



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

Council meeting agenda

Thursday, April 29, 2021

2:00 PM

<https://zoom.us/j/615079992> or
888-475-4499 (toll free)

Please note: To limit the spread of COVID-19, Metro Regional Center is now closed to the public.

This meeting will be held electronically. You can join the meeting on your computer or other device by using this link: <https://zoom.us/j/615079992> or 888-475-4499 (toll free).

If you wish to attend the meeting, but do not have the ability to attend by phone or computer, please contact the Legislative Coordinator at least 24 hours before the noticed meeting time by phone at 503-797-1916 or email at legislativecoordinator@oregonmetro.gov.

- 1. Call to Order and Roll Call**
- 2. Public Communication**

Public comment may be submitted in writing and will also be heard by electronic communication (videoconference or telephone). Written comments should be submitted electronically by emailing legislativecoordinator@oregonmetro.gov. Written comments received by noon on the day of the meeting will be provided to the council prior to the meeting.

Those wishing to testify orally are encouraged to sign up in advance by either: (a) contacting the legislative coordinator by phone at 503-797-1916 and providing your name and the agenda item on which you wish to testify; or (b) registering by email by sending your name and the agenda item on which you wish to testify to legislativecoordinator@oregonmetro.gov. Those requesting to comment during the meeting can do so by using the "Raise Hand" feature in Zoom or emailing the legislative coordinator at legislativecoordinator@oregonmetro.gov. Individuals will have three minutes to testify unless otherwise stated at the meeting.

- 3. Consent Agenda**

- 3.1 Consideration of the Council Meeting Minutes for April 8, 2021.

[21-5543](#)

Attachments: [040821c](#)

- 3.2 Consideration of the Metro Council Meeting minutes for April 15, 2021. [21-5553](#)
Attachments: [041521c](#)
- 3.3 Resolution 21-5167, For the Purpose of Amending and Adopting the List of Designated Facilities of the Solid Waste System Pursuant to Metro Code Chapter 5.05 [RES 21-5167](#)
Attachments: [Resolution No. 21-5167](#)
[Exhibit A](#)
[Exhibit B](#)
[Staff Report](#)
[Attachment 1](#)
- 3.4 Resolution No. 21-5160, For the Purpose of Accepting the Findings and Recommendations in the Regional Emergency Transportation Routes (RETR) Update Phase One Report [RES 21-5160](#)
Attachments: [Resolution 21-5160](#)
[Exhibit A](#)
[Exhibit B](#)
[Exhibit C](#)
[Staff Report](#)

4. Resolutions

- 4.1 Resolution 21-5171, For the Purpose of Approving the Multnomah County Local Implementation Plan for the Regional Supportive Housing Services Program [RES 21-5171](#)
Presenter(s): Patricia Rojas, Metro
Attachments: [Resolution No. 21-5171](#)
[Exhibit A](#)
[Exhibit B](#)
[Staff Report](#)

5. Adjourn to a Work Session

Work Session Begins at 2:30 pm.

1. Call to Order and Roll Call
 2. Work Session Topics:
-

2.1 Oregon Zoo Budget Work Session [21-5546](#)

Presenter(s): Scott Cruickshank, Metro

Attachments: [Work Session Worksheet](#)

2.2 Parks and Nature Budget Work Session [21-5541](#)

Presenter(s): Jon Blasher, Metro

Attachments: [Work Session Worksheet](#)

3. Chief Operating Officer Communication

4. Councilor Communication

5. Adjourn

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សេចក្តីជូនដំណឹងអំពីការមិនរើសអើងរបស់ Metro

ការគោរពសិទ្ធិពលរដ្ឋរបស់ ។ សំរាប់ព័ត៌មានអំពីកម្មវិធីសិទ្ធិពលរដ្ឋរបស់ Metro ឬដើម្បីទទួលបានកម្មប្រតិបត្តិការរើសអើងសម្រាប់សេចក្តីណែនាំ www.oregonmetro.gov/civilrights។ បើលោកអ្នកត្រូវការអ្នកបកប្រែភាសានៅពេលអង្គប្រជុំសាធារណៈ សូមទូរស័ព្ទមកលេខ 503-797-1700 (ម៉ោង 8 ព្រឹកដល់ម៉ោង 5 ល្ងាច ថ្ងៃធ្វើការ) ប្រាំពីរថ្ងៃ មុនថ្ងៃប្រជុំដើម្បីអាចឲ្យគេសម្រួលតាមសំណើរបស់លោកអ្នក ។

إشعار بعدم التمييز من Metro

تحتزم Metro الحقوق المدنية. للمزيد من المعلومات حول برنامج Metro للحقوق المدنية أو لإيداع شكوى ضد التمييز، يُرجى زيارة الموقع الإلكتروني www.oregonmetro.gov/civilrights. إن كنت بحاجة إلى مساعدة في اللغة، يجب عليك الاتصال مقدماً برقم الهاتف 503-797-1700 (من الساعة 8 صباحاً حتى الساعة 5 مساءً، أيام الاثنين إلى الجمعة) قبل خمسة (5) أيام عمل من موعد الاجتماع.

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<p>Clackamas, Multnomah and Washington counties, and Vancouver, WA Channel 30 – Community Access Network <i>Web site:</i> www.tvctv.org <i>Ph:</i> 503-629-8534 Call or visit web site for program times.</p>	<p>Portland Channel 30 – Portland Community Media <i>Web site:</i> www.pcmtv.org <i>Ph:</i> 503-288-1515 Call or visit web site for program times.</p>
<p>Gresham Channel 30 - MCTV <i>Web site:</i> www.metroeast.org <i>Ph:</i> 503-491-7636 Call or visit web site for program times.</p>	<p>Washington County and West Linn Channel 30– TVC TV <i>Web site:</i> www.tvctv.org <i>Ph:</i> 503-629-8534 Call or visit web site for program times.</p>
<p>Oregon City and Gladstone Channel 28 – Willamette Falls Television <i>Web site:</i> http://www.wftvmedia.org/ <i>Ph:</i> 503-650-0275 Call or visit web site for program times.</p>	

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Agenda Item No. 3.1

Consideration of the Council Meeting minutes for April 8, 2021

Consent Agenda

Metro Council Meeting
Thursday, April 29, 2021

Metro

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



Metro

Minutes

Thursday, April 8, 2021

2:00 PM

<https://zoom.us/j/615079992> or 888-475-4499 (toll free)

Council meeting

1. Call to Order and Roll Call

Council President Lynn Peterson called the Metro Council Meeting call to order at: 2:01 p.m.

Present: 7 - Council President Lynn Peterson, Councilor Shirley Craddick, Councilor Bob Stacey, Councilor Christine Lewis, Councilor Juan Carlos Gonzalez, Councilor Mary Nolan, and Councilor Gerritt Rosenthal

2. Public Communication

Robert Liberty, City of Portland: Spoke about the differences between gross and net congestion, and implored Councilors to take into account the impacts of net congestion.

3. Presentations**3.1 Solid Waste Service Equity Audit Presentation**

President Peterson introduced Brian Evans and Roy Brower to present.

Evans introduced Elliot Shuford and Angela Owens to assist in the presentation.

Evans outlined the objectives of the projects, recounted the impact that changes had made on the success of the project, and spoke to the history of a diversity and equity lens having been applied to Solid Waste Services (going back to 2016).

Positive and negative outcomes were gleaned from the services that were reviewed; there were places where access to resources by disadvantaged communities increased, and others where it decreased. Some best practices were set in place, however, they weren't as detailed as they could have been. Additionally, there were other programs developed to address racial equity which were not under the purview of this audit.

Elliot went on to describe audit results and recommendations. Elliot described the two main areas of focus by the audit: 1) evaluation of service equity outcomes and 2) a review of best practices. Elliot described the metrics used to evaluate positive and negative outcomes.

Three additional areas were identified that would increase positive service equity outcomes: 1) service equity goals were not in place; 2) data driven decision-making was undeveloped, and 3) policies and procedures were not in place.

Brower introduced Jon Meyer (Community Services and Program Director). Brower noted that the audit focused on years 2016-2018, just prior to the 2030 Regional Waste Plan (2019). Brower agrees with the outcomes of the audit, and WPES has already begun to propose solutions.

Meyer was tasked with presenting WPES's response to the audit. Programs were foreshadowed to return to the Metro Council with updated goals, targets, and so-forth that would allow them to better address gaps identified by the audit.

Council Discussion

There was none.

4. Consent Agenda

A motion was made by Councilor Craddick, seconded by Councilor Rosenthal, to approve the Consent Agenda. The motion carried by the following vote:

Aye: 7 - Council President Peterson, Councilor Craddick, Councilor Stacey, Councilor Lewis, Councilor Gonzalez, Councilor Nolan, and Councilor Rosenthal

- 4.1 Resolution No. 21-5163, For the Purpose of Amending ODOT's US 30 NW Saltzman Rd to NW Bridge Ave Project to Add Approved Funding

Increasing the Project Limits by 1.31 Miles to be US30 NW Kittridge Ave to NW Bridge Ave to the 2021-24 Metropolitan Transportation Improvement Program (MTIP) (MR21-08-MAR)

5. Resolutions

- 5.1 Resolution No. 21-5158, For the Purpose of Amending the FY2020-21 Budget and Appropriations Schedule and the FY2020-21 Through FY2024-25 Capital Improvement Plan to Provide for Changes in Operations

President Peterson introduced Cinnamon Williams to present.

Williams offered a high-level summary of the amendments, a detailed description of which could be located in the meeting packet.

Council Discussion

Councilor Lewis sought clarification on 9.0 FTE being cited for WPES vs 10.6 in other places. Williams explain that the 10.6 FTE represents other funds that are paying for that project (fund vs department where the person lives).

In response to a question asked by Councilor Rosenthal, Williams explained that VOIP is the phone system within the MRC building.

A motion was made by Councilor Lewis, seconded by Councilor Gonzalez, that this Resolution was adopted. The motion carried by the following vote:

Aye: 7 - Council President Peterson, Councilor Craddick, Councilor Stacey, Councilor Lewis, Councilor Gonzalez, Councilor Nolan, and Councilor Rosenthal

6. Chief Operating Officer Communication

Marissa Madrigal updated on the following topics:

- OOC vaccination site outcomes

- The zoo primate palace and polar passage
- Portland's new venue being installed

7. Councilor Communication

Councilors gave updates on the following items:

- Solid Waste Liaison Meeting
 - o Wet Waste Tonnage Allocations for 2021/2022
 - o Upcoming items for WPES
- Zoo adding more animals and planning a celebration following the completion of the bond project
- Meeting with Representative Bonamici (Councilors and leaders from around the region) regarding infrastructure and Build Back Better
- OZF board meeting [4/8]
- JPACT meeting
- West Linn and Oregon City pedestrian and bicycle bridge PAC meeting

8. Adjourn

Seeing no further business, Council President Lynn Peterson adjourned the Metro Council work session at 2:49 p.m.

Respectfully submitted,



Shay Perez, Council Policy Assistant

Agenda Item No. 3.2

Consideration of Metro Council Meeting minutes for April 15, 2021.

Consent Agenda

Metro Council Meeting
Thursday, April 29, 2021

Metro

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



Metro

Minutes

Thursday, April 15, 2021

2:00 PM

Revised 04/15

<https://zoom.us/j/615079992> or (346)-248-7799

Council meeting

1. Call to Order and Roll Call

Deputy Council President Shirley Craddick called the Metro Council Meeting call to order at: 2:00 p.m

Present: 7 - Council President Lynn Peterson, Councilor Shirley Craddick, Councilor Bob Stacey, Councilor Christine Lewis, Councilor Juan Carlos Gonzalez, Councilor Mary Nolan, and Councilor Gerritt Rosenthal

2. Public Communication

Deputy Council President Craddick opened up the Public Communication Portion of the meeting.

Robert Liberty, City of Portland: Mr. Liberty expressed his concerns with the Colombia River Crossing project as it relates to the I-5 Bridge project.

Seeing no further public testimony, Deputy Council President Craddick moved on to the Consent Agenda items.

3. Presentations**3.1 Congestion Pricing**

Presenter(s): Elizabeth Mros-O'Hara, Metro

Deputy Council President Craddick introduced Elizabeth Mros-O'Hara and Alex Oreshack to present on the Regional Congestion Pricing Study.

Ms. Mros-O'Hara explained that one of the goals of this study was to determine how a regional congestion pricing tool could help inform transportation policy work moving forward. Furthermore, she reviewed the following key performance measurements: Vehicle miles traveled, Percent of people using different modes of transportation, Accessibility, Vehicle Delay, Emissions and Costs.

Alex Oreshack reviewed the four families of congestion pricing tools they tested in their study. He explained that all of these pricing tools would increase the costs of travel

around the region. However, he added that each pricing tool has a different cost impact and some tools have more evenly distributed costs compared to others. Additionally, Ms. Mros-O'Hara shared that there will be an expert review panel next Thursday morning to speak about their experiencing with using congestion pricing tools in their jurisdictions.

Margi Bradway reviewed next steps with Council and confirmed that she would share the results of the study with the Metro Council before bringing it to JPACT.

Council Discussion:

Councilor Stacey asked staff how they can mitigate some of the adverse effects such as high costs and lower accessibility.

Councilor Rosenthal asked staff to further explain the efficacy of the Cordon pricing scenario pricing and to provide a comparison of the social benefits of each model compared to their more transportation focused benefits.

Councilor Gonzalez highlighted the importance of having the expert review panel review how they have mitigated issues such as displacement and affordability when implementing Congestion Pricing tools in their communities. Furthermore, Councilor Gonzalez asked staff to speak to the issue of reliability in terms of commute timing.

Councilor Lewis asked staff to ask the expert review panel to weigh-in on the following questions: how diversion of the transit system is related to transit access, how Cordon Pricing schemes encourage movement to certain areas vs. others, and what is the bottom line in terms of benefits outweighing costs.

Council President Peterson thanked staff for their work on the study and mentioned that she would like the expert review panel to address their strategies for the more cumbersome short term project needs/start up implementation work.

Councilor Nolan remarked that she would like to see the expert review panel address the longer implementation of different potential tax models that maintain the revenue needed to fund these transportation projects.

Deputy Council President Craddick asked that the expert review panel discuss how they have mitigated the issues of the potential financial gain vs. the impact the tax could have on the community.

4. Consent Agenda

A motion was made by Councilor Rosenthal, seconded by Council President Peterson, that this item be approved the Consent Agenda. The motion passed by the following vote:

Aye: 7 - Council President Peterson, Councilor Craddick, Councilor Stacey, Councilor Lewis, Councilor Gonzalez, Councilor Nolan, and Councilor Rosenthal

- 4.1 Consideration of the Council Meeting Minutes for the March 18, 2021 Meeting.
- 4.2 Resolution No. 21-5170, For the Purpose of Authorizing Metro's Chief Operating Officer to Extend the Deadline for Filing Proposals for Mid-Cycle UGB Amendments Under Metro Code Section 3.07.1427

Presenter(s): Marissa Madrigal, Metro

5. Resolutions

- 5.1 Metro Chief Operating Officer Acting as Budget Officer Presents the
-

Proposed Fiscal Year 2021-22 Budget and Budget Message to the Metro Council, Acting as the Budget Committee

Presenter(s): Brian Kennedy, Metro
Brian Evans, Metro
Marissa Madrigal, Metro

Deputy Council President Craddick introduced Marissa Madrigal, Brian Evans and Brian Kennedy to present on the proposed fiscal year 2021-2022 Metro budget.

Chief Operating Officer Marissa Madrigal reviewed the budget process and highlighted Metro's efforts to build back some of the internal infrastructure lost during the Pandemic.

Metro Chief Financial Officer Brian Kennedy summarized the current financial situation and how Metro plans to balance the budget after the loss of revenue during the 2020-21 Fiscal Year. Furthermore, Mr. Kennedy reviewed Metro's past budgets and Metro's debt obligations.

The Metro Auditor Brian Evans, reviewed the office of the Metro Auditor's independent budget process. He highlighted how Metro has spent their money in the past and how they plan to spend money this upcoming fiscal year.

Deputy Council President Craddick closed the Metro Council Meeting and opened up the Metro Budget Committee session.

5.1.1 Resolution No. 21-5166, For the Purpose of Approving the FY 2021-22 Budget, Setting Property Tax Levies and Transmitting the Approved Budget to the Multnomah County Tax Supervising and Conservation Commission

Presenter(s): Marissa Madrigal, Metro

Brian Kennedy, Metro

Budget Committee Discussion

Councilor Nolan asked staff how Metro can improve community transparency and engagement throughout the budget approval process.

Councilor Gonzalez shared that Reimagine Oregon asked Council to commit to examining the different ways Metro interacts with law enforcement contracts. He asked staff to review how Metro can further explore and incorporate changes in their contracts and relationships with law enforcement.

Councilor Lewis expressed her excitement with this year's budget process and encouraged staff to focus on rebuilding the central services infrastructure at Metro.

Councilor Rosenthal asked staff about whether Metro can receive federal funds through the CARE's act.

This item was forwarded without recommendation.

5.2.1 Public Hearing for Resolution No. 21-5166

Deputy Council President Craddick opened up the Budget Committee Public Hearing. Seeing no discussion Deputy Council President Craddick closed the public hearing portion of the meeting.

6. Chief Operating Officer Communication

Marissa Madrigal shared that the Oregon Zoo is now open seven days a week and that Department heads had a successful strategy retreat.

7 Councilor Communication

Deputy Council President Craddick shared updates on the following items from the JPACT meeting from this morning: Regional mobility policy, Congestion pricing study and said

goodbye to Commissioner Roy Rogers who will no longer be a JPACT member.

Council President Peterson shared that Council and staff will be sharing an update and response to Robert Liberty's testimony on the I-5 Bridge.

Council Gonzalez shared that tomorrow there will be a Portland area governor's metro regional advisory committee meeting centered on the passing of the new CARE's act.

8 Adjourn

Seeing no further business, Deputy Council President Craddick adjourned the Metro Council meeting at 4:07 P.M.

Respectfully submitted,

Pilar Karlin

Pilar Karlin, Council Policy Assistant.

ATTACHMENTS TO THE PUBLIC RECORD FOR THE MEETING OF APRIL 15, 2021

ITEM	DOCUMENT TYPE	DOC DATE	DOCUMENT DESCRIPTION	DOCUMENT No.
2.0	Testimony	04/15/21	Robert Liberty Written Testimony	041521c-01

Agenda Item No. 3.3

Resolution 21-5167, For the Purpose of Amending and Adopting the List of Designated Facilities
of the Solid Waste System Pursuant to Metro Code Chapter 5.05

Consent Agenda

Metro Council Meeting
Thursday, April 29, 2021

BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF AMENDING AND) RESOLUTION NO. 21-5167
ADOPTING THE LIST OF DESIGNATED)
FACILITES OF THE SOLID WASTE) Introduced by Chief Operating Officer
SYSTEM PURSUANT TO METRO CODE) Marissa Madrigal in concurrence with
CHAPTER 5.05) Council President Lynn Peterson

WHEREAS, Metro Code Chapter 5.05 governs the regulation of solid waste generated within the Metro boundary that is transported, managed and disposed at locations outside of the jurisdictional boundary; and

WHEREAS, Metro Code Chapter 5.05 states that no person may transport solid waste generated within the Metro boundary to a solid waste facility or disposal site unless it is a designated facility or the person has obtained a non-system license; and

WHEREAS, Metro Code Chapter 5.05 provides that Metro Council may designate a solid waste facility or disposal site located outside the Metro boundary as part of the solid waste system and add it to the designated facilities list; and

WHEREAS, Metro Code Chapter 5.05 prohibits disposal of waste generated within the Metro boundary at a new or “limited capacity landfill”, as defined in Metro Code Chapter 5.00, in order to conserve limited land and resources in and around the Metro region; and

WHEREAS, Metro Code Section 5.05.100 authorizes the Chief Operating Officer to execute an agreement between Metro and a designated facility or disposal site located outside the Metro boundary that Council approves pursuant to Metro Code Section 5.05.070; and

WHEREAS, Chemical Waste Management of the Northwest, Covanta Marion, Dirt Hugger, Divert Albany Processing Facility, Recology Organics – Aumsville and Recology Organics – North Plains have applied to Metro to become a designated facility of the system; and

WHEREAS, the Chief Operating Officer has considered the factors set forth in Metro Code Section 5.05.070 with respect to these applicants and recommends amending the designated facilities list to add Chemical Waste Management of the Northwest, Covanta Marion, Dirt Hugger, Divert Albany Processing Facility, Recology Organics – Aumsville and Recology Organics – North Plains, as provided in Exhibit A; and

WHEREAS, Metro Council finds that designating these solid waste facilities and disposal sites as part the solid waste system will provide Metro with greater oversight of the region’s waste and help ensure that the region’s waste is properly managed and disposed in accordance with Regional Waste Plan and other solid waste policy objectives; and

WHEREAS, Metro Council finds that designating these solid waste facilities and disposal sites as part the solid waste system will result in process improvements for Metro and users of these facilities by reducing the need for a non-system license from Metro; and

WHEREAS, Metro Council finds that, in order to minimize system disruption, it may be necessary to extend the term of certain non-system licenses that authorize the transport of waste to Covanta Marion and Divert Albany Processing Facility to provide time for the Chief Operating Officer to execute an agreement with each of those facilities; now therefore,

BE IT RESOLVED that the Metro Council:

1. Designates Chemical Waste Management of the Northwest, Covanta Marion, Dirt Hugger, Divert Albany Processing Facility, Recology Organics – Aumsville and Recology Organics – North Plains as part of the solid waste system.
2. Adopts the list of designated facilities attached as Exhibit A, effective May 1, 2021, pursuant to Metro Code Section 5.05.060.
3. Authorizes the Chief Operating Officer to remove from the list of designated facilities in Exhibit A any disposal site that is now or later becomes a “limited capacity landfill” as that term is defined in Metro Code Chapter 5.00, without requiring further Metro Council action.
4. Authorizes the Chief Operating Officer to execute agreements between Metro and Chemical Waste Management of the Northwest, Covanta Marion, Dirt Hugger, Divert Albany Processing Facility, Recology Organics – Aumsville and Recology Organics – North Plains for the types of waste described in the staff report to this resolution.
5. Authorizes the Chief Operating Officer to extend the term of the non-system licenses listed in Exhibit B to expire on December 31, 2021.

ADOPTED by the Metro Council this 29th day of April 2021.

Lynn Peterson, Council President

Approved as to Form:

Carrie MacLaren, Metro Attorney

Designated Facilities of Metro’s Solid Waste System

Effective May 1, 2021

The Metro Council has found that the following disposal sites and solid waste facilities meet the criteria set forth in Metro Code Chapter 5.05 and are designated as part of Metro’s solid waste system. In accordance with Metro Resolution No. 21-5167, this list of designated facilities is hereby effective on May 1, 2021.

I. Disposal sites and solid waste facilities owned or operated by Metro.

- | | |
|--|---|
| 1) <u>Metro Central Station</u>
6161 NW 61 st Ave.
Portland, OR 97210 | 2) <u>Metro South Station</u>
2001 Washington St.
Oregon City, OR 97045 |
|--|---|

II. Disposal sites and solid waste facilities located within Metro’s boundary.

All disposal sites and solid waste facilities located within the Metro boundary that are subject to Metro regulatory authority under Metro Code Chapter 5.01. All such designated facilities are required to obtain a Metro-issued license or franchise unless otherwise exempt from such requirement.

III. Disposal sites and solid waste facilities located outside of Metro’s boundary.

The out-of-region designated facilities listed below are authorized to accept certain types of waste generated within the Metro jurisdictional boundary as described in an agreement between Metro and the owner of the facility. Metro may also allow other types of waste to be transported to these facilities under a non-system license.

	Designated Facility	Address
1)	Canby Transfer & Recycling, Inc.	1600 SE 4th Ave., Canby, OR 97013
2)	Chemical Waste Management of the Northwest Inc.	17629 Cedar Springs Lane, Arlington, OR 97812
3)	Coffin Butte Landfill	29175 Coffin Butte Road, Corvallis, OR 97330
4)	Columbia Ridge Landfill	18177 Cedar Springs Lane, Arlington, OR 97812
5)	Covanta Marion	4850 Brooklake Road NE, Brooks, OR 97305
6)	Cowlitz County Headquarters Landfill	3434 Silverlake Road, Castle Rock, WA 98611
7)	Dirt Hugger	111 E. Rockland Road, Dallesport, WA 98617
8)	Divert Albany Processing Facility	950 SE Jackson St., Albany, OR 97322
9)	Finley Buttes Regional Landfill	73221 Bombing Range Road, Boardman, OR 97818
10)	Hillsboro Landfill	3205 SE Minter Bridge Road, Hillsboro, OR 97123
11)	Recology Organics – Aumsville	8712 Aumsville Highway SE, Salem, OR 97317
12)	Recology Organics – North Plains	9570 NW 307 th Ave., North Plains, OR 97133
13)	Roosevelt Regional Landfill	500 Roosevelt Grade Road, Roosevelt, WA 99356
14)	Tualatin Valley Waste Recovery	3205 SE Minter Bridge Road, Hillsboro, OR 97123
15)	Wasco County Landfill	2550 Steele Road, The Dalles, OR 97058

Exhibit B to Resolution No. 21-5167

Non-System Licenses expiring June 30, 2021

The Chief Operating Officer recommends that Metro Council extend the terms of the following non-system licenses until December 31, 2021.

Licensee	Location	NSL number	Non-system facility
Daimler Truck - North America	Portland	N-169-19A	Covanta
Eaton Portland Power Center	Wilsonville	N-170-19A	Covanta
Epson Portland Inc.	Hillsboro	N-028-19A	Covanta
FCA US LLC - Mopar PDC	Beaverton	N-171-19A	Covanta
Fujifilm North America Corporation	Portland	N-163-19B	Covanta
Technology Conservation Group	Portland	N-125-19A	Covanta
Willamette Resources Inc.	Wilsonville	N-005-19(2)A	Covanta
Albertsons LLC	Portland	N-180-20A	Divert
Fred Meyer	Clackamas	N-181-20A	Divert

IN CONSIDERATION OF RESOLUTION NO. 21-5167, FOR THE PURPOSE OF AMENDING AND ADOPTING THE LIST OF DESIGNATED FACILITIES OF THE SOLID WASTE SYSTEM PURSUANT TO METRO CODE CHAPTER 5.05

Date: April 14, 2021
Department: Waste Prevention and Environmental Services
Meeting Date: April 29, 2021

Prepared by: Joanna Dyer, 971-401-0976,
joanna.dyer@oregonmetro.gov

ISSUE STATEMENT

The following solid waste facilities and disposal sites have applied to become designated facilities of Metro's solid waste system pursuant to Metro Code Chapter 5.05:

- Chemical Waste Management of the Northwest, Inc. (ChemWaste), 17629 Cedar Springs Lane, Arlington, Ore.
- Covanta Marion (Covanta), 4850 Brooklake Road NE, Brooks, Ore.
- Dirt Hugger, 111 E. Rockland Road, Dallesport, Wash.
- Divert Albany Processing Facility (Divert), 950 SE Jackson St., Albany, Ore.
- Recology Organics – Aumsville (Recology Aumsville), 8712 Aumsville Highway SE, Aumsville, Ore.
- Recology Organics – North Plains (Recology North Plains), 9570 NW 307th Ave., North Plains, Ore.

ACTION REQUESTED

Approve Resolution No. 21-5167 to:

1. Designate ChemWaste, Covanta, Dirt Hugger, Divert, Recology Aumsville and Recology North Plains as part of Metro's solid waste system and add these six facilities to the designated facilities list;
2. Adopt an amended list of designated facilities, attached as Exhibit A, that becomes effective on May 1, 2021;
3. Authorize the Chief Operating Officer to remove from the list of designated facilities any disposal site that is now or later becomes a "limited capacity landfill" as that term is defined in Metro Code Chapter 5.00, without requiring further Metro Council action;
4. Authorize the Chief Operating Officer to execute an agreement between Metro and each facility as described in this staff report and Metro Code Chapter 5.05; and
5. Authorize the Chief Operating Officer to extend the term of nine non-system licenses (NSLs) that authorize transport of waste to Covanta and Divert, attached as Exhibit B, to expire December 31, 2021 to prevent any lapse in authorization until Metro can execute an agreement with each facility.

IDENTIFIED POLICY OUTCOMES

Staff finds that designating the proposed facilities as part Metro's solid waste system and establishing designated facility agreements with each provides greater oversight of the region's waste and helps Metro ensure that the waste is properly managed in accordance with the Regional Waste Plan and other solid waste policy objectives. The proposed action would also result in process improvements and make reporting and fee and tax collection more efficient because the designated facility would take on that responsibility instead of the users of those facilities. There are 24 NSLs currently in effect that would no longer be necessary upon approval of the proposed resolution and establishment of designated agreements with the proposed facilities. This would result in a reduction in administrative work for Metro and the users of the facilities.

POLICY QUESTION(S)

1. Should Metro Council designate ChemWaste, Covanta, Dirt Hugger, Divert, Recology Aumsville and Recology North Plains as part of Metro's solid waste system, adopt the proposed list of designated facilities, attached as Exhibit A, and authorize the Chief Operating Officer to execute agreements with these proposed facilities to authorize the types of waste described in this staff report?
2. Should Metro Council authorize the Chief Operating Officer to extend the term of nine NSLs, attached as Exhibit B, to expire December 31, 2021 to prevent any lapse in authorization until Metro executes agreements with Covanta and Divert?

POLICY OPTIONS FOR COUNCIL TO CONSIDER

1. Approve the resolution as proposed to designate ChemWaste, Covanta, Dirt Hugger, Divert, Recology Aumsville and Recology North Plains as part of Metro's solid waste system and add the facilities to the designated facilities list.
2. Amend the resolution to adopt a list of designated facilities that is different than that recommended by staff.
3. Do not approve Resolution No. 21-5167.

STAFF RECOMMENDATIONS

Staff recommends that Metro Council adopt Resolution No. 21-5167 to add six facilities, including two disposal sites (ChemWaste and Covanta), three compost facilities (Dirt Hugger, Recology Aumsville, and Recology North Plains), and a food waste processing facility (Divert) to Metro's designated facilities list, and approve the list that will become effective May 1, 2021.

STRATEGIC CONTEXT & FRAMING COUNCIL DISCUSSION

The Metro Council determines whether a solid waste facility or disposal site located outside of the Metro jurisdictional boundary may be part of Metro's solid waste system. If Metro Council designates a facility as part of the system, the Chief Operating Officer is authorized to execute an agreement between Metro and the facility that allows the facility to accept waste generated from within the region and collect the regional system fee and excise tax on Metro's behalf. Metro Code Chapter 5.05 prohibits the disposal of Metro area waste in a "limited capacity landfill" which is defined as a landfill that has sought a site

development plan amendment for the expansion of the landfill capacity from DEQ, and has not received approval from DEQ by May 25, 2017. If approved, this resolution would authorize the Chief Operating Officer to remove any disposal site that is now, or later becomes, a limited capacity landfill from the list of designated facilities without requiring further Metro Council action.

There are currently nine designated facilities located outside of the Metro jurisdictional boundary. This proposed resolution seeks to add six facilities to the designated facilities list. If approved, the designated facilities list would be amended as shown in Exhibit A to this staff report.

The current designated facilities list includes:

- Coffin Butte Landfill, Benton County, Ore. – Republic Services
- Columbia Ridge Landfill, Gilliam County, Ore. – Waste Management
- Cowlitz County Headquarters Landfill, Cowlitz County, Wash. – Cowlitz County
- Finley Buttes Regional Landfill, Morrow County, Ore. – Waste Connections
- Hillsboro Landfill, Washington County, Ore. – Waste Management
- Roosevelt Regional Landfill, Klickitat County, Wash. – Republic Services
- Tualatin Valley Waste Recovery, Washington County, Ore. – Waste Management
- Wasco County Landfill, Wasco County, Ore. – Waste Connections
- Canby Transfer & Recycling, Inc., Canby, Ore. – Kahut Waste Services

The proposed designated facilities list, as shown in Exhibit A, includes all nine of the facilities listed above and the following:

- Chemical Waste Management of the Northwest, Inc., Gilliam County, Ore. – Waste Management
- Covanta Marion, Marion County, Ore. – Covanta Holding Company
- Dirt Hugger, Klickitat County, Wash.
- Divert Albany Processing Facility, Albany, Ore. – Divert Inc.
- Recology Organics – Aumsville, Aumsville, Ore. – Recology Inc.
- Recology Organics – North Plains, Washington County, Ore. – Recology Inc.

The Applicants

A. Chemical Waste Management of the Northwest, Inc.

ChemWaste is a hazardous waste treatment, storage and disposal facility that has operated in Gilliam County since 1976. The landfill is permitted to accept hazardous waste and non-hazardous solid waste. The site is located adjacent to the Columbia Ridge Landfill, a general purpose landfill and Metro designated facility that is permitted by Oregon Department of Environmental Quality (DEQ) to accept municipal solid waste. Both of these landfills are owned and operated by Waste Management. ChemWaste has applied to become a designated facility so that it may receive non-hazardous solid

waste from the Metro region. In its application, ChemWaste indicated that the landfill has an estimated 41 years of capacity remaining with an estimated closure date of 2062. Metro does not regulate hazardous waste and Metro has not issued any non-system licenses to transport other types of waste to this disposal site.

The facility is regulated by the Environmental Protection Agency Region X and DEQ to ensure protection of human health and the environment. The facility operates under Resource Conservation and Recovery Act (RCRA) guidelines and holds a DEQ hazardous waste permit and a DEQ simple air contaminant discharge permit.

In March 2019, DEQ notified ChemWaste that it was required to participate in the Cleaner Air Oregon (CAO) risk assessment process. Cleaner Air Oregon is a health-based permitting program that regulates emissions of air contaminants from facilities based on risk to nearby communities. Facilities in the program are required to report toxic air contaminant emissions, assess potential health risks to people nearby and reduce toxic air contaminant risk if it exceeds legal limits. The facility is complying with all DEQ requests which are publically available on the Cleaner Air Oregon website.

In February 2020, the Oregon Department of Energy (ODOE) issued a Notice of Violation to ChemWaste for accepting 1,284 tons of radioactive materials between 2016 and 2019 from hydraulic fracturing activities (fracking) in violation of state rule and statute that prohibit the disposal of radioactive waste in Oregon. ODOE required the facility to conduct a risk assessment and develop a corrective action plan for the waste. The risk assessment concluded that the presence of these radioactive materials presents a low risk of future exposure and poses no risk of exceeding drinking water standards in the vicinity of the landfill. The landfill was designed to safely manage hazardous chemicals; therefore, ODOE determined that the best course of action in this instance was to leave the waste in place and continue to monitor potential risk by regularly testing groundwater and leachate at the facility.

In March 2021, ODOE issued a letter of determination accepting the facility's corrective action plan with amendments. The facility is required to install a radiation monitor to scan waste entering the facility to prevent a recurrence of this incident. ODOE has also requested that the facility review the active and recent waste streams to assess whether other noncompliant materials may have been disposed in Waste Management-owned landfills. Any noncompliant waste streams identified will be evaluated on a case-by-case basis.

In August 2020, DEQ notified ChemWaste that it was issuing a civil penalty of \$60,000 for the unauthorized disposal of radioactive waste at the landfill and for not screening for radiation as required in the hazardous waste permit. The final enforcement action had not been issued at the time of this staff report. Notwithstanding the above mentioned permit violation, DEQ staff has reported to Metro that the facility is otherwise in compliance with its hazardous waste and air permits. Metro staff notified Gilliam County of ChemWaste's application to become designated and the County has not expressed any concerns.

If the proposed resolution is approved, Metro Council will authorize the Chief Operating Officer to execute an agreement with ChemWaste that allows it to accept non-hazardous industrial waste and non-hazardous special waste generated within the Metro region.

B. Covanta Marion

Covanta is an incinerator located in Brooks, Ore. that is owned by Covanta Holding Company located in Morristown, New Jersey and operated by Covanta Marion Inc. The facility has been operating since 1987. The facility burns solid waste to produce steam in a boiler, and uses a turbine generator to produce up to 13 MW of electricity annually.

The facility has the capacity to process up to 186,000 tons of waste annually, of which 145,000 tons are contractually committed to Marion County through June 2021. The facility primarily accepts municipal solid waste but is also permitted to accept certain industrial and medical wastes, pharmaceuticals and illicit materials in conjunction with state and federal law enforcement agencies. The facility recovers ferrous and non-ferrous metals for recycling and the resulting ash is transported to Coffin Butte Landfill for use as alternative daily cover.

Metro has a longstanding practice of allowing Metro area waste to be disposed at Covanta. Currently, there are thirteen NSLs that authorize the transport of certain putrescible and non-recoverable waste to Covanta generated from commercial customers within the Metro region that have internal policies to seek disposal at Covanta instead of at a landfill. Two additional NSLs authorize the transport of confidential documents to Covanta for destruction. In calendar year 2020, licensees transported 1,629 tons of waste generated in the Metro region to Covanta.

Covanta currently holds a solid waste disposal permit, 1200-Z stormwater discharge permit, wastewater discharge permit, and a Title V air quality permit, all of which are issued by DEQ. DEQ staff has reported to Metro that Covanta is currently in compliance with all permits with no significant violations over the past three years. Metro staff notified Marion County of Covanta's application to become designated and the County did not express any concerns.

In August 2020, DEQ notified Covanta that it was required to participate in the Cleaner Air Oregon program. The facility is complying with all DEQ requests which are publically available on the Cleaner Air Oregon website.

If the proposed resolution is approved, Metro Council will authorize the Chief Operating Officer to execute an agreement with Covanta that allows it to accept putrescible waste, special waste, and other non-recoverable waste generated within the region by generators that seek material destruction or have implemented internal waste reduction programs such as zero waste-to-landfill policies.

C. Dirt Hugger

Dirt Hugger is a compost facility that has been operating in Dallesport, Wash. since 2015. The facility uses aerated static piles to process yard debris, yard debris containing residential food waste, commercial food waste and agricultural waste into a beneficial compost product that can be land applied. In 2019, the facility expanded its footprint increasing its annual inbound capacity to 62,700 tons.

In 2020, private facilities transported 25,412 tons of residential yard debris containing food waste generated in the Metro region to Dirt Hugger under the authority of three NSLs. Recology Portland Inc., the contracted operator for Metro South and Metro Central transfer stations, also transports material to Dirt Hugger as needs arise.

The facility operates under the authority of a Klickitat County solid waste permit and a Washington Department of Ecology notice of construction approval order (air permit). Compliance checks by Metro staff concluded that the facility is in compliance with both of its permits with no significant violations over the past three years. Metro staff notified Klickitat County of Dirt Hugger's application to become designated and the County did not express any concerns.

If the proposed resolution is approved, the Metro Council will authorize the Chief Operating Officer to execute an agreement with Dirt Hugger that allows it to accept commercial food waste and yard debris containing residential food waste generated within the Metro region.

D. Divert Albany Processing Facility

Divert is a food waste processing facility that has operated in Albany, Ore. since 2017. It is owned and operated by Divert Inc. headquartered in Concord, Mass. Divert accepts packaged and unpackaged food waste that cannot be donated from grocery distribution centers. Prior to processing the waste, Divert uses RFID tracking and data analytics to identify opportunities for source reduction and donation opportunities at the store level. The facility's processing equipment separates food waste from packaging to produce two outputs: (1) a nutrient rich liquid slurry that is further processed at an anaerobic digestion facility near Corvallis, and (2) non-recoverable residual waste that is disposed at Coffin Butte Landfill. Divert reports that residual waste accounts for about 30% (by weight) of the incoming material it receives from the Metro region.

In 2020, two grocery store distribution centers transported 6,126 tons of commercial food waste generated in the Metro region to Divert under the authority of NSLs. The facility operates under the authority of a DEQ solid waste disposal permit and a City of Albany wastewater discharge permit. DEQ and the City of Albany have reported to Metro that the facility is in compliance with its permits with no significant violations over the past three years. Metro staff notified the City of Albany of Divert's application to become designated and the city did not express any concerns.

If the proposed resolution is approved, the Metro Council will authorize the Chief Operating Officer to execute an agreement with Divert that allows it to accept packaged and unpackaged commercial food waste generated within the Metro region.

E. Recology Organics – Aumsville

Recology Aumsville is a compost facility that was acquired in 2009 by Recology Inc. based in San Francisco, Calif. and operated by Recology Oregon Compost. The facility processes yard debris, commercial food waste and yard debris containing residential food waste into a beneficial compost product that can be land applied. Recology Aumsville currently uses aerated static piles and is in the process of converting to mass bed technology which, when complete, will increase efficiencies in operation, reduce the potential for odors that may impact neighboring properties, and increase the annual capacity of the facility by 19,000 tons to 50,000 tons. In 2019, Metro awarded the facility a \$750,000 Investment and Innovation grant to support this conversion project. The agreement requires that Recology Aumsville apply to become a designated facility and, once the conversion to mass bed is complete, maintain a minimum of 25,000 tons annual capacity for yard debris and food waste generated from within the Metro region until January 31, 2027.

In 2020, two Metro-licensed facilities transported 78 tons of yard debris containing residential food waste generated in the Metro region to Recology Aumsville under the authority of NSLs. Recology Portland Inc., the contracted operator for Metro South and Metro Central transfer stations, also transports material to Recology Aumsville when capacity is available.

The facility currently operates under the authority of a DEQ solid waste disposal permit, a DEQ industrial stormwater discharge permit and a city of Salem wastewater discharge permit. DEQ received one odor complaint in 2018 that has since been resolved and the facility self-reports complaints to DEQ when they occur, typically in the summer months. DEQ and city of Salem staff have reported to Metro that the facility is currently in compliance with all of its permits with no significant violations in the last three years. Metro staff notified the city of Aumsville of Recology Aumsville's application to become designated and the city did not express any concerns.

If the proposed resolution is approved, the Metro Council will authorize the Chief Operating Officer to execute an agreement with Recology Aumsville that allows it to accept commercial food waste and yard debris containing residential food waste generated within the Metro region.

F. Recology Organics – North Plains

Recology North Plains is a compost facility that was also acquired in 2009 by Recology Inc. based in San Francisco, Calif. and is operated by Recology Oregon Compost. The facility processes yard debris and yard debris containing residential food waste into a beneficial compost product that can be land applied. Recology North Plains currently uses aerated static piles and is in the process of converting to mass bed technology which, when complete, will increase efficiencies in operation, reduce the potential for

odors that may impact neighboring properties, and increase the annual capacity of the facility by 24,000 tons to 80,000 tons. In 2019, Metro awarded the facility a \$750,000 Investment and Innovation grant to support this conversion project.

The property has operated as a compost facility since 1998 and was formerly known as Nature's Needs until 2016 when the facility became known as Recology Organics – North Plains. Two Metro-licensed facilities and six companies with collection franchises in cities within the Metro region currently hold NSLs that authorize the transport of yard debris containing residential food waste from the Metro region to Recology North Plains. In 2020, these eight licensees transported 47,081 tons of yard debris containing residential food waste generated in the Metro region to Recology North Plains.

The facility operates under the authority of a DEQ solid waste disposal permit, a Washington County franchise agreement and a DEQ industrial stormwater discharge permit. In its application, the facility self-reported six odor complaints received from January through November 2020. All complaints were investigated internally with two resulting in confirmed odor attributed to Recology North Plains operations. Washington County received one odor complaint in September 2019 that could not be substantiated by code compliance staff. DEQ has also received odor complaints and the facility proactively adjusts operations when possible to reduce the likelihood of offsite impacts. DEQ and Washington County staff have reported to Metro that the facility is currently in compliance with all its permits with no significant violations in the last three years. Metro staff notified the city of North Plains of Recology North Plain's application to become designated and the city did not express any concerns.

If the proposed resolution is approved, the Metro Council will authorize the Chief Operating Officer to execute an agreement with Recology North Plains that allows it to accept yard debris containing residential food waste generated within the Metro region.

Legal Antecedents

Metro has solid waste management authority under the Oregon Constitution, state law and the Metro Charter. With respect to designated facilities specifically, the Council considers the factors described in Metro Code Section 5.05.070(b) when determining whether to add a facility to the designated facilities list.

The proposed resolution seeks to add six facilities to Metro's designated facilities list. These include two disposal sites (ChemWaste and Covanta), three compost facilities (Dirt Hugger, Recology Aumsville, and Recology North Plains), and a food waste processing facility (Divert). The following factors to be considered by Metro Council are addressed by facility groupings or an individual facility basis as pertinent to the circumstances.

(1) The degree to which Metro had knowledge of prior facility users and waste types accepted at the facility and the degree to which those wastes pose a future risk of environmental contamination;

All of the proposed facilities are well known to Metro and hold the necessary permits from DEQ or its equivalent authority in Washington.

In regard to the proposed disposal sites, ChemWaste is a permitted RCRA Subtitle C landfill and the operations at this facility are highly regulated under the DEQ hazardous waste permit. The landfill meets strict EPA and DEQ guidelines and includes a leachate collection system, monitoring wells and a leak detection system. As mentioned previously in this staff report, the facility accepted 1,284 tons of radioactive materials from hydraulic fracturing activities (fracking) between 2016 and 2019, in violation of its DEQ permit, resulting in a Notice of Violation from ODOE and a civil penalty from DEQ. As part of the corrective action plan, the facility is required to install a radiation monitor to scan waste entering the facility to prevent a recurrence of this incident. ODOE has also requested that the facility review the active and recent waste streams to assess whether other materials may have been disposed in Waste Management-owned landfills. Any noncompliant waste streams identified will be evaluated on a case-by-case basis. The landfill was designed to safely manage hazardous chemicals; therefore, ODOE determined that the best course of action in this instance was to leave the waste in place and continue to monitor potential risk by regularly testing groundwater and leachate at the facility. The risk assessment required by ODOE concluded that the acceptance of these radioactive materials presents a low risk of future exposure and poses no risk of exceeding drinking water standards in the vicinity of the landfill.

The other applicants are not landfills and therefore do not pose the same potential environmental risk from wastes delivered from prior users. However, Covanta produces ash residue that is disposed and used as alternative daily cover at Coffin Butte Landfill. DEQ requires that Covanta sample and test its ash residue quarterly using Toxicity Characteristic Leaching Procedure (TCLP) in accordance with federal EPA guidance documents. DEQ reported that both of these disposal facilities are in compliance with their permits.

With respect to the compost and food processing facilities, staff's investigation has not shown any history of accepting waste that could pose a risk of environmental contamination.

(2) The facility owner's and operator's record of regulatory compliance with federal, state and local requirements, including but not limited to public health, safety and environmental rules and regulations;

Metro does not regulate these facilities as they are all located outside of the Metro region. However, all of these facilities are well known to Metro staff. With the exception of ChemWaste, Metro has a longstanding practice of allowing waste from

the region to be transported to these facilities under authority of NSLs. Metro does not regulate hazardous waste and has not issued any NSLs for transporting other types of waste to ChemWaste.

Based on investigations by staff and the information provided by DEQ and other regulatory agencies, these proposed facilities are reported to be in compliance with all state and local permit requirements.

(3) The adequacy of the facility's operational practices and management controls;

Metro, state and local regulatory agencies consider the operational practices and management controls in place at each of these facilities to be adequate for their specific type of operation that are consistent with that of similar facilities.

(4) The expected impact on the region's recycling and waste reduction efforts;

The proposed compost and food processing facilities under consideration in this resolution are integral to Metro's efforts to increase food waste recovery rather than disposal in a landfill. Staff finds that designating these facilities creates a direct relationship between Metro and each facility, which provides Metro with greater oversight of the system's compost and food processing facilities to ensure that food waste is properly managed. In addition, designating these facilities makes it easier for food waste to be composted or otherwise processed because it reduces the need for users of these facilities to obtain an NSL from Metro.

The proposed disposal sites under consideration in this resolution, ChemWaste and Covanta, seek to receive types of waste from the Metro region that are likely non-recoverable (e.g., putrescible waste, industrial process waste, and special waste). Staff does not expect that the proposed action related to these facilities will impact the region's recycling and waste reduction efforts.

(5) The facility designation's compatibility with Metro's existing contractual arrangements;

Metro's existing contractual arrangements will not be affected by the designation of any of the six facilities.

(6) The facility's record of compliance with Metro ordinances and agreements or assistance to Metro in Metro ordinance enforcement; and

All of the proposed facilities are well known to Metro staff and their operators have a good record of cooperating with Metro regarding waste flow control matters. Staff also finds that the operators have generally been responsive to Metro's requests for information about their facilities and origins of the waste they receive. Staff has an effective working relationship with the facility operators and finds that they all have a good record of assisting and complying with Metro's requirements.

(7) Other benefits or detriments accruing to regional residents if Council designates the facility.

As previously mentioned, staff finds that designating the proposed facilities creates a direct relationship between Metro and each designated facility and provides Metro with greater oversight of the region's waste to ensure that it is properly managed and disposed. This direct relationship will reduce the need for the users of these facilities to apply for and maintain an NSL. The responsibility for reporting monthly tonnage and remitting fees and taxes will shift to the facility, significantly reducing the number of monthly reports received by Metro. These process improvements will result in a reduction in administrative work for Metro, transporters and generators.

Based on an evaluation of the above mentioned factors, staff finds that each applicant operates in a manner that meets Metro Code requirements. In addition, each facility is regulated by appropriate local and state authorities to minimize the potential for environmental risk associated with the use of each facility.

Financial Implications

The proposed resolution seeks to add six facilities to Metro's designated facilities list – five of which currently receive Metro area waste under NSLs. Staff does not expect any financial implications resulting from the proposed action. If approved, designated facility agreements will replace current NSLs and Metro will continue to collect the requisite regional system fee and excise tax on all solid waste at the time of disposal. Metro will also continue to allow a fee and tax exemption for food waste that is composted or otherwise recovered.

Known Opposition

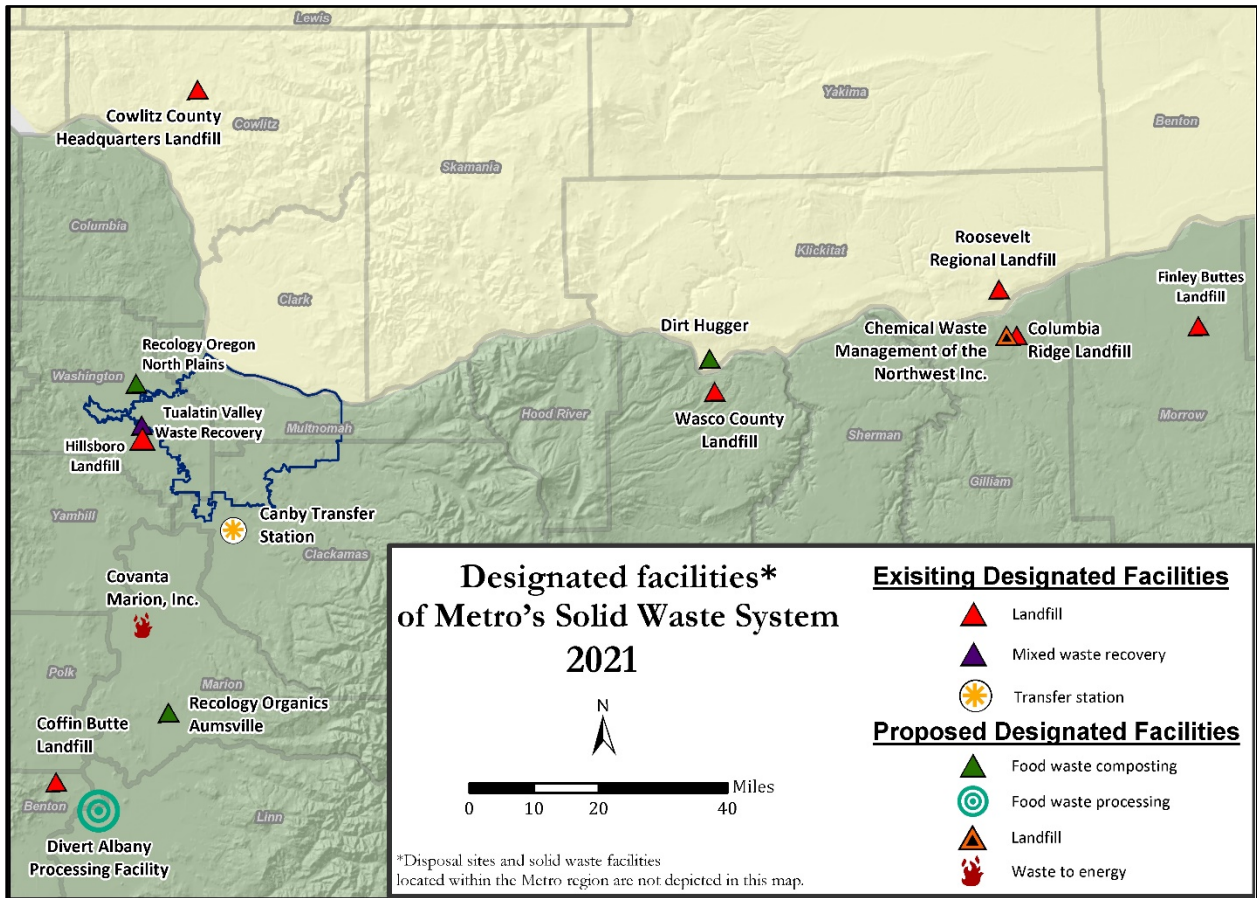
There is no known opposition to the proposed actions described in this resolution.

ATTACHMENTS

- A. Exhibit A: Designated Facilities of Metro's Solid Waste System
- B. Exhibit B: Non-System licenses requiring six-month term extension
- C. Attachment 1 to Staff Report: Map of existing and proposed designated facilities

Attachment 1 to Staff Report for Resolution No. 21-5167

Map



Existing and proposed Designated Facilities of Metro's Solid Waste System that are located outside of the Metro jurisdictional boundary.

Agenda Item No. 3.4

Resolution No. 21-5160, For the Purpose of Accepting the Findings and Recommendations in the Regional Emergency Transportation Routes (RETR) Update Phase One Report.

Consent Agenda

Metro Council Meeting
Thursday, April 29, 2021

BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF ACCEPTING THE)	RESOLUTION NO. 21-5160
FINDINGS AND RECOMMENDATIONS IN THE)	
REGIONAL EMERGENCY TRANSPORTATION)	Introduced by Chief Operating Officer
ROUTES UPDATE PHASE ONE REPORT)	Marissa Madrigal in concurrence with
)	Council President Lynn Peterson

WHEREAS, our region’s infrastructure systems need to be resilient and prepared for multiple natural hazards, which include earthquakes, wildfires, landslides, floods, severe weather and volcanic events, and the increasing impacts of climate change; and

WHEREAS, emergency management planning will help mitigate the risks these hazards pose to the public health and safety of communities and the region’s economic prosperity; and

WHEREAS, research and experience demonstrate that climate change and natural hazards have a disproportionate effect on historically marginalized communities, including Black, Indigenous and people of color (BIPOC), people with limited English proficiency, people with low income, youth, seniors, and people with disabilities, who typically have fewer resources and more exposure to environmental hazards, and are, therefore, the most vulnerable to displacement, adverse health effects, job loss, property damage and other effects; and

WHEREAS the Regional Disaster Preparedness Organization (RDPO) was created by intergovernmental agreement in 2015 as a partnership of government agencies, non-governmental organizations, and private-sector stakeholders in the Portland-Vancouver metropolitan region collaborating to build upon and unify various regional preparedness efforts and increase the region’s resilience to disasters; and

WHEREAS, as a member of the RDPO Metro plays an important role in transportation and emergency management planning related to regional functions, such as data and mapping, disaster debris management and emergency transportation route designations to improve disaster response coordination and help reduce loss of life, injury and property damage during disasters; and

WHEREAS, the Regional Emergency Transportation Routes (ETR) Update is a joint planning effort between the Regional Disaster Preparedness Organization (RDPO) and Metro, exemplifying regional collaboration and coordination to prepare for disasters that affect the transportation system; and

WHEREAS, the 2018 Regional Transportation Plan (RTP) identified the need for an update to the region’s designated regional emergency transportation routes to support future planning, policy-making and investment related to regional emergency management, transportation recovery and resiliency; and

WHEREAS, Regional ETRS were first designated within the Metro jurisdictional boundary in 1996 by the Regional Emergency Management Group (REMG) at the recommendation of the Regional Emergency Transportation Route Task Force facilitated by Metro, as priority routes targeted for rapid damage assessment and debris removal during a major regional emergency or disaster and used to transport emergency resources and materials, including first responders (e.g., police, fire and emergency medical services), essential supplies, debris, equipment, patients and personnel; and

WHEREAS, the Regional ETRs were last updated in 2005 and a Memorandum of Understanding was signed by local jurisdictions, the Port of Portland and the Oregon and Washington Departments of

Transportation that formalized commitments for assessing and reporting the status and condition of identified emergency transportation routes following an earthquake and coordinating activities under emergency conditions in relation to those routes; and

WHEREAS, since 2005, the region has experienced significant growth and demographic changes, and new technology, data and mapping have greatly expanded understanding of current hazard risks in the region, particularly seismic, wildfire, landslide, and flooding risks; and

WHEREAS, the RDPO ETR work group, a multi-disciplinary team of more than 30 local, regional, and state emergency management, transportation planning, engineering, operations and public works staff from 17 agencies within the five counties, supported the Phase 1 planning effort, including development of recommendations for future planning work; and

WHEREAS, the geographic scope of the planning effort was the five-county Portland-Vancouver metropolitan area, including Clark County in the state of Washington, and Columbia, Clackamas, Multnomah and Washington counties in the state of Oregon; and

WHEREAS, RDPO and Metro staff coordinated and consulted with cities, counties and agencies throughout the process to address specific needs of each agency or jurisdiction and facilitate collaboration and coordination among the agencies and jurisdictions, including: transportation, emergency management, and public works departments of each of the five counties and the City of Portland, the Oregon Department of Transportation (ODOT), the Washington Department of Transportation (WSDOT), the Oregon Department of Geologic and Mineral Industries (DOGAMI), transit providers, port districts, and cities within each of the five counties; and

WHEREAS, updates to the Regional ETRs incorporate changes recommended by the City of Portland, Clackamas, Columbia, Multnomah and Washington counties and ODOT through recent work that evaluated seismic risks along Statewide Seismic Lifeline Routes (SSLRs) identified in the Oregon Highway Plan; and

WHEREAS, agencies and jurisdictions recommended additional updates to the Regional ETRs and critical infrastructure and essential facilities to be included in the analysis through a series of consultation meetings convened by RDPO and Metro in Fall 2020; and

WHEREAS, the Regional Emergency Transportation Routes Update Report identifies a network of local and state-owned route segments in the region that should be designated as Regional ETRs, and summarizes key findings about the resilience and connectivity of these routes and recommendations for future planning work, including a second planning phase to tier and operationalize the routes; and

WHEREAS, the analysis found many of the Regional ETRs and their bridges are vulnerable to significant seismic and other hazard risks, such as flooding, landslides and liquefaction; and

WHEREAS, the analysis found the network of Regional ETRs provide adequate connectivity and access to the SSLRs as well as the region's population centers, isolated populations, areas with high concentrations of vulnerable populations, and critical infrastructure and essential facilities of state and regional importance; and

WHEREAS, the report was developed in collaboration with the ETR work group and reflects input from regional committees and elected bodies, such as the Transportation Policy Alternatives Committee (TPAC), the Metro Technical Advisory Committee (MTAC), the Regional Transportation Advisory Committee (RTAC), the County Coordinating Committees, Southwest Washington Regional Transportation Council (SW RTC), the Joint Policy Advisory Committee on Transportation (JPACT), the

Metro Council, and the RDPO Steering and Policy Committees and work groups, including the RDPO emergency management work group; and

WHEREAS, by accepting the report and updated routes, the Metro Council hereby recognizes all routes designated in the report are of state and regional importance during an emergency; and

WHEREAS, by accepting the report and updated routes, the Metro Council further recognizes the value in using the findings and recommendations in this report to inform the recommended second phase of work and ongoing local, regional and state efforts to improve the region's resilience and to develop funding strategies to make these routes more resilient; now therefore,

BE IT RESOLVED THAT:

1. The Metro Council hereby accepts:
 - a. the updated Regional ETRs for the metropolitan planning area (MPA) boundary, as shown in the attached Exhibit A;
 - b. the updated Regional ETRs for the five-county Portland-Vancouver region, as shown in the attached Exhibit B; and
 - c. the findings and recommendations in the Regional Emergency Transportation Routes Update Phase 1 Report, as shown in the attached Exhibit C.

2. The Metro Council hereby directs staff to use the updated Regional ETR maps and report to inform planning, policy and investment priorities in the 2023 Regional Transportation Plan update and ongoing efforts to improve the region's resilience and to develop funding strategies to make these routes more resilient.

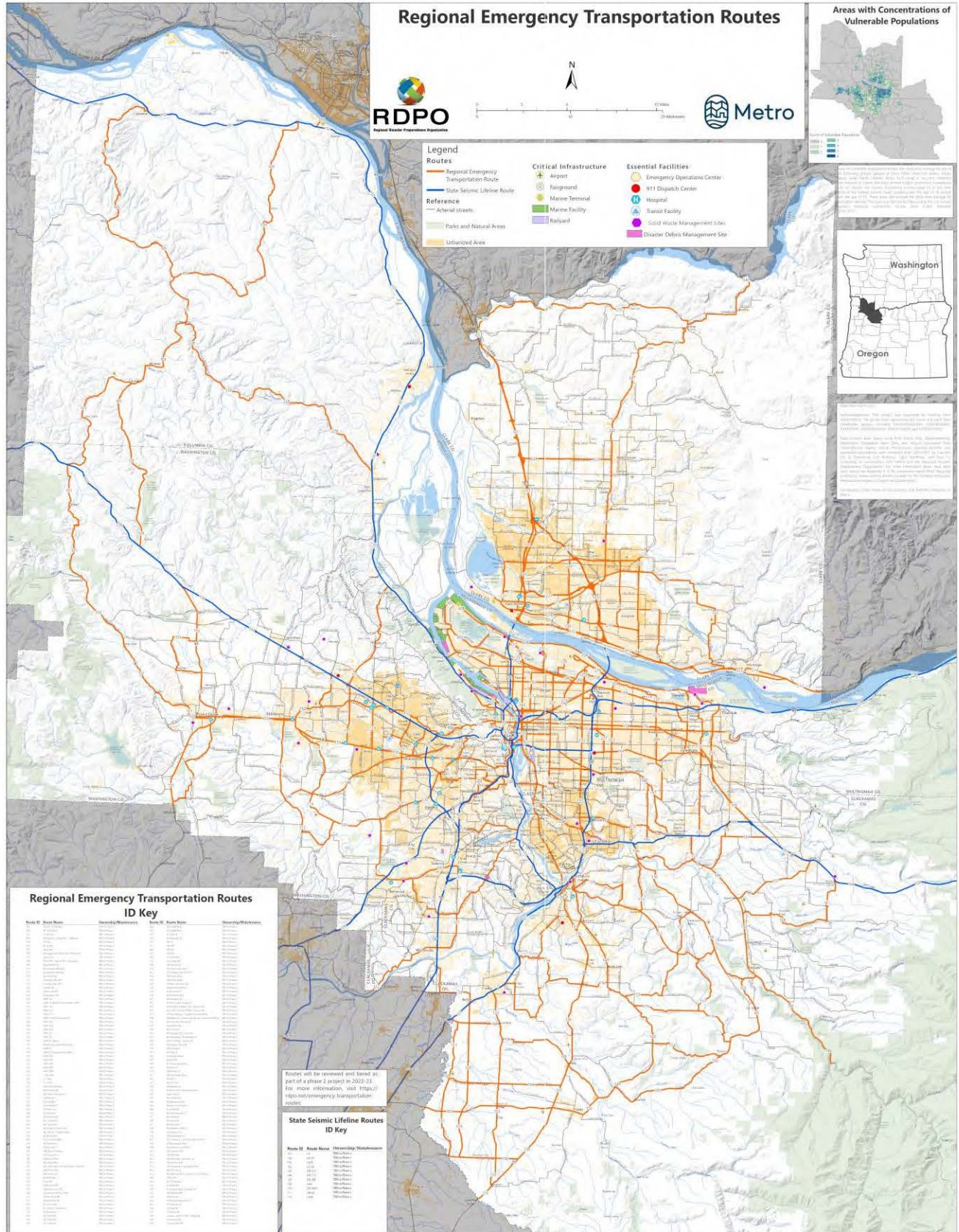
ADOPTED by the Metro Council this 29th day of April, 2021.

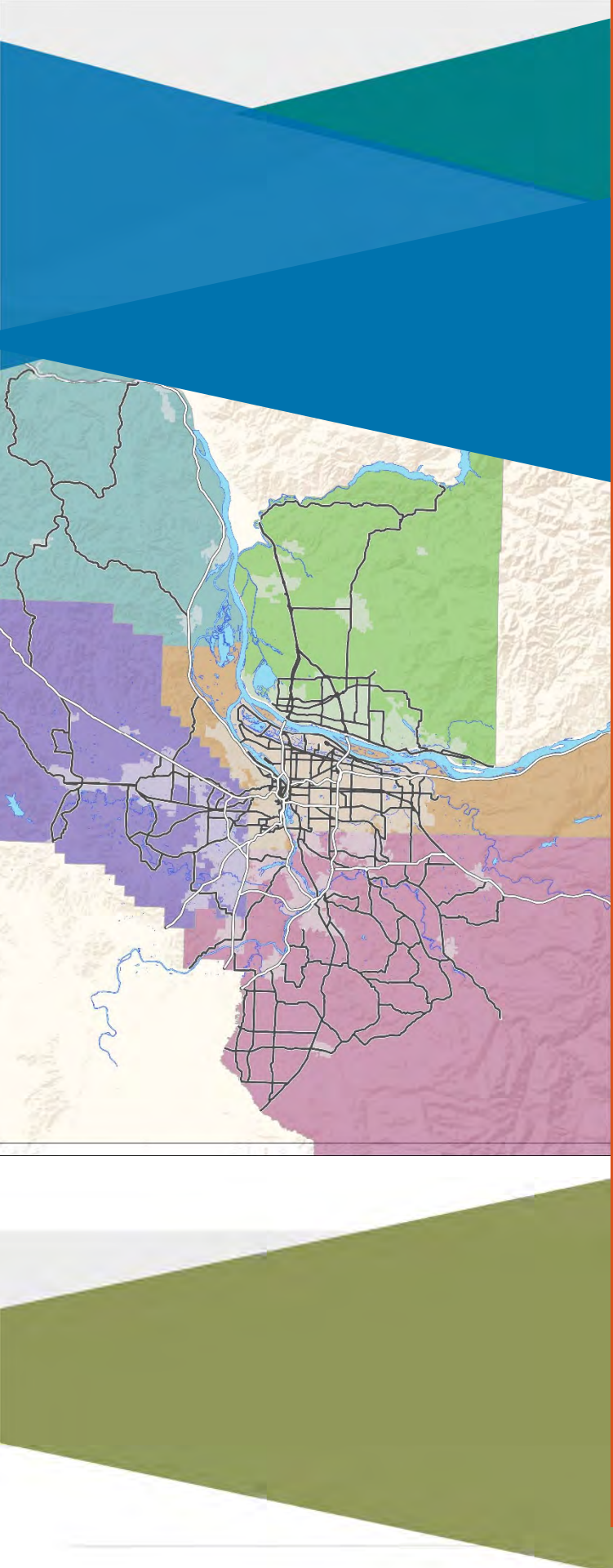
Lynn Peterson, Council President

Approved as to Form:

Carrie MacLaren, Metro Attorney

Exhibit B to Resolution No. 21-5160





Phase I Report

Regional Emergency Transportation Routes Update for the Portland-Vancouver Metropolitan Region in Oregon and Washington

Prepared for



April 2, 2021
154-035-016

Phase 1 Report

Regional Emergency Transportation Routes Update

for the Portland-Vancouver Metropolitan Region in Oregon and Washington

Prepared for
RDPO and
Metro

April 2, 2021
154-035-016

Prepared by
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EXECUTIVE SUMMARY

The five-county Portland-Vancouver metropolitan region's infrastructure systems need to be resilient and prepared for multiple natural hazards, including earthquakes, wildfires, landslides, floods, volcanoes, extreme weather events, and the increasing impacts of climate change. Emergency management planning will help mitigate the risks these hazards pose to the public health and safety of communities and the region's economic prosperity and quality of life.

Research and experience demonstrate that climate change and natural hazards have a disproportionate effect on historically marginalized communities, including Black, Indigenous and people of color (BIPOC), people with limited English proficiency, people with low income, youth, seniors, and people with disabilities, who typically have fewer resources and more exposure to environmental hazards, and are, therefore, the most vulnerable to displacement, adverse health effects, job loss, property damage and other effects.

A critical element of emergency preparedness for the region's hazards includes designation of emergency transportation routes (ETRs). First designated in 1996 by the Regional Emergency Management Group (REMG), the region established its first official network of regional ETRs. The last update occurred in 2006, under the direction of the Regional Emergency Management Technical Committee (REMTEC) of the Regional Emergency Management Group (REMG) predecessor to the RDPO.

Over the past 15 years, the region has experienced significant growth and demographic changes and new technology, data and mapping have greatly expanded our understanding of the region's natural hazard risks, particularly to a catastrophic Cascadia Subduction Zone (CSZ) earthquake. During that same period investments were made to improve seismic resilience of some roads and bridges in the region and additional planning was completed by the City of Portland, the five counties and the Oregon Department of Transportation (ODOT) to evaluate seismic risks along state-designated seismic lifeline routes (SSLRs) located in Oregon.



A partnership between the Regional Disaster Preparedness Organization (RDPO) and Metro, this planning effort updated the Regional Emergency Transportation Routes (RETRs) for the five-county Portland-Vancouver metropolitan region. The geographic scope of the effort included Clackamas, Columbia, Multnomah and Washington counties in Oregon and Clark County in Washington.

Regional ETRs are travel routes that, in the case of a major regional emergency or natural disaster, would be prioritized for rapid damage assessment and debris- removal.

These routes would be used to move people, resources and materials, such as first responders (e.g., police, fire and emergency medical services), patients, debris, fuel and essential supplies. These routes are also expected to have a key role in post-disaster recovery efforts.

rdpo.net/emergency-transportation-routes

The Regional Disaster Preparedness Organization (RDPO) and Metro initiated an update of the regional ETRs (RETRs) with funding from the Urban Areas Security Initiative (UASI). A literature review and other research conducted by the Transportation Research and Education Center (TREC) at PSU in August 2019 served as a foundation, providing a summary of recent work as well as identifying best practices and considerations for updating the RETRs. A consultant team, hired in fall 2019, provided technical support and facilitated the update with the work group, under the direction of project managers from both RDPO and Metro, and oversight from executives at both agencies.

This report presents the results of the two-year collaborative planning effort and recommendations for future work.

Phase 1 Project Scope and Timeline

The geographic scope of the planning effort included Clark County in the State of Washington and Columbia, Clackamas, Multnomah and Washington counties in the State of Oregon. The RDPO established a multi-disciplinary work group of more than thirty representatives from seventeen agencies to provide expertise in emergency management, transportation planning, public works, engineering, operations, ports and public transit.

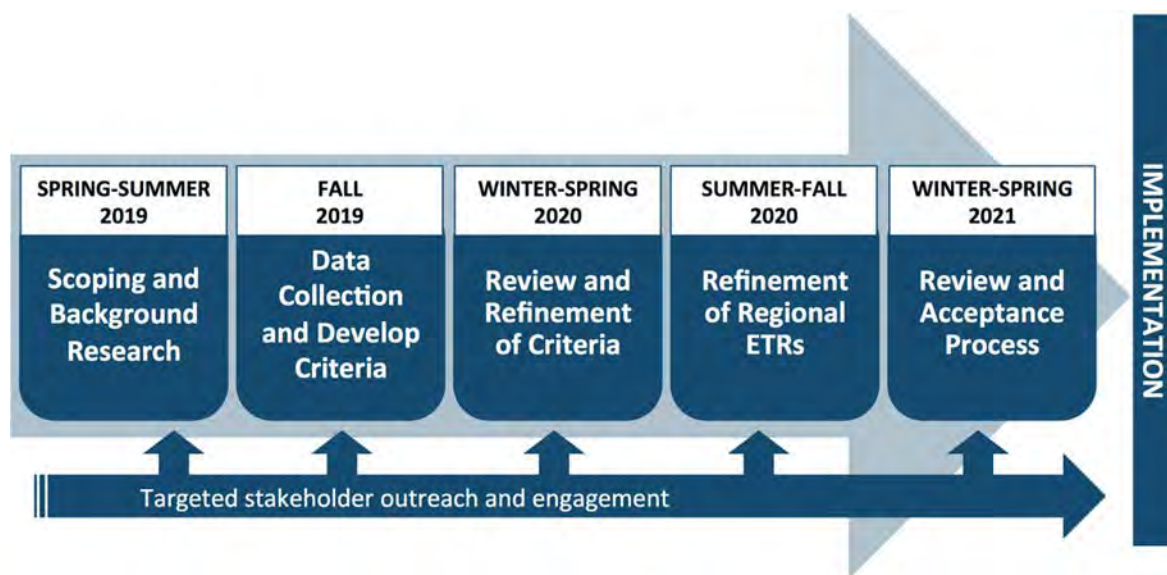


Figure ES.1 Phase 1 Project Timeline

Phase 1 Project Outcomes and Deliverables

This project represents the first phase of a multi-phase update to the regional ETRs. This phase resulted in:

- Multi-disciplinary collaboration of emergency management with transportation planning, engineering and operations, ports, transit and public works stakeholders.

- Enhanced visibility of RETRs and improved understanding of their resilience that informed a regional dialogue regarding resilience and recovery among policymakers, senior leadership and planners.
- A regionally-accepted network that provides adequate connectivity to critical infrastructure and essential facilities, as well as the region's population centers and vulnerable communities.
- A comprehensive regional GIS database and online RETR viewer established for current and future planning and operations. The data and on-line viewer provide valuable resources to support transportation resilience, recovery and related initiatives in the region.
- A regionally-accepted set of recommendations for follow-on work to support ongoing local, regional and state efforts to improve the region's resilience.

Engagement of policymakers, planners, and other stakeholders was extensive for this RETR update to better integrate transportation planning with planning for resiliency, recovery, and emergency response, as well as the investments that will be needed to make the region's transportation system more resilient

Coordination and Consultation

Regional Disaster Preparedness Organization (RDPO)

RDPO Policy Committee

RDPO Steering Committee

REMTEC- Regional Emergency Manager Technical Committee (formerly called REMG)

RDPO ETR Work Group

RDPO Public Works Work Group

Metro

Metro Council

Metro Technical Advisory Committee (MTAC)

Transportation Policy Alternatives Committee (TPAC)

Joint Policy Advisory Committee on Transportation (JPACT)

SW Washington Regional Transportation Council (SW RTC)

Oregon Department of Transportation (ODOT)

Washington Department of Transportation (WSDOT)

Oregon Department of Geology and Mineral Industries (DOGAMI)

Tri-County Metropolitan Transportation District (TriMet)

South Metro Area Regional Transit (SMART)

Clark County Public Transit Benefit Area Authority (C-TRAN)

Ports of Vancouver and Portland

Clark Regional Emergency Services Agency (CRESA)

Cities and Counties (five county region)

ETR Work Group



Key Findings from the Analysis



The updated routes provide adequate connectivity and access to the routes and regionally- significant critical infrastructure and facilities identified through the process. However, there remain areas with limited alternate routes, areas with higher hazard vulnerability that may require more redundancy, and some areas with higher reliance on state routes. These areas need further attention in future phases. In addition, further study of critical infrastructure and essential facilities will help with operational decisions and future RETR updates, as they are critical in post-disaster response and continuity of life-saving/sustaining services to communities.



The analysis demonstrates seismic and landslide impacts to roads and bridges will hinder connectivity and access during an emergency. Further planning and investment is needed to seismically strengthen bridges, particularly for crossings of the Columbia and Willamette rivers. Additional analysis that anticipates transportation impacts and closures that may result from a CSZ earthquake, landslide, wildfire and flood hazard risks on RETRs will be beneficial for operational decisions, disaster debris management plans and future updates. Further, an expansive engineering analysis would be necessary to identify roads and bridges at risk and propose specific retrofits to improve their survivability after a severe earthquake.



The updated routes provide adequate connectivity and access to the region's population centers and areas with concentrations of vulnerable populations. However, there are limited alternate routes and transportation services in some rural areas where there is also a higher prevalence of people over 65, people under 18 and low-income households, with fewer travel options.

Measuring social vulnerability is complex. More in-depth equity analysis and community-specific engagement is needed to better understand and address the unique needs of urban and rural communities, particularly potential disproportionate impacts and the needs of vulnerable populations. This can help identify potential areas of concern and inform the best approaches to enhance connectivity and access, while ensuring equitable outcomes in emergencies.

A total of **1,204 miles** making up
195 routes designated.

305 miles making up
89 new routes were added.

OVER 75% of state and regional critical
infrastructure and essential
facilities connected.

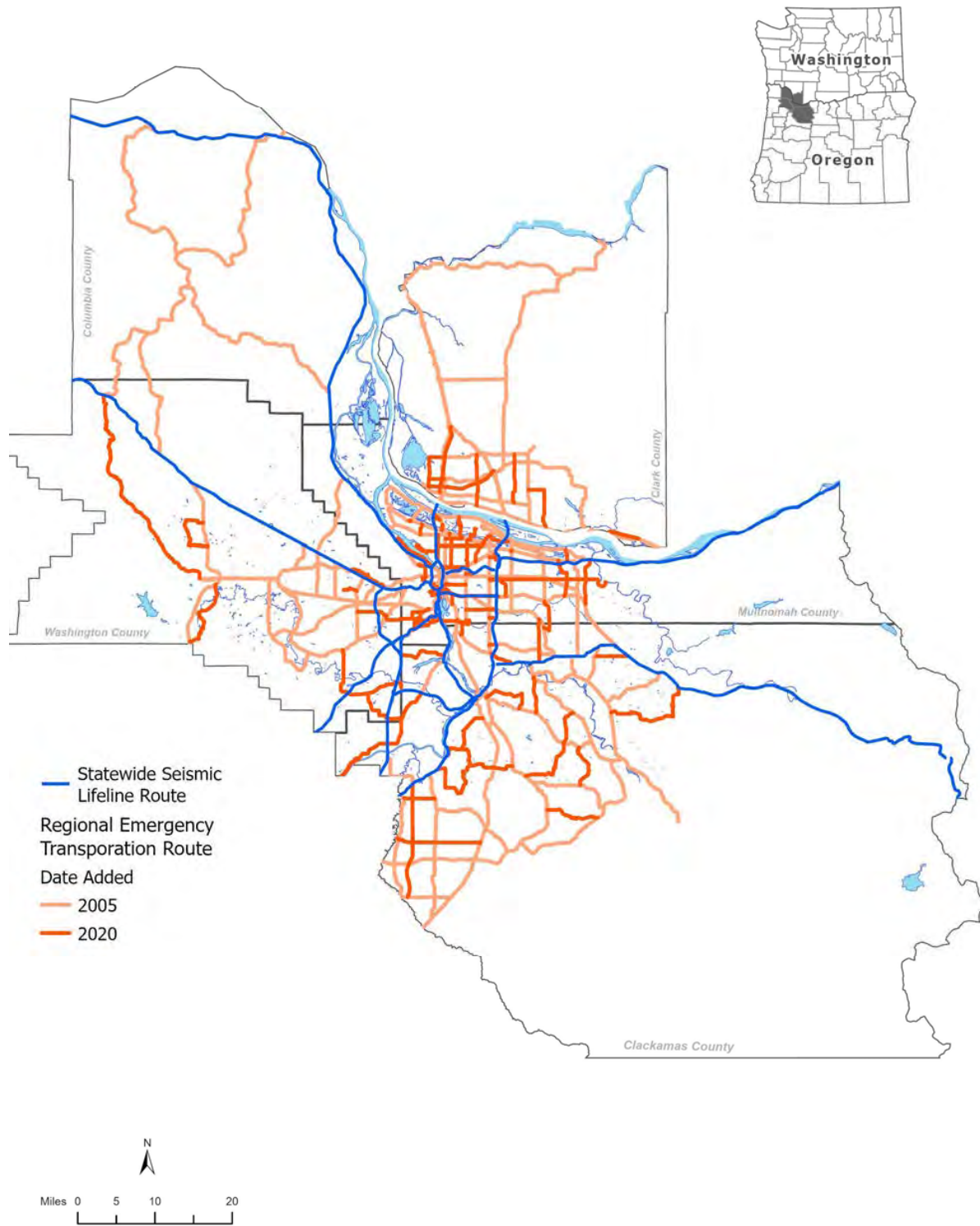


Figure ES-2: Regional Emergency Transportation Routes

Conclusions and Next Steps

The regional emergency transportation routes play an important role in the region’s resilience and ability to respond to multiple hazards, particularly to a catastrophic CSZ earthquake. The data set and on-line RETR viewer produced in this effort will be distributed to emergency managers and transportation planners throughout the region for use in future planning and during disaster response and the early recovery period. Coordinated planning can inform emergency transportation response planning and set the stage for agencies to seek funding for improvements to increase route resiliency to accelerate response and recovery times within the region.

Section 8 of the report outlines a set of necessary follow-on work raised during the course of this planning effort, but which the current project could not meaningfully address. The recommendations are summarized below, including a Phase 2 project led by RDPO and Metro (to be funded by the Urban Areas Security Initiative grant) to address recommendations 2, 3, 4 and 5. Additional resources are needed to advance the full list of recommendations for future work.

	Recommendation	Level	Lead / Key Partners
1	Integrate RETRs into other planning and investment decision-making processes	State, Regional, and Local	Various
2	Prioritize or tier the regional ETRs	Regional	RDPO & Metro <i>RETR Phase 2</i>
3	Develop RETR management plans to include: RETR operations in an emergency, evaluation of specific hazard events, maintenance and coordination between jurisdictions, and transition to recovery	Local with regional facilitation	Local jurisdictions with facilitation by RDPO & Metro <i>RETR Phase 2</i>
4	Better address vulnerable populations	Regional and Local	RDPO & Metro Social Vulnerability Tool (SVT) <i>RETR Phase 2</i>
5	Formalize the RETRs and agree to a plan for consistent updates	Regional	RDPO & Metro <i>RETR Phase 2</i>
6	Integrate RETR and LETRs into evacuation planning	Local and regional	Counties in partnership with RDPO and other agencies
7	Engineering evaluation of top priority routes for seismic upgrades	State, Regional, and Local	Various
8	Evaluate river routes for use in response to catastrophic event	Regional/State	Ports and Coast Guard, State Resilience Office
9	Develop equity-centered public messaging for transportation in emergencies	Regional	RDPO Public Messaging Task Force
10	Evaluate bike and pedestrian options for emergency transportation	Local	Various

This report was developed and finalized at a time when the Portland-Vancouver region—along with the rest of the world—is confronting a different kind of disaster in the response to COVID-19. The region (and Oregon) also experienced devastating wildfires in September 2020 as this work was underway, underscoring the need to be prepared and resilient. The alignment of these circumstances has provided an opportunity to reflect on how the current public health and economic disruption, and the 2020 wildfires are both like and unlike the kind of disruption that may occur at a regional scale following a CSZ event.

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APPENDIX A

Emergency Transportation Routes Work Group (EWRG) Members

APPENDIX B

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APPENDIX C

TREC at PSU Metropolitan Regional ETR Report

APPENDIX D

Chapter 6 - 2012 ODOT Seismic Lifeline Vulnerability Synthesis and Identification Report

APPENDIX E

GIS Methodology Report (FLO)

APPENDIX F

Large Format Maps

Regional Emergency Transportation Routes Update

for the Portland-Vancouver Metropolitan Region in Oregon and Washington

1.0 INTRODUCTION

In 2019, the Regional Disaster Preparedness Organization (RDPO), in partnership with Metro, contracted the Thuy Tu Consulting Team, consisting of Thuy Tu Consulting, LLC; Salus Resilience; Cascade GIS & Consulting, LLC; and FLO Analytics to update the designated Regional Emergency Transportation Routes (RETRs) for the five-county Portland-Vancouver metropolitan region. The approximately 4,440-square mile study area consists of Clackamas, Columbia, Multnomah, and Washington counties in Oregon as well as Clark County in Washington. The last update occurred in 2006¹ under the Regional Emergency Management Technical Committee (REMTEC) of the Regional Emergency Management Group (REMG)—the predecessor to the RDPO.

For this RETR update effort, the project team assembled data, input, and participation from agencies within the region; established a methodology and evaluation factors; and developed a process and proposed evaluation framework to update the existing RETRs. This first phase establishes an agreed upon updated and cataloged network of RETRs, a comprehensive dataset for use in future planning and update efforts, and an evaluation that will aid future phases of work. A second phase of the project will enable the agencies within RDPO to regionally prioritize and operationalize the RETRs for an emergency response to a Cascadia Subduction Zone (CSZ) level event or other regional emergency.

Coordinated planning and prioritization can then to inform emergency transportation response planning and set the stage for agencies to seek funding for improvements to increase route resiliency to accelerate response and recovery times within the region. Although this effort is primarily focused on updating the RETRs for emergency response immediately following a large seismic event, considerations for other natural hazards, such as flooding, landslide, and severe weather, have been incorporated into the data set and project recommendations for future consideration, including work to support all hazard transportation recovery planning.

¹ REMG was created in 1993 through an intergovernmental agreement between the five counties, City of Portland, Metro, and 15 other jurisdictions in the Portland Metropolitan Region and consisted of a technical committee (REMTEC), and a policy committee of elected leaders (REMPAC). The mission was focused on information-sharing and networking among public and private sector emergency managers and advancing projects like the ETR project. REMTEC reported to REMPAC (elected leaders representing member jurisdictions) about opportunities for and the status of their regional collaborative efforts. The RDPO absorbed REMTEC into its structure, as well as the work groups of the then UASI program structure, and created new Steering and Policy Committees when its IGA was fully executed in early 2015.

1.1 Purpose and Outcomes

1.1.1 Project Purpose

This report presents the results of a 2-year regional project led by the RDPO and Metro to update RETRs in the five-county Portland-Vancouver metropolitan region. The geographic scope of the planning effort included Clark County in the state of Washington, and Columbia, Clackamas, Multnomah and Washington Counties in the state of Oregon.

1.1.2 Regional ETR Project Update Purpose

The regional ETR update project (2019-2021) built upon an existing network of regional Emergency Transportation Routes (ETRs) designated in 1996 and updated in 2006. The project accounted for multiple natural hazard risks and incorporated updated natural hazard risk analyses, such as the Oregon Department of Geology and Mineral Industries (DOGAMI) Enhanced Earthquake Impact Analysis (2018-2020) and more recent planning work by the City of Portland, the five counties, and the Oregon Department of Transportation (ODOT) to evaluate seismic risks along state-designated seismic lifeline routes (SSLRs) located in Oregon. The project also accounted for seismic updates to infrastructure within the region since 2006, such as the seismically resilient Sellwood and Tilikum Crossing bridges. **The project resulted in an expanded network of regionally-designated surface transportation routes that connects the region's most critical infrastructure and essential facilities, population centers and most vulnerable communities in the event of an emergency.**

This planning effort was supported by the ETR work group (EWRG), a multi-disciplinary team of more than 30 local, regional, and state emergency management, transportation planning, engineering, and operations and public works staff from 17 agencies within the five counties. The EWRG provided input on the project scope and deliverables and helped to coordinate and solicit input on key deliverables from stakeholders in their respective jurisdictions. The members of this work group are listed in Appendix A.

Project Outcomes

1. Multi-disciplinary collaboration of emergency management with transportation planning, engineering, and operations, ports, transit and public works stakeholders.
2. Enhanced visibility of regional ETRs and improved understanding of their resilience that informed a regional dialogue regarding resilience and recovery among policymakers, senior leadership, and planners in the region.
3. A regionally-accepted network of updated RETRs that provides adequate connectivity to critical infrastructure and essential facilities as well as the region's population centers and vulnerable communities.

4. A comprehensive Geographical Information System (GIS) database and on-line RETR viewer established for future planning and operations. The data and on-line viewer provide valuable resources to support transportation resilience, recovery and related initiatives in the region .
5. A regionally-accepted set of recommendations for follow-on work to support ongoing local, regional and state efforts to improve the region’s resilience.

1.1.3 Key Project Deliverables

As guided by the EWRG, the key deliverables of this first phase of the RETR update project include the following:

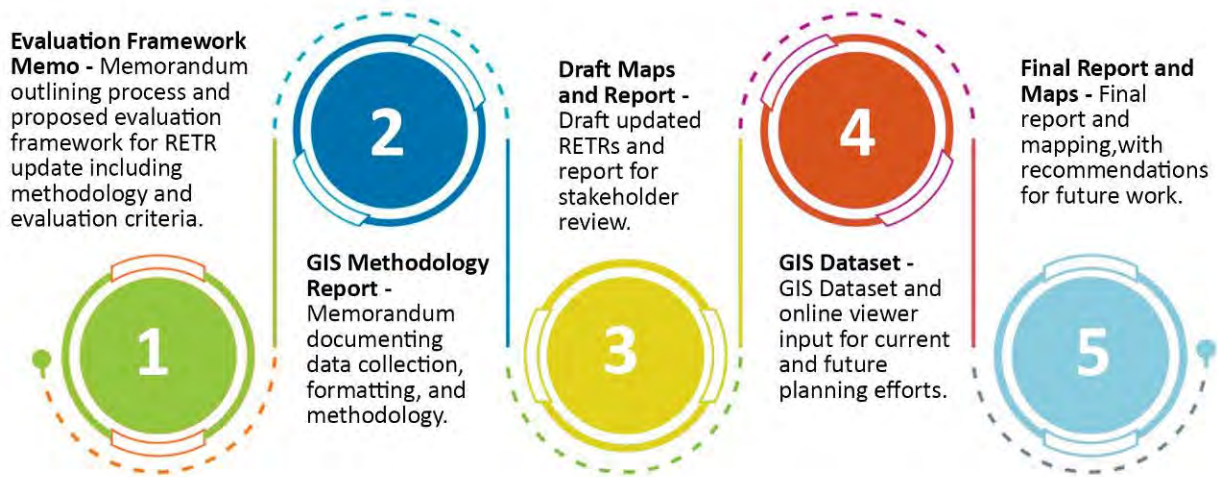


Figure 1.1: Key Project Deliverables

1.1.4 Process and Timeline

The project team established the following process and timeline for updating the RETRs.

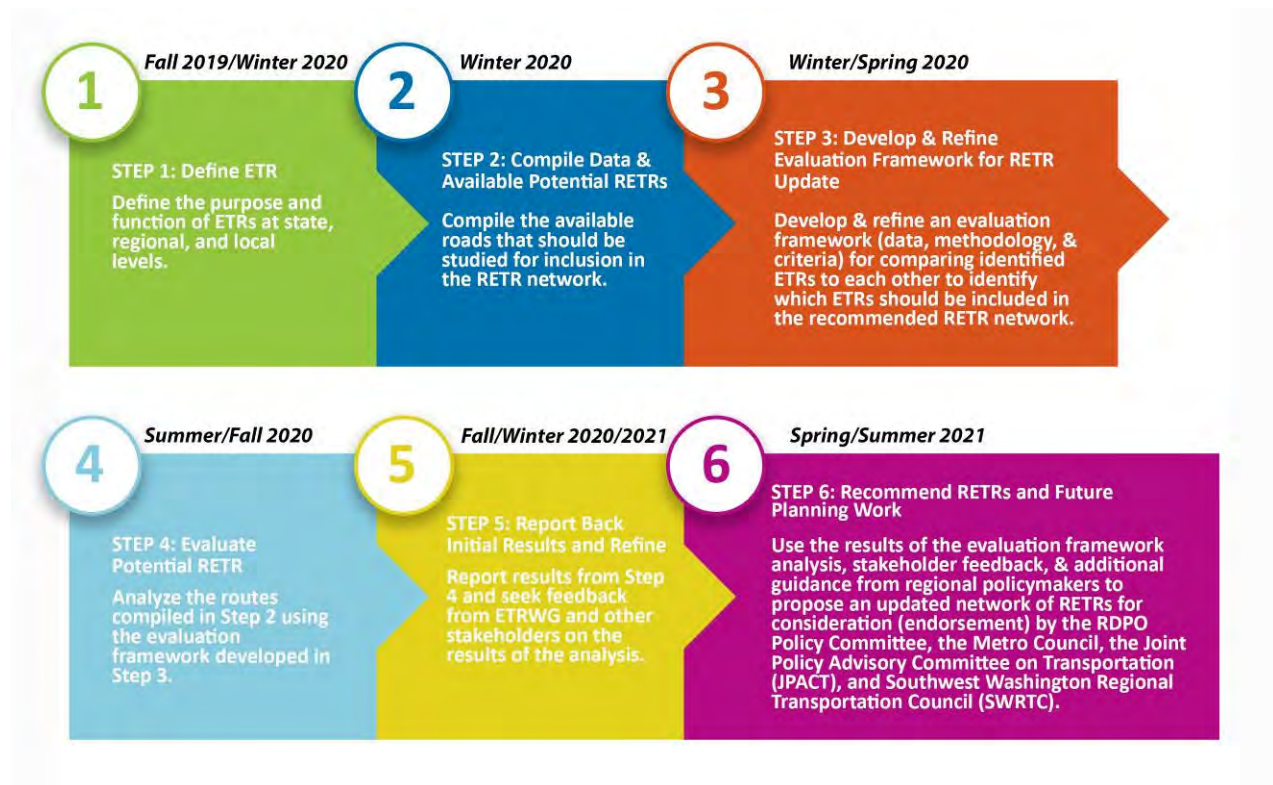


Figure 1.2: Process and Timeline for RETR Update Project

1.2 Document Contents

- **Section 1** provides the introduction, purpose, and project outcomes with key deliverable and approach.
- **Section 2** provides the background and history of regional ETRs and the summary of a Portland State University (PSU) memorandum on best practices for emergency transportation route designations developed in 2019.
- **Section 3** provides an overview of key concepts and the ETR development methodology. Definitions are provided for ETRs, critical infrastructure, and essential facilities. The process included compiling data and available potential RETR routes; developing the evaluation framework for RETR designation; and evaluating the potential RETRs based on route connectivity and access, route resiliency, and community and equity.
- **Section 4** provides a brief summary of data collection, data analysis methods, and mapping components for the project.

- **Section 5** provides analysis results, considerations and assessments of route connectivity, and route resilience and community and equity implications. A discussion on debris management, route redundancy, highlighted routes with significant resilience issues, and routes to be refined at a later date is also provided in this section.
- **Section 6** provides the final updated route summary.
- **Section 7** outlines the anticipated applications and recommendations for future planning work.

2.0 STAKEHOLDER ENGAGEMENT PROCESS

2.1 Introduction

A partnership of the Regional Disaster Preparedness Organization (RDPO) and Metro, the Regional Emergency Transportation Routes (RETRs) update resulted in an update to the regional ETR designations for the five-county Portland-Vancouver region, which includes Clackamas, Columbia, Multnomah and Washington counties in Oregon and Clark County in Washington. The last update occurred in 2006.

A project management team comprised of RDPO and Metro project managers provided day-to-day oversight of the project and management of the consultant team. A project executive team comprised of RDPO and Metro management provided strategic policy guidance and support to the project management team.

The ETR working group—a multi-disciplinary team of more than 30 local, regional, and state emergency management, transportation planning and public works staff from 17 agencies—supported the planning effort. The working group provided input on the project deliverables and helped to solicit input on key deliverables from stakeholders in their respective jurisdictions.

The planning effort evaluated existing and potential routes across a range of connectivity, resilience and equity factors to recommend an updated set of designated regional ETRs that:

- Connect to Statewide Lifeline Routes in Oregon
- Provide connectivity and access to state and regional critical facilities and essential destinations within and across the five-county region
- Provide connectivity and access to the region’s population centers and most vulnerable communities

The planning effort also developed a database of readily available geospatial data and identified recommendations for future planning work. The database is expected to be a valuable resource for coordination with stakeholders for ongoing state, regional, and local emergency response planning and resilience efforts as well as development of local and regional transportation plans and capital improvement programs. Coordinated planning can help set the stage for agencies and the region to seek funding for improvements to increase route resiliency to decrease response and recovery times within the region.

2.2 Project Timeline and Process

The overall project timeline is provided in Figure 2-1.

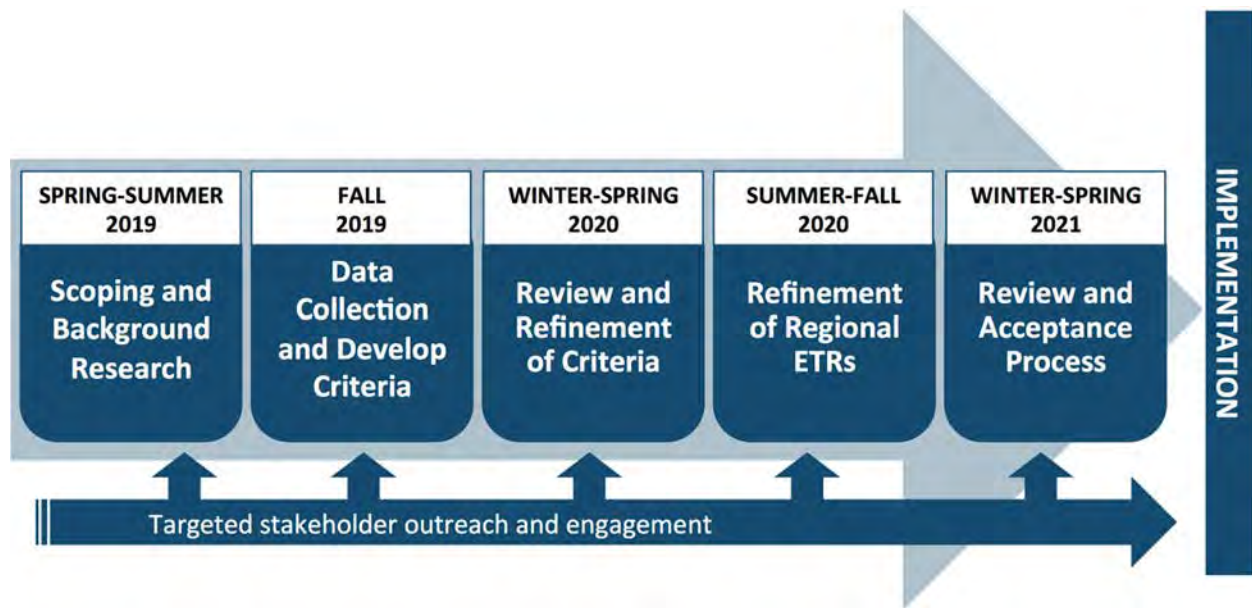


Figure 2.1: Timeline for Updating Regional Emergency Transportation Routes

Technical work and engagement of policymakers, planners and other stakeholders was more extensive for this RETR update to better integrate transportation planning with planning for resiliency, recovery and emergency response as well as the investments that will be needed to make the region's transportation system more resilient.

2.3 Stakeholder Engagement Overview

The RDPO and Metro developed a focused stakeholder engagement plan with the ETR work group that aimed to:

- Communicate complete, accurate, understandable, and timely information to the regional stakeholders throughout the project.
- Actively seek stakeholder input prior to key milestones during the project and share with Metro Council and RDPO Steering and Policy committees in a manner that supports the decision-making and acceptance process.
- Build broad stakeholder support for project outcomes.
- Provide meaningful opportunities for input from policymakers and key stakeholders.

2.3.1 Summary of Key Engagement Activities | 2019 to 2021

The stakeholder engagement plan guided the strategic direction, approach and desired outcomes for sharing information with and seeking input from local, regional and state partners and relevant transportation, emergency management, and public works stakeholders throughout the process.

The engagement plan relied on existing RDPO and Metro technical and policy committees and working groups (including the ETR work group that was formed to advise on this project) as well as briefings to county coordinating committees to engage individual cities within each county in a coordinated manner.

A summary of activities is provided below :

- 9 Regional ETR work group meetings (2019-2021)
- 3 TPAC/MTAC workshops (2019-2021)
- 1 community leaders' forum (2019)
- 13 county-level coordinating committee (staff) meetings (2020-21)
- 4 county-level coordinating committee (policy) meetings (2020-21)
- 8 jurisdictional specific meetings to review draft maps (2020)
- 5 REMTEC briefings (2019-2021)
- 3 Public Works work group briefings (2021)
- 4 RDPO Steering Committee briefings (2019-2021)
- 1 Metro Policy Advisory Committee briefing (2021)
- 3 Joint Policy Advisory Committee on Transportation briefings (2019-2021)
- 2 Metro Council briefings (2020-21)
- 2 Southwest Washington Regional Transportation Advisory Committee briefings (2020-21)
- 2 Southwest Washington Regional Transportation Council briefings (2020-21)
- 3 RDPO Policy Committee briefings (2021)

2.3.2 Agency and Jurisdictional Outreach and Coordination

RDPO and Metro staff engaged and consulted with cities, counties and agencies with focused outreach and communication efforts to address specific needs of each agency or jurisdiction and facilitated collaboration and coordination among the agencies and jurisdictions in the process. Throughout the process, staff engaged, consulted and coordinated with:

- Transportation, emergency management, and public works departments of each of the five counties and the City of Portland (via the RDPO's working groups for these disciplines)
- Oregon Department of Transportation (ODOT)
- Washington Department of Transportation (WSDOT)
- Oregon Department of Geologic and Mineral Industries (DOGAMI)
- Transit providers, including TriMet, SMART, and C-TRAN
- Port of Vancouver
- Port of Portland

- Cities within each of the five counties (through RDPO working groups, Metro advisory committees, jurisdiction specific meetings, and county coordinating committee meetings)
- Clark Regional Emergency Services Agency (CRESA)

The team convened nine ETR work group meetings and three joint MTAC/TPAC workshops . The project team engaged the Metro Council, the Joint Policy Advisory Committee on Transportation (JPACT), Metro Policy Advisory Committee (MPAC), standing County Coordinating Committees (as well as their technical advisory committees), Southwest Washington Regional Transportation Council (SW RTC), and Southwest Washington Regional Transportation Advisory Committee (RTAC).

The RDPO working groups of REMTEC, which includes representatives from electric and natural gas utilities and Public Works (which includes the Regional Water Provider’s Consortium), were engaged and consulted as key stakeholders due to their roles in emergency response and/or critical infrastructure and social services for vulnerable populations.

In March 2020, the COVID-19 emergency declaration and response prompted Emergency Operations Centers (EOCs) to activate region-wide and forced cancellation of in-person meetings throughout Oregon and Washington for the remainder of the project. As a result, most engagement activities in 2020 and all of 2021 occurred online using virtual meeting platforms.

2.3.3 Community Engagement

On August 2, 2019, Metro hosted a community leaders’ technical briefing and discussion, bringing together community leaders focused on social equity, environmental justice, labor fairness and community engagement. Invitees included community representatives on Metro Policy Advisory Committee (MPAC), Metro’s Committee on Racial Equity (CORE), Metro’s Public Engagement Review Committee (PERC), Metro Technical Advisory Committee (MTAC) and Metro’s Transportation Policy Alternatives Committee (TPAC), as well as previous participants in 2018 Regional Transportation Plan (RTP) regional leadership forums and those involved in discussions about an affordable housing measure. More than 100 community leaders were invited, and approximately 20 leaders participated. The regional ETR update was one of three planning efforts community leaders were asked to provide feedback on.

Organizations who participated in the Community Leaders’ Forum:

- Woodlawn Neighborhood Association
- Urban League
- Sullivan’s Gulch Neighborhood
- Asian Pacific American Network of Oregon (APANO)
- Immigrant and Refugee Community Organization (IRCO)
- Portland African American Leadership Forum (PAALF)
- Willamette Falls Trust
- Proud Ground
- The Street Trust
- 1000 Friends of Oregon

- Transportation for America
- Verde
- Central City Concern
- East Portland Action Plan
- Safe Routes to School Partnership

Appendix B contains a summary of the discussion.

2.3.4 Public Information

Information on the progression of the project was communicated through a project website (<https://rdpo.net/emergency-transportation-routes>), project factsheets, and ongoing agency and jurisdictional outreach.

Appendix B includes a summary of key engagement and consultation activities from 2019 to 2021, which includes agency and jurisdictional outreach and coordination, community engagement, public information, decision-making processes and endorsements. *Section 8.0 Anticipated Applications and Recommendations for Future Work* outlines the recommendations for future planning and engagement work.

3.0 BACKGROUND AND HISTORY

3.1 History of RETRs

First designated in 1996 by REMG, the current RETRs are priority routes targeted for rapid damage assessment and debris removal during an emergency to facilitate life-saving and life-sustaining response activities. They were established in a memorandum of understanding (MOU) between the ODOT; WSDOT; the Port of Portland; Clackamas, Columbia, Multnomah, and Washington counties; and the City of Portland in 2006. The route changes are shown below in Figure 3.1.

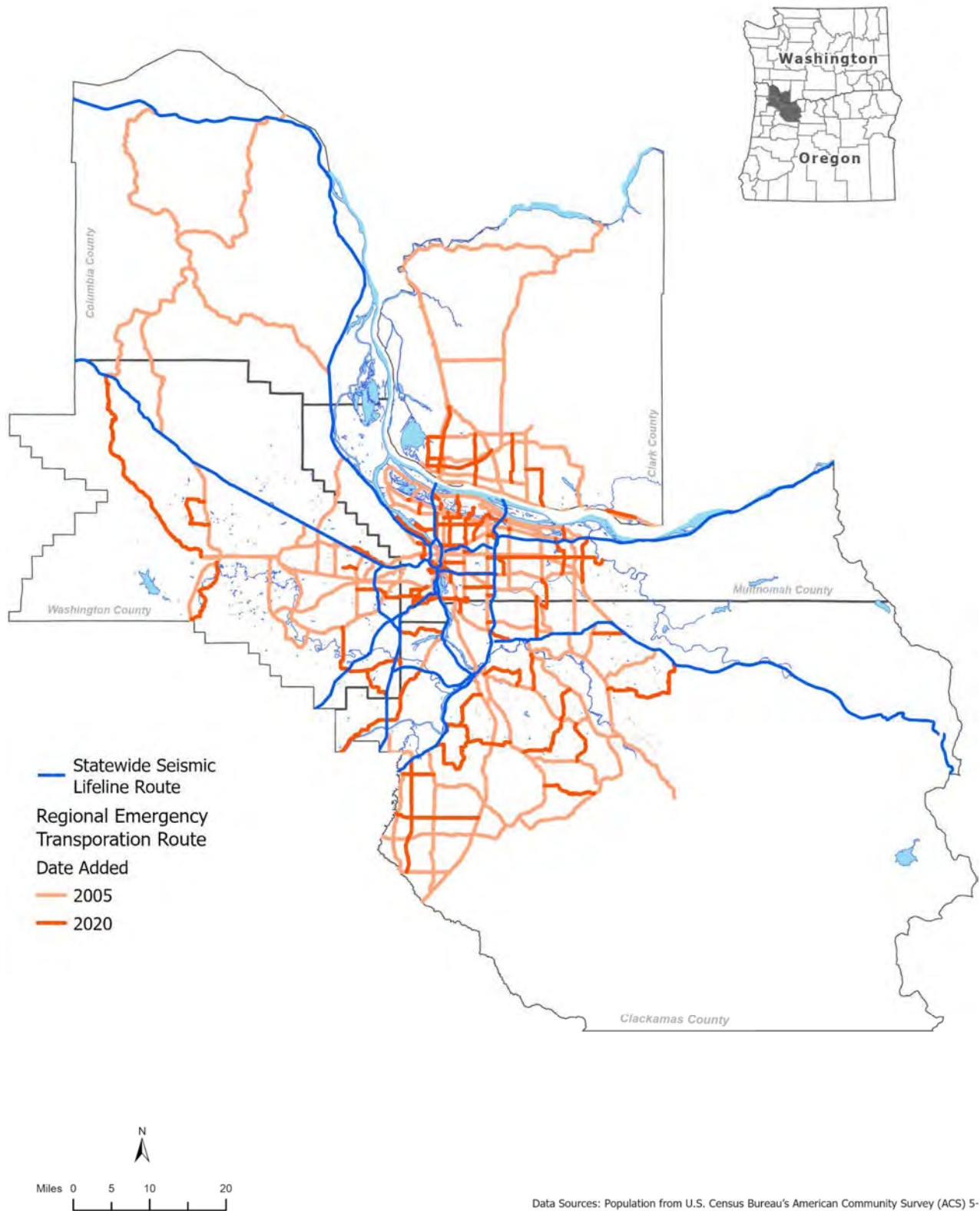


Figure 3.1. Evolution of RETRs

Since 2006, the region has experienced significant growth and demographic changes and new technology, data, and mapping have greatly expanded our understanding of the effects of seismic hazards in the region. The project considered these population trends and better-defined risks, as well as priorities for emergency response. Priorities for emergency response include debris removal and transport of first responders (e.g., police, fire, public works, emergency medical services), fuel, essential supplies, debris, and patients, and access to critical facilities and services, especially for vulnerable populations.

This RETR project delivers an updated RETR map and data in GIS platform, a list of ETR corridors, and accompanying report, and recommendations for use by state, regional, and local entities in future planning for resiliency, recovery and emergency response.

For the purposes of this project, the RETRs were primarily evaluated using a seismic lens (including landslide risk), specifically for a CSZ level event. The evaluation considered other hazards, such as flooding and landslides,; however, due to the limited scope and budget of this project, a future project that includes a more detailed evaluation of these and other hazards, such as wildfire, severe weather, and climate change, has been recommended in *Section 7 Anticipated Applications and Recommendations for Future Work* of this report.

3.2 Summary of Portland State University Research

A background research report developed by the Transportation Research and Education Center (TREC) at PSU in August 2019 provides a summary of best practices and considerations for updating the RETRs in the Portland-Vancouver metropolitan region. That report is included in this report as Appendix C. The authors reviewed local, regional, and statewide technical documents and reports authored by various planning, policy, and emergency management agencies. They also solicited feedback from representatives at the City of Portland Bureau of Transportation (PBOT) and ODOT, as well as Multnomah, Washington, Clackamas, Columbia and Clark counties. These documents are included in the appendix of the report, their publication date, agency, and how ETRs are defined within the document and their context on emergency transportation is outlined in the review summary.

Based on the PSU research, four types of ETRs were discussed in local, regional, and statewide planning, engineering, and emergency management documents. Among all the documents reviewed, the majority of the documents identified transportation as crucial to recovery after a disaster. Some pointed out that routes may be impassable following an event, and others discussed the use of evacuation routes in the event of an emergency; however, none established criteria or processes for identifying ETRs at the local or regional level. The background provided in this report acted as the foundation for the development of our update methodology outlined in *Section 3.0 Overview of Key Concepts and ETR Development Methodology*.

3.3 ODOT and Local Government Document Review

3.3.1 Statewide Seismic Lifeline Routes Review

The team reviewed the ODOT Seismic Lifelines Evaluation, Vulnerability Synthesis, and Identification report dated May 2012 and subsequent Seismic Plus report (2014). This report identified three main goals of lifeline routes.

1. Support survivability and emergency response efforts immediately following event
2. Provide transportation to facilities that are critical to life support functions for interim period following event
3. Support statewide economic recovery

The reports establish a three-tier system for prioritizing retrofits of lifeline segments, with the most critical linkages necessary to serve the greatest number of residents at the lowest investment of time and money get top priority. Links to the reports are provided below, and Section 6 of the report outlining ODOT's Statewide Seismic Lifeline Routes is provided in Appendix D. which includes tier definitions and a map of Tier 1, 2, 3 routes.

<https://www.oregon.gov/ODOT/Planning/Documents/Seismic-Lifelines-Evaluation-Vulnerability-Synthese-Identification.pdf>

https://www.oregon.gov/ODOT/Bridge/Docs_Seismic/Seismic-Plus-Report_2014.pdf

3.3.2 ODOT and County Seismic Lifeline Bridge Detour Reports

In 2018, ODOT requested that each county in western Oregon develop recommendation for local alternate routes that could serve as detours to SSLRs (defined in *Section 3.1.2 Define Critical Facilities and Essential Facilities*) that have seismically vulnerable bridges. The goal was to evaluate potentially more resilient bridges or routes with bridges that would be more cost-effective to retrofit or replace than retrofitting or replacing seismically-vulnerable bridges on the statewide seismic lifeline routes. Multnomah, Clackamas, and Washington counties completed this review concurrent with the RETR update.

Each county convened a work group that included ODOT and the cities in their respective county to complete this work. While the overall approach, stakeholder engagement and level of analysis varied in each county, each county considered unstable slopes, liquefaction, and landslide susceptibility in their evaluation of ETRs. Clackamas County used this work to update and prioritize their County's ETRs considering hazard data as well as populated areas, isolated populations and locations of critical infrastructure and essential facilities. Washington County used this work as an opportunity to update their County ETRs, similar to Clackamas County, but did not prioritize their routes. Multnomah County limited their focus to the SSLRs, considering unstable slopes and landslide susceptibility and did not review their County ETRs more broadly to identify potential updates, considering populated areas and locations of critical facilities. Recommendations for seismic detour routes from each county were shared with the RETR project team and have been included in the updated RETRs.

3.3.3 City of Portland Transportation Recovery Plan

In addition to the three ODOT/County seismic lifeline bridge detour reports, the City of Portland developed a Transportation Recovery Plan in 2018. Development of the plan included a review of ETRs and critical infrastructure and facilities in the City of Portland. The Plan identified several recommendations that have been included in the updated Regional ETRs, including the addition of:

- New and/or improved transportation facilities (such as the new Sellwood Bridge and the Tilikum Crossing)
- Routes that provide access to the Oregon Health Sciences University (OHSU) campus, TriMet's Center Street, Merlo and Columbia Boulevard bus garages.

4.0 OVERVIEW OF KEY CONCEPTS AND ETR DEVELOPMENT METHODOLOGY

4.1 Key Concepts and Definitions

4.1.1 Define ETRs

The first step in developing our methodology was to develop specific definitions of ETRs based on the PSU/TREC research included in Appendix C, on local, regional, and state ETRs planned in the region; best practices from other states and British Columbia, Canada; and discussions with the RDPO EWRG and other stakeholders. The results of this research and stakeholder discussions indicate that the levels and types of ETRs planned within the region have not been consistently defined to date and often overlap. To establish a common definition in the region, **an ETR is defined as a route used during and after a major regional emergency or disaster to transport emergency resources and materials, including essential supplies, debris, equipment, patients, and personnel.** It is recognized these routes will also play an important role as the region transitions from emergency response to recovery in the short- and long-term. Section 3.1 .2 distinguished between five tiers of ETRs and their role in an emergency,

Emergency Transportation Route (ETR): Routes used during and after a major regional emergency or disaster to transport resources and materials including first responders (e.g., police, fire and emergency medical services), fuel, essential supplies, debris, equipment, patients and personnel.

4.1.2 Define Critical Facilities and Essential Facilities

Critical infrastructure and essential facilities are grouped into three categories: State/Regional, County/City, and Community/Neighborhood. Critical infrastructure in this case includes lifelines other than the roadway transportation network, such as water, wastewater, electricity, fuel, communications, and intermodal transportation (e.g., transit, rail, airports, and marine terminals, river access points). Utility GIS data were not readily available for this project; however, a brief review of connectivity to Portland Water Bureau (PWB) critical infrastructure was included. These data are not included in the overall GIS database for security reasons.

Essential facilities included places such as hospitals and health care facilities; emergency operations centers (EOCs); police and fire stations; public works facilities; state, regional, and local points of distribution (PODs); designated debris management sites; and shelters and community centers.

Table 4.1 below shows how critical infrastructure and essential facilities are grouped into the three categories based on what is typically accessed from each level of ETR (see graphic on following page for levels). Further details on the critical infrastructure and essential facilities incorporated in the GIS analysis can be found on in *Section 4.2 Compiled Data and Available Potential RETRs*.

Table 4.1 – Critical Infrastructure and Essential Facilities

Category	Critical Infrastructure Considered	Essential Facilities Considered
State/Regional	<ul style="list-style-type: none"> • Airports • Marine port terminals • Rail yards • Regional level lifeline facilities, such as power and water transmission lines and state and regional fuel PODs • Regional transit facilities, such as transit EOCs, bus barns, and maintenance facilities 	<ul style="list-style-type: none"> • Regional hospitals • State, regional and county EOCs • State and regional PODs • State and county public works facilities and equipment stores • Regional Debris management sites • Transfer stations • Fairgrounds
City/County	<ul style="list-style-type: none"> • Local lifeline facilities, such as local water transmission infrastructure • Local river connections (boat ramps) • Transit hubs and transit centers 	<ul style="list-style-type: none"> • Health clinics and local hospitals and health care facilities • Police and fire stations • City EOCs • County and city PODs • City and utility public works facilities • Designated debris management sites • Local Transit Centers
Community/Neighborhood	<ul style="list-style-type: none"> • Lifeline distribution systems • Isolated lifeline distribution infrastructure 	<ul style="list-style-type: none"> • Schools • Community centers • Shelters • Community PODs

Considering the background research and stakeholder input, the project team identified five tiers of ETRs in the region, as listed below and shown on Figure 4.1 below. A discussion of each tier follows.

- Federal Strategic Highway Network (STRAHNET)
- Statewide Seismic Lifeline Routes (SSLRs)
- Regional Emergency Transportation Routes (RETRs)
- Local Emergency Transportation Routes (LETs)
- Local Emergency Response Routes (LERRs)



Figure 4.1: Emergency Transportation Route Tiers

Federal Strategic Highway Network (STRAHNET) and Connectors

The STRAHNET is a national system of roads identified by the Department of Defense (DOD) in coordination with the Federal Highway Administration (FHWA) for the purposes of emergency mobilization and peacetime movement of heavy armor, fuel, ammunition, repair parts, food, and other commodities.

Statewide Seismic Lifeline Routes (SSLRs)

State-owned roadways pre-designated in the Oregon Highway Plan by the Oregon Transportation Commission as priority transportation routes in Oregon. SSLRs provide key emergency response connections between regions within Oregon. Their primary function is to provide “a network of streets, highways, and bridges to facilitate emergency services response and to support rapid economic recovery after a disaster.” The Oregon Department of Transportation (ODOT) has identified tiered levels of SSLRs that are prioritized by the desired time for routes to be open to vehicular traffic after an event (e.g., Tier 1 routes are most important and desired to be open first).

Regional Emergency Transportation Routes (RETRs)

A network of state- and locally owned (county and city) roadways pre-designated by the region as priority transportation routes that can best provide connectivity for emergency operations in the region in the event of a major disaster or earthquake. These routes are priorities targeted during an emergency for rapid damage assessment and debris clearance and used to facilitate life-saving and life-sustaining response activities throughout the region.

These routes often connect multiple jurisdictions in the region, providing key emergency response connections from SSLRs to State/Regional essential facilities and critical infrastructure, as well as to local ETRs in each county. Their primary function is to form a regional backbone of roads that connect regional population centers, essential facilities, and critical infrastructure and services of state and regional importance to the SSLRs.

Local Emergency Transportation Routes (LETRs)

Locally owned roadways, pre-designated by local agencies (county and city) as priority transportation routes intended to provide a local network of arterials, collector, and local streets that will connect LERR (defined below) to RETRs. They are generally used to connect to more City/County critical infrastructure and essential facilities either directly or via RETRs.

Local Emergency Response Routes (LERRs)

Locally owned roadways intended to provide a network of streets to facilitate prompt response to routine fire, police, and medical emergencies within a single jurisdiction. LERRs also provide a connection from LETRs to Community/Neighborhood facilities and services, such as shelters, medical facilities, and community PODs. These facilities are often not pre-designated and can be defined based on the community needs, scale of the disaster, and resulting damage.

The Figure 4.2 displays the STRAHNET, SSLR and RETR for the region.

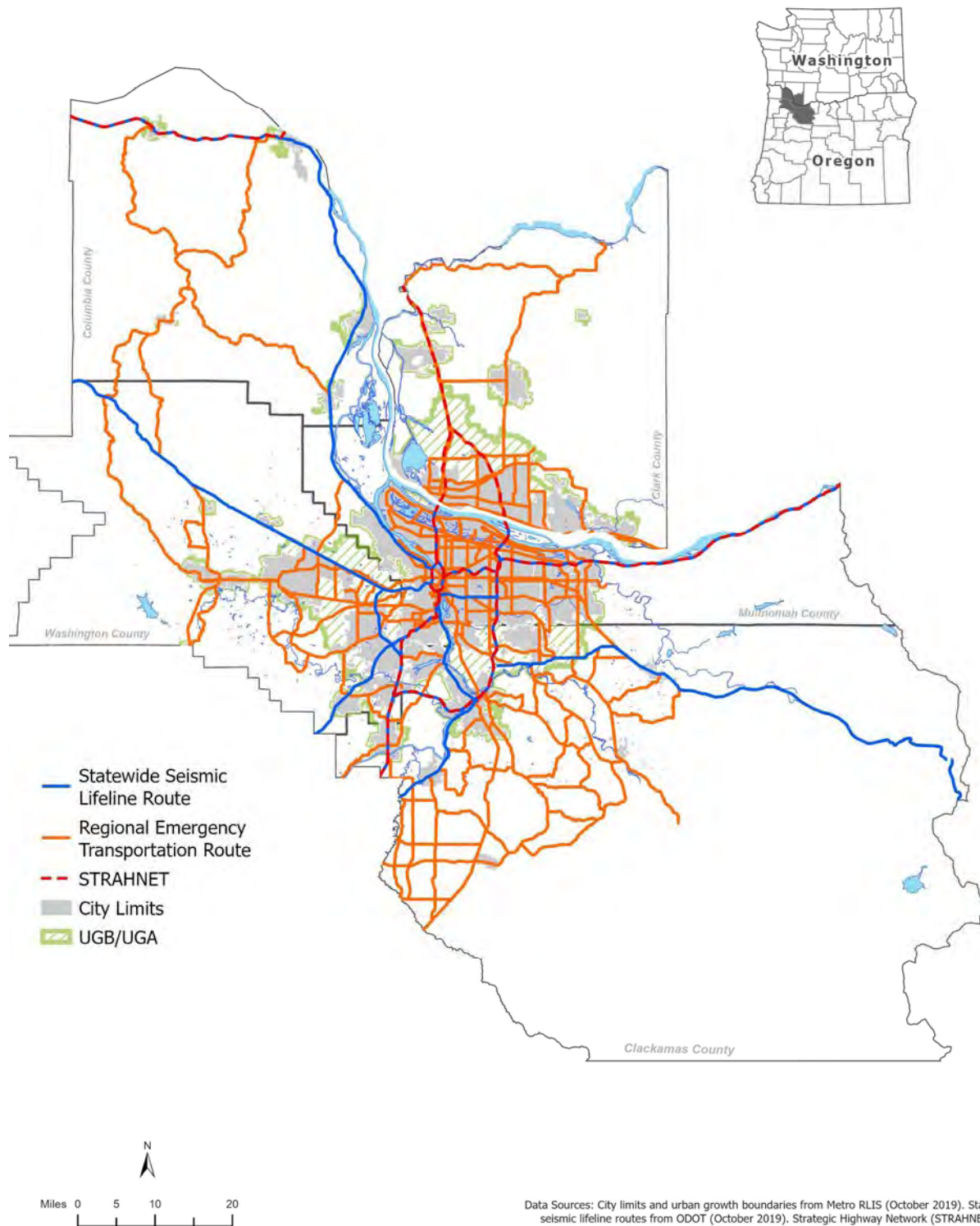


Figure 4.2: STRAHNET, SSLR and RETRs in the Portland-Vancouver Metropolitan Region

4.2 Data Compilation

The geographic scope of this project is the five-county Portland-Vancouver metropolitan area, including Clackamas, Clark, Columbia, Multnomah, and Washington counties (Counties) and their cities.

A regional geospatial data inventory was needed to support the evaluation and update process. The team compiled and aggregated readily available GIS data provided by project stakeholders and publicly available data from authoritative federal, state and regional sources to support the analysis. These data included:

- STRAHNET routes
- ODOT statewide seismic lifeline routes
- 1996/2006 regional Emergency transportation routes
- County and PBOT emergency transportation route designations (local and regional)
- County identified alternative detour routes to ODOT statewide seismic lifeline routes
- Routes and streets
- Tunnels and culverts
- Essential facilities, including:
 - Hospitals, clinics and other medical facilities
 - Police stations and fire stations
 - Critical vehicles and equipment storage facilities
 - Universities, schools, parks, and churches
 - Government buildings
 - Emergency Operations Centers (EOCs) – city, county, regional and state
 - Points of Distribution (PODs)
 - City and utility public works facilities
 - Disaster debris management sites
 - Transfer stations
 - Fairgrounds
- Critical infrastructure, including:
 - Routes and streets within the region
 - River ports, marine terminals, major shipping facilities, and airports
 - Transit locations and infrastructure (EOCs, bus garages, transit stations/centers, transit maintenance sites)
 - Water infrastructure and fuel storage sites
- ODOT bridge Seismic vulnerability (Oregon only)

Additional data collected included:

- Geologic hazard data (including landslide risk) as identified by DOGAMI and Clark County, Washington/Washington State Department of Natural Resources (WADNR)
- Urban growth boundaries (Oregon)
- Urban growth areas (Washington)
- Regional growth distribution to identify current and future population centers (Metro)

- Demographic data to identify vulnerable populations in the region, including race, ethnicity, English language proficiency, access to a vehicle, income, and age (U.S. Census data American Community Survey (2013-17) compiled by Metro)
- Designated over-dimensional freight routes (Metro)
- Utility providers were also consulted through RDPO's Public Works work group and Portland critical water infrastructure was considered in the evaluation.

4.3 Develop Evaluation Framework for RETR Designation

Based on the above definition of RETRs and the background research and stakeholder input received to date, the project team prepared the following recommendations for defining the methodology and criteria for evaluating and updating the RETRs.

The criteria used to establish the existing RETRs in 1996 and 2006 served as a starting point and included:

- State routes serving the metropolitan area were considered primary because of their high capacity and ability to handle oversized vehicles
- Relatively flat routes with few major gradients or potential landslide areas
- Routes serving major population centers
- At-grade level alternative routes at overpasses and underpasses

Additionally, the Counties and the City of Portland included the following additional criteria during their more recent internal reviews of ETRs and participation in ODOT's recent Seismic Lifeline Bridge Detour work described in Section 2.3.2.

- Seismic resilience of routes, including bridge seismic vulnerability and landslide risk
- Ability of roadway to accommodate over-dimensional vehicles and larger volumes of vehicles
- Access to airports, hospitals, and isolated communities

4.4 Evaluate Potential ETRs

The planning effort evaluated existing and potential routes across a range of connectivity, resilience and equity factors, shown in Figure 3.3, to recommend an updated set of designated regional ETRs that:

- Connect Statewide Seismic Lifeline Routes in Oregon.
- Provide connectivity and access to state and regional critical infrastructure and essential facilities within and across the five-county region.
- Provide connectivity and access to the region's population centers, isolated communities and most vulnerable populations.

The evaluation followed a methodology informed by the research conducted by PSU, available data sets and feedback from the EWRG and additional stakeholders. The evaluation addressed three key factors: Connectivity and Access, Route Resilience, and Community and Equity.

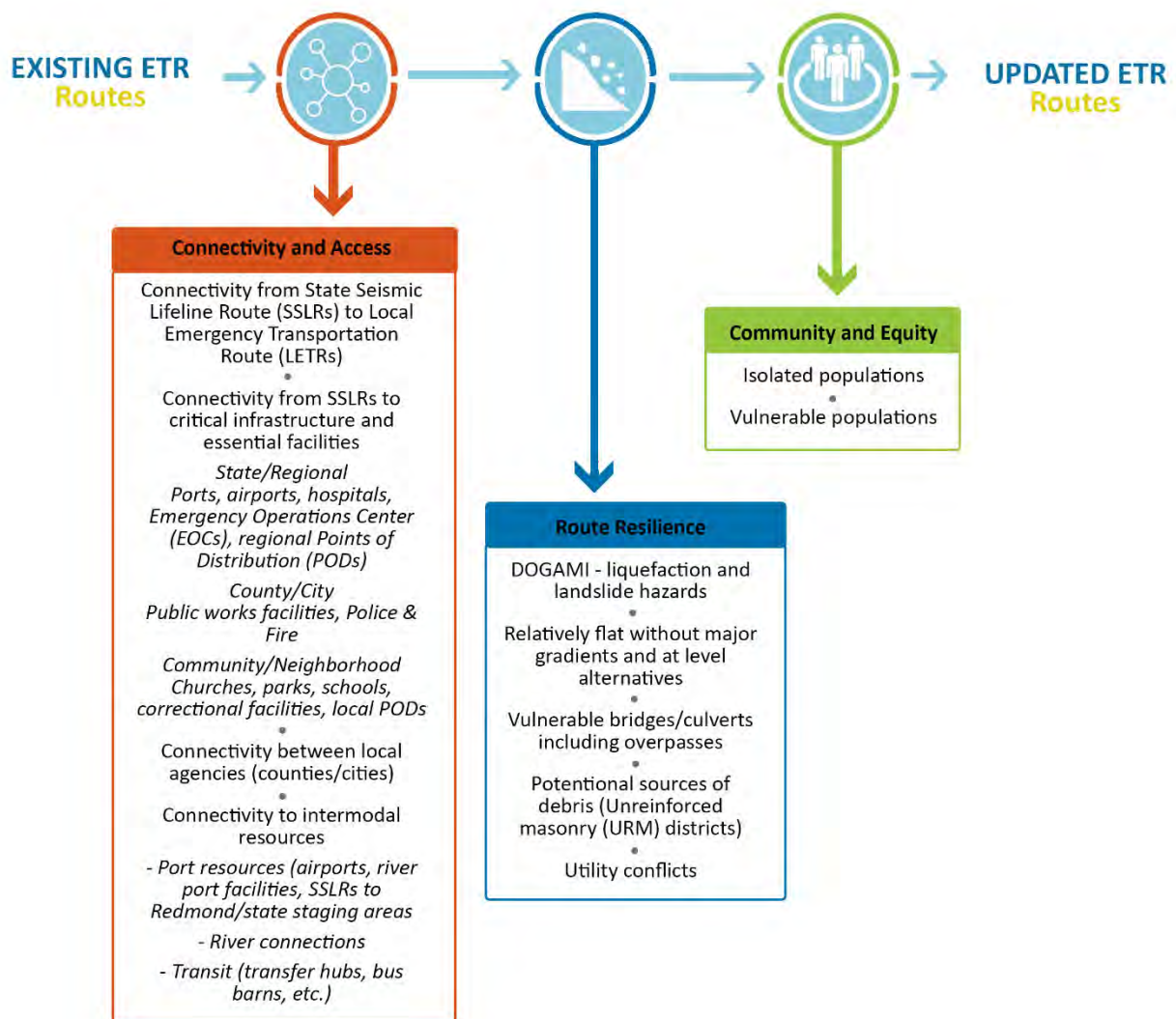


Figure 4.3: Summary of RETR Evaluation Framework Factors

Each of the factors considered in the evaluation are outlined below.

4.4.1 Connectivity and Access Factors

The “Connectivity and Access” category relates to route proximity to key resources that are likely to be essential after a disaster/seismic event.

- Connectivity and Access from SSLRs to LETRs
- Connectivity and Access from SSLRs to critical infrastructure and essential facilities (tiered by level as summarized in Table 1)
 - State/Regional – state, regional and county EOCs and PODs, hospitals, public works facilities
 - County/City – city EOCs and PODs, police and fire, health care facilities
 - Community/Neighborhood – churches, parks, schools, correctional facilities, community PODs (generally accessed through LETRs and LERRs)

- Connectivity and Access between local jurisdictions (counties/cities)
- Connectivity and Access to intermodal resources
 - Connectivity and Access to freight intermodal facilities
 1. SSLRs to Redmond Airport/Pendleton and other state staging areas
 2. Portland International Airport (PDX), Hillsboro and Troutdale Airports
 3. River port facilities and marine terminals (both sides of the Willamette and Columbia Rivers)
 4. Rail yards and rail lines (
 - Connectivity and Access to TriMet/C-TRAN/SMART transit facilities (transfer hubs, bus barns, maintenance facilities, etc.)

4.4.2 Route Resilience Factors

The “Route Resilience” category relates to the vulnerability of the route itself (including tunnels, bridges and culverts) to seismic and other natural hazards.

- Liquefaction and landslide hazards (DOGAMI and WADNR)
- Relatively flat routes without major gradients and at level alternatives
- Vulnerable bridges
- Potential sources of debris (unreinforced masonry (URM) districts)

4.4.3 Community and Equity Factors

The “Community and Equity” category relates to route proximity to population centers; isolated populations; and vulnerable populations after a disaster/seismic event for purposes of equitable rescue operations, emergency response or evacuation and providing equitable access to critical destinations (e.g., hospitals, temporary shelters, etc.).

The project used regional growth distribution data prepared by Metro in consultation with local jurisdictions in the five-county region to identify current populations centers and isolated populations. In addition, Metro compiled U.S. Census American Community Survey (ACS) 5-Year Estimates (2013-2017) data to identify census tracts with above regional average concentrations of potentially vulnerable populations in the five-county region. For this project, vulnerable populations are defined as people of color by race and ethnicity, people under the age of 18, people over the age of 65, households with no vehicle, people with limited English proficiency, and people with low-income. Low-income is defined as incomes equal to or less than 200 percent of the Federal Poverty Level (2016), adjusted for household size. The 2016 federal poverty level for a two-person household was \$16,020.

4.4.4 Route Characteristics

Originally, route characteristics were proposed as an additional evaluation factor for the project. This category related to the characteristics of the route itself—pavement width, access control, and ability to accommodate large vehicles and freight and ability to accommodate oversized vehicles and freight vehicles. These characteristics are important in the case of a disaster or seismic event because they can help determine route usability for large volumes of traffic, evacuation purposes, walking and biking to essential facilities, moving emergency response vehicles and freight (including over-dimensional vehicles), and transit to and from populated areas. However, these data are not consistently available

across the region, making an evaluation of this factor infeasible at this time. These considerations are important when operationalization is considered by owner agencies and should be included when additional evaluation and route tiering is developed in Phase 2 as described in *Section 7 Anticipated Applications and Recommendations for Future Work* of this report.

5.0 DATA COLLECTION AND ANALYSES

Project GIS data were collected, aggregated and evaluated by Cascade Consulting, LLC and FLO Analytics. The project resulted in a large amount of aggregated data, both existing data as well as derived through subsequent analysis. A detailed data collection and analysis methodology is included as Appendix E and summarized below. Results of the analysis are presented in *Section 5 Analysis Results and Recommendations*.

5.1 Data Collection

A data request was submitted to EWRG, Metro, and additional stakeholders during the first phase of the project. The project GIS team worked with the stakeholders to gather and identify all readily available and relevant data, including existing designated RETRs, potential new RETRs identified through more recent ODOT and local planning efforts, essential facilities, and critical infrastructure. Data were captured “as-is” from stakeholders and publicly available authoritative federal, state and regional sources, such as FEMA, ODOT, DOGAMI and Metro. Data were collected from July 2019 to December 2020. Table 1 in Appendix E provides a summary of the data by theme, source, date, and file type.

5.2 Data Compilation

The project GIS team developed a working database for use in ETR evaluation. Data stored in a format other than GIS were georeferenced and organized thematically into a geodatabase. Single datasets comprised of various themes were split into their corresponding thematic datasets. For example, police stations were extracted from the dataset of all government buildings. In some cases, features were individually reviewed and attributed before being split and organized thematically. All data were projected to have a common coordinate system, specifically Oregon State Plane HARN NAD83, International Feet, the coordinate system used by the City of Portland and Metro. More detail on data compilation is included in Appendix E.

5.2.1 RETR Network Development

The original RETR layer for this project was created using a combination of the routes designated and compiled in GIS in 1996 and revised in 2006. Where in conflict, precedence was given to the more recent 2006 routes. Note the 2006 routes did not extend into Columbia and Clark counties.

Additional routes were identified as RETRs through a stakeholder review process (see *Section 1.2 Stakeholder Engagement Process*). New routes were identified by Clackamas County, Multnomah County, Washington County, and PBOT during initial data gathering in 2019 and early 2020 as a result of ODOT and local government planning efforts (see *Section 2.3 ODOT and Local Government Document Review*). Additional routes were identified during subsequent jurisdiction-specific meetings held in summer and early fall 2020, and during EWRG review of the updated draft routes in early 2021.

Road alignments from 1996 and 2006 data layers were merged with current authoritative source data produced by Metro (Clackamas, Multnomah, and Washington counties), Columbia County, and Clark County into one data layer for use in identifying RETRs. This data layer served as the source alignment for the updated RETRs.

5.2.2 Compiling Essential Facilities and Critical Infrastructure Data

Essential facilities and critical infrastructure were consolidated into three GIS layers following the RETR framework categories of state/regional (category 1), city/county (category 2), and community/neighborhood (category 3). As an example, state, regional, county and transit EOCs were combined into a category 1 essential facilities EOC layer, and city EOCs were combined into a category 2 essential facilities EOC layer. See Table 3.1 in *Section 3.0 Overview of Key Concepts and ETR Development Methodology* for the categorization of essential facilities and critical infrastructure. Gaps remain in certain layers of the essential facilities and critical infrastructure data that will need to be addressed in future phases of this work, and/or in future project focused to comprehensively map this important data.

5.2.3 Compiling Natural Hazard Data

GIS data for natural hazards were collected from several sources, including DOGAMI and Washington State Department of Natural Resources (WADNR). GIS data representing seismic hazards, including seismic liquefaction susceptibility and debris expectations, were provided by DOGAMI. Landslide susceptibility and existing landslide hazards in Oregon were provided by DOGAMI and by WADNR for Clark County. Flood hazard data were provided by Federal Emergency Management Agency (FEMA).

5.2.4 Compiling Population and Demographic Data

Metro provided population and socioeconomic data for the community and equity analysis. The project used population density to identify and map current populations centers and isolated populations.

A number of factors, including race, poverty and lack of access to transportation may contribute to vulnerability. To identify and map communities that will most likely need support before, during and after an emergency event, Metro used the U.S. Census ACS 5-Year Estimates (2013-2017), aggregated to Census tracts to identify census tracts with above the five-county regional average concentrations of vulnerable populations. For purposes of this project, vulnerable populations have been defined as people of color (POC), people with limited English proficiency (LEP), people with low income, households with no vehicles, people under the age of 18, people over the age of 65. People of color are identified as Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, some other race, two or more races, and any race combined with Hispanic or Latino ethnicity. Due to significant margins of error in the ACS data, the analysis was not able to account for people with disabilities. This should be addressed in the future planning work.

Metro also prepared a GIS data layer – called RETR Equity Focus Areas (EFAs) – to evaluate providing emergency access to vulnerable populations with a focus on race and income. RETR EFAs are census tracts that represent communities where the rate of POC or LEP or people with low income (i.e., income equal to or less than 200% of the Federal Poverty Level [2016] adjusted for household size) is greater than the 5-county regional average.

Additional discussion of the analysis and methods is included in Appendix E and *Section 5 Analysis Results and Recommendations* and *Section 7 Anticipated Applications and Recommendations for Future Work*.

6.0 ANALYSIS RESULTS AND RECOMMENDATIONS

6.1 Analysis Discussion

The RETR evaluation analysis was completed in two stages. The first stage included developing GIS mapping layers that included all existing 1996 and 2006 existing RETRs, SSLRs, geologic hazard data, bridge seismic vulnerability data, and all collected critical infrastructure and essential facilities. The project team then consulted with members of the ERWG from each county, the City of Portland, transit agencies, and port districts to review the GIS data to identify missing critical infrastructure, essential facilities, and routes to be included in the analysis. An on-line viewer and static maps were created to support the review. The discussions resulted in the addition of essential facilities and critical infrastructure of regional importance to the dataset. Routes were added to account for new and seismically updated infrastructure, county-identified detour routes that avoid seismically vulnerable bridges, and provide additional connectivity to ports, hospitals, and transit facilities.

Once the additional routes were added and a naming convention designated, the GIS evaluation for connectivity, resilience, and equity was completed. The evaluations and results are described in the sections below.

6.2 Route Naming Convention

During the first phase of evaluation, it was determined that a consistent naming convention should be developed in order to help with route evaluation, identification, and use. With direction from the work group, the team developed a naming convention that provides consistency, as well as the ability to add and update routes during future phases of work and update cycles. The routes identification (IDs) have the format as outlined below and are included in Table 5.1 (attached and end of text) and on Figure 6.1 in *Section 6 Final Updated Route Summary*.

(S/R/L)-#-XXX-00-RouteName

- The “S/R/L” term designates whether it is a state, regional, or local route.
- The “#” term will be the route tier as designated by ODOT or by the region and localities in future phases of work.
- Each route has a three-digit number “XXX” assigned to it as a route ID that reflects the location and direction of the route. Routes with an odd ID are north/south routes and those with even IDs run east/west. These numbers currently run between 100 and 265 for the updated routes.
- The “00” term indicates if a route has segments. Route 101-01 and 101-02 connect to make route 101. Routes with “00” only have one segment.
- The “RouteName” reflects the road name(s) that make up the ETR.

Additionally, included in Table 5.1 (attached) is a designation of each route as a Primary or Alternate Route. Alternate routes were designated in 2020 to provide a detour route where expected failure of vulnerable bridges will close a primary RETR after a seismic event. These were identified by each county when working with ODOT to identify detour routes to SSLRs as described in Section 2.3.2. If vulnerable bridges are seismically retrofitted or replaced, the need for these routes should be evaluated for future RETR updates.

Interstate highways are identified as SSLRs in Oregon however, WSODT has not completed an official route designation process at this time.

6.3 Analysis Results

6.3.1 Assessment of Route Connectivity

Each RETR was evaluated for connectivity visually using the GIS mapping layers as well as using the data analysis methods described in *Section 4 Data Collection and Analysis*. Each evaluation is detailed below.

6.3.1.1 Connection from SSLRs to Region and LETRs

We visually evaluated the ETR network using GIS data mapping in order to evaluate if RETRs provide adequate connection between state and federal routes and facilities and regional facilities and local routes. As shown on Figure 5.1, the proposed RETRs provide adequate connection between state routes and regional areas as well as local routes. Further, the updated RETRs provide good connectivity between the jurisdictions within the region.

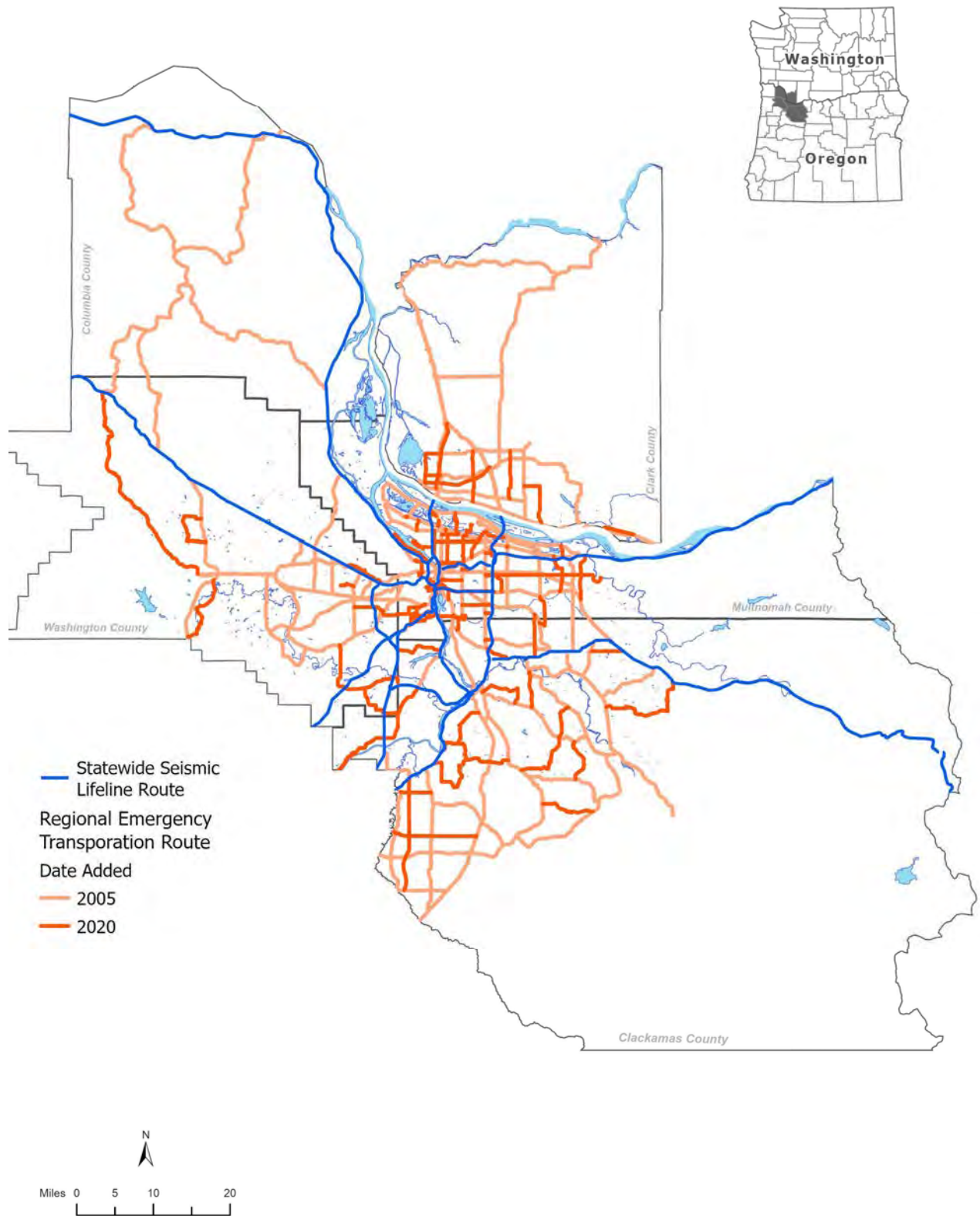


Figure 6.1. STRAHNET, RETRs, SSLRs Relative to City Limits, UGBs and UGAs

6.3.1.2 Population

Population density, city limits, urban growth areas in Washington and urban growth boundaries in Oregon were considered when evaluating if the RETRs provided adequate route connectivity to the region's population centers. These evaluations were conducted visually using the GIS mapped database as shown on Figures 5.2 and 5.3. In general, there is a higher density and redundancy of RETRs in the highest density population areas. One anomaly to this is the western portion of Clackamas County where route redundancy is higher than other areas in the region with similar population densities.

