# PORT OF TACOMA
# ADDENDUM D-4
# REGION 5 ALL HAZARD MITIGATION PLAN
# 2020-2025 EDITION

## Prepared for:

Port of Tacoma
1 Sitcum Way
Tacoma, WA 98421

*In Cooperation with:*

Pierce County Department of Emergency Management
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# ADDENDUM D-4

# REGION 5 ALL HAZARD MITIGATION PLAN
# PORT OF TACOMA

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## Appendices

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# Section 1

# Plan Process Requirements

***Planning Process---Requirement §201.6(b):***

An open public involvement process is essential to the development of an effective plan.

***Documentation of the Planning Process---Requirement §201.6(b):***

In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:

(1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;

(2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and

(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

***Documentation of the Planning Process---Requirement §201.6(c)(1):***

[The plan **shall** document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

- Does the plan provide a narrative description of the process followed to prepare the new or updated plan?
- Does the new or updated plan indicate who was involved in the current planning process? (Who led the development at the staff level and were there any external contributors such as contractors? Who participated on the plan committee, provided information, reviewed drafts, etc.?)
- Does the new or updated plan indicate how the public was involved? (Was the public provided an opportunity to comment on the plan during the drafting stage and prior to the plan approval?)
- Does the new or updated plan discuss the opportunity for neighboring communities, agencies, businesses, academia, nonprofits, and other interested parties to be involved in the planning process?
- Does the planning process describe the review and incorporation, if appropriate, of existing plans, studies, reports, and technical information?
- Does the updated plan document how the planning team reviewed and analyzed each section of the plan and whether each section was revised as part of the update process?

# SECTION 1

# REGION 5 ALL HAZARD MITIGATION PLAN
# 2020-2025 EDITION
# PORT OF TACOMA
# PROCESS SECTION

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# Changes To Jurisdiction Plan in this Document

This Process Section for the Region 5 All Hazard Mitigation Plan and the Port of Tacoma All Hazard Mitigation Plan includes the following changes which are documented as a result of a complete review and update of the previous plan. The purpose of the following change matrix is to advise the reader of these changes updating this plan from the original document approved in November 2008.

The purpose for the changes is three-fold: 1) the Federal Law (Code of Federal Regulations (CFR), Title 44, Part 201.4) pertaining to Mitigation Planning has changed since the original Plan was undertaken; 2) the Local Mitigation Planning Requirements of the Disaster Mitigation Act of 2000 201.6 (d) (3) Plan Review states plans must be reviewed, revised if appropriate, and resubmitted for approval within five years in order to continue to be eligible for HMGP project grant funding.

# Change Matrix

This Matrix of Changes documents the pertinent changes made from the July 2015 Port of Tacoma Plan for the Region 5 All Hazard Mitigation Plan; 2020-2025 Update. Most of the changes are a matter of additional detail, more information provided, and in some cases a response to new requirements. This 2020-2025 version represents a complete review and update by Port of Tacoma and Pierce County Emergency Management using a detailed process for development and following an established format. During this procedure, all web links have been verified and updated.

**Table 1-1 Change Matrix – Port of Tacoma Region 5 Hazard Mitigation Plan 2020-2025 Update**

| **Section 1 – Plan Development, Process Section** | |
|---|---|
| **Section or Part of Plan** | **New in 2020 Plan** |
| Section 1 – Process Section | Section 1 – Process Section |
| | The 2020 Process Section contains updated Planning Meeting overviews, Planning Team Members, Drop-in schedule, Public Comment dates, Elected Official Meetings and updated dates for Plans that collaborate with the mitigation plan. |

| **Section 2 – Participating Jurisdiction Profiles** | | |
|---|---|---|
| **Section or Part of Plan** | **Previous** | **2020 Plan** |
| Section 2 – Profile | Information was current as of 2010 Census Data. | The 2020 version of the Profile has been reviewed and updated. The Infrastructure Summary section was updated showing a significant increase in tax parcel values. In addition, the Economic Summary was |

| | | |
|---|---|---|
| | | updated also showing an increase. |
| | Information was current as of 2010 Census Data. | The 2010 Census Data remained for population data and is the current GIS available information from Pierce County. Once the 2020 Census data becomes available in Pierce County GIS format, population data figures will be updated in the Profile Section 2 and the Risk Assessment Section 4. |
| | | A new Demographic Analysis paragraph was added to the 2020 Mitigation Plan to elaborate the Port of Tacoma's demographics in more detail and capturing some of the at-risk populations. This also allowed the Port to provide an updated overview of its population beyond the 2010 census which is outdated. |

| **Section 3 – Capability Identification** | | |
|---|---|---|
| **Section or Part of Plan** | **Previous** | **2020 Plan** |
| Section 3 – Capability | The Capability Tables shown in the previous plan are in a similar format. | The 2020 Capability Section has been improved and updated to show current information from the jurisdiction. |

| **Section 4 – Vulnerability, Risk Analysis** | |
|---|---|
| **Section or Part of Plan** | **2020 Plan** |
| Vulnerability and Hazard Impact Analysis | This section was added to provide a better understanding on how the identified hazards affect the Port of Tacoma and its critical infrastructure. |
| Changes in Development | This required element was added to provide a clearer understanding and location within the plan of the changes in development that have occurred within the Port of Tacoma over the past five years. |
| Disaster Declarations Charts | The Geological, Meteorological and Technological Charts have been updated to reflect current changes in Pierce County's Hazard Identification Risk Assessment (HIRA). Major changes include updating the maps, figures and table column to align with the changes in the HIRA. Technological Hazards added "Active Threat" and "Cyber |

| | |
|---|---|
| | Attack" under the Terrorism category. |
| Hazard Maps - Overview of Data Source Descriptions | This section was added to provide the reader with a better understanding of the data source that was used to produce the hazard maps. |
| The previous version of the plan contained hazard maps. | The 2020 Risk Section includes updated maps and contains additional hazard maps such as deep/shallow landslides susceptibility. |
| The previous version included specific analysis showing vulnerability of population, land and infrastructure according to Census 2010 and 2013/2014 tax parcel data. | The 2020 Risk Section includes completely updated tables showing vulnerability of population, (where different hazard maps were used) land and infrastructure using Census 2010 data and 2019/2020 tax parcel data. |

| **Section 5 – Mitigation Strategy** | |
|---|---|
| **Section or Part of Plan** | **2020 Plan** |
| The previous document used the standard goals as outlined for the entire project. | The 2020 Mitigation Section was drafted using specific goals and objectives written by the jurisdictions to their specific hazards and concerns. |
| The previous document contained a Mitigation Measure Matrix chart followed by written descriptions of each individual measure. | The new document uses the same format as the original plan with the addition of a 'Status Update" table under each mitigation measure. This provides the opportunity to update each mitigation strategy and track the status. New measures have been added to both the Matrix and the individual measure descriptions. Measures completed in the past five years have been moved to a historical appendix in the plan to track projects completed by the jurisdiction. |

| Section 6 – Infrastructure | |
|---|---|
| Section or Part of Plan | 2020 Plan |
| The previous plan used a full table with details on each piece of critical infrastructure. In addition, a matrix summary of hazards and dependencies affecting the critical infrastructure was completed. | The 2020 plan uses the same table. The tables have been reviewed and updated by the jurisdiction. This section is only available to the jurisdiction due to the sensitivity of information contained. A disclosure statement acts as a placeholder for Section 6. |

| Section 7 – Plan Maintenance | |
|---|---|
| **Section or Part of Plan** | **2020 Plan** |
| The previous Plan Maintenance for the jurisdiction was very similar in format to the newer version for 2020. | The 2020 version of the Plan Maintenance borrows from the format and content of the original; however, the entire document has been reviewed and updated to current information. |

| Section 8 – Other Changes | |
|---|---|
| **Section or Part of Plan** | **2020 Plan** |
| The previous document contained four Appendices. | The 2020 Plan contains six Appendices including: place for the final resolution and approval letter from FEMA, list of jurisdiction's planning team, a chart for any changes, 2014 HAZUS analysis, documentation records for Public Outreach events and a historical appendix for completed projects. The Acronym list appears in the Base Plan for the entire project. |

# Plan Process

The Region 5 Hazard Mitigation Plan Process Section is a discussion of the planning process used to update the Region 5 Hazard Mitigation Plan (Pierce County is Region 5 for Homeland Security (HLS) in Washington State, including how the process was prepared, who aided in the process, and the public involvement.

The Plan update is developed around all major components identified in 44 CFR 201.6, including:

- **Public Involvement Process**;
- **Jurisdiction Profile**;
- **Capability Identification**;
- **Risk Assessment;**
- **Mitigation Strategy**;
- **Infrastructure Section**; and,
- **Plan Maintenance Procedure**.

Below is a summary of those elements and the processes involved in their development.

# Public Involvement Process

Public participation is a key component to strategic planning processes. Citizen participation offers citizens the chance to voice their ideas, interests, and opinions.

> "Involving stakeholders who are not part of the core team in all stages of the process will introduce the planning team to different points of view about the needs of the community. It will also provide opportunities to educate the public about hazard mitigation, the planning process, and findings, and could be used to generate support for the mitigation plan."[i]

In order to accomplish this goal and to ensure that the updated Region 5 Hazard Mitigation Plan be comprehensive, the seven planning groups in conjunction with Pierce County Emergency Management developed a public participation process of three components:

1. A Planning Team comprised of knowledgeable individual representatives of HLS Region 5 area and its hazards;
2. Hazard Meetings to target the specialized knowledge of individuals working with populations or areas at risk from all hazards; and
3. Public meetings to identify common concerns and ideas regarding hazard mitigation and to discuss specific goals, objectives and measures of the mitigation plan.

This section discusses each of these components in further detail below with public participation outlined in each. Integrating public participation into the development of the Region 5 Hazard

Mitigation Plan update has helped to ensure an accurate depiction of the Region's risks, vulnerabilities, and mitigation priorities.

# Planning Team

The Planning Team was organized early in 2019. The individual Region 5 Hazard Mitigation Planning Team members understand the portion of Pierce County containing their specific jurisdiction, including how residents, businesses, infrastructure, and the environment may be affected by all hazard events. The members are experienced in past and present mitigation activities and represent those entities through which many of the mitigation measures would be implemented. The Planning Team guided the update of the Plan, assisted in reviewing and updating goals and measures, identified stakeholders, and shared local expertise to create a more comprehensive plan. The Planning Team was comprised of:

**Table 1-2 Planning Teams – Discipline Group**

| NAME | TITLE | JURISDICTION |
|---|---|---|
| Curt Simonson | President HOA | Crystal River Ranch Association |
| Gary Castell | President HOA | Crystal Village Homeowners Association |
| Jason Harms | Sergeant Pierce County Sheriff's Department | Pierce Transit |
| Alisha Peña | Senior Planner | Port of Tacoma |
| Deidre Wilson | Planning Manager | Port of Tacoma |
| John Cammon | Maintenance Superintendent | Riviera Community Club |
| Don Tjossem | President HOA | Taylor Bay Beach Club |

**Table 1-3 Planning Teams – Regional Group**

| NAME | TITLE | JURISDICTION |
|---|---|---|
| Micah Lundborg | Police Chief | City of Edgewood |
| Pete Fisher | Police Chief | City of Fife |
| Robert Eugley | Patrol Officer | City of Fife |
| John Cheesman | Police Chief | City of Fircrest |
| Tony Hernandez | Police Chief | City of Milton |
| Ute Scofield | EM Program Manager | City of Tacoma |
| Jacob Rain | EM Program Coordinator | City of Tacoma |
| Jim Wassall | Fire Chief | Pierce County Fire District #13 |
| Jim Jaques | Assistant Fire Chief | East Pierce Fire & Rescue |
| Kira Thirkield | Fire Chief | Riverside Fire & Rescue #14 |
| Mike Rupert | Director of Safety/Security | Tacoma School District |
| Jeff Rogers | Environmental Health/Safety | Tacoma School District |
| Bart Stepp | General Manager | Mt. View-Edgewood Water Co |
| Jim Oliver | Assistant Quality Improvement Manager | Community Health Care |
| Eileen Newton | Emergency Manager | Franciscan Health System |
| Heidi Rock | Emergency Management Program Manager | MultiCare Health System |

| | | |
|---|---|---|
| Alex Truchot | Sr. HSE Manager | Kaiser Permanente |
| Johanna Hanson | Emergency Management Specialist | Kaiser Permanente |
| Alisha Peña | Senior Planner | Port of Tacoma – NW Seaport Alliance |
| Marty Kapsh | Port of Tacoma Patrol Officer | Port of Tacoma |
| Deirdre Wilson, AICP | Planning Manager | Port of Tacoma |

# Planning Team Meetings

The Planning Team held 7 Planning Team Meetings either in their Discipline Groups or Regional Planning Groups. Meeting in Regional Planning Groups supported a whole community planning approach which either developed new or stronger relationships amongst jurisdictions. This allowed for an integration of mitigation strategies for regions sharing the commonality in hazards. There was a total of 45 meetings from February 2019 to December 2019 between all Planning Groups.

The Planning Teams Discipline Groups: City and Town Group, Fire Group, School Group, Special Purpose Group, Utility Group, Medical Group and Unincorporated Pierce County Group.

The Planning Team Regional Groups broken down into five geographical areas in Pierce County: West Group (all of Gig Harbor, Key Peninsula, Herron Island, Fox Island and Raft Island), SW Group (Lakewood, Anderson Island, Steilacoom), Central Group (Puyallup, Graham, Eatonville), NE Group (Buckley, Carbonado, Bonney Lake, Wilkeson), North Group (Tacoma, Fife, Edgewood, Sumner).

**Table 1-4 Planning Team Meetings**

| |
|---|
| **Planning Team Meeting #1 – Special Purpose: PCEM Puyallup Room – February 28, 2019** |
| Planning Team members Debbie Bailey and Bailee Godfrey conducted the meeting and the Planning Team discussed the following items: Introduction of Planning Team, Review of the history of the Grant Application, Defining the Planning Requirements, How We Establish the In-Kind Match, Benefits of Developing a Plan, Defining the Planning Process, Establishing the Planning Team Meetings, Elected Official Meetings and Public Comment Meetings, reviewing each jurisdiction's profile information, and defining next steps. |
| **Planning Team Meeting #2 – North Regional Group: PCEM Nisqually Room – March 25, 2019** |

| |
|---|
| Planning Team members Debbie Bailey and Bailee Godfrey conducted the meeting and the Planning Team discussed the following items: Introduction of Planning Team as this was our first Regional Planning meeting and there were new members present. We reviewed items presented at the previous meeting, Defining the Planning Requirements, Defining the Process, Establishing the Planning Team Meetings, Elected Official Meetings and Public Comment Meetings, and explaining the next steps.<br>This meeting focused on continuing review of the Profile Section, an introduction to begin thinking about mitigation strategies to include a review of what measures from their original plan have already been completed and thinking about new measures they may like to add. In addition, this group discussed the Capability Section and how to recognize capabilities that already exist within the jurisdiction. Everyone was reminded to set up their Elected Official meetings. Everyone was given a copy of their original Section 3 – Capability Section. |
| **There was not a Regional Planning Meeting in April of 2019** |
| **Planning Team Meeting #3 – North Regional Group: PCEM Nisqually Room – May 21, 2019** |
| Planning Team members Debbie Bailey and Bailee Godfrey conducted the meeting with the majority of the regional jurisdictions present. We reviewed the Profile, Capabilities, and Mitigation Strategy Sections, along with introducing the Risk Assessment Section to the group. We also talked about progress made on the In-Kind Match sheets and pre-authorization approval from jurisdictions' governing bodies. Finally, we gathered feedback about our Threat and Hazard Identification Workshop held on May 1-2, and everyone's progress with outreach events for their mitigation plans, especially in relation to fire season starting and the opportunity for communities in this region to incorporate more fire protection and mitigation elements into their planning process. |
| **There was not a Regional Planning Meeting in June of 2019** |
| **Planning Team Meeting #4 – North Regional Group: PCEM Nisqually Room – July 16, 2019** |
| Planning Team members Debbie Bailey and Bailee Godfrey reviewed the Profile, Capabilities, Risk Assessment, and Mitigation Strategy Sections to see how everyone was coming along with their update process. A reminder was provided for those who had not turned in their in-kind match sheet, as well as for those who had not completed the governing body pre-approval requirement yet. Debbie offered to create jurisdictional maps for public outreach events to bring residents in to talk about hazards that can affect them and how the mitigation plan plays a role in community resilience. Lastly, Todd Kilpatrick, the former Mitigation Grant Program Manager with Washington State Emergency Management Division who now works at Pierce County Emergency Management, spoke to the group about the Hazard Mitigation Grant Program (HMGP), the Pre-Disaster Mitigation Grant (PDM), potential projects that are eligible for those grants, and the upcoming Mitigation Grant Workshop that'll be held on August 12th and 19th. |
| **There was not a Regional Planning Meeting in August of 2019** |
| **Planning Team Meeting #5 – North Regional Group: PCEM Nisqually Room – September 24, 2019** |

| |
|---|
| Planning Team members Debbie Bailey and Wyatt Godfrey reviewed the Profile, Capabilities, Risk Assessment, and Mitigation Strategy Sections to check on the jurisdictions' progress. More specifically, Debbie explained the process of developing new mitigation strategies to add to their plans. This discussion covered how to select a new mitigation strategy, the required components for their strategy development, and the format required to input the strategy into the plan. Feedback was gathered about the August Mitigation Grant Workshop – unanimous positive feedback with a few recommendations to improve for next time. A reminder for the In-Kind Match Sheet and pre-authorization documentation was provided. Finally, the meeting was closed out with a discussion on the progress of meeting the public outreach requirements and ideas for those who had not completed that component yet. |
| **Planning Team Meeting #6 – North Regional Group: PCEM Nisqually Room – October 22, 2019** |
| Planning Team members Debbie Bailey and Wyatt Godfrey held the meeting with less participation than preferred but included a call-in option for those who couldn't attend in person. The usual review of previous sections occurred, with the introduction of the Infrastructure and Plan Maintenance Sections. Participants were taught how to fill out the potentially overwhelming tables in the Infrastructure Section and told to review the Plan Maintenance Section for any inaccurate statements or language. Like the previous meeting, a reminder for the In-Kind Match Sheet, pre-authorization documentation, and public outreach documentation was provided |
| **Planning Team Meeting #7 – North Regional Group: PCEM Nisqually Room – November 21, 2019** |
| The final planning meeting was conducted by Debbie Bailey and Wyatt Godfrey. All sections of the plan were discussed and reviewed to ensure participants' questions were answered. A detailed discussion of the Mitigation Strategy Section occurred, specifically looking at the integration of new strategies into the plan and how to reorder them by priority. Like the previous meeting, a reminder for the In-Kind Match Sheet, pre-authorization documentation, and public outreach documentation was provided. Participants were informed that in the new year, Pierce County DEM would be hosting two "workshops" a month where jurisdictions can walk in and get help with their plan on an individual basis, instead of only in the previously used group format. The goal is to refine the work that participants have done thus far and craft it into a well-rounded, comprehensive, and usable Hazard Mitigation Plan. |

# Drop – In Workshop

To provide further opportunity for participating jurisdictions to work on their plan updates Pierce County DEM hosted two additional "workshop" meetings per month starting in January 2020. These were not formal meetings but provided individual instruction or assistance to jurisdictions. They were scattered at two-week intervals during the month with alternating morning and afternoon times trying to accommodate busy schedules. Due to the COVID-19 virus pandemic our "drop-in" workshops were canceled for the remainder of the update cycle. We remained available through email and phone call conversations.

