600 NE Grand Ave.
Portland, OR 97232-2736

Metro | *Agenda*

2018 REGIONAL TRANSPORTATION PLAN UPDATE

Transportation Equity Work Group - Meeting # 6

Date: November 17, 2016
Time: 1 – 3 p.m.
Place: Metro Regional Center, Room 401
600 NE Grand Avenue, Portland, OR 97232

Working together across interests and communities can help ensure every person and business in the Portland metropolitan region has access to safe, reliable, affordable and healthy ways to get around. Find out more at ***oregonmetro.gov/rtp****.*

Agenda items

1:00	**Welcome, Introductions, and Quick Staff Updates**	Cliff Higgins
1:05	**Partner Updates** *Who have you talked to about this work? What have you heard?*	Everyone
1:25	**2018 RTP Transportation Equity System Evaluation** *Present the adjustments to the recommended methods to-date, overarching assumptions, and request approval to enter into beta testing.*	Grace Cho/Everyone
2:05	**2018 RTP Performance Targets and Monitoring Measures – Brainstorm** *Overview of RTP performance management program to prepare for policy discussions in 2017.*	Grace Cho/Everyone
2:45	**Next Steps**	Grace Cho
3:00	**Adjourn**	

Meeting Packet	Next Meeting
• Agenda • Regional Leadership Forum #2 - Summary • 2017 Transportation Equity Work Group Meeting Schedule • Memorandum – Transportation Equity System Evaluation Measures • Attachment A – Transportation Equity System Evaluation Measures – Summary of Input and Staff Responses • Attachment B – RTP System Evaluation Recommendations Table • Attachment C – Transportation Equity System Evaluation Method Profiles – DRAFT – as of 11.10.16 • Memorandum - 2018 RTP Performance Management Overview • Attachment A – Summary Table of RTP Performance Management Program – Measurements - DRAFT • Meeting Summary – Transportation Equity Work Group #5	Thursday, April 6th , 2017 2018 RTP Transportation Equity Work Group Meeting # 7 1:00 – 4:00 pm, Room 401, Metro

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

October 2016

2018 REGIONAL TRANSPORTATION PLAN UPDATE
Regional Leadership Forum 2 summary

Building the Future We Want

The region is looking ahead to how our transportation system will accommodate future growth and change – and what investments we should make over the next 25 years to build a transportation system that provides every person and business with access to safe, reliable, affordable and healthy ways to get around.

What did leaders say?

Technology is a tool, not a solution.

There are people who are not in rooms like this who depend on the conversation.

People will support what they help create.

On Sept. 23, 2016, the Metro Council convened more than 70 leaders and 80 stakeholders from across the Portland metropolitan region to discuss the role of technology in our transportation system and to learn about successful transportation funding campaigns in Los Angeles, the Bay Area and Seattle.

City, county, regional and state policymakers and business and community leaders came together to explore what the future of transportation might look like from local and national leaders actively engaged in envisioning the future with their communities. Forum participants came from established and emerging businesses, business alliances, workforce partnerships, skilled trades organizations, and community-based organizations working on transportation advocacy, environmental justice, housing, community design, workforce equity, environmental protection and issues impacting youth and older adults.

Bringing these diverse perspectives to the conversation prompted a call for greater representation from communities whose quality of life and economic prosperity are most often impacted by our region's transportation system.

"For folks from different walks of life, from different income levels, and different parts of the region, if there isn't a way for them to remain connected and a way for the transportation system to be efficient, they really fear for their future."

–Cyreena Boston Ashby, COO, Oregon Public Health Institute

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oregonmetro.gov/rtp

Five key takeaways

1. **Technology and data are tools, not solutions.**

   Innovative technologies, ranging from car sharing and ridesharing services to electric cars and self-driving vehicles, are fundamentally changing how we travel. We need to enact thoughtful policies that deliver helpful technology, while ensuring these new tools and services benefit all residents and businesses and support our vision for the future.

2. **We need to keep people and goods connected and moving with smart investments and measurable results.**

   Transportation investments support our region's economic prosperity and quality of life. Investments should safely and reliably connect people work, school, services and other opportunities; maximize use of existing infrastructure; and promote greater use of efficient travel modes for both people and goods. This includes keeping our existing transportation system in good repair and using technology and other tools to achieve greater efficiencies. An essential step is providing more and better travel options and greater access to transportation services for everyone.

3. **We must take steps to strengthen public confidence and demonstrate the benefits of transportation investments.**

   Building the future we want means prioritizing transportation investments that support our vision and holding ourselves accountable by measuring how investments support the desired outcomes identified in our vision. It's important that we demonstrate to the public that taxpayer dollars are being spent wisely.

4. **Coalitions need strong leadership and leaders need strong coalitions.**

   The region's government, business and community leaders need to work together to agree on a bold vision for the future that reflects what people and businesses value and want in the region's transportation system. We need to welcome new voices and leaders to the table to help identify solutions to address the challenges we face. This can build broad support for the solutions and help make the case more funding to build the future we want for our region.

5. **People will support what they help create.**

   It will take more than having diverse perspectives at the table to get us to the future we want. Building deeper relationships with community and business coupled with meaningful engagement opportunities will help shape policy and investment decisions. The degree to which we invest in these relationships reflects our level of commitment to providing a transportation system that meets the needs of all communities and businesses.

More information

News coverage of the forum is available at **oregonmetro.gov/forum2recap**.

Materials and presentations from the forum are available at **oregonmetro.gov/event/building-future-we-want.**

Find out more about the 2018 RTP update at **oregonmetro.gov/rtp**.

Regional Leadership Forum 2 | Building the Future We Want | Oregon Convention Center, Portland OR | Sept. 23, 2016

The Metro Council convened MPAC, JPACT and community and business leaders to foster leadership and collaboration to address regional transportation challenges through the 2018 Regional Transportation Plan. Working together across interests and communities can help ensure every person and business in the Portland metropolitan region has access to safe, reliable, affordable and healthy ways to get around. Find out more at ***oregonmetro.gov/rtp****.*

Metro

September 23, 2016

Graphic recording of presentations and conversations heard at the Regional Leadership Forum 2, "Building the future we want," held on Sept. 23, 2016, at the Oregon Convention Center, Portland, OR. These illustrations were created by Darren Cools for Metro to support the 2018 Regional Transportation Plan. Find out more at ***oregonmetro.gov/rtp.***

Metro

September 23, 2016

Graphic recording created by Darren Cools for Metro to support the 2018 Regional Transportation Plan. Find out more at ***oregonmetro.gov/rtp****.*

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2018 REGIONAL TRANSPORTATION PLAN UPDATE
Transportation Equity Analysis Working Group Meetings
As of 11/9/16

2016

DATE	TIME	PLACE
Thursday, April 6th, 2017	1-4 pm	401
Thursday, August 10th, 2017	1-4 pm	401
Thursday, September 14th, 2017	1-4 pm	401
Thursday, October 19th, 2017	1-4 pm	401

MRC = Metro Regional Center (600 NE Grand Avenue Portland 97232)
Note: work group meetings are being extended to 3 hours to allow for discussion and background.

Memo

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

Date: November 17, 2016

To: Transportation Equity Working Group and interested parties

From: Grace Cho, Associate Transportation Planner

Subject: Transportation Equity System Evaluation Measures – Refinements, Updates, and Beta Testing

Purpose
Provide an update on the development of the transportation equity system evaluation measures and related methodologies for assessing the 2018 Regional Transportation Plan (RTP) investment strategy and the 2018-2021 Metropolitan Transportation Improvement Program (MTIP).

Action requested
Metro staff requests work group support on the following:
1) concluding further formal work group discussions of the transportation equity system evaluation measures until Beta testing is complete;
2) support for staff to move forward with finalizing the updated transportation equity system evaluation measures; and
3) support for staff to begin beta testing through Spring 2017 and bring back lessons learned to the work group.

2018 RTP project evaluation update

Since summer 2016, Metro staff has been researching whether to pursue and how to conduct a supplemental project-level evaluation. A recommendation is anticipated in early 2017.

Regardless of the outcome of the discussion, the work group can recommend conducting project evaluation for the next scheduled RTP update.

Background
The Transportation Equity work group is one of eight (8) work groups providing input and technical feedback to Metro staff to help shape the 2018 RTP. Since the kickoff of the 2018 RTP update at the end of 2015, each work group has been providing staff recommendations and guidance on the update of the 2018 RTP system evaluation measures. The 2018 RTP system evaluation is intended to measure the performance of a proposed system of investments for the transportation system. The results of the system evaluation are to provide information to decision-makers and inform subsequent policies and actions.

For the Transportation Equity work group, the central charge has been to develop evaluation measures which: 1) reflect the desires of historically underrepresented communities for the transportation system; and 2) determine methods for evaluating near and long-term transportation

investments which address those desires and looks at differences among the region and historically underrepresented communities.

2018 RTP Transportation Equity System Evaluation Measures

Access
- Access to Travel Options – System Completeness
- Access to Places
- Access to Jobs and Transit Access Disadvantage

Affordability
- Combined Housing and Transportation Expenditure and Cost Burden

Transportation Safety
- Transportation Safety Infrastructure Investments
- Non-Freeway Vehicle Miles Traveled Exposure

Environmental Health
- Vehicle Miles Traveled Emissions Exposure

Transportation Equity System Evaluation Measures: Recap and Updates

At the September 29th work group meeting, the Transportation Equity work group recommended that Metro staff continue defining the evaluation measures for the system evaluation measures focused around the themes of Accessibility, Affordability, Transportation Safety, and Environmental Health. The work group provided recommendations on areas within certain system evaluation measures in which staff sought input. Additionally, the work group provided input on certain key assumption areas for the transportation equity analysis. **Attachment A** outlines how that feedback has been incorporated into the measures or updates.

Additionally, since the September 29th Transportation Equity work group meeting, the Performance Measures, Transportation Safety, and Regional Transit Strategy work groups have all discussed the system evaluation measures for the 2018 RTP. Feedback from the different work groups, in addition to the refinements from the Transportation Equity work group, led to several refinements and recommendations to certain 2018 RTP system evaluation measures. These were presented to the Transportation Policy Alternatives Committee (TPAC) and Metro Technical Advisory Committee (MTAC) at their October and November meetings. The feedback provided for the 2018 RTP system evaluation measures have been incorporated into **Attachment B**, which illustrates the combination of the different comments and refinements from the different work groups as well as TPAC and MTAC. To date, not all the comments and refinements have been addressed for the system evaluation measures as Metro staff continues to conduct research into the refinements.

For the system evaluations measures most applicable to the transportation equity analysis work, the relevant recommended refinements are identified in Table 1. The Transportation Equity work group members are being asked to provide input and/or general support to the relevant recommendation refinements. **Attachment C** is an updated compilation of transportation equity system evaluation methodology profiles for each system evaluation measure. The methodology profiles reflect several of the recommended refinements from the different work groups and prioritize the refinements from the Transportation Equity work group. Some refinements are not reflected as staff continues working to determine if the proposed refinement is possible.

Table 1. Recommended Refinements to Transportation Equity System Evaluation Measures by Other Work Groups, TPAC, and MTAC

System Evaluation Measure	Recommended Refinement	Recommendation By:
Access to Jobs and Transit Access Disadvantage	Determine the threshold for "transit access disadvantage" after conducting a baseline analysis of low and middle-wage jobs accessible by transit versus automobile.	Performance Measures work group; Regional Transit Strategy; TPAC; Metro staff
	Include a secondary assessment of access to all jobs and/or include high wage jobs as part of this analysis to gather a more comprehensive perspective.	
Access to Places	Include medical facilities as part of the "daily needs" which will be part of the evaluation.	Performance Measures work group; Regional Transit Strategy; TPAC
	Align the work to other efforts done through the region to look at accessing different destinations.	
Access Travel Options	Refine the methodology for this measure to include and evaluate comprehensiveness of active transportation system completeness (for example, infill of gaps, but also marked crossings, curb ramps, sidewalk conditions) and system connectivity (for example, route directness).	Performance Measures work group; TPAC; Metro staff
	Broaden this measure to include local street connectivity.	
	Repackage all the accessibility measures into a suite looking at physical, operational, and temporal facets of accessibility.	
	Incorporate the Regional Transit Strategy's Access to Transit measure into this newly defined measure. Apply a transit lens of looking at active transportation system completeness and connectivity within a ½-mile walk and 1-mile bike shed of transit stops.	
Transportation Safety Infrastructure Investments	Removed high injury corridor and "safe routes to school" from the definition of a safety project. Therefore, all safety projects, regardless of which facility they may be on, are evaluated.	Transportation Safety work group; Performance measures work group; Metro staff.
	Evaluation measure will assess both the percent of number and cost of transportation safety projects in the 2018 RTP investment program.	
	Assess separately the projects on high injury corridors projects and safe routes to schools projects as an additional analysis of the investments.	
Non-Freeway Vehicle Miles Traveled Exposure	Rename the measure to more accurately reflect which parts of the roadway system are not included as part of this system evaluation.	Transportation Safety work group; Performance Measures work

System Evaluation Measure	Recommended Refinement	Recommendation By:
	Reconsider what may be the best "denominator" in normalizing and reporting the VMT exposure level. A per person measure may not be appropriate.	group; Metro staff.
	Recommend moving forward in using this system evaluation measure, but be clear this measure is an interim measure until a more comprehensive safety and crash predictive model is developed. Recognize the measure is not comprehensive in all the factors which affect crashes, but can help identify areas for future transportation safety considerations.	
Resource Habitats	Provide greater clarification on what areas were defined as resource habitats and the rationale provided for identifying areas within the region as resource habitats.	Performance Measures work group; TPAC; MTAC; Metro staff
	Use this measure to identify and note individual projects having potential environmental impact concerns. This is in recognition the project development, design and construction will be a greater indicator of the environmental impacts and the necessary mitigation.	
	Recognize in the documentation of this system measure that many transportation projects may implement mitigation strategies which improve habitat.	
	Recognize in the documentation of this system evaluation measure the transportation's impact on habitat is very complex and varies depending on many design decisions and factors.	

Follow Up on Transportation Equity System Evaluation Measures Under Development
At the September 29th meeting, Metro staff identified two (2) recommended measures, which continue to have major underlying methods questions that still to be determined. Since the meeting, Metro staff has continued to working with partners to make progress on the development of these two system evaluation measures.

Table 2 provides the details of the measure, the original issue, and status updates.

Table 2. Transportation Equity System Measures Where Methods Remain to Be Defined

System Measure	Issue Preventing a Method to Date	Status Updates
Combined Housing and Transportation Expenditure and Cost Burden	Upon further coordination with Metro's Research Center, this measure would require additional model update activities not currently scoped or resourced in the RTP work plan. The system evaluation measure continues to remain as a recommended system evaluation measure for the Transportation Equity Analysis, but information regarding the methodology for the measure is currently unavailable as staff continues to scope the details of updating the Combined Housing and Transportation Expenditure model.	Metro staff is having discussions with senior leadership in seeking out resources to update the Combined Housing and Transportation Expenditure model developed in 2009. A decision on resources is expected by the end of 2016. An alternative for this measure has not been identified if resources are not available. Metro staff would recommend this measure be a monitoring measure for the 2018 RTP. The work group may recommend for resources to be put forward to this measure in the future. In parallel, Metro staff is working with modeling staff to scope the components of the model update, to be prepared if resources become available.
Vehicle Miles Traveled Emissions Exposure	Metro staff has recommended a set of refinements to the RTP system measure for clean air. The recommended refinements are in need of further technical consultation with air quality partners at DEQ as well as with public health partners. At this time, the initial method appears feasible and would complement the planned system-wide air quality analysis; however, certain key details with technical staff are necessary to confirm.	Metro staff is currently in discussions with DEQ staff for assistance in developing a simplified methodology for conducting a sub-regional vehicle emissions analysis based on vehicle miles traveled (VMT) and transportation analysis zones. An approach has been proposed, but further assistance is needed from DEQ to define the methodology.