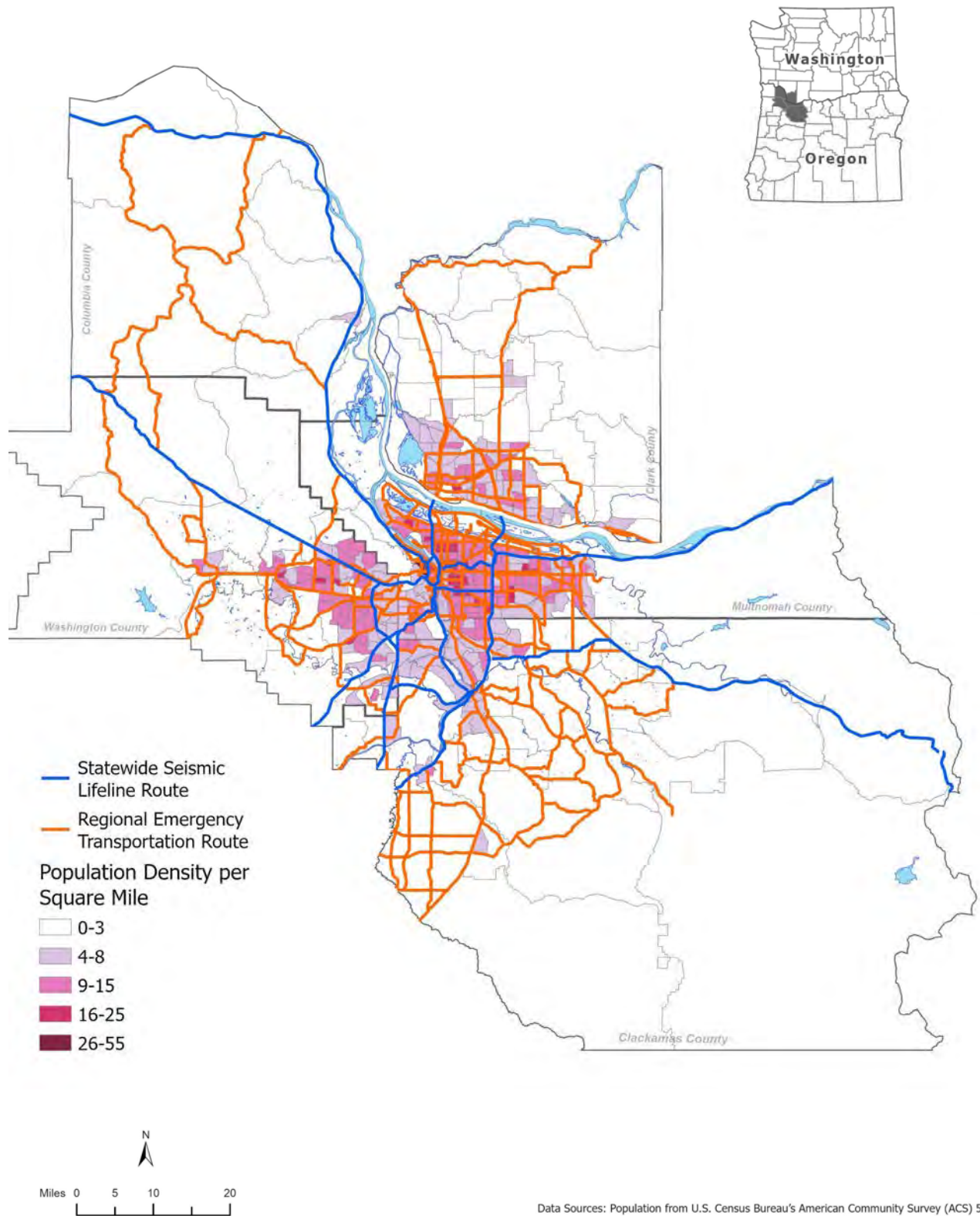
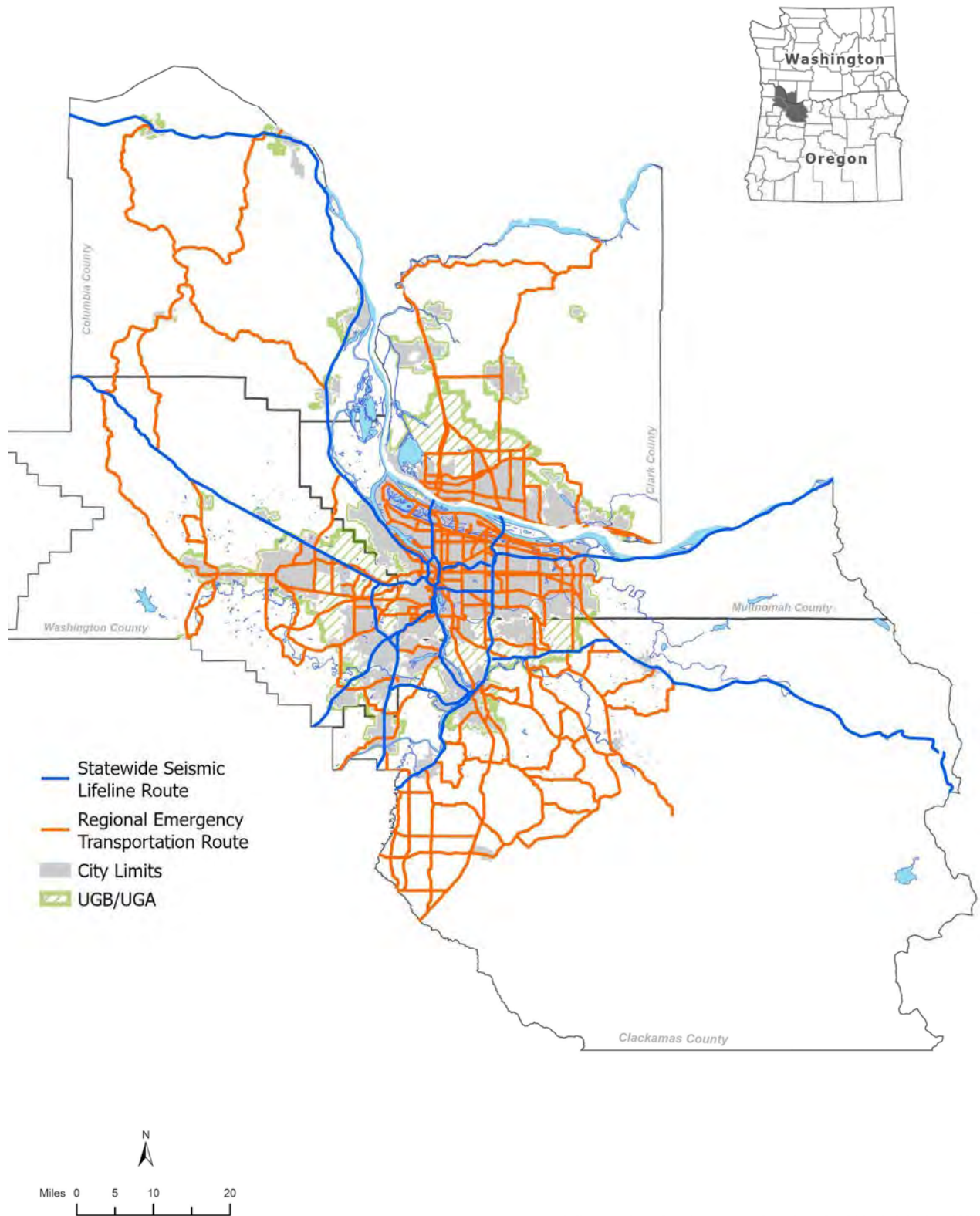


Figure 6.2. RETRs Relative to Population Density



Data Sources: City limits and urban growth boundaries from Metro RLIS (October 2019).

Figure 6.3. RETRs relative to City Limits, Urban Growth Boundaries and Urban Growth Areas

Based on a visual inspection, all major areas of high population density and cities are directly accessed by SSLRs or RETRs with the exception of Yacolt in Clark County. Clark County staff indicated that there are local routes that access Yacolt and a direct RETR connection is not necessary. Future updates should revisit the density and connectivity within the urban growth boundaries (UGBs) in Oregon and designated urban growth areas (UGAs) in Washington to determine if additional regional emergency transportation route designations are warranted based on population growth and community needs.

6.3.1.3 Critical Infrastructure and Essential Facilities

Connectivity to Critical Infrastructure and Essential Facilities categorized as State/Regional, City/County, and Community/Neighborhood as outlined in Table 3.1. Connectivity to these facilities was evaluated visually using the GIS mapped database as shown on Figures 6.4 through 6.8.

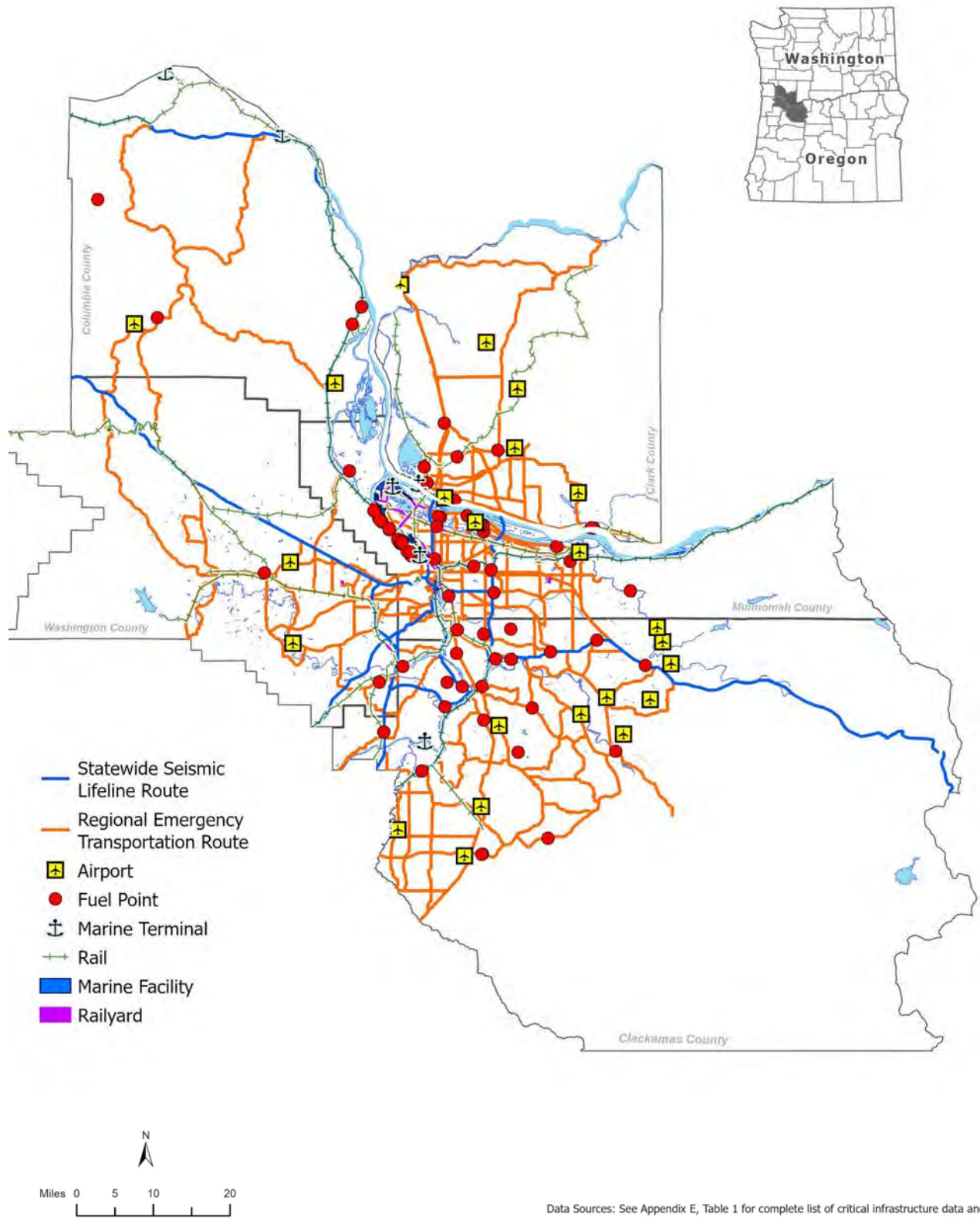


Figure 6.4. RETRs relative to State/Regional Critical Infrastructure

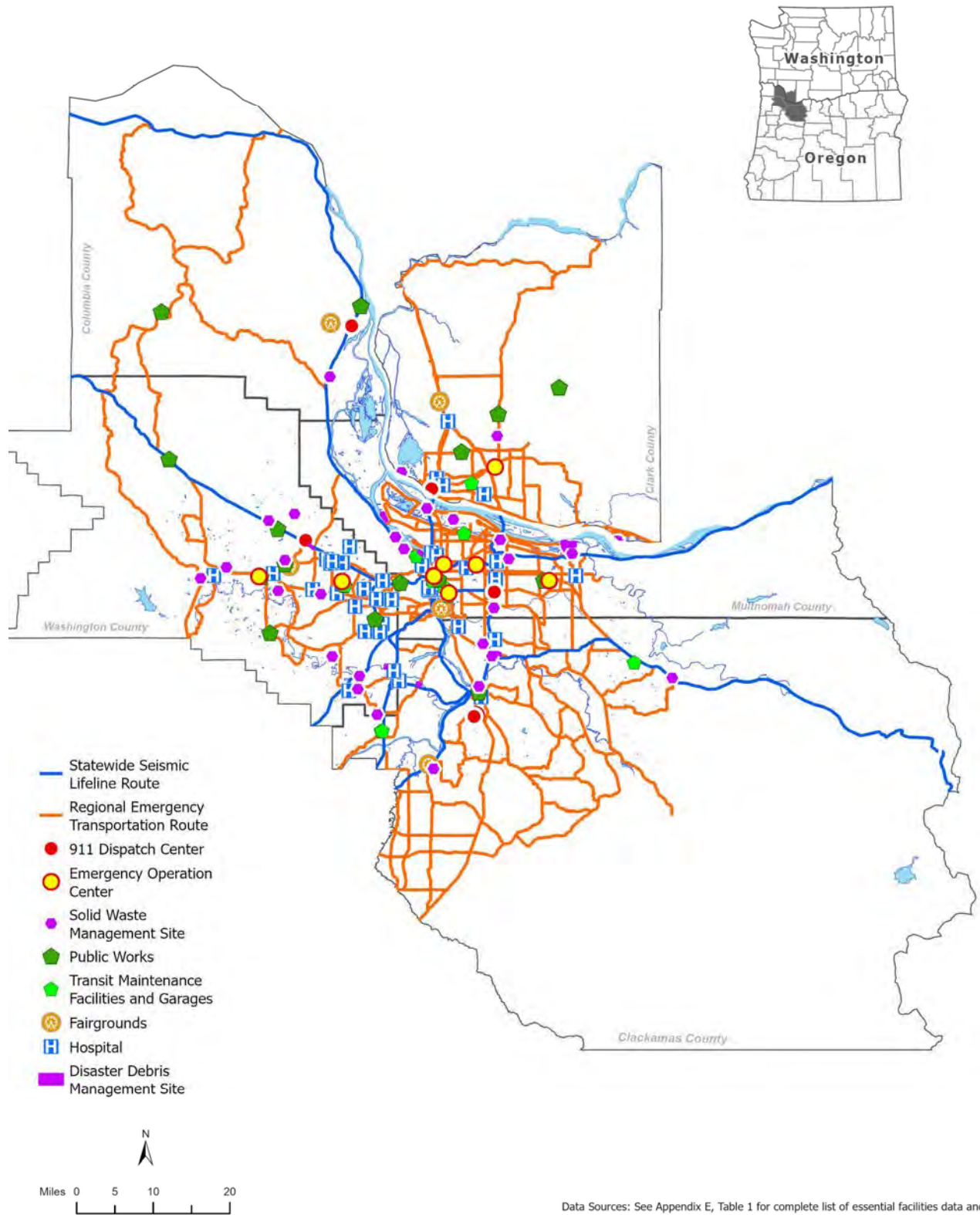


Figure 6.5. RETRs relative to State/Regional Essential Facilities

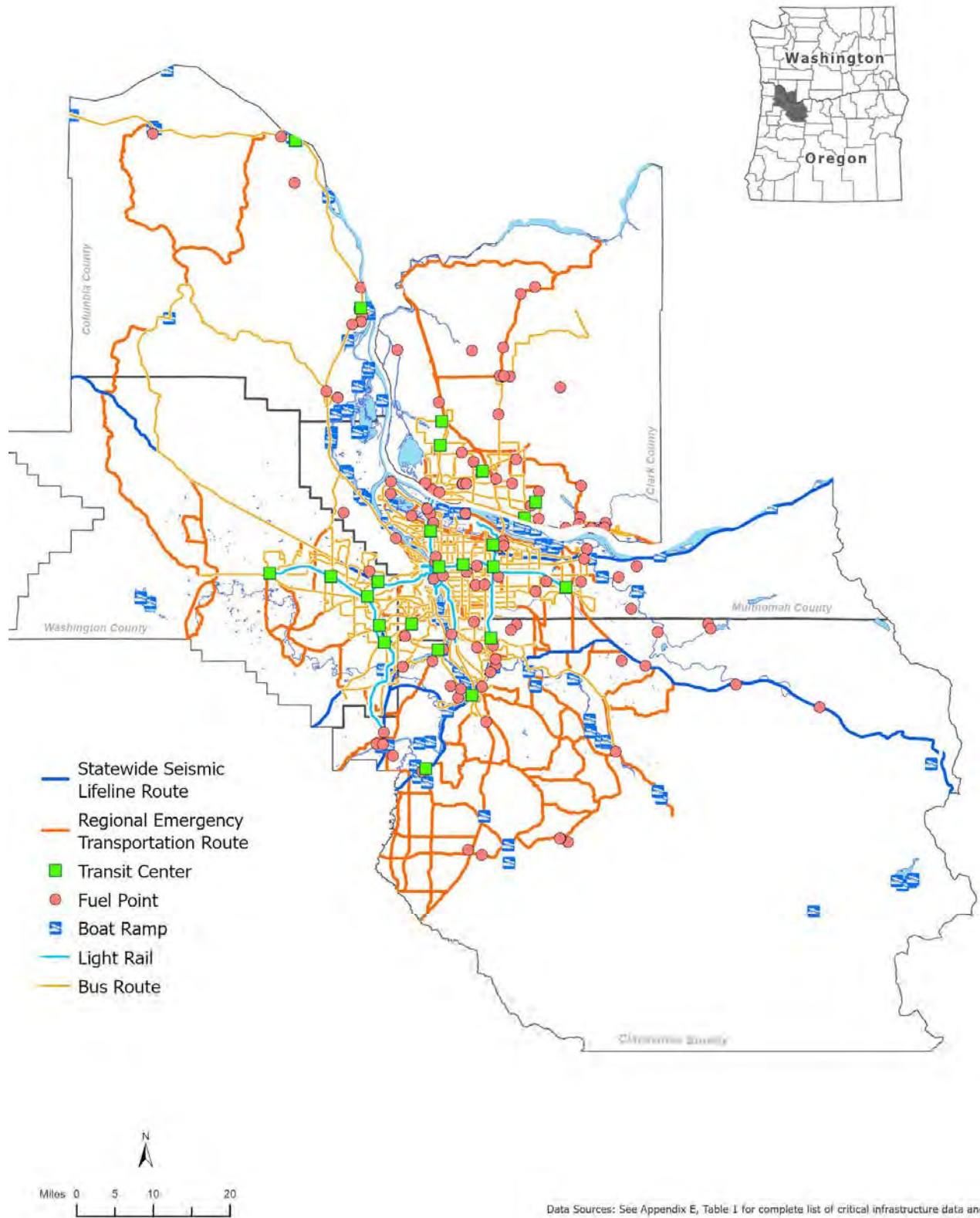


Figure 6.6. RETRs relative to City/County Critical Infrastructure

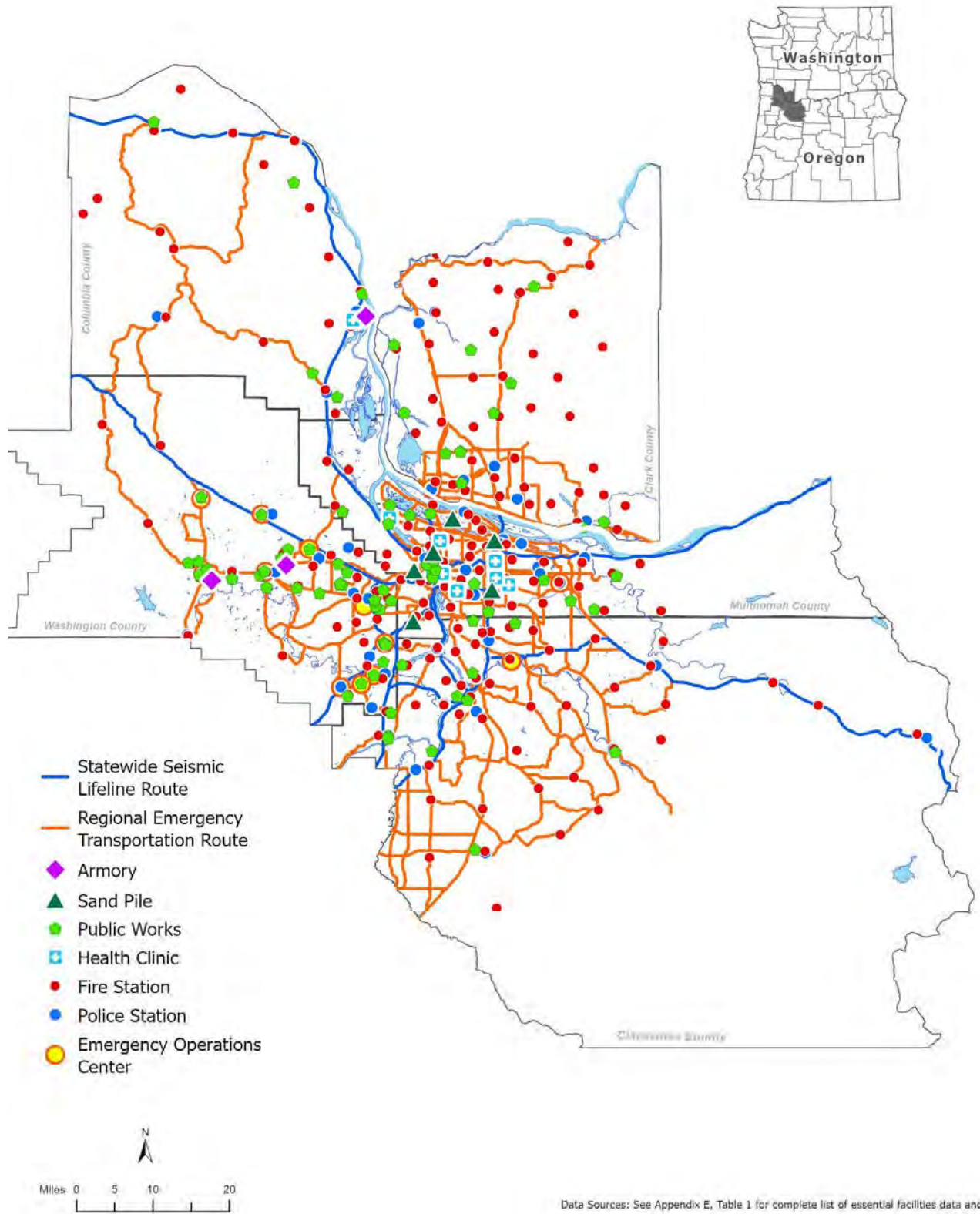


Figure 6.7. RETRs relative to City/County Essential Facilities

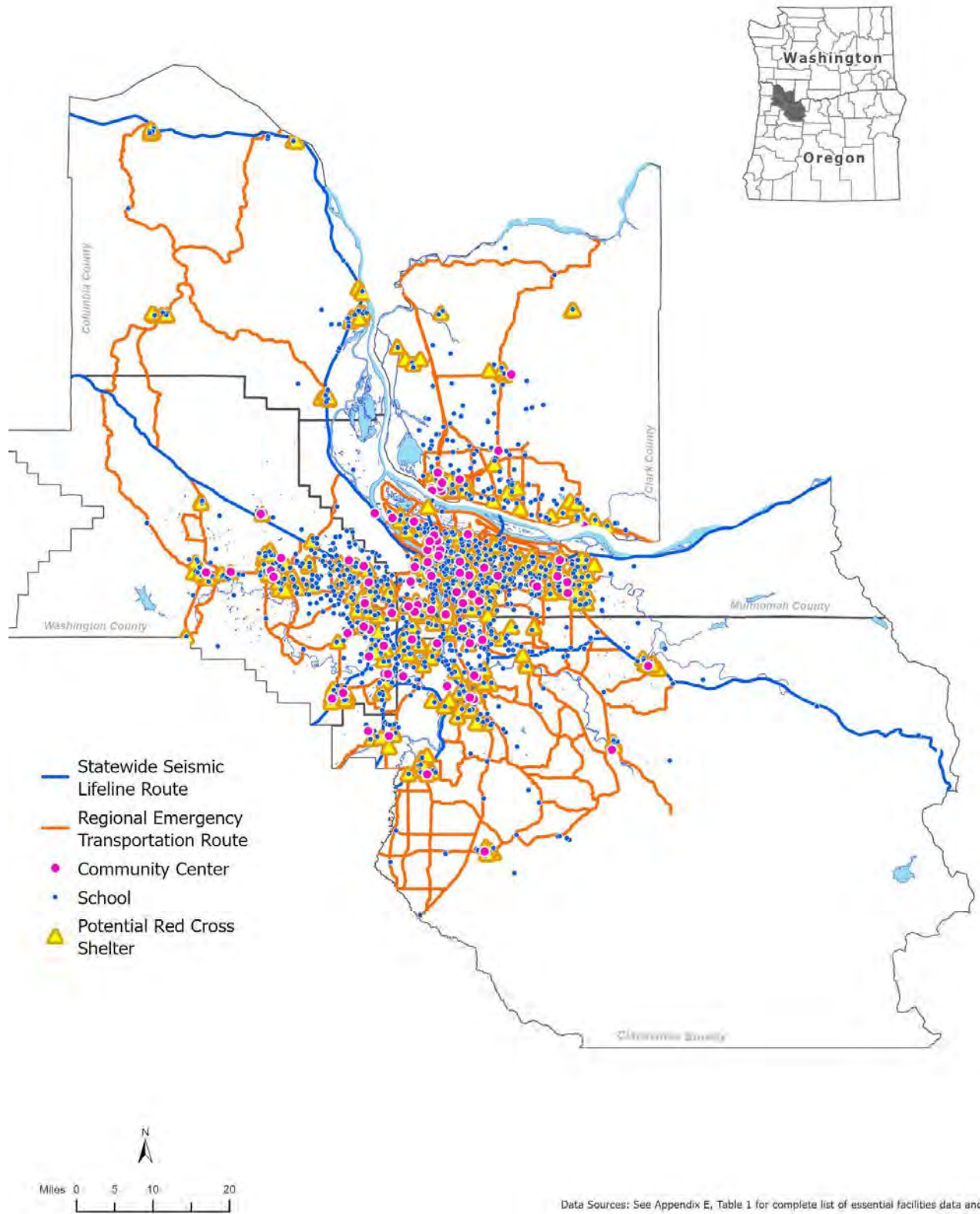


Figure 6.8. RETRs relative to Community/Neighborhood Essential Facilities

In addition to the visual evaluation, the GIS database was used to evaluate how many of each of the six categories were located within one-quarter mile of an RETR and/or SSLR. Results are outlined in Table 6.2 (attached).

Tabular results for State/Regional locations show that the majority of the locations are within one-quarter mile of an RETR and/or SSLR. Additions of routes in 2020 increased these percentages for transit and hospital locations, as well as for port facilities.

Additional visual evaluation indicates that much of the State/Regional critical infrastructure is composed of larger facilities with dedicated access roads that are accessible from the updated regional ETRs. In general, the updated regional ETRs provide good connectivity to State/Regional locations based on our evaluation; in particular they provide good coverage for access to essential facilities for emergency management and emergency response purposes (their primary function).

Due to variability in local ETR update methodology and the timing of recent updates, there is variability in the number of routes designated by the counties for the regional update. In particular, Clackamas County has a very robust network of regionally designated ETRs. When evaluating connectivity, it is noted that some of the routes do not appear to connect to either critical infrastructure/facilities or to vulnerable populations or higher density population areas. It is therefore recommended that the regional designations are revisited in Phase 2 evaluation when prioritizations are determined. Some of these routes may need to be tiered, or may be more appropriately designated as a local ETR.

6.3.2 Assessment of Route Resilience

The evaluation of route resilience considered seismic, landslides, and flood hazards. The latest data from DOGAMI regarding seismic and landslide hazards, FEMA flood hazard data, and ODOT bridge vulnerability data were used in the analysis. Data references are included in the GIS Methodology document included in Appendix E.

6.3.2.1 Seismic Hazards

The RDPO five-county region is at risk for multiple types of earthquakes, including a shallow crustal event on the order of 6 to 7M and a 9.0M CSZ event. In general, the CSZ event is more frequent and effects a much larger geographic area than a crustal event. Recent work by DOGAMI indicates that localized damage is much greater in the event of a shallow crustal event; however, these events are less likely to occur within the next 50 years. This study concentrated on resilience to a CSZ event mainly because it represents significant damage, is more likely to occur within a 20- to 50-year planning horizon, and will affect a much larger geographic area, resulting in a larger problem for emergency response and long-term recovery.

Based on the DOGAMI data, significant shaking is anticipated throughout the region such that significant infrastructure damage is expected due to the CSZ event. However, ground shaking does not necessarily result in direct damage to roadways. Shaking directly damages buildings and infrastructure, causing debris to fall into roads; bridges to fail; and soil to soften (liquefy), settle, and move laterally. Liquefaction is the result of seismic shaking causing loose, non-clay soils to lose strength and liquefy resulting in settlement and lateral movement toward slopes and water bodies. This study evaluated RETRS for resilience using liquefaction hazard data. This is generally where roads and embankments can expect the most damage.

As shown in Figure 6.9, large portions of the region are at risk for moderate to severe liquefaction damage. This generally occurs along rivers and in areas of artificial fill. Many of the RETRs are vulnerable to liquefaction damage.

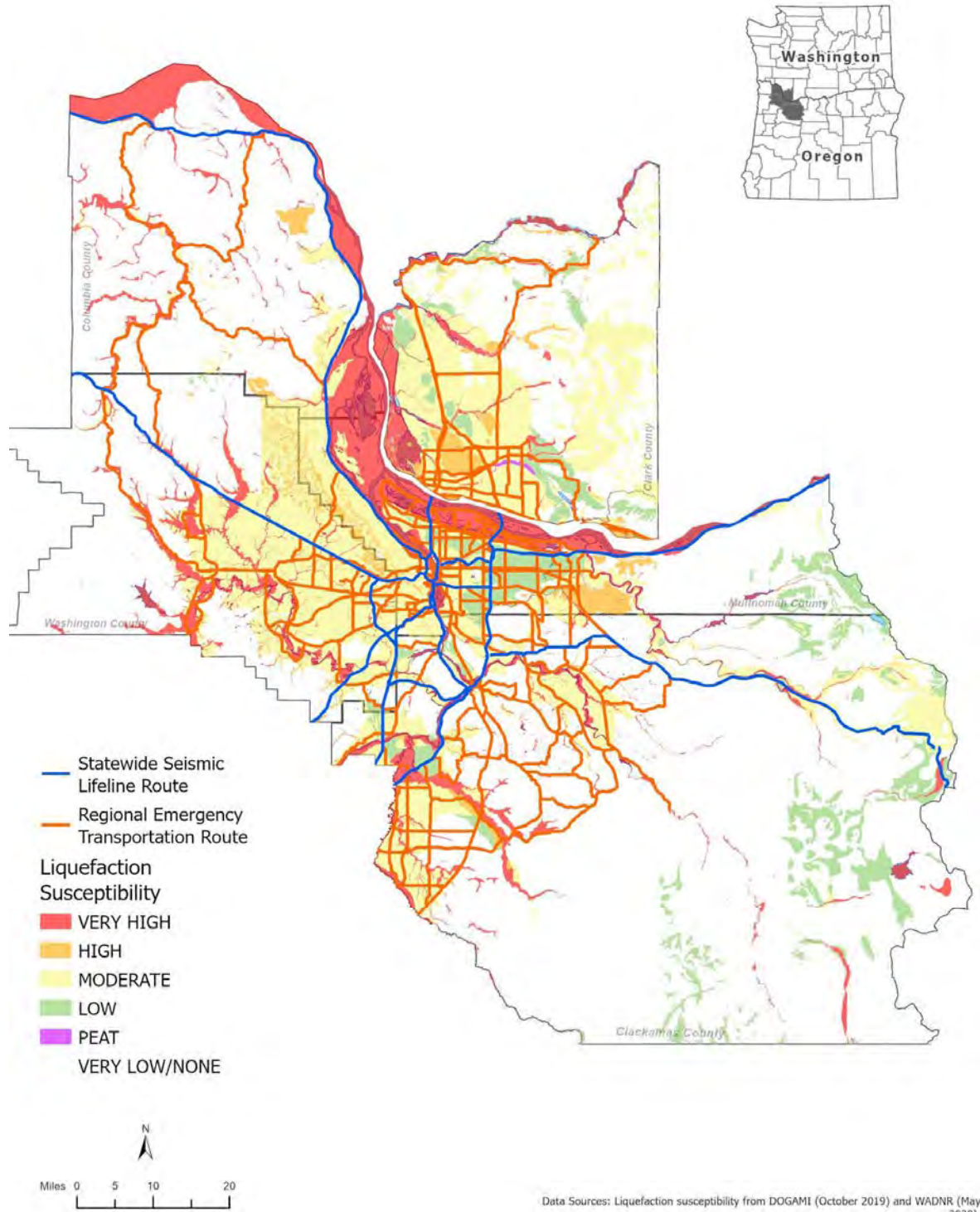


Figure 6.9. RETRs and SSLRs in relation to Liquefaction Hazard

Individual RETRs affected by liquefaction hazard above moderate are highlighted in Table 6.3 (attached). Bridge crossings, Marine Drive and access to the Port of Portland and PDX, access to the Port of Vancouver, rural routes along rivers in Washington and Clackamas counties, and the central area of downtown Portland are most likely to be severely impacted by liquefaction. Future evaluation of RETRs should consider adding redundancy with more resilient routes where possible and potentially eliminating routes where mitigation is unlikely to be completed due to scale and cost.

6.3.2.2 Seismically Vulnerable Bridges

ODOT has completed an extensive study of bridge vulnerability in the state and has worked with the four Oregon counties to identify vulnerable bridges on ETR routes. They have designated bridges as “Vulnerable,” “Potentially Vulnerable,” and “Not Vulnerable.” Based on information from ODOT, single-span bridges were not evaluated and were included as “Not Vulnerable” because they are easier to fix and generally less likely to catastrophically fail. This is an acceptable assumption when considering bridge repair prioritization; however, for the purposes of evaluating ETRs, single-span bridges that fail will close an RETR even if the repairs can be done more quickly due to the simplicity of the bridges. For this reason, single-span bridges are identified as “Not Evaluated.” Further, data for overpasses and onramps was not universally included in this evaluation; however, failures of these structures can greatly impede use of an SSLR or RETR after an earthquake. In general, at grade routes should be considered for redundancy purposes, while ODOT and local agencies are working on bridge retrofits and replacements on all RETRs. Due to the scale of bridge vulnerability on these routes, it is unlikely that mitigation will be completed on all the RETR routes. Regional phasing and tiering that mirrors ODOT’s program can help to evaluate the criticality of RETRs and resilience improvements so that available funds can be applied in a manner to increase RETR resilience as quickly as possible.

WSDOT has not evaluated their bridges with the same methodology as ODOT; hence, in the map all WSDOT bridges are marked “Not Evaluated.” However, the state of Washington has made significant investments in seismic strengthening of their bridges following the 2001 Nisqually Earthquake. Therefore, some of the bridges in Clark County may have a higher degree of resilience to seismic risk, they just have not been evaluated to be represented in this report together with the ODOT bridges. In the future, an investigation into the seismic resilience of bridges on the RETRs in Clark County together with WSDOT would be beneficial to inform understanding of vulnerabilities and areas to prioritize investment to increase seismic resilience of bridges where needed.

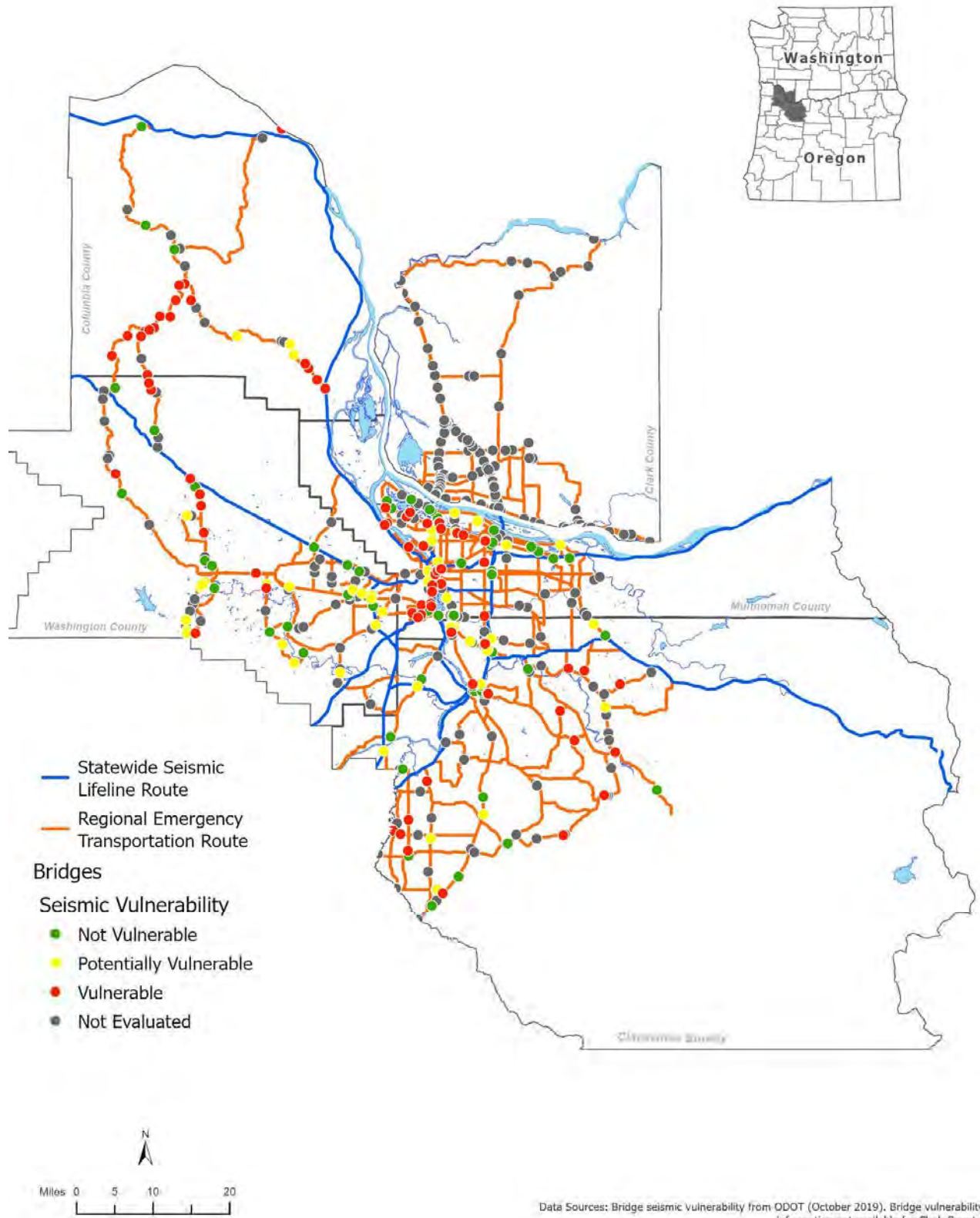


Figure 6.10. RETRS in relation to Seismically Vulnerable Bridges

As shown on Figure 5.11 and in Table 6.4 (attached), vulnerable bridges are one of the larger hazards to the RETR system. In an area with many water crossings and grade changes, bridges will affect a large majority of the RETR system. Routes with multiple river crossings are especially vulnerable. A highlight of this evaluation is the connection across the Willamette and Columbia rivers. Very few river crossings are expected to be operational within weeks to months after an event. Further evaluation of bridge vulnerability as well as prioritization based on RETR needs should be considered in future phases of work; further planning around marine transportation options in emergencies can also support contingency planning for bridge failures in a catastrophic response and recovery.

6.3.2.3 Landslide Hazards

Landslide hazard was evaluated using the latest DOGAMI (Oregon) and WADNR (Washington) data for existing mapped landslides and DOGMAI data for general landslide risk. Limited data on general landslide risk were available for portions of Clark County but was not considered in the evaluation for consistency purposes. Figure 6.11 shows both general risk as well as the locations of existing landslides and Table 5.5 (attached) highlights routes with significant landslide risk. Generally, areas of high risk, (red) and mapped landslides overlap. Landslides can be a hazard during periods of wet weather but should also be expected during a seismic event.

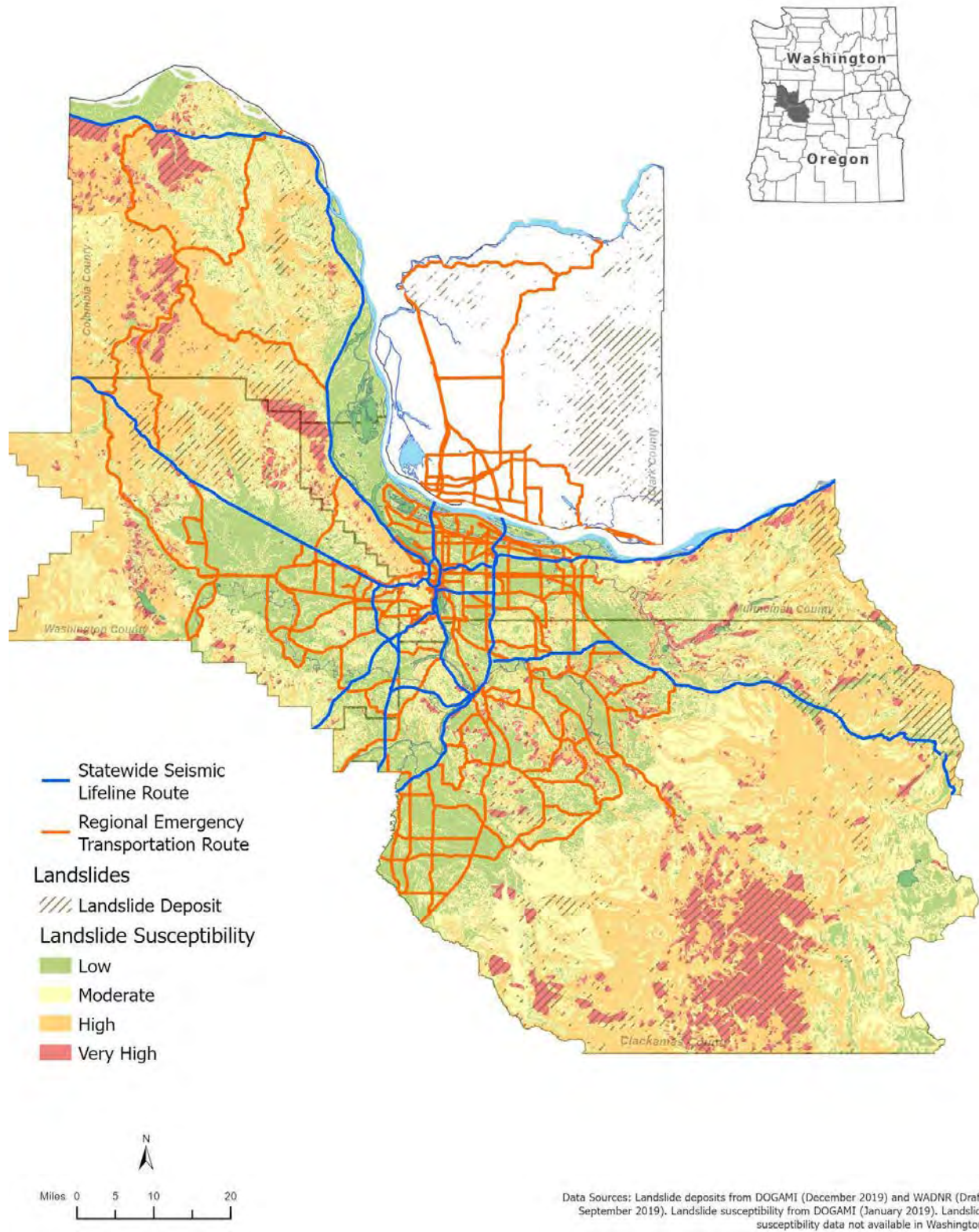


Figure 6.11. RETRs relative to Landslide Susceptibility

Based on the data, there are routes with significant landslide risk. These are generally in rural areas and may not have redundancy in the RETR system to provide access in the event of a landslide. Rural Columbia and Clackamas counties are at the most risk due to landslides that are likely to isolate populations. The Portland west hills are also highly at risk and could cut off Washington County from supplies coming from the east. Landslides during a wet season could result in local isolated communities; however, widespread landslides during a CSZ event will add to the already significant RETR damage due to shaking and liquefaction.

6.3.2.4 Potential Sources of Debris

Debris and debris management can be one of the major issues that can hinder emergency response after an earthquake. Debris from fallen buildings, downed bridges, and landslide or rockfall debris can block roadways and render an RETR unusable. Further, RETRs are needed for debris management functions to continue by providing access for debris removal. In order to evaluate the RETR system from a debris perspective, we used the 2017 DOGAMI debris estimates for the region. These maps provide estimates of tons of debris per area based on census tract areas as shown on Figure 5.13.

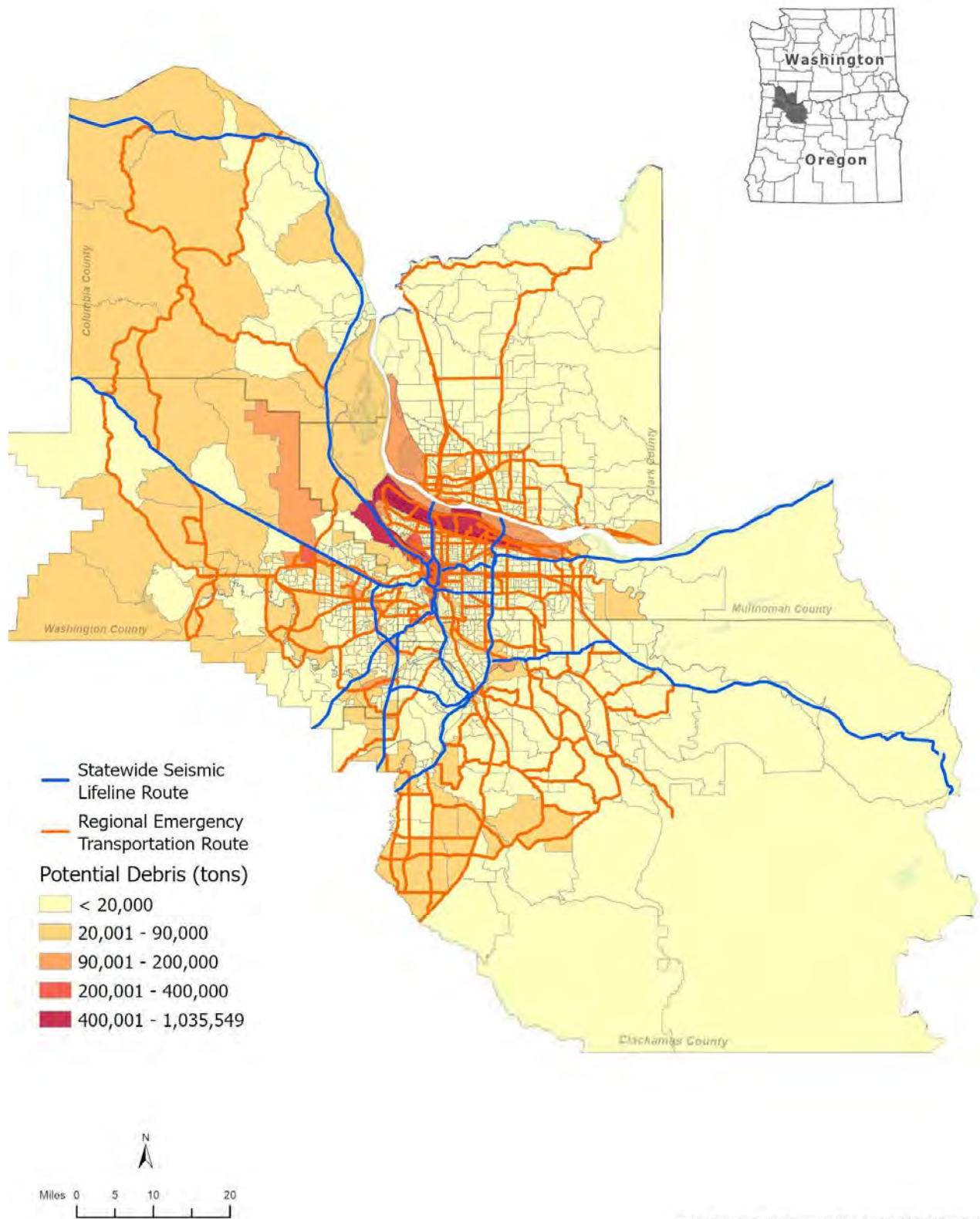


Figure 6.12. RETRS and SSLRS in relation to Potential Debris

For the most part, the highest risk areas (red) are industrial and commercial development areas on liquefiable soils and/or areas of older buildings in city and towns where unreinforced masonry (URM) and older building stock are concentrated will have a higher risk of debris blocking RETRs. The Critical Energy Hub and areas around the ports are all located on liquefiable soils and data indicated they will have large amounts of debris. In both cases, the potential for this debris to be hazardous materials is high. Risk to resilience of ETRs is high in these areas; however, ETRs will also be needed to connect these areas to debris management areas and disaster debris disposal sites.

Further, after a review of this data larger census tract areas that are based on population result in large amounts of debris. This results in larger census tracts of mostly rural land mapped as having a large amount of debris. Upon review, this may not be especially useful for emergency management planning. Large areas of rural land will likely have more spread out debris with significantly less effect on ETRs and access to communities. Future work with DOGAMI is recommended to evaluate this data set to better account for where significant debris is anticipated to affect the usability of the RETRS as well as where access will be required to remove, sort, and dispose of debris.

6.3.2.5 Flood Hazards

FEMA Flood hazard zones for the 100- and 500-year floods are shown in relation to the RETRS on Figure 6.13.

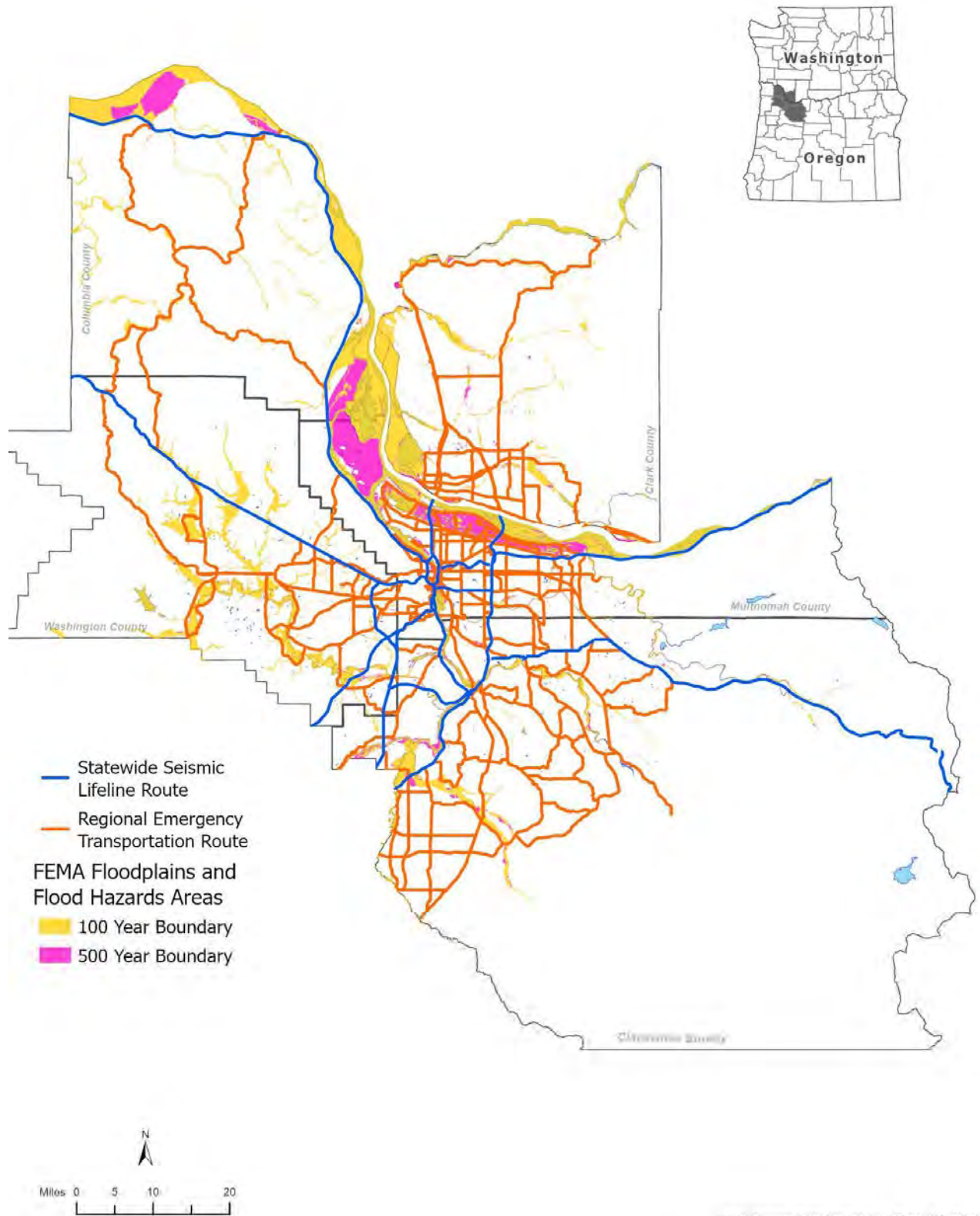


Figure 6.13. RETRs relative to FEMA Flood Hazards Zones

Flood hazards in the region are located in low lying areas and along rivers. RETR risk as a whole is relatively low; however, areas along the Willamette River are likely to be isolated during a flood event due to a lack of RETR redundancy. RETR routes with high flood risk are outlined in Table 6.6 (attached).

Generally, the most susceptible routes are along the Columbia and Willamette rivers. Access along the Columbia River and near PDX as well as Naito Parkway in downtown Portland are specifically susceptible to flooding based on our analysis. Flooding could also lead to isolated populations in rural areas where RETRs follow rivers. However, based on our evaluation, there is generally sufficient RETR redundancy in the majority of areas within the region to reach populations and assets during a flood event even if detours may be long.

6.3.3 Assessment of Community and Equity

As described in Section 3.0 Overview of Key Concepts and ETR Development Methodology, Metro compiled ACS 5-Year Estimates (2013-2017) data aggregated to Census tracts to evaluate RETRs with regards to providing emergency access to vulnerable populations. These populations may be disproportionately affected by an earthquake or other disaster as well as during emergency response. For evaluation purposes, areas with vulnerable populations above the five-county regional average were identified and considered. Definitions and the five-county regional average rates for each vulnerable population by percentage (%) higher than the average in the region are shown in Table 6.7 below. These data in relation to RETRs are presented graphically on Figures 6.14 to 6.19.

Table 6.7 – Vulnerable Population Definitions and Data Sources

	Five-county Regional Average Percent of Population	Description
People of color (POC)	26.0	Persons who identify as non-white Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, some other race, two or more races, and any race combined with Hispanic or Latino ethnicity
People under the age of 18 (18)	22.3	Persons who are under the age of 18
People over the age of 65 (65)	13.5	Persons who are over the age of 65
Households with no vehicle (NV)	7.7	Measures level of access to a vehicle for households
People with Limited English proficiency (LEP)	7.2	Persons who identify as unable “to speak English very well”.
People with low-income (LI)	28.0	Persons with incomes equal to or less than 200% of the Federal Poverty Level (2016), adjusted for household size. The 2016 federal poverty level for a two-person household was \$16,020.

Source: U.S. Census American Community Survey 5-year average estimates (2013-2017).

6.3.3.1 RETR and SSLR Access to Specific Vulnerable Populations

Figures 6.14 through 6.19 show the RETRs and SSLRs in relation to areas of the six identified vulnerable populations in concentrations over the 5-county regional average as described above. Represented in red for map is the percentage higher than average for the region for each respective category (shown in Table 6.7).

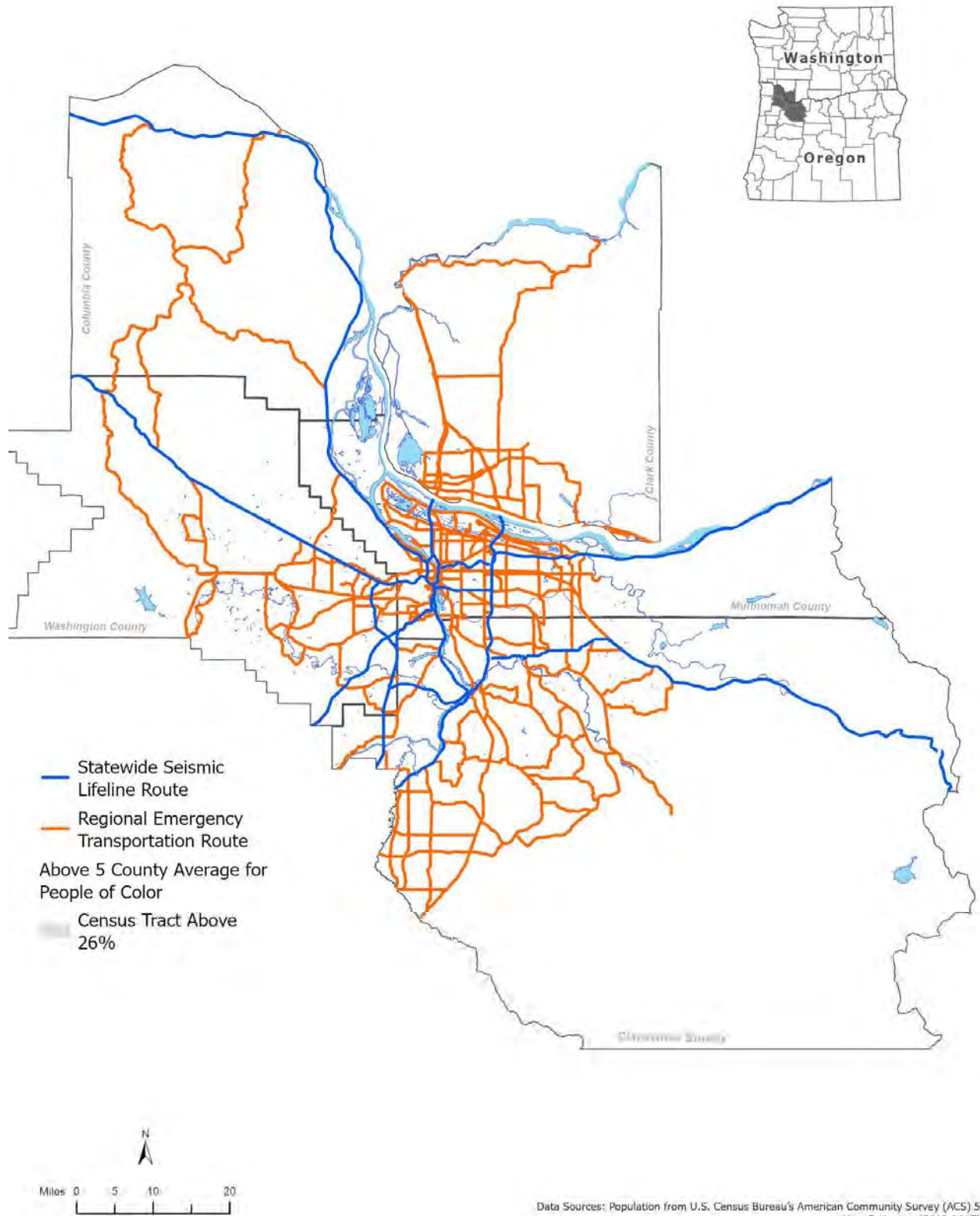


Figure 6.14. RETRs and SSLRs relative to People of Color

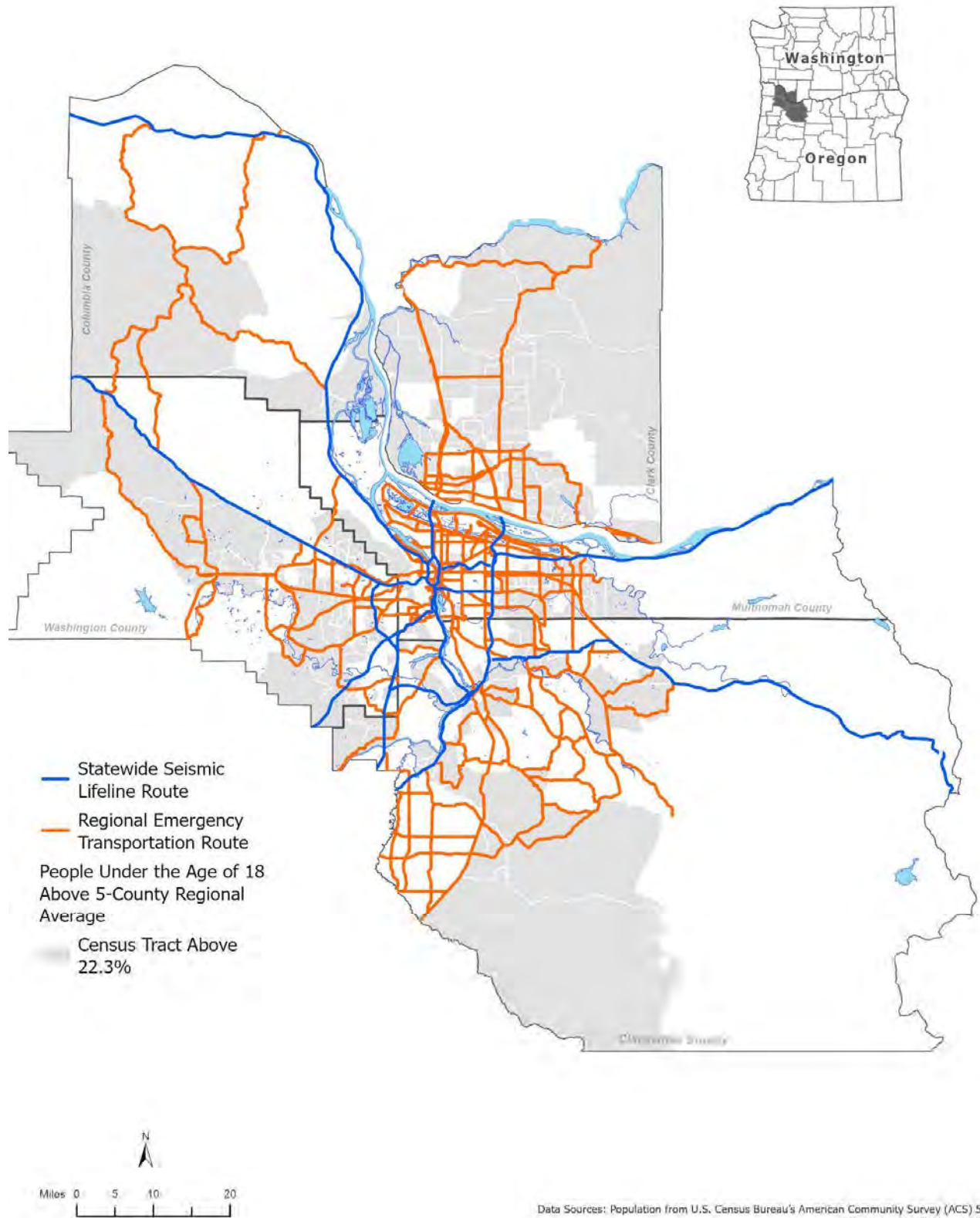


Figure 6.15. RETRs and SSLRs relative to People Under the Age of 18

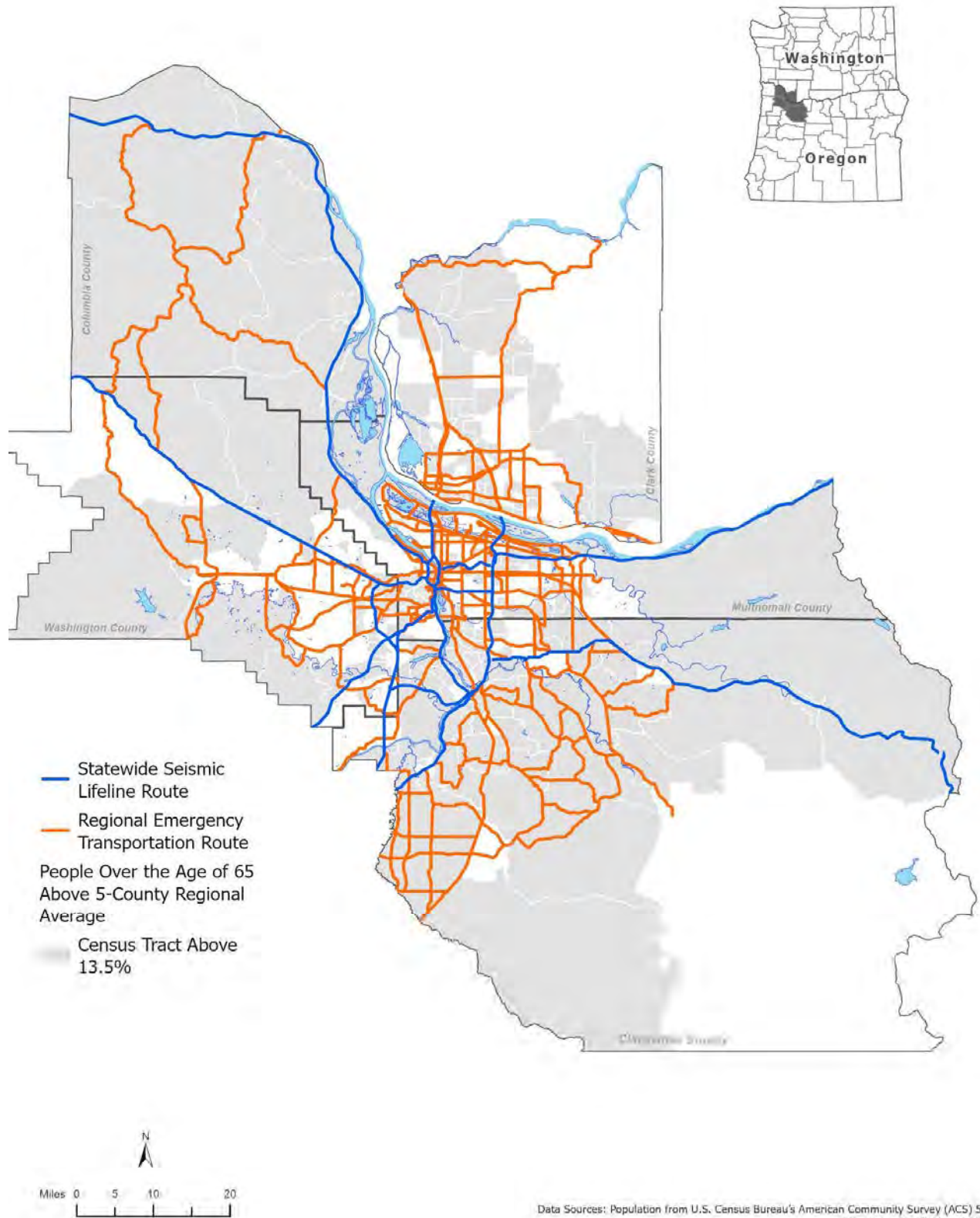


Figure 6.16. RETRs and SSLRs relative to People Over the Age of 65

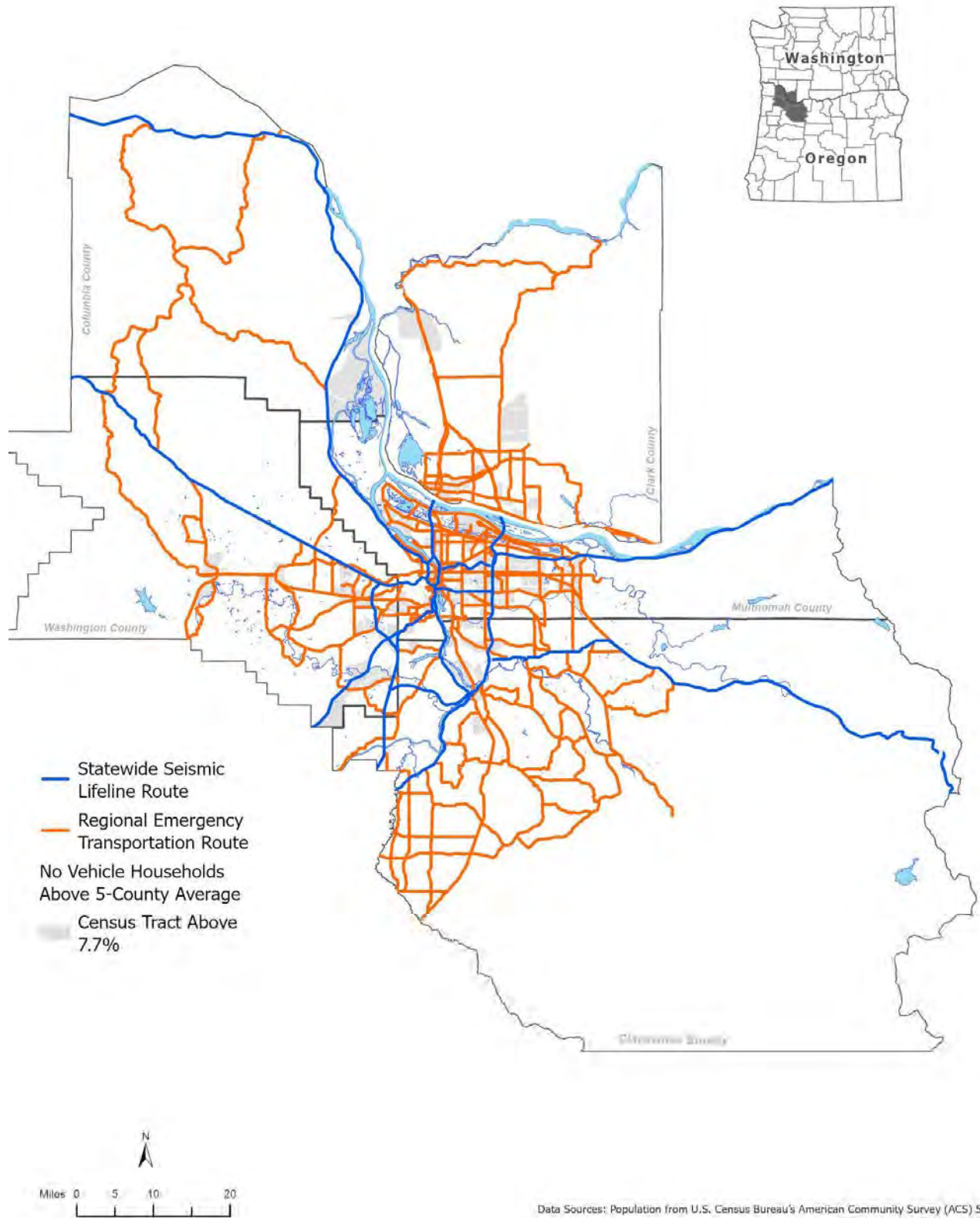


Figure 6.17. RETRs and SSLRs relative to Households with No Vehicle

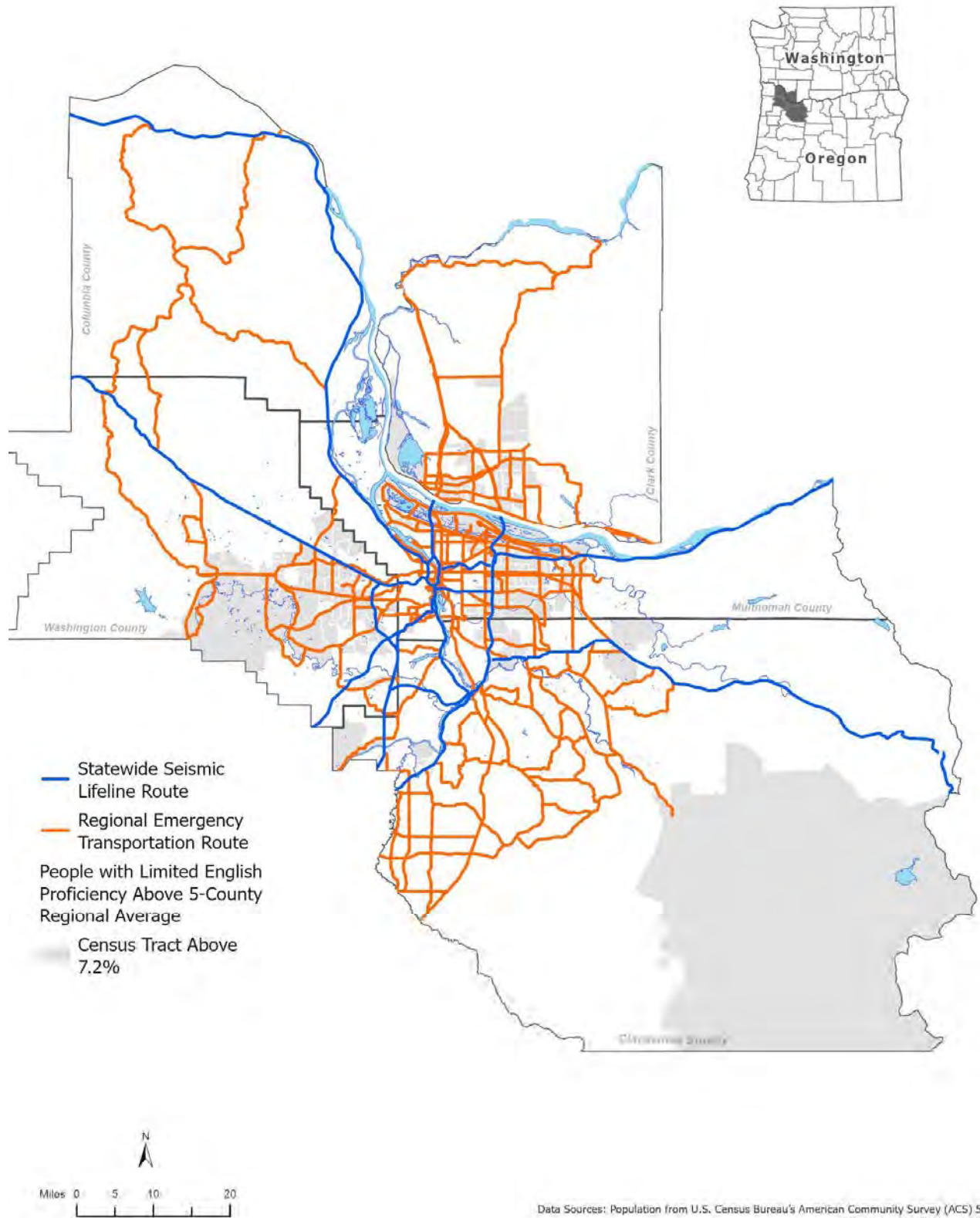


Figure 6.18. RETRs and SSLRs relative to People with Limited English Proficiency

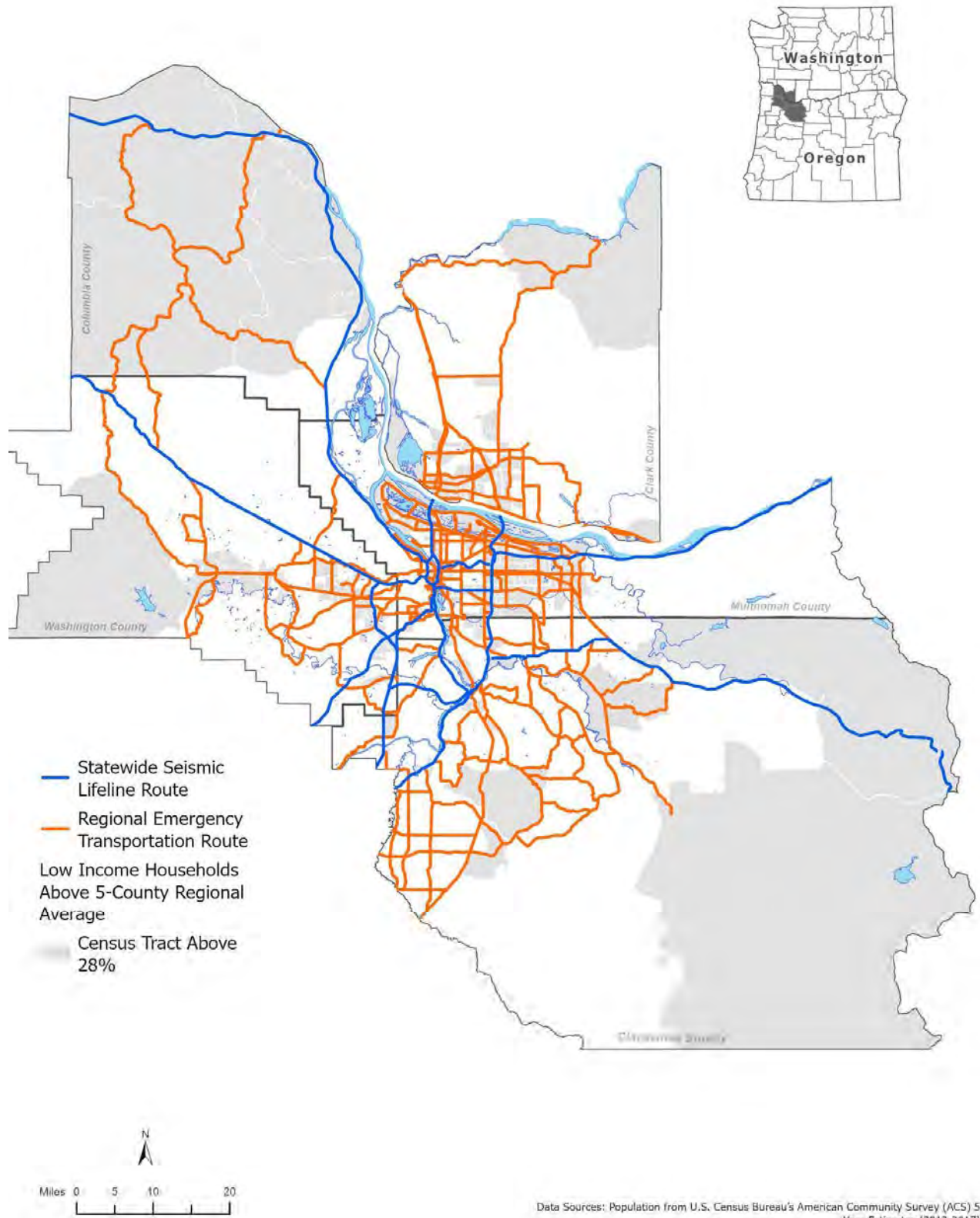


Figure 6.19. RETRs and SSLRs relative to People with Low Income

Based on this evaluation, the updated RETR system provides adequate access to vulnerable populations in the region. Further, vulnerable populations are not only concentrated in urban areas. People with low Income and people over the age of 65 especially are concentrated in rural areas. These populations are more likely to be isolated due to a lack of redundancy of RETRs. The RETRs and SSLRs traverse through vulnerable communities to ensure connectivity and accessibility; however, caution would be applied to those communities to make sure they would not be overburdened by emergency response related service vehicles, such as for debris management, etc. Connectivity and accessibility needs for urban and rural communities vary greatly; for example, access to transit would likely be of more importance to in more urban contexts and access to fuel PODs would likely be higher priority for rural communities. The accessibility needs for people with disabilities who require specially trained operators and accessible equipment, people with low-income, people over the age of 65, people under the age of 18 and people who lack access to a private vehicle during an emergency is of significance and should be addressed through future community-based emergency preparedness and debris management planning and engagement.

6.3.3.2 Additional Social Vulnerability Evaluations

In addition to individual vulnerable population evaluations, it is valuable to consider where multiple vulnerable populations intersect and are concentrated. Figures 6.20 through 6.22 present these evaluations.

To support this evaluation, Metro identified census tracts in the five-county region with above regional average concentrations of the following three categories of vulnerable populations: people of color (POC) by race and ethnicity, people with limited English proficiency (LEP), and people with low-income (LI). Called RETR Equity Focus Areas (EFAs), the EFAs do not account for population density, but only when a census tract exceeds the 5-county regional average rates for POC, LEP or LI. To better account for concentrations of these populations in urban and rural areas, Metro applied a separate population density screen to the EFAs at the block group level using the ACS 5-year estimates (2013-2017). Block groups are enumeration units used by the U.S. Census that are smaller than census tracts.

While the RETR EFAs were identified using demographic data at the census tract level (because the margins of error are too large at the block group level), block groups were used to determine the density of total population to better account for concentrations of people of color, people with limited English proficiency and people with low income in urban and rural areas. The five-county regional average population density is 0.76 people per acre. Higher population density is defined as equal to or more than 0.76 people per acre per block group and lower population density means less than 0.76 people per acre per block group.

Figure 6.20 shows RETR EFAs in the region defined above in *Section 4.0 Overview of Key Concepts and ETR Development Methodology* as areas with one or more of the POC, LEI, and LI populations above the five-county regional averages for each population.

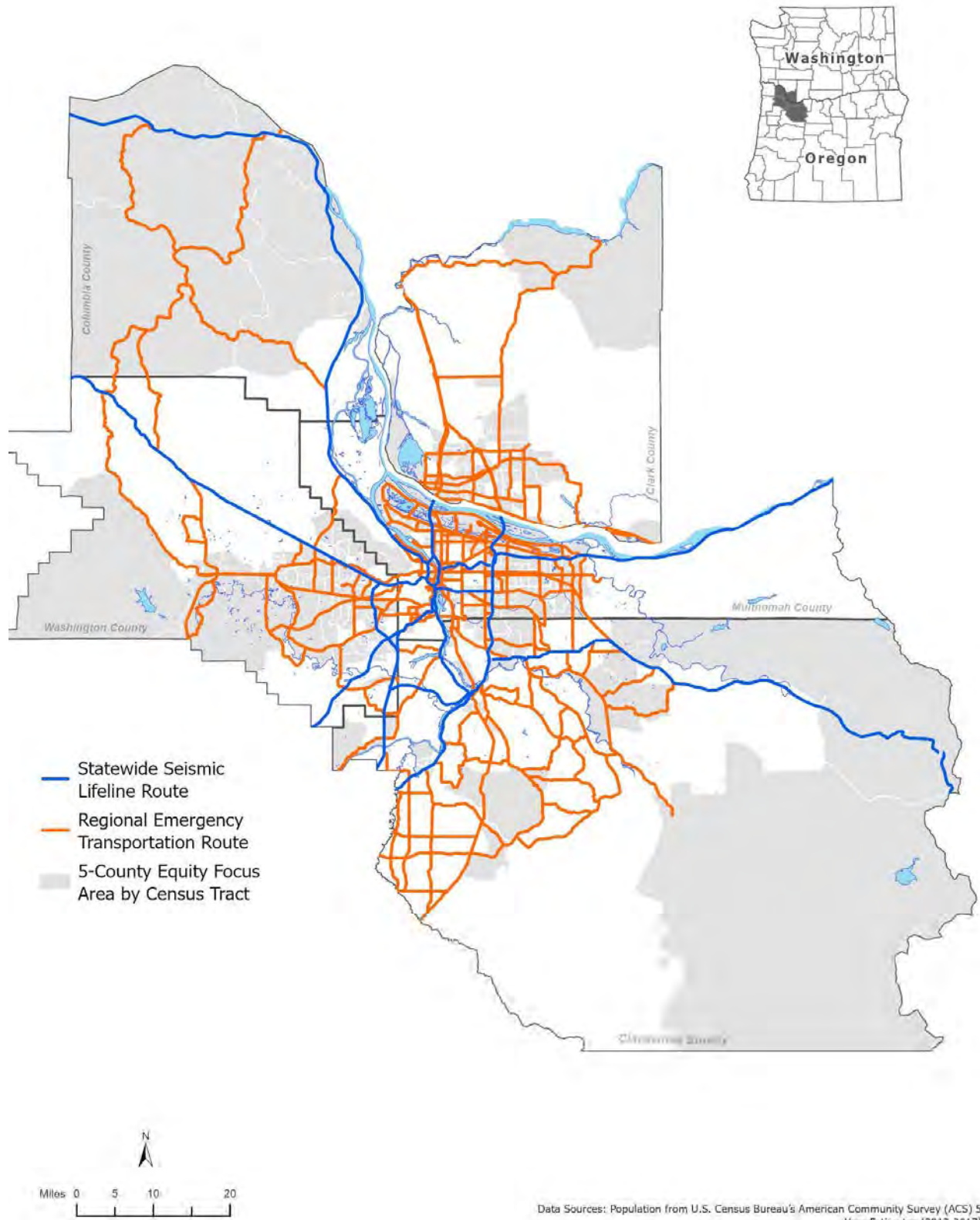


Figure 6.20. RETRs and SSLRs Relative to Equity Focus Areas

Figure 6.21 presents the RETRs relative to EFA census tracts further screened by areas with above the regional average population density. Higher density equity focus areas are defined as block groups within EFA census tracts with more than 0.76 people per acre. The analysis shows RETRs and SSLRs provide connectivity and service to equity focus areas with higher population densities in both for urban and rural areas.

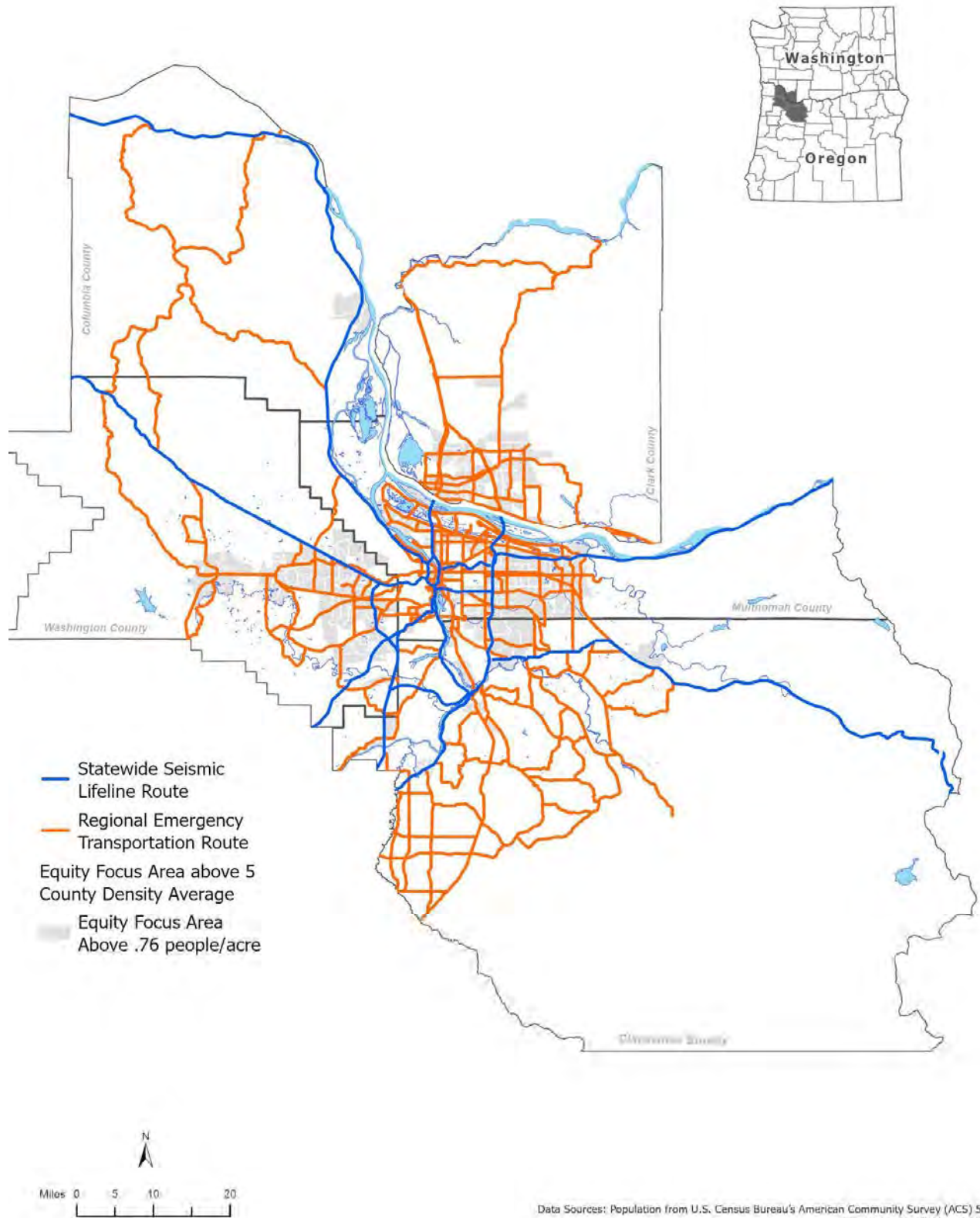


Figure 6.21. RETRs Relative to Equity Focus Areas Above the 5-County Density Rate

Figure 6.22 shows census tracts with concentrations of vulnerable populations with show shading to indicate how many types of vulnerabilities are present in each tract (0 through 6).

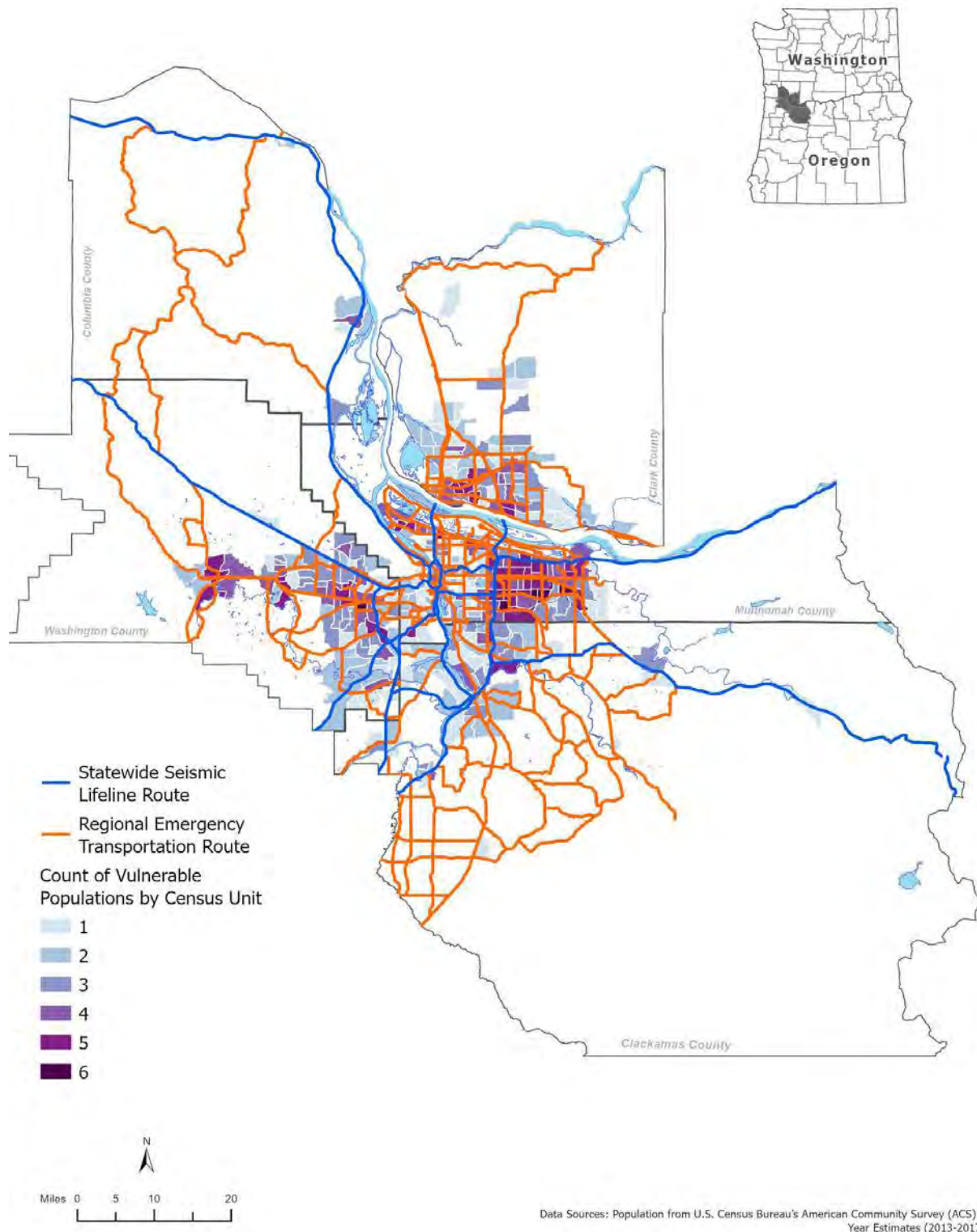


Figure 6.22. Areas of Vulnerable Populations Above the 5-County Density Rate

This work provides a preliminary assessment of considering community and social equity factors to evaluate the potential benefits and burdens of the RETRs and SSLRs routes. Based on the demographic mapping for the EFAs with a higher density screen (Figure 6.22) and the mapping that shows block groups within census tracts that include higher than average concentrations of multiple vulnerable populations (Figure 6.24), the RETRs and SSLRs provide adequate connectivity and accessibility for vulnerable populations in urban and rural communities. However, when screened with route resilience, many of the rural populations may become isolated from emergency response resources during seismic, flood, or landslide events. Further, these areas are less likely to be accessed quickly after an event. Therefore, work building resilience and emergency supplies within these communities will be important.

In disaster planning for social vulnerabilities and connectivity to emergency routes, an in-depth look at the demographics and socioeconomic attributes, such as poverty, income, education, gender, age, race, ethnicity, housing, health, and physical abilities, are all critical factors to consider for evaluating whether distribution of benefits and burdens is equitable. Social vulnerability factors to consider in future planning efforts include:

- Diversity and composition of families and households (e.g., single head of households, government-assisted households)
- Race/ethnicity/language
- Socioeconomic status (income, employment and education)
- Special needs of people without vehicles, older adults, people with disabilities or people who do not understand English well
- Lack of access to resources by those most in need of assistance (medical, housing, food, affordability, disability, etc.)
- Networks to provide access to economic resources

A more thorough analysis of these factors in combination with direct engagement of potentially vulnerable populations is recommended to provide a more in-depth look at the equity implications and help planners better prepare for an respond to emergency events. *Section 8.0 Anticipated Applications and Recommendations for Future Work* describes potential upcoming work to address these needs.

6.4 RETR Update Key Findings

6.4.1 Overall Findings

Based on our evaluation, the currently proposed system of RETRs provides adequate connectivity and access to routes and facilities identified during the methodology development. However, the route resilience evaluation highlighted significant weaknesses that will likely result in isolated populations and issues connecting critical infrastructure used for response and recovery to the populations and responders that need access. Supply distribution into the region via the ground vehicle transportation network from the east (PDX/Ports/Redmond Airport) and the west (ships off the coast) will be difficult if not impossible in the event of a large earthquake. The Willamette and Columbia rivers will be barriers to emergency response traffic due to areas of liquefaction and landslide, potential petroleum product

pollution from the CEI Hub, as well as significant bridge vulnerability. Bridge vulnerability and landslides are also likely to contribute to isolated populations in rural areas due to a lack of ETR redundancy. These weaknesses highlight the need to plan and mitigate for areas of low resilience to natural hazards without adequate route redundancy, and to develop operationalization guidelines for use of the routes during an emergency. Some specific observations are included below and future work is discussed in *Section 7.0 Anticipated Applications and Recommendations for Future Work*.

The vulnerabilities of the ETR network are significant and will likely require significant investment to adequately mitigate hazards to the full ETR system. Due to the limited availability of funding for transportation in Oregon and Washington and the region, this makes the development of a tiered or phased system of ETRs like ODOT's system critical. Prioritization of routes can help local agencies better plan for improvements to higher priority infrastructure and seek funding for resilience improvements to increase the resilience of the ETR system as quickly as possible. This prioritization should include not only resilience considerations, but a cost/benefit analysis that can help identify the most efficient and cost effective way to increase resilience as quickly as possible. Phase 2 of this effort will include some of this work as outlined in more detail in *Section 7.0 Anticipated Applications and Recommendations for Future Work*.

6.4.2 Connectivity and Access Findings

- Route redundancy in the east side of Portland and in the SW corner of the region is high in the current RETR system when compared to the critical infrastructure and essential facilities mapped in these areas. Prioritization of routes should be considered and some of the current RETRs may be able to be designated LETRs.
- Further refinement of critical infrastructure and essential facilities designations within the region would be beneficial before the next phase the of RETR update. Due to variability in the classifications (between jurisdictions and disciplines), a working definition was established for this project as outlined in *Section 3.0 Overview of Key Concepts and ETR Development Methodology*. Additional facilities and services should be incorporated to the extent possible in future updates. Additional attention should be paid to data gaps identified during this phase, including refinement of public works facilities and water/wastewater facilities, county debris management sites and emergency points of distribution (PODs), regional assets for large multi-use facilities anticipated to be used in emergency response, and marine assets for firefighting.
- Areas of Clark County outside of the Vancouver area have UGB areas that are serviced by fewer RETRs than other areas of similar population/urban growth in the region. The lack of redundant routes in northern Clark County and other more rural parts of the region are particularly at risk of isolation during a major disaster. Vulnerable populations in rural areas that include people with disabilities; youth; and older adults who may suffer from isolation, home boundness, and limited access to transportation. Furthermore, the majority of the routes are state routes. It may be prudent to increase RETR redundancy in these areas with more RETRs on local agency facilities. Future planning efforts should be considered for connectivity and redundancy to alleviate the further suffering and isolation of these vulnerable populations.

6.4.3 Route Resilience Findings

- In the event of a large earthquake, bridge vulnerability and expected damage due to liquefaction will greatly hinder the connectivity of the RETRs and the region. Seismically induced landslides will further disrupt the system. This is particularly an issue in rural areas where route redundancy is not sufficient to avoid isolated populations and in areas where river crossings are imperative for emergency response. Based on information from emergency management, the majority of the supplies for the region will be coming from the east and the Redmond Airport. Crossings of the Willamette and Columbia rivers are imperative to distribute supplies within the region.
- As mentioned with the bridge seismic vulnerability map, information about bridge resilience is available from ODOT, but comparable data are not available from WSDOT at this time. WSDOT has invested in seismic resilience of facilities statewide; therefore, the lack of information available to compile with the ODOT data should not be taken to indicate deficiency of infrastructure, just lack of available comparable data at this time. Further information about WSDOT bridge resilience should be incorporated when available.
- Lack of regional ETR redundancy results in Columbia County being especially vulnerable in both earthquake and flood events.
- Landslides outside of an earthquake event generally occur as singular events or as a small group. However, increased wildfires will develop increased risk for landslide events during wet weather periods and increased storm events may result in more landslides at a time. Additional mapping and considerations for landslide and wildfire events should be considered in future updates.
- As mentioned above, the DOGAMI debris data should be further evaluated to better reflect expected damage to the regional ETRs as well as where access will be needed to manage and remove debris within the region.

6.4.4 Community and Equity Findings

- The evaluation of vulnerable populations highlighted prevalence of over 65, under 18, and low-income populations in rural areas where there is less redundancy of regional ETRs and fewer travel options are available.
- The evaluation demonstrated different vulnerabilities in the rural and urban contexts; particularly the aging population in rural areas and more reliance on public transit or alternate modes of transportation in the urban areas.
- Ultimately, this was an evaluation of existing data; however, no conversations were held with communities classified as vulnerable within the data criteria. Future work needs to take these mapped results back to communities for discussion about how well the data represents their experience, and what additional information is needed to better represent their unique vulnerabilities and needs for the purposes of RETR planning (and others). Fortunately, the RDPO/Metro Social Vulnerability Tool (SVT) project will conduct outreach to a wide range of communities in 2021 to validate and explore factors for just such incorporation into future planning.

- These routes exist to serve people and the needs of each community. There is a necessity for local jurisdictions and emergency management agencies to integrate community resilience building into planning efforts and to find ways to meaningfully include all communities in the processes of recovery, resilience, and overall emergency management. After evaluating the diversity of our region’s geography, racial ethnicities, language barriers, and overall demographics, a more thorough and in-depth analysis and engagement of communities is recommended to define and understand the social equity implications and accessibility needs of the vulnerable communities to the RETR routes. Future and frequent in-person, virtual, webinar, teleconference engagements with existing and local Black, Indigenous and People of Color (BIPOC) groups, community-based organizations (CBOs) and community liaisons throughout the project during critical decision-making milestones are recommended, along with American Disability Act (ADA) accommodations, closed-captioned language translation, etc.

7.0 FINAL UPDATED ROUTE SUMMARY

The final updated RETR network as described above is detailed in Table 6.1 and shown on Figure 6.1 (*map with legend to be provided with large format*) below and attached in Appendix F as large format. This effort resulted in 192 RETR segments in addition to the 35 SSLR segments identified by ODOT.

8.0 ANTICIPATED APPLICATIONS AND RECOMMENDATIONS FOR FUTURE WORK

This section summarizes recommended future work that emerged during this two-year first phase of the regional ETR update project. Recommendations address topics raised by project stakeholders and/or were identified during the evaluation that fell outside the scope and budget for the initial phase of work (2019-2021). It is important to note that all future project work is contingent upon funding. Many of the proposed projects require further partnership between emergency management, planning organizations, and owner/operators of transportation facilities. The RDPO Steering Committee should continue to leverage the Urban Areas Security Initiative (UASI) federal grant to the region to continue immediate planning needs; it is also important that transportation stakeholders and entities with maintenance and capital investment responsibilities for facilities similarly prioritize funding to accelerate our region’s transportation resilience and preparedness.

Table 8.1 – Summary of Recommendations

	Recommendation	Level	Lead / Key Partners
1	Integrate RETRs into other planning and investment decision-making processes	State, Regional, and Local	Various
2	Prioritize or tier the regional ETRs	Regional	RDPO & Metro <i>RETR Phase 2</i>
3	Develop RETR management plans to include: RETR operations in an emergency, evaluation of specific hazard events, maintenance and coordination between jurisdictions, and transition to recovery	Local with regional facilitation	Local jurisdictions with facilitation by RDPO & Metro <i>RETR Phase 2</i>
4	Better address vulnerable populations	Regional and Local	RDPO & Metro (Social vulnerability Tool (SVT) <i>RETR Phase 2</i>
5	Formalize the RETRs and agree to a plan for consistent updates	Regional	RDPO & Metro <i>RETR Phase 2</i>
6	Integrate RETR and LETRs into evacuation planning	Local and regional	Counties in partnership with RDPO and other agencies
7	Engineering evaluation of top priority routes for seismic upgrades	State, Regional, and Local	Various
8	Evaluate river routes for use in response to a catastrophic event	Regional/State	Ports and Coast Guard, State Resilience Office
9	Develop equity-centered public messaging for transportation in emergencies	Regional	RDPO Public Messaging Task Force
10	Evaluate bike and pedestrian options for emergency transportation	Local	Various, TBD

8.1 Integration of ETR Work in Planning (Ongoing – Continuous)

Recommendation 1. Integrate RETRs into other planning and investment decision-making processes

As with all planning, the RETR work ties to many other efforts. The Table 8.2 below is a summary of those interrelated plans, projects and initiatives. Most are likely to be referenced throughout the detailed near and longer-term recommendations sections. RETRs and the local routes that serve the regional routes should be incorporated into many future planning efforts, including emergency response plans and exercises, natural hazards mitigation planning, master planning, transit planning, local and regional transportation system plan updates, and capital improvement planning.

The RETRs should be prioritized for resilience upgrades as projects are planned by local, regional, and state agencies as well as transportation providers. Based on understanding of upcoming federal and state grant opportunities, including the need for transportation resilience upgrades, these planning efforts will help demonstrate the urgency and necessity when applying for mitigation grants.

In addition to the plans, projects, and investments detailed on the following pages, it is important to underscore that RETRs are just one part of a robust emergency response following a catastrophic event. The success of emergency response in our region will hinge upon our continued investments in:

- 1. Emergency Management Capacity:** our ability to coordinate across multiple jurisdictions in a bi-state region and provide consistency in equitable response for all community members.
- 2. Connectivity to Emergency Response Resources:** our ability to connect with federal, state and local supplies and equipment for response efforts. Redundancy of RETRs is especially important considering the vulnerabilities of infrastructure and communities throughout the region.
- 3. Communications During Emergency Response:** continued investment to enhance technologies that enable regional communication in a catastrophic event, and communication to impacted community members throughout the five counties.

Critical Energy Infrastructure (CEI) Hub and Emergency Fuel Planning

Over the past decade, the following entities produced studies to map out aspects of seismic vulnerability, environmental and economic impact, engineering solutions and feasibility, stakeholder engagement and governance to address risks posed by the CEI Hub in NW Portland:

- DOGAMI, 2012
- City Club of Portland, 2017
- OSSPAC, 2019
- PSU, 2019
- Oregon Solutions, 2019
- ECONorthwest, 2021
- Oregon Solutions, 2021

The impacts of the CEI Hub on specific RETRs should be further explored within response/evacuation plans for adjacent communities, as well as in city/county mitigation action plans.

RETR use in emergencies hinges on access to fuel. The RDPO and partners also conducted an emergency fuel management regional exercise with Oregon Department of Energy in 2018 and are delivering emergency fuel management assessments and plans in 2020-2021, with a second regional fuel exercise scheduled for 2021- 2022. RETRs should serve as a key input to fuel distribution planning and exercises.



Figure 8.3. RETR integration into Regional Planning Efforts

Table 8.2 – Other State, Regional, and Local Plans that Connect to the RETR Update Project

#	PROJECT / PLAN	OWNER / LEAD	FOCUS AREA	STATUS / DATE	RELATION TO RETRS
State-Level Resilience Plans and Assessments					
1	Resiliency 2025	Oregon Governor’s Office / State Resilience Officer	Improving Our Readiness for the Cascadia Earthquake and Tsunami	Follow-up to the 2013 Oregon Resilience Plan, outlining strategy through 2025	Calls for seismic upgrades, addressing the CEI Hub, and robust logistical staging and supply chains
2	Regional Resiliency Assessment Program (RRAP)	Cybersecurity and Infrastructure Security Agency (CISA) with Oregon Governor’s Resilience Office	Assessment of multi-modal transportation solutions for a catastrophic earthquake	In progress since 2018. Estimated completion summer 2021.	Incorporate the “islands” created by a catastrophic earthquake (disruptions in the transportation networks) into the Phase 2 RETR operational planning with counties/cities.
Critical Energy Infrastructure (CEI) Hub Mitigation Planning and Investments					
3	CEI Hub Mitigation Assessment	Oregon Solutions and Portland State University	Seismic hazard mitigation study commissioned by Oregon Governor Kate Brown and the Oregon Office of Emergency Management (OEM)	In process, with findings due later in 2021	Will outline scenarios, reach, impacted communities, mitigation best practices as well as benefits and costs. ETRs adjacent to the CEI Hub may be impacted and/or priorities for response.

#	PROJECT / PLAN	OWNER / LEAD	FOCUS AREA	STATUS / DATE	RELATION TO RETRs
4	CEI Hub Economic Study	ECONorthwest and Salus Resilience commissioned by Multnomah County and City of Portland	Studying the economic impacts of the CEI Hub hazards, building on prior engineering seismic study of the CEI Hub storage tanks conducted by = PBEM/PSU	In process, findings due later in 2021	Will provide estimates of materials onsite and potential spills during the CSZ event as well as the economic impacts to the community.
Emergency Management Planning and Tools					
5	Emergency Fuel Assessment, Plans and Regional Exercise	RDPO with the Oregon Department of Energy (ODOE) and CNA Research	Assessment of emergency fuel needs for continuity of essential services in a catastrophic event, and plan development for fuel management in a large-scale emergency. A regional exercise in collaboration with ODOE will be delivered.	Initiated in 2019, plans and assessments will be completed in Spring 2021. Regional exercise to occur by 2022.	Fuel distribution in a catastrophic event will be reliant on the RETRs (along with SSLRs). Primary locations of fuel storage and distribution need to be accessible from SSLR/RETRs.
6	Social Vulnerability Toolkit (SVT)	RDPO and Metro	An enhanced GIS data platform for analysis of social vulnerabilities in the region	Initiated 2020, due by 2022	Key input for equity analysis. To be incorporated with RETR Phase 2 roll-out with local jurisdictions.
7	Transportation Recovery Plan and Toolkit	RDPO with Portland State University's Transportation Research and Education Center (PSU TREC)	Dissemination of PSU/PBEM/PBOT developed transportation recovery toolkit and plan; to promote further planning in region	Portland Toolkit and Plan established 2017, dissemination project 2020-2022	RETRs should be evaluated for recovery purposes with this toolkit, and recommendations made for any recovery-specific additions/changes.
8	Local hazard-specific evacuation plans	Counties in partnership with RDPO and other agencies	Geographic and hazard specific plans to evacuate populations at risk	TBD	Use of RETRs for evacuations was highlighted in 2020 wildfire season and needs to be clarified

#	PROJECT / PLAN	OWNER / LEAD	FOCUS AREA	STATUS / DATE	RELATION TO RETRs
9	Regional Critical Facilities Project	RDPO	Consistent designation of critical facilities region-wide and a toolkit to help prioritize use during a real-world event	2017- PAUSED	A consistent designation of critical facilities that support essential services is needed to further refine connectivity criteria of the RETRs for Phase 2 operationalizing with local jurisdictions.
10	Provision of Emergency Drinking Water Framework for the Portland Metropolitan Region	RDPO and the Regional Water Provider's Consortium (RWPC)	Regional coordinated planning for effective and equitable delivery of drinking water post-disaster. Advances development of resilient regional drinking water system in line with the Oregon Resilience Plan (2013) and requirements of America's Water Infrastructure Act.	In progress, final deliverables anticipated January 2023	This project will map critical water assets for immediate emergency response in a catastrophic event. This data will be critical input to the GIS layers for RETR Phase 2. The RETRs will inform connectivity for emergency water supply planning.

#	PROJECT / PLAN	OWNER / LEAD	FOCUS AREA	STATUS / DATE	RELATION TO RETRs
11	Regional Disaster Debris Management Planning	Metro	Designates disaster debris management sites and provides guidance for Metro on how to manage and coordinate debris operations and system disruptions following a debris-generating event.	Periodically updated; last update completed in 2018	RETRs provide important connections for moving debris and to access disaster debris disposal sites.
12	Natural Hazard Mitigation Plan (NHMP) Updates	Counties/Cities	FEMA required 5-year plan to outline mitigation actions that address area natural hazard risks for populations.	Ongoing, various updated cycles for each county/city	Incorporation of the Regional ETRs as well as updates to local routes should be highlighted in the next round of NHMP updates, in particular any mitigation actions that support ETRs
13	Port of Portland Resilience Program	Port of Portland	<p>Prepare the Port to support emergency response and return to operations after catastrophic events or disruptions through physical and operational actions and partnerships.</p> <p>Design and construct a seismically resilient runway at PDX to support immediate response and long-term recovery.</p>	TBD	RETRs are critical connections between PDX and Marine Terminal 6, which have the potential to serve as essential aid, transportation and logistics connection points between the Portland metropolitan region and areas outside the region within and beyond Oregon.

#	PROJECT / PLAN	OWNER / LEAD	FOCUS AREA	STATUS / DATE	RELATION TO RETRS
Transportation Plans and Investments					
14	Regional Transportation Plan (RTP)	Metro and SW RTC	Coordinates and plans investments in the regional transportation system (Portland tri-county urban area for Metro and Clark County, WA for SW RTC)	Updated every 5 years; Next RTP update due in Dec. 2023	RETRs can inform updates to regional transportation policies and criteria for prioritizing projects and programs in the plan.
15	Metropolitan Transportation Improvement Program (MTIP)	Metro and SW RTC	Four-year regional-level capital improvement plan for state and federally-funded transportation projects	Metro MTIP updated every three years (next update due in 2023; and RTC MTIP updated annually (next update due in Oct. 2021))	RETRs can inform updates to state and regional investment priorities and should be considered for resilience investments.
16	Oregon Transportation Plan	ODOT	Long-range policy plan that sets vision and policy foundation for investment in statewide transportation system	Next update planned in 2021-22	RETRs and SSLRs can inform updates to statewide transportation policies and investment priorities.
17	Oregon Highway Plan Update	ODOT	Statewide Seismic Lifeline Routes (SSLRs) are designated in this plan	Next update planned in 2021-22	SSLRs and RETRs can inform updates to investment priorities.
18	Statewide Transportation Improvement Plan (STIP)	ODOT and WSDOT	Four-year state-level capital improvement plan for state and federally-funded transportation projects	ODOT STIP updated every three years (next update due in 2023); next WSDOT STIP updated annually (next update due Jan. 2022)	RETRs and SSLRs can inform updates to statewide investment priorities and should be considered for resilience investments.

#	PROJECT / PLAN	OWNER / LEAD	FOCUS AREA	STATUS / DATE	RELATION TO RETRs
19	City and County Transportation System Plans (TSPs)	Cities/Counties	Long-range plans identify transportation needs for at least a 20-year period and define priority capital projects and programs (including maintenance of the system & funding)	Periodically each 7-10 years (varies)	Regional ETRs should be considered for resilience investments and can inform updates to investment priorities.
20	City and County Roadway Capital Improvement Plans (CIPs)	Cities/Counties	Defines near-term priority capital projects (including maintenance of the system and funding); draws from TSP and other plans/studies.	Periodically updated every 3-5 years	Regional ETRs should be considered for resilience investments and can inform investment priorities.
21	Portland Bureau of Transportation (PBOT) Transportation Resilience Strategy	PBOT, City of Portland	Outline social and physical impacts to natural hazards; begin identifying mitigation solutions	Jan-June 2021	Recent efforts in transportation resilience and recovery, and social equity will be inputs into this plan

8.2 Project Second Phase: Prioritizing, Operational Planning, and Formalizing the RETRs (Near Term – Next 1 to 5 Years)

A project concept was successfully submitted to the 2021 UASI pipeline of the RDPO in November 2020. The project concept for a second phase of work is anticipated to be funded in late 2021 for implementation in 2022-2024. The project proposal addresses most of the recommended near-term priorities.

Recommendation 2. Prioritize or tier the RETRs

An immediate next step will be to prioritize or tier the 192 RETR segments. With the phase 1 updated in 2021, 89 of routes were added to the 104 of 2006 established routes. With this most recent update, the network of RETRs is more robust, providing enhanced connectivity. However, for capital investment planning purposes, it will be most useful to determine key routes for seismic and other natural hazard resilience investment. It will also be important to make operational distinctions between different RETRs for prioritization in a real-world event.

For example, ODOT established a 3-tier system for their SSLRs, which could be emulated or adapted for the RETRs. ODOT's tiered system is based on the desired time required to get the routes open. As shown in Appendix D, Tier 1 routes are prioritized to be cleared and repaired first, then Tier 2 and so forth. Tiering and prioritization can also be helpful when planning capital improvements and applying for state and federal funding to improve resilience. Funding can be applied according to prioritization so that the most critical ETRs are retrofitted first.

The proposed Phase 2 project will develop a methodology for prioritization or tiering, work with owners/operators of the RETR facilities, as well as the elected leadership and local officials, whose ultimate decision it will be to endorse recommended tiering/prioritization for future investment and operational planning.

RETR OPERATIONAL CONSIDERATIONS

- Active landslides and high-risk landslide areas
- Areas of expected high liquefaction and flood zones
- Route geometry for emergency and large vehicle access
- Bridge capacity and weight restrictions
- Road grade and bridge vulnerability including overpasses and overcrossings.
- Route access restrictions for first responders and public
- Pedestrian access and alternate transit alternatives
- Public messaging regarding use of RETRs
- Debris management plans, equipment access, and temporary storage sites
- Coordination on multi-jurisdictional routes
- Planned jurisdictional transfers (State to local ownership)
- SSLR alternative regional and local routes identified by seismic resilience assessments (2019-2020)
- Local responsibilities for SSLR route damage assessment and debris clearance (if any)

Input from the following:

- Oregon Department of Transportation (ODOT) Tiering
- Regional Resiliency Assessment Program (RRAP) Study, Oregon
- Metro Regional Transportation Plan (RTP)
- Metro Regional Debris Management Plan
- RDPO Transportation Recovery project
- Local capital improvement plans
- Transit infrastructure investments

Recommendation 3. Develop RETR management plans to include: RETR operations in an emergency, evaluation of specific hazard events, and maintenance and coordination between jurisdictions, and transition to recovery.

Local Ownership

The proposed next phase of the project will focus on operationalizing the RETRS with local jurisdictions. Road and bridge facilities in the RETRs are owned and operated by the counties or state, and as such, planning can be coordinated with regional partners, but is ultimately owned by the local jurisdictions. We anticipate that due to equipment and personnel availability, local agencies will likely be responsible for clearing select ODOT routes and will have full responsibility for clearing regional and local routes.

All Hazards Approach

Local jurisdictions should consider the use of their tiered/prioritized RETRs against potential regional hazard risks, including snow and ice events, landslide or flooding events, and wildfire. Different disasters may require activating different routes suited to unique events and/or types of hazards. Future evaluation efforts should consider other hazards due to the effects of climate change, such as increased landslides and wildfires, damage to bridges and culverts due to washouts and flash flood events, increased and prolonged storm events, and flooding and water level rise.

Develop Detailed Operational Plans for ETRs and/or Incorporate into Existing Emergency Plans

It is recommended that detailed emergency transportation plans and response procedures are developed to better define concepts, such as communications between agencies, ETR use, users (including transit providers and public works staff), priorities and responsibilities for route maintenance, debris clearance, and repair. A coordinated plan with a timeline and associated responsibilities for federal, state, regional, and local emergency responders would provide the framework for developing emergency transportation response plans for varying levels of government. It would also be prudent to incorporate management and use of ETRs during future preparedness exercises, and to consider the potential role of transit during emergency response. In many emergency situations, people—sometimes large numbers of people and/or people with special transportation needs, first responders and support personnel—need to be moved.

The use of ETRs immediately after disaster in the region will depend on event-specific damage and needs, as well as access to fuel. In a CSZ event, fuel supply is likely to become very limited. Findings from the emergency fuel management assessments, plans and regional exercises developed 2019-2022 will be incorporated into the Phase 2 RETR operational planning. Also, it will be difficult to limit access to ETRs in the event of a large-scale disaster before federal and state aid and personnel are able to supplement local law enforcement; therefore, there are no plans to limit or restrict the use of ETRs by law enforcement at this time

Debris Management and Route Restoration

All levels of ETRs will need to be accessed and cleared of debris and potential obstructions, as well as damaged bridges, bridge approaches, or slope and embankment failures will have to be repaired. ETRs should be cleared according to the operational planning developed in future phases of this project. An example would be to clear based on order of importance from SSLRs to LERRs. Emergency debris management plans for the RETRs should be coordinated with the Metro Disaster Debris Management Plan that identifies disaster debris management site locations.

Regional and Multi-Jurisdiction Coordination

Part of the next phase of planning will be to evaluate LETRs and LERRs at jurisdictional boundaries, including those outside the region, to assess where they cross into a neighboring jurisdiction, district and/or community. In such instances, it is prudent to coordinate with the neighboring jurisdiction and other transportation providers to ensure that the road's designation as a local ETR or RETR is consistent across jurisdictional boundaries and operational plans for real-world disasters, emergencies, and significant events will be coordinated.

Transition from Response to Recovery

It is inevitable that ETRs, designated to facilitate immediate response priorities, will also be used for post-emergency recovery. As such, plans should include a timeline that details how the use of these routes will vary across jurisdictions and change after an event and during the recovery phase. Further, a better definition of federal, state, regional, and local responsibilities for recovery and repair of the routes is warranted. Planning for transition from emergency response to recovery is another area in which to consider the potential role of transit.

In 2021 the RDPO, in partnership with PSU's TREC will disseminate a toolkit developed by PBOT, PBEM, and PSU in 2018 to facilitate real-time decision-making about route restoration for recovery purposes. This dissemination project will provide important input on recovery considerations that can be applied in the Phase 2 RETR project to better address the transition of ETRs from emergency response to recovery purposes.

Recommendation 4. Better address vulnerable populations

The needs of vulnerable populations must be addressed in all phases of emergencies. In this report, the term vulnerable populations describes people who have existing vulnerabilities (regarding age, income, race, ethnicity, language, disability or mobility) that are often exacerbated during an emergency. This project evaluates census tracts and block group where ETRs intersect with higher concentrations of vulnerable communities that may be disproportionately affected by an earthquake or other disaster (e.g., more heavily damaged areas or limited access to medical care facilities). Future planning will need to acknowledge where the inequities in emergency preparedness and response would occur, and therefore, specifically address diversity, equity, and inclusion in transportation aspects of emergency response and recovery planning.

Early input from community leaders identified the need to ensure this body of work is relevant to community disaster preparedness activities and that there are clear lines of communication about how ETRs are implemented in the overall disaster planning at the regional and local levels. Though most leaders understand the need for the

RDPO Project to Develop Social Vulnerability Analysis Tools and Data (2020-22)

The RDPO received funding from the Urban Areas Security Initiative (UASI) to support development of tools and data to identify social vulnerability across the five-county region as well as within each of the five counties.

The tools will help identify people in the region who are most likely to experience barriers to services and programs before, during and after disasters. Factors that will be considered in this effort include race, income, houseless, functional and access needs, limited English proficiency, among others.

Tools are expected to include:

- A regional definition for social vulnerability.
- A set of common social vulnerability indicator datasets (including national and available local data) that will be compiled into a regional and county-level social vulnerability index.
- Maps and GIS data that geospatially display the data for each index.

RETR project, many emphasized that there are current infrastructure improvements in communities that need to be addressed, and future infrastructure improvement plans should balance the local needs of these emergency routes with helping local communities to prepare for disasters. This is an opportunity to address current community needs when improving the resilience of RETRs.

The overarching concern brought up by community leaders was to adequately evaluate who would be served by these prioritized RETRs and to ensure that future planning prioritizes serving those with less access to resources during a disaster. To this end, the RDPO/Metro Social Vulnerability Tool (SVT) project advancing in 2021 will provide important up-to-date data for deeper evaluation of these considerations with local communities that can inform the Phase 2 project.

Recommendation 5. Formalize the RETRs and agree to a plan for consistent updates

The regional partners will likely benefit from an updated formalized agreement (MOUs or other types of agreement, etc.) between agencies, including ODOT, Port districts and transit providers, which defines a plan for clearing debris and repairing RETRs based on their prioritization/tiering and in line with local operational and emergency plans.

As roadway maintenance and capital improvement programs progress and infrastructure ages, routes should be updated to reflect the current state of infrastructure resilience against identified hazard risks. Further, improvements to route corridors or new roadway corridors should be included in any route program updates on a regular basis.

It is recommended that the RETRs be updated at a minimum on a 10-year cycle: next update to commence in 2028 (anticipated 3-year timeframe to complete update by 2031).

It is recommended the regional partners, RDPO and Metro, conduct a shorter 5-year update to capture changes in the GIS data layers for any updated infrastructure, new critical facilities, and any updated or refreshed social vulnerability data.

Recommendation 6. Integrate RETR and LETR into evacuation planning

Over the past two decades, there have been numerous major evacuation events nationally with several high profile and highly publicized failings. Currently, each local jurisdiction maintains evacuation plans for specific vulnerable geographies and communities depending on their specific hazard risks (e.g., flood zones, rural/urban interface for wildfire, or the CEI Hub and adjacent communities). Current plans for a CSZ earthquake response include shelter-in-place because immediate evacuations will prove difficult due to infrastructure damage. The earliest evacuations will prioritize medically necessary evacuees, while the general population will be encouraged to shelter-in-place. This is further reinforced by the State of Oregon Resilience 2025 Plan promoting 2-weeks-ready supplies in households for the purpose of shelter-in-place.

2020 Wildfire Evacuations

During September 2020 when all of Clackamas County was on evacuation notice due to four simultaneous wildfire events within their boundaries, affordable housing partners in the region reached out to the RETR project team to get input on evacuation contingencies for their vulnerable populations. The RETR planning team directed inquiries back to the Clackamas and Multnomah County EOCs. This highlights the need for clarity about the purpose of ETRs and decision-making authority in a real-world incidents.

It is important that local jurisdictions integrate the RETRs and LETRs into their evacuation plans, and wherever possible, coordinate across jurisdictional boundaries and transportation agencies to plan contingencies for evacuations that may rely on RETRs spanning jurisdictional boundaries. Local evacuation plans should also emphasize areas at risk of cascading impacts (i.e., large fires, chemical releases, or landslides following an earthquake) and address the role of transit and management and operations of roadways during emergencies. As noted previously, in many emergency situations, people—sometimes large numbers of people and/or people with special transportation needs—need to be moved.. Modification to traffic signal timing, short-term capacity increases such as use of shoulders, roadway lane reversals and ramp closures to expedite travel during declared emergencies are potential strategies to consider in evacuation planning. These also require significant advance planning, multi-jurisdictional coordination and advanced real-time communications.

During an incident, evacuations are led by County Sherriff departments, who coordinate closely with emergency management and transportation departments for implementation and public communication. In addition, ODOT partners with the Federal Highway Administration, the Oregon State Police, and other agencies through multi-agency Transportation Incident Management (TIM) groups that support such incidents in Oregon. As the Regional ETRs are incorporated into local evacuation plans, the Columbia County and Portland area TIM groups should be included to ensure continuity and accuracy of evacuation incident management plans. Coordination of communication protocols and technology or tools to support the management and prioritization of use of routes (SSLRs and RETRs or LETRs) is essential in disseminating information and should be indicated in local evacuation plans.

8.3 Additional Follow-On Work to Advance Emergency Transportation Plans and Resilience (Medium-Term – 5 to 10 Years)

Recommendation 7. Engineering evaluation of top priority routes for seismic upgrades

Conducting a detailed engineering evaluation of all RETRs is not practical from a resource investment perspective. However, stakeholders should consider further investment in conducting site specific geotechnical and structural evaluations on a select group of RETRs (including bridges) to make informed investments to maximize seismic resilience and connectivity between LETRs, RETRs, and SSLRs in a catastrophic earthquake scenario. Details of the considerations to harden infrastructure include bridge/crossing age and vulnerability evaluations, including structural and geotechnical analyses and evaluation of the vulnerability of the route in general between crossings for liquefaction, lateral spread, and/or landslides. Route priority should also be considered. The system as a whole should be evaluated as well for both engineering and emergency response considerations. This will help identify areas where a lower tiered route may be considerably cheaper to harden than a higher priority route and still provide adequate connectivity.

Caltrans recently commissioned a **vulnerability study** of its State Highway System (SHS) to climate-change and extreme weather events. The result will identify transportation assets at risk of damage from these events, and will assist in future planning, design and funding decisions for adaption actions. <https://dot.ca.gov/programs/transportation-planning/2019-climate-change-vulnerability-assessments>

Recommendation 8. Evaluate river routes

The definitions in this study are related to ground transportation routes and do not include river routes. While the ETR project considered access to ports and shipping facilities, based on the numerous rivers in the region and the general expectation of large-scale bridge damage, we anticipate that ground transportation will be significantly affected. We recommend that RDPO and Metro consider a follow-up project in partnership with Port districts that examines the potential use of river routes, including how river debris will be managed and what options are available for using watercraft for supply and freight distribution as well as public evacuation from damaged areas.

If a major earthquake occurs during daytime hours when most of the population is at their place of work or school, then a major issue for the immediate response phase is to help the public return home and/or reunite with family after an event, especially in the case where they are across a river from home and/or family. It would be prudent to develop a plan to facilitate public crossings of both the Willamette and the Columbia rivers after an event assuming that neither the I-5 nor I-205 bridges are functional.

Recommendation 9. Develop equity-centered public information and messaging about transportation systems in emergencies

Further pursuing equity on ETRs as discussed above means incorporating clear communication with communities and community-based organizations about where ETRs are, meaningfully engaging these communities in preparedness planning to determine how best to communicate useful, actionable information in accessible formats during emergencies, and building understanding of how investments to make ETRs more resilient would benefit or impact their community. This also includes communication in different languages, using culturally-appropriate approaches and longer planning timeframes to incorporate voices less familiar with these planning processes. Future planning work should provide opportunities for community outreach and education, including people of different language groups, ages, socio-economic class, communities of color, and abilities to ensure that a broad cross section of community voices are represented and provided meaningful opportunities to shape the outcomes.

Future work is needed to develop a messaging campaign and information that helps communicate the role of ETRs and their uses prior to an incident. An example would be to include education about walking, biking, or other methods of transportation in lieu of driving to keep roads clear and promote public responsibility to keep RETRs available for emergency services.

Recommendation 10. Evaluate bike and pedestrian options for emergency transportation

In alignment with the equity information approach, future joint transportation and emergency planning at local levels should incorporate bike and pedestrian access to their LETRs and LERRs. An option could include isolated lanes on main LETRs or separate facilities that are provided specifically for non-motorized uses and transit vehicles.

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GLOSSARY OF TERMS

Accessibility

The ability or ease to reach desired goods, services, activities and destinations with relative ease, within a reasonable time, at a reasonable cost and with reasonable choices.

Arterial

Arterials provide direct, relatively high speed service for longer trips and large traffic volumes. Mobility is emphasized, and access is limited. These facilities form the primary connections between the central city, regional centers, industrial areas and intermodal facilities, as well as between neighboring cities and the metro region. Arterials generally span several jurisdictions and often are designated to be of statewide importance and serve as major freight routes.

Capacity

A transportation facility's ability to accommodate moving people or vehicles in a given place during a given time period.

Climate Change

Any change in global or regional climate patterns over time, whether due to natural variability or as a result of human activity that persists for an extended period, that is attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels.

Collector

Collectors provide a bridge between arterials and local roads. Collectors link small towns to arterials as well as collect traffic from local roads.

Community Centers

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

Connectivity

The degree to which the local and regional street, pedestrian, bicycle, transit and freight systems in a given area are interconnected.

Critical Infrastructure

Lifelines other than the roadway transportation network such as water, wastewater, electricity, fuel, communications, and intermodal transportation such as transit, rail, air, and waterway. Critical infrastructure and services of state and regional importance during a disaster include intermodal port facilities, such as river ports, airports and marine terminals, and transfer points.

Debris Clearance

Debris removal is defined as the clearance, removal, and/or disposal of items such as trees, sand, gravel, building components, wreckage, vehicles, and personal property.

Essential Facilities

Hospitals and health care facilities, Emergency Operation Centers, police and fire, public works facilities, state, regional, and local points of distribution, designated debris management sites, and shelters and community centers.

Emergency Transportation Route

Routes used during and after a major regional emergency or disaster to transport resources and materials including first responders (e.g., police, fire and emergency medical services), fuel, essential supplies, debris, equipment, patients and personnel.

Equity Focus Area

Equity focus areas are Census tracts that represent communities where the rate of people of color or people with limited English proficiency is greater than the five-county regional average, or people with low income, i.e., incomes equal to or less than 200% of the Federal Poverty Level.

Functional Classification

Functional classification is the process by which streets and highways are grouped in classes (systems) according to the character of service provided. There are three main functional classes as defined by the United States Federal Highway Administration: arterial, collector, and local. Throughways and freeways fall under arterial in the federal classification system.

Geospatial Data

Geographic information is the data or information that identifies the geographic location of features and boundaries on Earth, such as natural or constructed features, oceans, and more. Spatial data is usually stored as coordinates and topology, and is data that can be mapped.

Intermodal Facilities

A transportation element that allows passenger and/or freight connections between modes of transportation. Examples include airports, rail stations, marine terminals, and rail yards that facilitate the transfer of containers or trailers.

Isolated Populations

Vulnerable populations in urban and rural areas are particularly at risk of isolation. People with disabilities, youth, and the elderly are often left out entirely in urban planning. Many cannot leave their homes or do not have access to transportation, and therefore, suffer from isolation.

Local Streets or Roads

Local streets primarily provide direct access to adjacent land. Streets are designed as multi-modal facilities that accommodate bicycles, pedestrians and transit, with an emphasis on vehicle mobility and special pedestrian infrastructure on transit streets.

Network

Connected routes forming a cohesive system.

Population Centers

In demographics, the center of population (or population center) of a region is a geographical point that describes areas of concentration of people within a region.

Rapid Damage Assessment

Damage Assessment is a preliminary onsite evaluation of damage or loss caused by an accident or natural event. Damage assessments record the extent of damage, what can be replaced, restored or salvaged. It may also estimate the time required for repair, replacement and recovery. Rapid Damage Assessment is critical during the response phase of a natural or human-caused disaster. This information is used to measure the amount of damage, the area of damage, and to determine the resources necessary to mitigate and recover from a disaster.

Regional Transportation Plan

A long-range transportation plan that is developed and adopted for a metropolitan planning area (MPA) covering a planning horizon of at least 20 years. Usually RTPs are updated every five years through the metropolitan transportation planning process. The plan identifies and analyzes transportation needs of the metropolitan region and creates a framework for implementing policies and project priorities.

Route Maintenance

Route Maintenance or road maintenance involves remedying defects such as potholes that occur in the carriageway from time to time (corrective maintenance) and providing treatments such as crack sealing which will slow the rate of deterioration (preventative maintenance).

Single Occupancy Vehicle

Motor vehicles occupied and privately operated where the occupant is the driver. The drivers of SOVs use their vehicles primarily for personal travel, daily commuting and for running errands.

Slope and/or Embankment Failures

A slope failure is when a slope collapses abruptly due to weakened self-retainability of the earth under the influence of a rainfall or an earthquake. Embankments are constructed by placing and compacting successive layers of a fill material onto a foundation soil. Steeper slopes have greater risks for instability, hence more prone for slope failure. Excessive water in slopes is never good as it destabilizes the slope by adding weight, destroying cohesion between grains, and reducing friction.

Traffic

Movement of motorized vehicles, non-motorized vehicles and pedestrians on transportation facilities. Often traffic levels are expressed as the number of units moving over or through a particular location during a specific time period.

Users

A motorist, passenger, public transportation operator or user, truck driver, bicyclist, motorcyclist, or pedestrian, including a person with disabilities.

Vulnerable Populations

Vulnerable populations are people who have existing vulnerabilities (regarding age, income, race, ethnicity, language, disability or mobility) that are often exacerbated during an emergency. These communities are at a higher risk for poor health or longer recovery as a result of the barriers they experience to social, economic, political and environmental resources, as well as limitations due to illness or disability.

ACRONYMS

18 – Under the Age of 18

65 – Over the Age of 65

ACS – U.S. Census Bureau’s American Community Survey

ADT – Average Daily Traffic

C-TRAN – Clark County Public Transit Benefit Area Authority

CIP – Capital Improvement Plan

CISA – Cybersecurity & Infrastructure Security Agency

COVID-19 – Coronavirus disease of 2019

CRESA – Clark Regional Emergency Services Agency

CSZ – Cascadia Subduction Zone

DOD – Department of Defense

DOGAMI – Department of Geology and Mineral Industries

EFA – Equity Focus Area

EOC – Emergency Operations Center

EQRB – Earthquake Ready Burnside Bridge Project

ETR – Emergency Transportation Route

EWG – ETR Work Group

FEMA – Federal Emergency Management Agency

FHWA – Federal Highway Administration

GIS – Geographic Information System

ID – Route Identification

JPACT – Joint Policy Advisory Committee on Transportation

LERR – Local Emergency Response Route

LEP – Limited English Proficiency

LETR – Local Emergency Transportation Route

LI – Low Income

NV – No Vehicle

MOU – Memorandum of Understanding

MTAC – Metro Technical Advisory Committee

ODOE – Oregon Department of Energy

ODOT – Oregon Department of Transportation

OHSU – Oregon Health Sciences University

PBOT – Portland Bureau of Transportation

PDX – Portland International Airport

POC – People of Color

POD – Point of Distribution

PSU – Portland State University

PWB – Portland Water Bureau

RDPO – Regional Disaster Preparedness Organization

REMTEC – RDPO Emergency Managers Work Group

RETR – Regional Emergency Transportation Route

RRAP – Regional Resiliency Assessment Program

RTP – Regional Transportation Plan

SHS – State Highway System

SMART - South Metro Area Regional Transit

SOV – Single Occupancy Vehicle

SRAHNET – Federal Strategic Highway Network

SSLR – Statewide Seismic Lifeline Route (Oregon only)

SVT – Social Vulnerability Tool

SW RTC – Southwest Washington Regional Transportation Council

TPAC – Transportation Policy Alternatives Committee

TREC – Transportation Research and Education Center

TriMet – Tri-County Metropolitan Transportation District of Oregon.