**Table 1-5 Drop-In Meetings**

| Date | Location |
|---|---|
| January 7, 2020 – 1:00-3:30 | Pierce County - DEM |
| January 23, 2020 – 9:00-11:30 | Pierce County - DEM |
| February 11, 2020 – 1:00-3:30 | Pierce County - DEM |
| February 27, 2020 – 9:00-11:30 | Pierce County - DEM |
| March, April and June were canceled due to COVID-19. | Pierce County - DEM |

# Public Comment

**Table 1-6 Public Comment Meetings**

| Date | Location | Time |
|---|---|---|
| August 15, 2019 | Pierce County Skill Center | 12:00-1:40 |
| February 11, 2020 | Fabulich Bldg. | 11:30-1:00 |

The Port of Tacoma held a special Commission Meeting on August 15, 2019. This meeting was open to the general public and can be viewed online following the event. See Appendix E for the meeting minutes.

On February 11, 2020 the Port of Tacoma held another public meeting the Port of Tacoma South Sound Facility Security Officers Meeting as the plan neared the final stages of the update. This meeting is open to Tideflats stakeholders and includes port tenants, government partners such as the U.S. Coast Guard and Tacoma Fire, and other private business in the Tacoma Tideflats such as U.S. Oil. The plan was reviewed and discussed along with the mitigation strategies. The meeting agenda can be seen in Appendix E.

# Elected Officials Meetings

On August 15, 2019, Alisha Peña and Debbie Bailey presented in front of the Port of Tacoma Commissioners at the Pierce County Skill Center in Frederickson. Alisha Peña first explained the overarching project of updating local jurisdictions' mitigation plans and then went into detail about the purpose, components, and processes involved in this update. Reading material was presented to the Commissioners – in particular, a list of all jurisdictions participating in this update, as well as a short brochure explaining the mitigation plan and how it benefits the whole community. Once she was finished presenting, the Commissioners had the opportunity to ask questions and provide comments. Many Port Commissioners provided positive feedback regarding the Port of Tacoma's involvement in this planning process, while others asked questions about the project timeline, grant funding opportunities, and the applicability of specific mitigation projects for their jurisdiction. After the commentary period ended, the Commissioners indicated that they would like port staff to proceed with updating the Port of Tacoma's All Hazard Mitigation Plan.

# Port of Tacoma Planning Process

In updating the Port of Tacoma's All Hazard Mitigation Plan, an extensive review was undertaken, and each Section was rewritten to ensure the information provided is complete and accurate.

# Stakeholder Planning Team

Since September 2016, the South Sound Facility Security Officers (FSO) group has been an additional team that is engaged in the development of the Port of Tacoma's All Hazard Mitigation Plan.
This stakeholder forum is comprised of representatives from several organizations including area marine terminals, the Port of Tacoma, Local 23 of the International Longshore and Warehouse Union (ILWU), the United States Coast Guard, the Tacoma Fire Department and the Pierce County Department of Emergency Management.

The Port of Tacoma has also engaged port staff in the update of its Port of Tacoma All Hazard Mitigation Plan through its internal Emergency Readiness Workgroup. This group convenes multiple times a year to look at policies and procedures surrounding various types of emergencies, including many of the hazards identified in the Port of Tacoma All Hazard Mitigation Plan.

# Joint Planning Requirement

The Port of Tacoma has identified the following plans for integration with its All Hazards Mitigation Plan:

| Plan | Next Update |
|---|---|
| **Port of Tacoma/Northwest Seaport Alliance Plans** | |
| Port of Tacoma Strategic Plan | Underway |
| NWSA Gateway Infrastructure Plan *New Plan* | 2021/2022 |
| **Partner Agency Plans** | |
| City of Tacoma's Tideflats Area Transportation Study (TATS) | TBD; updating Freight Model now to inform future transportation planning efforts |
| City of Tacoma's Container Port Element of the Comprehensive Plan (2014) | TBD |
| City of Tacoma Climate Adaptation Strategy | Underway |

# Endnote

[i] State and Local Mitigation Planning How-to-Guide, Getting Started: building support for mitigation planning, FEMA 386-1, September 2002, p.3-1.

# SECTION 2

# REGION 5 ALL HAZARD MITIGATION PLAN
# 2020-2025 EDITION
# PORT OF TACOMA
# PROFILE SECTION

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# Overview

The Port of Tacoma is an independent municipal corporation that operates as a public port district under Title 53 of the Revised Code of Washington (RCW). Created in 1918, the Port owns and maintains facilities in the industrial tideflats of Tacoma, most of which support maritime commerce, including facilities for containerized cargo, automobiles, and dry bulks such as grain, breakbulk cargo, heavy lift cargo and project cargoes. The Port of Tacoma also plays a strategic role for the U.S. Department of Defense as part of the National Port Readiness Network. As a military strategic port, it helps ensure rapid, secure, and effective military mobilization to support major force deployments in times of need.

Methods for quantifying the relative size, scope of operations and capabilities for counties, cities and towns (e.g., demographics, population) are, in many instances, not readily applicable to public ports whose size may be generally measured in terms of service capabilities, trade volumes, job creation and service area.

The following provides a general overview of the Port of Tacoma, its mission, core values, operations and economic impact.

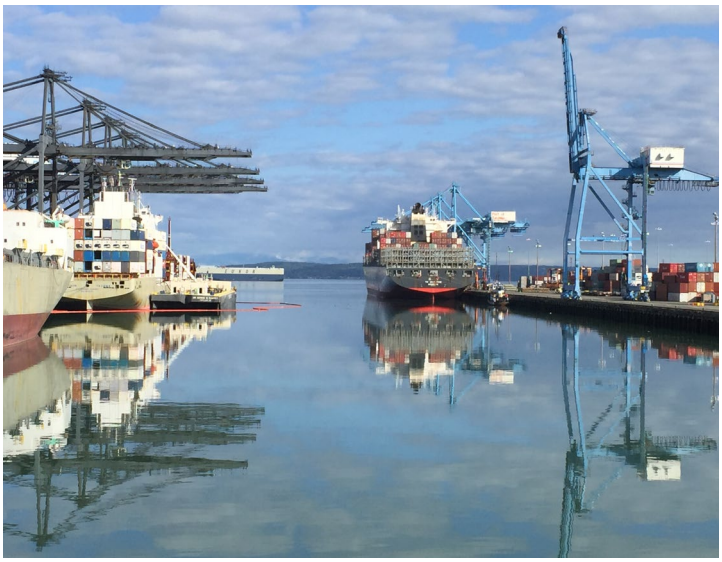
## MISSION STATEMENT

The mission of the Port of Tacoma is as follows:

**Deliver prosperity by connecting customers, cargo and community with the world.**

## CORE VALUES

The Port of Tacoma has six (6) core values as follows:



**Integrity**
Being ethically unyielding and honest; inspiring trust by saying what we mean and matching our behaviors to our words; acting in the public interest and in a manner to maintain public confidence.

**Customer focus**
Creating long-term relationships by consistently delivering value; helping customers to become high-performance businesses by understanding their business needs; establishing realistic expectations and meeting commitments.

**Teamwork**

Focusing on the success of the entire organization; fully utilizing our collective skills, knowledge and experiences to achieve our goals; encouraging diversity, respect and full participation; being effective collaborators with a broad range of partners in the region; having fun together.

**Courage**

Facing challenges with fortitude; setting aside fears and standing by personal principles; extending beyond personal comfort zones to achieve goals; taking responsibility for actions.

**Competitive spirit**

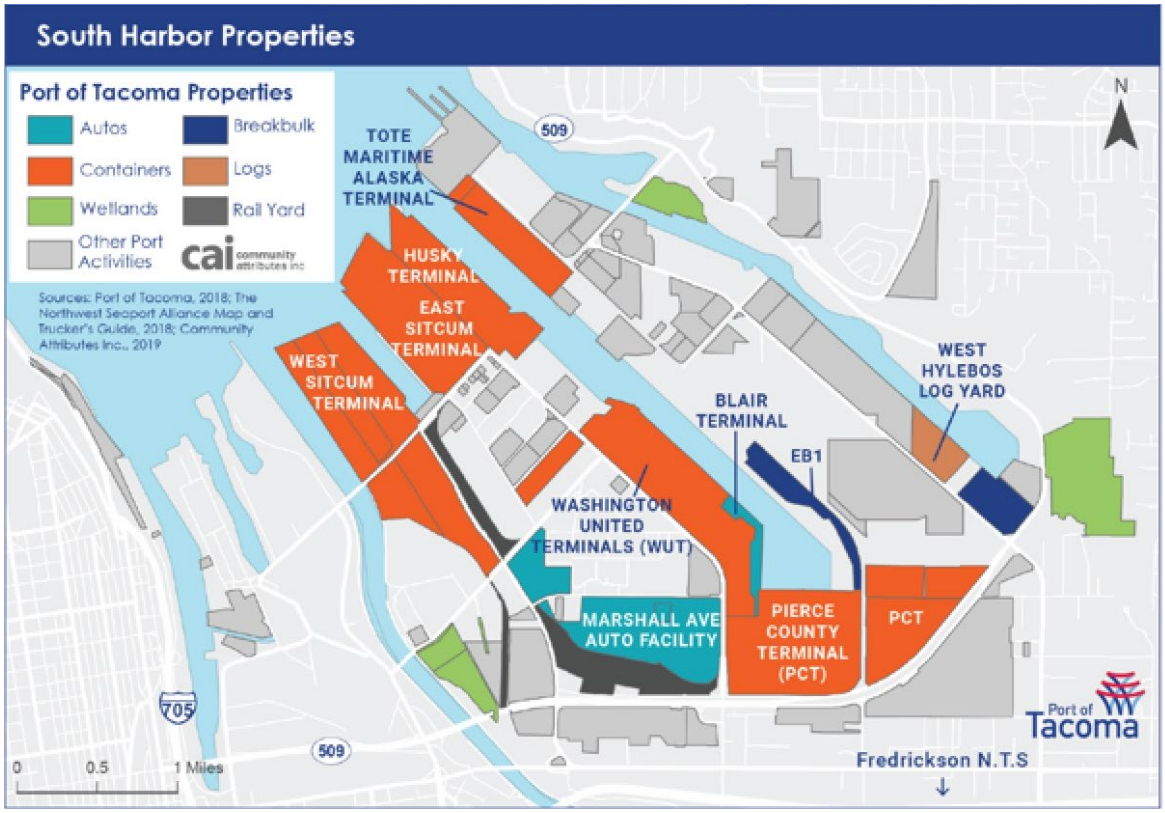
Pursuing our goals with energy, drive and the desire to exceed expectations; going the extra mile for our customers and to differentiate ourselves in the market; demonstrating passion and dedication to our mission; constantly improving quality, timeliness and value of our work.

**Sustainability**

Focusing on long-term financial viability; valuing the economic well-being of our neighbors; doing business in a way that improves our environment.

# Operational Summary

In 2015, The Port of Tacoma and the Port of Seattle formed The Northwest Seaport Alliance (NWSA), which represents one of the largest intermodal gateways in North America. The Northwest Seaport Alliance serves as the cargo operating partnership between both ports and helps bolster the competitiveness of the international gateway. The Northwest Seaport Alliance



offers various cargo handling services, including container terminal facilities, breakbulk, bulk, project and heavy lift cargo handling and storage, as well as facility and equipment repair and maintenance and leasing of terminals and buildings. As the southernmost port within the.

## CONTAINER TERMINALS

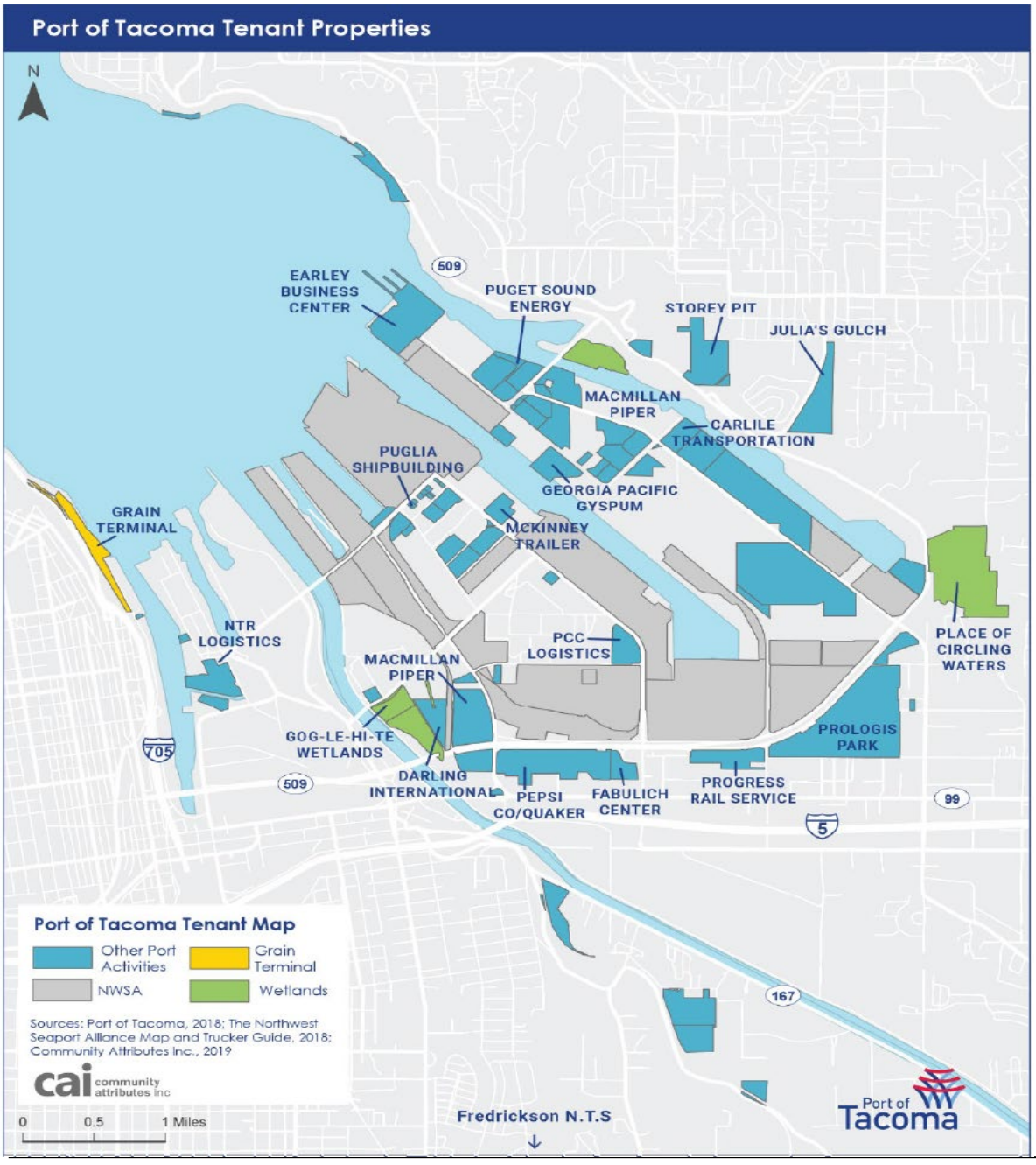
| | Area | Berthing | Berth Depth | Cranes | Truck Lanes | Scales | Reefer Plugs | Rail Service |
|---|---|---|---|---|---|---|---|---|
| **SOUTH HARBOR • TACOMA** | | | | | | | | |
| West Sitcum | 108 acres<br>43.7 ha | 2,200 ft<br>671 m | 51 ft<br>15.5 m | 5<br>4x18 wide<br>1x14 wide | 8/6<br>inbound/<br>outbound | 6 | 875 | Near-dock |
| Husky | 118 acres<br>48 ha | 2,960 ft<br>902 m | 51 ft<br>15.5 m | 8<br>8x24 wide | 7/4<br>inbound/<br>outbound | 7 | 600 | On-dock |
| East Sitcum | 36 acres<br>15 ha | 900 ft<br>274 m | 51 ft<br>15.5 m | 4<br>3x15 wide<br>1x14 wide | 5/2<br>inbound/<br>outbound | 2 | 300 | On-dock |
| PCT | 189 acres<br>76 ha | 2,087 ft<br>636 m | 51 ft<br>15.5 m | 7<br>7x23 wide | 10/6<br>inbound/<br>outbound | 6 | 654 | On-dock |
| WUT | 142 acres<br>57 ha | 2,600 ft<br>792 m | 51 ft<br>15.5 m | 6<br>4x18 wide<br>2x24 wide | 9/4<br>inbound/<br>outbound | 7 | 884 | On-dock |
| TOTE | 48 acres<br>19 ha | 3<br>RO/RO ramps | 51 ft<br>15.5 m | N/A | 5/4<br>inbound/<br>outbound | 4 | 140 | Off-dock |

## NON-CONTAINER TERMINALS

| | Area | Berthing | Berth Depth | Wharf Height | Cargo | Rail Service |
|---|---|---|---|---|---|---|
| **SOUTH HARBOR • TACOMA** | | | | | | |
| T-7 | 22 acres<br>10 ha | 1,800 ft<br>549 m | 51 ft<br>15.5 m | 18 ft<br>5.5 m | Breakbulk<br>Autos | On-dock |
| East Blair One | 19 acres<br>8 ha | 1,200 ft<br>366 m | 51 ft<br>15.5 m | 21.5 ft<br>6.5 m | Breakbulk<br>Autos | On-dock |
| Blair | 15 acres<br>6 ha | 600 ft<br>183 m | 51 ft<br>15.5 m | 22 ft<br>6.7 m | Autos | Near-dock |
| West Hylebos | 24 acres<br>10 ha | 800 ft<br>244 m | 35 ft<br>11 m | 21 ft<br>6.4 m | Bulk | Off-dock |

NWSA, the Port of Tacoma is also referred to as the 'South Harbor'. The NWSA-licensed Port of Tacoma properties and their terminal figures are shown below.

