

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

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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.



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

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

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.

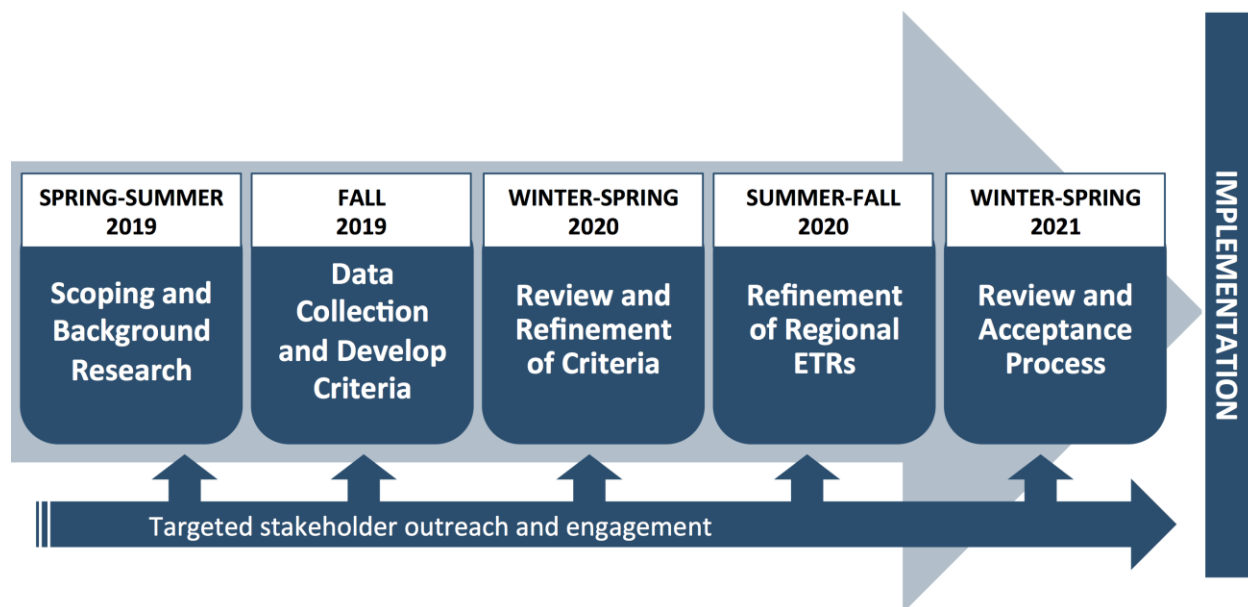
Over the past 15 years, the region has experienced significant growth and demographic changes and new technology, data and mapping have greatly expanded our understanding of the region's natural hazard risks, particularly to a catastrophic Cascadia Subduction Zone (CSZ) earthquake. During that same period 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 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		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 Council	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.

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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.

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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: - 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. 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.
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 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.