TSP – Transportation System Plan

UGA – Urban Growth Area (Washington only)

UGB – Urban Growth Boundary (Oregon only)

UASI – Urban Areas Security Initiative

UPRR – Union Pacific Railroad

URM – Unreinforced Masonry

WADNR – Washington State Department of Natural Resources

WSDOT – Washington Department of Transportation

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Table 6.1 - ETR IDs for RETRS and SSLRs

OBJECTID	ETR_ID_2020	From	To	Tier	Version	route	Route Length (miles)	County	Owner
1	R-X-100-00-MonteCristo	HWY 213	Meridian Rd		2005	Primary	4.7	Clackamas	Clackamas County
2	R-X-101-01-Timber_GalesCreek	HWY 26	HWY 47		2005	Primary	10.2	Washington	ODOT
2	R-X-101-01-Timber_GalesCreek	HWY 26	HWY 47		2005	Primary	10.2	Columbia	ODOT
3	R-X-101-02-Timber_GalesCreek	HWY 26 (Sunset HWY)	HWY 8 (Tualatin Valley HWY)		2020	Alternate	22.5	Washington	Unknown
4	R-X-102-00-Highway211	Marion Co Line	HWY 26		2005	Primary	42.3	Clackamas	ODOT
5	R-X-103-00-Greenville_KansasCity_Kemper	HWY 47	HWY 47		2020	Alternate	6.0	Washington	Unknown
6	R-X-104-00-Barnards	HWY 213	Marion Co Line		2020	Primary	7.9	Clackamas	Unknown
7	R-X-105-00-Highway47	Yamhill Co Line	HWY 30		2005	Primary	60.1	Washington	ODOT
7	R-X-105-00-Highway47	Yamhill Co Line	HWY 30		2005	Primary	60.1	Columbia	ODOT
8	R-X-106-00-Macksburg	HWY 211	HWY 170 (Marquam Canby HWY)		2005	Primary	8.6	Clackamas	Clackamas County
9	R-X-107-00-FernHill_SpringHill_Gaston	HWY 47	HWY 47		2020	Alternate	7.4	Washington	Unknown
10	R-X-108-00-LoneElder	S Meridian Rd	HWY 170		2020	Primary	2.9	Clackamas	Unknown
11	R-X-109-00-Apirary	HWY 30	HWY 47		2005	Primary	20.7	Columbia	Columbia County
12	R-X-110-00-Carus_Mulino	HWY 99E	Beavercreek Rd		2020	Alternate	11.9	Clackamas	Unknown
13	R-X-111-00-Highway219	HWY 8	HWY 210		2005	Primary	10.1	Washington	ODOT
14	R-X-112-00-Wilsonville	I-5	Clackamas Co Line		2020	Primary	5.9	Clackamas	Unknown
15	R-X-113-00-River	Scholls Ferry Rd	HWY 8 (Tualatin Valley HWY)		2005	Primary	8.2	Washington	Washington County
16	R-X-114-00-Unger	Beavercreek Rd	HWY 211		2020	Alternate	5.2	Clackamas	Unknown
17	R-X-115-01-Brookwood	HWY 26	Shute Rd		2005	Primary	2.2	Washington	Washington County
18	R-X-115-02-Brookwood	Cornell Rd	Shute Rd		2005	Primary	2.9	Washington	Washington County
19	R-X-116-00-UpperHighland	HWY 211	Beavercreek Rd		2005	Primary	8.2	Clackamas	Clackamas County
20	R-X-117-01-CorneliusPass	HWY 8	Multnomah Co Line		2005	Primary	7.1	Washington	Washington County
20	R-X-117-01-CorneliusPass	HWY 8	Multnomah Co Line		2005	Primary	7.1	Multnomah	Multnomah County
21	R-X-117-02-CorneliusPass	Multnomah Co Line	HWY 30		2005	Primary	4.9	Multnomah	Multnomah County
22	R-X-118-00-NewEra_Penman	HWY 99E	S Carus Rd / Mulino Rd		2020	Alternate	4.1	Clackamas	Unknown
23	R-X-119-00-185th	HWY 26	HWY 8 (Tualatin Valley HWY)		2005	Primary	3.3	Washington	Washington County
24	R-X-120-01-SchollsFerry	Multnomah Co Line	HWY 26		2005	Primary	1.4	Multnomah	ODOT
25	R-X-120-01-SchollsFerry	Multnomah Co Line	HWY 26		2005	Primary	1.4	Multnomah	PBOT
26	R-X-120-02-SchollsFerry	River Rd	Multnomah Co Line		2005	Primary	12.7	Washington	Washington County
26	R-X-120-02-SchollsFerry	River Rd	Multnomah Co Line		2005	Primary	12.7	Multnomah	Multnomah County
27	R-X-121-00-RoyRogers_TualatinSherwood	Scholls Ferry Rd	SW Stafford Rd		2020	Primary	11.3	Washington	Unknown
28	R-X-122-00-Redland	Springwater Rd	HWY 213		2005	Primary	12.3	Clackamas	Clackamas County
29	R-X-123-00-Murray	Scholls Ferry Rd	HWY 26		2005	Primary	6.0	Washington	Washington County
30	R-X-124-00-Holcomb_Bradley	HWY 213	Redland Rd		2020	Alternate	5.2	Clackamas	Unknown
31	R-X-125-00-CedarHills	HWY 26	HWY 8 (Tualatin Valley HWY)		2005	Primary	2.1	Washington	Washington County
32	R-X-126-00-BoonesFerry_CountryClub_Kruse	I-5 (Or)	Or-43		2020	Primary	4.4	Clackamas	Unknown
33	R-X-127-00-Stafford	I-5 (Or)	I-205 (Or)		2020	Primary	6.3	Clackamas	Unknown
34	R-X-127-00-Stafford_McVey	HWY 43	I-205 (Or)		2005	Primary	3.7	Clackamas	ODOT / PBOT
35	R-X-128-00-WildcatMountain	HWY 211	SE Firwood Rd		2020	Primary	6.6	Clackamas	Unknown
36	R-X-129-00-Armdt_Airport_Barlow	99E	I-5		2005	Primary	4.6	Clackamas	Clackamas County
37	R-X-129-00-Armdt_Airport_Barlow	99E	I-5		2005	Primary	4.6	Clackamas	ODOT
38	R-X-129-00-Barlow	HWY 99E	S Monte Cristo Rd		2020	Primary	10.5	Clackamas	Unknown
39	R-X-130-00-Springwater	HWY 211	HWY 224		2005	Primary	11.8	Clackamas	Clackamas County
40	R-X-131-00-Meridian	S Monte Cristo Rd	99E		2005	Primary	10.1	Clackamas	Clackamas County
41	R-X-132-01-Sunnyside	I-205	HWY 212		2005	Primary	5.9	Clackamas	Clackamas County
42	R-X-132-02-Sunnyside	SE 82nd Ave	I-205		2020	Primary	1.5	Clackamas	Unknown
43	R-X-133-01-Highway170	HWY 211	99E		2005	Primary	7.9	Clackamas	Clackamas County
44	R-X-133-02-Kropf	HWY 213	HWY 211		2005	Primary	5.7	Clackamas	Clackamas County
45	R-X-134-00-Kelso	Amisigger Rd / Kelso Rd / Richey Rd	HWY 26		2020	Primary	2.9	Clackamas	Unknown
46	R-X-135-00-Highway213	Marion Co Line	I-205		2005	Primary	27.5	Clackamas	ODOT
47	R-X-137-00-Molalla	HWY 213	7th Ave		2005	Primary	2.2	Clackamas	Clackamas County
48	R-X-138-00-Allen_GardenHome_Multnomah	Murray Blvd	I-5 (Or)		2020	Alternate	6.8	Washington	Unknown
48	R-X-138-00-Allen_GardenHome_Multnomah	Murray Blvd	I-5 (Or)		2020	Alternate	6.8	Multnomah	Unknown

OBJECTID	ETR_ID_2020	From	To	Tier	Version	route	Route Length (miles)	County	Owner
49	R-X-139-00-7th	Washington St	Molalla Ave		2005	Primary	0.5	Clackamas	Clackamas County
50	R-X-140-00-Taylor'sFerry	I-5 (Or)	HWY 43		2020	Alternate	2.5	Multnomah	Unknown
51	R-X-141-00-Washington	7th St	HWY 213		2005	Primary	1.4	Clackamas	Clackamas County
52	R-X-142-00-Dolph	SW Allen Rd / Garden Home Rd / Multnomah Blvd	SW 26th Ave		2020	Alternate	0.6	Multnomah	Unknown
53	R-X-142-00-Sellwood_Tacoma	HWY 43	HWY 99E		2020	Alternate	2.2	Multnomah	Unknown
54	R-X-143-01-Highway99E	HWY 99E	Multnomah Co Line		2005	Primary	8.7	Clackamas	ODOT
54	R-X-143-01-Highway99E	HWY 99E	Multnomah Co Line		2005	Primary	8.7	Multnomah	ODOT
55	R-X-143-02-Highway99E	NE Lombard St (HWY 30)	I-5		2005	Primary	4.1	Multnomah	ODOT
56	R-X-143-03-Highway99E	Multnomah Co Line	SE Division St Structure		2005	Primary	7.0	Multnomah	ODOT
57	R-X-143-04-Highway99E	SE Division St Structure	NE Lombard St		2005	Primary	6.9	Multnomah	PBOT
58	R-X-143-05-Highway99E	W Mill Plain Blvd	I-205		2020	Primary	6.1	Clark	WSDOT
59	R-X-144-00-JohnsonCreek	SE 39th Ave	HWY 99E		2020	Alternate	1.8	Clackamas	Unknown
59	R-X-144-00-JohnsonCreek	SE 39th Ave	HWY 99E		2020	Alternate	1.8	Multnomah	Unknown
60	R-X-145-00-Highway99W	SW 60th Ave	SW Naito Pkwy		2005	Primary	5.0	Multnomah	ODOT
61	R-X-146-00-Flavel	82nd Ave	SE 92nd Ave		2020	Alternate	0.5	Multnomah	Unknown
62	R-X-146-00-Highway224	SE 82nd Ave	HWY 212		2020	Primary	2.2	Clackamas	Unknown
63	R-X-146-01-Highway224	HWY 212	HWY 211 (Eagle Creek - Sandy HWY)		2005	Primary	9.4	Clackamas	ODOT
64	R-X-146-02-Highway224	HWY 99E	I-205		2005	Primary	4.2	Clackamas	ODOT
65	R-X-146-03-Highway224	Estacada	Ripplebrook		2005	Primary	8.4	Clackamas	ODOT
66	R-X-147-00-Terwilliger	SW Taylor's Ferry Rd	I-5 (Or)		2020	Alternate	0.6	Multnomah	Unknown
67	R-X-148-00-Farmington	Cedar Hills Blvd	HWY 219		2005	Primary	9.7	Washington	Washington County/COB
68	R-X-149-00-Beavercreek	HWY 213	HWY 211		2005	Primary	15.2	Clackamas	Clackamas County
69	R-X-150-00-Highway8	HWY 47	HWY 26		2005	Primary	24.2	Washington	ODOT
70	R-X-151-00-Fellows	Redland Rd	Upper Highland Rd		2020	Alternate	4.5	Clackamas	Unknown
71	R-X-152-01-Cornell	Main St	HWY 26		2005	Primary	7.4	Washington	Washington County
72	R-X-152-02-Cornell_Barnes	HWY 26 (Sunset HWY)	HWY 217		2020	Alternate	3.5	Washington	Unknown
73	R-X-153-00-Hattan	Springwater Rd	Redland Rd		2020	Alternate	3.5	Clackamas	Unknown
74	R-X-154-00-Barnes	HWY 217	W Burnside Rd		2005	Primary	1.8	Washington	Washington County
75	R-X-154-01-Burnside	Brg	Brg		2005	Primary	0.3	Multnomah	Multnomah County
76	R-X-154-02-Burnside	Burnside Bridge	160th Ave E 330ft		2005	Primary	11.4	Multnomah	PBOT
77	R-X-154-03-Burnside	Burnside Bridge	SW Barnes Rd		2005	Primary	3.9	Washington	PBOT
77	R-X-154-03-Burnside	Burnside Bridge	SW Barnes Rd		2005	Primary	3.9	Multnomah	PBOT
78	R-X-155-00-LowerHighland_Ridge	Beavercreek Rd	Springwater Rd		2020	Alternate	9.5	Clackamas	Unknown
79	R-X-156-01-Highway10	SW 65th Ave	SW Barbur Blvd (99W)		2005	Primary	3.5	Multnomah	PBOT
80	R-X-156-02-Highway10	SW 65th Ave	Cedar Hills Rd		2005	Primary	3.3	Washington	ODOT
80	R-X-156-02-Highway10	SW 65th Ave	Cedar Hills Rd		2005	Primary	3.3	Multnomah	ODOT
81	R-X-157-00-232nd	HWY 224	HWY 212		2005	Primary	1.9	Clackamas	Clackamas County
82	R-X-158-00-Woodstock	SE 39th Ave	SE Foster Rd		2020	Alternate	2.7	Multnomah	Unknown
83	R-X-159-00-Amisigger_Kelso_Richey	HWY 224	HWY 212		2005	Primary	3.5	Clackamas	Clackamas County
84	R-X-160-01-Foster	SE Jenne Rd	Multnomah Co Line		2005	Primary	1.2	Multnomah	Multnomah County
85	R-X-160-02-Foster	SE Powell Blvd	SE Jenne Rd		2005	Primary	6.8	Multnomah	PBOT
86	R-X-161-00-Firwood	SE Wildcat Mountain Dr	HWY 26		2020	Alternate	3.3	Clackamas	Unknown
87	R-X-162-00-AerialTram	Brg	Brg		2020	Primary	0.6	Multnomah	Unknown
88	R-X-163-00-CapitolHighway	HWY 10	I-5 (Or)		2020	Alternate	2.5	Multnomah	Unknown
89	R-X-164-01-Powell	SE Powell Blvd	SE 174th Ave		2005	Primary	3.8	Multnomah	ODOT
90	R-X-164-02-Powell	SE 174th Ave	SE Burnside Rd		2005	Primary	4.2	Multnomah	ODOT
91	R-X-164-03-Powell	HWY 99E	SE Powell Blvd		2020	Primary	4.9	Multnomah	Unknown
92	R-X-165-00-45th_Vermont	SW Allen Rd / Garden Home Rd / Multnomah Blvd	SW Capitol HWY		2020	Alternate	1.4	Multnomah	Unknown
93	R-X-167-00-Moody	SW Naito Pkwy	SW Lowell St		2020	Alternate	1.6	Multnomah	Unknown
94	R-X-168-00-Hawthorne	HWY 99E	SE 39th Ave		2020	Alternate	1.8	Multnomah	Unknown
95	R-X-169-01-Naito	W Burnside Rd	NW 15th Ave		2005	Primary	1.6	Multnomah	PBOT
96	R-X-169-02-Naito	SW Barbur Blvd	685ft N Of I-405		2005	Primary	2.1	Multnomah	ODOT
97	R-X-169-03-Naito	685 Ft N Of I-405	W Burnside Rd		2005	Primary	1.1	Multnomah	PBOT
98	R-X-170-00-Madison	HWY 99E	SE Hawthorne Blvd		2020	Alternate	0.4	Multnomah	Unknown
99	R-X-171-00-Broadway_Terwilliger	SW Market And SW Clay	Ohsu		2020	Alternate	2.5	Multnomah	Unknown
100	R-X-172-00-Tiikum	Brg	Brg		2020	Primary	0.7	Multnomah	Unknown

OBJECTID	ETR_ID_2020	From	To	Tier	Version	route	Route Length (miles)	County	Owner
101	R-X-174-00-Washington	NE 82nd Ave	SE Stark St		2020	Alternate	1.3	Multnomah	Unknown
102	R-X-176-01-Highway26	SE Powell Blvd	Multnomah Co Line		2005	Primary	11.1	Multnomah	ODOT
103	R-X-176-02-Highway26	Multnomah Co Line	HWY 212		2005	Primary	5.4	Clackamas	ODOT
103	R-X-176-02-Highway26	Multnomah Co Line	HWY 212		2005	Primary	5.4	Multnomah	ODOT
104	R-X-178-01-Sandy	E Burnside Rd	NE Columbia Blvd		2005	Primary	5.7	Multnomah	PBOT
105	R-X-178-01-Stark	82nd Ave	242nd Ave / Hogan Rd / 238th Dr		2020	Primary	8.1	Multnomah	PBOT/Multnomah County
106	R-X-178-02-Sandy	NE Columbia Blvd	NE 181st Ave		2005	Primary	4.2	Multnomah	PBOT
107	R-X-178-02-Sandy	NE Columbia Blvd	NE 181st Ave		2005	Primary	4.2	Multnomah	PBOT / ODOT
108	R-X-178-02-Stark	242nd Ave / Hogan Rd / 238th Dr	Stark St Brg		2020	Primary	3.2	Multnomah	Unknown
109	R-X-178-03-Sandy	NE 181st Ave	I-84		2005	Primary	2.9	Multnomah	Multnomah County/ODOT
110	R-X-180-00-Glisan	NE Cesar E Chavez Blvd	NE 53rd Ave		2020	Alternate	0.7	Multnomah	Unknown
111	R-X-182-00-Broadway_Weidler	I-5 (Or)	NE Sandy Blvd		2020	Alternate	3.8	Multnomah	Unknown
112	R-X-183-00-23rd_Vaughn	NW Nicolai St	W Burnside St		2020	Alternate	1.6	Multnomah	Unknown
113	R-X-184-00-Nicolai	NW Front Ave	NW St Helens Rd @ Kittridge		2005	Primary	2.5	Multnomah	PBOT
114	R-X-185-00-Murray	W Burnside St	SW Canyon Rd		2020	Alternate	1.2	Multnomah	Unknown
115	R-X-186-00-Front	NW Naito Parkway	NW 61st Ave		2020	Alternate	4.1	Multnomah	PBOT
116	R-X-187-00-17th	HWY 99E	SE Powell Blvd		2020	Primary	1.1	Multnomah	Unknown
117	R-X-188-00-RockyButte	NE 82nd Ave	Joseph Wood Hill Park		2020	Alternate	1.9	Multnomah	Unknown
118	R-X-189-00-32nd_Harrison	Johnson Creek Blvd	HWY 224		2020	Primary	1.2	Clackamas	Unknown
118	R-X-189-00-32nd_Harrison	Johnson Creek Blvd	HWY 224		2020	Primary	1.2	Multnomah	Unknown
119	R-X-190-00-SwanIsland	I-5 (Or)	I-5 (Or)		2020	Alternate	3.1	Multnomah	Unknown
120	R-X-191-01-CesarChavez	E Burnside Rd	I-84		2005	Primary	1.0	Multnomah	PBOT
121	R-X-191-02-CesarChavez	SE Crystal Springs Blvd	E Burnside Rd		2005	Primary	4.0	Multnomah	PBOT
122	R-X-192-00-Killingsworth	I-5 (Or)	N Lombard St		2020	Alternate	4.3	Multnomah	Unknown
123	R-X-193-01-82nd	SE Clatsop St	NE Holman St		2005	Primary	9.1	Clackamas	ODOT
123	R-X-193-01-82nd	SE Clatsop St	NE Holman St		2005	Primary	9.1	Multnomah	ODOT
124	R-X-193-02-82nd	NE Alderwood	NE Airport Way		2005	Primary	0.7	Multnomah	Port of Portland
125	R-X-193-03-82nd	NE Holman St	NE Alderwood Rd		2005	Primary	1.1	Multnomah	PBOT
126	R-X-193-04-82nd	I-205	SE Clatsop St		2005	Primary	4.4	Clackamas	ODOT
127	R-X-194-00-StJohnsBridge	Brg	Brg		2005	Primary	0.4	Multnomah	ODOT
128	R-X-194-00-StJohnsBridge	Brg	Brg		2005	Primary	0.4	Multnomah	PBOT
129	R-X-195-01-172nd	Sunnyside Rd	HWY 212		2020	Primary	1.6	Clackamas	Unknown
130	R-X-195-02-172nd	SE Foster Rd	Sunnyside Rd		2020	Primary	2.8	Clackamas	Unknown
130	R-X-195-02-172nd	SE Foster Rd	Sunnyside Rd		2020	Primary	2.8	Multnomah	Unknown
131	R-X-196-00-Highway20Bypass	HWY 30 (Nw St Helens Rd)	N Lombard Blvd		2005	Primary	0.4	Multnomah	ODOT
132	R-X-197-00-Foster	Multnomah Co Line	HWY 212		2005	Primary	3.6	Clackamas	Clackamas County
132	R-X-197-00-Foster	Multnomah Co Line	HWY 212		2005	Primary	3.6	Multnomah	Clackamas County
133	R-X-198-00-Dekum	HWY 99E	NE Columbia Blvd		2020	Alternate	2.0	Multnomah	Unknown
134	R-X-200-00-Lombard	N Kelley Point Park Rd	N Columbia Blvd		2005	Primary	13.5	Multnomah	ODOT
135	R-X-200-00-Lombard	N Kelley Point Park Rd	N Columbia Blvd		2005	Primary	13.5	Multnomah	PBOT
136	R-X-201-00-242nd_Hogan_238th	HWY 212	I-84		2005	Primary	9.2	Clackamas	Clackamas County
136	R-X-201-00-242nd_Hogan_238th	HWY 212	I-84		2005	Primary	9.2	Multnomah	Multnomah County
137	R-X-202-00-Columbia	N Lombard St	NE Sandy Blvd		2005	Primary	11.3	Multnomah	PBOT
138	R-X-203-01-122nd	E Burnside Rd	NE Marine Dr		2005	Primary	3.2	Multnomah	PBOT
139	R-X-203-02-122nd	SE Foster Rd	E Burnside Rd		2005	Primary	3.2	Multnomah	PBOT
140	R-X-204-00-ColumbiaRamp	NE Columbia Blvd	N Portland Rd		2020	Alternate	0.4	Multnomah	Unknown
141	R-X-205-00-Highland-190th-Tillstrom	SE Powell Blvd	SE Foster Rd		2020	Primary	3.4	Clackamas	Unknown
141	R-X-205-00-Highland-190th-Tillstrom	SE Powell Blvd	SE Foster Rd		2020	Primary	3.4	Multnomah	Unknown
142	R-X-206-01-Alderwood	NE 82nd Ave	Airport Way		2020	Alternate	1.9	Multnomah	Unknown
143	R-X-206-02-Alderwood	NE Columbia Blvd	NE 82nd Ave		2020	Primary	0.9	Multnomah	Unknown
144	R-X-207-00-112th-CherryBlossom	SE Stark St	SE Powell Blvd		2020	Alternate	2.0	Multnomah	Unknown
145	R-X-208-01-Marine	N Portland Rd	I-5		2005	Primary	1.3	Multnomah	ODOT
146	R-X-208-02-Marine	N Kelley Point Park Rd	N Portland Rd		2005	Primary	3.4	Multnomah	PBOT
147	R-X-208-03-Marine	NE 185th Dr	I-84		2005	Primary	3.9	Multnomah	Multnomah County
148	R-X-208-04-Marine	I-5	NE 185th Ave		2005	Primary	11.0	Multnomah	PBOT
149	R-X-209-00-182nd	SE Powell Blvd	E Burnside Rd		2005	Primary	2.2	Multnomah	Multnomah County

OBJECTID	ETR_ID_2020	From	To	Tier	Version	route	Route Length (miles)	County	Owner
150	R-X-210-01-Airport	I-205	NE 181st Ave		2005	Primary	4.7	Multnomah	PBOT / ODOT
151	R-X-210-02-Airport	Pdx	I-205		2005	Primary	5.1	Multnomah	ODOT / Port of Portland
152	R-X-211-00-Fairview_Glisan_223	NE Sandy Blvd	SE Powell Blvd		2020	Alternate	4.7	Multnomah	Unknown
153	R-X-212-00-SR14	I-5	Skamania Co. Line		2005	Primary	52.1	Clark	City of Vancouver
154	R-X-212-00-SR14	I-5	Skamania Co. Line		2005	Primary	52.1	Clark	WSDOT
155	R-X-213-00-257th_Kane	I-84	HWY 26		2020	Primary	4.3	Multnomah	Unknown
156	R-X-214-00-WashougalRiver_Evergreen	SR-14	SR-14		2020	Alternate	3.1	Clark	Unknown
157	R-X-215-00-Albina_Mississippi	N Lombard St	Kerby Ave		2020	Alternate	2.3	Multnomah	Unknown
158	R-X-216-01-MillPlain	I-5	SE 164th Ave		2005	Primary	8.2	Clark	City of Vancouver
159	R-X-216-01-MillPlain	I-5	SE 164th Ave		2005	Primary	8.2	Clark	WSDOT
160	R-X-216-02-MillPlain	I-5	Port Of Vancouver		2005	Primary	2.9	Clark	WSDOT
161	R-X-217-00-15th	NE Dekum St	NE Broadway / NE Weidler St		2020	Alternate	2.6	Multnomah	Unknown
162	R-X-218-00-FourthPlain	I-5 (Wa)	I-205 (Wa)		2020	Primary	4.8	Clark	Unknown
163	R-X-219-00-11th	NE Columbia Blvd	N Lombard St		2020	Alternate	0.1	Multnomah	Unknown
164	R-X-220-00-18th	162nd / 164th Ave	192nd Ave		2020	Primary	1.5	Clark	Unknown
165	R-X-221-00-42nd	NE Columbia Blvd	NE Broadway / Weidler St		2020	Alternate	3.4	Multnomah	Unknown
166	R-X-222-00-SR500	SR-14	I-5		2005	Primary	36.5	Clark	City of Vancouver
167	R-X-222-00-SR500	SR-14	I-5		2005	Primary	36.5	Clark	WSDOT
168	R-X-223-00-Cully	NE Sandy Blvd	NE Columbia Blvd		2020	Primary	1.9	Multnomah	Unknown
169	R-X-224-00-SR502	I-5	SR-503		2005	Primary	11.3	Clark	WSDOT
170	R-X-225-00-Portland	N Columbia Blvd	N Marine Dr		2005	Primary	1.7	Multnomah	ODOT
171	R-X-226-00-78th_Padden	I-5	NE 172nd Ave		2005	Primary	13.9	Clark	Clark County
172	R-X-226-00-78th_Padden	I-5	NE 172nd Ave		2005	Primary	13.9	Clark	City of Vancouver
173	R-X-226-00-78th_Padden	I-5	NE 172nd Ave		2005	Primary	13.9	Clark	WSDOT
174	R-X-227-00-DeltaPark	I-5 (Or)	HWY 99E		2020	Alternate	1.3	Multnomah	Unknown
175	R-X-228-00-ScapooseVernonia	HWY 30	HWY 47		2005	Primary	20.1	Columbia	Columbia County
176	R-X-229-00-Vancouver	HWY 99E	NE Columbia Blvd		2020	Alternate	0.5	Multnomah	Unknown
177	R-X-230-00-Haynes_CedarCreek	I-5	SR-503		2005	Primary	16.5	Clark	Clark County
178	R-X-231-00-33rd	NE Columbia Blvd	NE Marine Dr		2020	Alternate	2.6	Multnomah	Unknown
179	R-X-232-00-Merlo_Jenkins	Merlo Garage	Murray Blvd		2020	Alternate	1.4	Washington	Unknown
180	R-X-233-00-47th_Cornfoot_Airtrans	NE Columbia Blvd	Airtrans Way		2020	Primary	1.6	Multnomah	Unknown
181	R-X-235-00-FruitValley_FourthPlain	Lakeshore / Fruit Valley / 39th / 78th	I-5 (Wa)		2020	Primary	2.0	Clark	Unknown
182	R-X-237-00-FruitValley_39th_78th	I-5	NE 78th / Padden Pkwy		2020	Primary	4.5	Clark	Unknown
183	R-X-239-00-Andresen	SR-14	NE 78th / Padden Pkwy		2020	Primary	4.9	Clark	WSDOT
184	R-X-241-00-136th_137th	NE 78th / Padden Pkwy	Mill Plain (Vancouver)		2020	Primary	5.4	Clark	Unknown
185	R-X-243-00-162nd_164th	SR-14	Ward Rd		2005	Primary	6.7	Clark	Clark County
186	R-X-243-00-162nd_164th	SR-14	Ward Rd		2005	Primary	6.7	Clark	City of Vancouver
187	R-X-243-00-162nd_164th	SR-14	Ward Rd		2005	Primary	6.7	Clark	WSDOT
188	R-X-245-00-192nd	18th Ave	SR-14		2020	Primary	3.6	Clark	Unknown
189	R-X-247-00-SR503	Cowlitz Co. Line	SR-500		2005	Primary	27.8	Clark	WSDOT
190	R-X-249-00-Chautauqua	NE Columbia Blvd	N Lombard St		2020	Alternate	1.0	Multnomah	Unknown
191	R-X-251-00-Dewitt	HWY 10	HWY 10		2020	Alternate	0.3	Multnomah	Unknown
192	R-X-253-00-Sandy122Ramp	NE 122nd Ave	NE Sandy Blvd		2020	Alternate	0.3	Multnomah	Unknown
193	R-X-255-00-40th	SW Allen Rd / Garden Home Rd / Multnomah Blvd	SW Capitol HWY		2020	Alternate	0.2	Multnomah	Unknown
194	R-X-257-00-CentralPoint	S New Era Rd / Penman Rd	Molalla Ave		2020	Alternate	1.9	Clackamas	Unknown
195	R-X-259-00-26th	SW Taylors Ferry Rd	HWY 99W		2020	Alternate	0.7	Multnomah	Unknown
196	R-X-261-00-181st	E Burnside Rd	NE Sandy Blvd		2005	Primary	1.6	Multnomah	Multnomah County
197	R-X-263-00-MarketClay	I-405 / HWY 26	SW Naito Parkway		2005	Primary	1.3	Multnomah	PBOT
198	R-X-265-00-LewisClarkBridge	Brg	Brg		2005	Primary	0.7	Columbia	WSDOT
199	R-X-267-00-Gideon	SE 17th	Tilikum Crossing		2020	Alternate	0.9	Multnomah	Unknown
200	R-X-269-00-65th_Nyberg_TualatinSherwood	Meridian Park Medical	SW Roy Rogers / Tualatin Sherwood Rd		2020	Alternate	3.6	Washington	Unknown
201	R-X-271-00-223rd	NE Marine Dr	NE Sandy Blvd		2020	Alternate	1.1	Multnomah	Unknown
	S-0-108-02-I84	I-205	US-197	1	2013	Primary	33.9	Multnomah	ODOT
	S-0-113-01-I205	I-84	US-26	1	2013	Primary	2.4	Multnomah	ODOT
	S-0-113-02-I205	US-26	OR-224	1	2013	Primary	5.5	Multnomah	ODOT
	S-0-113-03-I205	OR-224	OR-212	1	2013	Primary	0.9	Clackamas	ODOT

OBJECTID	ETR_ID_2020	From	To	Tier	Version	route	Route Length (miles)	County	Owner
	S-0-113-04-1205	OR-212	OR-99E	1	2013	Primary	3.3	Clackamas	ODOT
	S-0-113-05-1205	OR-99E	OR-43	1	2013	Primary	0.5	Clackamas	ODOT
	S-0-113-06-1205	OR-43	I-5	1	2013	Primary	8.8	Clackamas	ODOT
	S-0-113-07-1205	WA Border	I-84	1	2013	Primary	5.1	Multnomah	ODOT
	S-1-101-01-15	WA Border	I-405	1	2013	Primary	5.3	Multnomah	ODOT
	S-1-102-00-US30	US-101	I-405	1	2013	Primary	67.2	Columbia/Multnomah	ODOT
	S-1-103-01-1405	I-5	US-30	1	2013	Primary	1.2	Multnomah	ODOT
	S-1-103-02-1405	US-30	US-26	1	2013	Primary	1.4	Multnomah	ODOT
	S-1-103-03-1405	US-26	I-5/OR-43/US-26	1	2013	Primary	1.6	Multnomah	ODOT
	S-1-109-01-OR99W	I-5	OR-217	1	2013	Primary	1.1	Multnomah	ODOT
	S-1-109-02-OR99W	OR-217	OR-219	1	2013	Primary	11.2	Washington	ODOT
	S-2-101-02-15	I-405	I-84	2	2013	Primary	1.4	Multnomah	ODOT
	S-2-101-03-15	I-84	I-405/OR 43/US-26	2	2013	Primary	1.9	Multnomah	ODOT
	S-2-101-04-15	I-405/OR 43/US-26	OR-99W	1	2013	Primary	6.0	Multnomah	ODOT
	S-2-101-05-15	I-205	OR-214	1	2013	Primary	7.6	Washington	ODOT
	S-2-101-06-15	OR-217	I-205	1	2013	Primary	3.8	Washington	ODOT
	S-2-101-07-15	OR-99W	OR-217	1	2013	Primary	1.5	Washington	ODOT
	S-2-104-01-US26	OR-103	OR-47	2	2013	Primary	16.0	Washington	ODOT
	S-2-104-02-US26	OR-47	OR-217	2	2013	Primary	18.8	Washington	ODOT
	S-2-104-03-US26	OR-217	I-405	2	2013	Primary	4.8	Multnomah	ODOT
	S-2-104-04-US26	OR-212	US-97	2	2013	Primary	41.2	Clackamas	ODOT
	S-2-106-00-OR212	I-205	US-26	2	2013	Primary	12.5	Clackamas	ODOT
	S-2-107-01-OR99E	I-205	OR-43	2	2013	Primary	0.5	Clackamas	ODOT
	S-2-107-02-OR99E	OR-43	OR-214	2	2013	Primary	12.3	Clackamas	ODOT
	S-2-108-01-184	I-5	I-205	2	2013	Primary	5.0	Multnomah	ODOT
	S-3-104-05-US26	OR-43	OR-99E	3	2013	Primary	0.7	Clackamas	ODOT
	S-3-104-06-US26	OR-99E	I-205	3	2013	Primary	8.3	Multnomah	ODOT
	S-3-105-01-OR217	OR-99W	I-5	3	2013	Primary	1.6	Washington	ODOT
	S-3-105-02-OR217	US-26 to	OR-99W	3	2013	Primary	5.9	Washington	ODOT
	S-3-111-00-OR43	US-26	I-205	3	2013	Primary	11.1	Clackamas	ODOT
	S-X-101-08-15	Or / Wa Border	Hayes Rd		2005	Primary	20.5	Clark	WSDOT
	S-X-113-23-1205	I-5	SR-14		2005	Primary	10.0	Clark	WSDOT

Table 6.2 Connectivity to Critical Infrastructure and Essential Facilities

Category	Type	CI/EF	Percent Within 1/4 Mile of RETR/SSLR
State/Regional	CI	Airports	48
State/Regional	CI	Fuel Points	86
State/Regional	CI	Marine Facilities	75
State/Regional	CI	Marine Terminals	50
State/Regional	CI	Public Works	76
State/Regional	CI	Public Works	69
State/Regional	CI	Rail	59
State/Regional	CI	Railyards	95
State/Regional	CI	Transit Facilities	79
State/Regional	EF	911 Dispatch Centers	67
State/Regional	EF	DDMS	86
State/Regional	EF	Hospitals	95
State/Regional	EF	Solid Waste Management	63
City/County	CI	Boat Ramps	7
City/County	CI	Bus Lines	100
City/County	CI	Fuel Points	60
City/County	CI	Light Rail	96
City/County	CI	Light Rail	96
City/County	CI	Transit Centers	92
City/County	EF	Armories	67
City/County	EF	EOC	17
City/County	EF	Fire	35
City/County	EF	Health Care Clinics	91
City/County	EF	Police	61
City/County	EF	Public Works	58
City/County	EF	Sand Piles	100
Community/Neighborhood	CI	Trails	46
Community/Neighborhood	EF	Community Centers	58
Community/Neighborhood	EF	Parks	53
Community/Neighborhood	EF	Schools	58

Table 6.3 RETRs Subject to Liquefaction Hazards

ETR ID 2021	From	To	Very High	High	Moderate	Total	At least 25% Above High Risk	At Least 50% above Moderate Risk
R-X-169-01-Naito	W Burnside Rd	NW 15th Ave	100	0	0	100	High Risk	High Risk
R-X-172-00-Tilikum	Brg	Brg	100	0	0	100	High Risk	High Risk
R-X-186-00-Front	NW Naito Parkway	NW 61st Ave	100	0	0	100	High Risk	High Risk
R-X-193-02-82nd	NE Alderwood	NE Airport Way	100	0	0	100	High Risk	High Risk
R-X-193-03-82nd	NE Holman St	NE Alderwood Rd	100	0	0	100	High Risk	High Risk
R-X-194-00-StJohnsBridge	Brg	Brg	100	0	0	100	High Risk	High Risk
R-X-206-01-Alderwood	NE 82nd Ave	Airport Way	100	0	0	100	High Risk	High Risk
R-X-208-01-Marine	N Portland Rd	I-5	100	0	0	100	High Risk	High Risk
R-X-208-02-Marine	N Kelley Point Park Rd	N Portland Rd	100	0	0	100	High Risk	High Risk
R-X-208-03-Marine	NE 185th Dr	I-84	100	0	0	100	High Risk	High Risk
R-X-208-04-Marine	I-5	NE 185th Ave	100	0	0	100	High Risk	High Risk
R-X-210-02-Airport	Pdx	I-205	100	0	0	100	High Risk	High Risk
R-X-227-00-DeltaPark	I-5 (Or)	HWY 99E	100	0	0	100	High Risk	High Risk
R-X-265-00-LewisClarkBridge	Brg	Brg	100	0	0	100	High Risk	High Risk
R-X-233-00-47th_Cornfoot_Airtrans	NE Columbia Blvd	Airtrans Way	96	0	4	100	High Risk	High Risk
R-X-229-00-Vancouver	HWY 99E	NE Columbia Blvd	93	0	7	100	High Risk	High Risk
R-X-231-00-33rd	NE Columbia Blvd	NE Marine Dr	93	0	7	100	High Risk	High Risk
R-X-143-02-Highway99E	NE Lombard St (HWY 30)	I-5	92	0	8	100	High Risk	High Risk
R-X-225-00-Portland	N Columbia Blvd	N Marine Dr	92	0	8	100	High Risk	High Risk
R-X-167-00-Moody	SW Naito Pkwy	SW Lowell St	90	0	10	100	High Risk	High Risk
R-X-206-02-Alderwood	NE Columbia Blvd	NE 82nd Ave	86	0	14	100	High Risk	High Risk
R-X-169-03-Naito	685 Ft N Of I-405	W Burnside Rd	65	0	35	100	High Risk	High Risk
R-X-239-00-Andresen	SR-14	NE 78th / Padden Pkwy	48	0	52	100	High Risk	High Risk
R-X-184-00-Nicolai	NW Front Ave	NW St Helens Rd @ Kittridge	42	0	58	100	High Risk	High Risk
R-X-103-00-Greenville_KansasCity_Kemper	HWY 47	HWY 47	39	0	61	100	High Risk	High Risk
R-X-111-00-Highway219	HWY 8	HWY 210	37	0	63	100	High Risk	High Risk
R-X-170-00-Madison	HWY 99E	SE Hawthorne Blvd	34	0	66	100	High Risk	High Risk
R-X-267-00-SEGideon	SE 17th	Tilikum Crossing	28	0	72	100	High Risk	High Risk
R-X-100-00-MonteCristo	HWY 213	Meridian Rd	26	0	74	100	High Risk	High Risk
R-X-146-02-Highway224	HWY 99E	I-205	24	0	76	100	High Risk	High Risk
R-X-162-00-AerialTram	Brg	Brg	23	0	77	100	High Risk	High Risk
R-X-142-00-Sellwood_Tacoma	HWY 43	HWY 99E	21	0	79	100	High Risk	High Risk
R-X-117-01-CorneliusPass	HWY 8	Multnomah Co Line	19	0	81	100	High Risk	High Risk
R-X-171-00-Broadway_Terwilliger	SW Market And SW Clay	Ohsu	17	0	83	100	High Risk	High Risk
R-X-154-03-Burnside	Burnside Bridge	SW Barnes Rd	16	14	70	100	High Risk	High Risk
R-X-115-02-Brookwood	Cornell Rd	Shute Rd	15	0	85	100	High Risk	High Risk
R-X-129-00-Barlow	HWY 99E	S Monte Cristo Rd	15	0	85	100	High Risk	High Risk
R-X-119-00-185th	HWY 26	HWY 8 (Tualatin Valley HWY)	12	0	88	100	High Risk	High Risk
R-X-196-00-Highway20Bypass	HWY 30 (Nw St Helens Rd)	N Lombard Blvd	12	0	88	100	High Risk	High Risk

ETR ID 2021	From	To	Very High	High	Moderate	Total	At least 25% Above High Risk	At Least 50% above Moderate Risk
R-X-138-00-Allen_GardenHome_Multnomah	Murray Blvd	I-5 (Or)	11	0	89	100		High Risk
R-X-150-00-Highway8	HWY 47	HWY 26	10	4	86	100		High Risk
R-X-235-00-FruitValley_FourthPlain	Lakeshore / Fruit Valley / 39th / 78th	I-5 (Wa)	10	8	82	100		High Risk
R-X-115-01-Brookwood	HWY 26	Shute Rd	9	0	91	100		High Risk
R-X-117-02-CorneliusPass	Multnomah Co Line	HWY 30	9	9	82	100		High Risk
R-X-131-00-Meridian	S Monte Cristo Rd	99E	9	0	91	100		High Risk
R-X-148-00-Farmington	Cedar Hills Blvd	HWY 219	9	0	91	100		High Risk
R-X-152-01Cornell	Main St	HWY 26	9	0	91	100		High Risk
R-X-160-01-Foster	SE Jenne Rd	Multnomah Co Line	6	0	94	100		High Risk
R-X-182-00-Broadway_Weidler	I-5 (Or)	NE Sandy Blvd	6	0	94	100		High Risk
R-X-259-00-26th	SW Taylors Ferry Rd	HWY 99W	6	0	94	100		High Risk
R-X-143-03-Highway99E	Multnomah Co Line	SE Division St Structure	5	0	95	100		High Risk
R-X-168-00-Hawthorne	HWY 99E	SE 39th Ave	5	0	95	100		High Risk
R-X-165-00-45th_Vermont	SW Allen Rd / Garden Home Rd / Multnomah Blvd	SW Capitol HWY	3	0	97	100		High Risk
R-X-132-02-Sunnyside	SE 82nd Ave	I-205	2	0	98	100		High Risk
R-X-140-00-TaylorsFerry	I-5 (Or)	HWY 43	2	0	98	100		High Risk
R-X-147-00-Terwilliger	SW Taylors Ferry Rd	I-5 (Or)	2	0	98	100		High Risk
R-X-202-00-Columbia	N Lombard St	NE Sandy Blvd	2	0	98	100		High Risk
R-X-183-00-23rd_Vaughn	NW Nicolai St	W Burnside St	1	0	99	100		High Risk
R-X-226-00-78th_Padden	I-5	NE 172nd Ave	1	20	79	100		High Risk
R-X-106-00-Macksburg	HWY 211	HWY 170 (Marquam Canby HWY)	0	72	28	100	High Risk	High Risk
R-X-108-00-LoneElder	S Meridian Rd	HWY 170	0	0	100	100		High Risk
R-X-120-01-SchollsFerry	Multnomah Co Line	HWY 26	0	0	100	100		High Risk
R-X-125-00-CedarHills	HWY 26	HWY 8 (Tualatin Valley HWY)	0	0	100	100		High Risk
R-X-142-00-Dolph	SW Allen Rd/Garden Home Rd/Multnomah Blvd	SW 26th Ave	0	0	100	100		High Risk
R-X-144-00-JohnsonCreek	SE 39th Ave	HWY 99E	0	0	100	100		High Risk
R-X-154-01-Burnside	Brg	Brg	0	0	100	100		High Risk
R-X-156-01-Highway10	SW 65th Ave	SW Barbur Blvd (99W)	0	0	100	100		High Risk
R-X-156-02-Highway10	SW 65th Ave	Cedar Hills Rd	0	0	100	100		High Risk
R-X-163-00-CapitolHighway	HWY 10	I-5 (Or)	0	0	100	100		High Risk
R-X-169-02-Naito	SW Barbur Blvd	685ft N Of 1-405	0	0	100	100		High Risk
R-X-180-00-Glisan	NE Cesar E Chavez Blvd	NE 53rd Ave	0	0	100	100		High Risk
R-X-185-00-Murray	W Burnside St	SW Canyon Rd	0	0	100	100		High Risk
R-X-187-00-17th	HWY 99E	SE Powell Blbvd	0	0	100	100		High Risk
R-X-189-00-32nd_Harrison	Johnson Creek Blvd	HWY 224	0	0	100	100		High Risk
R-X-191-01-CesarChavez	E Burnside Rd	I-84	0	0	100	100		High Risk
R-X-191-02-CesarChavez	SE Crystal Springs Blvd	E Burnside Rd	0	0	100	100		High Risk
R-X-204-00-ColumbiaRamp	NE Columbia Blvd	N Portland Rd	0	0	100	100		High Risk
R-X-216-01-MillPlain	I-5	SE 164th Ave	0	2	98	100		High Risk
R-X-218-00-FourthPlain	I-5 (Wa)	I-205 (Wa)	0	7	93	100		High Risk
R-X-219-00-11th	NE Columbia Blvd	N Lombard St	0	0	100	100		High Risk

ETR ID 2021	From	To	Very High	High	Moderate	Total	At least 25% Above High Risk	At Least 50% above Moderate Risk
R-X-220-00-18th	162nd / 164th Ave	192nd Ave	0	0	100	100		High Risk
R-X-237-00-FruitValley_39th_78th	I-5	NE 78th / Padden Pkwy	0	12	88	100		High Risk
R-X-251-00-Dewitt	HWY 10	HWY 10	0	0	100	100		High Risk
R-X-253-00-Sandy122Ramp	NE 122nd Ave	NE Sandy Blvd	0	0	100	100		High Risk
R-X-255-00-40th	SW Allen Rd / Garden Home Rd / Multnomah Blvd	SW Capitol HWY	0	0	100	100		High Risk
R-X-263-00-MarketClay	I-405 / HWY 26	SW Naito Parkway	0	0	100	100		High Risk
R-X-216-02-MillPlain	I-5	Port Of Vancouver	2	34	63	99	High Risk	High Risk
R-X-190-00-SwanIsland	I-5 (Or)	I-5 (Or)	89	0	9	98	High Risk	High Risk
R-X-113-00-River	Scholls Ferry Rd	HWY 8 (Tualatin Valley HWY)	6	0	92	98		High Risk
R-X-198-00-Dekum	HWY 99E	NE Columbia Blvd	0	0	98	98		High Risk
R-X-210-01-Airport	I-205	NE 181st Ave	97	0	0	97	High Risk	High Risk
R-X-214-00-WashougalRiver_Evergreen	SR-14	SR-14	0	7	90	97		High Risk
R-X-107-00-FernHill_SpringHill_Gaston	HWY 47	HWY 47	36	0	59	95	High Risk	High Risk
R-X-145-00-Highway99W	SW 60th Ave	SW Naito Pkwy	7	0	88	95		High Risk
R-X-112-00-Wilsonville	I-5	Clackamas Co Line	5	0	89	94		High Risk
R-X-129-00-Arndt_Airport_Barlow	99E	I-5	46	0	47	93	High Risk	High Risk
R-X-200-00-Lombard	N Kelley Point Park Rd	N Columbia Blvd	17	0	76	93		High Risk
R-X-146-00-Highway224	SE 82nd Ave	HWY 212	5	0	88	93		High Risk
R-X-143-05-Highway99E	W Mill Plain Blvd	I-205	0	31	62	93	High Risk	High Risk
R-X-241-00-136th_137th	NE 78th / Padden Pkwy	Mill Plain (Vancouver)	0	1	92	93		High Risk
R-X-269-00-65th_Nyberg_TualatinSherwood	Meridian Park Medical	SW Roy Rogers / Tualatin Sherwood Rd	25	0	67	92		High Risk
R-X-243-00-162nd_164th	SR-14	Ward Rd	0	0	92	92		High Risk
R-X-120-02-SchollsFerry	River Rd	Multnomah Co Line	17	0	74	91		High Risk
R-X-178-02-Sandy	NE Columbia Blvd	NE 181st Ave	0	0	91	91		High Risk
R-X-224-00-SR502	I-5	SR-503	0	0	90	90		High Risk
R-X-146-01-Highway224	HWY 212	HWY 211 (Eagle Creek - Sandy HWY)	5	0	84	89		High Risk
R-X-152-02-Cornell_Barnes	HWY 26 (Sunset HWY)	HWY 217	7	0	81	88		High Risk
R-X-143-04-Highway99E	SE Division St Structure	NE Lombard St	8	0	75	83		High Risk
R-X-212-00-SR14	I-5	Skamania Co. Line	1	42	40	83	High Risk	High Risk
R-X-101-01-Timber_GalesCreek	HWY 26	HWY 47	77	0	3	80	High Risk	High Risk
R-X-195-02-172nd	SE Foster Rd	Sunnyside Rd	1	0	77	78		High Risk
R-X-133-02-Kropf	HWY 213	HWY 211	3	0	73	76		High Risk
R-X-193-04-82nd	I-205	SE Clatsop St	12	0	63	75		High Risk
R-X-141-00-Washington	7th St	HWY 213	70	0	4	74	High Risk	High Risk
R-X-222-00-SR500	SR-14	I-5	2	23	49	74		High Risk
R-X-245-00-192nd	18th Ave	SR-14	0	0	72	72		High Risk
R-X-105-00-Highway47	Yamhill Co Line	HWY 30	54	0	17	71	High Risk	High Risk
R-X-126-00-BoonesFerry_CountryClub_Kruse	I-5 (Or)	Or-43	0	0	71	71		High Risk
R-X-249-00-Chautauqua	NE Columbia Blvd	N Lombard St	0	0	71	71		High Risk
R-X-271-00-223rd	NE Marine Dr	NE Sandy Blvd	70	0	0	70	High Risk	High Risk
R-X-139-00-7th	Washington St	Molalla Ave	0	0	70	70		High Risk

ETR ID 2021	From	To	Very High	High	Moderate	Total	At least 25% Above High Risk	At Least 50% above Moderate Risk
R-X-118-00-NewEra_Penman	HWY 99E	S Carus Rd / Mulino Rd	11	0	57	68		High Risk
R-X-130-00-Springwater	HWY 211	HWY 224	4	0	63	67		High Risk
R-X-201-00-242nd_Hogan_238th	HWY 212	I-84	13	13	38	64	High Risk	High Risk
R-X-178-02-Stark	242nd Ave / Hogan Rd / 238th Dr	Stark St Brg	11	0	53	64		High Risk
R-X-132-01-Sunnyside	I-205	HWY 212	3	0	61	64		High Risk
R-X-121-00-RoyRogers_TualatinSherwood	Scholls Ferry Rd	SW Staffrod Rd	11	0	51	62		High Risk
R-X-164-03-Powell	HWY 99E	SE Powell Blvd	0	0	60	60		High Risk
R-X-143-01-Highway99E	HWY 99E	Multnomah Co Line	13	0	46	59		High Risk
R-X-133-01-Highway170	HWY 211	99E	8	0	51	59		High Risk
R-X-178-01-Sandy	E Burnside Rd	NE Columbia Blvd	0	0	59	59		High Risk
R-X-101-02-Timber_GalesCreek	HWY 26 (Sunset HWY)	HWY 8 (Tualatin Valley HWY)	40	0	18	58	High Risk	High Risk
R-X-135-00-Highway213	Marion Co Line	I-205	29	3	25	57	High Risk	High Risk
R-X-217-00-15th	NE Dekum St	NE Broadway / NE Weidler St	0	0	54	54		High Risk
R-X-228-00-ScapooseVernonia	HWY 30	HWY 47	47	0	6	53	High Risk	High Risk
R-X-221-00-42nd	NE Columbia Blvd	NE Broadway / Weidler St	4	0	49	53		High Risk
R-X-176-01-Highway26	SE Powell Blvd	Multnomah Co Line	17	20	12	49	High Risk	
R-X-213-00-257th_Kane	I-84	HWY 26	8	24	17	49	High Risk	
R-X-153-00-Hattan	Springwater Rd	Redland Rd	1	0	48	49		
R-X-176-02-Highway26	Multnomah Co Line	HWY 212	47	0	0	47	High Risk	
R-X-257-00-CentralPoint	S New Era Rd / Penman Rd	Parrish Rd	5	0	41	46		
R-X-102-00-Highway211	Marion Co Line	HWY 26	27	2	16	45	High Risk	
R-X-104-00-Barnards	HWY 213	Marion Co Line	7	0	37	44		
R-X-205-00-Highland-190th-Tillstrom	SE Powell Blvd	SE Foster Rd	6	16	20	42		
R-X-127-00-Stafford	I-5 (Or)	I-205 (Or)	2	0	40	42		
R-X-203-01-122nd	E Burnside Rd	NE Marine Dr	24	0	16	40		
R-X-211-00-Fairview_Glisan_223	NE Sandy Blvd	SE Powell Blvd	21	0	19	40		
R-X-164-02-Powell	SE 174th Ave	SE Burnside Rd	14	21	3	38	High Risk	
R-X-247-00-SR503	Cowlitz Co. Line	SR-500	1	5	32	38		
R-X-154-00-Barnes	HWY 217	W Burnside Rd	0	2	36	38		
R-X-110-00-Carus_Mulino	HWY 99E	Beavercreek Rd	24	0	13	37		
R-X-230-00-Haynes_CedarCreek	I-5	SR-503	23	2	11	36		
R-X-193-01-82nd	SE Clatsop St	NE Holman St	6	0	30	36		
R-X-215-00-Albina_Mississippi	N Lombard St	Kerby Ave	3	0	32	35		
R-X-109-00-Apirary	HWY 30	HWY 47	32	0	1	33	High Risk	
R-X-128-00-WildcatMountain	HWY 211	SE Firwood Rd	1	0	31	32		
R-X-146-03-Highway224	Estacada	Ripplebrook	16	0	15	31		
R-X-122-00-Redland	Springwater Rd	HWY 213	11	4	15	30		
R-X-127-00-Stafford_McVey	HWY 43	I-205 (Or)	7	0	23	30		
R-X-154-02-Burnside	Burnside Bridge	160th Ave E 330ft	1	0	29	30		
R-X-223-00-Cully	NE Sandy Blvd	NE Columbia Blvd	0	0	30	30		
R-X-124-00-Holcomb_Bradley	HWY 213	Redland Rd	13	0	11	24		

ETR ID 2021	From	To	Very High	High	Moderate	Total	At least 25% Above High Risk	At Least 50% above Moderate Risk
R-X-197-00-Foster	Multnomah Co Line	HWY 212	3	0	18	21		
R-X-123-00-Murray	Scholls Ferry Rd	HWY 26	16	0	0	16		
R-X-192-00-Killingsworth	I-5 (Or)	N Lombard St	0	0	16	16		
R-X-155-00-LowerHighland_Ridge	Beavercreek Rd	Springwater Rd	5	0	10	15		
R-X-159-00-Amisigger_Kelso_Richey	HWY 224	HWY 212	1	0	14	15		
R-X-160-02-Foster	SE Powell Blvd	SE Jenne Rd	2	0	12	14		
R-X-157-00-232nd	HWY 224	HWY 212	0	0	14	14		
R-X-151-00-Fellows	Redland Rd	Upper Highland Rd	0	0	5	5		
R-X-149-00-Beavercreek	HWY 213	HWY 211	4	0	0	4		
R-X-158-00-Woodstock	SE 39th Ave	SE Foster Rd	0	0	4	4		

Table 6.4 Bridge Vulnerabilities on RETRs and SSLRs

ETR_ID_2020	ROUTENAME	Not Evaluated	Not Vulnerable	Potentially Vulnerable	Vulnerable
R-X-100-00-MonteCristo	S Monte Cristo Rd	1	0	2	0
R-X-101-01-Timber_GalesCreek	Timber / Vernonia Rd	1	1	0	4
R-X-101-02-Timber_GalesCreek	Timber / Gales Creek Rd	6	1	0	1
R-X-102-00-Highway211	HWY 211	14	2	1	4
R-X-103-00-Greenville_KansasCity_Kemper	Greenville / Kansas City / Kemper Rd	1	0	1	0
R-X-104-00-Barnards	S Barnards Rd	1	0	0	3
R-X-105-00-Highway47	HWY 47	18	8	9	17
R-X-107-00-FernHill_SpringHill_Gaston	Fern Hill / Spring Hill Rd / Gaston Rd	1	1	1	1
R-X-108-00-LoneElder	S Lone Elder Rd	1	0	0	0
R-X-109-00-Apirary	Apiary Rd	2	1	0	0
R-X-110-00-Carus_Mulino	S Carus Rd / Mulino Rd	2	0	0	0
R-X-111-00-Highway219	HWY 219 (Hillsboro HWY)	1	1	3	1
R-X-113-00-River	River Rd	1	1	0	0
R-X-117-01-CorneliusPass	Cornelius Pass Rd	5	1	0	0
R-X-118-00-NewEra_Penman	S New Era Rd / Penman Rd	3	0	0	0
R-X-119-00-185th	NW 185th Ave	2	0	0	0
R-X-120-02-SchollsFerry	Scholls Ferry Rd	5	1	2	0
R-X-121-00-RoyRogers_TualatinSherwood	SW Roy Rogers / Tualatin Sherwood Rd/Elligsen	4	0	1	0
R-X-122-00-Redland	Redland Rd	0	2	0	3
R-X-123-00-Murray	Murray Blvd	1	2	1	0
R-X-124-00-Holcomb_Bradley	S Holcomb Blvd / Bradley Rd	0	1	0	0
R-X-125-00-CedarHills	SW Cedar Hills Blvd	0	0	1	0
R-X-127-00-Stafford	SW Stafford Rd	0	1	1	0
R-X-127-00-Stafford_McVey	Mcvey Ave / SW Stafford Rd	1	1	1	0
R-X-128-00-WildcatMountain	SE Wildcat Mountain Dr	0	0	1	0
R-X-129-00-Arndt_Airport_Barlow	Arndt Rd / Airport Rd / Barlow Rd	1	1	1	0
R-X-129-00-Barlow	S Barlow Rd	0	0	0	2
R-X-130-00-Springwater	Springwater Rd	1	1	0	0
R-X-131-00-Meridian	S Meridian Rd	2	0	0	0
R-X-132-01-Sunnyside	Sunnyside Rd	2	0	1	0
R-X-132-02-Sunnyside	Sunnyside Rd	1	0	1	0
R-X-133-01-Highway170	HWY 170	1	0	1	1
R-X-133-02-Kropf	Kropf Rd	1	0	0	0
R-X-135-00-Highway213	HWY 213	6	6	2	1

ETR_ID_2020	ROUTENAME	Not Evaluated	Not Vulnerable	Potentially Vulnerable	Vulnerable
R-X-138-00-Allen_GardenHome_Multnomah	SW Allen Rd / Garden Home Rd / Multnomah Blvd	1	1	1	2
R-X-141-00-Washington	Washington St	2	2	1	0
R-X-142-00-Dolph	Dolph Ct	0	0	0	1
R-X-142-00-Sellwood_Tacoma	Sellwood Brg / Tacoma St	5	4	0	0
R-X-143-01-Highway99E	HWY 99E	5	6	2	2
R-X-143-02-Highway99E	HWY 99E	0	5	0	2
R-X-143-03-Highway99E	HWY 99E	7	4	1	1
R-X-143-04-Highway99E	HWY 99E	0	1	0	5
R-X-143-05-Highway99E	Main St / HWY 99	11	0	0	0
R-X-144-00-JohnsonCreek	SE Johnson Creek Blvd	6	3	0	0
R-X-145-00-Highway99W	HWY 99W	1	1	2	4
R-X-146-00-Highway224	HWY 224	1	3	3	0
R-X-146-01-Highway224	HWY 224	2	1	0	1
R-X-146-02-Highway224	HWY 224	1	3	6	0
R-X-146-03-Highway224	HWY 224	0	1	0	1
R-X-147-00-Terwilliger	SW Terwilliger Blvd	1	1	0	0
R-X-148-00-Farmington	Farmington Rd	5	2	0	0
R-X-149-00-Beavercreek	Beavercreek Rd	2	0	0	0
R-X-150-00-Highway8	HWY 8 (Tualatin Valley HWY)	2	3	2	1
R-X-151-00-Fellows	S Fellows Rd	0	0	0	1
R-X-152-01-Cornell	Cornell Rd	2	1	0	0
R-X-152-02-Cornell_Barnes	NW Cornell / Barnes Rd	1	1	0	0
R-X-153-00-Hattan	S Hattan Rd	1	0	0	0
R-X-154-01-Burnside	Burnside Brg	0	0	0	3
R-X-154-02-Burnside	E Burnside Rd	0	1	0	4
R-X-154-03-Burnside	W Burnside St	1	0	1	2
R-X-155-00-LowerHighland_Ridge	S Lower Highland Rd / Ridge Rd	0	0	0	1
R-X-156-01-Highway10	HWY 10	2	0	3	2
R-X-156-02-Highway10	HWY 10 (Beaverton Hillsdale HWY)	2	1	1	0
R-X-157-00-232nd	232nd Ave	0	0	0	1
R-X-159-00-Amisigger_Kelso_Richey	Amisigger Rd / Kelso Rd / Richey Rd	0	0	0	1
R-X-160-01-Foster	SE Foster Rd	1	0	0	0
R-X-160-02-Foster	SE Foster Rd	2	0	0	0
R-X-162-00-AerialTram	Aerial Tram	2	1	1	0
R-X-163-00-CapitolHighway	SW Capitol HWY	0	0	0	2
R-X-164-02-Powell	SE Powell Blvd	2	0	0	0

ETR_ID_2020	ROUTENAME	Not Evaluated	Not Vulnerable	Potentially Vulnerable	Vulnerable
R-X-164-03-Powell	SE Powell Blvd	1	0	0	0
R-X-169-01-Naito	NW Naito Parkway	0	1	0	2
R-X-169-02-Naito	SW Naito Pkwy	2	2	1	2
R-X-169-03-Naito	SW Naito Pkwy	0	0	0	3
R-X-171-00-Broadway_Terwilliger	SW Broadway / Terwilliger Blvd	1	0	2	0
R-X-172-00-Tilikum	Tilikum Crossing	0	1	0	1
R-X-174-00-Washington	SE Washington St	2	2	0	0
R-X-176-01-Highway26	HWY 26	3	0	0	0
R-X-176-02-Highway26	HWY 26	0	1	1	0
R-X-178-01-Sandy	NE Sandy Blvd	1	3	0	3
R-X-178-01-Stark	SE Stark St	2	2	0	0
R-X-178-02-Sandy	NE Sandy Blvd	1	2	1	0
R-X-178-02-Stark	SE Stark St	2	0	0	0
R-X-178-03-Sandy	NE Sandy Blvd	0	2	0	0
R-X-182-00-Broadway_Weidler	NE Broadway / NE Weidler St	1	1	2	0
R-X-185-00-Murray	SW Murray St	1	0	0	0
R-X-186-00-Front	NW Front Ave	0	0	0	1
R-X-187-00-17th	SE 17th Ave	0	0	1	0
R-X-189-00-32nd_Harrison	32nd Ave / SE Harrison	1	0	0	0
R-X-190-00-SwanIsland	Swan Island	2	0	0	1
R-X-191-01-CesarChavez	NE Cesar E Chavez Ave	1	1	0	0
R-X-192-00-Killingsworth	NE Killingsworth St	0	0	1	0
R-X-193-01-82nd	82nd Ave	1	1	1	4
R-X-193-04-82nd	SE 82nd Ave	4	1	3	2
R-X-194-00-StJohnsBridge	St Johns Brg	0	0	0	2
R-X-196-00-Highway20Bypass	HWY 30 Bypass	0	0	0	1
R-X-197-00-Foster	SE Foster Rd	1	0	0	0
R-X-198-00-Dekum	NE Dekum St	1	0	2	1
R-X-200-00-Lombard	N Lombard St	3	1	4	5
R-X-201-00-242nd_Hogan_238th	242nd Ave / Hogan Rd / 238th Dr	1	1	0	0
R-X-202-00-Columbia	NE Columbia Blvd	4	5	5	6
R-X-203-01-122nd	NE 122nd Ave	3	0	1	0
R-X-204-00-ColumbiaRamp	Columbia Ramp	0	1	2	1
R-X-206-01-Alderwood	NE Alderwood Rd	2	0	0	0
R-X-208-01-Marine	N Marine Dr	2	1	0	0
R-X-208-02-Marine	N Marine Dr	2	1	0	0

ETR_ID_2020	ROUTENAME	Not Evaluated	Not Vulnerable	Potentially Vulnerable	Vulnerable
R-X-208-03-Marine	NE Marine Dr	0	0	1	0
R-X-208-04-Marine	NE Marine Dr	0	2	1	0
R-X-210-01-Airport	Airport Way	2	2	0	0
R-X-210-02-Airport	NE Airport Way	2	1	1	0
R-X-211-00-Fairview_Glisan_223	NE Fairview Pkwy / Glisan St / 223rd Ave	0	1	0	0
R-X-212-00-SR14	SR-14	33	0	0	0
R-X-214-00-WashougalRiver_Evergreen	Washougal River Rd / Evergreen Way	1	0	0	0
R-X-215-00-Albina_Mississippi	N Albina Ave / Mississippi Ave	0	0	2	0
R-X-216-01-MillPlain	Mill Plain (Vancouver)	11	0	0	0
R-X-216-02-MillPlain	W Mill Plain Blvd	9	0	0	0
R-X-218-00-FourthPlain	Fourth Plain Blvd	4	0	0	0
R-X-221-00-42nd	NE 42nd Ave	1	1	0	1
R-X-222-00-SR500	SR-500	28	0	0	0
R-X-224-00-SR502	SR-502	4	0	0	0
R-X-225-00-Portland	N Portland Rd	2	1	2	2
R-X-226-00-78th_Padden	NE 78th St / Padden Pkwy	9	0	0	0
R-X-227-00-DeltaPark	Delta Park	0	2	0	0
R-X-228-00-ScappooseVernonia	Scappoose Vernonia Rd.	4	0	3	6
R-X-229-00-Vancouver	Vancouver Ave	0	3	0	1
R-X-230-00-Haynes_CedarCreek	NE / Nw Hayes Rd / NE Cedar Creek Rd	4	0	0	0
R-X-231-00-33rd	NE 33rd Dr	3	0	3	1
R-X-235-00-FruitValley_FourthPlain	Fruit Valley / Fourth Plain Blvd	2	0	0	0
R-X-237-00-FruitValley_39th_78th	Lakeshore / Fruit Valley / 39th / 78th	3	0	0	0
R-X-239-00-Andresen	Andresen Rd	1	0	0	0
R-X-243-00-162nd_164th	162nd / 164th Ave	1	0	0	0
R-X-245-00-192nd	192nd Ave	1	0	0	0
R-X-247-00-SR503	SR-503	8	0	0	0
R-X-253-00-Sandy122Ramp	Sandy-122nd Ramp	1	0	1	0
R-X-255-00-40th	SW 40th Ave	0	0	0	1
R-X-257-00-CentralPoint	S Central Point Rd	1	0	0	0
R-X-259-00-26th	SW 26th Ave	0	0	0	1
R-X-261-00-181st	NE 181st Ave	0	1	0	0
R-X-265-00-LewisClarkBridge	Lewis & Clark Brg	0	0	0	1
R-X-267-00-Gideon	SE Gideon	0	1	0	1
R-X-271-00-223rd	NE 223rd Avenue	0	0	1	0
S-X-101-08-I5	I-5 (Wa)	58	0	0	0

ETR_ID_2020	ROUTENAME	Not Evaluated	Not Vulnerable	Potentially Vulnerable	Vulnerable
S-X-113-23-I205	I-205 (Wa)	50	0	0	0
S-0-108-02-I84	I-84	0	2	0	0
S-0-113-01-I205	I-205	2	3	0	0
S-0-113-02-I205	I-205	0	1	3	0
S-0-113-03-I205	I-205	0	1	2	0
S-0-113-04-I205	I-205	2	1	1	0
S-0-113-05-I205	I-205	1	1	0	0
S-0-113-06-I205	I-205	0	0	1	0
S-0-113-07-I205	I-205	2	2	0	0
S-1-101-01-I5	I-5	0	1	2	0
S-1-102-00-US30	US-30	0	0	0	2
S-1-103-02-I405	I-405	0	0	1	0
S-1-103-03-I405	I-405	0	1	2	1
S-2-101-02-I5	I-5	0	0	2	3
S-2-101-03-I5	I-5	1	1	1	4
S-2-101-04-I5	I-5	1	2	2	4
S-2-101-05-I5	I-5	0	0	1	0
S-2-104-01-US26	US-26	2	0	0	1
S-2-104-02-US26	US-26	0	3	0	0
S-2-104-03-US26	US-26	1	0	0	0
S-2-107-01-OR99E	OR-99E	1	0	0	0
S-2-108-01-I84	I-84	1	2	0	4
S-3-104-05-US26	US-26	1	1	1	0
S-3-104-06-US26	US-26	1	0	0	0
S-3-105-02-OR217	OR-217	1	1	3	0
S-3-111-00-OR43	OR-43	3	3	1	1

Table 6.5 RETRs with Significant Landslide Risk

ETR_ID_2020	Route From	Route To	Mapped Landslide Hazard Susceptibility			Risk	Percent Hazard Above Moderate
			Very High	High	Moderate		
R-X-100-00-MonteCristo	HWY 213	Meridian Rd			43	Moderate	43
R-X-101-01-Timber_GalesCreek	HWY 26	HWY 47		53	23	High	76
R-X-101-02-Timber_GalesCreek	HWY 26 (Sunset HWY)	HWY 8 (Tualatin Valley HWY)		46	24	High	70
R-X-102-00-Highway211	Marion Co Line	HWY 26		11	27	Moderate	38
R-X-103-00-Greenville_KansasCity_Kemper	HWY 47	HWY 47			10		10
R-X-104-00-Barnards	HWY 213	Marion Co Line			12		12
R-X-105-00-Highway47	Yamhill Co Line	HWY 30	5	64	12	High	81
R-X-106-00-Macksburg	HWY 211	HWY 170 (Marquam Canby HWY)			15		15
R-X-107-00-FernHill_SpringHill_Gaston	HWY 47	HWY 47		16	35	Moderate	51
R-X-108-00-LoneElder	S Meridian Rd	HWY 170			11		11
R-X-109-00-Apirary	HWY 30	HWY 47		36	36	High	72
R-X-110-00-Carus_Mulino	HWY 99E	Beavercreek Rd			25		25
R-X-111-00-Highway219	HWY 8	HWY 210		5	22		27
R-X-112-00-Wilsonville	I-5	Clackamas Co Line		19	26	Moderate	45
R-X-113-00-River	Scholls Ferry Rd	HWY 8 (Tualatin Valley HWY)			27	Moderate	27
R-X-114-00-Unger	Beavercreek Rd	HWY 211			30	Moderate	30
R-X-115-01-Brookwood	HWY 26	Shute Rd			20		20
R-X-115-02-Brookwood	Cornell Rd	Shute Rd			24		24
R-X-116-00-UpperHighland	HWY 211	Beavercreek Rd			32	Moderate	32
R-X-117-01-CorneliusPass	HWY 8	Multnomah Co Line			31	Moderate	31
R-X-117-02-CorneliusPass	Multnomah Co Line	HWY 30	9	44	39	High	92
R-X-118-00-NewEra_Penman	HWY 99E	S Carus Rd / Mulino Rd		11	34	Moderate	45
R-X-119-00-185th	HWY 26	HWY 8 (Tualatin Valley HWY)			32	Moderate	32
R-X-120-01-SchollsFerry	Multnomah Co Line	HWY 26		16	51	Moderate	67
R-X-120-02-SchollsFerry	River Rd	Multnomah Co Line			30	Moderate	30
R-X-121-00-RoyRogers_TualatinSherwood	Scholls Ferry Rd	SW Stafford Road		5	28	Moderate	33
R-X-122-00-Redland	Springwater Rd	HWY 213	6	8	32	Moderate	46
R-X-123-00-Murray	Scholls Ferry Rd	HWY 26			43	Moderate	43
R-X-124-00-Holcomb_Bradley	HWY 213	Redland Rd		6	43	Moderate	49
R-X-125-00-CedarHills	HWY 26	HWY 8 (Tualatin Valley HWY)		5	23		28
R-X-126-00-BoonesFerry_CountryClub_Kruse	I-5 (Or)	Or-43			29	Moderate	29
R-X-127-00-Stafford	I-5 (Or)	I-205 (Or)		6	39	Moderate	45
R-X-127-00-Stafford_McVey	HWY 43	I-205 (Or)		7	54	Moderate	61
R-X-128-00-WildcatMountain	HWY 211	SE Firwood Rd	9	7	39	Moderate	55
R-X-129-00-Arndt_Airport_Barlow	99E	I-5			24		24
R-X-129-00-Barlow	HWY 99E	S Monte Cristo Rd			11		11
R-X-130-00-Springwater	HWY 211	HWY 224		9	14		23
R-X-131-00-Meridian	S Monte Cristo Rd	99E			14		14
R-X-132-01-Sunnyside	I-205	HWY 212			24		24
R-X-132-02-Sunnyside	SE 82nd Ave	I-205			26	Moderate	26
R-X-133-01-Highway170	HWY 211	99E			12		12
R-X-133-02-Kropf	HWY 213	HWY 211			19		19
R-X-134-00-Kelso	Amisigger Rd / Kelso Rd / Richey Rd	HWY 26			5		5
R-X-135-00-Highway213	Marion Co Line	I-205	5	8	30	Moderate	43
R-X-137-00-Molalla	HWY 213	7th Ave			6		6
R-X-138-00-Allen_GardenHome_Multnomah	Murray Blvd	I-5 (Or)		6	24		30
R-X-139-00-7th	Washington St	Molalla Ave			54	Moderate	54
R-X-140-00-TaylorsFerry	I-5 (Or)	HWY 43		14	55	Moderate	69

ETR_ID_2020	Route From	Route To	Mapped Landslide Hazard Susceptibility			Risk	Percent Hazard Above Moderate
			Very High	High	Moderate		
R-X-141-00-Washington	7th St	HWY 213		8	25		33
R-X-142-00-Dolph	SW Allen Rd/Garden Home Rd/Multnomah Blvd	SW 26th Ave			71	Moderate	71
R-X-142-00-Sellwood_Tacoma	HWY 43	HWY 99E		8	20		28
R-X-143-01-Highway99E	HWY 99E	Multnomah Co Line		6	21		27
R-X-143-02-Highway99E	NE Lombard St (HWY 30)	I-5		18	33	Moderate	51
R-X-143-03-Highway99E	Multnomah Co Line	SE Division St Structure			12		12
R-X-143-04-Highway99E	SE Division St Structure	NE Lombard St			6		6
R-X-143-05-Highway99E	W Mill Plain Blvd	I-205					0
R-X-144-00-JohnsonCreek	SE 39th Ave	HWY 99E		11	29	Moderate	40
R-X-145-00-Highway99W	SW 60th Ave	SW Naito Pkwy		12	23		35
R-X-146-00-Highway224	SE 82nd Ave	HWY 212			10		10
R-X-146-01-Highway224	HWY 212	HWY 211 (Eagle Creek - Sandy HWY)	15	25	11	High	51
R-X-146-02-Highway224	HWY 99E	I-205			22		22
R-X-146-03-Highway224	Estacada	Ripplebrook	16	20	61	High	97
R-X-147-00-Terwilliger	SW Taylors Ferry Rd	I-5 (Or)		11	49	Moderate	60
R-X-148-00-Farmington	Cedar Hills Blvd	HWY 219			19		19
R-X-149-00-Beavercreek	HWY 213	HWY 211		8	25		33
R-X-150-00-Highway8	HWY 47	HWY 26			7		7
R-X-151-00-Fellows	Redland Rd	Upper Highland Rd		31	14	High	45
R-X-152-01-Cornell	Main St	HWY 26			7		7
R-X-152-02-Cornell_Barnes	HWY 26 (Sunset HWY)	HWY 217			25		25
R-X-153-00-Hattan	Springwater Rd	Redland Rd		14	37	Moderate	51
R-X-154-00-Barnes	HWY 217	W Burnside Rd		7	49	Moderate	56
R-X-154-01-Burnside	Brg	Brg		5	15		20
R-X-154-02-Burnside	Burnside Bridge	160th Ave E 330ft			13		13
R-X-154-03-Burnside	Burnside Bridge	SW Barnes Rd		16	45	Moderate	61
R-X-155-00-LowerHighland_Ridge	Beavercreek Rd	Springwater Rd		24	18		42
R-X-156-01-Highway10	SW 65th Ave	SW Barbur Blvd (99W)		10	31	Moderate	41
R-X-156-02-Highway10	SW 65th Ave	Cedar Hills Rd			9		9
R-X-157-00-232nd	HWY 224	HWY 212	15	11	28	High	54
R-X-159-00-Amisigger_Kelso_Richey	HWY 224	HWY 212	13	9	12		34
R-X-160-01-Foster	SE Jenne Rd	Multnomah Co Line			35	Moderate	35
R-X-160-02-Foster	SE Powell Blvd	SE Jenne Rd			14		14
R-X-161-00-Firwood	SE Wildcat Mountain Dr	HWY 26			36	Moderate	36
R-X-162-00-AerialTram	Brg	Brg		25	55	Moderate	80
R-X-163-00-CapitolHighway	HWY 10	I-5 (Or)			34	Moderate	34
R-X-164-02-Powell	SE 174th Ave	SE Burnside Rd			10		10
R-X-164-03-Powell	HWY 99E	SE Powell Blvd			6		6
R-X-165-00-45th_Vermont	SW Allen Rd/Garden Home Rd/Multnomah Blvd	SW Capitol HWY		7	34	Moderate	41
R-X-167-00-Moody	SW Naito Pkwy	SW Lowell St		16	5		21
R-X-168-00-Hawthorne	HWY 99E	SE 39th Ave			5		5
R-X-169-01-Naito	W Burnside Rd	NW 15th Ave			14		14
R-X-169-02-Naito	SW Barbur Blvd	685ft N Of I-405		16	31	Moderate	47
R-X-169-03-Naito	685 Ft N Of I-405	W Burnside Rd			19		19
R-X-171-00-Broadway_Terwilliger	SW Market And SW Clay	Ohsu		45	30	High	75
R-X-172-00-Tilikum	Brg	Brg			10		10
R-X-176-02-Highway26	Multnomah Co Line	HWY 212			11		11
R-X-178-01-Sandy	E Burnside Rd	NE Columbia Blvd		1	8		9
R-X-178-02-Sandy	NE Columbia Blvd	NE 181st Ave			8		8
R-X-178-02-Stark	242nd Ave / Hogan Rd / 238th Dr	Stark St Brg		24	25		49

ETR_ID_2020	Route From	Route To	Mapped Landslide Hazard Susceptibility			Risk	Percent Hazard Above Moderate
			Very High	High	Moderate		
R-X-178-03-Sandy	NE 181st Ave	I-84			30	Moderate	30
R-X-180-00-Glisan	NE Cesar E Chavez Blvd	NE 53rd Ave			14		14
R-X-183-00-23rd_Vaughn	NW Nicolai St	W Burnside St		6	13		19
R-X-184-00-Nicolai	NW Front Ave	NW St Helens Rd @ Kittridge			18		18
R-X-185-00-Murray	W Burnside St	SW Canyon Rd	92			Very High	92
R-X-188-00-RockyButte	NE 82nd Ave	Joseph Wood Hill Park		27	34	High	61
R-X-189-00-32nd_Harrison	Johnson Creek Blvd	HWY 224			28	Moderate	28
R-X-190-00-SwanIsland	I-5 (Or)	I-5 (Or)			12		12
R-X-191-01-CesarChavez	E Burnside Rd	I-84			40	Moderate	40
R-X-191-02-CesarChavez	SE Crystal Springs Blvd	E Burnside Rd			43	Moderate	43
R-X-192-00-Killingsworth	I-5 (Or)	N Lombard St			8		8
R-X-193-01-82nd	SE Clatsop St	NE Holman St			19		19
R-X-193-03-82nd	NE Holman St	NE Alderwood Rd			38	Moderate	38
R-X-193-04-82nd	I-205	SE Clatsop St			17		17
R-X-194-00-StJohnsBridge	Brg	Brg			21		21
R-X-195-01-172nd	Sunnyside Rd	HWY 212			45	Moderate	45
R-X-195-02-172nd	SE Foster Rd	Sunnyside Rd			16		16
R-X-196-00-Highway20Bypass	HWY 30 (Nw St Helens Rd)	N Lombard Blvd			51	Moderate	51
R-X-197-00-Foster	Multnomah Co Line	HWY 212			58	Moderate	58
R-X-198-00-Dekum	HWY 99E	NE Columbia Blvd			34	Moderate	34
R-X-200-00-Lombard	N Kelley Point Park Rd	N Columbia Blvd			11		11
R-X-201-00-242nd_Hogan_238th	HWY 212	I-84			26	Moderate	26
R-X-202-00-Columbia	N Lombard St	NE Sandy Blvd			14		14
R-X-203-01-122nd	E Burnside Rd	NE Marine Dr		5	17		22
R-X-204-00-ColumbiaRamp	NE Columbia Blvd	N Portland Rd			13		13
R-X-205-00-Highland-190th-Tillstrom	SE Powell Blvd	SE Foster Rd			45	Moderate	45
R-X-206-01-Alderwood	NE 82nd Ave	Airport Way			12		12
R-X-206-02-Alderwood	NE Columbia Blvd.	NE 82nd Ave			14		14
R-X-207-00-112th-CherryBlossom	SE Stark St	SE Powell Blvd			10		10
R-X-208-01-Marine	N Portland Rd	I-5			10		10
R-X-208-02-Marine	N Kelley Point Park Rd	N Portland Rd			11		11
R-X-208-03-Marine	NE 185th Dr	I-84			45	Moderate	45
R-X-208-04-Marine	I-5	NE 185th Ave		35	45	High	80
R-X-209-00-182nd	SE Powell Blvd	E Burnside Rd			7		7
R-X-210-01-Airport	I-205	NE 181st Ave			10		10
R-X-211-00-Fairview_Glisan_223	NE Sandy Blvd	SE Powell Blvd		6	29	Moderate	35
R-X-213-00-257th_Kane	I-84	HWY 26			25		25
R-X-215-00-Albina_Mississippi	N Lombard St	Kerby Ave			24		24
R-X-217-00-15th	NE Dekum St	NE Broadway / NE Weidler St			27	Moderate	27
R-X-221-00-42nd	NE Columbia Blvd	NE Broadway / Weidler St			30	Moderate	30
R-X-223-00-Cully	NE Sandy Blvd	NE Columbia Blvd			10		10
R-X-225-00-Portland	N Columbia Blvd	N Marine Dr		5	13	High	18
R-X-227-00-DeltaPark	I-5 (Or)	HWY 99E			16	Moderate	16
R-X-228-00-ScapooseVernonia	HWY 30	HWY 47		76	10	Moderate	86
R-X-229-00-Vancouver	HWY 99E	NE Columbia Blvd		6	6	Moderate	12
R-X-231-00-33rd	NE Columbia Blvd	NE Marine Dr		6	37	High	43
R-X-233-00-47th_Cornfoot_Airtrans	NE Columbia Blvd	Airtrans Way			21	Moderate	21
R-X-249-00-Chautauqua	NE Columbia Blvd	N Lombard St			10	Moderate	10
R-X-251-00-Dewitt	HWY 10	HWY 10			37	Moderate	37
R-X-253-00-Sandy122Ramp	NE 122nd Ave	NE Sandy Blvd		5	54	High	59

ETR_ID_2020	Route From	Route To	Mapped Landslide Hazard Susceptibility			Risk	Percent Hazard Above Moderate
			Very High	High	Moderate		
R-X-255-00-40th	SW Allen Rd/Garden Home Rd/Multnomah Blvd	SW Capitol HWY			51	Moderate	51
R-X-257-00-CentralPoint	S New Era Rd / Penman Rd	Parrish Rd	34	14	32	High	80
R-X-259-00-26th	SW Taylors Ferry Rd	HWY 99W		5	49	High	54
R-X-261-00-181st	E Burnside Rd	NE Sandy Blvd			18	Moderate	18
R-X-263-00-MarketClay	I-405 / HWY 26	SW Naito Parkway			24	Moderate	24
R-X-265-00-LewisClarkBridge	Brg	Brg			32	Moderate	32
R-X-269-00-65th_Nyberg_TualatinSherwood	Meridian Park Medical	SW Roy Rogers Road/Tualatin Sherwood Rd		2	15	Moderate	17
R-X-271-00-223rd	NE Marine Dr	NE Sandy Blvd		7	58	Moderate	65

Table 6.6 RETRs with Flood Risk

ETR_ID_2020	ROUTE_TO	ROUTE_FROM	Percent Hazard			At Risk (if > 25%)
			100 year	500 year	Total	
R-X-154-01-Burnside	Brg	Brg	81	19	100	High Risk
R-X-169-01-Naito	NW 15th Ave	W Burnside Rd		100	100	High Risk
R-X-193-02-82nd	NE Airport Way	NE Alderwood		100	100	High Risk
R-X-193-03-82nd	NE Alderwood Rd	NE Holman St		100	100	High Risk
R-X-206-01-Alderwood	Airport Way	NE 82nd Ave		100	100	High Risk
R-X-210-02-Airport	I-205	Pdx		100	100	High Risk
R-X-227-00-DeltaPark	HWY 99E	I-5 (Or)		99	99	High Risk
R-X-208-04-Marine	NE 185th Ave	I-5	67	30	97	High Risk
R-X-233-00-47th_Cornfoot_Airtrans	Airtrans Way	NE Columbia Blvd	9	86	95	High Risk
R-X-210-01-Airport	NE 181st Ave	I-205		93	93	High Risk
R-X-231-00-33rd	NE Marine Dr	NE Columbia Blvd	15	77	92	High Risk
R-X-208-01-Marine	I-5	N Portland Rd	28	62	90	High Risk
R-X-271-00-223rd	NE Marine Dr	NE Sandy Blvd	1	89	90	High Risk
R-X-167-00-Moody	SW Lowell St	SW Naito Pkwy	24	62	86	High Risk
R-X-194-00-StJohnsBridge	Brg	Brg		86	86	High Risk
R-X-208-02-Marine	N Portland Rd	N Kelley Point Park Rd	5	80	85	High Risk
R-X-206-02-Alderwood	NE 82nd Ave	NE Columbia Blvd		83	83	High Risk
R-X-125-00-CedarHills	HWY 8 (Tualatin Valley HWY)	HWY 26	77		77	High Risk
R-X-141-00-Washington	HWY 213	7th St	71		71	High Risk
R-X-103-00-Greenville_KansasCity_Kemper	HWY 47	HWY 47	58		58	High Risk
R-X-225-00-Portland	N Marine Dr	N Columbia Blvd	27	29	56	High Risk
R-X-265-00-LewisClarkBridge	Brg	Brg	52		52	High Risk
R-X-169-03-Naito	W Burnside Rd	685 Ft N Of I-405		48	48	High Risk
R-X-229-00-Vancouver	NE Columbia Blvd	HWY 99E	13	35	48	High Risk
R-X-172-00-Tilikum	Brg	Brg	44		44	High Risk
R-X-186-00-Front	NW 61st Ave	NW Naito Parkway		37	37	High Risk
R-X-208-03-Marine	I-84	NE 185th Dr	31	5	36	High Risk
R-X-129-00-Arndt_Airport_Barlow	I-5	99E	20	14	34	High Risk
R-X-107-00-FernHill_SpringHill_Gaston	HWY 47	HWY 47	25		25	
R-X-269-00-65th_Nyberg_TualatinSherwood	Meridian Park Medical	Roy Rogers Road/Tualatin Sherwood	12	13	25	
R-X-143-01-Highway99E	Multnomah Co Line	HWY 99E		23	23	
R-X-203-01-122nd	NE Marine Dr	E Burnside Rd		23	23	
R-X-146-00-Flavel	SE 92nd Ave	82nd Ave	22		22	
R-X-228-00-ScapooseVernonia	HWY 47	HWY 30	20		20	
R-X-190-00-SwanIsland	I-5 (Or)	I-5 (Or)		17	17	
R-X-110-00-Carus_Mulino	Beavercreek Rd	HWY 99E	8	8	16	
R-X-109-00-Apirary	HWY 47	HWY 30	15		15	
R-X-230-00-Haynes_CedarCreek	SR-503	I-5	14		14	
R-X-101-01-Timber_GalesCreek	HWY 47	HWY 26	13		13	
R-X-142-00-Sellwood_Tacoma	HWY 99E	HWY 43	13		13	
R-X-144-00-JohnsonCreek	HWY 99E	SE 39th Ave	13		13	
R-X-200-00-Lombard	N Columbia Blvd	N Kelley Point Park Rd		12	12	
R-X-111-00-Highway219	HWY 210	HWY 8	11		11	
R-X-154-03-Burnside	SW Barnes Rd	Burnside Bridge		11	11	
R-X-105-00-Highway47	HWY 30	Yamhill Co Line	10		10	
R-X-203-02-122nd	E Burnside Rd	SE Foster Rd	5	5	10	
R-X-160-02-Foster	SE Jenne Rd	SE Powell Blvd	9		9	

ETR_ID_2020	ROUTE_TO	ROUTE_FROM	Percent Hazard			At Risk (if > 25%)
			100 year	500 year	Total	
R-X-216-02-MillPlain	Port Of Vancouver	I-5		9	9	
R-X-106-00-Macksburg	HWY 170 (Marquam Canby HWY)	HWY 211		8	8	
R-X-122-00-Redland	HWY 213	Springwater Rd	8		8	
R-X-211-00-Fairview_Glisan_223	SE Powell Blvd	NE Sandy Blvd	8		8	
R-X-162-00-AerialTram	Brg	Brg		7	7	
R-X-194-00-StJohnsBridge	Brg	Brg		7	7	
R-X-241-00-136th_137th	Mill Plain (Vancouver)	NE 78th / Padden Pkwy		7	7	
R-X-135-00-Highway213	I-205	Marion Co Line	6		6	
R-X-156-02-Highway10	Cedar Hills Rd	SW 65th Ave	6		6	
R-X-224-00-SR502	SR-503	I-5	6		6	
R-X-113-00-River	HWY 8 (Tualatin Valley HWY)	Scholls Ferry Rd	5		5	
R-X-127-00-Stafford_McVey	I-205 (Or)	HWY 43		5	5	
R-X-133-01-Highway170	99E	HWY 211	5		5	
R-X-160-01-Foster	Multnomah Co Line	SE Jenne Rd	5		5	
R-X-178-03-Sandy	I-84	NE 181st Ave		5	5	
R-X-193-01-82nd	NE Holman St	SE Clatsop St		5	5	

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APPENDIX A
Regional Emergency Transportation Routes Work Group (EWRG) Members



APPENDIX A

Regional Emergency Transportation Routes Work Group (EWRG) Members

Regional Emergency Transportation Routes Work Group

We wish to thank the following agencies and individuals have participated in the Regional ETR Work Group from 2018 to present.

	Agency	Participants
1	Regional Disaster Preparedness Organization (RDPO)	Laura Hanson, Chair
2	Metro	Kim Ellis, Co-chair Matthew Hampton Zac Christensen Molly Vogt Daniel Nibouar
3	Tri-County Metropolitan Transportation District of Oregon (TriMet)	Alex Ubiadas Justin Dillon
4	C-TRAN	Bob Medcraft
5	Oregon Department of Transportation (ODOT)	Albert Nako Talia Jacobson Bruce Johnson (retired) Tom Braibish Geoff Bowyer Michael Zimmerman Glen Bolen
6	Washington Department of Transportation (WSDOT)	Monique Rabideau John Himmel
7	Oregon Department of Geology and Mineral Industries (DOGAMI)	John Bauer (retired)
8	Oregon Counties Association	Brian Worley
9	Portland State University (PSU) Transportation Research and Education Center (TREC)	John MacArthur
10	Port of Portland	Art Spillman Alex Howard Greg Theisen
11	Clackamas County Disaster Management	Nancy Bush
12	Washington County Emergency Management	Ken Schlegel John Wheeler
13	Washington County Operations and Maintenance	Todd Watkins

Agency		Participants
14	Washington County Land use and Transportation	Erin Wardell, Washington County
15	Multnomah County Emergency Management	Lisa Corbly David Lentzner
16	Multnomah County Transportation Division	Megan Neill Allison Boyd Tina LeFebvre
17	Portland Bureau of Emergency Management (PBEM)	Jonna Papaefthimiou
18	Portland Bureau of Transportation (PBOT)	Mauricio Leclerc Emily Tritsch Michael Serritella
19	Clark Regional Emergency Services Agency	Anthony Vendetti Cindy Stanley
20	Columbia County Emergency Management	Shaun Brown Steve Pegram
21	Columbia County Public Works	Mike Russell Lonny Welter (retired)
22	Gresham Transportation Manager	Chris Strong
23	City of Wilsonville Public Works	Martin Montalvo

APPENDIX B
Stakeholder Engagement Process

APPENDIX B

Regional Emergency Transportation Routes
Update/

Stakeholder Engagement

Summary of Engagement Activities

April 2, 2021

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Attachment 2 – Community Leaders’ Forum Summary

Attachment 3 – Summary of Comments Received and Recommended Actions (Feb. 4 to March 24, 2021)

SUMMARY OF ENGAGEMENT ACTIVITIES | 2019 TO 2021

A detailed project engagement schedule is provided in **Attachment 1**.

2019 Engagement Activities

In 2019, Metro and RDPO worked closely together with a work group comprised of local, regional, and state partners in transportation planning and emergency management as well as engaged the Portland State University Transportation Research and Education Center (TREC) and a team of local consultants to provide the following for the ETR project work group.

- Conduct a [policy review and research on best practices](#) for establishing emergency transportation routes
- Assemble readily available datasets to support the evaluation process
- Develop and refine the draft RETR evaluation framework.

Four meetings of the ETR work group were held.

In August 2019, Metro hosted a community leaders' technical briefing and discussion, bringing together community leaders focused on social equity, environmental justice, labor fairness and community engagement. More than 100 community leaders were invited, and approximately 20 leaders participated. A summary of the discussion is provided in **Attachment 2**.

2020 Engagement Activities

From January to February 2020, the project team requested feedback on the draft evaluation framework from regional technical committees and work groups as well as regional policymakers.

In March 2020, mid-way through the project, the COVID-19 emergency declaration and response prompted Emergency Operations Centers (EOCs) to activate region-wide and forced cancellation of in-person meetings throughout Oregon and Washington for the remainder of the project.

In April 2020, the project team made adjustments to the work plan and engagement schedule to advance the project:

- The draft methodology and criteria were made available online for groups or individual stakeholders who wanted to review and provide comments through the end of May. No additional comments were received.
- The project team applied the draft methodology and evaluation factors to the routes and datasets collected for preliminary review and refinement by the ETR work group in July.

The team felt confident making these adjustments to the work plan given the substantive feedback previously provided by the ETR Work Group and positive feedback received from other stakeholders prior to the emergency declaration.

In July 2020, the preliminary routes with maps were presented to the ETR work group by the consulting team, enabling the work group to review draft outputs of the methodology and provide substantive feedback on the evaluation factors, methodology, and data used before preparing the draft report and maps for review (and subsequent refinement) by project stakeholders.

In September 2020, catastrophic wildfires in the region and other parts of Oregon further delayed completion of project deliverables and engagement activities. The continued delays required requesting a project extension from the Urban Areas Security Initiative (UASI) to June 2021.

From August to October 2020, staff convened a series of on-line jurisdictional meetings to request feedback on the preliminary maps and recommendations for future work. The meetings were held with each of the five counties (and their respective cities) as well as the Port of Portland, Port of Vancouver, City of Portland, TriMet, and the South Metro Area Regional Transit (SMART). The project team prepared an on-line viewer to support the jurisdictional review. The review identified data limitations and gaps, and new potential ETRs to be included in the analysis.

From November to December 2020, the project team incorporated the missing data (when readily available) and the additional potential ETRs, updated the ETR analysis and prepared a draft report with updated maps and recommendations for future work. The ETR work group reviewed and provided feedback on the draft report in advance of broader engagement planned for 2021.

2021 Engagement Activities

From January to April 2021, updated maps, draft findings, and recommendations for future work were brought forward for review and consideration by regional technical committees and work groups, county coordinating committees as well as regional policymakers, including the RDPO Steering Committee, the RDPO Policy Committee, the Metro Council, the Joint Policy Advisory Committee on Transportation (JPACT), the Metro Policy Advisory Committee (MPAC) and the Southwest Washington Regional Transportation Council (SW RTC).

On Feb. 4, 2021, the draft Regional Emergency Transportation Routes (RETRs) and a draft report were published in the online RETR viewer and on the [project website](#) for review and feedback. Between Feb. 4 and March 25, 2021, Metro and the RDPO facilitated a review process to gather comments on the updated routes, draft report and recommendations for future work. The review process focused on various policy bodies and policy and technical advisory committees in the region that oversee transportation and emergency management planning and decision-making in the region.

Attachment 1 summarizes recommended changes to the draft RETRs and the draft report to respond to all substantive comments received during the review process. Recommended changes include technical corrections to maps and data, additional RETR updates, and expanding descriptions of the recommendations for future work. Other feedback included:

- Broad appreciation for this work and recognition of its importance to planning and investment in the region;
- Acknowledgement that significant gaps in data and planning remain to be addressed (during Phase 2 and other efforts);
- Request for more jurisdictional and policymaker engagement in Phase 2 RETR effort; and
- Look for opportunities to connect and advance future work to address likely Critical Energy Infrastructure Hub failure, needs of vulnerable populations, evacuation planning needs as well as roles of river routes and transit during a regional emergency.

A regional dissemination webinar is anticipated in June 2021 to more broadly share the updated maps, data findings, and recommendations for Phase 2 of the RETR update.

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REGIONAL EMERGENCY TRANSPORTATION ROUTES UPDATE

ENGAGEMENT SCHEDULE | 2020 - 2021

2020

Month	When	Who	What
January	1/23	ETR Working Group	<ul style="list-style-type: none"> • Project update • Seek feedback on draft criteria and methodology • Seek feedback on recommendations for future work
February	2/19	TPAC/MTAC workshop; ETR Working Group members invited	
	Via RDPO email	RDPO work groups (e.g., public works, law enforcement, healthcare)	
March	3/2	East Multnomah County Transportation Committee TAC	
	3/6	RDPO Emergency Managers Work Group - REMTEC	
	3/10	Metro Council	
	4/13	East Multnomah County Transportation Committee	
April	4/30	Washington County Coordinating Committee TAC	
	5/18	Washington County Coordinating Committee	
May	5/20	Clackamas County C-4 Metro Subcommittee	
	7/9	REMTEC	
July	7/17	Regional Transportation Advisory Committee	
	7/21	ETR Working Group	
	8/3	RDPO Steering Committee	Project update
August	8/4	SW Regional Transportation Council (RTC)	Project update
	8/12	Clark County, Vancouver, WSDOT staff	Jurisdiction specific review of preliminary maps
	8/19	City of Portland staff	
	8/20	Multnomah County staff	
	9/2	East Multnomah County Transportation Committee TAC	
September	9/8	Clackamas County, Cities of Happy Valley, Gladstone, Lake Oswego, Milwaukie, Oregon City, West Linn and Wilsonville staff	
	9/10	Washington County, Cities of Beaverton, Cornelius, Forest Grove, Hillsboro, Sherwood, Tigard and Tualatin staff	
	9/14	Columbia County staff	
	9/23	RDPO Public Works WG Meeting	Project update
	October	10/1	REMTEC
10/5		Ports of Portland and Vancouver staff	Jurisdiction specific review of preliminary maps
10/9		TriMet, C-TRAN and SMART staff	

Attachment 1

Month	When	Who	What
	10/26	ETR Working Group	Seek feedback on draft maps and report recommendations
	Via email	RDPO Public Works WG	Provided links to the maps and technical documents to review
December	Via email	ETR Working Group Reviews DRAFT Report	Email/online no meeting
	12/7	RDPO Steering Committee	Project update

2021

Final Review Process

Regional Councils and Committees

Who	Date
ETR Work Group Review	Jan. 20
RDPO Emergency Managers Work Group - REMTEC	Feb. 5
RDPO Steering Committee	Feb. 8
Transportation Policy Alternatives Committee (TPAC)/Metro Technical Advisory Committee (MTAC) workshop	Feb. 17
Joint Policy Advisory Committee on Transportation	Feb. 18
Regional Technical Advisory Committee (RTAC)	Feb. 19
RDPO Policy Committee	Feb. 19
Metro Council	Feb. 23
Metro Policy Advisory Committee (MPAC)	Feb. 24
Clackamas County TAC	Feb. 24
Southwest Washington Regional Transportation Council	March 2
East Multnomah County Transportation Committee TAC	March 3
Washington County Coordinating Committee TAC	March 4
RDPO Emergency Managers Work Group - REMTEC	March 5
Washington County Coordinating Committee (policy)	March 15
East Multnomah County Transportation Committee (policy)	March 15
Clackamas County C-4 subcommittee (policy)	March 18
Joint Policy Advisory Committee on Transportation	March 19
RDPO Policy Committee	March 20
RDPO Public Works Work Group	March 24

Attachment 1

Acceptance process

Regional Councils and Committees

Who	Date
TPAC – seek recommendation to JPACT	April 2
RDPO Steering Committee – seek recommendation the RDPO Policy Committee	April 5
RTAC – seek recommendation to the SW RTC	April 16
JPACT – seek recommendation to the Metro Council	April 15
Metro Council – seek acceptance of updated map, report findings and recommendations for future work	April 29
SW RTC – seek acceptance of updated map, report findings and recommendations for future work	May 4
RDPO Policy Committee – seek acceptance of updated map, report findings and recommendations for future work	May 21

Attachment 1

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COMMUNITY LEADERS' TECHNICAL BRIEFING AND DISCUSSION

Friday, August 2, 2019

Meeting Summary of Regional Emergency Transportation Routes Discussion

On Aug. 2, 2019, Metro hosted a community leaders' technical briefing and discussion, bringing together community leaders focused on social equity, environmental justice, labor fairness and community engagement. Invitees included community representatives on the Metro Policy Advisory Committee (MPAC), Metro's Committee on Racial Equity (CORE), Metro's Public Engagement Review Committee (PERC), Metro Technical Advisory Committee (MTAC) and Metro's Transportation Policy Alternatives Committee (TPAC), as well as previous participants in 2018 Regional Transportation Plan (RTP) regional leadership forums and those involved in discussions about an affordable housing measure. More than 100 community leaders were invited, and about 20 leaders participated.

Attendees

Community Leaders: Bev Drottar, TPAC community member; Anjala Ehelebe, Woodlawn Neighborhood Association; Hannah Holloway, Urban League; DJ Hefferman, Sullivan's Gulch Neighborhood; Allie Yee, APANO; Coi Vu, IRCO Asian Family Center; Ali Mohamad Yusuf, IRCO; Sydney McCotter Bicknell, PAALF; Andrew Basin, Willamette Falls Trust; Diane Linn, Proud Ground; Richi Poudyal, The Street Trust; Nicole Johnson, 1000 Friends of Oregon; Chris Rall, Transportation for America; Vivian Satterfield, Verde; Mercedes Elizalde, Central City Concern; Arlene Kimura, East Portland Action Plan; Carol Chesarek, MTAC community member; Kari Schlosshauer, Safe Routes to School Partnership

Metro staff: Clifford Higgins (facilitator), Lake McTighe, Caleb Winter, Eryn Kehe, Matt Bihn

Cliff Higgins kicked off the meeting with introductions and an agenda overview.

Discussion 2: Emergency Transportation Routes

Presentation and large group discussion

- Cliff Higgins presented about the Emergency Transportation Routes Study to the group. He discussed some background on the region's existing Emergency Transportation Routes and the need to update the regional routes to reflect changing population centers, demographics, technology and new information about hazard risks. The study will both identify priority routes and also make recommendations on planning and investments to make those routes more resilient in preparation for major disasters.
- There were questions about how this project will go beyond just route prioritization and identification to also consider the connections between routes and ways community members can access the routes during an emergency.

Attachment 2

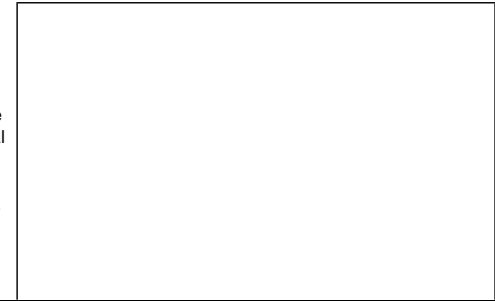
Small group discussions:

Below are the major themes and takeaways from each of the small group discussions on this topic. The participants in these small groups were responding to the following prompts:

- 1) Based on how we've described it, is this project on the right track?
 - 2) Does the problem to be solved make sense?
 - 3) What else should we consider as this project moves forward?
 - 4) How can we best pursue equity on this topic?
- Participants generally agreed that this project was on the right track, but wanted to make sure it is relevant to individual community disaster preparedness and that there are clear lines of communication about how emergency routes play into overall disaster planning regionally.
 - Though most participants understood the need for the project, many emphasized that there are infrastructure improvement needs in communities now that need addressing, and this project must balance the local needs of these emergency routes with helping local communities to prepare for disasters. There were some suggestions of phasing improvements on certain routes to better serve community's immediate needs.
 - As the project moves forward, there was an interest in how we can learn from best practices in other communities who have experienced significant natural disasters.
 - Individuals brought up specific examples of necessary coordination with other utilities in this planning effort, including: water and sewer lines under Burnside, Powell and Division, the Linnton fuel tanks (fire risk) and major institutions housing vulnerable or dependent populations such as jails, nursing homes or hospitals.
 - The overarching concern brought up by each of the groups was to adequately evaluate who would be served by these prioritized emergency transportation routes, and ensuring that the planning prioritizes serving those with fewer access to resources in a disaster.
 - Pursuing equity on this topic means clear communication with communities about how to prepare for a disaster, where emergency transportation routes are how improving emergency transportation routes would impact their neighborhood. This also includes communication in different languages and longer planning timeframes to incorporate voices less familiar with these planning processes.

2021 Regional Emergency Transportation Route (RETR) Update
Summary of Comments Received and Recommended Actions
 (comments received Feb. 4 to March 24, 2021)

The Updated Regional Emergency Transportation Routes (RETRs) were published in a draft report on Feb. 4, 2021 which included maps, appendices, and an online viewer. The Regional Disaster Preparedness Organization (RDPO) and Metro facilitated a stakeholder review process to gather comments from various policy bodies and policy and technical advisory committees in the region that oversee transportation and emergency management planning and decision-making. Feedback was provided at meetings and via emails between February 4 and March 24, 2021. This document summarizes recommended changes to respond to all substantive comments received during the review period. All recommended changes will be reflected in the final report and maps brought forward for acceptance by the Joint Policy Advisory Committee on Transportation, the Metro Council, the Southwest Washington Regional Transportation Council and the RDPO Policy Committee. *ALL COMMENTS ARE PARAPHRASED FROM DISCUSSIONS AND MEETING MINUTES*



ITEMS FOR CONSIDERATION - Comments on draft 2021 Regional Emergency Transportation Route (RETR) Update								
#	ITEM	Last name	First name	Affiliation	Date	Meeting	Comment	RDPO and Metro Staff Recommended Action
1	Washington and Columbia County Routes				2/19/21	RDPO Policy Committee	Washington County and Columbia County are closer to the epicenter of a CSZ earthquake. Note the update has lower redundancy of routes in that western part of the region- how will we connect if those areas get cut off?	Columbia County low route redundancy is well noted in the report and is largely due to geological constraints. Washington County has limited SSLR redundancy with their coastal neighbors (only Highway 26). A shelter-in-place approach is the current plan statewide. However, the coastal communities do have plans to receive support from federal and state marine assets to be deployed immediately post-event.
2	Route Redundancy	Peterson	Lynn	Metro Council President	2/19/21	RDPO Policy Committee	The low redundancy of routes in some areas should inform preparations for an incident and the prioritization of routes - justification of prioritizing regionally to help prioritize funding to take into account vulnerabilities and to improve their resilience.	As noted, this is a key justification for prioritizing routes regionally as recommended in the Phase 2 work.
3	Critical Energy Infrastructure (CEI) Hub	Sharon	Meiren	Commissioner, Multnomah County	2/19/21	RDPO Policy Committee	There have been multiple Critical Energy Infrastructure (CEI) Hub studies ongoing in the county/city. How was the CEI Hub included in the RETR update? It is important to identify what routes will be cut off if the CEI Hub falls into the river as anticipated in a catastrophic earthquake.	Update Section 7 of the RETR Report to: - incorporate a discussion of previous and current Critical Energy Infrastructure Hub studies - recommend future planning work to identify RETRs that are likely to be cut off if the CEI Hub - add references to Regional Emergency Fuel Management Planning (concurrent) and upcoming regional exercise and other relevant planning efforts to show how this effort relates to other efforts that are under way or planned. Recommendation to incorporate findings in the Phase 2 prioritization and operationalization process with local partners.
4	Critical Energy Infrastructure (CEI) Hub	Joanne	Hardesty	Commissioner, City of Portland	2/19/21	RDPO Policy Committee	We cannot implement this plan until the CEI Hub is addressed.	The RETR Update is not a plan; it provides information and route designations that can be used to inform development of policies and more detailed planning at the state, regional and local levels. Other RDPO and State efforts are under way to address the CEI Hub. The recommended Phase 2 work (if funded by the Urban Areas Security Initiative) is anticipated to tier or prioritize routes for operational purposes, and can take this into consideration. See also response to Comment #3.

ITEMS FOR CONSIDERATION - Comments on draft 2021 Regional Emergency Transportation Route (RETR) Update								
#	ITEM	Last name	First name	Affiliation	Date	Meeting	Comment	RDPO and Metro Staff Recommended Action
5	Clackamas County Critical Facilities	Smith	Tootie	Clackamas County Chairperson	2/19/21	RDPO Policy Committee	It appears Clackamas Co. public works facilities, as well as the 911 call center and Clackamas County EOC in Oregon City are missing from the regional map.	Update as requested. The 911 center was inadvertently not included and the EOC and some public work facilities were mis-categorized in the GIS dataset. The public works dataset will be further reviewed and updated as part of Phase 2, in consultation with the RDPO Public Works Work Group.
6	Clackamas County Critical Facilities	Peterson	Lynn	Metro Council President	2/19/21	RDPO Policy Committee	The report needs to ensure all of the County public works facilities are represented across the region.	Update as requested. In addition, the public works dataset will be further reviewed and updated as part of Phase 2, in consultation with the RDPO Public Works Work Group.
7	General	Pippenger	Dan	Port of Portland	2/19/21	RDPO Policy Committee	Expressed appreciation for the effort that went into this Phase 1 update, the report and data produced are a great resource for the region. It would be a big achievement for the region to prioritize/tier the routes in Phase 2.	Comment noted.
8	Public Works Facilities	Peterson	Lynn	Metro Council President	2/19/21	RDPO Policy Committee	The report needs to ensure all of the County public works facilities are consistently represented across the region.	Update as requested. In addition, the public works dataset will be further reviewed and updated as part of Phase 2, in consultation with the RDPO Public Works Work Group.
9	General	Peterson	Lynn	Metro Council President	2/19/21	RDPO Policy Committee	Important to balance pre-incident planning with real-world incident response. There are things we can mitigate now and plan toward, and then we also need to be clear on protocols in an incident. We need both.	No change needed. Aligns to the report recommendation to use the RETR Update to inform the next Metro Regional Transportation Plan (RTP), Southwest Washington Regional Transportation Council RTP and for the next phase of RETR project to work with local, state and regional jurisdictions on guidelines for RETRs in real incidents.
10	All Routes	Joanne	Hardesty	Commissioner, City of Portland	2/18/2021	Metro JPACT Meeting	It is unclear why so many routes were added and none removed.	Update Section 6.1 to clarify why routes were added and none removed. The report details the process, methodology, and detailed consultation with State and local partners to identify the need for additional routes to improve access to and redundancy in areas with critical infrastructure, essential facilities and vulnerable populations. Routes likely won't be deleted but could be tiered/categorized as lower level routes during Phase 2.
11	Portland Critical Facilities	Joanne	Hardesty	Commissioner, City of Portland	2/18/2021	Metro JPACT Meeting	Were the marine facilities for Fire & Rescue included in the critical infrastructure that was mapped?	The Portland Fire and Rescue facilities at Stations 6,17, 21 are all included in the existing fire and rescue data layer for essential facilities. These three PFR stations have adjacent docks. A further evaluation of marine fire and rescue assets (beyond the City of Portland) will require additional work in Phase 2 to confirm all stations with marine assets are properly/consistently mapped.

ITEMS FOR CONSIDERATION - Comments on draft 2021 Regional Emergency Transportation Route (RETR) Update								
#	ITEM	Last name	First name	Affiliation	Date	Meeting	Comment	RDPO and Metro Staff Recommended Action
12	Maps, cartography	Patterson	Courtney	Metro Emergency Management	2/8/21	RDPO Steering Committee	Using the color blue for Statewide Seismic Lifeline Routes is confusing on the maps because blue is usually used for rivers.	The SSLRs will be shown as dark navy blue.
13	Resolution for Metro Council and RDPO Policy Committee	Howard	Alex	Port of Portland	2/8/21	RDPO Steering Committee	Recommend to include language on the Phase 2 project concept within the resolutions we put forward to Metro Council and RDPO Policy Committee since we have that work scoped and in funding pipeline.	The Phase 2 project is presented to both RDPO Policy and Metro Council. Because the UASI 2021 application is still pending signature with DHS, we will not put language into the resolutions at this time.
14	Engagement				2/19/21	RTAC meeting	How have PacifiCorp and other utility providers been engaged in this update? PacifiCorp controls the Lewis River dams, which have lava tubes. While outside geographic scope of this project, a dam failure could impact nearby Clark County.	PGE, Pacific Power and NW Natural Gas all provided details on their regional Emergency Operations Centers (primary and secondary) which are included in the regional critical facilities map layers. Analysis of dams is beyond the scope of this project.
15	Route Redundancy				2/19/21	RTAC meeting	The lack of redundant routes in northern Clark County and other more rural parts of the region underscores need to consider that people are likely to be isolated/homebound during a major emergency.	This comment has been forwarded to Clark County agencies for consideration in future planning efforts. The report includes information that Clark County relies on State routes, and that data on the seismic resilience of their bridges is not available at this time. Additional work to develop data on route resilience in Clark County could be beneficial in Phase 2 and other future planning efforts.
16	Individual Routes	Owen	Jeff	TriMet	2/17/21	email	The Merlo Bus Garage does not appear to be directly accessed by the updated RETRs.	Add new RETR connection to Merlo bus garage and other critical assets in the vicinity via Jenkins Road and Merlo Road. TriMet bus barns/maintenance yards are identified as state/regional essential facilities and included in the analysis that informed RETR updates. This recommendation has been coordinated with Washington County transportation and emergency management staff.
17	Landslide Data	Herman	Matt	Clark County	2/17/21	email	<p>Add landslide/slope data for Clark County/Washington State that is available from Washington State's Open Data Portal:</p> <p>(1) https://www.dnr.wa.gov/Publications/fp_gis_slopestability.zip</p> <p>(2) https://geo.wa.gov/</p> <p>(3) https://hub-clarkcountywa.opendata.arcgis.com/</p> <p>The additional data contains:</p> <p>(1) Partial coverage of landslide susceptibility (both and shallow and deep susceptibility) for the Columbia River corridor about four miles inland from the river and east of SE 164th Ave to the county boundary. This coverage intersects all of the Washougal River Rd / Evergreen Way RETR, and parts of SR-500, SR-14, and 192nd Ave RETRs.</p> <p>(2) Partial coverage of landslide mapping from historic geologic maps for the most northeast corner of the county. There is no intersection with RETRs.</p> <p>(3) Countywide slope stability coverage. From the metadata, this is intended for forest land management and is based on regional digital elevation models (i.e. not LiDAR precision).</p>	Add new map figure to the final report to show this data separately from the landslide susceptibility map along with a discussion that the data was not used in the route evaluation because the data was not available for all of Clark County. The ETR analysis included one data layer for landslides hazards for Clark County, which is a draft landslide deposit inventory from Washington Dept. Natural Resources.

ITEMS FOR CONSIDERATION - Comments on draft 2021 Regional Emergency Transportation Route (RETR) Update								
#	ITEM	Last name	First name	Affiliation	Date	Meeting	Comment	RDPO and Metro Staff Recommended Action
18	Bridges	Owen	Jeff	TriMet	2/17/21	TPAC/MTAC Workshop	Has the seismic vulnerability of the Tillikum Crossing Bridge been accounted for in the data and analysis?	Label the Tillikum Crossing bridge as not evaluated in Figure 6.10. This project did not conduct specific evaluation of the vulnerability of any of the bridges. Figure 6.10 mapped vulnerability data provided by ODOT for multi-span bridges in Oregon; ODOT has not evaluated single-span bridges. WSDOT did not have comparable data available for Washington State, so bridges in Washington State are also shown as "not evaluated" in Figure 6.10 and were not included the GIS analysis.
19	Individual Routes				2/17/21	TPAC/MTAC Workshop	Note the recent jurisdictional transfer of Cornelius Pass to the State (will it become an SSLR)?	Update the ownership field in the GIS data to reflect this change. In addition, this comment has been forwarded to ODOT for consideration as part of their planned update to the Oregon Highway Plan (OHP). SSLRs are designated by the Oregon Transportation Commission in the OHP.
20	Individual Routes	Schlegel McCarthy	Ken Mike	Washington County and City of Tualatin staff	3/2/21	email	Designate the full length of Tualatin-Sherwood Road east to I-5 to provide a continuous RETR connection between I-5 and 99W.	Designate this segment of Tualatin-Sherwood Road as requested. This will provide a direct connection between I-5 and 99W and access to the seismically resilient PGE Integrated Operations Center, which will serve as a key hub for PGE operations during a regional emergency.
21	Critical infrastructure	Schlegel McCarthy	Ken Mike	Washington County and City of Tualatin staff	3/2/21	Zoom meeting	Add the PGE Integrated Operations Center to the state/regional critical infrastructure data layer. The seismically resilient facility includes an emergency helipad and will serve as a key hub for PGE operations during an emergency.	PGE is constructing their new Integrated Operations Center in Tualatin, to be completed by December 2021. Currently, PGE's regional (and backup) Emergency Operations Centers are listed in the regional EOC data layers. In Phase 2, the PGE EOC primary location will shift to the new Tualatin Integrated Operations Center.
22	Individual Routes	McCarthy	Mike	City of Tualatin	3/2/21	Zoom meeting	Designate Nyberg Road/65th Avenue east of I-5 as a RETR to provide direct access to Meridian Park Hospital.	Designate Nyberg Road/65th Avenue as requested to provide a direct connection to Meridian Park Hospital. Hospitals are critical state/regional assets.
23	Evacuation Planning	Schlegel McCarthy	Ken Mike	Washington County and City of Tualatin staff	3/2/21	Zoom meeting	Evacuation planning falls under the authority of County Sheriff's offices. For future planning coordination.	Expand the description of recommendation #5 in the report to recommend the inclusion of County Sheriffs as key stakeholders to engage in future evacuation planning efforts. See also responses to Comments #38, #54 and #55.
24	Railroads	Odermott	Don	City of Hillsboro	2/17/21	TPAC/MTAC Workshop	What role will railroads play during emergency response and recovery?	While this RETR update did not specifically address the role of railroads or river routes, providing adequate access to rail yards, airports and marine terminals were factors in the update to the RETRs given their critical infrastructure role. This resulted in the addition of new RETR designations. Future planning work is recommended to address the role and resiliency of these critical transportation infrastructure elements. For example, rail lines are typically much older than the road network and are anticipated to be significantly impacted by landslides and liquefaction.

ITEMS FOR CONSIDERATION - Comments on draft 2021 Regional Emergency Transportation Route (RETR) Update

#	ITEM	Last name	First name	Affiliation	Date	Meeting	Comment	RDPO and Metro Staff Recommended Action
25	Bridges	Odermott	Don	City of Hillsboro	2/17/21	TPAC/MTAC Workshop	Are there specific bridges that should be priorities to harden seismically to leverage limited funding?	This update included a high-level analysis of seismically vulnerability of routes and their bridges; more detailed analysis is recommended for future planning work following completion of Phase 2 of the ETR update. ODOT has prioritized investment in the Statewide Seismic Lifeline Routes (SSLRs) based on detailed engineering analysis conducted in 2012 and 2014. Priority investments are being programmed through the Statewide Transportation Improvement Program (STIP) process.
26	Individual Routes	Deffebach	Chris	Washington County	2/17/21	TPAC/MTAC Workshop	Ownership of Cornelius Pass Road was recently transferred to the Oregon Department of Transportation (ODOT). Will this work inform whether the route should be added to ODOT's statewide seismic lifeline routes?	This comment has been forwarded to ODOT for consideration as part of their planned update to the Oregon Highway Plan (OHP). SSLRs are designated by the Oregon Transportation Commission in the OHP.
27	Policy and Investment	Cooper	Colin	City of Hillsboro	2/22/21	email	How does the RETR report fit into the Regional Transportation Policy and Funding policy scheme? For example, does the I-5 bridge receive a higher priority for federal funding on the State and Metro Federally constrained project list because it is a Tier 1 route?	The RETR Update Report is not a plan and does not establish policy or investment priorities. The Report provides information and a consistent regional planning framework and route designations that can be used to inform the development of policies, more detailed planning and investment decisions at the state, regional and local levels. The recommended Phase 2 work (if funded by the Urban Areas Security Initiative) is anticipated to tier or prioritize routes for operational purposes. The Phase 2 work will also help further inform policy development, planning and investment priorities at all government levels. For example, the next update to the Regional Transportation Plan (RTP) will use the information from Phase 1 (and Phase 2, if available) as a foundation for updating the plan's existing transportation resilience policies and to inform development of the RTP investment strategy. Another example is Multnomah County – they have been using the current routes to prioritize investments in the County CIP and to look for opportunities to seismically upgrade bridges/routes as part of planned projects.
28	Individual Routes			Project team	3/5/21		Add NE 223rd Avenue between Sandy Boulevard to Marine Drive to the RETR designations. This route was identified by Multnomah County staff to be added in Fall 2020 and was inadvertently not included.	Update as requested.
29	Essential facilities			Project team	3/5/21		Review State-owned maintenance yard on OR 47. This facility was identified by Columbia County staff to be added in Fall 2020.	Update this site from city/county to state/regional category; it serves as an important staging area in an area with limited routes.
30	Critical infrastructure			Project team	3/5/21		Add Canby Ferry as critical infrastructure (county/city category). This infrastructure was identified by Clackamas County staff to be added in Fall 2020 and was inadvertently not included.	Update as requested.

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#	ITEM	Last name	First name	Affiliation	Date	Meeting	Comment	RDPO and Metro Staff Recommended Action
31	Critical infrastructure			Project team	3/5/21		Confirm Columbia County rider hub transit centers are reflected (county/city category)	The transit hubs were identified by Columbia County staff to be added in Fall 2020. There are currently transit centers in Rainier and St. Helens, which are city/county critical infrastructure. Clatskanie and Vernonia transit centers only have bus stops, which are not captured as critical infrastructure in this project. This dataset will be further reviewed in Phase 2 in coordination with transit providers.
32	Essential facilities			Project team	3/5/21		Review and refine public works sites as needed to show state/regional and county/city sites consistently across 5-county region	Update as requested. In addition, the public works dataset will be further reviewed and updated as part of Phase 2, in coordination with the RDPO Public Works Work Group.
33	Essential facilities			Project team	3/5/21		Review Tualatin Valley Fire and Rescue Command Center (11945 SW 70th Avenue., Tigard, OR) to confirm whether state/regional or county/city essential facility	In this Phase 1 analysis, all fire and rescue assets (stations and command centers) were mapped and included in the local essential facilities. A deeper analysis of assets to be considered "regional" needs to be addressed going into Phase 2 (including marine assets, regional command centers, or in some instances even specialized teams or equipment deployable region-wide)
34	Phase 2 and Future Lynn planning work		Peterson	Metro Council President	2/23/21	Metro Council Work Session	4 things that are key to highlight and address in future planning work: (1) Management of capacity during an emergency - Coordination and consistency as to how to manage/prioritize users of RETRs is needed and should be documented as part of updating the operational guidelines and protocols in Phase 2. (2) Connectivity to emergency response resources - State and County public works staging areas are key for getting supplies and resources where they are needed during a state or regional emergency. Ensure they are consistently reflected throughout 5-county area. (3) Redundancy of emergency response routes - Redundancy is important given vulnerabilities throughout the system of RETRs. Public works staff have an understanding of where potentially vulnerable and isolated populations live as well as limitations of RETRs (e.g., weight or height restricted bridges, areas of frequent flooding/landslides/road closures). It is important to continue engaging public works staff during Phase 2 tiering process. (4) Communications during emergency response - Technology can play an important role in supporting jurisdictional coordination during emergency response and sharing real-time information about routes to use/avoid during an emergency. Other communications pathways also need to be planned in advance to address the diverse needs of vulnerable populations during an emergency, including households without access to a vehicle, people with limited English proficiency, older adults and people living with disabilities.	Phase 2 will address these four themes in the work program, and periodically update the Metro Council on the project status. See also responses to Comments #32 and #33.
35	Evaluation criteria	Councilor Nolan		Metro Councilor	2/23/21	Metro Council Work Session	Were capacities of the routes themselves evaluated?	Route characteristics were not included in the Phase 1 evaluation due to inconsistent data across the five counties. Route characteristics like road capacity, bridge weight/height restrictions, ability to carry over-dimensional vehicles, and other factors will be considered as part of the Phase 2 data collection and subsequent tiering analysis.

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#	ITEM	Last name	First name	Affiliation	Date	Meeting	Comment	RDPO and Metro Staff Recommended Action
36	Clark County Routes	Councilor	Rosenthal	Metro Councilor	2/23/21	Metro Council Work Session	Do we need to better address bypasses and work around routes in Clark County? They are mostly state routes at this point.	This comment has been forwarded to Clark County agencies for consideration in future planning efforts. The report includes information that Clark County relies on State routes, and that data on the seismic resilience of their bridges is not available at this time. Additional work to develop data on route resilience in Clark County could be beneficial in Phase 2 and other future planning efforts.
37	Community Engagement	Councilor	Gonzales	Metro Councilor	2/23/21	Metro Council Work Session	Remember that these routes exist to serve people. Its important we build community resilience with local planning work. Important we reflect geography and language diversity.	Expand discussion in the recommendations for future work related to community engagement and building increased understanding of how routes serve community needs.
38	Evacuation Planning	Lyles Smith	Rachel	Mayor, City of Oregon City	2/24/21	MPAC	This is good, important work. Look for opportunities for future evacuation planning and Phase 2 RETR work on operational guidelines and protocols to be informed by lessons learned from the 2020 wildfires in terms of evacuation route planning, information gaps/needs and coordination/communication of changes to traffic operations among transportation facility owners/operators. For example, there were significant bottlenecks in the OR 213/I-205 area in Oregon City as significant numbers of people evacuated wildfire areas at the same time. How might evacuation route designations be impacted by vulnerable bridges and routes? Are there opportunities to adjust traffic operations to efficiently move large numbers of people/vehicles, e.g., making a whole Interstate operate in one direction like has been done in other metropolitan areas to facilitate evacuation?	While outside the scope of Phase 2, future work on evacuation planning is already called out as a priority at both the local and regional level. Future evacuation planning can address highlighted problem areas identified in these comments. See also responses to Comments #23, #54 and #55.
39	Seismic resilience engineering	Iyall	Bill	Cowlitz Tribe	3/2/21	SW RTC	Recommend to look at SMI tool for seismic measurement. Network in Puget Sound. Do we have here in the Portland region?	ODOT, Multnomah County, and possibly others are working on incorporating ShakeAlert systems for bridge operation and emergency response into their operations. Currently, there is not a consistent system for alerting or measuring shaking in an overall system in Oregon.
40	Stakeholder engagement	Stober	Ty	City of Vancouver	3/2/21	SW RTC	What are we doing to address the routes that connect into other counties? (i.e.. Skamania and Cowlitz). How is this being communicated with them?	Recommend to inviting partners to dissemination workshop and to engage in the Phase 2 work.
41	Phase 2	Medrigy	Gary	Councilor, Clark Co	3/2/21	SW RTC	Would be good to look at weight restrictions for bridges when we do the tiering/prioritization process in Phase 2.	Expand Phase 2 RETR description to identify weight restrictions for bridges be included in the analysis to inform the tiering process.
42	Technical corrections			Project team	3/9/21		Figure 6.11 - Correct figure label to read "RETRs relative to Landslide Susceptibility"	Update as requested.
43	Technical corrections			Project team	3/9/21		Figure 3.1 - Correct typo in legend - "Transportation Route"	Update as requested.
44	Executive summary			Project team	3/9/21		ES-5 - create infographics and add final 5-county map	Update as requested.
45	Technical corrections			Project team	3/9/21		Page 5 - remove gray sidebar about RDPO and project; this is included in executive summary.	Update as requested.

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46	Mapping - SSLRs			Project team	3/12/21		Ensure that RETRs have a GIS tie-in to SSLRs for network analysis.	Update published maps to complete gaps in SSLR network. A review of the SSLR source GIS data confirmed that gaps exist (e.g., highway ramps are not designated). This comment has been forwarded to ODOT for consideration in future updates to the SSLR data.
47	Technical corrections	Senechal Biggs	Jean	City of Beaverton	3/15/21	email	Add a table of the existing routes and the proposed new routes to document the additions.	Appendix E includes a table summarizing new routes added during the RETR update. The table will be updated to reflect additional routes added during the review of the draft report.
48	Mapping- SSLRs			Project team	3/16/21		Verify whether or not there are gaps in the ODOT SSLR source GIS data.	Update published maps to complete gaps in SSLR network. A review of the SSLR source GIS data confirmed that gaps exist (e.g., highway on/off-ramps are not designated in ODOT's dataset). This comment has been forwarded to ODOT for consideration in future updates to the SSLR dataset.
49	Individual routes	Nematzu	Chris	City of Wilsonville		email	Add Elligson Road connection in N. Wilsonville to connect two RETRs (Day Road and Stafford Road) to provide a connection to a N-S route if I-5 was not operable during an emergency.	Update as requested.
50	Bridges	Nematzu	Chris	City of Wilsonville		email	Figure 6.10 - I-5/Boone Bridge seismic vulnerability rating (potentially vulnerable) seems at odds with recent planning work done by ODOT and the City of Wilsonville.	To remain consistent, the ODOT data provided for seismic vulnerability ratings is maintained. The I-5 Facility Study does not contradict the rating in use; however, further study following the 2018 report may have been conducted. The RDPO and Metro will continue to pursue further information on Boone Bridge seismic vulnerability rating specifically and recommend an update to the rating if warranted for Phase 2 analysis.
51	Essential facilities	Patterson	Courtney	Metro Emergency Manager	3/9/21	email	Add transfer stations designated on the Regional Solid Waste facilities map to the state/regional essential facilities data layer.	Update as requested.
52	Technical corrections			Project team	3/18/21		Figure 6.8 - Remove churches from the map and geodatabase because data provided was limited to Columbia Co. and Washington County, and as a result was not included in the analysis.	Update as requested.

ITEMS FOR CONSIDERATION - Comments on draft 2021 Regional Emergency Transportation Route (RETR) Update

#	ITEM	Last name	First name	Affiliation	Date	Meeting	Comment	RDPO and Metro Staff Recommended Action
53	Evacuation Planning	Savas	Paul	Clackamas County Commissioner	3/17/21 and 3/18/2021	C-4 subcommittee briefing and JPACT	Evacuation planning that takes into account the role of SSLRs and RETRs during events like the 2020 wildfires is needed and should be a priority for the region to address in the near-term. The planning work needs to address lessons learned from the wildfire evacuations, including communications gaps, routing and bottlenecks on the transportation network and other identified issues. Request that that Clackamas County Board of Commissioners be engaged in Phase 2 and future evacuation planning work.	While outside the scope of Phase 2, future work on evacuation planning is already called out as a priority at both the local and regional level, pending funding and staff capacity to complete this work. Future evacuation planning can address highlighted problem areas identified in these comments. Update Section 8 (Recommendation 5) to highlight the importance and need for evacuation planning to provide more context about: <ul style="list-style-type: none"> - The region is planning for sheltering in place when a major earthquake happens. - Wildfires and flooding may be most relevant to focus on. - Recognize that many people will want to evacuate the area following a catastrophic earthquake. - The importance of managing/prioritizing use of SSLRs and RETRs during an evacuation event or other major emergency and communications and technology needed to support this. - The priority for evacuation should be injured/medically fragile and people from areas with cascading impacts, e.g., large fires, chemical releases, landslides, etc. that threaten lives and destroy homes. <p>In addition, the Clackamas County Board of Commissioners will be engaged in Phase 2 and future evacuation planning efforts. See also responses to Comments#23, #38 and #55.</p>
54	Evacuation Planning	Hyzy	Kathy	Milwaukie City Councilor	3/17/21 and 3/18/2021	C-4 subcommittee briefing and JPACT	Recognizing evacuation planning is currently not within the scope of Phase 2, how might the region secure resources to complete this important work?	Federal and state grants have been available to support this type of planning work, including the Department of Homeland Security's Urban Area Security Initiative (UASI) funding for which the RDPO serves as administrator for in the region. See also responses to Comments #23, #38 and #54.
55	River routes	Hardesty	Joanne	City of Portland Commissioner	3/18/21	JPACT	Comment that we will benefit from emergency management plans to utilize marine assets/waterways	This comment supports report recommendation #8 that calls for further analysis of rivers for emergency response. This is an area of work that may be informed by the RRAP (anticipated later 2021) and could build on examples such as Vancouver, BC plans to use waterways following a major earthquake event. The Ports are likewise very supportive of this recommendation.
56	Transit	Linville	Joann	Wilsonville City Councilor	3/17/21 and 3/18/2021	C-4 subcommittee briefing	More work is needed to better define/connect the role of transit during an emergency.	Update Section 8 (Future Planning) to add references to considering the role of transit in the Phase 2 tiering process as well as future evacuation planning efforts.
57	Future planning work	Windsheimer	Rian	ODOT Region 1 Manager	3/18/21	JPACT	Wildfires demonstrated the importance of state and regional routes (SSLRs and RETRs) and resilience work underway in the region. The Transportation Incident Management (TIM) group should be engaged in the Phase 2 work.	Update Section 8 to add references to engaging the TIM group in the Phase 2 work as well as future evacuation planning work.

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58	Technical corrections			Project team	3/19/21		Expand acknowledgement section to identify the list of participating agencies and staff who participated on the ETR working group to more directly acknowledge their engagement and participation.	Update as requested.
59	Technical corrections			Project team	3/19/21		Update Figure 6.22 (Vulnerable Populations) to show block groups with above the regional average population density that are within census tracts with above the regional average for each vulnerable population. This will better highlight were concentrations of multiple vulnerable populations live in the region.	Update as requested.
60	Technical corrections			Project team	3/19/21		Update Appendix E (GIS Methodology) to: - clarify data collected and used in the analysis vs. data collected and available for reference and Phase 2. - clarify data limitations and further work to address in Phase 2 or by other agencies.	Update as requested.
61	Technical corrections	Stasny	Jamie	Clackamas County	3/19/21	email	Central Point Road appears to be cut off at the edge of Oregon City and should be extended through.	Update as requested to extend Central Point Road RETR to connect to Molalla Avenue via Warner Mile Road. This recommendation has been coordinated with the City of Oregon City.
62	Technical corrections	Stasny	Jamie	Clackamas County	3/19/21	email	Recommend that you work with Clackamas County departments to fill in data gaps identified on page 236 included but not limited to churches and debris management sites.	Updates were made to some of the public works and emergency response facilities in Clackamas county. Remaining data gaps will be addressed during the Phase 2 RETR work.
63	Individual Routes	Stasny	Jamie	Clackamas County	3/19/21	email	Identify more "north south" ETRs to connect Troutdale and rural area outside of Gresham to US 26. Staff is concerned that there are limited ETRs north of US 26.	No change recommended at this time. Nearly all of the routes added through the current update have been identified by individual jurisdictions to reflect recent local planning and/or more detailed reviews of the ETRs that were conducted as part of the ODOT/County Seismic Lifeline reviews. The 2018 Clackamas Co. Seismic Lifeline Bridge Detour review identified several additions that were included in the updated RETRs for this project. It would be appropriate for the C2C effort to recommend additional routes to be considered during the Phase 2 RETR effort or future RETR updates. The Phase 2 RETR work is anticipated to begin in early 2022.
64	Technical corrections			Project team	3/19/21		Update Table 6.2 to remove reference to critical infrastructure and essential facilities data that was not used in the Phase 1 analysis.	Update as requested.
65	Technical corrections			Project team	3/22/21		Update Appendix E (GIS Methodology) to clarify how public works essential facilities have different levels of information across the region, as well as relevance at the city/county/regional levels.	Update as requested.

APPENDIX C
TREC at PSU Metropolitan Regional ETR Report

Background and Considerations for Updating the Regional Emergency Transportation Routes in the Portland-Vancouver Metropolitan Region

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August 2019



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Section I: Project Background

Natural disasters can happen any time and the Pacific Northwest is in a highly seismically active region. In addition to the risk posed by the three shallow, crustal fault lines that intersect Portland, geologists believe that there is a 24 percent chance of a magnitude 8.0 or greater earthquake occurring in the Cascadia Subduction Zone within the next 50 years.^{1,2} Landslides, wildfires, flooding, volcanic activity, and extreme snow and ice events pose additional threats, and when they strike, the transportation system must be resilient in order to facilitate emergency response and recovery activities.

In 1996, the Portland Metro region first designated Emergency Transportation Routes (ETRs), to be used after a major regional disaster to move emergency resources such as personnel, supplies and equipment to designated staging areas and subsequent deployment to heavily damaged areas. The 1996 report of the Metro Regional Emergency Transportation Routes Task Force identified several factors that influence the designation of routes as emergency transportation corridors, including:

- The response phase lasts a relatively short time, so the focus of the task force was on primary ETRs for use during the first 72 hours following an event.
- In past earthquakes, injured people generally found ways to access medical care and were not transported by ambulance to a hospital. The task force identified distributing patients from overloaded or out-of-action medical centers to underutilized ones, perhaps outside of the major impact area, as a primary concern.
- Utilities tend to congregate on major arterials. Downed wires or collapsed water or sewer mains may render these roads impassable. Freeways are less likely to be impacted by damaged utility facilities.
- Airport facilities and air traffic control systems could be damaged by the event. Alternatives for access to airlift locations should be considered for ETR selection.

¹ Monahan, R. (2019). "When the Big One Hits, Hundreds of Portland's Buildings Could Crumble. Is it Fair to Make Property Owners Prepare?" *Willamette Week*. Retrieved from <https://www.wweek.com/news/city/2019/03/06/when-the-big-one-hits-hundreds-of-portlands-buildings-could-crumble-is-it-fair-to-make-property-owners-prepare/> on 3/14/19/

² Read, R (2015). "Oregon State earthquake, tsunami expert Chris Goldfinger: 'It's not hopeless.'" *The Oregonian*. Retrieved from https://www.oregonlive.com/pacific-northwest-news/2015/07/tsunami_earthquake_cascadia_ch.html on 3/14/19.

The task force used four criteria for selecting specific routes:

1. State routes serving the metropolitan area were considered primary because of their high capacity and ability to handle oversized vehicles. Additionally, local emergency corridors are often only accessible via a state route.
2. Relatively flat routes with few major gradients or potential slide areas.
3. Routes should serve major population centers.
4. At-grade level alternative routing at overpasses and underpasses.

While the criteria established in the 1996 Report of the Metro Regional Emergency Transportation Routes Task Force are important, there are other additional criteria that are worth considering (see Sections V through VII).

In 2006, the current regional ETRs were established in a Memorandum of Understanding between Oregon Department of Transportation (ODOT), Washington State Department of Transportation (WSDOT), Metro and local jurisdictions in the Portland-Vancouver metropolitan region.

The MOU describes after-event procedures such as the chain of reporting and jurisdictional responsibility for each road and bridge segment of the ETR network. It also specifies basic assessment procedures, establishes standards on the reporting of route status, and designates the Richter scale magnitude earthquakes for which different response levels are activated. However, the MOU offers minimal guidance on how routes are established and updated.

Since 2006, the ETRs have not been updated thru the MOU and the current designations are not being maintained at a regional level. Recently, some local jurisdictions have identified changes to the local ETRs but these changes have not been shared or updated regionally.

ODOT is currently evaluating the seismic resilience of the state-designated Lifeline Routes in the Portland-Vancouver region portion of Oregon. Overall, ODOT is working with each county in Oregon to further assess the state designated lifeline routes and locally designated ETRs to anticipate seismic impacts to bridge and overpass infrastructure on the state's designated lifeline arterial streets and throughways. The ODOT analysis includes an evaluation of the cost-benefit to seismically update bridge and overpass facilities along state-owned routes compared to the cost-benefit to seismically update adjacent county routes. In addition, each county in Oregon is recommending changes to the ETRs within their respective jurisdiction based on this analysis and local information, when available.

In 2018, Clackamas County updated their routes while evaluating bridge and overpass facilities on the Statewide Lifeline Routes for ODOT. In 2019, Washington County, Columbia County and

Multnomah County will complete a similar analysis of their ETRs in partnership with ODOT. Clark County, in Washington State, will complete a similar analysis of their ETRs using DOGAMI data and analysis. Independent of ODOT’s work with the counties, the City of Portland conducted an update of their ETRs in 2018, which will be brought into this planning effort.

Given the above work, the designation of current ETRs need to be re-evaluated to reflect updates recommended by the City of Portland and each of the five counties.

The Regional Disaster Preparedness Organization (RDPO) and Metro are coordinating efforts with transportation, emergency management and public works departments of each county and the City of Portland, ODOT and Washington Department of Transportation (WSDOT), as well as the Metro Council, the Joint Policy Advisory Committee on Transportation (JPACT), Southwest Regional Transportation Council (RTC), TriMet, SMART, C-TRAN and DOGAMI.

The Regional Emergency Transportation Routes (ETRs) update project will update the existing regional ETRs for the 5-county Portland-Vancouver metropolitan region by updating the regional ETR map. The project will also make recommendations on elements to be included in an updated memorandum of understanding (MOU), mutual aid or other written agreements needed to implement ETRs, and provide information to support future planning work related to regional transportation recovery, resiliency and emergency management.

The regional project will update existing designated regional routes using the latest DOGAMI seismic data, ODOT Lifeline analysis and subsequent county-level bridges and ETR analysis. This will also ensure the updated ETRs are responsive to local and state knowledge and priorities in our rapidly growing and changing region. Planning and updates to infrastructure within the region since 2006 will also inform the ETR update; particularly the now seismically-resilient Sellwood and Tilikum Crossing bridges owned by Multnomah County and TriMet, and recommendations identified in the 2018 Earthquake Ready Burnside Project Feasibility Report.

Given the limited time and funding available, this report is not intended to be an exhaustive literature review, nor make authoritative recommendations. Rather, it will serve as a resource document for the contracted consultants leading a longer regional ETR refinement process by providing a general knowledge base, cataloging relevant documents, and describing considerations and lessons learned from other regions that have been reviewed

Between March and June of 2019, Metro and RDPO partnered with a Portland State University’s (PSU) Transportation Research and Education Center (TREC) to perform desk research to evaluate the policy framework in which ETRs currently operate in the Portland-Vancouver metropolitan region, as well as best practices from other regions with similar vulnerabilities.

Section II: Report Organization

Throughout the research process, we reviewed dozens of planning, policy, emergency management, and technical documents, and solicited feedback from representatives at Portland Bureau of Transportation (PBOT) and ODOT, as well as Multnomah, Washington, Clackamas, Columbia and Clark counties. Additionally, we had a phone conversation with Mike Andrews from North Shore Emergency Management in British Columbia about their current emergency transportation management policies and future plans in a region with similar vulnerabilities. **Appendix B** contains a table of all parties consulted during this process.

One of the initial key findings was a lack of consistency in how ETRs are both named and defined between jurisdictions. In **Section III**, seen below, we identify the four types of emergency transportation routes discussed in local, regional, and statewide planning, engineering, and emergency management documents. Additionally the degree to which ETRs are identified in planning documents between local and regional governments varies widely. ETRs are discussed in multiple sections of Metro's 2018 Regional Transportation Plan (RTP), while the Transportation System Plans (TSP) of the cities and counties in the Portland-Vancouver region hardly mention them at all. The table in **Appendix A**, identifies all local, regional, and statewide documents reviewed during the research process, their publication date and agency, how ETRs are defined within the document, relevant content on emergency transportation.

In addition to local, regional, and state emergency management memos, documents from other regions that have similar vulnerabilities as Oregon, or that have other natural disasters that would warrant established emergency transportation routes as an important disaster planning measure were reviewed. Given the limited time and budget of this project, only selected documents were reviewed. Among those documents, the majority identified transportation as crucial to recovery after a disaster. Some point out that routes may be impassable following an event, and others discuss the use of evacuation routes in the event of an emergency, however none established criteria or a process for identifying emergency transportation routes. While not particularly helpful for establishing best practices, they are included in the table in **Appendix D** so that the contractors hired to lead the larger regional ETR update project can focus their energy elsewhere and be advised on which documents are *not* pertinent.

Several of the emergency management documents from other regions that were reviewed *did* have pertinent discussion of emergency transportation routes, and other considerations that may be useful when updating the Portland-Vancouver region's existing ETRs (**Appendix C**). Sections **V**, **VI**, and **VII** synthesize the insights gained from this best practices research (**Section IV**) along with local, regional and statewide planning, technical, and emergency management documents, conversations with planners and disaster management experts into considerations for the regional ETR update.

Section III: ETR Types

We have identified four distinct types of emergency transportation routes within Oregon and in particular the Portland—Vancouver region, all of which serve different purposes/have different functions. The four types of emergency transportation routes are:

1. **Local Emergency Response Streets (Routes)** are intended to provide a network of streets to facilitate prompt response to routine fire, police, and medical emergencies within a single jurisdiction. These streets, which are often identified by first responders and local and regional emergency managers with some input from transportation planners and policymakers, may receive specific design treatments such as wide streets and lanes, large curb radii, parking restrictions, and a lack of center medians, pedestrian islands, traffic circles, or speed bumps in order to ensure freedom of movement for emergency response vehicles. (This term originated from the City of Portland, and the authors believe is an applicable term to include in this update project.)
2. During a large-scale event, seismic or otherwise, **Local Emergency Transportation Routes (ETRs)** are used both during the initial response phase and early recovery phase to both transport first responders and supplies such as fuel, food, and medical equipment that aid with recovery and therefore must connect with, staging areas, essential infrastructure (power generation, fuel, water mains, etc.) and intermodal transfer points either directly or via **Regional Emergency Transportation Routes** (defined below). These routes are pre-designated by local jurisdictions with input from neighboring jurisdictions, Metro, and the Regional Disaster Preparedness Organization (RDPO), as they must connect with the Regional ETR network. Locally designated ETRs may also cross into a neighboring jurisdiction. In such instances, it is prudent to coordinate with the neighboring jurisdiction to ensure the road's designation as an ETR is consistent across jurisdictional boundaries.

Prioritization of local ETRs in terms of retrofitting prior to an event, or inspection and debris clearance after an event is at the discretion of the local government but should be coordinated with local, regional and state partner governments. Given limited resources, prioritization of routes could be used to inform funding priorities for seismic retrofitting and hardening of assets (for example ODOT and Metro could use for future funding criteria).

Locally designated ETRs also serve as detours for segments of **Statewide Lifeline Routes** that have been identified as Tier 2 or Tier 3 (defined below and in Appendix E).

Often, ETRs are focused on the movement of emergency vehicles, cars, trucks, and buses. However, after an emergency in many metropolitan/urban, many people may not have access to public or private transportation. Alternative routes for pedestrians and bicycles should be considered in some areas to enhance mobility while also maintaining

the right of way for emergency responders on the primary ETRs. For example, some pedestrians and bikes may use unimproved, spontaneous pathways, but in some instances we may want to include bridges for bike/pedestrian use, and connections of pathways to the ETRs; during recovery it may become prudent to designate certain streets/routes for bike/pedestrian and others for cars.

As an example of how municipalities can expand their own ETRs for non-motorized use as a subset of the larger regional ETR network, the City of Portland is incorporating active transportation into the city's emergency response plans through a process called Bike ETRs (BETRs).

3. **Regional Emergency Transportation Routes** are pre-designated routes critical to the movement of emergency responders and supplies between *regional* nodes in Multnomah County, Washington County, Clackamas County, Columbia County in Oregon, and Clark County in the state of Washington. Because the regional ETRs connect across jurisdictions and connect with local ETRs and Statewide Lifeline Routes, the authors suggest that Metro and RDPO to facilitate the process for updating designated Regional ETRs, with input from and in coordination with local jurisdictions, ODOT and WSDOT. These routes may overlap with local ETRs, however their primary function is to form a backbone of roads connecting population centers as well as critical infrastructure and services of regional importance. Routes within the regional system may be tiered, so that the most critical links receive prioritization for retrofitting, maintenance, inspection or debris clearance and management.

As an example, an East-West regional ETR may connect a fuel supply depot in Portland to a staging area in Beaverton. Local ETRs in Beaverton and Washington County distribute supplies to local distribution areas and population centers.

Regional routes may overlap with locally designated ETRs in some instances. For example, at present, segments of SE Foster Road are identified as both local Multnomah County ETRs and as regional ETRs.

In accordance with the 2006 Memorandum of Understanding, cities, counties, and state transportation departments prioritize the damage assessment and debris clearance of ETRs over other local streets.

4. **Statewide Lifeline Routes** are state-owned roadways considered critical to emergency response and recovery activity at the statewide level in Oregon and Washington. Defined in Policy 1E of the Oregon Highway Plan, the Lifeline Routes are intended to facilitate immediate emergency services and disaster response as well as support rapid statewide economic recovery. While local and regional ETRs support the movement of emergency responders within a region, Lifeline Routes allow for the movement of both emergency responders and freight to transport goods needed for recovery between regions within Oregon. The OHP states that in planning for lifeline routes, focus on

susceptibility of the route and improvements on it (bridges and other structures) to disasters such as earthquakes, landslides, and flooding and to consider the presence of designated lifeline routes in system investment and management decisions and in coordination efforts with local land use and transportation planning activities.

For example, the Redmond Municipal Airport in Deschutes County is thought to be more seismically resilient than Portland International Airport and is designated as the main airport for airlifting emergency response and recovery supplies. Lifeline Routes connect Redmond Municipal Airport with population centers across the state of Oregon.

The term **Lifeline Corridors** is used to denote the combination of Lifeline Route highways, and Local ETRs identified as Lifeline detours as not to imply that Lifeline Routes are to be used at the exclusion of other parallel roads if necessary.

While the focus of this report is Regional ETRs, there is more substantial documentation on the process of designating statewide Lifeline Routes and prioritizing them for seismic retrofitting. Although Lifeline Routes are functionally different than regional ETRs, many of the designation criteria are the same, and, as a result, the methodology used by ODOT can help inform the Regional ETR update process. Therefore, Lifeline Routes are discussed in greater detail in this section and in Appendix E.

Lifeline Routes have three main goals which capture needs during three distinct periods following a seismic event: short, medium, and long-term response and recovery. Within each goal is a series of specific actionable objectives to achieve each goal, and a series of criteria to evaluate how well each Lifeline segment can achieve the related objectives and goals. A cost-benefit analysis based on these criteria is used to categorize Lifeline Routes into a 3-tiered system for prioritizing seismic retrofits. Critical linkages necessary to serve the greatest number of residents at the lowest investment of time and money are given top priority. The specific goals, objectives, criteria and tiers used to designate Lifeline Routes are detailed in Appendix E.

It is useful to think of Lifelines, regional ETRs, and local ETRs as a street hierarchy (Figure 1). Lifelines connect regions of statewide importance and are limited to a few key north-south and east-west routes. Regional ETRs connect nodes of population and critical infrastructure within a region (i.e. Burnside connects Portland Metro east to west), and local ETRs connect regional nodes to destinations of local importance (populated areas, distribution centers, medical facilities, fire stations, etc.) As an example, Figure 2, seen below, depicts selected Lifelines, Regional ETRs and Local ETRs.

Figure 1. Emergency Transportation Route Hierarchy

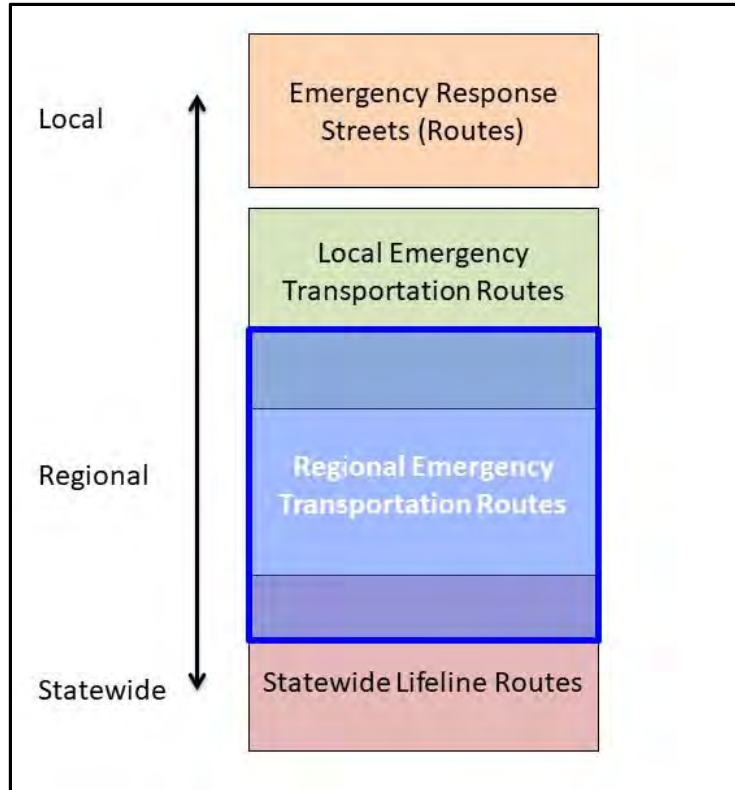


Figure 2. Selected Lifelines, Regional ETRs, and Local ETRs*



*Not all routes and key destinations are depicted. Rather, the map serves as an example of the hierarchy of emergency transportation routes.

Section IV - Literature Review

Our literature review of planning and emergency management documents from regions outside of Oregon proved largely unfruitful chiefly because most MPOs do not have established ETRs in the same way that Metro does. Pre-established evacuation routes in areas prone to hurricanes and flooding are common, however, these are functionally different than ETRs as they are designed to quickly move people out of an area, rather than bring emergency responders and supplies to an area.

West Coast Cities

Several emergency management documents from regions with similar hazards as Oregon were reviewed, including the State of California Emergency Plan, the Bay Area Earthquake Plan, the City and County of San Francisco Emergency Response Plan, and the City of Seattle Comprehensive Emergency Management Plan (See appendices C and D for a full list). While they all acknowledge the importance of a resilient transportation network, there is no discussion of a predetermined emergency transportation network, let alone a methodology for creating one.

Seattle prioritizes snow and ice routes to be plowed first during extreme winter weather events. These routes tend to be on major arterials and transit routes, but the Seattle Comprehensive Emergency Management Plan offers little detail on other criteria used.

British Columbia

Of all documents reviewed from regions outside of Oregon, the British Columbia Disaster Response Primer, and the British Columbia Disaster Response Transportation Planning Guide for Road Transportation were most relevant to the regional ETR update. Similar to ETRs, British Columbia establishes a network of regional and provincial routes “vital to the functioning of the transportation network in the impact area and movement of emergency resources cross-jurisdictionally.” While these so called “Critical Routes” are pre-designated with the latest information regarding resiliency, BC disaster management experts recognize that these routes may fail given the unpredictable nature of disasters. In the event that a Critical Route is impassable, or does not provide sufficient access to the affected area, a separate system of Disaster Response Routes (DRRs) are activated post-event. DRRs are for the exclusive use of emergency response vehicles, or critical personnel with valid identification (exclusively for their use, as a separate system). The report further differentiates between short, medium, and long-term DRRs, which utilize different levels of traffic control and access restrictions.

Sections V through VII describe some considerations for updating Metro’s regional ETRs organized by access considerations, roadway considerations, and policy and jurisdictional considerations.

Section V: Access Considerations

There are a wide range of locations that need to be accessible following a major earthquake. Table 1, seen below, contains a list of critical assets organized by regional importance (local, regional, statewide). This list is neither comprehensive nor prescriptive, rather it summarizes key destinations identified during the literature review for this project. Assuredly, there are additional locations of importance not identified here.

Table 1. Critical Assets by Regional Importance

Locations	Regional Importance		
	Local	Regional	Statewide
Major Hospitals	X	X	X
Urgent Care, Clinics, Medical Centers	X		
Fire, Police, and Ambulance	X	X	
National Guard			X
Airports		X	X
Marine Ports		X	X
Rail Yard		X	X
Fuel Depots		X	X
Fueling Stations	X		
Utilities: Electricity, Natural Gas	X	X	
Staging Areas	X	X	X
Community Points of Distribution	X		
Mass Shelter	X	X	
Transit Garages	X	X	
Drinking Water	X	X	
Food Sources	X	X	
Sewage Treatment Sites	X		
Disaster Debris Management Sites	X	X	
City Halls	X		
Emergency Operations Centers	X	X	
Community Centers	X		
Childcare Facilities	X		
Homeless Shelters	X		
Jails	X		
Residential Care Facilities	X		
Schools	X		

Additional Access Considerations:

- **Lifelines and critical infrastructure and services are interdependent:** Swift emergency response depends not only on the road itself, but the availability of other critical services such as radio, cellular, and broadband internet connections for communications, electricity or fuel for generators at hospitals, and water to suppress fires and support life-saving efforts. ETRs should connect with access points to other critical infrastructure so that services can be resumed as quickly as possible following an event. Due to security concerns, utility providers are often apprehensive about sharing the locations of critical assets and will only do so on a “need to know basis.” However, there is a strong case that emergency preparedness planners need to know. One approach could be to share initial mapping and data with utility providers with a request to identify issues or network gaps.
- **Emergency vehicle energy sources may change:** Today, the majority of emergency response vehicles and heavy trucks and machinery are propelled by internal combustion engines fueled by gasoline, diesel, biodiesel, or compressed natural gas. Thus, connecting to fuel depots is crucial to keep vehicles in service. However, as electric vehicles continue to mainstream and models for light-duty use, such as pickups and vans, fueling needs may change such that charging stations, and power generation and transmission sites become more relevant.
- **Public access to ETRs:** The primary function of ETRs is to facilitate the movement of emergency responders, supplies, and other personnel that aid with immediate response and life-saving activities and the initial transition to recovery. Consideration should be given as to whether regional ETRs will be accessible to the general public (and in what timeframe, and in light of access needs including access to shelters, points-of-distribution, hospitals, etc).

The most likely disaster scenario (major earthquakes) generally do not trigger large-scale evacuations. Unlike a hurricane, where people generally have advanced warning, and vacate the area prior to the event, earthquakes are usually “shelter-in-place” events. However, depending on when the earthquake occurs, there may be a significant number of people that need to travel home or an agreed upon meeting place to reconnect with family. According to the Transportation Technical Memorandum in the City of Portland’s Evacuation Plan, a full-scale evacuation would cause congestion greater than a typical peak travel period. While a full-scale evacuation is unlikely, general traffic, perhaps worsened by panic, could impede emergency response. Mass relocation out of the region may occur during the recovery period, and likely warrants more consideration as part of transportation recovery planning.

Emergency management documents from British Columbia explicitly state that first responders will either receive police escort on their “Disaster Response Routes,” or routes will be closed to the public entirely.

- **Public outreach about ETRs:** If ETRs are for the exclusive use of emergency responders, it still may be valuable for the public to be educated about their location through public outreach plan, so that they know where they should avoid in order to relieve congestion for re-supply operations, but give information on Commodity/Community Points of Distribution (C-POD) sites where they can expect to find help. However, during the literature review no instances of public engagement in the ETR planning process were identified; typically, outreach includes first responder agencies. ETRs generally do not extend into local neighborhood streets, and people may have to travel to receive medical care, so an understanding of where responders will be able to access may be beneficial. One of the public comments from the Portland Mitigation Action Plan that all jurisdictions can benefit from called for “Culture and language-appropriate webpage for new Portlanders [ergo all citizens] to access emergency information, videos, and events in their preferred language” - it is important that however public messaging about ETRs occurs it adheres to best practices about universally accessible formats, particularly in light of the fact that telecommunications may be down for a period of time following a seismic event.
- **Getting emergency responders and support staff to staging areas or rallying points:** While it is impossible to account for all of the dispersed residential locations of essential employees (i.e., employees needed to operate the sites and services listed in Table 1) when establishing ETRs, it is important to consider that they will need safe passage to their designated rallying point in order to perform their duties.
- **Consider the locations of isolated, marginalized or underserved communities:** Considerations need to be made for isolated, marginalized and underserved community areas. Often these communities lack access to public or private transportation and include higher proportions of people with low-incomes, people of color, older adults, people living with disabilities, houseless individuals and families, and be immigrant communities where English is not the primary language.
- **Alternate modes of transportation (i.e., helipads and makeshift aircraft landing zones, rail or marine terminals):** Despite the best efforts of emergency planners, key surface transportation links may fail in a large earthquake. Alternate transportation landing zones on both sides of the Columbia and Willamette rivers would provide first responders access to areas that cannot be reached otherwise.
- **Consider the movement of bicycles and pedestrians:** Following a disaster or major emergency, travel by foot or by bicycle (and scooters) may be the best option for a many people to move around the region. However, there are many people with mobility challenges or who need accommodation (i.e., wheelchairs or strollers) that should be

considered. Many roads may be impassable, and ETRs may be reserved for the movement of disaster responders. Fuel may also be reserved for the exclusive use of vehicles leading the response and recovery effort and not provided to the general public for an extended length of time. Moreover, walking or cycling may be the only option for residents without access to public or private transportation, which is a solution that does not work for many people due to mobility challenges. In order to keep ETRs clear for emergency response, planning processes to identify and manage alternative routes for other traffic at the time of need may need to be established.

- **Access to debris management areas:** There is a need to be prepared for a debris generating incident that overwhelms the existing solid waste infrastructure and to ensure the efficient, orderly and timely removal and disposal of debris. For example, Metro's Disaster Debris Management Plan provides guidance for Metro on how to manage and coordinate debris operations and system disruptions and identifies potential disaster debris management sites. Similarly, the Multnomah County Disaster Debris Management Plan outlines how debris will be cleared from roadways in two phases. During the immediate response, debris is pushed to the side so that traffic may pass, but no effort is made to remove the debris until short-term recovery. During short-term recovery, crews will need access to debris management sites in order to make roads fully operational again.
- **Critical Energy Infrastructure (CEI) Hub:** The CEI Hub is a six-mile stretch along the western bank of the Willamette in Portland's NW Industrial area that contains the majority of Oregon's energy infrastructure for petroleum, natural gas, liquefied natural gas, and electricity. DOGAMI data and analysis indicate that there is significant liquefaction and seismic risk within the CEI Hub. While it is critical the ETR network connects with the CEI hub so that damage can be assessed and operations restored after a non-seismic disaster, the CEI is in a liquefaction zone and will likely be destroyed or inaccessible. Additionally, ETRs in a liquefaction zone are at risk of significant damage themselves.
- **Connects to major population and economic centers as well as isolated, marginalized and underserved communities:** It is important to connect major population and economic centers both for emergency responses but also with the intention for recovery. These locations will be important for people to have access to services and jobs in post disaster recovery.
- **Intermodal transfer points:** Supplies needed to aid recovery could be sent to the region via rail, air, or marine vessel. ETRs must connect to resilient marine ports, marine terminals, airports, and rail yards.
- **Public transit:** In the event of an emergency, TriMet, C-Tran and other publicly-owned buses could be used to shuttle response and recovery personnel and supplies between areas of need. Buses can also be used to shuttle the public out of hazard areas and

to/from mass shelters and community points of distribution, for example. Access to bus garages and maintenance sites is necessary in order to make use of these vehicles.