Transportation Equity System Evaluation Measures Summary and Refinement Opportunities

In summary, the updated 2018 RTP Transportation Equity system evaluation measures reflect the input and recommendations of multiple work groups to Metro staff as well as the consultation and expertise of different data analysis specialists from Metro and other partner agencies (e.g. Portland State University, TriMet , etc.). In developing and crafting the system evaluation measures, those identified as part of the transportation equity analysis were not refined in ways which would diverge from the original intent of reflecting the desires of historically underrepresented communities for the transportation system and a means of differentiating between different communities. (For example, the transportation equity measures were not refined to be more "all-

inclusive.") The transportation equity measures will look to report both a region-wide metrics and metric for historically underrepresented communities.

Work groups will have the opportunity to make further refinements to the system evaluation measures in Spring 2017, if necessary. Staff recommends concluding refinements to the system evaluation measures in early 2017 in order to begin preparing a baseline analysis and begin beta testing the system evaluation measures on a smaller set of projects prior to the opening of the 2018 RTP project solicitation and subsequent system analysis in Spring-summer 2017. This opportunity will provide insight as to what can be learned from these measures, particularly those which are new to the 2018 RTP. What may be learned is that some of these measures may not provide meaningful information or may need additional refinements. Staff will bring forward a set of recommendations after the baseline analysis and beta testing is completed.

Timeline for Finalizing Transportation Equity System Evaluation Measures

The 2018 RTP project solicitation process is expected to begin in late winter/early spring of 2017. (See Table 3 for a more detailed timeline.) Prior to then, all system evaluation measures for the 2018 RTP must be in a final draft stage by mid-January 2017. This is to allow Metro staff the ability to receive committee approval to move forward with the evaluation on the long-range transportation investment strategy that will be developed as part of the 2018 RTP call-for-projects. Having the system evaluation measure in final draft phase will provide the necessary information and signal the region's priority outcomes for the investment program. Local jurisdictions will be expected to respond by submitting projects for the 2018 RTP investment package which move the transportation system towards achieving the region's priority outcomes while also balancing local priorities.

Table 3. Timeline: 2018 RTP System Evaluation Measures Development Completion

Activity	Timeframe
Work groups continue to refine the 2018 RTP system evaluation measures, particularly those measures with significant refinements	November 2016 – mid-January 2017
2018 RTP system evaluation measures are set in final draft form for TPAC and MTAC discussion • System evaluation enters into beta testing phase (with 2018-2021 MTIP) and baseline results development	Mid-January 2017
Presentation to TPAC and recommendation to JPACT on the approach for building the 2018 RTP Investment Strategy (aka call-for-projects) and subsequent system evaluation	March 2017
Presentation to MTAC and recommendation to MPAC on the approach for building the 2018 RTP Investment Strategy (aka call-for-projects) and subsequent system evaluation	March 2017
Presentation to MPAC and recommendation to the Metro Council on the approach for building the 2018 RTP Investment Strategy (aka call-for-projects) and subsequent system evaluation	April 2017
Presentation to JPACT and recommendation to the Metro Council on the approach for building the 2018 RTP Investment Strategy (aka call-for-projects) and subsequent system evaluation	April 2017

Discussion Questions

Based on the work to-date in defining the methods for each individual system measure for the transportation equity analysis, Metro staff seeks input from the work group members on the following questions:

1. Are the recommended methods to the individual transportation equity system evaluation measures headed in the desired direction of the work group?

2. Do work group members feel the community identified priorities continue to be reflected in the system evaluation measures?

3. Are there additional methodological concerns for the system evaluation measures which need to be addressed that have not been identified or reflected? Does the work group have any proposed refinements?

4. Does the work group feel comfortable with staff recommending the closing the discussion of the transportation equity system evaluation measures at the November work group meeting so staff may move forward with methodology development and refinements?

   If so, Metro staff will present a combined defined set of system evaluation measures in January 2017 to TPAC and MTAC for discussion. TPAC and MTAC will be asked to make a recommendation at their respective March meetings as part of their recommendations on the approach for building the 2018 RTP Investment Strategy and subsequent system evaluation.

5. Does the work group feel comfortable with allowing staff to move forward into baseline analysis and beta testing, without having the full methodology for all the transportation equity system evaluation measures developed?

Next Steps

The 2018 RTP system evaluation measures must be set and defined by January 2017 to allow Metro staff to enter into a beta testing phase to determine whether the system evaluation measures, especially those which are newly recommended, will be able to work. Prior to the January 2017, Metro staff will continue to refine and finalize the methodology for the measures to be used in the transportation equity analysis conducted for the 2018 RTP and 2018-2021 MTIP. This work will include:

1. Determining the status and methodology for the Combined Housing and Transportation Expenditure and the Vehicle Miles Traveled Emissions Exposure system evaluation measure.

2. Resolving, defining, and documenting the methodology for each transportation equity system evaluation measure proposed as final draft for baseline analysis work and beta testing.

3. Continuing to communicate to the transportation equity work group status updates and the final draft system evaluation measures for the 2018 RTP and the transportation equity analysis.

4. Briefing TPAC and MTAC on the status of this work in January 2017.

5. Requesting a recommendation from TPAC and MTAC in March 2017 as part of their recommendation respective recommendations to JPACT and MPAC on building the RTP investment strategy.

Attachment A – Transportation Equity System Evaluation Measures – Summary of Input from September 29th and Staff Responses

Summary of Metro Staff Responses to Input on the Overall Assumptions for Conducting the Transportation Equity System Evaluation

Transportation Equity System Evaluation Assumption	Summary of Feedback Provided for Measure Method	Refinements and Changes as a Result of Feedback
Definition and Geographic Threshold for Low-Income Community	The definition of low-income, not considering household size may have been capturing many households which represent more middle-class homes. Additionally there was interest in looking at different geographic thresholds or validating the geographic thresholds for low-income communities because the dataset the definition is based is census survey data, which has numerous issues	After further discussions with work group members most interested in revisiting the definition of low-income, Metro staff has proposed using 200% of the federal poverty level (2016), adjusted for size of household as the definition. While there is significant recognition of the drawbacks of using federal poverty level as an income metric, the dataset is accessible for both baseline and future year scenario assessments.
Secondary Screening Assessment	There was work group interest in exploring a more focused look at certain historically underrepresented communities in the transportation equity analysis.	A secondary assessment screening is being proposed to take a more focused look at how the 2018 RTP investment program will help achieve the priority outcomes identified by historically underrepresented communities in areas with high concentrations of these communities.
Geographic Thresholds for Historically Underrepresented Communities	General interest for looking at how population density may be able to inform the geographic thresholds for identifying the census tracts with concentrated populations of historically underrepresented communities.	Population density is being proposed as part of the geographic threshold in identifying the census tracts with concentrated populations of historically underrepresented communities for the secondary screening assessment.

Summary Table of Metro Staff Responses to Input on the 2018 RTP Transportation Equity System Evaluation Measures

Transportation Equity System Evaluation Measure	Summary of Feedback Provided for Measure Method	Refinements and Changes as a Result of Feedback
Access to Places	Adjust the automobile travel time shed to be more in line with the ratio/split between the automobile and transit travel	The automobile travel time shed has been adjusted and shortened to 20 minutes to align with the 2:3 ratio seen in the Access to Jobs measure.

	times in the Access to Jobs measure. For the Access to Jobs measure, the ratio is 2:3, automobile to transit travel time.	
	Include medical facilities to the list of "daily needs."	Non-ambulatory medical facilities have been added as part of the list of "daily needs" to be counted as part of the evaluation.
Access to Jobs	Conduct some sensitivity testing to determine an appropriate threshold for determining areas which are "transit access disadvantaged" to low and middle-wage jobs. The If testing does not result in a clear threshold break point, then consider 50% of low and middle-wage jobs which cannot be accessed by transit as the threshold for determining "transit access disadvantage."	Metro staff will use the baseline and beta testing period in early 2017 to look at potential "transit access disadvantage" thresholds to recommend a threshold for identifying areas which are "transit access disadvantaged" in getting to low and middle-wage jobs. This additional geographic lens will then look at the overlap with historically underrepresented communities.
Access to Travel Options	Consider this measure more broadly to include local street connectivity.	Metro staff is continuing to look into the potential of the Access to Travel Options to be expanded beyond the active transportation network.
	Include all active transportation projects proposed for the 2018 RTP, regardless of whether the project is on the regional active transportation network.	All active transportation projects proposed for the 2018 RTP investment program will be included in the analysis of this measure, regardless of whether the investment is located on the regional active transportation network.
Resource Habitats	Refine measure to focus in on roadway projects which may have significant impacts to identified resource habitats.	The measure will focus in on projects which the primary purpose is roadway capacity.

Attachment 1. Summary of Recommended changes to RTP System Evaluation Measures. November 4, 2016 (*Reflects input from 10/28/16 TPAC and 11/2/16 MTAC discussions)*

ID#	System Evaluation Measure	Staff Recommendation	Rationale / Notes	Work Group(s) Recommendation	TPAC & MTAC comments
How much do people and goods travel in our region?					
1.	**Multimodal Travel** A) Vehicle Miles Traveled (VMT) *(total, per capita, and per employee)* B) Bicycle miles traveled *(total and per capita)* C) Freight miles traveled D) Pedestrian miles traveled *(total and per capita)* E) Person miles traveled per VMT	**Refine and rename** ~~Vehicle travel and Bicycle travel~~ Multimodal travel Previously Metro reported vehicle miles traveled and bicycle miles traveled *(both total and per capita)*. Staff now recommends reporting auto, bike, pedestrian and freight, as well as auto vmt per employee and person miles traveled per VMT.	This measure provides information on the amount of travel in the region. VMT per employee may better factor in fluctuation in VMT due to economic swings.	Performance work group supports the staff recommendation and reporting by # of miles and % of overall miles traveled by sub-region (urban Washington Co, urban Clackamas County, Portland, East Multnomah County) to better show variations across the region.	TPAC - "Travel Characteristics" is too ambiguous of a theme name. Try phrasing themes as questions, e.g. initial staff response for this theme: *"How much and by what methods are we traveling?"*
2.	**Active transportation and transit mode share** System-wide (total and share) for: A) walking B) bicycling C) transit Non-SOV travel (total and share) for: A) Central City B) Regional Centers C) Mobility corridors D) Sub-regions.	**Refine and rename:** "Active transportation and transit mode share "	Narrow this measure to evaluate mode share for the Central City and Regional Centers (as well as region-wide and by mobility corridor) as done in past RTP updates. This formally acknowledges that Metro cannot accurately measure mode share at geographies as small as town centers, industrial and employment areas. Chapter 2 of the RTP (p.2-22) and table 2.5 will need to be updated to reflect this recommended change. These refinements are consistent with the state's Transportation Planning Rule (TPR) - the original impetus for creating these targets. Regional-level mode share targets will be addressed in 2017 as part of the broader RTP target-setting discussions.	Performance and transit work groups support the staff recommendation and requested the analysis be reported by sub-region (urban Washington Co, urban Clackamas County, Portland, East Multnomah County) to better show variations across the region.	
How much do households spend on housing and transportation in our region?					
3.	**Affordability*** Combined cost of housing and transportation	**Refine** methodology.	Staff will continue to develop a methodology. This measure is a major priority of the equity work group. The methodology will identify cost burdened households in the region.	The Equity work group supports the staff recommendation with the recognition that there are a number of methodological components that need further work in order to be useful. Transit Work Group has expressed concerns that current tools and methods won't capture the transit cost component very well.	TPAC - A challenge with this measure is that current H+T tools are better at monitoring what's happening currently rather than projecting into the future (which is needed for a system evaluation measure).
How safe is travel in our region?					
n/a	**Fatal & severe crashes** Fatal & severe crashes for pedestrian, bicyclists, motorists	**Move** to RTP monitoring measures.	This measure cannot be used as a system evaluation measure due to the inability of the regional travel model to directly predict crashes.	The Performance and Safety workgroups support the staff recommendation.	MTAC - Look for opportunity to take into account seismic resiliency in evaluation. *Staff response: Yes.*
4.	**Share of Safety projects** Percent of number and cost of	**Add** as new measure.	Safety is a key concern of the RTP and has not been part of past system evaluations. This measure will assess whether safety investments are being made disproportionately. Safety	The Safety, Equity and Performance work groups support the staff recommendation.	TPAC - Safety is a difficult issue for Washington County. Its arterials have access

ID#	System Evaluation Measure	Staff Recommendation	Rationale / Notes	Work Group(s) Recommendation	TPAC & MTAC comments
	safety projects in the RTP investment packages regionwide and in areas with historically underrepresented communities.		projects are defined as: "Infrastructure projects with the primary intent to address a safety issue, and allocate a majority of the project cost to a documented safety countermeasure(s) to address a specific documented risk, or improve safety for vulnerable users, including people walking and bicycling, older adults and youth." In response to feedback from the performance and safety work groups, references to high-injury corridors and safe routes to school projects were removed from an earlier draft safety project definition.		management, so they don't have as many high-injury crash locations as other parts of the region.
5.	**Exposure to crash risk*** The sum of all non-interstate vehicle miles traveled (VMT) in Transportation Area Zones (TAZ) for RTP investment packages region-wide, and in historically underrepresented communities.	**Add** as new measure.	Safety is a key concern of the RTP and has not been part of past system evaluations. This is an interim measure until a safety and crash predictive model is developed involving other factors. Measuring transportation safety is a priority topic area for historically underrepresented communities and there is some interest in looking at forecastable indicators to flag potential transportation safety issues. Staff has found a statistical correlation between VMT and crashes. Staff will further test the measure to determine if using per capita is the right approach and refine which limited-access facilities are excluded from the analysis.	The Safety, Equity and Performance work groups support the general approach of the staff recommendation. Additionally, the Performance work group provided general support to continue to explore this measure and use It for an initial assessment, and asked staff to use "non-throughway" or "non-freeway" instead of "non-interstate" to ensure that limited access facilities such as US 26 and OR 217 are accounted for. The safety work group recommends further testing the measure, including whether s per capita is the right approach.	TPAC – Crash risk is more of an output measure than an outcome measure.
How easily, comfortably and directly can we access jobs and destinations in our region?					
6.	**Access to Travel Options – system connectivity *** Sub measure: Access to transit *(percent of bike or pedestrian network gaps completed within ½-mile of transit)*	**Refine, continue to develop methodology and rename** - "~~Basic Infrastucture~~ Access to Travel Options – system connectivity."	A methodology to measure street connectivity will need to be developed to implement this recommendation. Developing this measure will have resource impacts for both Metro and local governments. This measure replaces the basic infrastructure measure that was composed of total mileage of (regional networks) of sidewalk, bikeways and trails. The access to transit submeasure supports the transit supportive elements part of the regional transit vision.	The Equity work group's preliminary recommendation is to expand this measure to add street connectivity to sidewalks, bikeways and trails with an emphasis on looking at the timing of basic infrastructure investments in historically underrepresented communities. The Performance work group recommends packaging all of the "access" measures as a suite, being sure to address completeness, route directness/connectivity, origins & destinations.	
7.	**Access to Jobs*** Number of jobs *(classified by wage groups – low, middle, and high) accessible within* *A) 30 minutes by auto* *B) 45 minutes by transit* *C) 30 minutes by bike* *D) 20 minutes by walking.*	**Add** as a new measure.	Access to jobs is a significant transportation priority identified by historically underrepresented communities. The Access to jobs and access to daily needs measures have been recognized by work groups and staff as extremely important. Metro Planning and Research Center staff will work to further develop these accessibility-related measures.	Equity, Transit and Performance work groups support the staff recommendation.	TPAC – Noted the importance of high wage jobs (accessed via US 26). Asked if the data set will capture the low wage jobs at Intel's Ronler Acres campus? *Staff response: Yes.*
8.	**Access to Community Places*** *1) Measure access by bicycling, walking, transit, driving*	**Refine and rename** - "~~Access to Daily Needs~~ Access to Community Places."	Metro staff recommends this measure replace the Access to Daily needs measure that was composed of**:** Number of essential destinations accessible within 30 minutes by bicycling & public transit for low-income, minority, senior and disabled populations. The Access to Jobs and Access to Daily Needs measures have been recognized by workgroups and staff as	Equity, Transit and Performance work groups support the staff recommendation.	