The Port of Tacoma has more than 2,700 acres of real estate property which support a wide range of industrial and non-industrial tenants and activities. Many of these tenants directly support the marine cargo operations of The Northwest Seaport Alliance. Outside of the NWSA marine cargo operations, the Port of Tacoma also provides bulk cargo operations at the TEMCO Grain Terminal, as well as bulk gypsum operations for the wallboard manufacturing activities of Georgia Pacific Gypsum. The Port of Tacoma also provides critical habitat and open space areas. The Port of Tacoma properties that fall outside of the NWSA operations are shown below.



# Economic Summary

The economic reach of the Port of Tacoma is much greater than its budgeted financial revenues and expenses and extends far beyond the Tacoma Tideflats. The port brings in imports for consumers and helps export goods from Washington, Oregon, Idaho, and beyond to foreign and domestic markets. A study released in October 2019 highlighted the economic impact of the NWSA and Port of Tacoma's cargo operations and real estate in 2017. The findings are shown below.

NWSA (including Port of Tacoma and Port of Seattle):

1. Generated $12.4B of total business output
2. Supported 58,400 jobs
3. Handled 27.6M metric tons of cargo
4. Handled 3.7M TEUs
5. Transported 146,900 autos

Port of Tacoma (non-NWSA activities):

1. Generated $1.6B of total business output
2. Supported 5,200 jobs
3. Provided 2.3M of sq. ft of warehousing, offices, industrial, and other buildings

# Geo-Political Summary

**Table 2-2 Geo-Political Summary[1]**

| Jurisdiction | Area (sq mi) | Elevation Range (ft.) | Major Water Features | Regional Partners | |
|---|---|---|---|---|---|
| | | | | Shared Borders | Land Use Authorities |
| Port of Tacoma | ~4.5 | Sea Level | Puget Sound and Puyallup River | N/A | Pierce County and the City of Tacoma |

# Population Summary

## Demographics

**Table 2-3 Population[2]**

| Jurisdiction | Population | Population Density (people/sq mi) | Population Served |
|---|---|---|---|
| Region 5 | 795,225 | 440 | 795,225 |

## Special Populations

**Table 2-4 Special Populations[3]**

| Jurisdiction | Population | Population 65 Plus | % of Total | Population Under 20 | % of Total |
|---|---|---|---|---|---|
| Region 5 | 795,225 | 89,860 | 11.3% | 193,240 | 24.3% |

# Demographic Analysis

The Port of Tacoma is located predominately in the Tacoma Tideflats in a non-residential area zoned Port Maritime Industrial (PMI). While the residential population in the Tacoma Tideflats is low and primarily limited to those at the detention center and re-entry facility, the daytime population estimate is 11,173. This reflects the high number of jobs and activity that take place in the Tideflats. There can be wide swings in the daytime population depending on vessel schedules and the labor and trucks required to move cargo through the port.

# Infrastructure Summary

## General

**Table 2-5 Parcel Summary[4]**

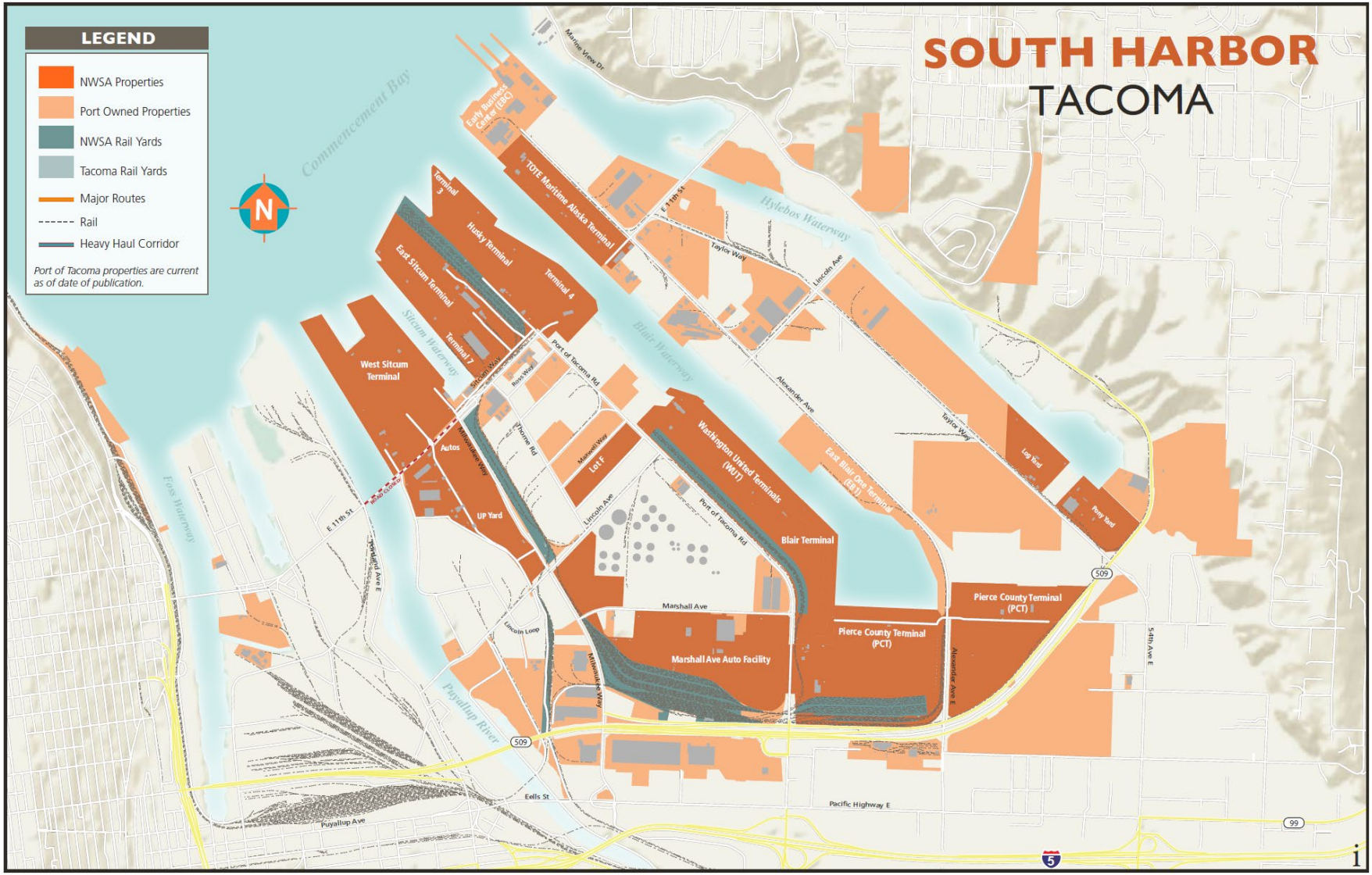
| Jurisdiction | # Parcels | Land Value | Average Land Value | Improved Value | Average Improved Value |
|---|---|---|---|---|---|
| Region 5 | 256 | $1,092,649,600 | $4,268,163 | $261,693,000 | $1,022,238 |

| Jurisdiction | Total Assessed Value | Average Assessed Value |
|---|---|---|
| Region 5 | $1,354,342,600 | $5,290,401 |

**Table 2-6 Housing Summary[5]**

| Jurisdiction | # Houses | Housing Density |
|---|---|---|
| Region 5 | 277,060 | 165 |

A basemap for the Port of Tacoma, identifying property ownership, is provided on the following page.


SOUTH HARBOR
TACOMA
LEGEND
NWSA Properties
Port Owned Properties
NWSA Rail Yards
Tacoma Rail Yards
Major Routes
Rail
Heavy Haul Corridor
Port of Tacoma properties are current as of date of publication.
N
Commencement Bay
Hylebos Waterway
Sitcum Waterway
Blair Waterway
Foss Waterway
Puyallup River
Maritime View Dr
Early Business Center (EBC)
TOTE Maritime Alaska Terminal
E 11th St
Taylor Way
Lincoln Ave
Terminal 3
Husky Terminal
Terminal 4
East Sitcum Terminal
Terminal 7
West Sitcum Terminal
Sitcum Way
Ross Way
Port of Tacoma Rd
Alexander Ave
Autos
Milwaukee Way
Thorne Rd
Maxwell Way
Lot F
Washington United Terminals (WUT)
East Blair One Terminal (EB1)
Log Yard
Pony Yard
UP Yard
Blair Terminal
Pierce County Terminal (PCT)
Marshall Ave
Marshall Ave Auto Facility
Lincoln Loop
Portland Ave E
Alexander Ave E
54th Ave E
509
Eells St
Pacific Highway E
Puyallup Ave
99
5

# Resource Directory

## Regional

- **Port of Tacoma**
  http://www.portoftacoma.com/

- **Northwest Seaport Alliance**
  http://www.nwseaportalliance.com

- **City of Tacoma**
  https://cms.cityoftacoma.org/fire/Website%202013/all-hazards%20risk%20assessment%202016.pdf

- **Pierce County Government**
  http://www.piercecountywa.org/PC/

- **Pierce County DEM**
  https://www.co.pierce.wa.us/104/Emergency-Management

- **Pierce County Planning and Public Works (PPW)**
  https://www.co.pierce.wa.us/4999/Planning-Public-Works

- **Municipal Research & Services Center of Washington (MRSC)**
  http://www.mrsc.org

## National

- **US Census**
  www.census.gov/

# Endnotes

[1] Information from Pierce County GIS application, CountyView Pro (2020).
[2] "Population" from Census 2010, Office of Financial Management.
[3] "Special Population" from Census 2010, Office of Financial Management.
[4] Information from Pierce County GIS application, CountyView Pro (2020). Numbers derived from tax parcels whose centers are within selected jurisdictions.
[5] "Projected Population Density" is based on an assumption of the jurisdiction maintaining the same geographic area and boundaries. It does not consider changes in annexation, district mergers, etc.

# SECTION 3

# REGION 5 ALL HAZARD MITIGATION PLAN
# 2020-2025 EDITION
# PORT OF TACOMA
# CAPABILITY IDENTIFICATION SECTION

## Table of Contents

# Legal and Regulatory

**Table 3-1 Legal and Regulatory**

| Jurisdiction Capabilities | Yes or No |
|---|---|
| Enabling legislation under Chapter 53 of the Revised Code of Washington (RCW) | Yes<br>http://apps.leg.wa.gov/RCW/default.aspx?cite=53 |
| State Environmental Protection Act (SEPA): Lead Agency Authority | Yes |
| Interlocal Agreement Authority | Yes |
| Resolution Authority | Yes |

# Administrative Capability

**Table 3-2 Administrative Capability**

| Administrative Tools | Yes or No |
|---|---|
| Commission (five-member, elected at-large)<br>www.portoftacoma.com/about/organization | Yes |
| Newsletter | Yes |
| Port Website<br>www.portoftacoma.com | Yes |
| Comprehensive Annual Financial Report<br>www.portoftacoma.com/sites/default/files/2018_CAFR_Final.pdf | Yes |
| Capital Improvement Program | Yes |
| Communications Capabilities | Yes |
| CPR/First Aid/AED Training | Yes |
| HAZWOPER Training | Yes |
| Emergency Response Drills and Exercises | Yes |
| Threat &Vulnerability Assessment | Yes |
| Armed, Non-Commissioned Proprietary Security Force | Yes |
| | |
| **Regional Capabilities** | |
| Local Fire Service (provided by Tacoma Fire Department) | Yes |
| City & County Laws Enforcement Agencies<br>(Tacoma Police Department primary) | Yes |
| Pierce County Department of Emergency Management | Yes |
| Pierce County Portal | Yes |

# Technical Capability

**Table 3-3 Technical Capability**

| Technical Tools | Yes or No |
|---|---|
| Emergency Declaration and Contracting Authority (under existing Master Policy Resolution) | Yes |
| Emergency Coordination Center (ECC) | Yes |
| Interoperable Communications | Yes |
| Disaster Recovery Plan | Yes |
| Equipment and Facilities Maintenance & Repair | Yes |
| Emergency Generated Power (except cranes) | Yes |
| Ability to Telecommute; i.e., Work Remotely (except M&R, terminal operations and security) | Yes |
| Engineering Project Management, Planning and Environmental Services | Yes |
| ATC-20 Training and Equipment | Yes |
| Inclement Weather Plan | Yes |
| Facility Security Plan (USCG-approved) | Yes |

# Fiscal Capability

**Table 3-4 Fiscal Capability**

| Fiscal Tools | Yes or No |
|---|---|
| Eligible for Federal and State Grants | Yes |
| Taxing Authority | Yes http://app.leg.wa.gov/RCW/default.aspx?cite=39.36.015 |
| General Obligation Bonds | Yes |
| Revenue Bonds | Yes |
| All-Risk (including EQ/Flood) Insurance | Yes |

**The Moody's and Standard & Poor's rated the Port's debt as reported in the 2018 Comprehensive Annual Financial Report:**

| Description | MOODY'S | STANDARD & POORS |
|---|---|---|
| General Obligation (Senior Lien) | Aa2 | AA |
| Revenue Bonds (Senior Lien) | Aa3 | AA- |
| Revenue Bonds (Subordinate) | A1 | A+ |

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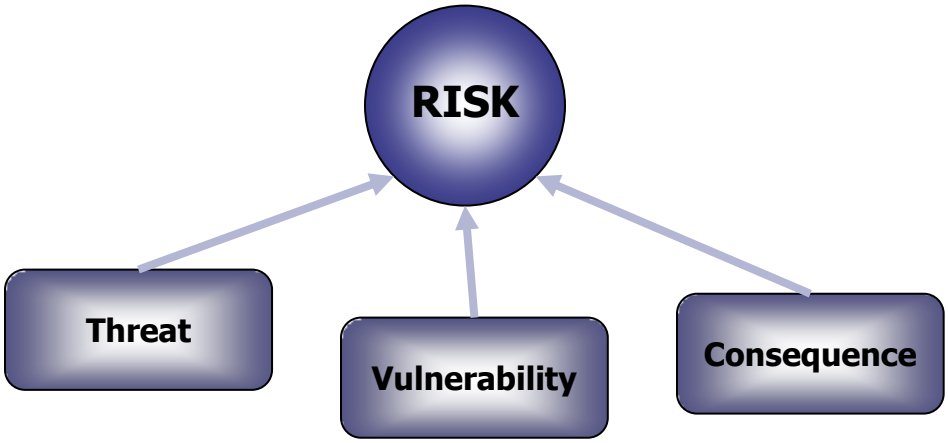
# SECTION 4

# REGION 5 ALL HAZARD MITIGATION PLAN
# 2020-2025 EDITION
# PORT OF TACOMA
# RISK ASSESSMENT SECTION

## Table of Contents

# Section Overview

The Risk Assessment portrays the threats of natural hazards, the vulnerabilities of a jurisdiction to the hazards, and the consequences of hazards impacting communities. Each hazard is addressed as a threat and is identified and profiled in the Hazard Identification. The vulnerabilities to and consequences of a given hazard are addressed in the Vulnerability Analysis. Vulnerability is analyzed in terms of exposure of both population and infrastructure to each hazard. Consequences are identified as anticipated, predicted, or documented impacts caused by a given hazard when considering the vulnerability analysis and the characteristics of the hazard as outlined in its identification.




The WA Region 5 **Hazard Identification** was used for this plan. Each jurisdiction's Vulnerability and Consequence Analysis are based on the Region 5 Hazard Identification. The Region 5 Hazard Identification can be found in the Base Plan. Each hazard is identified in subsections. The subsections are grouped by hazard-type (i.e., geological and meteorological hazards) and then alphabetically within each type. A summary table of the WA Region 5 Hazard Identification is included in this section as Table 4-1a and Table 4-1b.

The **Vulnerability Analysis** is displayed in six tables:

- **Table 4-2 General Exposure**
- **Table 4-3 Population Exposure**
- **Table 4-4 General Infrastructure Exposure**
- **Table 4-5a Consequence Analysis Chart – Geological**
- **Table 4-5b Consequence Analysis Chart – Meteorological**
- **Table 4-5c Consequence Analysis Chart –Technological**

Each jurisdiction has its own Vulnerability Analysis, and it is included in this section.

The **Consequence Identification** is organized by Threat. Each threat page summarizes the hazard, graphically illustrates exposures from the Vulnerability Analysis, and lists corresponding Consequences. Each jurisdiction has its own Consequence Identification and it is included in this section: avalanche, earthquake, landslide, tsunami, volcanic, drought, flood, severe weather, and wildland/urban interface fire.