Section VI: Roadway Considerations

- **Consider infrastructure constructed since the last ETR update:** Seismic upgrades to existing routes, as well as new bridges and roadways can improve the reach and survivability of emergency transportation routes. For example, since the last ETR update in 2006 two existing bridges have become more resilient and one new bridge has been constructed. The Sellwood Bridge and Sauvie Island Bridges have been replaced and are multimodal. In addition, the new Tilikum Crossing has opened for city buses, the Portland Streetcar, bicycles, pedestrians, and emergency vehicles. The Regional ETRs network may make use of these three resilient Willamette crossings. It is also worth noting development patterns in comprehensive plans to understand the projected transportation demands/flows.
- **Bicycle and pedestrian bridges:** If bollards are removable, and the path is wide enough, crossings typically reserved for bicycles and pedestrians could be used for emergency vehicles.
- **Debris management can impact movement for other modes.** During the first phase of debris clearance impedances are pushed to the side of the right of way before being removed later. This may allow for emergency vehicles to pass, while also creating an impediment for people using wheelchairs, strollers, others with mobility challenges, pedestrians, scooters and bicycles. If forced to use the vehicle lanes, may slow emergency responders.
- **Utilities may also share the right of way with ETRs:** Utilities may need to be accessed on these roads following an earthquake. Utility repair efforts could impede the path of first responders. Moreover, the utilities themselves pose a threat in the form of gas leaks, downed power lines, and broken water mains.
- **Consider the network as a whole, not just specific links:** The relative elevation of roads and bridges should be considered to ensure that connections can actually be made between existing routes. For example, on the current regional ETR map, Naito Parkway appears to intersect with the Burnside Bridge, when in fact, there is no road access between the two.
- **Flat routes, with few major gradients or potential slide areas.**
- **At-grade alternative routing at overpasses and underpasses.**

- **Intrinsic seismic resilience:** When Portland Metro's ETRs were first established in 1996, the Burnside Bridge was originally chosen as the key Willamette River crossing because bascule bridge types were considered less vulnerable and cheaper to seismically retrofit. Single span bridges are considered to be resilient during earthquakes and are more easily replaced if damaged.
- **Wide right of way:** Wide roads that can accommodate oversized support vehicles with wide turning radii are preferable.
- **Limited use of traffic calming devices:** design treatments like speed bumps and traffic calming circles can hinder the movement of emergency response vehicles.
- **ETRs may still be impassible after an event** While ETRs are chosen with the latest information on seismic and landslide risk, in an emergency, they may still fail or be impassable. Authorities must be prepared to designate alternate routes following an earthquake.
- **Automated vehicles:** While emergency response vehicles will likely still require a driver behind the wheel for the foreseeable future, automated emergency response vehicles and semi-trucks carrying recovery supplies are a real possibility in the coming decades. Debris in the right of way, or damaged roads may hamper their ability to operate as designed.

Section VII: Policy and Management Considerations

- **Defined roles and responsibilities prior to an event and for periodic updates to designated routes:** While the current MOU assigns responsibilities for the inspection and debris clearance of ETRs in the immediate aftermath of an event, there is little documentation on which entities should be involved in establishing, managing, and updating ETRs. As regional conveners, Metro is the logical choice to catalog existing Lifelines, local ETRs, and regional ETRs and RDPO and Metro together to facilitate regional ETR mapping updates with input from partner jurisdictions.
- **GIS Data Management and Mapping:** A single recognized dataset that contains all Lifeline Routes, Local ETRs, and Regional ETRs within the region would facilitate the coordination of local routes between jurisdictions, and with the larger system of regional routes, as well as serve as a resource for first responders, inspectors, debris managers and transportation planners. Metro is a logical candidate for managing the ETR dataset within the Regional Land Information System (RLIS) for all local Emergency Response

Streets (ERS), local and regional ETRs, and Statewide Lifeline Routes (defined in Section III). Metro's RLIS is a compilation of more than 100 GIS data layers that serve as the spatial data infrastructure for the Portland metropolitan area. Since the inception of RLIS in the late 1980s, Metro's Data Resource Center staff have worked with regional partners to collect and combine a wide array of data into a seamless dataset for use in region-wide decision-making.

- **Tiered regional ETRs:** While all roads within the regional ETR network are considered vital to disaster response and recovery, inevitably there will have to be a choice made about which segments should be prioritized for retrofitting (if needed) prior to an event, and which should be inspected, cleared, or repaired following an event. "Tier 1" regional ETRs could indicate the routes that absolutely must be passable in the event of a disaster, and should thus be placed at the top of the project list for seismic upgrades, and in disaster response plans. While Tiers 2 and 3 are still vital to recovery, they should be upgraded, repaired, or inspected only after Tier 1 routes are restored or deemed safe for emergency vehicles.

During the literature review no examples were found to guide best practice on ETR tiering/prioritization. The only useful input is found in the criteria development of state lifeline routes. This region will therefore need to develop criteria for prioritization and/or tiering routes.

- **Set restoration targets and timelines:** Establishing restoration timelines helps set expectations for other agencies, and the users of the ETRs. Additionally, restoration timelines may dictate design or engineering considerations of the roadway itself.
- **Differentiation between response and recovery:** The immediate response to a crisis requires access to different destinations, requires different skills, and has different time horizons than the recovery phase.

Documented criteria and methodology for selecting and prioritizing ETRs:

Sections V and VI describe some considerations for the physical characteristics of roadways used as ETRs, as well as locations that may need to be accessible in the event of an emergency (ie. depending on time of day a school or community center may not need to be opened immediately). However, a system of prioritizing access to these locations is needed. Clearly defined and prioritized criteria will help identify the most important routes and interdependencies.

- **Regular Updates:** While the upcoming regional ETR update is the first since 2006, the current MOU outlines responsibility for the RDPO Emergency Management working group (REMTEC) to coordinate updates on a 5-year cycle. Updates aligned with the RTP update cycle (currently every five years) could help ritualize the process and prevent future lapses. An update cycle for regional ETRs deserves further discussion.

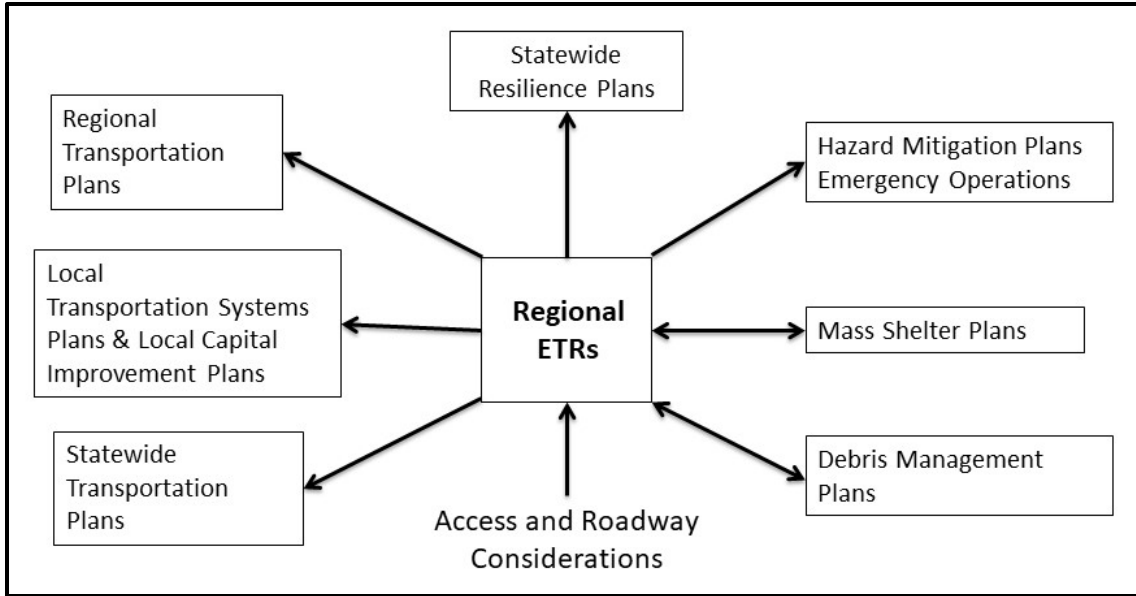
- **Integrate ETRs into Local and Regional Transportation Plans and Capital Improvement Plans:** If resiliency is part of the rubric for project funding, statewide Lifeline Routes, local and regional ETRs should be identified in city and county TSPs and the RTP so that facilities in need of retrofitting can be prioritized for seismic upgrades, and design treatments that adequately accommodate emergency response vehicles can be included. They can also be included in CIPs and in grant criteria.
- **Enhance communication and coordination between relevant stakeholders:** Effective communication and coordination helps build understanding of the importance of these routes and broad support for needed investments.
- **Consider all interdependent variables when designating and updating ETRs:** ETR designation is influenced by many factors including (but not limited to) existing infrastructure and its resiliency, the location of crucial assets and emergency services, and the latest science on seismic, landslide, and liquefaction risk. A change to any one of these variables has implications for all of the others.

As a hypothetical example, new DOGAMI landslide risk data may show that a link previously thought to be resilient will likely be impassable after a large earthquake. In response, a parallel route is identified as a replacement. However, a close-by hospital is not accessible from the parallel route.

Alternatively, a municipality constructs a new neighborhood fire station and alters their locally designated ETRs to ensure access for emergency responders, which in turn affects how Regional ETRs connect to local ETRs.

Figure 3 below diagrams some (but certainly not all) of the interactions between the aforementioned variables.

Figure 3. Regional ETR relationship to local, regional and state plans



Appendix A: Local, Regional and National Planning, Policy and Disaster Management Documents Reviewed

Document	Agency	Date	ETR as defined in Document	Contents pertaining to Emergency Transportation	Folder Location
Federal Documents					
Highway Evacuations in Selected Metropolitan Areas: Assessment of Impediments	U.S. Department of Transportation Federal Highway Administration	April 2010	No formal definition. This document is more focused on evacuating people out of a disaster zone than facilitating movement of emergency responders.	<p>-Assess mass evacuation plans for the country’s high-threat, high-density areas (including Portland) and identify and prioritize deficiencies on those routes that could impede evacuations.</p> <p>-Portland no-notice event Vulnerabilities: Earthquakes, wildland/urban interface fires, landslides, volcanoes.</p> <p>-None would trigger full scale evacuation, rather most residents would shelter in place.</p> <p>Some Top Highway Impediments include:</p> <p>-Bridge Vulnerabilities (2 of 4 highway bridges have been retrofitted, and all sit in liquefiable soil).</p> <p>-157 city-owned overpasses and bridges could fall onto major thruways.</p> <p>Capacity and Infrastructure Limitations: Highways operate at capacity during peak periods. Chokepoints would cause problematic congestion during an evacuation.</p>	Federal and National
Statewide Documents					
Seismic Lifelines Evaluation, Vulnerability Synthesis, and Identification CH2M Hill	ODOT / CH2M Hill	May 2012	<p>No definition for ETRs.</p> <p>3 main goals of Lifeline routes:</p> <p>-Support survivability and Emergency response efforts immediately</p>	<p>Purpose: Facilitate implementation of Lifeline Routes. IDs specific highways/bridge retrofits key to Lifeline routes.</p> <p>Focused on routes of statewide importance, not local ETRs</p> <p>IDs Lifeline Corridors in Portland area (page 6-9)</p> <p>Establishes 3 tier system for prioritizing retrofits of lifeline segments. Most</p>	Oregon

Document	Agency	Date	ETR as defined in Document	Contents pertaining to Emergency Transportation	Folder Location
prepared for ODOT			<p>following event</p> <ul style="list-style-type: none"> -Provide transportation to facilities that are critical to life support functions for interim period following event. -Support Statewide economic recovery <p>(Document lists objectives and criteria to support each goal)</p> <p>Lifeline Route vs Corridor:</p> <p>Refers to lifeline corridors as such because it is not intended that lifeline routes are used at the exclusion of other alternatives in the same vicinity..."Future seismic vulnerability evaluation and remediation prioritization are likely to ID least cost alternatives for providing a seismically resilient route that include detours off of the ID'd roadway to bypass critical seismic vulnerabilities...Corridor is used to denote ID'd highway, along with easily accessed adjacent roadways as necessary."</p>	<p>critical linkages necessary to serve greatest number of residents at the lowest investment of time and money get top priority.</p>	

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ODOT Seismic Plus	ODOT	October 2014	<p>No Formal Definition of Lifeline route given.</p> <p>Discusses seismic vulnerabilities of highways in more general terms.</p>	<p>-Discusses phased seismic investment in Oregon state highways, in more general terms not just “Lifeline” routes.</p> <p>-Offers cost estimates for retrofitting infrastructure in each phase (Appendix A)</p> <p>-Appendix B discusses hazards at statewide-level and diagrams common vulnerabilities and hazard mitigation techniques (similar to Oregon Resilience Plan).</p> <p>-Refers back to CH2M Hill Seismic Lifelines Evaluation (End Appendix B) and identifies stakeholders consulted during that process:</p> <ul style="list-style-type: none"> -Oregon Seismic Safety Policy Advisory Commission -DOGAMI <p>During Resilient Oregon Plan development, Oregon Ports Association, Department of Aviation, Rail Advisory Committee, Oregon Freight Advisory Committee, Portland State University, and Oregon State University consulted.</p> <p>-Appendix C: Lifeline Selection Summary Report is a summary of the Lifeline route selection process found in Oregon Seismic Lifeline Report from CH2M Hill</p>	Oregon
Oregon Resilience Plan Transportation Chapter (Page 105)	Oregon Seismic Safety Policy Advisory Commission	February 2013	<p>No formal definition. Instead, states that resilience Goal for transportation network is to first facilitate immediate emergency response, including permitting personnel to access critical areas and allowing the delivery of supplies, and second to restore general mobility within specified time periods for various</p>	<p>-Describes and diagrams some common vulnerabilities of highway bridges and common slope failure models. Includes possible mitigation strategies for both.</p> <p>-Breaks down vulnerabilities (in general terms) by state zone):</p> <ul style="list-style-type: none"> -Willamette -Central Oregon -Tsunami induction zone (per DOGAMI) -Coastal Zone (outside tsunami zone) <p>...and by Mode: Highway, rail, air, ports, transit</p>	Oregon

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			<p>areas of the state.</p> <p>Priorities highways into 3 tiers:</p> <p>Tier 1: Small backbone system that allows access to vulnerable regions, major population centers, and areas considered to vital to rescue operations</p> <p>Tier 2: Larger network that provides access to most urban areas and restores major commercial operations.</p> <p>Tier 3: More complete transportation network.</p> <p>Reliance targets established at 3 levels:</p> <p>Minimal: A minimum level of service is restored, primarily for the use of emergency responders, repair crews, and vehicles transporting food and other critical supplies</p> <p>Functional: Although service is not yet restored to full capacity, it is sufficient to get the economy moving again--for example, ome truck/freight traffic can be accommodated.</p>	<p>-Chart describing current state of Oregon's transportation systems and the anticipated time to restore service after a CSZ event. Includes targets for relative time needed to restore service if the system were strengthened or retrofitted. Page 141</p> <p>-Makes recommendations by mode (Page 146). Mostly calls for further study, but includes relevant points on highways, local roads, and transit:</p> <p>Highways: The longer investment in bridge and slope strengthening is delayed, the greater the cost and potential adverse effects of an earthquake will have on the state economy.</p> <p>Public Transit:</p> <ul style="list-style-type: none"> -Plan, collaborate with local and regional emergency planners. -Inventory Assets (rolling stock and facilities) -Assess locations of vulnerable, transit-dependent populations -Assess routes, noting vulnerabilities of both current and alternate routes. -ID alternate routes ahead of event. -Potential tactical hardening or relocation of assets <p>Local Roads: One observation made after the recent subduction zone earthquake in Chile: Local road/bridge system survived better than the state system because local roads tended to be straighter and wider, which resulted in larger roadway cuts and fills which make them more susceptible to damage. As a result, many local roads used as detours for damaged state highways/bridges. On the other hand, because many local roads and streets are narrow, with sharp curves, they cannot safely handle high volumes of traffic.</p>	

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			<p>Operational: Restoration is up to 90 % of capacity: A full level of service has been restored and is sufficient to allow people to commute to school and work.</p>		
Washington State Comprehensive Emergency Management Plan	Washington Military Department Emergency Management Division	June 2016	No Definition for ETR/Lifeline Route	<p>Little discussion of emergency routes.</p> <p>Under “Responsibilities” section, the Department of Transportation “Reconstructs, repairs, and maintains the state transportation system including designation of alternate routes in coordination with counties, cities, and ports.”</p>	Washington
Washington State Transportation System Plan	WSDOT	2007	No Definition for ETR/Lifeline Route	<p>Under “Safety” subheading:</p> <p>Goal C: Encourage Inter-Agency Collaboration on Emergency Preparedness and Response</p> <p>Recommended Actions:</p> <ul style="list-style-type: none"> -Accelerate efforts for interagency and cross-jurisdictional disaster responses, such as communications systems that work with each other and agreed-to strategies and routes for evacuation of injured persons, and provision of emergency shelter, food, and medical supplies. -Continue to develop plans to facilitate the movement of goods and supplies in the event of a disaster that affects transportation infrastructure. -Recognize and supports transit’s role in emergency response efforts, such as evacuating large numbers of people or transporting those with special needs. 	Washington
Washington State Highway Plan	WSDOT	2007	No Formal ETR/Lifeline Definition	<p>Emergency Preparedness (P.36):</p> <p>“For immediate response purposes, the designation of alternate routes and the development of evacuation plans are important issues.</p> <p>For long-term planning, any substandard structures on evacuation routes</p>	Washington

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				<p>should be identified and targeted for improvements. Mitigation measures defined through the vulnerability assessment process should also be implemented to protect critical infrastructure across the highway system.”</p> <p>Seismic Retrofits Needs (P. 19): The seismic program priorizes bridge projects based on essential lifelines that need to remain in service following a seismic event, and where the bridges are located in the seismic risk zones. All bridges within the highest risk zone and those on interstates in the moderate risk zone will have a higher priority and will be retrofitted first. Those bridges with single columns located in the low-moderate range will also be retrofitted after the higher risk areas have been completed.”</p>	
Regional Documents					
<p>Memoranda of Understanding (MOU)</p> <p>Resolution 03-3352</p>	<ul style="list-style-type: none"> -ODOT -WSDOT -PBOT -Metro DRC -REMTEC -Clark County -Tri-Met -Port of Portland -Clackamas County -Columbia County -Multnomah County -Washington County -State EOC/ECC 	<p>Adopted October 2003</p>	<p>“Road authorities and other local officials in the Portland metropolitan area have identified those roadways in the region that they consider critical to the movement of response resources and designated them as Emergency Transportation Routes (ETRs)”</p>	<p>The MOU describes after-event procedures such as the chain of reporting and jurisdictional responsibility for each road and bridge segment of the ETR network. It also specifies basic assessment procedures, establishes standards on the reporting of route status, and designates the Richter scale magnitude earthquakes for which different response levels are activated.</p>	<p>Metro and other Regional Partners -> Agreements</p>
<p>Metro Regional Transportation Plan 2018</p>	<p>Metro</p>	<p>December 2018</p>	<p>“priority routes targeted during an emergency for debris-clearance and transportation corridors to</p>	<p>Ch 8: (8.2.3.10 - page 8.32 - 8.35)</p> <p>Describes (this) process of updating the Emergency Transportation Routes.</p>	<p>Metro and other Regional Partners -> 2018 RTP - Relevant</p>

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			<p>facilitate life-saving and sustaining response activities.”</p> <p>-Section 8.2.3.10</p>	<p>Includes a map of current ETRs as designated in 2006.</p> <p>Expected Outcomes:</p> <p>-ID Criteria by which to evaluate and refine existing ETRs and any alternates that are considered in this work.</p> <p>ODOT considered seismic resiliency in establishment of their lifeline routes to which the ETRs must connect</p> <p>-Recommendations for new MOU. Define reasonable time frame for periodic updates.</p> <p>-Recommendations on updated ETRs for consideration by JPACT and the METro Council in the next update to the next RTP and other relevant regional plans, policies and strategies.</p> <p>-Recommendations for future planning work related to regional transportation recovery, resiliency, and emergency mgmt.</p> <p>Ch 2: Objective 5.3 - Preparedness and Resiliency: Reduce the vulnerability of regional transportation infrastructure to natural disasters, climate change and hazardous incidents</p> <p>Falls under Goal 5 - Safety and Security</p> <p>Ch 3: System Policies to achieve our vision:</p> <p>Sub-section 3.2.3 Climate Leadership Policies → Sub-heading 3.2.3.5 Transportation Preparedness and resilience:</p> <p>Discuss need to respond to natural disasters quickly, collaboratively, and equitably, in order to be able to transport fuel, essential supplies, and medical transport.</p> <p>Discusses need for transportation system that is resilient in event of extreme weather events, flooding, and fires, not just earthquakes.</p>	<p>Chapters</p>

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				Lists potential opportunities for future regional collaboration in support of transportation preparedness and resilience:	
Memo from Multnomah County Willamette River Bridges Capital Improvement Project	Multnomah County	March 2014	No Definition	<p>Discusses how Burnside Street and Bridge were selected by ODOT as a Lifeline route.</p> <p>-Mentions that it was made part of the regional ETRs in March 1996.</p> <p>Metro and ODOT team selected Burnside bridge because of</p> <p>Intrinsic seismic resiliency (bascule bridge type considered less vulnerable / cheaper to seismically retrofit)</p> <p>- Streets with least amount of seismic vulnerabilities. (Less bridges, less failure points than adjacent routes)</p> <p>Belief that only one route over Willamette required because emergency services available on both sides of river.</p>	Metro and other Regional Partners
Regional Emergency Transportation Routes: Report of the Metro Regional Emergency Routes Task Force	Metro Regional Emergency Transportation Routes Task Force	March 1996	“A Primary Emergency Transportation Route is a route use after a major regional disaster to move emergency resources such as personnel, supplies, and equipment to designated staging areas and subsequent deployment to heavily damaged areas.”	<p>-Includes a short “recommendations” section.</p> <p>-Describes initial efforts and the conceptual framework for ETRs:</p> <p>-Major arterials may be blocked because of downed wires or collapsed water/sewer mains.</p> <p>-Response phase lasts a short time. The task force focused on primary ETRs for use during the initial response period (first 72 hours after an event)</p> <p>-Most victims are not transported by ambulance to a hospital. Injured people will generally find medical care, and a primary medical concern is getting patients distributed from overloaded or out-of-action medical centers to underutilized ones. Includes need to move patients out of the impacted area to less affected areas.</p> <p>-Airport’s facilities or traffic control systems may be damaged. Alternatives for airlift should be factored into emergency transportation corridor selection..</p> <p>-Includes Primary Route Selection Criteria:</p> <p>1. State routes servicing metro area considered primary because of high</p>	Metro and Other Regional Partners

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				<p>capacity and ability to handle oversized vehicles. Local emergency corridors often accessible via state route only.</p> <ol style="list-style-type: none"> 2. Relatively flat with few gradients or potential slide areas. 3. Serve major population center 4. Routes should offer at-grade level alternative routing at overpasses and underpasses. <p>-Includes map of ETRs as established in 1996.</p> <p>-Describes Steps for Implementing ETRs:</p> <ol style="list-style-type: none"> 1. Regional emergency transportation plan in relation to ETR designation. 2. Method for testing plan through ETR exercise. 3. Plan describing operating procedures/responsibility assignment. 4. Establish MOU between participating jurisdictions 5. Standardized maps for response, recovery, mitigation activities. <p>-Task force calls for permanent committee to develop standard operating procedures</p> <p>-Includes example MOU from Los Angeles County.</p>	
<p>RIPE Report (Report from multi-agency disaster preparedness exercise)</p>	<p>BES, BDS, BIBS, BPS, CBO, OMF, PBEM, PBOT, PF&R, PP&R, PWB</p> <p>-Bureau of Revenue and Financial Services,</p>	<p>June 2018</p>	<p>No Formal Definition</p>	<p>-Failure of other assets (natural gas, water mains, etc.) could compromise important roads and bridges</p> <p>-Many assets ID'd as critical by BES, Parks and Water likely inaccessible.</p> <p>-Transportation's top priority: Clean/repair ETRs to meet needs of emergency responders/hospitals. However, many of those ETRs are not near critical assets that other infrastructure bureaus will need immediate access to (drinking water/sewage).</p> <p>-Many ETRs intersect water, sewer, storm pipes, which, if broken, would result</p>	<p>Metro and Other Regional Partners</p>

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	-Bureau of Technology Services, -Office of Mayor Ted Wheeler, -Multnomah County Bridges			in washed out ETRs and sinkholes.	
Local Documents					
Designing a Methodology for Portland's Emergency Transportation Routes	PBOT	August 2018	<p>Emergency Response Routes are focused on the <i>response</i> phase of a disaster – the days and possibly weeks after an event. They include restrictions on the treatments that can applied to the street and are designated as routes for emergency responders such as fire, ambulance, and police services.</p> <p>-”comes from Portland’s TSP. These are the roads utilized by emergency responders for access around the city.”</p> <p>Emergency Transportation Routes are regionally-defined, updated on an ad hoc basis, and are used to prioritize major thoroughfare traffic after a</p>	<p>Report that proposes what redesigned ETRs could look like/makes suggestions for considerations/methodology for updating ETRs.</p> <p>-Suggested routes designed to augment, not replace, current ETRs</p> <p>-Sought input from various Portland agencies.</p> <p>-Concern about Kerby Facility given its vulnerability to nearby infrastructure collapse, liquefaction, and East Bank Fault. Suggested distributing resources to maintenance sites on both sides of Willamette.</p> <p>-Adding resilience as qualifying attribute for TSP projects, or a separate program specifically for addressing most pressing resilience needs in transportation infrastructure.</p> <p>-In several cases, ETRs overlap but are not actually connected: for example, West Burnside and Southwest Naito Parkway appear to connect, but are actually at separate elevations. In these cases, minor routes are proposed to eliminate the gaps and provide connectivity between two major routes.</p> <p>-Worth considering obligation to maintain each additional lane mile of ETR and repair after a seismic event.</p>	Local -> Portland

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			<p>disaster or significant disruption to transportation services. ETRs are focused on the recovery phase – the weeks and months after an event.</p> <p>-part of an intergovernmental agreement signed in 2006 by municipal governments within the Portland region. These routes provide prioritization for which roads are repaired first after a disaster.</p>		
<p>Multnomah County Multi-Jurisdictional Hazard Mitigation Plan</p>	<p>Multnomah County Emergency Management</p>	<p>July 2017</p>	<p>Seismic Lifeline: State highways identified as most able to serve response and rescue operations, reaching the most people and best supporting economic recovery.</p> <p>No ETR Definition</p>	<p>-IDs and Maps critical facilities (2.7) in 3 categories</p> <p>Emergency: Fire, Ambulance, Hospitals, Licensed Medical Facilities, Urgent Care, Law Enforcement</p> <p>Administrative: Airports, City Halls, Community Centers, County Assets, Libraries</p> <p>Special Population: Childcare Facilities, Homeless Shelters, Jails, Residential Care Facilities, Schools.</p> <p>-Table IDs key transportation system elements (Section 2.5.1)</p> <p>-References Bridge Capital Improvement Program (2.5.2)</p> <p>-References 2012 ODOT Seismic Lifeline Report and Oregon Resilience Plan.</p> <p>-Six-mile stretch along Willamette in Portland’s NW Industrial area identified as</p>	<p>Local -> Multnomah County</p>

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				“Critical Energy Infrastructure (CEI) Hub” contains the majority of Oregon’s energy infrastructure for petroleum, natural gas, liquefied natural gas, and electricity. There is significant liquefaction and seismic risk within the CEI Hub. (Section 3.1).	
Gresham TSP	City of Gresham Transportation	?	No Definition	Little mention of emergency preparedness. The city’s emergency preparedness page links to the Multnomah County Multi-Jurisdictional Hazard Mitigation Page.	Left out of folder (no discussion of ETRs)
Clackamas County TSP	Clackamas County Transportation	December 2013	No Definition	Essentially no discussion of the transportation system’s role in emergency response. Section 5.A. Compliance and Coordination Policies “Work with the Oregon Office of Emergency MGMT to ensure that the TSP supports effective responses to natural and human-caused disasters and emergencies and other incidents, and access during these incidents.”	Left out of folder (no discussion of ETRs)
Beaverton TSP	City of Beaverton	September 2010	No Definition	Only discussion of emergency response: “Ensure that adequate access for emergency services vehicles is provided throughout the city: Actions: -Work cooperatively with Tualatin Valley Fire and Rescue and other Washington County emergency service providers to designate and periodically update Primary and Secondary Emergency Response Routes . Continue to work with these agencies to establish acceptable traffic calming strategies for these routes. -Recognize the route designations and associated acceptable traffic calming strategies in the City’s Traffic Calming Program.	Left out of folder (no discussion of ETRs)
Washington County TSP	Washington County	Nov. 2018	No Definition	Mentions of providing emergency access to responders.	Left out of folder (no discussion of ETRs)
Tualatin TSP	City of Tualatin	Updated February	No Definition	None	Left out of folder (no discussion of

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		2014			ETRs)
Portland TSP	PBOT	2018	<p>“Emergency Response Streets are intended to provide a network of streets to facilitate prompt emergency response.” (P 99 - street classification descriptions).</p> <p>Classifies emergency response streets into Major, Secondary, and Minor Response streets.</p> <p>Describes appropriate design treatments (in general terms) for each class of emergency response street (Balance of emergency vehicle mobility vs. traffic calming)</p>	<p>Modal Policy:</p> <p>“Emergency Response: Maintain a network of accessible emergency response streets to facilitate safe and expedient emergency response and evacuation. Ensure that police, fire, ambulance, and other emergency providers can reach their destinations in a timely fashion, without negatively impacting traffic calming and other measures intended to reduce crashes and improve safety.” (P. 24)</p>	
Post-Earthquake Bridge Inspection Response Plan	PBOT	2015	<p>No Definition of Emergency Transportation Route or Lifeline Route. The prioritization tiers differentiate between Lifeline routes and Emergency Response Routes. However, it is unclear if ERRs and ETRs have been conflated with the term ‘Emergency Response Streets’ used in Portland’s TSP.</p> <p>The introduction says “this plan is intended to be in compliance with the MOU</p>	<p>-Determines the inspection response by PBOT bridge personnel for a given earthquake magnitude, and prioritizes structures into 3 groups:</p> <p>Priority 1 (High):</p> <ul style="list-style-type: none"> -Bridges based on Seismic Lifeline Route -Bridges on Emergency Response Routes (ERRs) classified as more vulnerable, vulnerable or less vulnerable. -Other bridges over I-84 not included above. <p>Priority 2 (Medium):</p> <ul style="list-style-type: none"> -Pedestrian bridges over ERRs or Seismic Lifeline Routes classified as more vulnerable and vulnerable. 	Local -> Portland

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			Emergency Transportation Route, Post-Earthquake Damage Assessment and Coordination (No. 21,273) and with the City of Portland Ordinance No. 180656."	-Bridges on ERRs classified as less vulnerable and resilient. -Bridges on Freight Routes (all classifications) -Bridges on Transit Routes (all classifications) Priority 3 (Lowest): -All other bridges -Includes several maps with priority 1, 2, and 3 bridge locations, as well as routes inspectors should follow. -Include procedures and forms for the inspections.	
Basic Emergency Operations Plan 2016	Portland Bureau of Emergency Management	2016	No Definition	-Discusses ETRs only as they pertain to PBOT (damage assessment, debris clearance) under "Responsibilities" section. PPB/PF&R tasked with "coordinating with PBOT and ECC (if activated) to define immediate routes and destinations for evacuees," and to "direct and control traffic, secure and prevent unauthorized access to damaged or impassable roadways. -Discusses the vulnerabilities of transportation and other critical infrastructure in general terms. -Maps Critical Facilities by <i>Emergency Services:</i> (Emergency Coordination Centers, Medical Care Facilities, Police/Fire Stations). <i>High Potential Loss Facilities:</i> (Dams, Military, Nuclear Power Plants, Hazards Materials, Schools, <i>Other Assets:</i> [zoo, jail, nursing/assisted living facilities])	Local -> Portland
Portland Mitigation Action Plan	Portland Bureau of Emergency Management	2016	No Definition	Minimal discussion of ETRs. Comments from Portlanders in the public engagement section(3.7): -Prioritize clearing bike paths so that non-automobile traffic can flow safely and develop plans to locate aid stations along these routes.	Local -> Portland

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				<p>-Prioritize road access to grocery stores, medical offices, and hospitals. Consider isolated communities in establishing road-clearing priorities.</p> <p>-Pre-Established detour routes for access in and out of known landslide risk areas.</p> <p>-Culture and language-appropriate webpage for new Portlanders to access emergency information, videos, and events in their preferred language.</p>	
<p>Multnomah County Disaster Debris Management Plan</p>	<p>Multnomah County Department of Community Services & Emergency Management</p>	<p>September 2016</p>	<p>No Definition</p>	<p>Priority roads are divided into Emergency Transportation Routes and secondary Emergency Transportation Routes for east Multnomah County.</p> <p>A list of all priority roads for clearance can be found in in Attachment A: Emergency Transportation Routes.</p>	<p>Local->Multnomah County</p>
<p>Clackamas County Lifeline Seismic Bridge Priority Detour Recommendations</p>	<p>Clackamas County Disaster Management</p>	<p>November 2018</p>	<p>No Formal Definition</p>	<p>Objective: -'Re-evaluate county's ETRs by taking into consideration and establishing connections from critical facilities and the County's populated areas to the ODOT's lifeline routes. Prioritize the findings for seismic bridge retrofit or replacement, considering unstable slopes, landslides and other data available to inform decisions.'</p> <p>-'Review ODOT's lifeline routes and locations of vulnerable or potentially vulnerable bridges. Identify alternative routes on local roads that may be more cost effective to seismically retrofit or replace local bridges, considering unstable slopes and landslides as information is available'</p> <p>-ETR criteria expressed only in general terms</p> <p>-'Capitalize on current efforts and data to update and prioritize the County's ETRs.'</p> <p>-References Oregon Resilience plan's recommendations for retrofitting Lifeline routes.</p> <p>-Single-span bridges not considered because they are expected to perform well during an earthquake, and If damaged, they are more easily repaired.</p> <p>-Discusses outreach process.</p>	<p>Local -> Clackamas County</p>

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				<ul style="list-style-type: none"> - Provides detour recommendations to ODOT Lifelines -Prioritizes and gives cost estimate to bridge retrofits on ETRs -Maps state and county bridge vulnerabilities as well as landslide risk around the routes 	
Clackamas County Emergency Operations Plan - Transportation Annex	Clackamas County	2017	No Formals Definition	Discuss how transportation infrastructure may be damaged and that there are ETRs in place.	Local -> Clackamas County
ODOT/Multnomah County Triage Project Kick Off Meeting PowerPoint	Multnomah Department of Community Services - Transportation Division	2019	No Formal Definition	<p>Project Objectives:</p> <p><i>Review existing ETRs:</i></p> <ul style="list-style-type: none"> •Re-evaluate the county's Emergency Transportation Routes (ETR) by taking into consideration connections from critical facilities and populated areas to the ODOT's lifeline routes. •Prioritize the findings for seismic bridge retrofit or replacement, considering unstable slopes, landslides and other data available to inform decisions. <p><i>Identify Detour Routes:</i></p> <ul style="list-style-type: none"> •Review ODOT's lifeline routes and locations of vulnerable or potentially vulnerable bridges. •Identify alternative routes on local roads that may be more cost effective to seismically retrofit or replace local bridges, considering unstable slopes and landslides as information is available. 	
City of Portland's Evacuation Plan: Attachment 1 - Transportation	Portland Office of Emergency Management (Prepared by CH2M Hill)	December 2008	Emergency Transportation Routes are intended for primary inspection and also used by emergency vehicles after an earthquake. They	<ul style="list-style-type: none"> -Modified travel demand model used to determine if evacuation routes could handle. -Divides city into 5 analysis zones. -During an evacuation all zones would experience congestion greater than typical PM peak. However, some arterials identified as evacuation routes may 	Local - > Portland

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Technical Memorandum			<p>generally share the same roadways as the evacuation routes.</p> <p>City has ID'd primary and secondary Evacuation Routes.</p> <p>Primary routes generally follow major roadways and would typically be evacuated before secondary routes.</p>	<p>still have excess capacity.</p> <ul style="list-style-type: none"> -Maps evacuation routes, which usually share roads with ETRs. -Maps projected congestion on evacuation routes during an evacuation event. -Maps proposed revisions to evacuation routes 	

Appendix B: City, county, and state planners and emergency transportation personnel consulted

Name	Agency	Position	Contact
Jake Davis	Portland State University / PBOT	Master of Urban Planning Student / Intern	Jake.Davis@portlandoregon.gov
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Ken Schlegel	Washington County	Emergency Management Coordinator	Ken_Schlegel@co.washington.or.us
John Jensen	Washington County	Senior Engineer	John_Jensen@co.washington.or.us
Lonny Welter	Columbia County Road Department	Transportation Planner	lonny.welter@co.columbia.or.us
Anthony Vendetti	Clark Regional Emergency Services Agency	Emergency Management Coordinator	anthony.vendetti@clark.wa.gov
Megan Neill	Multnomah County	Engineering Services Coordinator	megan.neill@multco.us
Mike Andrews	North Shore Emergency Management (British Columbia)	Deputy Director	mandrews@nsem.info

Appendix C: Pertinent Planning and Disaster Management Documents from Other Regions

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City of Seattle Comprehensive Emergency Management Plan Emergency Support Function #1 - Transportation CEMP - Annex IV Documentation	Office of Emergency Management	August 2018	The City's interdependent lifeline systems include transportation, power, water, sewer, natural gas, liquid fuel, telephone services, fiber-optic networks, cellular services, and cable services. This complex system of infrastructure is comprised of a mix of public and private sector assets and resources.	Identifies emergency support functions of Seattle Department of Transportation. Some include: -Update SDOT Snow and Ice Readiness Plan annually. -Designate snow and ice routes by service levels. -Coordinate with Metro transit to align snow and ice routes with us routes where possible. -Develop and maintain procedures to assign a liaison from Metro Transit and SPD to the Operations Center -Oversee damage assessments of city roadway and bridge structures. (Includes other post-event duties)	Other States and MPOs
CALTRANS Transit Emergency Planning Guidance	California Department of Transportation - Division of Mass Transportation	July 2007	None	"Plans should be established for alternative facilities, equipment, personnel, and other resources necessary to maintaining service during crisis, or resume service as quickly as possible following disaster. Typically, organizations will ID and pre-contract for alternate facilities in the event of catastrophic infrastructure loss. Facilities should meet accessibility standards to ensure an employee or contractor with a disability can effectively perform their duties."	Other States and MPOs
British Columbia Disaster Response Primer	Government of British Columbia	June 2018	Critical Routes: Regional and provincial routes vital to the functioning of the transportation network in the impact area and movement of emergency resources cross-jurisdictionally at the regional	-Establishes common understanding of disaster response transportation strategies and terminology. -"While critical routes are chosen with the latest intelligence regarding resiliency, the possibility still exists of actual routes post-disaster deviating from pre-designated critical routes dues to the unpredictable nature of disasters"	Other States and MPOs

		<p>level.</p> <p>Also essential for movement of emergency resources at the local level.</p> <p>Critical Routes are to be established before an event.</p> <p>Disaster Response Routes (DRRS) are used to expedite movement for official purposes to achieve emergency response or recovery objectives. DRRs are not designated pre-event. They are determined at the time of the event based on the needs of response and recovery and available options. DRRs may or may not coincide with Critical Routes. DRRs are coordinated regionally and/or provincially.</p> <p>Short term DRRs consist of coordinated convoys for emergency personnel and resources. When short term DRRs are utilized, police officer escort will be used to move the convoy.</p> <p>Medium term DRRs are established during a local and/or provincial state of emergency when the power to control or prohibit travel to or from any area of BC is in effect. For road transportation, <i>the general public will be restricted from DRRs with the use of traffic</i></p>	<p>Transportation Node: any designated location within a transportation route or network where resources, personnel or vehicles (and/or vessels, aircraft, etc) can enter or change route. Potential transportation nodes should be identified in the preparedness phase.</p> <p>Transportation Node Types:</p> <p><i>Staging Areas:</i></p> <p>Movement control points where resources are received, prioritized and organized prior to deployment (provincial, regional, local).</p> <p><i>Community points of distribution:</i></p> <p>Locations where emergency supplies are disseminated to the public following a disaster.</p> <p><i>Transfer Points:</i></p> <p>Locations or facilities where the transfer of resources and/or personnel can occur between one mode of transport to another.</p> <p>-Discusses strategies for recovery, steps for DRR activation, who gets transportation priority, and with what sort of identification.</p>	
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			<p><i>control devices and mechanisms.</i> DRRs may utilize both directions of travel, or specific lanes of travel.</p> <p>Long term DRRs may be required after the state of emergency has expired. Would require municipal/statewide resolution restricting use of roadway. The General public would be excluded.</p>		
British Columbia Disaster Response Transportation Planning Guide for Road Transportation	Government of British Columbia	June 2018	See British Columbia Disaster Response Primer Above	<p>-Provides guidance on selecting Critical Routes, Disaster Response Routes, Staging Areas, and signage.</p> <p>-Also includes guidance on changing pre-established critical routes.</p>	Other States and MPOs
Lifelines: Lessons from Natural Hazards in Canterbury (New Zealand)	Centre for Advanced Engineering	December 2012	No Formal Definition	<p>-Need for coordinated approach when reinstating utilities as roads often form the top layer.</p> <p>-Establish relationships with helicopter services. Useful for determining status of transportation links if cell/radio network lost. Useful for moving people and supplies until link is repaired.</p> <p>3 Aspects of Infrastructure Resilience:</p> <p>-Robust physical assets with key network routes and facilities having appropriate redundancy.</p> <p>-Effective coordination arrangements (pre and post-event).</p> <p>-Realistic end-user expectations and appropriate measures of back-up arrangements.</p>	Other States and MPOs
Post Hurricane Sandy Transportation	Federal Highway Administration	October 2017	No Formal Definition	Some damage done from storm not detected for months after the storm.	Federal and National

<p>Resilience Study in New York, New Jersey, and Connecticut</p>				<p>Barriers to effective adaptation of transportation resiliency measures:</p> <ul style="list-style-type: none"> -Cross-agency coordination and jurisdictional issues can create delays and obstacles. -Legal and regulatory hurdles can hinder adaptation responses. (ROW acquisition, lawsuits from impacted landowners, environmental and community impact studies). -Limited sources of funding for transportation adaptation projects, and those that do exist are highly competitive, or can be only accessed after a disaster. Proactive adaptation needs to be folded into projects in the development pipeline, or there needs to be a strong case to implement standalone projects. 	
<p>Best Practices: Emergency Access in Healthy Streets</p>	<p>Ryan Snyder Associates and County of Los Angeles Public Health</p>	<p>March 2013</p>	<p>No Definition</p>	<p>Discusses street design considerations to accommodate emergency vehicles</p>	<p>Other States and MPOs</p>

Appendix D: Non-pertinent planning and emergency documents from other jurisdictions that were reviewed

Document	Agency	Date Published
State of California Emergency Plan	State of California	October 2017
City and County of San Francisco Emergency Response Plan	San Francisco Department of Emergency Management	May 2017
MTC Regional Transportation Emergency Security Planning Report	San Francisco Bay Area Metropolitan Planning Organization	December 2008
Bay Area Earthquake Plan	California Governor's Office of Emergency Services / FEMA Region IX	July 2016
Move Seattle	Seattle Department of Transportation	Spring 2015
Vancouver Transportation 2040	City of Vancouver Streets and Transportation	
Catastrophic Hurricane Evacuation Plan Evaluation: A Report to Congress	U.S. Department of Transportation and U.S. Department of Homeland Security	2006
New Jersey Transportation System Plan	New Jersey Department of Transportation	2008
New Jersey Transit Corporation Comprehensive Emergency Management Plan	New Jersey Transit Corporation	2010
Plan 2045 Connecting North Jersey	North Jersey Transportation Planning Authority	2017

Appendix E: Details on Lifeline Goals, Objectives, Criteria, and Tiers

Section III describes how Statewide Lifeline Routes have three main goals, which capture needs during three distinct periods following a seismic event: short, medium, and long-term response and recovery. Within each goal is a series of specific actionable objectives to achieve each goal, and a series of criteria to evaluate how well each Lifeline segment can achieve the related objectives and goals. These goals, objectives and actions are as follows:

Goal 1 (Short-term): Support survivability and emergency response efforts immediately following the event.

Objective 1A: Retain routes necessary to bring emergency responders to the emergency location.

Criteria:

- Bridge and roadway seismic resilience
- Critical non-redundant access to a major area
- Access to fire stations and hospitals
- Access to ODOT maintenance facilities
- Ability to control access during response and recovery
- Dam safety
- Roadway width
- Access to ports and airports
- Access to population centers

Objective 1B: Retain routes necessary to transport injured people from the damaged area to hospitals and other care facilities.

Objective 1C: Retain routes necessary to transport emergency response personnel, equipment and materials to damaged area.

Criteria:

- Bridge and roadway seismic resilience
- Critical non-redundant access to a major area
- Access to emergency response staging areas
- Dam safety
- Roadway width
- Freight access
- Access to hospitals

Goal 2 (Medium-term): Provide transportation facilities that are critical to life support functions for an interim period following the event.

Objective 2A: Retain routes critical to bring life support resources (food, water, sanitation, communications, energy, and personnel) to the emergency location.

Criteria:

- Bridge seismic resilience *after* short-term repair
- Access to ODOT maintenance facilities
- Access to fire stations and hospitals
- Access to critical utility components (fuel depots and communication facilities)
- Dam safety
- Freight access
- Access to ports and airports
- Roadway seismic resilience

Objective 2B: Retain regional routes to hospitals.

Criteria:

- Access to hospitals

Objective 2C: Retain evacuation routes out of the affected region.

Criteria:

- Access to central Oregon.
- Importance of route to freight movement
- Access to ports and airports

Goal 3 (Long-term): Support statewide economic recovery.

Objective 3A: Retain designated critical freight corridors.

Criteria:

- Critical non-redundant access to major area
- Bridge and roadway seismic resilience *after* short-term repair
- Access to ports, airports, and railroads
- Freight access

Objective 3B: Support statewide mobility for connections outside of the affected region.

Criteria:

- Access to central Oregon.
- Access to ports, airports, and railroads

Objective 3C: Retain transportation facilities that allow travel between large metro areas.

Criteria:

- Critical non-redundant access to major area
- Connection to centers of commerce

Tiers:

A cost-benefit analysis based on these criteria is used to categorize Lifeline Routes into a 3-tiered system for prioritizing seismic retrofits. Critical linkages necessary to serve the greatest number of residents at the lowest investment of time and money are given top priority. The 3 tiers of Lifeline Routes are:

Tier 1: A small backbone system that allows access to vulnerable regions, major population centers, and areas are considered to be vital to rescue operations while minimizing retrofit costs. Other characteristics of a Tier 1 network include:

- A contiguous network (no isolated Tier 1 segments).
- Penetration to each geographic region.
- Redundant Willamette River crossings in Portland.
- Access to the eastern (less seismically vulnerable) part of the state.

Tier 2: A larger network that provides access to most urban areas and restores major commercial operations. Tier 2 routes add additional redundancy to allow for increased traffic volumes and alternate routes in high-population areas.

Tier 3: A more complete transportation network.

APPENDIX D
Chapter 6 - 2012 ODOT Seismic Lifeline Vulnerability Synthesis and
Identification Report

6.0 Seismic Lifeline Routes

6.1 Overview and Definitions of the Tiers

Given the existing vulnerabilities of our built environment in Oregon, the many seismic hazards in the natural environment, and the geographic spread of the population, it is quite likely that nearly every roadway in the western half of the state would be needed to serve as a lifeline following a major CSZ event. As the years go by and the effects of age and use require the rehabilitation or replacement of our existing transportation infrastructure, the system will become more seismically resilient as those rehabilitations and replacements are accomplished according to design standards that take into account these recently identified seismic hazards. However, if a CSZ Mw 9.0 were to occur today, it is possible that nearly every state highway in Western Oregon would be impassible, possibly severely limiting ground transportation for many months. A program to immediately (within the next few years) retrofit all seismic lifeline routes in western Oregon to current design standards is likely beyond our means as a society to accomplish. Even if the State were to embark on a program of rapid seismic strengthening of the entire transportation system, it would be prudent to begin where the most benefit is accomplished in the least time for the least cost.

After a catastrophic earthquake, it is anticipated that ground transportation will be supplemented by air and water transport as necessary to address the most-critical needs. Air and water transportation services are much more limited in capacity and availability than ground transportation; consequently, the shorter the distance from a functioning ground transportation system to the area of need, and the fewer numbers of people in need, the more likely it is that the available air and water transportation vehicles and infrastructure will be able to meet all needs.

A prioritized seismic lifeline system should attempt to provide the following three functions:

1. First and foremost, it should provide access to and through the state, allowing access to the seismically vulnerable areas of the state (study area) for emergency responders and economic recovery.
2. Secondly, it should attempt to provide access into each region of the state.
3. Lastly, it should serve as a transportation network that provides redundant access throughout the state.

The PMT used the results of the evaluation framework and a review of system connectivity and key geographic features to identify a three-tiered seismic lifeline system—Tier 1 being the highest priority roadway segment, Tier 2 being the next highest, and Tier 3 being the third highest priority grouping. It is intended that seismically resilient infrastructure along each lifeline route tier would accomplish the three goals listed above and would consist of the following:

- Tier 1: A system that provides access to and through the study area from Central Oregon, Washington, and California, and provides access to each region within the study area
- Tier 2: Additional roadway segments that extend the reach of the Tier 1 system throughout seismically vulnerable areas of the state and that provide lifeline route redundancy in the Portland Metro Area and Willamette Valley
- Tier 3: Roadway segments that, together with Tier 1 and Tier 2, provide an interconnected network (with redundant paths) to serve all of the study area

The purpose of having three tiers of lifeline routes is to establish guidelines for prioritizing seismic retrofits of highways and bridges with the highest priority roadways being those that provide the most critical linkages necessary to serve the greatest number of residents in the study area, at the lowest investment of time and money. Ideally, as discussed previously, vulnerabilities along all three tiers of lifeline routes (as well as the remainder of public transportation facilities statewide) should be addressed. Recognizing potential cost restrictions, use of this tiered system is intended to provide the State of Oregon with guidance for identifying project priorities. It should be noted that this lifeline system is intended to serve statewide transportation needs, not to directly access all locations in the state. Planning for the needs of individuals and local communities is the responsibility of statewide, regional, and local agencies, whose core mission is emergency planning and response. As local response and recovery plans are developed, it is recommended that local earthquake preparation efforts include recognition of the state lifeline routes and could include evaluation of local roadways with a methodology similar to that used here.

The following sections define each tier and describe the recommended tier system within six geographic areas.

6.1.1 Tier 1

The routes identified as Tier 1 are considered the most significant and necessary to provide a functioning statewide transportation system. A functioning Tier 1 lifeline system will allow traffic to flow through the study area and to each region. Required characteristics of the Tier 1 system are as follows:

- Contiguous (all segments connected, with no isolated segments or groups of segments) connection to each geographic region of the study area with access to the most populous areas in those regions
- Access to the most-critical utilities required for statewide response and recovery (in particular fuel depots)
- Access from the east to the most-seismically vulnerable regions of the state
- Redundant crossings of the Willamette River in Portland
- Minimization of cost of retrofit and/or repair (fewest number of routes with least vulnerabilities that provide characteristics in the preceding bullets)

6.1.2 Tier 2

The Tier 2 lifeline routes provide additional connectivity and redundancy to the Tier 1 lifeline system. The Tier 2 system would allow for direct access to more locations, fewer miles to travel between some locations, increased traffic volume capacity, and alternate routes in high-population regions in the event of outages on the Tier 1 system. Requirements for this tier include the following:

- Contiguous (all segments connected, with no isolated segments or groups of segments)
- Redundant routes to provide circulation within the Portland Metro Geographic Zone and north-south movement within the Willamette Valley
- Minimization of cost of retrofit and/or repair (fewest number of routes with least vulnerabilities that provide characteristics in the preceding bullets)

6.1.3 Tier 3

The Tier 3 lifeline routes provide additional connectivity and redundancy to the lifeline systems provided by Tiers 1 and 2.

Together, the Tiers 1, 2, and 3 lifelines will comprise the Oregon Seismic Lifeline System and will accomplish the following:

- Include all of US 101 to provide access to all of the Oregon coast (the most-seismically vulnerable regions of the state)
- Include routes that have been identified as providing access to the most-critical utilities (the final seismic lifeline system includes all segments identified as providing access to critical utilities, except those providing access to power generation facilities on the Santiam and McKenzie rivers).
- Include all routes that have been identified as providing access to emergency response staging areas
- Include all routes that have been designated as strategic freight corridors or freight facilities
- Provide alternate routes between any two nodes that connect two or more segments (any node that is not a dead end)
- Minimize cost of retrofit and/or repair (fewest number of routes with least vulnerabilities that provide characteristics in the preceding bullets)

6.1.4 Study Routes Not Identified as Seismic Lifeline Routes

Several routes included in the study, as listed in Section 2.1, have not been identified as seismic lifeline routes on the statewide Seismic Lifeline Route System. Although these routes may be important for local circulation during a seismic event, they are not likely to function as key corridors on a statewide level. Several of these routes have more-significant and extensive vulnerabilities than do adjacent routes that can serve the same purpose in a statewide system. All of these routes are less favorable than routes included in the Seismic Lifeline Route System with respect to a variety of evaluation framework criteria.

6.2 Proposed Oregon Seismic Lifeline Routes

6.2.1 Seismic Lifeline Tier Designations

Figure 6-1 shows the proposed seismic lifeline routes with tier designations.

The proposed Tier 1 lifeline network shown provides roadway access to within about 50 air miles of all locations in western Oregon. Significant factors in the designation of each study route are discussed as follows by geographic zone. Total roadway miles for each tier are as follows:

- Tier 1: 1,146 miles
- Tier 2: 705 miles
- Tier 3: 422 miles

This provides a total of 2,273 miles of designated lifeline route. Study routes not identified as a seismic lifeline total 298 miles.

Figure 6-2 presents an overlay of the lifeline system on the peak ground acceleration coefficients used for the evaluation of bridge resilience in this study.

FIGURE 6-1
Oregon Seismic Lifeline Routes

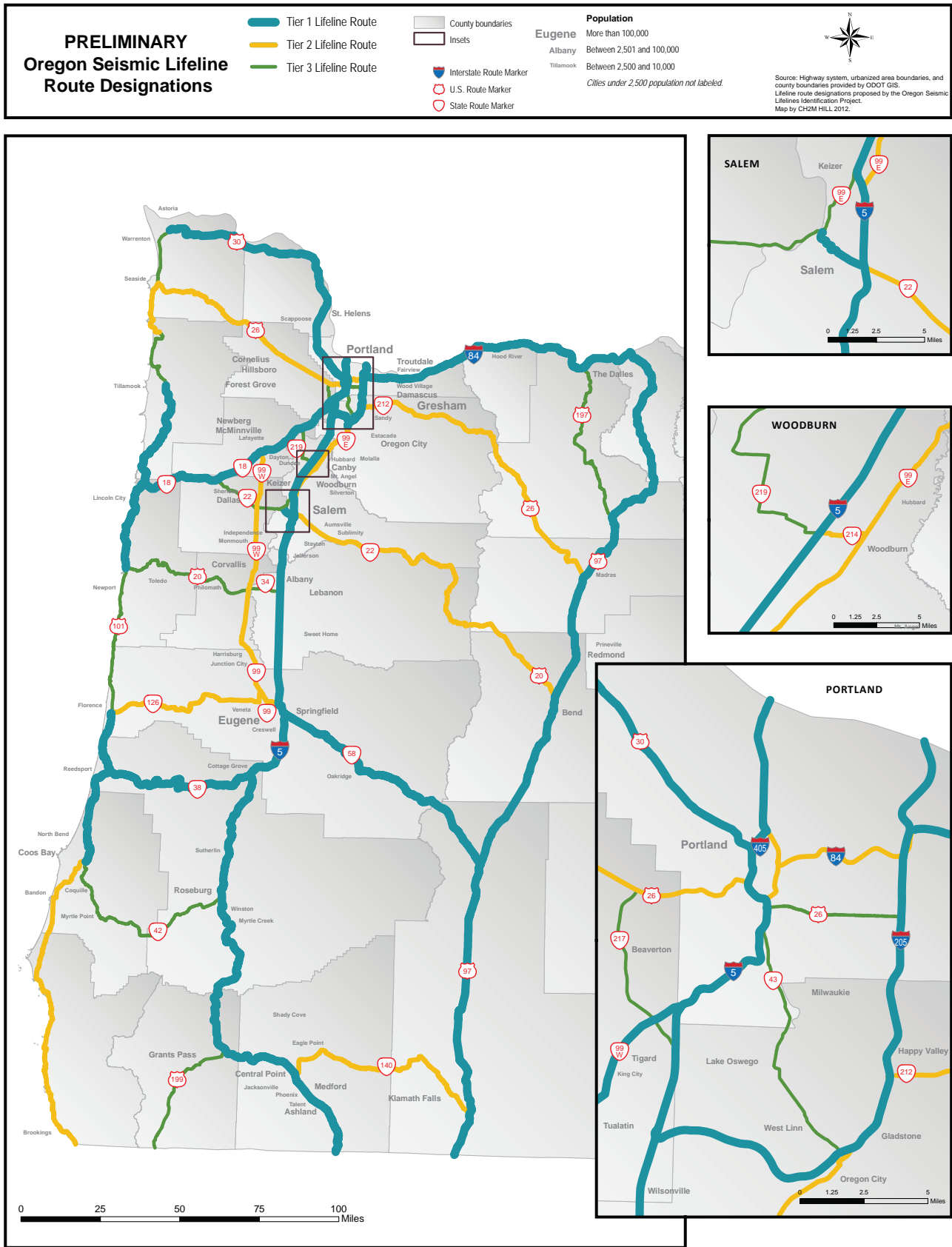


FIGURE 6-2
Lifeline Routes n Seismic Ris

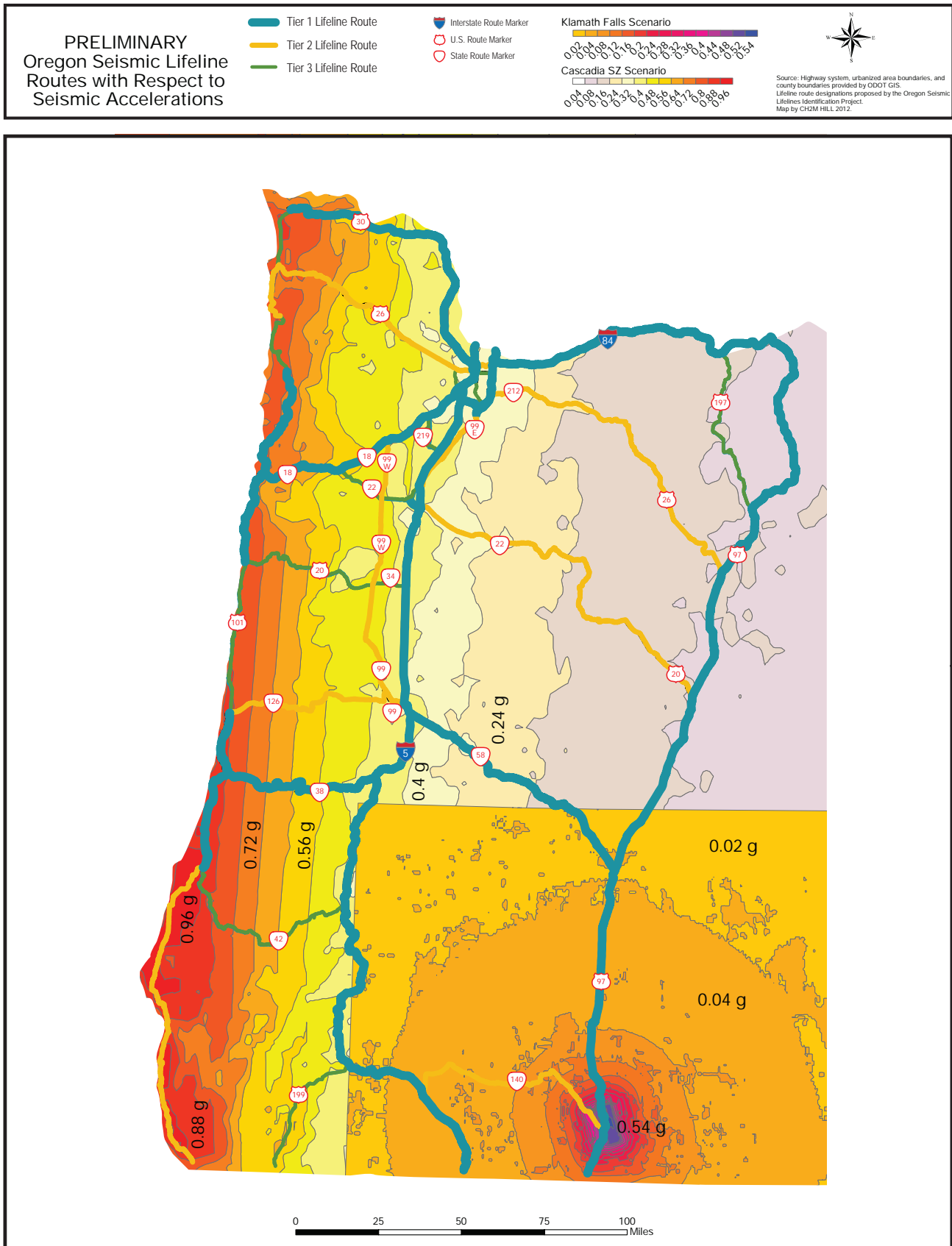


Table 6-1 contains a tabulation of lifeline roadway miles within three classifications of peak ground acceleration (PGA) coefficients, by tier for the CSZ seismic event. These CSZ PGA zones generally correlate to geographic areas with the high acceleration zone being the coast and Coast Range mountains, the moderate acceleration zone the inland valleys, and low acceleration zone the Cascades and central Oregon.

TABLE 6-1
Lifeline Roadway Length by CSZ Seismic Acceleration Zone and Tier (Miles)

CSZ PGA Zone	Approximate PGA (g)	Tier 1	Tier 2	Tier 3	Total
High	0.56 – 0.96	217	211	236	664
Moderate	0.24 – 0.48	540	313	127	979
Low	0.08 – 0.16	389	181	59	630
Total		1,146	705	422	2,273

6.2.2 Lifeline Corridor Definition

In the following discussion, the roadways selected to serve as lifeline routes are referred to as corridors since it is not intended that the identified state highways be used as seismic lifeline routes to the exclusion of other alternatives in the same vicinity. Future seismic vulnerability evaluation and remediation prioritization efforts are likely to identify least cost alternatives for providing a seismically resilient route that include detours off of the identified roadway to bypass critical seismic vulnerabilities. Therefore, the term “corridor” is used to denote that the identified highway, along with easily accessed adjacent roadways as necessary, are intended to serve as the seismic lifeline route.

Future efforts to identify possible detours around seismic vulnerabilities should take advantage of the information available in emergency closure response plans such as the “Pre-Identified Detour Routes for I-5” documents that are available in District Manager offices. Once this information has been reviewed and detailed seismic vulnerability assessments have been conducted, the exact route along specific roadways can be identified within the designated lifeline route corridors and the seismic retrofit needs can be prioritized. However, it is assumed that the final seismic lifeline routes will consist primarily of the roadways identified in this study.

6.2.3 Coast Geographic Zone

The Coast Geographic Zone is the most-seismically vulnerable geographic zone and is the most difficult to access because of geographic constraints. Although it could be argued that the critical post-earthquake needs of the region should dictate that all routes be Tier 1, this is not necessary to meet the statewide transportation goals (listed previously) that govern the identification of Tier 1 routes. Specifically, the conditions of US 101, the extent of the area being studied and limited resources make it infeasible to plan on being able to drive the full length of US 101 or being able to cross the Coast Range on all of the east-west study routes in this zone, nor is this necessary to accomplish the goals and provide the characteristics of the Tier 1 lifeline system. The reality is that the vulnerabilities are so extensive on these routes that the majority of the cost of making the entire lifeline system acceptably resilient is associated with this region. Because of the high vulnerability of the zone, it is paramount that emergency services and recovery resources can reach this zone from other zones. Consequently, the

consensus of the PMT and SC was that all needs are best served with a Tier 1 backbone system selected according to the criteria described in Section 6.1.

Tier 1

The Tier 1 system in the Coast Geographic Zone consists of the following three separate access corridors:

- OR 30 from Portland to Astoria
- OR 18 from the Valley to US 101 and north and south on US 101 from Tillamook to Newport
- OR 38 from I-5 to US 101 and north and south on US 101 from Florence to Coos Bay

Tier 2

The Tier 2 system in the Coast Geographic Zone consists of the following three access corridors:

- US 26 from Portland to US 101 and north and south on US 101 from Seaside to Nehalem
- OR 126 from the Valley to US 101 at Florence
- US 101 from Coos Bay to the California border

Tier 3

The Tier 3 system in the Coast Geographic Zone consists of the following corridors:

- US 101 from Astoria to Seaside
- US 101 from Nehalem to Tillamook
- OR 22 from its junction with OR 18 to the Valley
- OR 20 from Corvallis to Newport
- OR 42 from I-5 to US 101
- US 199 from I-5 to the California border

Segments Considered but Not Designated as Lifelines

The only state highways in the Coast Geographic Zone not designated a seismic lifeline are OR 103 and OR 202 from US 26 to Astoria. In spite of significant vulnerabilities on many of the routes, all other segments in the Coast Geographic Zone have been selected to be seismic lifelines because of their wide geographic distribution and the at-risk populations they serve.

Tier Designation Discussion

North Coast (Astoria to Tillamook). A special evaluation of the three possible routes from Portland to Astoria was performed by using the evaluation framework. In this evaluation, the parameters for each segment along each alternate route were summed, and then the evaluation framework methodology was applied to each alternate route composed of the combined segments. Because this analysis showed OR 30 was preferable by most measures, this highway was designated Tier 1.

US 101 from Astoria to Seaside has significant vulnerabilities in the areas of the bay crossing at Astoria and the low-lying area in downtown Seaside; therefore, it was designated Tier 3.

The system of US 26 to US 101 down to Nehalem was designated Tier 2. US 101 from Nehalem to Tillamook was designated Tier 3 because of extensive vulnerabilities in the low-lying areas of Nehalem and Tillamook Bays.

OR 102 and OR 202 were included in the study to evaluate alternate access to Astoria, but were found to not provide significant overall benefit compared to the other routes; therefore, these highways were not designated as lifelines.

Central Coast (Tillamook to Coos Bay). Five state highways were evaluated as east-west lifelines through this section of the Coast Geographic Zone. The project team preferred that the Tier 1 lifelines not be adjacent routes.

Of these five east-west highways, OR 42 was rated lower on most measures and significantly lower for bridge and roadway seismic resilience. This is a case where the segment rated marginally better on several criteria and therefore rated well on the PMT Weighted Evaluation Framework, but rated much worse on resilience criteria. This means that significantly more investment would be required to provide adequate seismic resilience on this route than on other alternatives, with little added benefit. Therefore, this highway was identified as a Tier 3 lifeline.

Of the four routes remaining as candidates to serve as Tier 1 lifelines, two serve the northern portion and two serve the southern portion of this central coast area. Of the two northern routes, OR 18 and OR 20, OR 18 has much better resilience ratings. The southern two routes, OR 126 and OR 38, are comparable on most measures. The best-rated sections of US 101 are between Florence and Coos Bay. OR 126 provides access to the north end and OR 38 provides access to the middle of this section of US 101. It is preferable to access the midpoint of a transportation corridor because this location is most beneficial for emergency response and recovery. A midpoint corridor location allows road and bridge repair crews to start in the middle of this section of US 101 and work both ways away from the center, rather than starting at one end and working the length toward the other end. Selection of OR 38 as a Tier 1 lifeline also provides access to the center of this higher-population area (from Florence to Coos Bay), whereas selection of OR 126 would provide access at the northern end of this area, much farther from Coos Bay. Therefore, OR 38 and US 101 north to Florence and south to Coos Bay were designated Tier 1.

Similarly, because of their central position with respect to more resilient portions of US 101, central location between population centers, and higher resilience ratings, OR 18 and the segments of US 101 north to Tillamook and south to Newport were identified as Tier 1 lifelines. OR 18 did not rate well with the PMT Weight Evaluation Framework; however, this is primarily due to the fact that the segment joins US 101 slightly north of Lincoln City and therefore does not rate well on a number of connections criteria, which are not pertinent to its selection as a Tier 1 route given the function it serves and the close proximity of the connection criteria parameters. OR 18 rates better with respect to the criteria rating and the alternative resilience emphasis rating.

Of the remaining two east-west lifelines, OR 26 has the superior seismic resilience; therefore, this highway was designated Tier 2. OR 20 was then designated Tier 3. US 101 between Newport and Florence also was designated Tier 3.

Southern Coast (Coos Bay to California). The only segments in this area are US 101 from Coos Bay to the Oregon/California border and US 199 from I-5 to the California border. The Tier 1 lifeline network extends to the north end of the southern US 101 segment, which rates in the middle range of the coastal segments, and the roadway serves a highly vulnerable and isolated region; therefore, it was identified as a Tier 2 lifeline. US 199 provides a third connection to the California border and has been designated Tier 3 since the I-5 connection is Tier 1 and US 101 is Tier 2.

6.2.4 Portland Metro Geographic Zone

In addition to encompassing the largest population concentration in the state, the Portland Metro Geographic Zone contains many facilities (such as transportation, communication, and fuel depots) that are critical to statewide earthquake response and long-term economic recovery. For these reasons, this

zone has a higher concentration of lifeline routes than do the other geographic zones and has redundant Tier 1 crossings of the Willamette River.

Tier 1

The Tier 1 system in the Portland Metro Geographic Zone consists of the following corridors:

- I-5, excluding the section between the northern and southern I-405 interchanges
- I-205
- OR 99W from I-5 to OR 217

Tier 2

The Tier 2 system in the Portland Metro Geographic Zone consists of the following three access corridors:

- I-84
- I-5 between the northern and southern I-405 interchanges

US 26 from OR 217 to I-405

The Tier 3 system in the Portland Metro Geographic Zone consists of the following corridors:

- OR 217
- US 26 from I-5 to I-205
- OR 43

Segments Considered but Not Designated as Lifelines

The following segments were considered but were not designated as lifelines:

- OR 224
- OR 99E from US 26 to Oregon City

Tier Designation Discussion

The single-most significant criteria for lifeline tier designations in the Portland Metro Geographic Zone were the known seismic vulnerabilities of the Willamette River crossings and key interchange structures. For these structures, more-comprehensive seismic vulnerability assessments have been performed than those performed within the REDARS2 evaluation. Since these structures are very large, they represent a significant percentage of the lifeline system bridge deck area and, therefore, potential seismic retrofit cost.

The Willamette River crossings evaluated for this study are the I-405 Fremont Bridge, the I-5 Marquam Bridge, the US 26 Ross Island Bridge, and the I-205 Abernathy Bridge. The US 26 route is not a prime candidate for a variety of reasons other than seismic resilience issues, so this leaves the other three routes as potential candidates for the desired two Tier 1 Willamette River Crossings. Of these three, the Marquam Bridge is the most-seismically vulnerable. In addition, the segment of I-5 north of the Marquam Bridge along with the I-5/I-84 interchange includes several structures that have been determined to have severe seismic vulnerabilities. Therefore, the Tier 1 Willamette River crossings are I-405 and I-205. This also provides one crossing in the downtown area and one on the outer edge of the geographic zone.

I-5, with the exception of the segment between the end points of I-405, is designated Tier 1 because it is arguably the most-important transportation corridor in the state and does not have significantly more identified vulnerabilities than any alternate routes.

I-205 is also Tier 1 for its Willamette River crossing discussed previously and since it serves a significant role—providing access to the Portland International Airport, connecting I-5, to the I-84 and OR 212/US 26 corridors to the east, and connecting to the Washington state border.

I-405 serves the important function of connecting I-5 to OR 30 and the important fuel and communications facilities in that area, as well as containing the Willamette River crossing discussed previously. Therefore, I-405 has been designated Tier 1.

The final Tier 1 segment in the Portland Metro Geographic Zone is a short piece of OR 99W that provides connection from I-5 to the Tier 1 OR 99W segment in the Valley Geographic Zone.

In spite of the critical seismic vulnerabilities, I-5 between I-405 intersections, and I-84 between I-5 and I-205 have been designated Tier 2 due to the critical function they serve in the statewide transportation network.

US 26 in the Coast Geographic Zone was designated Tier 2 and must be connected to the Portland Metro Geographic Zone by a Tier 1 or 2 segment. The two alternatives for this connection are US 26 to I-405 and OR 217 to OR 99W. US 26 rates better on almost every measure and provides a more direct connection to the Tier 1 lifelines and supporting facilities. Therefore, US 26 was designated Tier 1. OR 217 was designated Tier 3 because it provides significant extra capacity through and around the Portland Metro area.

The remaining routes (US 26 from I-5 to I-205, OR 99E, OR 224, and OR 43) pass through the south and east portions of the city. Of these routes, US 26 from I-5 to I-205 and OR 43 rate the best. Because US 26 provides access to some critical facilities, serves as an alternate route to I-84, and provides a fourth Willamette River crossing, it was designated Tier 3. OR 43 provides an alternative to I-5 south on the west side of the Willamette River and was designated Tier 3, with the exception of the short segment of OR 43 from I-205 to OR 99E.

The short segment of OR 43 from I-205 to OR 99E has not been designated a seismic lifeline route because it would be the fifth Willamette River crossing in the Portland Metro Geographic Zone and is adjacent to the I-205 Tier 2 crossing of the Willamette. OR 224 and OR 99E from US 26 to I-205 would not serve significant functions in the statewide transportation network beyond those already provided by other seismic lifelines in the area and therefore have not been designated as seismic lifeline routes.

The short segment of OR 99E from I-205 to OR 43 was designated Tier 2 to connect with the Tier 2 segment of OR 99E in the Valley Geographic Zone.

6.2.5 Valley Geographic Zone

The Valley Geographic Zone generally consists of two or three north-south routes through the Willamette Valley and a variety of east-west connectors between those routes, intended to provide for redundant routes for north-south movement.

Tier 1

The Tier 1 system in the Valley Geographic Zone consists of the following corridors:

- I-5
- OR 99W from I-5 to OR 18 near Dayton
- OR 18 from OR 99W near Dayton to McMinnville
- OR 22 from I-5 to OR 99E in Salem

Tier 2

The Tier 2 system in the Valley Geographic Zone consists of the following corridors:

- US 26 from OR 47 to OR 217
- OR 99W from McMinnville to Junction City
- OR 99 from Junction City to I-5 in Eugene
- OR 99E from Oregon City to I-5 in Salem
- OR 214 in Woodburn from I-5 to OR 99E

Tier 3

The Tier 3 system in the Valley Geographic Zone consists of the following corridors:

- OR 219 from Newberg to Woodburn
- OR 99E in Salem from I-5 to OR 22
- OR 22 from OR 99W to Salem
- OR 34 from Corvallis to I-5

Segments Considered but Not Designated as Lifelines

The following segments were considered but were not designated as lifelines:

- OR 47
- OR 99W from north of Dayton to the south side of McMinnville
- OR 99E from Albany to Junction City
- OR 569 in Eugene

Tier Designation Discussion

Most segments of I-5 in the Valley Geographic Zone rate as well or better than the alternatives. These ratings, as well as the capacity and importance of I-5, justifies a Tier 1 designation for all of I-5 through this zone.

In the McMinnville area, OR 99W and OR 18 were included as alternate routes. The evaluation framework rating was slightly better for OR 18; therefore, OR 18 through McMinnville and OR 99W from near Dayton to I-5 in Tigard were designated Tier 1 to join to the Tier 1-designated OR 18 in the Coast Geographic Zone. With OR 18 through McMinnville designated Tier 1, the adjacent segments of OR 99W do not serve a significant function; therefore, they are not designated as seismic lifeline routes.

The last route in this zone designated Tier 1 is a piece of OR 22 in Salem that connects the state government offices to I-5.

Routes available to serve as north-south travel alternatives to I-5 are OR 99E, OR 99W, and OR 47. OR 99E, from Oregon City to Woodburn, is very significant because it provides a route from the Portland Metro area to points south without a Willamette River crossing. Large river crossings have some level of

seismic vulnerability even when constructed to current code requirement. They also do not generally have many alternatives. Because inclusion of routes that do not require large river crossings is preferred in the seismic lifeline system, OR 99E from Oregon City to Salem was designated Tier 2.

On the other side of the valley, OR 99W provides a route from the Portland Metro area to the south valley without large river crossings. Therefore, it was designated Tier 2 from McMinnville to I-5 in Eugene. In the south Valley, OR 99E was included in the study between Albany and Junction City. However, this route has very low seismic resilience and does not serve a statewide transportation function already served by I-5 and OR 99W. Therefore, OR 99E from Albany to Junction City was not designated a seismic lifeline route.

OR 47 could provide additional north-south travel redundancy; however, it did not rate well with respect to many criteria and therefore was not designated as a seismic lifeline.

US 26 from OR 47 to OR 217 was designated Tier 2 to provide a connection to the Tier 2 segment of US 26 in the Coast Geographic Zone.

OR 214 in Woodburn from I-5 to OR 99E was designated Tier 2 because it provides valuable connectivity between those routes in a short distance.

The following routes, which were rated reasonably well and serve to provide additional connectivity between the north-south routes, were designated Tier 3: OR 219 from Newberg to Woodburn, OR 99E in Salem from I-5 to OR 22, OR 22 from OR 99W to Salem, and OR 34 from Corvallis to I-5.

OR 569 in Eugene has very low seismic resilience and was rated lower than the adjacent alternate segment of OR 99; therefore, OR 569 was not designated as a seismic lifeline route.

6.2.6 South I-5 Geographic Zone

The only roadway in this zone is I-5 from Eugene to the California border. All of I-5 in this zone was designated Tier 1 because of the regional importance of I-5, the connection to California, and the lack of alternate corridors.

6.2.7 Cascades Geographic Zone

The Cascades Geographic Zone lifeline routes consist of five crossings of the Cascade Mountains from western to central Oregon. These routes serve to connect the highly seismically affected western portion of the state to the central portion of the state, which is expected to be far less affected by a CSZ event. In addition, the southernmost route can serve as a connection from Medford to the Klamath Falls area in the event of a seismic event in the Klamath Falls area.

Tier 1

The Tier 1 system in the Cascades Geographic Zone consists of the following corridors:

- I-84/OR 58

Tier 2

The Tier 2 system in the Cascades Geographic Zone consists of three corridors:

- OR 212 and US 26
- OR 22 from Salem to Santiam Junction and US 20 from Santiam Junction to Bend
- OR 140 and OR 62

Tier 3

No corridors are designated as Tier 3 in the Cascades Geographic Zone.

Segments Considered but Not Designated as Lifelines

The following segments were considered but were not designated as lifelines:

- OR 34 from I-5 to Lebanon and US 20 from Lebanon to Santiam Junction
- OR 126 from I-5 to Santiam Junction
- OR 126 from US 20 to US 97

Tier Designation Discussion

I-84 serves a critical transportation function for the state and rated well; therefore, it was designated Tier 1. The other route that rated well is the OR 212 to US 26 route from Portland to Madras; however, since it is adjacent to I-84 and less significant as a freight corridor and in providing access to critical utilities, it is also designated Tier 2.

The second Cascades Geographic Zone route designated Tier 1 is OR 58. This selection was intended to provide a Tier 1 route from the southern end of the Willamette Valley to central Oregon. OR 58 was preferred over other routes for the Tier 1 designation because of its importance as a freight route and its central location.

The southernmost Cascades route, OR 140 and OR 62, was designated Tier 2 for the access it provides between Medford and Klamath Falls.

The remaining three routes through the Cascades Geographic Zone begin in Salem, Corvallis, and Eugene and converge at Santiam Junction, then continue to Bend on US 20. Because of their relative ratings, in particular their importance to freight, OR 22 was designated Tier 2. OR 34/US 20 was not designated as a seismic lifeline primarily due to its limited capacity to carry freight traffic. OR 126 was not designated a lifeline because it did not provide significant statewide transportation function beyond that already provided by OR 22 and OR 58. US 20 from Santiam Junction to Bend was designated Tier 2 as a continuation of OR 22. Because OR 126 from Sisters to Redmond rated lower than US 20 and US 97, provided no additional function, and there are few seismic vulnerabilities in this area that would warrant alternate routes, it was not designated as a lifeline.

6.2.8 Central Geographic Zone

Tier 1

The Tier 1 system in the Central Geographic Zone consists of the following corridors:

- I-84 from The Dalles to Biggs Junction
- US 97

Tier 2

No Tier 2 corridors are located in the Central Geographic Zone

Tier 3

The one Tier 3 corridor in the Central Geographic Zone is US 197.

Segments Considered but Not Designated as Lifelines

All segments considered in this zone were designated as lifelines.

Tier Designation Discussion

Because the ground shaking levels in the Central Geographic Zone (east of the Cascades) from a CSZ seismic event are much lower than for the zones to the west, damage in the area is expected to be minimal. US 97 will serve as a critical transportation corridor for the response to and recovery from such an event. Consequently, it is important that all vulnerabilities that do exist are taken care of.

Furthermore, US 97 will be an important lifeline in the event of a Klamath Falls area seismic event. For these reasons, US 97 was designated Tier 1.

Two alternate routes connect US 97 north of Madras to I-84 in The Dalles—US 197 and US 97 from US 197 to I-84 at Biggs Junction and then west on to I-84 to The Dalles. The US 97 and I-84 route rated better on most criteria and therefore was designated Tier 1. Because the US 197 route provides access to critical utilities, it was designated Tier 3 rather than being dropped from the system.

Table 6-2 lists each segment studied in the project, its tier designation (or lack thereof) and a brief description of the justification for inclusion or exclusion as a seismic lifeline routes.

TABLE 6-2
Tier Designation by Segment

Seg.	Highway	Geographic Zone	ODOT Hwy No.	Description (Point to Point)	Tier	Tier Designation Justification Notes
1	I-5	Portland Metro	1	Washington border to I-405	1	I-5
2	I-5	Portland Metro	1	I-405 to I-84	2	Significant known vulnerabilities on this segment at I-84 interchange
3	I-5	Portland Metro	1	I-84 to I-405/OR 43/US 26	2	Significant known vulnerabilities on this segment at I-84 interchange and Marquam Bridge (I-5 over Willamette River), Fremont (I-405) and Abernathy (I-205) bridges selected as Tier 1
4	I-5	Portland Metro	1	I-405/OR 43/US 26 to OR 99W	1	I-5
5	I-5	Portland Metro	1	OR 99W to OR 217	1	I-5
6	I-5	Portland Metro	1	OR 217 to I-205	1	I-5
7	I-5	Valley	1	I-205 to OR 214	1	I-5
8	I-5	Valley	1	OR 214 to OR 99E Bus.	1	I-5

TABLE 6-2
Tier Designation by Segment

Seg.	Highway	Geographic Zone	ODOT Hwy No.	Description (Point to Point)	Tier	Tier Designation Justification Notes
9	I-5	Valley	1	OR 99E Bus. to OR 99E	1	I-5
10	I-5	Valley	1	OR 99E to OR 22	1	I-5
11	I-5	Valley	1	OR 22 to OR 99E	1	I-5
12	I-5	Valley	1	OR 99E to OR 34	1	I-5
13	I-5	Valley	1	OR 34 to OR 569	1	I-5
14	I-5	Valley	1	OR 569 to OR 126/OR 99	1	I-5
15	I-5	South I-5	1	OR 126 to OR 58	1	I-5
16	I-5	South I-5	1	OR 58 to OR 38	1	I-5
17	I-5	South I-5	1	OR 38 to OR 42	1	I-5
18	I-5	South I-5	1	OR 42 to OR 199	1	I-5
19	I-5	South I-5	1	OR 199 to OR 140	1	I-5
20	I-5	South I-5	1	OR 140 to California border	1	I-5
21	I-84	Portland Metro	2	I-5 to I-205	2	Provides connection to east from Tier 2 portion of I-5
22	I-84	Cascades	2	I-205 to US 197	1	Interstate connection to east
23	I-84	Central	2	US 197 to US 97	1	Interstate connection to east
24	I-205	Portland Metro	64	Washington border to I-84	1	Access to airport
25	I-205	Portland Metro	64	I-84 to US 26	1	Connection between other Tier 1 lifelines
26	I-205	Portland Metro	64	US 26 to OR 224	1	Connection between other Tier 1 lifelines
27	I-205	Portland Metro	64	OR 224 to OR 212	1	Connection between other Tier 1 lifelines
28	I-205	Portland Metro	64	OR 212 to OR 99E	1	Connection between other Tier 1 lifelines
29	I-205	Portland Metro	64	OR 99E to OR 43	1	One of two Tier 1 Willamette River crossing in Portland Metro Geographic Zone
30	I-205	Portland Metro	64	OR 43 to I-5	1	Connection between other Tier 1 lifelines

TABLE 6-2
Tier Designation by Segment

Seg.	Highway	Geographic Zone	ODOT Hwy No.	Description (Point to Point)	Tier	Tier Designation Justification Notes
31	I-405	Portland Metro	61	I-5 to US 30	1	Connection between other Tier 1 lifelines, access to fuel, and Portland circulation, one of two Tier 1 Willamette River crossings
32	I-405	Portland Metro	61	US 30 to US 26	1	Connection between other Tier 1 lifelines, access to fuel, and Portland circulation
33	I-405	Portland Metro	61	US 26 to I-5/OR 43/US 26	1	Connection between other Tier 1 lifelines, access to fuel, and Portland circulation
34	OR 217	Portland Metro	144	US 26 to OR 99W	3	Low resilience
35	OR 217	Portland Metro	144	OR 99W to I-5	3	Low resilience
36	OR 99W	Portland Metro	91	I-5 to OR 217	1	Connection to Tier 1 route to coast
37	OR 99W	Valley	91	OR 217 to OR 219	1	Connection to Tier 1 route to coast
38	OR 99W	Valley	91	OR 219 to OR 18	1	Connection to Tier 1 route to coast
39	OR 99W	Valley	91	OR 18 to OR 47	0	Redundant to OR 18
40	OR 99W	Valley	91	OR 47 to OR 18	0	Redundant to OR 18
41	OR 99W	Valley	91	OR 18 to OR 22	2	Alternate to I-5
42	OR 99W	Valley	91	OR 22 to US 20	2	Alternate to I-5
43	OR 99W	Valley	91	US 20 to 99E/99W merge	2	Alternate to I-5
44	OR 99	Valley	91	99E/99W merge to OR 569/126	2	Alternate to I-5
45	OR 99	Valley	91	OR 569/126 to I-5	2	Alternate to I-5
46	OR 99E	Portland Metro	81	US 26 to OR 224	0	Redundant to OR 43 and US 26
47	OR 99E	Portland Metro	81	OR 224 to I-205	0	Redundant to OR 43 and US 26
48	OR 99E	Portland Metro	81	I-205 to OR 43	2	Alternate to I-5
49	OR 99E	Valley	81	OR 43 to OR 214	2	Alternate to I-5
50	OR 99E	Valley	81	OR 214 to I-5	2	Alternate to I-5
51	OR 99E	Valley	81	I-5 in Albany to OR 34	0	Redundant to I-5 and OR 99W

TABLE 6-2
Tier Designation by Segment

Seg.	Highway	Geographic Zone	ODOT Hwy No.	Description (Point to Point)	Tier	Tier Designation Justification Notes
52	OR 99E	Valley	81	OR 34 to 99E/99W merge	0	Redundant to I-5 and OR 99W
53	OR 47	Valley	29	OR 26 to OR 99W	0	Redundant to I-5 and OR 99W
54	OR 212	Cascades	174	I-205 to US 26	2	Redundant connection to Central Oregon, less critical to freight than I-84 route to east
55	OR 224	Portland Metro	171	OR 99E to I-205	0	Redundant to OR 43 and US 26
56	OR 18	Valley	39	OR 99W to OR 99W	1	Connection to Tier 1 route to coast
57	OR 18	Coast	39	OR 99W to OR 22	1	Central Tier 1 route to coast
58	OR 18	Coast	39	OR 22 to US 101	1	Central Tier 1 route to coast
59	OR 43	Portland Metro	3	US 26 to I-205	3	Additional capacity in Portland
60	OR 43	Portland Metro	3	I-205 to OR 99E	0	Redundant crossing of Willamette
61	US 30	Coast	92	US 101 to I-405	1	Northern Tier 1 route to coast
62	OR 202	Coast	102	US 101 to OR 103	0	Redundant route to Astoria
63	OR 103	Coast	103	OR 103 to US 26	0	Redundant route to Astoria
64	US 101	Coast	9	OR 202 to US 26	3	Low resilience
65	US 101	Coast	9	US 26 to OR 18	1, 2, 3	Tier 2 access to Nehalem, Tier 3 due to low resilience Nehalem to Tillamook, Tier 1 access from OR 18 to Tillamook
66	US 101	Coast	9	OR 18 to US 20	1	Tier 1 access from OR 18 to Newport
67	US 101	Coast	9	US 20 to OR 126	3	Low resilience
68	US 101	Coast	9	OR 126 to OR 38	1	Tier 1 access from OR 38 to Florence
69	US 101	Coast	9	OR 38 to OR 42	1	Tier 1 access from OR 38 to Coos Bay
70	US 101	Coast	9	OR 42 to California border	2	Access to south coast
71	US 197	Central	4	I-84 to US 97	3	Redundant to US 97 and I-84 but provides access to critical utilities
72	US 97	Central	42	I-84 to US 197	1	North-south lifeline outside of highly CSZ event affected zone
73	US 97	Central	4	US 197 to US 26	1	North-south lifeline outside of highly CSZ event affected zone

TABLE 6-2
Tier Designation by Segment

Seg.	Highway	Geographic Zone	ODOT Hwy No.	Description (Point to Point)	Tier	Tier Designation Justification Notes
74	US 97	Central	4	US 26 to OR 126	1	North-south lifeline outside of highly CSZ event affected zone
75	US 97	Central	4	OR 126 to US 20	1	North-south lifeline outside of highly CSZ event affected zone
76	US 97	Central	4	US 20 to OR 58	1	North-south lifeline outside of highly CSZ event affected zone
77	US 97	Central	4	OR 58 to OR 140	1	North-south lifeline outside of highly CSZ event affected zone and access to Klamath Falls
78	US 97	Central	4	OR 140 to California border	1	North-south lifeline outside of highly CSZ event affected zone and access to Klamath Falls
79	US 26	Coast	47	US 101 to OR 103	2	Intermediate route to coast
80	US 26	Coast	47	OR 103 to OR 47	2	Intermediate route to coast
81	US 26	Valley	47	OR 47 to OR 217	2	Intermediate route to coast
82	US 26	Portland Metro	47	OR 217 to I-405	2	Intermediate route to coast
83	US 26	Portland Metro	26	I-5/OR 43/US 26 to OR 99E	3	Fourth Willamette River crossing in Portland Metro Geographic Zone
84	US 26	Portland Metro	26	OR 99E to I-205	3	Alternate route through Portland, mostly at grade with many detours available
85	US 26	Cascades	53	OR 212 to US 97	2	Redundant connection to Central Oregon, less critical to freight than I-84 route to east
86	OR 22	Cascades	162	I-5 to Santiam Jct	2	Freight route
87	US 20	Coast	33	US 101 to OR 99W	3	Low resilience
88	OR 34	Valley	210	OR 99W to OR 99E	3	Connection from OR 99W to I-5
89	OR 34	Valley	210	OR 99E to I-5	3	Connection from OR 99W to I-5
90	OR 34	Cascades	210	I-5 to US 20	0	Redundant to OR 22
91	US 20	Cascades	16	OR 34 to OR 126	0	Redundant to OR 22
92	US 20	Cascades	16	OR 126 to OR 22	0	Redundant to OR 22
93	US 20	Cascades	16	OR 22 to OR 126	2	Continuation of OR 22 route to Bend
94	US 20	Cascades	16	OR 126 to US 97	2	Continuation of OR 22 route to Bend
95	OR 126	Coast	62	US 101 to OR 99/ OR 569	2	Alternate route to OR 38

TABLE 6-2
Tier Designation by Segment

Seg.	Highway	Geographic Zone	ODOT Hwy No.	Description (Point to Point)	Tier	Tier Designation Justification Notes
96	OR 569	Valley	69	OR 99/OR 126 to I-5	0	Redundant to OR 99
97	OR 126	Cascades	69	I-5 to US 20	0	Redundant to OR 58
98	OR 38	Coast	45	US 101 to I-5	1	Southern Tier 1 route to coast
99	OR 58	Cascades	18	I-5 to US 97	1	Tier 1 route to Central Oregon
100	OR 42	Coast	35	US 101 to I-5	3	Alternate to OR 38
101	OR 140	Cascades	270	I-5 to US 97	2	Medford – Klamath Falls connection
102	US 199	Coast	25	I-5 to California border	3	Access to southern Oregon and CA border
103	OR 22	Coast	30	OR 18 to OR 99W	3	Alternate connection of OR 18 to OR 99W
104	OR 22	Valley	30	OR 99W to OR 99E Bus.	3	east west connection OR 99W to I-5, alternate crossing of Willamette
105	OR 22	Valley	30	OR 99E Bus. To I-5	1	Connection of State Government to I-5
106	OR 219	Valley	140	OR 99W to I-5	3	Alternate crossing of Willamette
107	OR 214	Valley	140	I-5 to OR 99E	2	East west connection OR 99E to I-5
108	OR 126	Cascades	15	US 20 to US 97	0	Redundant to US 20
109	OR 99E Bus.	Valley	72	I-5 to OR 22	3	Alternate to I-5 and OR 22

APPENDIX E
GIS Methodology Report (FLO)

Appendix E: GIS Methodology

RDPO/Metro Regional Emergency Transportation Routes Update Project

Prepared by:

Cascade GIS & Consulting
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Date: March 26, 2021

Prepared for:

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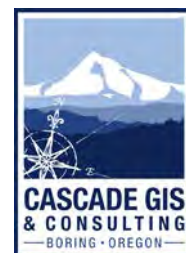


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CHAPTER 1: GIS METHODOLOGY STATEMENT

1.1 INTRODUCTION

This GIS Methodology provides supplementary information to the Regional Emergency Transportation Routes (ETR) Update Project report. The Regional ETR report includes significant background and stakeholder information describing the scope of the current project and delineating an approach for future work. The GIS Methodology provides additional background and details of the technical approach to this update.

Primary methodology development, data compilation, and initial analysis were completed by Cascade GIS staff, including Principal Analyst Erica McCormick, and GIS Analysts Andy Wilson and Tyler Harris. The project transitioned to FLO Analytics in Fall 2020. Finalization of the data compilation and analysis were completed by Senior GIS Analyst Jed Roberts and GIS Technician Ethan Poole.

1.2 ORGANIZATION OF DOCUMENT

The Methodology is organized by technical approach as follows:

- **Chapter 1 - GIS Methodology Statement:** This chapter describes the purpose and organization of this document.
- **Chapter 2 - Regional Data Aggregation:** This chapter describes the methodology for compilation of regional data.
- **Chapter 3 - Regional ETR Update Modeling:** This chapter describes the GIS methodology used to develop the updated Regional ETRs.
- **Chapter 4 - List of Acronyms**

CHAPTER 2: REGIONAL DATA AGGREGATION

2.1 INTRODUCTION

The project required the creation of a GIS database of existing regional data. The approximately 4,400-square-mile study area in the Portland Metro Area consists of Clackamas, Columbia, Multnomah, and Washington counties in Oregon as well as Clark County in Washington. Some data extended beyond the study area.

A regional geospatial data inventory was needed to evaluate the Regional ETRs based on the final framework criteria and to perform analyses of connectivity, resilience, and community equity. The data inventoried fall under five broad categories:

- **Critical infrastructure:** Defined and prioritized in the framework criteria for the project, critical infrastructure has been sub-categorized as having a role in emergency response at the state/regional, city/county, or community/neighborhood level.
- **Essential facilities:** As with critical infrastructure, defined and prioritized in the framework criteria and sub-categorized by emergency response role.
- **Routes:** Regional ETRs developed in 1996 and revised in 2005 served as the foundation for updated routes. Updates to existing routes were coordinated through a stakeholder engagement process.
- **Analysis:** Regional ETRs were analyzed for resilience and social equity. Earthquake, landslide, and flood hazard data were used to analyze resilience. Socioeconomic data from the U.S. Census American Community Survey were used to analyze equity.
- **Reference:** Various datasets were used to inform and support the project team's decisions about adding, removing, or changing Regional ETRs.

GIS data were obtained in two ways: through direct coordination with stakeholders and from publicly available sources. All GIS data were reviewed, compiled, and aggregated in a comprehensive geospatial data inventory. Data were collected from

public repositories and from stakeholders over a period of eighteen months, from July 2019 through December 2020. Stakeholders were provided with a formal list of requested items in September 2019. Following the data request, and follow-up correspondence, a wide range of data formats were received including GIS data (shapefiles, geodatabases, and layer packages), spreadsheets, PDFs, and descriptions and addresses via email. To facilitate stakeholder review of Regional ETRs and analysis data, Metro staff posted working data on an online web map at points throughout the project.

2.2 METHODOLOGY

ArcGIS Advanced 10.8 software was used. The original and derivative data were reviewed and geoprocessed in ArcMap and ArcCatalog. FLO Analytics developed analysis workflows using Alteryx 2020.4.

2.2.1 DATA COLLECTION

All stakeholder data were organized in folders by agency and date received. No changes were made to these original data. A spreadsheet was maintained to track the progress of data collection, identify data gaps, and to follow-up with stakeholders as needed. The data compiled also included publicly available data from authoritative entities and sources, including Metro’s Regional Land Information System (RLIS), Federal Emergency Management Agency (FEMA), the Oregon Department of Geology and Mineral Industries (DOGAMI), City of Portland’s Portland Maps, Oregon Geospatial Enterprise Office (GEO), Oregon Department of Transportation (ODOT) and Washington Department of Transportation (WSDOT) GIS, Clark County GIS, and the Washington Geospatial Open Data Portal. Not all data were used in the initial phase of this work but may be used in future phases. Table 1 provides a summary of the data collected from stakeholders and public sources used in the initial phase of work. Table 2 provides a summary of those data that may be considered in later phases.

Table 1. Summary of GIS data compiled from stakeholders and public sources and used in initial update phase

Theme	Type / Use	Essential Facility / Critical Infrastructure Category	Data Provider	Date Acquired / Published	Format
911 dispatch centers	Essential facility	State/regional	Clark County	Nov-19	Email
			Washington County	Jan-20	Email
			Metro/RDPO	Mar-21	Email
Airports	Essential facility	State/regional	Columbia County	Sep-19	Shapefile
			Metro RLIS	Aug-16	Shapefile
			Washington Department of Transportation	Unknown	Shapefile
Armories	Essential facility	City/county	Columbia County	Sep-19	Shapefile
			Washington County	Oct-19	Geodatabase
Boat ramps	Critical infrastructure	City/county	Oregon Geospatial Enterprise Office	Unknown	Shapefile
Bridges	Reference	n/a	Clackamas County	Nov-19	Shapefile
			Clackamas County	Nov-19	Shapefile
			Clark County	Jan-20	Geodatabase
			Metro	Oct-19	Shapefile
			Portland Bureau of Transportation	Oct-19	Geodatabase
			Washington County	Oct-19	Geodatabase
			Washington Department of Transportation	Unknown	Geodatabase
Bridges (including seismic vulnerability)	Analysis	n/a	Oregon Department of Transportation	Oct-19	Shapefile
City limits	Reference	n/a	Metro RLIS	Apr-20	Shapefile
Community centers	Essential facility	Community / neighborhood	City of Gresham	Jan-19	Address
			Metro RLIS	Oct-18	Shapefile
			Portland Bureau of Transportation	Oct-19	Geodatabase

Theme	Type / Use	Essential Facility / Critical Infrastructure Category	Data Provider	Date Acquired / Published	Format
Debris tonnage (seismic induced)	Reference	n/a	Oregon Department of Geology and Mineral Industries	Oct-19	Geodatabase
Emergency operations centers	Essential facility	City/county; state/regional	City of Gresham	Jan-20	Email
			City of Portland	Nov-19	Shapefile
			Clackamas County	Nov-19	Shapefile
			Clark County	Nov-19	Email
			Port of Portland	Oct-19	Email
			Trimet	Nov-19	Spreadsheet, shapefile
			Washington County	Jan-20	Email
			Washington Department of Transportation	Nov-20	Email
Fairgrounds	Essential facility	State/regional	Google maps	Oct-20	Address
Fire and rescue	Essential facility	City/county	Columbia County	Nov-19	Shapefile
			Washington County	Oct-19	Geodatabase
Flood hazards	Analysis	n/a	Federal Emergency Management Agency	Jul-19	Shapefile
Fuel retail	Critical infrastructure	City/county	CNA	Dec-20	Geodatabase
Fuel storage	Critical infrastructure	State/regional	CNA	Dec-20	Geodatabase
Health care clinics	Essential facility	City/county	Columbia County	Sep-19	Shapefile
			Washington County	Oct-19	Geodatabase
Highways	Reference	n/a	Oregon Geospatial Enterprise Office	Oct-18	Geodatabase
Highways (STRAHNET)	Reference	n/a	Metro	Nov-19	Shapefile
Hospitals	Essential facility	State/regional	Metro RLIS	Nov-18	Shapefile
			Oregon Geospatial Enterprise Office	Jan-14	Geodatabase
			Washington Geospatial Data Open Portal	Oct-19	Shapefile

Theme	Type / Use	Essential Facility / Critical Infrastructure Category	Data Provider	Date Acquired / Published	Format
Landslide deposits	Analysis	n/a	Oregon Department of Geology and Mineral Industries	Dec-19	Geodatabase
			Washington Department of Natural Resources	Sep-19	Shapefile
Landslide scarps	Analysis	n/a	Oregon Department of Geology and Mineral Industries	Dec-19	Geodatabase
Landslide susceptibility	Analysis	n/a	Oregon Department of Geology and Mineral Industries	Jan-19	Geodatabase
			Washington Department of Natural Resources	Sep-19	Shapefile
Liquefaction susceptibility	Analysis	n/a	Oregon Department of Geology and Mineral Industries	Oct-19	Geodatabase
			Washington Department of Natural Resources	May-20	Map package
Marine facilities	Critical infrastructure	State/regional	Metro	May-19	Shapefile
Marine terminals	Critical infrastructure	State/regional	Columbia County	Oct-19	Shapefile
			Port of Vancouver	Nov-19	PDF
Natural areas	Essential facility	Community / neighborhood	Metro RLIS	Oct-19	Shapefile
Parks	Essential facility	Community / neighborhood	Clark County	Unknown	Shapefile
			Columbia County	Sep-19	Shapefile
			Portland Bureau of Transportation	Oct-19	Geodatabase
Police	Essential facility	City/county	City of Gresham	Jan-20	Email
			Port of Portland	Oct-19	Email
			Washington County Consolidated Communications Agency	Jan-20	Shapefile
Population	Analysis	n/a	Metro	May-20	Shapefile

Theme	Type / Use	Essential Facility / Critical Infrastructure Category	Data Provider	Date Acquired / Published	Format
Public works facilities	Essential facility	City/county; state/regional	City of Gresham	Jan-20	Email
			Clackamas County	Dec-19	Shapefile
			Clark County	Jan-20	Geodatabase
			Columbia County	Sep-19	Shapefile
			Multnomah County	Mar-21	Email
			Port of Portland	Nov-19	Shapefile
			Port of Vancouver	Nov-19	PDF
			Portland Water Bureau	Dec-19	Spreadsheet
			Washington County	Oct-19	Geodatabase
Rail	Reference	n/a	Columbia County	Sep-19	Shapefile
			Metro RLIS	Jul-18	Geodatabase
			Washington County	Oct-19	Geodatabase
Railyards	Reference	State/regional	Metro	Nov-19	Shapefile
Regional disaster debris management sites	Essential facility	State/regional	Metro	Jan-20	Shapefile, PDF
Regional emergency transportation routes (1996)	Routes	n/a	Metro	Sep-19	Layer package, shapefile
Regional emergency transportation routes (2005)	Routes	n/a	Metro	Sep-19	Layer package, shapefile
Regional emergency transportation routes (2021)	Routes	n/a	Clackamas County	Jun-19	Geodatabase
			Clark County	Oct-19	Email
			Columbia County	Sep-19	Shapefile
			Multnomah County	Sep-19	Shapefile
			Portland Bureau of Transportation	Oct-19	Geodatabase
			Washington County	Oct-19	Email
			Washington County	Oct-19	Geodatabase
Regional solid waste facilities	Essential facility	State/regional	Metro	Mar-21	Shapefile

Theme	Type / Use	Essential Facility / Critical Infrastructure Category	Data Provider	Date Acquired / Published	Format
Schools	Essential facility	Community / neighborhood	Columbia County	Sep-19	Shapefile
			Portland Bureau of Transportation	Oct-19	Geodatabase
			Washington Geospatial Data Open Portal	Oct-19	Shapefile
Shelters	Essential facility	Community / neighborhood	Federal Emergency Management Agency	Oct-20	Google KMZ
State seismic lifeline routes	Reference	n/a	Oregon Department of Transportation	Oct-19	Shapefile
Streets	Reference	n/a	Clark County	Nov-19	Shapefile
			Columbia County	Sep-19	Shapefile
			Metro RLIS	Oct-19	Shapefile
Transit centers	Critical infrastructure	City/county	Trimet	Nov-19	Spreadsheet, shapefile
			Washington Department of Transportation	Nov-19	Shapefile
Transit facilities	Essential facility	State/regional	Trimet	Nov-19	Spreadsheet, shapefile
Unreinforced masonry buildings	Reference	n/a	City of Portland (Open Data Hub)	Feb-20	Shapefile
Urban growth boundaries	Reference	n/a	Metro RLIS	Oct-19	Shapefile
Vulnerable populations	Analysis	n/a	Metro	Oct-19	Geodatabase

Table 2. Summary of GIS data compiled from stakeholders and public sources and deferred for use in future phases

Theme	Data Provider	Date Acquired / Published	Format
Average daily traffic	City of Gresham	Feb-20	Shapefile
	City of Portland	Apr-20	
	Clackamas County	Jan-20	Shapefile
	Clark County	Feb-20	Access, shapefile
	Columbia County	Jan-20	Shapefile
	Multnomah County	Sep-19	Shapefile
	Port of Portland	Oct-19	PDF
	Washington County	Oct-19	Geodatabase
Bike routes	Metro	Oct-19	Geodatabase
	Metro RLIS	Oct-18	Shapefile
	Multnomah County	Sep-19	Shapefile
	Port of Portland	Oct-19	PDF
	Portland Bureau of Transportation	Oct-19	Geodatabase
Bus routes	Columbia County	Apr-20	Shapefile
	Trimet	Oct-19	Shapefile
	Washington County	Oct-19	Geodatabase
Churches	Columbia County	Sep-19	Shapefile
	Washington County	Oct-19	Geodatabase
Freight routes	Metro	Oct-19	PDF, shapefile
	Multnomah County	Sep-19	Shapefile
	Washington Department of Transportation	Aug-19	PDF
Light rail	Washington County	Oct-19	Geodatabase
Public land ownership	Bureau of Land Management	Oct-18	Geodatabase
Sand piles	Portland Bureau of Transportation	Oct-19	Geodatabase
Snow routes	Clark County	Nov-19	Geodatabase, PDF
Trails	Clark County	Unknown	Shapefile
	Metro RLIS	Oct-19	Shapefile

Datasets included are DOGAMI’s seismic impact study results, cadastral boundaries (states, counties, cities, urban growth boundaries), ownership (public lands), demographics (underserved and vulnerable populations), critical emergency or

community facilities (police stations, fire stations, emergency operations centers [EOCs], parks, schools, hospitals, etc.), transportation features (state seismic lifeline routes, roads, bridges, bike routes, transit centers, bus stops, bus routes, trails, rail, freight routes, throughways, and pedestrian routes), transportation facilities, geology and soils, seismic hazards (shaking and landslides), flood hazard areas and floodplains, and emergency response layers (i.e., locations where emergency equipment are stored).

This project resulted in a large amount of aggregated data, both existing data as well as derived through subsequent analysis. All data were securely managed and curated with redundant back-ups.

2.2.2 DATA COMPILATION

The GIS data were then compiled thematically in a file geodatabase in ArcCatalog (Figure 1). Therefore, shapefiles were exported as feature classes into the appropriate thematic feature dataset. Some datasets with multiple types of features were split across thematic datasets. For example, police stations may have been extracted from a file of all government buildings. In some files, features were individually reviewed and attributed with facility type and category before being split and organized thematically. Some data files were post-processed to extract optimal values. For example, Clark County Average Daily Traffic (ADT) was received as a shapefile with numerous associated tables. The Count tables contained all past ADT records for the 625 intersections, yielding over 3,400 records. These were reduced in Excel using conditional statements before joining to the spatial data so that only the most recent data for any given intersection is shown. City of Portland data also included numerous features for any given intersection and were therefore processed in Excel, after selecting the desired traffic types.

All data were projected to a common coordinate system, specifically Oregon State Plane HARN NAD83, International Feet, the coordinate system used by the City of Portland and Metro. The vertical datum assigned was North American Vertical Datum (NAVD) 1988.

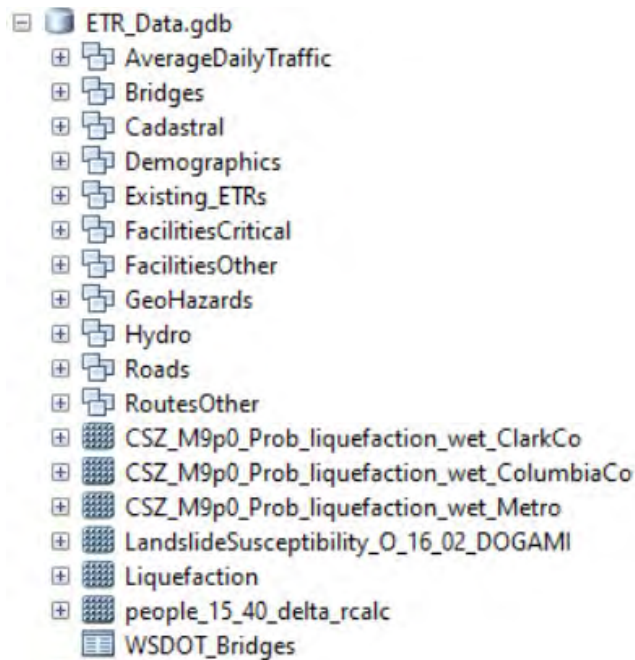


Figure 1. The source data organized thematically in an Esri file geodatabase.

2.2.3 DATA CONSOLIDATION

Related features were then consolidated into single, consistent master layers following the Regional ETR framework criteria. State/regional level critical infrastructure and essential facilities were combined into a single Category 1 EOC layer for each theme (e.g., emergency operation centers). The same was done for city/county level (Category 2) and community/neighborhood level (Category 3) themes.

A series of models were developed in ArcGIS ModelBuilder to facilitate the merging of these layers. In addition to *Merge*, other tools used within the models include *Select*, *Clip*, *Feature to Point*, *Mosaic to New Raster*, and *Dissolve*, predominantly from the Analysis and Data Management toolboxes. Limited field mapping was performed within the *Merge* tool parameters where appropriate. The extensive number of datasets (with thousands of attribute columns) precluded field mapping every attribute.

The ADT model used conditional if/else statements written in Python to populate a single ADT field (representing the most recent total ADT counts) drawing from

numerous input columns in the Clark County layer to limit null and zero values. Remaining null and zero values were removed. The City of Portland ADT weekend and weekday traffic types were used. Types such as *covid test* and *bike only* were not used.

Roads were merged into a complete coverage for the study area. Inputs included Metro's "Streets", Columbia County's "Streets" and Clark County's "Roads". The "LocalID" field was field mapped using the "LocalID" attributes in both of the Oregon layers and the "RoadsID" attribute from the Clark County layer.

Parks (from stakeholder data) and the parks and natural areas features from Metro's Outdoor Recreation and Conservation Areas layer were combined. A public lands layer was created using library data curated in-house to be included as part of the basemap as needed.

Geohazard data consisted of liquefaction susceptibility, landslide susceptibility hazard, landslide inventories, loss estimates (debris tonnage), and unreinforced masonry buildings. Classified liquefaction susceptibility from two of DOGAMI's studies were used: OFR O-19-09¹ and OFR O-20-01². The latter study is a risk assessment and did not result in a published liquefaction susceptibility product³. Liquefaction susceptibility in Clark County was an intermediate product however and though it remains unpublished it is a significant improvement on the latest published data for the county, a 2004 Washington Department of Natural Resources (WA DNR)⁴ data

¹ "Coseismic landslide susceptibility, liquefaction susceptibility, and soil amplification class maps, Clackamas, Columbia, Multnomah, and Washington Counties, Oregon: For use in Hazus: FEMA's methodology for estimating potential losses from disasters." By Christina A. Appleby, William J. Burns, Robert W. Hairston-Porter, and John M. Bauer. Oregon Department of Geology and Mineral Industries Open-File Report O-19-09. 2019.

² "Probability of Permanent Ground Deformation due to liquefaction, Cascadia Subduction Zone Magnitude 9.0 Earthquake, Wet Soil Conditions, for Clark County, Washington." By John M. Bauer, Recep Cakir, Corina Allen, Kate Mickelson, Trevor Contreras, Robert Hairston-Porter, and Yumei Wang. Oregon Department of Geology and Mineral Industries Open-File Report O-20-01. 2020.

³ "Liquefaction_RC2." Shapefile. Intermediate data developed for DOGAMI's Open-File Report O-20-01. Incorporates WA DNR's 2004 liquefaction susceptibility, updated geologic mapping, and updated landslides. WA DNR. 2020.

⁴ "Liquefaction Susceptibility and Site Class Maps of Washington State, By County" by Stephen P. Palmer, Sammantha L. Magsino, Eric L. Bilderback, James L. Poelstra, Derek S. Folger, and Rebecca A. Niggemann. WASHINGTON DIVISION OF GEOLOGY AND EARTH RESOURCES. Open File Report 2004-20. 2004.

layer. Our study therefore used the unpublished 2020 data. The DOGAMI data are classified using a scale from None to High. Washington's data were classified using a different scale from None to Very High and included categories for water and peat. These were merged into a single layer and the liquefaction categories field mapped to a new field. The 2004 layer was reviewed to determine a relative classification for peat. Landslide susceptibility for Oregon was included from DOGAMI's OFR-O-16-02 study⁵, using the raster classified from Low to Very High. Landslide susceptibility has been mapped for only a small area of southeast Clark County by WA DNR in 2019⁶ and was not used for resilience analysis due to its limited and inconsistent coverage. Landslide inventory polygons were compiled from DOGAMI's SLIDO 4.0⁷, DOGAMI's OFR-O-19-09⁸ and WA DNR's unpublished 2017 data⁹ for Clark County. Landslide point data also used SLIDO as well as local data provided by Clackamas County, Washington County, and ODOT. All scarps and scarp flanks are from SLIDO. Debris tonnage was referenced using the neighborhood unit loss estimates from DOGAMI's OFR 18-02^{10,11}

⁵ "Landslide Susceptibility Overview Map of Oregon." By William J. Burns, Katherine A. Mickelson, and Ian P. Madin. In *Landslide susceptibility overview map of Oregon*. Oregon Department of Geology and Mineral Industries Open-File Report O-16-02. 2016.

⁶ "Landslide Inventory Protocol Mapping." By Washington Division of Geology and Earth Resources. Digital Data Series. 2019.

⁷ "Statewide Landslide Information Database for Oregon Release-4.0 (SLIDO R-4.0)." Geodatabase. By Jon J. Franczyk, William J. Burns, and Nancy C. Calhoun. Oregon Department of Geology and Mineral Industries. 2019.

⁸ "Soil Amplification Classes and Landslides Geologic Group for Clackamas, Columbia, Multnomah, and Washington Counties, Oregon." By Christina A. Appleby, William J. Burns, Robert W. Hairston-Porter, and John M. Bauer. In *Coseismic landslide susceptibility, liquefaction susceptibility, and soil amplification class maps, Clackamas, Columbia, Multnomah, and Washington Counties, Oregon: For use in Hazus: FEMA's methodology for estimating potential losses from disasters*. Oregon Department of Geology and Mineral Industries Open-File Report O-19-09. 2019.

⁹ "DRAFT_Clark_County_SLIP_Landslide" Shapefile. By Washington Geological Survey. 2017.

¹⁰ "Neighborhood Units for Clackamas, Multnomah, and Washington Counties, Oregon." Feature class. By John M. Bauer, William J. Burns, and Ian P. Madin. In *Earthquake regional impact analysis for Clackamas, Multnomah, and Washington Counties, Oregon*. Oregon Department of Geology and Mineral Industries Open-File Report O-18-02. 2018.

¹¹ "Loss estimates per Neighborhood Unit, Cascadia Subduction Zone M 9.0 earthquake, wet (saturated) conditions scenario, Clackamas, Multnomah, and Washington Counties, Oregon" File geodatabase table. By John M. Bauer, William J. Burns, and Ian P. Madin. In *Earthquake regional impact analysis for Clackamas, Multnomah, and Washington Counties, Oregon*. Oregon Department of Geology and Mineral Industries Open-File Report O-18-02. 2018.

and OFR O-20-01^{12,13} studies. The loss estimate tables for a Cascadia Subduction Zone wet season scenario were joined to the feature classes and merged into a single layer. Unreinforced masonry was acquired from the City of Portland's open data hub¹⁴.

Flood hazards were evaluated using FEMA's latest National Flood Hazard Layer¹⁵.

Numerous ETRs were provided by stakeholders including Clackamas County, Columbia County, Multnomah County, Washington County, and the Portland Bureau of Transportation (PBOT). Those that were not also Regional ETRs or SSLRs were considered Local ETRs (LETR). The SSLRs consist of ODOT's Lifeline routes¹⁶.

Bridges required additional processing. Nineteen inputs were received, which included point, line and polygon data. These had various levels of precision, accuracy, and attribution. In addition, there were numerous duplicates between inputs. The ODOT and WSDOT bridges were given precedence. A single layer of bridges without duplicates along the Regional ETRs was needed. Most duplicates were not spatially coincident and points were not well aligned with the road features. Manual editing and several GIS tools including *Near*, *Find Identical*, *Buffer*, and *Frequency* were used to remove bridges not located along the routes, remove duplicates, merge the bridges, and attribute with seismic vulnerability. The bridge data received from ODOT¹⁷ contained seismic vulnerability classifications whereas the others did not. Bridges without seismic vulnerability were attributed as "Not Evaluated".

¹² "Neighborhood Units for Columbia County, Oregon, and Clark County, Washington." Feature class. By John M. Bauer, Recep Cakir, Corina Allen, Kate Mickelson, Trevor Contreras, Robert Hairston-Porter, and Yumei Wang In *Earthquake regional impact analysis for Columbia County, Oregon, and Clark County, Washington*. Oregon Department of Geology and Mineral Industries Open-File Report O-20-01. 2020.

¹³ "Loss_Neighborhood_Unit_CSZ_M9p0_wet." File geodatabase table. By John M. Bauer, Recep Cakir, Corina Allen, Kate Mickelson, Trevor Contreras, Robert Hairston-Porter, and Yumei Wang In *Earthquake regional impact analysis for Columbia County, Oregon, and Clark County, Washington*. Oregon Department of Geology and Mineral Industries Open-File Report O-20-01. 2020.

¹⁴ "Unreinforced Masonry (URM) Buildings." City of Portland. 2020.

¹⁵ "Flood Plains (FEMA)." The National Flood Hazard Layer (NFHL). By the Federal Emergency Management Agency (FEMA). 2019.

¹⁶ "SeismicPlus_Routest (sic)". Shapefile of the ODOT Lifelines received October 10, 2019. ODOT.

¹⁷ Local and State bridges for Clackamas, Columbia, Multnomah, and Washington Counties. Eight shapefiles. Received October 10, 2019. ODOT.

These consolidated data layers were organized in an Esri file geodatabase separate from the compiled source data geodatabase (Figure 2). No sensitive information protected under non-disclosure agreements was included in either file geodatabase.

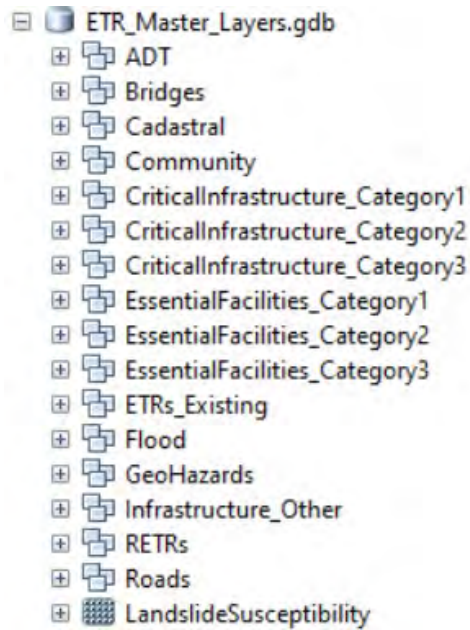


Figure 2. The consolidated GIS layers.

These master data layers can be used for several purposes:

1. As inputs for the analyses to evaluate the updated Regional ETRs,
2. For cartographic efficiency, and
3. To identify remaining data gaps.

2.3 FINAL DATA LAYERS

The resulting data layers were used as reference or in evaluating the Regional ETRs for the five-county study area: ADT, bridges, city limits, UGBs, vulnerable populations, population density, 911 dispatch centers, EOCs, public works, disaster debris management sites, hospitals, fire stations, police stations, sand piles, health clinics, armories, shelters, schools, churches, community centers, airports, fuel storage, marine terminals, marine facilities, railyards, rail, transit centers, boat ramps, light rail, bus routes, bike routes, trails, culverts, tunnels, flood hazard areas, landslide inventory, landslide susceptibility, liquefaction susceptibility, unreinforced masonry buildings, and debris tonnage.

CHAPTER 3: ETR MODELING

3.1 INTRODUCTION

A single base dataset of the most recent ETRs was needed to evaluate proximity to essential facilities, critical infrastructure, and exposure to hazards. The source data included ETRs designated by the Regional Emergency Management Group (REMG) and updated by Metro Data Resource Center (DRC) in GIS in 2005

“Metro_EmergencyTransportationRoutes” shapefile¹, representing the most recent version of ETRs in the region; 1996 ETRs designated by REMG and compiled in GIS by Metro DRC in “etr” shapefile²; Clark County’s “Roads” shapefile³; and Columbia County’s “Streets” shapefile⁴.

Following an initial visual evaluation, additional recommended routes were added to the 1996 and 2005 ETRs dataset, which was used as the backbone to the final data Regional ETR deliverable and therefore needed to be as accurate as possible. The updated Regional ETR layer was then re-evaluated for proximity and hazards. The final Regional ETR layer can be used at a scale of 1:3,000 or smaller.

¹ “Metro_EmergencyTransportationRoutes” Shapefile. Emergency Transportation Routes in Clackamas, Multnomah, & Washington Counties, for use in disaster response and recovery. From July 2005 *Memorandum of Understanding, Emergency Transportation Route Post-Earthquake Damage Assessment and Coordination. Portland, Oregon/ Vancouver, Washington Regional Area*. Misc. Contracts and Agreements ODOT No. 21,273. Metro Data Resource Center. 2005.

² “etr” Shapefile. From Metro Data Resource Center. *Regional Emergency Transportation Routes Report*. Metro Regional Emergency Transportation Routes Task Force. 1996.

³ “Roads” Shapefile available on the Clark County Open Data Hub. Clark County GIS. 2019.

⁴ “Streets” Shapefile. Columbia County GIS. 2019.

3.2 METHODOLOGY

3.2.1 EXISTING REGIONAL ETRs

The first Regional ETR layer was created using a combination of the routes designated by REMG and compiled in GIS in 1996 and 2005, giving precedence to the 2005 routes. In the tri-county Metro area, the 2005 data were used and updated. Because the 2005 routes did not extend into Columbia and Clark counties, they were joined with the relevant routes identified during the 1996 study. In addition, ETRs recently created by DOGAMI⁵ based off the 2005 routes were reviewed and referred to for consistency.

Whereas the 2005 data layer was still mostly accurate, the 1996 polylines had four main issues precluding their use:

1. Roads were misaligned up to 250 feet (Figure 3),
2. Ground conditions in Clark County have changed significantly since 1996 (Figure 4),
3. Highway ramps were not consistently included (Figure 5), and
4. They lacked "LocalID" attribution.

⁵ "Emergency_Transportation_Routes- Potential Impact of a Major Earthquake on Emergency Transportation Routes in Columbia County, Oregon, and Clark County, Washington" Feature class in RDPO_Earthquake_Impact_Analysis_Phase2.gdb. By John M. Bauer, Recep Cakir, Corina Allen, Kate Mickelson, Trevor Contreras, Robert Hairston-Porter, and Yumei Wang. 2020. Oregon Department of Geology and Mineral Industries Open-File Report O-20-01.

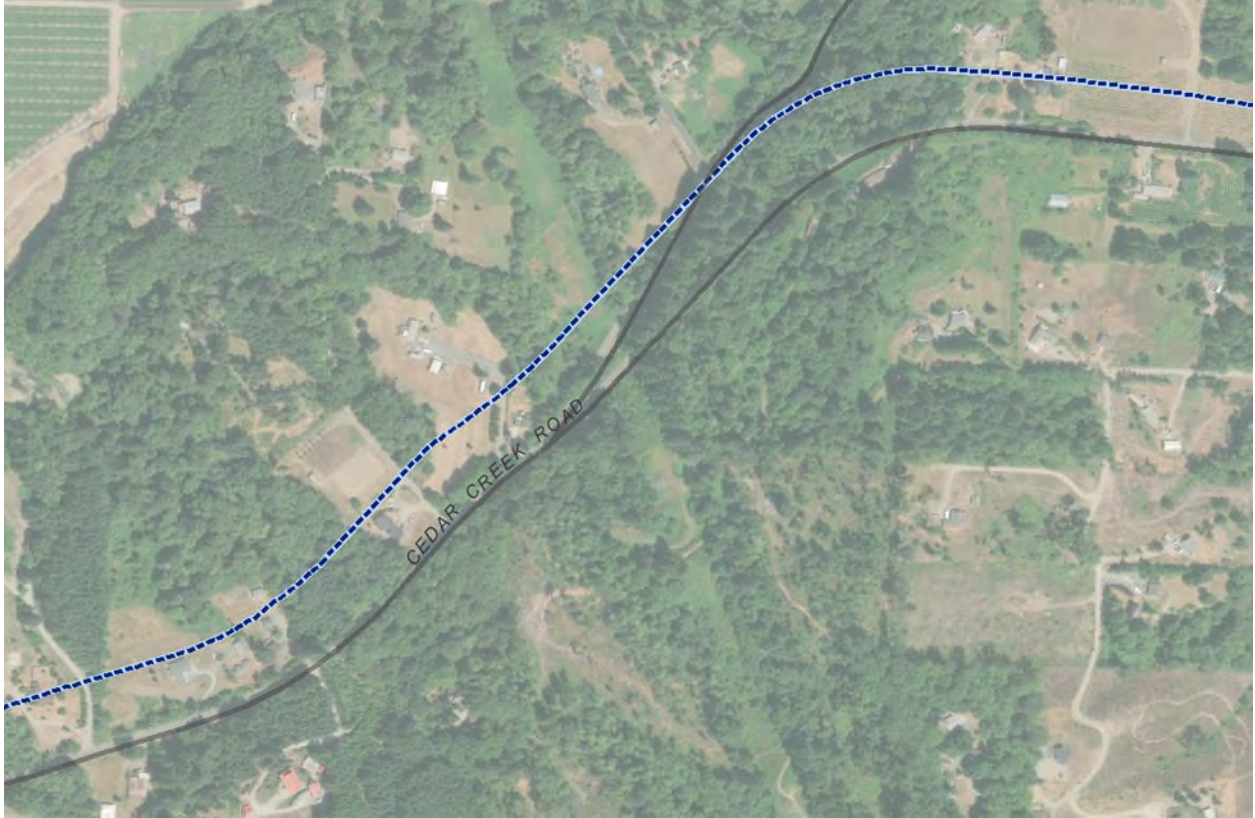


Figure 3. The Hayes Road/Cedar Creek Road 1996 ETR segment (in blue) was misaligned up to 250 feet.



Figure 4. Some Clark County routes in the original 1996 ETRs (in blue) have been significantly realigned, such as Padden Parkway/SR-500.



Figure 5. Road improvements and approaches were incorporated. For example, 72nd Street no longer connects 78th Street and what was 83rd Street. 83rd Street has been replaced by Padden Parkway. In addition, the old ETRs (in blue) did not include highway ramps.

Development of a Baseline Regional ETR Layer

To stage the Regional ETR inputs a model was developed to prepare the roads, clip the 2005 routes, extract the 1996 routes in Clark and Columbia Counties from authoritative road layers, and assign the ETR segment IDs to the Clark and Columbia

routes. The 2005 layer was clipped to the study area extent, keeping river crossings intact, while removing extraneous segments beyond the study area. Road alignments in Clark County have changed significantly since 1996, precluding minor manual edits to the 1996 shapefile and necessitating a fresh start. Therefore, the roads identified in the 1996 ETRs were extracted from the County's 2019 "Roads" layer. These primarily included "Interstate", "Interstate Ramp", "State Route", and "SR Ramp" features as well as a few "Primary Arterials", using a SQL query. The 1996 ETRs were clipped to Clark and Columbia counties. These were then used to spatially join the ETR segment ID numbers to the routes outside of the tri-county Metro area. A copy was made for manual editing. Little has changed in Columbia County, however, roads were misaligned in several locations. Therefore, the Columbia County "Streets" layer was similarly used to extract that county's designated ETRs, using a SQL query to select the highways and other relevant roads and ramps as identified in the 1996 study. These were clipped to the study area, spatially joined with the ETR segment IDs, and a copy was made for manual editing.

Manual editing of each of the three ETR inputs (2005 ETR routes, Columbia County routes, and Clark County routes) consisted of the following:

1. For Clark County, excess segments that resulted from the SQL query were removed, where they extended beyond the designated ETRs.
2. Similarly, excess fragments were removed in Columbia County. For example, parts of Highway 47 that pass through Vernonia are classified as streets (Rose Street and Bridge Street). The portions of these streets pulled out during the SQL query that extended beyond the ETRs were removed.
3. The ETR IDs were edited in Clark and Columbia counties where needed, primarily at ramps since these had no previous counterpart.
4. The 2005 routes were manually edited where necessary to coincide with current road alignments. These changes mainly occurred at interchanges (Figure 6). Road segmentation was updated as well, for example where new intersections have been constructed resulting in new "LocalIDs".
5. The ETR IDs in Clackamas, Multnomah and Washington counties were edited for accuracy.



Figure 6. Highway ramps were updated, such as at this interchange between I-205 and 82nd Avenue. The 2005 ETRs (in red) are overlain on the RLIS Streets network (in blue). Inconsistencies were corrected.

Regional ETR Ownership

Following manual edits to the inputs, additional steps were modeled to assign ownership and to combine the layers into a single coverage. An "OWNER" field was added to the Columbia County layer to maintain consistency with the 2005 layer. Field Calculator was used to attribute the routes with ownership, using ODOT's most recent Oregon Transportation Network roads dataset⁶ for verification. Because the polylines did not align sufficiently with the Columbia County Roads layer, an accurate

⁶ Oregon Transportation Network - 2017" Geodatabase. By Geographic Information Services Unit, Oregon Department of Transportation (ODOT). 2018.

spatial join for ownership attribution was not feasible. The "ROADOWNER" attributes from the ODOT data were used and then formatted to be consistent with the 2005 layer. Python scripts were then written to convert the names to those matching the 2005 attributes. For example, "Oregon Department of Transportation" was replaced with "ODOT" and "Columbia County" was replaced with "COLUMBIA CO."

In Clark County, the Roads layer used to extract the routes also contained jurisdiction information. An OWNER field was added to reclass County information for consistency. After coordination with Clark County GIS staff, a combination of the "JURIS" and "RoadClass" fields was used. Where RoadClass referred to interstates, state routes, or their ramps, these were reclassified using python to "WSDOT". For all other classifications, the city or county jurisdictions in the JURIS field were used, populating the new "OWNER" field.

The process described above provided a baseline of ownership information that was known to be inaccurate for some Regional ETRs. In January 2021 a table of information was provided to stakeholders for their review and the ownership field was updated based on their feedback.

Regional ETR Road Classifications

The 2005 ETRs lacked road classifications. Therefore, the RLIS Streets were used to assign this information with the spatial join tool (using the SHARE_A_LINE_SEGMENT_WITH match option) and the *Transfer Attributes* tool. RLIS Streets uses a code in the Type field, rather than a text string. A "ROAD_CLASS" field was added to the ETR dataset. Field Calculator was used to populate it with the Type code and Python scripts were written to replace the Type number with the road classification text string, as detailed in the RLIS metadata. For example, value 1110 equates to "Freeway;" value 1120 equates to "Ramps for freeways, interchanges and feeders."

Regional ETR Route Connectivity

The *Snap* tool was then used to snap the routes together to ensure connectivity (Figure 7). These were then merged into a single dataset, using field mapping to

correlate fields across inputs⁷. Field Calculator and Python were again used to format fields for consistency, such as to convert text to upper case. A new field was added for "COUNTY". The counties were then spatially joined. "STATE" was populated as well. Extraneous fields were deleted with the *Delete Field* tool and a copy was created and stored in the project geodatabase.

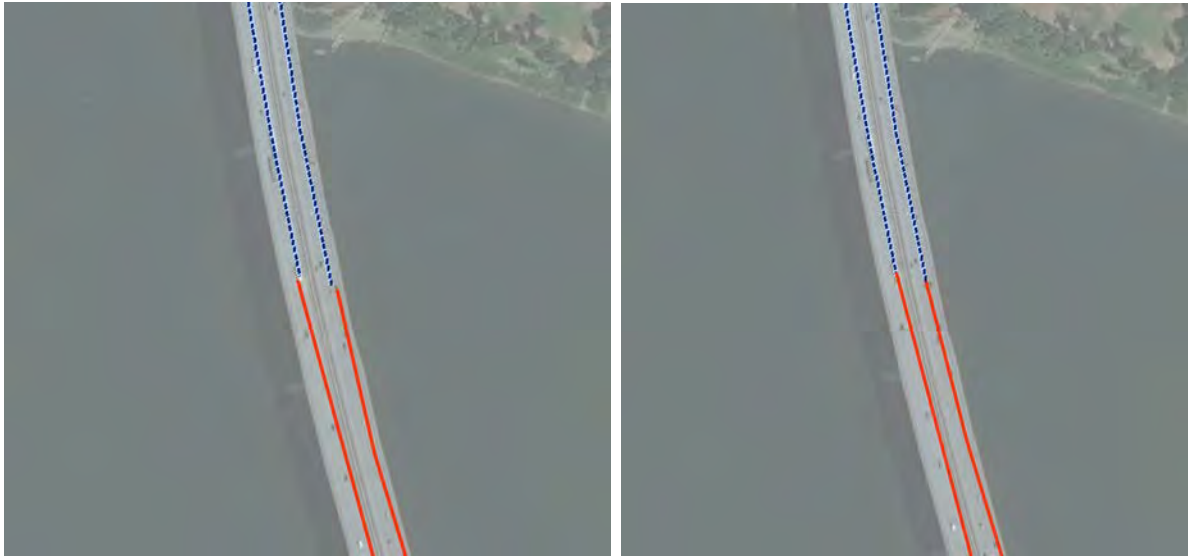


Figure 7. The 2005 routes (in red) were snapped to the Clark County routes (in blue) to ensure connectivity. Scale 1:2,000.

The attribute table was exported to Excel where the route names, from, and to fields were standardized for Clark and Columbia counties. This was then joined back to the spatial data. The refined Regional ETR layer was reviewed for QA/QC using visual and tabular checks including identifying duplicates (*Find Identical*) and mismatches (*Dissolve and Transfer Attributes*). The attributes are shown in Figure 8.

⁷ The Columbia County roads data contained no road classifications.

ROUTENAME	ETR_ID_2005	ETR_ID_2020	ROUTE_FROM	ROUTE_TO	VERSION	ROUTE_TYPE	TOTAL_ROUTE_LENGTH
162nd / 164th Ave	60	R-X-243-00-162nd_164th	SR-14	Ward Rd	2005	Primary	35271.428883
SE 182nd Ave	55	R-X-209-00-182nd	SE Powell Blvd	E Burnside Rd	2005	Primary	11574.7655
232nd Ave	2	R-X-157-00-232nd	HWY 224	HWY 212	2005	Primary	10005.600279
242nd Ave / Hogan Rd / 238th Dr	3	R-X-201-00-242nd_Hogan_238th	HWY 212	I-84	2005	Primary	48836.718032
7th Ave	8	R-X-139-00-7th	Washington St	Molalla Ave	2005	Primary	2694.412237
82nd Ave	22	R-X-193-01-82nd	SE Clatsop St	NE Holman St	2005	Primary	48198.6343
82nd Ave	24	R-X-193-02-82nd	NE Alderwood	NE Airport Way	2005	Primary	3706.948812
Amisigger Rd / Kelso Rd / Richey Rd	100	R-X-159-00-Amisigger_Kelso_Richey	HWY 224	HWY 212	2005	Primary	18353.808888
Aplary Rd	83	R-X-109-00-Apirary	HWY 30	HWY 47	2005	Primary	109263.608288
Arndt Rd / Airport Rd / Barlow Rd	102	R-X-129-00-Armdt_Airport_Barlow	99E	I-5	2005	Primary	24362.296332
Beavercreek Rd	5	R-X-149-00-Beavercreek	HWY 213	HWY 211	2005	Primary	80084.841178
Brookwood Parkway	61	R-X-115-01-Brookwood	HWY 26	Shute Rd	2005	Primary	11446.491288
Brookwood Parkway	91	R-X-115-02-Brookwood	Cornell Rd	Shute Rd	2005	Primary	15058.436445
Burnside Brg	1	R-X-154-01-Burnside	Brg	Brg	2005	Primary	1415.628901

Figure 8. The attribute table of the Regional ETR layer.

Revisions to Baseline Regional ETRs

Additional routes beyond the 1996 and 2005 inputs then needed to be added to the Regional ETR layer before beginning the spatial analysis evaluation. After internal and stakeholder review, several routes were manually added. The Regional ETR layer was dissolved by “ETR ID”, “ROUTE_FROM” and “ROUTE_TO” to create a layer of route segments. New routes were added to this dissolved route segment layer. These included ETR routes received from Clackamas County⁸, Multnomah County^{9,10}, Washington County^{11,12}, and PBOT¹³ during initial data gathering and additional routes identified during subsequent jurisdiction-specific meetings held in summer 2020.

Using the stakeholder-provided data to the extent possible, routes were added using a combination of edit and merge tools. Each input had different schema and levels of precision and accuracy. All routes were individually cross-checked and edited to align with the RLIS Streets layer to facilitate “LocalID” attribution and because the RLIS Streets layer has the most accurate road alignments. The From and To attributes were manually entered in addition to a “ROUTE_TYPE” attribute that identified whether

⁸ “ClackamasETRs” Feature class received June 18, 2019. Clackamas County.

⁹ “MultcoETRs” Shapefile received September 16, 2019. Multnomah County.

¹⁰ “MultnomahCountyProposedSeismicETR” Shapefile received June 4, 2020. Multnomah County.

¹¹ “ETR” Feature class received October 25, 2019. Washington County.

¹² “SeismicResiliencyRoute_WashCo” Feature class received October 25, 2019. Washington County.

¹³ “tsp_etr_coverage” Geodatabase of four feature classes received October 15, 2019.

routes were primary or alternate (i.e. detours around vulnerable bridges). The “Primary” and “Alternate” terms were already in use by Clackamas County and were therefore adopted for this study.

Establishing a Regional ETR Route Identification Naming Convention

During the first phase of evaluation, it was determined that a consistent naming convention should be developed to help with route evaluation, identification, and use. With direction from the work group, the team developed a naming convention that provides consistency, as well as the ability to add and update routes during future phases of work and update cycles. The route identification convention is (S/R/L)-#-XXX-00-RouteName, where:

- The S/R/L term designates whether it is a State, Regional, or Local route
- The # term will be the route tier as designated by ODOT or by the region and localities in future phases of work
- Each route has a three-digit number XXX assigned to it as an ID that reflects the location and direction of the route. Routes with an odd ID are north/south routes and those with even IDs run east/west. These numbers currently run between 100 and 271 for the updated route segments.
- The 00 term indicates if a route has segments. Route 101-01 and 101-02 connect to make route 101. Routes with “00” only have one segment.
- The RouteName reflects the road name(s) that make up the ETR.

Handling of Oregon State Seismic Lifeline Routes

The Oregon SSLRs were removed from the Regional ETR layer, to be consistent with the various ETR definitions (i.e. SSLRs vs RETRs vs LETRs). On-ramps and off-ramps were carefully evaluated. Practical connectivity of Regional ETRs to Oregon SSLRs was ensured, however, GIS network connectivity was not always established due to the complication of incorporating on- and off-ramps consistent with route naming conventions.

Final Regional ETR Segments

The Regional ETRs originally had 122 segments. Following the removal of the Oregon SSLRs and several other existing routes (Table 3) and the addition of the new routes (Table 3), the Regional ETRs had 191 route segments for final evaluation.

Table 3. Summary of Regional ETRs removed from 1996/2005 baseline

Route Name and Segment	Jurisdiction(s)
Regional ETRs	
Wildcat Mountain Drive	Clackamas County
Eagle Fern Road	Clackamas County
NE 78 th Street (re-aligned to Padden Parkway)	Clark County, City of Vancouver
NE 83 rd Street (re-aligned to Padden Parkway)	City of Vancouver
State Route 502 or NE 10 th Avenue (I-5 bypass between exits 9 and 11)	Clark County
I-5 Columbia River Bridge	Multnomah County, Clark County, Portland, Vancouver
I-205 Columbia River Bridge	Multnomah County, Clark County, Vancouver
Oregon SSLRs	
I-5	Clackamas County, Multnomah County, Washington County, Portland, Tigard, Tualatin, Wilsonville
I-205	Clackamas County, Multnomah County, Washington County, Gladstone, Maywood Park, Oregon City, Portland, Tualatin, West Linn
I-405	Multnomah County, Portland
I-84	Multnomah County, Fairview, Gresham, Portland, Troutdale, Wood Village
US Highway 26	Clackamas County, Columbia County, Multnomah County, Washington County, Beaverton, Hillsboro, Portland, Sandy
US Highway 30	Columbia County, Multnomah County, Clatskanie, Columbia City, Portland, Rainier, Scappoose, St. Helens
State Highway 212	Clackamas County, Happy Valley
State Highway 217	Washington County, Beaverton, Tigard
State Highway 43	Clackamas County, Multnomah County, Lake Oswego, Portland, West Linn
State Highway 99E	Clackamas County, Canby, Oregon City
State Highway 99W	Multnomah County, Washington County, Portland, Sherwood, Tigard, Tualatin

Table 3. Summary of Regional ETRs added to 1996/2005 baseline

Route Name and Segment	Jurisdiction(s)
SE Firwood Road	Clackamas County
SE Kelso Road	Clackamas County
S Fellows Road	Clackamas County
S Unger Road	Clackamas County
S Lower Highland Road / Ridge Road	Clackamas County
S Carus Road / Mulino Road	Clackamas County, Canby
S New Era Road / Penman Road	Clackamas County
S Central Point Road	Clackamas County, Oregon City
S Lone Elder Road	Clackamas County
S Barlow Road	Clackamas County
S Barnards Road	Clackamas County
Wilsonville Road	Clackamas County, Wilsonville
SW Stafford Road	Clackamas County, Wilsonville
SW Roy Rogers / Tualatin Sherwood Rd / Elligsen Rd	Clackamas County, Washington County, Wilsonville, Tualatin, Sherwood, Tigard
SW 65th / SW Nyberg St / Tualatin Sherwood Rd	Clackamas County, Washington County, Tualatin
Kruse Way / Boones Ferry / Country Club	Clackamas County, Lake Oswego
S Holcomb Boulevard / Bradley Road	Clackamas County, Oregon City
S Hattan Road	Clackamas County
State Highway 224	Clackamas County, Happy Valley
SE 172 nd Avenue	Clackamas County, Happy Valley
Sunnyside Road	Clackamas County
SW Highland / 190 th Drive / Tillstrom Road	Clackamas County, Multnomah County, Happy Valley, Gresham
SE Stark Street	Multnomah County, Gresham, Troutdale
257 th / Kane Drive	Multnomah County, Gresham, Troutdale
NE 223rd Ave	Multnomah County, Fairview
NE Fairview Parkway / Glisan Street / 223 rd Avenue	Multnomah County, Gresham, Fairview
SE 112 th Avenue / SE Cherry Blossom Drive	Multnomah County, Portland
SE Flavel Street	Multnomah County, Portland
Rocky Butte	Multnomah County, Portland
SE Woodstock Boulevard	Multnomah County, Portland
SE Gideon	Multnomah County, Portland
SE 17 th Avenue / SE Holgate Blvd	Multnomah County, Portland

Route Name and Segment	Jurisdiction(s)
SE Hawthorne Boulevard	Multnomah County, Portland
Sellwood Bridge / Tacoma Street	Multnomah County, Portland
NE Glisan Street	Multnomah County, Portland
NE Broadway / NE Weidler Street	Multnomah County, Portland
NE Cully Boulevard	Multnomah County, Portland
NE 42 nd Avenue	Multnomah County, Portland
NE 15 th Avenue	Multnomah County, Portland
NE Killingsworth Street	Multnomah County, Portland
NE Dekum Street	Multnomah County, Portland
NE Lombard Street	Multnomah County, Portland
NE 47 th / Cornfoot Road / Airtrans Way	Multnomah County, Portland
NE 33 rd Drive	Multnomah County, Portland
Vancouver Avenue	Multnomah County, Portland
Delta Park	Multnomah County, Portland
Swan Island	Multnomah County, Portland
N Albina Avenue / N Mississippi Avenue	Multnomah County, Portland
N Chautauqua Boulevard	Multnomah County, Portland
NW Front Avenue	Multnomah County, Portland
Tilikum Crossing	Multnomah County, Portland
SW Moody Avenue	Multnomah County, Portland
Aerial Tram	Multnomah County, Portland
SW Broadway / Terwilliger Boulevard	Multnomah County, Portland
SW Murray Street	Multnomah County, Portland
NW Vaughn Street / NW 23 rd Avenue	Multnomah County, Portland
SW Dewitt Street	Multnomah County, Portland
SW Capitol Highway	Multnomah County, Portland
SW Taylors Ferry Road	Multnomah County, Portland
SW Terwilliger Boulevard	Multnomah County, Portland
Dolph Court	Multnomah County, Portland
SW 45 th Avenue / Vermont Street	Multnomah County, Portland
SW 26 th Avenue	Multnomah County, Portland
SW 40 th Avenue	Multnomah County, Portland
SW Allen Road / Garden Home Road / Multnomah Boulevard	Multnomah County, Washington County, Portland, Beaverton
NW Cornell / Barnes Road	Washington County, Beaverton
SW Merlo Rd / SW Jenkins Rd	Washington County, Beaverton
Fern Hill / Spring Hill Road / Gaston Road	Washington County, Gaston, Forest Grove

Route Name and Segment	Jurisdiction(s)
Timber / Gales Creek Road	Washington County, Forest Grove
Greenville / Kansas City / Kemper Road	Washington County
Washougal River Road / Evergreen Way	Clark County, Washougal
192 nd Avenue	Clark County, Vancouver
NE 18 th Street	Clark County, Vancouver
136 th / 137 th	Clark County, Vancouver
Andersen Road	Clark County, Vancouver
Fourth Plain Boulevard	Clark County, Vancouver
Fruit Valley / Fourth Plain Boulevard	Clark County, Vancouver
Lakeshore / Fruit Valley / 39 th / 78 th	Clark County, Vancouver
Main Street / Highway 99	Clark County, Vancouver

3.2.2 SPATIAL ANALYSIS

The Regional ETR segment layer was used as the input for spatial analyses. The evaluation was broken into three parts, and therefore three modeling efforts. These include a proximity analysis, a resilience analysis, and a community and equity analysis. All results were exported to Excel spreadsheets and provided to the team for further analysis.

Critical Infrastructure/Essential Facilities Proximity Analysis

Model inputs included the consolidated facilities and infrastructure layers (see Table 1) plus a dissolved buffer of one quarter-mile on both sides of the Regional ETRs (Figure 9). The study area was first used to clip the boat ramps and trails to the five-county region. A batched spatial join was then utilized for each of the six categories (i.e., Categories 1-3 of both critical infrastructure and essential facilities). The spatial join, as opposed to a clip function, preserved all features in the output regardless of whether they were in or out of the buffer, attributing them with their relationship to the buffer, thereby facilitating the percentage calculation of those within the buffer. The study area feature class, which was attributed with county, was again used to attribute the Regional ETR segments with county. The Near tool was used to calculate the distance between the city limits to the nearest Regional ETR. Each of these calculations were then tabulated in a spreadsheet.

