Office of Governor Kate Brown

OSSPAC Update

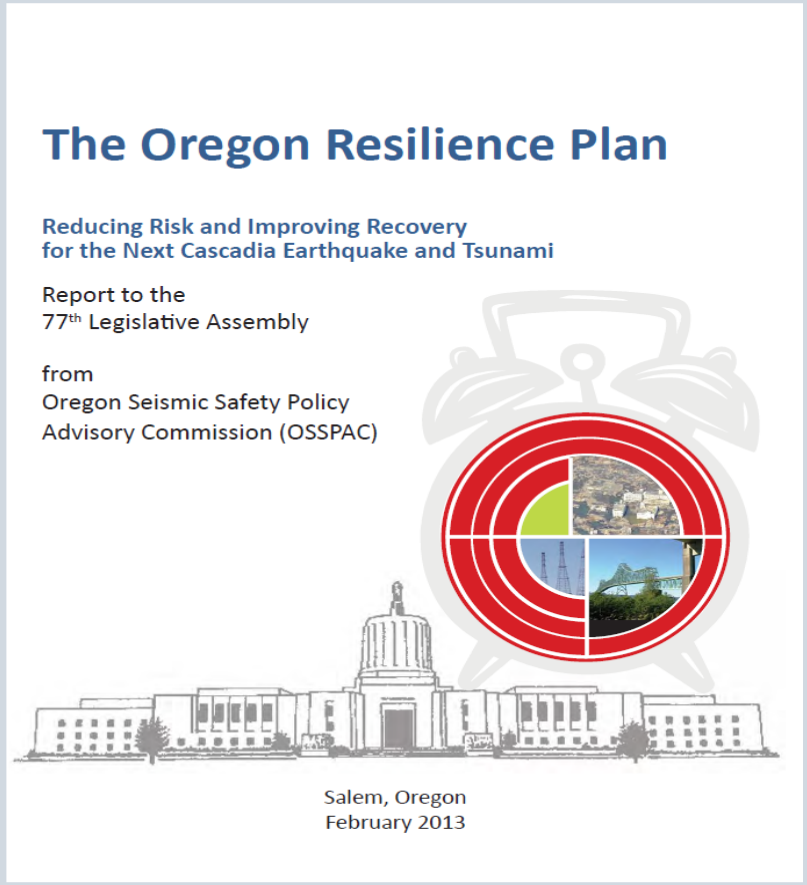
Oregon's Transportation Regional Resiliency Assessment (RRAP)