Specific information and analysis of a jurisdiction's owned (public) infrastructure is addressed in the Infrastructure Section of its Plan.

# Vulnerability and Hazard Impact Analysis

Through the Mitigation, Hazard Identification and Risk Assessment (HIRA) and Comprehensive Emergency Management Plan (CEMP) planning processes, the Port of Tacoma susceptible to fifteen of the eighteen hazards considered in this plan. Some of the more relevant risks are detailed below.

These hazards were chosen based on multiple criteria including high frequency and potential impact. The most common hazards are earthquake, flood, winter/severe storms, hazardous materials spills and transportation emergencies. We have included much less likely hazards and incidents including active threat / attack tactics, and terrorism as they are high consequence incidents. They have been identified in all plans and the likelihood of (re)occurrence and potential damage to life and property is illustrated.

The geography and climate of the Port area naturally offer rationale for the threats and vulnerabilities. The Port is located on water and generally has mild and steady rainfall annually. The make-up of the land and normal weather patterns make harsh weather an issue that needs to be accounted for and mitigated. Since the climate is typically mild, severe weather tends to hit the area harder and make a greater impact to certain critical services like transportation, communications and utilities.

Geological:

- Earthquake
- Tsunami
- Volcanic

Meteorological:

- Flood
- Severe Weather

Technological:

- Dam Failure
- Hazardous Materials
- Terrorism / Active Threat / Attack Tactics

## Geological

### *Earthquake*

The Port of Tacoma facilities are composed of a variety of construction types, some of which could be damaged in the event of an earthquake. Because the Port is largely located on fill materials, the facilities could be impacted by liquefaction.

The Port averages at least one earthquake every ten years. More recently they have become more frequent and at a higher rate of intensity. Over the last 20 years, the region has experienced earthquakes every two years and in 2001 we had three in one year. The highest likelihood for devastating damage will occur in the Puget Sound area and include a large part of Pierce County and King County. More detailed information on the impacts of earthquakes in the Port of Tacoma area can be found on the Pierce County Department of Emergency Management (PCDEM) website, Washington State Department of Natural Resources and through the US Geological Survey and in the Region 5 All Hazards Mitigation Plan-Base Plan Risk Section.

### *Tsunami*

An event such as an earthquake could generate a tsunami and devastate the Port of Tacoma. Much of the low-lying lands of the Tideflats are susceptible to tsunami wave inundation.

Current modeling for a Seattle Fault induced tsunami will be worse than the Cascadia Subduction Zone earthquake due to our proximity from the source. Major transportation routes will be directly impacted including Interstate 5, SR 99 (turns into Pacific Hwy E.), and SR 167. We will have small groups of people who will not be directly impacted (about 25 percent of the City population) but will be isolated for quite some time due to damaged infrastructure.

### *Volcanic*

The Port of Tacoma lies in the Mount Rainier lahar zone. The likelihood of a volcano erupting in and around the Port of Tacoma from Mt. Saint Helens and Mt. Rainier is relatively low compared to the other hazards, but the amount of damage and devastation it would cause is high.

In addition to any impacts to the port facilities, sediment buildup in the waterways could affect vessel access and require dredging.

All the Port of Tacoma area is directly and indirectly affected by volcanic hazards.

Mount Rainier is the most dangerous volcano in North America according to the USGS Cascades Volcano Observatory (CVO). It has previously buried sections of the surrounding river valleys in a volcanic mudflow, called a lahar. The Puyallup River Valley is at greatest risk. Tens of thousands of people live in areas that may have as little as 40 minutes to as much as three hours to move to safety once a large lahar is detected. The lahar warning system is robust and warnings are disseminated promptly and widely every first Monday of the month so people in harm's way are taught how to respond to the warnings and take protective actions.

Pierce County DEM in partnership with USGS CVO maintains a “Volcano Map”.

Pierce County DEM maintains a “Mt. Rainier Volcanic Hazards Response Plan” that details the monitoring, planning, operational response and historical data surrounding a volcanic event in the region.

## Meteorological

### *Flood*

The Port is a water-dependent use and many of its facilities are located at or near sea-level and/or in floodplains. Furthermore, there is potential for dike failure at Lake Tapps and dam failure from Mud Mountain Dam that could inundate the Port of Tacoma.

Since the Port of Tacoma is prone to flooding on an annual basis, a lot of information has been gathered on the potential and real impacts of flooding in the area and multiple mitigation strategies have been designed based on past disaster events and areas that are continually affected. The most common flood zones are rivers and creeks swelling due to heavy rainfall in urban areas and ice melting from Mount Rainier and the surrounding Cascade Mountain Range. Pierce County has had 25 federally declared disasters since 1960 and eleven of them were flooding incidents. The largest flood on record is the Puyallup River in 1996-1997. As population grows and urbanization expands, this increases the damages as a consequence of repetitive flooding. Also, it is important to note that changes in the temperature and climate have added to the frequency and magnitude of flooding incidents particularly over the last 20 years.

### *Severe Weather*

Severe weather events in the past have caused extended power outages that can affect port operations. There can also be compounding effects from severe weather such as access issues to port terminals in events such as snowstorms.

The Base Plan contains the Hazard Identification Vulnerability Assessment (HIRA) records and disaster declarations of severe storms affecting the Port of Tacoma and the surrounding region such as windstorms, snowstorms, ice storms and tornadoes. Harsh weather, creating severe storms, affects the Port area at least once every year and the damages/costs to our business are high.

## Technological

### *Dam Failure*

The Port of Tacoma is vulnerable to two dam failures: Lake Tapps and Mud Mountain Dam. The vulnerability analysis tables below you will see that nearly 100% of the Port would be impacted.

### *Hazardous Materials*

Given the industrial nature of the Tacoma Tideflats, there are hazardous materials both on and around Port of Tacoma facilities, including three pipelines. One of the recent developments on port property is the building of a new liquefied natural gas (LNG) facility for Puget Sound Energy. Special precautions have been taken to ensure the safety of this facility.

The US Department of Transportation (DOT) collects data on hazardous materials incidents occurring in the US during transportation.

Fixed locations are the most frequent for accidents, but the transportation accidents are often riskier because they happen in uncontained spaces. They can be in close proximity to people and responders who usually have less information about the materials involved.

Areas up to one-half mile downwind from an accident site are considered vulnerable, according to US DOT. An incident could affect thousands of people in area.

Other hazards, such as earthquakes and landslides could produce hazardous material incidents.

### *Terrorism and Active Threat / Attack Tactics*

Attacks can be perpetrated by many different actors with different motivations, such as terrorists, violent extremists, the mentally ill, and targeted violent offenders. All use violent attack tactics to harm people and/or property. Attack tactics can include active shooter, bombings, arson, murder, kidnapping, and vehicle ramming.

Incidents of terrorism and active threats have increased in the United States. Our Port Police and Security department trains regularly for this type of incident.

### *Transportation Accident*

There are high truck and rail volumes that converge in the area due to its industrial nature. Accidents involving either mode of transport can have significant impacts on the transportation network, especially if hazardous materials are involved. Furthermore, there are limited access routes into and out of the Port, so incidents on nearby roads such as I-5 can have major impacts on the ability to get into or out of the Tideflats.

| Hazard | Additional Notes |
|---|---|
| **Earthquake** | The Port of Tacoma facilities are composed of a variety of construction types, some of which could be damaged in the event of an earthquake. Because the Port is largely located on fill materials, the facilities could be impacted by liquefaction. |
| **Landslide** | Most of the port facilities are not located in landslide hazard areas. There are several properties located off Marine View Drive and Schuster Parkway that are located in or near landslide hazard areas. |
| **Tsunami** | An event such as an earthquake could generate a tsunami and devastate the port. Much of the low-lying lands of the Tideflats are susceptible to tsunami wave inundation. |
| **Volcanic** | The Port of Tacoma lies in the Mount Rainier lahar zone. Although the chance of an eruption and lahar are low, such an event would have a devastating impact on the Port. In addition to any impacts to the port facilities, sediment buildup in the waterways could affect vessel access and require dredging. |
| **Drought** | A severe drought could affect the health of the Port of Tacoma's habitat sites. |
| **Flood** | The Port is a water-dependent use and some of its facilities are located at or near sea-level and/or in floodplains. |
| **Severe Weather** | Severe weather events in the past have caused extended power outages that can affect port operations. |
| **Civil Disturbance** | A civil disturbance could affect port operations |

| | |
|---|---|
| **Dam Failure** | There is potential for dike failure at Lake Tapps and dam failure from Mud Mountain Dam that could inundate the Port of Tacoma. |
| **Energy Emergency** | An energy emergency could impact port operations either through operations interruptions or increased costs for handling cargo. |
| **Epidemic** | An epidemic in the area might have impacts on the Port of Tacoma and its operations. |
| **Hazardous Materials** | There are hazardous materials both on and around Port of Tacoma facilities. |
| **Pipeline Hazards** | There are three pipelines that run through and near Port of Tacoma facilities. |
| **Terrorism** | Ports can be targets for terrorist attacks because of their high levels of activity, economic significance, and the usual presence of hazardous materials in the port vicinity. |
| **Transportation Accident** | There are high truck and rail volumes that converge in the area due to its industrial nature. Accidents involving either mode of transport can have significant impacts on the transportation network, especially if hazardous materials are involved. Furthermore, there are limited access routes into and out of the Port, so incidents on nearby roads such as I-5 can have major impacts on the ability to get into or out of the Tideflats. |

# Changes in Development

Since the Port of Tacoma All Hazard Mitigation Plan was last updated in 2016, there have been changes in and around the Tideflats that affect the Port and its vulnerabilities and resiliency to various types of hazards. Notable changes include:

Port Facilities

- The Port of Tacoma and its terminal operator have finished modernizing Terminals 3 and 4, also known as Husky Terminal. This terminal is built to more rigorous standards and is more likely to withstand a hazardous event such as an earthquake. Also, because it is close to Commencement Bay and near the entrance to the federal Blair Channel, this terminal and its waterway are more likely to remain operational in the event of an earthquake since there is a smaller chance of encountering debris in the waterway.

- The Port of Tacoma entered into a new long-term lease and developed a new auto processing facility.

- The Port of Tacoma customer Puget Sound Energy is building a liquified natural gas (LNG) facility on port property to provide a cleaner fuel alternative for vessels that call at the port.

- The Port of Tacoma started construction on a new project to replace a failing culvert with a new bridge that provides access to one of the terminal truck queuing lots. Replacing the culvert with a bridge will increase the culvert's capacity and reduce flood risk in the area.

Transportation Facilities

- WSDOT has begun construction on the Puget Sound Gateway SR 167 project. This project will provide a new and improved connection between the port and warehousing in the area. Because it will be built to modern design standards it will be better able to withstand a natural hazard event such as an earthquake. The Port has contributed funding to this project.

- Port staff, WSDOT, and the City of Tacoma are working to establish a formal working group known as the Tacoma Area Joint Operations Group or 'TAJOG' to improve their collective ability to get traffic moving after an emergency or incident. This effort is initially focused on establishing protocols to improve future cooperation among staff from different agencies during incidents.

- The City of Tacoma is working to replace the 93-year old bridge over the Puyallup River, which is being renamed the Fishing Wars Memorial Bridge. This project provides freight and multimodal network connectivity within the Port of Tacoma Manufacturing/Industrial Center. The existing structure is being replaced in phases and the City of Tacoma recently completed Phase I. The Port has contributed funding to this project.

- The East 11$^{th}$ Street Bridge which served as a vital connection between the port and downtown Tacoma was closed to all traffic including pedestrians and bicyclists. This is also the most direct route between the Port of Tacoma Administration Building and downtown Tacoma. Its closure means that there are fewer evacuation route options for port staff and other partners in the Tideflats. The City of Tacoma completed a corridor study in 2019 which shows a clear need and desire to replace the existing structure which has fallen into disrepair. The City has completed the study and included funding in its Transportation Improvement Plan for design and construction, but both items are currently unfunded.

General Development

- In general, the Port of Tacoma and Tideflats area has seen steady cargo volumes passing through the Gateway. The area remains largely industrial in nature but redevelopment efforts such as planned development along the Thea Foss Waterway and the Sound Transit Tacoma Dome Link Extension which will have three new stations on the edges of the Port of Tacoma Manufacturing/Industrial Center will further blur the buffer zone between industrial uses and commercial and residential uses. It will be important to mitigate the safety hazards that come with bringing what are often times considered incompatible land uses together.

**Table 4-1a WA Region 5 Hazard Identification Summary – Geological**

| | THREAT | DECLARATION # DATE/PLACE | PROBABILITY/ RECURRENCE | MAPS, FIGURES AND TABLES |
|---|---|---|---|---|
| *Geological* | **AVALANCHE** | Not Applicable | Yearly in the mountainous areas of the County including Mt. Rainier National Park and the Cascades. | Slab Avalanche<br>Areas Vulnerable to Avalanche<br>Pierce County Avalanches of Record |
| | **EARTHQUAKE** | N/A--7/22/2001 Nisqually Delta<br>N/A--6/10/2001 Satsop<br>DR-1361-WA--2/2001 Nisqually<br>N/A--7/2/1999 Satsop<br>DR-196-WA--4/29/1965 Maury Island, South Puget Sound<br>N/A--4/13/1949 South Puget Sound<br>N/A--2/14/1946 Maury Island | 40 years or less occurrence<br>Historical record—about every 23 years for intraplate earthquakes. | Types of Earthquakes<br>Major Faults in the Puget Sound Basin<br>Seattle and Tacoma Fault Segments<br>Pierce County Seismic Hazard<br>Major Pacific Northwest Earthquakes<br>Notable Earthquakes Felt in Pierce County<br>Salmon Beach, Tacoma Washington following Feb 2001 Earthquake<br>Liquefaction Niigata Japan-1964<br>Lateral Spreading – March 2001 |
| | **LANDSLIDE** | DR-1671-WA--2006<br>DR-1361-WA--2001<br>DR-1159-WA--12/96-2/1997<br>DR-852-WA--1/1990<br>DR-545-WA--12/1977<br>State proclamations:<br>20-02 – 01/20/2020<br>17-08 –05/18/2017 SR 410 | Slides with minor impact (damage to five or less developed properties or $1,000,000 or less damage) 10 years or less.<br><br>Slides with significant impact (damage to six or more developed properties or $1,000,000 or greater damage) 100 years or less. | Northeast Tacoma Landslide January 2007<br>Pierce County Landslide Deposits, Scarps and Flanks, and Susceptibility<br>Landslide Facts for Pierce County – Shallow Landslide Susceptibility<br>Pierce County Deep Landslide Hazard Area<br>Pierce County Shallow Landslide Hazard Area<br>Pierce County Slope Stability Areas<br>Pierce County Comparison of Landslide Susceptible Areas<br>Notable Landslides in Pierce County<br>Ski Park Road – Landslide January 2003<br>SR-165 Bridge Along Carbon River – Landslide February 1996<br>Aldercrest Drive – Landslide |
| | **TSUNAMI** | N/A--A.D. 900 Seattle Fault EQ Sourced Tsunami<br>N/A--1894 Puyallup River Delta<br>N/A--1949 Tacoma Narrows | Due to the limited historic record, until further research can provide a better estimate a recurrence rate of plus or minus 100-200 years will be used. | Hawaii 1957 – Residents Explore Ocean Floor Before Tsunami<br>Hawaii 1949 – Wave Overtakes a Seawall<br>Tsunamis in Washington State<br>Tsunami Inundation and Current Based on Earthquake Scenario<br>Notable Tsunamis in Pierce County<br>Salmon Beach, Pierce County 1949 – Tsunamigenic Subaerial Landslide<br>Salmon Beach, Pierce County 1949 – Tsunamigenic Subaerial Landslide<br>Damage in Tacoma from 1894 Tsunami |
| | **VOLCANIC** | DR-623-WA--5/1980 | The recurrence rate for either a major lahar (Case I or Case II) or a major tephra eruption is 500 to 1000 years. The recurrence rate for either a major lahar (Case I or Case II) or a major tephra eruption is 500 to 1000 years. | Volcano Hazards<br>Tephra Types and Sizes<br>Lahars, Lava Flows and Pyroclastic Hazards of Mt. Rainier<br>Estimated Lahar Travel Times for Lahars $10^7$ to $10^8$ Cubic Meters in Volume<br>Pierce County Eruptive Events and Lahars |