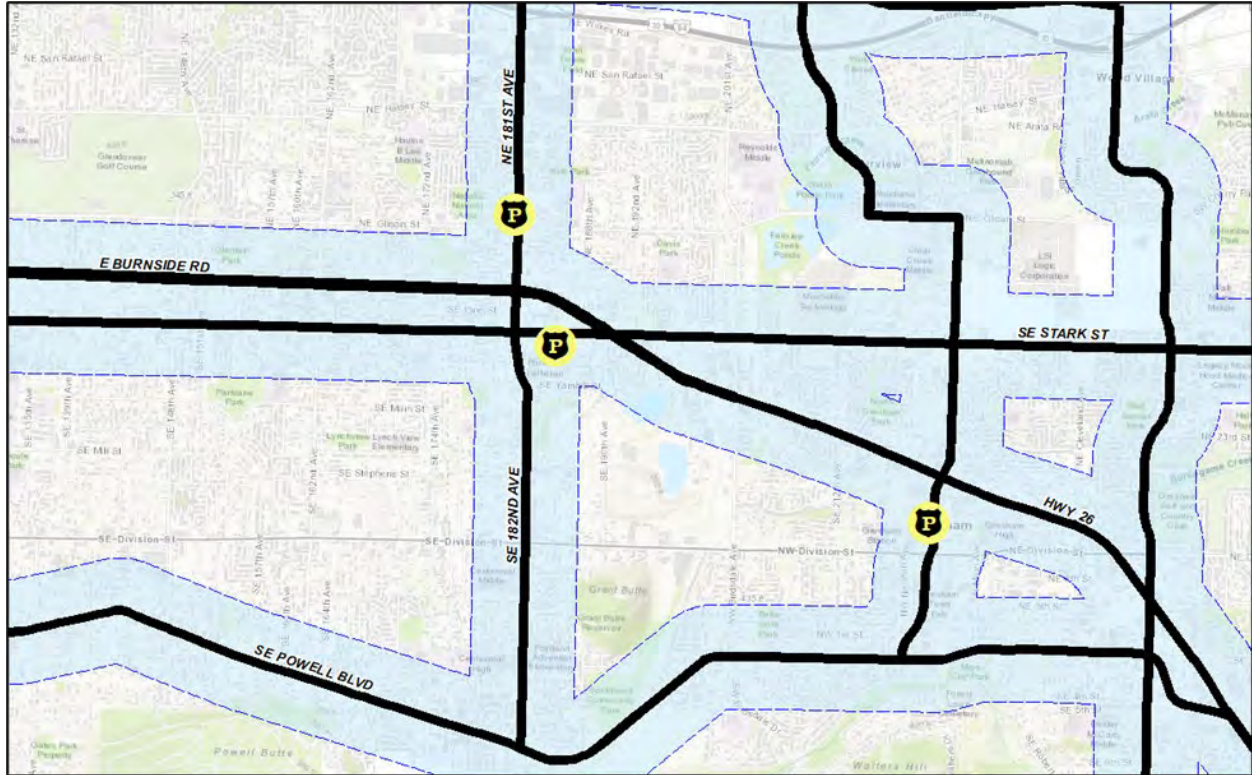


Figure 9. Police stations within the quarter-mile buffer.

Resilience Analysis

The hazards data (geohazards and flood) were used as inputs for the resilience analysis. Landslide susceptibility was converted from raster to polygons. Liquefaction susceptibility, landslide susceptibility, landslide inventory, and flood hazard areas were then joined with the Regional ETR segments using the *Identity* tool (Figure 10). Results were dissolved by classification. An Alteryx workflow was used to calculate the percentage of the classifications along each route. The tables were exported from Alteryx to spreadsheets.

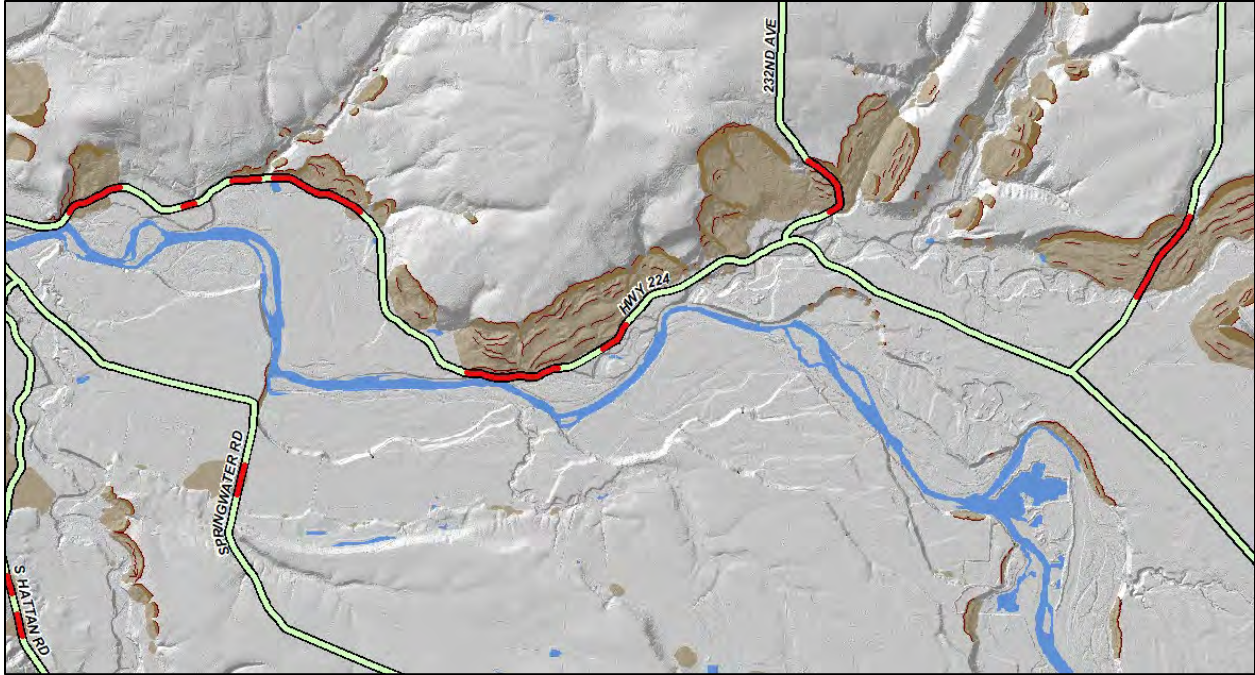


Figure 10. The percentage of hazards on each route segment was calculated using GIS tools. Landslide inventory is shown above. The red sections overlap with the hazard.

Community and Equity Analysis

To determine how well Regional ETRs provide emergency access to vulnerable populations, Metro mapped concentrations of vulnerable populations and identified “equity focus areas” using the U.S. Census Bureau’s American Community Survey (ACS) 5-Year Estimates (2013-2017). Population indicator data (see list below) were geographically aggregated to Census tracts. To determine vulnerable population concentrations, the average percent population for each indicator was calculated for the five-county study area and then Census tracts were flagged where the percent population exceeded the study area average. Six population indicators were used to identify vulnerable populations:

- People of color (POC)¹⁴

¹⁴ People of color are identified as Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, some other race, two or more races, and any race combined with Hispanic or Latino ethnicity.

- Under the age of 18
- Over the age of 65
- Households with no vehicle
- Limited English proficiency (LEP)
- Low income (household income equal to or less than 200% of the Federal poverty level [2016 adjusted for household size])

Due to significant margins of error in the ACS data, the analysis was not able to account for people with disabilities. This should be addressed in future phases of work.

Metro also prepared a GIS data layer called “equity focus areas” (EFAs) to evaluate access to concentrations of POC, LEP, and low income households. EFAs are Census block groups (sub-units of Census tracts) with a population density that exceeds the study area average and are located within Census tracts flagged with any of three specific vulnerable population indicators - POC, LEP, or low income households.

A simple proximity analysis in ArcGIS was used to confirm connectivity of all Regional ETRs to any Census tracts flagged as having concentrations of any vulnerable populations (e.g., six indicators above) and all Census block groups flagged as EFAs.

3.3 LIMITATIONS AND DATA GAPS

This process revealed several gaps in data coverage, including:

- Churches (outside Columbia and Washington Counties);
- Sand piles (outside City of Portland);
- Updated liquefaction susceptibility for Clark County (most recent published, data are from 2004; this study uses unpublished 2020 data);
- Landslide susceptibility for Clark County (only partial 2018 coverage exists);
- Road characteristics (e.g., number of lanes, access management, pavement width, signalized intersections);
- Seismic vulnerability for local Oregon bridges (other than those evaluated by ODOT), including single span bridges;

- Seismic vulnerability for state and local Washington bridges and on- and off-ramps for Oregon Statewide Seismic Lifeline Routes (SSLRs);
- and the equivalent of SSLRs for Washington.

Several data and analysis limitations should also be highlighted, including:

- Resilience analyses relies on the intersection of Regional ETRs with hazard layers. In the case of landslide deposits and scarps this does not account for future risk, such as an ETR that does not intersect a landslide deposit but is downslope from it. For this reason, it is important to also consider landslide susceptibility along Regional ETRs.
- Community and equity analyses relies on U.S. Census American Community Survey estimates, which are known to be less accurate in rural Census tracts. Future phases of work will incorporate updated social vulnerability data developed through the RDPO/Metro social vulnerability tool project, currently underway.
- Route ownership and road characteristics were not available consistently throughout the study area. Additional coordination with transportation agencies in future phases of work is needed to provide or confirm these aspects of the Regional ETRs.
- Seismic induced debris tonnage was provided by DOGAMI in aggregate by neighborhood geographic unit. For larger neighborhoods especially, it does not provide insight into the proximity of debris sources (e.g., unreinforced masonry buildings) to Regional ETRs and the likelihood debris may either block the ETR or be difficult to access for removal via the ETR.
- Public works facilities were not defined consistently through the study area. Additional review and refinement of this dataset is needed during future phases of work to ensure consistency and completeness. This review is expected to be coordinated through the RDPO public works workgroup.
- Regional ETRs and SSLRs are not routed for GIS network analysis, which should be considered in future phases.

CHAPTER 4: LIST OF ACRONYMS

ADT: Average Daily Traffic

DOGAMI: Oregon Department of Geology and Mineral Industries

EFA: Equity Focus Area

EOC: Emergency Operations Center

ETR: Emergency Transportation Route

GIS: Geographic Information Systems

ODOT: Oregon Department of Transportation

RDPO: Regional Disaster Preparedness Organization

RLIS: Regional Land Information System (Metro)

SSLR: State Seismic Lifeline Route

WA DNR: Washington Department of Natural Resources

WSDOT: Washington Department of Transportation

APPENDIX F
Large Format Maps

Regional Emergency Transportation Routes



Legend

Routes	Critical Infrastructure	Essential Facilities
Regional Emergency Transportation Route	Airport	Emergency Operations Center
State Seismic Lifeline Route	Firestation	Hospital
Reference	Marine Terminal	Rail Facility
Arterial Street	Marine Facility	Waste Water Management Site
Parks and Natural Areas	Postoffice	Transfer Station/Management Site
Unincorporated Area	Police	

Map of the region showing various transportation routes and infrastructure. The map is color-coded according to the legend, with orange lines for regional emergency routes and blue lines for state seismic lifeline routes. The Willamette River is shown in blue, flowing through the center of the region. The map also shows major roads, parks, and other geographical features.



Map of the region showing various transportation routes and infrastructure. The map is color-coded according to the legend, with orange lines for regional emergency routes and blue lines for state seismic lifeline routes. The Willamette River is shown in blue, flowing through the center of the region. The map also shows major roads, parks, and other geographical features.

Regional Emergency Transportation Routes ID Key

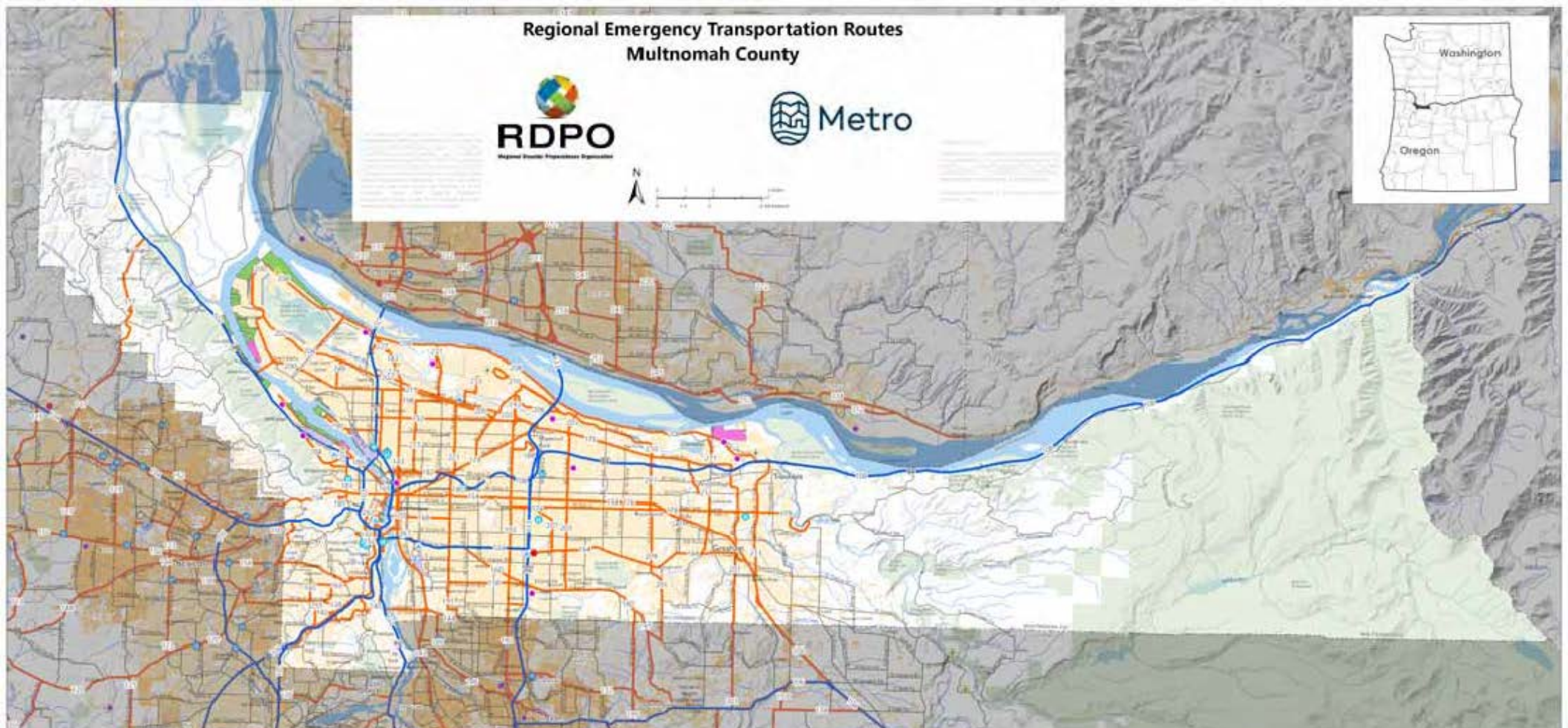
Route ID	Route Name	Route Type	Route Description
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Routes will be reviewed and based as part of a review completed in 2023. For more information, visit <https://www.metro.net/transportation/emergency-transportation/routes/>

State Seismic Lifeline Routes ID Key

Route ID	Route Name	Route Description
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Regional Emergency Transportation Routes Multnomah County



Regional Emergency Transportation Routes
ID Key

Route ID	Route Name	Ownership/Maintenance	Route ID	Route Name	Ownership/Maintenance
101	Northrup Road	RDPO in Phase 2	101	101st Ave S (1st Avenue)	RDPO in Phase 2
102	102nd Ave S	RDPO in Phase 2	102	102nd Ave S	RDPO in Phase 2
103	103rd Ave S (103rd Avenue S)	RDPO in Phase 2	103	103rd Ave S (103rd Avenue S)	RDPO in Phase 2
104	104th Ave S	RDPO in Phase 2	104	104th Ave S	RDPO in Phase 2
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200	200th Ave S	RDPO in Phase 2	200	200th Ave S	RDPO in Phase 2

State Seismic Lifeline Routes
ID Key

Route ID	Route Name	Ownership/Maintenance
101	101	RDPO in Phase 2
102	102	RDPO in Phase 2
103	103	RDPO in Phase 2
104	104	RDPO in Phase 2
105	105	RDPO in Phase 2
106	106	RDPO in Phase 2
107	107	RDPO in Phase 2
108	108	RDPO in Phase 2
109	109	RDPO in Phase 2
110	110	RDPO in Phase 2
111	111	RDPO in Phase 2
112	112	RDPO in Phase 2

Legend

Reference

- at level shown
- Public and Federal Street
- Unimproved Street

Routes

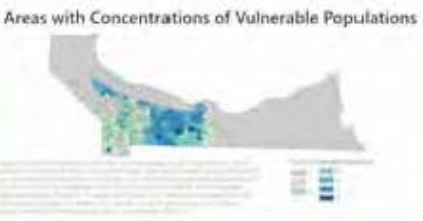
- Regional Emergency Transportation Routes
- State Seismic Lifeline Routes

Critical Infrastructure

- Airport
- Hospital
- Water Treatment
- Massive Facility
- Subway

Essential Facilities

- Shipping/Operations (S/O)
- 911 Dispatch Center
- Water Park
- Water Facility
- Local Police Management Unit
- Regional Police Management Unit



Regional Emergency Transportation Routes Clackamas County



Legend

Routes

- Emergency (Orange)
- Transportation (Blue)
- State Seismic Lifeline Routes (Green)

Critical Infrastructure

- Airport
- Fireground
- Highway Network
- Shelter (Orange Management Zone)
- Water Facility
- Wastewater

Essential Facilities

- Emergency Operations Center
- 911 Dispatch Center
- Hospital
- Power Facility
- Local Water Management Site
- Local Sewer Management Site

Reference

- Arterial Street
- Highway and Railroad Area
- Urbanized Area

Regional Emergency Transportation Routes ID Key

Route ID	Route Name	Ownership/Maintenance
001	10th Street	City of Clackamas
002	11th Street	City of Clackamas
003	12th Street	City of Clackamas
004	13th Street	City of Clackamas
005	14th Street	City of Clackamas
006	15th Street	City of Clackamas
007	16th Street	City of Clackamas
008	17th Street	City of Clackamas
009	18th Street	City of Clackamas
010	19th Street	City of Clackamas
011	20th Street	City of Clackamas
012	21st Street	City of Clackamas
013	22nd Street	City of Clackamas
014	23rd Street	City of Clackamas
015	24th Street	City of Clackamas
016	25th Street	City of Clackamas
017	26th Street	City of Clackamas
018	27th Street	City of Clackamas
019	28th Street	City of Clackamas
020	29th Street	City of Clackamas
021	30th Street	City of Clackamas
022	31st Street	City of Clackamas
023	32nd Street	City of Clackamas
024	33rd Street	City of Clackamas
025	34th Street	City of Clackamas
026	35th Street	City of Clackamas
027	36th Street	City of Clackamas
028	37th Street	City of Clackamas
029	38th Street	City of Clackamas
030	39th Street	City of Clackamas
031	40th Street	City of Clackamas
032	41st Street	City of Clackamas
033	42nd Street	City of Clackamas
034	43rd Street	City of Clackamas
035	44th Street	City of Clackamas
036	45th Street	City of Clackamas
037	46th Street	City of Clackamas
038	47th Street	City of Clackamas
039	48th Street	City of Clackamas
040	49th Street	City of Clackamas
041	50th Street	City of Clackamas
042	51st Street	City of Clackamas
043	52nd Street	City of Clackamas
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049	58th Street	City of Clackamas
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059	68th Street	City of Clackamas
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061	70th Street	City of Clackamas
062	71st Street	City of Clackamas
063	72nd Street	City of Clackamas
064	73rd Street	City of Clackamas
065	74th Street	City of Clackamas
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083	92nd Street	City of Clackamas
084	93rd Street	City of Clackamas
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091	100th Street	City of Clackamas
092	101st Street	City of Clackamas
093	102nd Street	City of Clackamas
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162	171st Street	City of Clackamas
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164	173rd Street	City of Clackamas
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183	192nd Street	City of Clackamas
184	193rd Street	City of Clackamas
185	194th Street	City of Clackamas
186	195th Street	City of Clackamas
187	196th Street	City of Clackamas
188	197th Street	City of Clackamas
189	198th Street	City of Clackamas
190	199th Street	City of Clackamas
191	200th Street	City of Clackamas

Areas with Concentrations of Vulnerable Populations



State Seismic Lifeline Routes ID Key

Route ID	Route Name	Ownership/Maintenance
101	101st Street	City of Clackamas
102	102nd Street	City of Clackamas
103	103rd Street	City of Clackamas
104	104th Street	City of Clackamas
105	105th Street	City of Clackamas
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197	197th Street	City of Clackamas
198	198th Street	City of Clackamas
199	199th Street	City of Clackamas
200	200th Street	City of Clackamas

Map Date: 10/20/2017
 Map Scale: 1" = 100 Feet
 Map Projection: NAD 83 UTM Zone 12N
 Data Source: Clackamas County GIS Department
 Contact: GIS@clackamas.gov
 Phone: 503.263.4000
 Website: www.clackamas.gov

Regional Emergency Transportation Routes Washington County



Legend

Regional Emergency Transportation Routes

State Seismic Lifeline Routes

Areas with Concentrations of Vulnerable Populations

Essential Facilities

Critical Infrastructure

Legend

Reference

County Boundaries

Public and Native Lands

Unincorporated Area

Roads

Regional Emergency Transportation Routes

State Seismic Lifeline Routes

Roads will be reviewed and listed on the map if a road is owned or controlled by the state, federal, or local government, or if it is a major transportation route.

Scale: 0 to 10 Miles

North Arrow

Regional Emergency Transportation Routes ID Key

Route ID	Route Name	Ownership/Maintenance
101	101st St	100% in Phase 1
102	102nd St	100% in Phase 1
103	103rd St	100% in Phase 1
104	104th St	100% in Phase 1
105	105th St	100% in Phase 1
106	106th St	100% in Phase 1
107	107th St	100% in Phase 1
108	108th St	100% in Phase 1
109	109th St	100% in Phase 1
110	110th St	100% in Phase 1
111	111th St	100% in Phase 1
112	112th St	100% in Phase 1
113	113th St	100% in Phase 1
114	114th St	100% in Phase 1
115	115th St	100% in Phase 1
116	116th St	100% in Phase 1
117	117th St	100% in Phase 1
118	118th St	100% in Phase 1
119	119th St	100% in Phase 1
120	120th St	100% in Phase 1
121	121st St	100% in Phase 1
122	122nd St	100% in Phase 1
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124	124th St	100% in Phase 1
125	125th St	100% in Phase 1
126	126th St	100% in Phase 1
127	127th St	100% in Phase 1
128	128th St	100% in Phase 1
129	129th St	100% in Phase 1
130	130th St	100% in Phase 1
131	131st St	100% in Phase 1
132	132nd St	100% in Phase 1
133	133rd St	100% in Phase 1
134	134th St	100% in Phase 1
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145	145th St	100% in Phase 1
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147	147th St	100% in Phase 1
148	148th St	100% in Phase 1
149	149th St	100% in Phase 1
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162	162nd St	100% in Phase 1
163	163rd St	100% in Phase 1
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192	192nd St	100% in Phase 1
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198	198th St	100% in Phase 1
199	199th St	100% in Phase 1
200	200th St	100% in Phase 1

State Seismic Lifeline Routes ID Key

Route ID	Route Name	Ownership/Maintenance
101	101st St	100% in Phase 1
102	102nd St	100% in Phase 1
103	103rd St	100% in Phase 1
104	104th St	100% in Phase 1
105	105th St	100% in Phase 1
106	106th St	100% in Phase 1
107	107th St	100% in Phase 1
108	108th St	100% in Phase 1
109	109th St	100% in Phase 1
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112	112th St	100% in Phase 1
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115	115th St	100% in Phase 1
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199	199th St	100% in Phase 1
200	200th St	100% in Phase 1

Areas with Concentrations of Vulnerable Populations

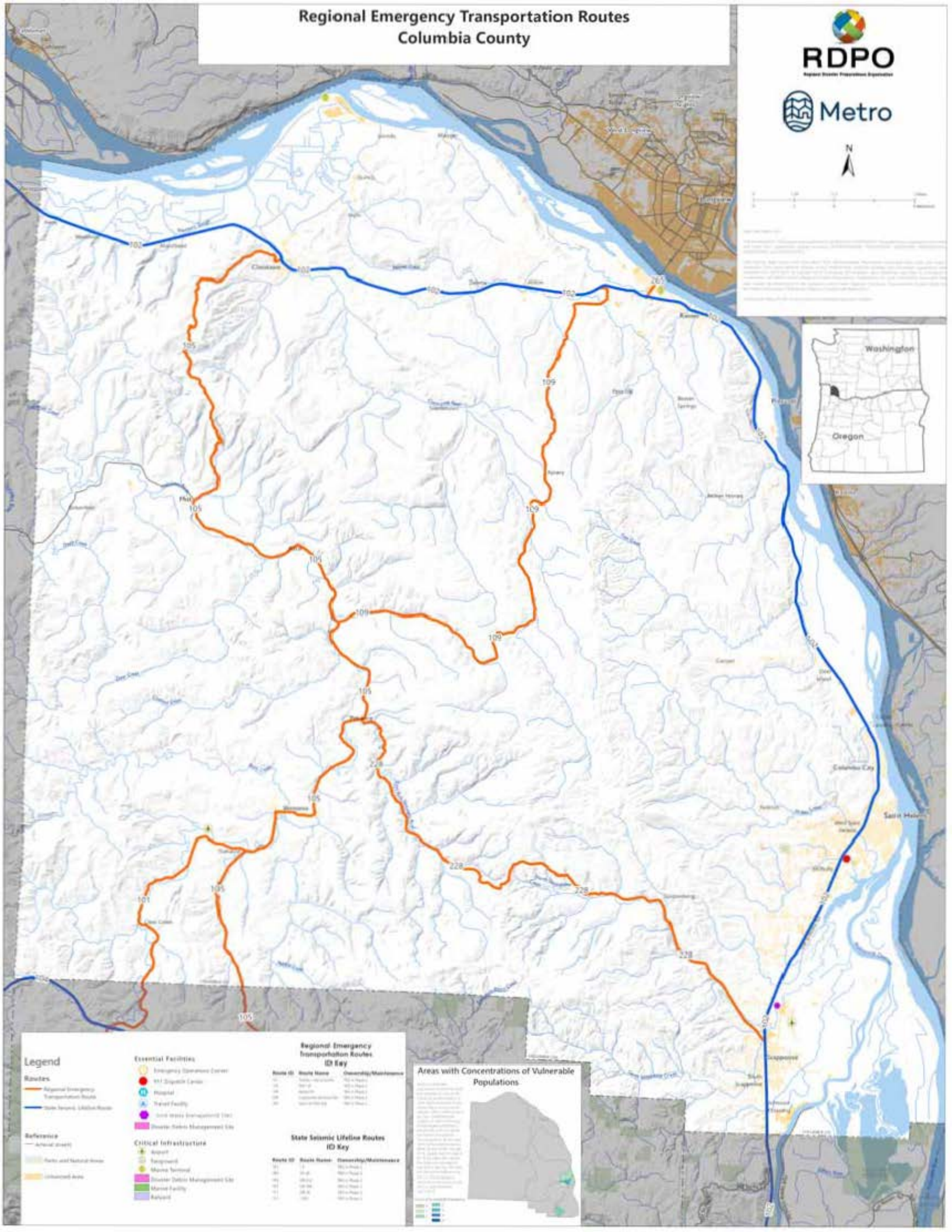


Regional Emergency Transportation Routes Columbia County



Map Information

This map was prepared by the Regional Disaster Preparedness Organization (RDPO) and Metro. It is intended to provide a general overview of the regional emergency transportation routes in Columbia County. The map is not intended to be used for navigation or as a substitute for official maps. The map is subject to change without notice. The map is not a warranty, representation, or endorsement of any product or service. The map is not a contract. The map is not a guarantee. The map is not a promise. The map is not a statement of fact. The map is not a statement of opinion. The map is not a statement of intent. The map is not a statement of policy. The map is not a statement of strategy. The map is not a statement of action. The map is not a statement of result. The map is not a statement of value. The map is not a statement of quality. The map is not a statement of quantity. The map is not a statement of quality. The map is not a statement of quantity.



Legend

Routes

- Regional Emergency Transportation Route
- State Seismic Lifeline Route

Reference

- Aerial Photo
- Parks and National Monuments
- Unincorporated Area

- Essential Facilities**
- Emergency Operations Center
 - 911 Dispatch Center
 - Hospital
 - Traffic Facility
 - Local Mass Transportation (LMT)
 - Disaster Shelters Management Site
- Critical Infrastructure**
- Airport
 - Seaport
 - Major Terminal
 - Disaster Shelters Management Site
 - Major Facility
 - Rail

Regional Emergency Transportation Routes ID Key

Route ID	Route Name	Ownership/Maintenance
101	W. Columbia Ave.	W. Columbia Ave. Dist.
102	W. Columbia Ave.	W. Columbia Ave. Dist.
103	W. Columbia Ave.	W. Columbia Ave. Dist.
104	W. Columbia Ave.	W. Columbia Ave. Dist.
105	W. Columbia Ave.	W. Columbia Ave. Dist.
106	W. Columbia Ave.	W. Columbia Ave. Dist.
107	W. Columbia Ave.	W. Columbia Ave. Dist.
108	W. Columbia Ave.	W. Columbia Ave. Dist.
109	W. Columbia Ave.	W. Columbia Ave. Dist.
110	W. Columbia Ave.	W. Columbia Ave. Dist.
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112	W. Columbia Ave.	W. Columbia Ave. Dist.
113	W. Columbia Ave.	W. Columbia Ave. Dist.
114	W. Columbia Ave.	W. Columbia Ave. Dist.
115	W. Columbia Ave.	W. Columbia Ave. Dist.
116	W. Columbia Ave.	W. Columbia Ave. Dist.
117	W. Columbia Ave.	W. Columbia Ave. Dist.
118	W. Columbia Ave.	W. Columbia Ave. Dist.
119	W. Columbia Ave.	W. Columbia Ave. Dist.
120	W. Columbia Ave.	W. Columbia Ave. Dist.

State Seismic Lifeline Routes ID Key

Route ID	Route Name	Ownership/Maintenance
101	W. Columbia Ave.	W. Columbia Ave. Dist.
102	W. Columbia Ave.	W. Columbia Ave. Dist.
103	W. Columbia Ave.	W. Columbia Ave. Dist.
104	W. Columbia Ave.	W. Columbia Ave. Dist.
105	W. Columbia Ave.	W. Columbia Ave. Dist.
106	W. Columbia Ave.	W. Columbia Ave. Dist.
107	W. Columbia Ave.	W. Columbia Ave. Dist.
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109	W. Columbia Ave.	W. Columbia Ave. Dist.
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112	W. Columbia Ave.	W. Columbia Ave. Dist.
113	W. Columbia Ave.	W. Columbia Ave. Dist.
114	W. Columbia Ave.	W. Columbia Ave. Dist.
115	W. Columbia Ave.	W. Columbia Ave. Dist.
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117	W. Columbia Ave.	W. Columbia Ave. Dist.
118	W. Columbia Ave.	W. Columbia Ave. Dist.
119	W. Columbia Ave.	W. Columbia Ave. Dist.
120	W. Columbia Ave.	W. Columbia Ave. Dist.

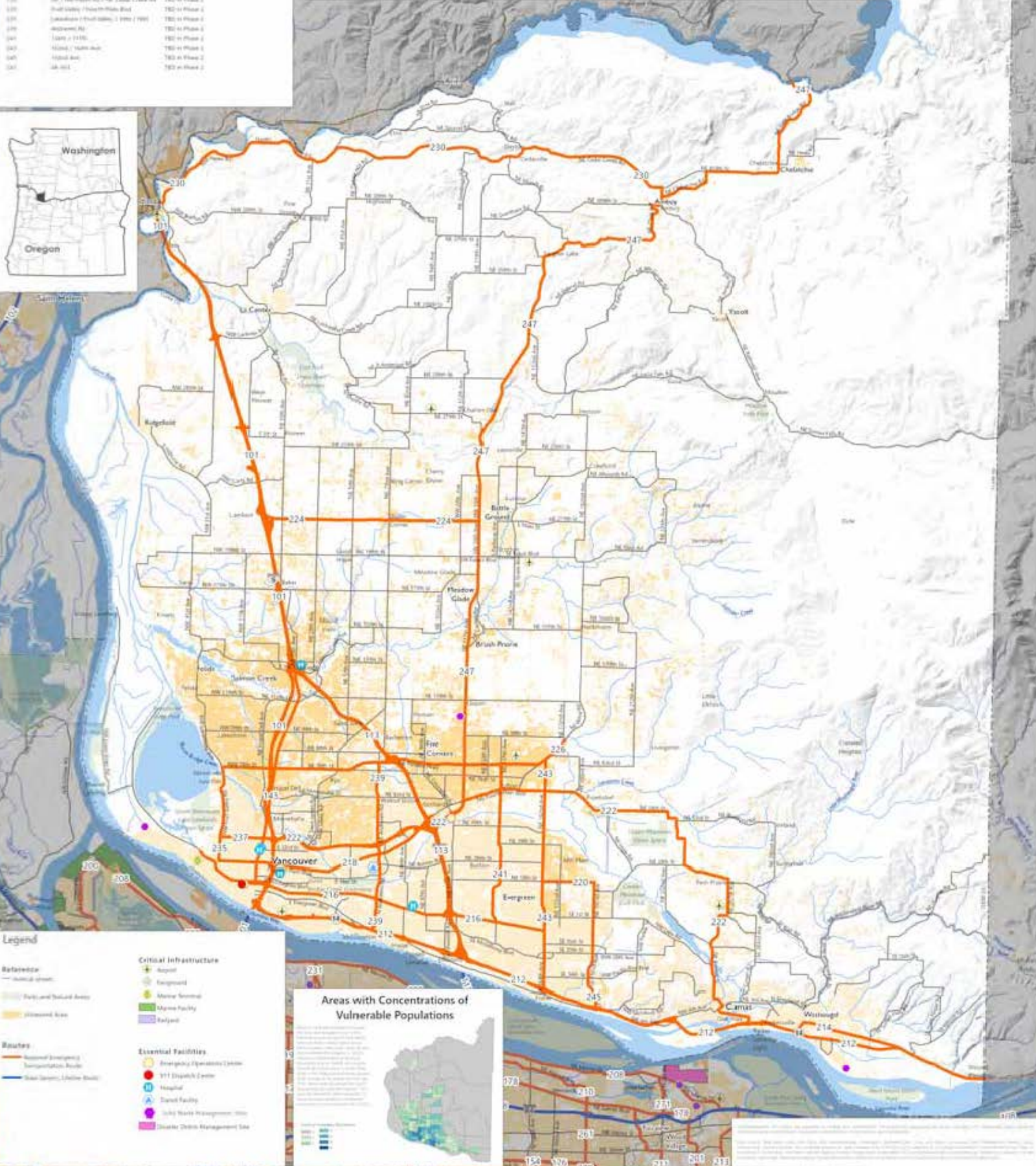
Areas with Concentrations of Vulnerable Populations



Regional Emergency Transportation Routes ID Key

Route ID	Route Name	Ownership/Maintenance
001	I-5 West	TBD in Phase 2
101	I-5 West	TBD in Phase 2
141	State St / 101st St	TBD in Phase 2
210	SR 7A	TBD in Phase 2
214	Washington State Rd / Oregon Way	TBD in Phase 2
216	SR 26W, Vancouver	TBD in Phase 2
218	State St / 101st St	TBD in Phase 2
220	SR 100 St	TBD in Phase 2
222	SR 102	TBD in Phase 2
224	SR 104 St / Astoria Hwy	TBD in Phase 2
226	SR 106 St / Astoria Hwy	TBD in Phase 2
228	SR 108 St / Astoria Hwy / SR 2000 / Clark Rd	TBD in Phase 2
230	SR 110 St / Astoria Hwy / SR 2000 / Clark Rd	TBD in Phase 2
232	SR 112 St / Astoria Hwy / SR 2000 / Clark Rd	TBD in Phase 2
234	SR 114 St / Astoria Hwy / SR 2000 / Clark Rd	TBD in Phase 2
236	SR 116 St / Astoria Hwy / SR 2000 / Clark Rd	TBD in Phase 2
238	SR 118 St / Astoria Hwy / SR 2000 / Clark Rd	TBD in Phase 2
240	SR 120 St / Astoria Hwy / SR 2000 / Clark Rd	TBD in Phase 2
242	SR 122 St / Astoria Hwy / SR 2000 / Clark Rd	TBD in Phase 2
244	SR 124 St / Astoria Hwy / SR 2000 / Clark Rd	TBD in Phase 2
246	SR 126 St / Astoria Hwy / SR 2000 / Clark Rd	TBD in Phase 2
248	SR 128 St / Astoria Hwy / SR 2000 / Clark Rd	TBD in Phase 2
250	SR 130 St / Astoria Hwy / SR 2000 / Clark Rd	TBD in Phase 2

Regional Emergency Transportation Routes Clark County



Legend

Reference	Critical Infrastructure
— Interstate	✈ Airport
— Park and Natural Area	🏠 Emergency Shelter
— Interstate Area	🏢 Major Facility
	🏠 Major Facility
	🏠 Major Facility
Routes	Essential Facilities
— Regional Emergency Transportation Route	🏠 Emergency Operations Center
— State Street / Other Road	📞 911 Dispatch Center
	🏠 Hospital
	🏠 District Facility
	🏠 Solid Waste Management Site
	🏠 Disaster Debris Management Site



Map prepared by RDPO on 10/15/2024. Data provided by Metro, Clark County, and various local agencies. All rights reserved.

STAFF REPORT

IN CONSIDERATION OF RESOLUTION NO. 21-5160 FOR THE PURPOSE OF ACCEPTING FINDINGS AND RECOMMENDATIONS IN THE REGIONAL EMERGENCY TRANSPORTATION ROUTES UPDATE PHASE ONE REPORT

Date: March 26, 2021

Department: Planning and Development

Meeting Date: April 29, 2021

Prepared by:

Kim Ellis, x1617,

kim.ellis@oregonmetro.gov

ISSUE STATEMENT

The five-county Portland-Vancouver metropolitan region's infrastructure systems need to be resilient and prepared for multiple natural hazards, including earthquakes, wildfires, landslides, floods, volcanoes, extreme weather events, and the increasing impacts of climate change. Emergency management planning will help mitigate the risks these hazards pose to the public health and safety of communities and the region's economic prosperity and quality of life.

A critical element of emergency preparedness for the region's hazards includes designation of regional emergency transportation routes (RETRs). RETRs are travel routes that, in the case of a major regional emergency or natural disaster, would be prioritized for rapid damage assessment and debris-clearance. These routes would support life-saving and life-sustaining response activities, such as moving first responders (e.g., police, fire and emergency medical services), patients, debris, fuel and essential supplies. While outside the scope of this project, these routes are also expected to have a key role in both short- and long-term post-disaster recovery efforts.

A partnership between the Regional Disaster Preparedness Organization (RDPO) and Metro, this project was identified in the 2018 Regional Transportation Plan (RTP) implementation chapter (Chapter 8) as a necessary step to better integrate transportation planning with planning for resiliency, recovery and emergency response. Funding for the project is provided by the Urban Areas Security Initiative (UASI) grant from the Federal Emergency Management Agency (FEMA) that is managed by the RDPO. The UASI grant program makes funding available to enhance regional preparedness in major metropolitan



Regional ETRs are travel routes that, in the case of a major regional emergency or natural disaster, would be prioritized for rapid damage assessment and debris-clearance. These routes would be used to move resources and materials, such as first responders (e.g., police, fire and emergency medical services), patients, debris, fuel and essential supplies. These routes are also expected to have a key role in post-disaster recovery efforts.

rdpo.net/emergency-transportation-routes

areas throughout the United States and directly supports expanding regional collaboration to assist in the creation of regional systems for prevention, protection, response and recovery.

Why now?

First designated in 1996 by the Regional Emergency Management Group (REMG) facilitated by Metro, the region established its first official network of regional ETRs. The last update occurred in 2006, under the direction of the Regional Emergency Management Technical Committee (REMTEC) of REMG – the predecessor to the RDPO.

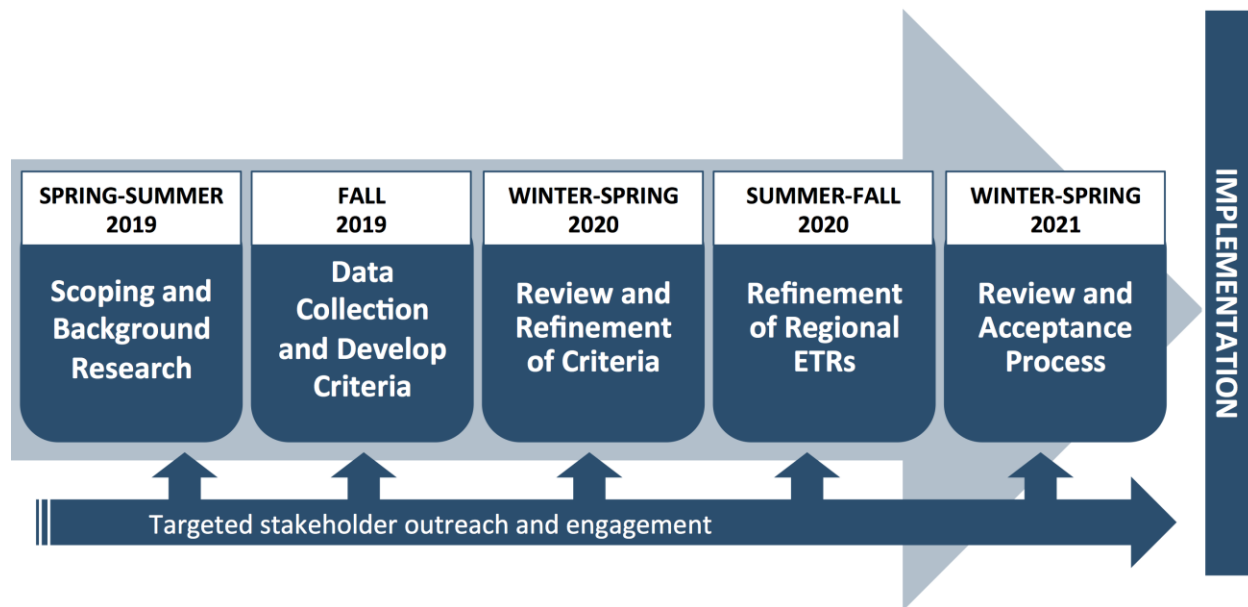
Over the past 15 years, the region has experienced significant growth and demographic changes and new technology, data and mapping have greatly expanded our understanding of the region’s natural hazard risks, particularly to a catastrophic Cascadia Subduction Zone (CSZ) earthquake. During that same period investments were made to improve seismic resilience of some roads and bridges in the region and additional planning was completed by the City of Portland, the five counties and the Oregon Department of Transportation (ODOT) to evaluate seismic risks along state-designated seismic lifeline routes (SSLRs) located in Oregon.

Project timeline

The geographic scope of the planning effort included Clark County in the State of Washington and Columbia, Clackamas, Multnomah and Washington counties in the State of Oregon. The RDPO established a multi-disciplinary work group of more than thirty representatives from seventeen agencies to provide expertise in emergency management, transportation planning, public works, engineering, operations, ports and public transit.

The overall project timeline is provided in **Figure 1**.

Figure 1. Phase 1 timeline for updating regional emergency transportation routes



Overview of Phase 1 RETR Update

The RDPO and Metro initiated the first phase of a multi-phase update of the RETRs in Spring 2019. A literature review and other research conducted by the Transportation Research and Education Center (TREC) at PSU in August 2019 served as a foundation. The PSU research summarized recent work and identified best practices and considerations for updating the RETRs. A consultant team, hired in fall 2019, provided technical support and facilitated the RETR update with the multi-disciplinary work group, under the direction of project managers from both RDPO and Metro, and oversight from executives at both agencies to:

- assemble readily available local, regional and state datasets to support the evaluation process;
- develop the RETR evaluation framework and process to review and update the routes; and
- update the RETRs and prepare recommendations for future planning work in coordination and consultation with staff representing emergency management, transportation, operations, port, transit and public works disciplines across the 5-county region.

Phase 1 project outcomes and deliverables

This project represents the first phase of a multi-phase update to the regional ETRs. This phase resulted in:

- Multi-disciplinary collaboration of emergency management with transportation planning, engineering and operations, ports, transit and public works stakeholders.
- Enhanced visibility of RETRs and improved understanding of their resilience that informed a regional dialogue regarding resilience and recovery among policymakers, senior leadership and planners.
- A regionally-accepted network that provides adequate connectivity to critical infrastructure and essential facilities, as well as the region's population centers and vulnerable communities.
- A comprehensive regional GIS database and online RETR viewer established for current and future planning and operations. The data and on-line viewer provide valuable resources to support the Phase 2 RETR Update and other transportation resilience, recovery and related initiatives in the region.
- A regionally-accepted set of recommendations for follow-on work to support ongoing local, regional and state efforts to improve the region's resilience.

Phase 2 is anticipated to begin in early 2022, pending final award of the UASI 2021 application funding and signature with the Department of Homeland Security.

ACTION REQUESTED

Approve Resolution No. 21-5160 accepting the findings and recommendations in the Regional Emergency Transportation Routes Update Phase One Report, as recommended by the Joint Policy Advisory Committee on Transportation (JPACT) on April 15, 2021.

IDENTIFIED POLICY OUTCOMES

Metro continues to play an important role in assisting local emergency management agencies with disaster planning related to regional functions, such as data and mapping, disaster debris management and emergency transportation route designation to improve disaster response coordination and help reduce loss of life, injury and property damage during disasters.

Guided by regional natural hazard policies in [Chapter 5 of the Regional Framework Plan](#) and Goal 5 in [Chapter 2 of the 2018 RTP](#) (Safety and Security), this work supports implementation of the region's [Climate Smart Strategy](#), 2018 RTP and [Metro's Disaster Debris Management Plan](#). This work also advances the 2018 RTP's transportation equity goals and policies, and Metro's agency-wide racial equity goals and [Strategic Plan to Advance Racial Equity Diversity and Inclusion](#).

Pending Council approval of Resolution No. 21-5160, this work will inform planning, policy and investment priorities in the 2023 RTP update and ongoing efforts to improve the region's resilience and to develop funding strategies to make these routes more resilient.

RECOMMENDED ACTION

Metro Council approval of Resolution No. 21-5160.

ANALYSIS/INFORMATION

Explicit list of stakeholder groups and individuals who have been involved

Engagement of policymakers, planners and other stakeholders is extensive for this RETR update to better integrate transportation planning with planning for resiliency, recovery and emergency response as well as the investments that will be needed to make the region's transportation system more resilient. These routes can be prioritized for resilience upgrades as projects are planned within the region by local, regional and state agencies and transportation providers.

RDPO and Metro staff worked closely with a team of local consultants and the RDPO ETR work group, a multi-disciplinary team of more than 30 local, regional, and state emergency management, transportation planning, engineering, operations and public works staff from 17 agencies within the five counties, to prepare the final report. The work group included staff from transportation, emergency management, and public works departments of each of the five counties and the City of Portland, the Oregon Department of Transportation (ODOT), the Washington Department of Transportation (WSDOT), the Oregon Department of Geologic and Mineral Industries (DOGAMI), transit providers and port districts. Appendix A in the final report lists members of the work group and the agencies they represent.

RDPO and Metro staff coordinated and consulted with each of the five counties and their cities, DOTs, and port and transit districts throughout the process to address specific needs of each agency or jurisdiction and facilitate collaboration and coordination among the agencies and jurisdictions. This included jurisdictional specific meetings, briefings to policy and technical committees affiliated with RDPO, Metro and the SW RTC, and county coordinating committees. Section 2 and Appendix B of the final report summarize project engagement activities, including the final acceptance process.

STAFF REPORT TO RESOLUTION NO. 21-5160

On Feb. 4, 2021, the draft Regional Emergency Transportation Routes (RETRs) and a draft report were published in the online RETR viewer and on the project website for review and feedback. Between Feb. 4 and March 25, 2021, Metro and RDPO facilitated a review process to gather comments on the updated routes, draft report and recommendations for future work. The review process focused on various policy bodies and policy and technical advisory committees in the region that oversee transportation and emergency management planning and decision-making in the region. A schedule of the review process is provided in Table 1.

Table 1. 2021 Final review process

Who	Date
ETR Work Group Review	Jan. 20
RDPO Emergency Managers Work Group - REMTEC	Feb. 5
RDPO Steering Committee	Feb. 8
Transportation Policy Alternatives Committee (TPAC)/Metro Technical Advisory Committee (MTAC) workshop	Feb. 17
Joint Policy Advisory Committee on Transportation	Feb. 18
Regional Technical Advisory Committee (RTAC)	Feb. 19
RDPO Policy Committee	Feb. 19
Metro Council	Feb. 23
Metro Policy Advisory Committee (MPAC)	Feb. 24
Clackamas County TAC	Feb. 24
Southwest Washington Regional Transportation Council	March 2
East Multnomah County Transportation Committee TAC	March 3
Washington County Coordinating Committee TAC	March 4
RDPO Emergency Managers Work Group - REMTEC	March 5
Washington County Coordinating Committee (policy)	March 15
East Multnomah County Transportation Committee (policy)	March 15
Clackamas County C-4 subcommittee (policy)	March 18
Joint Policy Advisory Committee on Transportation	March 19
RDPO Policy Committee	March 20
RDPO Public Works Work Group	March 24

Attachment 1 summarizes recommended changes to the draft RETRs and the draft report to respond to all substantive comments received during the review process. These changes are reflected in the final report. Recommended changes include technical corrections to maps and data, additional RETR updates, and expanding descriptions of the recommendations for future work. Other feedback included:

- Broad appreciation for this work and recognition of its importance to planning and investment in the region;
- Acknowledgement that significant gaps in data and planning remain to be addressed (during Phase 2 and other efforts);
- Request for more jurisdictional and policymaker engagement in Phase 2 RETR effort; and
- Look for opportunities to connect and advance future work to address likely Critical Energy Infrastructure Hub failure, needs of vulnerable populations, evacuation planning needs as well as roles of river routes and transit during a regional emergency.

Known Opposition – No known opposition.

Legal Antecedents

- **Ordinance No. 18-1421** (For the Purpose of Amending the 2014 Regional Transportation Plan to Comply with Federal and State Law and Amending the Regional Framework Plan), adopted on December 6, 2018.
- **Resolution No. 20-5086** (For the Purpose of Adopting the Fiscal Year 2020-21 Unified Planning Work Program and Certifying that the Portland Metropolitan Area is in Compliance With Federal Transportation Planning Requirements), adopted on May 21, 2020.

Anticipated Effects

The regional emergency transportation routes play an important role in the region's resilience and ability to respond to multiple hazards, particularly to a catastrophic CSZ earthquake. The data set and on-line RETR viewer produced in this effort will be distributed to emergency managers and transportation planners throughout the region for use in future planning and during disaster response and the early recovery period. Coordinated planning can inform emergency transportation response planning and set the stage for agencies to seek funding for improvements to increase route resiliency to accelerate response and recovery times within the region.

In addition, Section 8 of the report outlines a set of necessary follow-on work raised during the course of this planning effort, but which the current project could not meaningfully address. It is important to note that all future project work is contingent upon funding. The recommendations include a Phase 2 project led by RDPO and Metro (pending funding from the 2021 UASI grant program). The RETR Phase 2 concept proposal was successfully submitted to UASI for funding through a competitive process on Feb. 8, 2021, and is pending final award of funding and signature with the Department of Homeland Security.

Many of the proposed projects, including RETR Phase 2, require further partnership between emergency managers, planning organizations, and owner/operators of transportation facilities and services. The RDPO should continue to leverage the UASI federal grant to the region to continue immediate planning needs. It is also important that transportation stakeholders and entities with maintenance and capital investment responsibilities for facilities similarly prioritize funding to accelerate our region's resilience.

Budget Impacts

The UASI program provided funding for the consultant team and a portion of Metro planning/project management support. Metro data and mapping support is being funded through Metro's federal planning grants. All of Metro's support for this project was accounted for in the 2020-21 budget approved by the Metro Council on June 18, 2020 and the 2020-2021 Unified Planning Work Program (UPWP) approved by the Metro Council on May 21, 2020. Metro's continued planning, data and mapping support for Phase 2 is contingent on staff capacity and UASI funding.

ATTACHMENT

Attachment 1 – 2021 Regional Emergency Transportation Route (RETR) Update: Summary of Comments Received and Recommended Actions (comments received Feb. 4 to March 24, 2021). Recommended actions are incorporated in the final report and maps.

2021 Regional Emergency Transportation Route (RETR) Update
Summary of Comments Received and Recommended Actions
 (comments received Feb. 4 to March 24, 2021)

Attachment 1
 3/26/2021

The Updated Regional Emergency Transportation Routes (RETRs) were published in a draft report on Feb. 4, 2021 which included maps, appendices, and an online viewer. The Regional Disaster Preparedness Organization (RDPO) and Metro facilitated a stakeholder review process to gather comments from various policy bodies and policy and technical advisory committees in the region that oversee transportation and emergency management planning and decision-making. Feedback was provided at meetings and via emails between February 4 and March 24, 2021. This document summarizes recommended changes to respond to all substantive comments received during the review period. All recommended changes will be reflected in the final report and maps brought forward for acceptance by the Joint Policy Advisory Committee on Transportation, the Metro Council, the Southwest Washington Regional Transportation Council and the RDPO Policy Committee. *ALL COMMENTS ARE PARAPHRASED FROM DISCUSSIONS AND MEETING MINUTES*

ITEMS FOR CONSIDERATION - Comments on draft 2021 Regional Emergency Transportation Route (RETR) Update								
#	ITEM	Last name	First name	Affiliation	Date	Meeting	Comment	RDPO and Metro Staff Recommended Action
1	Washington and Columbia County Routes				2/19/21	RDPO Policy Committee	Washington County and Columbia County are closer to the epicenter of a CSZ earthquake. Note the update has lower redundancy of routes in that western part of the region- how will we connect if those areas get cut off?	Columbia County low route redundancy is well noted in the report and is largely due to geological constraints. Washington County has limited SSLR redundancy with their coastal neighbors (only Highway 26). A shelter-in-place approach is the current plan statewide. However, the coastal communities do have plans to receive support from federal and state marine assets to be deployed immediately post-event.
2	Route Redundancy	Peterson	Lynn	Metro Council President	2/19/21	RDPO Policy Committee	The low redundancy of routes in some areas should inform preparations for an incident and the prioritization of routes - justification of prioritizing regionally to help prioritize funding to take into account vulnerabilities and to improve their resilience.	As noted, this is a key justification for prioritizing routes regionally as recommended in the Phase 2 work.
3	Critical Energy Infrastructure (CEI) Hub	Sharon	Meiren	Commissioner, Multnomah County	2/19/21	RDPO Policy Committee	There have been multiple Critical Energy Infrastructure (CEI) Hub studies ongoing in the county/city. How was the CEI Hub included in the RETR update? It is important to identify what routes will be cut off if the CEI Hub falls into the river as anticipated in a catastrophic earthquake.	Update Section 7 of the RETR Report to: - incorporate a discussion of previous and current Critical Energy Infrastructure Hub studies - recommend future planning work to identify RETRs that are likely to be cut off if the CEI Hub - add references to Regional Emergency Fuel Management Planning (concurrent) and upcoming regional exercise and other relevant planning efforts to show how this effort relates to other efforts that are under way or planned. Recommendation to incorporate findings in the Phase 2 prioritization and operationalization process with local partners.
4	Critical Energy Infrastructure (CEI) Hub	Joanne	Hardesty	Commissioner, City of Portland	2/19/21	RDPO Policy Committee	We cannot implement this plan until the CEI Hub is addressed.	The RETR Update is not a plan; it provides information and route designations that can be used to inform development of policies and more detailed planning at the state, regional and local levels. Other RDPO and State efforts are under way to address the CEI Hub. The recommended Phase 2 work (if funded by the Urban Areas Security Initiative) is anticipated to tier or prioritize routes for operational purposes, and can take this into consideration. See also response to Comment #3.

ITEMS FOR CONSIDERATION - Comments on draft 2021 Regional Emergency Transportation Route (RETR) Update								
#	ITEM	Last name	First name	Affiliation	Date	Meeting	Comment	RDPO and Metro Staff Recommended Action
5	Clackamas County Critical Facilities	Smith	Tootie	Clackamas County Chairperson	2/19/21	RDPO Policy Committee	It appears Clackamas Co. public works facilities, as well as the 911 call center and Clackamas County EOC in Oregon City are missing from the regional map.	Update as requested. The 911 center was inadvertently not included and the EOC and some public work facilities were mis-categorized in the GIS dataset. The public works dataset will be further reviewed and updated as part of Phase 2, in consultation with the RDPO Public Works Work Group.
6	Clackamas County Critical Facilities	Peterson	Lynn	Metro Council President	2/19/21	RDPO Policy Committee	The report needs to ensure all of the County public works facilities are represented across the region.	Update as requested. In addition, the public works dataset will be further reviewed and updated as part of Phase 2, in consultation with the RDPO Public Works Work Group.
7	General	Pippenger	Dan	Port of Portland	2/19/21	RDPO Policy Committee	Expressed appreciation for the effort that went into this Phase 1 update, the report and data produced are a great resource for the region. It would be a big achievement for the region to prioritize/tier the routes in Phase 2.	Comment noted.
8	Public Works Facilities	Peterson	Lynn	Metro Council President	2/19/21	RDPO Policy Committee	The report needs to ensure all of the County public works facilities are consistently represented across the region.	Update as requested. In addition, the public works dataset will be further reviewed and updated as part of Phase 2, in consultation with the RDPO Public Works Work Group.
9	General	Peterson	Lynn	Metro Council President	2/19/21	RDPO Policy Committee	Important to balance pre-incident planning with real-world incident response. There are things we can mitigate now and plan toward, and then we also need to be clear on protocols in an incident. We need both.	No change needed. Aligns to the report recommendation to use the RETR Update to inform the next Metro Regional Transportation Plan (RTP), Southwest Washington Regional Transportation Council RTP and for the next phase of RETR project to work with local, state and regional jurisdictions on guidelines for RETRs in real incidents.
10	All Routes	Joanne	Hardesty	Commissioner, City of Portland	2/18/2021	Metro JPACT Meeting	It is unclear why so many routes were added and none removed.	Update Section 6.1 to clarify why routes were added and none removed. The report details the process, methodology, and detailed consultation with State and local partners to identify the need for additional routes to improve access to and redundancy in areas with critical infrastructure, essential facilities and vulnerable populations. Routes likely won't be deleted but could be tiered/categorized as lower level routes during Phase 2.
11	Portland Critical Facilities	Joanne	Hardesty	Commissioner, City of Portland	2/18/2021	Metro JPACT Meeting	Were the marine facilities for Fire & Rescue included in the critical infrastructure that was mapped?	The Portland Fire and Rescue facilities at Stations 6,17, 21 are all included in the existing fire and rescue data layer for essential facilities. These three PFR stations have adjacent docks. A further evaluation of marine fire and rescue assets (beyond the City of Portland) will require additional work in Phase 2 to confirm all stations with marine assets are properly/consistently mapped.

ITEMS FOR CONSIDERATION - Comments on draft 2021 Regional Emergency Transportation Route (RETR) Update								
#	ITEM	Last name	First name	Affiliation	Date	Meeting	Comment	RDPO and Metro Staff Recommended Action
12	Maps, cartography	Patterson	Courtney	Metro Emergency Management	2/8/21	RDPO Steering Committee	Using the color blue for Statewide Seismic Lifeline Routes is confusing on the maps because blue is usually used for rivers.	The SSLRs will be shown as dark navy blue.
13	Resolution for Metro Council and RDPO Policy Committee	Howard	Alex	Port of Portland	2/8/21	RDPO Steering Committee	Recommend to include language on the Phase 2 project concept within the resolutions we put forward to Metro Council and RDPO Policy Committee since we have that work scoped and in funding pipeline.	The Phase 2 project is presented to both RDPO Policy and Metro Council. Because the UASI 2021 application is still pending signature with DHS, we will not put language into the resolutions at this time.
14	Engagement				2/19/21	RTAC meeting	How have PacifiCorp and other utility providers been engaged in this update? PacifiCorp controls the Lewis River dams, which have lava tubes. While outside geographic scope of this project, a dam failure could impact nearby Clark County.	PGE, Pacific Power and NW Natural Gas all provided details on their regional Emergency Operations Centers (primary and secondary) which are included in the regional critical facilities map layers. Analysis of dams is beyond the scope of this project.
15	Route Redundancy				2/19/21	RTAC meeting	The lack of redundant routes in northern Clark County and other more rural parts of the region underscores need to consider that people are likely to be isolated/homebound during a major emergency.	This comment has been forwarded to Clark County agencies for consideration in future planning efforts. The report includes information that Clark County relies on State routes, and that data on the seismic resilience of their bridges is not available at this time. Additional work to develop data on route resilience in Clark County could be beneficial in Phase 2 and other future planning efforts.
16	Individual Routes	Owen	Jeff	TriMet	2/17/21	email	The Merlo Bus Garage does not appear to be directly accessed by the updated RETRs.	Add new RETR connection to Merlo bus garage and other critical assets in the vicinity via Jenkins Road and Merlo Road. TriMet bus barns/maintenance yards are identified as state/regional essential facilities and included in the analysis that informed RETR updates. This recommendation has been coordinated with Washington County transportation and emergency management staff.
17	Landslide Data	Herman	Matt	Clark County	2/17/21	email	<p>Add landslide/slope data for Clark County/Washington State that is available from Washington State's Open Data Portal:</p> <p>(1) https://www.dnr.wa.gov/Publications/fp_gis_slopestability.zip</p> <p>(2) https://geo.wa.gov/</p> <p>(3) https://hub-clarkcountywa.opendata.arcgis.com/</p> <p>The additional data contains:</p> <p>(1) Partial coverage of landslide susceptibility (both and shallow and deep susceptibility) for the Columbia River corridor about four miles inland from the river and east of SE 164th Ave to the county boundary. This coverage intersects all of the Washougal River Rd / Evergreen Way RETR, and parts of SR-500, SR-14, and 192nd Ave RETRs.</p> <p>(2) Partial coverage of landslide mapping from historic geologic maps for the most northeast corner of the county. There is no intersection with RETRs.</p> <p>(3) Countywide slope stability coverage. From the metadata, this is intended for forest land management and is based on regional digital elevation models (i.e. not LiDAR precision).</p>	Add new map figure to the final report to show this data separately from the landslide susceptibility map along with a discussion that the data was not used in the route evaluation because the data was not available for all of Clark County. The ETR analysis included one data layer for landslides hazards for Clark County, which is a draft landslide deposit inventory from Washington Dept. Natural Resources.

ITEMS FOR CONSIDERATION - Comments on draft 2021 Regional Emergency Transportation Route (RETR) Update								
#	ITEM	Last name	First name	Affiliation	Date	Meeting	Comment	RDPO and Metro Staff Recommended Action
18	Bridges	Owen	Jeff	TriMet	2/17/21	TPAC/MTAC Workshop	Has the seismic vulnerability of the Tillikum Crossing Bridge been accounted for in the data and analysis?	Label the Tillikum Crossing bridge as not evaluated in Figure 6.10. This project did not conduct specific evaluation of the vulnerability of any of the bridges. Figure 6.10 mapped vulnerability data provided by ODOT for multi-span bridges in Oregon; ODOT has not evaluated single-span bridges. WSDOT did not have comparable data available for Washington State, so bridges in Washington State are also shown as "not evaluated" in Figure 6.10 and were not included in the GIS analysis.
19	Individual Routes				2/17/21	TPAC/MTAC Workshop	Note the recent jurisdictional transfer of Cornelius Pass to the State (will it become an SSLR)?	Update the ownership field in the GIS data to reflect this change. In addition, this comment has been forwarded to ODOT for consideration as part of their planned update to the Oregon Highway Plan (OHP). SSLRs are designated by the Oregon Transportation Commission in the OHP.
20	Individual Routes	Schlegel McCarthy	Ken Mike	Washington County and City of Tualatin staff	3/2/21	email	Designate the full length of Tualatin-Sherwood Road east to I-5 to provide a continuous RETR connection between I-5 and 99W.	Designate this segment of Tualatin-Sherwood Road as requested. This will provide a direct connection between I-5 and 99W and access to the seismically resilient PGE Integrated Operations Center, which will serve as a key hub for PGE operations during a regional emergency.
21	Critical infrastructure	Schlegel McCarthy	Ken Mike	Washington County and City of Tualatin staff	3/2/21	Zoom meeting	Add the PGE Integrated Operations Center to the state/regional critical infrastructure data layer. The seismically resilient facility includes an emergency helipad and will serve as a key hub for PGE operations during an emergency.	PGE is constructing their new Integrated Operations Center in Tualatin, to be completed by December 2021. Currently, PGE's regional (and backup) Emergency Operations Centers are listed in the regional EOC data layers. In Phase 2, the PGE EOC primary location will shift to the new Tualatin Integrated Operations Center.
22	Individual Routes	McCarthy	Mike	City of Tualatin	3/2/21	Zoom meeting	Designate Nyberg Road/65th Avenue east of I-5 as a RETR to provide direct access to Meridian Park Hospital.	Designate Nyberg Road/65th Avenue as requested to provide a direct connection to Meridian Park Hospital. Hospitals are critical state/regional assets.
23	Evacuation Planning	Schlegel McCarthy	Ken Mike	Washington County and City of Tualatin staff	3/2/21	Zoom meeting	Evacuation planning falls under the authority of County Sheriff's offices. For future planning coordination.	Expand the description of recommendation #5 in the report to recommend the inclusion of County Sheriffs as key stakeholders to engage in future evacuation planning efforts. See also responses to Comments #38, #54 and #55.
24	Railroads	Odermott	Don	City of Hillsboro	2/17/21	TPAC/MTAC Workshop	What role will railroads play during emergency response and recovery?	While this RETR update did not specifically address the role of railroads or river routes, providing adequate access to rail yards, airports and marine terminals were factors in the update to the RETRs given their critical infrastructure role. This resulted in the addition of new RETR designations. Future planning work is recommended to address the role and resiliency of these critical transportation infrastructure elements. For example, rail lines are typically much older than the road network and are anticipated to be significantly impacted by landslides and liquefaction.

ITEMS FOR CONSIDERATION - Comments on draft 2021 Regional Emergency Transportation Route (RETR) Update								
#	ITEM	Last name	First name	Affiliation	Date	Meeting	Comment	RDPO and Metro Staff Recommended Action
25	Bridges	Odermott	Don	City of Hillsboro	2/17/21	TPAC/MTAC Workshop	Are there specific bridges that should be priorities to harden seismically to leverage limited funding?	This update included a high-level analysis of seismically vulnerability of routes and their bridges; more detailed analysis is recommended for future planning work following completion of Phase 2 of the ETR update. ODOT has prioritized investment in the Statewide Seismic Lifeline Routes (SSLRs) based on detailed engineering analysis conducted in 2012 and 2014. Priority investments are being programmed through the Statewide Transportation Improvement Program (STIP) process.
26	Individual Routes	Deffebach	Chris	Washington County	2/17/21	TPAC/MTAC Workshop	Ownership of Cornelius Pass Road was recently transferred to the Oregon Department of Transportation (ODOT). Will this work inform whether the route should be added to ODOT's statewide seismic lifeline routes?	This comment has been forwarded to ODOT for consideration as part of their planned update to the Oregon Highway Plan (OHP). SSLRs are designated by the Oregon Transportation Commission in the OHP.
27	Policy and Investment	Cooper	Colin	City of Hillsboro	2/22/21	email	How does the RETR report fit into the Regional Transportation Policy and Funding policy scheme? For example, does the I-5 bridge receive a higher priority for federal funding on the State and Metro Federally constrained project list because it is a Tier 1 route?	The RETR Update Report is not a plan and does not establish policy or investment priorities. The Report provides information and a consistent regional planning framework and route designations that can be used to inform the development of policies, more detailed planning and investment decisions at the state, regional and local levels. The recommended Phase 2 work (if funded by the Urban Areas Security Initiative) is anticipated to tier or prioritize routes for operational purposes. The Phase 2 work will also help further inform policy development, planning and investment priorities at all government levels. For example, the next update to the Regional Transportation Plan (RTP) will use the information from Phase 1 (and Phase 2, if available) as a foundation for updating the plan's existing transportation resilience policies and to inform development of the RTP investment strategy. Another example is Multnomah County – they have been using the current routes to prioritize investments in the County CIP and to look for opportunities to seismically upgrade bridges/routes as part of planned projects.
28	Individual Routes			Project team	3/5/21		Add NE 223rd Avenue between Sandy Boulevard to Marine Drive to the RETR designations. This route was identified by Multnomah County staff to be added in Fall 2020 and was inadvertently not included.	Update as requested.
29	Essential facilities			Project team	3/5/21		Review State-owned maintenance yard on OR 47. This facility was identified by Columbia County staff to be added in Fall 2020.	Update this site from city/county to state/regional category; it serves as an important staging area in an area with limited routes.
30	Critical infrastructure			Project team	3/5/21		Add Canby Ferry as critical infrastructure (county/city category). This infrastructure was identified by Clackamas County staff to be added in Fall 2020 and was inadvertently not included.	Update as requested.

ITEMS FOR CONSIDERATION - Comments on draft 2021 Regional Emergency Transportation Route (RETR) Update								
#	ITEM	Last name	First name	Affiliation	Date	Meeting	Comment	RDPO and Metro Staff Recommended Action
31	Critical infrastructure			Project team	3/5/21		Confirm Columbia County rider hub transit centers are reflected (county/city category)	The transit hubs were identified by Columbia County staff to be added in Fall 2020. There are currently transit centers in Rainier and St. Helens, which are city/county critical infrastructure. Clatskanie and Vernonia transit centers only have bus stops, which are not captured as critical infrastructure in this project. This dataset will be further reviewed in Phase 2 in coordination with transit providers.
32	Essential facilities			Project team	3/5/21		Review and refine public works sites as needed to show state/regional and county/city sites consistently across 5-county region	Update as requested. In addition, the public works dataset will be further reviewed and updated as part of Phase 2, in coordination with the RDPO Public Works Work Group.
33	Essential facilities			Project team	3/5/21		Review Tualatin Valley Fire and Rescue Command Center (11945 SW 70th Avenue., Tigard, OR) to confirm whether state/regional or county/city essential facility	In this Phase 1 analysis, all fire and rescue assets (stations and command centers) were mapped and included in the local essential facilities. A deeper analysis of assets to be considered "regional" needs to be addressed going into Phase 2 (including marine assets, regional command centers, or in some instances even specialized teams or equipment deployable region-wide)
34	Phase 2 and Future Lynn planning work	Lynn	Peterson	Metro Council President	2/23/21	Metro Council Work Session	4 things that are key to highlight and address in future planning work: (1) Management of capacity during an emergency - Coordination and consistency as to how to manage/prioritize users of RETRs is needed and should be documented as part of updating the operational guidelines and protocols in Phase 2. (2) Connectivity to emergency response resources - State and County public works staging areas are key for getting supplies and resources where they are needed during a state or regional emergency. Ensure they are consistently reflected throughout 5-county area. (3) Redundancy of emergency response routes - Redundancy is important given vulnerabilities throughout the system of RETRs. Public works staff have an understanding of where potentially vulnerable and isolated populations live as well as limitations of RETRs (e.g., weight or height restricted bridges, areas of frequent flooding/landslides/road closures). It is important to continue engaging public works staff during Phase 2 tiering process. (4) Communications during emergency response - Technology can play an important role in supporting jurisdictional coordination during emergency response and sharing real-time information about routes to use/avoid during an emergency. Other communications pathways also need to be planned in advance to address the diverse needs of vulnerable populations during an emergency, including households without access to a vehicle, people with limited English proficiency, older adults and people living with disabilities.	Phase 2 will address these four themes in the work program, and periodically update the Metro Council on the project status. See also responses to Comments #32 and #33.
35	Evaluation criteria	Councilor Nolan		Metro Councilor	2/23/21	Metro Council Work Session	Were capacities of the routes themselves evaluated?	Route characteristics were not included in the Phase 1 evaluation due to inconsistent data across the five counties. Route characteristics like road capacity, bridge weight/height restrictions, ability to carry over-dimensional vehicles, and other factors will be considered as part of the Phase 2 data collection and subsequent tiering analysis.

ITEMS FOR CONSIDERATION - Comments on draft 2021 Regional Emergency Transportation Route (RETR) Update								
#	ITEM	Last name	First name	Affiliation	Date	Meeting	Comment	RDPO and Metro Staff Recommended Action
36	Clark County Routes	Councilor Rosenthal		Metro Councilor	2/23/21	Metro Council Work Session	Do we need to better address bypasses and work around routes in Clark County? They are mostly state routes at this point.	This comment has been forwarded to Clark County agencies for consideration in future planning efforts. The report includes information that Clark County relies on State routes, and that data on the seismic resilience of their bridges is not available at this time. Additional work to develop data on route resilience in Clark County could be beneficial in Phase 2 and other future planning efforts.
37	Community Engagement	Councilor Gonzales		Metro Councilor	2/23/21	Metro Council Work Session	Remember that these routes exist to serve people. Its important we build community resilience with local planning work. Important we reflect geography and language diversity.	Expand discussion in the recommendations for future work related to community engagement and building increased understanding of how routes serve community needs.
38	Evacuation Planning	Lyles Smith	Rachel	Mayor, City of Oregon City	2/24/21	MPAC	This is good, important work. Look for opportunities for future evacuation planning and Phase 2 RETR work on operational guidelines and protocols to be informed by lessons learned from the 2020 wildfires in terms of evacuation route planning, information gaps/needs and coordination/communication of changes to traffic operations among transportation facility owners/operators. For example, there were significant bottlenecks in the OR 213/I-205 area in Oregon City as significant numbers of people evacuated wildfire areas at the same time. How might evacuation route designations be impacted by vulnerable bridges and routes? Are there opportunities to adjust traffic operations to efficiently move large numbers of people/vehicles, e.g., making a whole Interstate operate in one direction like has been done in other metropolitan areas to facilitate evacuation?	While outside the scope of Phase 2, future work on evacuation planning is already called out as a priority at both the local and regional level. Future evacuation planning can address highlighted problem areas identified in these comments. See also responses to Comments #23, #54 and #55.
39	Seismic resilience engineering	Iyall	Bill	Cowlitz Tribe	3/2/21	SW RTC	Recommend to look at SMI tool for seismic measurement. Network in Puget Sound. Do we have here in the Portland region?	ODOT, Multnomah County, and possibly others are working on incorporating ShakeAlert systems for bridge operation and emergency response into their operations. Currently, there is not a consistent system for alerting or measuring shaking in an overall system in Oregon.
40	Stakeholder engagement	Stober	Ty	City of Vancouver	3/2/21	SW RTC	What are we doing to address the routes that connect into other counties? (i.e.. Skamania and Cowlitz). How is this being communicated with them?	Recommend to inviting partners to dissemination workshop and to engage in the Phase 2 work.
41	Phase 2	Medrigy	Gary	Councilor, Clark Co	3/2/21	SW RTC	Would be good to look at weight restrictions for bridges when we do the tiering/prioritization process in Phase 2.	Expand Phase 2 RETR description to identify weight restrictions for bridges be included in the analysis to inform the tiering process.
42	Technical corrections			Project team	3/9/21		Figure 6.11 - Correct figure label to read "RETRs relative to Landslide Susceptibility"	Update as requested.
43	Technical corrections			Project team	3/9/21		Figure 3.1 - Correct typo in legend - "Transportation Route"	Update as requested.
44	Executive summary			Project team	3/9/21		ES-5 - create infographics and add final 5-county map	Update as requested.
45	Technical corrections			Project team	3/9/21		Page 5 - remove gray sidebar about RDPO and project; this is included in executive summary.	Update as requested.

ITEMS FOR CONSIDERATION - Comments on draft 2021 Regional Emergency Transportation Route (RETR) Update								
#	ITEM	Last name	First name	Affiliation	Date	Meeting	Comment	RDPO and Metro Staff Recommended Action
46	Mapping - SSLRs			Project team	3/12/21		Ensure that RETRs have a GIS tie-in to SSLRs for network analysis.	Update published maps to complete gaps in SSLR network. A review of the SSLR source GIS data confirmed that gaps exist (e.g., highway ramps are not designated). This comment has been forwarded to ODOT for consideration in future updates to the SSLR data.
47	Technical corrections	Senechal Biggs	Jean	City of Beaverton	3/15/21	email	Add a table of the existing routes and the proposed new routes to document the additions.	Appendix E includes a table summarizing new routes added during the RETR update. The table will be updated to reflect additional routes added during the review of the draft report.
48	Mapping- SSLRs			Project team	3/16/21		Verify whether or not there are gaps in the ODOT SSLR source GIS data.	Update published maps to complete gaps in SSLR network. A review of the SSLR source GIS data confirmed that gaps exist (e.g., highway on/off-ramps are not designated in ODOT's dataset). This comment has been forwarded to ODOT for consideration in future updates to the SSLR dataset.
49	Individual routes	Nematzu	Chris	City of Wilsonville		email	Add Elligson Road connection in N. Wilsonville to connect two RETRs (Day Road and Stafford Road) to provide a connection to a N-S route if I-5 was not operable during an emergency.	Update as requested.
50	Bridges	Nematzu	Chris	City of Wilsonville		email	Figure 6.10 - I-5/Boone Bridge seismic vulnerability rating (potentially vulnerable) seems at odds with recent planning work done by ODOT and the City of Wilsonville.	To remain consistent, the ODOT data provided for seismic vulnerability ratings is maintained. The I-5 Facility Study does not contradict the rating in use; however, further study following the 2018 report may have been conducted. The RDPO and Metro will continue to pursue further information on Boone Bridge seismic vulnerability rating specifically and recommend an update to the rating if warranted for Phase 2 analysis.
51	Essential facilities	Patterson	Courtney	Metro Emergency Manager	3/9/21	email	Add transfer stations designated on the Regional Solid Waste facilities map to the state/regional essential facilities data layer.	Update as requested.
52	Technical corrections			Project team	3/18/21		Figure 6.8 - Remove churches from the map and geodatabase because data provided was limited to Columbia Co. and Washington County, and as a result was not included in the analysis.	Update as requested.

ITEMS FOR CONSIDERATION - Comments on draft 2021 Regional Emergency Transportation Route (RETR) Update

#	ITEM	Last name	First name	Affiliation	Date	Meeting	Comment	RDPO and Metro Staff Recommended Action
53	Evacuation Planning	Savas	Paul	Clackamas County Commissioner	3/17/21 and 3/18/2021	C-4 subcommittee briefing and JPACT	Evacuation planning that takes into account the role of SSLRs and RETRs during events like the 2020 wildfires is needed and should be a priority for the region to address in the near-term. The planning work needs to address lessons learned from the wildfire evacuations, including communications gaps, routing and bottlenecks on the transportation network and other identified issues. Request that that Clackamas County Board of Commissioners be engaged in Phase 2 and future evacuation planning work.	While outside the scope of Phase 2, future work on evacuation planning is already called out as a priority at both the local and regional level, pending funding and staff capacity to complete this work. Future evacuation planning can address highlighted problem areas identified in these comments. Update Section 8 (Recommendation 5) to highlight the importance and need for evacuation planning to provide more context about: <ul style="list-style-type: none"> - The region is planning for sheltering in place when a major earthquake happens. - Wildfires and flooding may be most relevant to focus on. - Recognize that many people will want to evacuate the area following a catastrophic earthquake. - The importance of managing/prioritizing use of SSLRs and RETRs during an evacuation event or other major emergency and communications and technology needed to support this. - The priority for evacuation should be injured/medically fragile and people from areas with cascading impacts, e.g., large fires, chemical releases, landslides, etc. that threaten lives and destroy homes. <p>In addition, the Clackamas County Board of Commissioners will be engaged in Phase 2 and future evacuation planning efforts. See also responses to Comments#23, #38 and #55.</p>
54	Evacuation Planning	Hyzy	Kathy	Milwaukie City Councilor	3/17/21 and 3/18/2021	C-4 subcommittee briefing and JPACT	Recognizing evacuation planning is currently not within the scope of Phase 2, how might the region secure resources to complete this important work?	Federal and state grants have been available to support this type of planning work, including the Department of Homeland Security's Urban Area Security Initiative (UASI) funding for which the RDPO serves as administrator for in the region. See also responses to Comments #23, #38 and #54.
55	River routes	Hardesty	Joanne	City of Portland Commissioner	3/18/21	JPACT	Comment that we will benefit from emergency management plans to utilize marine assets/waterways	This comment supports report recommendation #8 that calls for further analysis of rivers for emergency response. This is an area of work that may be informed by the RRAP (anticipated later 2021) and could build on examples such as Vancouver, BC plans to use waterways following a major earthquake event. The Ports are likewise very supportive of this recommendation.
56	Transit	Linville	Joann	Wilsonville City Councilor	3/17/21 and 3/18/2021	C-4 subcommittee briefing	More work is needed to better define/connect the role of transit during an emergency.	Update Section 8 (Future Planning) to add references to considering the role of transit in the Phase 2 tiering process as well as future evacuation planning efforts.
57	Future planning work	Windsheimer	Rian	ODOT Region 1 Manager	3/18/21	JPACT	Wildfires demonstrated the importance of state and regional routes (SSLRs and RETRs) and resilience work underway in the region. The Transportation Incident Management (TIM) group should be engaged in the Phase 2 work.	Update Section 8 to add references to engaging the TIM group in the Phase 2 work as well as future evacuation planning work.

ITEMS FOR CONSIDERATION - Comments on draft 2021 Regional Emergency Transportation Route (RETR) Update								
#	ITEM	Last name	First name	Affiliation	Date	Meeting	Comment	RDPO and Metro Staff Recommended Action
58	Technical corrections			Project team	3/19/21		Expand acknowledgement section to identify the list of participating agencies and staff who participated on the ETR working group to more directly acknowledge their engagement and participation.	Update as requested.
59	Technical corrections			Project team	3/19/21		Update Figure 6.22 (Vulnerable Populations) to show block groups with above the regional average population density that are within census tracts with above the regional average for each vulnerable population. This will better highlight where concentrations of multiple vulnerable populations live in the region.	Update as requested.
60	Technical corrections			Project team	3/19/21		Update Appendix E (GIS Methodology) to: - clarify data collected and used in the analysis vs. data collected and available for reference and Phase 2. - clarify data limitations and further work to address in Phase 2 or by other agencies.	Update as requested.
61	Technical corrections	Stasny	Jamie	Clackamas County	3/19/21	email	Central Point Road appears to be cut off at the edge of Oregon City and should be extended through.	Update as requested to extend Central Point Road RETR to connect to Molalla Avenue via Warner Mile Road. This recommendation has been coordinated with the City of Oregon City.
62	Technical corrections	Stasny	Jamie	Clackamas County	3/19/21	email	Recommend that you work with Clackamas County departments to fill in data gaps identified on page 236 included but not limited to churches and debris management sites.	Updates were made to some of the public works and emergency response facilities in Clackamas county. Remaining data gaps will be addressed during the Phase 2 RETR work.
63	Individual Routes	Stasny	Jamie	Clackamas County	3/19/21	email	Identify more "north south" ETRs to connect Troutdale and rural area outside of Gresham to US 26. Staff is concerned that there are limited ETRs north of US 26.	No change recommended at this time. Nearly all of the routes added through the current update have been identified by individual jurisdictions to reflect recent local planning and/or more detailed reviews of the ETRs that were conducted as part of the ODOT/County Seismic Lifeline reviews. The 2018 Clackamas Co. Seismic Lifeline Bridge Detour review identified several additions that were included in the updated RETRs for this project. It would be appropriate for the C2C effort to recommend additional routes to be considered during the Phase 2 RETR effort or future RETR updates. The Phase 2 RETR work is anticipated to begin in early 2022.
64	Technical corrections			Project team	3/19/21		Update Table 6.2 to remove reference to critical infrastructure and essential facilities data that was not used in the Phase 1 analysis.	Update as requested.
65	Technical corrections			Project team	3/22/21		Update Appendix E (GIS Methodology) to clarify how public works essential facilities have different levels of information across the region, as well as relevance at the city/county/regional levels.	Update as requested.

Agenda Item No. 4.1

Resolution No 21-5171, For the Purpose of Approving the Multnomah County Local Implementation Plan for the Regional Supportive Housing Services Program

Resolutions

Metro Council Meeting
Thursday, April 29, 2021

BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF APPROVING THE)	RESOLUTION NO. 21-5171
MULTNOMAH COUNTY LOCAL)	
IMPLEMENTATION PLAN FOR THE)	Introduced by Chief Operating Officer
REGIONAL SUPPORTIVE HOUSING		Marissa Madrigal in concurrence with
SERVICES PROGRAM		Council President Lynn Peterson

WHEREAS, the housing affordability and homelessness crisis in the greater Portland region impacts us all and requires collective and individual action from every person, business, elected official, and resident that calls the region home; and

WHEREAS, on February 25, 2020, the Metro Council adopted Ordinance 20-1442 which, among other things, imposed business and personal income taxes to fund a Supportive Housing Services Program; and

WHEREAS, Resolution 20-5083 referred Ordinance No. 20-1442 (Supportive Housing Services) to the voters for approval, which was designated as Measure 26-210 by Multnomah County Elections and placed on the May 2020 ballot (the “Measure”); and

WHEREAS, on May 19, 2020, the Metro area voters approved the Measure, thereby approving Ordinance No. 20-1442; and

WHEREAS, since the election Metro has collaborated with jurisdictional partners and stakeholders to develop a regional Supportive Housing Services program, incorporating the goals and outcomes set forth in the Measure; and

WHEREAS, on December 17, 2020, the Metro Council adopted a series of ordinances and resolutions to implement the Measure: Resolution No. 20-1548, adopting the Supportive Housing Services Program Work Plan ("Work Plan"); Ordinance No. 20-1542, codifying the programmatic aspects of the Measure in Title XI of the Metro Code; Ordinance No. 20-1543, codifying the requirements, membership, and responsibilities of the Supportive Housing Services Regional Oversight Committee in Chapter 2.19 of the Metro Code; and Ordinance No. 20-1454, codifying the enforcement, collection, and implementation of the income taxes imposed by the Measure in Chapters 7.05, 7.06, and 7.07 of the Metro Code; and

WHEREAS, Metro Code Sections 11.01.060 – 11.01.070 and the Work Plan describe requirements for Local Implementation Plans to be developed by Local Implementation Partners in order to receive Supportive Housing Services funds; and

WHEREAS, Metro Code Section 11.01.070 and the Work Plan require each of the Local Implementation Partners to develop their Local Implementation Plans through a racial equity lens, including inclusive engagement that prioritizes the experiences and needs of Black, Indigenous and People of Color as well as people with lived experience, in partnership with local advisory bodies that equitably reflect community expertise and experience; and

WHEREAS, the Measure and Work Plan describe ten required elements for each Local Implementation Plan, including but not limited to analyses of existing conditions and racial inequities, commitments to regional Supportive Housing Services outcomes, evidence of

inclusive engagement, a description of how funds are proposed to be used equitably and in alignment with the regional program priorities and principles, and a commitment to tracking regional outcome metrics; and

WHEREAS, Metro Code Section 11.01.070 and the Work Plan direct that the Regional Oversight Committee review Local Implementation Plans for consistency with these requirements, and make a recommendation for approval to the Metro Council and Local Implementation Partner; and

WHEREAS, Metro Code Section 11.01.070 and the Work Plan provide that the Metro Council will approve Local Implementation Plans to be incorporated into intergovernmental agreements between Metro and the respective Local Implementation Partners regarding transfer of funds, program implementation, and ongoing oversight and accountability; and

WHEREAS, on December 17, 2020, after an extensive and inclusive community engagement process, and acting with the support of the A Home For Everyone executive committee, the Multnomah County Board of Commissioners unanimously approved Multnomah County's Local Implementation Plan, attached hereto as Exhibit A, and submitted it for review by the Regional Oversight Committee; and

WHEREAS, the Regional Oversight Committee reviewed the Multnomah County Local Implementation Plan at meetings on January 25 and February 22, 2021; and

WHEREAS, on February 22, 2021, the Regional Oversight Committee determined that the Multnomah County Local Implementation Plan is consistent with the requirements described in the Work Plan, and unanimously recommended its approval by the Metro Council; and

WHEREAS, on April 26, 2021, the Regional Oversight Committee finalized considerations to attach to its recommendation of the Multnomah County Local Implementation Plan, reflecting items beyond the scope of the Local Implementation Plan requirements that the committee seeks to understand and track throughout implementation and evaluation, and these considerations are attached hereto as Exhibit B; now therefore,

BE IT RESOLVED:

1. The Metro Council approves the Multnomah County Local Implementation Plan, attached hereto as Exhibit A, as consistent with the requirements in the Supportive Housing Services Program Work Plan; and
2. The Metro Council directs Metro staff to incorporate the Multnomah County Local Implementation Plan into an intergovernmental agreement negotiated with the county for the implementation of the Supportive Housing Services program, which agreement will be approved by Metro and Multnomah County prior to disbursement of Supportive Housing Services funds to Multnomah County; and
3. The Metro Council acknowledges the considerations raised by the Regional Oversight Committee, attached hereto as Exhibit B, and directs Metro staff to work with Multnomah County

to ensure these considerations are addressed in implementation of the Supportive Housing Services program in Multnomah County.

ADOPTED by the Metro Council this 29th day of April, 2021.

Lynn Peterson, Council President

Approved as to Form:

Carrie MacLaren, Metro Attorney



MULTNOMAH COUNTY LOCAL IMPLEMENTATION PLAN

METRO SUPPORTIVE HOUSING SERVICES PROGRAM

December 2020

Approved on:
12/17/2020

Acknowledgements

We take this opportunity to thank the original caretakers of this land, Multnomah County is located on the ancestral homelands of the Multnomah, Kathlamet, Clackamas, Tumwater, Watlala bands of the Chinook, the Tualatin, Kalapuya, Wasco, Cowlitz, Molalla, and other indigenous nations of the Columbia River.

We acknowledge the following individuals, organizations, government departments and offices who provided support to the Joint Office of Homeless Services on Multnomah County's Metro Supportive Housing Services Local Implementation Plan. In addition we acknowledge the hundreds of community members that participated in and shared their insight through the Stakeholder Survey and the Unsheltered Lived Experience Survey, in particular the more than 350 people currently experiencing homelessness who contributed.

A Home for Everyone Coordinating Board

Alexandra Appleton, Community Member
Carolyn Bateson, Portland VA Medical Center
Stacy Borke, Transition Projects, Inc
Delores Burgos, Native American Youth and Family Center
Beth Burns, p:ear
Marcí Cartagena, Human Solutions, Inc.
Lee Po Cha, IRCO, Asian Family Center
Tou Cha, Oregon Department of Human Services
Sam Chase, Metro
Frieda Christopher, David Douglas School District
Julia Delgado, Urban League of Portland
Timothy Desper, Portland Rescue Mission
Anthony Eddings, Bridges to Change
Mercedes Elizalde, Central City Concern
Marisa Espinoza, Northwest Pilot Project
Maureen Fisher, Portland Business Alliance
Kevin Fitts, Community Member
Ernesto Fonseca, Hacienda Community Development Corporation
Ashley Henry, Business for a Better Portland
Stephanie Herro, Portland Police Bureau
Katrina Holland, JOIN
Kelli Houston, Health Share of Oregon
Kim James, Cascadia Behavioral Healthcare
Adam Lyons, Neighborhood Leader
Andrew McGough, Worksystems, Inc.
Christina McGovney, Raphael House
Sahaan McKelvey, Self Enhancement, Inc.
Rebecca Nickels, Community Member
Shannon Olive, WomenFirst Transition and Referral Center
Patricia Patron, Outside In
Edith Quiroz, El Programa Hispano Católico
Jace Richard, Cascade AIDS Project
Art Rios, Sr., Community Member
Nicole Stein, Umpqua Bank
Becky Straus, Oregon Law Center
Sean Suib, New Avenues for Youth
Michael Thurman-Noche, Community Member
Helen Ying, Neighborhood Leader
Marisa Zapata, Ph.D., Portland State University

A Home for Everyone Executive Committee

Deborah Kafoury, Multnomah County Chair
Ted Wheeler, City of Portland Mayor
Sharon Meieran, Multnomah County Commission
Dan Ryan, Portland City Council
Janine Gladfelter, Gresham City Council
Michael Buonocore, Home Forward
Ben Sand, Portland Leadership Foundation
Vanessa Sturgeon, Portland Business Alliance

Tri-County Partners Clackamas County Washington County

A Home for Everyone Workgroups

Community Advisory Forum
Equity Committee
Health Workgroup
Housing Workgroup
Safety Off the Streets Workgroup
Workforce & Economic Opportunity
Veteran Workgroup

Organizations

Black Parent Initiative
Bridges to Change
Business for a Better Portland
Call to Safety
Central Eastside Industrial Council
Coalition of Communities of Color
Coalition of Gresham Neighborhood Associations
Community of Hope
Clackamas Service Center
East Portland Action Plan Housing Subcommittee
Free Hot Soup
Health Share of Oregon
HereTogether
Historic Parkrose
Hopewell House
Housing Oregon
Interfaith Alliance on Poverty
Iron Tribe Network
Kaiser Permanente
Mental Health and Addiction Association of Oregon
Mental Health & Addiction Certification Board of Oregon
Mental Health Association of Portland
Meyer Memorial Trust
North Portland Neighborhood Services
Oregon Community Foundation
Oregon Recovers
Outside In
Portland Business Alliance
Portland Homeless Family Solutions
Portland Metro Policy Council
Portland Neighborhood Coalitions
Portland Opportunities Industrialization Center
Providence Health & Services
Rain the Growth Agency
Rockwood Community Development Corporation
ROSE Community Development
Rose Haven
Salvation Army
Stone Soup PDX
The 4th Dimension Recovery Center
Tri-County 9-1-1 Service Coordination
Portland State University
Volunteers of America
Welcome Home Coalition Steering Committee
Young Women's Christian Association of Greater Portland

Representatives from Service Providers

211 Info, Inc.
Bradley Angle House, Inc.
Cascade Aids Project
Cascadia Behavioral HealthCare
Catholic Charities
Central City Concern
El Programa Hispano Católico
Human Solutions, Inc.
Impact Northwest
Immigrant and Refugee Community Organization (IRCO)
Janus Youth Programs, Inc.
Join
Latino Network
Native American Rehabilitation Association (NARA)
Native American Youth & Family Center (NAYA)
New Avenues for Youth
NW Pilot Project, Inc.
Raphael House of Portland
Self Enhancement, Inc.
Street Roots
Transitions Projects, Inc.
Urban League of Portland
Volunteers of America
Worksystems, Inc.

Representatives from government offices, committees, workgroups, and councils:

Adult System Outreach Providers
Adult System Leadership
Adult System Shelter Providers
Aging Services Advisory Council
Behavioral Advisory Council Community Workgroup
Coordinated Access for Adults Leadership & Case
Conferencing
City of Gresham
City of Portland
Disability Services Advisory Council
Domestic Violence Supportive Housing and Economic
Empowerment Network (SHEEN)
Homeless Families System of Care
Homeless Youth Oversight Committee
Homeless Youth Trauma Informed Supervisors
Multnomah County Aging & Disability
Multnomah County Department of Community Justice
Multnomah County District Attorney
Multnomah County Sheriff's Department
Multnomah County Youth and Family Services
Multnomah County Public Health Advisory Board Public
Health Approaches Committee
Portland Police Bureau
Portland Housing Bureau

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This report was prepared by the Joint Office of Homeless Services.

Executive Summary

Right now, on any given night, thousands of our neighbors throughout the region are experiencing, or at risk of, homelessness.

A large and growing percentage of these neighbors are considered chronically homeless. That means they have acutely disabling conditions, extremely low incomes, and have been living unsheltered or in emergency shelter for long periods of time.

At the same time, many other neighbors experience what's known as episodic homelessness, meaning they experience shorter periods of homelessness. They may be living involuntarily doubled or tripled up, or they are paying such a high percentage of their limited income on rent and utilities that they continually face a substantial risk of becoming homeless.

Every aspect of **this crisis disproportionately and increasingly impacts Communities of Color** due to persistent structural, institutional and individual racism.

Local governments in Multnomah County have invested more than ever to address homelessness over the past five years. They have more than doubled shelter capacity and doubled the number of people who've been able to gain and keep housing with rent assistance.

But without the resources necessary to continue scaling those responses, the social and economic forces that put thousands of people on our streets — and then keep them there — have continued to outpace that progress.

With the passage of Metro Ballot Measure 26-210, the Tri-County region has a rare opportunity to confront the true scale of this crisis — **to reduce rates of chronic and short-term homelessness, and racial disparities** — by making unprecedented investments that center racial equity, leverage existing systems, and provide the flexibility necessary to offer truly participant-centered approaches to meeting the needs of our un-housed neighbors.

Measure 26-210¹, also known as the Supportive Housing Services Measure, adds a regional income tax on high-earning households and a regional profit tax on businesses grossing more than \$5 million. The Measure was projected to generate as much as \$248 million a year across the region, once fully implemented. **Of that, approximately \$100 million a year is ultimately expected to come to Multnomah County.**

With that new funding, governments across the Tri-County region will be able to grow and sustain the **critical interventions that actually end homelessness**, including rent assistance and other support services vital to helping keep people housed, while also investing in emergency options like shelter.

The largest share of funding raised by the Measure will address chronic homelessness. The measure prioritizes 75% of funds for extremely low-income households (0-30% Median Family Income [MFI]) with at least one disabling condition who are experiencing or at imminent risk of experiencing long-term literal homelessness.

The remaining 25% will be devoted to services for very low-income households (up to 50% MFI) who are either experiencing or are at substantial risk of experiencing homelessness.

¹ [Exhibit A](#) to Metro Ordinance 20-1442 provides additional details.

Within both of those groups, the Measure also prioritizes Communities of Color.

As part of its responsibility for implementing the Measure, Metro requires each of the three counties to develop a high-level Local Implementation Plan that centers racial equity, is informed by a comprehensive community engagement process, and identifies investment priorities for rent assistance and supportive services. Metro also requires that each plan include detailed accountability metrics.

Multnomah County's Local Implementation Plan (hereafter "this Plan" or "the Plan") was developed with guidance from the Plan's advisory body, the A Home For Everyone Coordinating Board. The Coordinating Board includes voices from local governments, service providers, people with lived experience, faith organizations, neighborhood advocates and business groups.

The Plan was also shaped by an extensive community engagement process that prioritized Communities of Color and included a survey of **more than 300 people currently experiencing unsheltered homelessness**.

Metro has outlined what must be addressed in each County's Local Implementation Plan. Among the most critical sections of this Plan are:

- (1) **An Analysis of Inequitable Outcomes:** Rooted in an understanding of the role that historical and current racism play in causing overrepresentation of Communities of Color among people experiencing homelessness, this section reviews quantitative and qualitative data demonstrating disparities in rates of homelessness, as well as disparate rates of access to, and successful outcomes from, current homeless services. The analysis provides a foundation for the Plan's specific strategies to reduce disparities and improve outcomes for People of Color experiencing chronic and episodic homelessness.
- (2) **Investment and Gaps Analysis:** This section reviews the best available data on the level of regional unmet need for housing and support services among those experiencing homelessness, including an estimate of just under 5000 people who experience chronic homelessness each year. Following a review of current investments in the continuum of homeless services, the Plan details the results from community engagement that identified the critical gaps in supportive housing, rental assistance, behavioral and other support services, shelter, and the capacity of our community based organizations to expand to meet the objectives of the Measure.
- (3) **Investment Priorities:** Building upon the racial equity analysis and the identified needs and gaps, this section lays out the important values that will guide how services are delivered, including offering culturally specific and responsive services that are participant centered, trauma-informed, low-barrier, and continuously evaluated to improve outcomes.

The highest priority investment areas are detailed, including investments in:

- (a) supportive housing services, including rent assistance and wraparound housing retention supports
- (b) an expansion of behavioral health services delivered to people whether they are unsheltered, in shelter, or in housing
- (c) and additional and more diversified emergency shelter options

A set of specific **Phase 1 (year 1 - 3) Investments** are called out that will build system capacity and launch critical new programming, as well as prepare Multnomah County to respond to the short-term economic impacts of COVID-19.

This Plan also commits Multnomah County to working with Metro and Clackamas and Washington Counties to create a truly regional system of care and ensuring an equitable geographic distribution of services.

And the Plan commits Multnomah County to being accountable for outcomes. That includes Metro's identified regional outcome metrics related to how many people achieve housing stability (disaggregated by race). It also includes metrics set by Metro meant to measure whether services are being delivered equitably, and whether people with lived experience of homelessness and People of Color have had a prioritized role in the planning and oversight of all aspects of this Measure.

The framework set out in this Plan reflects the experience and expertise of thousands of community members who gave their valuable time and generously shared their input. We thank the many partners and community members who were involved.

This Plan will be the foundation for Multnomah County's ongoing implementation planning efforts, already under way. Through this framework and those efforts, we will deliver on the promise of the Metro Supportive Housing Services Measure to finally provide a scaled, comprehensive, and equitable regional response to the homelessness crisis.

Background

Our region faces a homelessness and housing crisis. Tens of thousands of people each night experience or are at risk of falling into homelessness. Among those most severely impacted by the crisis are a subset of an estimated 4,936 people across the region, disproportionately People of Color, who have acutely disabling conditions, extremely low-incomes², and are experiencing long periods of street and shelter homelessness. Many thousands more, also disproportionately People of Color, are experiencing shorter periods of homelessness, are involuntarily doubled or tripled up living with friends and family, or are paying such a high percentage of their limited income on rent and utilities that they are always at substantial risk of becoming homeless.³

On May 19, 2020 voters in Multnomah, Washington, and Clackamas Counties took an unprecedented step toward meeting the rent assistance and supportive services needs of these two populations, with a particular focus on addressing the housing and support service needs of those extremely low-income individuals with disabilities who are experiencing long periods of street and shelter homelessness. Voters passed Metro ballot Measure 26-210⁴, imposing a regional income tax on high-earning households and a regional business profit tax on businesses grossing over \$5 million.

The Metro Supportive Housing Services (SHS) Measure was intentionally brought forward to work in concert with recent large-scale regional and local housing-focused investments and initiatives, and in particular the needs of Black, Indigenous, People of Color and immigrants and refugees. Although expected to make a sizable impact in addressing the housing and services needs for these populations, this program cannot meet its potential without continued and expanded investments from the federal and state governments, full participation from health care systems, and continued support from the private and philanthropic sectors.

A Regional Approach

The SHS Program focuses on addressing housing instability for people experiencing homelessness across the region, with a call to share responsibility and strengthen coordination between the three counties. Washington, Clackamas and Multnomah counties recognize that a regional approach is required to effectively address services and resource gaps to meet the needs of these priority populations. The counties cannot design responses based on local data alone, which are reflections of traditionally siloed systems developed when homelessness and housing crises were more localized and less severe. We know that people accessing homeless system services “often travel to meet their housing, service and employment needs, and the data show the impact on communities in the tri-county region⁵” (CSH, 2019, p.12). The Corporation for Supportive Housing found that at least 2,600 people experiencing homelessness were served in more than one of the counties in the region between 2014 and 2016.

² Extremely low-income is defined as a household that makes 0-30% of the Median Family Income for that area.

³ One cause of the disproportionate impact to Communities of Color were the discriminatory planning decisions made in our region (*Historical Context of Racist Planning: A History of How Planning Segregated Portland* (2019). Retrieved from: <https://www.portland.gov/bps/history-racist-planning-portland>).

⁴ [Exhibit A](#) to Metro Ordinance 20-1442 provides additional details.

⁵ Corporation for Supportive Housing [CSH]. (2019). *Tri-County Equitable Housing Strategy to Expand Supportive Housing for People Experiencing Chronic Homelessness*. Retrieved from: <https://www.csh.org/resources/tri-county-equitable-housing-strategy-to-expand-supportive-housing-for-people-experiencing-chronic-homelessness/>

The three counties have agreed that enhancing and expanding local systems of care to more equitably address unmet needs across the region, particularly in supportive and affordable housing, is of the utmost importance. The SHS Measure initially divides program funds between the three counties as follows: Multnomah County (45.3%), Washington County (33.3%) and Clackamas County (21.3%). The three counties plan to develop and enhance local homeless systems of care that address the scale of the SHS priority populations in a similarly proportionate manner.

Regional Guiding Principles

Multnomah County's Local Implementation Plan and its implementation are guided by regional principles developed by the Metro Supportive Housing Services Program Stakeholder Advisory Group (see Appendix C).

Program Oversight and Plan Approval Process

Oversight for the SHS Program is provided by a regional Oversight Committee that includes equal representation from each of the three counties. Multnomah County's program will be overseen locally by the A Home for Everyone (AHFE) Coordinating Board, which acts as the community's SHS Advisory Board. This Plan will be recommended for approval locally in the following order:

- AHFE Coordinating Board
- AHFE Executive Committee
- Multnomah County Board of Commissioners
- SHS Regional Oversight Committee
- Metro Council

The Joint Office of Homeless Services

The Joint Office of Homeless Services (hereafter "The JOHS" or "Joint Office") is the lead entity within Multnomah County responsible for SHS Program implementation. Established in 2016 to unite City of Portland and Multnomah County efforts to address homelessness, the JOHS manages approximately **\$75.1M**⁶ in Federal, State and local public funding for emergency shelter, rental assistance and services programs. The JOHS also provides infrastructure and staffing for AHFE. Since the formation of both AHFE (2014) and the JOHS (2016), the community has increased placements into permanent housing by 40% and has significantly expanded shelter bed capacity. Leading community coordination across services sectors, the JOHS and AHFE have committed to centering race and have made progress towards reducing racial disparities within the systems of care they oversee.

Yet despite this progress, Multnomah County's homeless system of care continues to experience persistent racial disparities that are rooted in centuries of inequitable housing and economic policies. These disparities are being intensified through a growing housing crisis exacerbated by a global pandemic. Curbing the impacts of these crises is possible with significant injections of new resources that are intentionally aligned with existing supports and are prioritized for those with the most barriers to accessing and maintaining permanent housing. The SHS Program is the flexible funding resource this community has been desperately in need of for decades, and provides an opportunity to scale up rental assistance and services resources to unparalleled levels locally and regionally.

⁶ Figure is from the [JOHS Fiscal Year 20/21 adopted budget](#) excluding funding allocated for COVID-19 response.

Multnomah County’s SHS Implementation Plan is intentionally broad and is meant to be iterative, due to the short timeframe available to conduct extensive community engagement and develop the plan. The following sections of this Plan contain Multnomah County’s best efforts to identify population needs, system and services gaps, and initial investment priorities to address the identified unmet needs. As we implement initial strategies and work with stakeholders to plan implementation details, additional opportunities will arise for adjustment and improvement, and we will make amendments to this Plan as needed.

Plan Development

This Plan was developed to identify and outline unmet needs and investment priorities for rental assistance and supportive services programs across Multnomah County for extremely and very low-income households experiencing/at substantial risk of experiencing homelessness. The program prioritizes Communities of Color, and 75% of funds are prioritized for extremely low-income households (0-30% MFI) with at least one disabling condition that are experiencing or at imminent risk of experiencing long-term literal homelessness.

Multnomah County, through the JOHS, is committed to centering race at every stage of SHS planning and program development, and is working to identify and eliminate barriers that prevent participation from Communities of Color in stakeholder engagements and in accessing services. This Plan is informed by the best-available data, which has been disaggregated by race, as well as by the rich stakeholder input gained through an extensive and inclusive community engagement process that centered the voices of Communities of Color. Finally, the Plan and its implementation are guided by an advisory body, Multnomah County’s AHFE Coordinating Board whose membership equitably reflects community expertise and experience.⁷

Commitment to Racial Equity

Racism is a primary driver of homelessness. Through historical policies such as slavery, the Indian Removal Act of 1830, redlining, and Federal Housing Administration (FHA) loan discrimination, Communities of Color have been systematically excluded from land and property ownership. This legacy shapes the current configuration of housing and homelessness within our community. Additionally, systemic racism is infused within all social systems; housing, criminal justice, education, healthcare, and social services, which shape opportunities for individuals and communities. The confluence of these systems generates an ongoing channel to homelessness that disproportionately impacts Communities of Color, and makes it significantly more challenging for People of Color to escape homelessness. People of Color are also subjected to the ongoing indignities of interpersonal racism — both implicit and explicit — as they navigate services and community. These different dynamics create a constellation of factors that must be eliminated.

To counter the ongoing mechanisms of racism and create systems that prioritize Communities of Color, the JOHS and Multnomah County are committed to implementing racial equity into all organizational functions and SHS service strategies. Historically, this has occurred through the implementation of internal equity efforts that impact organizational culture,⁸ as well external

⁷ In Section 5.1 “Local Implementation Plans” from Metro’s *Supportive Housing Services Program Work Plan Draft V.5*, Metro requires that the plan must be “developed in full partnership with advisory bodies that equitably reflect community expertise and experience” (Metro, Nov 2020, p.8). Retrieved from: <https://www.oregonmetro.gov/sites/default/files/2020/11/12/supportive-housing-services-program-work-plan-20201109.pdf>

⁸ Multnomah County. (2019). *Workforce Equity Strategic Plan*: <https://multco.us/workforce-equity-strategic-plan>

equity measures that positively impact racial equity in contracting organizations,⁹ such as equity plans and the prioritization of culturally specific services.¹⁰ Additionally, as our community faced the disparate health impacts of COVID-19, the Joint Office prioritized Communities of Color and culturally specific organizations.¹¹

Organizational equity plans and the prioritization of culturally specific organizations will be two components of the ongoing system expansion efforts through the Metro Supportive Housing Services Measure. All new and expanded programs and services funded by the Measure will be required to submit an organizational equity plan and incorporate culturally responsive practices into their service delivery model. Equity will also be a core component of all procurement processes. Furthermore, the JOHS will collaborate with culturally specific organizations by forming an advisory group composed of these organizations to inform the homeless system of care's expansion. Through this ongoing dialogue, the expanded administrative and infrastructural needs of culturally specific organizations will be prioritized.

Centering the perspectives and experiences of Communities of Color and culturally specific organizations was foundational to the development of this Plan. This occurred through multiple strategies that manifested through facilitated dialogues, a survey for individuals currently experiencing unsheltered homelessness, and engagements with culturally specific organizations. An equity lens was utilized in the design and actualization of all community engagement functions. All facilitated dialogues were oriented around racial equity, with a specific emphasis on identifying the needs of Communities of Color, and surveys asked specific questions to identify the particular experiences of individuals of color. The Joint Office also conducted a comprehensive review of feedback and information received through other racial equity focused processes outside of the Local Implementation Plan community engagement process, and incorporated that feedback as well.

AHFE is also committed to implementing racial equity throughout its structure. The Equity Committee, charged with leading this work, met three times to develop input for the Plan, discussing how to best incorporate equity in the Plan and throughout the program.

Inclusive Community Engagement

Under the guidance of the AHFE Coordinating Board, Multnomah County, through the JOHS, designed a comprehensive and inclusive community engagement strategy that centered the perspectives of Communities of Color, people with lived experience, and reached an unprecedented number of stakeholders. Through 70+ virtual engagement meetings, ad-hoc feedback¹² and two surveys that received nearly one-thousand (961) responses combined, the JOHS received rich input and feedback that has been incorporated throughout this plan.

The JOHS employed supportive and inclusive engagement practices to eliminate barriers to participation. This included the use of incentives, providing opportunities outside of normal business hours, translating key engagement materials and leveraging existing scheduled

⁹ A Home For Everyone [AHFE] Equity Committee. (2018). *Equity Committee Charter*. Retrieved from: <http://ahomeforeveryone.net/equity-committee-workgroup>

¹⁰ JOHS will be in alignment with the *Contracting and Procurement for Culturally Specific and Responsive Services* (2017) guidance document prepared by Multnomah County's Office of Diversity and Equity.

(<https://multco.us/diversity-equity/news/multnomah-county-issues-guidance-contracts-culturally-specific-services>)

¹¹ JOHS is in alignment with AHFE's *Racial Equity Lens* (http://ahomeforeveryone.net/s/Racial_Equity_Lens.pdf).

¹² Throughout the Plan development process, September-November 2020, community stakeholders were provided the option of submitting feedback via email and by online form on the [AHFE website](#).

meetings to reduce scheduling burdens. Additional details outlining the methods of engagement can be found in Appendix D.

Centering the Perspectives of Communities of Color and Those With Lived Experience

Racial equity was central to the engagement process. Virtual meetings included an overview of systemic racism, an explanation of the impact of systemic racism on homelessness outcomes, and a grounding in the importance of advancing racial equity via the SHS Program. All meetings included specific questions concerning the particular needs and experiences of Communities of Color.

Black, Indigenous, People of Color (BIPOC), representatives of culturally specific agencies and people with lived experience of homelessness were represented in the majority of these meetings. Additionally, the JOHS held several focus group engagements with culturally specific organizations.

Community surveys posed questions to identify specific unmet needs for Communities of Color and gather recommended priorities to address those needs. Additionally, survey responses were disaggregated by race to understand responses specifically from Communities of Color. Finally, the JOHS worked with Portland State University's Homeless Research & Action Collaborative (HRAC) to develop a survey specifically for people experiencing homelessness, and, thanks to Street Roots, reached 383 people, 37% of whom identified as BIPOC. A November 2020 report prepared by HRAC summarizing the survey findings, *Local Implementation Plan Unsheltered Survey Results*, is presented as supplemental material in Appendix O of this Plan.

Continued Engagement Strategies

This Plan represents high-level strategies for investments and, therefore, the JOHS will continue to engage stakeholders, focusing on specific Communities of Color, to inform specific investments and the design of SHS programs. The JOHS will continue to employ strategies that promote inclusive engagement, including:

- Scheduling additional engagements with options outside of normal business hours;
- Providing stipends, child-care services, translated meeting materials and provided interpretation services, along with other barrier-mitigating strategies and incentives for participation whenever possible;
- Intentionally engaging culturally specific organizations, especially smaller organizations, to evaluate specific needs for capacity to grow programs and develop competitive funding applications; and
- Continuing to leverage AHFE committees, workgroups and system coordination groups.

Analysis of Inequitable Outcomes

The following analysis is a framework to identify and address racial disparities within the homeless system of care in Multnomah County. Overall, the analysis reiterates what the community has known for years — Communities of Color are overrepresented in the homeless population; they face significant barriers to accessing resources, and many experience worse outcomes in homeless and housing programs than non-Hispanic White households. In this section we also begin to identify the policies and practices that represent barriers for Communities of Color, and some of the strategies to remove those barriers. This is necessarily

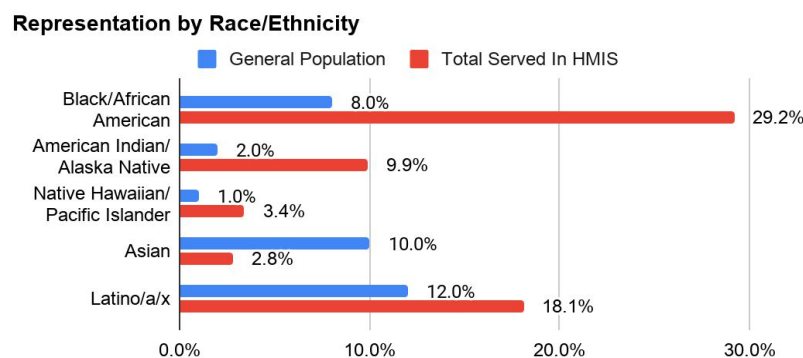
a high-level review and significant additional work will need to be done as we move toward full implementation of the SHS Program.

Racial and Ethnic Disparities Among Households Experiencing Homelessness

The disproportionate rates of homelessness among Communities of Color can be traced to centuries of policies that prevented People of Color from accessing resources. Policies such as redlining, where communities of color were disproportionately denied access to FHA loans, and eminent domain, where communities of color were disproportionately displaced, ultimately prevented many BIPOC individuals from obtaining home ownership, which is a major conduit to housing stability and wealth. Further, policies that restrict the level and duration of services and financial assistance for immigrants and refugees force many in these communities to take any housing or employment resource immediately available, foreclosing future opportunities.

The current manifestation of systemic racism within social systems continues to create barriers to housing access for Communities of Color, immigrants and refugees. Two examples of this dynamic can be seen in both criminal justice and housing systems. Through the over-policing of Communities of Color and racism in policing, BIPOC individuals are disproportionately arrested and convicted of crimes. In housing, BIPOC individuals are also disproportionately evicted. Receiving a criminal conviction or a formal eviction can prevent individuals from accessing housing and contributes to the likelihood that a person will become and remain unhoused. Both of these issues were uplifted throughout community engagement.

We also see disparities for Communities of Color in accessing the homeless services system. Fiscal Year (FY) 19/20¹³ data from the Homeless Management Information System (HMIS)¹⁴ show racial disparities among those served in homeless system programs. Communities of Color identified below, with the exception of the Asian community, were overrepresented in these data, which is consistent with what we see in other data, like the Point-in-Time¹⁵ Count, where Communities of Color are similarly overrepresented. This is especially true for Black/African American and American Indian/Alaska Native communities.



¹³ Fiscal Year 19/20: July 1, 2019 - June 30, 2020

¹⁴ The Homeless Management Information System (HMIS) is the primary database used for collecting, storing, and reporting on data from the homeless services system. The HMIS database is mandated by the U.S. Department of Housing and Urban Development (HUD) to receive federal funding. The City of Portland manages the HMIS database for Multnomah County and for other Homeless Continuum of Care systems across Oregon.

¹⁵ The Point-in-Time (PIT) Count is a nationwide effort every two years to count the number of unsheltered people on a single night in January. The U.S. Department of Housing and Urban Development (HUD) started the count in 2003, each community does their own count, and it is a requirement to receive federal funding for homeless programs. The PIT Count is sometimes considered an undercount, as it only counts people that are visibly experiencing homelessness on a single night. See “3.1 What the PIT Count Does and Does Not Tell Us” in the JOHS report, *2019 Point-In-Time Count of Homelessness in Portland/Gresham/Multnomah County, Oregon*.

It should be noted, however, that any household included in HMIS data would have had to access a homeless system program in order to be counted. It is therefore very likely that Communities of Color experience homelessness at even higher rates than the data indicate given that they face significant systemic, institutional and individual barriers to accessing the homeless services system. Barriers such as racism, English-only access points, strict eligibility requirements, extensive documentation, and distrust prevent some households from accessing the homeless services system altogether.

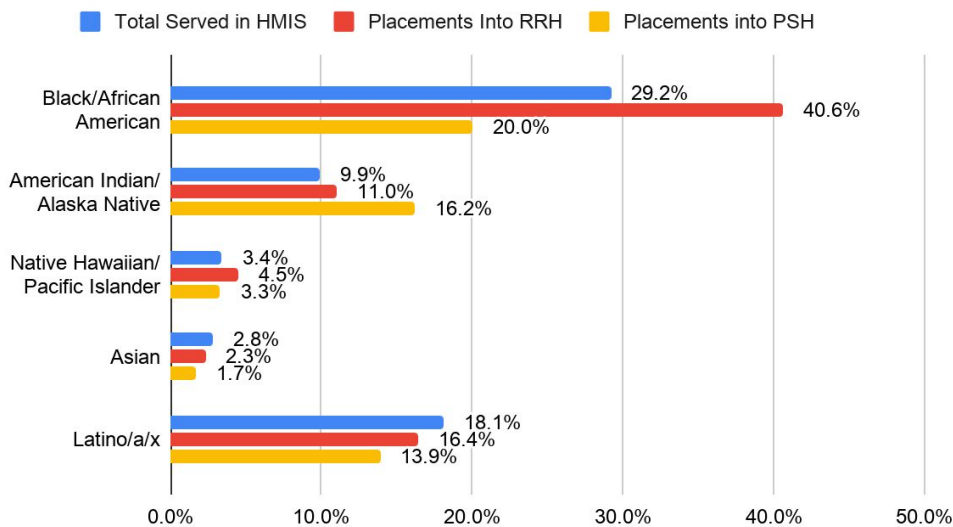
Culturally specific providers emphasized that there is often distrust in seeking housing assistance due to a legacy of anti-black and anti-brown policies and practices. Providers added that Communities of Color prefer to access resources, supports and services within their trusted and established networks, and that centralized triage, assessment, and intake systems can often exclude most communities.

While this quantitative data offers a glimpse at access disparities on the basis of race, a full analysis will of course require disaggregation on the basis of each individual community of color and their experience accessing each type of service to be funded by the SHS Measure.

Racial and Ethnic Disparities in Homeless System Program Outcomes

The data below show placements into permanent housing by race and ethnicity as compared to representation in the total homeless population.

FY19/20 Placements into Permanent Housing



RRH: Rapid Re-Housing; PSH: Permanent Supportive Housing

Housing Placement Outcomes by Race & Ethnicity

We see in this data that Black/African Americans/American Indian/Alaska Natives and Native Hawaiian/Pacific Islanders had higher rates of placement into Rapid Re-Housing (RRH)¹⁶ than their representation across homeless system programs. Asian and Latinx communities, on the

¹⁶ Rapid Re-housing is a limited-duration intervention to provide rental assistance and services. It is informed by a Housing First approach, and assistance is offered without preconditions (such as employment).

other hand, had lower rates of placement into RRH as compared to their representation across homeless system programs. This could be explained in part by the fact that there are some RRH programs in Multnomah County that are prioritized specifically for Black/African Americans and American Indian/Alaska Natives, though the data could also indicate possible barriers to accessing RRH for Asian and Latinx communities.

Permanent Supportive Housing (PSH)¹⁷ data show even greater disparities in housing placements, with Black/African Americans and Latino/a/x communities experiencing significantly lower rates of placement as compared to their representation. PSH often comes with stricter eligibility criteria than RRH, including restricting eligibility to people living on the street or in a shelter. We know that Communities of Color often experience homelessness in doubled and tripled up living conditions rather than living unsheltered.

We heard from culturally specific providers of the numerous barriers to accessing permanent housing faced by Communities of Color, and these barriers can differ depending on the specific community. For example, documentation requirements are a significant barrier¹⁸, particularly for the immigrant and refugee communities and in light of Public Charge.¹⁹ Providers also uplifted the fear some families of color, particularly Black/African Americans, face in disclosing their homelessness status for fear of losing their children.

Housing Retention Outcomes

Housing retention refers to whether a household was still permanently housed one year after exiting a permanent housing program. Using collected²⁰ data from the HMIS system for FY19/20, the average retention rate was **85%**. The data indicate that American Indian/Alaska Natives and Black/African Americans experienced lower rates of housing retention, (**82%** and **84%** respectively).

Returns to Homelessness

Another measure of relative success in housing programs is the average percentage of people that fall back into homelessness within two years after gaining permanent housing.²¹ The average rate of return in FY19/20 was **24.9%**, and we saw higher rates of returns for the following communities:

- American Indian/Alaska Native **26.2%**
- Black/African American **28.7%**
- Native Hawaiian/Pacific Islander **27.9%**

Engaged stakeholders from Communities of Color provided context that can help explain some of the disparities in maintaining housing. People of Color experiencing unsheltered homelessness²² indicated that losing housing is their number one worry about moving back into

¹⁷ Permanent Supportive Housing (PSH) is an intervention that combines affordable housing assistance with voluntary support services that are designed to help participants stabilize and remain in housing.

¹⁸ See Appendix G: Documentation Barriers for additional details.

¹⁹ The law allows for a review of the use of U.S. public benefits to determine if the person is likely to use government aid in the future and this can affect an application for citizenship (<https://www.oregon.gov/DHS/DHSNEWS/Pages/Public-Charge-Proposal.aspx>).

²⁰ On average approximately 28% of the retention data in FY19/20 was unreliable because it was either missing or the households were unable to be reached.

²¹ Due to the two-year timeline, this data includes people housed in FY18/19 and whether they returned to homelessness by FY20/21.

²² See report presented as supplemental material in Appendix O of this Plan for additional details.

housing, highlighting the importance of addressing the gaps in the system that perpetuate barriers to housing retention. Barriers identified by culturally specific providers include:

- An overall lack of culturally specific services across every program and dedicated to special populations like LGBTQIA2S+ and youth;
- Need for more housing-focused outreach to Communities of Color in locations where there are services deserts, including East County;
- A lack of Communities of Color represented in staff positions, including direct service staff;
- A lack of intensive housing supports - including behavioral health services - to support People of Color and immigrants and refugees as they transition into permanent housing, and a need for trauma-informed services offered on site as much as possible;
- Capacity needs for culturally specific providers to scale successful programs and prepare competitive funding applications;
- The need for additional legal supports and advocacy to ensure Fair Housing and access to reasonable accommodations;
- A lack of opportunities to build and/or stay connected with community, including cultural activities and the ability for friends and family to visit; and
- A lack of larger housing units for Families of Color, immigrants and refugees, especially those living in multigenerational households.

Strategies to Address Racial Disparities

The JOHS led a robust community engagement process that provides the foundation for identifying the full range of system and organizational policies, practices, rules, biases and restrictions that perpetuate racial disparities. A Phase I (see below) implementation priority for the SHS Measure will be to continue to work with AHFE and Communities of Color to spell out these barriers and collaboratively develop the specific strategies to address them.

Current racial disparities in homelessness represent the sum total of racist policies and the ongoing manifestation of racism within our social systems. To eliminate these racial disparities, all strategies to combat homelessness must be rooted in racial equity and justice. While a comprehensive set of strategies to overcome racial disparities in the homeless response system will be formulated and updated throughout the implementation of the SHS Program, there are some initial strategies that can be employed immediately to address some of the barriers mentioned by stakeholders. These strategies include investments in better data collection, additional data and administrative capacity for culturally specific organizations and supporting all service providers to more actively center race in service delivery. These and other strategies are outlined in the Planned Investments section of this plan.

System Investment Gaps & Needs Analysis

The following analysis provides an estimation of the number of people in each of the two SHS eligibility groups²³ who are experiencing homelessness across the region, and the scope of need that will be addressed specifically in Multnomah County. The analysis then highlights homeless system gaps in access to and outcomes of housing and services by program type,

²³SHS eligibility groups are households experiencing or at substantial risk of experiencing homelessness, with an emphasis on extremely low-income households (0-30% MFI) with a disabling condition who are experiencing or at risk of experiencing long-term literal homelessness.

which leave unmet needs for the many households experiencing homelessness, especially Communities of Color. The analysis also includes gaps in infrastructure and alignment, including capacity, partnerships and coordination. This analysis is informed by:

- Regional data and local data showing the scope of unmet needs of SHS priority households;
- Regional and local data on Current System Investments by housing program type; and
- Insights synthesized from our Local Implementation Plan’s community engagement process.

Population Scope: Number of households

At least **24,260** households experienced homelessness across the region over the course of 2017.²⁴ **4,936** of those households were extremely low-income, had at least one disabling condition and experienced long-term literal homelessness. People in this SHS eligibility group most often need intensive interventions like supportive housing. The remaining **19,324** households are experiencing homelessness more broadly, and in most cases, may not need the intensity of supportive housing, but will likely need rent assistance and less intensive supportive services. Here is the breakdown of these figures by household type derived from the 2019 report, *Governance, Costs, and Revenue Raising to Address and Prevent Homelessness in the Portland Tri-County Region* released by Portland State University’s Homelessness Research & Action Collaborative.

Regional Homeless Population by Household Type

Household Type	Percentage (Number) of Individual Households	Percentage (Number) of Family Households
Extremely low-income households with one or more disabling conditions experiencing/at imminent risk of experiencing long-term literal homelessness	90% (4,452)	10% (483)
Households experiencing/at substantial risk of experiencing homelessness	54% (10,471)	46% (8,853)

Proportionate Size and Scope in Multnomah County

Multnomah County’s general population represents approximately 46% of households across the Tri-County region.²⁵ However, for many reasons, the County’s homeless system of care serves a significantly larger proportion of households experiencing homelessness. In FY18/19, publicly-funded programs within the County’s homeless system of care served approximately 90% of the total households served across the three counties. These programs provided approximately 84% of the region’s supportive housing beds, 85% of the region’s rapid

²⁴ Zapata M, Liu J, Everett L, Hulseman P, Potiowsky T, & Willingham E. (2019). *Governance, Costs, and Revenue Raising to Address and Prevent Homelessness in the Portland Tri-County Region*. Portland State University. Retrieved from: <https://www.pdx.edu/homelessness/faculty-and-staff-research>. Note: report is presented as supplemental material in Appendix M of this Plan.

²⁵ U.S Census Bureau, Population Estimates Program [PEP]. (July 2019). “Population Estimates, July 1, 2019 (V2019).” *Multnomah County, Oregon*. Retrieved from: <https://www.census.gov/quickfacts/fact/table/multnomahcountyoregon#>

re-housing beds, 87% of the region's year-round emergency shelter beds and 82% of the region's transitional housing beds.²⁶

Sharing responsibilities in meeting the needs of homeless and at-risk households will require significant expansions of the homeless systems of care in both Washington and Clackamas counties to meet the needs of a larger number of households than currently present in their local data. For Multnomah County, this will mean addressing the needs of a more equitable proportion of households.

Multnomah County will initially receive about **45.3%** of the region's SHS Program funds. In the spirit of shared responsibility, Multnomah County plans to strengthen and enhance its homeless system of care to address unmet needs based on the County's proportion of SHS resources (45.3%). Using this approach, Multnomah County will use SHS funds to help:

- Over the course of the program, at least **2,236** extremely low-income households with at least one disabling condition who are experiencing/at imminent risk of experiencing long-term literal homelessness, obtain and retain permanent housing; and;
- Annually at least 3,000²⁷ very low-income households who are experiencing or are at substantial risk of experiencing homelessness, to obtain or retain permanent housing. Currently there are an estimated **8,754 households** that meet this criteria.

Before considering specific gaps in meeting the needs of the populations identified above through homeless system programs, it is important to consider current homeless system investments and the capacity of existing programs, within a regional context.

Current Investments and Capacity: Homeless System of Care

The Joint Office of Homeless Services manages the majority of current public-sector investments in services to address homelessness in Multnomah County, and contracts most of those funds to a large network of community-based organizations throughout the County, including to providers of culturally specific and culturally responsive services.²⁸ Both the Joint Office and Home Forward, the community's Housing Authority, manage and/or directly provide publicly-funded rent assistance included in housing programs within the homeless system of care.

The following overview of current investments by program type uses figures from a July 2020 regional data analysis report provided to Metro, *Regional Supportive Housing Services Tri-County Data Scan*,²⁹ and reflects public funding flowing through the Joint Office of Homeless Services, as well as funding through local community action agencies and Home Forward. The FY19/20 investments shown below do not include funding that flows directly to service providers, expenses billed to Medicaid, or COVID-related investments.

²⁶ This data is included in a report that is provided as supplemental material in Appendix N.

²⁷ This figure represents total served annually and includes households that newly receive support and households that are continuing support from previous program year/s.

²⁸ Culturally responsive services are services adapted to align with beliefs, practices, and linguistic needs of communities whose members identify as having a particular cultural affiliation, for example, by virtue of their place of birth, ethnic origin, preferred language, shared experiences or shared identities (*Contracting and Procurement for Culturally Specific and Responsive Services*, 2017, p. 5).

²⁹ Report included as supplemental material in Appendix N.

FY19/20 Public Funding Investments by Program Type³⁰

Program Type	FY19/20 Public Funding	Bed Capacity	# People Served	# Households Served
Supportive Housing	\$38,628,151	4,947	4,828	3,392
Rapid Re-housing	\$34,188,197*	2,186**	6,563	3,507
Prevention		N/A	6,501	2,869
Emergency Shelter	\$17,041,310	1,891	5,136	4,480
Transitional Housing	\$1,133,565***	746	1,291	1,242
Outreach****	~\$2,900,000	N/A		

*Rapid Re-housing and Prevention investments are combined in this analysis.

**Rapid Re-housing “beds” reflect people currently served in the program and do not reflect total bed capacity.

***Transitional housing

****Outreach was not included in the regional report. Figures used here are from the Joint Office of Homeless Services FY20/21 budget.

Unmet Needs and System Gaps by Program Type

The amount of need for housing interventions in Multnomah County will depend upon the ability of all three counties to significantly enhance and/or expand housing solutions within their homeless systems of care to meet their proportionate share of the need across the region. This will require ongoing close collaboration with the other two counties to closely monitor local and regional needs for each type of housing program and adjust proportions accordingly when needed. The analysis on the following pages describes high-level unmet housing-related needs by program type. It should be noted that some housing-related needs specific to Communities of Color were highlighted above in the Analysis of Inequitable Outcomes, so those insights will not be repeated below.

Households experiencing or at substantial risk of experiencing homelessness require an array of flexible rent assistance and tenant-centered supportive services to meet their short and long-term housing needs. Some households will need only one-time resources to prevent homelessness, some will only need rent assistance, others will need long-term rent assistance and long-term intensive supportive services, and many will find that their needs for housing resources change over time.

Extremely low-income households (0-30% MFI) living with significant disabling conditions and experiencing long-term and cyclical homelessness often live unsheltered for years and benefit most from intensive and long-term housing supports. The 2019 Point-in-Time Count identified over 1,700 people experiencing chronic homelessness on one night, a 37% increase over 2017, and 77% of those individuals were unsheltered.³¹ Those surveyed identified substance use disorders and mental health as the most common disabling conditions. In response to these trends, Multnomah County’s homeless system of care has expanded housing and services

³⁰ Definitions of program type are located in Appendix F.

³¹ Joint Office of Homeless Services [JOHS]. (2019). *2019 Point-In-Time Count of Homelessness in Portland/Gresham/Multnomah County, Oregon*. Retrieved from: <http://ahomeforeveryone.net/point-in-time-counts>

options for those experiencing chronic homelessness with guidance from the 2018 [Strategic Framework to Address Chronic Homelessness](#),³² and has made progress towards a community goal set in October of 2017 of creating 2,000 units of supportive housing; however, gaps in housing and services quality and capacity mean that many of these households live with significant unmet needs. The needs as they pertain to housing quantity and quality are summarized below.

Supportive Housing

Extremely low-income households with a disabling condition who are experiencing long-term homelessness often need both long-term rent assistance and long-term intensive support services (including case management, healthcare and behavioral health services), or in other words—supportive housing.³³ Using SHS funds, Multnomah County plans to address the housing needs of at least 2,235 households that meet this criteria. The County had previously set a community goal to create 2,000 units of supportive housing between 2017 and 2027. As of October 2020, approximately **1,900**³⁴ units/households of the 2,235 need funding for long-term rental assistance and/or services.³⁵ As with all of the gaps identified in this Plan, the need and available resources will be reevaluated on a regular basis and goals will be adjusted accordingly.

In community engagements, several stakeholder groups detailed some of the culturally specific needs of Communities of Color experiencing homelessness and raised the fact that those needs remain unmet time and time again due to the lack of culturally specific and responsive supports. In order to center the needs of Communities of Color, supportive housing will need to be expanded, programming will need to become more flexible, and services — in particular behavioral health services — will need to be enhanced, and, in some cases re-designed, with continued input from these communities.

Rent Assistance

According to community stakeholders, there is a great need in households experiencing homelessness for flexibility in the way that rental assistance is administered to both honor client choice and address a variety of barriers. These barriers include extensive documentation requirements, waiting time for approval, funder-imposed rent limits, and limited options for when households need to or want to move³⁶. Stakeholders also emphasized the need for an array of rental assistance offerings, with a mix of tenant-based rent assistance that can be used anywhere in the rental market, project-based assistance tied to new and existing units, and more opportunities for service providers to master lease units (sponsor-based assistance).

For extremely low-income households (0-30% MFI) with a disabling condition and experiencing or at risk of long-term literal homelessness, long-term rent assistance is crucial to maintaining housing stability. Many extremely low-income households experiencing shorter-term homelessness will also need long-term rent assistance to maintain housing stability.

For very low-income households (30-50% MFI) experiencing or at risk of episodic homelessness, there is a range of rental assistance needs from short to longer-term assistance that varies based on household needs and may change over time as household compositions

³² Joint Office of Homeless Services [JOHS]. (2018). *Strategic Framework to Address Chronic Homelessness*. Retrieved from: http://ahomeforeveryone.net/s/CH_Strategic_Framework

³³ Supportive housing is defined in Appendix F, and includes transitional recovery-focused housing.

³⁴ This would be a 1,900-unit/bed increase to the number shown in the Current Investments chart.

³⁵ Other community resources (HUD vouchers, local funds) have funded rental assistance and services in the other units.

³⁶ See Appendix G: Documentation Barriers for additional details.

and circumstances change. For those not eligible for supportive housing, rent assistance often comes in the form of publicly-funded affordable housing (HUD³⁷ vouchers) or Rapid Re-Housing. Many of our culturally-specific service providers have indicated that the eligibility criteria is often too narrow to serve these households and additionally, the assistance is not for a long enough period of time. This is particularly the case for Black/African American, American Indian/Alaska Native and Latino/a/x households, and for youth transitioning to adult services (at age 25).

Supportive Services

Very low and extremely low-income households experiencing or at risk of homelessness need an array of supportive services that are tenant-centered, designed by those who will be using them, voluntary, and range in intensity based on specific household needs. Therefore, flexibility is paramount in the type and intensity of services that are offered.

Extremely low-income people with a disabling condition that are experiencing or at imminent risk of long-term literal homelessness will often need long-term intensive housing-based supports, along with clinical behavioral health services that are offered as part of supportive housing. Many households at substantial risk of or are experiencing homelessness more broadly also may need supportive services to maintain housing stability. These shorter-term services may not need to be as intensive or prolonged as those provided in supportive housing, though it should be noted that households newly experiencing homelessness include a large number of youth, families with children and domestic and sexual violence survivors, each with their own unique set of needs.

Behavioral Health Services

Based on a broad community survey of stakeholders, the top service³⁸ need across the County is more behavioral health services capacity, from outreach for unsheltered and doubled-up populations through supports in housing. This specifically includes intensive mental health supports and substance use services that can be offered where clients are located, as well as peer supports and culturally specific behavioral health services for Communities of Color and immigrants and refugees. Further, based on HMIS data, households with disabling conditions, including a mental illness and/or a substance use disorder, are represented at lower rates in homeless system programs than their representation in the 2019 Point-in-Time Count.³⁹ This could suggest barriers to access for these populations in some or all of these programs, or could point to a lack of behavioral health and mental health supports available within these programs. Additional analysis would need to be completed to determine the full scope of service gaps and needs, though the data is consistent with the stakeholder input highlighting an overall need for more behavioral health resources.

Other Supportive Services

Other service gaps and needs identified through surveys and community engagements include:

- Housing-based supportive services that would range in intensity and duration, depending on household needs. Such services would include:
 - Housing-based case management;
 - On-call resources and support for when crises arise or escalate;

³⁷ The U.S Department of Housing and Urban Development.

³⁸ Behavioral health services were ranked as the highest need in community engagement survey and frequently discussed in stakeholder engagement meetings.

³⁹ See Appendix K: Data Tables for additional details.

- Culturally-specific and responsive housing-based services delivered through existing community networks; and
- Advocacy on behalf of the household for issues related to tenancy
- Intentional, intensive services to support household transitions from shelter/streets into housing. In a survey of BIPOC⁴⁰ experiencing unsheltered homelessness, respondents indicated that losing housing and overly strict rules were their top worries in moving back into housing.
- Community engagement services: There is a prevalence of isolation once households move into housing. There is a need for more focus on intentionally building community to promote a sense of belonging, and to offer opportunities for households to stay connected to their existing networks.
- Increased resources for staffing: There are not enough staffing resources dedicated to each household (case ratios are too high and there are often issues of staff availability for coverage).
- Increased self sufficiency services: Households report struggles with getting the support they need to achieve higher independence.
- Increased transportation services: There is not sufficient transportation for households to access services.⁴¹
- Although not specifically services related, a need for better housing quality and type was raised by culturally specific providers and by providers in the recovery community:
 - There are not enough larger units available for families, especially those in multigenerational family units.
 - There is a need for more recovery housing, particularly for entire families so that people discharged from inpatient treatment can reunite with their family.

Multnomah County expects to serve thousands more households per year with SHS funds than the system currently serves, though we will not be able to meet the needs of all eligible households, particularly since the number needing housing assistance is expected to grow due to the impacts of COVID-19. Rent assistance and services programs will prioritize very low-income (0-50% MFI) as well as extremely low-income (0-30% MFI) households in Communities of Color, including those with disabilities who are experiencing or at risk of long-term literal homelessness.

Homelessness Prevention Resources

Very low-income households at substantial risk of homelessness need homeless Prevention and Diversion resources that are focused on households with the greatest risk of falling into homelessness. The SHS program cannot address the larger issues of poverty and economic disparities; however, it provides the flexibility to prevent thousands of households from entering or reentering homelessness if the funds are used strategically. Community stakeholders emphasized the importance of growing the community's Prevention and Diversion programs especially as eviction moratoria are set to expire.⁴² More detailed planning work is necessary

⁴⁰ See report presented as supplemental material in Appendix O of this Plan for additional details.

⁴¹ Smock, K, Besser, D. (2019). *2019 Poverty in Multnomah County*. Report prepared for the Multnomah County Department of County Human Services, Youth and Family Services Division under the oversight of the Multnomah County Commission for Economic Dignity. Retrieved from: <https://multco.us/dchs/2019-poverty-multnomah-county-report>. Note: See p.40 for the Multnomah County Transit Access (Density) Map.

⁴² The Centers for Disease Control and Prevention (CDC) implemented a federal eviction moratorium to prevent the spread of COVID-19. This is set to expire on December 31, 2020. Benfer et al. (2020) estimates that 30-40 million people in the U.S. are facing eviction. See Benfer, E., et al. (2020, August 7). *The Covid-19 Eviction Crisis: An Estimated 30-40 million people in America are at Risk*. Aspen Institute. Retrieved from: <http://aspeninstitute.org>

with service providers and other AHFE participants to determine the scale and type of Prevention and Diversion programs, and how they will be prioritized using SHS funds.

Pre-Housing Resources and Services

Many extremely-low and very low-income households experiencing/at substantial risk of homelessness will need pre-housing supports that engage them wherever they are, provide connections to needed services and guide them through the process of securing housing. It is near-impossible to quantify the need for pre-housing services, as most households need at least some level of support and services utilization data does not fully convey the scope of need for these resources. Feedback gathered in community engagements and surveys identify several unmet needs in this area.

Outreach/In-Reach: Community outreach and in-reach were identified as an area of need, with an emphasis on Communities of Color and other populations like youth and LGBTQIA2S+. Although there is a relatively large network of outreach workers for general street outreach, there is not enough population-specific or multi-lingual outreach available. Community partners also report a lack of capacity for in-reach into institutional settings such as hospitals and jails. Some specific gaps include:

- A need for more supplies in the field that can facilitate services access (i.e. mobile hotspots, tablets, printers).
- Support in navigating various services systems is a high priority, especially for those who need multilingual assistance and those who do not have access to technology.
- An increasing need to provide hygiene access to address the lack of toilets, showers, laundry, internet access and garbage clean-up for people living unsheltered and in camps.
- A need to deliver more behavioral health-focused outreach, particularly to those living outside, that pair with support to navigate behavioral health systems.

Housing Navigation: There is not enough housing-focused navigation to help households find and secure permanent housing, including advocating for households during the application process (application supports, document readiness, fair housing, reasonable accommodations). Navigation services were also highlighted as a top need in the stakeholder feedback survey.

Housing Access Barrier Elimination Funds: There is a need for more resources to address housing barriers that can be eliminated with financial assistance, such as paying past debt, deposits, application fees, documentation fees, legal fees and moving costs.

Health Care: As more people find themselves living outside during a pandemic, there is an urgent need for building rapport through outreach and connecting households to mainstream health care services. For unsheltered households, this includes more street-level medical care and mobile health care services that are able to be delivered outside of traditional settings.

Shelter

Shelter capacity and a range of shelter options have surfaced via community feedback as a need for SHS eligible households, to the extent that there continues to be a lack of permanent housing options for people living unsheltered. Multnomah County has more than doubled the number of shelter beds over the past several years, yet there are gaps in the system in where shelter is located and how it is able to provide for special populations, including a growing number of people with complex physical and behavioral health challenges who are living

outside. Among the most pressing shelter needs as identified through data and by stakeholders are:

- Overall Capacity
 - The need for additional shelter beds until more permanent housing is available.
- Type of Shelter
 - Desire for alternative shelter options (non congregate, sanctioned tent camping, safe parking, etc.); and
 - There is a need for more dedicated resources to promote community-driven shelter models that offer welcoming environments with trauma-informed approaches to service delivery.
- Services
 - More housing-focused services located in shelter;
 - Culturally specific and responsive services on site in shelters with staff representation from Communities of Color;
 - Increased case management services brought on-site into shelters to provide opportunities for pre-housing services; and
 - Behavioral health services, including mental health and substance use services.
- Facilities
 - Increased security for belongings, especially medications and documentation;
 - Some shelters do not have adequate access for people with disabilities; and
 - Ability of medically vulnerable and immunocompromised participants to remain safe.

Needs for Homeless System Infrastructure & Capacity

Operating a homeless system of care requires more than a collection of funded housing and services programs. The JOHS has worked over the past five years to advocate for and intentionally build capacity for contract management, program design and planning, training, data analysis, community engagement and capacity to actively center racial equity, that comprise the infrastructure that designs, coordinates and improves programs for those experiencing homelessness.⁴³ Although questions regarding infrastructure were not specifically asked in community engagements or the surveys, stakeholder feedback, particularly from jurisdictional partners, service providers and staff within the JOHS, offered insights into current and anticipated needs to support the SHS Program.

Community-Based Organization (CBO) Capacity: Many service provider organizations do not currently have the capacity to scale programming to meet the needs of the SHS Program. This is especially true for smaller CBOs serving specific Communities of Color.

- Smaller organizations are sometimes unable to access funding solicitations and lack the staffing to navigate the solicitations and prepare competitive applications. These organizations often do not have the data to demonstrate outcomes in the ways that many solicitations require.
- Across providers large and small there is a need for more administrative capacity to conduct program tracking, management, monitoring, data collection (including technology), reporting, and evaluation.
- There is insufficient funding to appropriately compensate direct services staff, which has led to system-wide practice of high caseloads and high staff turnover.

⁴³ The Joint Office of Homeless Services (JOHS) aligns with A Home For Everyone's (AHFE) Vision, Guiding Values, and Principles (<http://ahomeforeveryone.net/vision-principles>).

- Organizations across the homeless system of care require ongoing technical assistance and support to implement racial equity.

Coordination and Partnerships: AHFE fills a large need by providing platforms to build partnerships and better coordinate services. There are continued opportunities for improvement here, as County department services are not yet fully coordinated with one another and often service referrals result in programs that are at capacity or have long wait times. Expanded coordination with health care systems and Coordinated Care Organizations⁴⁴ will also be critical to the success of the SHS Measure. In addition, there are limited resources to support landlord engagement and relations, which will be a growing system-wide need as rent assistance programs scale up significantly with SHS. Along with these efforts, Fair Housing technical and legal assistance will need to scale up.

Data & Evaluation: The JOHS and the Portland Housing Bureau manage the community's HMIS database. The JOHS has spent the past few years building a data infrastructure to better track, report and analyze system data. However, a program of unprecedented size such as SHS, will require the JOHS, as well as the network of CBOs to build out their data collection, reporting, and evaluation capacity. This expansion and integration will also have to occur regionally.

Commitment to Non-Displacement of Funds

Through the JOHS, in FY21 Multnomah County and the City of Portland are investing approximately \$70 million of local general fund into the types of services authorized by the SHS Measure. Of that total, the FY21 allocation of Multnomah County general fund is approximately \$35 million. Multnomah County hereby commits not to use SHS funds to reduce general funds committed to the JOHS to provide supportive housing services for purposes of reallocating those funds to other priorities.

Gaps in Geographic Equity Across Multnomah County

The community's homeless system of care resources are concentrated mostly within the City of Portland, though efforts have been made in recent years to expand shelter, housing and services into other areas of the County. As a result of displacement, many households, especially Communities of Color and immigrants and refugees find that needed resources are out of reach as they are forced to move into outlying areas of the County. Stakeholder conversations and the community survey identified East County, including the City of Gresham, as an area in great need of additional resources, especially rental assistance and support services.⁴⁵

Supportive Housing Across the County

Community stakeholders have emphasized the importance of honoring client choice in housing type and location. There are areas across within the County that have little supportive housing stock,⁴⁶ and there is also an important need to expand housing options in areas with amenities and in places that will allow Communities of Color to remain in their historic neighborhoods. It is critical to expand opportunities for tenant choice across new developments and within existing

⁴⁴ Oregon uses a coordinated care model, delivered through Coordinated Care Organizations (CCOs) to provide healthcare coverage to people that qualify for the Oregon Health Plan (Medicaid).