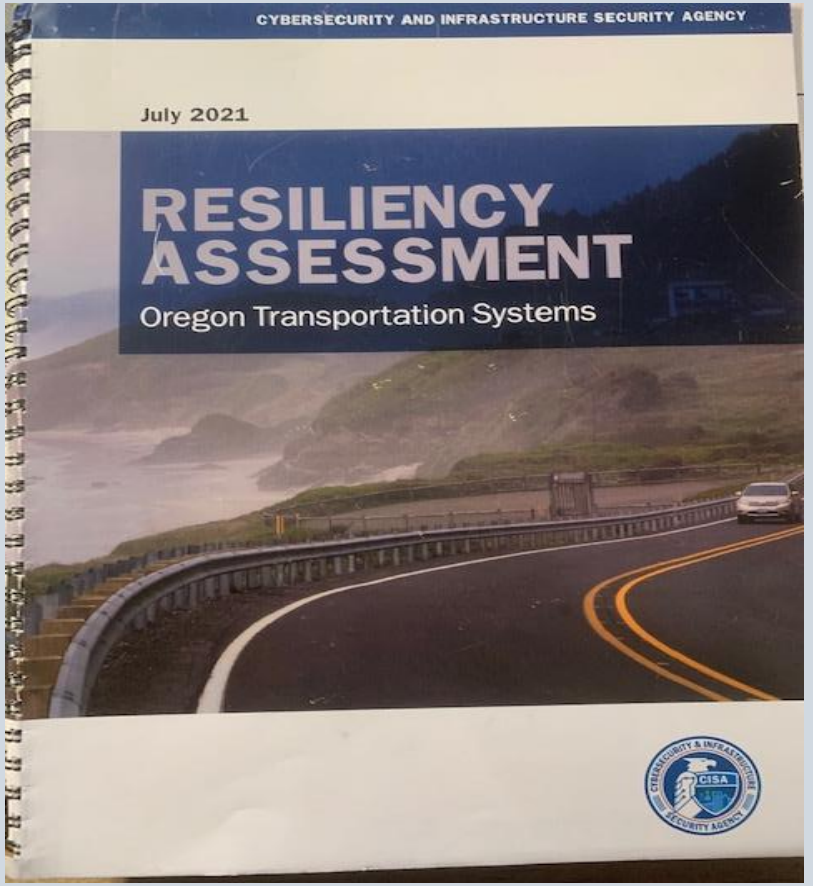
Mike Harryman, MA

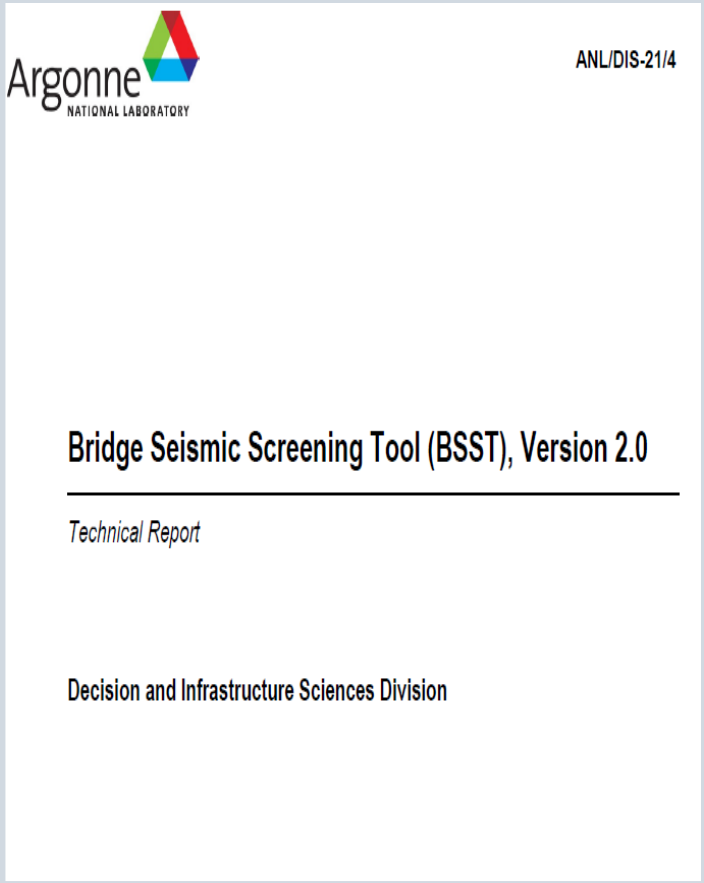
State Resilience Officer

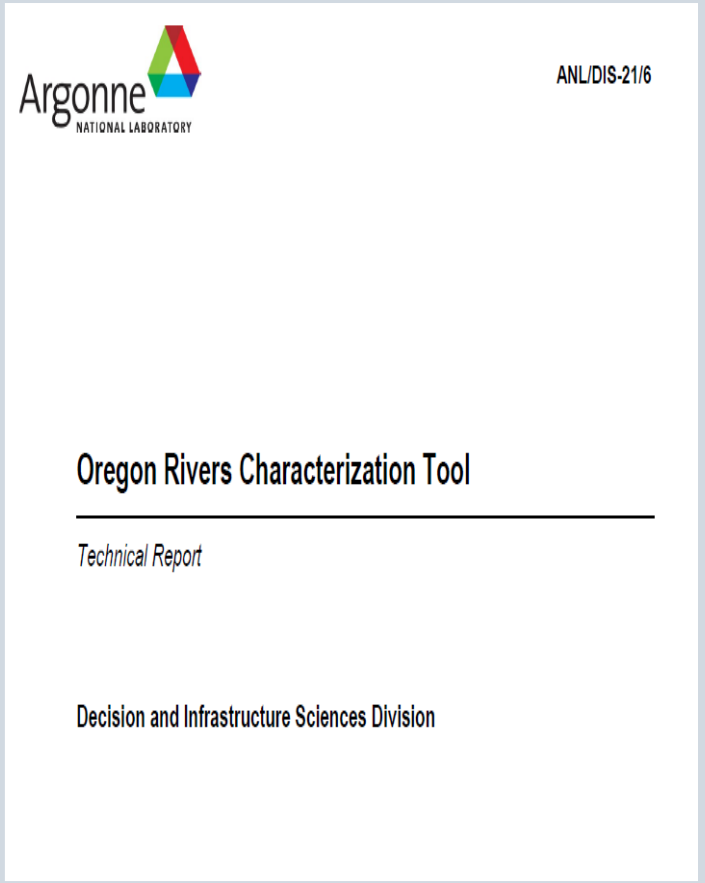
January 2022

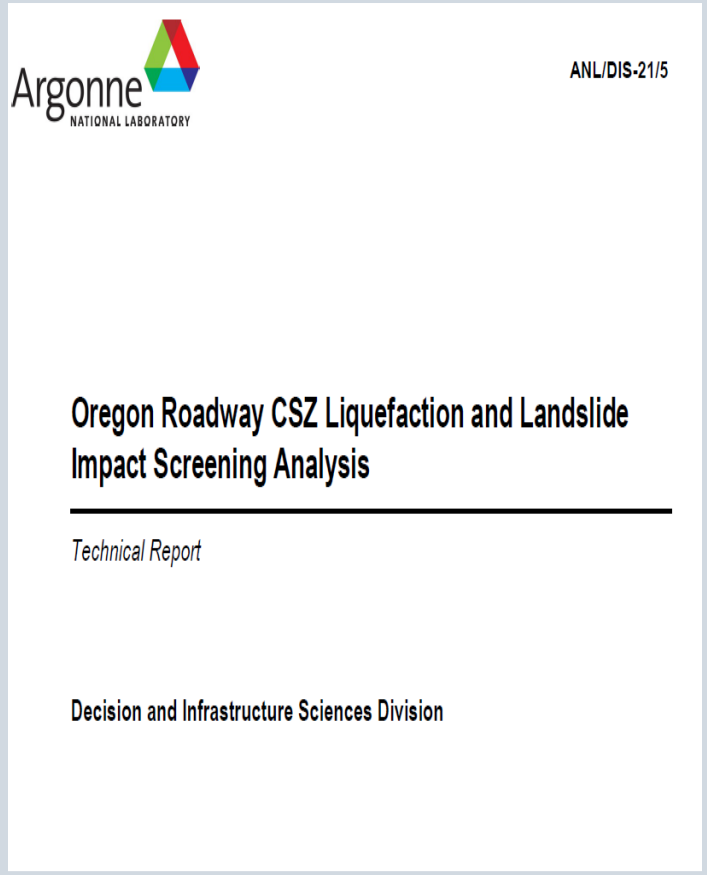
ORP – Chapter 5 Transportation











RRAP Technical Reports

Location of RRAP Report & Technical Papers

2021 – Oregon Transportation RRAP: https://www.oregon.gov/gov/policy/Pages/resilience.aspx

Appendix A – Summary of Bridge Damage Types

Appendix B – Post-Earthquake Island Areas as a Function of Time

Appendix C – Airport Soil Liquefaction Susceptibility and Tsunami Inundation

Appendix D – Summary of Airport/Airfield Facilities and Critical Resilience Capabilities

Appendix E – Maritime Port Soil Liquefaction Susceptibility and Tsunami Inundation

Key Findings – Resilience Enhancement Options

#1 – Oregon's statewide transportation system is vulnerable to a CSZ earthquake, the impacts of which will significantly disrupt the movement and destruction of post-disaster emergency supplies to communities throughout the affected regions – in particular, the Oregon coast and other regions within western Oregon.

#2 – Seismic impacts will create islanded communities that are functionally disconnected from one another, and also from the planner disaster logistics supply chains intended to support them.

#3 – Airports and airfields in Oregon are critical to early disaster response efforts, serving as staging and distribution points for an anticipated national influx of critical supplies and resources into the region; however, significant planning and analysis are necessary to better understand and enhance the resilience of these facilities in order to more efficiently and effectively support incident response.

#4 – The ability of maritime transportation systems to support sustained incident response and recovery efforts is not well understood due to a lack of available information about the seismic resilience of these systems.