**Table 4-1b WA Region 5 Hazard Identification Summary – Meteorological**

| | HAZARD | DECLARATION # DATE/PLACE | PROBABILITY/ RECURRENCE | MAPS, FIGURES AND TABLES |
|---|---|---|---|---|
| ***Meteorological*** | **CLIMATE CHANGE** | Not Applicable | Not Applicable | IPCC Models on Global Temperature Change: 1900 to 2100<br>Recent and Projected Temperatures for the Pacific Northwest<br>Puget Sound Projected Warming<br>Puget Sound Projected Precipitation Change<br>Projected Decline in Snowpack<br>Projected Sea Level Risk – Tacoma<br>Sea Level Rise Inundation Area in 2100 Tacoma Tideflats<br>Climate Impacts and Natural Hazards<br>Comparison of the South Cascade Glacier: 1928 to 2003<br>Lower Nisqually Glacier Retreat: 1912 to 2001 |
| | **DROUGHT** | Many dry seasons but no declarations<br>State proclamations:<br>18-05--7/31/2018 | 50 years or less occurrence | Sequence of Drought Impacts<br>Palmer Drought Severity Index<br>Pierce County Watersheds<br>%Area of Basin in Drought Conditions Since 1895<br>%Time in Severe to Extreme Drought: 1895-2004<br>%Time in Severe to Extreme Drought: 1985-1995<br>Notable Droughts Affecting Pierce County<br>Columbia River Basin<br>USDA Climate Zones – Washington State |
| | **FLOOD** | DR-852-WA--1/1990<br>DR-784-WA--11/1986<br>DR-545-WA--12/1977<br>DR-492-WA--12/1975<br>DR-328-WA--2/1972<br>DR-185-WA--12/1964<br>DR-WA 1817--01/2009<br>DR-1734-WA--12/2007<br>DR-1671-WA--11/2006<br>DR-1499-WA--10/2003<br>DR-1159-WA--12/96-2/97<br>DR-1100-WA--1-2/1996<br>DR-1079-WA--11-12/1995<br>DR-896-WA--12/1990<br>DR-883-WA--11/1990<br>DR-852-WA--1/1990<br>DR-784-WA--11/1986<br>DR-545-WA--12/1977<br>DR-492-WA--12/1975<br>DR-328-WA--2/1972<br>DR-185-WA--12/1964 | 5 years or less occurrence<br><br>Best available science--the frequency of the repetitive loss claims indicates there is approximately a 33 percent chance of flooding occurring each year. | Lower Puyallup River<br>Historical Flooding in Lower Puyallup River<br>Levees and Revetments in the Lower Puyallup River<br>Summary of Damages to Lower Puyallup River Facilities<br>Middle Puyallup River<br>Historical Flooding in Middle Puyallup River<br>Levees and Revetments in the Middle Puyallup River<br>Summary of Damages to Lower Middle River Facilities<br>Upper Puyallup River<br>Historical Flooding in Upper Puyallup River<br>Levees and Revetments in the Upper Puyallup River<br>Summary of Damages to Upper Puyallup River Facilities<br>Lower White River<br>Historical Flooding in Lower White River<br>Levees and Revetments in the Lower White River<br>Summary of Damages to Lower White River Facilities<br>Upper White River<br>Historical Flooding in Upper White River<br>Levees and Revetments in the Upper White River<br>Summary of Damages to Upper White River Facilities<br>Greenwater River<br>Historical Flooding in Greenwater River<br>Carbon River<br>Historical Flooding in Carbon River<br>South Prairie Creek<br>Historical Flooding in South Prairie Creek<br>Middle Nisqually River<br>Historical Flooding in Middle Nisqually River<br>Upper Nisqually River |

| | | | | |
|---|---|---|---|---|
| ***Meteorological*** | | | | Historical Flooding in Upper Nisqually River<br>Levees and Revetments in the Upper Nisqually River<br>Summary of Damages to Upper Nisqually River Facilities<br>Mashel River<br>Historical Flooding in Mashel River<br>Nov 2006 Flooding River Park Estates – Along Puyallup River |
| | **SEVERE WEATHER** | DR-981-WA--1/1993<br>DR-137-WA--10/1962<br>DR-4056-WA – 01/2012<br>DR-1825- WA – 12/2008 – 01/2009<br>DR-1682-WA--12/2006<br>DR-1159-WA--12/96-2/1997<br>DR-1152-WA--11/19/1996<br>DR-981-WA--1/1993 Inauguration Day Storm<br>DR-137-WA--10/1962 Columbus Day Storm<br>State proclamations:<br>19-06--02/15/2019 (Dec. 2018 Winter Storm)<br>19-05--02/14/2019 Winter Storm Maya<br>17-08--5/18/2017 Severe rain<br>17-03--3/14/2017<br>17-02--1/19/2017 Winter Storm<br>15-18--12/24/2015 Windstorms and Flooding | The recurrence rate for all types of severe storms is 5 years or less. | Fujita Tornado Damage Scale<br>Windstorm Tracks<br>Pierce County Severe Weather Wind Hazard – South Wind Event<br>Pierce County Severe Weather Wind Hazard – Enumclaw East Wind Event<br>Notable Severe Weather in Pierce County<br>Snowstorm January 2004 Downtown Tacoma<br>Satellite Image – Hanukkah Eve Windstorm<br>Before/After Tornado Damage Greensburg KS May 2007<br>County Road December 2006 Windstorm<br>Tacoma Narrows Bridge – November 1940 Windstorm |
| | **WUI FIRE** | EM-3372-WA Aug-Sept. 2015<br>State proclamations:<br>17-12--9/2/2017 Norse Peak Fire<br>15-11--6/26/2015 | Based on information from WA DNR the probability of recurrence for WUI fire hazard to Pierce County is 5 years or less. | Washington State Fire Hazard Map<br>Pierce County Forest Canopy<br>Industrial Fire Precaution Level Shutdown Zones<br>Carbon Copy Fire August 2006<br>Washington State DNR Wildland Fire Statistics: 1973-2007<br>DNR Wildland Response South Puget Sound Region: 2002-2007<br>Pierce County DNR Fires |

**Table 4-1c Region 5 Hazard Identification Summary – Technological**

| | HAZARD | FEMA DECLARATION # DATE/PLACE | PROBABILITY/RECURRENCE | MAPS, FIGURES AND TABLES |
|---|---|---|---|---|
| *Technological* | **ABANDONED MINES** | Not Applicable | Based on information from WA DNR. The Pierce County Sheriff's Department reports that they have had very few incidents of citizens entering the abandoned mines in east Pierce Co.<br><br>Isolated issues of minor subsidence have occurred, typically following flood events i.e. 2009/2010. | Pierce County – Mine Hazard Areas Map Based on WA DNR Information<br>Schasse, Koler, Eberle, and Christie, The Washington State Coal Mine Map Collection: A Catalog, Index, and User's Guide, Open File Report 94-7, June 1984<br>Pierce County 2014 HIRA |
| | **CIVIL DISTURBANCE** | Not Applicable | In the past 150 + years there have been eleven major incidents giving a recurrence rate of every seven years. | Pierce County Civil Disturbance High Probability Locations Map<br>Pierce County Civil Disturbance High Probability Locations Zoomed in Map |
| | **DAM FAILURE** | Not Applicable | No occurrences in Pierce County<br><br>50+ years recurrence for WA State | Reasons for Dam Failures Nationally<br>PC Dams that Pose a High or Significant Risk to the Public<br>Pierce County High and Significant Risk Dams<br>Dam Failures in WA State<br>Mud Mt. Dam Intake |
| | **ENERGY EMERGENCY** | Not Applicable | Power outages are the most frequent energy incident, via natural hazards (storms, ice) Recurrence rate – every five years (storms)<br>Recurrence rate – 50+ years (major) | Tacoma Power Outage 1929, USS Lexington provides power |
| | **EPIDEMIC / PANDEMIC** | EM-3507-WA 03/12/2020 | Epidemic:<br>• 1976-2014 Ebola outbreaks<br>• Flu occurs annually<br>Pandemics:<br>• 2009-2010 "Swine Flu" recurrence rate – 20 years | Individuals hoping to avoid contacting disease |
| | **HAZARDOUS MATERIALS** | Not Applicable | • Dalco Passage oil spill of October 13, 2004<br>• Chlorine Spill Port of Tacoma February 12, 2007<br>Large incidents five-year recurrence<br>Small incidents one-week recurrence | List of constituents or ingredients found in Bakken crude oil<br>Environmental Protection Agency's Identified Top Five Facilities<br>Exxon Valdez Oil Spill, 1989<br>Pierce County Spill data from May 2018 to May 2019<br>Dalco Passage oil spill (October 13, 2004) |
| | **PIPELINE FAILURE** | Not Applicable | • Northwest Pipeline Corporation natural gas incident May 1st, 2003, in Sumner<br>10 years recurrence | Cities and Towns with interstate pipelines within, or within 1 mile of city limits<br>Olympic Pipeline Rupture 06/10/99<br>Pierce County Pipelines<br>Whatcom Falls Park, 2003 |
| | **TERRORISM ACTIVE THREAT CYBER ATTACK** | Not Applicable | Minor incident –recurrence 1-year<br>Major Incident – recurrence 10 years | 250 Active Shooter Incidents in the U.S. from 2000-2017: Incidents per year<br>250 Active Shooter Incidents in the U.S. from 2000-2017: Casualty Breakdown per year<br>250 Active Shooter Incidents in the U.S. from 2000-2017: Location Categories<br>Occurrences in the Puget Sound |

| | | | | |
|---|---|---|---|---|
| | **TRANSPORTATION ACCIDENT** | Not Applicable<br>State proclamations:<br>17-13--12/18/2017Amtrak derailment<br>15-05--4/16/2015 SR 410 Bridge<br>15-04--3/11/15 Damage to I-5 Overpass | Minor incidents – recurrence daily<br>Major incidents - recurrence 10 years | Airports in Pierce County<br>Ferry Services in Pierce County<br>Transportation Accidents/Catastrophic Failures in Pierce County |

# Hazard Maps and Overview of Data Source Descriptions

The hazard maps provide a visual identification for the 19 hazards currently identified in the Region 5 All Hazards Mitigation Base Plan. Hazard maps were developed for each jurisdiction based on the hazard that was identified within their geographical boundaries. A few of the hazards are difficult to map and to what extent the hazards exists. For these hazards the planning team decided to include the entire jurisdictions boundaries indicating that the hazard could occur anywhere within their boundaries. Specifically, the technological/human-caused hazards are; civil disturbance, energy emergency, epidemic/pandemic, hazardous materials spills, terrorism / active threat / attack tactics / cyber-attack, and transportation accidents. Each of these hazards potentially could begin as an isolated incident and cascade into a larger event affecting a much greater area. Similarly, the natural hazards; avalanche, climate change and drought fall into this category too. Avalanche although isolated to the slopes of Mt. Rainier can occur anywhere within the National Park, National Forest and Wilderness Areas. Climate change and drought can have a spiraling effect on eco-systems, the economy and demographics throughout the Region 5 (Pierce County) area with a multitude of variability's making these hazards difficult to map as well. Lastly, the Wild Urban Interface (WUI) hazard areas within Pierce County are currently going through an update to identify areas not addressed. Specific areas of concern exist on the Key Peninsula and Gig Harbor Peninsula and additional areas within the eastern part of the county. The WUI hazards maps will be distributed to jurisdictions when this update is complete.

## Regulated Floodplain[1]

Summary:

The flood hazard map delineates the flood hazard risk for the Port of Tacoma. This map uses the new FEMA Flood Insurance Study (FIS) and Digital Flood Insurance Rate Map (DFIRM) for Pierce County, Washington and Incorporated Areas effective on March 7, 2017. These mapping products replace the FIS & FIRM issued to Unincorporated Pierce County in 1987 and the other incorporated communities between 1980 and 1985. The new DFIRM is a seamless countywide product adopted by every community participating in the National Flood Insurance Program (NFIP).

The intended purposes of this data are to support the National Flood Insurance Program so that flood insurance policies can be written for any qualifying structure in the community. In areas identified as Special Flood Hazard Areas (SFHA), a structure with a federally backed loan is required to purchase flood insurance. SFHA are designated as Zones beginning with the letter A or V (e.g. AE, AH and VE). Areas of moderate risk or areas suspected to be at risk of flooding but where no detailed flood study has been completed are shown as Zone X (Shaded). It is also to inform development in or near flood hazard areas so that new construction and redevelopment meets the purposes of the flood hazards areas described in Pierce County Code Title 18E.70.

Description:

The DFIRM is a composite of several flood studies, some dating back to the 1970s and as recent as 2016 that represent the best available date at the production deadline. The exception to this is

the "secluded areas" that are near significant levees that effect the floodplain do not meet the federal standard (44 Code of Federal Regulations 65.10) to show an area protected by the levee. The secluded areas, in the lower Puyallup River and the Carbon River and Puyallup River near the City of Orting, continue to show the understanding of risk prior to the establishment of 44CFR65.10 as shown on the first FIRM. There are more recent hydraulic studies that show a better understanding of flood risk and Unincorporated Pierce County regulates to this better data which has been added to the Regulated Floodplain 2017 feature class. In areas where the regulated flood hazard varies from the DFIRM there are attributions indicating a different "insurance zone" or "insurance BFE".

The Digital Flood Insurance Rate Map (DFIRM) Database depicts flood risk information and supporting data used to develop the risk data. The primary risk classifications used are the 1-percent-annual-chance flood event, the 0.2-percent-annual- chance flood event, and areas of minimal flood risk. The DFIRM Database is derived from Flood Insurance Studies (FISs), previously published Flood Insurance Rate Maps (FIRMs), and flood hazard analyses performed in support of the FISs and FIRMs, and new mapping data, where available. The FISs and FIRMs are published by the Federal Emergency Management Agency (FEMA).

The FIRM is the basis for floodplain management, mitigation, and insurance activities for the National Flood Insurance Program (NFIP). Insurance applications include enforcement of the mandatory purchase requirement of the Flood Disaster Protection Act, which "... requires the purchase of flood insurance by property owners who are being assisted by Federal programs or by Federally supervised, regulated or insured agencies or institutions in the acquisition or improvement of land facilities located or to be located in identified areas having special flood hazards, " Section 2 (b) (4) of the Flood Disaster Protection Act of 1973. In addition to the identification of Special Flood Hazard Areas (SFHAs), the risk zones shown on the FIRMs are the basis for the establishment of premium rates for flood coverage offered through the NFIP. The DFIRM Database presents the flood risk information depicted on the FIRM in a digital format suitable for use in electronic mapping applications. The DFIRM database is a subset of the Digital FIS database that serves to archive the information collected during the FIS.

Updates:

The October 2019 update to the Regulated Floodplain 2017shows the changed flood hazard areas modified by FEMA in two Letter of Map Revisions (LOMR).

Some coastal areas of Puget Sound were modified by LOMR 19-10-0588P that became effective 4/22/2019.

A new flood study of Deer Creek within the City of Puyallup modified the flood hazard areas with LOMR 18-10-0841P that became effective 4/4/2019.

## Landslide Susceptibility - Deep[2]

Summary:

These data sets were produced to provide attribute and spatial information on deep-seated landslide susceptibility in Pierce County, by the Washington State Department of Natural Resources, Washington Division of Geology and Earth Resources (DGER). The goal of this data is to estimate the extent of deep-seated landslide susceptible areas. This data is only an estimate

of deep-seated landslide susceptible areas and can occur outside of the bounds of these polygons. This data is nonregulatory and is intended for informational purposes. It may not be suitable for legal, engineering, forestry, or surveying purposes; but it is intended to assist planners, homeowners, regulators, and others by identifying areas to seek further geologic investigation before developing, or areas to avoid. Users of this information should consider their intended application, and review or consult the accompanying documentation, to determine the usability of the data for themselves.

Description:

This is a polygon feature class intended to estimate areas susceptible to deep-seated landslides. To create this susceptibility dataset a landslide inventory was first created by using the methods described in the report accompanying these data. The constructed landslide inventory was then used, along with other necessary datasets, to create this deep-seated landslide susceptibility dataset by following protocol from Special Paper 48 (Burns and Mickelson, 2016). This feature class is part of a larger landslide susceptibility dataset for Pierce County, Washington.

Use Limitations:

The Washington Division of Geology and Earth Resources (DGER) shall not be held liable for improper or incorrect use of the data described and/or contained herein. This product is provided 'as is' without warranty of any kind, either expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular use. The Washington State Department of Natural Resources and the authors of this product will not be liable to the user of this product for any activity involving the product with respect to the following: (a) lost profits, lost savings, or any other consequential damages; (b) the fitness of the product for a particular purpose; or (c) use of the product or results obtained from use of the product. Although these data have been processed successfully on computers of DGER, no warranty, expressed or implied, is made by DGER regarding the use of these data on any other system, nor does the fact of distribution constitute or imply any such warranty.

## Landslide Susceptibility - Shallow[3]

Summary:

These data sets were produced to provide attribute and spatial information on shallow landslide susceptibility in Pierce County, by the Washington State Department of Natural Resources, Washington Division of Geology and Earth Resources (DGER). The goal of this data is to estimate the extent of shallow landslide susceptible areas. This data is only an estimate of shallow landslide susceptible areas and can occur outside of the bounds of these polygons. This data is non-regulatory and is intended for informational purposes. It may not be suitable for legal, engineering, forestry, or surveying purposes; but it is intended to assist planners, homeowners, regulators, and others by identifying areas to seek further geologic investigation before developing, or areas to avoid. Users of this information should consider their intended application, and review or consult the accompanying documentation, to determine the usability of the data for themselves.

Description:

This is a polygon feature class intended to estimate areas susceptible to shallow landslides. To create this susceptibility dataset, the data listed in Special Paper 45 (Burns and others, 2012) as necessary data was obtained, and the Factor of Safety (FOS) portion of that protocol was followed. This feature class is part of a larger landslide susceptibility dataset for Pierce County, Washington.

Use Limitations:

The Washington Division of Geology and Earth Resources (DGER) shall not be held liable for improper or incorrect use of the data described and/or contained herein. This product is provided 'as is' without warranty of any kind, either expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular use. The Washington State Department of Natural Resources and the authors of this product will not be liable to the user of this product for any activity involving the product with respect to the following: (a) lost profits, lost savings, or any other consequential damages; (b) the fitness of the product for a particular purpose; or (c) use of the product or results obtained from use of the product. Although these data have been processed successfully on computers of DGER, no warranty, expressed or implied, is made by DGER regarding the use of these data on any other system, nor does the fact of distribution constitute or imply any such warranty.

## Liquefaction Potential[4]

Summary:

This is a subset of the original data clipped to Pierce County. The liquefaction susceptibility map details the risk potential throughout the Port of Tacoma in a color gradient map.

The Washington State Department of Natural Resources, Division of Geology and Earth Resources received grant funding through the Hazard Mitigation Grant Program (HMGP) following the Nisqually earthquake of February 2001 (FEMA-1361-DRWA). This grant required the Division of Geology and Earth Resources to develop statewide liquefaction susceptibility and NEHRP (National Earthquake Hazards Reduction Program) site class maps.

Regional and local earthquake hazard maps such as these support hazard mitigation, emergency planning and response, planning of local zoning ordinances, and building code enforcement. The primary reason for producing this series of earthquake hazard maps is to support revisions to the State Hazard Mitigation Plan required in the implementation of final rules 44CFR201.4 and 44CFR201.6. These Federal code regulations require both state and local agencies to describe the location and extent of earthquake hazards that affect their jurisdictions. Additionally, these maps will serve a great variety of end-users that are crucial partners in earthquake hazard mitigation.