ID#	System Evaluation Measure	Staff Recommendation	Rationale / Notes	Work Group(s) Recommendation	TPAC & MTAC comments
	2) Adjust the time sheds for each mode *3) Define existing "daily needs" consistent with other similar efforts, including the TriMet Equity Index.*		extremely important. Metro Planning and Research Center staff will work to further develop these accessibility-related measures.		
9.	**Access to Bicycle and Pedestrian Parkways** Number and percent of households within ½ mile of a bicycle or pedestrian parkway.	**Refine and rename** – "Access to ~~Trails~~ Bicycle and Pedestrian Parkways	This change would better reflect access to the major regional off-street and on-street bicycling and walking routes throughout the region.	The Performance work group supports the staff recommendation.	
10.	**Access to Transit** Number and share of households, low-income households and employment within ¼- mile of high capacity transit or frequent service transit	**Add** as a new measure.	This measure was recommended through the Climate Smart Strategy and by the Transit Work Group. This measure provides information on how much of the region's households and jobs are served by transit.	The Transit work group supports the staff recommendation. The Performance work group noted that this measure will eventually be replaced by the access measures.	
11.	**Access to Industry and Freight Intermodal Facilities**	**Under development.**	***Under development by RTP Freight workgroup.*** The performance work group noted that the freight travel time measure within #12 "Multimodal travel times" may address this, making this measure unnecessary.	**TBD**	
How efficient is travel in our region?					
12.	**Multi-modal Travel Times** Between key origin-destinations for mid-day and 2-hr PM peak	**Refine and rename – "Multimodal travel times"**	Metro staff recommends renaming and refining this measure to evaluate bicycling and freight travel times in addition to auto and transit for each regional mobility corridor. *Note: the regional travel model is not currently able to forecast walking travel times.* Metro staff will bring back a list/map of proposed origins/destination that match up with each mobility corridor. It is possible that some important Origin/Destination pairs for biking, freight or transit don't match up within the mobility corridors.	The Performance and Transit work groups support the staff recommendation.	
13.	**Congestion** A) Vehicle hours of delay per person B) Interim Regional Mobility Policy - Locations of throughways, arterials, and regional freight network facilities that that exceed LOS threshold C) Freight Truck delay D) Total cost of delay on freight network	**Under development.**	Metro staff will develop options for discussion by TPAC and the performance work group this winter. Discussions are underway with ODOT regarding updates to regional and state congestion measures and the Interim Regional Mobility Policy. Developing a recommendation for this measure is especially challenging since the new federal regulations relating to congestion measurement are not yet finalized. The Freight work group recommends evaluating delay per truck trip exclusively on regional freight network rather than entire roadway system. Also, the measure should be called "Freight truck delay" rather than the current misnomer, "freight reliability", since it does not measure reliability. A freight reliability measure for current conditions will be developed as part of RTP Monitoring Measures discussions in 2017.	**TBD**	TPAC – Continuing to measure delay *per capita* is very important to factor all people into the measure, including those that walk, bike, drive, take transit or telecommute.

Attachment 1. Summary of Recommended changes to RTP System Evaluation Measures. November 4, 2016 (*Reflects input from 10/28/16 TPAC and 11/2/16 MTAC discussions)*

ID#	System Evaluation Measure	Staff Recommendation	Rationale / Notes	Work Group(s) Recommendation	TPAC & MTAC comments
14.	**Transit efficiency** A) Boarding rides per revenue hour for HCT & bus B) Revenue hours by transit mode C) Transit ridership system-wide by each transit service type	**No change to measure but rename** Transit Efficiency ~~Productivity~~.	The measure provides information on the productivity and efficiency of transit service provided. Revenue hours was recommended through Climate Smart Strategy and by the Transit Work Group and provides information on the amount of transit service provided.	The Transit work group supports collapsing transit productivity and revenue hours into one measure as recommended by staff.	
How will transportation impact our air quality and the environment?					
15.	**Climate Change** Tons of transportation-related greenhouse gas emissions (total and per capita)	**No change.**	The region is required to measure greenhouse gas emissions to help demonstrate whether the RTP is meeting state-required per capita greenhouse gas emissions reductions. During 2017 target setting discussion, ensure that the new target is consistent with statewide target and Climate Smart Strategy.	The Performance work group supports the staff recommendation.	
16.	**Clean air** Tons of transportation related air pollutants (e.g. CO, ozone, PM-10)	**Refine** air pollutants reported.	Metro staff recommends this measure be refined. This is an important measure for evaluating transportation impact on air quality and human health. Pollutants reported may change pending further consultation with DEQ.	The Performance work group supports the staff recommendation. The work group member requested staff to provide mapping at the sub-regional level if possible since the Tualatin Valley has unique air quality compared to the east side of the region.	
17.	**Habitat impact*** Number and percent of projects that intersect high value habitat	**Refine methodology.**	The Equity work group recommends assessing whether there are disparities between historically underrepresented communities and transportation projects that may impact habitat conservation/ preservation, primarily focusing the assessment on roadway projects.	The Equity and Performance work groups support the staff recommendation. The Performance work group recommends adding contextual language to describe the purpose of this measure, better define high value habitat, and note that it is tied to federal requirements to consult with resource agencies as part of an RTP update. The Performance work group also supports continuing to use this measure to identify projects in the RTP for informational purposes for the public and project sponsors.	TPAC – Remember that many transportation projects improve habitat. MTAC – transportation project impact on habitat is very complex and varies depending on many factors – width of asphalt, retaining walls, wildlife crossing treatments, volume of auto traffic, etc.

** Reflects the transportation priorities identified by historically underrepresented communities and will serve as the basis for the federally-required Title VI Benefits and Burdens analysis.*

Attachment C – Transportation Equity Analysis System Evaluation Measures – Methodology Profiles and Key Assumptions – Updated – 11.10.16

2018 RTP System Evaluation – Analysis Geographies

Geography	Definition
Regionwide	Metropolitan Planning Area (MPA)* – the federally recognized boundary in which The boundary the metropolitan transportation planning (i.e. RTP) process must be carried out.
Subregional Geographies	Commonly referred to as the coordinating committees, organized by geography and decision-making: • Clackamas County • City of Portland • East Multnomah County • Washington County – Urban • Washington County – Rural
Mobility Corridors	Travel corridors which generally align with a major roadway or transit facility and are anchored by regional destinations, and/or identified growth centers.
Growth Centers	A population and employment typology which identifies ten different urban design types which are intended to accommodate a certain mix of population, employment, and densities. The descriptions of the types are described in the 2040 growth concept.
Transportation Analysis Zones (TAZ)	An analysis geography used within Metro's travel demand model. The TAZ is roughly the same size geography as census block group, but not exactly the same as the TAZs look to include roadway networks inside the geography instead of using roadways as a boundary.

**Unless otherwise noted in the system evaluation.*

Definition of Historically Underrepresented Communities & Geography

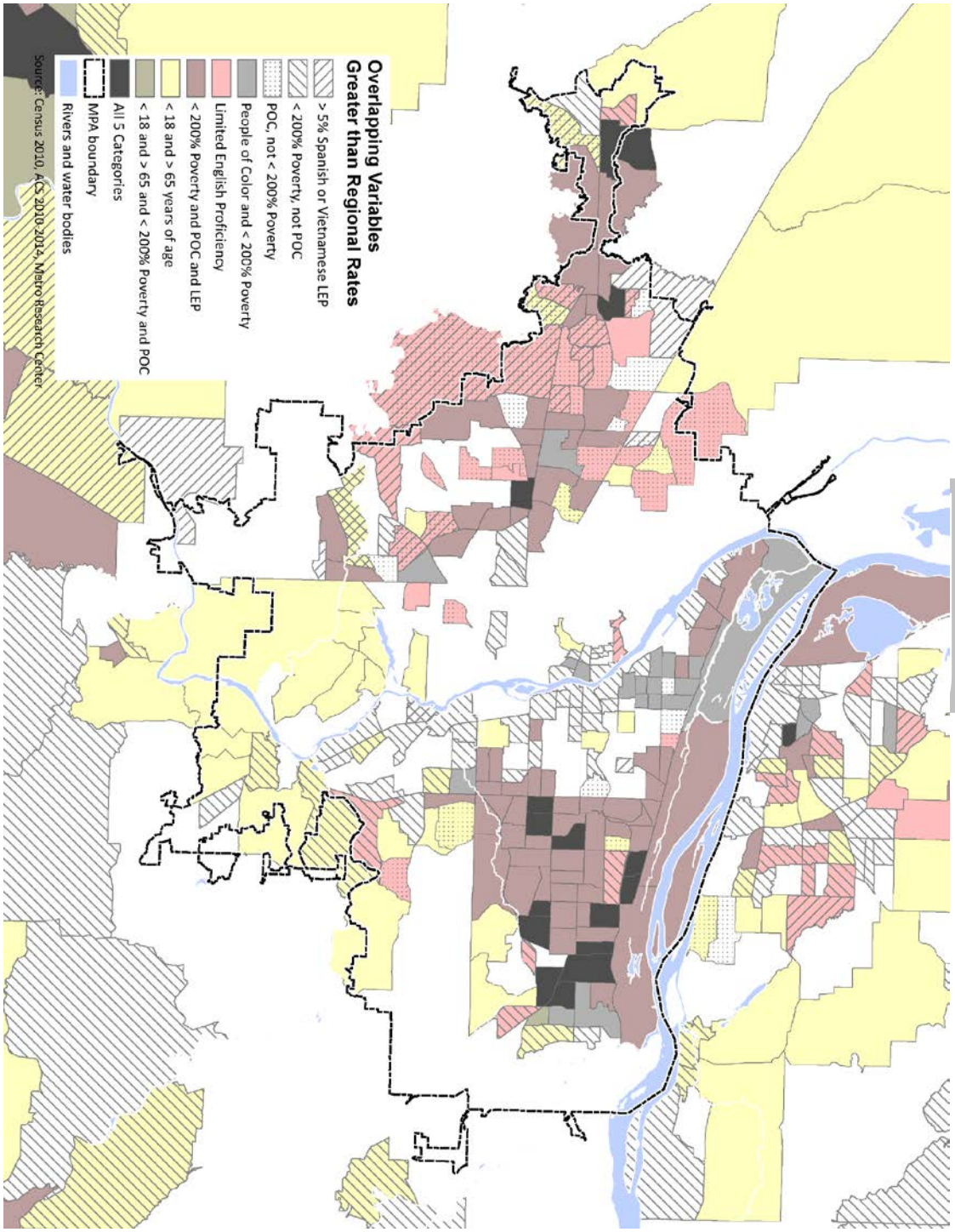
Community	Definition	Geography Threshold*	Date Source
People of Color	Persons who identify as non-white.	Census tracts above the regional rate (26.5%) for people of color.	2010 Decennial Census
Low-Income	Households with incomes equal to or less than 200% of the Federal Poverty Level (2016); adjusted for household size	Census tracts above the regional rate (31.8%) for Household with Lower-Income	American Community Survey, 2009-2013
Limited English Proficiency	Persons who identify as unable "to speak English very well."	Census tracts above the regional rate (8.5%) for Limited English Proficiency AND those census tracts which were identified as	

		"safe harbor" tracts for individual language isolation.[1]	
Older Adults	Persons 65 years of age and older	Census tracts above the regional rate for Older Adults (11%) AND Young People (22.8%)	2010 Decennial Census
Young People	Persons 17 years of age and younger		

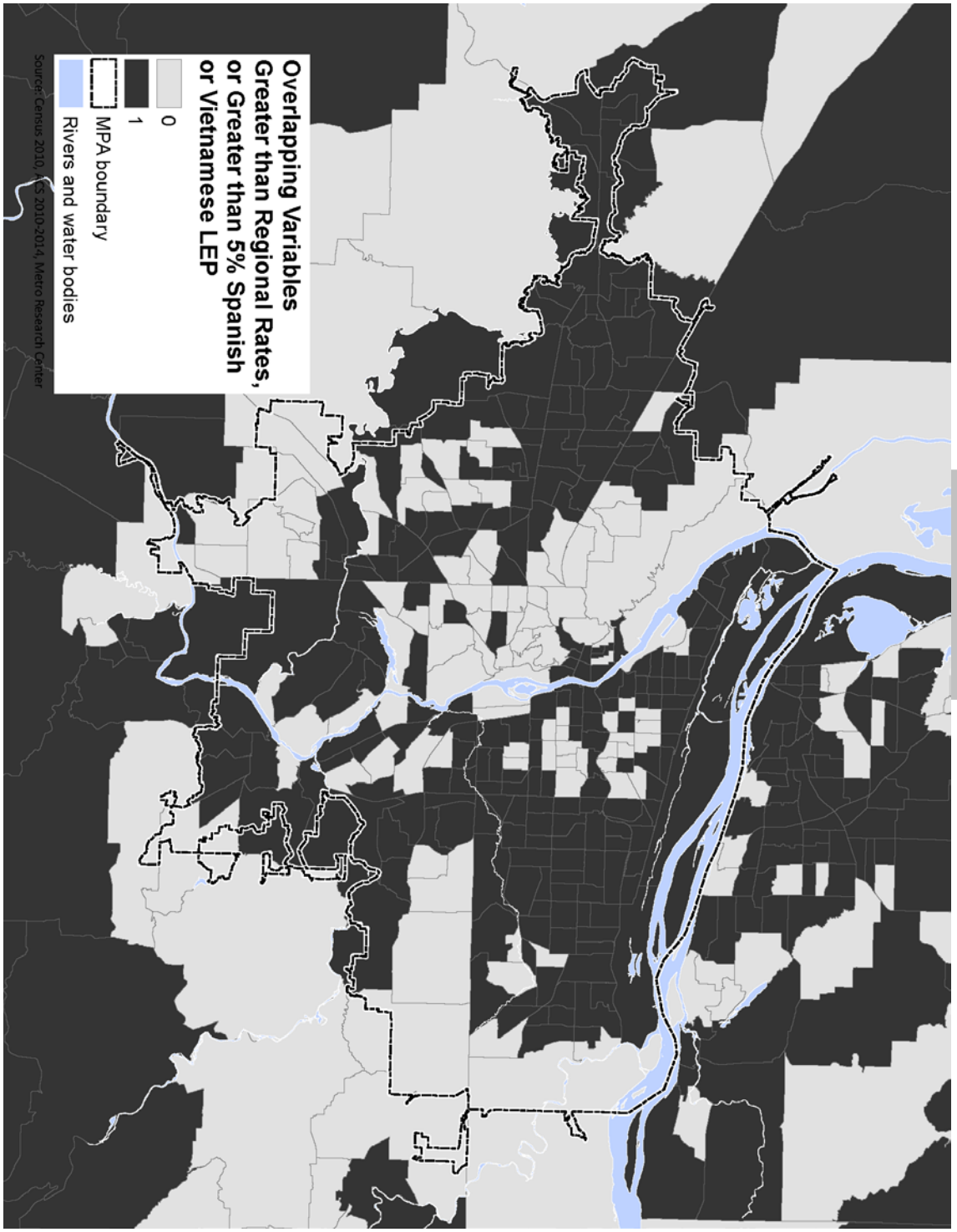
*See attached map of historically underrepresented communities.