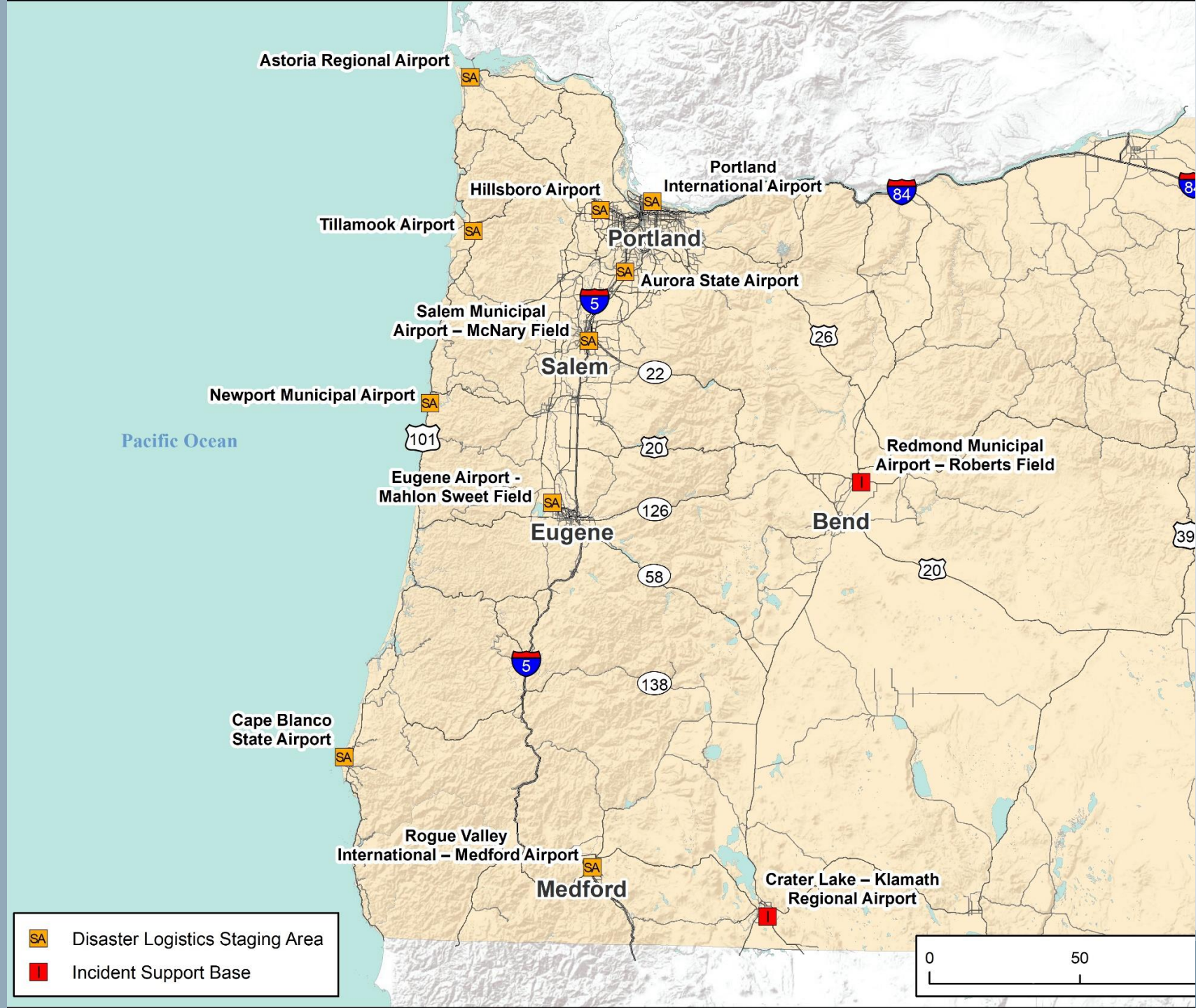
Regional Islanding Analysis

Project Objective:

> "Evaluate the capabilities of the transportation infrastructure to determine the nature and extent of their possible participation in alternative Oregon supply strategies."

