

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.

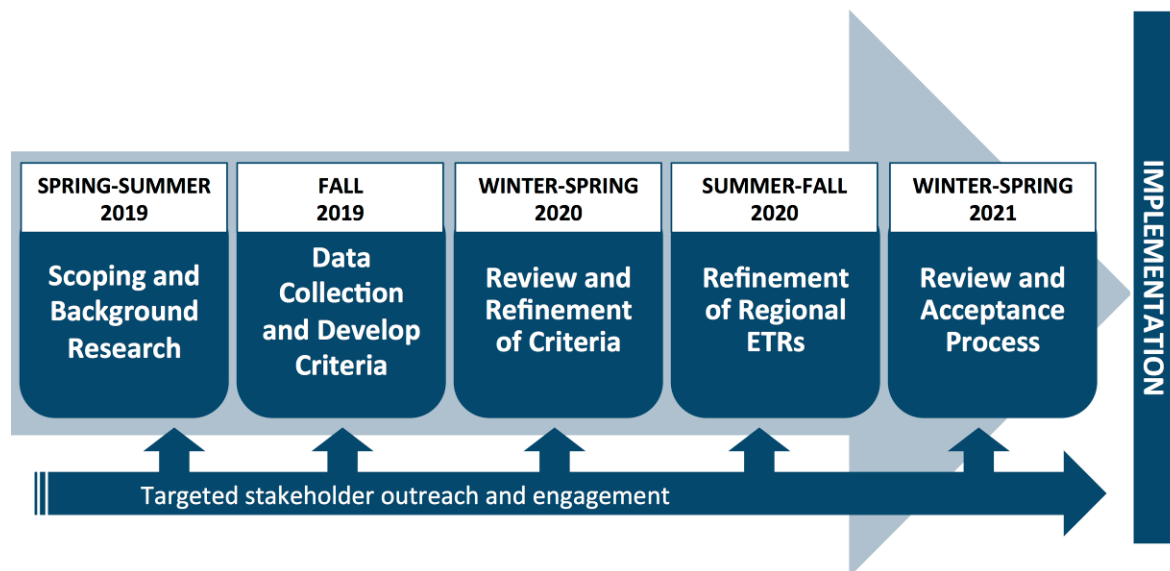


Figure ES.1 Phase 1 Project Timeline

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)

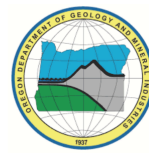
Clark County Public Transit Benefit Area Authority (C-TRAN)

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



CONNECTIVITY AND ACCESS FINDINGS

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.



ROUTE RESILIENCE FINDINGS

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.



COMMUNITY AND EQUITY FINDINGS

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.

BY THE NUMBERS

[insert TBD three summary infographics on the routes]

XX miles of routes are designated

XX miles new routes were designated

X% of critical infrastructure and essential facilities connected

Add regional map of the updated routes (SSLRs and RETRs)

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 (pending funding from the Urban Areas Security Initiative) to address recommendations 2, 3, 4 and 6. 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 (RETR Phase 2)
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 (RETR Phase 2)
4	Better address vulnerable populations	Regional and Local	RDPO & Metro (RETR Phase 2 and Social vulnerability Tool (SVT))
5	Integrate RETR and LETRs into evacuation planning	Local and regional	TBD
6	Formalize the RETRs and agree to a plan for consistent updates	Regional	RDPO & Metro (RETR Phase 2)
7	Engineering evaluation of top priority routes for seismic upgrades	Local and regional	TBD
8	Evaluate river routes	Regional/State	Ports and Coast Guard, State Resilience Office
9	Develop equity-centered public messaging for transportation in emergencies	Regional	RDPO Public Messaging TF
10	Evaluate bike and pedestrian options for emergency transportation	Local	Various

This report was developed and is being released 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.