⁴⁵ According to the American Community Survey (2013-17 5-Year Estimates), there is a higher percentage of households east of I-205 that are below poverty level ([2019 Poverty in Multnomah County, p. 70](#)).

⁴⁶ "The densest concentrations of affordable units are in downtown Portland, and in Portland's inner east and west side neighborhoods ... these areas had high poverty rates in the 1990's but have experienced declining ... rates over the past two decades ... there are fewer buildings in Portland east of I-205, and even fewer in Gresham, Fairview, Wood Village, and Troutdale" (2019 Poverty in Multnomah County, p.43).

inventory (using flexible tenant-based rent assistance). We have heard from the community of the need for more housing resources in East County, and will work with stakeholders to further identify neighborhoods and areas across the county where resources should be distributed more equitably. Although not comprehensive, a visual map of where supportive housing units are currently located can be found in Appendix H.

Temporary Housing and Shelter Across the County

We have also heard from community members that there is a need for additional shelter capacity in various areas, in particular East County. Short-term investments in additional shelter capacity will likely be made through the SHS Program. When deciding where to site a shelter, Multnomah County will consider areas that currently need more nearby shelter capacity. See Appendix I for a current snapshot of most of the emergency shelters supported by public funding.

Other priorities that surfaced include the need for outreach, navigation and behavioral health services specifically in East County and in areas without substantial public transportation resources.⁴⁷

Investment Plan

Overarching Program Commitments

Through Multnomah County's Supportive Housing Services (SHS) Program implementation, our County commits to the funding allocations as required by Metro:

- 75% of SHS Program funds will be devoted to services to people who are extremely low-income (0-30% MFI), have a disabling condition and either are experiencing or are at imminent risk of experiencing, long term literal homelessness.
- 25% of SHS Program funds will be devoted to services for very low-income households (30-50% MFI) that are either experiencing or are at substantial risk of experiencing homelessness.

We further agree to evaluate locally and regionally the needs of these two populations regularly (at least annually) as the program is implemented. Multnomah County will work with Metro and regional partners to adjust priorities or distributions to better meet the needs of the SHS priority populations and the goals of the program.

Multnomah County further commits to maintaining low-barrier program eligibility requirements, including low-barrier documentation, as well as options for participants in SHS-funded programs to self-report data required for program eligibility. There may be instances when SHS funds are paired or aligned with other community resources that require additional documentation, including third-party documented proof of eligibility (e.g. certain HUD-funded programs). However, it will be a priority to maximize the flexibility offered by the SHS Program to remove documentation requirements to find alternative pathways that maximize access for SHS-eligible households.

⁴⁷ According to the Behavioral Risk Factor Surveillance System (BRFSS) survey, the prevalence of mental health issues in adults in Multnomah County (adults that reported mental health is "not good" for 14 days or more) is highest in census tracts east of I-205 (*2019 Poverty in Multnomah County*, p.54).

Planned Investments

By virtue of the very limited time available, this Plan provides only a high-level strategic framework to guide the funding priorities for SHS over the coming years. While Phase I priorities are committed to and detailed below, the majority of funding decisions will be made only after additional in-depth planning over the coming year in partnership with community stakeholders. In that additional planning work, we will continue to prioritize the participation of Communities of Color and people with lived experience of homelessness, and structure engagements to remove barriers to their participation.

The ability to provide a highly detailed spending Plan for the SHS Measure funds is also limited by the lack of clarity about how much funding will actually be available, especially in the early years of the Measure. Metro originally projected annual revenues of over \$100 million for Multnomah County, but the short and long-term impacts of COVID-19, together with the anticipated lag in collection rates, will have unknown negative impacts on revenues for the first several years of the program. For purposes of planning, Metro has advised that we should estimate Year 1 revenues at **\$52** million for Multnomah County.

The framework for investments provided in this section is derived from the requirements set out in the SHS Measure, the guiding values, objectives, and racial equity and gaps analyses set out above, along with extensive community feedback regarding what is needed to meet those objectives and address those gaps. Phase I investments reflect the more specific known needs and commitments that are either of limited duration or provide a necessary foundation for the long-term expansion of the homeless system of care under the SHS Program. While Phase I investments are thought of as priorities for years 1 - 3, the complete investment strategy for years 2 and 3 will await additional local and regional planning following approval of this plan.

Systemwide Investment Priorities

Certain investments will be needed early and on an ongoing basis to support the effective implementation of the SHS Program. Many of the Phase I investment priorities are in this category. Some of these investments are likely to be made regionally in coordination with Washington and Clackamas Counties.

- (1) Community Based Organization (CBO) Capacity:** The success of the SHS Program will depend on the ability of CBOs, in particular those offering culturally specific services, to effectively deliver the support services funded by the Measure. Both established and emerging organizations will be needed to support implementation of the SHS Program across all three counties. Therefore, there will be a significant priority placed on building the capacity of CBOs through technical assistance, training (including training to frontline staff), and infrastructure development. Specific strategies will be co-created with stakeholders to encourage and facilitate new CBOs contracting for SHS funds with the County. Following an evaluation, there will likely also be a significant investment in current organizational capacity to address pay equity concerns, help stabilize staffing and enhance outcomes. CBO capacity will be a shared priority of all three counties, and investments will likely be made on a regional basis.
- (2) System and Program Evaluation:** As part of developing more detailed investment priorities and system expansion strategies for the SHS Program, there is a need to evaluate aspects of our existing homeless response, behavioral health, aging and other aligned systems and program strategies. Ongoing system and program evaluation investments will be essential to ensuring continuous quality improvement throughout the life of the program. Immediate evaluation priorities include assessing the capacity of

CBOs that currently deliver services, including a review of their ability to attract and retain talent given current compensation levels and approaches to equity. Evaluation is an area where investments will likely be made regionally as well as locally. All system and program evaluation work will be carried out using a racial equity lens and with leadership from Communities of Color, immigrants and refugees, and people with lived experience of homelessness.

- (3) Data Collection and Sharing:** There is a substantial need to strengthen and integrate existing data systems, in particular the HMIS database and healthcare data systems, to expand users and develop new service coordination, tracking and reporting capabilities. Community stakeholders uplifted the difficulty in data collection compliance, particularly as many community based organizations don't have dedicated data staff. In terms of improving service coordination, particularly across departments within Multnomah County, we anticipate investing in existing initiatives that focus on connecting together disparate data regarding client and service access. Establishing and implementing regional data collection and reporting standards will be a necessary area of work and investment, especially in the early phase of the SHS Program.
- (4) System Navigation and Coordinated Access:**⁴⁸ Improving access to information and the mapping of available services was identified as a high priority through community engagement. In addition, enhanced system navigation services that are delivered in partnership with culturally specific providers is a priority need, in particular for Communities of Color and immigrants and refugees. Bringing information and navigation services through outreach to people exiting institutional settings, staying in shelters, and living unsheltered is an added component to this. Finally, improving coordinated access systems in order to ensure equitable access to housing and support services was identified as a high priority, as was ensuring that those who are highly vulnerable and have been awaiting housing on the current coordinated access waitlists, sometimes for years, not lose their place in line as the system is improved.
- (5) County Program Implementation Capacity:** The SHS Measure will more than double the current budget of the JOHS when revenue reaches the projected total. It will also likely expand critical services offered by other County departments, including the Health Department and the Department of County Human Services. While it is anticipated that the majority of funded services will be delivered by community partners, additional County staffing will be needed to effectively plan, procure, implement, and evaluate the SHS Program.

Planned Investments by Service Types

Our community engagement sessions and surveys asked participants to identify service priorities based on two population groups identified in the SHS Measure: (1) those who are extremely low-income (0-30% MFI), living with one or more significant disabling conditions and are, or are at imminent risk of, experiencing long-term literal homelessness and, (2) those who are very low-income (30-50% MFI) and are, or are at substantial risk of, experiencing homelessness. While the types of services identified as priorities were largely the same, how they ranked in priority varied. We also heard very clearly from our community stakeholders that

⁴⁸ The Coordinated Access model is recommended by the U.S. Department of Housing and Urban Development (HUD) and is a requirement to receive federal funding for homeless services. The intention of Coordinated Access is to provide homeless services to anyone regardless of where they first seek services. Multnomah County has a Coordinated Access system for Adults, Families, Youth (25 yrs and younger), and Survivors of Domestic Violence. There is a fifth system, the Veteran By-Name list. Each system has established unique processes to assess needs and deliver services. See AHFE website "Coordinated Access in Multnomah County" at <http://ahomeforeverone.net/coordinatedaccess>

people’s needs will vary along a continuum, and that our priority must be to provide each person the specific type and intensity of support that they need to be successful in ending their homelessness. In addition, in all cases, the priority is delivering services in a manner that ensures equity in access and outcomes for People of Color, and people from other historically marginalized communities who are overrepresented in the homeless population. This requires all services to be offered using culturally specific, culturally responsive, trauma-informed, and person-centered approaches that are adaptable to the unique situation of each individual. The specific services that emerged as priorities through our engagements include:

(1) Supportive Housing: In particular for those extremely low-income people with disabling conditions experiencing, or facing, long-term literal homelessness, supportive housing was the highest priority investment area. The gaps analysis section above identifies a projected need of at least 2,235 additional supportive housing units in Multnomah County. Based on the quantitative and qualitative data generated for this Plan, within that 2,235 units priority will be placed on:

- (a)** Permanent Supportive Housing units approved for development under the Portland Housing Bond, including the units prioritizing individuals with behavioral health needs, Veterans, and Seniors, and people who identify as Native American and Latino/a/x.
- (b)** Project-based supportive housing units that feature enhanced services for individuals who are aging and struggling with the activities of daily living, and individuals with significant behavioral health challenges.
- (c)** Project based transitional housing units that provide intensive support services focused on recovery from mental health and substance use disorders.
- (d)** Project based and scattered site Permanent Supportive Housing units that are specifically designed to address the overrepresentation of specific Communities of Color in the chronically homeless population, in particular among Native Americans, African Americans, and Native Hawaiian and Pacific Islanders.
- (e)** Project-based and scattered site permanent and transitional supportive housing units prioritized for individuals exiting institutional settings, including jails and prisons, hospitals, secure residential facilities, and foster care.

While it must be a priority to leverage all existing and future long-term rental assistance and support service resources, if the SHS resources are used to cover rent and support services (not including clinical services) for the estimated 1,900 units that need identified funding sources, the annual cost will be approximately \$38 million.⁴⁹

(2) Long-Term Rental Assistance: The lack of access to housing that rents at levels affordable to people with extremely low-incomes, and even people with very low-incomes, is a primary cause of homelessness and disproportionately impacts People of Color. Therefore, the success of the SHS Program depends on a large investment in long-term rental assistance — a “local Section 8” program. This long-term rental assistance will take various forms, including attaching to new units of supportive housing

⁴⁹ This assumes an estimated \$10,000 in rental assistance and \$10,000 in services costs per unit per year and does not include annual escalation increases, which averages about 3% per year.

that are being developed, existing affordable and market rate units, and tenant based vouchers that may last several years or as long as the tenant remains income-eligible. The standards for the long-term rental assistance program will be developed regionally, but implementation will initially be at the County and, potentially, at the provider level.

- (3) Flexible Rental Assistance:** Through stakeholder engagement that prioritized Communities of Color and individuals with lived experience of homelessness, housing was identified as the highest priority investment area. While short-term rental assistance (less than 24 months) will meet the needs of many, culturally specific providers in particular identified the need for SHS funds to be used flexibly to create medium-term rental assistance options based on participant need (e.g. 48 months). Rental assistance will be used to divert people leaving institutional settings or living doubled up into permanent housing; to assist in placing homeless households into permanent housing; and to prevent housing loss for those at substantial risk of homelessness. Funds will be used flexibly to address the range of financial obstacles to housing (e.g. payment of past debt, security deposits, risk mitigation, etc.)
- (4) Support Services:** Whether attached to housing programs, to shelters, or delivered through outreach to individuals still living unsheltered, stakeholder feedback repeatedly emphasized the importance of prioritizing strategic investments in access to certain essential support services, especially culturally specific forms of these services. Too often the lack of access to these services, and how they are delivered, are barriers to successfully obtaining and maintaining permanent housing:
- (a) Behavioral Health Services:** Behavioral health services were identified through community engagement as the second most important investment next to permanent supportive housing for those extremely low-income people living with disabilities and experiencing long-term literal homelessness. These services were also a critical identified need across populations, with an emphasis on behavioral health services for families and youth participating in SHS-funded programs. Investments in culturally specific mental health and addiction recovery services will be a priority. Trauma-informed approaches to behavioral health services will be required. A caution raised was that SHS funds should not replace or reduce the expectation that federal and state funding be used to expand behavioral health services.
 - (b) Peer Support Services:** Investments in peer support services will be priority, including peers from communities of color with lived experience of substance use, severe and persistent mental health conditions, homelessness, and criminal justice involvement. As well as, long-term nonclinical peer recovery supports that provide opportunity for culturally specific peer engagement within the recovery community.
 - (c) Education, Training, Employment and Benefits Acquisition:** Services aimed at increasing incomes and thus reducing, or even eliminating, the need for ongoing rental assistance and long-term services will be prioritized. While a priority for all populations, the education, training, and employment services were particularly highlighted for those very-low income households (30-50% MFI) experiencing or at substantial risk of homelessness. SHS funds should be used to leverage, not replace, mainstream resources for which people experiencing homelessness are eligible.

- (d) Housing Case Management:** There is a substantial need to invest in housing placement and retention assistance that comes with financial resources, tenant education, tenant advocacy, household goods, and other transition services to assist individuals in finding, accessing, and retaining housing. These critically needed services must be delivered in a culturally responsive, trauma-informed, and person-centered way, which will require significant training investments for frontline staff.⁵⁰
- (e) Legal Assistance:** There is a particular need for civil legal assistance, including assistance to enforce tenants' rights, expungement rights, and rights guaranteed under the Fair Housing Act, the Americans with Disabilities Act, and other federal, state, and local civil rights laws to ensure that people are free from discrimination on the basis of race, gender, sexual orientation, disability and other protected class categories. Other civil legal services that facilitate housing access and stability will also be a priority.
- (f) Family Supports:** Because of the high prevalence of families with children, in particular families of color, among those experiencing, or facing a substantial risk of homelessness, there will be priority for investments in child care and other supports that make it possible for families with children to obtain and maintain housing. These investments will leverage, rather than replace, existing family support services.

(5) Street and Shelter Services: Street outreach aimed at the distribution of survival gear, provision of health services, and service navigation for those who are unsheltered, housing focused year-round shelter, and alternative sheltering options are not the long-term priority focus of this SHS Measure; however, feedback through community engagement identified these as priorities, in particular in the immediate term to address the rise in unsheltered homelessness and the impacts of COVID-19. In addition, community feedback on current shelter options identified a lack of shelter and interim housing options that are culturally specific or truly culturally responsive for Communities of Color, as well as barriers for the transgender community and for people with physical disabilities.

Phase I Investments (Years 1 - 3)

Phase I investments will launch as soon as July 2021 and carry through one or more of the first three years of the implementation of the SHS Program. In some cases, the investments will last well beyond year three because they are foundational to the success of the SHS Program (e.g. long-term rental assistance). In other cases, the investments may be made in year one and be reassessed going into years 2 and 3 (e.g. capacity building investments). Phase I investments are necessarily limited because of the uncertainty of year 1 revenues, and, more importantly, because additional local and regional planning is needed during year 1 to determine the specific mix of investments that will lead to the best housing outcomes for the two priority households. Additionally, in Year 1 Multnomah County will look for opportunities to use available SHS funds to address the short-term COVID-19 related surge in housing instability and homelessness.

⁵⁰ Training and education for frontline staff is a component of the aforementioned CBO capacity building investments.

Permanent Supportive Housing - Existing Commitments and High Priority Needs

1. **Portland Housing Bond:** All necessary funding to meet the long-term project based rental assistance and/or support service needs of permanent supportive housing projects being developed with Portland Housing Bond funds. According to the JOHS, Home Forward and the Portland Housing Bureau (PHB), projected costs for years 1 - 3 is roughly **\$8-9 million** in total.
2. **Metro Housing Bond:** All necessary funding to meet the long-term project based rental assistance and/or support service needs of the permanent supportive housing units⁵¹ to be developed with Metro Housing Bond funds. Based on estimates from the JOHS, Home Forward and the PHB, projected costs for rent assistance and services for an estimated 286 supportive housing units coming into operation in years 1 - 3 is roughly **\$10 million** in total.
3. **Assertive Community Treatment (ACT) Long-Term Rental Assistance:** Providing sponsor or tenant based long term rental assistance to unhoused participants on ACT teams.⁵²
4. **COVID 19 High Risk Households:** All necessary sponsor or tenant based long-term rental assistance and support services for approximately 300, disproportionately 65+, People of Color households in high risk COVID-19 hotels.
5. **Metro “300” Seniors:** All necessary sponsor or tenant based long-term rental assistance and support services for approximately 100 Multnomah County seniors placed in housing with limited-term rental assistance.
6. **Federal Voucher Leverage:** All necessary support services funding to support new allocations of federal vouchers, including Veterans Affairs Supportive Housing (VASH) and Mainstream vouchers.

Building System Capacity

1. **Multnomah County & Partner Jurisdictions:** The Joint Office of Homeless Services plans to initially increase staffing by approximately 13 full-time equivalent (FTE) to plan, procure, implement, and evaluate the SHS investments, and likely will increase capacity further following an organizational development assessment. In addition, other County departments, Home Forward, and the City of Portland will need additional capacity to facilitate Phase I investments.
2. **CBO Capacity:** Providing technical assistance, training, and financial support to assist community based organizations — especially culturally specific organizations — to be ready to take on new and/or significantly expanded services in Multnomah County and across the region. This will include a formal evaluation of CBO compensation levels, hiring, and retention challenges.
3. **Data Collection, Sharing & Evaluation:** Create a data collection, sharing, and evaluation infrastructure to allow CBOs, Multnomah County, and region to document the services provided through the SHS Program, to coordinate those services on behalf of individual participants, to report on local and regional performance metrics, and to continuously evaluate and improve program investments. This will include the development of data visualization tools such as data dashboards.
4. **Coordinated Access:** As system capacity expands — especially the availability of supportive housing — ensuring that there is a foundation in place to ensure equitable

⁵¹ The Metro Bond supportive housing unit goal is 300 total units.

⁵² Assertive Community Treatment (ACT) is an evidence-based model designed to provide intensive community-based mental health treatment for adults with a serious mental illness that need regular and on-going support to maintain a home. People in this group have a higher likelihood of homelessness or institutionalization. Teams typically consist of a psychiatrist, nurse, social worker, case manager, and peer support specialist. Participants must meet certain eligibility requirements to receive a referral to an ACT team.

access to those resources is essential. Phase I investments will include increasing access, in particular for Communities of Color, and the redesign and alignment of local coordinated access systems.

Behavioral Health Services

The stakeholder engagement process highlighted the urgency of taking steps to expand behavioral health services available to people living unsheltered, in shelter, and in transitional housing settings. The JOHS will prioritize a partnership with the Behavioral Health Division of the Multnomah County Health Department to expand: (1) outreach-based clinical and peer led behavioral health services; (2) shelter-based clinical and peer led behavioral health services; and (3) the expansion of both mental health and addiction recovery transitional housing. These initial investments will be of limited scope given the need to build the capacity of culturally specific providers to offer these services going forward.

Street Safety & Shelter Expansion

While stakeholder engagement called for placing highest priority on supportive housing and behavioral health services, expanding safety on the streets and shelter options was a high priority to address the growth in chronic homelessness and the impacts of COVID-19, including a projected need for temporary sheltering options for people who are displaced by the economic downturn. As part of Phase I, the JOHS will work with the AHFE Safety off the Streets workgroup to develop projects that expand the locations and types of shelter offered in our community, with a particular focus on how to address the known disparities in access to and successful exits from shelter, for some Communities of Color.

COVID-19 Response

In anticipation of an influx in people, especially Communities of Color and immigrants and refugees, that will experience housing insecurity and homelessness due to COVID-19, the JOHS will work with the Department of County Human Services and the network of CBOs that do rapid re-housing, diversion, and prevention to expand available financial assistance to at risk and newly homeless households. In addition, in the event that other resources are not available, SHS funds will be used to sustain the expanded safety on the streets services and expanded sheltering services that have been established in order to assist people experiencing homelessness to remain healthy during the pandemic.

Reserves

Funds not immediately allocated to new services in Phase I will be placed in a reserve fund. Reserves will be necessary to cover unanticipated costs and non-renewal risk as the inventory of supportive housing and the range of other services grow. Once a specific reserve policy is developed, any funds in reserve that are in excess of what the policy requires will be used to meet rent assistance and service needs for the priority households.

While it will not be possible to plan for and execute the expenditure of the full \$52 million starting July 1 of 2021, there are a number of critical Phase I investments that we will be able to make, provided that we have the internal capacity between now and July to launch those. In addition, in order to be prepared to fully scale our continuum of services by the beginning of FY22-23, we will need to be ready on July 1 of 2021 to launch the full build-out of the JOHS' capacity to plan, procure, and contract for all of the additional funding.

Leverage and Alignment

The promise of the SHS Measure to substantially reduce homelessness in the region can only be realized if every effort is made to use Measure funds to leverage the full range of federal, state, other County, private sector, community and philanthropic resources that are and become available.

Multnomah County, through the JOHS, benefits from a large network of providers, established local rent assistance programs, a sizable infrastructure to support homeless system response, strong partnerships with affordable housing providers and two recent housing bonds that provide a large amount of new capital funds for developing new affordable housing. The JOHS plans to leverage these resources for the SHS Program, and already has leveraged the AHFE and the JOHS infrastructure for this program.

Because the JOHS serves as the lead agency for the Continuum of Care, there will be ample opportunities to align current and future federal ending homelessness funding with the Measure. The JOHS also enjoys a strong working relationship with the Oregon Housing and Community Services that will help leverage and align state spending with the goals of the Measure. Through expanding partnerships with the County's Health Department, Coordinated Care Organizations, and the regional hospital systems, there will be tremendous opportunities to expand partnerships and align investments⁵³ in the full range of supportive housing types with the health care systems, and to advocate collectively for improved utilization of Medicaid to help address the social determinants of health.

Building systems and partnerships across County departments, Portland Housing Bureau, and the JOHS that will allow for sharing of data, SHS resources and collaborative programming, is already underway. A number of the additional alignment and leverage opportunities are identified in the list of Phase I investments, including leveraging new federal long-term voucher resources, connecting long-term rental assistance to Assertive Community Treatment Teams, and coordinating direction with the County's health department to expand street, transitional, and permanent housing connected behavioral health services.

Equitable Geographic Distribution of Services⁵⁴

At this time, there are areas in Multnomah County that have better access to homeless services⁵⁵ and this has caused an unequal distribution of services across our County and region.⁵⁶ Based on our community engagement, the principals that Multnomah County will use to work towards equitable distribution are as follows: (1) Offer housing and services that allow Communities of Color to remain in the communities they feel most connected to and/or to return to the communities they feel most connected to; (2) maximize participant choice with respect to where they are able to access housing and services; (3) ensure that housing and services are brought to where people are; (4) create housing and services where participants are part of the larger community rather than isolated from it; and (5) ensure that through technology, outreach,

⁵³ This includes aligning with regional cross-sector programs currently working to expand supportive housing, such as the [Regional Supportive Housing Impact Fund](#).

⁵⁴ Geographic equity is a lens used to assess access to resources. The World Health Organization defines equity as "a fair opportunity for everyone to attain their full health potential regardless of demographic, social, economic or geographic strata" (retrieved from [WHO website]: <https://www.who.int/gender-equity-rights/understanding/equity-definition/en/>).

⁵⁵ Services include supportive housing, shelter, outreach, and wrap-around support services.

⁵⁶ This is the result of many factors including redlining, gentrification, population growth, and the accelerating cost of rental housing. In addition, there are six municipalities within Multnomah County, each representing unique geographic values and challenges.

and other strategies, where one is in the County does not determine one's access to resources. The JOHS will consult multiple sources to analyze geographic equity including the *2019 Poverty in Multnomah County Report* and the *2020 Regional Supportive Housing Services Tri-County Data Scan* by Metro.

In terms of the region, we learned earlier that Multnomah County provides between 80-85% (depending on program type) of the region's temporary and permanent housing beds. This is a call to build significant capacity in both Washington and Clackamas counties, which Multnomah County will help support through regional planning and implementation efforts. The JOHS will work closely with the regional partners to regularly analyze how resources are distributed geographically across the region and will re-evaluate strategies in collaboration with the other two counties to meet the needs of SHS priority households. This will be an on-going and evolving process throughout implementation of the SHS Measure.

System and Services Coordination

The JOHS commits to coordinating access to services locally and regionally. In particular, coordination with health, criminal justice, aging and disability services, employment, and mainstream anti-poverty programs will be essential.

As mentioned before, there is still a great deal of work to be done to understand the full extent of barriers to services access for Communities of Color and other historically marginalized groups. The JOHS will account for this as decisions are made on how SHS will align with access systems like Coordinated Access.

The JOHS has already created a working group with Multnomah County department managers to determine the best County services offerings for SHS priority households, and will use this group to improve services coordination and access between County departments.

Regionally the JOHS will continue to prioritize Tri-County planning as it relates to the SHS Program. Working together will "create a better understanding of the consequences of overburdened systems, develop efficiencies, address common challenges in a shared service delivery system and generate coordinated action to scale systems according to the need" (CSH, 2019, p.2).⁵⁷ The JOHS will continue participating in weekly regional planning meetings to collaborate on SHS design and implementation, taking advantage of shared learnings across the three counties.

Procurement and Partners

Through the SHS Program, Multnomah County plans to expand its network of providers that deliver supportive housing services and will specifically invite smaller organizations and nontraditional partners to apply to funding solicitations. Realizing that past procurement processes have not done enough to be accessible to these important stakeholders, starting in the first program year, the JOHS will allocate resources to better identify and support the unique capacity needs of smaller organizations, particularly for providers of culturally specific and responsive services. Capacity building needs may include, for example, support to prepare for scaling programs or services or staff support dedicated to preparing competitive funding applications.

⁵⁷ Corporation for Supportive Housing [CSH]. (2019). *Tri-County Equitable Housing Strategy to Expand Supportive Housing for People Experiencing Chronic Homelessness*. Retrieved from: <https://www.csh.org/resources/tri-county-equitable-housing-strategy-to-expand-supportive-housing-for-people-experiencing-chronic-homelessness/>

Multnomah County plans to develop a significant procurement for new SHS programs in the latter half of Year 1 (FY21/22), potentially in cooperation with Washington and Clackamas Counties.⁵⁸ This is an intentional decision so that there is time to center the needs and perspectives of Communities of Color in the procurement design process — to identify specific practices, processes, policies and rules that continue to exclude Communities of Color from accessing resources in the homeless system of care.

The JOHS has already developed procurement standards⁵⁹ that are consistent with SHS goals such as commitment to Housing First⁶⁰ and other best practices, the requirement of diversity within organizational staffing, and the requirement of providers to deliver services in a culturally specific and/or responsive manner. The JOHS will incorporate such standards into procurements using SHS funds. We will prioritize funding organizations that align with workforce equity standards: equitable rates of pay, employment practices that promote trust, safety and belonging, providing equitable opportunities for advancement and providing trainings that develop foundational knowledge on race and equity. Procurements will require SHS-funded services to maintain low-barrier documentation with options for clients to self report.

Outcomes and Evaluation

Multnomah County, through the Joint Office of Homeless Services, will track and report on all agreed upon regional metrics and any additional local metrics at least annually. All outcome reports will disaggregate each metric using inclusive racial and ethnic identity categories. This is established practice for the JOHS outcomes reporting. As part of Phase I implementation, Multnomah County will work with Washington and Clackamas Counties to align race and ethnicity reporting categories and practices to ensure consistent regional reporting. In addition, Multnomah County will work with regional partners to use data visualization tools in order to make outcome data easily publicly accessible. To the extent feasible, the metrics will also be disaggregated by age, gender identity, household type, disabling condition, and other key demographic characteristics.

To date, Metro has adopted regional metrics in three primary areas: (1) Housing Stability; (2) Equitable Service Delivery; and (3) Engagement and Decision Making.⁶¹ Housing stability metrics include the number of additional supportive housing units put in service, the ratio of units to need, and several metrics that are consistent with HUD system performance metrics the JOHS currently collects and reports on quarterly. The Equitable Service Delivery and Engagement and Decision Making metrics will require collaborative work with regional partners and service providers to operationalize.

Based on stakeholder feedback, as part of implementation planning, the JOHS will convene a process with stakeholders to address the possibility of creating additional local metrics. We expect this process to be complete in time for the Year 1 update to this Plan. In addition to this, the JOHS will continue to collect and report on trends in unmet needs of SHS-eligible households. Using the Point-in-Time Count, “by-name” lists, and other available data, the JOHS

⁵⁸ The County may engage in intergovernmental transfers and/or leverage existing planned JOHS services procurements to support Year 1 priority investments, particularly for rent assistance or shelter services.

⁵⁹ See Appendix L for Community Program Guidelines and Adult Homeless System procurement standards.

⁶⁰ Housing First is an approach (and a philosophy) to quickly connect people experiencing homelessness to permanent housing without preconditions for participation (HUD, *Housing First in Permanent Supportive Housing Brief*, 2014).

⁶¹ See Appendix J: Metro Supportive Housing Services Outcomes Metrics for additional details.

will track and provide the most current information on, for example, rates of chronic homelessness, rates of unsheltered homelessness, rates of homelessness among families and youth, all disaggregated by race and ethnicity, age, disabling condition, gender identity and other key demographic characteristics.

Annual Outcomes

Each year, the JOHS will work with stakeholders to set annual outcome goals in relationship to the established regional performance metrics, and any local metrics that are adopted. Because system performance projections will depend not just on available SHS funds, but also on other critical funding streams that are braided with the Metro funds e.g. federal and state homeless assistance funding, local general funds, and housing development capital — it will not be possible to set specific numeric SHS Program goals independently. Multnomah County outcome goals will also depend on what other capacity is emerging regionally.

Anticipated Outcomes

Although specific numeric outcome goals will need to be set annually, with consideration for other funding streams and regional capacity, it is possible to identify anticipated outcomes for the Measure. Based on the projected level of SHS funding, the program values and priorities, and the historic costs of delivering the service types prioritized for this Measure, our goals will include:

1	Set a new community goal of 2,235 supportive housing units through a combination of project, sponsor and tenant based rental subsidies, combined with the necessary wrap-around support services;
2	Reduce street and shelter homelessness, as well as doubled up homelessness, by increasing the number of eligible households who exit homelessness for permanent housing by at least 2,500 ⁶² households per year once the Measure is fully implemented; Create specific housing placement goals for unsheltered, doubled-up and individual Communities of Color;
3	Reduce street and shelter homelessness for people with significant behavioral health issues by increasing the number of people experiencing behavioral health challenges who move into appropriately supported permanent housing;
4.	Reduce the number of people who become homeless by increasing successful preventions, diversions, and housing retention intervention, provided to eligible households, by at least 1,000 households per year once the Measure is fully implemented;
5.	Reduce the number of people who return to the homeless services system within two years after entering permanent housing, by evaluating and continuously improving the the quality of rent assistance and support services programming;
6.	Eliminate disparities in access and outcomes for Communities of Color participating in homeless and housing services; ensure that each Community of

⁶² This number includes initial annual estimated placements into PSH and annual placements into rent assistance resources coupled with services for all populations.

	Color accesses and succeeds in Metro funded programs at rates as high or higher than would be expected based on the make-up of the SHS eligible households.
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It is possible because of the scale of SHS funding that in achieving the goals set for the Measure there will also be a reduction in total unmet need relative to today's levels (e.g. the total number of people who are chronically homeless or unsheltered will be lower than it is today, or the overrepresentation of particular Communities of Color in the homeless population will be lower than it is currently). Those, however, cannot themselves be measures of success for this Measure because there are factors entirely outside the control of the County that could offset the gains made through the Measure; those gains will be real and quantifiable, but other factors — e.g. a deep economic recession resulting from COVID-19 — may mean that we do not see the level of change in total need over time that would otherwise have occurred.

Although many factors influence an overall reduction in the levels of unsheltered homelessness across the system, the JOHS will track and report on the levels of unsheltered homelessness at least biennially. It should be noted that SHS investments may not be solely responsible for systemwide reductions.

Evaluation Report

Phase I of implementation includes building the capacity of CBO's, the County, and the region to improve data collection, reporting and evaluation. Resources currently dedicated to this work are insufficient even to meet the expectations of current funders.

With additional capacity in Year 1, the JOHS, on behalf of Multnomah County, will engage CBOs and regional partners in Second Phase planning to develop and implement the data collection and reporting requirements for the SHS Program. The JOHS will solicit stakeholders regarding data collection and reporting specifics and will collaboratively design standards for the SHS Program that meet Metro requirements once those requirements have been established.

Also beginning in Year 1, the JOHS will work with Metro, Washington and Clackamas counties to develop an evaluation framework and plan for the SHS Program. Multnomah County will advocate that this be one of the first priority areas for the new regional planning body to address with its 5% funding set aside. In addition to annual reporting on the regional and any local metrics, the evaluation plan will lay out priority areas for study and continuous quality improvement, and a schedule for completing that work.

For Multnomah County, Phase I will also include investments in evaluating current programs that may be scaled through the SHS Program. The JOHS is prioritizing bringing in an evaluator and preparing a solicitation for third party evaluation services. Both of these should be complete before the launch of the new fiscal year.

Community Inclusion

Community members, in particular Communities of Color, will be involved at each stage of the program evaluation process. The JOHS will engage stakeholders in a second phase of planning to provide input that will help inform the evaluation strategy that Metro will develop with the three counties. Once that framework has been established, the JOHS will again engage stakeholders to develop evaluation methods, standards and strategies for SHS programs, which will be incorporated into services contracts. Stakeholders, including culturally specific providers, will

help to define and operationalize the metrics for the Measure, and will be invited to identify and develop any additional metrics from established SHS Program goals.

The JOHS will seek out partners for evaluation design and implementation, who specialize in developing evaluation frameworks, tools, and implementation strategies using a racial equity lens. The process of drawing conclusions from any quantitative and qualitative data will involve both researchers with expertise in racial equity and community members with lived experience who can help interpret and draw conclusions from that data. We expect to create regular opportunities for community stakeholders to review program outcomes data. It will be especially important to include service providers and SHS Program participants in reviewing outcomes to better understand the context behind the data and offer solutions on where the program can improve.

Second Phase Planning

This plan reflects a First Phase of planning, including high-level strategies for investments of SHS funds but does not include the specific work plans for these investments. These details are best developed in collaboration with community stakeholders across multiple planning sessions for each investment strategy. Starting in December 2020, the JOHS will develop a structure that outlines the categories of and the full scope of work for years 1 - 3 of the program. Through AHFE workgroups, systems of care including the family, youth, domestic and sexual violence and adult homeless services systems, the JOHS will build workplans for priority investments collaboratively with stakeholders, and will engage especially with culturally-specific organizations, including smaller and emerging organizations to support this work. The work of these groups will inform the specific programs that will be designed or expanded upon to meet the goals of this plan.

A large component of the above Second Phase planning work will include internal JOHS planning to determine the ways in which the SHS Program will align with the programs, workflows and systems that the JOHS coordinates. Rather than risk duplication with a stand-alone program, the JOHS will carefully determine the ways that SHS funds can bring opportunities for expansion, improvement and flexibility to more quickly and comprehensively connect people to permanent housing and provide the individualized supportive services and rent assistance needed to maintain it.

APPENDICES

Appendix A: SHS Implementation Plan Checklist from Metro

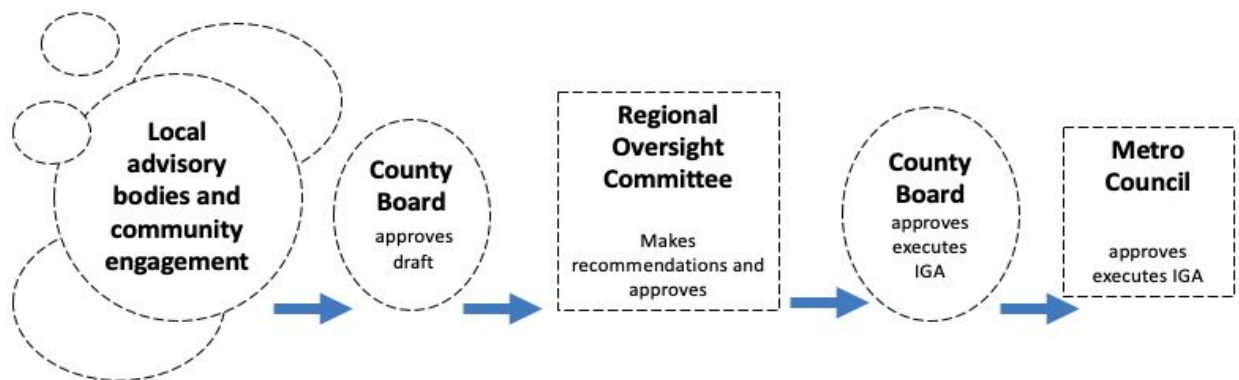
Regional Supportive Housing Services Program
Local Implementation Plans required elements
Updated Draft 9.21.2020

Overview:

Each county will prepare a Local Implementation Plan to describe their local housing and homeless service needs, current programming and unmet programming capacities, and proposed use of funds in accordance with the purposes of the regional Supportive Housing Services program.

Each plan will be created using a racial equity lens that ensures equitable participation, access and outcomes in all parts of the program for Black, Indigenous and People of Color, and considers the best available quantitative and qualitative data. Plans will be developed in full partnership with advisory bodies that equitably reflect community expertise and experience.

Each plan will be reviewed and approved by their local governing body, the regional oversight committee, and the Metro Council. Upon full approval each Local Implementation Plan will be incorporated into the intergovernmental agreements between Metro and each respective county to govern transfer of funds, program implementation, and ongoing oversight and accountability.



Local Implementation Plan required elements:

- A. **Racial equity analysis.** An articulation of disparities in housing instability and access to current services, including:
 - an analysis of the racial disparities among people experiencing homelessness and the priority service populations;

- an analysis of the racial disparities in access to programs, and housing and services outcomes, for people experiencing homelessness and the priority service populations;
- B. **Racial equity strategies.** A description of how the key objectives of Metro’s Strategic Plan to Advance Racial Equity, Diversity, and Inclusion have been incorporated. This should include a thorough racial equity analysis and strategy that includes:
- clearly defined service strategies and resource allocations intended to remedy existing disparities and ensure equitable access to funds and services;
 - an articulation of how perspectives and experiences of Communities of Color and culturally specific groups informed the plan development.
- C. **Inclusive community engagement.** An articulation of how perspectives of Black, Indigenous and other Communities of Color and culturally specific groups were considered and incorporated into the development of the plan and will continue to be engaged through implementation and evaluation. Including:
- Advisory body membership that includes:
 - People with lived experience of homelessness and/or extreme poverty;
 - People from Black, Indigenous and other Communities of Color, and other marginalized communities;
 - Culturally responsive and culturally specific service providers;
 - Elected officials, or their representatives, from the county and cities participating in the regional affordable housing bond;
 - Representatives from the business, faith, and philanthropic sectors;
 - Representatives of the county/city agencies responsible for implementing housing and homelessness services, and that routinely engage with unsheltered people;
 - Representatives from health and behavioral health who have expertise serving those with health conditions, mental health and/or substance use from culturally responsive and culturally specific service providers; and
 - Representation ensuring geographic diversity.
 - A description of how the plan will remove barriers to participation for organizations and communities by providing stipends, scheduling events at accessible times and locations, and other supportive engagement strategies.
- D. **Priority population investment distribution.** A commitment that funding will be allocated as follows:
- 75% of SHS funds will be devoted to services for population A, defined as:
 - Extremely low-income; AND
 - Have one or more disabling conditions; AND

- o Are experiencing or at imminent risk of experiencing long-term or frequent episodes of literal homelessness.
 - 25% of SHS funds will be devoted to services for population B, defined as:
 - o Experiencing homelessness; OR
 - o Have a substantial risk of experiencing homelessness.
 - A commitment that documentation requirements for program eligibility will be low-barrier and include self-reporting options.
 - Agreement that distribution of resources to serve priority populations may be adjusted over time as chronic and prolonged homelessness is reduced.
- E. **Current investments.** A review of current system investments or capacity serving priority populations, an analysis of the nature and extent of gaps in services to meet the needs of the priority population, broken down by service type, household types, and demographic groups. Including:
- A commitment to maintain local funds currently provided. Supportive Housing Services revenue may not replace current funding levels, with the exception of good cause requests for a temporary waiver such as a broad economic downturn.
 - [maintain current investments with existing resources]
- F. **Distribution.** A strategy for equitable geographic distribution of services within the respective jurisdictional boundary and the Metro district boundary.
- G. **Access coordination.** A plan for coordinating access to services with partnering jurisdictions and service providers across the region.
- H. **Procurement and partners.** A description of how funds will be allocated to public and non-profit service providers, including:
- transparent procurement processes, and a description of the workforce equity procurement standards.
 - A description of how funding and technical assistance will be prioritized for providers who demonstrate a commitment to serve Black, Indigenous and Communities of Color with culturally specific and/or linguistically specific services, including programs that have the lowest barriers to entry and actively reach out to communities screened out of other programs.
 - [current procurement on TA for building institutional capacity for providers within system of care]
- I. **Planned investments.** An articulation of programmatic investments planned, including:
the types of housing services to be funded to address the gap analysis; including specifically,
- supportive housing,
 - long-term rent assistance,
 - short-term rent assistance,
 - housing placement services,

- eviction prevention, and
 - shelter and transitional housing,
- a description of the support services to be funded in tandem with these housing services, *see addendum for a reference to eligible support services*;
- a commitment to one regional model of long-term rent assistance;
- a description of other program models for each type of service, that define expectations and best practices for service providers;
- a description of how investments by service type will be phased to increase over the first three years of program implementation as revenues grow; and how decisions will be made to scale investments by service types with funding increases and decreases over time, including a plan to ensure housing stability for program participants;
- description of programming alignment with and plans to leverage other investments and systems such as Continuum of Care, Medicaid, behavioral health, and capital investments in affordable housing.

A. **Outcomes, reporting and evaluation.** An agreement to tracking and reporting on program outcomes annually as defined through regional coordination and with regional metrics. Including:

- A description of annual outcomes anticipated. Goals can be updated annually as programming evolves and based on anticipated annual revenue forecasts. Goals may include:
 - number of supportive housing units created
 - numbers of housing placements made
 - number of eviction preventions
 - rate of successful housing retention, etc.
- A commitment to tracking outcomes as established and defined through regional coordination and with regionally established metrics. This includes consistency in data disaggregation using regionally standardized values and methodology to understand disparate outcomes for people by race, ethnicity, disability status, sexual orientation and gender identity. *See addendum for a reference to regionally required outcome metrics.*
- A commitment to regional measurable goals to decrease racial disparities among people experiencing homelessness. *See addendum for a reference to measurable goals for advancing racial equity.*
- A commitment to evaluation standards and procedures to be established through regional coordination. Evaluation will be conducted every three years and include performance of systems coordination, housing and service program types, and services provision.

Appendix B: List of Recent Initiatives to Address Housing Needs

List of recent investments and initiatives to address housing needs of those experiencing or at risk of homelessness:

- In 2017, a \$258.4M City of Portland [affordable housing bond](#) with supportive housing goals, that provides capital funding for new units
- In 2018, a \$652.8M Metro region [affordable housing bond](#) that provides capital funding for new units
- A 2018 A Home for Everyone [Strategic Framework to Address Chronic Homelessness](#)
- A 2018 Multnomah County [plan](#) to create 2,000 units of supportive housing in Multnomah County
- The creation of a locally-funded, flexible Long-term Rent Assistance program in Multnomah County

Appendix C: SHS Guiding Principles

The following guiding principles were developed by the Metro-led regional Stakeholder Advisory Group to inform key elements of the SHS Program such as these principles and program outcomes. The guiding principles are:

- Strive towards stable housing for all
- Lead with racial equity and work towards racial justice
- Fund proven solutions
- Leverage existing capacity and resources
- Innovate: evolve systems to improve
- Demonstrate outcomes and impact with stable housing solutions
- Ensure transparent oversight and accountability
- Center people with lived experience, meet them where they are and support their self determination and well-being.
- Embrace regionalism with shared learning and collaboration to support systems coordination and integration
- Lift up local experience: lead with the expertise of local agencies and community organizations addressing homelessness and housing insecurity.

Appendix D: Community Engagement Process Detailed Overview

The following overview provides additional detail on the methods of community engagement used to gather stakeholder input for Multnomah County's SHS Local Implementation Plan.

Virtual Engagements

JOHS staff conducted approximately 70 virtual engagement sessions ranging between 45-90 minutes with a wide variety of stakeholders in both private and open sessions. Virtual and remote engagements were conducted with recognition that Covid-19 created a risk associated with facilitating in person engagements.

The JOHS leveraged the A Home for Everyone structure and network for some of these engagements, including AHFE workgroups, the Equity Committee and the Coordinating Board. The JOHS also engaged providers and people with lived experience of homelessness in population and program-specific coordination meetings (adult, youth, domestic and sexual violence and family service systems). The JOHS also engaged the City of Gresham and electeds from both the City of Portland and Multnomah County. Many more stakeholder groups were also engaged. A complete list of stakeholders engaged through this process can be found in the Acknowledgments page of the Plan.

The JOHS also held focus-group engagements with culturally specific organizations: Urban League of Portland, Self Enhancement, Inc., Native American Rehabilitation Association, Latino Network, El Programa Hispano Católico. Across all virtual engagements, Communities of Color, members of culturally specific agencies, and people with lived experience of homelessness were represented in the majority of facilitations.

Community Survey

JOHS staff created a community survey to gather additional feedback to pair with the qualitative information gathered throughout virtual engagements. The survey was available for approximately three weeks, and was designed to gather feedback on:

1. The community's top priorities for SHS program investments
2. Unmet needs and means of addressing these needs for the SHS priority populations
3. Strategies for coordinating with other governmental jurisdictions participating in the SHS Program
4. Strategies for local and regional procurement
5. Strategies for ensuring workforce equity in homeless services
6. Strategies for further engaging the community over the lifespan of the plan, with particular attention to groups and community-based organizations serving Communities of Color

The community survey received a total of **578** responses. Survey results⁶³ were disaggregated to better understand how differing perspectives and identities responded to the questions we provided. In terms of incorporating feedback into this plan, the JOHS prioritized the perspectives from respondents who identified as people with lived experience of homelessness or housing instability, marginalized communities and racial/ethnic identities other than Non-Hispanic Whites.

⁶³ Survey results can be accessed here:

<https://public.tableau.com/profile/johs#!/vizhome/MetroMeasureStakeholderSurveyAnalysis/SurveyAnalyses?publish=yes>

Survey/interviews of People Experiencing Unsheltered Homelessness

The Joint Office worked with the Homelessness Research & Action Collaborative (HRAC) at Portland State University (PSU) to develop a paper survey for people currently experiencing unsheltered homelessness, made available in both English and Spanish.

The JOHS partnered with Street Roots and their network of vendors with lived experience of homelessness to facilitate these surveys, and made intentional efforts to reach and engage community members who identify as People of Color. To incentivize participation and compensate community members for sharing their expertise, the JOHS provided \$15 gift cards as to the first 200 respondents. In total, 383 surveys were facilitated through this effort, and HRAC consolidated them into a summary report. Of total respondents, 143 identified as representing Communities of Color.

Appendix E: Community Engagement Themes

The following qualitative themes are aggregated from individual comments provided to the JOHS staff during the Community Engagement process. During each engagement, JOHS staff took notes in various ways including overall notes of each engagement and maintained lists of comments that were sorted by theme. The following themes were named at the end of the process to best reflect its cumulative meaning. Some comments or themes that emerged from engagements with Communities of Color are noted in the theme, and otherwise combined with the themes that were important for the overall homeless system of care.

Bring Services to Clients

The criminal justice system and the unemployment system are two systems directly linked to homelessness outcomes, and also disproportionately impact Communities of Color. Homeless services should be embedded into those systems. Address transportation disparities by providing more access points across the County. Bring services on-site at several locations to allow for easy and reliable access, and provide mobile services. Finally, it matters who is bringing the services. Whenever possible, trusted community leaders should be the people that bring in information and services to their community.

Access to Housing Resources and Opportunities for Communities of Color

Feedback from culturally specific agencies serving Communities of Color shared that Black families, in particular single parent households, have a hard time building trust with providers to share that they are experiencing homelessness because of a strong fear that their kids will be taken into DHS custody. This is a significant barrier to linking these households up to resources that can help them access housing. Providers also shared that Native Americans are invisibilized in the homeless system of care when there are limited specialized cultural supports to link them to the existing cultural services. Since many of our local Tribes have Tribal Sovereignty, each Nation has their own unique process to apply for tribal resources and benefits. When there is not general knowledge about this system, this is an invisibilization of the Native communities needs and it has a negative impact on Native Americans' ability to access housing opportunities. Another barrier is gathering necessary documents including getting documents ready and accessing online resources. A challenge to this process is losing paperwork and/or losing access to digital storage areas like email, which have needed documents. Eligibility to housing programs can be too rigid because households from Communities of Color may be homeless but they are staying doubled-up. Overall, for Communities of Color there is a fair housing concern over perceived discriminatory practices of high rental deposits for communities of color, which is often linked to credit scores.

Covid-19 Response

There was much discussion about the known and unknown factors that will be caused by the Covid-19 pandemic for SHS priority populations. Community member's emphasized prioritization of Communities of Color, youth, families, and domestic violence survivors to receive Covid-19 eviction prevention. Much emphasis was placed on meeting basic livability needs for the duration of the pandemic, including meal programs, hygiene services, survival gear, and outdoor shelter options.

Culturally-Responsive Services

Multnomah County needs to make homeless services more culturally-responsive, and fund opportunities for scaled up culturally-specific services. Participants discussed the need for more

bilingual and multilingual services at homeless service entry points. In addition, more culturally-specific wrap-around services, more culturally-specific peer supports and mentorship, and more services for the Immigrant and Refugee, and Undocumented communities. There was also a call for more culturally-specific hygiene products at housing, shelter, and showering sites.

Flexible Services, Systems, and Resources

Service providers' value having more flexibility in how they can support participants, from funding amount, assistance duration, to the ability to pay for client services. A call was made for more flexible funding to support Undocumented households as many are ineligible for food stamps, preventative health care, or certain low-income cellphone plans. Additionally, there is much interest to extend current timelines associated with eviction prevention funding, as some participants require more time to stabilize in housing.

Housing Design, Voucher Flexibility, and Flexible Funding

Design new physical spaces to fit specific needs of different communities. Ensure that the housing stock has varied designs to meet the needs of different households' configurations. For single adults, there is an immediate need to create alternatives to the single room occupancy model. Community members want flexible housing vouchers that allow for the client to make choices about where they will live and for how long. In addition, a call was made for increased flexible funding to pay off debts that serve as a barrier to housing. Beyond debts, there is a lot of need for more financial support to help with deposits.

Housing Supports for Communities of Color

Providers shared a need for more access to fair housing advocacy and enforcement, such as what is offered by the Catalyst Collaborative, particularly to address pervasive racial discrimination. There was a call to allow for more flexibility to master lease units, and overall more variety in housing types including group housing with services on-site. There is interest in developing a deeper Service Philosophy that focuses on tenet centeredness and empowerment, and emphasizes quick access to services and housing. There is a call to end waitlists as over time the waitlist function can erode community trust.

Lived Experience, Peer Support, Mentorship

There is much interest to employ more people with lived experience of homelessness in roles as outreach workers, community health workers, and mentors. Feedback from community engagement sessions emphasized the essential role these workers play to help clients overcome barriers within the homeless service system. There is interest to conduct a community wide wage assessment to determine opportunities for higher wages and educational attainment.

Outreach Supports for Communities of Color

Feedback from culturally specific providers that serve Communities of Color noted that new efforts to increase behavioral health outreach to bring services into the community, like efforts by the Cascadia Behavioral Health Outreach Team, have been working and making a difference. Some People of Color are suspicious of behavioral health outreach. Other forms of outreach, including the 2-1-1 system, are not getting needed information to some communities of color. There is a call for more outreach for the LGBTQIA2S+ youth of color, as providers note it can be very difficult to reach them. There is also a call for more outreach support for people that have consistent incomes but just need initial support to link up with affordable housing opportunities.

Pre-Housing Supports for Communities of Color

Feedback from culturally specific providers that serve Communities of Color are interested in having multi-agency teams that can help with resource navigation similar to the Mobile Housing Team that provides support to families experiencing homelessness or the City of Portland and Multnomah County Navigation Team that works with the Homelessness Urban Camping Impact Reduction Program (HUCIRP). This new team should be multilingual with housing navigators. There were requests to have specialists with knowledge about local Native American reservations and an ability to liaison with Native American Tribes. There was also a call to embed housing specialists in shelter locations that can help with resource and housing applications, and can link participants to mobile housing teams.

SHS Priority Population Needs

There is much interest to expand outreach and engagement and to scale up street response services to meet complex and varying behavioral health, survival, and wellness needs, without a law enforcement presence. Community members want services that are designed in collaboration with trusted leaders from marginalized communities, and especially leaders from Communities of Color. Culturally-specific organizations should be the first organizations to scale up programmatic interventions that prevent entry into homelessness.

System-Thinking

There is much interest in the homeless system of care to build capacity to improve assessment tools, standards of practice, system mapping, information and referral. There is also a call for more technical assistance for providers regarding the ongoing developments of the homeless system of care. There is a call for system mapping of the established culturally-specific services, and programs with culturally-specific providers. The homeless service system should intensify alignment and coordination with parallel systems like school districts, foster care, criminal justice, health, employment services, and basic needs services. There is a call to increase behavioral health supports in all service types; in particular in shelters and on outreach teams.

Appendix F: Key Definitions

Disclaimer: This is only the beginning of a comprehensive set of definitions for this plan. The JOHS will continue to add to this list based on feedback from Plan reviewers.

Coordinated Access Assessment Tools

Individuals and families that meet the eligibility requirements can complete a Coordinated Access assessment. A different assessment tool is used for each subpopulation. Many partner agencies have staff trained to conduct these assessment tools. The assessment information is used to support the evaluation of participant vulnerability and prioritization for assistance.⁶⁴

Coordinated Access System Subpopulation	Assessment Tool
Unaccompanied Youth System	Homeless Youth Continuum (HYC) Screening, includes the Transition Age Youth Triage Tool (TAY)
Survivors of Domestic Violence System	Safety and Stabilization Assessment (SSA)
Families with Minor Children System	Family-Vulnerability Index-Service Prioritization Decision Assistance Tool (F-VI-SPDAT)
Adults unaccompanied by Minor Children System	Vulnerability Index-Service Prioritization Decision Assistance Tool (VI-SPDAT)

Culturally-Responsive Services

Culturally-responsive services are respectful of, and relevant to, the beliefs, practices, culture and linguistic needs of diverse consumer/client populations and communities. That is, communities whose members identify as having particular cultural or linguistic affiliations by virtue of their place of birth, ancestry or ethnic origin, religion, preferred language or language spoken at home. Cultural responsiveness describes the capacity to respond to the issues of diverse communities. It thus requires knowledge and capacity at different levels of intervention: systemic, organizational, professional and individual.⁶⁵

Culturally-Specific Organizations

Culturally-specific organization include the following elements: 1) The majority of members and/or clients are from a particular community of color; 2) The organizational environment is culturally-focused and identified as such by members; 3) The staff, board and leadership reflects the community that is served; 4) The organization has a track record of successful community engagement and involvement with the community being served. Additionally, the community itself has validated the range of services provided by the organization and confirmed their usefulness to the community.⁶⁶

⁶⁴ A Home For Everyone. [AHFE]. (2018). A Home For Everyone Coordinated Access Guidelines. [AHFE website]. Retrieved from: http://ahomeforeveryone.net/s/FINAL_CA_Guidelines

⁶⁵ Curry-Stevens, A., Reyes, M.E. & Coalition of Communities of Color. (2014). Protocol for Culturally Responsive Organizations. Center to Advance Racial Equity, Portland State University.

⁶⁶ Ibid.

Disabling Condition

HUD defines a disability as having one or more of the following impairments: physical, mental or emotional impairment, including impairment caused by alcohol or drug abuse, post-traumatic stress disorder (PTSD), or a brain injury that is expected to be of long-continuing or indefinite duration and substantially impedes the person's ability to live independently. For the purpose of permanent supportive housing (PSH), verification of disability is not needed at the time of assessment, but is required before entry into a PSH program.

Document Readiness Support

Assists participants with collecting documents to demonstrate eligibility for housing programs. These documents include verification of chronic homelessness or homelessness, documentation of a disabling condition, and verification of income ([AHFE Coordinated Access Guidelines](#), 2018). Often, this process can entail scheduling and attending medical appointments, and/or meeting with case managers, social workers, or therapists, and may even require ordering a replacement birth certificate, applying for a state ID, or a social security card. Each can take weeks, if not months, based on scheduling availability and complexity of need.

Doubled-Up

Zapata et al. in their report *Governance, Costs, and Revenue Raising to Address and Prevent Homeless in the Portland Tri-County Region* define doubled up as, "families or individuals who live doubled up with friends or family members due to the loss of housing or economic hardship are considered homeless. Sometimes described as the hidden homeless, this population is not counted in Point-in-Time but is included Department of Education counts for unaccompanied youth or youth in families. Neither count includes doubled-up adult households. Doubled up can refer to a range of complex living arrangements." (Zapata et al., 2019, p. 14).

Emergency Shelter/Shelter (ES)

ES Provides individuals and families with a safe place to sleep. It is meant to be short in duration and offer connection to housing options. The level of services available depends on the model. ES may be structured as a mat on the floor of a community space, an individual unit in which a household resides for a limited period of time, a private room with shared community space in a building, or other models.

Extremely Low Income (ELI)

Households whose incomes are at or below 30% of the Median Family Income for their area. In 2020 the Portland-Vancouver-Hillsboro metropolitan area, a household size of one's 30% MFI is \$19,350. For a household size of four, 30% MFI is \$27,630. The median income for a family of four is \$92,100.⁶⁷

Fair Housing

The Fair Housing Law passed in 1968, it prohibits discrimination in the sale, rental or financing of housing based on race, color, religion, national origin, sex, familial status, and disability. In Oregon, there are additional protected classes including marital status, source of income, sexual orientation, and domestic violence survivors. It is a civil rights law because it protects the rights of people based on protected classes.⁶⁸

⁶⁷ Portland Housing Bureau. (2020). Median Income Percentages 2020 (effective 4/1/2020). [City of Portland website]. Retrieved from: <https://www.portland.gov/sites/default/files/2020-04/2020-ami-rents-phb.pdf>

⁶⁸ Fair Housing Council of Oregon. (2020). [Top 3 Things You Should Know About Fair Housing](http://fhco.org/index.php/news/blog-2/item/29-top-3-things-you-should-know-about-fair-housing). [Fair Housing Council of Oregon website]. Retrieved from: <http://fhco.org/index.php/news/blog-2/item/29-top-3-things-you-should-know-about-fair-housing>

Health Stabilization Services

Health services are a central part of stabilization for households experiencing homelessness. These services include addiction and recovery treatment (detox, inpatient, intensive outpatient, and medicated assisted treatment), behavioral health treatment (hospitalization, involuntary commitment, sub-acute inpatient, transitional residential treatment, and on-going ACT or ICT case management). In addition, some people are experiencing complex medical conditions like cancer, brain injury, HIV/AIDS, or a terminal illness, which require intensive and on-going medical stabilization services up to hospice and end-of-life planning. At times, treatment will be delayed if there is no access to housing. Finally, for people discharging from a hospital with an acute medical condition (like a broken leg or an open wound) they may be eligible to stay in a recuperative care shelter. Most of these services have requirements, waitlists, and typically need a referral from a provider to start treatment (a person cannot self refer into the program).

Homelessness

The U.S. Department of Housing and Urban Development (HUD) has defined four categories of homelessness: literally homeless, imminent risk of homelessness, homeless under other federal statutes, and fleeing/attempting to flee domestic violence. Our local definition of homelessness includes households who are “couch surfing” or doubled up with family or friends and lack housing permanence, a secure place to stay the next night or legal recourse if asked to leave.⁶⁹

Housing Barriers

Barriers can include: no income or limited income; limited rental history; prior eviction; utility arrears; property damage debt; history of criminal charges. These barriers can be reasons why a rental application is denied.

Housing Discrimination

The Fair Housing Act protects households from discrimination when buying a home, renting, applying for a mortgage, seeking housing assistance. Additional protections apply to federally-assisted housing. Some examples of housing discrimination include when: securities deposits are only required for immigrants and refugees, or only required for people from Mexico; adult-use only building rules that prevent youth from going into certain common spaces; refusal to change property management rules to meet a reasonable accommodation such as sending notices to a payee; a renter is steered from living in certain neighborhoods to other neighborhoods where there are more people like the renter; a person from a Community of Color contacts a landlord over the phone and the conversation is positive but then in-person the landlord’s demeanor is different and the renter receives a denial.⁷⁰

Imminent Risk of Homelessness

HUD defines imminent risk of homelessness as an individual or family who will imminently lose their primary residence, provided that: (i) residence will be lost within 14 days of the date of application for homeless assistance; (ii) no subsequent residence has been identified; and (iii) the individual or family lacks the resources or support networks needed to obtain other permanent housing.⁷¹

⁶⁹ [AHFE Coordinated Access Guidelines](#), 2018, [HUD Criteria and Recordkeeping Requirements for Definition of Homelessness](#), 2012.

⁷⁰ HUD.GOV. (n.d.). Housing Discrimination Under the Fair Housing Act. [HUD website]. Retrieved from: https://www.hud.gov/program_offices/fair_housing_equal_opp/fair_housing_act_overview

⁷¹ HUD. (2012). Criteria and Recordkeeping Requirements for Definition of Homelessness. HUD Exchange Website. Retrieved from: <https://www.hudexchange.info/resource/1974/criteria-and-recordkeeping-requirements-for-definition-of-homeless/>

Long-term Rental Assistance (LTRA)

Flexible rent assistance that is available to support those experiencing or at substantial risk of experiencing homelessness. LT rent assistance does not have an end date and can be available as long as the household needs it. It is also portable and moves with the tenant. Typically, these funds are limited to extremely low income households with incomes at 30% or less AMI.

Median Family Income

Zapata et al. in their report *Governance, Costs, and Revenue Raising to Address and Prevent Homeless in the Portland Tri-County Region* define median income “[m]edian income identifies the point where 50% of people make over that amount and 50% make less than that amount. Median income can be calculated for different groups of people such as different geographies, family size, households size, race, etc. [...] Determining who is described as low-income depends on what part of the income spectrum a family falls. If you make less than 80% MFI, you would be considered low- or moderate-income. HUD uses US Census Bureau data to calculate their own median incomes. Their definition is based on family income.” (Zapata et al., 2019, p. 14).

Permanent Supportive Housing (PSH)

PSH is permanent housing with supportive services to assist people that have a disability and have experienced homelessness to live independently. Supportive services must be offered for the duration of program participation. PSH may be at a single site, a scattered site or a clustered site, and can be integrated with affordable or market-rate units. Housing assistance can be project-based (tied to the unit) or tenant-based (tenant must locate a unit in the rental market).⁷²

Prevention (Eviction and Homeless Prevention)

Housing relocation and stabilization services and short-and/or medium-term rental assistance as necessary to prevent the individual or family from moving into homelessness.

Project Based Subsidy

Subsidy is attached to the building or unit and does not transfer with the tenant if and when they move. For project based section 8 public housing programs, entry into one of these units is from a waitlist. These waitlists typically open up one to three times a year.⁷³

Rapid Re-Housing (RRH)

RRH is designed to help currently homeless households achieve and maintain permanent housing stability as quickly as possible. RRH offers flexible funding, rental assistance and supportive services, and ranges from one-time financial assistance through a maximum of 24 months of rental assistance and/or supportive services. Our community values multiple approaches, including predetermined time frames for assistance as well as the Progressive Engagement model in which households receive the minimum assistance necessary to gain housing stability and frequent reassessment occurs to determine additional need.

⁷² The Joint Office of Homeless Services. (2018). [Resources and Eligibility Criteria for Adult and Family Coordinated Access in Multnomah County](#). [AHFE website].

⁷³ Multnomah County. (n.d.). Affordable/Subsidized Housing Resources. [Multnomah County website] Retrieved from: <https://multco.us/dd/affordablesubsidized-housing-resources>

Recovery-Oriented Transitional Housing (TH)

“Recovery housing is a housing model that uses substance use-specific services, peer support, and physical design features to support individuals and families on a particular path to recovery from addiction, typically emphasizing abstinence. The personal recovery journey is different for everyone, and some people who experience homelessness and who are pursuing recovery express a preference for a housing environment that is abstinence-focused and uses a peer-driven community to support recovery” (HUD, 2015).⁷⁴ All local HUD-funded Recovery-Oriented TH is short-term (from 4 to 24 months), site-based (meaning participants have units in the same building with services on-site), and alcohol and drug free. Participants receive case management with a focus on supporting recovery and achieving long-term housing stability.⁷⁵

Retention Services

Services provided to households after the end of a rental subsidy for up to 12-24 months. Services include ongoing visits, eviction prevention assistance, landlord and neighbor problem solving, and connection to community resources.⁷⁶

Scattered-Site Model

This model is typically used by non-profit organizations as a strategy to integrate housing units into the general community by purchasing or renting, or master leasing, condominiums, apartments, or single family homes as opposed to purchasing whole buildings and then placing all participants into one location.⁷⁷

Shelter Plus Care Program (S+C)

The former Shelter Plus Care program has been consolidated with other HUD competitive homelessness assistance grants programs to create the new Continuum of Care (CoC) Program. On A Home For Everyone’s ([AHFE website](#)), there is an archive of Portland/Gresham/Multnomah County CoC Program Competition Resources, currently from 2015-2018, that details the new CoC process.

Short-Term Rental Assistance

Flexible rent assistance meant to serve those at risk of or are recently homeless. Assistance duration is flexible, but does have a cap. 1 month - 2 years on average and is similar to rental assistance offered in Rapid Re-Housing and Prevention (though it is not limited by HUD requirements). Home Forward administers Multnomah County’s STRA program. STRA is designed to respond quickly when homelessness threatens a household in three ways: emergency hotel/motel vouchers for temporary shelter, eviction prevention assistance to remain in housing, and housing placement into permanent housing.⁷⁸

⁷⁴ The U.S. Department of Housing and Urban Development. [HUD]. (2015). [HUD Recovery Housing Policy Brief](#).

⁷⁵ The Joint Office of Homeless Services. (2018). [Resources and Eligibility Criteria for Adult and Family Coordinated Access in Multnomah County](#). [AHFE website].

⁷⁶ Multnomah County. (2018). Homeless Family System of Care: Multnomah County Mobile Housing Team Retention Services ServicePoint Handbook. [Multnomah County website]. Retrieved from:

<https://multco.us/multnomah-county-servicepoint-helpline/homeless-family-system-care-hfsc>

⁷⁷ Corporation for Supportive Housing. [CHS].(n.d.). CSH Supportive Housing Scattered-Site Ownership.[CHS website]. Retrieved

from:http://www.csh.org/wp-content/uploads/2015/12/IL_Toolkit_Model_Scattered-Site-Owned.pdf

⁷⁸ Home Forward.(n.d.). Short-Term Help Paying Rent. [Home Forward website]. Retrieved from:

<http://www.homeforward.org/find-a-home/get-help-paying-rent/short-term-help>

Supportive Housing (SH)

Supportive housing is a proven solution for highly vulnerable people who have complex health needs, including those with untreated or undertreated mental illness and addictions and have long-term homelessness in their background. It combines deeply affordable housing with supportive services to help people live with stability, autonomy and dignity. Our community operates two primary models of supportive housing: 1) Permanent supportive housing for populations with more complex needs and 2) Facility-based transitional housing for populations with shorter-term needs.

Tenant Based Rental Assistance (TBRA)

TBRA is a rental subsidy that is used to help individual households afford housing costs such as rent and security deposits. Under certain circumstances, it can be used to help with utility deposits. There are many types of TBRA programs. The most common type provides monthly assistance to cover the difference between the amount a household can afford to pay for housing and local rent standards, like the Section 8 Voucher Program. The HOME TBRA program is unique from other programs in that the TBRA assistance moves with the tenant and the level of the subsidy varies based upon the income of the household and the cost of their rent.⁷⁹

Tenant Protections

In Oregon, tenant protections are covered under the Oregon State Residential Landlord & Renter Act (ORS Section 90.100-90.875). (Note that this is not the same as the Fair Housing Law, which is a federal law that prohibits housing discrimination based on protected class.) The Oregon Act outlines the rights and responsibilities for renters and landlords, this includes basic habitability and maintenance standards, as well as rules on security deposits, fees, rent increases, utility payments, and the rules that permit the landlord to conduct inspections of a rental unit.⁸⁰ In addition to the protections set forth in the Residential Landlord and Tenant Act, the City of Portland has additional protections under the Portland Renter Additional Protections Ordinance (30.01.085). These additional protections set limits on rent increases, require longer times for a no-cause eviction move out period, and in some cases require financial assistance for tenant relocation.⁸¹

Transitional Housing (TH)

TH is a temporary housing with supportive services to facilitate a household's successful move into permanent housing, typically within 24 months. Participants choose whether to participate in services offered. It may be facility based or scattered site, although all publicly funded TH in Portland and Multnomah County is currently facility based.

⁷⁹ HUD. (n.d.). Hud Exchange HOME Tenant-Based Rental Assistance. [HUD Exchange website]. Retrieved from: <https://www.hudexchange.info/programs/home/topics/tbra/#policy-guidance-and-faqs>

⁸⁰ Multnomah County. (2018). Multnomah County Rent Right Housing Resource Guide. [Multnomah County website]. Retrieved from: <https://multco.us/file/9038/download>

⁸¹ City of Portland. (2019). Charter, Code and Policies: 30.01.085 Portland Renter Additional Protections. [City of Portland website]. Retrieved from: <https://www.portlandoregon.gov/citycode/article/748112>

Appendix G: Documentation Barriers

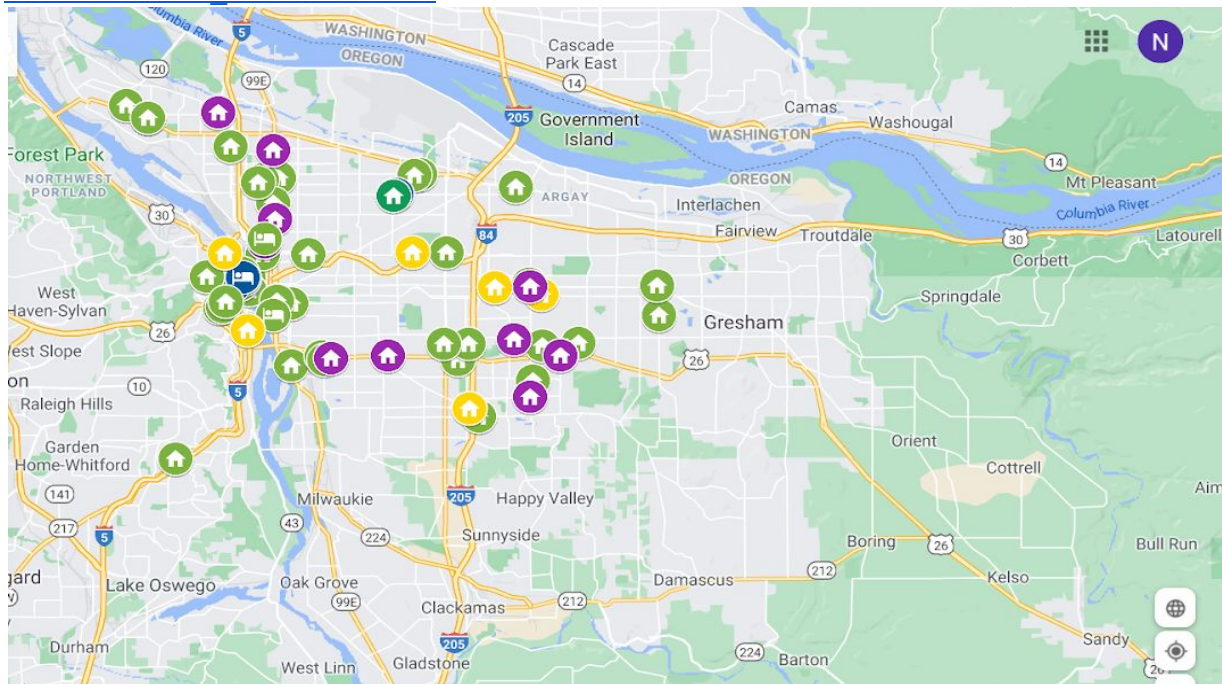
<p>Documentation is an essential part of the process to initiate housing and benefit services. For example, a person or family needs to show a legal photo ID to submit a rental application, start SSD/I or VA pension benefits, open a utility account, or start certain types of medical treatment. Since September 11, 2001 the process to obtain birth certificates and state ID is much more restrictive and has caused longer wait times for documents and introduced new barriers to obtain them. Communities of color face additional barriers based on racial and ethnic discrimination, which may cause additional wait times and create more distrust of government offices.</p>					
Documentation barriers					Uses
Doc type	Racial and ethnic discrimination	Time to obtain	Legal considerations	Cost	Needed to:
Photo ID	<p>BIPOC <i>may</i> experience bias based on the type of ID they show to service and housing providers</p> <p>Some community members do not want to show their ID because of the new Public Charge Law</p>	<p>Varies, dependent on whether person can enter certain places, re-order, pay costs, retrieve mail; one month to one year</p> <p>Access to and familiarity with internet may impact duration</p>	<p>Ex. Legal photo ID: COFA nation passport Military ID State ID Perm. Resident Card Prison ID Tribal ID</p> <p>Accepted for shelter services in MultCo: Transition Project ID</p>	<p>Varies, & not all ID can be replaced. If passports (more than 5 yrs. expired), resident cards, visas are expired then may need to consult with lawyer</p>	<p>Stay in (some) shelters Open (most) bank accounts Enter legal employment Start to receive SSD/I benefits Start to receive VA pension Order (most) birth certificates Order social security card Pick up narcotic medications Cash a check Enter a federal building Submit a rental application Start utility services Start methadone treatment</p>
OR ID	<p>BIPOC still <i>may</i> experience racial + ethnic bias at govt. offices</p>	<p>During Covid-19, 1-2 months for DMV appointment then 2 weeks in mail</p>	<p>Must demonstrate proof of physical address</p> <p>1st time OR ID must show birth certificate, even if born in OR</p>	<p>\$44.50 ID \$39.50 Replace \$40.50 Renew</p>	<p>Rent a room at (most) motels/hotels</p> <p>OR Driver's License to drive</p> <p>Often used (but not required) to register to vote</p>
Birth certificate	<p>BIPOC <i>may</i> experience bias at govt. offices based on perceptions about their place of birth, and perceptions about the importance of their need for a birth certificate</p>	<p>Time varies</p> <p>Non-digitized records may impact duration</p> <p>One month to one year, depending complexity to prove place of birth</p>	<p>For people born at home or that were adopted, they may need to work with a lawyer</p> <p>Legal name changes require add. Documentation</p> <p>Applicants may not know name of birth parents, place of birth</p>	<p>Varies</p> <p>Typically requires a notarized application fee & a general app fee</p> <p>Often a fee to expedite</p> <p>Legal costs for more complex cases</p>	<p>Apply for a state ID (which is required to apply for a social security card)</p> <p>Apply for permanent resident card, work visas, citizenship</p>
Feedback from culturally-specific providers on some ways to address documentation barriers					
Culturally-specific interventions		Outreach & pre-housing supports	Documentation flexibility	CBO infrastructure	
<p>Trusted BIPOC community members must design & introduce interventions to BIPOC community</p> <p>Establish a multi-lingual support and navigation team</p> <p>2-1-1 has not been a successful method to inform BIPOC community, <i>bring services to</i> BIPOC community through trusted community members</p> <p>Provide financial assistance to apply for citizenship</p>		<p>Prioritize service deserts</p> <p>Invest in mobile tools like laptops with Wi-Fi, and cellphones for clients to use in meetings</p> <p>Reserve spots for BIPOC community members to apply for needed documents</p>	<p>Require less paperwork</p> <p>Provide trauma-informed guidance about the process</p>	<p>Invest in more access to lawyers to expedite getting a birth certificate</p> <p>Invest in more access to lawyers to address citizenship barriers</p> <p>Invest in annual collaboration with service providers about documentation interventions</p>	

Appendix H: Supportive Housing Projects/Units in Multnomah County

The map below shows buildings that have dedicated supportive housing units across Multnomah County. This map does not include tenant-based resources that can be used in market-rate or affordable housing units.

To access the map virtually, click on the link below. You will need a Google account and you may need to request access:

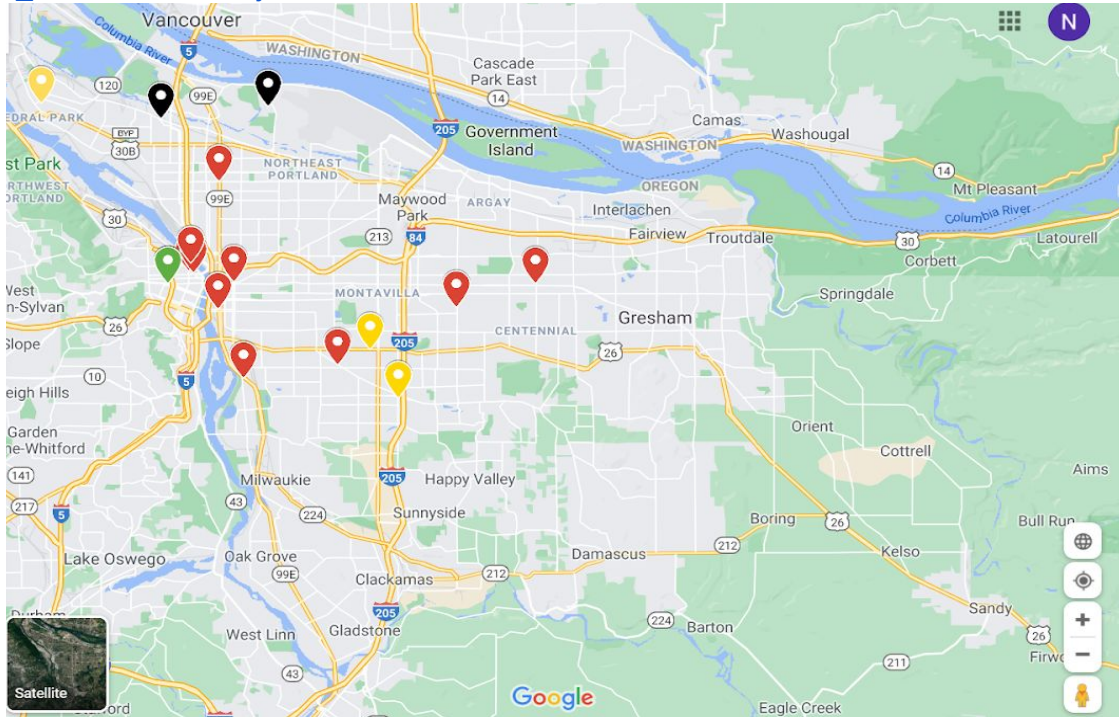
https://www.google.com/maps/@45.4778502,-122.6424044,11z/data=!4m2!6m1!1s1ERkv5ngSzlSfTMX1mXKX_mZ5z4RXECuD



Appendix I: Emergency Shelter Locations in Multnomah County

Below is a snapshot of publicly funded emergency shelter locations across Multnomah County. You can view this Google map on your computer using this link:

https://www.google.com/maps/@45.4929373,-122.6279267,11z/data=!4m2!6m1!1s1Kjpeq5kmKv_TTnQFWiltzBPrBj0



Appendix J: Metro Supportive Housing Services Outcome Metrics

The following charts capture the SHS Program outcome metrics that have been established to date.

Outcome Metrics: Housing Stability

Category	Goals	Proposed Annual Metrics
Housing Stability	<p>Housing equity advanced by access and service access at greater rates to BIPOC;</p> <p>Housing retention rates equal or better for BIPOC; Rate of chronic homelessness significantly reduced</p>	# of supportive housing units created
		Rate: Total supply of supportive housing vs. demand
		Rate: # of households experiencing housing instability/homelessness compared to those placed in stable housing
		# of housing placements by housing type and population type
		# of homeless preventions by housing type and population type
		Rate: housing retention
		Average length of homelessness
		Returns to homelessness (# and %)
		Funds and services leveraged (across sectors, departments) locally

Outcome Metrics: Equitable Service Delivery

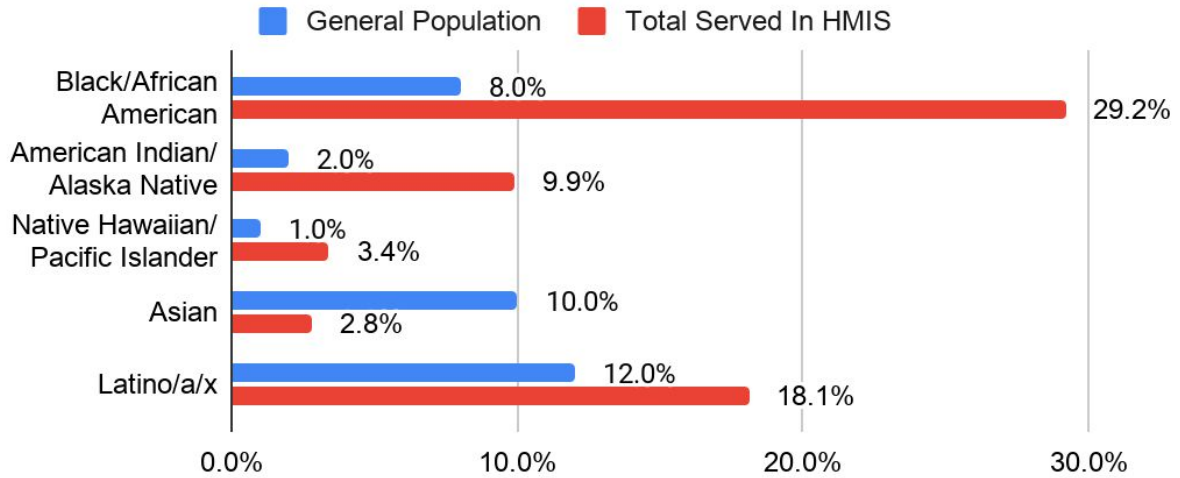
Category	Goals	Proposed Annual Metrics
Equitable Service Delivery	<p>Increase culturally specific organization capacity with increased investments and expanded organizational reach for these organizations;</p> <p>All supportive housing services providers work to build anti-racist, gender-affirming systems with regionally established, culturally responsive policies, standards and technical assistance</p>	Scale of investments made through culturally specific service providers
		Rates of pay for direct service roles & pay distribution from highest to lowest-paid staff within agencies
		Diversity of staff by race, ethnicity, sexual orientation, gender identity, disability status and lived experience

Outcome Metrics: Engagement & Decision Making

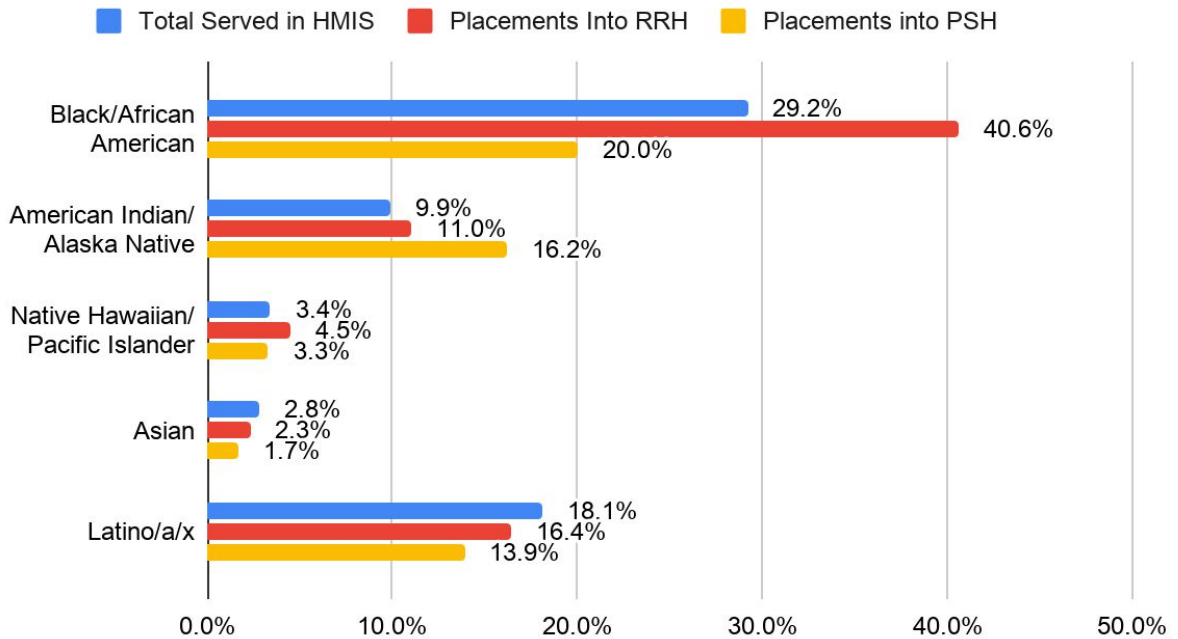
Category	Goals	Proposed Annual Metrics
Engagement & Decision Making	<p>BIPOC folks are overrepresented on all decision-making and advisory bodies</p> <p>BIPOC folks and people with lived experience are engaged disproportionately (i.e. over-engaged) to inform program design and decision making.</p>	<p>Percent of all advisory and oversight committee members who identify as BIPOC or as having lived experience of housing instability or homelessness</p>

Appendix K: Data Tables

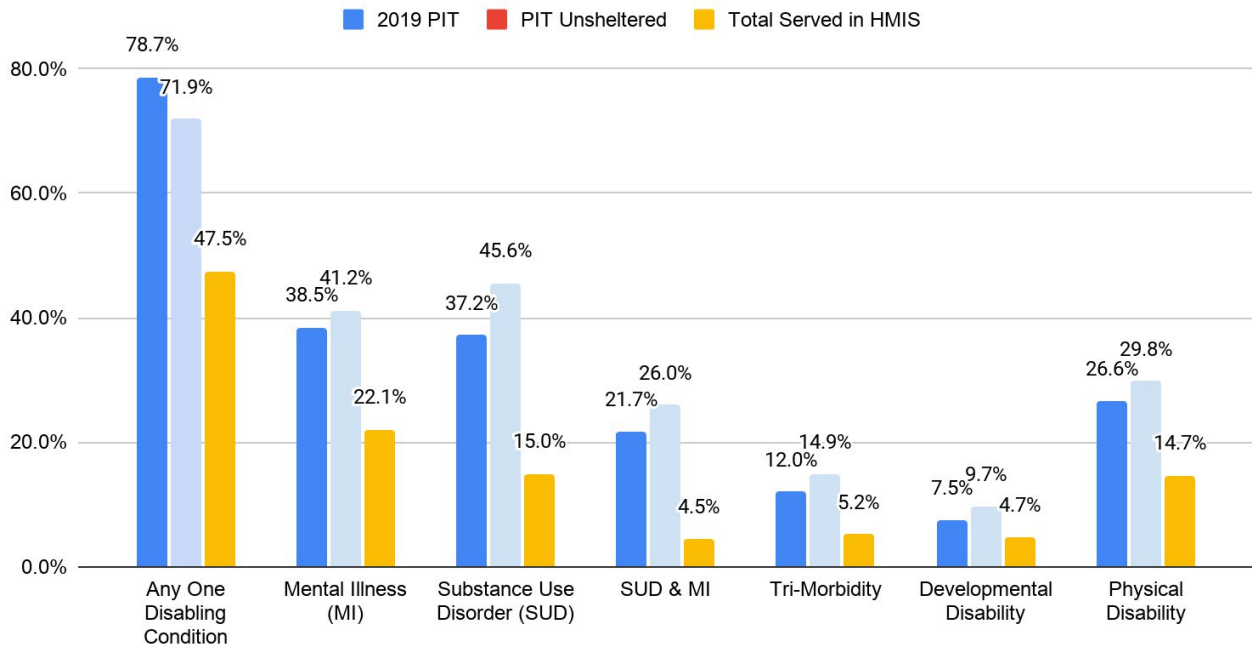
Representation by Race/Ethnicity



FY19/20 Placements into Permanent Housing



Disparities for People With Disabling Conditions



Appendix L: A Home For Everyone Community Program Guidelines and Joint Office of Homeless Services Adult Homeless Services RFPQ Program Requirements

This appendix includes the A Home for Everyone Community Program Guidelines for homeless system programs, as well as the Joint Office of Homeless Services program requirements from the 2019 Adult Homeless Services RFPQ.

JOHS Adult Homeless Services RFPQ

Relevant excerpt from: 2019 Adult RFPQ Attachment B (pg 4-6):

1.1.4 System-wide Service Delivery Approaches & Values Four core system-wide approaches are expected to be utilized by all Adult Homeless Services Suppliers in the provision of JOHS-funded services or strategies and are outlined in this section.

Housing First and Low Barrier AHS should be designed to support the community's commitment to Housing First. Housing First is an approach to quickly and successfully connect households experiencing homelessness to permanent housing without preconditions and barriers to entry. Housing First recognizes that with the right supports, everyone is "ready" to return to permanent housing as soon as a suitable unit becomes available. Therefore, absent very specific programmatic justifications (for example, Recovery Housing models), services should be designed to expedite and not delay a participant's return to permanent housing. Following this approach, the utilization of services are participant-led and modified to meet the unique needs of each participant.

Assertive Engagement *Assertive Engagement* (AE) is a synthesis of evidence-based practices adopted by Multnomah County that includes elements from Motivational Interviewing, Strengths-Based Practice, and Assertive Community Treatment. It is a person-centered and strengths-based social service approach to working with people that honors the individual as experts in their own lives. AE principles will guide service design as well as how Adult Homeless Services are delivered by Suppliers.

Racial and Social Justice In order to end homelessness we must acknowledge and address through our work the continuing role that structural and institutional racism play in causing significantly disproportionate rates of homelessness among Communities of Color.

We are often described as a progressive community. But we are, in fact, a community built on a long history of legalized and institutionalized racist and oppressive practices that have deprived generations of People of Color access to economic and social opportunity. Until 1926, Oregon's Constitution barred African Americans from moving to or residing in Oregon. As recently as 1948, Oregon realtors affirmed their commitment to a "Code" that, "a realtor shall never introduce into a neighborhood members of any race or nationality whose presence will be detrimental to property values." These examples of racial exclusionary laws and practices in Oregon are two of many contributors to the infrastructure of institutional racism that continues to this day.

Data shows that the inequities created by these historical practices continue to be reproduced and reinforced through institutionalized racism and prejudice in our current housing, education, criminal justice, and employment and human services systems.

As a result, African Americans, Native Americans, Latinx communities, immigrants and refugees and other Communities of Color do far worse on all social indicators of well-being than whites. And their rates of homelessness are much higher than rates of homelessness among whites.

Eliminating these disparities requires an understanding among all Suppliers of AHS of how historical and current structural, institutional, and personal racism shape the experiences and opportunities of People of Color in our community. It requires that Suppliers understand and carry out their obligations under federal, state, and local civil rights statutes designed to protect people against unlawful discrimination. It requires that resources be targeted and services be delivered in a manner that addresses these disparities (see below for discussion of culturally responsive and specific services). And it requires that individual Suppliers and the homeless services system as a whole be accountable for equitable access to and benefit from services provided.

Culturally Responsive and Culturally Specific Services All Suppliers of Adult Homeless Services will be expected to deliver those services in a Culturally Responsive and/or Culturally Specific manner, as those terms have been defined through a collaborative County-wide work group, led by the Multnomah County Chief Operating Officer and the Director of the Office of Diversity and Equity (see Appendix 1). These definitions realize the County's stated belief that **culturally responsive and culturally specific services eliminate structural barriers and provide a sense of safety and belonging which will lead to better outcomes**. For more detailed information on cultural specificity and responsiveness, please see Multnomah County's guidance on [Culturally Specific Services](#).

A Home for Everyone Community Program Guidelines

The Community Program Guidelines document includes definitions, populations served, expectations for effective practices and operating standards by program type. Below are excerpts that include the effective practices for each program type. The full document can be accessed via this link: <http://ahomeforeveryone.net/guidelines>.

Emergency Shelter Guidelines

Effective Practices (pg 4-5) :

- Operate as low-barrier based on the Housing First philosophy, so people with high housing barriers can receive ES services. Offer emergency shelter to support people in recovery (no drug/alcohol use) through a safe and non-triggering environment.
- Wherever possible, do not utilize first-come, first-served approach.
- Diversion is a critical component of the homeless system that should be operated at all front doors of coordinated entry and ES, to ensure resources are dedicated to households who need shelter tonight and those who can be diverted have support in making necessary connections to safe, alternative housing situations.

- Safety Off the Streets workgroup hosts monthly action-oriented conversations to address detailed challenges and alignment opportunities, including exclusions, nuts & bolts of how shelter operates, how to support team members within system shifts, how to increase staff retention rates.
- Shelters are to be used only when an appropriate permanent housing option is not available. When shelter capacity is expanded, it should be coupled with permanent housing resources for those in shelter, to ensure improved, longer-term outcomes.
- Client-level and outcome data will be collected to the extent appropriate given the nature of the shelter and level of public investment.
- Ensure geographic equity in siting of shelter, particularly in East Multnomah County, to meet the needs of people experiencing homelessness throughout the area

Transitional Housing Guidelines

Effective Practices (pg 6):

- TH is used for households who have immediate and acute supportive service needs, who will likely not need intensive services permanently, though their needs may vary over time.
- Examples of effective approaches and/or models include: harm reduction and low barrier approaches (i.e., recovery housing is also low-barrier). Also, in our community we operate TH beds for people with mental health conditions.
- Goals and plans are participant-driven with the ultimate goal of obtaining safe and stable housing. These may be oriented around:
 - Employment
 - Linkage to mainstream services and eligible benefits (Medicaid, SSI/SSDI, TANF)
 - Addictions treatment
 - Mental health services
 - Primary health care
- Explore models and best practices for community space within facility-based transitional housing.

Permanent Supportive Housing Guidelines

Effective Practices (pg 8-9):

- Focuses on serving households with intensive social and clinical service needs, long-term homelessness and/or frequent stays in institutions.
- Assessments and participant-driven planning to secure long-term stability and reach goals, including:
 - Employment
 - Linkage to mainstream services and eligible benefits (Medicaid, SSI/SSDI, TANF)
 - Addictions treatment
 - Mental health services
 - Health care
 - Legal services
 - Payee services
- Evictions in tenant-based PSH should not result in program termination unless absolutely necessary for safety reasons; transfers between programs should be facilitated whenever safe and appropriate to allow the best fit of available resources to meet household needs. As households and/or circumstances change (ex: youth aging out) and the service need remains high, the system should ensure continued access to PSH.
- Housing is permanently affordable to people with very little or no income.
- Eligibility criteria is minimal, especially in regard to serious criminal justice involvement.

Rapid Re-Housing Guidelines

Effective Practices (pg 10):

- One-time financial assistance, or 1-24 months of rental assistance and supportive services based on individual need, and rooted in Progressive Engagement model as well as pre-determined timeframes for assistance. Subsidy may be deep or shallow, depending on individual needs.
- Assessment for and access to participant-driven services to obtain & retain long-term housing stability. Service linkages may include:
 - Addiction treatment
 - Mainstream services and eligible benefits (Medicaid, SSI/SSDI, TANF)
 - Connection to permanent subsidized housing (e.g. Section 8) or permanent supportive housing if need indicated through progressive engagement
 - Domestic violence services
 - Health care (including mental health care)
 - Employment
 - Legal services (including education of personal and tenant rights)
 - Payee services
 - Housing stability

Appendix M:

Governance, Costs, and Revenue Raising to Address and Prevent Homelessness in the Portland Tri-County Region



**A report by the Portland State University Homelessness
Research & Action Collaborative,
& Northwest Economic Research Center**

Governance, Costs, and Revenue Raising to Address and Prevent Homelessness
in the Portland Tri-County Region

Citation: Zapata MA,* Liu J,** Everett L, Hulseman P, Potiowsky T, & Willingham E. 2019. *Governance, Costs, and Revenue Raising to Address and Prevent Homelessness in the Portland Tri-County Region*. Portland State University

*First author & **second author. All other authors listed in alphabetical order.

For questions, please contact: Marisa A. Zapata (mazapata@pdx.edu)

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We met with, received data from, and sought or received comment from the organizations listed below. While a range of partners were given the opportunity to provide feedback on the report, we asked some to review parts versus all of the document and some to offer feedback throughout the process versus reviewing a final draft. Some partners were asked specific questions, or asked for data sets only. In all instances, we made the final determination of how to proceed. Their listing below should not be interpreted as an endorsement. To protect confidentiality of all who shared thoughts with us, we do not list individual names associated with organizations, unless they are not with an organization or submitted comment as an individual person within an organization:

Central City Concern	Metro Regional Government
City of Portland	Multnomah County
Clackamas County	Oregon Center for Public Policy
The Corporation for Supportive Housing	REACH CDC
ECONorthwest	State of Oregon
Here Together	Washington County
Home Forward	Welcome Home
JOIN	Wheelhouse Associates
Joint Office of Homeless Services	Transition Projects, Inc.

In addition to the above organizations, we would like to thank Robert Stoll for sharing this project idea with us. Mr. Stoll's support throughout this project has been greatly appreciated.

Special thanks to the additional PSU team members who worked on this report: Stefanie Knowlton, Andrew Hickey, Jennifer Lee-Anderson, Jacen Greene and all of the Summer Research Institute graduate students.

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FOREWORD

This report takes a comprehensive look at the scale of homelessness and housing insecurity experienced in the Portland tri-county area. Our goal in producing this report is to help community members understand the scope and scale of the challenges we face when addressing homelessness and housing insecurity. We examine governance options, provide cost estimates for providing housing, supports, and services, and present revenue-raising options for our local governments to address homelessness and housing insecurity.

Before getting too far into the report, we want to make sure to note a few things. Many of the available counts of those experiencing homelessness use a narrow definition. We believe this leaves people behind. For example, the official Point-in-Time counts do not include those living doubled up, those sometimes described as the hidden homeless or precariously housed. This vulnerable population is sleeping on friends' couches or cramming in unsafe numbers into bedrooms. Because homelessness is experienced differently within communities of color, a narrow definition of who has experienced homelessness leaves people of color out. Larger estimates like we have conducted in this report will help better achieve racial equity and give a more complete picture overall.

Because these figures are comprehensive and include multiple jurisdictions, some might be shocked by the homelessness count and the cost. These numbers are on a scale that we are not used to seeing when talking about homelessness in the Portland region. Here are a few considerations to put the numbers in perspective. The overall count of people experiencing homelessness is about 2% of the population, many of whom are already receiving some type of services. Who is receiving what types of services and at what level is beyond the scope of this report; however, we know that some of the necessary investments have already been made, and will continue to be made. For example, the estimates do not account for the impact of the 2018 Metro and 2016 Portland affordable housing bonds, which total approximately \$911 million combined.

When turning to the costs for homelessness prevention and housing insecurity, we assume that the costs we estimate for people experiencing homelessness are spent and the interventions are successful, and that the planned rent assistance for prevention would happen immediately. Obviously, this would not happen in practice. The type of modeling needed to capture the inflow and outflow of people experiencing homelessness is complex, data intensive, and time consuming.

We opted to go in the opposite direction, and created replicable, straightforward estimates completed in just a few months. Our goal was to provide a general sense of the number of households and associated costs, and we believe that adding layers of complexity where assumptions are added to assumptions would not get us to a better estimate. These estimates for the costs and revenue-raising options are ballpark figures based on counts, data, and

Governance, Costs, and Revenue Raising to Address and Prevent Homelessness
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assumptions from currently available sources. They are not meant to be exact, and should only be used as guideposts. The numbers provide a starting point for conversations on the resources necessary to tackle this issue in the tri-county area, and how we might go about raising the revenue to do so. Similarly, the governance section provides case descriptions about regional governance for homelessness in other areas, and considers options for the tri-county region. We urge the tri-county region to collectively decide how to move forward, and to define the problem we are trying to solve—homelessness or housing? Supporting people experiencing homelessness who are unsheltered will not solve affordable housing, and affordable housing is integral to helping them. However, without weighing trade-offs, we cannot know for sure exactly which is the best path to addressing affordable housing.

Lastly, we know that governance, costs, and revenue are just the beginning of the work we must undertake in our community to provide a safe, quality, affordable home with supportive services to every community member in need. At the PSU Homelessness Research & Action Collaborative, we look forward to understanding the policies that have given rise to and perpetuate homelessness. We know that only through long-term strategic planning and structural improvements can we both resolve homelessness for people today, and ensure it does not continue to happen in the future. We hope you find this report helpful, and we look forward to discussing with you how we can best address homelessness in our region.

A handwritten signature in black ink that reads "Marisa A. Zapata". The signature is written in a cursive, flowing style.

Marisa A. Zapata, PhD

INTRODUCTION/EXECUTIVE SUMMARY

In the Portland, Oregon metropolitan region, homelessness has become increasingly visible on our streets and in our media headlines. Conflicting rates of who is experiencing homelessness, differing definitions of who is at risk, and varying cost estimates to help those without a stable place to live leave community members confused about the scale and scope of the challenge that we face. Our overarching goal in this report is to provide information that helps the public better deliberate about how to support people experiencing homelessness, and to prevent future homelessness. We thread together three areas of work—governance, costs, and revenue—to help the region discuss how to collectively move forward.

We start with a discussion about governance for a regional approach to address homelessness. We then offer two sets of conceptual cost estimates. These ballpark figures are meant to help the community understand the number of people experiencing homelessness and facing housing insecurity. Lastly, we examine a range of revenue-raising options for the tri-county region to give communities an idea of how to find resources to address and prevent homelessness. In all three sections our goal is to paint a picture with a broad brush of the landscape in which we are operating.

Key Takeaways

We present core findings from each of three substantive sections in the report.

- Regional governance can play an effective and important role in addressing homelessness and increasing capacity to improve the lives of people experiencing homelessness or housing insecurity. Solving homelessness requires affordable housing, and housing markets to operate regionally. Service needs do not follow jurisdictional boundaries, and coordinating regionally can reduce inefficiencies and allow for cost sharing.
- Political advocacy matters for raising awareness about an issue while also informing, influencing, and building power among multiple stakeholders. These stakeholders include people experiencing homelessness, elected officials, government actors, businesses, service providers, advocates, people experiencing housing insecurity, and other community members.
- Multi-stakeholder processes can help build power across groups and create advocacy networks and coalitions. Multiple groups operating in government or civic society can help create broader commitments to work toward a common goal, in this case addressing homelessness.

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- Some of the most successful governance groups included in this report focused on homelessness centered on racial equity. Poverty and race are inextricably linked, and communities of color face disproportionate rates of homelessness. In the four cases we describe, Black community members consistently experienced disproportionately higher rates of homelessness.
- 38,000 people experienced homelessness in the tri-county area in 2017. This estimate is based on annualized Point-in-Time data, numbers served in each county, and K-12 homelessness reports. Communities of color, specifically Black and Native American communities, are represented at disproportionately higher rates in the homelessness population when compared to their total population in the region.¹
- The cost to house and support this population ranges from \$2.6 billion to \$4.1 billion over ten years based on a range of options presented in the cost section of this report. The costs include the development and/or acquisition of new units. These estimates assume these populations remained static, with no new additional homeless households. These figures do not account for the impact of Metro and Portland bonds totaling approximately \$911 million for affordable housing, or ongoing service-level funding.
- Services, rent assistance for privately leased units, building operations for publicly developed units, and program administration would cost about \$592 million–\$925 million in 2025,² when costs are at their highest, and an average of \$97 million–\$164 million per year thereafter.³ These figures do not include the costs for building or acquiring units, and vary by scenario. These numbers also include non-permanent supportive housing (non-PSH) households receiving 100% rent support and moderate services for two years. In all

¹ The focus on Black and Native American populations reflects that more and better data were available and should not be an indication that other communities do not face serious disparities. For example, in the case of Latino communities, fears about immigration status means limited requests for help. Asian Pacific Islander communities have significantly different demographic profiles based on which sub-population to which they belong. Also note that systemic and persistent data collection issues results in undercounts in many communities of color. See Runes, C. (2019). *Following a long history, the 2020 Census risks undercounting the Black population*. Urban Institute. Retrieved from <https://www.urban.org/urban-wire/following-long-history-2020-census-risks-undercounting-black-population>)

² We assumed programming would begin in 2024. We selected 2025 as it included completion of unit acquisition/development.

³ Cost variance is due to the proportion of units that are publicly developed (versus acquired and leased on the private market). The top end of the range represents the scenario in which higher service costs are assumed and local public entities construct all permanent supportive housing units, while the lower end of the range includes lower service cost assumptions, and increases the number of units rented through private leases. These numbers also include non-PSH households receiving 100% rent support and more moderate services. Should the non-PSH homeless households become fully self-sufficient, service and operation costs drop to \$97 million - \$164 million per year. In all likelihood many non-PSH homeless households will achieve some level of self-sufficiency but may continue to need some level of support; this report does not calculate those expense estimates.

likelihood many non-PSH homeless households will achieve some level of self-sufficiency, but may continue to need some level of support after two years. Should all non-PSH homeless households continue to receive 100% rent assistance and services, our high-end estimates for every additional two years that non-PSH households receive full rent subsidies and services totals \$1.6 billion. Again, these numbers do not include current funding commitments.

- As many as 107,000 households faced housing insecurity or were at risk of homelessness in 2017 in the tri-county area due to low incomes and paying more than 30% of their income on housing costs, commonly described as housing cost burdened. This number includes households that made 0–80% of median family income (MFI), and paid more than 30% of their income on housing costs. About 83,000 households from the same income brackets paid more than 50% of their income on housing costs in 2017. Focusing on the lowest wage earners (0–30%), about 52,000 households paid more than 30% of their income on housing costs.
- Communities of color face much higher rates of rent burden, and lower median income when compared to White counterparts. The median salary for Black households in the Portland area is half that of the overall median—a significant disparity, and a sign of the current and historic systemic racism faced by this population in the region.
- Providing rent assistance for all of these households would help resolve housing insecurity and reduce the risk of becoming homeless. We estimated costs to create such a program, using a range of rents and addressing households that earn 0–80% of the median family income (MFI) for their household size. To help severely cost-burdened households over ten years would cost \$8.7 billion–\$16.6 billion. That’s about \$870 million–\$1.66 billion per year, or \$10,000–\$20,000 per household per year. These numbers do not account for what is already being spent in the tri-county area to relieve the cost burden for households in need.
- There are a range of revenue options that the tri-county region could explore collectively, through Metro, or at individual jurisdictional levels. All have trade-offs; all should be carefully examined for equity and regressivity, with particular attention to the impacts on communities of color and low-income communities.

Key Recommendations

These recommendations were developed by working through available data sets, interviewing people from other communities, reviewing literature, and professional practice here in Portland.

- We recommend the tri-county area form an exploratory committee or task force of an inclusive and committed set of stakeholders that is led by a government entity, or set of government entities, to examine in which ways better regional planning, policies, and

program coordination around homelessness could help all jurisdictions meet their goals. This task force would do the following:

- Deliberatively identify the “problem” to be solved. Two examples of how to frame the problem: 1) Focusing on unsheltered homelessness; or, 2) Creating safe, quality, and affordable housing for all community members. Clarity about which problem(s) we are attempting to solve is essential to the success of any effort. We recommend the region carefully consider if we are trying to “solve” homelessness, or if we are trying to “solve” affordable housing. We argue for the second framing, focusing on affordable housing. The second framing could include the first identified problem framing. *Supporting people experiencing homelessness who are unsheltered will not solve affordable housing, and affordable housing is integral to helping them. However, without weighing trade-offs, we cannot know for sure exactly which is the best path to addressing affordable housing.*
- Include decisions and discussions about program and service coordination, policy making and implementation, and revenue raising and distribution.
- Build on existing collaborative efforts, but not usurp them, and hold processes in an inclusive and equitable manner where equity refers to communities of color and people who have or are experiencing homelessness or housing insecurity. Transparency will be central to ensuring democratic governance as well as public support. Encourage processes occurring in civic society to continue their work independently.
- Have an identified decision-making date where the group will make formal recommendations about how the region should move forward.
- Define the homelessness community to include people who are doubled up. This is a substantial population that cannot be easily dismissed.
- Center the process on racial equity. The racial disparities for communities of color experiencing homelessness or housing insecurity do not exist by accident, and the only way to really address and prevent homelessness will be to focus on their needs. By focusing on achieving racial equity, other racial groups that do not experience disparities will also be served.
- Given the conceptual nature of the population and cost estimates in this report, we encourage identifying key areas where additional, more concrete estimating may be appropriate. *We caution against spending significant resources on complicated and in-depth dynamic modeling and cost estimates unless their utility is clear.* Much of the data and estimates related to homelessness can be problematic, and intensive drill downs may not make cost estimates more reliable.
- Use the information from this report to help map strategic next steps. We encourage stakeholders to break down pieces from the cost studies and think about manageable ways to go about addressing different parts of the issues. For instance, Metro and the City

of Portland have bonds that are projected to produce more affordable housing units. A corresponding revenue-raising mechanism for operating costs and services for those units may be an appropriate next step, and the tables in the costs section of the report include the figures to make such an estimate.

- A racial equity decision-making tool should be created and used when making decisions about how to analyze data, estimate costs, and raise revenue.⁴ We were unable to estimate additional costs to support the specific needs of communities of color; however, based on preliminary analysis providing appropriate and effective services for communities of color would not significantly raise the final cost estimates provided here. Any programming should include funding to support work that achieves racial equity.

In the rest of this section, we provide some basic definitions that you will encounter in the report and research methodology. Additional definitions are found throughout the report, and in the glossary. Each section has more detailed methodological notes as research methods varied based on topic. We conclude this section with a summary, including summary tables about costs and revenue, of each of the three substantive sections after the terminology primer.

Terminology

Homelessness has been created by a series of interconnected systems, but is fundamentally about a lack of affordable housing. This report focuses on the costs over ten years to provide housing and relevant services to those experiencing homelessness while also working to prevent additional homelessness and deep housing insecurity. However, to fully address and prevent homelessness, our community will need to consider more significant and robust policy change. This report helps readers more fully imagine how the Portland region can continue its work to address homelessness while also understanding costs and possible revenue options for housing and relevant support services. In this first section of the report, we introduce definitions, data, and concepts related to homelessness. Then we provide summaries of the other sections of the report.

Key Definitions

There are many definitions of homelessness, housing insecurity, supportive services, and other terms you encounter when reading about homelessness. We include a brief primer on the

⁴ A Racial equity lens has been adopted by Metro, Multnomah County, the city of Portland, and Meyer Memorial Trust. In short, a racial equity lens provides a series of questions to research and consider on policies and programs to identify their disparate impacts on communities of color. See Dr. Zapata's Creating an Equity Lens at Institutions for Higher Education for an overview about lenses and examples on how to apply one (2017. Working Paper. Portland State University. <https://works.bepress.com/marisa-zapata/10/>).

differences between some of these core terms, focusing on how we employ them in this report. You will find plenty of references to read more, and recommendations to other glossaries. Always remember that how a given government entity defines a term is how they determine who is eligible for the programmatic services they administer.

Homelessness

Despite considerable recent attention to homelessness, no one definition of homelessness unites the work. The McKinney-Vento Homeless Assistance Act is the source of funding for all homeless services across all of the federal agencies. Each federal agency creates their own definition through their own regulatory process.

The Department of Housing and Urban Development (HUD) controls a significant portion of the federal funding for homelessness, and their definition focuses on people living unsheltered, in emergency shelter, and transitional housing. The HUD definition for homelessness does not include people living doubled up with other people.

The Department of Education (DOE) does include school-aged children and youth, unaccompanied or with their families, who are sharing other peoples' housing (commonly referred to as doubled up) in their definition of homelessness. This definition does not include adults without school-aged children who are doubled.

The multi-jurisdictional governance structure within Multnomah County that addresses homelessness, A Home for Everyone, adopted a local definition of homelessness allowing people who are unsafely doubled up to qualify for local homelessness funds.

Note that regardless of how any local or state government defines homelessness, the relevant federal definition determines who can access federal funds.

For this study, we defined homelessness as an individual or household who lacks a fixed, regular, and adequate nighttime residence including people sharing someone else's housing because of economic or other hardships. This definition expands who is "counted" as homeless, and leads to a number considerably larger than the HUD homeless Point-in-Time count figures. However, because of how the federal government defines homelessness dictates who is counted as homeless, we are only able to create estimates for people who are counted in HUD and DOE data sources. This means we do not have the ability to count those who are doubled-up adults without children in our calculations.

At risk of homelessness

Identifying who is at risk of homelessness can again reference a broader definition, or a much more narrow definition. HUD provides detailed criteria across three categories to determine who is at risk of homelessness, starting with those making 30% or below of median family income

(MFI) in the area.⁵ In their reports, ECONorthwest defined being at risk of homelessness that started with 50% of MFI and at least 50% housing cost burdened, following the definition of “worst-case housing needs” from HUD.⁶

We reviewed academic literature, held discussions with community partners, examined the significant increases in housing values in the region, and decided to include more households in our analysis. Because the literature demonstrates that evictions are a significant cause for homelessness, and not having enough money to pay for rent is a leading cause for eviction, we start our analysis of how many people need assistance by identifying people who are cost or rent burdened, meaning they pay more than 30% of their income for housing costs.⁷ Because some making over the median family income may be cost burdened, but still able to afford basic necessities, we examined who is housing cost burdened and making less than 80% of median family income. While not all of these households are at risk of homelessness, they are most likely housing insecure, and for the purposes of our analyses it does not matter for estimating costs. Further, as discussed below, housing insecurity results in significant negative life outcomes. We break down the analysis in a way that allows readers to create more restrictive definitions and calculate their own related population sizes and costs.

Housing insecurity and housing instability

Similarly to “homeless,” housing instability or insecurity can refer to a range of household situations. In the American Housing Survey (AHS), a joint venture between HUD and the US Census Bureau, housing insecurity “encompasses several dimensions of housing problems people may experience, including affordability, safety, quality, insecurity, and loss of housing”.⁸ Housing insecurity and instability play significant roles in life-time learning, earnings, and health outcomes.

Because a more detailed analysis of who is housing insecure was beyond the scope of this report, we use housing insecurity to mean those households between 0–80% of area median income (AMI) paying more than 30% of their income to housing costs. We break down the analysis in a way that allows readers to create more restrictive definitions and calculate their own related population sizes and costs. We use housing insecurity and instability as synonyms.

⁵ To see the additional criteria, see U.S. Department of Housing and Urban Development. (2012). Criteria for definition of at risk of homelessness [web page]. Retrieved from <https://www.hudexchange.info/resource/1975/criteria-for-definition-of-at-risk-of-homelessness/>.

⁶ Watson, N. E., Steffen, B. L., Martin, M., & Vandenbroucke, D.A. (2017). *Worst case housing needs: Report to Congress 2017* [PDF file]. Retrieved from <https://www.huduser.gov/portal/sites/default/files/pdf/Worst-Case-Housing-Needs.pdf>.

⁷Collinson, R. & Reed, D. (2018). *The effects of evictions on low income households* [PDF file]. Retrieved from https://www.law.nyu.edu/sites/default/files/upload_documents/evictions_collinson_reed.pdf and Desmond, M. & Gershenson, C. (2016). Who gets evicted? Assessing individual, neighborhood, and network factors. *Social Science Research*, 62, 362-377.

⁸ U.S. Department of Housing and Urban Development [HUD]. (n.d.). *Measuring housing insecurity in the American Housing Survey*. Retrieved from <https://www.huduser.gov/portal/pdredge/pdr-edge-frm-asst-sec-111918.html>

Median income

Median income identifies the point where 50% of people make over that amount and 50% make less than that amount. Median income can be calculated for different groupings of people such as different geographies, family size, household size, race, etc. In this report, we use median family income (MFI) in our calculations. Determining who is described as low-income depends on what part of the income spectrum a family falls. If you make less than 80% MFI, you would be considered low- or moderate-income. HUD uses US Census Bureau data to calculate their own median incomes. Their definition is based on family income.⁹

Housing cost or rent burdened

According to HUD, “Families who pay more than 30% of their income for housing are considered to be cost burdened and may have difficulty affording necessities such as food, clothing, transportation and medical care.”¹⁰ In addition to rent or mortgage payments, housing cost burden includes housing costs such as insurance and utilities. Families paying more than 50% of their income on housing costs are classified as severely cost burdened. Housing costs are considered things like rent or mortgage, utilities, and renter’s or homeowner’s insurance. Housing cost and rent burden are often treated as synonyms.

Doubled Up

Families or individuals who live doubled up with friends or family members due to the loss of housing or economic hardship are considered homeless. Sometimes described as the hidden homeless, this population is not counted in Point-in-Time but is included in Department of Education counts for unaccompanied youth or youth in families. Neither count includes doubled-up adult households. Doubled up can refer to a range of complex living arrangements.

Chronic homelessness

HUD defines chronic homelessness as “an unaccompanied homeless individual with a disabling condition who has either been continuously homeless for a year or has had at least four episodes of homelessness in the past three years.”¹¹ Most likely, people who are chronically homeless are the people you see on the streets.

⁹ See U.S. Department of Housing and Urban Development [HUD]. (2019). *Estimated median family incomes for Fiscal Year (FY) 2019* [PDF file]. Retrieved from <https://www.huduser.gov/portal/datasets/il/il19/Medians2019r.pdf>.

¹⁰ See U.S. Department of Housing and Urban Development [HUD]. (n.d.). Affordable housing. Retrieved from https://www.hud.gov/program_offices/comm_planning/affordablehousing/.

¹¹ National Low Income Housing Coalition [NLIHC]. (2019). HUD publishes final rule on definition of “chronic homelessness”. Retrieved from <https://nlihc.org/resource/hud-publishes-final-rule-definition-chronic-homelessness>

Unsheltered Homeless

HUD defines unsheltered homeless as people experiencing homelessness “who sleep in places not meant for human habitation (for example, streets, parks, abandoned buildings, and subway tunnels) and who may also use shelters on an intermittent basis.”¹²

Permanent Supportive Housing

HUD defines permanent supportive housing as permanent housing with indefinite leasing or rental assistance paired with supportive services to assist homeless persons with a disability or families with an adult or child member with a disability achieve housing stability.¹³

Point-in-Time Count

“The Point-in-Time Count provides a count of sheltered and unsheltered homeless persons on a single night during the last ten days in January”¹⁴ that must be completed every two years by jurisdictions over a single night to avoid double counting. The guidelines for conducting the PIT Count differentiate between sheltered and unsheltered individuals, and require basic demographic breakdowns. The PIT Count is a snapshot at a single point in time, and has several well-documented flaws.¹⁵

Affordable Housing

Affordable housing can refer to a wide range of housing types and pathways to housing. In this report, we define housing as affordable when households pay less than 30% of their income on housing costs. Affordable housing may be developed and owned by the government, subsidized by the government and built by a private developer, or obtained through rent assistance to lease units on the private market. Some buildings might have a mix of market rate units and other units that are designated for specific moderate to lower income groups. Other affordable housing is “naturally occurring,” meaning it is affordable to people with lower incomes without any type of intervention. Our focus is on whether community members can attain safe and quality housing based on their income at a level that promotes housing stability, and not on a particular type of affordable housing or unit type.

¹² U.S. Department of Housing and Urban Development [HUD]. (2008). *A guide to counting unsheltered homeless people* [PDF file]. Retrieved from https://files.hudexchange.info/resources/documents/counting_unsheltered.pdf

¹³ U.S. Department of Housing and Urban Development [HUD]. (2019). *Continuum of Care (CoC) program eligibility requirements*. Retrieved from <https://www.hudexchange.info/programs/coc/coc-program-eligibility-requirements/>

¹⁴ U.S. Department of Housing and Urban Development [HUD]. (2019). *CoC homeless populations and subpopulations reports*. Retrieved from <https://www.hudexchange.info/programs/coc/coc-homeless-populations-and-subpopulations-reports/>

¹⁵ National Law Center on Homelessness and Poverty. (2017). *Don't count on it: How the HUD Point-in-Time Count underestimates the homelessness crisis in America* [PDF file]. Retrieved from <https://nlchp.org/wp-content/uploads/2018/10/HUD-PIT-report2017.pdf>

Racial Equity

Because of the legacies of structural, institutional, and interpersonal racism, many communities of color experience significantly disproportionate rates of negative community indicators such as lower educational attainment rates, median incomes, and employment rates. Using a racial equity lens when analyzing policies and programs helps decision makers identify how to create effective and appropriate programming to surface disparate impacts to these communities, reveal unintended consequences, and identify opportunities to redress inequities. The ultimate goal of discussions about racial equity is to ensure that communities of color do not continue to negatively experience policy-making and programs.

Research Process

This report emerged from discussions with community partners about what the newly created PSU Homelessness Research & Action Collaborative (HRAC) could help contribute in a short period of time to inform public discourse about homelessness. We chose to focus on the Oregon tri-county Portland metropolitan area because the three counties are inextricably linked. We did not extend our analysis across the border to Washington because of the different regulatory contexts. Each section of the report has its own research methodology, and the specific processes and data sources are detailed there. The data sets and cost estimates from which we build in this report posed unique challenges, and we detail challenges and concerns elsewhere.

Findings Summary

Governance

Planning and governing regionally offer important opportunities to create policies and programs to address interconnected and cross-jurisdictional issues. Such efforts can reduce inefficiencies, reduce spatial disparities, and lead to more thriving regions. Planning and governing structures that work at a regional level require investment, politically and fiscally, and can take considerable time to structure justly and effectively. Identifiable leaders in government and civic society are needed to advance solutions for homelessness. They each play instrumental roles in building public support, and in raising revenue for addressing homelessness.

Organizing and advocacy matter. The power of collaborative efforts is realized when they collectively advocate for policy and funding. Collective organizing increases network power, and does not have to fully be subsumed within government-driven processes. Community organizing plays an essential role in successful revenue measures. The best governance structure will not be effective if resources are too scarce to act on identified solutions. However, governance structures linked to or with advocacy agendas embedded could help identify resources and apply pressure to obtain them. In addition, governance that centers on racial equity and builds power with people who have lived experience as homeless fulfills not only democratic goals, but

ensures that governance and resulting plans, policies, and programs serve the communities at the center of the work.

Costs

Based on the available data, we estimate that during 2017 about 38,000 people (or about 24,000 households) experienced homelessness across the three counties. We also estimate that in 2017, up to 107,000 households were experiencing housing insecurity or were at risk of homelessness. Based on ongoing housing market and income trends, we do not anticipate the number to have dramatically decreased.¹⁶ Neither of these counts account for services that households may have already been receiving. We do not want to assume existing service levels go forward in the future, nor that the services being received are adequate. Reporting the possible total of people needing support allows for better planning and preparation for the region.

We calculated two sets of costs. First, we considered what the costs would be to support those 38,000 who experienced homelessness. We estimated how many households would need permanent supportive housing (PSH), and how many would need housing with lighter supportive services (non-PSH). Depending on the scenario selected, we estimate the total costs for 10 years to between \$2.6 billion and \$4.1 billion, or an average of \$107,000 to \$169,000 per household over 10 years (NPV over ten years). Additional findings are summarized below:

¹⁶ ECONorthwest (2018). *Homelessness in the Portland region: A review of trends, causes, and the outlook ahead* [PDF file]. Retrieved from https://m.oregoncf.org/Templates/media/files/publications/homelessness_in_portland_report.pdf.

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Table 2.1: Summary of Results for People Experiencing Homelessness in 2017: Housing and Services¹⁷

Group	Population Size ¹⁸	Resources	Costs
Total population experiencing homelessness (PSH¹⁹ and Non-PSH)	38,263 individuals (or 24,260 households)	Housing construction and acquisition (one-time per unit)	\$190,000–\$218,000 (0–1 bedroom unit) \$190,000–\$338,000 (2–4 bedroom unit)
		Rent assistance (per year)	\$11,352–\$18,960 (0–1 bedroom) \$14,904–\$41,000 (2–4 bedroom)
		Rent assistance administration (annual)	\$800 per household
		System support and employment services (annual)	\$450 per household
		Administrative costs (annual)	2.4%
With Permanent Supportive Housing (PSH) Need	5,661 individuals (or 4,936 households)	PSH services (annual)	\$8,800–\$10,000 per household
Without PSH Need	32,602 individuals (or 19,324 households)	Services (annual)	\$5,700 per household
Total		\$2.6 billion– \$4.1 billion, or an average of \$107,000–\$169,000 per household (NPV over ten years)	

¹⁷ All data come from 2017.

¹⁸ Where possible, we provide individual and household estimates. Some data are collected on an individual basis, other on the household basis. We use household size estimates from the American Community Survey 2017 5-Year Estimates to convert individuals to households as needed.

¹⁹ Permanent Supportive Housing: Approximately 15% of the homeless population is assumed to require permanent supportive housing services, and costs for this group are calculated separately from the costs associated with the 85% that does not require said services.

We then estimated what a universal rent assistance program might cost for all households facing housing insecurity. Depending on which segments of the population are selected for support, costs range from \$8.7 billion–\$21 billion.²⁰ The findings are summarized below and in:

Table 2.2: Summary of Results for Universal Rent Assistance (Homelessness Prevention and Housing Stability)

Group	Population Size	Resources	Costs
Cost burdened (spend >30% of income on rent, earn <80% MFI ²¹)	107,039 households (includes severely cost burdened, below)	Universal housing rent assistance, homelessness prevention programs	\$10.7 billion–\$21 billion (NPV ²² , 2024–2033)
Severely cost burdened (spend >50% of income on rent, earn <80% MFI)	82,576 households	Universal housing rent assistance, homelessness prevention programs	\$8.7 billion–\$16.6 billion (NPV, 2024–2033)

There are some important considerations to keep in mind when reviewing the above tables. The datasets related to homelessness are limited, and as discussed above, driven by how homelessness is defined. Furthermore, conflicting data definitions, incomplete data sets, weak justifications for estimates, and reports with limited to no access to their full methodologies were not uncommon. In other circumstances we might lower our confidence about our work. However, the goal of this report was to create a range of estimates that help frame a regional discussion about the general scope of the work we face in homelessness. Our goal was not to produce the most precise number. Rather, we sought to identify a reasonable estimate or series of estimates to help people make sense of the scale of homelessness.

We provide several sets of options as well as detailed tables to allow for people to identify population sizes and associated costs on their own. Any additional use of these figures should include additional resources to support the specific needs of communities of color. What drives the population estimates and cost estimates is how many people need to be served. If you use the HUD homeless definition, your overall costs would be much less than if you also include doubled-up populations in your homelessness work. The same is true on the housing insecurity and homelessness prevention side of the work. If you focus resources on people making 0–30%

²⁰ See tables in the costs section if you want to calculate serving people experiencing cost burden in an income bracket lower than 0–80%.

²¹ Median Family Income, accounting for family size.

²² Net Present Value: This report often presents program costs in net present value, which estimates the present value of an investment by accounting for the discount rate (10%) and therefore the time value of money; as well as inflation when appropriate. This method most clearly allows sums to be considered comparatively, at the present time. (Note that nominal cash, or cash in the year in which it is used, is often presented as well.)

of MFI versus 0–80% of MFI, you will likely spend less and will serve fewer people. We do not have enough data, nor did we have the time to complete additional analyses that would help inform focusing on one struggling population over another. We also believe that community members and groups should be involved in any decision about whom to serve.

We are also concerned that in policy and program implementation the question of who is most at risk of homelessness or whether doubled-up “counts” as homeless reinforces a pathway where there are highly limited resources given to those identified as most at risk, and others given nothing. People may be living in unsafe housing and thus be housing insecure, but not most likely to become homeless. We do not want to implicitly take a position that one population deserves support while another does not. More inclusive definitions provide us important guideposts for when those types of questions have to be asked.

Revenue

We reviewed 11 revenue-raising options, examined examples, and then estimated what rate or fee would be necessary to reach \$100 million in annual revenue. The findings are summarized in Table 3.1 below:

Table 3.6: Revenue-raising options summary

Tax Policy	Description	Relevant examples	Tax Base	Tax Rate/Fee to reach \$100 Million per year
Corporate Tax	A tax on business profits	Exists in Oregon, Multnomah County, and Portland	Clackamas and Washington County Business Profits	\$91.5 million by expanding Multnomah BIT to Clackamas and Washington
Business License Tax or Fee	A fee charged per establishment	City of Portland Business License Tax	Business Fee	\$1,755.54
Gross Receipt Tax	A tax on business revenue	City of Portland and San Francisco	Business Revenue	0.055% (0.056% excluding groceries)
Sales Tax	A tax on a good or service levied at the point of sale	Does not exist in Oregon, but most other states	Price of Purchased Goods	1.45%
Individual Item Tax/Luxury Tax	A tax on a specific good, levied at the point of sale	Exists in Oregon in the form of sin taxes	Retail Price of the Good (Unit or Ad Valorem)	Varies significantly by good (see pg. 100 of full report for details)
Flat Rate Tax	A tax on individual income	Portland Art	Tax filers	\$119.78 per taxpayer
Payroll Tax	A tax on wages paid out by all businesses	TriMet Payroll and Self-Employment Tax	Payroll Wages	0.176%
Income Tax on the Highest Earners	Increases in income tax rate for top earners	California "Millionaire's Tax"	Tax filers with AGI over \$250 thousand	0.505% of adjusted gross income
Bond Measure	Funded through an increase in property taxes	Metro Affordable Housing Bond Measure	Assessed Property Values	-----
Reset Assessment of Commercial Assessed Values	Increase in taxable property value	-----	Commercial Properties	\$352 million in revenue from Multnomah County alone
Real Estate Transfer Tax	A tax on property sales and transfers	Washington County Transfer Tax	All Property Sales	\$6.52 per \$1,000 in sale value

Conclusion

We hope this report helps readers develop a better understanding of the scale and scope of the challenges we face when talking about homelessness and affordable housing as well as some pathways for moving forward. The work in front of us can seem daunting; however, through good governance, firm commitments, and hard work, we believe addressing homelessness and affordable housing is achievable.

I. GOVERNANCE

Introduction

In this section of the report, we describe various ways local governments might structure their responses to address homelessness, including ways to work together across jurisdictions. Governance may include formal arrangements between government and non-government entities to identify policies to address homelessness, or be a mechanism to administer a levy or bond. For context, we first discuss regional and collaborative governance, a familiar structure in the tri-county area. We then describe studies that focus on governance and homelessness specifically, though not all of those studies are regional in scope.

We then turn our attention to three places working on homelessness across the country. We focus most on Los Angeles (LA) County, California as our external example given its comprehensive efforts to address homelessness, and include shorter descriptions of Houston TX, Washington DC, and a local example, Multnomah County. We conclude by discussing what the guidance and examples of governance and homelessness could mean for the Oregon side of the Portland Metropolitan area.

Key Takeaways

- Planning and governing regionally offer important opportunities to create policies and programs to address inter-connected and cross-jurisdictional issues. Such efforts can reduce inefficiencies, reduce spatial disparities, and lead to more thriving regions.
- Planning and governing structures that work at a regional level require investment, politically and fiscally, and can take considerable time to structure justly and effectively.
- Identifiable leaders in government and civic society are needed to advance solutions for homelessness. They each play instrumental roles in building public support, and in raising revenue for addressing homelessness. They may work collaboratively or independently, or some combination of the two.
- Organizing and advocacy matter. The power of collaborative efforts is realized when they collectively advocate for policy and funding. Bottom-up organizing increases network power, and does not have to fully be subsumed within government driven processes.
- The best governance structure will not be effective if resources are too scarce to act on identified solutions; however, structures linked to or have advocacy agendas embedded in them could help identify those resources and apply pressure to obtain them.

Governance, Costs, and Revenue Raising to Address and Prevent Homelessness
in the Portland Tri-County Region

- Some of the most successful governance groups included in this report focused on homelessness centered on racial equity. Poverty and race are inextricably linked, and communities of color face disproportionate rates of homelessness. In the four cases we describe, Black community members consistently experienced significant disproportionate rates of homelessness.
- We recommend the tri-county area form an exploratory committee or task force of an inclusive and committed set of stakeholders that is led by a government entity, or set of government entities, to examine in which ways better regional planning, policies, and program coordination around homelessness could help all jurisdictions meet their goals. This task force would do the following:
 - Deliberatively identify the “problem” to be solved. Problem identification should be the first step in both identifying who should be part of any future discussions as well as the first step of the group. Two examples of possible problem framings include: 1) Focusing on unsheltered homelessness; or, 2) Creating safe, quality, and affordable housing for all community members. Clarity about which problem(s) we are attempting to solve is essential to the success of any effort. We recommend the region carefully consider if we are trying to “solve” homelessness, or if we are trying to “solve” affordable housing.
 - We argue for the second framing, focusing on affordable housing. The second framing could include the first identified problem framing. *Supporting people experiencing homelessness who are unsheltered will not solve affordable housing, and affordable housing is integral to helping them. However, without weighing trade-offs, we cannot know for sure exactly which is the best path to addressing affordable housing.*
 - Include decisions and discussions about program and service coordination, policy making and implementation, and revenue raising and distribution.
 - Build on existing collaborative efforts, but not usurp them, and hold processes in an inclusive and equitable manner where equity refers to communities of color and people who have or are experiencing homelessness or housing insecurity. Transparency will be central to ensuring democratic governance as well as public support. Encourage processes occurring in civic society to continue their work independently.
 - Have an identified decision-making date where the group will make formal recommendations about how the region should move forward.
 - Define the homelessness community to include people who are doubled up. This is a substantial population that cannot be easily dismissed.
 - Center the process on racial equity. The racial disparities for communities of color experiencing homelessness or housing insecurity do not exist by accident, and the only way to really address and prevent homelessness will be to focus on their

needs. By focusing on achieving racial equity, other racial groups that do not experience disparities will also be served.

Regional Collaborative Governance

Planning and governing across jurisdictions requires coordination, and commitment. Early 20th century planning focused regionally, understanding that people and systems, urban ones in particular, did not adhere to jurisdictional boundaries. Over time, planning and governing work fell within jurisdictions, where city and county governments had regulatory control. However, recognizing the utility of cross jurisdictional work, issues from sharing fire and police services across county lines to developing 20-year land-use plans have been developed across jurisdictional boundaries.

Often referred to as regionalism, some of these efforts happen through one off planning processes, others build regional governance structures to implement plans and continue governing regionally. Early examples of regional governance structures include county-city mergers and council of governments. One of the best-known regional approaches to planning and governing is the Portland Oregon government Metro. Voted to function as a home-rule entity in 1993, Metro remains the only regional government in the country with directly elected representatives.²³

Best practices for developing and running regional governance abound in the academic and practitioner literature. Across the literature findings emphasize the importance of: 1) shared problem identification; 2) Actor willingness, interest, capacities, and resources; and, 3) inclusiveness of diverse actors in a well-designed process with clear leader(s) identified. See Figure 1.1 for a model of collaborative governance. Note that this model does not apply an equity lens, something that research has found important in successful governance cases.²⁴

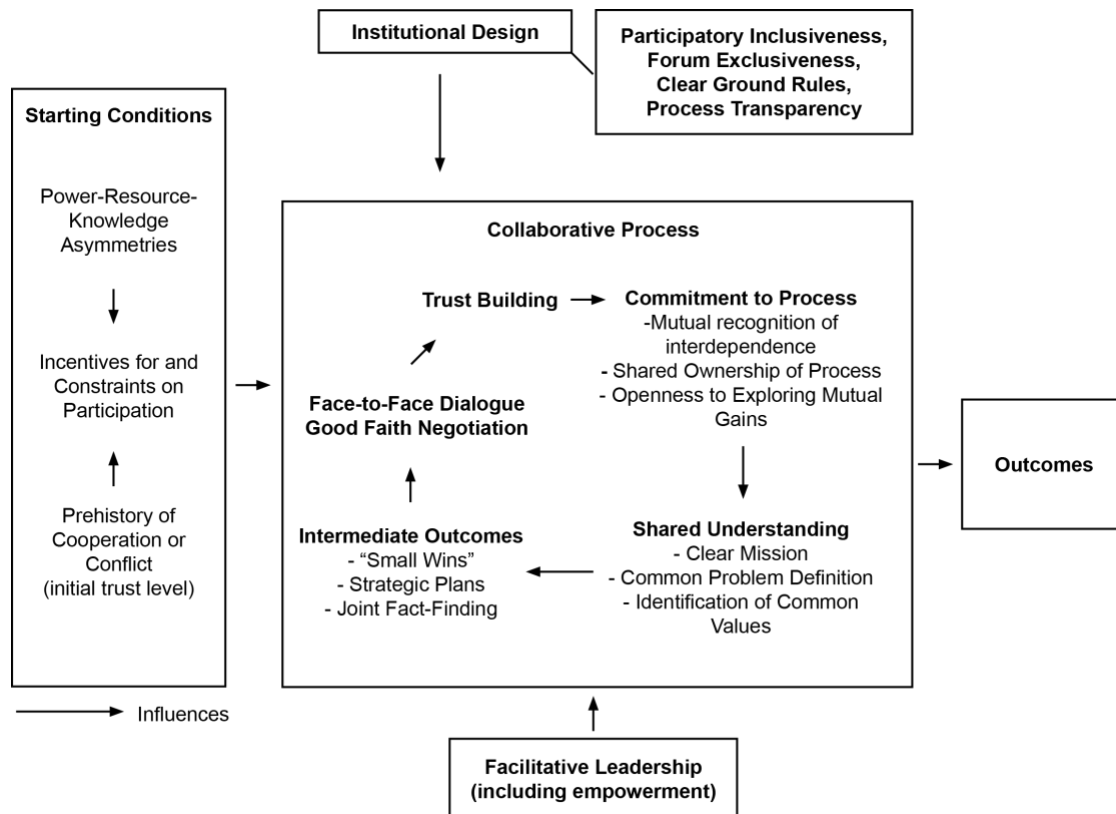
While many of these best practices could apply in any planning process or governance structure, process design and actor relationships matter in a different way at the regional scale. In a HUD study about regional collaborative planning, the report cited Foster (2010) saying: “because these relationships do not depend on legal authority to ensure that the goals are met,

²³ See the following for a summary, and excellent summary table of regional governance options: Parr, J., Riem, J., & McFarland, C. (2006). Guide to successful local government collaboration in America's regions, Washington, DC: National League of Cities. As cited in: U.S. Department of Housing and Urban Development [HUD] (2015). *Strategies for regional collaboration*. Retrieved from: <https://www.huduser.gov/portal/periodicals/em/fall15/highlight2.html#title>

²⁴ Inclusive democratic practices and equity are not the same thing. Inclusiveness refers to the process, and how people experience it. Equity can refer the process where there are deliberate components put in place to address inequity, and also refers to the equity of the outcomes of the process. It is possible to have an inclusive process with no equitable outcomes.

collaborative arrangements must rely on other forces and skills to create the cohesion necessary to achieve objectives.”

Figure 1.1: Model of Collaborative Governance ²⁵



Homelessness Continuums of Care

Collaborative governance is not new within the field of homeless services. The McKinney-Vento Act of 1987 was the first federal law to specifically address homelessness, and the Act provides federal support for a multi-tiered system of homeless service programs at the local level.

The local multi-tiered system to address homelessness became known as the Continuum of Care (CoC) model in 1994. There were two ultimate goals for establishing CoCs: 1) better system alignment, efficiency, and coordination; and 2) developing plans and recommend policy to address homelessness. The CoC system was designed to facilitate coordination and integration of services, and enable a smooth transition for clients moving from one tier of service

²⁵ Ansell & Gash. (2008). Model of Collaborative Governance. From Bartenberger, M. & Grubmmiller, V. (2014). The enabling effects of open government data on collaborative governance in smart city contexts. *SSRN Electronic Journal*. 6. DOI: 10.2139/ssrn.2474974.

to another on the path to permanent stable housing.²⁶ The system was also meant to recognize that the causes of homelessness for each individual are complex and include a variety of unmet needs, in addition to shelter itself. Today, CoCs are expected to develop and implement long-term strategic plans and planning efforts that evolve to meet changing needs of the various populations experiencing homelessness.

Three main programmatic branches made up, and continue to shape, the CoC model, and they were meant to operate as a series of stages. Emergency shelters were the point of entry in the system, and provide short-term housing in a crisis situation, for individuals in a variety of circumstances. Transitional housing was the next step, and entails service-intensive programming that aims to prepare clients to achieve self-sufficiency, aimed toward the next step. The final stage was either permanent supportive housing, or other housing options (market rate, subsidized), depending on the level of need. Permanent supportive housing serves individuals who are not able to live independently due to mental illness, substance abuse, physical disabilities, and/or other challenges.²⁰ While the need to progress across the system is not a central component, the range and types of organizations within homelessness are still viewed as a comprehensive network.

Shifting from allowing multiple applications, HUD now requires a community to submit a single application for funding rather than separate applications for each service provider.²⁷ HUD mandated that CoCs are governed by a range of stakeholders, including nonprofit organizations and government entities working on homelessness. The HUD guidelines are explicit about the importance of stakeholder engagement and collaboration in implementing homelessness services.²¹

Studies on Continuums of Care

Several studies focus on how CoCs have functioned as governance structures. In a survey of CoCs around the nation in 2014, researchers found that of the 234 CoCs that responded to the survey, their structures (e.g. size, membership, lead organizations) varied considerably.²⁸ The study further examined how those differences in structures, namely size, related to rates of reductions in service gaps. The study identified how group advocacy, networking opportunities, and government investment and support played pivotal roles in reducing service gaps.

²⁶ Wong, Y., L. I., Park, J.M., & Nemon, H. (2006). Homeless service delivery in the context of Continuum of Care. University of Pennsylvania. Retrieved from

https://repository.upenn.edu/cgi/viewcontent.cgi?article=1038&context=spp_papers

²⁷ U.S Department of Housing and Urban Development [HUD]. (2009). *HUD's Homeless Assistance Programs: Continuum of Care 101* [PDF file]. Retrieved from

<https://files.hudexchange.info/resources/documents/CoC101.pdf>

²⁸ Jarpe, M., Mosley, J. E., & Smith, B. T. (2019). Understanding the collaborative planning process in homeless services: Networking, advocacy, and local government support may reduce service gaps. *Journal of Public Health Management and Practice*, 25(3), 262-269.

For larger CoCs, like Multnomah and Washington counties, networking opportunities along with group advocacy were the strongest predictors of reductions in service gaps. The importance of advocacy mattered in service level reductions even when networking was low. For medium sized CoCs, which Clackamas County would have been at the time, reductions in services gaps were predicted by higher levels of government investment and support.

A study about Chicago's CoC reinforced the importance of networking as a space for community building and advocacy.²⁹ Representing a shift from past practices of non-profit organizations (NPOs), the NPOs in this CoC reported participating in advocacy work within the CoC intermediary organization, The Chicago Alliance to End Homelessness, as well as a traditional advocacy organization. Each group played important, and distinct, roles in influencing and operating within the Chicago policy context.

Based in Canada, the most in-depth and extensive study about collaborative governance and homelessness examined six different structures across three cities. The creation of a Canadian model similar to the HUD CoC program helped spur different collaborative models. One of the study's core findings illuminated that the more institutionalized processes were and the more inclusive they were, the better their systems were coordinated and created more innovative policy solutions. The study also illustrates the importance of having dual collaborative efforts where one can fulfill the CoC duties and another can take on greater advocacy. Lastly, the study examined overall policy-making environment assessing their degree of flexibility and how much the environment was influenced by the relevant CoC. The authors found that greater flexibility in policy-making and CoC visible influence on decision-making led to better outcomes.

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²⁹ Mosley, J. E. (2012). Keeping the lights on: How government funding concerns drive the advocacy agendas of nonprofit homeless service providers. *Journal of Public Administration Research and Theory*, 22(4), 841-866.

³⁰ Jarpe, M., Mosley, J. E., & Smith, B. T. (2019). Understanding the collaborative planning process in homeless services: Networking, advocacy, and local government support may reduce service gaps. *Journal of Public Health Management and Practice*, 25(3), 262-269.

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Below we discuss four contemporary examples of homelessness governance systems. Each case example includes: Background about the region, actors working on homelessness, governance structures, revenue-raising efforts (where relevant), and progress to date (where possible). We devote the most attention to LA County as they are similar to Portland in several ways. They are: 1) located on the West Coast; 2) have several groups planning and acting for homelessness; and 3) have recently adopted revenue measures.³² Table 1.4 summarizes general aspects of the four cases on the following page.

³¹ Mosley, J. E. (2012). Keeping the lights on: How government funding concerns drive the advocacy agendas of nonprofit homeless service providers. *Journal of Public Administration Research and Theory*, 22(4), 841-866.

³² Each site had a slightly different methodology. For LA County, We interviewed and consulted with several representatives of key actors in Los Angeles, and reviewed public documents, news articles, reviewed non-governmental reports, and PIT reports and US Census data. For Harris County and Washington DC we conducted the same secondary data analysis. We were unable to obtain interviews with people in these two locations, but did receive answers to questions via email from Harris County. We also asked people in Multnomah County for their views about the three places. For Multnomah County, one of the report authors, Dr. Zapata, is heavily involved in the governance structure and CoC for the county, and has written papers and given presentations about it. She asked for feedback from that section from Multnomah County stakeholders; however, she made the ultimate decision on what was incorporated.

Table 1.1: Basic Facts about Cases

Name	Size	Total Population	PIT Count 2019	PIT Count 2017	2019 PIT Sheltered	2019 PIT Unshelter.	2019 PIT/Total pop.	African Americans % 2019 PIT vs. % tot. pop.	Key Distinctions
Los Angeles County (All CoCs)	4,084 sq mi	10,441,090	58,936	52,765	14,722	44,214	0.56%	33% HUD homeless vs. 8.3% tot. pop.	Extremely limited amount of housing affordability and supply
Harris County et al CoC	3,771 sq mi	6,047,402	3,640	3,866	2,112	1,528	0.06%	55% HUD homeless vs. 20% tot. pop.	Lower comparative housing values + higher comparative vacancy rates
Washington DC CoC	68 sq mi	633,427	6,521	7,473	5,913	608	1.03%	87% HUD homeless vs. 41% tot. pop.	Legal right to shelter in <32 or >95 degree weather
Multnomah County et al CoC	466 sq mi	811,000	4,015	4,177	1,978	2,037	0.52%	16.1% HUD homeless vs. 7.2% tot. pop.	Comparatively recent significant increases in property values and rents

* African Americans consistently present with high levels disproportionate rates of homelessness across the country. Other communities of color may be too small in some areas to report, or not have disproportionate rates

Los Angeles County

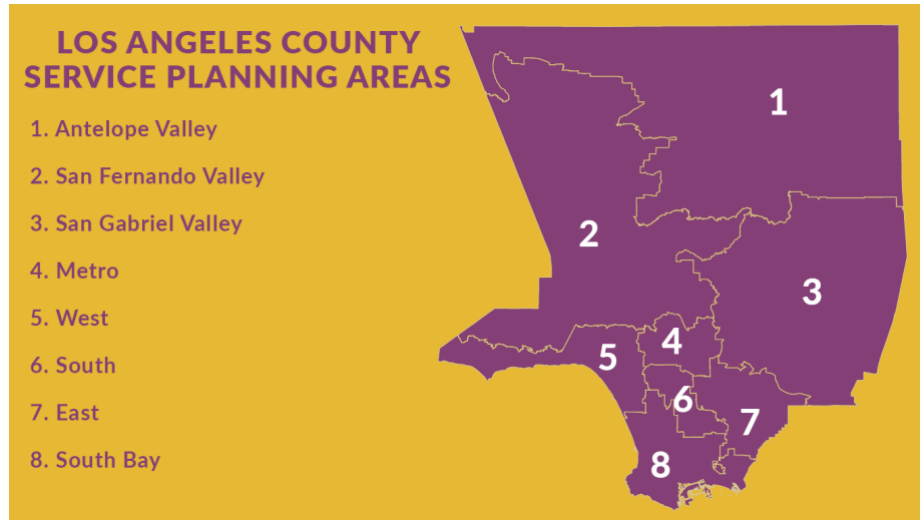
Los Angeles County, and its included jurisdictions, has developed a network of formal and informal governance structures. These structures include relationships between entities as well mechanisms to oversee the distribution of raised revenue.

Background

LA County is a massive county, spanning 4,084 square miles with more than 10 million people and 88 municipalities. LA County is divided into service planning areas to facilitate planning and service delivery for homelessness efforts (see figure 2.1: LA County Planning Areas).³³

³³ County of Los Angeles. (n.d.). Statistics [web page]. Retrieved from <https://www.lacounty.gov/government/geography-statistics/statistics/#1481130319389-8a1c0344-8add>

Figure 1.2: Los Angeles Planning Areas³⁴



Los Angeles County has one of the highest homelessness rates in the nation. Persistent efforts to coordinate a response to the growing problem began several decades ago, and various government and non-government entities have played important roles in bringing entities together to identify shared ideas of how to address homelessness. Notably, discussions about racial equity have only recently entered into discussions about addressing homelessness.