Airports across Oregon identified as disaster logistics staging areas

Study to identify transportation supply routes out from staging areas to surrounding community



Islanding Optimization Analysis

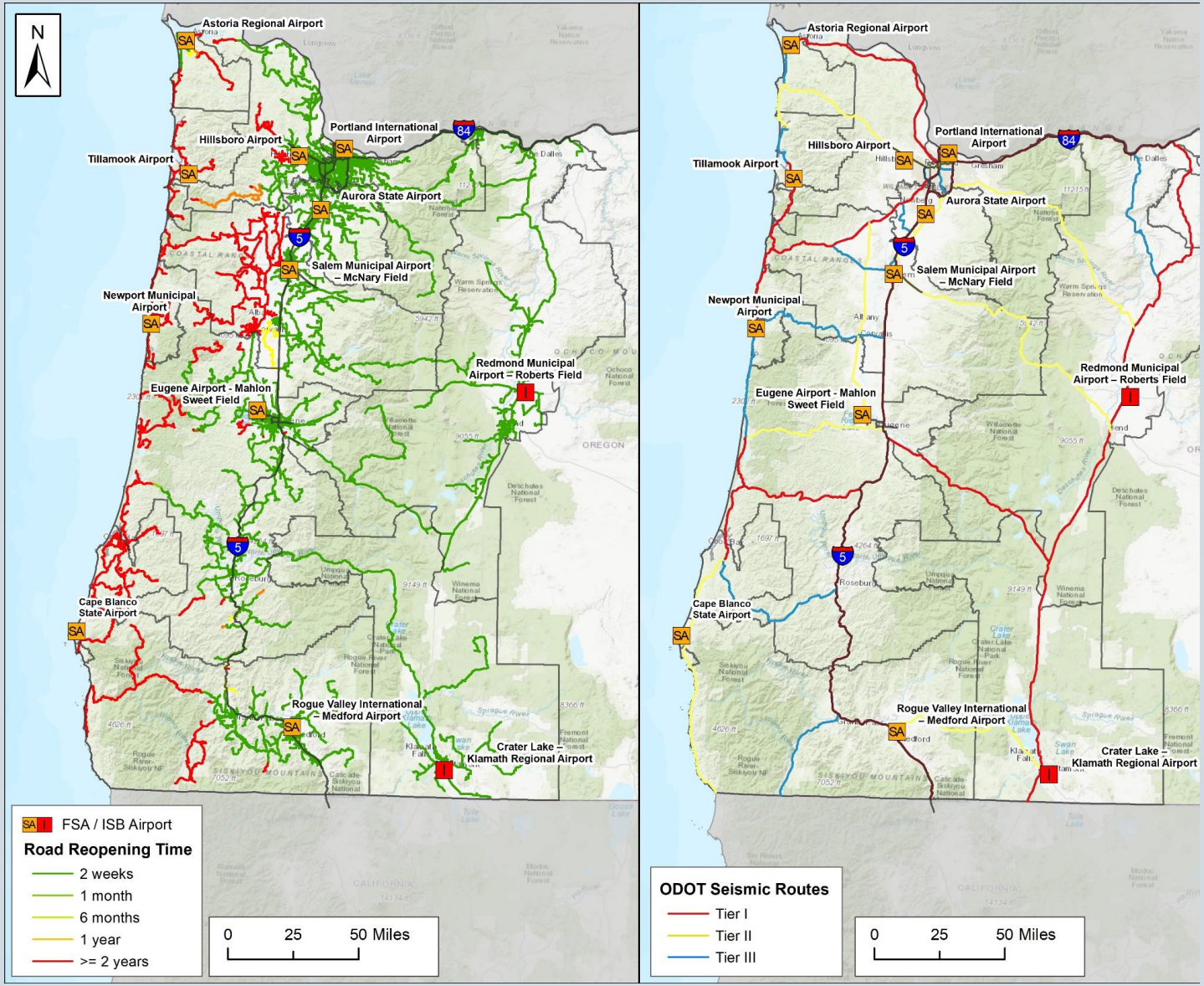
Comparison with ODOT Seismic Plus Report (2014) Priority Routes

General agreement in priority routes identified between two studies

Differences in RRAP routes due to focus on establishing connectivity to 12 staging areas, not general mobility – e.g., US97

RRAP included county and local roadways

Block-group-level of analysis in RRAP led to greater number of routes identified as priority