[1] Safe Harbor is a provision within Title VI of the Civil Rights Act of 1964 which addresses for when and how agencies are to provide language assistance to limited English proficiency persons to ensure access to all public resources. The safe harbor provision mainly addresses translation of documents and language assistance, however for analysis purposes, it may help to identify areas where additional attention is warranted because of a concentration of language isolation. Safe harbor applies when a language isolated group constitutes 5% or 1,000 persons of the total population.

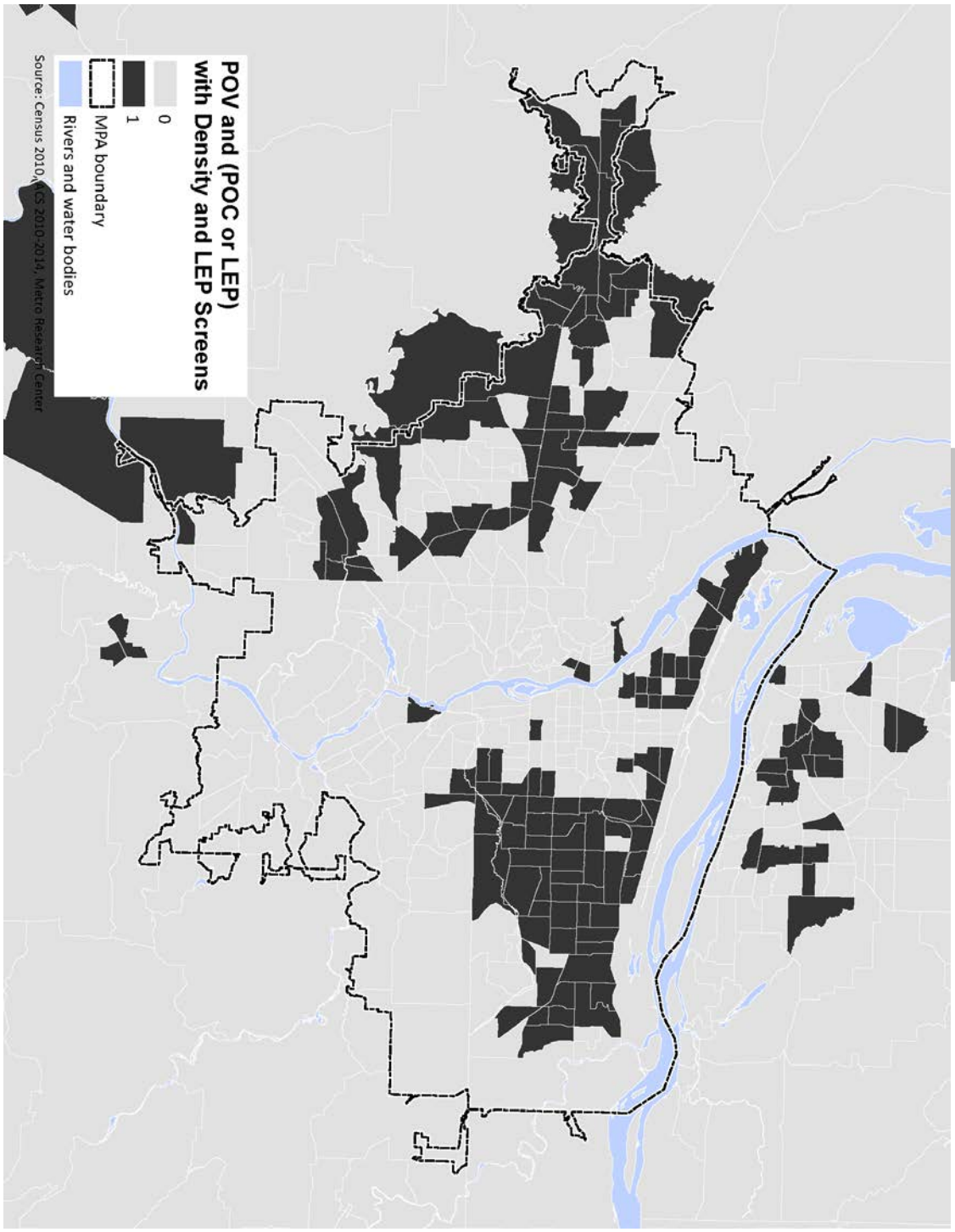
Historically Underrepresented Communities – Census Tracts Above the Regional Rate and Limited English Proficiency Safe Harbor Tracts



Historically Underrepresented Communities – Binary Map (YES/NO) for Transportation Equity Analysis Purpose



Focused Historically Underrepresented Communities – Binary Map (YES/NO) – People of Color, Limited English Proficiency Populations, and People with Lower-Incomes with Population Density



Analysis Years Assumptions and Inputs

Analysis Year	Transportation Inputs	Land use Inputs
Base Year (2015)	All transportation projects completed by 2015	Adopted growth distribution (2016) from MetroScope[2][3]
Interim Year (2027)	Proposed transportation projects to be completed by 2027 (financially constrained only)	
Future Year (2040)	All proposed transportation to be completed by 2040 (financially constrained and strategic project lists)	

Forecasted Methods Approach for Historically Underrepresented Communities

Community	Base Year	Interim Year	Horizon Year
People of Color	Identifying the correlating transportation analysis zones (TAZ) to census tracts which have greater than the regional rate of people of color.		Will not produce results for the horizon year.
Low-Income	Identifying the correlating transportation analysis zones (TAZ) to census tracts which have greater than the regional rate for lower-income households.	Forecasted spatial distribution of households with incomes under 200% of the Federal Poverty Level (2016).	
Limited English Proficiency	Identifying the correlating transportation analysis zones (TAZ) to census tracts which have greater than the regional rate of limited English proficiency.		Will not produce results for the horizon year.
Older Adults	Identifying the correlating transportation analysis zones (TAZ) to census tracts which have greater than the regional rate for older adults.	Forecasted spatial distribution of households with older adults.	
Young People	Identifying the correlating transportation analysis zones (TAZ) to census tracts which have greater than the regional rate for young people.	Forecasted spatial distribution of households with older adults.	

Secondary/Focused Screening Analysis

[2] Metro Ordinance No. 16-1371. More information regarding the 2016 land use forecast can be found at: oregonmetro.gov

[3] Metroscope geographically allocates population and employment projections in five year increments. Therefore, the nearest land use forecast input to be used for the interim analysis year analysis will be 2025. This is out of respect for the decision that certain historically underrepresented communities are not being forecasted and spatially distributed and therefore assumed static for the interim analysis.

By request of the work group, the transportation equity analysis will conduct a secondary assessment of the full suite of measures, but primarily focus on a subset of historically underrepresented communities. The subset is defined as:

Secondary/Focused Assessment – Subset of Historically Underrepresented Communities for Focus

Historically Underrepresented Community	**Geographic Threshold**
People of Color	The census tracts which are above the regional rate for people of color AND the census tract has twice (2x) the population density of the regional average (.48 person per acre).
Low-Income	The census tracts which are above the regional rate for low-income households AND the census tract has twice (2x) the population density of the regional average (.58 person per acre).
Limited English Proficiency	The census tracts which are above the regional rate for low-income households AND those census tracts which have been identified as "safe harbor" tracts for language isolation AND the census tract has twice (2x) the population density of the regional average (.15 person per acre).

This secondary assessment is to help take a more focused look at the transportation investments being made in areas in which there are highly concentrated populations of the communities required for evaluation by federal law. Ultimately, the secondary assessment will be able to address how well the 2018 RTP investments are performing and moving towards the priority outcomes identified by historically underrepresented communities in areas with the greatest concentration.

Evaluation Measure Title: **Access to Places**

Purpose and Goals

Overall Purpose: To identify whether the package of future transportation investments will increase the ability of region's residents to get to existing places that provide/serve daily or weekly needs.

Transportation Equity Purpose: Furthermore, to look at how the region's future transportation investments increase access to existing places that provide/serve daily or weekly needs, but with a particular emphasis in areas where there are high concentrations of historically underrepresented communities and the region.

Questions to Be Addressed:

The **Access to Places** performance measure looks to assess the following questions for the region's transportation system:

1) What are the number of existing daily needs (i.e. places which provide services or items) that can be reached on the existing transportation system by travel mode (e.g. drive, transit, bike, and walk) in a given travel time?
2) How does accessibility, measured by the number of existing daily needs reached, change (across travel modes) with the proposed set of transportation investments?

More specifically from a transportation equity perspective, the **Access to Places** performance measures looks to further assess the additional question:

1) What are the differences between the number of daily needs accessible by historically underrepresented communities and the entire region? Are there large differences seen between travel modes?
2) Are there significant differences (or lack of differences) seen between historically underrepresented communities and the region once the proposed transportation investments are added?

2014 RTP Goals

●	Foster vibrant communities and compact urban form	●	Promote environmental stewardship
●	Sustain economic competitiveness and prosperity	●	Enhance human health
●	Expand transportation choices		Demonstrate leadership at reducing greenhouse gas emissions
	Effective and efficient management of system	●	Ensure equity
	Enhance safety and security		Ensure fiscal stewardship
●	Deliver accountability		

Function of Evaluation Measure

●	System Evaluation		Project Evaluation		System Monitoring	●	Performance Target

Associated 2014 RTP Performance Measure: RTP Target – By 2040, increase by 50% the number of essential destinations accessible within 30 minutes by bicycling & public transit for low-income, minority, senior and disabled populations compared to 2005

Methodology Description:
The **Access to Daily Needs** performance measure is calculated by using existing data from the U.S. Bureau of Labor Statistics to identify the existing places which provide key services and/or daily needs (defined in assumptions) for people in the region. The analysis will determine the number of places reached using existing transportation system and looking at the differences in places accessed by travel mode (automobile, transit, bicycle, and walking) in a given travel time window for the entire region and for areas with a high concentration of historically underrepresented communities to determine base year conditions. The same assessment will be conducted, but use the proposed package of transportation investments in the long-range regional transportation plan as the input to determine the future year accessibility to places by mode for the entire region and in areas with high concentrations of historically underrepresented communities. Lastly, the measure will look at the change in the accessibility to these existing places between the base year and future year with added transportation investments, with an emphasis in looking at the change in historically underrepresented communities.

Output Units: Number of places accessed by mode (# - Auto; # - Transit; # - Bike; # - Walk)

Potential Output of Assessment:

	Base Year				**Interim Year**				**Future Year – Financially Constrained**				**Future Year – Strategic**			
	A	T	B	W	A	T	B	W	A	T	B	W	A	T	B	W
Region-wide																
Historically Underrepresented Communities																
Focused Historically Underrepresented Communities																

A – Automobile; T – Transit; B – Bicycle; W - Walk

Key Assumptions to Method:
Dataset Used:

Dataset	**Type of Data**
Geospatial project information for proposed transportation projects	Observed
U.S. Bureau of Labor Statistics – Quarterly Census of Employment and Wages (TBD – 2013, 2014, or 2015, dependent on data availability and data cleanup effort)	Observed

Tools Used for Analysis: Metro Travel Demand Model and ArcGIS

Definitions of Places:

Select North American Industry Classification System (NAICS) codes. Codes include those used as part of TriMet's Transit Equity Index with select additions based on consultation with 2018 RTP work groups, TPAC, and Metro Planning and Development Department and Diversity, Equity, and Inclusion staff.

Category	NAICS	Description
Civic/Health	491110	Postal Service
	519120	Libraries and Archives
	611110	Elementary and Secondary Schools
	611210	Junior/Community Colleges
	611310	Colleges, Universities, and Professional Schools
	624110	Child and Youth Services
	624120	Services for the Elderly and Persons with Disabilities
	624190	Other Individual and Family Services
	624210	Community Food Services
	624229	Other Community Housing Services
	624230	Emergency and Other Relief Services
	624310	Vocational Rehabilitation Services
	624410	Child Day Care Services
	624221	Temporary Shelters
	813110	Religious Organizations
Essential Retail	444130	Hardware Stores
	446110	Pharmacies and Drug Stores
	452111	Department Stores
	452990	All Other General Merchandise Stores
	812111	Barber Shops
	812112	Beauty Salons
	812310	Coin-Op Laundry
	812320	Dry Cleaning and Laundry Service
Financial/Retail	522110	Commercial Banking
	522120	Savings Institutions
	522130	Credit Unions
Food	445110	Supermarkets and Other Grocery (except convenience) Stores
Medical	621111	Offices of Physicians (except Mental Health Specialists)
	621112	Office of Physicians, Mental Health Specialists
	621210	Offices of Dentists
	621310	Offices of Chiropractors
	621320	Offices of Optometrists
	621330	Offices of Mental Health Practitioners (except Physicians)
	621340	Offices of Physical, Occupational, and Speech Therapists and Audiologists
	621391	Offices of Podiatrists
	621399	Offices of All Other Miscellaneous Health Practitioners
	621410	Family Planning Centers
	621420	Outpatient Mental Health and Substance Abuse Centers
	621491	HMO Medical Centers
	621492	Kidney Dialysis Centers
	621498	All Other Outpatient Care Centers
	621512	Diagnostic Imaging Centers
	622110	General Medical and Surgical Hospitals
	622210	Psychiatric and Substance Abuse Hospitals
	622310	Specialty (except Psychiatric and Substance Abuse) Hospitals

For the purpose of the analysis, the existing places which currently provide/serve daily needs are being used to determine access to places in both the base year conditions and the future year. This approach is being taken because Metro's land use forecast model, Metroscope, currently does not project the locations of these types of businesses (i.e. food, commercial, retail, civic, and health-related services). In assessing the access to existing places which provide/serve daily needs, the rational is that greater access to existing places will further increase as new places to provide services open as a result of population and employment growth.

