \$3,333/month or less
 - Source: 2014 Longitudinal Employer-Household Dynamics (LEHD)
 - Geographic scale: Block Group
 - Basis: UC Davis Center for Regional Change Jobs/Housing Fit Analysis
10. Access to Services ("Svcs")
 - Human & Social Services: NAICS codes Individual and Family Services (624190), Child and Youth Services (624110), Services for Elderly and Persons with Disabilities (624120), Temporary Shelters (624221), and Other Community Housing Services (624229)
 - Source: ESRI Business Analyst
 - Geographic scale: Aggregated to Block Group
 - Basis: CLF Equity Atlas 2.0
 - Key Retail Services: NAICS codes Supermarkets and Grocery Stores (445110), Financial Institutions (522110), Barber & Beauty Shops/Salons (812111 & 812112), Laundries & Dry Cleaners (812310 & 812320), Hardware Stores (444130), Pharmacies & Drug Stores (446110)
 - Source: ESRI Business Analyst
 - Geographic scale: Aggregated to Block Group
 - Basis: CLF Equity Atlas 2.0/SF Dept of Public Health Helath Development Measurement Tool, modified by committee
 - Schools: Community colleges, High Schools, Middle or junior high schools, Skill center or alternative schools
 - Source: Metro RLIS
 - Geographic scale: Aggregated to Block Group
 - Basis: Committee decision

Equity Index Measures & Data Sources

1. People of Color
 - Pct. population non-white and/or Hispanic/Latino
 - Source: 2011-2015 American Community Survey
 - Geographic scale: Block Group
 - Basis: Title VI/Environmental Justice definition
2. Low-income Households
 - Pct. households below 200% federal poverty level
 - Source: 2011-2015 American Community Survey
 - Geographic scale: Block Group
 - Basis: Metro definition of low-income
3. LEP Persons
 - Pct. population speaking English less than “very well”
 - Source: 2011-2015 American Community Survey
 - Geographic scale: Census Tract
 - Basis: TriMet definition
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 - Pct. population with a disability
 - Source: 2011-2015 American Community Survey
 - Geographic scale: Census Tract
 - Basis: Committee decision
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 - Pct. population age 65 and over
 - Source: 2011-2015 American Community Survey
 - Geographic scale: Block Group
 - Basis: TriMet Honored Citizen age
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 - Pct. population age 21 or under
 - Source: 2011-2015 American Community Survey
 - Geographic scale: Block Group
 - Basis: Multnomah Youth Commission 2014 Youth Summit recommendation
7. Households w/ Poor Vehicle Access
 - Pct. households with zero vehicles OR 2+ workers and one vehicle
 - Source: 2011-2015 American Community Survey
 - Geographic scale: Census Tract
 - Basis: Committee decision

8. Access to Affordable Housing

- Rental housing w/ rent under \$800 (B25056 Contract Rent & B25061 Rent Asked)
 - Source: 2011-2015 American Community Survey
 - Geographic scale: Block Group
 - Basis: UC Davis Center for Regional Change Jobs/Housing Fit Analysis, modified for higher housing costs in Portland metro
- Affordable owner-occupied or available for sale valued at \$175,000 or less (B25075 Value & B25085 Price Asked)
 - Source: 2011-2015 American Community Survey
 - Geographic scale: Block Group
 - Basis: UC Davis Center for Regional Change Jobs/Housing Fit Analysis, modified for higher housing costs in Portland metro

9. Access to Low/Medium Wage Jobs

- Jobs with earnings of \$3,333/month or less
 - Source: 2014 Longitudinal Employer-Household Dynamics (LEHD)
 - Geographic scale: Block Group
 - Basis: UC Davis Center for Regional Change Jobs/Housing Fit Analysis

10. Access to Services

- Human & Social Services: NAICS codes Individual and Family Services (624190), Child and Youth Services (624110), Services for Elderly and Persons with Disabilities (624120), Temporary Shelters (624221), and Other Community Housing Services (624229)
 - Source: ESRI Business Analyst
 - Geographic scale: Aggregated to Block Group
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- Key Retail Services: NAICS codes Supermarkets and Grocery Stores (445110), Financial Institutions (522110), Barber & Beauty Shops/Salons (812111 & 812112), Laundries & Dry Cleaners (812310 & 812320), Hardware Stores (444130), Pharmacies & Drug Stores (446110)
 - Source: ESRI Business Analyst
 - Geographic scale: Aggregated to Block Group
 - Basis: CLF Equity Atlas 2.0/SF Dept of Public Health Healthy Development Measurement Tool, modified by committee
- Schools: Community colleges, High Schools, Middle or junior high schools, Skill center or alternative schools
 - Source: Metro RLIS
 - Geographic scale: Aggregated to Block Group
 - Basis: Committee decision

Enhanced Transit Concept Criteria for Prioritization – City of Portland and Draft Regional Comparison

City of Portland Measures

Measure	Definition
Stop-level ridership	Summary of average daily “ons” in the corridor, for both directions
Average daily passenger load	50 th percentile maximum load multiplied by total number of weekday trips in the corridor
Reliability	Percent difference between 90 th and 10 th percentile operating speeds
Transit speed	50 th percentile operating speed (exclusive of dwell time) proportional to the posted speed limit along each segment
Dwell time	50 th percentile dwell time proportional to 50 th percentile overall running time
Equity	Percentage of minority, low income, and LEP individuals by block group within ¼ mile of corridor
Future growth	Percent change between base year (2010) and future year (2035) household and job growth within ¼ mile of the corridor

Draft Regional Measures to Establish “Proposed Universe”

Group	Measure	Definition
Operational Performance	Reliability (proposing to double weight)	Percent difference between 90 th and 10 th percentile operating speeds
Need for Operational Improvements	Dwell time	50 th percentile dwell time proportional to 50 th percentile overall running time
	Productivity	Ridership/Mile (focused on top 3 quintiles)
Equity	Equity	TriMet Equity Index
Future Growth	Future growth	Percent change between base year (2010) and future year (2040) household and job growth within ¼ mile of the corridor



Metro

Getting there



by transit

Regional Transit Strategy

a component of the 2018 RTP

Regional Transit Strategy Work Group

Meeting #15

October 11, 2017

Today's agenda...

1. Welcome and introductions
2. What are the goals of Enhanced Transit
3. Proposed Enhanced Transit work plan
4. Enhanced Transit Criteria
5. Universe of potential projects



Next steps

November meeting:

- Share transit related system performance measures
- Discuss changes to RTP Transit policies
- Draft table of contents/outline for the Regional Transit Strategy



CIRCA
1978

Riders boarding bus
at 5th & Morrison

Thank you