Islanding Optimization Analysis

Staging Area Service Areas

Community proximity to staging area not a consistent predictor of service area

Example: Hillsboro Airport service area extends nearly to Astoria and Tillamook

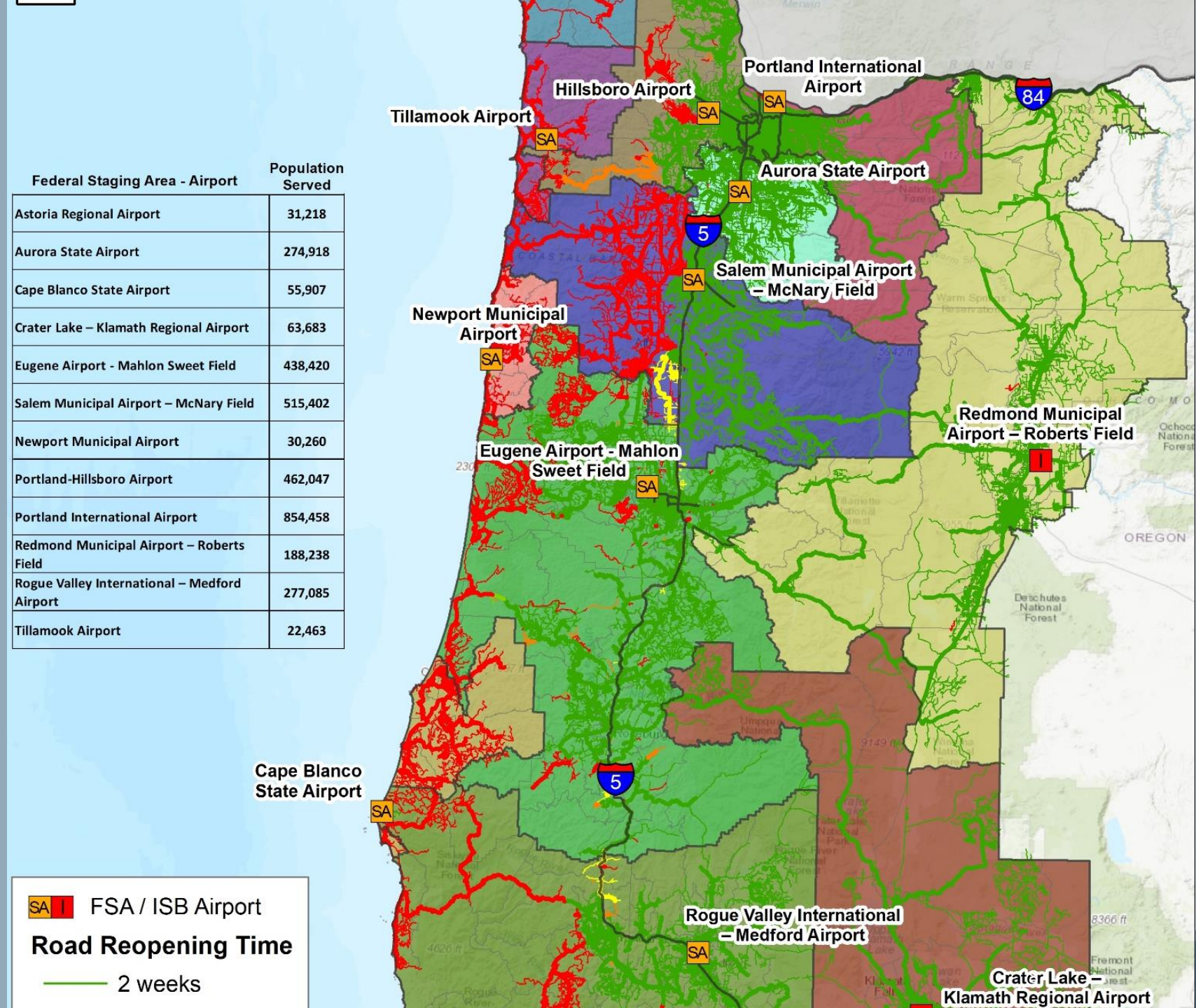
Results driven largely by bridge disruptions

Populations served by staging areas based on total population in full extent of service areas.