The 2019 PIT Count revealed a 12% increase in the homeless population in LA County for a total of nearly 60,000 people.³⁵ About 63% are experiencing homelessness for the first time, and 53% of that cohort cite economic barriers to retaining housing as a root cause.³⁶ About 36% of individuals experiencing homelessness are Latino (47.7% of total population), 33.2% are Black (8.3% total population), 24.5% are white (27.8% of total population), and 0.8% are Asian (13.5% of total population), along with smaller percentages of other populations. This means Black people are four times more likely than Whites to experience homelessness.³⁷

This increase comes even with an estimated 21,631 individuals who were housed through county programs, and 27,080 who were able to reenter housing independently. That represents a daily rate of 131 people exiting homelessness and 151 entering homelessness. About 75% of individuals experiencing homelessness have lived in LA County for at least five years, and 71% do not have a serious mental illness and/or report substance abuse. Meanwhile, a series of

³⁴ Los Angeles County Homeless Initiative. (2019). Measure H funded contracts [web page]. Retrieved from <http://homeless.lacounty.gov/measure-h-funded-contracts/>

³⁵ Los Angeles Homeless Services Authority (2019). *2019 Greater Los Angeles homeless count results*. Retrieved from <https://www.lahsa.org/news?article=557-2019-greater-los-angeles-homeless-count-results>

³⁶ Chiland, E. (2018). When will LA's big homelessness strategy start paying off? *Curbed LA*. Retrieved from <https://la.curbed.com/2018/4/13/17229430/los-angeles-homeless-strategy-measure-h-results>

³⁷ Los Angeles Homeless Service Authority. (2019). About LAHSA. Retrieved from <https://www.lahsa.org/abo>

state-level bills that would have ameliorated California's housing crisis failed in rapid succession, despite a Democratic supermajority (Walker, 2019). Several jurisdictions have enacted temporary emergency caps on rent increases, including the City of Glendale, and LA County, while the City of Inglewood formally adopted a rent control ordinance in 2019 (Chandler, 2019).

Select Entities Working on Homelessness

In LA County, a number of different organizations address homelessness. As government entities have the ultimate implementing role, we focus our attention on those organizations, and include a few non-governmental groups. This list is not exhaustive.

LAHSA

The Los Angeles Homeless Services Authority is an independent, joint powers authority, and is the lead agency in the Los Angeles Continuum of Care. It was created by the Los Angeles County Board of Supervisors, the Los Angeles mayor, and City Council in 1993. Its creation solved a lawsuit between the city and county over who was responsible for addressing homelessness.³⁸ LAHSA provides funding, program design, outcomes assessment, and technical assistance to more than 100 nonprofit partner agencies that serve those experiencing homelessness. This entails coordinating and managing over \$300 million annually in federal, state, county, and city funds.

LA County

The Los Angeles County Board of Supervisors (CBOS) created the Homeless Initiative in 2015, as a response to the escalating crisis. The Homeless Initiative is situated within the Chief Executive Office (CEO), and provides the CEO with guidance on how to allocate and deploy funds gathered through the Measure H sales tax. The Homeless Initiative Action Plan is organized around six key areas: Prevention, subsidized housing, increasing income, case management and services, coordinated system, and affordable housing.³⁹ Twelve lead agencies for the sub-areas of each of the key strategy areas administer the funds to community-based organizations, with support from collaborating County departments and agencies.⁴⁰ Additionally, in 2017 the Board approved \$2 million in funding for cities in the Los Angeles Continuum of Care to develop their own homelessness plans, as well as \$500,000 for regional coordination services by Councils of Governments.⁴¹ These figures do not include Measure H funding, which is explained below.

³⁸ Burt, M.R. (2007). *System change efforts and their results: Los Angeles, 2005–2006* [PDF file]. Urban Institute. Retrieved from <https://www.urban.org/sites/default/files/publication/46426/411449-System-Change-Efforts-and-Their-Results-Los-Angeles---.PDF>

³⁹ Los Angeles County Homeless Initiative (n.d.) The Action Plan [web page]. Retrieved from <http://homeless.lacounty.gov/the-action-plan/>

⁴⁰ Los Angeles County Homeless Initiative. (n.d.). Measure H funded contracts. Retrieved from <http://homeless.lacounty.gov/measure-h-funded-contracts/>

⁴¹ Los Angeles County Homeless Initiative. (2018). *City homelessness plans*. Los Angeles County. Retrieved from http://file.lacounty.gov/SDSInter/lac/1043966_AllCitiesHomelessPlans_8.31.18--pdf.pdf

Nongovernmental Actors

- The United Way of Greater Los Angeles has been instrumental over the last decade in helping partners articulate the fundamental role housing plays in preventing and ending homelessness. It launched the Everyone In campaign to engage community members in the Homeless Initiative in a variety of ways.⁴² The project website clearly frames homelessness as a housing crisis, and their objective is to elevate hidden stories of progress, galvanize residents to fight for housing in their neighborhoods, and apply political pressure for solutions. They also provide grants to nonprofit service providers through a request for proposals process.
- Corporation for Supportive Housing (CSH) is a key partner for service provider resources, supportive housing funding, program development, and policy advocacy.
- The LA Community Action Network (LA CAN) is a grassroots, volunteer-led organization based in Downtown LA, that aims to build collective political power through leadership consisting exclusively of the low-income constituents they serve.

Revenue Raising

The two most recent and largest revenue mechanisms within LA County include Measure H and Measure HHH. LA County runs the former, and the City of LA runs the latter.

Measure HHH

In 2016 LA City voters passed Bond Measure HHH, a \$1.2 billion bond that aims to create 10,000 affordable residences over ten years in the City of LA. LA CAN launched a phone bank in support of Measure HHH in October 2016, and their results overwhelmingly indicated support of the measure, which passed in November 2016 with 76% of the vote. LA CAN attributes Measure HHH's success to strong coalition-building across sectors, with City Hall, business elites, philanthropic organizations, churches, stakeholders, and community-based organizations all on board.⁴³

Measure H passed in a midterm election shortly after, in spring 2017. Measure H builds on the objectives of Measure HHH by creating the service infrastructure needed for supportive housing, which makes up a portion of the funding allocation for the bond: housing developers cannot secure bond money until service providers have been secured.⁴⁴ As of April 2019, 33 developments were approved, with 457 affordable residences, and 1,637 supportive residences. The total number of housing units in some stage of the housing pipeline is 7,400.⁴⁵

⁴² Everyone In (2019). [United Way campaign]. Retrieved from <https://everyoneinla.org/>

⁴³ Los Angeles County Board of Supervisors. (2017, February 7). *Motion by Supervisors Mark Ridley-Thomas and Sheila Kuehl*. Retrieved from http://homeless.lacounty.gov/wp-content/uploads/2017/03/Board-Motion_-_Measure-H-Planning-Process-Strategies_2-7-17.pdf

⁴⁴ LA Times Editorial Board. (2017, March 3). Measure H is the key to finally ending homelessness in Los Angeles County. *The Los Angeles Times*. Retrieved from <https://www.latimes.com/opinion/editorials/la-ed-measure-h-vote-for-it-20170303-story.html>

⁴⁵ Garcetti, E. (2019). Rising to the challenge: helping homeless Angelenos. City of Los Angeles. Retrieved from: <https://www.lamayor.org/rising-challenge-helping-homeless-angelenos>

Measure H

Measure H was a Los Angeles County ballot measure in which voters approved a ¼ of a cent sales tax increase to pay for homeless services in 2017.⁴⁶ This measure implements strategies approved by County Board of Supervisors the previous year, which are mostly rooted in a “Housing First” approach. The tax increase will last ten years, and raise about \$355 million annually, and includes prevention services. The funds are administered by the Los Angeles County Homelessness Initiative.

Origin

The work of two regional bodies led to the creation of Measure H. First, the LA County Board of Supervisors adopted a set of 47 strategies to combat homelessness in 2016. They were devised through a comprehensive planning process led by the Homeless Initiative, which included 18 policy summits in 2015, that brought together 1,100 participants from 25 county departments, 30 cities, and over 100 community stakeholder organizations, including 4 focus groups with individuals with lived experience.⁴⁷

Housing First

HUD defines Housing First as an "approach to quickly and successfully connect individuals and families experiencing homelessness to permanent housing without preconditions and barriers to entry, such as sobriety, treatment or service participation requirements. Supportive services are offered to maximize housing stability and prevent returns to homelessness as opposed to addressing predetermined treatment goals prior to permanent housing entry."¹

LAHSA conducted an analysis of housing gaps for people experiencing homelessness in LA County. This report estimated a \$450 million funding gap, with a need of over 15,000 units of permanent supportive housing.⁴⁸ The LA County Board of Supervisors approved the creation of Measure H, to fund the Homeless Initiative strategies, per the funding gap.⁴⁹ Measure H would increase sales tax by ¼ cent for ten years, and proposed to generate enough funds to house 45,000 people experiencing homelessness and help another 30,000 people avoid losing their

⁴⁶ Chiland, E. (2017). Measure H: A voter guide for LA County's homelessness prevention ballot measure. March 7, 2017. *Curbed Los Angeles*. Retrieved from <https://la.curbed.com/2017/3/6/14829792/ballot-measure-h-march-election-los-angeles-homelessness>

⁴⁷ Ridley-Thomas, M. & Kuehl, S. (2017, February 7). *Motion: Measure H collaborative revenue planning process*. Los Angeles County. Retrieved from http://homeless.lacounty.gov/wp-content/uploads/2017/03/Board-Motion_-_Measure-H-Planning-Process-Strategies_2-7-17.pdf

⁴⁸ Los Angeles Homeless Services Authority. (2016). *Report on homeless housing gaps in the county of Los Angeles*. Retrieved from https://www.cacities.org/Resources-Documents/Policy-Advocacy-Section/Hot-Issues/Homeless-Resources/League-CSAC-Task-Force/Nov-28,-2016/la_county_housing_gap_analysis.aspx

⁴⁹ Ridley-Thomas, M. & Hahn, J. (2016, December 6). *Motion: Securing ongoing funding to address the homeless crisis*. Los Angeles County. Retrieved from <http://file.lacounty.gov/SDSInter/bos/supdocs/109803.pdf>

homes.⁵⁰ It narrowly passed in the March 2017 special election, with just over the required two-thirds of the vote.⁵¹

Citizens' Oversight Advisory Board (COAB)

Measure H is overseen by a community board. The COAB is comprised of five individuals, each of whom was nominated by a County Supervisor. The COAB meets quarterly, and meetings are open to the public. The board includes people from the nonprofit, foundation, and public service fields.

The COAB's official functions are threefold: semi-annual review of all expenditures from Measure H; annual accounting of allocations; and periodic evaluations of expenditures. Per Phil Ansell, director of the Homeless Initiative, the COAB may also incorporate other functions into their work.⁵² Quarterly meetings typically feature presentations from lead agencies and committees (e.g. Ad hoc Committee on Black People Experiencing Homelessness), discussion and questions from the Board, with opportunity for public comment and questions.

Progress to Date

The United Way of Greater Los Angeles said that funding has enabled them to quadruple the number of outreach teams on the streets, add 600 shelter beds, and provide subsidies to prevent 1,000 people from becoming homeless. The LA County Board of Supervisors has also approved \$20 million from the mental health budget for veteran services, and funding from the concurrent City of Los Angeles Measure HHH bond is funding low-income housing development.⁵³ In August of 2018, LAHSA reported 7,448 people had been placed in permanent housing through Measure H, and 13,524 in interim housing.⁵⁴ That number rose to 9,635 and 18,714 in November 2018.⁵⁵ For a current snapshot on Measure H, please see Figure 2.2.

⁵⁰ Gumbel, A. (2017, March 8). Los Angeles set to tax itself to raise billions for homelessness relief. *The Guardian*. Retrieved from <https://www.theguardian.com/us-news/2017/mar/08/los-angeles-homelessness-sales-tax-approved>

⁵¹ County of Los Angeles, Chief Executive Office. (2018, May 15). *Fiscal Year 2018-19 Measure H funding recommendations (All Supervisorial Districts)*. Retrieved from <http://homeless.lacounty.gov/wp-content/uploads/2019/02/FY-2018-19-Measure-H-Funding-Recommendations-.pdf>

⁵² The Los Angeles County Homeless Initiative. (2017, Dec 7). *Measure H Citizens' Oversight Advisory Board Meeting Minutes* [PDF file]. Retrieved from http://homeless.lacounty.gov/wp-content/uploads/2018/03/12.7.17-COAB-Minutes_FINAL.pdf

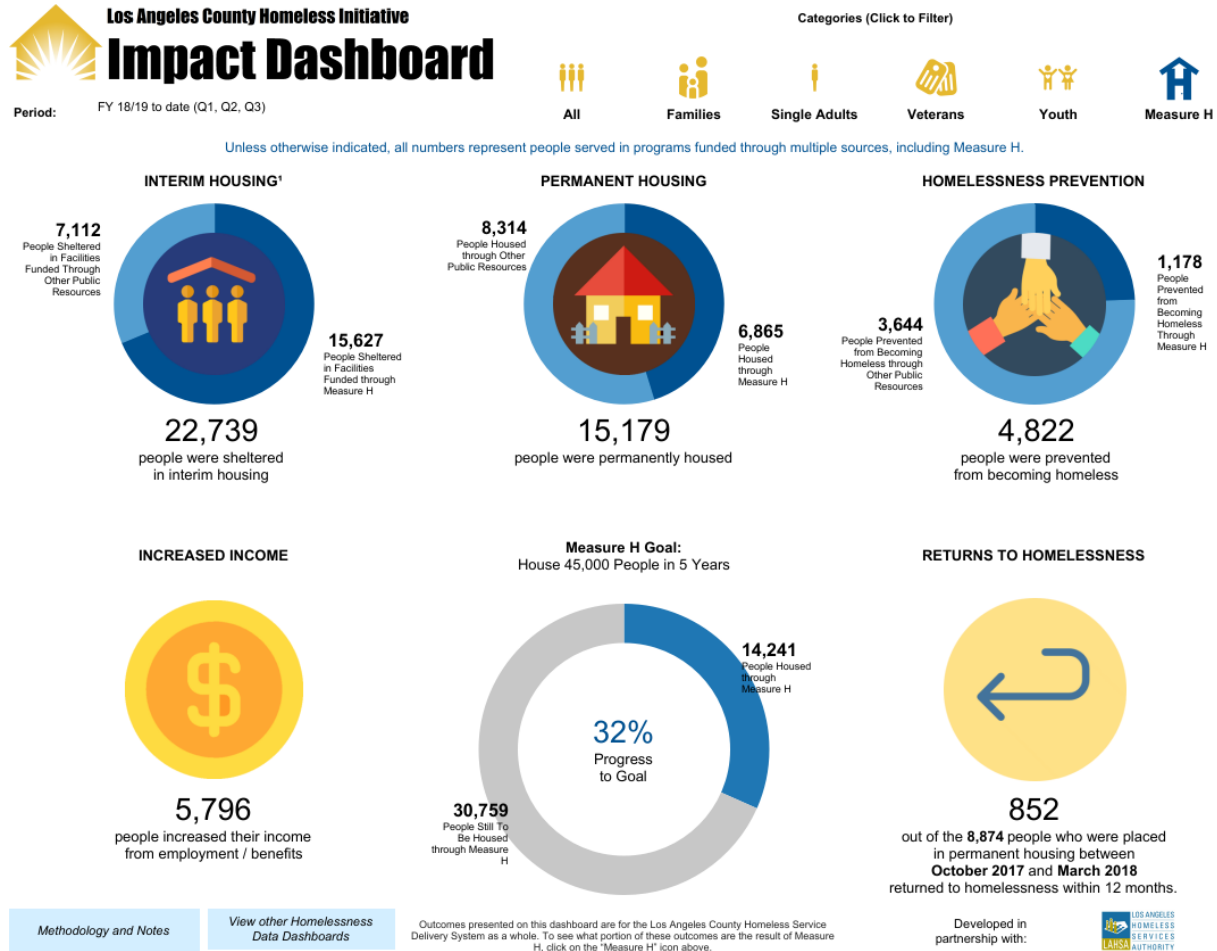
⁵³ Denkman, L. (2018, May 31). Veteran homelessness in LA has dropped by 18 percent. *KPCC: Member-supported news for Southern California*. Retrieved from <https://www.scpr.org/news/2018/05/31/83625/veteran-homelessness-in-la-has-dropped-by-18-perce/>

⁵⁴ CBS LA. (2018, August 17). 7,400 LA homeless now in permanent housing through Measure H, officials say. *CBS Local*. Retrieved from <https://losangeles.cbslocal.com/2018/08/17/7400-la-homeless-permanent-housing-through-measure-h/>

⁵⁵ NBC City News Service. (2018, November 2018). Measure H helped 10,000 homeless people into permanent housing, officials say. *NBC*. Retrieved from <https://www.nbclosangeles.com/news/local/Measure-H-Helped-Homeless-Into-Permanent-Housing-501312852.html>

Governance, Costs, and Revenue Raising to Address and Prevent Homelessness
in the Portland Tri-County Region

Figure 1.3: Measure H Dashboard⁵⁶



The overall homeless population countywide decreased by 3% in 2018, but the number of people experiencing homelessness for the first time increased. This perhaps foretells the 2019 PIT Count, where the enormous number of people entering homelessness for the first time pushed the total population up 12% county-wide, despite significant progress in re-housing. Unlike the 2018 PIT Count, 2019's data show increases in every service planning area. As such, these efforts have not been without criticism. Foreshadowing the numbers of 2019, a February 2018 article in *The LA Times* reported the homeless population was increasing faster than the projected supply of new housing. Furthermore, the Homeless Initiative was facing a \$73 million annual budget shortfall which could more than triple. Providing permanent housing would require building 20,000 homes, which is 5,000 more than projected. The latest version of

⁵⁶ The Los Angeles County Homeless Initiative. (2019). Homeless initiative impact dashboard [web page]. Retrieved from <http://homeless.lacounty.gov/impact-dashboard/>

the Housing Gap Analysis report⁵⁷ also estimated a shortage of emergency rental subsidies, and needed shelter beds also increased by double digit percentages.⁵⁸ To add to these challenges, construction costs in Los Angeles have increased by 20% since housing Measure HHH passed, diminishing the total potential impact of the funds.⁵⁹

Implementation Limitations

Additionally, there were concerns in early 2018 that LAHSA did not have the capacity to manage the extensive scope of the work. The County Auditor-Controller found the organization short on staff and late on payments to community group contractors. In response to these findings, LAHSA director Peter Lynn said the agency is already in a much stronger position than during the audit, with new staff and workflow systems.⁶⁰ Some local homeless advocates were also growing restless at what they perceive as a lack of substantive response to a crisis situation. Mel Tillekeratne of the Monday Night Mission and Shower of Hope felt that some cities were doing nothing at all.⁶¹

Lastly, after criticism, the government entities working on homelessness pushed to integrate racial equity into their work. LAHSA created the Ad Hoc Committee on Black People Experiencing Homelessness. In early 2019 the 26-member committee released a groundbreaking report that details how institutional racism is driving the enormous disparity in the percentage of Black people experiencing homelessness.⁶² The report offers 67 recommendations to advance equity.

⁵⁷ Los Angeles Homeless Services Authority. (2018). *Report on homeless housing gaps in the county of Los Angeles: A homeless crisis response system model*. Retrieved from <https://www.sbceh.org/uploads/4/5/0/7/45075441/1865-2018-report-on-homeless-housing-gaps-in-the-county-of-los-angeles.pdf><https://www.lahsa.org/documents?id=1865-2018-report-on-homeless-housing-gaps-in-the-county-of-los-angeles.pdf>

⁵⁸ Smith, D., Holland, G., & Smith, D. (2018, May 31). Homelessness dips in L.A. and countywide, but Garcetti warns 'a real challenge' still remains. *Los Angeles Times*. Retrieved from <https://www.latimes.com/local/lanow/la-me-ln-homeless-count-20180531-story.html>

⁵⁹ McGahan, J. (2019, March 8). Will a measure to help L.A.'s homeless become a historic public housing debacle? *Los Angeles Magazine*. Retrieved from <https://www.lamag.com/citythinkblog/proposition-hhh-debacle/>

⁶⁰ Los Angeles County Auditor-Controller (2018). Los Angeles Homeless Services Authority, Measure H, *Phase 1 – Fiscal operations assessment review* [PDF file]. Los Angeles County. Retrieved from http://file.lacounty.gov/SDSInter/auditor/cmr/1036006_2018-04-03LosAngelesHomelessServicesAuthority-MeasureH-Phase1-FiscalOperationsAssessmentReview.pdf

⁶¹ Chiland, E. (2018, April 13). When will LA's big homelessness strategy start paying off? *Curbed LA*. Retrieved from <https://la.curbed.com/2018/4/13/17229430/los-angeles-homeless-strategy-measure-h-results>

⁶² Los Angeles Homeless Services Authority. (2019, February 26). Groundbreaking report on Black people and homelessness released. Retrieved from <https://www.lahsa.org/news?article=514-groundbreaking-report-on-black-people-and-homelessness-released>

The Greater Houston Area

Background

The Greater Houston area is a sprawling metropolitan region, home to almost 7 million people. It includes nine counties, and covers about 10,000 square miles. The City of Houston itself has a population of over 2 million people, and includes 669 square miles. The cost of housing is among the lowest in major US metro areas, at 9.3% below the national average, and 47.8% below the 20 most populous metros.⁶³ The Continuum of Care for Houston includes three of the most populous counties in the Greater Houston area (Harris, Fort Bend, and Montgomery Counties), representing about 3.1 million people from the metropolitan region.

The 2018 PIT Count recorded 4,143 individuals experiencing homelessness in the Houston area. Of these, 1,614 individuals were unsheltered, and 2,529 were living in shelters.⁶⁴ The 2019 PIT Count shows a 5% decrease since 2018, which represents a 54% overall decrease since 2011.⁶⁵ However, Hurricane Harvey continues to make an impact, with 1 in 9 people citing the natural disaster as their reason for being unhoused.⁶⁶ The CoC received \$38,155,969 in federal funding for FY 2018; the largest amount to be awarded to the region to date. This includes funding renewals for 43 existing homeless services programs, and an expansion of CoC's Coordinated Access program. It also includes new funding for several domestic violence housing programs.⁶⁷

Primary Actors Working on Homelessness

The Way Home

The Way Home, Houston's Continuum of Care, serves the City of Houston and City of Pasadena as well as Harris, Fort Bend, and Montgomery Counties.⁶⁸ Their mission statement is "...to create a collaborative, inclusive, community-based process and approach to planning for and managing homeless assistance resources and programs effectively and efficiently to end

⁶³ Jankowski, P., and Verhoef, M. (2019). Cost of living comparison. Greater Houston Partnership. Retrieved from <https://www.houston.org/houston-data/cost-living-comparison>

⁶⁴ Coalition for the Homeless (2018). *2018 Homeless count & survey fact sheet* [PDF file]. Retrieved from http://www.homelesshouston.org/wp-content/uploads/2018/05/Final_2018_PIT_FactSheet_Digital_3.pdf

⁶⁵ Coalition for the Homeless (2019). *2019 Homeless count & survey fact sheet* [PDF file]. Retrieved from <http://www.homelesshouston.org/wp-content/uploads/2019/05/2019-PIT-Fact-Sheet-Final-for-Digital.pdf>

⁶⁶ Edwards, S. (2019, May 17). New data shows promising decline in greater Houston homelessness. *Houstonia*. Retrieved from <https://www.houstoniamag.com/articles/2019/5/17/2019-homelessness-count-houston-harris-county-coalition-for-the-homeless-way-home>

⁶⁷ Wright, A. (2019, Feb 27). The U.S. Department of Housing & Urban Development announces final awards from FY 2018 [web page]. The Way Home. Retrieved from <http://www.thewayhomehouston.org/the-u-s-department-of-housing-urban-development-announces-final-awards-from-fy-2018/>

⁶⁸ The Way Home. (2019). Continuum of Care [web page]. Coalition for The Homeless. Retrieved from <http://www.homelesshouston.org/continuum-of-care/>

homelessness in the jurisdiction...”⁶⁹ They partner with over 100 agencies to provide services, with a ‘Housing First’ approach to stabilizing individuals experiencing homelessness.⁷⁰ HUD recently merged Montgomery County’s CoC into The Way Home due to infrastructure and efficiency concerns.

The CoC is governed by a Steering Committee comprised of representatives from across the community. These sixteen members are selected from the various counties served, and from the private, nonprofit and public sectors.⁷¹ According to the CoC’s charter, each member of the Committee must have fiscal and program authority of the organization they represent.⁷² Organizations and jurisdictions on the Committee appoint their own representatives, while provider representatives are selected by the CoC Provider Forum, and Consumer representatives are selected from the Consumer Input Forum participants.

The Steering Committee’s decisions are informed by service provider recommendations, which are discussed at the quarterly CoC Provider Forums.⁷³ These forums are the “primary policy, input and planning group for the CoC provider community”,⁷⁴ and membership is comprised of homeless service provider agencies in the district. The Consumer Input Forum is a means to gather knowledge from the consumer population, and is composed of people with lived experience with homelessness, both past and present. It convenes no less than twice a year. Other components of the CoC are: The HMIS forum, the HMIS Support Committee, Provider Affinity Groups, Population Specific Work Groups, and Task Specific Work Groups.⁷⁵

⁶⁹ The Way Home. (2017). *The Way Home Continuum of Care Charter*. Page 1. Coalition for The Homeless. Retrieved from <http://www.homelesshouston.org/wp-content/uploads/2017/08/CoC-Charter-Revised-8-2017.pdf>

⁷⁰ Manouse, E. (2018, Oct 8). Houston’s homeless situation - Working on a solution. *Houston Public Media*. Retrieved from <https://www.houstonpublicmedia.org/articles/news/in-depth/2018/10/08/307243/houstons-homeless-situation-working-on-a-solution/>

⁷¹ The Way Home. (2019). Continuum of Care Steering Committee [web page]. Coalition for the Homeless. Retrieved from <http://www.homelesshouston.org/continuum-of-care/steering-committee/>

⁷² The Way Home. (2017). *The Way Home Continuum of Care Charter* [PDF file]. Coalition for the Homeless. Retrieved from <http://www.homelesshouston.org/wp-content/uploads/2017/08/CoC-Charter-Revised-8-2017.pdf>

⁷³ The Way Home. (2019). Continuum of Care Provider Forum [web page]. Coalition for the Homeless. Retrieved from <http://www.homelesshouston.org/continuum-of-care/coc-provider-forum/>

⁷⁴ The Way Home. (2017). *The Way Home Continuum of Care Charter* [PDF file]. Page 4. Coalition for the Homeless. Retrieved from <http://www.homelesshouston.org/wp-content/uploads/2017/08/CoC-Charter-Revised-8-2017.pdf>

⁷⁵ The Way Home. (2017). *The Way Home Continuum of Care Charter* [PDF file]. Coalition for the Homeless. Retrieved from <http://www.homelesshouston.org/wp-content/uploads/2017/08/CoC-Charter-Revised-8-2017.pdf>

In recognition that funding was not being effectively applied and a new overarching strategy was needed, The Way Home released their Action Plan in 2014.⁷⁶ Their new approach relies on data-driven decision making to allocate resources, and is organized by homeless population segment (e.g. veterans), rather than by strategies. This decision was made in accord with the Federal Plan, “Opening Doors,” which provides a framework for ending homelessness by subpopulation, with an emphasis on veterans and the chronically homeless.⁷⁷

In July 2019, The Way Home launched a new Eviction Prevention Program Pilot, in partnership with the Coalition for the Homeless, CSH, Harris County Community Service, Harris County Precinct 7, Texas Southern University’s Urban Research and Resource Center, and consultant Barbara Poppe (former Executive Director of the U.S. Interagency Council on Homelessness). The program aims to help low- and moderate-income tenants avoid eviction through three key strategies: homelessness prevention funding; short-term case management; and research on strategies for avoiding eviction that can be replicated on a wider scale. The program was initiated by Judge Jeremy L. Brown, who felt a need to look toward preventative solutions in response to the staggering volume of eviction cases passing through the court system. ⁷⁸

The Coalition for the Homeless

The Coalition for the Homeless is the lead agency within the CoC. It was established in 1982, incorporated as a 501(c)(3) in 1988, and has four program areas: Research, project management, system capacity building, and public policy.⁷⁹ Their role is to create a system that facilitates collaboration between service providers, government agencies, and community partners for the provision of services to people experiencing homelessness.⁸⁰ This collaborative model integrates partner service provider organizations with public sector efforts, under the direction of the Mayor’s Office for Homeless Initiatives.⁸¹

The Mayor’s Office for Homeless Initiatives

The MOHI⁸² coordinates the efforts of agencies like the Housing and Community Development Department, the Health and Human Services Department, the Houston Police Department,

⁷⁶ The Way Home. (2016). *Action plan: 2015-2017 Update* [PDF file]. Coalition for the Homeless. Retrieved from http://www.homelesshouston.org/wp-content/uploads/2016/08/1617_Action_Plan_Final_Digital_082216.pdf

⁷⁷ U. S. Interagency Council on Homelessness (2015). *Opening doors: Federal strategic plan to prevent and end homelessness*. Retrieved from <https://www.usich.gov/tools-for-action/opening-doors>

⁷⁸ Wright, A. (2019, July 3). Eviction prevention pilot launches in Houston [web page]. The Way Home. Retrieved from <http://www.thewayhomehouston.org/eviction-prevention-pilot-launches-in-houston/>

⁷⁹ Coalition for the Homeless (2019). About us [web page]. Retrieved from <http://www.homelesshouston.org/about-us/who-we-are/>

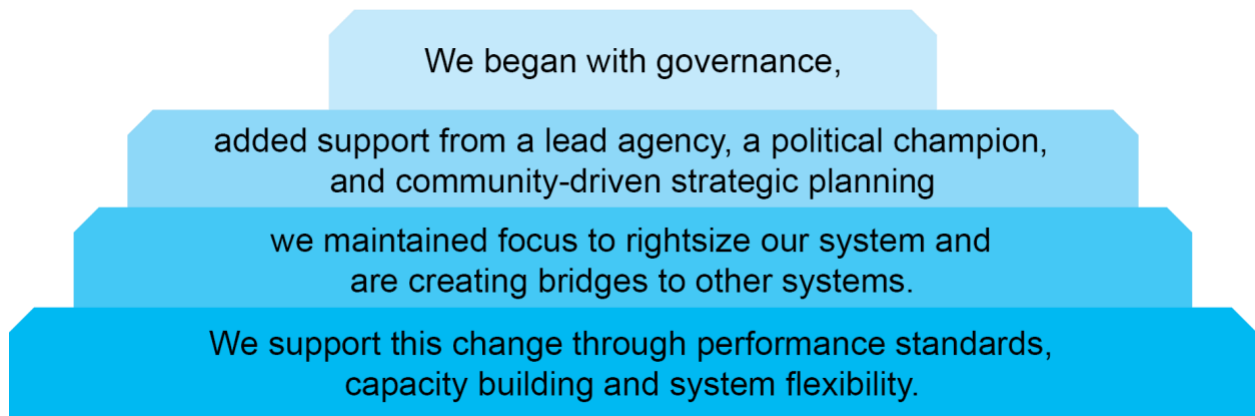
⁸⁰ Coalition for the Homeless (2019). About us [web page]. Retrieved from <http://www.homelesshouston.org/about-us/who-we-are/>

⁸¹ Mayor’s Office for Homeless Initiatives [web page]. (2019). City of Houston. Retrieved from www.houstontx.gov/homeless/

⁸² Ibid

which has a Homeless Outreach Team.⁸³ They also develop public policy for the City of Houston; guide the City's participation in regional planning around homelessness; and coordinate with federal, state and regional governments, national experts and local housing authorities.⁸⁴

Figure 1.4: Approach to redesigning the system⁸⁵

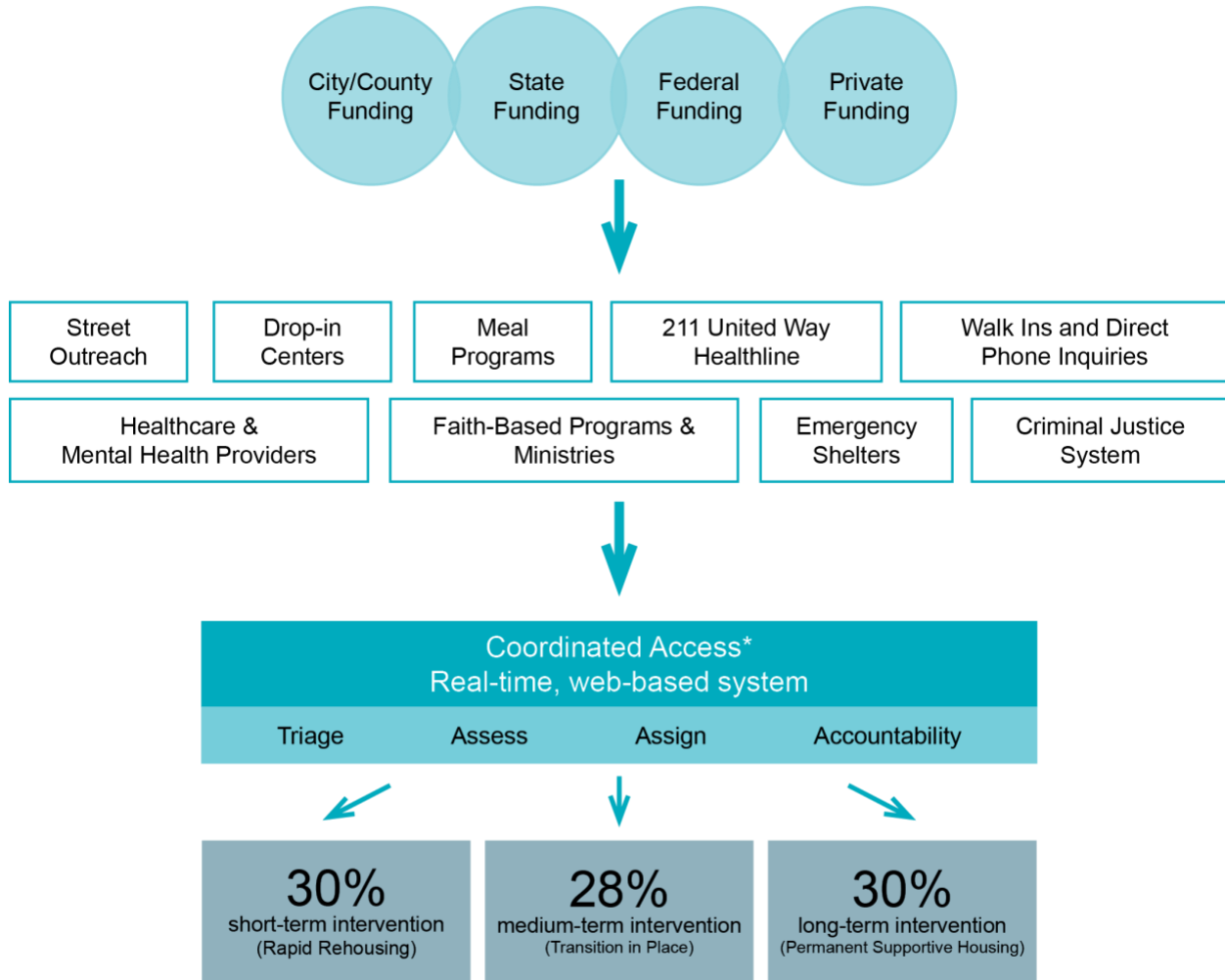


⁸³ Houston Police Department, Mental Health Division. (2019, April 2). Homeless outreach team [web page]. Retrieved from: <https://www.houstoncit.org/test/>

⁸⁴ Mayor's Office for Homeless Initiatives [web page]. (2019). Retrieved from www.houstontx.gov/homeless/

⁸⁵ The Way Home. (2016). *Action Plan: 2015-2017 Update*. Retrieved from www.homelesshouston.com

Figure 1.5: The Way Home Homeless Response System⁸⁶



*12% of the homeless population will solve homelessness on their own

Progress to Date

Houston reports significant declines in their homelessness population. They credit increased support from HUD starting in 2011, and an articulated focus on a single population (veterans).⁸⁷ Lower housing values and land prices also factor into Houston’s successes. The last Point-in-Time count showed another decline in homelessness, after an uptick attributed to Hurricane

⁸⁶ The Way Home. (2016). *Action Plan: 2015-2017 update*. Retrieved from www.homelesshouston.com

⁸⁷ Garnham, J. P. (2019, July 2). Why homelessness is going down in Houston but up in Dallas. *The Texas Tribune*. Retrieved from <https://www.texastribune.org/2019/07/02/why-homelessness-going-down-houston-dallas/>

Harvey.⁸⁸ In a recent visit to Houston, the City of Anchorage Alaska's mayor noted the ability of government and private sector actors to work together in addressing homelessness as a component of their successes in reducing the overall numbers of people experiencing homelessness.⁸⁹

Washington DC

Background

The District of Columbia has a smaller geographic footprint compared to the other case studies, at only 68 square miles. The population, however, is not far below Multnomah County, with 702,455 residents, making it the densest of the four areas studied. The PIT Count data discussed in this report refers to the city itself. Washington DC is situated within the Washington metropolitan area, which includes portions of Maryland and Virginia, and is the most educated and affluent region in the US.⁹⁰ The total population of the region is 5,441,979 people. The District is the fifth most expensive US city, with housing costs 2.7 times the national average.⁹¹ Renters are the majority in the city, representing 62% of households, yet 48% of renters are cost-burdened.⁹² Washington DC is the only of our case examples with a right to shelter at any time of the year.

Washington DC has an unusual governmental structure and history, due to its status as an independent city without a state. It was only in 1973 that the District of Columbia Self-Government and Governmental Reorganization Act was passed, which provided for an elected mayor and 13-member Council. The act allows Congress to review and overturn any legislative act of Council within 30 legislative days. In 1997 Congress stripped financial authority from locally elected representatives in the face of mismanagement, and transferred control to the federal government. Local authority under the Home Rule Charter was restored in 2001.⁹³ The city's budget is created through an iterative process between the Mayor and the Council, and

⁸⁸ Edwards, S. (2019, May 17). New data shows promising decline in greater Houston homelessness. *Houstonia*. Retrieved from <https://www.houstoniamag.com/articles/2019/5/17/2019-homelessness-count-houston-harris-county-coalition-for-the-homeless-way-home>

⁸⁹ Howard, A. (2019, June 13). Anchorage mayor cites Houston model for best practices to end homelessness. *JHV*. Retrieved from <http://jhvonline.com/anchorage-mayor-cites-houston-model-for-best-practices-to-end-homelessness-p26128-89.htm>

⁹⁰ Homan, T. (2010, December 14). Washington suburbs are richest, most educated in U.S. *Bloomberg*. Retrieved from <https://www.bloomberg.com/news/articles/2010-12-14/washington-d-c-metropolitan-area-is-wealthiest-most-educated-u-s-region>

⁹¹ Burrows, D. (2019, April 21). 20 most expensive U.S. cities to live in. *Kiplinger*. Retrieved from <https://www.kiplinger.com/slideshow/real-estate/T006-S001-most-expensive-u-s-cities-to-live-in-2019/index.html>

⁹² National Equity Atlas. (2017). *When renters rise, cities thrive*. National Equity Atlas, PolicyLink & USC Program for Environmental and Regional Equity. Retrieved from <https://nationalequityatlas.org/node/50176>

⁹³ Richards, M. (2002). History of local government in Washington, D.C. D.C. vote: Strengthening democracy. Retrieved from <https://www.dcvote.org/inside-dc/history-local-government-washington-dc>

must be approved by Congress. DC residents have long complained of “taxation without representation,” as they have no official representative in the Senate.

Two years ago, the nation’s capital had one of the highest rates of people experiencing homelessness in the country,⁹⁴ with an increase of 50% between 2000 and 2015. That number represents almost 1% of all District residents, or 101 people per square mile. According to the 2019 PIT Count, 6,521 individuals were experiencing homelessness, which represents a 6% decrease from the previous year, and an 11% decrease since 2015. The count shows 608 of those individuals were unsheltered, 4,679 were in an emergency shelter, and 1,234 were in transitional housing. The decrease is primarily attributed to a reduction of families in the population, which diminished by 11.8%, and 45.3 % in 2016.⁹⁵

Selected Actors Working on Homelessness

The Metropolitan Washington Council of Governments

The Metropolitan Washington Council of Governments’ (MWCOC) is comprised of 300 elected officials from 24 local governments, the Maryland and Virginia state legislatures, and the U.S. Congress. The council’s Homeless Services Planning and Coordinating Committee manages the annual PIT Count, and convenes to share strategies “in addressing common challenges that are unique to living in a high-cost housing market such as metropolitan Washington.”⁹⁶ The MWCOC also provides training, discussions and speaking events for members of the Committee. Membership is extended to representatives from human services departments of the various jurisdictions in the MWCOC, and to employees of nonprofit members of the CoC. They hold monthly public meetings in Washington D.C.

The District of Columbia Interagency Council on Homelessness

The District of Columbia Interagency Council on Homelessness (ICH) is the Continuum of Care, and includes representatives from government agencies, service providers, advocates, constituents, the private sector, and the CoC. Council members also meet as the following committees: Emergency Response and Shelter Operations, Youth, Strategic Planning, and Housing Solutions.⁹⁷

⁹⁴ Weiland, N. (2017, Jan 1). D. C. Homelessness doubles national average as living costs soar. *New York Times*. Retrieved from <https://www.nytimes.com/2017/01/01/us/washington-dc-homelessness-double-national-average.html>

⁹⁵ Chapman, H. (2019). *Homelessness in metropolitan Washington: Results and analysis from the annual Point-in-Time (PIT) count of homeless persons*. Retrieved from <https://www.mwcog.org/documents/homelessnessreport/>

⁹⁶ Metropolitan Washington Council of Governments. (2019). Homeless Services Planning and Coordinating Committee. Retrieved from <https://www.mwcog.org/committees/homeless-services-planning-and-coordinating-committee/>

⁹⁷ District of Columbia Interagency Council on Homelessness (n.d.). *About us*. Retrieved from: <https://ich.dc.gov/page/about-ich>

At the behest of newly elected mayor Muriel Bowser, the council developed *The Homeward DC Strategic Plan (2015-2020)*.⁹⁸ The overarching vision of the plan is to end long-term homelessness in the District by 2020. Within that vision there are three major goals: End homelessness among veterans by the end of 2015; End chronic homelessness among individuals and families by the end of 2017; and to be able to rehouse any household experiencing a loss of housing within 60 days, by 2020. The plan is organized around five key strategy areas:

1. Develop a more effective crisis response system;
2. Increase the supply of affordable and supportive housing;
3. Remove barriers to affordable and supportive housing;
4. Increase the economic security of households in our system; and
5. Increase prevention efforts to stabilize households before housing loss occurs.⁹⁹

The collaborative process was led by the ICH, and took place between June 2014 and March 2015. It involved government representatives, nonprofit partners, advocates, people with lived experience, members of the business and philanthropic communities, and consultants from the Corporation for Supportive Housing (CSH), Abt Associates, and Community Solutions.

The Plan mainly utilizes data collected through the HMIS, and is supplemented by additional data from other agencies. In keeping with ICH practice, standing committee and work group meetings were (and remain) open to the public, and during the process of developing the plan there were additional public meetings to solicit stakeholders' feedback. In total, twenty-six public meetings were held as part of the planning process, which took place at various locations and focused on different topics.

The Community Partnership for the Prevention of Homelessness

The Community Partnership for the Prevention of Homelessness (TCP) manages the Continuum of Care for the District of Columbia, and the HMIS database. They were established in 1989, and their mission is to “utilize community resources to create innovative strategies that prevent homelessness in our city.”¹⁰⁰

⁹⁸ District of Columbia Interagency Council on Homelessness. (2015). *Homeward DC 2015-2020*. Retrieved from https://ich.dc.gov/sites/default/files/dc/sites/ich/page_content/attachments/ICH-StratPlan2.7-Web.pdf

⁹⁹ District of Columbia Interagency Council on Homelessness. (2015). *Homeward DC 2015-2020*. Retrieved from https://ich.dc.gov/sites/default/files/dc/sites/ich/page_content/attachments/ICH-StratPlan2.7-Web.pdf

¹⁰⁰ The Community Partnership for the Prevention of Homelessness. (n.d.). About us [web page]. Retrieved from: <http://community-partnership.org/about-us>

The Way Home

The non-governmental organization The Way Home (no relationship to the Houston organization) has been leading an independent campaign to end chronic homelessness in the city for several years. The campaign is partnered with nearly 100 local and national organizations, from healthcare providers to the private sector.¹⁰¹ One of their key efforts is advocating for housing and services funding allocations in each year's Fiscal Year budget. This year they are requesting \$20.6 million, in addition to the \$35 million in the proposed 2020 budget.¹⁰² In addition to more funding for housing and services, they are asking for funding specifically for a homeless street outreach network.¹⁰³ The organization's position is situated in the belief that Washington D.C.'s homelessness strategy is *working*, per the 2019 PIT Count numbers, and needs robust continued funding.¹⁰⁴ Their direct action, A People's Budget Action to End Homelessness, convened in front of the DC Council building May 8 to demand increased funding.

Funding and Progress to Date

In April of 2019 the ICH met publicly to discuss the draft Homeward D.C. progress report, which will be submitted to Mayor Bowser as a required precursor to the creation of Homeward D.C. 2.0. According to ICH Executive Director Kristy Greenwalt, the greatest strides have been made in reducing the number of families experiencing homelessness, which has gone down by 38% in two years. Greenwalt also stated the difficulties of contending with changing externalities like rising rents, while implementing the plan.¹⁰⁵

The mayor's proposed Fiscal Year 2020 budget includes \$103 million in housing funding, of which \$35 million would be explicitly dedicated to Homeward D.C., with the remainder going to affordable and workforce housing. The \$35 million will go toward supporting short-term family shelters, rapid rehousing, and permanent supportive housing. These spending increases are enabled by making the commercial property tax of \$1.89 permanent (\$25 million) and increasing the deed and recordation tax on commercial properties over \$2 million from 1.45% to 2.5% (\$78

¹⁰¹ The Way Home District of Columbia. (n.d.). Retrieved from <http://thewayhomedc.org/miriamskitchen/?0>

¹⁰² Ibid

¹⁰³ Rabinowitz, J. (2019, April 12). FY20 budget increases funds to end chronic homelessness, falls far short of need [web page]. The Way Home: Ending chronic homelessness in DC. Retrieved from <http://www.thewayhomedc.org/app/document/32967864>

¹⁰⁴ Rabinowitz, J. (2019, May 1). Decrease in chronic homelessness shows DC on is on the right track, more funding needed [web page]. The Way Home: Ending chronic homelessness in DC. Retrieved from <http://www.thewayhomedc.org/app/document/33156804>

¹⁰⁵ Collins, A. (2019, April 17). In progress report, ICH looks at successes and shortcomings of plan to end homelessness. *Street Sense Media*. Retrieved from <https://www.streetsensemedia.org/article/in-progress-report-ich-looks-at-successes-and-shortcomings-of-plan-to-end-homelessness/>

million).¹⁰⁶ Equity continues to be a major issue in the District, as 97% of families experiencing homelessness are African American, while that group makes up only 40% of the total population.¹⁰⁷

In June of 2019, Mayor Bowser, the ICH, and the Greater Washington Community Foundation launched the Partnership to End Homelessness.¹⁰⁸ The initiative aims to galvanize private sector investment, and coordinate the public and private sectors around a central strategy to address homelessness and housing insecurity in the city. ICH director Kristy Greenwalt cites the need for a “formal structure for better mobilizing and aligning the contributions of private sector partners” (ICH, 2019). The new partnership will increase philanthropic and private sector capital opportunities to nonprofits, in order to accelerate efforts under the Homeward DC strategic plan.

Multnomah County

Multnomah County has worked with the City of Portland, the City of Gresham, nonprofits and faith, philanthropic, and business communities and developed several mechanisms for addressing housing and homelessness in the area.

Background

Multnomah County, Oregon is home to eight incorporated cities, including the cities of Portland and Gresham, unincorporated land, and is 466 square miles. Multnomah County is the center of the Portland metropolitan statistical area, which includes seven counties and spans two states (Oregon and Washington). Four of the counties are located in Oregon (Multnomah, Clackamas, Washington, and Yamhill Counties). While all seven of the counties’ housing and labor markets are inextricably linked together, the regulatory environments are distinct. Policy work and program delivery related to housing and homelessness is further complicated by having two different state legislatures.

Unique in the nation, the regional government, Metro, serves as the MPO for three of the counties on the Oregon side of the border, which includes Multnomah, Clackamas and Washington counties. Here, representatives are directly elected to Metro council, and the representation system reflects traditional local government systems, as opposed to the more complex regional governance structures found across the country. About 811,000 people live in Multnomah County, or 46% of the tri-county regional population.

¹⁰⁶ Telerski, N. (2019, April 17). The mayor’s budget proposal contains \$103 million in support for affordable housing production and preservation. *Street Sense Media*. Retrieved from <https://www.streetsensemedia.org/article/dc-mayor-budget-support-affordable-housing-production-preservation/>

¹⁰⁷ Collins, A. (2019, April 17). In progress report, ICH looks at successes and shortcomings of plan to end homelessness. *Street Sense Media*. Retrieved from www.streetsensemedia.org

¹⁰⁸ The Greater Washington Community Foundation. (n.d.). Partnership to end homelessness [web page]. Retrieved from <https://www.thecommunityfoundation.org/partnership-to-end-homelessness>

Efforts to coordinate a response to homelessness in Multnomah County go back about two decades with the creation of a 10-year plan to end homelessness (adopted in 2004).¹⁰⁹ At that time, Multnomah County worked with the homeless family system, and the City of Portland supported houseless single adults. While the plan faced implementation challenges, this early work on collaboration helped create connections among stakeholders addressing homelessness. In recent years, a flurry of governance agreements and revenue-raising tools have been adopted. According to the 2017 Point-in-Time count, almost 4,200 people met the definition to be described as homeless according to HUD, about 0.5% of the population.

Selected Actors Working on Homelessness

Joint Office of Homeless Services (JOHS)

Created in 2016, the JOHS coordinates homelessness services from Multnomah County and the City of Portland. The JOHS also manages the CoC, A Home for Everyone. The JOHS's IGA has a five-year term.

A Home for Everyone (AHFE)

Created in 2013, AHFE is a multijurisdictional governance structure to end homelessness in Multnomah County. The participating government partners include Multnomah County, the cities of Portland and Gresham, and the area housing authority, Home Forward. The entire structure brings together various stakeholders, including government, nonprofit, private sector, and community members who have experienced homelessness, to make plans, policy, and budget recommendations to address homelessness through a collaborative governance process. AHFE serves as the Multnomah County and Portland's CoC.

AHFE consists of several committees, boards, and task forces. The executive committee includes elected officials from the three participating jurisdictions, the local housing authority, philanthropic organizations, the coordinating board co-chairs, and selected civic leaders. The coordinating board includes about 40 stakeholders from social service agencies, government agencies (elected officials and staff), and community members who have experienced homelessness. The coordinating board makes recommendations to the executive committee based on their deliberations and input from other committees. The executive committee then makes decisions about what to recommend that jurisdictions do to address homelessness. Ideally, the elected officials on the executive committee take the recommendations back to their home jurisdictions and advocate for the decisions of the executive committee. The majority of the AHFE work focuses on making budgetary recommendations to the relevant jurisdictions, developing shared standards of care, recommending regional policy to address homelessness,

¹⁰⁹ Citizens Commission on Homelessness. (2004). Home again: A 10-year plan to end homelessness in Portland and Multnomah County [PDF file]. Retrieved from <http://www.mentalhealthportland.org/wp-content/uploads/2015/10/FULL-ACTION-PLAN.pdf>

and acting as the US Department of Housing and Urban Development (HUD) Continuum of Care.

Early in its work, AHFE created *A Home for Everyone: A United Community Plan to End Homelessness* that included five supporting strategic plans for housing, health, employment, veterans, and safety off the streets.¹¹⁰ This work also includes accessing services, system coordination, and several vulnerable populations such as veterans. Similarly to other locations, AHFE has made significant progress in housing veterans in part thanks to funding focused on this population made available during the Obama administration.

AHFE includes a stated goal to racial equity, and employs a racial equity lens. In 2018, AHFE created a standing equity committee, at the recommendation of its equity task force. A JOHS staff member started full-time in 2019 to help implement the goals of the equity committee.

As of August 2019, the IGA for AHFE has expired, and AHFE is undertaking a strategic planning process.

Racial Equity Lens

A decision-making tool that helps people consider the disparate impacts and equity-making opportunities for policies, plans, programs, and projects.

Multnomah County

Before the formation of the JOHS, Multnomah County managed the homeless family system, having responsibility for families, youth, and domestic violence services. In addition, the County maintained and maintains many of the mainstream programs that provide care to people who otherwise would be homeless—e.g. Aging Disability and Veterans Services, Mental Health and Addictions Services— and also oversees a range of anti-poverty programs, including school based anti-poverty programs that help stabilize families with children at risk of homelessness. While JOHS is a joint venture between Multnomah County and the City of Portland, the JOHS staff are classified as county employees.

City of Portland

As the largest city in the Portland region, the city is also home to significant influx of new community members, escalating housing prices, new luxury housing, and redevelopment catering to the upper end of the housing market. In 2015, the city declared a housing emergency to expand its powers to address the spiraling housing market. In 2016, trying to address the ever-shrinking amount of affordable housing, city residents approved a seven year \$258.4 million bond to provide housing. The City of Portland continues to have primary responsibility for developing affordable housing, and until the creation of the JOHS, managed

¹¹⁰ A Home for Everyone. (2013). *A Home for Everyone: A united community plan to end homelessness for Portland/Multnomah County*. Retrieved from <http://ahomeforeveryone.net/the-plan>.

the adult homelessness system. The city continues to maintain the Homeless Management Information System (HMIS), both for Multnomah County and for CoCs across Oregon state.

Metro

The regional government sponsored a housing bond that passed in 2018 to raise \$652.8 million in revenue to build permanently affordable housing. The bond signified Metro's interest in expanding its role in addressing the housing crisis, requiring a revision of its charter.

Home Forward

Home Forward is the housing authority from Multnomah County, but goes beyond the traditional role of a housing authority. HF is an active participant in AHFE, and part of an integrated network of government entities committed to addressing homelessness.

Nongovernmental Actors

A wide range of faith, philanthropic, business, and nonprofit organizations have rallied in support of housing solutions to homelessness in the tri-county area. In the interest of space and to avoid leaving any partners out, we decided to talk about nongovernmental actors in more general terms. These partners are pivotal in many ways including oversight of governance, support for revenue measures, complementing regional efforts, advancing racial equity, and educating and encouraging the public to see housing solutions to homelessness.

Revenue Raising

Revenue in the Portland region has been raised through two funding mechanisms: a Portland housing bond and a regional housing bond. The City of Portland's Housing Bond was passed by voters in November 2016, and allocates \$258.4 million to create more affordable housing. The Portland Housing Bureau (PHB) is leading the effort in collaboration with city officials and community partners. The bond aims to create 1,300 affordable homes for 650 households making no more than 60% Area Median Income (AMI), over a five- to-eight-year period. At the time the bond was passed, state law stipulated that only a public entity could own housing built with bond proceeds, and Home Forward stepped into the role. This law changed in November of 2018, when voters passed a constitutional amendment allowing bond funds for affordable housing to be loaned to private entities. All housing under construction up until that time will be owned by Home Forward.

Allocation of funds is shaped by the 22-member Stakeholder Advisory Group (SAG), which was convened in April 2017. Members were mainly representing community partners from the nonprofit sector, with a few public sector participants. The group met nine times over six months to develop the Housing Bond Policy Framework, which will be used to guide decision-making, and to evaluate expenditures in annual reporting. After the framework was in draft form, Portland Housing Bureau conducted five weeks of community outreach to solicit comments,

which numbered nearly 1,000.¹¹¹ The Policy Framework established production goals, community values, communities to be served, services, reporting metrics, and guidelines for ongoing community engagement.

Oversight of the bond funds is handled by Portland's Housing Bond Oversight Committee (BOC), as stipulated by City Council when they referred the measure for the ballot.¹¹² The five-member committee is appointed by the commissioners and mayor, and is responsible for reviewing bond expenditures, and providing annual reports. This includes tracking implementation metrics against the Housing Bureau's Racial Equity Plan, and monitoring utilization of disadvantaged, minority, women, and emerging small business to support community benefits.

In November 2018, voters in the Metro area passed the nation's first regional housing bond, which sets out a goal of creating 3,900 affordable homes in five to seven years, using \$652.8 million in funds.¹¹³ About 1,600 of these will be set aside for households earning 30% AMI or less. Overall, the bond aims to house between 7,500 and 12,000 people. Unlike Portland's Housing Bond, the framework was developed in advance of the Metro Council referring it to the ballot. Core values are leading with racial equity; prioritizing people least served by the market; increasing access to public goods and preventing displacement; and creating fiscally sound and transparent investments.¹¹⁴ This framework was developed through months of engagement with partners and community members.

Between February and June 2019 a separate community engagement process was conducted. This effort focused on local strategies to address housing needs, providing a forum for stakeholder feedback, and identifying opportunities to create affordable housing. Public meetings were held in each of the jurisdictions, and facilitated by either nonprofit community partners or local governments.

The Metro Council voted to appoint thirteen members of the committee that will oversee the region's affordable housing program. They will be tasked with tracking construction of the 3,900 homes planned under the bond measure. Annual independent audits will also be conducted. The members of the committee are a mix of professionals from the private and nonprofit sectors. The committee meets once a month.

¹¹¹ Bond Stakeholder Advisory Group for the Portland Housing Bureau. (2017). *Portland's Housing Bond Policy Framework* (pp. 1-71). Retrieved from <https://www.portlandoregon.gov/phb/article/659537>

¹¹² Portland Housing Bureau. (2017). *Portland's Housing Bond Oversight Committee: Charter and protocols*. Retrieved from <https://www.portlandoregon.gov/phb/article/692098>

¹¹³ Homes for Greater Portland. (2018). *Implementing Metro's affordable housing bond* [PDF file]. Retrieved from <https://www.oregonmetro.gov/sites/default/files/2019/02/12/housing-bond-fact-sheet-02122019.pdf>

¹¹⁴ Oregon Metro. (2018). *Affordable homes for greater Portland: Metro Chief Operating Officer recommendation*. Retrieved from: <https://www.portlandoregon.gov/phb/article/708741>

Progress to Date

Since the creation of AHFE, the following goals have been achieved: (1) expansion of system capacity to prevent and end homelessness using local general funds; (2) doubling the publicly funded shelter system; (3) because of the strength of the governance structure, investing and programming in alignment with AHFE identified values/priorities/practices, including culturally specific and responsive programs; and, (4) integrating disparate data collection, entry, and reporting practices to allow for system-level reporting.

A June 2019 audit of the Portland Housing Bond finds positive early results of the implementation process, with consistent project selection criteria.¹¹⁵ To-date, 662 homes have been completed or are in-progress. The audit recommends greater attention to veterans, disabled and senior populations, and evaluating the target populations of each project.

The recently released Point-in-Time count found a small, but overall decline in homelessness in Multnomah County, but an increase in unsheltered people experiencing homelessness. African American and Native American men saw significant increases in chronic homelessness. At the same time, A Home for Everyone served over 35,000 people experiencing or at risk for homelessness in fiscal year 2017–2018.

Moving Forward in the Portland Tri-County Area

The purpose of this report is to examine homelessness issues and possible responses for the Portland tri-county area, and its three CoCs (one in each county). Developing just and meaningful regional governance takes time, and requires both political and financial support. However, given the pivotal role housing and labor markets play in homelessness, and that these markets are regional in nature, identifying collaborative opportunities for the tri-county region could be instrumental in addressing homelessness. Further, service provision will likely be more effective if it occurs on a regional scale, mirroring how people and the relevant systems operate.

Multnomah, Washington, and Clackamas counties and cities within their boundaries, along with Metro, should convene a task force or working group to examine the potential benefits of addressing homelessness through regional coordination. Such a group should have a clear deadline for making decisions and recommendations about how the region should move forward. The group should consider which issues and/or programs in particular could be better coordinated regionally related to homelessness. Problem identification will be essential in any coordinating work or long-term governance process. If the solution to homelessness is housing, then homelessness and housing discussions should be integrated while explicitly working to understand how any efforts to serve one part of the population needing affordable housing

¹¹⁵ Caballero, M., & Guy, K. (2019). *Portland Housing Bond: Early implementation results mostly encouraging*. Portland City Auditor: Audit Services.
<https://www.portlandoregon.gov/auditservices/article/734894>

impacts others. ***Solving affordable housing is not the same thing as solving chronic homelessness.*** To address the need for affordable housing, we need to consider housing across the income spectrum, and weigh trade-offs and interaction effects between interventions. Solving chronic homelessness would mostly focus on creating permanent supportive housing through a Housing First model. Both creating more access to affordable housing for all relevant income groups, and supporting people who are chronically homeless are necessary. Achieving both would be remarkable, but doing so at the same time can only happen through deliberate and careful planning.

Metro, and its participating jurisdictions, started this work at the regional level with its affordable housing bond. However, this bond only covers capital costs and only for about 12,000 of the people in need across the region. A significant resource gap still exists in serving everyone experiencing homelessness and housing insecurity in the region.

A logical next step to the Metro housing capital bond, would be to raise revenue across the region to pay for services to match the capital bond. Section 3 of this report provides details on various ways that revenue could be raised in addition to Metro. Regardless of how revenue is raised and which government entity raises it, it is essential to have a transparent process that determines how the revenue will be spent including a public-facing body to oversee it that is based on a racial equity lens framework. Long-term planning work, and shorter-term work such as exploring other revenue measures could occur in tandem. For instance, the region moves forward on existing efforts such as the Regional Supportive Housing Impact Fund, which is dedicated to raising funding for permanent supportive housing. At the same time, a government-driven process could begin to identify next steps in the region.

Government-led discussions must occur transparently and include those who are most marginalized in the region and have experienced homelessness or housing insecurity. These discussions should build on existing coordinating discussions about homelessness such as A Home for Everyone, other county CoCs, and groups like the Regional Housing Impact Fund,¹¹⁶ but continue to allow these groups to work independently. For example, Los Angeles County represents a complex and intensive set of coordinated efforts to address homelessness. The efforts of different public and private actors in LA County created an overlapping set of activities largely focused on the belief that providing stable housing is the best path to addressing homelessness. Their present-day efforts build on over a decade of work to coordinate responses to addressing homelessness. In the tri-county area, encouraging the work of civic society groups, non-profit organizations, and advocacy movements, are, thus, also necessary to address and prevent homelessness across the region. Solutions to affordable housing and

¹¹⁶ CSH. (2019). *Tri County equitable housing strategy to expand supportive housing for people experiencing chronic homelessness* [PDF file]. Retrieved from https://d155kunxf1aozz.cloudfront.net/wp-content/uploads/2019/03/Metro_SupportiveHousing_Report_WithAppendices_March_Final.pdf

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homelessness may not rely on one large multi-stakeholder table, but rather rest on several small to medium-sized tables.

II. COSTS OF ADDRESSING HOMELESSNESS

Background

In this section of the report, we estimate the number of people experiencing homelessness as well as those who need support to prevent homelessness. We then provide a set of cost estimates that include housing those experiencing homelessness, assisting those at risk of homelessness, and providing appropriate services to both groups.

Key Takeaways

- Communities of color (namely Black, Latino, and Native American communities) are disproportionately represented in the homelessness counts and/or renter cost-burdened rate.¹¹⁷ One reason is income disparity. For example, the median income for Black households in the Portland area is half the overall median income.¹¹⁸ While calculating additional costs to support people of color was not feasible in the time frame for this study, we want to note that ensuring that supporting these communities may require are living doubled up in other peoples' residences. Integrating these counts produce a more realistic estimate of people experiencing homelessness in the region.
- The numbers for doubled-up populations only include families with children due to limited methodological tools to estimate adults who do not have children living with them. The number of doubled-up individuals is likely higher.
- About 15% of those experiencing homelessness likely need permanent supportive housing.
- We examine three scenarios for providing housing and necessary supports for people experiencing homelessness. Costs over ten years range from \$2.6 billion to \$4.1 billion in net present value to cover housing and services depending on the scenario. Each scenario includes a high cost and low-cost estimate. These estimates are not reduced to account for either housing revenue measure being administered by Metro (Measure 26-199) or the

¹¹⁷ We do not report on Asian & Pacific Islander (API) communities here because they are often not experiencing disparate rates of homelessness. However, the data for the API community is especially problematic. First, the number of APIs in the data set is small, leading to high margins of error. Second, because of the small numbers, we cannot meaningfully disaggregate data to examine rates for API subgroups. However, we know that there are marked differences between API populations in relation to socio-demographic and economic factors, where some populations are likely to experience disparate rates of homelessness.

¹¹⁸ The reason for this income disparity, is of course, the legacy and continuation of structural, institutional, and interpersonal racism.

City of Portland (Measures 26-179). The Metro bond is specifically dedicated to construction, acquisition, and rehabilitation; not services.¹¹⁹

- Services¹²⁰ alone account for about \$825 million–\$910 million of the cost for resolving homelessness over the ten-year analysis period.
- Overall, the region does not have enough affordable housing for households making 0–80% Median Family Income (FMI). Many in this group are cost-burdened, which means they pay more than 30% of their income toward rent. There is an unmet need for affordably-priced units of all sizes. Units are available at higher price ranges (from 30% up to 80% of MFI) in most cases; notable shortages are present in studios and one-bedroom apartments, as well as three or more bedroom units. This means that construction of new units will be necessary to meet those housing needs even with rent assistance. However, if households are permitted to rent larger units than their households might normally be eligible for, the shortage for studios and one-bedrooms disappears.
- Further research is needed to determine whether the spatial distribution and quality of available units is sufficient. Assessing unit quality was beyond the scope of this work; however, we are aware that some of the units counting toward housing inventory may have serious issues. Likewise, previous research demonstrates that low-income households are being displaced to the outer edges of the region. We address this to the best of our ability by using a range of rents that reflect regional variation.
- Supporting low-income (below 80% MFI), cost-burdened households for 10 years would cost between \$10.7 billion and \$21 billion (net present value) for all cost-burdened households (paying more than 30% of their income toward rent). Supporting just the low-income, severely cost-burdened households (those who pay more than 50% of their income toward rent) would cost between \$8.7 billion and \$16.6 billion.
- Due to the two-pronged nature of this analysis, the rent subsidy value should not be summed with the costs necessary to support individuals experiencing homelessness; see below.

In our analysis we consider three main groups: those experiencing homelessness who would not require permanent supportive housing (PSH), those who would require PSH, and households at risk of experiencing homelessness due to low incomes and paying 30% or more

¹¹⁹ City of Portland Auditor Mary Hull Caballero. (2016). Affordable Housing Bond Measure - 26-179 [web page]. Retrieved from: <https://www.portlandoregon.gov/auditor/article/581552>; See also: Metro. (2018). *Notice of measure election* [PDF file]. Retrieved from <https://multco.us/file/74022/download>.

¹²⁰ Services include those for PSH and non-PSH households, but do not include rent assistance or building operating costs.

of their income toward rent. These groups, and the resources and associated costs are summarized in Tables 2.1 and 2.2 below. It is important to note that the per-household costs might seem low, but this is because the value is an average of two groups with very different needs: those who need PSH and those who do not. Households in PSH are assumed to have housing constructed and services over the entire period, while those without receive only two years of rent assistance and services in existing housing.¹²¹ We know that many homeless households will continue to need some type of assistance beyond two years; however, we were unable to identify a reasonable set of assumptions to calculate the amount of longer-term support necessary. Instead, we include how much it would cost overall for all households to continue to receive the same amount of support for two additional periods.

Permanent Supportive Housing

HUD defines permanent supportive housing as permanent housing with indefinite leasing or rental assistance paired with supportive services to assist homeless persons with a disability, or families with an adult or child with a disability, to achieve housing stability.

Table 2.1: Summary of Results for Homeless: Housing and Services¹²²

Group	Population ¹²³	Resources	Costs
Total population experiencing homelessness (combined PSH ¹²⁴ and Non-PSH)	38,263 individuals (or 24,260 households)	Housing construction and acquisition (one-time cost)	\$190,000–\$218,000 (0–1 bedroom unit) \$190,000–\$338,000 (2–4 bedroom unit)
		Rent assistance (per year)	\$11,352–\$18,960 (0–1 bedroom) \$14,904–\$41,000 (2–4 bedroom)
		Rent assistance administration (annual)	\$800 per household
		System support and employment services (annual)	\$450 per household
		Administrative costs (annual)	2.4%

¹²¹ For example, in 2024, expenses per household for those in PSH are \$174,613, and \$41,633 for those not in PSH. The values are similar for 2025, and thereafter the expenses for non-PSH households fall to zero (as our cost modelling provides for two years of rent assistance and services), and with construction complete, PSH costs per household fall considerably as well (reaching just over \$26,000 in 2033, or a total of \$128.7M).

¹²² For consistency, all data come from 2017.

¹²³ Where possible, we provide individual and household estimates. Some data are collected on an individual basis, other on the household basis. We use household size estimates from the American Community Survey 2017 5-Year Estimates to convert individuals to households as needed.

¹²⁴ Permanent Supportive Housing: Approximately 15% of the homeless population is assumed to require permanent supportive housing services, and costs for this group are calculated separately from the costs associated with the 85% that does not require these more intensive services.

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With Permanent Supportive Housing Need	5,661 individuals (or 4,936 households)	PSH services (annual)	\$8,800–\$10,000 per household
Without PSH Need	32,602 individuals (or 19,324 households)	Services (annual)	\$5,700 per household
Total		\$2.6 billion– \$4.1 billion, or an average of \$107,000– \$169,000 per household (Net present value for ten years)	

Table 2.2: Summary of Results for Universal Rent Assistance (Homelessness Prevention)

Group	Population	Resources	Costs
Cost burdened (spend >30% of income on rent, earn <80% AMI ¹²⁵)	107,039 households (includes severely cost burdened, below)	Universal housing rent assistance	\$10.7 billion - \$21 billion (NPV ¹²⁶ , 2024-2033)
Severely cost burdened (spend >50% of income on rent, earn <80% AMI ¹²⁵)	82,576 households	Universal housing rent assistance	\$8.7 billion - \$16.6 billion (NPV, 2024-2033)

Limitations

There are several things to keep in mind while reading this section. First, existing rigorous research for some of these topics is limited. Second, data sets about homelessness have limitations, and in some cases we have no data.

Third, these analyses are not iterative or interactive. We assume that rent assistance is successful at limiting people becoming homeless, and that the resources provided are enough, and effective at moving people into housing. In other words, no one else becomes homeless, and everyone exits homelessness. Our goal was to produce a general framing series of estimates to help people understand the scope of the issue. A more complicated analysis would be required to consider realistic timing of bringing new affordable units on line and scaling up services and rent voucher programs, and how these programs would reduce costs of the emergency shelter system. Such analyses would also examine how creating access to more

¹²⁵ Area Median Income: average household income adjusted for family size, as used by US HUD to determine aid thresholds.

¹²⁶ Net Present Value: This report often presents program costs in net present value, which estimates the present value of an investment by accounting for the discount rate (10%) and therefore the time value of money; as well as inflation when appropriate. This method most clearly allows sums to be considered comparatively, at the present time. (Note that nominal cash, or cash in the year in which it is used, is often presented as well.)

housing would affect the housing market overall. These analyses were beyond the scope of this work.

Fourth, based on current practices there are limited methods for assessing how addressing racial equity may increase costs. We draw attention to the significant inequities several communities of color experience. Further research will help demonstrate if that type of work translates into significant additional costs.

Lastly, the costs presented in the table above and throughout ***may not be aggregated to arrive at a single number***. For example, households not requiring permanent supportive housing are assumed to receive two years of rent assistance and services and then exit the system and the cost scenario. However, they might end up requiring the type of housing voucher discussed for the at-risk group, which would increase that estimate, as only housed individuals are considered in that group at this time. Another example: previous work by local consultant ECONorthwest found that housing unaffordability is a major driver of homelessness.¹²⁷ If vouchers were used to make such housing affordable, then the number of homeless individuals would be much lower. Presumably the non-PSH group would likely move from homeless to the at-risk-category receiving rent assistance, requiring fewer interventions. These estimates are meant to be considered separately, not added together, because of the complex interactions that would result if these policies were deployed simultaneously: the entire landscape from which the data used in this report was drawn would shift in ways that fall beyond the scope of this assessment.

Homelessness and other Key Terms

Different organizations and institutions use varying definitions of homelessness, adding an additional level of complexity to already complicated datasets. As discussed in the introduction, the federal government lacks a unified definition of homelessness. The HUD definition of homelessness focuses on people living unsheltered or sleeping in a place not designed for sleep, living in shelter designed to serve people without permanent housing, people who will lose their housing, and some additional types of unaccompanied youth and families. HUD has also changed their definitions of homelessness as well as specific subtypes of homelessness over the years.¹²⁸

¹²⁷ ECONorthwest. (2018). *Homelessness in the Portland region: A review of trends, causes, and the outlook ahead* [PDF file]. Retrieved from https://m.oregoncf.org/Templates/media/files/publications/homelessness_in_portland_report.pdf

¹²⁸ Signed into law in 2009, the HEARTH Act reauthorized the McKinney-Vento as and included substantive changes to the homelessness definition (among other things).

In 2012, a final rule offered additional substantive definitional changes for what constituted homelessness. The definition for chronic homelessness was changed yet again in 2015. For a discussion about the differences in definitions, and the supporting federal statutes, see: U.S. Department of Housing and Urban Development [HUD]. (n.d.). *Homeless Emergency Assistance and Rapid Transition to Housing Act*. Retrieved from <https://www.hudexchange.info/homelessness-assistance/heardh-act/>.

For the purposes of this report, the major way in which homelessness definitions vary is whether or not an organization defines homelessness as including people living doubled up with family or friends due to loss of housing or economic hardship. In this report, we define homelessness to include people living doubled up. Including doubled up populations is particularly important for racial equity as communities of color often experience homelessness in this way. As explained in the introduction of this report, all the categories come with specific conditions, and sub-categories with additional criteria.

Additional terms that have multiple meanings include permanent supportive housing, support services, and supportive affordable housing. Traditionally, permanent supportive housing referred to providing housing and supportive services for those experiencing chronic homelessness and people with severe mental illnesses experiencing homelessness (this includes addiction services). The most commonly known model that has demonstrated effectiveness at moving and keeping people without stable housing into housing is known as Housing First.

As the word “permanent” implies, this model assumes that some people may need access to support services for their lifetime. Ideally as people become more stable in housing, the degree and intensity of supportive services will decrease, and for some will disappear altogether. Keep in mind that some people develop addictions and mental illness while living as homeless. In this instance, the model indicates that intense services at the beginning and no-barrier housing could result in a person managing/in remission/etc. from their addiction.

In Portland, local government, practitioners, and advocates have argued for expanding PSH and the concept of support services more broadly. First, permanent supportive housing models are based on research with individuals experiencing homelessness. Portland is applying this concept to families who also need permanent supportive services. Second, support services means services that people may not need permanently (such as medical care for chronic illness), but do need shorter terms services to support moving forward. Examples include job training, etc.

In this report, we follow Portland’s lead in using PSH to include individuals and families in need of PSH and to ensure inclusion of support services for all people experiencing homelessness.

Understanding Homelessness in the Portland Tri-County Region

There have been a number of reports assessing homelessness in the region in recent years. We summarize the most salient ones that pertain to the cost estimates of the study.

Point-In-Time (PIT) Reports

In order to receive federal funding, local areas termed Continuums of Care (CoCs) must conduct “Point-in-Time” Counts (PIT) of all homeless individuals and families in their jurisdictions at least every two years. These counts must take place during the last 10 calendar days of January. The count occurs over a single night. The required PIT Count requires a census-style count of people living unsheltered, in emergency shelter, or in transitional shelter.

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Some jurisdictions also report a doubled-up count that come from a range of sources, and in the case of Multnomah County are provided by school homelessness liaisons. The doubled-up data provided by schools for PIT Counts are not the same data required for annual homelessness reporting for the schools. The doubled-up counts, meaning individuals living with friends or family for economic reasons (e.g. someone living on a friend’s couch) are usually based on annual surveys of schools. This is separate from the annual school data reported (which is what we used for our analysis). The PIT Count Figure 2.1 combines results from the most recent PIT Count reports for Multnomah, Washington, and Clackamas Counties. Remember changes in definitions make data not perfectly comparable.

Figure 2.1: Timeline of PIT Counts Estimate in Clackamas, Multnomah, and Washington Counties by Housing Situation

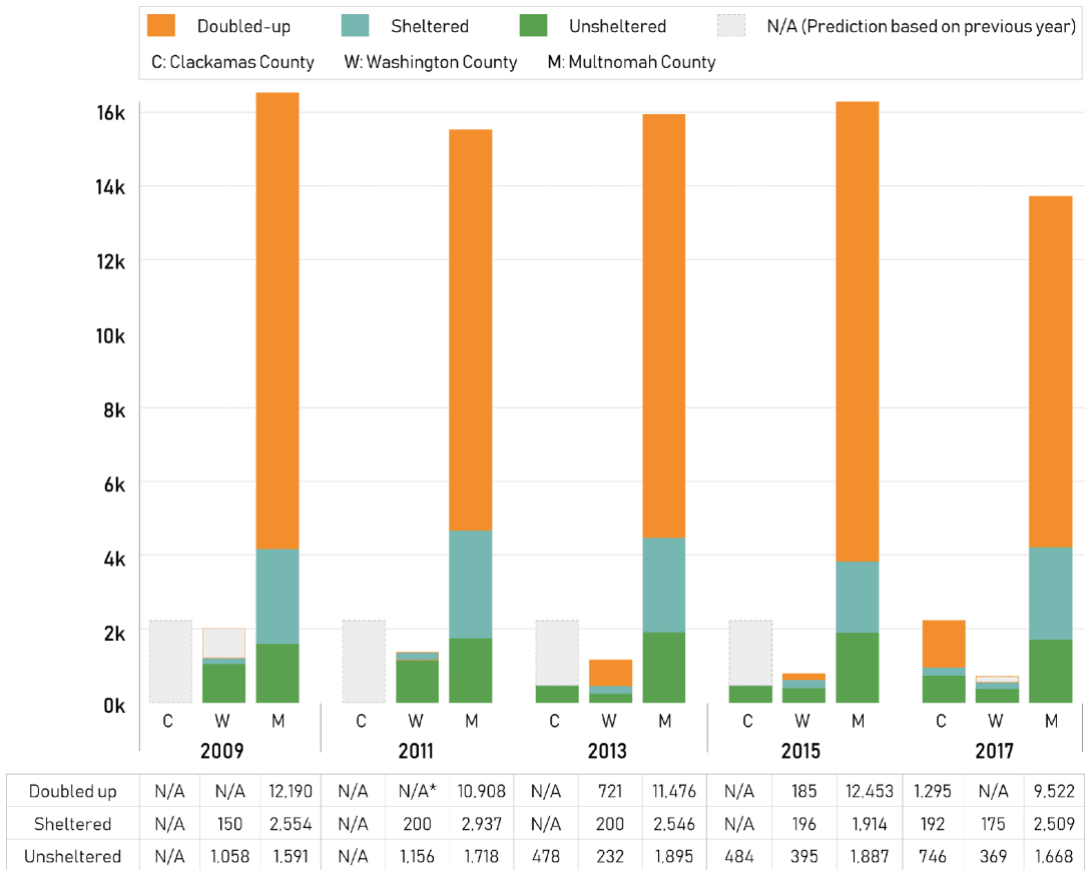
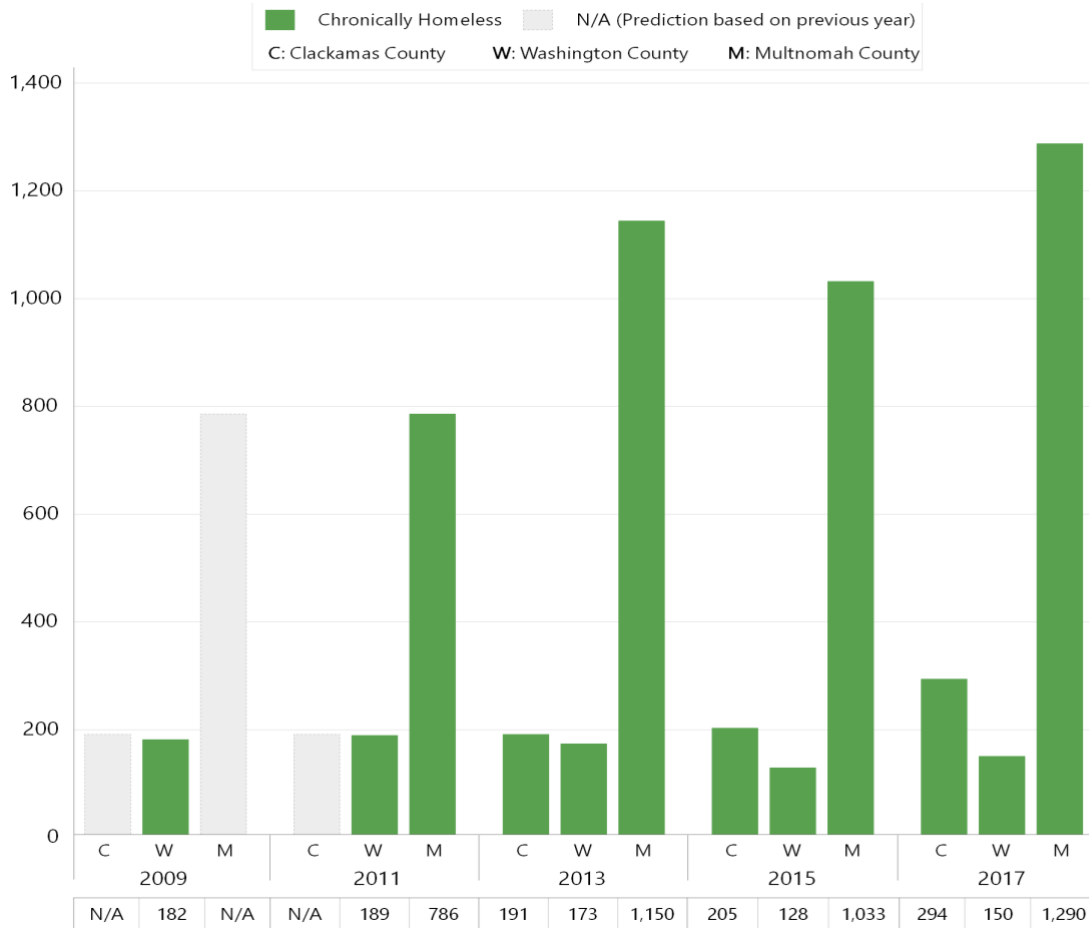


Figure 2.2 shows the number of chronically homeless individuals¹²⁹ in each county by year. Changes in methodology mean that these numbers are not always directly comparable from year to year. Note that methodologies for conducting the PIT Count may differ between counties as well.

Figure 2.2: Chronically Homeless Counts and Definitions by Year and County

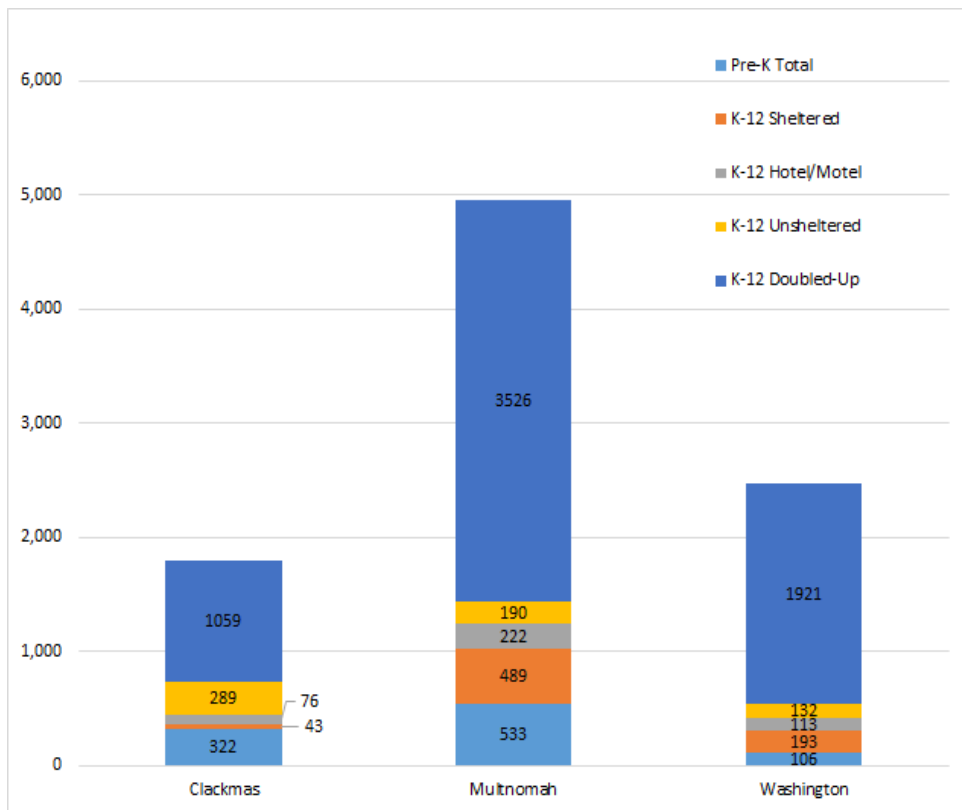


¹²⁹ A chronically homeless individual is one who has experienced homelessness for at least one year, or who has experienced four episodes of homelessness over the previous three years totaling one year, and who has a disabling condition (Department of Housing and Urban Development, 2018 Annual Homeless Assessment Report to Congress).

Reports from the Oregon Department of Education

As required by federal statute, Oregon public school districts employ student liaisons who identify and provide direct support to students experiencing homelessness, and their families. Records kept by school districts on homeless students are a valuable resource, above and beyond the PIT Count, to track child homelessness, especially as they use a different methodology (and therefore can capture students who may not be counted in the census-style PIT); and are done namely through individual identification by teachers and liaisons. Figure 2.3 shows the number of homeless students by housing situation and county in the 2017-2018 academic year.¹³⁰

Figure 2.3: School District Homeless Students by County and Housing Situation, 2017-2018 Academic Year



¹³⁰ Oregon Department of Education. (2018). McKinney-Vento Act: Homeless Education Program [web page]. Retrieved from: <https://www.oregon.gov/ode/schools-and-districts/grants/ESEA/McKinney-Vento/Pages/default.aspx>

Reports from the Corporation for Supportive Housing (CSH)

Over the last two years, CSH has produced two reports assessing Portland's supportive affordable housing. The first, released in September of 2018, is titled *Scaling Smart Resources, Doing What Works: A System-Level Path to Producing 2,000 Units of Supportive Housing in Portland and Multnomah County*, and used an approach combining stakeholder input, data analysis, and a review of best practices to produce a plan that can close the supportive housing gap in Portland. Costs total \$592 million to \$640 million over the first ten years, with annual investments of \$43 million to \$47 million thereafter for building operations and service costs.

The second CSH report, titled *Tri-County Equitable Housing Strategy to Expand Supportive Housing for People Experiencing Chronic Homelessness* and released in February 2019, expands the analysis to include the entire Metro area, while focusing on chronically homeless individuals. Additionally, the report models costs for supportive housing, in order to show the savings feasible under the required investment: a chronically homeless individual imposes an average annual cost, via use of public systems, that is nearly double the cost of providing supportive housing services. Units are distributed between counties according to need, and total costs over a ten-year period are \$923 million to \$998 million.

Addressing Housing Needs for Population Experiencing Homelessness

In this section, we estimate ranges of costs to provide housing and supportive services (temporary and permanent) to the population experiencing homelessness in the tri-county region (Clackamas, Multnomah, and Washington Counties). We start with the various counts of the total population without housing (including sheltered, unsheltered and doubled-up individuals) to create a reasonable estimate of people experiencing homelessness in 2017. We then estimate the number of people who will need permanent supportive housing (PSH) and the number of people who do not need PSH. Based on assumptions of families and household sizes, these numbers are then converted into numbers of households (family and individual households). Costs of housing provision (including capital and ongoing operating costs), service provision and administrative costs are estimated on a per household basis. Finally, we calculate a range of costs to provide housing to the homeless population based on several scenarios with different assumptions.

Assessing the true size of the homeless population is a tremendous challenge due to limited data. It is difficult to determine the population of a group that is not consistently engaged with public systems, is constantly in flux as individuals enter and exit homelessness, and lacks stable residential addresses (some non-profits will receive mail for their clients). Snapshot counts, such as the widely-used PIT Count cited below, miss individuals living doubled up as well while other methods require that households and individuals access services in order to be counted—services that are constrained by budgetary and staffing levels to assist only a certain number, and are rife with institutional and implicit biases. Stakeholders and entities engaged in working with

the homeless and financially disadvantaged population express that they are not able to assist every family and individual who requires their services. Further not all nonprofits providing services participate in government system data tracking. Based on in-person interviews, we know that at least some individuals will not show up in the government reports, and we have no way to account for their services. In short, counts derived from service provision can be assumed to be low as well.

At the same time, there is no central database shared among the data collectors, so it is possible for households and individuals to be counted multiple times. Lacking a cohesive central database across the region and consistent long-term definitions and reporting methods, this challenge is likely to continue.

With these things in mind, note that all counts presented in the below sections must be considered educated guesses. It is possible to state precise individual numbers from the datasets we used, (i.e., “The 2017 PIT records 1,668 unsheltered individuals in Multnomah County”) but it is not possible to state the exact number of households (a category not often used in counts) and overall individuals experiencing homelessness in the Portland tri-county area. This report takes the most straightforward approaches possible to estimate an overall count, rather than adding assumptions to assumptions in an attempt to zero in on a degree of precision that is not realistically achievable regardless of the amount of data points or statistical technique.

When estimating the costs we have tried to be as consistent with other reports as possible. Unfortunately with several of the reports, precise methodologies were not possible to locate. Further, where we were able to identify assumptions, we found that some of those assumptions are also best educated guesses based upon available data and stakeholder input. If we found new research, or new thinking by some of those same stakeholders, we changed assumptions. This still means that our calculations are also not precise in a way you might see in other types of studies, and are best used as an educated and informed estimate. Our work here is to help people in the Portland region understand the magnitude and scope of the affordable housing and homelessness challenges we face.

Our most important deviation from other reports about homelessness is a definition of homelessness that includes doubled-up populations. This definition is consistent with other federal agencies such as the Department of Education, and with A Home for Everyone, the inter-jurisdictional initiative to address homelessness within Multnomah County.

Population Experiencing Homelessness in 2017

In order to estimate the costs of providing housing to the population experiencing homelessness, we estimate the size of that population in the tri-county region. This estimate utilizes several data sources discussed in the previous section of this report, including the biennial Point-in-Time (PIT) counts, annual homelessness assessment reports (AHAR) along with related reports provided by each Continuum of Care (CoC) to HUD, and annual Oregon Department of Education counts of homeless children and youth. Table 2.3 below summarizes

the various homeless population counts from these data sources in calendar year 2017 or fiscal year 2017.

Table 2.3: Homeless Population Data Summary, 2017

	2017 Point-in-Time (PIT)			2017 PIT	FY 2017 Annual Homelessness Assessment Report ¹	2016-2017 Oregon Dept of Education Homeless Children & Youth ²
	Unsheltered	Sheltered	Doubled Up	Chronically Homeless		
Clackamas	746	192	1295 ³	294	723	1789
Multnomah	1668	2509	9522 ⁴	1290	11648	4960
Washington	369	175	5778 ⁵	150	764	2465

¹ Annual Homelessness Assessment Reports (AHAR) are reports to HUD and include unduplicated individuals served in emergency shelters (ES) or transitional housing (TH) between 10/1/2016-09/30/2017.
² Oregon Dept of Education counts includes both Pre-K and K-12 homeless populations. Within the K-12 homeless population, the number is further broken down into sheltered, doubled up, hotel/motel and unsheltered counts.
³ Clackamas County doubled up population includes 385 people counted as living in doubled up or unstable housing, and 910 children in the same situation (counted by Homeless School Liaisons).
⁴ Multnomah County doubled up population (reported in the 2017 Multnomah County PIT Report) is based on the Dept of Education doubled up population and household size assumptions (by school district).
⁵ The Washington County doubled up population was not reported in its 2017 PIT report. We estimate this number by using the Dept of Education Pre-K homeless, K-12 doubled up and K-12 hotel/motel (equal to 2,140), and assuming an average household size of 2.7 (2017 ACS 5-year averages for Washington County).

We used these data sources to help calculate the total homeless population for the purpose of estimating the range of costs to provide housing for the entire population, including all unsheltered homeless, sheltered homeless (in emergency shelters or transitional housing), and all doubled-up individuals. The AHAR counts of individuals served in emergency shelters (ES) and transitional housing (TH) and the doubled-up population estimates are annualized estimates (accounting for all individuals who might have experienced homelessness during the year), while the PIT Counts are snapshot estimates. Two main adjustments are applied to the data as follows:

- An annual extrapolation factor of 1.9¹³¹ was applied to convert the snapshot unsheltered homeless PIT Counts into an annualized unsheltered estimate. This is a low extrapolation factor, selected because of its use by the Multnomah County Joint Office of Homeless Services. A 2001 attempt arrived at extrapolation factors ranging from 2.5 up to as high as 10.2, meaning that our numbers may be low (although it is important to note that the level of services available is an important determinant; in areas with more awareness and services a lower number is more appropriate).¹³²

¹³¹ This factor was used in JOHS's calculations to annualize street PIT Counts, and is the factor used in the Rapid Results Institute program.

¹³² Metraux, S., Culhane, D., Raphael, S., White, M., Pearson, C., Hirsch, E. & Cleghorn, J. S. (2016). Assessing homeless population size through the use of emergency and transitional shelter services in 1998: Results from the analysis of administrative data from nine US jurisdictions. *Public Health Reports*.

- Clackamas County and Multnomah County utilized different estimation methodologies to calculate the total doubled-up population reported in their PIT reports. To be consistent across the tri-county region, we use the Department of Education Pre-K homeless, K-12 doubled-up and K-12 hotel/motel counts (last column of Table 3.1 above) for each county, multiplied with the county average household size (2017 ACS 5-year averages) to estimate the doubled-up population for the purposes of our cost estimates.¹³³

Because our doubled-up data is derived from schools, it does not include doubled-up individuals who are adults, aside from those with children. Adults who are temporarily cohabiting with friends and family due to financial hardship are not represented in our data at all, and it is known that the size of this population is fairly significant: the 2011 American Housing Survey found 25 million individuals living with relatives who were not their spouses or children, 11.5 million living with nonrelatives, and 3.6 million households with more than one family in them (541,000 of which were not related) nationwide.¹³⁴ We assume not all of these are voluntary arrangements, and the AHS may not be including adults who are not able to live on their own but whose friends and families decide not to turn them out. The best data available at the time of writing was that from schools, and it seems likely that families with children are more likely to cohabit out of necessity rather than choice, so we use the referenced schools' data, but offer it with the caveat that it by definition represents a subsection of the actual doubled-up population.

These homeless population estimates are summarized in Table 2.4, totaling 38,263 homeless individuals in the tri-county region.

Table 2.4: Homeless Population Estimates, 2017

	FY2017 AHAR Count (ES & TH)	2017 Unsheltered PIT x Annual Extrapolation Factor	FY2017 Doubled-Up Estimate	Total Estimated Homeless Population
Clackamas	723	1,417	3,788	5,928
Multnomah	11,648	3,169	10,274	25,091
Washington	764	701	5,778	7,243
Total	13,135	5,287	19,840	38,263

¹³³ People can sometimes inexpensive lodging at low cost motels. Motels usually do not include access to a kitchen, and are not considered permanent housing.

¹³⁴ U.S. Department of Housing and Urban Development [HUD]. (2011). American housing survey reveals rise in up households during recession. *PD&R Edge*. Retrieved from: https://www.huduser.gov/portal/pdredge/pdr_edge_research_012714.html

Homeless Individuals with Permanent Supportive Housing (PSH) Need

We further break down the estimate of the total population experiencing homelessness into two categories—those who need permanent supportive housing (PSH), and those who do not need PSH. The Corporation for Supportive Housing (CSH)'s 2018¹³⁵ report to the Multnomah County Board of Commissioners and Portland City Council estimates that 90% of individuals experiencing chronic homelessness and 10% of all households experiencing homelessness will need permanent supportive housing (pg. 11).

Following consultation with local experts, we received conflicting advice about whether these estimates for PSH could be applied to the doubled-up population. Some stated that this rate would be lower for doubled-up populations based on a belief that many people who require PSH do not cohabit successfully. However, others countered that because we actually know so little about the doubled-up population we have no idea how many people may be able to survive doubled-up and have families and friends taking risks to house them.

We reviewed the available academic literature, of which there was little, consulted with a research psychologist, and examined national rates of disabilities that qualify for PSH (including mental illness, drug or alcohol use disorders, or physical and cognitive disabilities).^{136, 137} We found no estimates about PSH rates for doubled-up populations, and decided that we would apply the ratios CSH identified for HUD defined homelessness to our broader definition that includes doubled-up populations.¹³⁸

In the interest of simplicity we follow a similar methodology and estimate that the homeless population with PSH need is the sum of:

- (i) Current homeless population with PSH need:
90% of chronically homeless population (2017 PIT Counts) = 1,561

¹³⁵ CSH. (2018). *Scaling smart resources, doing what works: A system-level path to producing 2,000 units of supportive housing in Portland and Multnomah County* [PDF file]. Retrieved from:

http://ahomeforeveryone.net/s/CSH-Supportive-Housing-Report_Sept7_FINAL.pdf

¹³⁶ National Institute of Mental Health. (2019). Mental illness. Retrieved from

<https://www.nimh.nih.gov/health/statistics/mental-illness.shtml>

¹³⁷ Estimates for people who have disabilities that qualify for PSH are difficult to find as eligibility requires both a medical diagnosis and that people demonstrate that the “disability must also be of long and continuing duration, substantially impede the program participant’s ability to live independently, and be improved by the provision of more suitable housing conditions.” NIMH estimates that 4.5% of the adult population has a serious mental illness (<https://www.nimh.nih.gov/health/statistics/mental-illness.shtml>). Estimates of drug or alcohol use disorders vary. One study, funded by NIH, found that 10% of adults had a drug disorder in their lifetime, and 30% had an alcohol disorder (<https://www.nih.gov/news-events/news-releases/10-percent-us-adults-have-drug-use-disorder-some-point-their-lives>). National estimates for physical, intellectual, and emotional disabilities were not easily accessible, and where they were located, it was not possible to tell which might prevent independent living.

¹³⁸ We would like to note that CSH does not agree with this decision “because they do not have data nor have they done the analysis to support it” (personal note 8/5/2019).

10% of total estimated homeless population (Table 2.4) = 3,653¹³⁹

To estimate the population of those who returned to homelessness after being in permanent supportive housing, we examine retention rates for this population. The rate of return to homelessness after exiting from permanent supportive housing within two years is reported at 3% in Clackamas County, 26% in Multnomah County and 9% in Washington County (HUD SPM 2017 reports). A Home for Everyone's (AHFE) FY2017 report cites 26% who are not confirmed still in housing after 12 months of their permanent housing placement. Because these retention numbers may include both those served in PSH and RRH (rapid re-housing) and are highly dependent on the ability to establish contact with this population after a certain period of time, we further obtain annual performance reports (APRs) from the three counties to estimate more accurate retention rates. We find a weighted average retention rate¹⁴⁰ of approximately 92.15%, which means that 7.85% of those previously served in PSH return back to homelessness.

- (ii) PSH inflow from reentry (estimated population of those who were previously served in PSH, but returned to homelessness) = 5,691 x 7.85% = 447

The estimated population lacking housing who need PSH in the tri-county region is equal to 5,661 individuals, about 15% of the total population experiencing homelessness.

Households Experiencing Homelessness

In order to estimate the costs of providing housing to the population experiencing homelessness, we estimate the number of homeless households, or amount of housing units needed, from the total homeless population estimate. We separately estimate the number of households for the homeless population with PSH need and the homeless population without PSH need.

Homeless Households with PSH Need

While FY2017 AHAR reports indicate that 38.7% of the chronically homeless population (which comprises a large component of the homeless population with PSH need) served in PSH were in families, the 2017 Multnomah County PIT Count showed that 3.9% of those chronically homeless are in families. This differential suggests that more PSH-related services are targeted toward families than individuals, meaning that the AHAR percentage may be biased to be higher than the actual number of families within this population. At the same time, expert consultation

¹³⁹ Ninety percent of the chronically homeless population (1,734) is equal to 1,561. Ten percent of the remaining homeless population is determined using the total number of homeless (38,263) less the chronically homeless (1,734), a tenth of which is 3,653 (rounded).

¹⁴⁰ We utilized three alternative measures to calculate the retention rate using the APR data from each county (all of the following are calculated as a percentage of the total number of people served in PSH): (1) those who stayed in PSH; (2) those who stayed in PSH or exited to a permanent destination; (3) those who did not exist to a temporary or unknown destination. The weighted average retention rate is weighted by number of individuals served in PSH in each county.

indicates that the PIT undercounts families. We concluded that it is reasonable to split the difference, and use 21.35% to estimate the number of family households with PSH need:

- (i) Family households with PSH need = $5,661 \times 21.35\% / 2.5 = 483$ family households
- (ii) (Note: We assume an average household size of 2.5 persons in the tri-county region using the 2017 ACS 5-year estimates.)
- (iii) Individual households with PSH need = $5,661 \times 78.65\% = 4,452$ individual households (Note: an “individual household” is a household consisting of a single individual who resides alone.)

The estimated homeless households with PSH need in the tri-county region is equal to 483 family households and 4,452 individual households, totaling 4,936 households with PSH need.

Table 2.5: Number of People Served in PSH by Families/Non-families (Source: FY 2017 AHAR)

	FY 2017 AHAR Numbers Served in PSH		
	People in families ¹⁴¹	People not in families	Family Percentage
Clackamas	163	178	47.8%
Multnomah	1888	2958	39.0%
Washington	154	350	30.6%

Homeless Households without PSH Need

The 2017 PIT reports from the three counties reported that 15% to 37.5% of the homeless population are in families. We use school data, where nearly all households are families (as the data points are children, typically accompanied by one or both parents). For simplicity we assume that all 19,840 doubled-up homeless are in families. We follow the CSH (2019) study in assuming that the 19% of the remainder of the homeless population are in family households (which is in line with the 15-37.5% range found in the PIT counts, here applied to the PIT and AHAR data). Recall that the 2017 AHAR report found 13,135 homeless individuals, and the 2017 PIT Count found 5,288. Therefore, the number of family and individual homeless households without PSH need can be found as follows:

- (i) Doubled-up households = $19,840 \text{ individuals} / 2.5 = 7,936$ family households;
Individuals in families (AHAR, PIT) = $(13,135 \text{ individuals} + 5,288 \text{ individuals}) \times 19\% / 2.5 = 1,400$ family households
- (ii) Family households without PSH need (AHAR, PIT): $1,400$ family households – 483 family households with PSH need = 917 family households
- (iii) Total family households without PSH need = $7,936$ family households (doubled up) + 917 family households (AHAR, PIT) = $8,853$ family households
- (iv) Individual households (AHAR, PIT) = $(13,135 \text{ individuals} + 5,288 \text{ individuals}) \times 81\% = 14,923$ individual households.
- (v) Individual households without PSH need: $14,923$ individual households (AHAR, PIT) – $4,452$ individual households with PSH need = $10,471$ individual households

¹⁴¹ People in families = number of people in families.

The estimated homeless households without PSH need in the tri-county region is equal to 8,853 family households and 10,471 individual households. This totals 19,324 households without PSH need.

Cost Assumptions

The costs of providing housing to people experiencing homelessness can be divided into two essential categories: the cost of providing housing units (via development or acquisition) and the costs of services and administration.

Costs of Housing Provision

To meet the housing needs of those currently experiencing homelessness, public agencies and private organizations can choose to: build new housing units, acquire existing units, rehabilitate existing housing, or privately lease housing units on the rental market. Developing, acquiring, or rehabilitating housing units usually entails higher upfront capital costs, but have lower ongoing operating costs. The private lease of housing units entails costs that are more evenly spread through the analysis time periods (CSH, 2019).¹⁴² However research has demonstrated that leasing units in the private market may lead to landlords charging more rent and lease units at higher rates than their quality warrants.¹⁴³

Because rents vary considerably by neighborhood in the Portland region, we included a range of rents for consideration. Our goal here was to create estimates that would not imply the concentration of available units in just one area of the region (i.e., primarily in the outskirts of the region and lower-cost neighborhoods). A healthy community has a range of housing types and costs, and we used a range of rents to help encourage that.

Table 3.4 summarizes the housing cost assumptions below (page 76).

The costs of developing housing units, including new construction and rehabilitation, mainly follow the vetted assumptions from the CSH (2018 and 2019) reports (based on “actual costs reported by PHB and approved by stakeholder advisory groups”). The only adjustment comes from the Metro Affordable Housing Bond Program Work Plan (2019) and Regional Housing Bond Financial Modeling Summary Memorandum (2018). These sources peg the average construction cost of housing units at \$215,000 (a weighted average for all housing unit sizes),

¹⁴² Per CSH 2019 p. 23: “Because the ongoing costs of providing rental assistance for private market units is greater than the annual operating costs of newly constructed supportive housing units, the total cost of leasing supportive housing units in the private rental market becomes significantly more expensive in the long run than building new units. Using the cost and inflation assumptions above, the ongoing cost of newly developed units becomes lower than the cost of leased units in year 30 for studio and one-bedroom units and in year 23 for two and three-bedroom units.”

¹⁴³ Desmond, D, & Perkins, K. (2016). Are landlords overcharging housing voucher holders. *City and Community*, (15), 137-162.

and the cost of rehabilitation of existing units at \$190,000 (including \$150,000 building acquisition cost and \$40,000 rehabilitation cost, all in 2018 dollars). CSH (2018) estimates that annual operating and maintenance costs run between \$6,000 and \$8,000 per unit. This range is similar to Portland area annual expenses reported by Multifamily NW's The Apartment Report (Spring 2019), which estimates a cost of \$6.01 to \$7.36 per square foot (a similar result when factoring in unit size). Note that these operating costs only pertain to the maintenance and operation of the buildings themselves, and do not include any additional support services that may be provided. Support service costs are estimated elsewhere.

We examined three main data sources to estimate market rents in the tri-county region: the FY 2017 HUD Fair Market Rent (FMR) for the Portland-Vancouver-Hillsboro, OR-WA MSA¹⁴⁴, 2017 Portland State of Housing Report¹⁴⁵, and FY 2017 HUD Hypothetical Small Area Fair Market Rent¹⁴⁶ for all regional zip codes. To avoid underestimation of rental prices, we pulled out both average rents by bedroom for the City of Portland and the maximum rent by bedroom from the individual neighborhood estimates in the Portland State of Housing Report. We also identified the maximum fair market rent in all zip codes covered by the HUD Hypothetical Small Area FMR document. Table 2.7 summarizes these rental prices, which are also generally consistent with the overall average rents reported in the MultiFamily NW (Spring 2019) report.

The ranges of annual rent assistance specified in Table 2.6 are the average and maximum annual rents for individual housing units (0 to 1 bedroom)¹⁴⁷ and family units (2 to 4 bedrooms) calculated from prices in Table 2.7. (For example, cost ranges for individual units are estimated using the average value of \$946 and the upper-end value of \$1,580 per month, for annual costs of \$11,352 to \$18,960. The information in these tables assume that 100% of the cost is paid on behalf of the renter, unlike rent calculations for housing rent assistance later in the report.)

Table 2.6: Costs of Housing Provision (development vs. private lease), 2017

Development of Housing Units	
Individual Units (0-1 bedroom)	\$215,000 - \$218,000 one-time cost per unit
Family Units (2-4 bedrooms)	\$338,000 one-time cost per unit
Rehabilitation of existing units	\$190,000 one-time cost per unit

¹⁴⁴ U.S. Department of Housing and Urban Development [HUD]. (2017). Fair market rents [web page]. Retrieved from https://www.huduser.gov/portal/datasets/fmr.html#2017_data

¹⁴⁵ Portland Housing Bureau. (2017). *State of housing in Portland*. Retrieved from <https://www.portlandoregon.gov/phb/article/681253>

¹⁴⁶ U.S. Department of Housing and Urban Development [HUD]. (2017). *Small area fair market rents: FY2017 hypothetical small area FMRs*. Retrieved from <https://www.huduser.gov/portal/datasets/fmr/smallarea/index.html#2017>

¹⁴⁷ 0 bedrooms is a studio.

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Operating Costs (<i>annual</i>)	\$6,000–\$8,000 per unit per year
Private Lease of Housing Units (rent assistance, annual)	
Individual units (0-1 bedroom)	\$11,352–\$18,960 per unit per year
Family units (2-4 bedrooms)	\$14,904–\$41,000 per unit per year

Table 2.7: 2017 Tri-county Region Rental Price Summary, monthly

	0 bed	1 bed	2 bed	3 bed	4 bed
2017 HUD FMR	\$946	\$1,053	\$1,242	\$1,808	\$2,188
2017 Portland State of Housing Report					
City Average	\$1,130	\$1,350	\$1,599	\$1,717	\$1,975
Neighborhood Average Max	\$1,271	\$1,546	\$2,431	\$2,971	\$3,417
2017 HUD Hypothetical Small Area FMR					
Zip Code Max	\$1,420	\$1,580	\$1,860	\$2,710	\$3,280
Note that we estimated 4 bedroom units to cost 15% more than 3 bedroom units for the Portland State of Housing Report numbers as this report does not include averages for more than 3 bedroom units.					

Cost of Services and Administration

The cost of services can vary significantly depending on the challenges and conditions that each household encounters, and administrative costs also vary in relation. We identify five categories of costs for services and administration. Some of our estimates may include limited overlaps across categories as we drew from different data and estimate sources. We sought to avoid overlap as much as possible.

1. *Overall system support, employment services = \$450 per year per household*
We estimated this cost using costs spent in these two areas according to the Multnomah County Homeless Services System Program Spending Dashboard (FY 2014–FY 2017)¹⁴⁸ in Fiscal Year 2017 and divided by the number of people served. The system support category in this dashboard consists of “programs that support the entire homeless services system, including administrative costs, information and referral, research and evaluation and benefits recovery programs.” Employment services, according to the dashboard, consists of “programs connecting employment and housing resources for individuals and families experiencing homelessness.” While this cost category covers a wide range of general and employment services provided to homeless households, our discussions

¹⁴⁸ A Home for Everyone. (2017). *Homeless services system program spending*. Retrieved from <http://ahomeforeveryone.net/services-spending-dashboard>

have highlighted that these services may not be provided at an adequate or efficient level due to funding or programmatic limitations.

2. *Services for homeless households with PSH need = \$8,800 to \$10,000 per year per household*

CSH (2018 and 2019) estimated annual supportive service costs for homeless households with PSH need to be \$10,000, which reflects “the cost of tenancy support services at a ratio of one case manager to 10 clients for scattered site and one case manager to 15 clients for single site. This figure also includes flexible service funding for people with specific needs not covered by community-based and Medicaid-paid services including additional mental health care, substance use treatment and children’s services.” Using the Multnomah Spending Dashboard expenses targeted toward the chronically homeless population (who often have PSH needs), we estimate the low-end value service costs to be approximately \$8,800, including services categorized in the “Supportive Housing” and “Housing Placement and Retention” general program areas.

3. *Services for homeless households without PSH need = \$5,700 per year per household*

While higher levels of services are typically provided to households with PSH need, homeless households without PSH may also require services. This is estimated by taking all costs categorized in “Supportive Housing” and “Housing Placement and Retention” divided by the number of people served (from the Multnomah County Spending Dashboard and internal county documents provided to NERC).

4. *Administration cost for system = 2.4% of all service costs*

We estimated the administrative costs to oversee the system of providing PSH housing and non-PSH housing as well as associated services. In the absence of an operational system as described that covers the tri-county area, we utilized the administrative costs of the Joint Office of Homeless Services (JOHS) as a proxy. In FY 2017, the administrative costs of JOHS were \$1.8 million, with a total service cost of \$83.8 million. Note these administrative costs do not include the costs of individual programs, agencies or organizations that serve the homeless population, but rather the umbrella organization(s) that oversee and operate the system as a whole. Additionally, several stakeholders expressed concern that this number was an underestimation.

5. *Administration cost for rent assistance = \$800 per household per year*

Home Forward, Portland’s housing authority, estimated that administrative costs were approximately \$800 per household for their Short Term Rent Assistance (STRA) in FY 2017.

Cost Scenarios & Results

In order to estimate the total costs to provide housing to the homeless population, we make a few more financial and scenario assumptions:

- Annual inflation rate = 2%¹⁴⁹

¹⁴⁹ Federal Reserve Bank of Philadelphia. (2019). Short-Term and Long-Term Inflation Forecasts: Survey of Professional Forecasters. Retrieved from <https://www.philadelphiafed.org/research-and-data/real-time-center/survey-of-professional-forecasters/historical-data/inflation-forecasts>

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- Annual inflation for construction costs = 6% (CSH, 2019)
- Annual nominal discount rate = 3%
- Time frame for analysis = 2024 to 2033 (10 years)
- Capital costs for public development of housing units occur in 2024 and 2025 (50% in each year)¹⁵⁰

We also assume that for each homeless household with PSH need, that these households are housed in a combination of public development, which may be new construction or acquisition and rehabilitation of existing units, and/or private lease of rental units. Public development is assumed to occur in years 2024 and 2025, and private lease of rental units are assumed to start in year 2024. We also assumed that these housing units are provided in conjunction with supportive services, which begin as soon as the households are housed.

For each homeless household without PSH need, we assume that these households would be housed through private lease of rental units on the market (via rent assistance) for an average of two years with associated services.^{151,152} Currently, data for federal or regional rental assistance programs do not provide appropriate guidance for the length of time that households may need rent assistance or supportive services, as many of these programs are limited by the amount of funding or other eligibility requirements.¹⁵³

Table 2.8 details the high and low-cost estimates for housing and services as well as supports and administration costs used to create the cost scenarios. Table 2.9 shows the cost scenarios of providing housing to homeless populations at net present value. For example, Scenario 2 would include 70% public development (developed in 2024 and 2025) and 30% private lease for PSH households with supportive services through 2033, as well as two years of private lease and services for non-PSH households experiencing homelessness with high- and low-cost estimates.

¹⁵⁰ While construction will not take place over two years, it makes essentially no difference to the final results of the cost modelling in this case. For that reason, and to make our process as simple and straightforward as possible, we assume two-year construction period. Similarly, any units constructed could be used for households that do or do not need PSH. Their designation as new units was only for simplicity, and consistently with other reports.

¹⁵¹ We make this assumption for simplicity. While the housing gap analysis portion of this report provides some insight into how many units of which types might need to be constructed, arriving at a value suitable for inclusion at this point requires analysis beyond the scope of this report.

¹⁵² Gubits, D., Shinn, M., Wood, M., Brown, S. R., Dastrup, S. R., & Bell, S. H. (2018). What Interventions Work Best for Families Who Experience Homelessness? Impact Estimates from the Family Options Study. *Journal of Policy Analysis and Management*, 37(4), 835-866.

¹⁵³ Some programs with two-year end dates will allow for renewal; others are more stringent with the 24-month termination date. We chose to use a two-year funding period for the analysis to be consistent with HUD's short-term rent assistance program requirements. Each additional 24-month period would add approximately \$1.5 billion - \$1.6 billion to the NPV cost.

Table 2.8: High and Low-Cost Estimates for Scenario Analysis

	Low	High
Development/Acquisition of housing units (one-time)		
<ul style="list-style-type: none"> ● Individual units (0-1 bedroom) ● Family units (2-4 bedrooms) 	\$190,000	\$218,000 \$338,000
Operating costs (per year)	\$6,000	\$8,000
Private lease of housing units (rent assistance) (per year)		
<ul style="list-style-type: none"> ● Individual units (0-1 bedroom) ● Family units (2-4 bedrooms) 	\$11,352 \$14,904	\$18,960 \$41,000
Service cost for homeless households with PSH need (per year)	\$8,800	\$10,000
Service cost for homeless households without PSH need (per year)	\$5,700	
Other system support and employment services for all homeless households (per year)	\$450	
Administrative costs ¹⁵⁴ (per year)		
For all services	2.4%	
For administration of rental assistance	\$800 per household	

Table 2.9: Cost Scenarios for Housing Homeless Populations in Net Present Value (2019 dollars)

	Housing options (development vs. lease cost scenarios)	Additional costs	Low Cost	High Cost
Scenario 1	100% public development	services, rent assistance, operation, administration costs (2 years for non PSH and 10 years for PSH)	\$2,975,323,364	\$4,100,532,252.5
Scenario 2	70% public development and 30% private lease		\$2,774,792,311	\$ 4,092,731,516
Scenario 3	50% public development and 50% private lease		\$2,589,051,959	\$ 3,921,826,474

Table 2.10 (p. 78) provides additional details of all cost estimates by cost category, expressed in nominal dollars of the year that the expense is occurred. Note that the first two years of costs

¹⁵⁴ Note that we received feedback that these rates were likely too low; however, we were not able to conduct additional research to produce a better estimate.

are high compared to ongoing costs due to the upfront capital costs associated with the public development of housing units, as well as due to the assumed two years of rent assistance and services that are provided to homeless households without PSH need. Because administrative costs are directly proportional to the service costs, they are also higher in the first two years of the cost analysis.

Additional Considerations

While the HUD homelessness definition includes individuals who will soon exit or have recently exited temporary institutions, such as those in the criminal justice and mental health system, our cost estimates do not include these populations. Data do exist for these groups, but they are small in terms of absolute size when compared to the overall homeless population. Additionally, concerns about overlap and likely demographic and household differences indicate that inclusion at this stage is not appropriate.

In addition, one major concern for homeless assistance programs is a low prevailing wage. Many individuals who work in necessary roles to assist with basic and social services (which are generally employed by non-profit organizations, contracted by local government agencies to provide direct services) earn a wage that cannot be considered a “living” or “housing” wage appropriate to the region in which they reside. NERC does not estimate costs for services that reflect an appropriate living wage, because while this is a very important issue, the analysis required would dramatically increase the cost of provision and would require an intensive survey of individual organizations to determine prevailing wages in different roles. Rather, the estimates in this report reflect current wages, as used by previous reports and currently available data. We encourage future projects to take the low prevailing wage into account, and develop better estimates for a living or housing wage in the region.

Major efforts to fund affordable and supportive housing are underway in the tri-county region. Some of these include the Portland Housing Bond passed by voters in 2017 which involves funding for a targeted 600 units affordable to households with 0–30% AMI (area median income), 300 of which will be permanent supportive housing units and 50% of all units will be family sized units. In addition, the Metro Affordable Housing Bond was passed at the end of 2018, creating a fund to build 3,900 affordable housing units, with 1,600 of those dedicated to households 0–30% AMI. The Metro bond includes funding only for the capital cost portions, but not operating or service costs associated with the housing, and will need to be leveraged with additional funding sources for those costs. As these programs are currently ongoing, we did not include the anticipated new units created through the bonds.

Another significant element not addressed by this report is the impact that providing housing assistance at a previously unprecedented level would have on the housing market. Obviously, a massive influx of government assistance into the rental market would have dynamic implications for pricing and supply. It is not possible at this stage to determine those impacts, and this report therefore takes a static approach to market analysis and assumes no change, rather than assuming an uncertain level of change.

Lastly, we have not calculated specific costs related to supporting communities of color. Addressing historic inequities associated with racism are essential in providing housing for people experiencing homelessness, because people of color are disproportionately represented in homelessness rates. These costs may include anti-racism training for service providers, capacity building in organizations that serve people of color but do not specialize in homelessness, more intensive healthcare services, etc. These additional or more intensive supports reflect the unequal treatment that people of color have received. Additional research is needed to understand the magnitude of additional costs which a homelessness services and housing system centered on the needs of people of color would cost.

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Table 2.10: Detailed Cost Scenario Estimates by Cost Category (nominal dollars; not adjusted
for inflation)

	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Scenario 1[LOW]										
Capital Cost	\$665,148,521	\$705,057,432	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Operating Cost	\$16,675,625	\$34,018,275	\$34,698,640	\$35,392,613	\$36,100,465	\$36,822,475	\$37,558,924	\$38,310,103	\$39,076,305	\$39,857,831
Private Lease Cost	\$288,104,039	\$293,866,120	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Service Cost (PSH)	\$24,946,735	\$50,891,339	\$51,909,166	\$52,947,349	\$54,006,296	\$55,086,422	\$56,188,151	\$57,311,914	\$58,458,152	\$59,627,315
Service Cost (non-PSH)	\$126,524,050	\$129,054,532	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Service Cost (all)	\$12,540,111	\$12,790,914	\$2,654,446	\$2,707,535	\$2,761,686	\$2,816,919	\$2,873,258	\$2,930,723	\$2,989,337	\$3,049,124
Admin Cost	\$21,694,023	\$22,738,600	\$1,309,527	\$1,335,717	\$1,362,432	\$1,389,680	\$1,417,474	\$1,445,823	\$1,474,740	\$1,504,235
Scenario 1[HIGH]										
Capital Cost	\$804,317,341	\$852,576,381	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Operating Cost	\$22,234,167	\$45,357,700	\$46,264,854	\$47,190,151	\$48,133,954	\$49,096,633	\$50,078,566	\$51,080,137	\$52,101,740	\$53,143,774
Private Lease Cost	\$644,990,632	\$657,890,445	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Service Cost (PSH)	\$28,348,562	\$57,831,067	\$58,987,689	\$60,167,442	\$61,370,791	\$62,598,207	\$63,850,171	\$65,127,175	\$66,429,718	\$67,758,312
Service Cost (non-PSH)	\$126,524,050	\$129,054,532	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Service Cost (all)	\$12,540,111	\$12,790,914	\$2,654,446	\$2,707,535	\$2,761,686	\$2,816,919	\$2,873,258	\$2,930,723	\$2,989,337	\$3,049,124
Admin Cost	\$21,775,667	\$22,905,153	\$1,479,411	\$1,508,999	\$1,539,179	\$1,569,963	\$1,601,362	\$1,633,390	\$1,666,057	\$1,699,378
Scenario 2[LOW]										
Capital Cost	\$465,603,964	\$493,540,202	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Operating Cost	\$11,672,937	\$23,812,792	\$24,289,048	\$24,774,829	\$25,270,326	\$25,775,732	\$26,291,247	\$26,817,072	\$27,353,413	\$27,900,482
Private Lease Cost	\$337,033,800	\$343,774,476	\$20,704,515	\$21,118,606	\$21,540,978	\$21,971,797	\$22,411,233	\$22,859,458	\$23,316,647	\$23,782,980
Service Cost (PSH)	\$32,430,755	\$50,891,339	\$51,909,166	\$52,947,349	\$54,006,296	\$55,086,422	\$56,188,151	\$57,311,914	\$58,458,152	\$59,627,315
Service Cost (non-PSH)	\$126,524,050	\$129,054,532	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Service Cost (all)	\$12,540,111	\$12,790,914	\$2,654,446	\$2,707,535	\$2,761,686	\$2,816,919	\$2,873,258	\$2,930,723	\$2,989,337	\$3,049,124
Admin Cost	\$24,141,524	\$25,051,842	\$3,669,034	\$3,742,415	\$3,817,263	\$3,893,608	\$3,971,481	\$4,050,910	\$4,131,928	\$4,214,567
Scenario 2[HIGH]										
Capital Cost	\$603,517,184	\$639,728,215	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

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Operating Cost	\$15,563,917	\$31,750,390	\$32,385,398	\$33,033,106	\$33,693,768	\$34,367,643	\$35,054,996	\$35,756,096	\$36,471,218	\$37,200,642
Private Lease Cost	\$740,971,797	\$755,791,233	\$38,283,093	\$39,048,755	\$39,829,730	\$40,626,325	\$41,438,851	\$42,267,629	\$43,112,981	\$43,975,241
Service Cost (PSH)	\$36,853,131	\$57,831,067	\$58,987,689	\$60,167,442	\$61,370,791	\$62,598,207	\$63,850,171	\$65,127,175	\$66,429,718	\$67,758,312
Service Cost (non-PSH)	\$126,524,050	\$129,054,532	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Service Cost (all)	\$12,540,111	\$12,790,914	\$2,654,446	\$2,707,535	\$2,761,686	\$2,816,919	\$2,873,258	\$2,930,723	\$2,989,337	\$3,049,124
Admin Cost	\$24,247,661	\$25,218,396	\$3,838,919	\$3,915,697	\$3,994,011	\$4,073,891	\$4,155,369	\$4,238,477	\$4,323,246	\$4,409,711
Scenario 3[LOW]										
Capital Cost	\$332,574,260	\$352,528,716	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Operating Cost	\$8,337,812	\$17,009,137	\$17,349,320	\$17,696,307	\$18,050,233	\$18,411,237	\$18,779,462	\$19,155,051	\$19,538,152	\$19,928,915
Private Lease Cost	\$350,300,823	\$357,306,839	\$34,507,526	\$35,197,676	\$35,901,630	\$36,619,662	\$37,352,056	\$38,099,097	\$38,861,079	\$39,638,300
Service Cost (PSH)	\$37,420,102	\$50,891,339	\$51,909,166	\$52,947,349	\$54,006,296	\$55,086,422	\$56,188,151	\$57,311,914	\$58,458,152	\$59,627,315
Service Cost (non-PSH)	\$126,524,050	\$129,054,532	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Service Cost (all)	\$12,540,111	\$12,790,914	\$2,654,446	\$2,707,535	\$2,761,686	\$2,816,919	\$2,873,258	\$2,930,723	\$2,989,337	\$3,049,124
Admin Cost	\$24,261,269	\$25,051,842	\$3,669,034	\$3,742,415	\$3,817,263	\$3,893,608	\$3,971,481	\$4,050,910	\$4,131,928	\$4,214,567
Scenario 3[HIGH]										
Capital Cost	\$431,083,703	\$456,948,725	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Operating Cost	\$11,117,083	\$22,678,850	\$23,132,427	\$23,595,075	\$24,066,977	\$24,548,316	\$25,039,283	\$25,540,068	\$26,050,870	\$26,571,887
Private Lease Cost	\$765,502,807	\$780,812,863	\$63,805,156	\$65,081,259	\$66,382,884	\$67,710,542	\$69,064,752	\$70,446,048	\$71,854,968	\$73,292,068
Service Cost (PSH)	\$42,522,844	\$57,831,067	\$58,987,689	\$60,167,442	\$61,370,791	\$62,598,207	\$63,850,171	\$65,127,175	\$66,429,718	\$67,758,312
Service Cost (non-PSH)	\$126,524,050	\$129,054,532	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Service Cost (all)	\$12,540,111	\$12,790,914	\$2,654,446	\$2,707,535	\$2,761,686	\$2,816,919	\$2,873,258	\$2,930,723	\$2,989,337	\$3,049,124
Admin Cost	\$24,383,735	\$25,218,396	\$3,838,919	\$3,915,697	\$3,994,011	\$4,073,891	\$4,155,369	\$4,238,477	\$4,323,246	\$4,409,711

Preventing homelessness and stabilizing housing

In this section, we estimate the potential cost to prevent homelessness and stabilize housing by identifying households who are most susceptible or most at-risk of losing their housing due to their low wages, high housing costs, and rental costs. We estimate the cost of providing universal rent assistance to all low-income renter households (between 0–80% MFI) who are cost burdened (>30% of income spent on rent¹⁵⁵) or severely cost burdened (>50% of income spent on rent), and the administrative costs for such a program. We then conduct an affordable housing gap analysis that estimates the gap between the supply of housing units (units with rents below 30% of MFI) and demand of housing units (households with income between 0–80% MFI) for affordable housing.¹⁵⁶ We then estimate the availability of rental housing units with rents between 30–80% MFI for this potential rent assistance program.

Background Context

We provide background information here to help illustrate the state of housing (in 2017) in the tri-county area. While the majority of households in the tri-county area own homes, there is a sizeable minority that are renters, as shown in Figure 2.4 for each of the three counties in Metro areas. Multnomah County, where homes are more expensive, displays the highest proportion of renters at 45.7%, while Clackamas County (the least urban of the three) displays the lowest, with less than a third renting.

Certain groups are represented disproportionately in the renting population. On average, the renting population is lower income than the home-owning population (Figure 2.5). Looking at race, households with Black, Native, and Hispanic heads earn a median income lower than the average, as shown in Figure 2.6. The median salary for Black households in the Portland area is half that of the overall median—a significant disparity, and a sign of the current and historic systemic issues faced by this population in the region. Given the lower median incomes for these communities of color, we are not surprised to see higher averages of renters for

Median Income

Median income identifies the point where 50% of people make over that amount and 50% make less than that amount. Median income can be calculated for different groupings of people such as different geographies, family size, household size, race, etc. In this report, we use median family income (MFI) in our calculations. Determining who is described as low income depends on what part of the income spectrum a family falls. If you make less than 80% MFI, you would be considered low- or moderate-income.

¹⁵⁵ While HUD's definition of "cost burdened" is that the entire cost of housing (including utilities) exceeds 30% of monthly income, we use the term here to mean that only rent exceeds 30%. This is due to the format of the available data: the decision was made to prioritize incorporating unit and family size, over including utility cost. If utilities were included, the impact would be a slightly larger affordability gap.

¹⁵⁶ Because of time constraints and data availability, we only look at gross rent and do not include other common housing cost data, such as utilities.

communities of color; see Figure 2.7. Because of these racial disparities, renters' issues are racial equity issues. This means that strategies to assist renters have impacts that increase racial equity within the metro area because non-white groups are more heavily represented in the renting population.

Figure 2.4: Distribution of Owner vs Renter Occupied Households in the tri-county region
(Source: 2013-2017 ACS 5-year estimate)¹⁵⁷

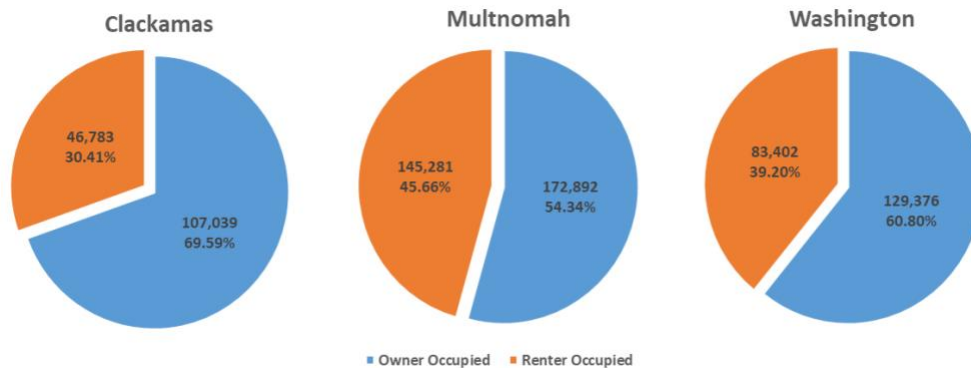
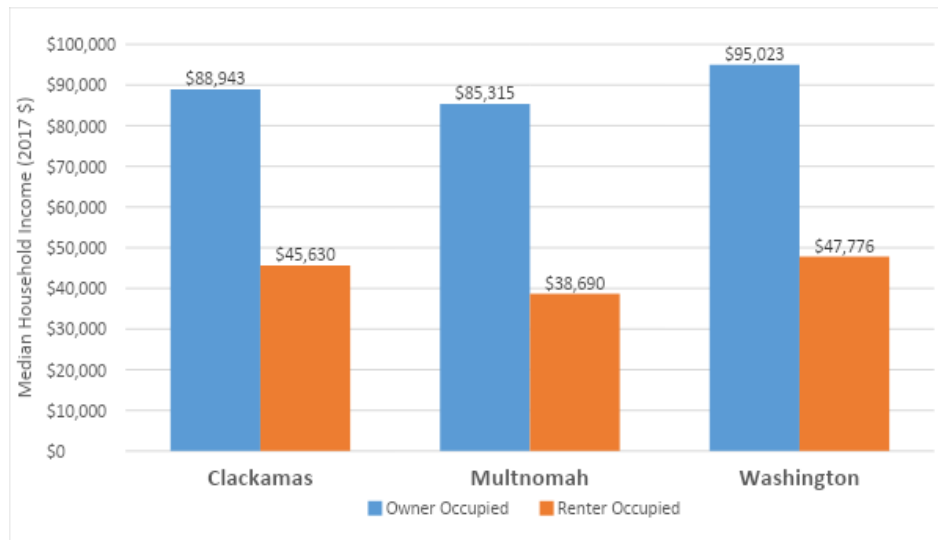


Figure 2.5: Owner vs Renter Occupied Household by Median Household Income in the tri-county region (Source: 2013-2017 ACS 5-year estimate)¹⁵⁸



¹⁵⁷ U.S. Census Bureau. (2018). *2013-2017 ACS 5-year estimates*. Retrieved from <https://www.census.gov/programs-surveys/acs/technical-documentation/table-and-geography-changes/2017/5-year.html>

¹⁵⁸ U.S. Census Bureau. (2018). *2013-2017 ACS 5-year estimates*. Retrieved from <https://www.census.gov/programs-surveys/acs/technical-documentation/table-and-geography-changes/2017/5-year.html>

Figure 2.6: Median Household Income by Race (Source: 2013-2017 ACS 5-year estimate)¹⁵⁹

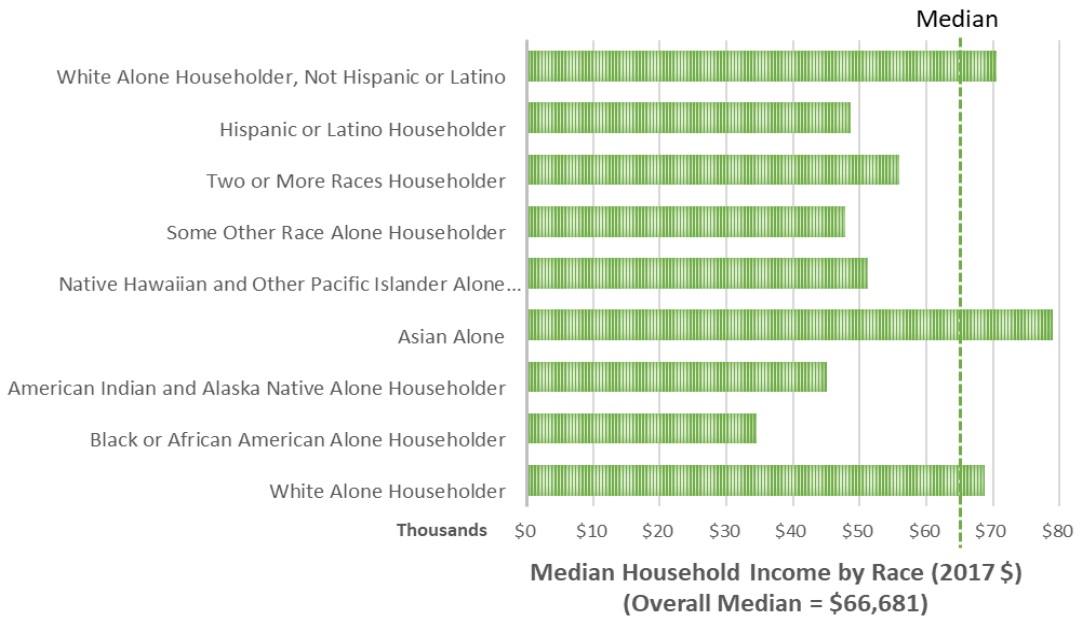
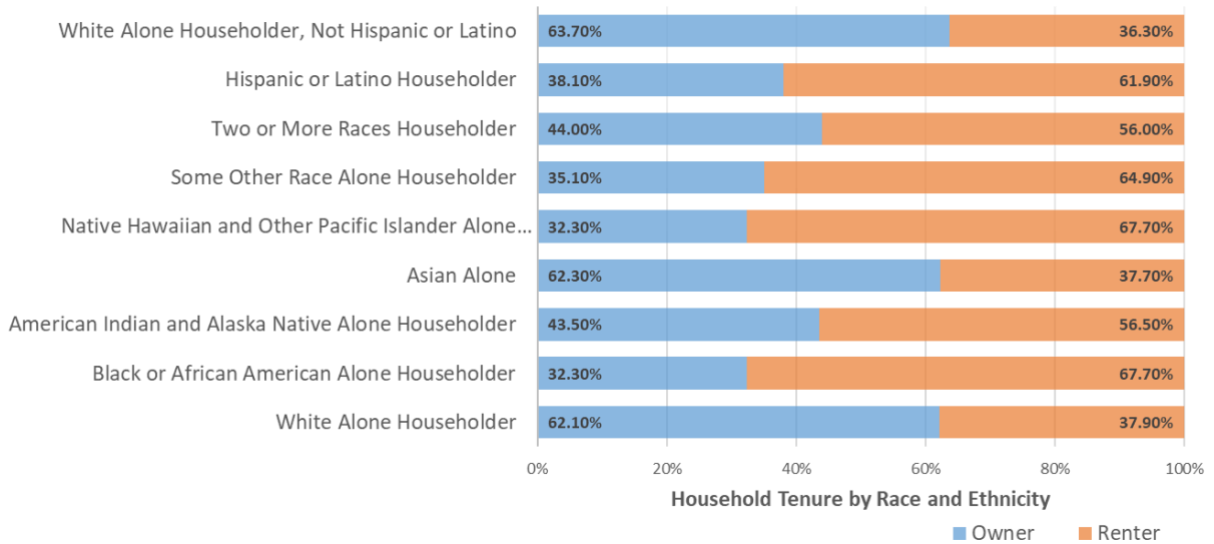


Figure 2.7: Household Tenure (Owner vs Renter) by Race (Source: 2013-2017 ACS 5-year estimates)¹⁶⁰



¹⁵⁹ U.S. Census Bureau. (2018). *2013-2017 ACS 5-year estimates*. Retrieved from <https://www.census.gov/programs-surveys/acs/technical-documentation/table-and-geography-changes/2017/5-year.html>

¹⁶⁰ Ibid

Costs of Universal Rent Assistance Program

Long-term rent assistance has proven to reduce homelessness as well as provide better health outcomes for community members.¹⁶¹ In order to estimate the cost of a universal rent assistance program to prevent those households who are most susceptible or most at-risk of losing their housing, we utilized the 2017 ACS 5-year estimates to identify the number of renter households who are *cost burdened* (paying more than 30% of household income in the past 12 months in gross rent and other housing costs) or *severely cost burdened* (paying more than 50% of household income in the past 12 months in gross rent and other housing costs) in each income bracket¹⁶² in the tri-county region (Clackamas, Multnomah and Washington Counties). Severely cost burdened households are a subset of the cost burdened households.

Within each income bracket, we assume that the household size distribution is equivalent to the household size distribution for all renter-occupied housing units in the region¹⁶³ and assume that the household income level is equal to the midpoint of the income bracket. Next, we calculate the maximum annual rent (including utilities) that households would be responsible for (30% of their household income). Then, for each income bracket and household size, we estimate the difference between the maximum annual rent and the market rental price (using rent levels shown in Table 2.1 in the *Costs* section, page 56) for the specified housing unit size, which is the estimated amount of rent assistance per household. Table 2.11 summarizes the number of cost burdened and severely cost burdened households within different income levels, and estimates the costs of universal rent assistance, administrative costs and eviction prevention program costs. These costs are expressed in nominal 2017 dollars on an annual basis. The total costs for such a universal rent assistance program include the cost of rent assistance, administrative costs, and eviction prevention program costs. We do not take into account any households already receiving assistance, as the ECONorthwest report did. We have no way of knowing if those supports are adequate, or at what level they will continue.

Table 2.12 summarizes the total costs of a universal rent assistance program for years 2024 to 2033, the same analysis timeframe as the previous sections of this report. We take the highest and lowest estimates of rent assistance costs from Table 2.11 to construct Table 2.12, which includes nominal costs for each year (incorporates inflation) and net present values for each year in 2019 dollars. The estimates indicate that this type of program would cost between \$10.7 billion and \$21 billion (2019\$) to address all cost burdened households, and between \$8.7 billion and \$16.6 billion for all severely cost burdened households for the years of 2024 to 2033 (the severely cost burdened group is a subset of the cost burdened group). While this cost

¹⁶¹ Fleary, S.A., Joseph, P., Zhang, E. & Quirion, C. (2019). "They give you back that dignity": Understanding the intangible resources that make a transitional house a home for homeless families, *Journal of Social Distress and the Homeless*, 13(1), 835-866.

¹⁶² U.S. Census Bureau. (2018). *2013-2017 ACS 5-year estimates*. Retrieved from <https://www.census.gov/programs-surveys/acs/technical-documentation/table-and-geography-changes/2017/5-year.html>

¹⁶³ Ibid

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encompasses all households earning from 0–80% MFI, it is useful to consider how this money is distributed between the income tiers: see Table 2.13 for a summary of NPV estimates over ten years for 0–30% MFI and 0–60% AMI, in addition to the 0–80% MFI estimates repeated from Table 2.12.

Table 2.11: Cost of Universal Rent Assistance Program (2017 dollars) by Income Level and Cost Burden, 2017

	0-30% MFI	30-60% MFI	60-80% MFI	Total (0-80% MFI)
Number of severely cost burdened renter households (>50% of income on rent)	44,953	24,073	13,551	82,576
Cost of universal rent assistance (2017 \$)				
HUD FMR (2017)	\$ 508,634,283	\$ 187,090,274	\$ 3,091,894	\$ 698,816,451
Portland State of Housing (2017) city avg	\$ 604,426,818	\$ 235,114,342	\$ 39,427,039	\$ 878,968,199
Portland State of Housing (2017) neighborhood avg high	\$ 862,560,407	\$ 437,303,469	\$ 89,172,775	\$ 1,389,036,652
Cost of administering rent assistance program (2017)	\$ 35,962,148	\$ 19,258,271	\$ 10,840,454	\$ 66,060,873
	0-30% MFI	30-60% MFI	60-80% MFI	Total (0-80% MFI)
Number of cost burdened renter households (>30% of income on rent)	51,650	31,514	23,875	107,039
Cost of universal rent assistance (2017 \$)				
HUD FMR (2017) Rents	\$ 586,347,728	\$ 249,359,111	\$ 22,098,684	\$ 857,805,523
Portland State of Housing (2017) City Avg Rents	\$ 693,119,557	\$ 311,599,075	\$ 82,216,186	\$ 1,086,934,818
Portland State of Housing (2017) Neighborhood High Rents	\$ 997,824,502	\$ 583,603,877	\$ 177,792,823	\$ 1,759,221,203
Cost of administering rent assistance program	\$ 41,319,994	\$ 25,210,856	\$ 19,100,248	\$ 85,631,098

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Table 2.12: Detailed Costs of Universal Rent Assistance Program in Nominal and Net Present Value (2024–2033), 0–80% AMI

			2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Total NPV
Severely Cost Burdened	LO W	(nominal)	\$ 875,656,983	\$ 893,170,123	\$ 911,033,525	\$ 929,254,196	\$ 947,839,280	\$ 966,796,065	\$ 986,131,987	\$ 1,005,854,626	\$ 1,025,971,719	\$ 1,046,491,153	
	HI GH		\$ 1,668,503,035	\$ 1,701,873,096	\$ 1,735,910,558	\$ 1,770,628,769	\$ 1,806,041,345	\$ 1,842,162,172	\$ 1,879,005,415	\$ 1,916,585,523	\$ 1,954,917,234	\$ 1,994,015,578	
	NP V-LOW	(2019 \$)	\$ 833,157,574	\$ 841,406,658	\$ 849,737,417	\$ 858,150,659	\$ 866,647,200	\$ 875,227,866	\$ 883,893,488	\$ 892,644,909	\$ 901,482,977	\$ 910,408,551	\$ 8,712,757,300
	NP V-HIGH		\$ 1,587,523,388	\$ 1,603,241,441	\$ 1,619,115,119	\$ 1,635,145,962	\$ 1,651,335,526	\$ 1,667,685,382	\$ 1,684,197,119	\$ 1,700,872,338	\$ 1,717,712,658	\$ 1,734,719,714	\$ 16,601,548,646
Cost Burdened	LO W	(nominal)	\$ 1,079,892,562	\$ 1,101,490,413	\$ 1,123,520,221	\$ 1,145,990,625	\$ 1,168,910,438	\$ 1,192,288,647	\$ 1,216,134,420	\$ 1,240,457,108	\$ 1,265,266,250	\$ 1,290,571,575	
	HI GH		\$ 2,115,335,833	\$ 2,157,642,549	\$ 2,200,795,400	\$ 2,244,811,308	\$ 2,289,707,535	\$ 2,335,501,685	\$ 2,382,211,719	\$ 2,429,855,953	\$ 2,478,453,072	\$ 2,528,022,134	
	NP V-LOW	(2019 \$)	\$ 1,027,480,719	\$ 1,037,653,795	\$ 1,047,927,595	\$ 1,058,303,116	\$ 1,068,781,364	\$ 1,079,363,358	\$ 1,090,050,124	\$ 1,100,842,700	\$ 1,111,742,132	\$ 1,122,749,480	\$ 10,744,894,383
	NP V-HIGH		\$ 2,012,669,463	\$ 2,032,596,883	\$ 2,052,721,605	\$ 2,073,045,581	\$ 2,093,570,785	\$ 2,114,299,208	\$ 2,135,232,864	\$ 2,156,373,783	\$ 2,177,724,019	\$ 2,199,285,643	\$ 21,047,519,834

Table 2.13: NPV of Rent Assistance from 2024 to 2033 for 0–30%, 0–60%, and 0–80% AMI

Burden Level	Income Level	Low	High
Severely Cost Burdened	0-30% AMI	\$ 6,224,401,436	\$ 10,269,558,832
	0-60% AMI	\$ 8,582,838,082	\$ 15,487,778,030
	0-80% AMI	\$ 8,712,757,300	\$ 16,601,548,646
Cost Burdened	0-30% AMI	\$ 7,173,855,077	\$ 11,876,780,908
	0-60% AMI	\$ 10,312,020,516	\$ 18,835,157,950
	0-80% AMI	\$ 10,744,894,383	\$ 21,047,519,834

Affordable Housing Gap Analysis

Based on recent data, we identified a gap that exists between the demand for affordable housing units and the supply available. This means that there are not enough housing units available for people to pay 30% or less of their income to housing. People paying 30% or less of their income on housing costs is considered the best way to promote housing security and stability along with better health outcomes.^{164, 165} Adding a further squeeze on the supply of affordable housing, some housing units at the lower end of the housing market may be rented by people who could afford to pay more and are instead paying substantially less than 30% of their income, further decreasing supply at lower-income levels.

The affordability housing gap analysis for this report was constructed using federal data sources: the US Department of Housing and Urban Development's Comprehensive Housing Affordability Strategy (HUD CHAS) dataset for 2015 in the Portland tri-county area (Clackamas, Multnomah, and Washington counties)¹⁶⁶, and American Community Survey (ACS) data from the five-year averages for 2013–2017 for the same counties.¹⁶⁷ Additionally, we used HUD median family income information for the Portland-Vancouver-Hillsboro MSA for 2017 to establish income brackets equal to 0–30%, 30–50%, and 50–80% MFI.¹⁶⁸

Housing Supply and Demand

In order to determine the affordable housing gap, we first estimate the supply by using the HUD CHAS dataset from 2015 (specifically, questions 15C and 14B) to arrive at the number of housing units in the tri-county area at various levels of cost burden, including the income level of the renter (in terms of percent of AMI) and number of bedrooms. These data include both units that are occupied, and units that are not, and these are summed to arrive at a value for supply.

Demand is determined using ACS five-year average data: first, household sizes within various income brackets are assumed to match overall household size distribution. Next, household incomes are assumed to fall at the midpoint of each income bracket, so households earning, for example, \$20,000–\$24,999 are included at \$22,500. Using these values, the number of

¹⁶⁴ Bailey, K. T., Cook, J. T., Ettinger de Cuba, S., Casey, P. H., Chilton, M., Coleman, S. M., & Frank, D. A. (2016). Development of an index of subsidized housing availability and its relationship to housing insecurity. *Housing Policy Debate*, 26(1), 172-187.

¹⁶⁵ Meltzer, M., & Schwartz, A. (2016) Housing affordability and health: Evidence from New York City. *Housing Policy Debate*, (26:1), 80-104.

¹⁶⁶ HUD Office of Policy Development and Research. (2019). Consolidated planning/CHAS data. Retrieved from <https://www.huduser.gov/portal/datasets/cp.html>

¹⁶⁷ 2013-2017 ACS 5-year average tables SE:A14003B – Household Income in the Past 12 Months (in 2017 Inflation-Adjusted Dollars) (Renter-Occupied Housing Units) and SE:A100002B – Household Size (Renter-Occupied Housing Units).

¹⁶⁸ Portland Housing Bureau. (n.d.). 2017 Median income for a family of four in the Portland-Vancouver-Hillsboro MSA. Retrieved from <https://www.portlandoregon.gov/phb/article/651806>

households at 0–30%, 30–50%,¹⁶⁹ and 50–80% MFI are estimated using HUD MFI values for different household sizes. Finally, we assume that households with one to two members will require a studio or one-bedroom unit, households with three members will require two-bedroom units, and households with four or greater members will require greater than two bedrooms.