Travel Time Windows by Mode[4]:

- Automobile – 20 minutes*
- Transit – 30 minutes*
- Bicycle – 15 minutes
- Walk – 20 minutes

*Includes access and egress times.

Travel Time Assumptions:
Travel time windows by mode were developed with information from the Oregon Household Activity Survey (OHAS) and research from around the country on travel time by different modes for different types of trips. Additionally, work groups provided input and suggested manual adjustments to travel time windows as reflected in the final.

Transit Service Networks Used:[5]

- Peak – Transit service running from 6am – 9am & 3pm – 6pm
- Off-Peak – Transit service running at any other time

[4] The travel time windows represents the average number of places which can be reached within a +/- 5 minutes of the stated travel time window. For example, for automobile, the number of daily needs accessed will be an average of places reached between 15 minutes – 25 minutes. This is to address in the travel demand model the potential for a "cliff effect" when a hard cut off time is used and a destination may not be reached because the travel time to reach the destination in the travel model is one (1) second beyond the cut off time.

[5] Metro is currently transitioning how it will be developing its transit service networks in the travel demand model to better reflect transit service within the model. This transition is looking at a transit service typology. If this method is used for the system evaluation, information will be updated in the assumptions and available to the work group.

Evaluation Measure Title: **Access to Jobs**

Purpose and Goals

Overall Purpose: To identify whether the package of future transportation investments will increase the ability of region's residents to get to jobs in the region.

Transportation Equity Purpose: Furthermore, to look at how the region's future transportation investments increase access jobs, but more specifically to low and middle-wage jobs, particularly for those areas where there are high concentrations of historically underrepresented communities and the region.

The **Access to Jobs** performance measure looks to assess the following questions for the region's transportation system:

1) How many jobs can be reached in a given time window by different travel modes?
2) How many more jobs can be reached with the future package of transportation investments? Is the increase in jobs accessible in proportion or providing greater access to jobs in light of anticipated future employment and population growth?
3) Are different transportation modes outpacing its ability to get the region's residents to jobs?

More specifically, from the transportation equity perspective, the **Access to Jobs** performance measure looks to assess the following questions:

1) How many low and middle-wage jobs can be reached in a given time window by different travel modes?
2) What are differences in low and middle-wage job access for the region and specifically for historically underrepresented communities?
3) Is the difference in low and middle-wage job access between automobile and transit? Is there a difference which extends beyond a reasonable threshold and creating a "transit access disadvantage" to low and middle-wage jobs in certain areas? If so, do those "transit access disadvantage" areas overlap with historically underrepresented communities?
4) Is the access to low and middle-wage jobs also in proportion or providing greater access to jobs in light of anticipated future population and employment growth?

2014 RTP Goals

●	Foster vibrant communities and compact urban form	●	Promote environmental stewardship
●	Sustain economic competitiveness and prosperity	●	Enhance human health
●	Expand transportation choices		Demonstrate leadership at reducing greenhouse gas emissions
	Effective and efficient management of system	●	Ensure equity
	Enhance safety and security		Ensure fiscal stewardship
●	Deliver accountability		

Function of Evaluation Measure

●	System Evaluation		Project Evaluation		System Monitoring		Performance Target

Associated 2014 RTP Performance Measure: None to date

Methodology Description:

The **Access to Jobs** performance measure is calculated by using forecasted data from Metroscope to identify and geographically distribute jobs throughout the region, including categorized low-wage and middle-wage jobs (defined in assumptions). The analysis will determine the number of jobs, and additionally the low and middle-wage jobs, reached using the existing transportation system. The analysis will look at the differences in jobs, including low and middle-wage jobs, accessed by travel mode (automobile, transit, bicycle, and walking) in a given travel time window for the entire region and in areas with high concentrations of historically underrepresented communities to determine base year conditions. The next step is to conduct the same assessment, but use the proposed package of transportation investments in the long-range regional transportation plan as the input to determine the future year accessibility to forecasted jobs, including more focused look at low and middle-wage jobs, by mode for the entire region and in areas with high concentrations of historically underrepresented communities. Lastly, the measure will look at the change in the accessibility to jobs between the base year and future year with the added transportation investments, but with a particularly emphasis on the change in access to low and middle-wage jobs in areas with high concentrations of historically underrepresented communities. In considering transportation equity further, the **Access to Jobs** measure will also look at the number of low and middle-wage jobs accessible by transit and by automobile and compared the access. A threshold will be applied to determine whether there is a "transit access disadvantage" to low and middle-wage jobs. (Meaning there is significantly less access to low and middle-wage jobs by transit compared to automobile access.) These areas which are identified as "transit access disadvantaged" will be compared to areas where there are higher concentrations of historically underrepresented communities.

Output Units: Number of jobs, including low and middle-wage jobs accessed by mode (# - Auto; # - Transit; # - Bike; # - Walk)

Potential Output of Assessment: Number of jobs reached within different travel time sheds by different modes.

Job Access – All Jobs:

	Base Year				**Interim Year**				**Future Year – Financially Constrained**				**Future Year – Strategic**			
	A	T	B	W	A	T	B	W	A	T	B	W	A	T	B	W
Region-wide																
Historically Underrepresented Communities																

A – Automobile; T – Transit; B – Bicycle; W - Walk

Job Access – Low-Wage Jobs:

	Base Year	**Interim Year**	**Future Year – Financially**	**Future Year – Strategic**

									Constrained							
	A	T	B	W	A	T	B	W	A	T	B	W	A	T	B	W
Region-wide																
Historically Underrepresented Communities																
Focused Historically Underrepresented Communities																

A – Automobile; T – Transit; B – Bicycle; W - Walk

Job Access – Middle-Wage Jobs:

	Base Year				**Interim Year**				**Future Year – Financially Constrained**				**Future Year – Strategic**			
	A	T	B	W	A	T	B	W	A	T	B	W	A	T	B	W
Region-wide																
Historically Underrepresented Communities																
Focused Historically Underrepresented Communities																

A – Automobile; T – Transit; B – Bicycle; W - Walk

Job Access – Transit Access Disadvantage

	Base Year		**Interim Year**		**Future Year – Financially Constrained**		**Future Year – Strategic**	
	Jobs Inaccessible By Transit		Jobs Inaccessible By Transit		Jobs Inaccessible By Transit		Jobs Inaccessible By Transit	
	LW	MW	LW	MW	LW	MW	LW	MW
Region-wide								
Historically Underrepresented Communities								
Focused Historically Underrepresented Communities								

LW – Lower-wage; MW – Middle-wage

Key Assumptions to Method:
Dataset Used:

Dataset	Type of Data
Geospatial project information for proposed transportation projects	Observed
Employment/jobs outputs from Metroscope[6]	Forecasted

Tools Used for Analysis: Metro's Travel Demand Model, Metro's Metroscope Model

Specifically for the transportation equity assessment, populations to apply in this measure include:

- People of Color
- Persons with Limited English Proficiency
- Low-Income Households

Young people and older adults are not being proposed for assessment in this system evaluation as it considered that traveling to and from employment is less likely a priority.

Definition of Low-Wage Jobs:
Jobs which pay an annual salary between $0 - $39,999.[7]

Definitions of Middle-Wage Jobs:
Jobs which pay an annual salary between $40,000 – $65,000. [8]

Methods for Defining and Identifying All Jobs:
The projections (total jobs) and geographic distribution of employment is based on underlying U.S. Bureau of Labor Statistics data and assumptions regarding growth for the employment industries in MetroScope. (See MetroScope documentation regarding employment forecast.)

Methods for Defining and Identifying Low and Middle-Wage Jobs:
The annual salary band was based on the average household size of three (3) and a combination of different income, program eligibility, and self-sufficiency definitions (HUD median income, UW self-sufficiency index, federal poverty level, and uniform relocation assistance and real property acquisition act) The definition of low and middle-wage jobs is not taking into consideration employer benefits provided as part of the identification of wages.

Distribution of Low and Middle-Wage Jobs Assumptions:
The distribution of low and middle-wage jobs is based on underlying U.S. Bureau of Labor Statistics data and assumptions regarding growth for the employment industries in MetroScope. (See MetroScope documentation regarding employment industry forecast assumptions.) The low and middle-wage band will not change according to inflation. Low and middle-wage jobs were determined by the wage profile of each MetroScope industry, looking at the percentage of jobs, which paid within the annual salary range. This range was applied to the employment forecast for the future year to determine the distribution.

[6] Forecasted estimates are based on MetroScope assumptions on employment industries and based off U.S. Bureau of Labor Statistics data. Documentation can be found at: http://www.oregonmetro.gov/forecasting-models-and-model-documentation

[7] Wages are set as static for the purposes of the analysis and are not indexed to inflation. Therefore, the wage bands for low-wage and middle wage will not adjust between the based-year and future year.

[8] See Footnote 4.

Definition of Transit Access Disadvantage: TBD through initial baseline and beta testing work to take place prior to the conducting the transportation equity system evaluation.

Travel Time Windows by Mode[9]:

- Automobile – 30 minutes*
- Transit – 45 minutes*
- Bicycle – 30 minutes
- Walk – 20 minutes

*Includes access and egress times.

Travel Time Assumptions:
Travel time windows by mode were developed with information from the Oregon Household Activity Survey (OHAS) and research from around the country on travel time by different modes for different types of trips. Additionally, internal Metro staff consultation was conducted and work groups were provided the opportunity to give input.

Transit Service Networks Used:[10]

- Peak – Transit service running from 6am – 9am & 3pm – 6pm
- Off-Peak – Transit service running at any other time

[9] The travel time windows represents the average number of places which can be reached within a +/- 5 minutes of the stated travel time window. For example, for automobile, the number of jobs accessed will be an average of places reached between 25 minutes – 35 minutes. This is to address in the travel demand model the potential for a "cliff effect" when a hard cut off time is used and a number of jobs may not be reached because the travel time to reach the jobs in the travel model is one (1) second beyond the cut off time.
[10] Metro is currently transitioning how it will be developing its transit service networks in the demand model to better reflect transit service within the model. This transition is looking at service typology. If this method is used for the system evaluation, information will be updated in the assumptions and available to the work group.

Evaluation Measure Title: **Access to Travel Options – System Connectivity and Completeness**
(Replacing the 2014RTP System Evaluation measure– Miles of sidewalk, bikeways, and trails)

Purpose and Goals
Overall Purpose: To identify how the package of future transportation investments will increase access to walking, bicycling and transit, through the development of sidewalks, bikeways, trails and new street connections.

Transportation Equity Purpose: To identify how the package of future transportation investments will increase access to walking, bicycling and transit through the development of sidewalks, bikeways, trails and new street connections in areas where there are high concentrations of historically underrepresented communities.

Questions to Be Addressed:
The **Access to Travel Options – System Completeness and Connectivity** performance measure will assess the following questions for the region's transportation system, region-wide and in areas with historically underrepresented communities:

1) How many more miles of the active transportation network are completed? How many miles are left to complete?
2) What percentage of bicycle and pedestrian gaps within ½ mile of transit stops and stations are completed?
3) Has connectivity of the walking, bicycling and roadway networks increased?
4) What time-frame are the infrastructure investments being proposed for, compared to other investments in the RTP?

More specifically, from the transportation equity perspective, the **Access to Travel Options – System Connectivity and Completeness** performance measure looks to assess the following questions:

1) How many more miles of the active transportation network are completed in areas with high concentrations of historically underrepresented communities? How many miles are left to complete?
2) What percentage of bicycle and pedestrian gaps within ½ mile of transit stops and stations are completed in areas with high concentrations of historically underrepresented communities?
3) Has connectivity of the walking, bicycling and roadway networks increased in areas with high concentrations of historically underrepresented communities?
4) What time-frame are the infrastructure investments being proposed for, compared to other investments in the RTP? Are active transportation and connectivity investments being prioritized in the near-term in areas where there are high concentrations of historically underrepresented communities?

2014 RTP Goals

●	Foster vibrant communities and compact urban form	●	Promote environmental stewardship
	Sustain economic competitiveness and prosperity	●	Enhance human health

●	Expand transportation choices	●	Demonstrate leadership at reducing greenhouse gas emissions
	Effective and efficient management of system	●	Ensure equity
	Enhance safety and security		Ensure fiscal stewardship
●	Deliver accountability		

Function of Evaluation Measure

●	System Evaluation		Project Evaluation		System Monitoring	●	Performance Target

Associated 2014 RTP Performance Target: Basic Infrastructure: Increase by 50% the miles of sidewalk, bikeways, and trails compared to the regional network in 2010 (This target may be updated in the 2018 RTP).

Methodology Description:

1) Sidewalk, bikeway, trail and street completeness: Using a geospatial analysis, calculate the miles of proposed sidewalk, bikeway, trails and new street connections. Calculate percent sidewalk, bikeway, trail and new street connections complete compared to the planned regional pedestrian, bicycle and roadway networks.

   Calculate the linear miles and percentage of sidewalks and bikeways completed within ½ mile of transit stops and stations.

   The percentage of the investments proposed in areas where there are high concentrations of historically underrepresented communities will be compared to the percentage of these investments proposed region-wide, normalized by number of people; system completeness will be measured by comparing the percent of new connections completed compared to the to the planned regional pedestrian, bicycle and roadway networks.

2) Network connectivity: Street connectivity is measured using a geospatial analysis to calculate the ratio of three-way or more intersections for the base year and future year investment packages, region-wide and in historically underrepresented communities. A higher number would indicate more intersections, and presumably, higher connectivity.

   Sidewalk connectivity is measured using a geospatial analysis to calculate the linear feet of sidewalks per TAZ (for density) and the number of three-way or more intersections with sidewalks per area of TAZ (in sq. feet)(for connectivity), for the base year and future year investment packages, region-wide and in historically underrepresented communities.
   In addition to street connectivity network, use geospatial analysis to calculate the number and percentage of pedestrian enhanced crossings (if data is available region-wide).

   Bikeway connectivity is measured using a geospatial analysis to calculate the linear feet of bikeways per TAZ (for density) and the number of three-way or more bikeway intersections per area of TAZ (in sq. feet)(for connectivity), for the base year and future year investment packages, region-wide and in historically underrepresented communities.

3) Timing of investments: Calculate the percentage of sidewalk, bikeway, trail and new street connections proposed for the first ten-years of the RTP (from 2017-2027) for the region and in areas with higher concentrations of historically underrepresented communities. Then the measure will look at the percentage of proposed active transportation investments for the latter years (2028 – 2040) for the region and in areas with higher concentrations of historically underrepresented communities. This will help to determine whether there is an imbalance in the timing and locations of these types of investments.

Output Units: Percentage (%) of bikeways, sidewalks, trails and new street connections region-wide and in areas with high concentrations of historically underrepresented communities

Potential Output of Assessment:

	Base Year				**Interim Year**				**Future Year – Financially Constrained**				**Future Year – Strategic**			
Type of investment	B	P	T	NS	B	P	T	NS	B	P	T	NS	B	P	T	NS
Region-wide																
Number of people region-wide																
% per person region-wide																
Historically Underrepresented Communities																
Number of people																
% per person																
Focused Historically Underrepresented Communities																
Number of people																
% per person																

B – Bikeways; P – Pedestrian Sidewalks; T – Off-Street Trails; NS – New Street Connection

Key Assumptions to Method

Dataset Used:

Dataset	Type of Data
Geospatial project information for sidewalks, bikeways, trails and new street connections	Observed
Inventory geospatial information available pedestrian crossings	Observed
Regional bicycle, pedestrian and roadway planned networks	Observed

Tools Used for Analysis: ArcGIS

Definitions

Connectivity is defined as the directness of links and the density of connections in path or road network. A well connected road or path network has many short links, numerous intersections, and minimal dead-ends (cul-de-sacs). As connectivity increases, travel distances decrease and route options increase, allowing more direct travel between destinations, creating a more accessible and resilient system.[11]

Completeness is defined as the percentage of miles of the planned pedestrian, bicycle or roadway network that has been completed.