PDX, Hillsboro, Salem, Eugene > 400,000 residents

Aurora State, Redmond Municipal, Medford > 100,000 residents

Federal Staging Area - Airport	Population Served
Astoria Regional Airport	31,218
Aurora State Airport	274,918
Cape Blanco State Airport	55,907
Crater Lake – Klamath Regional Airport	63,683
Eugene Airport - Mahlon Sweet Field	438,420
Salem Municipal Airport – McNary Field	515,402
Newport Municipal Airport	30,260
Portland-Hillsboro Airport	462,047
Portland International Airport	854,458
Redmond Municipal Airport – Roberts Field	188,238
Rogue Valley International – Medford Airport	277,085
Tillamook Airport	22,463



Islanding Optimization Analysis

Staging Area Service Areas

Community proximity to staging area not a consistent predictor of service area

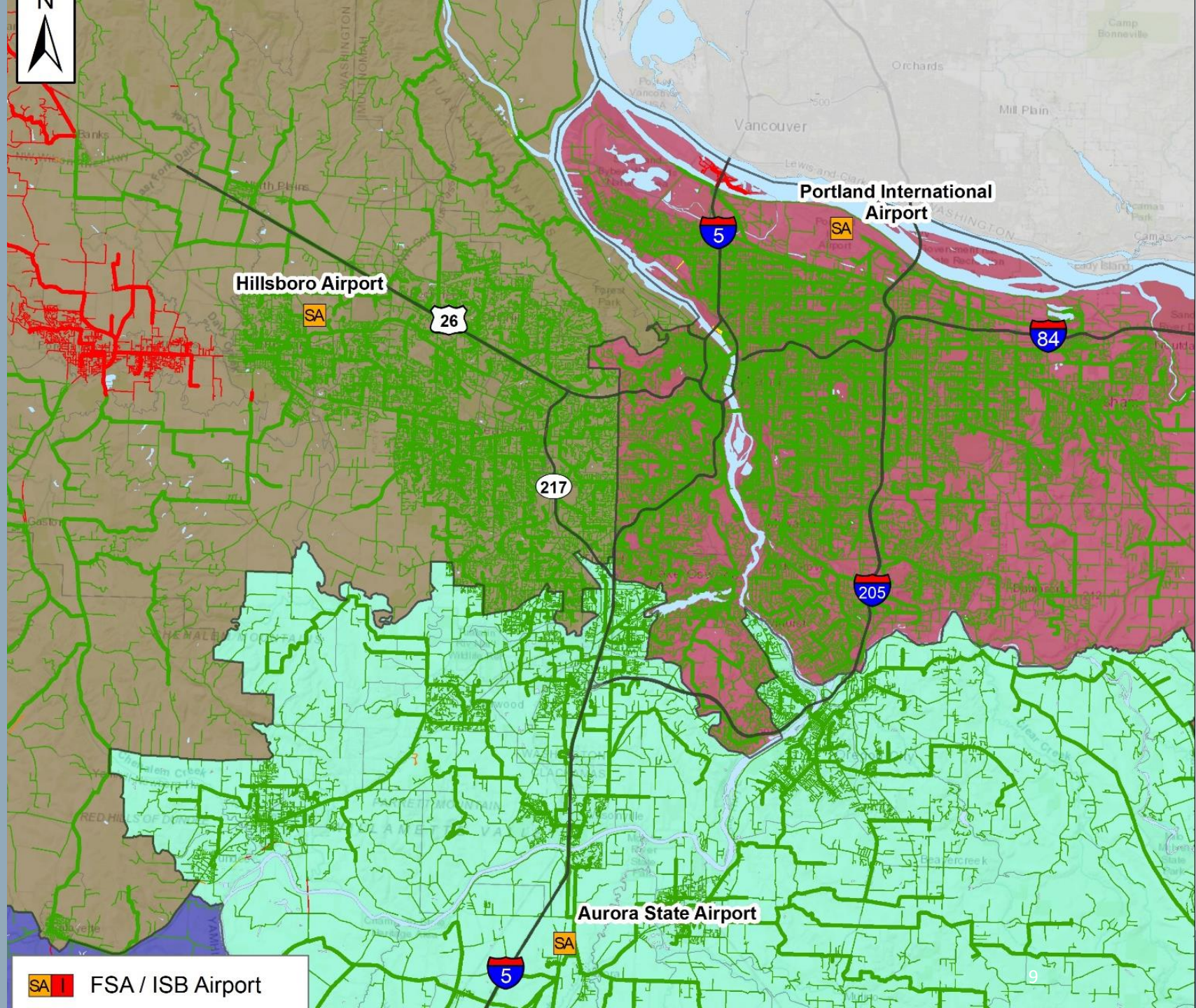
Example: Hillsboro Airport service area extends nearly to Astoria and Tillamook