Description:

These data contain polygons that provide information regarding the relative liquefaction potential for Pierce County, Washington. This feature class is part of a geodatabase that contains statewide ground response data for Washington State. Liquefaction is a natural phenomenon in which saturated, sandy soils lose their strength and behave as liquid. Liquefaction is caused by severe ground shaking during earthquake events. Polygons are classified as having 'very low' to 'high' relative liquefaction susceptibility. Areas underlain by bedrock or peat are mapped

separately as these earth materials are not liquefiable, although peat deposits may be subject to permanent ground deformation caused by earthquake shaking and require site-specific analysis under the International Building Code. Water and ice are also separately designated.

Use Limitations:

The Washington Division of Geology and Earth Resources (DGER) shall not be held liable for improper or incorrect use of the data described and/or contained herein. This product is provided 'as is' without warranty of any kind, either expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular use. The Washington State Department of Natural Resources and the authors of this product will not be liable to the user of this product for any activity involving the product with respect to the following: (a) lost profits, lost savings, or any other consequential damages; (b) the fitness of the product for a particular purpose; or (c) use of the product or results obtained from use of the product. Although these data have been processed successfully on computers of DGER, no warranty, expressed or implied, is made by DGER regarding the use of these data on any other system, nor does the fact of distribution constitute or imply any such warranty. Appropriate use of these map data is the responsibility of each user. - Users must acknowledge the originators when using the data set as a source. - Data should not be used beyond the limits of the source scale. - The data set is not a survey document and should not be utilized as such. This map is meant only as a general guide to delineate areas prone to liquefaction. It is not a substitute for site-specific investigation to assess the potential for liquefaction for any development project. Because the data used in the liquefaction susceptibility assessment have been subdivided based on regional geologic mapping, this map cannot be used to determine the presence or absence of liquefiable soils beneath any specific locality. This determination requires a site-specific geotechnical investigation performed by a qualified practitioner.

## Volcanic – Lahar[5]

Summary

This volcanic hazard zone is intended for use by public and private agencies to view, overlay with other Geographic Information System (GIS) datasets, and make maps of volcanic hazards from potential future eruptions of Mount Rainier, Washington. It is critical to understand the nature of the boundaries of the volcanic hazard zones. Although arcs serve as boundaries of hazard zones, the degree of hazard does not change abruptly at these boundaries. Rather, a volcanic hazard decreases gradually with increased distance from the volcano and above the valley floor. These volcanic hazards also span a range of size and recurrence. The hazard zones delineated in this data set portray volcanic events believed most likely from future activity at Mount Rainier, Washington. Areas outside the hazard zones, especially those having low relief, should not be regarded as hazard-free. Too many uncertainties exist in source, size, and mobility of future events to locate boundaries of zero-hazard zones with confidence.

Description

This is a combined dataset of a Case I, Case II and Case III lahar scenario into one dataset and does not include a pyroclastic dataset. Please contact Washington Division of Geology and Earth Resources to obtain these datasets or more information. For the planning purposes and identification of lahar risk within jurisdictions, the Case I scenario dataset is used to identify the

worst-case scenario potentially possible, although again, areas outside the hazard zones, especially those having low relief, should not be regarded as hazard-free.

This dataset contains inundation zones for Case I lahars which are defined as areas that could be affected by cohesive lahars that originate as enormous avalanches of weak, chemically altered rock from the volcano. Case I lahars can occur with or without eruptive activity. The average time interval between Case I lahars on Mount Rainier is about 500 to 1000 years.

## Hazardous Material

The Hazardous Material map has outlined the main arterial routes, railroad lines, airports, marine ferry routes and Tier II sites for which the GIS spatial analysis was taken where there is the potential risk for hazardous materials to be located at any given time. A 2,500-foot buffer was placed around these identified areas, in accordance with the Emergency Response Guidebook (ERG) for potential contaminated zones. This zone does not go into detail of identifying 3 control zones during a hazmat incident. It is intended for general planning purposes only. If an actual incident were to occur instructions would be given by the Incident Commander on site and buffer zones would be determined by the type of hazardous material released. To reduce clutter and overlapping of data the 2,500-buffer zone was not included on the map, but data was analyzed from within those perimeters.

2017 Tier II Sites

The Emergency Planning and Community Right-to-Know Act (EPCPA) of 1986 was created to help communities plan for chemical emergencies. It also requires industry to report on the storage, use and releases of hazardous substances to federal, state, and local governments. EPCRA requires state and local governments, and Indian tribes to use this information to prepare for and protect their communities from potentials risks. In 2017 Pierce County Emergency Management secured a project to identify reported 2017 Tier II Sites within Pierce County. These sites were mapped based on their geographical location of identified hazardous substances reported.

## Transportation Accidents / Incidents

The Transportation Accident map, like the Hazardous Material Map has also outlined the main arterial routes, railroad lines, airports, marine ferry routes for which the GIS spatial analysis was taken where there is the potential risk for transportation accidents/incidents to occur at any given time. A 2,500-foot buffer was placed around these identified areas also for potential hazard risks related to the accident/incident. It is intended for general planning purposes only. If an actual accident/incident were to occur instructions would be given by the Incident Commander on site and traffic control zones, barriers or alternate routes would be determined by the type of accident/incident. To reduce clutter and overlapping of data the 2,500-buffer zone was not included on the map, but data was analyzed from within those perimeters.

## Drought, Severe Weather, Civil Disturbance, Energy Emergency, Epidemic, and Terrorism / Active Threat / Attack Tactics / Cyber Attack

Due to the nature of these potential natural and human-caused hazards occurring anywhere within Pierce County or within a local jurisdiction, their total boundary figures are used when calculating the risk factors. These numbers will match their Base number's and will show the percent risk at 100% on the Vulnerability Analysis Tables for General Exposure, Population Exposure and General Infrastructure Exposure.

Hazard maps are not created for each of these hazards and for reference the Base map is in Profile Section 2 of this Mitigation Plan.

## Vulnerability Analysis Data

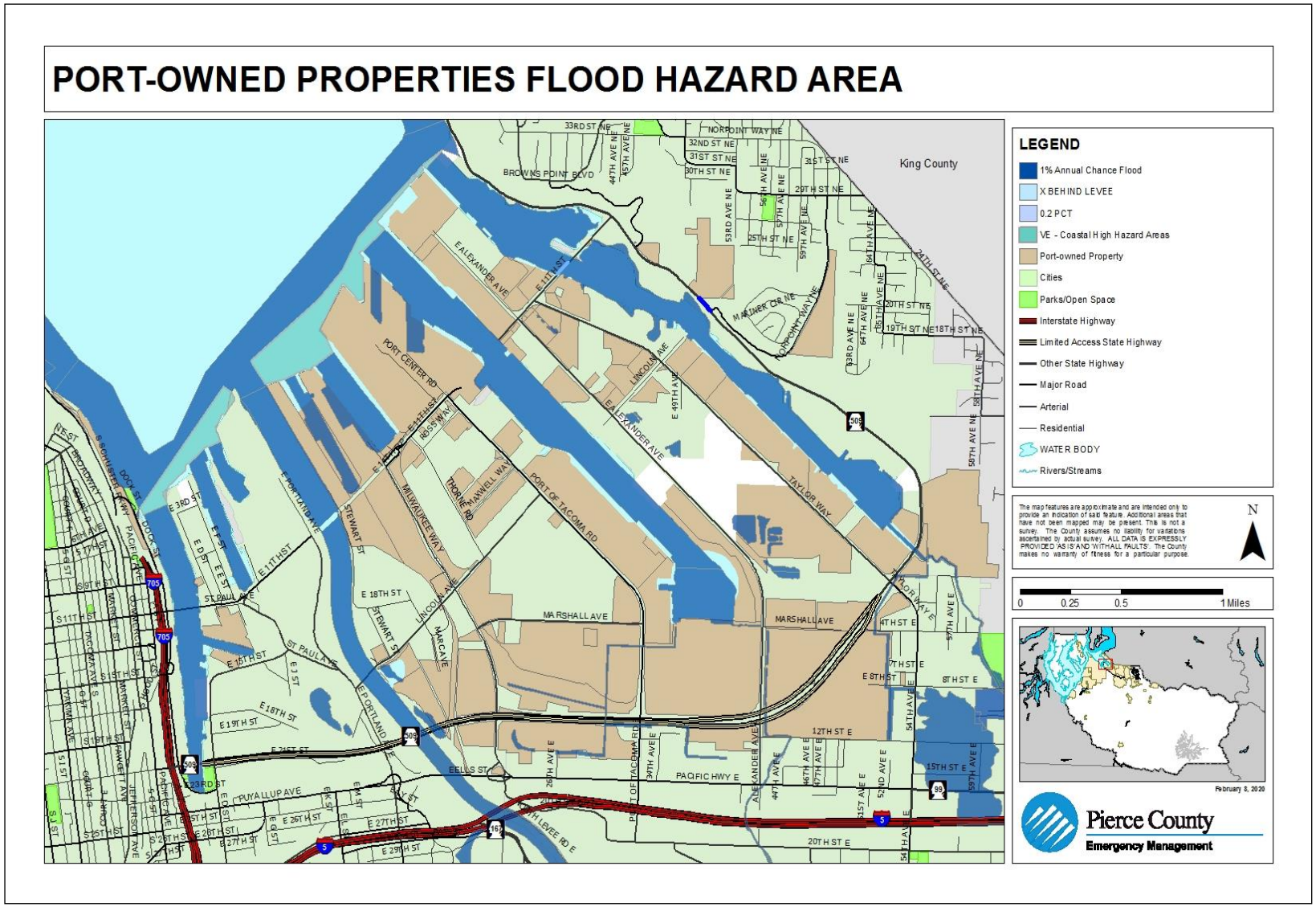
A vulnerability analysis was conducted on each hazard map to determine the General Exposure, Population Exposure, and general Infrastructure Exposure risk.

The Pierce County parcel geodatabase is derived from the Pierce County Assessor-Treasurer's Office and they edit and maintain their "parcel" geodatabases daily. The GIS polygon data includes condominium parcel information but does not include mobile home data. A "Total Base" value is determined for each jurisdiction based on their boundaries and then an analysis is performed to determine the risk percent of each hazard within those boundaries. The tax parcel geodatabase provides information for the square miles, parcels, land value, improved value and total assessed values for the analysis and is identified in Tables 4-3 and 4-4.

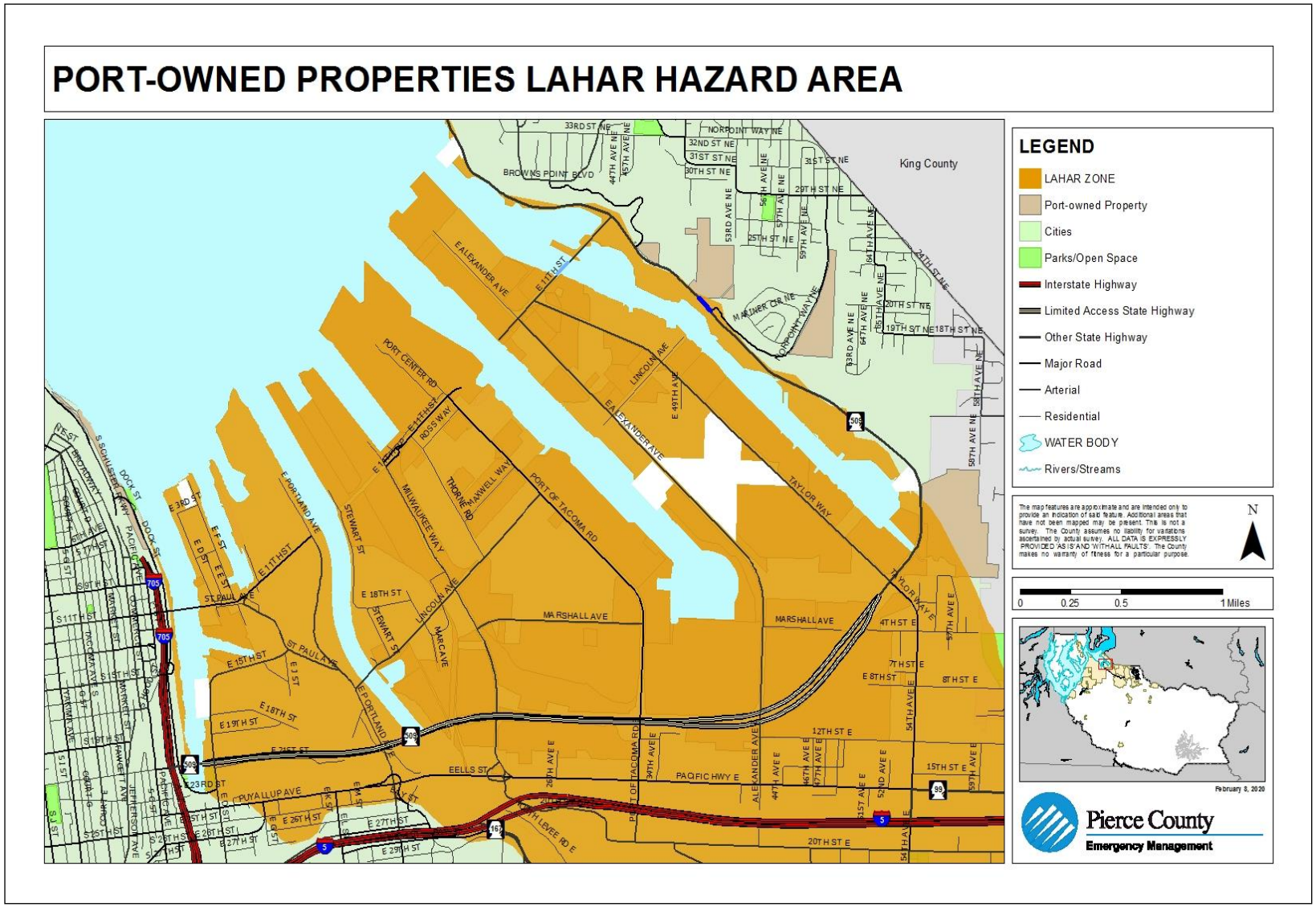
The original 2010 census data was downloaded by Pierce County GIS via the US Census Bureau server ftp and was available on October 14, 2011. All population base and hazard exposure data are derived from this dataset in determining the population exposure. At the current time with the mitigation plan updates this is the best available data that is county wide. As hazards do not have jurisdictional boundaries, a dataset is required that is county wide for analysis purposes. It is acknowledged that this population data is 10 years old and outdated and will be replaced within the plan once the 2020 census data becomes available sometime in 2021. Profile Section 2 provides a heading "Demographic Analysis" for jurisdictions to identify their current populations as best described by them.

The population density figures from Table 4-3 Vulnerability Analysis, Population Exposure calculate the total population density within each hazard area to identify the vulnerable population at risk. The population density is not calculated from the entire jurisdictional boundary.

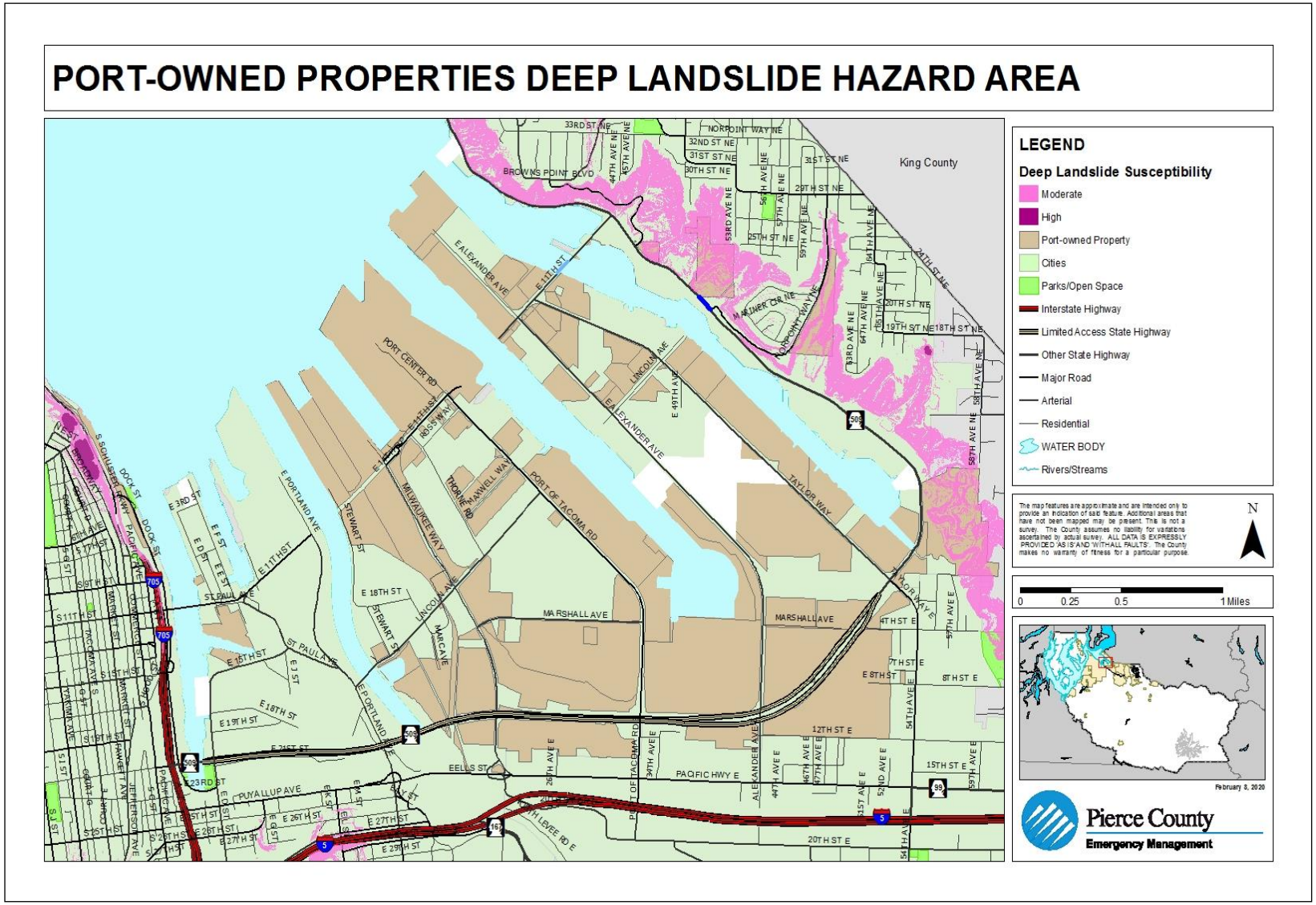
**Map 4-1 Port of Tacoma Flood Hazard Map**