New Street Connection Project TBD

Active Transportation Project defined as projects that allocate a majority of the project cost to increasing bicycling and/or walking access on the regional active transportation network.

Bikeway Project TBD

Sidewalk Project TBD

[11] Victoria Transport Policy Institute

Evaluation Measure Title: **Transportation Safety – Vehicle Miles Traveled Exposure**

Purpose and Goals

Overall Purpose: To approximate risk of exposure to crashes by identifying whether the package of future transportation investments increases or decreases vehicle miles traveled (VMT) per capita within each transportation area zone (TAZ), in the region.

Transportation Equity Purpose: Furthermore, to look at the approximate risk of exposure to crashes by identifying whether the package of future transportation investments increases or decreases VMT per capita in areas with high concentrations of historically underrepresented communities

Questions to Be Addressed:

The **Transportation Safety – Vehicle Miles Traveled Exposure** performance measure will assess the following questions for the region's transportation system:

1) What is the region's vehicle miles traveled per capita in each TAZ?
2) How does it change with the proposed package of transportation investments?

More specifically, from the transportation equity perspective, the **Transportation Safety – Vehicle Miles Exposure** performance measure looks to assess the following questions:

1) What is the difference in exposure to vehicle miles traveled per capita for historically underrepresented communities?
2) Has the proposed transportation investment program held steady or decreased the vehicle miles traveled exposure in historically underrepresented communities?

2014 RTP Goals

	Foster vibrant communities and compact urban form		Promote environmental stewardship
●	Sustain economic competitiveness and prosperity	●	Enhance human health
	Expand transportation choices		Demonstrate leadership at reducing greenhouse gas emissions
	Effective and efficient management of system	●	Ensure equity
●	Enhance safety and security		Ensure fiscal stewardship
●	Deliver accountability		

Function of Evaluation Measure

●	System Evaluation		Project Evaluation		System Monitoring	●	Performance Target

Associated 2014 RTP Performance Target: By 2035 eliminate fatal and serious crashes for all users of the region's transportation system, with a 15% reduction by 2020 and 50%reduction by 2025. (Target proposed to be updated in 2018 to: By 2035 eliminate transportation related fatalities and serious injuries for all users of the region's transportation system, with a 16% reduction by 2020 (as compared to the 2015 five year rolling average), and a 50% reduction by 2025.)

Methodology Description:

This analysis uses vehicle miles traveled per capita as a proxy for crash exposure risk. The **Transportation Safety – Vehicle Miles Traveled Exposure** system evaluation performance measure is calculated by:

1. Aggregating non-freeway vehicle miles traveled (VMT) within each transportation analysis zone (TAZ).
2. To determine increased or decreased exposure to VMT, the total non-freeway, average weekday VMT for each TAZ is divided by the total number of jobs and households in the TAZ and the area of the TAZ.
3. Calculate the total area of TAZs within the Metropolitan Planning Area boundary and the area of TAZs comprising historically underrepresented communities and focused historically underrepresented communities; divide the average weekday VMT by the area of TAZs with above average historically underrepresented communities populations and the remainder of the region to control for the differing geographical extents of historically underrepresented communities (around 28% of the region's land area) and the remainder of the region (around X%).
4. TAZs which overlap with historically underrepresented communities are flagged to determine the non-freeway VMT exposure per capita for historically underrepresented communities. Then the non-freeway VMT exposure per capita is looked in those flagged TAZs with high concentrations of historically underrepresented communities and compared to the region. The per capita exposure is also looked at for the base year to the future year.

Output Units: Vehicle miles traveled per capita (VMT/per person) by TAZ

Potential Output of Assessment:

	Base Year	Interim Year	Future Year – Financially Constrained	Future Year – Strategic
Region-wide	VMT/per person			
Historically Underrepresented Communities	VMT/per person			
Focused Historically Underrepresented Communities	VMT/per person			

Key Assumptions to Method

Dataset Used:

Dataset	Type of Data
Geospatial project information for proposed transportation projects	Observed
Vehicle miles traveled by TAZ	Forecasted

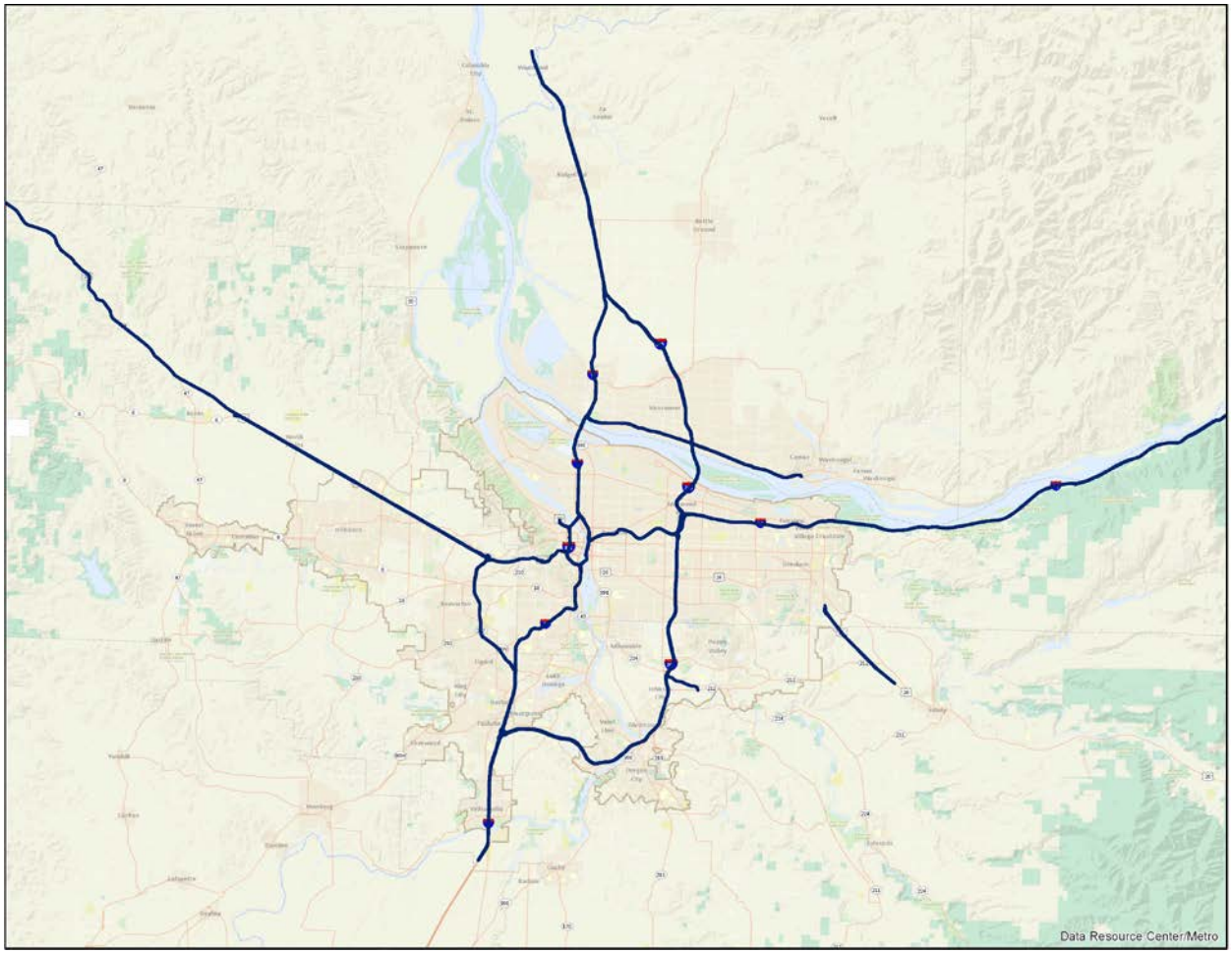
Tools Used for Analysis: Metro's travel demand model and ArcGIS

Considerations:

Analysis conducted showed correlation between VMT and crashes in the region; the R2 was just over 0.25, so ¼ of the crash relationship can be explained by exposed VMT at the TAZ level.

Facilities excluded from VMT exposure analysis are (see map):

- Hwy 26 W
- Hwy 217
- Hwy 224 the sunrise corridor
- Hwy 26 E from Burnside intersection in Gresham
- I-5
- I-205
- I-84
- I-405



Evaluation Measure Title: **Transportation Safety – Infrastructure Investments**

Purpose and Goals
Overall Purpose: To identify where and at what level of investment the package of future transportation projects addresses transportation safety through the development of transportation infrastructure with proven safety countermeasures, region-wide.

Transportation Equity Purpose: Furthermore, to look at what level of investment the package of future transportation projects addresses safety, through the development of transportation infrastructure with proven safety countermeasures, in areas with high concentrations of historically underrepresented communities.

Questions to Be Addressed:
The **Transportation Safety – Infrastructure Investments** performance measure looks to assess the following questions for the region's transportation system:

1) What percentage of the region's proposed transportation projects are identified as safety projects?
2) What percentage of the total transportation investment package (cost) is attributed to safety projects?

More specifically from a transportation equity perspective….

1) What percentage of the total number of transportation safety investments are located in historically underrepresented communities?
2) Is there a difference of transportation safety investment levels (cost) in areas with historically underrepresented communities?
3) What is the per-person expenditure of transportation safety investments region-wide and for historically underrepresented communities?

2014 RTP Goals

	Foster vibrant communities and compact urban form		Promote environmental stewardship
●	Sustain economic competitiveness and prosperity	●	Enhance human health
	Expand transportation choices		Demonstrate leadership at reducing greenhouse gas emissions
	Effective and efficient management of system	●	Ensure equity
●	Enhance safety and security		Ensure fiscal stewardship
	Deliver accountability		

Function of Evaluation Measure

●	System Evaluation		Project Evaluation		System Monitoring	●	Performance Target

Associated 2014 RTP Performance Target: By 2035 eliminate fatal and serious crashes for all users of the region's transportation system, with a 15% reduction by 2020 and 50%reduction by 2025.

(Target proposed to be updated in 2018 to: By 2035 eliminate transportation related fatalities and serious injuries for all users of the region's transportation system, with a 16% reduction by 2020 (as compared to the 2015 five year rolling average), and a 50% reduction by 2025.)

Methodology Description:

The method for calculating the **Transportation Safety – Infrastructure Investments** performance measure will entail:

1. Calculating the number of safety projects in the regional transportation investment packages region-wide, in historically underrepresented communities and in focused historically underrepresented communities;
2. Calculating the cost of safety projects in the regional transportation investment packages region-wide, in historically underrepresented communities and in focused historically underrepresented communities;
3. Geospatial analysis of safety projects in the regional transportation investment packages region-wide, in historically underrepresented communities and in focused historically underrepresented communities.
4. Calculating the per-person expenditure of transportation safety projects for the number of people region-wide and for the number of people identified within in historically underrepresented communities and focused historically underrepresented communities.

Output Units: Percentage (%) of transportation safety projects and percentage of cost for transportation safety projects region-wide, in historically underrepresented communities, and in focused historically underrepresented communities.

Potential Output of Assessment:

	Base Year	Interim Year	Future Year – Financially Constrained	Future Year – Strategic
Region-wide	% Safety Projects, % cost allocated to Safety Projects			
Number of people region-wide	% Per person			
Historically Underrepresented Communities	% Safety Projects, % cost allocated to Safety Projects			
Number of people – Historically Underrepresented Communities	% Per person			
Focused Historically Underrepresented Communities	% Safety Projects, % cost allocated to Safety Projects			
Number of people Focused Historically Underrepresented	% Per person			

Communities				

Key Assumptions to Method:
Dataset Used:

Dataset	Type of Data
Geospatial and cost information for proposed transportation safety projects	Observed

Tools Used for Analysis: ArcGIS

Definition of a Safety Project: Safety Projects -Infrastructure projects with the primary intent to address a safety issue, and allocate a majority of the project cost to a documented safety countermeasure(s)* to address a specific documented risk, or improve safety for vulnerable users, including people walking and bicycling, older adults and youth. **Example safety countermeasures include, but are not limited to, FHWA's nine proven safety countermeasures: road diets, medians and pedestrian crossing islands, pedestrian hybrid beacons, roundabouts, access management, retroreflective backplates, safety edge, enhanced curve delineation, and rumble strips.*

Evaluation Measure Title: **Resource Habitats and Infrastructure**

Purpose and Goals

Overall Purpose: To identify and flag those proposed future transportation investments within the 2018 RTP investment package which intersect with the region's identified high value habitat areas and note additional environmental consideration to mitigation may be needed in implementing the investment.

Transportation Equity Purpose: Furthermore, to look at those proposed future transportation investments within the 2018 RTP investment package which overlap with high value habitat and in areas of high concentrations with historically underrepresented communities and the region. These projects would be flagged and noted that in addition to further environmental, but also environmental justice considerations mitigation and/or strategies may be needed in implementing the investment.

Questions to Be Addressed:

The **Resource Habitats and Infrastructure** performance measure looks to assess the following questions for the region's transportation system:

1) What percentage of the region's proposed roadway transportation investments intersect and have may have a potential conflict with the region's resource habitats and needs further assessment of environmental considerations through project development?
2) What is the per-person expenditure of roadway transportation investment for the number of people region-wide which intersect the region's resource habitats?

More specifically, from the transportation equity perspective, the **Resource Habitats and Infrastructure** performance measure looks to assess the following questions:

1) What percentage of resource habitats overlap with historically underrepresented communities? Are these resource habitats in historically underrepresented communities seeing a greater percentage of proposed roadway transportation investments which may have a potential conflict with the region's resource habitats? Is the percentage in historically underrepresented communities greater than the region?
2) What is the per-person expenditure of roadway transportation investment for the number of people identified within in historically underrepresented communities which interest the region's resource habitat?

2014 RTP Goals

●	Foster vibrant communities and compact urban form	●	Promote environmental stewardship
	Sustain economic competitiveness and prosperity	●	Enhance human health
	Expand transportation choices		Demonstrate leadership at reducing greenhouse gas emissions
	Effective and efficient management of system	●	Ensure equity
	Enhance safety and security		Ensure fiscal stewardship
●	Deliver accountability		

Function of Evaluation Measure

●	System Evaluation		Project Evaluation		System Monitoring		Performance Target

Associated 2014 RTP Performance Measure: Percent of projects which intersect high value habitats

Methodology Description:

The method for calculating the **Resource Habitats and Infrastructure** performance measure will entail a geospatial analysis the region's proposed transportation investments which intersect the region's resource habitats. The percentage of projects which intersect resource habitats will be looked at region-wide and in areas where there is a concentration of historically underrepresented communities. Additionally, the per person expenditure of transportation investments will be calculated to determine whether the per capita roadway transportation investments which intersect/overlap with the region's high value habitats and areas where there are concentrations of historically underrepresented communities is greater.