Based on these figures, identifying the gap is a matter of finding the differences in supply and demand at said levels and sizes. Additionally, we conduct spatial analysis to find gaps by income level and unit size by area.

These housing unit shortages are not distributed evenly across income levels, or in geographic terms. Households are free to rent units that do not amount to 30% of their income as well. That means that better-off households may choose units that cost less than that. Adding additional challenges for low-income households, wealthier households are more likely to obtain units by virtue of the rental approval process. All of these factors mean that identifying the shortage is a complicated and uncertain process.

Understanding spatial aspects for housing markets are important. While one area might have more affordable units at a given price level, they may not be appropriate locations for people who are transit-dependent or reliant on services that are not evenly dispersed around the region. Further out locations may not be opportunity-rich neighborhoods, where ample green space and health care are typically located.

The table below (Table 2.14) estimates the change in affordable units by county over the two-year period following the data year used, which is 2015. Despite adding 2,243 affordable housing units over two years, the affordable housing gap remains. This is partially due to uneven geographic distribution of added units and varying demand for different sizes of units. Per our analysis, Clackamas County appears to have lost affordable units between 2015 and 2017. Recently described slow-downs in the housing market are unlikely to create an increased supply of affordable housing. Bates (2017) found that vacancy rates in high quality (“five stars”) apartments was much higher than naturally occurring affordable housing.¹⁷⁰

¹⁶⁹ Note that here the range is 30-50% AMI, while elsewhere this report uses 30-60% MFIs as a bracket. This is due to differences in data format from various sources: the data obtained from the ACS questions breaks at 50% rather than 60%.

¹⁷⁰ Seyoung, S. & Bates, L. (2017). Preserving housing choice and opportunity: A study of apartment building sales and rents. Urban Studies and Planning Faculty Publications and Presentations. Retrieved from https://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1203&context=usp_fac

Table 2.14: Regulated Affordable Housing Units (Source: 2017 Regional Inventory of Regulated Affordable Rental Housing¹⁷¹)

Regulated Affordable Housing Units				
	2015	2017	Change	% Change
Clackamas	3,937	3,804	(133)	-3.38%
Multnomah	24,989	26,625	1,636	6.55%
Washington	7,307	8,047	740	10.13%
Total	36,233	38,476	2,243	6.19%

Figure 2.8 shows the estimated shortages at various income levels in each county, and Figure 2.9 shows estimated shortages by unit size (relying on the family size assumptions described above) and county. While the shortage for Multnomah County appears to signify a unique problem in that area, this is due to the larger number of households and units within this densely urban area, and the housing shortage on a per capita basis is comparable in the other counties.

¹⁷¹ Oregon Metro. (2019). *Regional inventory of regulated affordable rental housing*. Retrieved from <https://www.oregonmetro.gov/regional-inventory-regulated-affordable-housing>

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Figure 2.8: Affordable Housing Gap by County and by Household Income¹⁷²



Demand	8,414	5,704	9,277	39,790	16,930	25,797	15,049	9,723	15,672
Supply	3,727	2,656	2,258	16,785	6,831	5,871	5,057	3,617	2,609
Shortage	-4,687	-3,048	-7,019	-23,005	-10,099	-19,926	-9,992	-6,106	-13,063

¹⁷² Assumes households will not pay more than 30 percent of their income.

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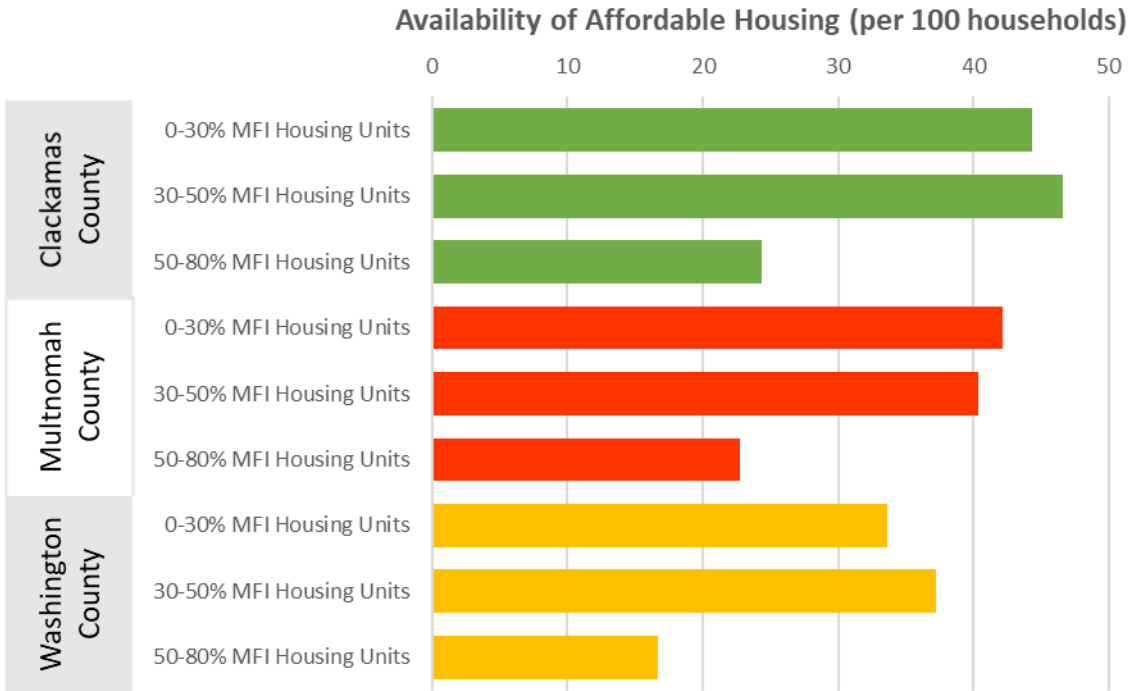
Figure 2.9: Affordable Housing Gap, Estimated Shortages by Unit Size by County



Demand	14,521	3,453	5,421	52,629	11,970	17,918	25,220	5,975	9,249
Supply	2,389	3,949	2,303	13,329	10,676	5,482	3,083	5,498	2,702
Shortage	-12,132	496	-3,118	-39,300	-1,294	-12,436	-22,137	-477	-6,547

Figure 2.10 breaks the shortage down by showing how many units are available at different income levels per hundred households and by county. All counties are suffering comparable shortages. Washington County has a more severe shortage than Multnomah at 0-50% MFI

Figure 2.10: Availability of Affordable Housing (per 100 households) by County and by Household Income



Figures 2.11 and 2.12 show mapped availability of affordable housing by census tract. Redder areas have fewer affordable units, while pink or blue areas have a lower shortage of affordable units at various income levels. Note that households may move from one census tract to another (although it is likely that jobs and schools make large moves difficult and undesirable). These maps serve as a static image of the situation a few years ago (based as they are in data from the 2015 HUD CHAS, and 2013-2017 five-year average ACS data). Some areas showing little to no shortage may actually have low population.

Figure 2.11: Spatial distribution of available rental housing units for 0–80% MFI Households by
Census tract (per household)

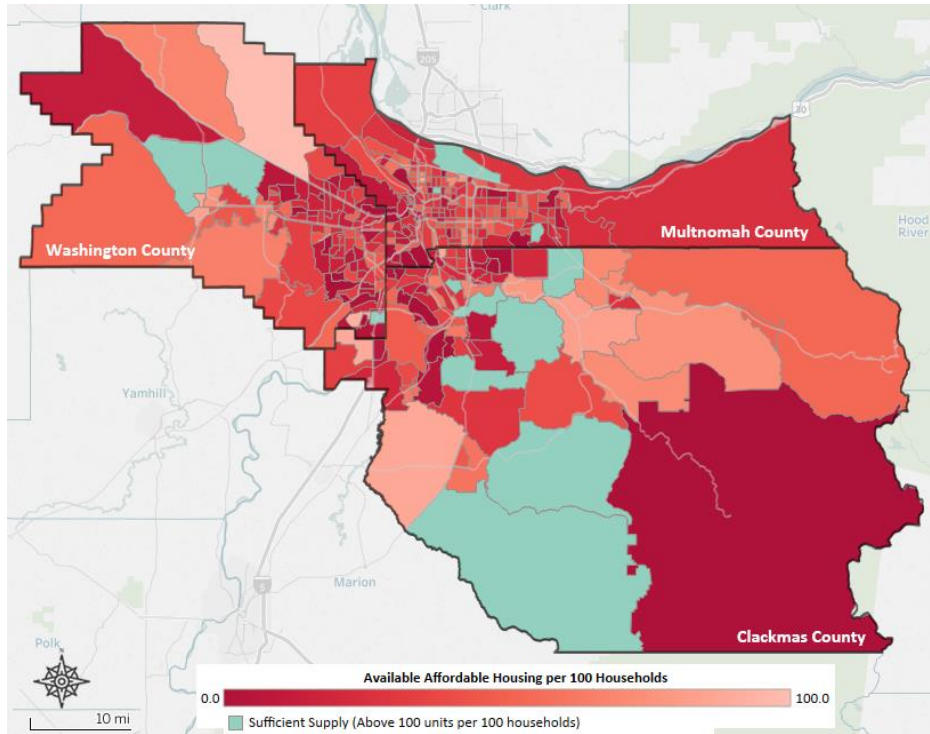
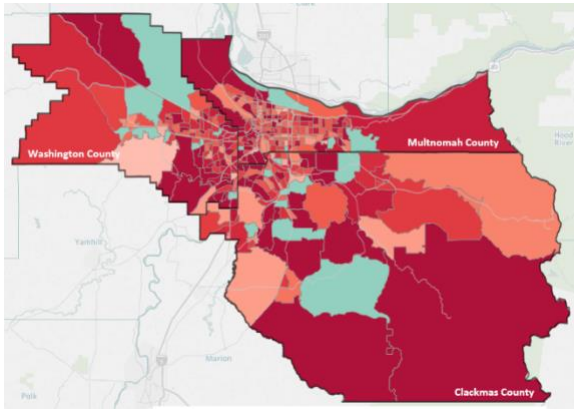
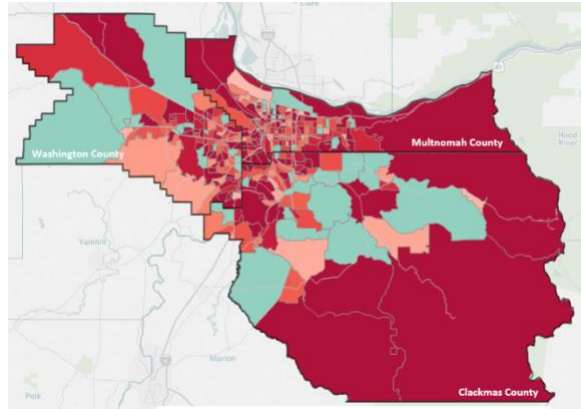


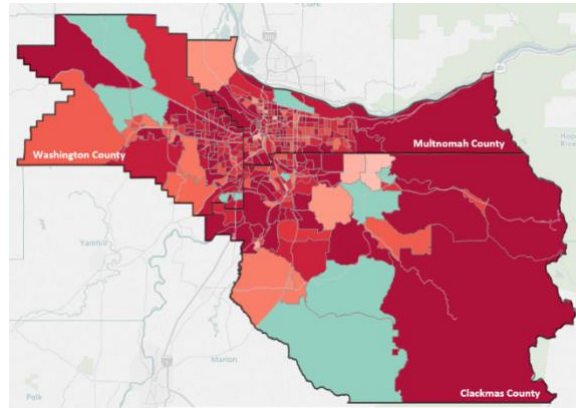
Figure 2.12: Spatial distribution of available affordable rental housing units by Census tract and by household income



(a) Affordable housing for 0-30% MFI households



(b) Affordable housing for 30-50% MFI households



(c) Affordable housing for 50-80% MFI households

Note: Legend is based on number of affordable housing per 100 households between 0 and 100 (any shade of red indicates a shortage, while census tracts with sufficient supply of affordable housing are designated in green),

Affordable Housing Gap with Rent Assistance Program

To help understand how to support the number of households needing support to avoid homelessness or obtain housing security, we examined how a large, long-term rent assistance program would help close the gap for households living in deep housing insecurity. To conduct this analysis, we assumed that fair market rents would not change, even with the introduction of a large number of vouchers. This is unlikely to happen, but we chose to conduct this exercise to give a sense of the shortage of affordable units. Remember that we only included gross rent, and no other housing costs, in this part of the analysis. This means that there may be even fewer units available, and that people from low-income backgrounds experience more difficulty accessing available housing for a range of reasons.

After establishing the shortage of affordable rental housing units in the tri-county region, we identified available rental housing units for a potential rent assistance program, i.e., units that are not affordable at their lease rate to people who are low-income. To do this, we utilized the same procedure as the affordable housing gap analysis described above (identifying the mismatch between supply and demand). This time, we focused on available rental housing units for people who are 30–80% cost burdened and vacant units. In this scenario, a housing assistance voucher has been applied, meaning that they can now afford units they could not previously afford without this rent assistance. Table 2.20 compares the unmet demand for rental units to the available rental units that are unaffordable at state lease rates, by income level and by number of bedrooms. The final section of the table shows the percentage of unmet demand that can be fulfilled by the available rental units currently at 30-80% cost burden (not including vacant units). In other words, it shows the amount of housing stock that exists and does not need to be constructed if a voucher program is implemented, again assuming no changes in market rates, and landlords and developers work with government entities and community development corporations to accept all tenants.

If a universal rent assistance program to help prevent homelessness were implemented, these estimates provide a look at whether households might be able to find rental units with the provided assistance. In most income levels and housing unit sizes, we find that there are sufficient rental units to be subsidized through such a program. However, in terms of available units, even after making housing vouchers available, shortages still exist in the 0-1 bedroom category for 0-30% and 50-80% MFI levels, and in the >3 bedroom category for households that earn 30-50% MFI. However, these shortages could be corrected by, for example, allowing individual households to use vouchers on two-bedroom units.

Table 2.15: Housing Unit Shortage, Post Universal Housing Voucher

	0-30% AMI	30-50% AMI	50-80% AMI	Vacant
Unmet Demand for Affordable Rental Units				
0-1 bedrooms	(29,439)	(11,163)	(22,895)	
2 bedrooms	(5,295)	(6,087)	(5,178)	
>3 bedrooms	(10,131)	(8,093)	(5,045)	
Available Rental Units (Unaffordable, 30-80% Cost Burden)				
0-1 bedrooms	15,420	15,970	7,180	1,885
2 bedrooms	11,165	16,055	21,340	3,200
>3 bedrooms	11,060	6,545	10,720	1,470
Ratio of Available Rental Units to Unmet Demand				
0-1 bedrooms	52.38% (14,019 units short)	143.07% (4,807 unit surplus)	31.36% (15,715 units short)	
2 bedrooms	210.85% (5,870 unit surplus)	263.76% (9,968 unit surplus)	412.12% (16,162 unit surplus)	
>3 bedrooms	109.17% (929 unit surplus)	80.87% (1,548 units short)	212.49% (5,675 unit surplus)	

There are some important issues to consider about Table 2.20. The available rental units may also not be located evenly throughout the region. Where an adequate supply of larger housing units might exist (e.g., two bedrooms), assistance could be provided to put single adults into that housing. Note that the data used here produces static estimates. Our analyses provide guidance for the general magnitude of affordable housing shortages and available rental units, but should not be taken as an accurate depiction of the extremely dynamic housing market. Further, these calculations are based only on gross rent and do not include other housing costs, such as utilities. Perhaps most importantly, households are not always able to use rent vouchers for a range of reasons—not enough housing available, too far from mass transit, racial discrimination, prior eviction, landlord screening practices, etc.¹⁷³

Limitations and Considerations

There are also multiple caveats to the findings here beyond the general data reliability issues common with ACS and other data sets. Housing markets have submarkets that function differently than traditional supply and demand models might explain. Some submarkets are unlikely to ever be produced by a traditional market (e.g., why would a developer build housing that they could not at least recover the costs of) without some type of government intervention. Earlier, we discussed spatial limitations of some of these analyses. For instance, considering where we want different types of housing must be considered when reviewing findings like those presented in Table 2.20. A simple interpretation of the table might mean that people think we have an adequate supply of housing for people who are 30–80% cost burdened for certain unit sizes once rent assistance is made available. However, further analyses must be conducted to determine if this housing is located in opportunity rich areas. Clustering all affordable units on the outskirts of the region away from mass transit is not an equitable solution. The City of Portland PHB provides detailed analyses of housing unit available by neighborhood to emphasize the importance of this spatial view.¹⁷⁴

Our analyses also do not take into account the quality of available affordable housing. It is not enough to provide housing, as we should be providing quality and safe affordable housing. Providing quality, affordable housing appropriately located to services and opportunities will likely increase costs from what we provide next. Between spatial distribution and housing quality, we may have less available or vacant affordable housing than it seems.

We focus on renter households because they are typically the most precariously housed. Further research should examine the precariousness of homeowners in a burgeoning housing market, especially as we ask more from taxpayers in helping to address the negative

¹⁷³ Turner, M. (2003). Strengths and weaknesses of the housing voucher program. *Urban Institute*. Retrieved from <https://www.urban.org/sites/default/files/publication/64536/900635-Strengths-and-Weaknesses-of-the-Housing-Voucher-Program.pdf>

¹⁷⁴ Portland Housing Bureau. (2017). *State of Housing in Portland*. Retrieved from <https://www.portlandoregon.gov/phb/article/681253>.

repercussions of escalating real estate values to moderate and low-income community members.

We do not estimate the cost (or need) of households that are discussed in the homeless prevention section that may need some type of temporary or permanent supportive services. We focus only on the cost of providing housing, and administering these housing programs.

Lastly, we do not estimate the cost of creating new units to meet demand after rent assistance is made available. The estimates for developing or acquiring new units discussed earlier in this section could be used to estimate those costs.

Why Don't Our Numbers Match Other Reports?

Numbers related to homelessness do not share consistent definitions and sometimes rely on weak data sources and collection procedures. In addition, more robust data sources such as those put out by the US Census have estimates and counts that vary from year to year. Further, with US Census data in particular, when we talk about the housing needed for homelessness, we are talking about a small portion of the total housing data for the region. When using US Census data estimates (instead of the raw count data gathered every 10 years), the data become more unreliable as you disaggregate it. But, the primary reason for major differences in number of households or cost estimates between reports is which populations are identified for support and their size.

For instance, HUD homelessness counts for 2017 Point-in-Time count (PIT) for the three counties was about 6,000 people, and is just for one night during the year. Our count includes an annualized PIT count for people living unsheltered, and annualized shelter data. Our estimates also include an estimate for doubled-up families and unaccompanied youth. This means that our 38,000 person estimate for 2017 is for people who have experienced homelessness across the year, and includes a broader definition than other reports driven by HUD reporting.

Turning to households that are housing insecure or at risk of homelessness, ECONorthwest estimates 56,000 households are at risk of homelessness, and that it would cost about \$550 million annually to serve them. ECONorthwest includes Clark County in Washington State in their calculations, while we limit ours to the 3 counties on the Oregon side. Most importantly, they only included households up to 50% MFI and more than 50% rent burdened who were not receiving rent assistance, a classification that HUD describes as worst-case housing needs. We instead included households making up to 80% MFI, and more than 30% rent burdened. We also opted to be more conservative and not assume existing service levels continue forward. Our additional concern here was that we had no way of knowing how many households were receiving adequate support. Several stakeholders pointed out that just because someone was receiving assistance, it may not be an adequate amount of assistance. Further, research consistently demonstrates that households at above 30% of housing costs are at risk of homelessness and displacement.

Providing emergency shelters

Emergency shelters are defined by HUD as places for homeless individuals to inhabit temporarily, that do not require said individuals to sign any kind of lease or rental agreement. There are generally three essential types: conventional shelters, which provide a bed to sleep in and access to services; day centers, where individuals can spend time and receive services during daytime hours but may not sleep overnight; and severe weather shelters, which operate as extensions of the previous two types in the event of weather that endangers those on the streets and necessitates increased capacity.

Of course, if all homeless families and individuals or at risk of becoming homeless are permanently housed, the need for emergency shelters will be dramatically reduced. This report does not undertake the task of assuming exactly how much the need would decrease.

In the fiscal year of 2017, over 9,000 individuals (29.5% are in families) were served in emergency shelters in Multnomah County, for a total of \$15,368,395 in services. The largest portion of spending (\$12,668,477) was on conventional shelters, with \$1,302,011 going to day centers and \$182,586 to severe weather shelter provision. While detailed spending data is not available for Clackamas and Washington County, if we assume that it costs the same amount to serve individuals in those counties, we can estimate total and per capita spending in each. In Clackamas County, according to data provided for the Annual Homeless Assessment report (AHAR) to Congress over the year between October 1st 2016 and September 30th 2017, 619 persons (17% are in families) were served in emergency shelters, implying an expense of \$1,056,633. In Washington County over the same time period, data collected for the same purpose identifies 480 individuals served (85% are in families), for an estimated total expense of \$819,360. Summing for the tri-county region, the estimated total spending on emergency shelters is \$17,244,388. This number can be considered low, as it does not include the cost of capital: i.e., the actual costs of shelter construction. Multnomah County budgeted an additional \$7.4M for shelter construction expenses in 2017 alone, and this expense and others like it from various sources are not included in the above estimates.

While we utilize Multnomah County spending on emergency shelters as a proxy to extrapolate per capita costs in Clackamas and Washington Counties, it is important to note that the household composition of those served in emergency shelters ranges widely across geographic areas, and can impact the costs of providing emergency shelters and services. These differences may be attributed to pre-existing differences in the overall homeless population household composition in each of the three counties. Other contributing factors may include the specific type of shelter that is available, whether there is programming specifically targeting families, or a potential self-selection among those who are more likely to seek shelter and assistance.

Conclusions

This section has laid out potential costs for massive social programs, for the purpose of enhancing public discourse and providing initial benchmarks for the consideration of policies like these. A secondary purpose of this document is to emphasize the considerable uncertainties faced when dealing with data related to the constantly shifting population experiencing homelessness or housing insecurity at any given time. For that reason, all numbers provided here are, of course, estimates. Without knowing the size of the true population, costs are unknown. Additionally, there are few reports of this kind that approach hypothetical scenarios with the goal of addressing the fullest possible scope of the target population, and a high level of assistance, rather than focusing on a certain amount of feasible revenue or policy change.

By using the most straightforward and replicable approach possible, based on previous local work in the field and expert consultation, this section first estimates that there are over 38,000 homeless individuals in the Portland tri-county area, including those who are doubled up in housing situations that are not intended to hold multiple households. Additionally, it is estimated that over 5,600 of those individuals suffer from disabilities that require permanent supportive housing.

The section estimates a cost of \$2.6 billion to \$4.1 billion to house all homeless individuals who require permanent supportive housing for ten years, and to provide complete rent assistance and services to those who do not require permanent supportive housing for two years.

Next, the potential costs of issuing universal housing vouchers in order to assist those at risk of becoming homeless are assessed. A framework based on ACS and HUD data is implemented to estimate the costs to providing said vouchers (which cover all housing expenses in excess of 30% of a household's income) at varying levels of income and rent burden. Administrative costs for the rent assistance program are included as well. The final estimates range from \$6.2 billion over ten years, if only those earning lower than 30% of the MFI and paying greater than 50% of their rent are included; up to \$21 billion, if the hypothetical rent assistance includes all households earning up to 80% MFI and paying more than 30% of their income to rent.

Finally, the supply and demand of affordable rental housing in the tri-county area are determined, in order to locate specific areas of shortage and surplus based on income level and housing type and size. All of these elements provide a large-scale, top-end set of costs and economic estimates that can be used to inform public discourse and prioritization.

In the next section we examine revenue-raising options for the local region.

III. REVENUE-RAISING OPTIONS

The previous section of this report estimated the potential cost of providing the supports, services and housing necessary to eliminate homelessness and rent burden in Clackamas, Multnomah, and Washington counties. This section examines revenue sources available to local governments that could fund these solutions, describes various governance challenges inherent in public projects of this magnitude, and provides estimates of necessary tax rates and fees to reach \$100 million in tax revenue by revenue source.

Typical criteria for analyzing policies and revenue generation options from an economic perspective include: efficiency, equity, effectiveness, and political feasibility (see sidebar for definitions). However, each of those criteria depend on the specific policy. Since this section of the report only discusses policies in their broadest sense, economic impacts are left for future analysis when more policy details are known.

In particular, we urge a robust consideration of the equity of any revenue proposal. A key component of equity is a tax policy's regressivity, or how much of the tax burden is borne by the poor. A highly regressive tax would put more financial stress on those with the highest risk for becoming homeless, potentially undermining the policies and programs discussed in the first part of this report. Sales taxes are considered regressive because the cost of all goods increase, taking a larger percentage of income from poorer taxpayers. States sometimes dampen this effect by exempting necessities—such as food—from the tax. This illustrates that the specifics of any policy would need to be considered before any useful comparisons could be made. For example, an income tax could be constructed with progressive tax brackets (as it is at the Federal level) or proportionally with a flat tax rate (as is the case in many states). Similarly, a gross receipts tax could be considered either regressive or progressive depending on what businesses have to pay the tax.

Economic Criteria

Efficiency: The most common economic criteria, efficiency signifies the relationship between costs and outputs. An efficient policy would produce the most output (e.g. affordable units) for the least cost (e.g. tax dollars) compared to feasible alternatives.

Equity: Equity captures the concept of fairness, and is typically used with regards to the distribution of resources across a population. An inequitable policy would distribute goods “unfairly” across income groups, race, or other category.

Effectiveness: Effectiveness refers to how well the policy objectives are met. Often confused with efficiency, effectiveness is about doing “the right thing”, while efficiency is about “doing the thing, right”.

Political Feasibility: How likely the policy will succeed in the political arena.

Key Takeaways

We identified the following key takeaways:

- Any revenue-raising option should account for equity and regressivity. A decision-making framework driven by careful analysis of disparate impacts on different demographic and geographic groups must be part of any revenue-raising measure. Revenue raising should not worsen circumstances for marginalized community members.
- Raising revenue across the tri-county area will lead to greater coordination, and a firm commitment for all relevant actors; however, greater levels of coordination will take more time to implement. Note that Metro’s boundaries do not extend to all of the counties’ boundaries.
- There are multiple ways for localities to raise revenue. We focused on eleven possible tax options. The summary table of those options follows:

Table 3.1: Revenue-raising options summary

Tax Policy	Description	Relevant examples	Tax Base	Tax Rate/Fee to reach \$100 Million
Corporate Tax	A tax on business profits	Exists in Oregon, Multnomah County, and Portland	Clackamas and Washington County Business Profits	\$91.5 million by expanding Multnomah BIT to Clackamas and Washington
Business License Tax or Fee	A fee charged per establishment	City of Portland Business License Tax	Business Fee	\$1,755.54
Gross Receipt Tax	A tax on business revenue	City of Portland and San Francisco	Business Revenue	0.055% (0.056% excluding groceries)
Sales Tax	A tax on a good or service levied at the point of sale	Does not exist in Oregon, but most other states	Price of Purchased Goods	1.45%
Individual Item Tax/Luxury Tax	A tax on a specific good, levied at the point of sale	Exists in Oregon in the form of sin taxes	Retail Price of the Good (Unit or Ad Valorem)	Varies significantly by good (see pg. 107 for details)
Flat Rate Tax	A tax on individual income	Portland Art	Tax filers	\$119.78 per taxpayer
Payroll Tax	A tax on wages paid out by all businesses	TriMet Payroll and Self-Employment Tax	Payroll Wages	0.176%
Income Tax on the Highest Earners	Increases in income tax rate for top earners	California “Millionaire’s Tax”	Tax filers with AGI over \$250 thousand	0.505% of adjusted gross income
Bond Measure	Funded through an increase in property taxes	Metro Affordable Housing Bond Measure	Assessed Property Values	-----
Reset Assessment of Commercial Assessed Values	Increase in taxable property value	-----	Commercial Properties	\$352 million in revenue from Multnomah County alone

Real Estate Transfer Tax	A tax on property sales and transfers	Washington County Transfer Tax	All Property Sales	\$6.52 per \$1,000 in sale value
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What Constitutes Revenue

Before discussing potential revenue streams, it is important to define what counts as revenue in the context of this report. The revenue streams discussed below only work for the costs of homelessness assistance or rent burden relief. Tax revenue policies that include funds for multiple uses, such as K-12 or parks and recreation, might gain greater political support. Rather, we address taxes which have a specific expenditure requirement in Oregon—e.g. gasoline taxes. This report only includes those revenue streams that could be applied to homelessness. Policies or programs that do not explicitly raise revenue—such as a declaration of a public health emergency—are also excluded.

Revenue Sources

Of the revenue sources available to regional and regional governments, taxes provide the most revenue,¹⁷⁵ and are the focus of this report. Pertinent taxes include:

- Corporate income taxes
- Gross receipt taxes
- Sales taxes
- Individual item taxes (e.g. Coffee tax)
- Income taxes
- Property Taxes and Bond measures

These are broken down in more detail below; however, it is important to note that many of these forms of taxes exist in the Portland Metro area and its constituent counties already. This highlights a challenge: coordinating additional taxes and spending across Clackamas, Multnomah and Washington counties under the constraints of various legal requirements placed upon Oregon's governing bodies.

Governance

Governing revenue-raising effects is an important part of administering how raised revenue is spent. There are several ways the three Portland Metro counties can go about raising revenue. First, each county could act independently. This requires the least coordination which makes it the most easily adoptable strategy, and would allow programming and services for all parts of

¹⁷⁵ Theoretically, any source of revenue could provide enough revenue, however fees or taxes on relatively few individuals would require a prohibitively high value to generate the \$100 million objective (e.g. business license fees/jewelry tax).

the county. Unfortunately, this lack of coordination makes it more difficult to coordinate the spending side and raises the possibility that enough revenue is raised in one county but not enough in another. Second, the region's local governing body—Metro—could raise the revenue and operate the spending program for the three counties. This removes the coordination problem, but may require a charter review of Metro's scope and will not serve all of the counties' geographies.¹⁷⁶ Lastly, the three counties could form a new Special Service District to address homelessness; however, special districts can only be for specific services (housing or homelessness is not listed as an option).¹⁷⁷ The requirements for creating a special district are many, and would likely take some time to fulfill.¹⁷⁸

Revenue Sources

This section describes eleven potential revenue sources with a focus on how various governing bodies have utilized them and estimates for what the rate/fee would have to be to reach \$100 million in tax revenue (for feasible sources).

Corporate Income Taxes

Corporate taxes are taxes on business profits (net income). Oregon's state government exacts a corporate tax on C-corporations and, more pertinently, the City of Portland and Multnomah County also exact corporate taxes (on C-corporations and other business types).¹⁷⁹ The income that Portland and Multnomah treat as taxable is based on the business's proportion of gross receipts in the area, relative to its activities everywhere else, and the tax is paid based on net-income (profit).¹⁸⁰ Portland's rate of 2.2% and Multnomah County's rate of 1.45% generated \$134 million¹⁸¹ and \$93.4 million¹⁸² in fiscal year 2018, respectively. Businesses with less than \$50,000 in gross receipts from all activities everywhere are exempt from this tax.

¹⁷⁶ Metro's district boundary does not match county boundaries. The affordable housing bond can only be spent within the boundaries.

¹⁷⁷ Oregon Secretary of State Bev Clarno. (n.d.) *Special service districts*. Retrieved from <https://sos.oregon.gov/blue-book/Pages/local/other-special.aspx>

¹⁷⁸ Oregon Legislature. (2017). *Chapter 198. Special districts generally miscellaneous matters 2017 edition: Special districts generally*. Retrieved from https://www.oregonlegislature.gov/bills_laws/ors/ors198.html

¹⁷⁹ Portland's corporate tax is called the City of Portland Business License Tax, while Multnomah's is called the Multnomah Business Income Tax (<https://www.portlandoregon.gov/revenue/article/216081>). Despite the different names, they operate similarly.

¹⁸⁰ Wingard, R. & Freeman, C. (2013). *Portland and Multnomah Business Tax*. Retrieved from: https://www.osbplf.org/assets/in_briefs_issues/Portland%20Multnomah%20Business%20Tax%20April%202016%20In%20Brief.pdf

¹⁸¹ Rinehart, T. & Cooperman, J. (2018). *Comprehensive annual financial report for the fiscal year ended*. Bureau of Revenue and Financial Services, p 3. Retrieved from <https://www.portlandoregon.gov/omf/article/701632>

¹⁸² Multnomah County, Oregon. (2018). *Comprehensive annual financial report*, p 6. Retrieved from <https://multco.us/file/77203/download>

Options for generating revenue through a corporate income tax include: 1) the adoption of a similar corporate tax in Clackamas and Washington Counties; 2) increasing the corporate taxes in Multnomah and Portland; or, 3) some combination of both. However, there are a few problems in adopting this approach. Currently corporate taxes are not earmarked for particular spending in Multnomah or Portland, and there is no guarantee new revenue would be spent on homelessness unless the current law was changed, or the new tax structure was treated independently. Similarly, it would be difficult to coordinate both the new corporate tax system and spending on homelessness without the direction of Metro or another new Special Service District, since each of the counties would have to pass and manage the legislation separately. This could lead to businesses locating to the county with the smallest corporate tax rate.¹⁸³ However, there are certain revenue generation structures—such as the urban renewal districts—that have dedicated special funds.¹⁸⁴ In these cases, expenditures are earmarked very specifically, which can be beneficial from the standpoint of political accountability; however, the restrictions remove flexibility.

Since a corporate tax already exists for Multnomah County, adopting a corporate tax in Washington and Clackamas Counties has slightly less revenue potential. To generate an estimate of the extra revenue from expanding Multnomah's Business Income Tax to the other two counties, we first assume that any additional revenue would be proportional to the wages paid out in that county. In other words, if the wages in one county are 50% of the wages of Multnomah, then that county would generate 50% of the business income tax revenue of Multnomah County. Using this method, we estimate that expanding the Business Income Tax of 1.45% to Clackamas and Washington Counties would result in \$91.5 million in revenue.

Another option is to charge a flat business license tax (or fee) to businesses above a certain level of revenue. Revenue and establishment counts for Oregon are aggregated for the entire state. To focus the counts to the three counties, we assume that establishments are distributed according to wage payments. In other words, since 59.1% of Oregon wages are paid within the area, we assume the three counties also account for 59.1% of Oregon business establishments. This amounts to around 57,000 of the state's over 96,000 establishments. The table below shows the rates required to generate the desired \$100 million in tax revenue, broken down by level of sales. To generate \$100 million in annual revenue for homelessness spending, each business would need to be charged \$1,755 per year, with payments dramatically increasing if only charged to businesses with higher sales (see figure below). Because businesses above this level of sales are likely to be more concentrated within Multnomah, Clackamas, and Washington Counties, the higher business license fees are likely to be overestimates to some degree.

¹⁸³ Papke, L. (1991). Interstate business tax differentials and new firm location: Evidence from panel data. *Journal of Public Economics*, 45(3), 47-68.

¹⁸⁴ Prosper Portland. (2019). Urban Renewal [web page]. Retrieved from <https://prosperportland.us/what-we-do/urban-renewal/>

Table 3.2: Business License Fees

Business License Tax Base	Fee per Business
All Corporations	\$1,755.54
Corporations with over \$25 million in revenues	\$99,542.86
Corporations with over \$50 million in revenues	\$199,437.88
Corporations with over \$100 million in revenues	\$428,160.31

Gross Receipt Taxes

Like corporate taxes, gross receipt taxes are also charged to businesses. The key difference is that instead of taxing profits, the tax is on total revenue. This leads to a different group of business being taxed. Under a corporate tax, industries with large profit margins (such as the financial industry) tend to bear more of the burden. Under a gross receipts tax this is flipped, and low-margin industries (such as the retail industry) tend to carry more of the weight.

In 2018, the City of Portland passed the Portland Clean Energy Community Benefits Initiative which “requires large retailers (those with gross revenues nationally exceeding \$1 billion, and \$500,000 in Portland) to pay a surcharge of 1% on gross revenues from retail sales in Portland, excluding basic groceries, medicines, and health care services. This is expected to generate between \$54 million and \$71 million in revenue annually once the program is underway. Since its funds are already earmarked for community-level energy efficiency programs, it cannot be expanded upon to raise revenue to combat homelessness. However, this policy does provide a framework for a new tax as well as an idea of how much revenue could potentially be generated.

The Oregon Corporate Activity Tax (CAT) provides a recent example of a gross receipts tax reserved for specific use. Passed in May 2019, the CAT levies a fee of \$250 plus 0.57% of all taxable commercial activity over \$1 million. This is estimated to secure roughly \$1 billion annually for early learning and K-12 education statewide. It is important to note that this bill may preclude specific forms of GRTs for localities, and that this analysis offers no interpretation of what types of policies are currently allowed.

The City of San Francisco recently passed a gross receipts tax on businesses with more the \$50 million of revenue in San Francisco. It is estimated that 300–400 businesses will be subject to the tax, and that it would raise \$250 million–\$300 million and is operative as of January 1st,

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2019.¹⁸⁵ ¹⁸⁶ Notably, these funds are specifically earmarked to combat homelessness. One concern for reproducing such a tax in the Portland Metro region would be that the two areas have vastly different corporate tax bases, and so the revenue threshold would need to be lowered to achieve a significant source of funding at the same tax rate.

Similar to the business license fee estimates above (page 108), we assume 59.1% of sales revenue occurs within the area to pare down Oregon Department of Revenue aggregate sales revenue to the local level. To generate \$100 million, the three counties would need to charge a rate of 0.055% if applied to all corporations.

Table 3.3: Gross Receipt Taxes

Gross Receipts Tax Base	Gross Receipts Tax Rate
All Corporations	0.055%
Corporations with over \$25 million in revenues	0.084%
Corporations with over \$50 million in revenues	0.098%
Corporations with over \$100 million in revenues	0.120%

If only corporations with over \$50 million in revenue, as in San Francisco, the required rate would be 0.098% of gross revenue. This could be an overestimate, as businesses with higher revenues may be more concentrated within Multnomah, Clackamas, and Washington Counties.

¹⁸⁵ City and County of San Francisco. (2018). *Homelessness gross receipts tax*. Retrieved from https://sfcontroller.org/sites/default/files/Documents/Economic%20Analysis/hgrt_economic_impact_final.pdf

¹⁸⁶ City and County of San Francisco Treasurer and Tax Collector. (2019). *Homelessness gross receipts tax*. Retrieved from <https://sftreasurer.org/homelessness-gross-receipts-tax-ordinance>

Sometimes groceries are exempt from gross receipt taxes. Using the national ratio of grocery store revenue to all revenue from 2017 (2.1%)¹⁸⁷ and assuming that all grocery retailers gross over \$100 million in revenue, NERC estimated that the tax rate on all corporations would be 0.056% to reach \$100 million.

Table 3.4: Gross Receipt Taxes (excluding groceries)

Gross Receipts Tax Base (Excluding Groceries)	Gross Receipts Tax Rate (Excluding Groceries)
All Corporations	0.056%
Corporations with over \$25 million in revenues	0.086%
Corporations with over \$50 million in revenues	0.102%
Corporations with over \$100 million in revenues	0.125%

Sales Taxes

A sales tax is a tax on the price of a good or service that, unlike a gross receipts tax, is levied at the point of sale. Oregon is one of five states with no sales taxes and has voted down potential sales taxes nine times.¹⁸⁸ However, there is no law preventing local jurisdictions from adopting a sales tax, even if the state has no such structure. The range of potential revenue raised by a new sales tax is large and is dependent on the size of the base (how many counties or municipalities participate) and the tax rate.

One example of how sales taxes have been used to combat homelessness is Los Angeles County's Measure H. This bill raised sales taxes by one quarter of a cent which, due to the size of the tax base in Los Angeles, is estimated to bring in about \$355 million a year.¹⁸⁹ This tax, which went into effect October 2017, is on all sales and the revenue it generates will be used to provide services for the homeless.

Using sales tax data from Texas, a rich source of tax revenue data, we scale the sales tax revenue per person within Austin, to provide an estimate of the revenue from a potential local sales tax. Austin was chosen as its income levels are relatively similar to those of the Metro area, and charges a 1% sales tax on top of Texas's rate of 6.25%. Within the three counties, a sales tax rate of 1.45%, or 1.45 cents per \$1, would generate \$100 million in tax revenue.

¹⁸⁷United States Census Bureau. (2017). *Annual retail trade survey*. Retrieved from <https://www.census.gov/data/tables/2017/econ/arts/annual-report.html>

¹⁸⁸ Oregon's long history of saying no to sales tax. (2019). *Oregon Public Broadcasting*. Retrieved from <https://www.opb.org/news/widget/oregons-history-with-sales-tax/>

¹⁸⁹ Chiland, E. (2017). Updated: LA County voters approve Measure H: Here's how higher taxes will help the homeless. *Curbed LA*. Retrieved from <https://la.curbed.com/2017/3/8/14855430/los-angeles-election-results-ballot-measure-h>

Individual Item Taxes

Specific goods can also face a tax through either a unit excise tax (per unit) or an ad valorem excise tax (based on percentage). One type of individual item tax is known as a “sin tax.” A sin tax has the dual purpose of both raising revenue and, since the associated goods are typically seen as harmful, curbing consumption of the good. Tobacco, alcohol, and marijuana are examples of goods with sin taxes. Over the 2016–2017 fiscal year in Oregon, the cigarette tax raised over \$205 million, taxes on beer and wine raised over \$18 million, and the tax on marijuana raised over \$74 million.¹⁹⁰

However, an individual item tax does not need to be on a harmful good. For example, the Oregon Legislature briefly considered a coffee tax in 2017.¹⁹¹ One difficulty with individual item taxes is that legislatures often seek to tie the source of revenue to the purpose for raising it. For example, the Portland Gas Tax is used for road repairs, pedestrian safety, and the like.¹⁹² The amount of revenue generated by an individual item tax can range from inconsequential to very significant, depending on the good, the tax base, and the tax rate. One specific example is the sugary drink tax that is now in place in a number of cities. For example, Philadelphia’s tax of sweetened beverages at a rate of \$0.015 per ounce produced \$78.8 million over 2018.¹⁹³

To give a ballpark figure for how much an individual item tax could raise in Portland, consider a \$0.05/unit excise tax on coffee. Assuming that every adult in the tri-counties (1,459,274 as of July 2018)¹⁹⁴ buys on average one cup of coffee a week, then that would generate \$3.8 million in revenue on an annual basis.

Luxury Taxes

Luxury taxes are a subset of individual item taxes levied only on goods deemed non-essential. This typically take the form of an ad-valorem tax and is passed to the consumer at the point of sale. For example, the U.S. imposed a nation-wide 10% luxury tax in 1990 on several products including private boats, jewelry and furs. Each good was only considered a luxury item after a

¹⁹⁰ Legislative Revenue Office. (2018). *2018 Oregon Public Finance: Basic Facts*, Retrieved from <https://www.oregonlegislature.gov/lro/Documents/2018%20FINAL%20-1.pdf>

¹⁹¹ CBS News. (2017). Oregon legislature considers coffee tax, officials say. CBS. Retrieved from <https://www.cbsnews.com/news/oregon-legislature-considers-coffee-tax/>

¹⁹² Njus, E. (2018, February). Portland gas tax brings in more than expected. *The Oregonian*. Retrieved from https://www.oregonlive.com/commuting/2018/02/portland_gas_tax_collects_more.html

¹⁹³ Burdo, A. (2018, January). First full year of soda tax revenue puts city \$13M+ short of goal.

Philadelphia Business Journal. Retrieved from <https://www.bizjournals.com/philadelphia/news/2018/01/26/philly-beverage-tax-soda-tax-pbt-2017-year-revenue.html>

¹⁹⁴ Population Research Center. (2019). Population estimates and reports. Portland State University, College of Urban and Public Affairs. Retrieved from <https://www.pdx.edu/prc/population-reports-estimates>

certain value (i.e. jewelry and furs costing over \$10,000).¹⁹⁵ However, these taxes were collectively repealed by 2002.

Today, there are few remaining states with outright luxury taxes. New Jersey implemented a Luxury and Fuel Inefficient Vehicle Surcharge in 2006. Under this tax, new vehicles priced over \$45,000 or that have an EPA rating less than 19 miles per gallon are charged an additional 0.4%.¹⁹⁶ Some states, like California, tax luxury items such as boats and aircraft as property based on market value of the vessel.¹⁹⁷ There is little uniformity among “luxury taxes” and most states do not collect revenue data from their luxury items separate from their general sales and use taxes. This makes any quantitative analysis of the revenue potential difficult. Moreover, there is little evidence that any state without a general sales tax has successfully imposed a luxury item tax. Montana came the closest with their 2017 “Ferrari tax” which would have imposed a 0.08%–1.0% tax on all new vehicles sales over \$150,000. However, this version of the bill did not actualize and instead was settled with an increase in vehicle registration fees. As of today, none of the five states without a statewide sales tax have imposed a luxury item tax.

Keeping the above challenges in mind, we calculated the rate a potential luxury item tax would need to be charged to reach \$100 million in revenue using Illinois Department of Revenue Sales Tax Statistics for fiscal year 2018.¹⁹⁸ The data is divided by standard industrial classification (SIC) codes, of which we analyzed several goods that fall reasonably into the definition of luxury (jewelry, recreational vehicles, motorcycles, etc.). First, we analyzed jewelry stores, as this industry had the highest state sales tax revenue of all the “luxury” industries in FY 2018. We took the roughly \$32 million in state tax revenue, scaled it up by the 6.25% state tax rate, and then proportioned it down to what might be feasible to generate within Clackamas, Multnomah, and Washington counties—this came out to roughly \$74 million. In order to generate enough revenue to meet our \$100 million goal, all goods within this industry would need to be charged a 135.2%.

Next, we combined the revenue for each “luxury” good industry and performed a similar analysis. These industries are: jewelry, aircraft, boats, motorcycles, and R.V.s. This resulted in an estimated \$136 million in sales for the tri-county area. Again, to reach our target revenue this would require a tax rate estimated at 73.6%. We emphasize that spending patterns on these items vary state by state and that this analysis is based on rough data that does not account for the consumer response to higher prices (which would be significant).

¹⁹⁵ United States General Accounting Office. (1992). *Tax policy and administration: Luxury excise tax issues and estimated effects* [PDF file]. Retrieved from <https://www.gao.gov/assets/220/215770.pdf>

¹⁹⁶ State of New Jersey. (2017). *Luxury & fuel inefficient vehicle surcharge*. Retrieved from <https://www.state.nj.us/treasury/revenue/njbgs/luxvehs.shtml>

¹⁹⁷ Los Angeles County. (2019). Boats and aircraft: Other property [web page]. Retrieved from <https://assessor.lacounty.gov/boats-and-aircraft/>

¹⁹⁸ Illinois Revenue. (2018). *Sales tax statistics by annual year*. Retrieved from <https://www2.illinois.gov/rev/research/taxstats/SalesTaxStatistics/SitePages/SalesTaxYear.aspx?rptYear=2018>

Income Taxes

Oregon is one of the many states that taxes income, which provides the primary source of revenue for the state government. One of the key methods for implementing an income tax is withholdings, which is managed through the payroll system. Counties or other jurisdictions have the option of increasing revenue by adding onto the current payroll tax, much like Multnomah County did in the early 2000s to increase funding for schools after state budget cuts.¹⁹⁹ Passed in 2003, this measure raised an estimated \$128 million annually for three years through a 1.25% income tax.²⁰⁰

Flat Rate Income Tax

A flat tax (or head tax) on income taxes individuals at a constant rate. A true flat rate taxes all individuals at the same level regardless of their income. In order to generate \$100 million in revenue using a head tax, each household in Clackamas, Multnomah, and Washington counties would be charged \$119.78, tacked on to their annual income filing. If levied at the individual level, the fee drops to \$54.38. Using Oregon Department of Revenue's 2017 report on income tax statistics, we calculated the household fee by dividing the \$100 million target revenue with the total number of returns filed for the three counties, and used the total population in similar process for the per capita head tax. The individual head tax would disproportionately affect families as each tax-filing member's fee would be multiplied how many dependents they claim. For example, a joint-filing family of five would pay a total of \$271.90 under this option.

Additionally, this tax is regressive as it taxes lower income individuals at higher rates than their higher earning counterparts. Under the household case, the bottom 20% of earners would pay an average of 0.70% more of their income than the top 20%, whereas the middle quintile would be responsible for 0.12% more than the top earners.

Proportional Income Tax

To mitigate these discrepancies we also analyze the case of a proportional tax (i.e. a head tax that varies across income levels). For this analysis we use U.S. Census Bureau's income quintile distribution for each county, alongside the Oregon income tax statistics employed in the previous section. We calculated a rate for each county that, when applied to the mean household income for each quintile, sum to generate the desired \$100 million across the tri-county area.

¹⁹⁹ Dillon, S. (2003). Portland voters approve Oregon's only county income tax, aiding schools. *The New York Times*. Retrieved from <https://www.nytimes.com/2003/05/22/us/portland-voters-approve-oregon-s-only-county-income-tax-aiding-schools.html>

²⁰⁰ Multnomah County. (2003). *May 2003 special election - Multnomah County - Measure No. 26-48*. Retrieved from <https://multco.us/elections/may-2003-special-election-multnomah-county-measure-no-26-48>

To illustrate using Multnomah County, each household would be charged 0.14% of the mean income for their respective quintile. This amounts to a \$17.15 tax for the bottom 20%, \$84.98 charged to the middle 20%, and a \$299.82 flat tax levied on those in the top income group. The rates are similar for Clackamas and Washington counties, each requiring a 0.13% income tax to produce their share of the target revenue. While this proportional flat tax remains regressive within each quintile group, it negates the variation between income quintiles seen in the analysis of a true flat tax.

Income Tax on Highest Earners

In 2010, Oregon voters passed two referenda, Measure 66 and 67, that increased taxes for businesses and high-earning households. Measure 66 increased the tax rate to 9.9% for joint-filers earning more than \$250,000 and for single-filers with an income higher than \$125,000 in order to help make up for the state budget deficit following the recession.²⁰¹ Along this line of thinking, we have calculated how much the tax rate on top earners would need to increase in order to cover \$100 million in revenue for homelessness projects. Using Oregon Department of Revenue's 2017 Personal Income Tax Statistics, we found the aggregate adjusted gross income of those earning more than \$250,000 across the three counties was just over \$19.8 billion. To reach the target revenue this figure would be taxed at a rate of 0.505%, meaning the rate on the 33,770 top earning households across the tri-county would need to increase to roughly 10.41%.

California is one state leading the charge on aggressive tax hikes for high income earners. Their "millionaires' tax," passed in 2005, increased their highest rate to 10.3% for those in the top income threshold. This rate was further increased to 13.3% in 2012, the highest rate in the country. This increase raised an estimated \$8.1 billion for budget year 2018–2019²⁰².

Payroll Tax

Payroll taxes are paid by employers based on their employees' wages. The TriMet Payroll and Self-Employment Tax is an example of a local application of a payroll tax. Currently, employers pay 0.7637% of wages toward mass transit district funds.²⁰³ While the TriMet Tax applies only to businesses within their service area, applying the payroll tax to the three counties expands the tax base, allowing for relatively lower tax rates. A payroll tax of 0.176% on wages paid within Clackamas, Multnomah, and Washington Counties would raise the desired revenue for

²⁰¹ State of Oregon. (2009). *Measures 66 and 67*. Legislative Revenue Office. Retrieved from <https://www.oregonlegislature.gov/lro/Documents/11-19-09%20RR%206-09%20Measures%2066-67.pdf>

²⁰² Tharpe, W. (2019, 7 February). Raising state income tax rates at the top a sensible way to fund key investments. *Center on Budget and Policy Priorities*. Retrieved from https://www.cbpp.org/research/state-budget-and-tax/raising-state-income-tax-rates-at-the-top-a-sensible-way-to-fund-key#_ftn1

²⁰³ Oregon Department of Revenue. (n.d.) Payroll tax basics: Understanding basic requirements for reporting and paying Oregon payroll taxes [PowerPoint slides]. Retrieved from <https://www.oregon.gov/DOR/programs/businesses/Documents/PayrollSlideshow.pdf>

homelessness programs. Using 2017 QCEW data, we assume the shares of wages by establishment size for the entire US is representative of the local area. The table below displays our estimates of this rate if only applied to establishments above a certain size. For example, a tax of 0.264% charged on the payroll of establishments with 50 or more employees would generate \$100 million in homelessness project revenue.

Table 3.5: Payroll Taxes

Establishment Size Tax Base	Payroll Tax Rate
All Establishments	0.176%
Establishments with 5 employees or more	0.186%
Establishments with 10 employees or more	0.198%
Establishments with 20 employees or more	0.219%
Establishments with 50 employees or more	0.264%
Establishments with 100 employees or more	0.319%
Establishments with 250 employees or more	0.446%
Establishments with 500 employees or more	0.612%
Establishments with 1,000 employees or more	0.881%

To generate the desired revenue, a tax of wages only at establishments with 50 employees or more would require a rate of 0.264%, while a tax of wages at only the largest classification of establishments would require a rate of 0.881%, or \$8.81 per \$1000 in wages.

Property Taxes and Bond Measures

Property taxes are the primary source of revenue for local governments in Oregon, and can be used to generate revenue through bond measures such as Oregon Metro’s Affordable Housing Bond.²⁰⁴ This bond raises \$653 million in revenue, which will be used to provide affordable housing within the Metro region (for more information, see the previous section). To pay for the bond, property taxes were raised by \$0.24 per \$1,000 in assessed value (which comes out to about \$60 for every \$250,000 of assessed home value (AV)).²⁰⁵ A major piece of legislation that allowed for this bond was Measure 102, which amends the state constitution to allow government entities to use revenue from affordable housing bonds toward public-private development partnerships.

²⁰⁴ Metro. (2018). Affordable homes for greater Portland [web page]. Retrieved from: <https://www.oregonmetro.gov/public-projects/affordable-homes-greater-portland>

²⁰⁵ Oregon Live. (2018). \$653 million Metro affordable housing bond passes: Election results 2018. *The Oregonian*. Retrieved from https://www.oregonlive.com/politics/2018/11/2018_metro_affordable_housing_bond.html

Calculating Property Taxes

Calculating the actual tax due for a household can be complicated due to the multiple rates and valuation methods. The calculation begins with the comparison of two values, based on a property's AV and RMV. The Measure 5 cap is 1.5% of current RMV (1% for general government taxes and 0.5% for educational taxes). Based on its location in various taxing districts, each property will have a limited government tax rate and a limited education tax rate. The sum of these rates is then multiplied by the AV to calculate the base tax. If the calculated base tax exceeds the Measure 5 cap, any temporary voter-approved property tax measure for specific services (such as increased funding for public safety, libraries or schools) is reduced first, all the way to \$0 if necessary. If the taxes still exceed Measure 5 caps, each permanent tax rate component within the base tax is then compressed proportionally such that the base tax will equal the Measure 5 cap.

In order to calculate final taxes, the bonded general government and bonded education rates, which fund capital construction projects, such as new buildings or equipment, are multiplied by the AV and added to the base tax. These bonded rates are not subject to the property tax caps.

Typically property taxes are capped at 1.5% of the property's real market value (RMV) due to Measure 5. However, Measure 5 does not apply voter-approved bond levies used for capital construction.²⁰⁶ It is also possible to directly raise property taxes through a local option instead of going through a bond measure. This tax scheme also requires voter-approval and, unlike bonds used for capital construction, would be subject to Measure 5 and Measure 50. Since some properties are already at the 1.5% cap, not all properties will be subject to the full rate increase—a phenomena known as compression. For more information on Measures 5 and 50, see the sidebar.

Resolving a portion of the difference between the AV and RMV of select properties is one potential method of raising the required revenue. As of 2017, commercial buildings in Multnomah County are only taxed on 37% of their current RMV due to the taxable value growth limits imposed by Measure 50. Increasing the taxable values of these properties alone to their RMV would raise, an extra \$352 million in tax revenue, after accounting for compression. While extending this estimate to all three counties is difficult due to the concentration of commercial properties within Multnomah County, it is clear that resetting just a fraction of the taxable value difference would generate considerable revenue. However, implementing the policy would require a regional waiver from the Measure 50, likely putting the issue to a vote.

Another option is to adopt a real estate transfer tax similar to that imposed within Washington County. Currently, the county taxes property sales and transfers at a rate of \$1 per \$1,000 of sale price, split between the buyer and seller. In the 2017-18 tax year, this generated \$6.5

²⁰⁶ Oregon Department of Revenue. (n.d.). How property taxes work in Oregon [web page]. Retrieved from <https://www.oregon.gov/dor/programs/property/pages/property-taxes.aspx>

million in revenue.²⁰⁷ Using this data, 2017 Multnomah County Assessor data, and extrapolating to Clackamas County proportionally using QCEW wages, we estimate that \$15.3 billion in properties were sold in 2017. According to this estimate, the region would need to tax transfers at a rate of \$6.52 per \$1,000 in sale price to generate the desired revenue, or around \$652 per \$100,000 in home value. Unfortunately, implementing such a tax is not likely feasible, as Measure 79 of Oregon’s constitution, passed in 2012, prohibits state and local governments from imposing transfer taxes, except those in effect at the end of 2009.

Similar to Metro’s Affordable Housing Bond, Los Angeles County’s Measure HHH was a \$1.2 billion bond measure to fund affordable housing, that increases property taxes by an average of about \$33 per year.²⁰⁸ We summarize the tax options below.

Table 3.6: Revenue-raising options summary

Tax Policy	Description	Relevant examples	Tax Base	Tax Rate/Fee to reach \$100 Million
Corporate Tax	A tax on business profits	Exists in Oregon, Multnomah County, and Portland	Clackamas and Washington County Business Profits	\$91.5 million by expanding Multnomah BIT to Clackamas and Washington
Business License Tax or Fee	A fee charged per establishment	City of Portland Business License Tax	Business Fee	\$1,755.54
Gross Receipt Tax	A tax on business revenue	City of Portland and San Francisco	Business Revenue	0.055% (0.056% excluding groceries)
Sales Tax	A tax on a good or service levied at the point of sale	Does not exist in Oregon, but most other states	Price of Purchased Goods	1.45%
Individual Item Tax/Luxury Tax	A tax on a specific good, levied at the point of sale	Exists in Oregon in the form of sin taxes	Retail Price of the Good (Unit or Ad Valorem)	Varies significantly by good (see pg. 107 for details)
Flat Rate Tax	A tax on individual income	Portland Art	Tax filers	\$119.78 per taxpayer
Payroll Tax	A tax on wages paid out by all businesses	TriMet Payroll and Self-Employment Tax	Payroll Wages	0.176%
Income Tax on the Highest Earners	Increases in income tax rate for top earners	California “Millionaire’s Tax”	Tax filers with AGI over \$250 thousand	0.505% of adjusted gross income

²⁰⁷Washington County Oregon. (2019). *Proposed budget detail program Fiscal Year (FY) 2019-2020*. [PDF file]. Retrieved from https://www.co.washington.or.us/Support_Services/Finance/CountyBudget/upload/19-20-Proposed-Budget-Program.pdf

²⁰⁸ Chiland, E. (2016). Measure HHH: Angelenos ok \$1.2 billion bond to tackle homelessness. *Curbed Los Angeles*. Retrieved from <https://la.curbed.com/2016/11/9/13574446/homelessness-ballot-measure-hhh-housing-bond-pass>

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Bond Measure	Funded through an increase in property taxes	Metro Affordable Housing Bond Measure	Assessed Property Values	-----
Reset Assessment of Commercial Assessed Values	Increase in taxable property value	-----	Commercial Properties	\$352 million in revenue from Multnomah County alone
Real Estate Transfer Tax	A tax on property sales and transfers	Washington County Transfer Tax	All Property Sales	\$6.52 per \$1,000 in sale value

Further Research and Conclusion

This has been a review of the various means local jurisdictions can raise revenue to address homelessness. This report did not delve into the various economic impacts of any of these tax policies. Doing so would require a specific policy from which the impacts could be modeled. Given the multiple additional burdens marginalized communities experience, and that these communities experience homelessness at higher rates, examining the equity impacts or regressiveness of any revenue measure is essential.

Policy does not happen in a vacuum. While each of these taxes are discussed in the context of homelessness, there also exists the option of coordinating with other priorities—such as increasing K-12 education funding—to establish new revenue streams. Further, decisions about what revenue measures to pursue, and how to structure them should take place in a transparent and inclusive manner. This section provides information and data about how to structure such a measure.

IV. CONCLUSIONS

In this report we examined approaches to collaborative and regional governance to address homelessness in the Portland tri-county region, costs to support people experiencing homelessness and housing insecurity, and possible revenue options for Oregon localities to explore. The purpose of this report was to provide community members, organizations, businesses, and governments with some of the building blocks to create a path forward in addressing homelessness and housing insecurity. This report does not provide answers to some of the most important questions, such as how do we make sure we do not end up in this situation again. Rather, the information in the report helps articulate how we create some stability for people while we also make plans to understand the underlying structural issues that shape our region. We look forward to creating those plans with the Portland region.

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Appendix - Glossary

Affordable Housing

Affordable housing can refer to a wide range of housing types and pathways to housing. In this report, we define housing as affordable when households pay less than 30% of their income on housing costs. Affordable housing may be developed and owned by the government, subsidized by the government and built by a private developer, or obtained through rent assistance to lease units on the private market. Some buildings might have a mix of market rate units and other units that are designated for specific moderate to lower income groups. Other affordable housing is “naturally occurring,” meaning it is affordable to people with lower incomes without any type of intervention. Our focus is on whether community members can attain safe and quality housing based on their income at a level that promotes housing stability, and not on a particular type of affordable housing or unit type.

Chronic homelessness

HUD defines chronic homelessness as “an unaccompanied homeless individual with a disabling condition who has either been continuously homeless for a year or has had at least four episodes of homelessness in the past three years.”²⁰⁹

Continuum of Care

HUD defines the Continuum of Care (CoC) program is designed to promote community-wide commitment to the goal of ending homelessness; provide funding for efforts by nonprofit providers, and State and local governments to quickly rehouse homeless individuals and families while minimizing the trauma and dislocation caused to homeless individuals, families, and communities by homelessness; promote access to and effect utilization of mainstream programs by homeless individuals and families; and optimize self-sufficiency among individuals and families experiencing homelessness.”

Doubled Up

Families or individuals who live doubled up with friends or family members due to the loss of housing or economic hardship are considered homeless. Sometimes described as the hidden homeless, this population is not counted in Point-in-Time but included in Department of Education counts for unaccompanied youth or youth in families. Neither count includes doubled-up adult households. Doubled up can refer to a range of complex living arrangements.

Homeless

Government agencies employ multiple definitions of homelessness. For instance:

²⁰⁹ National Low Income Housing Coalition. (2019). HUD publishes final rule on definition of “chronic homelessness” [web page]. Retrieved from <https://nlihc.org/resource/hud-publishes-final-rule-definition-chronic-homelessness>

- **HUD:** To be described as homeless for HUD²¹⁰ reporting, an individual must fall into one of four categories. Those categories include: 1) an individual who lacks a fixed, regular, and adequate nighttime residence; 2) an individual who will imminently lose their primary nighttime residence; 3) unaccompanied children and youth or those in families who meet another federal statute's definition for homelessness and, 4) an individual fleeing domestic violence. While these 4 categories may sound somewhat broad, each category includes sub-criteria creating significant restrictions in being defined as homeless.²¹¹
- **Department of Education:** The DOE focuses on youth who are with families or unaccompanied. Under the McKinney-Vento Act, the first part of the definition starts out similarly to the HUD definition where homeless "means individuals who lack a fixed, regular, and adequate nighttime residence" (<https://nche.ed.gov/mckinney-vento-definition/>). The second part of the definition includes all of the categories within the HUD definition as well as unaccompanied youth or children or those in families who: 1) are sharing someone else's housing due to economic hardship, loss of housing, etc. (commonly referred to as doubling up); and, 2) migratory children living in any of the situations described by HUD or the MVA (<https://nche.ed.gov/mckinney-vento-definition/>).
- **Health Resources and Services Administration:** "an individual who lacks housing (without regard to whether the individual is a member of a family), including an individual whose primary residence during the night is a supervised public or private facility that provides temporary living accommodations and an individual who is a resident in transitional housing."²¹²

Housing cost or rent burdened

According to HUD, "Families who pay more than 30% of their income for housing are considered cost burdened and may have difficulty affording necessities such as food, clothing, transportation and medical care." In addition to rent or mortgage payments, housing cost burden includes housing costs such as insurance and utilities.

Housing First

HUD defines Housing First as an "approach to quickly and successfully connect individuals and families experiencing homelessness to permanent housing without preconditions and barriers to

²¹⁰ U.S. Department of Housing and Urban Development [HUD]. (n.d.) Homeless definition [PDF file]. Retrieved from https://files.hudexchange.info/resources/documents/HomelessDefinition_RecordkeepingRequirementsandCriteria.pdf

²¹¹ HUD does allow for people who are doubled up, or at risk of imminently losing their housing under several limited circumstances; however, the documentation required to demonstrate this are onerous.

²¹² U.S. Health Resources & Service Administration [HSRA]. (n.d.). Health center program terms and definitions [PDF file]. Retrieved from <https://www.hrsa.gov/sites/default/files/grants/apply/assistance/Buckets/definitions.pdf>

entry, such as sobriety, treatment or service participation requirements. Supportive services are offered to maximize housing stability and prevent returns to homelessness as opposed to addressing predetermined treatment goals prior to permanent housing entry."²¹³

Housing insecurity

In the American Housing Survey (AHS), a joint venture between HUD and the US Census Bureau, housing insecurity “encompasses several dimensions of housing problems people may experience, including affordability, safety, quality, insecurity, and loss of housing”.²¹⁴

Median income

Median income identifies the point where 50% of people make over that amount and 50% make less than that amount. Median income can be calculated for different groupings of people such as different geographies, family size, household size, race, etc. In this report, we use median family income (MFI) in our calculations. Determining who is described as low-income depends on what part of the income spectrum a family falls. If you make less than 80% MFI, you would be concerned low- or moderate- income.

Permanent Supportive Housing

HUD defines permanent supportive housing as permanent housing with indefinite leasing or rental assistance paired with supportive services to assist homeless persons with a disability or families with an adult or child member with a disability achieve housing stability.²¹⁵

Point-in-Time Count

“The Point-in-Time Count provides a count of sheltered and unsheltered homeless persons on a single night during the last ten days in January”²¹⁶ in part to capture which individuals are unwilling or unable to access shelter. The count must be completed every two years by jurisdictions over a single night to avoid double counting. The guidelines for conducting the PIT Count differentiate between sheltered and unsheltered individuals, and require basic demographic breakdown.

²¹³ U.S. Department of Housing and Urban Development [HUD]. (2019). Continuum of Care program eligibility requirements [web page]. Retrieved from <https://www.hudexchange.info/programs/coc/coc-program-eligibility-requirements/>

²¹⁴ U.S. Department of Housing and Urban Development [HUD]. (n.d.) Measuring housing insecurity in the American Housing Survey [web page]. Retrieved from <https://www.huduser.gov/portal/pdredge/pdredge-frm-asst-sec-111918.html>

²¹⁵ U.S. Department of Housing and Urban Development [HUD]. (2019). Continuum of Care program eligibility requirements [web page]. Retrieved from <https://www.hudexchange.info/programs/coc/coc-program-eligibility-requirements/>

²¹⁶ U.S. Department of Housing and Urban Development [HUD]. (2019). CoC homeless populations and subpopulations reports [web page]. Retrieved from <https://www.hudexchange.info/programs/coc/coc-homeless-populations-and-subpopulations-reports/>

Unsheltered Homeless

HUD defines unsheltered homeless as people experiencing homelessness “who sleep in places not meant for human habitation (for example, streets, parks, abandoned buildings, and subway tunnels) and who may also use shelters on an intermittent basis.”²¹⁷

²¹⁷ U.S. Department of Housing and Urban Development [HUD]. (2008). *A guide to counting unsheltered homeless people* [PDF file]. Retrieved from https://files.hudexchange.info/resources/documents/counting_unsheltered.pdf

Appendix N:

REGIONAL SUPPORTIVE HOUSING SERVICES Tri-County Data Scan



Photo credit: Andrii Yalanskyi, Dreamstime.com

Prepared by
Kristina Smock Consulting
for



Metro

November 2020

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Introduction

In May 2020, voters approved a measure to raise money for supportive housing services for people experiencing homelessness or at risk of homelessness in Multnomah, Clackamas and Washington counties. The regional Supportive Housing Services (SHS) program will fund a range of homeless and housing services, including supportive housing, rapid rehousing, rent assistance, homelessness prevention, and wraparound clinical and social service supports.

Metro worked with its jurisdictional partners in June and July 2020 to compile baseline data from across the three counties to support regional planning for SHS implementation. County staff gathered and shared data on public funding, system capacity, outcome measures and programmatic cost estimates for homeless services in their counties. Additional information was compiled from each county's Continuum of Care applications, Housing Inventory Counts and Annual Performance Reports.

This report provides a cross-county summary analysis of the data. The analysis includes the entire scope of each county's homeless services, not just the area within Metro's service district. It offers a snapshot of the region's current homeless services landscape as a starting point to help inform further information gathering, analysis and decision making. It is intended as an internal document to support Metro and its jurisdictional partners in their SHS program planning work.

Public Funding

Each county was asked to provide data on the sources (federal, state or local) and amounts of all public funding for supportive housing, rapid rehousing, homelessness prevention, emergency shelter and transitional housing programs in their jurisdiction. The analysis in this section shows the funding data provided by each county, broken out by program area.

The public funding across all three counties totals to more than \$112 million:

Public Funding	Multnomah	Washington	Clackamas	Total
Supportive Housing	\$38,628,151	\$5,769,658	\$4,239,884	\$48,637,693
Rapid Rehousing & Prevention ¹	\$34,188,197	\$1,963,541	\$2,209,027	\$38,360,765
Emergency Shelter	\$17,041,310	\$3,016,174	\$1,337,805	\$21,395,289
Transitional Housing	\$1,333,565	\$2,045,234	\$232,726	\$3,611,525
Total	\$91,191,223	\$12,794,607	\$8,019,442	\$112,005,272

These figures primarily reflect the public funding that flows through each county's Continuum of Care and homeless services department. Counties also worked to compile data on relevant funding allocated through their local Community Action Agencies and Housing Authorities. Funding that is paid directly to service providers or reimbursed through Medicaid billing is not fully reflected in the data. None of the funding or system capacity data in the report includes COVID-related funding or programming.

The main sources of public funding captured in the data include:

Federal:

- *Housing and Urban Development (HUD):* Continuum of Care (CoC), Housing Choice Vouchers, Project Based Vouchers, Community Development Block Grant, Housing Opportunities for Persons with AIDS, Emergency Food and Shelter Program, Emergency Solutions Grant, Family Unification Program Vouchers
- *HUD-Veterans Affairs:* Veterans Affairs Supportive Housing, Supportive Services for Veteran Families
- *Health and Human Services:* Runaway and Homeless Youth

State:

- *Oregon Housing and Community Services:* Emergency Housing Assistance, State Housing Assistance Program, Elderly Rental Assistance
- *Oregon Health Authority:* Medicaid, Medicare, State Mental Health Services Fund
- *Oregon Department of Human Services*
- *Oregon Department of Justice*

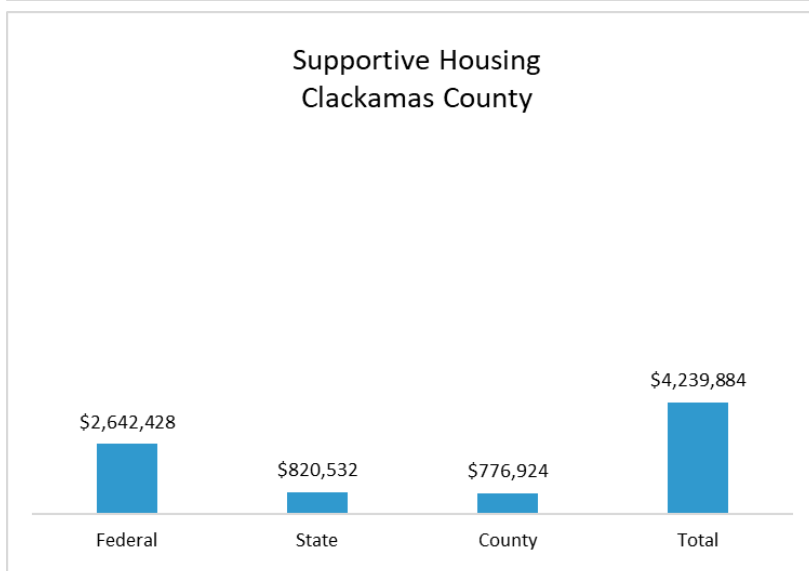
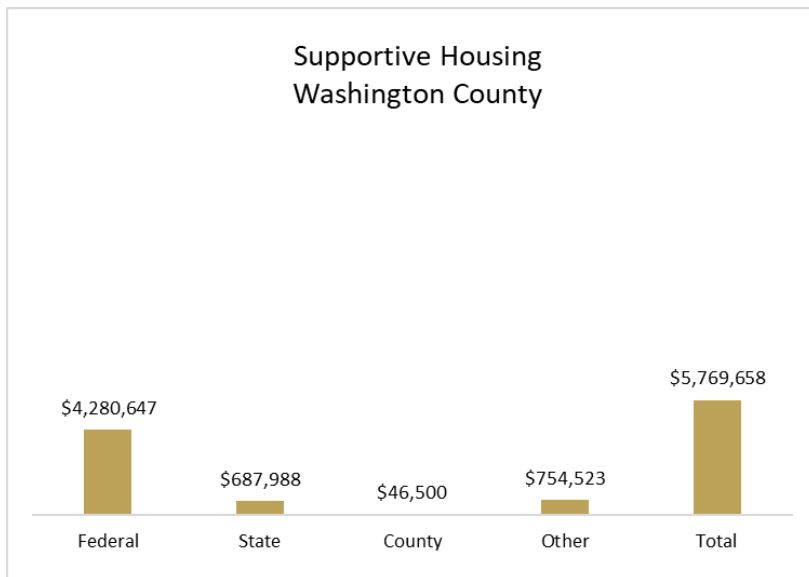
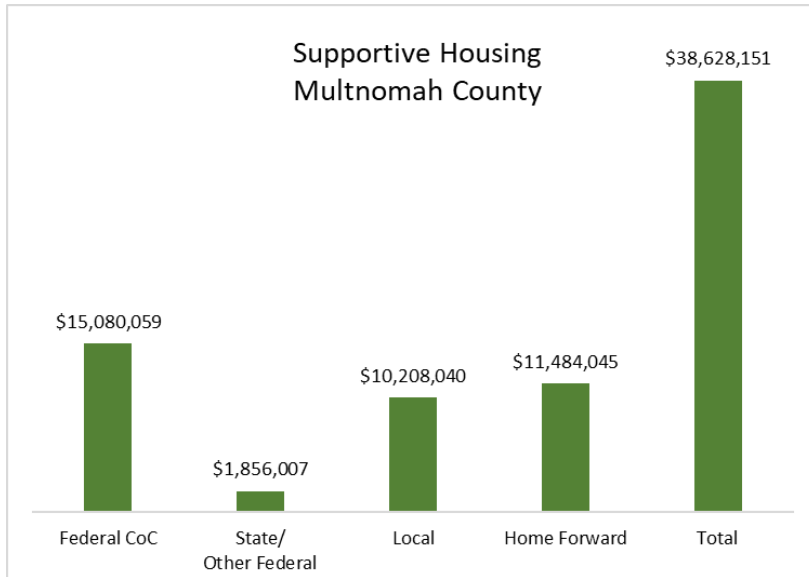
Local:

- *County:* Multnomah, Washington and Clackamas County General Funds, Washington County Safety Levy
- *City:* City of Portland General Fund

The charts on pages 5-8 show the amounts of federal, state and local funding by county for each program area.

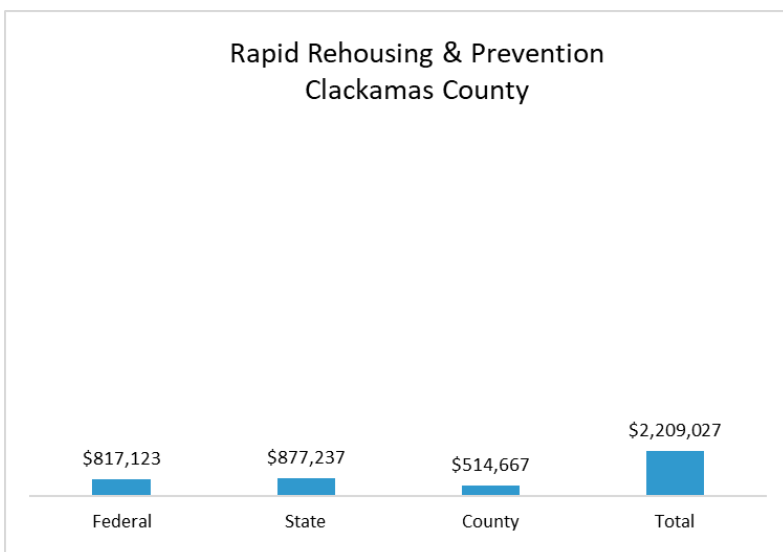
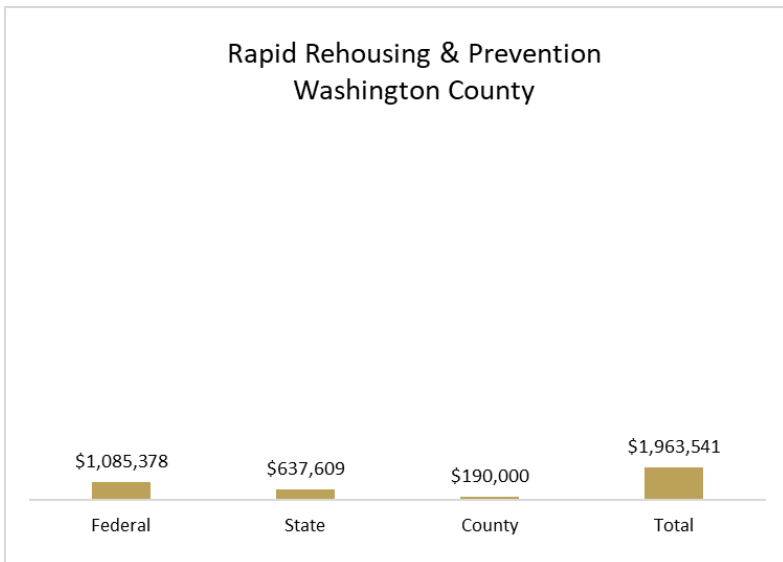
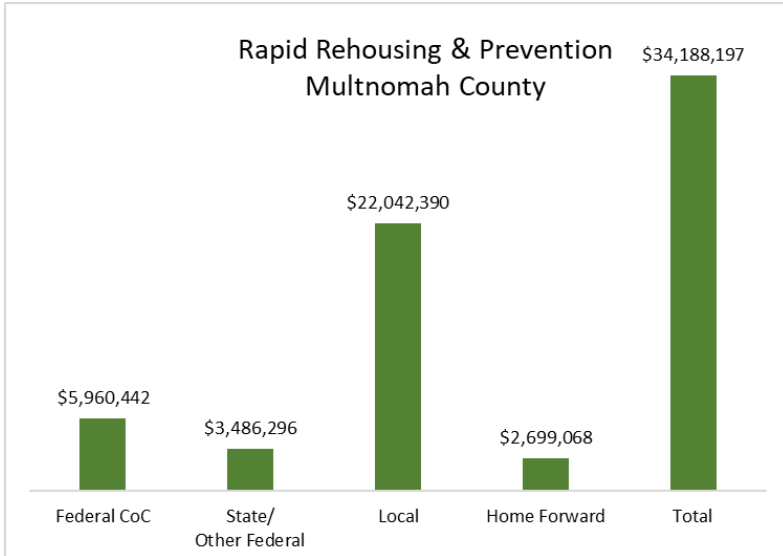
¹ Multnomah County combines rapid rehousing and homelessness prevention services into the same budget category. For consistency, funding information for these two program areas has been combined into one category for all three counties. Washington County's rapid rehousing funding is \$1,151,926 and prevention funding is \$811,615. Clackamas County's rapid rehousing funding is \$1,656,715 and prevention funding is \$552,312.

Supportive Housing



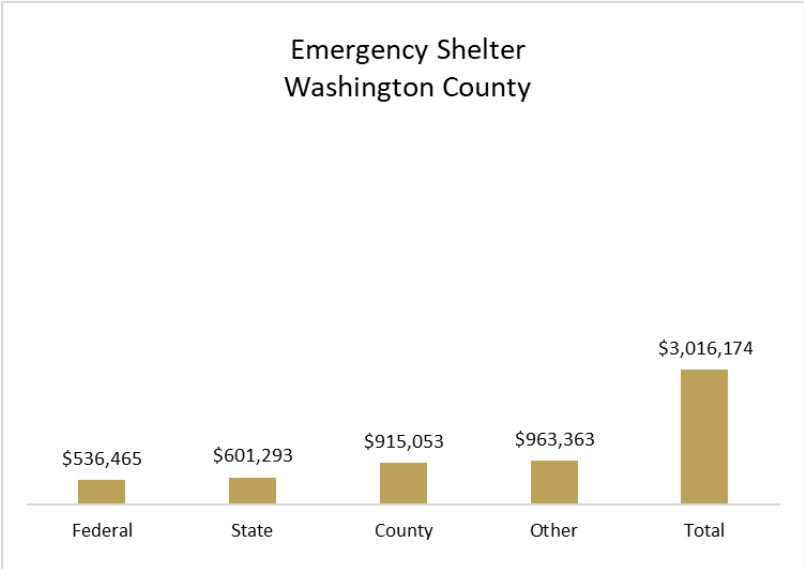
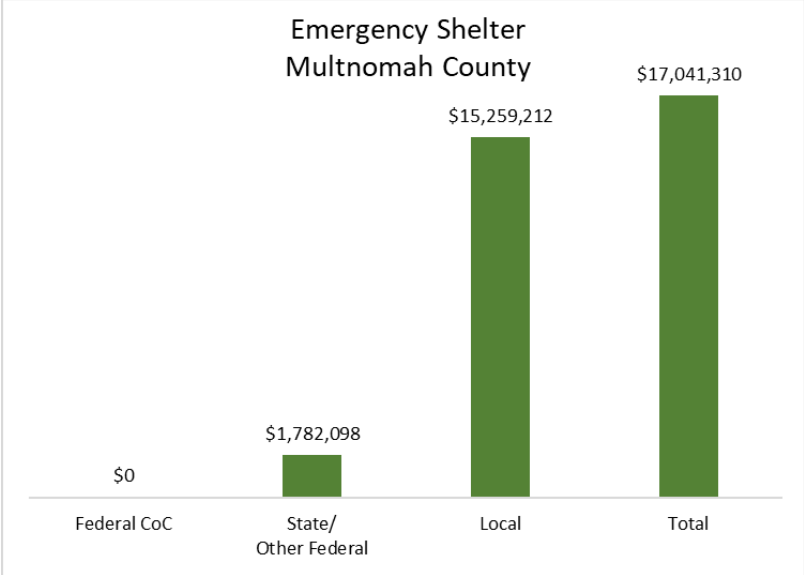
**Total Tri-County Public Funding
for Supportive Housing:
\$48,637,693**

Rapid Rehousing and Prevention

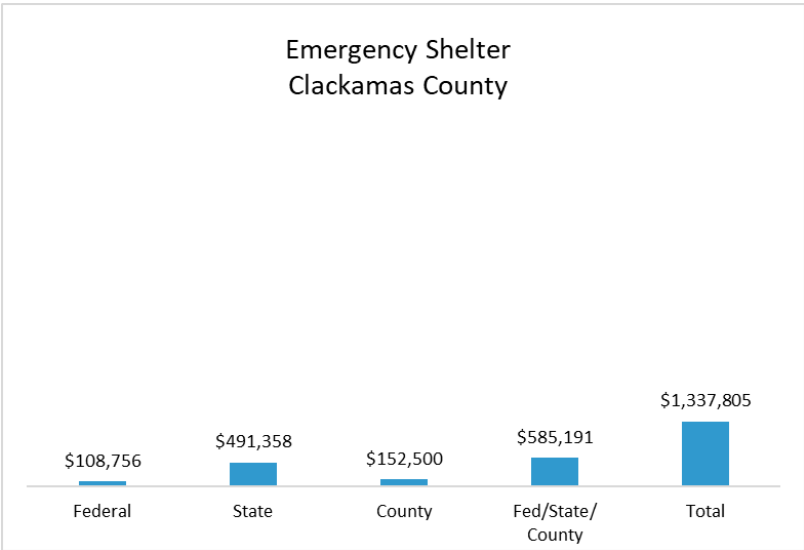


**Total Tri-County Public Funding for
Rapid Rehousing & Prevention:
\$38,360,765**

Emergency Shelter

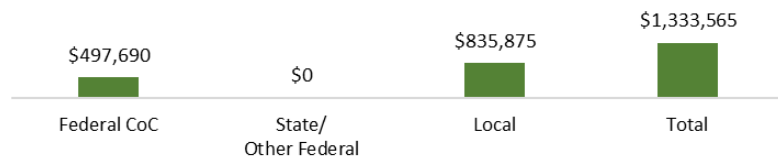


**Total Tri-County Public Funding
for Emergency Shelter:
\$21,395,289**

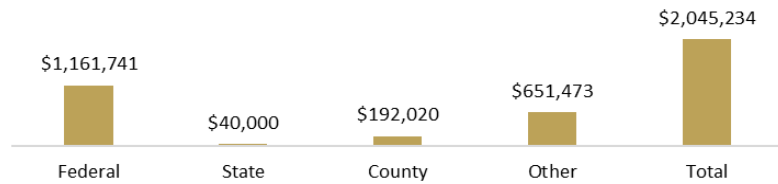


Transitional Housing

Transitional Housing
Multnomah County



Transitional Housing
Washington County



Transitional Housing
Clackamas County



**Total Tri-County Public Funding
for Transitional Housing:
\$3,611,525**

System Capacity

The regional scan of homeless service system capacity focuses on supportive housing, rapid rehousing, homelessness prevention, emergency shelter and transitional housing programs. The first part of this section summarizes bed capacity for each program area based on point-in-time data. The second summarizes the number of households served annually within each program area.

Bed Capacity (Point-in-Time Data)

The Housing Inventory Count (HIC) provides a comprehensive snapshot of each county’s bed capacity on a single night. It includes publicly funded programs as well as those that don’t receive any public funding and don’t participate in the county’s Homeless Management Information System (HMIS). The data in this section are based on each county’s 2020 HIC, which was conducted on January 23, 2020.

The HIC is a useful way to understand system capacity at a single point in time, but it also has limitations that need to be kept in mind:

- The HIC shows how many people the system can serve on a given night, but not how many people are served over the course of a year. (The section on households served provides that information.)
- The HIC doesn’t include everyone being served via rapid rehousing on a given night due to the way the data are collected, and it doesn’t include homelessness prevention programs at all.
- The HIC doesn’t systematically capture seasonal and severe weather emergency shelter beds. Those beds are included in the *Total Bed Capacity* chart below, but they are not guaranteed from year to year.

Total Bed Capacity (Point-in-Time 2020)		Multnomah	Washington	Clackamas	Total
Supportive Housing	Total beds	4947	509	401	5857
Rapid Rehousing	Total beds	2186	231	159	2576
Emergency Shelter	Year-round beds	1607	125	99	1831
	Seasonal & severe weather	284	109	209	602
Transitional Housing	Total beds	746	126	35	907

The HIC provides information on how bed capacity is allocated by certain HUD-defined sub-populations and household types on the night of the count. The allocations may shift over time, particularly for programs that are not facility based. The sub-population categories that are tracked in the HIC do not capture the full range of populations served or all of the populations that are prioritized for services by specific programs, so the insights they offer are limited. The sub-populations are not mutually exclusive, and households can be counted in more than one category.

Bed Capacity by Population and Household Type (Point-in-Time 2020)	Multnomah	Washington	Clackamas	Total
Supportive Housing Beds				
Total beds for households with children	1734	166	180	2080
Total beds for households without children	3213	343	221	3777
Beds for veteran households with children	124	117	69	310
Beds for veteran households without children	680	140	128	948
Domestic violence program beds	74	0	7	81
Unaccompanied youth beds	67	0	0	67

Bed Capacity by Population and Household Type (Point-in-Time 2020)	Multnomah	Washington	Clackamas	Total
Rapid Rehousing Beds				
Total beds for households with children	1717	211	126	2054
Total beds for households without children	461	20	33	514
Beds for veteran households with children	11	12	14	37
Beds for veteran households without children	86	7	23	116
Domestic violence program beds	265	18	21	304
Unaccompanied youth beds	181	0	3	184
Emergency Shelter Beds				
Total beds for households with children	379	117	77	573
Total beds for households without children	1297	6	22	1325
Beds for veteran households with children	0	0	0	0
Beds for veteran households without children	110	0	15	125
Domestic violence program beds	111	24	54	189
Unaccompanied youth beds	68	3	0	71
Transitional Housing Beds				
Total beds for households with children	44	39	27	110
Total beds for households without children	698	87	8	793
Beds for veteran households with children	0	27	0	27
Beds for veteran households without children	112	66	0	178
Domestic violence program beds	0	8	0	8
Unaccompanied youth beds	80	10	22	112

Households Served (Annual Data)

Data on the number of households served in each program area over the course of a year provide another lens for understanding system capacity. Compared with point-in-time data, annual data provide a more complete picture of how many people the system can serve. The data on households served also include homelessness prevention programs, which are an important part of the regional system that aren't captured in the HIC. One limitation of the data on households served is that programs that don't participate in HMIS (or don't consistently enter their program data into HMIS) may not be reflected in these data.

The data in the *Total Households Served* chart below are based on the most recently available annual data from 2019 and 2020. (The specific data years within 2019-20 vary from county to county.)

Total Households Served (Annual 2019-20)	Multnomah	Washington	Clackamas	Total
Supportive Housing	3540	393	346	4279
Rapid Rehousing	4000	135	152	4287
Prevention	3430	335	145	3910
Emergency Shelter (year-round beds)	5490	233	n/a ²	n/a
Transitional Housing	1290	206	17	1513

² Recent data on the number of households served in year-round emergency shelter for Clackamas County aren't available because one of the county's year-round shelters was demolished and rebuilt, and a full year of data aren't yet available.

The *Households Served by Population and Household Type* chart below provides data on households and people served, broken out by certain HUD-defined sub-populations and household types. These data are from each county’s Continuum of Care Annual Performance Reports (APRs) for FY 2018-19, so they are less current than the data in the *Total Households Served* chart above. APRs for FY 2019-20 are not yet available.

As with the HIC, the population categories collected and reported on in the APRs are limited and don’t capture the full range of populations that are served by the region’s homeless services system. The categories also aren’t mutually exclusive, and individuals and households can be counted in more than one category.

Households Served by Population and Household Type (Annual FY 2018-19)	Multnomah	Washington	Clackamas	Total
Supportive Housing				
Total households served	3392	385	261	4038
Households with children and adults	517	42	53	612
Households without children	2874	343	208	3425
Households with only children ³	1	0	0	1
Total persons served	4828	543	391	5762
Veterans	888	138	113	1139
Chronically homeless persons	1792	175	180	2147
Persons fleeing domestic violence	90	16	23	129
Youth under age 25	80	1	3	84
Rapid Rehousing				
Total households served	3507	115	159	3781
Households with children and adults	1151	89	129	1369
Households without children	2319	26	30	2375
Households with only children	8	0	0	8
Total persons served	6563	355	476	7394
Veterans	602	32	36	670
Chronically homeless persons	1285	14	70	1369
Persons fleeing domestic violence	359	25	47	431
Youth under age 25	393	11	10	414
Homelessness Prevention				
Total households served	2869	242	141	3252
Households with children and adults	1198	167	48	1413
Households without children	1629	75	92	1796
Households with only children	2	0	1	3
Total persons served	6501	741 ⁴	255	6756
Veterans	486	33	45	564
Chronically homeless persons	445	5	4	454
Persons fleeing domestic violence	127	34	4	165
Youth under age 25	264	15	21	300

³ “Households with only children” refers to households comprised only of persons under age 18, including unaccompanied minors, adolescent parents and their children, and adolescent siblings.

⁴ Additional households were served through the Emergency Food and Shelter Program.

Households Served by Population and Household Type (Annual FY 2018-19)	Multnomah	Washington	Clackamas	Total
Emergency Shelter				
Total households served	4480	231	660	5371
Households with children and adults	168	140	11	319
Households without children	4156	34	649	4839
Households with only children	92	57	0	149
Total persons served	5136	573	688	6397
Veterans	473	2	76	551
Chronically homeless persons	1501	26	146	1673
Persons fleeing domestic violence	642	54	16	712
Youth under age 25	695	93	47	835
Transitional Housing				
Total households served	1242	185	17	1444
Households with children and adults	29	32	13	74
Households without children	1207	153	1	1361
Households with only children	4	0	3	7
Total persons served	1291	278	44	1613
Veterans	350	114	0	464
Chronically homeless persons	360	14	0	374
Persons fleeing domestic violence	62	17	1	80
Youth under age 25	144	18	22	184

Outcome Metrics

The counties were asked to share the outcome metrics that they currently report on for each program area. This information was supplemented with data from the counties' Continuum of Care applications and Annual Performance Reports (APRs). This section summarizes the primary outcome metrics that are currently collected for each program area. It is intended to provide baseline information as a starting point for the development of regional outcome metrics.

Each county prioritizes specific outcome metrics for each program area (and in some cases for individual projects within a program area). There is some overlap, but there are also some outcome metrics that are only gathered by one county. The outcome metrics that are gathered consistently across all three counties are those that are required by HUD as part of the Continuum of Care reporting. This section begins with some of these shared outcome metrics and then lists additional outcome metrics that are used by individual counties (or specific projects within a county) but are not collected consistently across all three counties.

Many of the outcome metrics in this section could be disaggregated by race and other demographic data as part of regional SHS outcome reporting. Additional outcome metrics could be developed for SHS reporting that draw upon HUD-required universal data elements (UDE) that are currently collected in HMIS by all three counties. There are also opportunities to develop new outcome metrics that expand upon the HUD-required data fields.

Cross-County Outcome Metrics

These are the primary HUD-required outcome metrics that are collected consistently across all three counties. The performance data are based on FY 2018-19 APRs and FY 2019 Continuum of Care applications.

Outcome Metrics	Multnomah	Washington	Clackamas
Supportive Housing (PSH)			
% of persons served who remained in PSH or exited to permanent housing	94%	95%	94%
% of adults who gained or increased total income from entry to annual assessment or exit	46%	60%	62%
% of adults who gained or increased employment income from entry to annual assessment or exit	11%	9%	13%
% of adults who gained or increased non-employment cash income from entry to annual assessment or exit	37%	55%	53%
Rapid Rehousing (RRH)			
% of persons exiting RRH to permanent housing	91%	82%	83%
% of persons served in RRH who moved into housing	85%	75%	81%
Average length of time between RRH start date and housing move-in date, in days	36	40	43
% of adults who gained or increased total income from entry to annual assessment or exit	11%	43%	32%
% of adults who gained or increased employment income from entry to annual assessment or exit	7%	28%	19%
% of adults who gained or increased non-employment cash income from entry to annual assessment or exit	5%	23%	15%

Outcome Metrics		Multnomah	Washington	Clackamas
Homelessness Prevention (HP)				
% of persons served in HP who remained in permanent housing or exited to permanent housing		94%	99%	84%
% of adults who gained or increased total income from entry to exit		8%	3%	9%
% of adults who gained or increased employment income from entry to exit		6%	3%	6%
% of adults who gained or increased non-employment cash income from entry to exit		3%	1%	4%
Emergency Shelter (ES)				
% of persons served in ES who exited to permanent housing ⁵ (see footnote 5 for limitations of this measure)		21%	46%	3%
% of adults who gained or increased total income from entry to exit		7%	15%	7%
% of adults who gained or increased employment income from entry to exit		4%	8%	3%
% of adults who gained or increased non-employment cash income from entry to exit		3%	9%	3%
Transitional Housing (TH)				
% of persons served in TH who exited to permanent housing		60%	77%	100%
% of adults who gained or increased total income from entry to annual assessment or exit		37%	28%	63%
% of adults who gained or increased employment income from entry to annual assessment or exit		26%	17%	63%
% of adults who gained or increased non-employment cash income from entry to annual assessment or exit		12%	14%	0%
Returns to Homelessness				
% of persons who exited the homeless services system to a permanent housing (PH) destination and returned to the homeless services system in:				
<6 months	Exit was from PH (includes PSH and RRH)	9%	0%	0%
	Exit was from ES	22%	5%	5%
	Exit was from TH	9%	1%	0%
6-12 months	Exit was from PH (includes PSH and RRH)	8%	3%	3%
	Exit was from ES	11%	7%	0%
	Exit was from TH	7%	0%	0%
2 years	Exit was from PH (includes PSH and RRH)	28%	5%	3%
	Exit was from ES	45%	15%	8%
	Exit was from TH	26%	2%	0%

⁵ There are several limitations to this measure: (a) Multnomah and Clackamas have high rates of missing data on exit destinations (55% and 95%), which is a common issue for shelters that exit clients in HMIS after they do not return for a period of time; (b) some of the data, particularly for Clackamas, include warming centers that are not intended to help participants transition to permanent housing. For families with children in Clackamas (a data set that better reflects exits from year-round shelters with services), 60% exit to permanent housing (with a missing data rate of only 12%).

Additional Outcome Metrics

This section lists the metrics in addition to those in the above chart that are used by at least one county (or in some cases by specific projects within a county) to measure outcomes.

Supportive Housing
People/households newly placed or retained
Bed utilization
Housing stabilization period
Length of time people remain homeless
Equitable access and participation in program by BIPOC participants
Resource connections
Engagement in trackable onsite or offsite services
Connections to health insurance, primary care and mental health services
6-month and 12-month housing retention
Rapid Rehousing
People/households newly placed or retained
Bed utilization
Length of time people remain homeless
Equitable access and participation in program by BIPOC participants
6-month and 12-month housing retention
Prevention
People/households newly placed or retained
Prevent homelessness for extremely low and low-income households
Equitable access and participation in program by BIPOC participants
6-month and 12-month housing retention
Emergency Shelter
People/households served
Bed utilization
Length of time people remain homeless
Equitable access and participation in program by BIPOC participants
Transitional Housing
People/households newly placed or retained
Bed utilization
Participants enrolled in education program
Length of time people remain homeless
Equitable access and participation in program by BIPOC participants
System-Level Metrics
Inflow and outflow reporting

Cost Analysis

The data scan gathered information on current program costs to provide a starting point for Metro and its jurisdictional partners to work together to develop a methodology for determining SHS cost projections. The intent of the cost analysis was to better understand the range of costs for different program models as well as the factors that influence whether a specific project is at the low end or high end of the range. The analysis also aimed to assess what we can learn from the available data, and the gaps and limitations of that data, in order to provide a baseline to help inform further research and planning.

Recognizing that public funding covers only a portion of the total costs of most projects, the counties worked to gather more complete budget data for their programs. This was a significant undertaking with a short turnaround time, and the comprehensiveness of the budget data that could be collected varied by project and program area. As a result, the analysis of average costs reflects some but not all of the additional costs to programs beyond the public share. The analysis also doesn't capture providers' full administrative costs or any of the administrative costs to the jurisdictions, but those costs will need to be incorporated into SHS budget projections.

Even if the budget information for the analysis was complete, there are some inherent limitations to using current cost data to inform SHS program costs. Some existing projects are under-funded, so their budgets don't necessarily capture what it would actually cost to implement sustainable programs that reflect best practices. In addition, many projects rely on a wide array of leveraged services, some of which are not reflected in their budgets and are impossible to fully quantify. As the region scales up its programming, these leveraged services may not be able to meet the increased demand unless they are also funded.

The cost analysis has additional methodological limitations that should be kept in mind:

- Varying levels of completeness in the budget data across projects contribute to some of the variations in each county's average costs.
- Since the analysis relied on relatively small sample sizes, in some cases the average costs were distorted by a single program with disproportionately high costs related to unique features of its program model or disproportionately low costs due to incomplete budget information. When the outliers significantly skewed the averages, they were excluded from the calculations.
- Due to data inconsistencies and limitations in a few of the data sets, the analysis of average costs sometimes required the use of estimates and extrapolations.
- In a few cases, insufficient data made it impossible to develop a reasonable estimate. These are noted in the chart below with "n/a" and explanatory footnotes.

Average Costs

Cost Category	Multnomah	Washington	Clackamas
Supportive Housing			
Rent: average annual cost per unit	\$10,808	\$13,172	\$15,008
Supportive services: average annual cost per unit	\$4,775	\$10,714	\$6,914
Average total annual cost per unit (rent+services+admin)	\$17,076	\$24,886	\$23,048
Rapid Rehousing			
Rent: average annual cost per household served	\$6,207	\$4,103	\$5,232
Supportive services: average annual cost per household served	\$4,500	\$3,477	\$4,846
Average total annual cost per household (rent+services+admin)	\$12,303	\$8,029	\$11,366

Cost Category	Multnomah	Washington	Clackamas
Homelessness Prevention			
Average annual cost per household served	\$1,993 ⁶	\$2,373 ⁷	\$3,009
Emergency Shelter⁸			
Average annual cost per household served	\$3,104 ⁹	\$13,808	n/a ¹⁰
Average annual cost per bed	\$12,274	\$17,818	\$4,756 ¹¹
Transitional Housing			
Average annual cost per household served	n/a ¹²	\$11,537	\$13,690
Average annual cost per unit	n/a	\$20,928	\$19,394

Factors Influencing Costs

Within each program area, there is typically a range of costs, with some projects costing less than the average and some costing significantly more. This section summarizes the most common program-related factors that influence whether costs are at the low end or high end of the range for each program area.

It should be noted that while the factors listed in this section are important to consider when planning for future program costs, some projects were on the low end of the cost range for this analysis because the available cost data did not include the project's full costs.

Supportive Housing

- Household type and size
- Acuity of need of population served
- Service model – e.g. Intensive Case Management and Assertive Community Treatment are more expensive than support services that primarily focus on connecting tenants to other resources
- Availability of clinical services – these services are often not reflected in the project's budget data if they are provided by partners or funded through Medicaid billing, but they affect the overall costs
- Availability of flexible funding to cover direct costs for specific services tailored to each household
- Staff to client ratios – underfunded programs often have ratios that are higher than best practice guidelines, which can limit the effectiveness of the supportive services
- Operating model – e.g. upfront costs for developed units are higher than for leased units, but ongoing costs are lower; services are more expensive to provide at scattered sites than a single site

Rapid Rehousing

- Household type and size

⁶ This figure is a rough extrapolated estimate due to limited data.

⁷ This estimate excludes one outlier program with an average cost per of \$41,352 per household; if that outlier is included in the estimate, the average cost is \$8,870.

⁸ A goal for this analysis was to determine an average cost for housing placements out of shelter, but that wasn't possible for several reasons: (a) funding to support housing placement out of shelter is often budgeted as rapid rehousing and isn't part of the shelter budget; (b) there is a high percentage of missing data on housing placements out of shelter, as noted earlier in this report; (c) not all shelters are designed or funded to support housing placement.

⁹ Due to limited data, this figure is only based on public costs for emergency shelter.

¹⁰ Insufficient data were available to calculate average costs per household for emergency shelter for Clackamas County.

¹¹ Due to limited data, this is a rough extrapolated estimate that reflects the average operating costs of church-run shelters combined with the average public cost for case management.

¹² Insufficient data were available to calculate average costs for transitional housing for Multnomah County.

- Acuity of need of households served
- Length and intensity of housing retention support and wrap-around services provided
- Staff to client ratios
- Average length of service

Prevention

- Household type and size
- Level and duration of rent assistance provided
- Level of other financial assistance provided
- Availability and level of case management or other support services
- Average length of service

Emergency Shelter

- Household type and size
- Acuity of need of population served
- Operating model – e.g. shelters on church property run by volunteers are less costly (but also more limited) than facility-based shelters
- Availability and level of case management or housing placement support
- Type of programming – e.g. domestic violence and youth shelters often have higher costs than those without such specialized services

Transitional Housing

- Household type and size
- Acuity of need of population served
- Operating model – e.g. facility-based vs. scattered site transition-in-place
- Type and level of case management and programming provided
- Average length of service

Comparisons to Other Available Cost Data

Supportive Housing

Corporation for Supportive Housing (CSH) Estimates

Nationally, CSH calculates average costs for tenancy support services at \$7,200 per household per year, with costs ranging as high as \$17,000 for Assertive Community Treatment services. For the 2019 tri-county CSH report,¹³ CSH worked with local stakeholders to develop an estimated annual service cost of \$10,000 per household based on a survey of actual costs from a sample of local providers. The estimate is based on a ratio of one case manager to 10 clients for scattered site and one case manager to 15 clients for single site. It also includes flexible service funding for direct costs not covered by community-based and Medicaid-paid services.

Average annual costs per household		Individuals	Families
Supportive Services		\$10,000	\$10,000
Rent Assistance	Private market unit	\$13,000	\$19,600
	Regulated affordable housing unit	\$7,000	\$7,000

¹³ “Tri-County Equitable Housing Strategy to Expand Supportive Housing for People Experiencing Chronic Homelessness.” Corporation for Supportive Housing. 2019.

CSH’s cost estimate for rent assistance for private market units is based on HUD’s 2018 fair market rents (FMR) and does not include the gap between FMRs and actual rental costs in the market. The estimate for regulated affordable housing units is based on costs from a sample of local projects.

Portland State University (PSU) Estimates

PSU’s Homelessness Research and Action Collaborative’s 2019 report¹⁴ provides cost estimates that are similar to CSH’s but are based on cost ranges rather than a single figure for each cost category:

Average annual costs per household		Individuals	Families
Supportive Services		\$8,800-\$10,000	\$8,800-\$10,000
Rent Assistance	Private market unit	\$11,352-\$18,960	\$14,904-\$41,000
	Regulated affordable housing unit	\$6,000-\$8,000	\$6,000-\$8,000

The low end of PSU’s service cost estimates is based on an analysis of Multnomah County’s spending dashboard; the high end is based on CSH’s estimate. PSU’s rent assistance cost estimate for private market units is based on HUD’s 2017 FMR and hypothetical small area FMR zip code max as well as Portland’s 2017 State of Housing report. The regulated affordable housing unit estimate is based on CSH’s estimate and Multifamily NW’s 2019 Apartment Report.

Rapid Rehousing

HUD’s Family Options Study,¹⁵ which is one of the most rigorous national studies of housing interventions for homeless families, found the average monthly cost per household of rapid rehousing was \$880, which translates into an annual cost of \$10,560. (Actual annual costs per household would be lower since not all households served in a given year receive 12 months of services.) Housing costs constituted 72% of the total average costs while supportive services constituted 28%.

Prevention

A HUD study of the Homelessness Prevention and Rapid Rehousing Program¹⁶ found an average cost of \$897 per person and \$2,252 per household for homelessness prevention assistance. Financial assistance (including rent assistance, utility payments and moving costs) constituted 73% of average costs while supportive services constituted 27%.

Emergency Shelter

HUD’s Family Options Study found an average monthly per household cost of \$4,819 for emergency shelter, which translates into an annual cost of \$57,828. Actual annual costs per household served would be lower since few households remain in emergency shelter for 12 months, but the annual cost estimate provides a proxy for the annual operating costs of shelter space for one family. Supportive services made up 63% of the average costs, and shelter costs made up 37%.

Transitional Housing

HUD’s Family Options Study found an average monthly per household cost of \$2,706 for transitional housing, which translates into an annual cost of \$32,472. The annual cost estimate provides a proxy for the annual operating costs of one unit of transitional housing for families. Supportive services constituted 42% of program costs, on average, and housing costs constituted 58%.

¹⁴ “Governance, Costs, and Revenue Raising to Address and Prevent Homelessness in the Portland Tri-County Region.” Portland State University. 2019.

¹⁵ “Family Options Study: 3-Year Impacts of Housing and Services Interventions for Homeless Families.” HUD. 2016.

¹⁶ “Homelessness Prevention and Rapid Re-Housing Program (HPRP): Year 3 & Final Program Summary.” HUD. 2016.

Potential Next Steps

This initial cost analysis offers a starting point for SHS cost planning that will need to be supplemented with additional research. Possible next steps could include:

- Asking a sample of service providers representing a range of models in each program area to provide full budget data for their programs to support a more complete analysis of costs.
- Working with service providers to identify what it would actually cost to implement their programs with fidelity to best practices.¹⁷
- Determining the proportion of housing units within each relevant program area that will be developed vs. leased in order to more accurately estimate housing costs.
- Applying an annual inflation factor to all costs to more accurately project SHS costs over time.¹⁸

¹⁷ For example, CSH's Services Staffing and Budget Tool enables supportive housing providers to combine actual program data with best practice guidelines to develop cost estimates: <https://cshcloud.egnyte.com/fl/KibC8XSZTs#folder-link/>.

¹⁸ The CSH tri-county report suggests using inflation factors of 1.5% for operating costs, 1.5% for rental assistance, and 2% for services.

Appendix O:



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Memorandum

To: Joshua Bates, Joint Office of Homeless Services
From: Marisa A. Zapata, PhD, PSU – HRAC
Date: November 26, 2020
Regarding: Local Implementation Plan Unsheltered Survey Results

Overview

As part of the 2020 Metro Supportive Housing Services fund, Multnomah County is writing a Local Implementation Plan (LIP). I worked with the Joint Office of Homeless Services and Shannon Singleton¹ to write a survey of people living unsheltered. The survey design explicitly focused on the experiences of Black, Indigenous, and other People of Color (BIPOC). Street Roots staff members administered the survey, and I analyzed it.

The survey findings highlight important differences in the experiences and needs of BIPOC experiencing homelessness such as the role of racism in shaping daily life, more generally, and who utilized tents when sleeping on the street, more specifically. In order to feel more supported in community the next week, Native Americans selected “fewer experiences of racial discrimination” almost as frequently as “food.” Black respondents identified living in mixed race housing, or experiencing racism from property managers as top concerns for staying in their housing. Latinos indicated the importance of having someone speak like them when receiving services.

There were important findings across the survey for all racial groups. People experienced and worried about discrimination because they experienced homelessness. The top concern about moving into housing was losing that housing again. Across multiple survey items, people indicated the importance of human connections. Friends and family were often the top sources of comfort and needs. After having their own bathroom and kitchen, having their friends and family visit them freely was the most identified need in their housing for people experiencing homelessness. BIPOC imagined how a therapist, healthcare provider, or case worker could support them, defying the stereotype that people living unsheltered do not want to work with service providers. They may not have simply met the right one, or the right one may not have had the time to put into the relationship.

Going forward, policy and program recommendations should carefully consider how racism – interpersonal, institutional, and structural – shapes the daily lives, concerns, and needs of BIPOC. For all people, building and/or supporting relationships will be integral to the success of the work being done. Considering that people’s

¹ Ms. Singleton participated in her capacity as a private citizen, and not as part of her current employment.

second most frequently selected concern for moving into housing was following the rules, any rules that restrict the freedom of friends and family to visit may add considerable stress to people moving into housing. The importance of friendship and family show up over and over in the survey. Identifying ways to support and continue those structures should be explored. Housing units that have their own bathroom and kitchen should be given priority. Program and policy designers and implementers should consider building on the activities that people enjoy doing when that is not already done such as music, exercise, or spiritual connections. More details for each question follow. Additional research would allow for better understanding of the rationale for selected items.

The survey was developed and deployed quickly to meet the deadline of the LIP. The findings should be used in conjunction with other input to confirm, better understand, or question findings, and not as a stand-alone means to dictate policy and program development. Because of the rapidness of data collection, entry, and analysis, there may be remaining errors in the reporting; however, the general trends should be consistent overall. Where the differences between an option are just 1-2 people, these answers should be considered as similar in preference or importance.

Background

In addition to the findings from the questions presented here, there were open-ended questions asked of respondents. Those questions revealed limited additional insight, and are not presented here.

Three hundred and four people took the survey. I analyzed 383 surveys. One record was excluded as they were not experiencing homelessness. Twenty-four percent of respondents were BIPOC. People who reported a White alone were 61% of the survey respondents. About 7% reported an "other" identity such as human, alien, or pizza.

Black (15%) and Native American (11%) respondents were the two largest subgroups of BIPOC who participated in the survey. Mixed race was the next largest; however, the majority of mixed-race people selected Black, Latino, Native American, or Asian in combination with something else (mostly White). Only 11 people stated a mixed identity only. Because of the small number of mixed-race only respondents, I am not including their disaggregated data here. Total BIPOC counts include those 11 people. The subpopulation counts for Asian and to some extent Latino are not as robust as Black or Native American. I would be cautious in overinterpreting these survey results, and discuss the findings with culturally specific providers and community members to ensure the survey matches their understanding or experiences.

Results

Below, I present summary data for each question. Note that people could choose all that applied for questions. This was not a ranking or trade-off activity.

In the last week, where did you sleep most often?

In the last week, where did you sleep most often?																
	BIPOC										White Alone		Total Respondents			
	All BIPOC		Black		Latino		Native American		Asian							
Street	33	26%	11	19%	5	20%	12	29%	6	33%	24	11%	61	16%		
Street Tent	31	24%	13	22%	6	24%	10	24%	1	6%	57	27%	95	25%		
Hotel	17	13%	9	16%	2	8%	3	7%	2	11%	18	8%	35	9%		
Shelter	11	9%	2	3%	2	8%	1	2%	3	17%	42	20%	54	14%		
Tiny village	11	9%	5	9%	1	4%	3	7%	3	17%	28	13%	43	11%		
Car	9	7%	1	2%	4	16%	2	5%	0	0%	10	5%	18	5%		
Other	9	7%	6	10%	2	8%	3	7%	1	6%	8	4%	13	3%		
Transit	4	3%	3	5%	1	4%	0	0%	0	0%	3	1%	7	2%		
Building	2	2%	1	2%	0	0%	1	2%	0	0%	5	2%	9	2%		
Day center	1	1%	1	2%	0	0%	0	0%	0	0%	1	0%	2	1%		
Transit Stop	0	0%	0	0%	0	0%	0	0%	0	0%	2	1%	3	1%		

Overall, all but Asian BIPOC slept on the street or in a tent on the street most often. This sleeping pattern occurred in such strong numbers that it drove the total population count to reflect these categories. Meanwhile, the White alone population included people reporting shelter stays 20% of the time, compared to only 9% of BIPOC. White alone people reported sleeping on the street without a tent 11% of the time compared to 26% of all BIPOC. This question produced some of the largest differences in frequencies of what was chosen when disaggregated based on race. Of the top 3 selected, Whites selected the same option only 1 time (on the street with a tent) as BIPOC, and the most frequent place BIPOC reported sleeping (on the street in general) was just the 4th most common location for Whites.

These findings confirm that BIPOC are indeed experiencing unsheltered homelessness differently than Whites. When policies or programs cater to people living unsheltered those should be developed with clear understanding that the visible population sleeping in tents are not reflecting the BIPOC who are also sleeping on the street without tents.

How long have you been homeless?

All but one sub group reported homelessness for over 12 months. Note that multiple respondents reported exactly 12 months (and some 11). Notably, 61% of Native Americans reported homelessness for longer than 12 months. Asians reported somewhat less time homeless with 39% of their population reporting homelessness for 12 months or less.

How long have you been experiencing homelessness?														
	BIPOC										White Alone		Total Respondents	
	All BIPOC		Black		Latino		Native American		Asian					
12 months+	69	48%	27	47%	13	52%	25	61%	6	33%	102	48%	190	50%
Not reported/not known	39	27%	15	26%	6	24%	10	24%	5	28%	63	30%	108	28%
0-12months	35	24%	16	28%	6	24%	6	15%	7	39%	47	22%	84	22%

How do you describe your race or ethnicity?

				Total	% of Total	% of BIPOC
Total				383		
	BIPOC			143	24%	
		Black		58	15%	41%
		Latino		25	7%	17%
		Native American		41	11%	29%
		Asian		18	5%	13%
		Mixed		40	10%	28%
			Mixed alone	11	3%	8%
	White alone			213	61%	
	Other (e.g., human, pizza)			25	7%	

How old are you?

Most respondents were between the ages of 25-49. Black respondents were evenly split between the ages of 25-49 and 50 and older.

How old are you?														
	BIPOC										White Alone		Total Respondents	
	All BIPOC		Black		Latino		Native American		Asian					
<18	1	1%	0	0%	1	4%	0	0%	0	0%	0	0%	1	0%
18-24	6	4%	1	2%	1	4%	2	5%	2	11%	13	6%	21	5%
25-49	83	58%	28	48%	17	68%	23	56%	11	61%	122	57%	220	57%
50+	50	35%	27	47%	6	24%	16	39%	5	28%	76	36%	131	34%

How would you describe your gender?

The Black and Latino communities have much higher percentages of men who responded. Of the 138 BIPOC who responded and were not "mixed alone," only 5 reported a non-cisgender identity. Only 8 did in the White alone group.

How would you describe your gender?														
	BIPOC										White Alone		Total Respondents	
	All BIPOC		Black		Latino		Native American		Asian					
Male	95	66%	41	71%	18	72%	24	59%	10	56%	128	60%	237	62%
Female	38	26%	14	24%	7	28%	13	32%	6	33%	72	34%	114	30%
Trans Woman	0	0%	0	0%	0	0%	0	0%	0	0%	4	2%	5	1%
NonBinary	5	3%	0	0%	0	0%	3	7%	2	11%	4	2%	12	3%
Additional Genders	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	2	1%

Household type

With the exception of Native Americans, all other racial groups lived alone more often. Note that there are fairly wide variations in the rate of living alone, living with other adults, and living with children by racial subgroup. Black and Latino communities have much higher rates of living alone. Native Americans reported the lowest rates of living alone when compared to the other racial groups; however, living alone was still most common.

Household Type														
	BIPOC										White Alone		Total Respondents	
	All BIPOC		Black		Latino		Native American		Asian					
Alone	91	63%	42	72%	19	76%	20	49%	10	56%	143	67%	247	64%
Other adults	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0
With Children	8	6%	3	5%	0	0%	6	15%	0	0%	4	2%	13	3%

*A data error prevented summing of “living with other adults”; however, the percentages are evident based on the sum of the other two categories.

Have you experienced racism recently?

The high nonresponse rate to this question makes interpretation of this question problematic. We can say that around a quarter of BIPOC reported experiencing racism "recently." Black and Native Americans were the only two BIPOC groups that reported racism at a greater rate of "yes" than "no."

	BIPOC												
	All BIPOC		Black		Latino		Native American		Asian				
Yes	33	23%	19	33%	2	8%	14	56%	2	8%			
No	43	30%	17	29%	12	48%	10	40%	3	12%			
No response/I don't know	67	47%	22	38%	11	44%	17	68%	13	52%			

For BIPOC: How do you know if an organization can effectively serve you?

Overall, the top responses were similar across BIPOC. Most respondents selected “not experiencing” racism or discrimination first. However, Native American respondents chose “feeling accepted” at a much higher rate.

	All BIPOC		Black		Latino		Native American		Asian	
People who work there look like you	38	31%	21	38%	6	23%	11	34%	4	25%
People who work there talk like you	28	23%	11	20%	7	27%	10	31%	3	19%
People who work there openly talk about racism	17	14%	11	20%	4	15%	6	19%	2	13%
Wall art and photos feature people who look like you	19	16%	12	22%	4	15%	7	22%	2	13%
Your culture is reflected on the walls and on paper materials	19	16%	10	18%	6	23%	7	22%	3	19%
You feel accepted for who you are	41	34%	20	36%	10	38%	16	50%	3	19%
You do not see people who look like you being treated differently from others	27	22%	16	29%	5	19%	8	25%	5	31%
You do not have to code switch	19	16%	13	24%	4	15%	4	13%	5	31%
You do not experience racism or discrimination because of your ethnic or racial group	53	44%	30	55%	15	58%	6	19%	13	81%
Your concerns about how you are treated because of your race or ethnicity are acted on	21	17%	13	24%	3	12%	10	31%	4	25%
People who work there believe your stories about racism	14	12%	8	15%	5	19%	6	19%	1	6%

Latinos were fairly evenly split between people looking like them and talking like them. Native Americans and Asians were also close between those two options. For Black people, “talk like you” was ranked much lower overall, but 20% of respondents did select this option (compared to 19% of Asians).

Asians selected two options in their top three that none of the other groups picked: not seeing people being treated differently, and not having to code switch. While not coming in their top 3, 24% of Black community members selected not having to code switch.

What made you feel more supported in community in the last week?

The three top options are the same across all demographic groups. However, there are noteworthy differences in how many people in a given group select those options. A closer look at the ranking of the whole list may reveal more insights. There are wide variations across the entire list that could be meaningful, as well as similarities. For instance, nearly half of Native American respondents reported feelings supported by having a stable place to rest or sleep. The other BIPOC groups reported that rate at 28% and below. Whites only reported this 38% of the time.

	BIPOC										White Alone	
	All BIPOC		Black		Latino		Native American		Asian			
Food	75	54%	28	48%	14	52%	22	54%	8	42%	118	57%
Access to Bathrooms	66	47%	25	43%	11	41%	23	56%	6	32%	114	55%
Friendship	63	45%	25	43%	10	37%	24	59%	5	26%	120	58%
Stable place to rest/sleep	47	34%	16	28%	7	26%	20	49%	1	5%	80	38%
Earning income	42	30%	17	29%	5	19%	15	37%	5	26%	54	26%
Family	42	30%	12	21%	6	22%	17	41%	6	32%	42	20%
Romantic love	37	27%	16	28%	5	19%	12	29%	5	26%	0	0%
Peer support	35	25%	14	24%	4	15%	15	37%	2	11%	58	28%
Seeing or spending time with people from my own racial group	35	25%	20	34%	4	15%	9	22%	2	11%	19	9%
Fewer incidents of other types of discrimination other	30	22%	9	16%	5	19%	14	34%	1	5%	35	17%
Positive neighbor interaction	28	20%	10	17%	1	4%	11	27%	4	21%	36	17%
Fewer incidents of racial discrimination	28	20%	8	14%	3	11%	11	27%	3	16%	25	12%
Case Worker	26	19%	7	12%	5	19%	9	22%	2	11%	41	20%
Pet	25	18%	7	12%	2	7%	11	27%	4	21%	30	14%
Religious or spiritual connection	24	17%	10	17%	4	15%	9	22%	2	11%	31	15%
Healthcare Provider	19	14%	5	9%	1	4%	8	20%	1	5%	24	12%
Exercising	18	13%	6	10%	2	7%	8	20%	1	5%	24	12%
Positive police interactions	15	11%	4	7%	2	7%	8	20%	0	0%	17	8%
Positive other first responder interactions	14	10%	6	10%	2	7%	8	20%	0	0%	17	8%
Group Therapy	12	9%	6	10%	1	4%	5	12%	1	5%	24	12%
Therapist	11	8%	5	9%	0	0%	5	12%	0	0%	12	6%

What would make you feel more supported in community in the next week?

	BIPOC										White Alone	
	All BIPOC		Black		Latino		Native American		Asian			
Stable housing	71	52%	27	49%	8	30%	30	77%	5	26%	138	66%
Access to Bathrooms	62	46%	21	38%	10	37%	26	67%	3	16%	101	48%
Stable place to rest/sleep	62	46%	18	33%	10	37%	26	67%	5	26%	81	39%
Earning income	58	43%	21	38%	8	30%	17	44%	6	32%	90	43%
Friendship	51	38%	16	29%	11	41%	19	49%	4	21%	58	28%
Food	50	37%	15	27%	12	44%	21	54%	2	11%	60	29%
Fewer incidents of racial discrimination	48	35%	18	33%	6	22%	20	51%	4	21%	29	14%
Fewer incidents of other types of discrimination	43	32%	11	20%	5	19%	19	49%	6	32%	38	18%
Romantic	40	29%	15	27%	5	19%	15	38%	7	37%	49	23%
Family	39	29%	11	20%	7	26%	18	46%	5	26%	33	16%
Positive neighbor interaction	38	28%	14	25%	6	22%	15	38%	2	11%	51	24%
Peer support	37	27%	13	24%	9	33%	12	31%	1	5%	45	21%
Religious	33	24%	9	16%	4	15%	16	41%	2	11%	41	20%
Pet	32	24%	9	16%	4	15%	17	44%	2	11%	38	18%
Healthcare Provider	30	22%	8	15%	5	19%	12	31%	1	5%	41	20%
Positive other first responder interactions	30	22%	10	18%	3	11%	13	33%	2	11%	29	14%
Therapist	30	22%	11	20%	3	11%	10	26%	4	21%	28	13%
Case Worker	29	21%	5	9%	7	26%	14	36%	2	11%	46	22%
Group Therapy	27	20%	9	16%	5	19%	9	23%	4	21%	24	11%
Seeing or spending	25	18%	11	20%	5	19%	15	38%	0	0%	39	19%
Exercising	22	16%	6	11%	4	15%	11	28%	1	5%	30	14%
Positive police interactions	0	0%	0	0%	0	0%	0	0%	0	0%	0	0

Not surprisingly, stable housing was the top choice for all respondents. Access to bathrooms was a top choice for all but Asian survey respondents. There was a lot of variation across the three largest racial groups that responded to the survey (Black, Native American, and White).

BIPOC did not feel supported by a therapist last week, but do believe one could help them. Similar trends were noted for other service providers. People can imagine, and want to, work with service providers who can meet their needs as they envision them.

Other opportunities for meeting the needs of people include things like ensuring BIPOC see people who are like them, creating opportunities for exercise and spiritual connections, and promoting relationships with neighbors.

What do you enjoy doing?

People have a lot of things they enjoy doing, and even where there is similarity programming or relationship development in those areas would need further examination. However, music and eating were universal wins. Each activity received at least 20% of respondents expressing interest. Combined with the previous questions, participation in religious or spiritual activities or communities may also be worth exploring more. The role of animal love and companionship may also be an area worth pursuing more. I would not expect “advocating” to show up this frequently on a survey of housed people, generally, and this may highlight an important strength and capacity of unhoused community members when compared to housed populations.

	BIPOC										White Alone	
	All BIPOC		Black		Latino		Native American		Asian			
Music	85	62%	29	53%	17	61%	27	66%	7	37%	140	68%
Eating	80	58%	32	58%	16	57%	20	49%	10	53%	109	53%
Talking	67	49%	27	49%	11	39%	24	59%	3	16%	116	56%
Exercise	51	37%	17	31%	11	39%	18	44%	1	5%	59	29%
Art	50	36%	16	29%	10	36%	18	44%	2	11%	72	35%
Reading	46	34%	17	31%	7	25%	18	44%	3	16%	81	39%
Religion	45	33%	24	44%	8	29%	12	29%	2	11%	39	19%
Pets	43	31%	13	24%	6	21%	20	49%	4	21%	64	31%
Walking	42	31%	15	27%	4	14%	18	44%	3	16%	81	39%
Advocating	42	31%	20	36%	3	11%	13	32%	4	21%	57	28%
Writing	37	27%	12	22%	5	18%	12	29%	5	26%	55	27%

What worries you about moving into housing?

Losing housing was the largest concern for respondents by wide margins. Living with people from a different race was a concern for nearly half of Black respondents. The responses across the population vary quite a bit, and even options that aren't in the top three or ranking often received a lot of picks. Not surprisingly concerns about discrimination were high about race and being homeless.

For people to want to move into housing, their concerns must be addressed. Housing First programs offer relief for the two issues. Supportive housing rules should be revisited.

	BIPOC										White Alone	
	All BIPOC		Black		Latino		Native American		Asian			
Losing housing	79	59%	33	58%	13	23%	24	42%	8	14%	110	51%
Rules	47	35%	18	32%	8	14%	20	35%	5	9%	77	36%
Mixed race living	45	34%	26	46%	6	11%	9	16%	3	5%	26	12%
Isolation	42	32%	16	28%	5	9%	17	30%	3	5%	79	37%
Experiencing racism	36	27%	20	35%	5	9%	8	14%	3	5%	21	10%
Leaving friends	32	24%	11	19%	5	9%	10	18%	4	7%	49	23%
Change routine	30	23%	13	23%	5	9%	11	19%	2	4%	47	22%
Noises/smells	25	19%	9	16%	5	9%	7	12%	3	5%	30	14%
New transportation	18	14%	8	14%	3	5%	5	9%	1	2%	38	18%
Changing doctor	11	8%	4	7%	0	0%	6	11%	0	0%	13	6%

What are your top five priorities for your housing?

This was the only question where respondents were asked to pick a set of options (5). Some selected more; however, most stuck to the 5 or fewer requested. The top two choices were having their own kitchen or bathroom. Single room occupancy or kitchenettes will not meet this preference. Considering previous questions where accessing bathrooms, food, eating, and cooking ranked highly there is a recurring pattern of prioritizing hygiene and nourishment in different but complementary ways. Family and friends being able to visit freely was a top choice for most racial subgroups, especially Native Americans. Living without experiencing racial discrimination shows up here again. Issues such as not being able to hear your neighbors may be related to managing health needs and should be examined in more detail (this may also apply for the other preferences as well).

	BIPOC										White Alone	
	All BIPOC		Black		Latino		Native American		Asian			
Own Kitchen	107	77%	46	79%	21	75%	28	70%	12	63%	174	81%
Own Bathroom	105	76%	47	81%	20	71%	25	63%	12	63%	176	82%
Friends & family can visit freely	83	60%	33	57%	17	61%	28	70%	9	47%	108	50%
Laundry in building	61	44%	32	55%	8	29%	14	35%	6	32%	101	47%
Can't hear your neighbors	53	38%	16	28%	9	32%	17	43%	11	58%	92	43%
Laundry in unit	39	28%	12	21%	8	29%	16	40%	4	21%	69	32%
Sober living	39	28%	16	28%	5	18%	12	30%	6	32%	49	23%
Can't smell odors outside your apartment	35	25%	11	19%	7	25%	5	13%	9	47%	58	27%
Outdoor space	32	23%	13	22%	4	14%	11	28%	4	21%	56	26%
Living someplace without racial discrimination	29	21%	18	31%	3	11%	1	3%	7	37%	11	5%
Place without other types of discrimination	27	19%	13	22%	3	11%	9	23%	2	11%	27	13%
Laundry on your floor	20	14%	8	14%	1	4%	8	20%	3	16%	33	15%
Rec room	19	14%	6	10%	3	11%	5	13%	1	5%	28	13%
Gym	18	13%	5	9%	4	14%	7	18%	3	16%	23	11%
Comp lab	17	12%	6	10%	3	11%	7	18%	1	5%	33	15%

What do you need to move into housing?

Money being the top choice is not surprising. The second top choice for all BIPOC was having a landlord who did not discriminate against you for being homeless. Most answers received at least 20% of respondents indicating them as needs. Though several types of health support were chosen less often than most other choices, general help managing health symptoms and specifically physical health support were requested fairly often.

People may be grouping all of their health needs under “general” health needs.

	BIPOC										White Alone	
	All BIPOC		Black		Latino		Native American		Asian			
Money	90	66%	34	60%	19	68%	24	60%	13	23%	146	68%
No discrimination based on being homeless	80	58%	29	51%	19	68%	3	8%	1	2%	0	0%
Cook	71	52%	28	49%	12	43%	20	50%	10	18%	96	45%
Furniture	70	51%	28	49%	12	43%	22	55%	10	18%	105	49%
Accepts criminal history	68	50%	25	44%	12	43%	19	48%	11	19%	71	33%
No discrimination based on race	64	47%	30	53%	10	36%	15	38%	11	19%	37	17%
Stable housing while waiting	62	45%	25	44%	11	39%	24	60%	6	11%	83	39%
Accepts poor credit history	58	42%	19	33%	8	29%	20	50%	10	18%	96	45%
No discrimination based on other factors	55	40%	21	37%	7	25%	19	48%	8	14%	73	34%
Accessible unit	54	39%	21	37%	10	36%	18	45%	5	9%	72	34%
Someone to advocate for me	54	39%	21	37%	10	36%	18	45%	5	9%	72	34%
Support for my physical health	30	22%	11	19%	3	11%	12	30%	3	5%	48	22%
Support health (general)	27	20%	10	18%	4	14%	8	20%	1	2%	44	21%
Help moving	22	16%	7	12%	2	7%	10	25%	3	5%	41	19%
Support mental health symptoms	18	13%	8	14%	3	11%	3	8%	1	2%	19	9%
Support for addiction	17	12%	8	14%	2	7%	3	8%	1	2%	17	8%

What do you need to stay in housing?

Again, money is identified most frequently. Friends and family visiting freely comes in second. Considering that people’s second most frequently selected concern for moving into housing was following the rules, any rules that restrict the freedom of friends and family to visit may add considerable stress to people moving into housing. The importance of friendship and family show up over and over in the survey. Identifying ways to support and continue those structures should be explored.

Having someone to advocate for you falls into the top four needs for all but Native Americans (and there it's 5th). Black people express concern about the need to address discrimination from property managers at a much higher rate than other BIPOC, but Latinos and Native Americans are also concerned. While health supports were not in the top, they were present in all groups at about 20% or higher with the exception of Asian respondents.

	BIPOC										White Alone	
	All BIPOC		Black		Latino		Native American		Asian			
Pay rent	83	60%	34	61%	11	39%	28	70%	11	20%	132	62%
Family and family can visit freely	70	51%	22	39%	15	54%	26	65%	7	13%	108	50%
Some to advocate for you	49	36%	19	34%	8	29%	14	35%	5	26%	83	39%
Property manager does not discriminate based on race	46	33%	24	43%	7	25%	12	30%	4	7%	22	10%
Property manager does not discriminate for other reason	41	30%	12	21%	6	21%	15	38%	5	9%	74	35%
Support health needs	40	29%	12	21%	5	18%	13	33%	4	7%	69	32%
Transportation	38	28%	18	32%	3	11%	16	40%	2	4%	49	23%
Sober living	28	20%	7	13%	6	21%	7	18%	5	9%	33	15%
Support PH	21	15%	7	13%	2	7%	7	18%	1	2%	19	9%
Support MH	21	15%	8	14%	3	11%	5	13%	1	2%	28	13%
Support Addiction	17	12%	7	13%	2	7%	3	8%	1	2%	25	12%

Exhibit B to Metro Council Resolution No. 21-5171, For the Purpose of Approving the Multnomah County Local Implementation Plan for the Regional Supportive Housing Services Program

**Supportive Housing Services Regional Oversight Committee:
Considerations for Multnomah County Local Implementation Plan recommendation**

Approved by the Regional Oversight Committee, April 26, 2021

On February 22, 2021, the SHS Oversight Committee unanimously recommended Multnomah County's Local Implementation Plan for approval by the Metro Council. The committee believes the Multnomah County LIP represents a strong starting place for implementation, and that throughout implementation more data and clarity will emerge to strengthen, clarify, and amend the plan.

The committee attaches the following considerations as points of clarity that the committee expects Multnomah County to prioritize in implementation and reporting to the committee.

1. **Provide an annual budget and summary of goals related to annual investments.** The budget should summarize commitment to, and prioritization of, the planned investments described in the Lo. The budget should further clarify how any reserved funding is committed, as well as programmatic investments in long-term rent assistance. The budget should also describe numeric and annual outcome goals desired, in correlation to program investments described in the budget.
2. **Provide a comprehensive and regionally coordinated plan for expanding and supporting culturally specific service capacity.** The plan should include concrete steps to address pay equity goals for service providers, training and ongoing supports for service providers, and regional coordination for expanding the system of culturally specific service provision. The county should expedite study of wage equity.
3. **Provide a detailed outline for how the program will align with, invest in, and leverage the mental health system.** The plan should describe approaches and a timeline for leveraging and improving Medicaid-funded behavioral health services, particularly for Population A. The plan should especially provide further data analysis of the racial disparities within mental health and co-occurring (dual diagnosis) services as well as the culturally and linguistically specific needs within communities of color, including analysis of disparities within subgroups. Finally, the plan should address needs for culturally specific and trauma informed mental healthcare and describe how the SHS system will augment the Medicaid system to provide these services.

Measurable goals required in Metro's regional Supportive Housing Services work plan

In addition to the above considerations, the committee will be closely tracking counties' performance on the racial equity goals and outcome metrics defined in the Metro SHS programmatic work plan, section 5.2.

IN CONSIDERATION OF RESOLUTION NO. 21-5171, FOR THE PURPOSE OF FOR THE
PURPOSE OF APPROVING THE MULTNOMAH COUNTY LOCAL IMPLEMENTATION
PLAN FOR THE REGIONAL SUPPORTIVE HOUSING SERVICES PROGRAM

Date: April 13, 2021
Department: Planning & Development
Meeting Date: April 29, 2021

Prepared by: Craig Beebe,
craig.beebe@oregonmetro.gov
Presenter: Patricia Rojas, Regional
Housing Director
Length: 10 min.

ISSUE STATEMENT

On May 19, 2020, greater Portland voters approved Measure 26-210, establishing Metro's regional supportive housing services program to address homelessness and help people find and keep safe, stable, affordable housing across the region.

This program brings a groundbreaking level of regional coordination and scale to address this regionwide challenge. Each of the Metro area's three counties are responsible for developing a local implementation plan through engagement with community and local practitioners, analysis of local conditions and needs, and developing a framework for planned investments.

The Multnomah County Board of Commissioners approved its Local Implementation Plan for Metro consideration on Dec. 17, 2020. Following a unanimous recommendation from the Regional Oversight Committee, and a work session discussion on April 22, the Metro Council is asked to approve the Multnomah County Local Implementation Plan.

ACTIONS REQUESTED

- Approve the Multnomah County Local Implementation Plan (attached to Resolution No. 21-5171 as Exhibit A) as consistent with the requirements defined in the Supportive Housing Services measure and work plan.
- Direct Metro staff to incorporate the plan into an intergovernmental agreement with Multnomah County for program implementation. The agreement will return to the Metro Council and Multnomah County for adoption before funds are disbursed to the county.
- Acknowledge considerations (to be attached as Exhibit B) attached by the Oversight Committee to its recommendation of the Plan, and direct staff to work with the County to see that they are addressed.

IDENTIFIED POLICY OUTCOMES

Local Implementation Plans are described in Section 6 of the Supportive Housing Services measure referred to voters by the Metro Council in February 2020 and approved by voters that May. In referring the measure, the Metro Council recognized the unique needs of each county and stated its policy that "there be sufficient flexibility in implementation to serve the needs of residents, communities, and those receiving Supportive Housing Services."

After several months of work with the Stakeholder Advisory Committee, jurisdictional partners and other stakeholders, on December 17, 2020 the Metro Council adopted a series of resolutions and ordinances to implement the Supportive Housing Services measure, including Resolution No. 20-1548, adopting the Supportive Housing Services Program Work Plan ("Work Plan"); Ordinance No. 20-1542, codifying the programmatic aspects of the Measure in Title XI of the Metro Code; Ordinance No. 20-1543, codifying the requirements, membership, and responsibilities of the Supportive Housing Services Regional Oversight Committee in Chapter 2.19 of the Metro Code; and Ordinance No. 20-1454, codifying the enforcement, collection, and implementation of the income taxes imposed by the Measure in Chapters 7.05, 7.06, and 7.07 of the Metro Code.

The Metro Council has directed that Local Implementation Partners must have an approved Local Implementation Plan in order to receive Supportive Housing Services funds. Metro's work plan further defines Local Implementation Plans' purpose, process of development and review, and required elements, including "local housing and homeless service needs, current programming and unmet programming capacities, and proposed use of funds in accordance with the purposes of the regional Supportive Housing Services Program." (These requirements are listed in detail in the "Background" section below.)

Council's direction has established Local Implementation Plans as high-level frameworks that establish local priorities and actions based on identified gaps and regional outcomes. Recognizing how systemic racism is reflected in racial disparities in the region's homelessness and housing crisis, the plans are also required to be developed through inclusive community engagement that centers the voices of Black, Indigenous and people of color communities as well as people with lived experience of homelessness and housing instability. The plans also commit Local Implementation Partners to be accountable for tracking and reporting on regionally-identified outcomes, particularly racial equity outcomes.

POLICY OPTIONS FOR COUNCIL TO CONSIDER

By adopting the resolution, Metro Council accepts the Regional Oversight Committee's recommendation that the county's Local Implementation Plan meets regional requirements described in the measure and program work plan. If the Council approves, Metro staff would incorporate the Local Implementation Plan into an intergovernmental agreement with the county, which will be considered for adoption by Multnomah County and the Metro Council prior to the beginning disbursement of Supportive Housing Services funds to the county.

If the Metro Council does not approve the Multnomah County Local Implementation Plan, it could direct staff instead to work with Multnomah County to address the Council's concerns. If this would require a modification of the plan, it may necessitate further action by the Board of County Commissioners and review by the Regional Oversight Committee before an intergovernmental agreement can be completed. This could lead to a delay in initiating program implementation in Multnomah County.

The Metro Council may also consider approving the plan while also attaching additional considerations for Metro and Multnomah County to address, evaluate or track during implementation.

STAFF RECOMMENDATION

In recognition of the extensive engagement and analysis that shaped the Multnomah County Local Implementation Plan, as well as the Oversight Committee's recommendation and considerations, staff believes the plan is consistent with the requirements set forth in the Measure, Metro Code and Metro's program work plan. Staff recognizes this is a framework that can and will continue to evolve collaboratively throughout implementation, while helping to initiate critical services to help people experiencing or at risk of homelessness find and keep safe, stable and affordable housing.

Therefore, staff recommends adoption of the resolution.

STRATEGIC CONTEXT & FRAMING COUNCIL DISCUSSION

The Metro Council established the requirements and processes for Local Implementation Plans in its measure referral (Ordinance No. 20-1442), work plan adoption (Resolution No. 20-5148), and Metro Code adoption (Ordinance No. 20-1542).

Multnomah County is the first of the three counties to bring its Local Implementation Plan for Metro approval, owing in part to its existing infrastructure for supportive housing and the successful engagement of local advisory bodies, service providers, community partners and residents to develop the plan.

The plan describes the extensive engagement the county conducted in its development, including but not limited to:

- approximately 70 facilitated stakeholder discussions, with a particular focus on engaging Black, Indigenous and People of Color
- an online community survey with a total of 578 responses disaggregated by racial/ethnic identity and lived experience
- a bilingual on-the-street paper survey conducted with more than 380 people currently experiencing unsheltered homelessness, with intentional efforts to reach people of color
- coordination with Metro, Washington County and Clackamas County
- review by the A Home For Everyone Coordinating Board and executive committee.

Metro's work plan and Code describes a process for review whereby a local advisory body, after inclusive community engagement and extensive analysis, makes a recommendation for the county board of commissioners to approve a local implementation plan for review by the Regional Oversight Committee, which in turn considers recommending the plan for approval by the Metro Council. Each county's plan is then incorporated into an intergovernmental agreement between its county and Metro.

Following the A Home for Everyone executive committee's recommendation of Multnomah County Local Implementation Plan, the plan was approved by the Multnomah County Board of County Commissioners on December 17, 2020, and submitted for review by the Regional Oversight Committee.

The Regional Oversight Committee took up the county's plan at its meeting on January 25, hearing from Multnomah County leaders, community members and staff. The committee continued discussion and voted on the plan at its February 22 meeting, unanimously recommending the plan for approval by the Metro Council.

The Regional Oversight Committee has also attached considerations to its recommendation. These are issues the committee recognized were beyond the scope of the LIP requirements, but which nevertheless they seek to monitor and evaluate during implementation and annual review. The Metro Council may acknowledge these considerations and provide direction to staff to work with the county to ensure they are addressed. Draft language for the considerations is attached to this worksheet as Attachment 1. Although the committee largely agreed to these considerations at its February 22, meeting, they requested a few minor revisions to be made to the language, as noted in the attachment. The committee will be asked for final approval of this language in the considerations at its meeting on Monday, April 26. Once approved, the considerations will be attached to Resolution No. 21-5171 as Exhibit B.

BACKGROUND

The Supportive Housing Services Program Work Plan, section 5.1, lists required elements in the Local Implementation Plans, with greater detail provided in Appendix D.

The required elements include:

- A. *Analysis of inequitable outcomes*: An articulation of racial inequities in housing stability and access to current services;
- B. *Racial equity strategies*: A description of mitigation strategies and how the key objectives of Metro's Strategic Plan to Advance Racial Equity, Diversity and Inclusion have been incorporated;
- C. *Inclusive community engagement*: An articulation of how perspectives of Black, Indigenous and people of color and culturally specific groups were considered and incorporated into the development of the plan and will continue to be engaged through implementation and evaluation;

- D. *Priority population investment distribution*: A commitment that funding will be allocated as specified in Section 4.2;
- E. *Current investments*: A review of current system investments or capacity serving priority populations, an analysis of the nature and extent of gaps in services to meet the needs of the priority population, and a commitment to prohibit displacement of current local funding commitments for such services;
- F. *Distribution*: A strategy for equitable geographic distribution of services with partnering jurisdictions and service providers across the region;
- G. *Access coordination*: A plan for coordinating access to services with partnering jurisdictions and service providers across the region;
- H. *Procurement and partners*: A description of how funds will be allocated to public and nonprofit service providers;
- I. *Planned investments*: An articulation of programmatic investments planned, including the types of services to be funded to address the gap analysis;
- J. *Outcomes, reporting and evaluation*: An agreement to track and report on program outcomes annually as defined through regional coordination and with regional metrics.

Pertaining to item J, the SHS program work plan also describes several regional outcome metrics in Section 5.2; these will be further developed in partnership with the counties, regional oversight committee and the Tri-County Advisory Body.

Following months of community engagement and analysis, the Washington County Board of Commissioners approved its Local Implementation Plan for oversight committee review on April 6. Regional Oversight Committee discussion of that plan begins April 26. The Clackamas County Board of Commissioners approved its plan for Oversight Committee review on April 13. The Regional Oversight Committee is expected to begin discussion of that plan in late May. If the oversight committee recommends the plans, the Metro Council is expected to consider approval in May and June.

Also in June, the Metro Council is expected to consider adoption of intergovernmental agreements incorporating approved local implementation plans with the counties, which would allow for fund disbursement and program implementation to begin this summer.

ATTACHMENTS

- Resolution No. 21-5171
- Exhibit A to Resolution No. 21-5171 (Multnomah County Local Implementation Plan as recommended by the Oversight Committee)
- Staff Report Attachment 1: Draft revised Oversight Committee considerations for the Multnomah County Local Implementation Plan (upon confirmation by Oversight Committee meeting on April 26, 2021, these will attached to Resolution No. 21-5171 as Exhibit B)

Oregon Zoo Budget Work Session

Work Session Topics

Metro Council Work Session
Thursday, April 29, 2021

OREGON ZOO/PARKS AND NATURE BUDGET PRESENTATION

Date: 4/6/2021

Department: Finance/Oregon Zoo/P+N

Meeting Date: 4/29/2021

Presenter(s) (if applicable): Scott

Cruickshank, Jon Blasher

Length: 45 Minutes

Prepared by: Brian Kennedy, 503-797-1913, brian.kennedy@gmail.com

ISSUE STATEMENT

This work session will provide Council the opportunity to hear how the Oregon Zoo and Parks and Nature Departments FY 2021-22 base budgets and modification requests align with Council priorities. Information shared at the work session will help guide development of the FY 2021-22 Approved Budget.

ACTION REQUESTED

Council discussion and feedback on the base budget and modification requests submitted by the department.

IDENTIFIED POLICY OUTCOMES

Development of a FY 2021-22 budget that aligns with Council priorities.

POLICY QUESTION(S)

What are the policy implications and tradeoffs that will result from the department's base budget and any approved modification requests? Specific factors for Council consideration may include:

- How well do the department's programs align with Council priorities?
- Does the base budget represent a good investment in Council priorities?
- Do proposed modification requests advance Council priorities?
- Has the department demonstrated sufficient planning to successfully implement any new programs or projects?
- Will the department need additional General Fund support to implement their new programs or projects?
- If yes; how high a priority are the programs compared to others that also require General Fund support?

POLICY OPTIONS FOR COUNCIL TO CONSIDER

Each department's modification requests may be considered for support and inclusion in the FY 2021-22 Approved Budget. Some, none or all of the department's individual items may be supported by Council.

STAFF RECOMMENDATIONS

The Chief Operating Officer and Chief Financial Officer recommend Council hear all the department presentations prior to determining their support for departments' modification requests.

STRATEGIC CONTEXT & FRAMING COUNCIL DISCUSSION

Each department's FY 2021-22 base budget was developed following the Chief Financial Officer's budget instructions released in early December. The base budgets allow the departments to continue existing programs and projects as adjusted for various factors such as inflation, COLAs, etc.

New programs, projects, additional appropriations and FTE are requested through the department's modification requests. Once approved the modification requests were built into the Proposed Budget scheduled for presentation to Council on April 15th.

- **Legal Antecedents**
The preparation, review and adoption of Metro's annual budget is subject to the requirements of Oregon Budget Law, ORS Chapter 294. The Chief Financial Officer, acting in their capacity as the designated Budget Officer, is required to present a balanced budget to Council, acting in their capacity as our Budget Committee.

BACKGROUND

Each department will provide information pertaining to their base budget and modification requests.

[For work session:]

- Is legislation required for Council action? Yes No
- If yes, is draft legislation attached? Yes No
- What other materials are you presenting today? N/A

Parks & Nature Budget Work Session

Work Session Topics

Metro Council Work Session
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