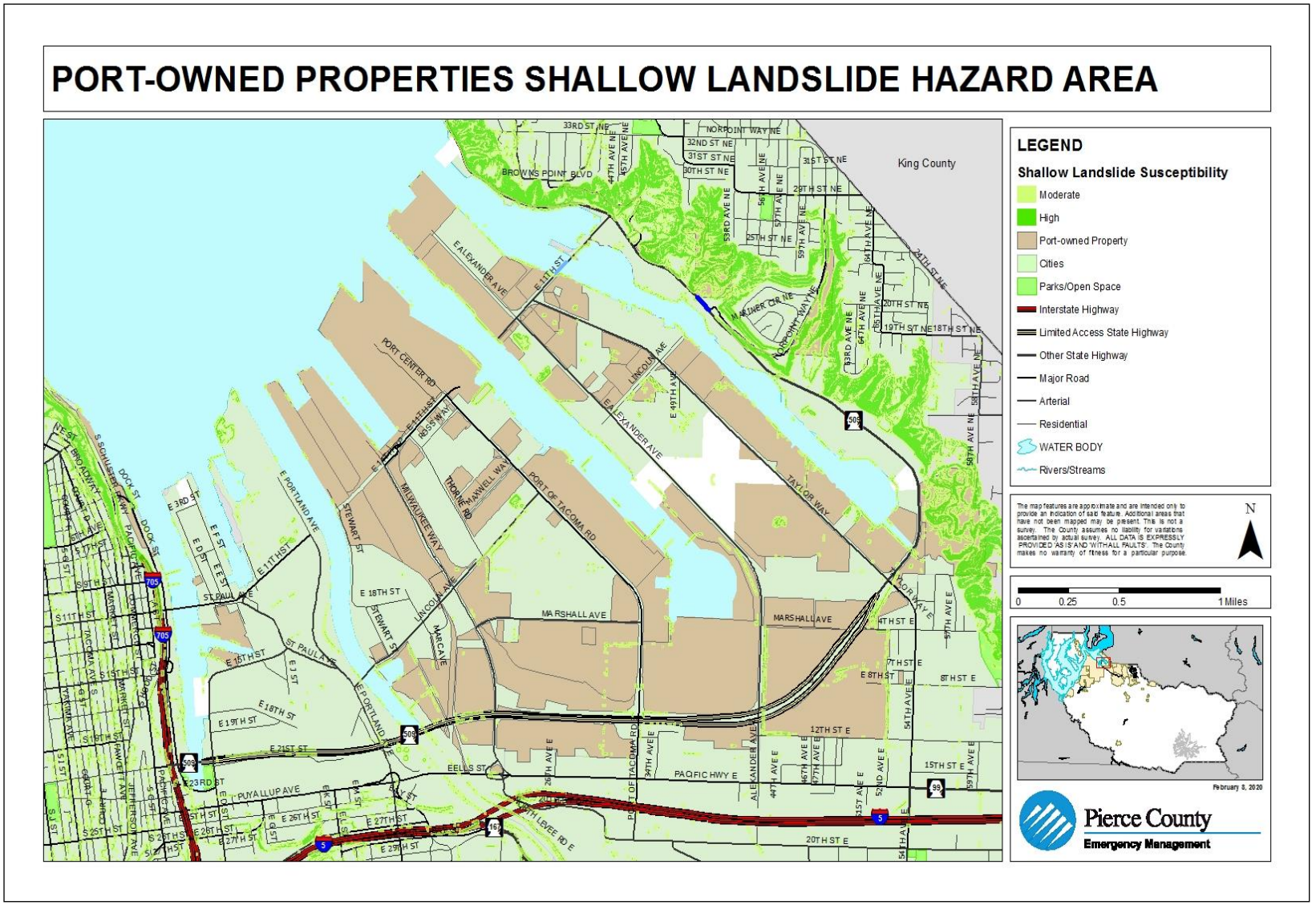
**Map 4-2 Port of Tacoma Lahar Hazard Map**



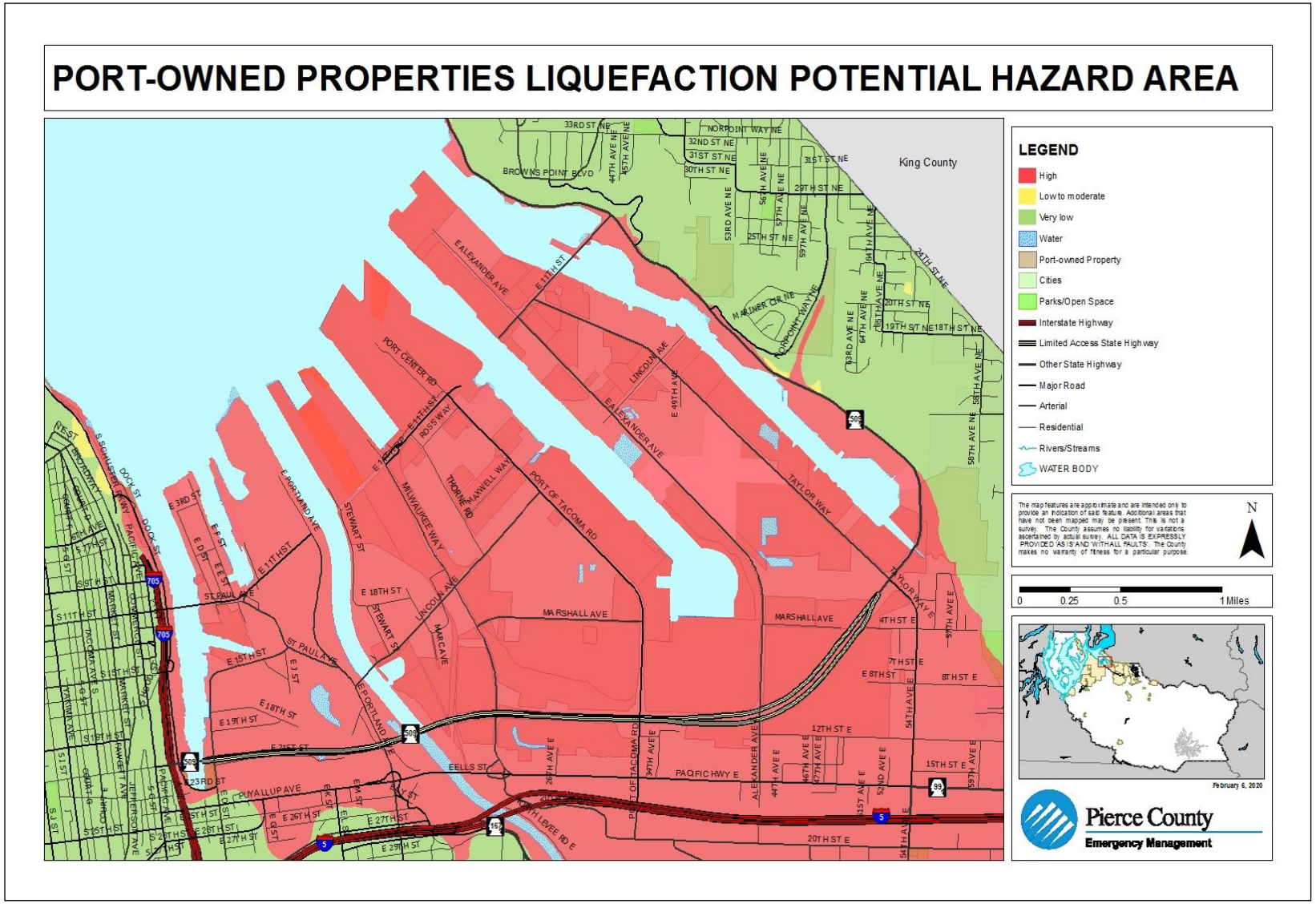
**Map 4-3 Port of Tacoma Deep Landslide Hazard Map**



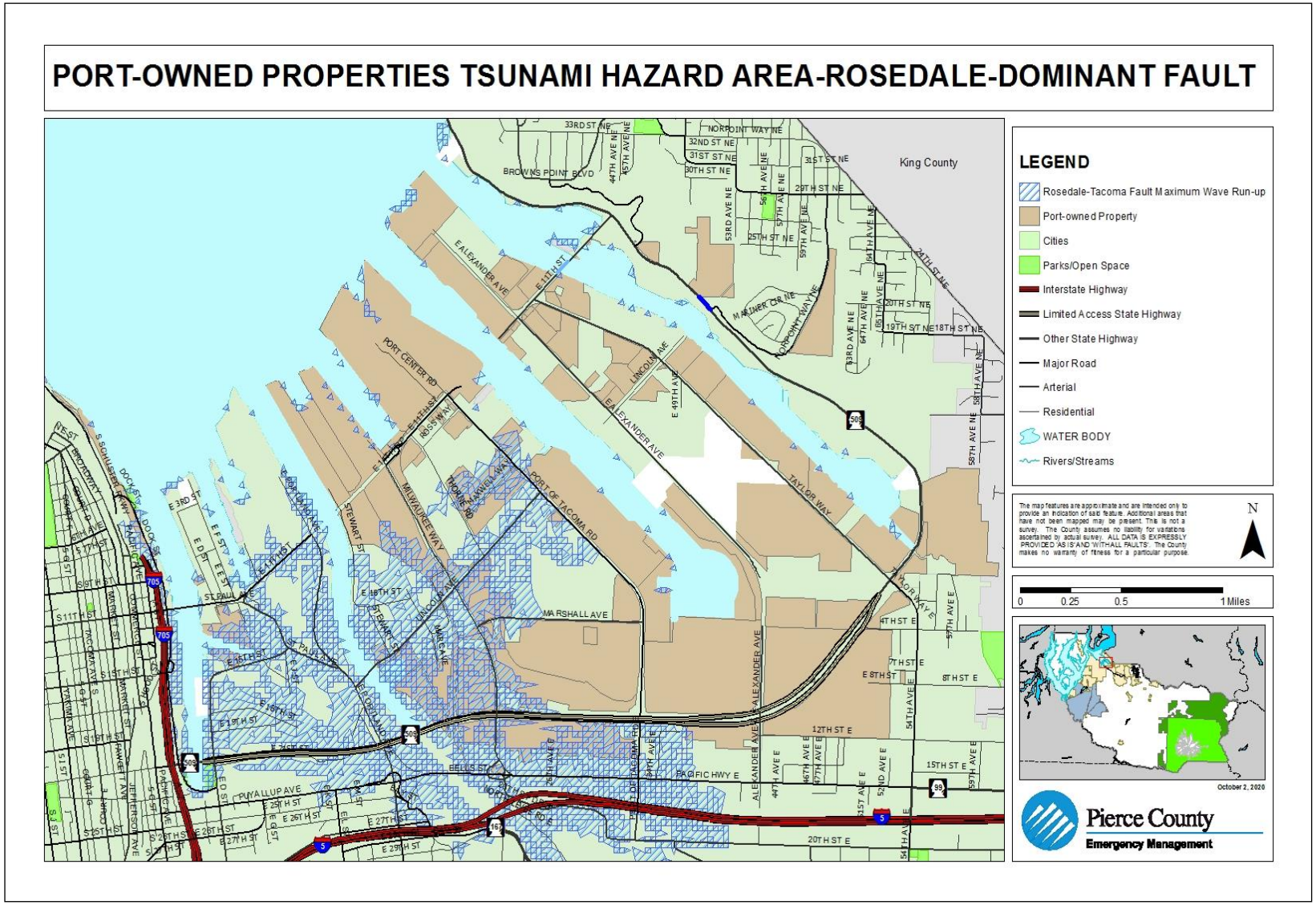
**Map 4-4 Port of Tacoma Shallow Landslide Hazard Map**



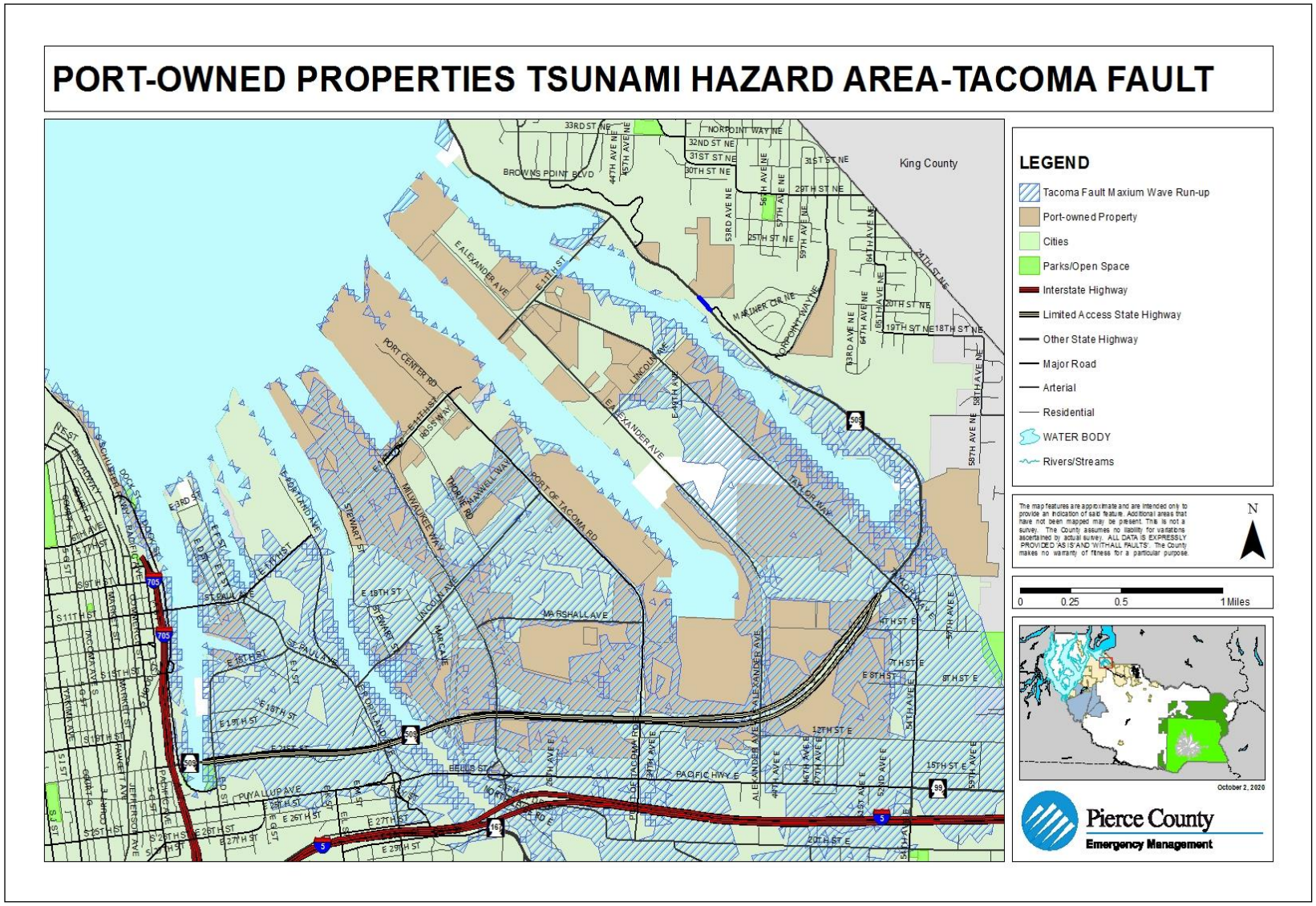
**Map 4-5 Port of Tacoma Liquefaction Susceptibility Hazard Map**