Output Units: Percentage (%) of transportation projects intersecting identified resource habitats and per capita expenditure

Potential Output of Assessment:

	Base Year	Interim Year	Future Year – Financially Constrained	Future Year – Strategic
Region-wide				
Historically Underrepresented Communities				
Focused Historically Underrepresented Communities				

Key Assumptions to Method:
Dataset Used:

Dataset	Type of Data
Geospatial project information for proposed transportation projects	Observed
Geospatial resource conservation information from Metro identified resource and conservation habitat areas	Observed

Tools Used for Analysis: ArcGIS

Definition of Resource Habitats:
Resource habitats are those areas with the top 25% modeled score of high value habitat or riparian quality. Habitat quality took into account factors such as habitat interior, influence of roads, total patch area, relative patch area, habitat friction, wetlands, and hydric soils. The riparian areas took into account criteria of floodplains, distance from streams, and distance from wetlands. The analysis and modeled scoring was conducted for the entire Portland-Vancouver region and conducted through a collaborative effort with partners across the region and topic area experts

through the development in the Resource Conservation Strategy process. More detail about the high value habitats can be found at www.regionalconservationstrategy.org.

Evaluation Measure Title: **Vehicle Miles Traveled – Transportation Emissions Exposure**

Methodology TBD

Evaluation Measure Title: **Combined Housing and Transportation Expenditure and Cost Burden**

Methodology TBD

Memo

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

Date: November 17, 2016
To: Transportation Equity Working Group and interested parties
From: Grace Cho, Associate Transportation Planner
Subject: 2018 RTP Performance Management Program – Overview and Preparation of 2017 Policy Recommendations

Purpose

Provide the Transportation Equity work group an overview of existing regional transportation plan (RTP) performance management program to inform development of policy recommendations in 2017.

Introduction

Through 2017, Metro staff will develop a series of policy recommendations, refinements, and other potential products for region's policymakers to consider adopting as regional policy in the 2018 RTP. The development of policy recommendations, refinements, and other potential products are expected to be created with input from the eight (8) RTP technical work groups. The 2018 RTP Policy Actions work group will be coordinating the effort, but the Transportation Equity work group is asked to advise staff on the policy recommendations which will support advancing the transportation priority outcomes of historically underrepresented communities. These transportation priorities include those which are part of the 2018 RTP transportation equity system evaluation and those which were not considered for system evaluation, but recognized as important to address as part of the 2018 RTP and/or other efforts.

One area in which Metro staff has identified a number of potential policy recommendations and refinements is the 2018 RTP performance management program. The performance management program includes the region's aspirational performance targets for the transportation system and the monitoring program, which is the region's mechanism for tracking progress. The 2018 RTP transportation equity analysis is expected to inform recommendations and/or refinements to the 2018 RTP performance management program. To help prepare for the discussion of potential performance targets and system evaluation measures recommendations, a brief overview of the existing performance management program is discussed in the following sections.

Existing Regional Transportation Plan (RTP) Performance Management Program - Overview

With its adoption, the 2010 Regional Transportation Plan (RTP) established a new outcomes-based, performance driven framework and planning approach intended to better link investment decisions to desired goals. The goals adopted in the RTP reflect values and priorities identified by the public and other stakeholders during development of the plan, and continue to resonate today.

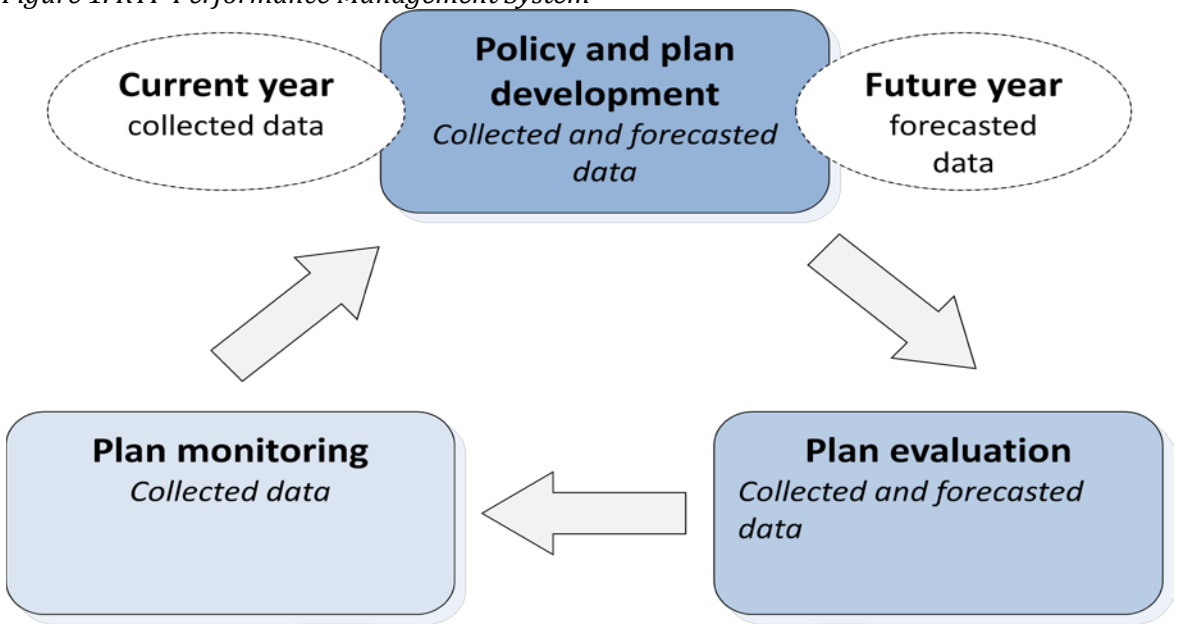
During the 2010 RTP update, Metro convened a performance measures technical work group and worked with regional partners through an extensive process to develop the RTP performance management system. The RTP's performance management system identifies three layers of measurement to establish an on-going evaluation and monitoring cycle. These three layers and a brief description are shown in Table 1.

Table 1. RTP Performance Management System – Measurement Layers

Performance Management System – Measurement Layers	Description of Measurement Purpose
RTP performance targets	Sets time-bound, quantifiable goals for achieving the region's desired policy outcomes for investment in the region's transportation system.
RTP system evaluation measures	Establishes the performance evaluation metrics for assessing whether proposed future investments are moving in the direction towards the region's time-bound, quantifiable goals. Often the performance evaluation entails comparing base year conditions with alternative investment packages (projects) to document how well each package of transportation investments performs on an array of measures that are linked to the RTP goals. Helps to inform investment decisions. System evaluation measures also often rely on forecasted (projected) data. In most cases, system evaluation measures link and overlap with the RTP performance targets, but at times there are also stand alone system evaluation measures without a target.
RTP monitoring measures	Establishes the performance evaluation metrics for assessing whether investments made are moving in the direction towards the region's time-bound quantifiable goals. Relies on collected (observed) data and is the mechanism for tracking progress and maintaining accountability.

The layers of measurement in the performance management system serve as the dynamic link between RTP goals and plan implementation by formalizing the process of target-setting, evaluation and monitoring to ensure the RTP advances toward achieving the region's transportation goals. The RTP refers to the process of plan development, evaluation and monitoring over time as the performance measurement system, as shown in Figure 1.

Figure 1. RTP Performance Management System



Following the adoption of the 2010 RTP which established the RTP performance management system, the 2014 RTP made only minor changes to the safety performance target to reflect recommendations which emerged from the 2012 Regional Transportation Safety Plan.

Since the adoption of the 2014 RTP, the landscape of performance management has evolved. Between the implementation of the federal performance management rules, challenges to emerge in measuring certain 2014 RTP targets and system evaluation measures, and recognition of certain gaps areas in which the performance management system was not measuring, these changes necessitated the need to conduct a focused review and refinement to the regional performance management system. One of the guiding principles of the work is to simplify and ensure each measurement provides value to inform policy direction in the RTP. Currently the performance-based planning framework is overly cumbersome and complicated to administer and be meaningfully used in the regional decision-making process. Any adjustments to the RTP targets and measures need to be easily understood by all stakeholders who influence or are affected by the transportation system.

Next Steps for the Transportation Equity Working Group

Beginning in 2017 as Metro staff conducts work on the 2018 RTP system evaluation and conducts the transportation equity analysis (which is a subset of the broader RTP system evaluation), the focus of the Transportation Equity work group will be to formulate recommendations and refinements to the 2018 RTP performance targets and monitoring program to better align to the transportation equity system evaluation measures. This work is intended to take place throughout 2017 to allow plenty of time for input, but also to learn from the results of the transportation equity system evaluation.

For reference, a summary table of the existing RTP performance management program has been provided. (**Attachment A**) The summary table also includes the transportation equity system evaluation measures developed for the 2018 RTP and a short list of potential monitoring measures which have been identified by the Transportation Equity work group. At the November 17th work group meeting, Metro staff will provide an overview and begin to lead a discussion of potential areas recommended refinements on the RTP performance management program.

Summary Table of RTP Performance Management Program - Measurements - DRAFT

Existing 2014 RTP Performance Target	Proposed New 2018 RTP Performance Target	2014 RTP System Evaluation Measure	Proposed New 2018 RTP System Evaluation Measure	2014 RTP Monitoring Measure	Proposed New 2018 RTP Monitoring Measure
Safety –By 2040, reduce the number of fatal and severe injury crashes for pedestrians, bicyclists, and motor vehicle occupants each by 50% compared to 2007 - 2011 average.	By 2035 eliminate transportation related fatalities and serious injuries for all users of the region's transportation system, with a 16% reduction by 2020 (as compared to the 2015 five year rolling average), and a 50% reduction by 2025.	None	Share of Safety projects Percent of number and cost of safety projects in the RTP investment packages regionwide and in areas with historically underrepresented communities.	Number of fatalities, serious injuries and crashes per vehicle miles traveled for all modes of travel regionwide	Number of fatal & severe crashes for pedestrian, bicyclists, motorists
			Exposure to crash risk* The sum of all non-interstate vehicle miles traveled (VMT) in Transportation Area Zones (TAZ) for RTP investment packages region-wide, and in historically underrepresented communities.		
Congestion – By 2040, reduce vehicle hours of delay (VHD) per person by 10% compared to 2010.		Congestion - Location of throughways, arterials, and regional freight network facilities that exceed RTP motor vehicle-based level of service thresholds in mid-day and 2-HR PM peak	Congestion A) Vehicle hours of delay per person B) Interim Regional Mobility Policy - Locations of throughways, arterials, and regional freight network facilities that that exceed LOS threshold C) Freight Truck delay D) Total cost of delay on freight network	Congestion - Location of throughways, arterials, and regional freight network facilities that exceed RTP motor vehicle-based level of service thresholds in mid-day and PM peak	
		Motor vehicle and transit travel time between key origin-destinations for mid-day and 2-HR PM peak	Multi-modal Travel Times Between key origin-destinations for mid-day and 2-hr PM peak	Motor vehicle and transit travel time between key origin-destinations for mid-day and PM peak	
				Average incident duration on throughway system	
Freight reliability – By 2040, reduce vehicle hours of delay per truck trip by 10% compared to 2010.		Total delay and cost of delay on the regional freight network in mid-day and PM peak	TBD	Average incident duration on throughway system	
				Travel time reliability on throughways	
Climate change – By 2040, reduce transportation-related greenhouse gas emissions per capita below 2010 levels.		Tons of transportation-related greenhouse gas emissions (e.g. CO_2)	No change proposed.	Tons of transportation-related greenhouse gas emissions (e.g. CO_2)	
				Climate Smart Strategy greenhouse gas target	
Active transportation – By 2040, triple walking, biking and transit mode shares compared to 2010.		Mode share and non-drive alone trips system-wide, by mobility corridor and for central city and individual regional centers (*Number of daily walking, bicycling, shared ride and transit trips and % by mode)*	Active transportation and transit mode share System-wide (total and share) for: A) walking B) bicycling C) transit	Number and share of average daily shared ride, walking, bicycling and transit trips region wide, by mobility corridor and for the Portland central city and individual regional centers	
			Active transportation and transit mode share Non-SOV travel (total and share) for: A) Central City B) Regional Centers C) Mobility corridors D) Sub-regions.		
Basic infrastructure – By 2040, increase by 50% the miles of sidewalk, bikeways, and trails compared to the regional networks in 2010.		Number and percent of households within ½-mile of regional trail system	Access to Travel Options – system connectivity * Sub measure: Access to transit (percent of bike or pedestrian network gaps completed within ½-mile of transit) Also with an emphasis of looking at active transportation system completeness in historically underrepresented communities and the timing	Percent of regional pedestrian system completed region-wide and by 2040 centers and RTP transit-mixed-use corridor	
			Access to Bicycle and Pedestrian Parkways Number and percent of households within ½ mile of a bicycle or pedestrian parkway.	Percent of regional bicycle system completed region-wide and by mobility corridor	
Clean air – By 2040, ensure zero % population exposure to at-risk levels of air pollution.		Tons of transportation-related air pollutants (CO, ozone, and PM-10)	Tons of select transportation-related air pollutants (air pollutants to be determined, but like to include fine particulates, air toxics, and ozone)	Tons of transportation-related air pollutants (CO, ozone, and PM-10)	
Travel – By 2040, reduce vehicle miles traveled per person by 10 percent compared to 2010.		Vehicle and bicycle miles traveled (total and per capita)	Multimodal Travel A) Vehicle Miles Traveled (VMT) (total, per capita, and per employee) B) Bicycle miles traveled (total and per capita) C) Freight miles traveled D) Pedestrian miles traveled (total and per capita) E) Person miles traveled per VMT	Vehicle and bicycle miles traveled (total and per capita)	
				Average trip length by mobility corridor	
Affordability – By 2040, reduce the average household combined cost of housing and transportation by 25 percent compared to 2010.		None	Combined household housing and transportation expenditure and households with in expenditure cost-burden	Average household combined cost of housing and transportation (from other sources such CNT	

Summary Table of RTP Performance Management Program - Measurements - DRAFT

Existing 2014 RTP Performance Target	Proposed New 2018 RTP Performance Target	2014 RTP System Evaluation Measure	Proposed New 2018 RTP System Evaluation Measure	2014 RTP Monitoring Measure	Proposed New 2018 RTP Monitoring Measure
Access to daily needs – By 2040, increase by 50% the number of essential destinations accessible within 30 minutes by bicycling & public transit for low-income, minority, senior and disabled populations compared to 2010.		None	Access to Community Places* 1) Measure access by bicycling, walking, transit, driving 2) 20 minutes by auto; 30 minutes by transit; 15 minutes by bike; 20 minutes by walking. 3) Definition of existing "daily needs" consistent with other similar efforts and created through consultation. Will have an emphasis on looking at access for historically underrepresented communities		
New or Stand Alone RTP Performance Management Measures *(as of November 2016)*					
		Number and percent of projects that intersect high value habitat	Habitat impact* Number and percent of projects that intersect high value habitat with an emphasis on looking at the overlap with historically underrepresented communiteis		
		Transit productivity *(transit boarding rides per revenue hour)* for High Capacity Transit (HCT) and bus	Access to Transit Number and share of households, low-income households and employment within ¼- mile of high capacity transit or frequent service transit	Transit productivity (transit boarding rides per revenue hour) for High Capacity Transit and bus	
			Transit efficiency A) Boarding rides per revenue hour for HCT & bus B) Revenue hours by transit mode C) Transit ridership systemwide by each transit service type		
			Access to Jobs* Number of jobs (classified by wage groups – low, middle, and high) accessible within A) 30 minutes by auto B) 45 minutes by transit C) 30 minutes by bike D) 20 minutes by walking. Will have an emphasis in looking at access for historically underrepresented communities.		
			Access to Industry & Freight Intermodal Facilities		
				Number and percent of households and jobs within 30 minutes of central city, regional centers, and key employment/industrial areas for mid-day and PM peak	Diplacement mitigation
					Travel time reliability