Results driven largely by bridge disruptions

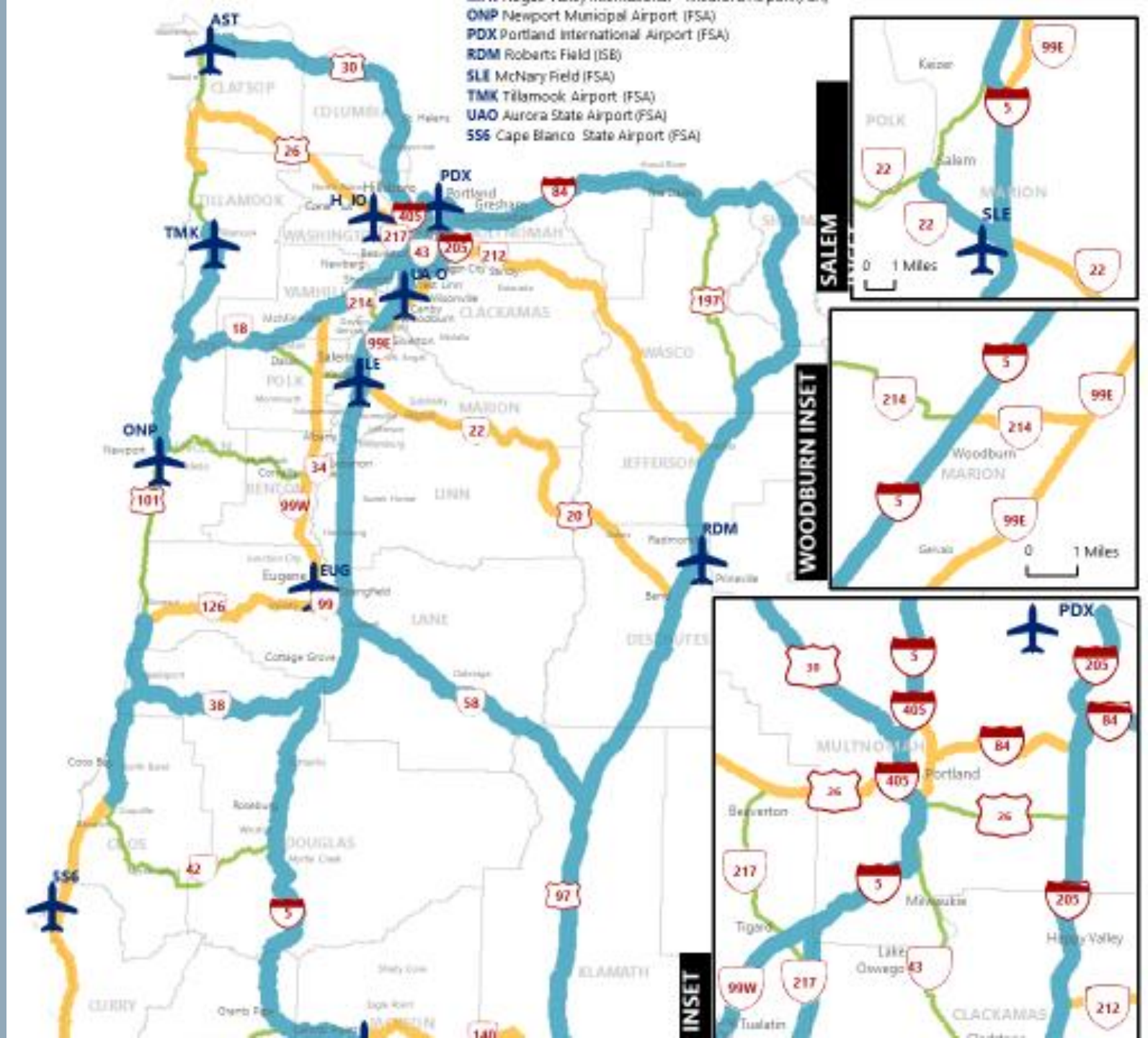
Populations served by staging areas based on total population in full extent of service areas.

PDX, Hillsboro, Salem, Eugene > 400,000 residents

Aurora State, Redmond Municipal, Medford > 100,000 residents



Next steps…Staging Bases Focus



Contact Information

Mike Harryman, MA

State Resilience Officer

Cell: 503.975.1911

Mike.k.harryman@oregon.gov

Governor Brown's Resilience page:

https://www.oregon.gov/gov/policy/Pages/resilience.aspx