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Metro | *Meeting Summary*

2018 RTP Transportation Equity Work Group – Meeting #5
Thursday, September 29, 2016
9:00 a.m. – 11:00 a.m.
Metro Regional Center, Council Chambers

Committee Members	**Affiliation**	**Attendance**
Dan Rutzick	City of Hillsboro	Present
April Bertelsen	City of Portland – Transportation	Present
Aaron Golub	Portland State University	Present
Jon Holan	City of Forest Grove	Present
Jake Warr	TriMet	Present
Cora Potter	Ride Connection	Present
Steve Williams	Clackamas County	Present
Kari Schlosshauer	Oregon Walks/National Safe Routes to School Partnership	Present
Karen Savage	Washington County	Present
Jared Franz	ATU	Present
Brendon Haggerty	Multnomah County Public Health	Present
Terra Lingley	ODOT	Present
Nicole Phillips	Bus Riders Unite	Present
Noel Mickelberry	Oregon Walks	Present
Interested Parties		
Katie Selin	Portland State University	Present
Metro Staff		
Grace Cho	Metro	Present
Lake McTighe	Metro	Present
Cliff Higgins	Metro	Present
Jamie Snook	Metro	Present
John Mermin	Metro	Present
Maribeth Todd	Metro	Present
Cindy Pederson	Metro	Present
Ted Leybold	Metro	Present

I. WELCOME AND INTRODUCTIONS

Cliff Higgins welcomed meeting attendees and walked through the agenda for the work group meeting. He mentioned the change in the order of the agenda in order to accommodate work

group members who may need to leave early. Following the notification about the agenda changes, he asked for a quick round of introductions.

II. 2018 RTP TRANSPORTATION EQUITY SYSTEM EVALUATION MEASURES – RECOMMENDED METHODS

Ms. Cho provided a brief recap of where the work group had left off at its last meeting from June 30th. She discussed how the work group had given Metro staff the green light to move forward with developing the methods for the individual system evaluation measures for the transportation equity analysis.

Following the recap of where the work group left off in June, Ms. Cho briefly reviewed the transportation equity system measures and also the key assumptions to the evaluation. She then moved into a recap of the main assumptions being made to help ground the entire transportation equity analysis. She noted there were three main areas of assumptions: 1) the geography and definition of historically underrepresented communities; 2) the transportation and land use inputs for the system evaluation; and 3) how certain communities will be treated as part of analysis and forecasting. Ms. Cho provided some additional information and detail regarding the definitions and the identification of census tracts which would be considered historically underrepresented communities for the purposes of transportation equity system evaluation.

At the end of the assumptions presentation, Ms. Cho paused to take any questions.

Questions and Discussion Regarding Definitions of Historically Underrepresented Communities
Mr. Warr asked why age was treated differently in the process for identifying historically underrepresented communities. Ms. Cho responded that early research work identified when looking at older adults and young people at concentrations above the regional rate, in combination with other historically underrepresented communities, the entire region would then be considered a historically underrepresented community.

Mr. Williams asked how Eastern European immigrant communities may be accounted for in the historically underrepresented communities. Ms. Cho clarified that the definition used for people of color would not capture people Eastern European immigrants, but two other historically underrepresented communities: limited English proficiency populations and/or low-income households would be places in which Eastern European immigrants would likely get captured in the analysis.

Mr. Warr also mentioned the U.S. Census office has released a number of new statistical tools which can look more closely at statistical validity with surveyed populations. He stated these tools may provide for greater finesse to the selection of the census tracts which will define the historically underrepresented communities for the transportation equity analysis.

Another work group member also mentioned the U.S. Census recently released a different demographic data package which looks at the ratio of working age vs. not working age. The work group member suggested this may be a better approach in identifying historically underrepresented communities.

Mr. Holan commented that several areas on the westside which have been identified as historically underrepresented communities, but in knowing the landscape of the westside of the region, he commented these areas happen to be more affluent. He asked staff if there was consideration of undergoing a secondary screening to look at the areas where there are intersections of poverty with the other historically underrepresented communities.

As a follow on to Mr. Holan's comment, Mr. Rutzick asked where population maps had been created which look at census tracts which might have higher concentrations than the region rate for historically underrepresented communities and how that might help better define and focus the system evaluation for historically underrepresented communities. Ms. Cho responded that Metro staff is deliberating the potential of doing a secondary analysis of the transportation equity assessment focusing on census tracts which are seeing above the regional rate for all five historically underrepresented communities. However, the concept as proposed by Mr. Rutzick could be something to consider as an approach.

Ms. Bertelsen mentioned she desired to see population density get accounted for in the identification of historically underrepresented communities.

Ms. Cho committed to working with any interested work group members on revisiting how to approach an additional screening of historically underrepresented communities or potentially looking at different threshold definitions for the historically underrepresented communities. She said she would bring the information back to the work group.

Questions and Discussion of System Evaluation Measures

Following the discussion of the historically underrepresented communities, Ms. Cho then discussed the development of the methods of the individual measures. She addressed the question about system evaluation vs. project evaluation, as she noted there have been a number of work group members who have wanted to know why the work will focus at a system scale. She discussed the general benefits and drawbacks of each and also mentioned the current discussion happening around the topic of conducting project evaluation for the 2018 RTP. Ms. Cho encouraged that members of the work group interested in project evaluation speak to TPAC and MTAC members to have them express their interest since the discussion is currently happening at the technical committees.

A work group member asked whether the project evaluation would include running the travel model for each individual project. Ms. Cho responded that the details and criteria for conducting a project evaluation are yet to be determined, but if policymakers decide that is the direction to go, then the topic would likely return to the work group to discuss and recommend some form of transportation equity criteria to include.

Following the brief discussion of system evaluation vs. project evaluation, Ms. Cho then discussed the areas where staff seeks direction regarding the five individual system evaluation measures in which a method has been developed. She walked through the methodology question for each individual system evaluation measure prior to opening the floor for discussion.

Questions and Discussion of Individual System Measures – Access to Travel Options

Ms. Cho provided a brief overview of the Access to Travel Options system evaluation measure and she explained the main questions staff seeks input are:

1. Should this measure primarily focus on looking at system connectivity for active transportation projects proposed in the 2018 RTP? Or should street connectivity (i.e. roadway projects) be included in this analysis?
2. How should active transportation investments be defined? Should only those transportation investments on the regional bikeway and pedestrian pathway network considered or are all local active transportation investments acceptable?

Mr. Haggerty was in support of expanding the system measure to include local street connectivity. He explained public health literature has illustrated greater local street connectivity has been supportive of more physical activity and active forms of transport, which is significant to health outcomes. He suggested using intersection density as a means of measuring local connectivity for environmental health outcomes.

Work group members expressed support for potentially expanding the Access to Travel Option system evaluation measure to include local street connectivity. Local jurisdiction partners were generally supportive of the additional work which would be needed as part of this measure.

Ms. Schlosshauer asked a clarifying question as to how the Access to Travel Options system measure is considering transit connectivity. Ms. Cho clarified that the measure would not be addressing transit connectivity as the measure is more focused on physical, basic infrastructure. She mentioned that the other accessibility measures will inherently be addressing the questions around transit connectivity as they will be looking at where transit can get a person within a certain time frame.

For the measure, Ms. Cho has committed to looking into the possibility of expanding the Access to Travel Option measure to further include local street connectivity. She will provide an update at the November meeting of the staff recommendation.

<u>Questions and Discussion of Individual System Measures – Access to Jobs</u>
Ms. Cho provided a brief overview of the Access to Jobs system evaluation measure and she explained the main question staff seeks input is:

1. What should be the threshold for determining when an area is “transit access disadvantaged?”

A work group member asked whether a baseline or sensitivity analysis has been conducted for the “transit access disadvantage” concept. Ms. Cho said the region has not conducted this work, but she referred to Mr. Golub who had developed the academic concept to the transit access disadvantage system measure. He explained in his testing in the Bay Area, a transit access disadvantage threshold of 33% was used. Meaning if transit could only access 33% of the jobs that automobiles can access, then there was a transit access disadvantage.

The work group discussed different threshold ideas, but did not feel ready to provide direction on a specific threshold for transit access disadvantage. Metro staff and the work group came to the agreement that a potential threshold definition should be determined after conducting some initial baseline analysis and return with a recommendation to the work group.

Following the discussion of the transit access disadvantage, Mr. Rutzick asked whether the transit travel time shed could be increased from 45 minute to one hour for the measure. Ms.

Cho responded in asking the work group whether there would be interest in changing the transit travel time shed. Ms. Snook, who is leading the Regional Transit Strategy, mentioned that the transit travel time is "all-inclusive" meaning it would include the walk time at both ends of the trip, wait time, and transfer wait time in addition to the in-vehicle time. Work group members were in general agreement 45 minutes is a more reasonable transit travel time shed especially since the analysis is focused on looking at access to low and middle-wage jobs.

Mr. Holan asked whether the transit travel time took into consideration the transit travel experience and how that is accounted for in the analysis. Ms. Cho looked to Ms. Pederson who works on the travel demand model and Ms. Pederson explained how the model accounts for transit travel perceptions and how it affects the travel behavior in the model. An example she provided was that there is a transfer penalty within the transit travel model.

Questions and Discussion of Individual System Measures – Access to Places

Ms. Cho provided a brief overview of the Access to Places system evaluation measure and she explained the main question staff seeks input is:

1. Should the automobile travel time shed (places reached by automobile within 30 minutes) threshold be shortened?

The work group came to general agreement that the automobile travel time shed (30 minutes) could be shortened. A work group member suggested shortening the automobile travel time shed to mirror the ratio difference between the travel time sheds proposed for automobile and transit in the Access to Jobs system measure. This ratio is 1:3. Therefore, the automobile travel time shed would be 20 minutes. Ms. Cho said she would adjust the measure to reflect an automobile travel shed to 20 minutes.

Ms. Potter made a comment that there has some discussions happening at the Regional Transit Strategy work group regarding the Access to Places system measure not accounting for hospitals and medical facilities as part of the list of places being measures. Ms. Potter noted the significance that accessing medical care, especially for the elderly, becomes and it begins to impact travel choices.

At the end of the discussion, Metro staff committed to looking further into adding other daily needs to the list of places for the system evaluation measure and would report back to the work group the staff recommendation.

Resource Habitats and Transportation Investments

Ms. Cho provided a brief overview of the Resource Habitats and Transportation Investments system evaluation measure and she explained the main question staff seeks input is:

1. Should only certain types of transportation investments (e.g. roadway) be considered for this analysis and not others (active transportation)? Or should all transportation investments proposed be assessed under this system measure?

The work group generally came to agreement that the Resource Habitat and Transportation Investments system evaluation should focus more a certain types of transportation projects, predominately roadway capacity increasing projects, which have the potential for more significant resource habitats impacts.

Transportation Equity System Evaluation Measures – Further Follow Up Needed

Following the discussion of the individual system evaluation measures and the direction requested from staff, Ms. Cho provide a brief update on the progress being made on the system evaluation measures which had not been discussed at the work group. Ms. Cho noted that staff has been conducting statistical analysis on the Non-Freeway Vehicle Miles Traveled Exposure measure to ensure the measure would be a valid approach in looking at transportation safety. She said that the statistical analysis indicated there was a statistically significant correlation between vehicle miles traveled and crashes. But she also noted that the statistical analysis also validated there are many factors which affect crashes. She also clarified that the measure is not intending to use vehicle miles traveled exposure as a means to predicting crashes, but rather can serve as a tool to help understand whether additional transportation safety considerations are needed. Ms. Cho said that Metro staff is still trying to determine whether the measure will move forward as part of the system evaluation, but she would report back by the November meeting on the staff recommendation.

Ms. Cho also noted there were two system evaluation measures recommended from the June work group meeting in which staff will need to continue to work on developing a system evaluation measure. These measures are the Combined Housing and Transportation Expenditure and Cost-Burden as well as the Vehicle Emissions Exposure and Air Quality. Ms. Cho mentioned that these two system measures still require further consultation to define the methods. She also noted that the Combined Housing and Transportation Expenditure and Cost-Burden measure will need significant staff capacity to update the model to run the analysis and therefore, if this measure remains of interest to the work group, then that interest should be expressed to Metro staff as well as to TPAC and MTAC members so they can continue to communicate that message to leadership.

IV. SPRING ENAGEMENT UPDATE

Mr. Higgins gave a recap of the spring engagement activities Metro had undertaken with historically underrepresented communities. He discussed the results from a focused survey effort and a set of focus groups. Mr. Higgins brought up the different lessons learned through the survey and focus group work and he was able to confirm the topic areas which the 2018 RTP Transportation Equity Analysis will be evaluation are reflective of the priorities of historically underrepresented communities. He also provided a summary of the key communications takeaways.

V. NEXT STEPS

Ms. Cho walked through a preview of the material to be covered at the November work group meeting. She also outlined the tentative first two meetings for 2017. Lastly, Ms. Cho walked through the homework assignments for the work group. She asked between the work group meetings, for members to complete the following “homework” assignments:

- Report back to your people what was discussed at the work group meeting and bring any feedback.
- Reach out with any questions or further input on the system evaluation measures.
- Lastly come prepared at the next work group meeting for discussion about the 2018 RTP performance targets and the potential monitoring measures.

VI. QUESTIONS AND ANSWERS

After providing the work group the next steps, Ms. Cho opened the meeting for any final questions.

Ms. Schlosshauer expressed her interest in Metro moving forward with conducting a combined housing and transportation expenditure and cost-burden evaluation.

Ms. Bertelsen asked when the system evaluation measures for the transportation equity analysis will be discussed again at TPAC. Ms. Cho mentioned that TPAC and MTAC would receive updates on the system evaluation measures for the transportation equity analysis at their upcoming October and November meetings.

VIII. ADJOURN

There being no further business or questions, Ms. Cho and Mr. Higgins adjourned the meeting at 11:00 a.m.

Meeting summary prepared by: Grace Cho, Transportation Equity Project Manager

Meeting materials:

Item	Topic	Document Date	Description
1	Agenda	09/29/16	Meeting Agenda
2	Memorandum Synthesizing Feedback, Findings, and Draft Measures	09/29/16	Overview of findings of community priorities and process for defining draft transportation equity measures.
3	Attachment A	09/29/16	
4	2018 RTP Assessing Directional Change – Overview and Methods	09/29/16	
5	Work Group Meeting 2 Summary	06/30/16	Summary of transportation equity work group meeting #4.
6	Presentation	05/12/16	TE Work Group Presentation
7	Mtg. Evaluation	05/12/16	TE Meeting #5 Meeting Evaluation