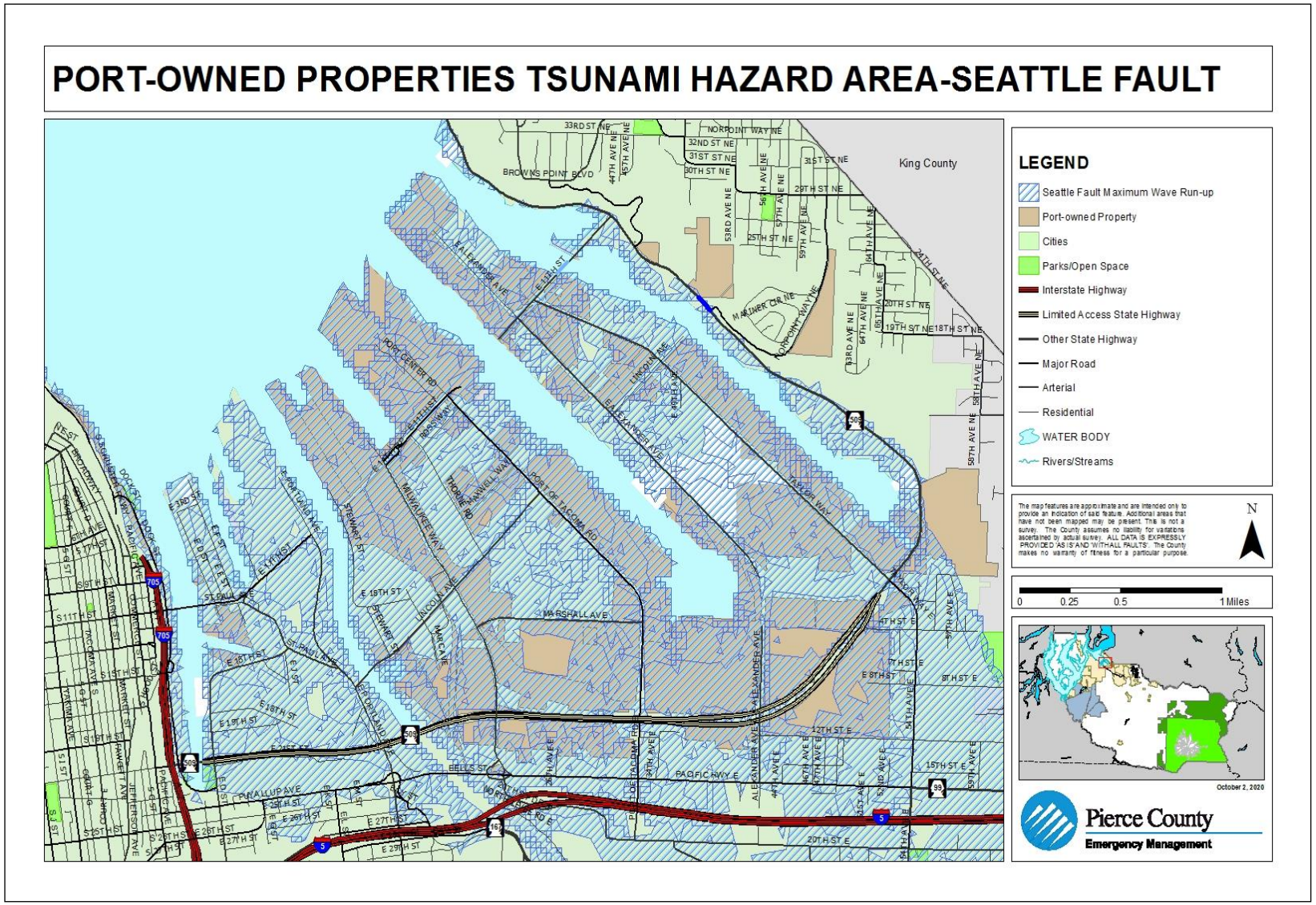
**Map 4-6 Port of Tacoma –Tsunami Hazard –Rosedale Tacoma Fault Area Map**



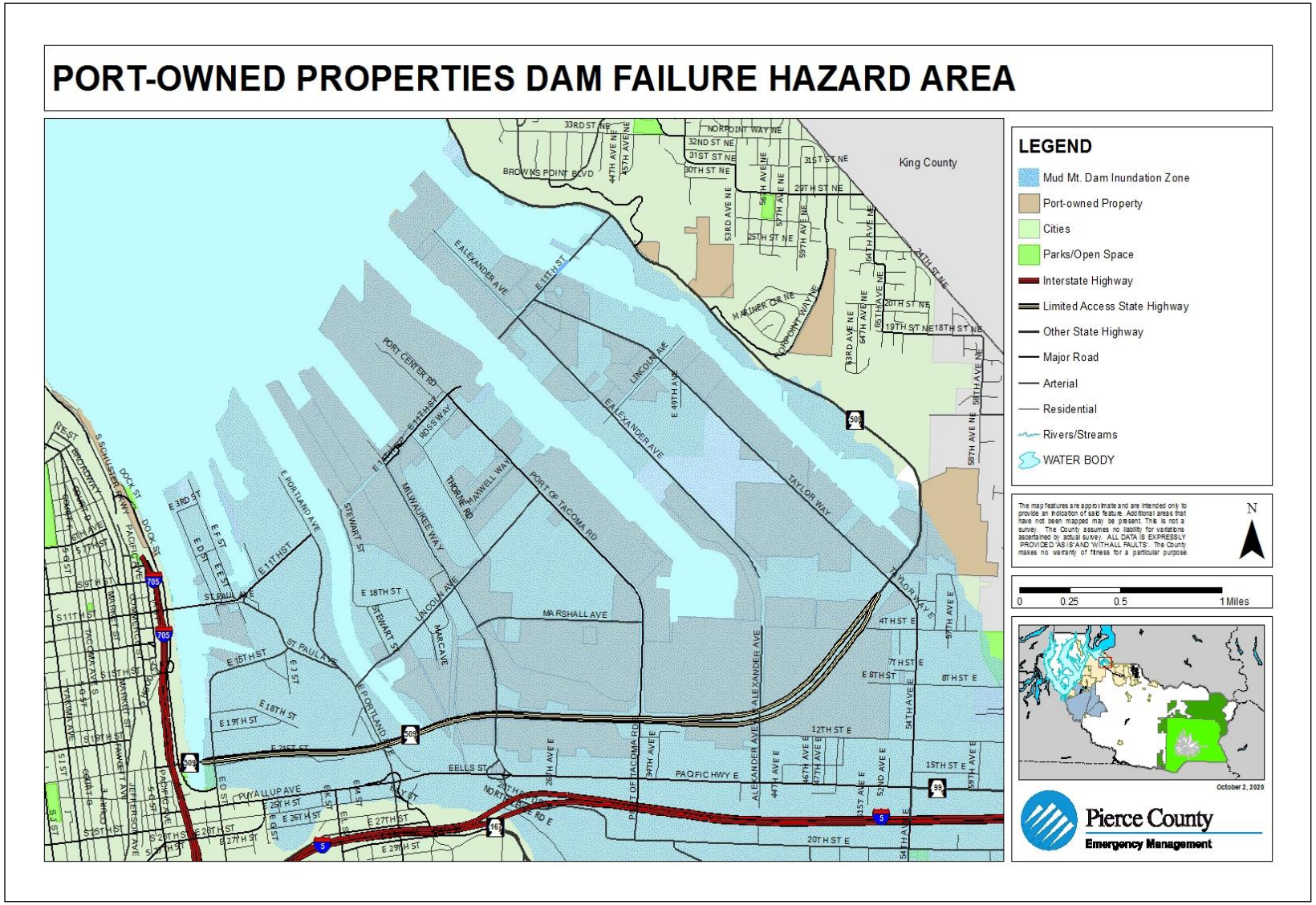
**Map 4-7 Port of Tacoma –Tsunami Hazard –Tacoma Fault Area Map**



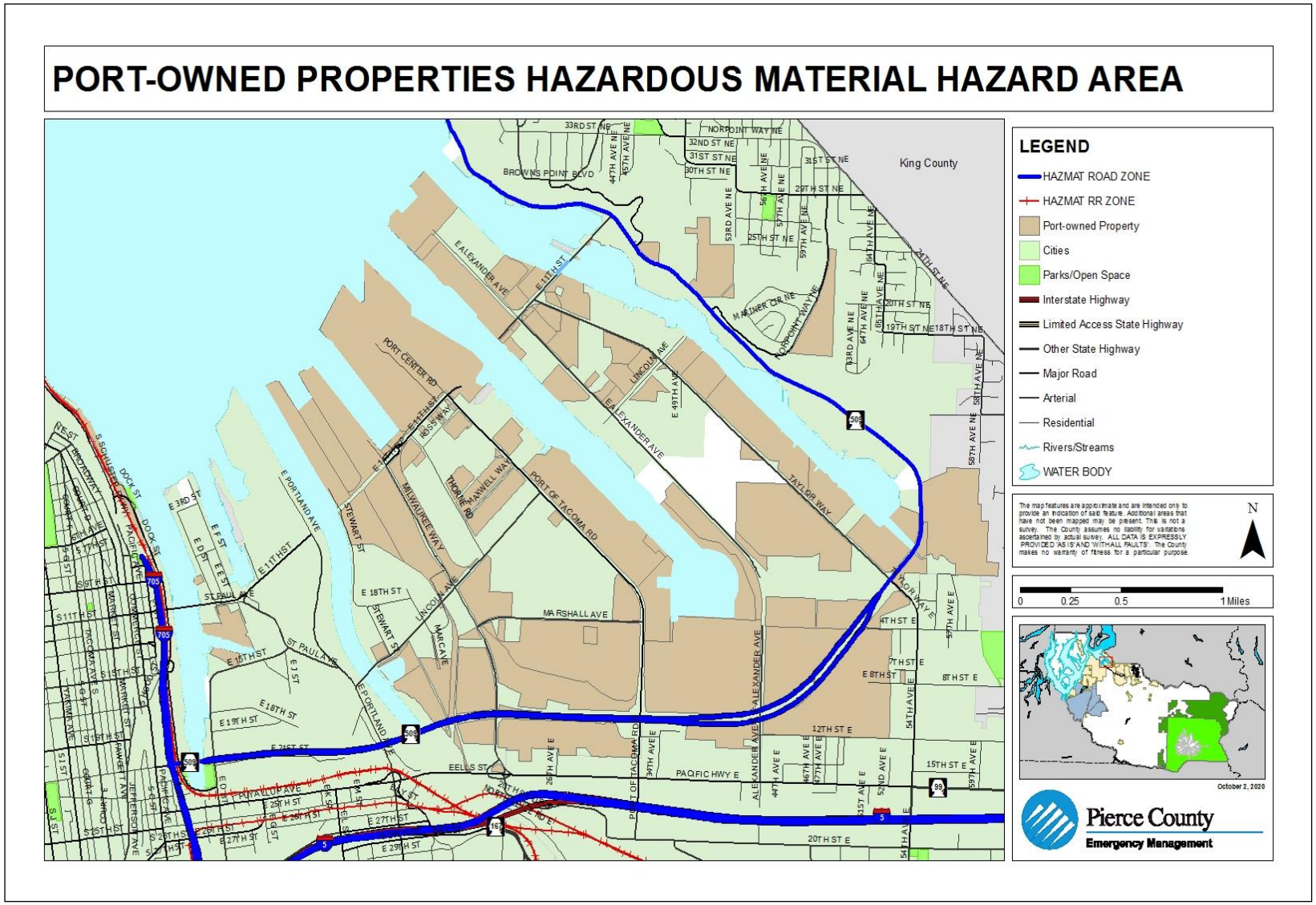
**Map 4-8 Port of Tacoma –Tsunami Hazard –Seattle Fault Area Map**



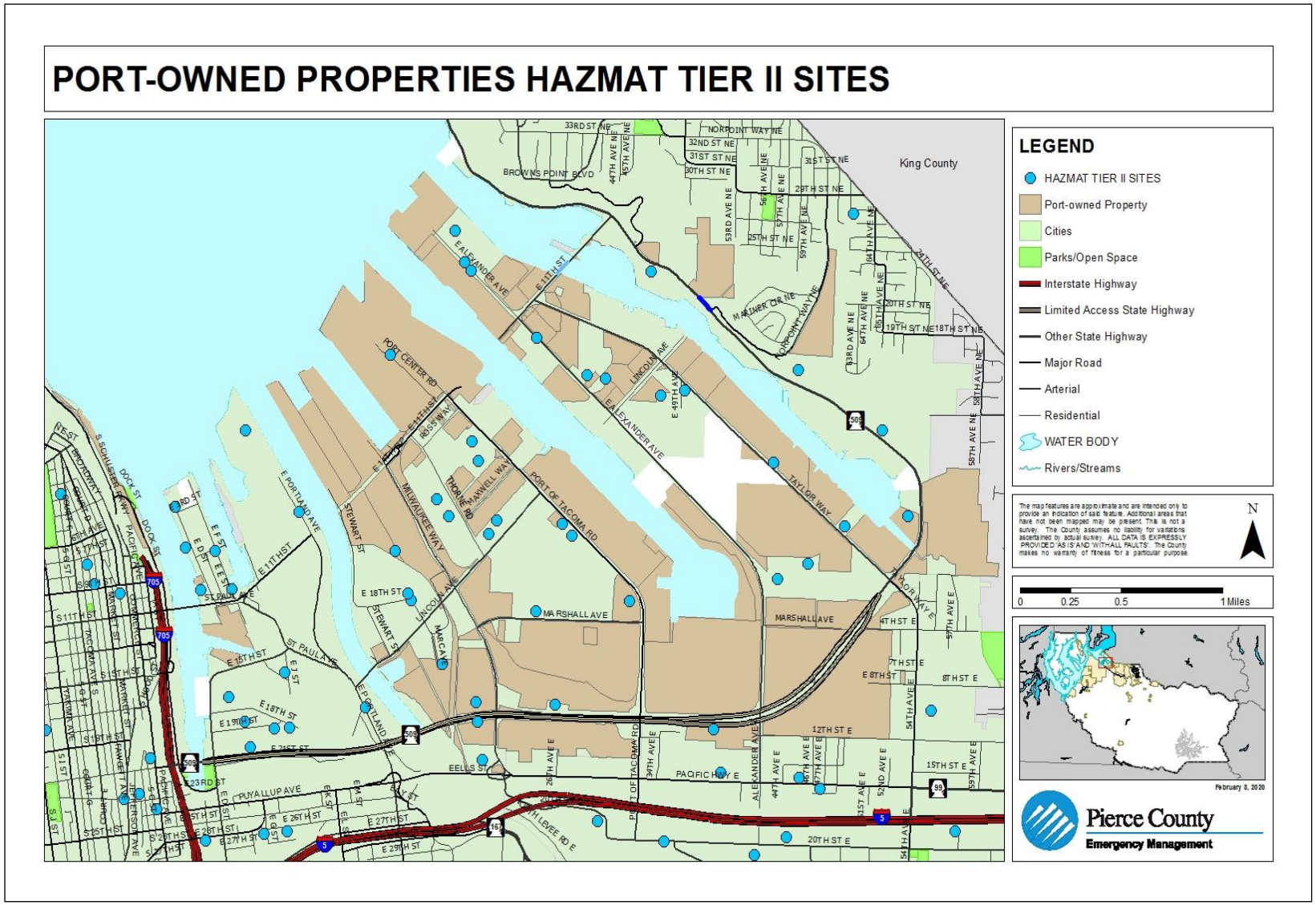
**Map 4-9 Port of Tacoma –Dam Failure Hazard Area Map**



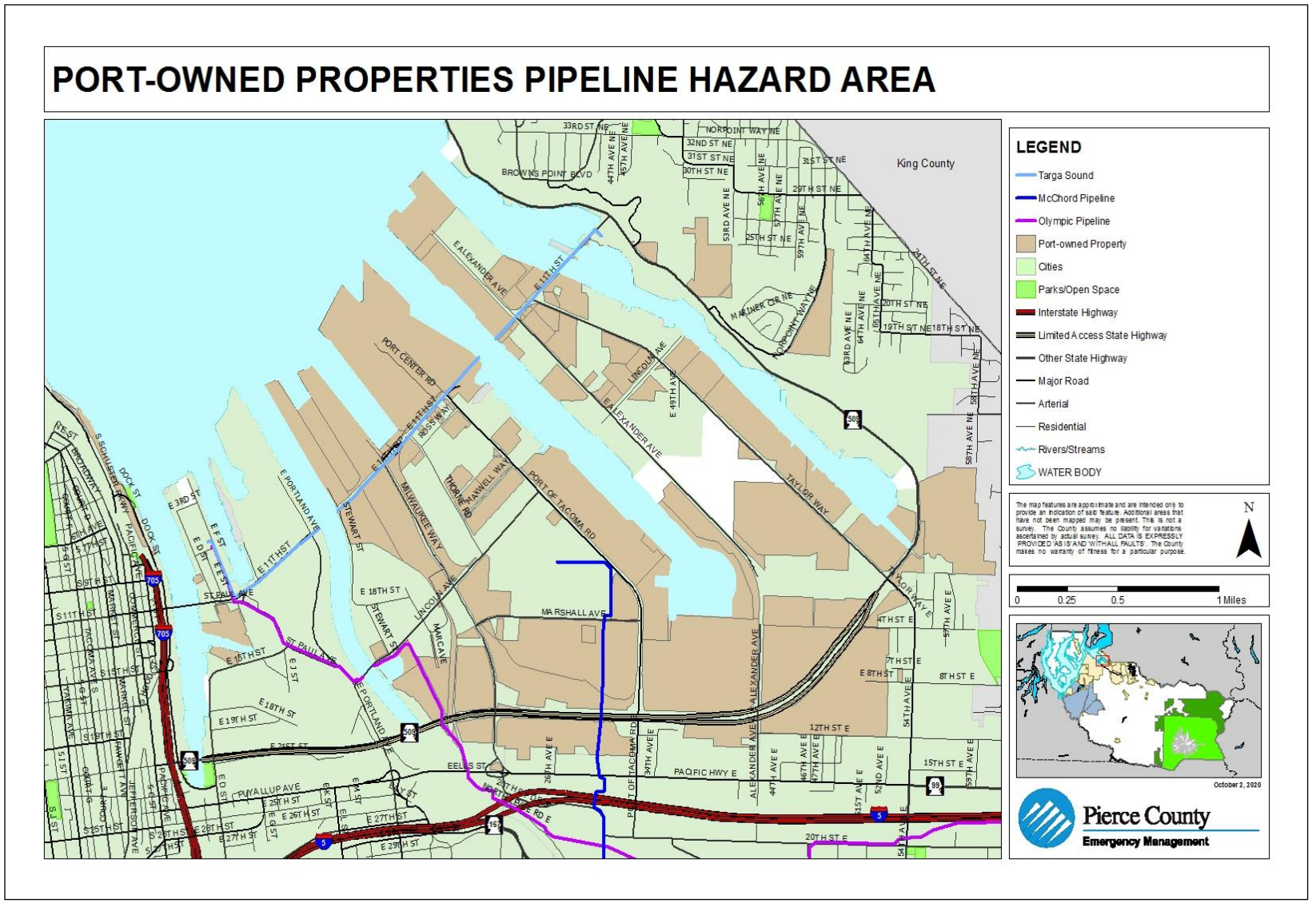
**Map 4-10 Port of Tacoma – Hazardous Material Hazard Area Map**



**Map 4-11 Port of Tacoma – Hazardous Material Tier ll Sites (2017) Hazard Area Map**



**Map 4-12 Port of Tacoma –Pipeline Hazard Area Map**



Map 4-13 Port of Tacoma – Transportation Emergency Hazard Area Map

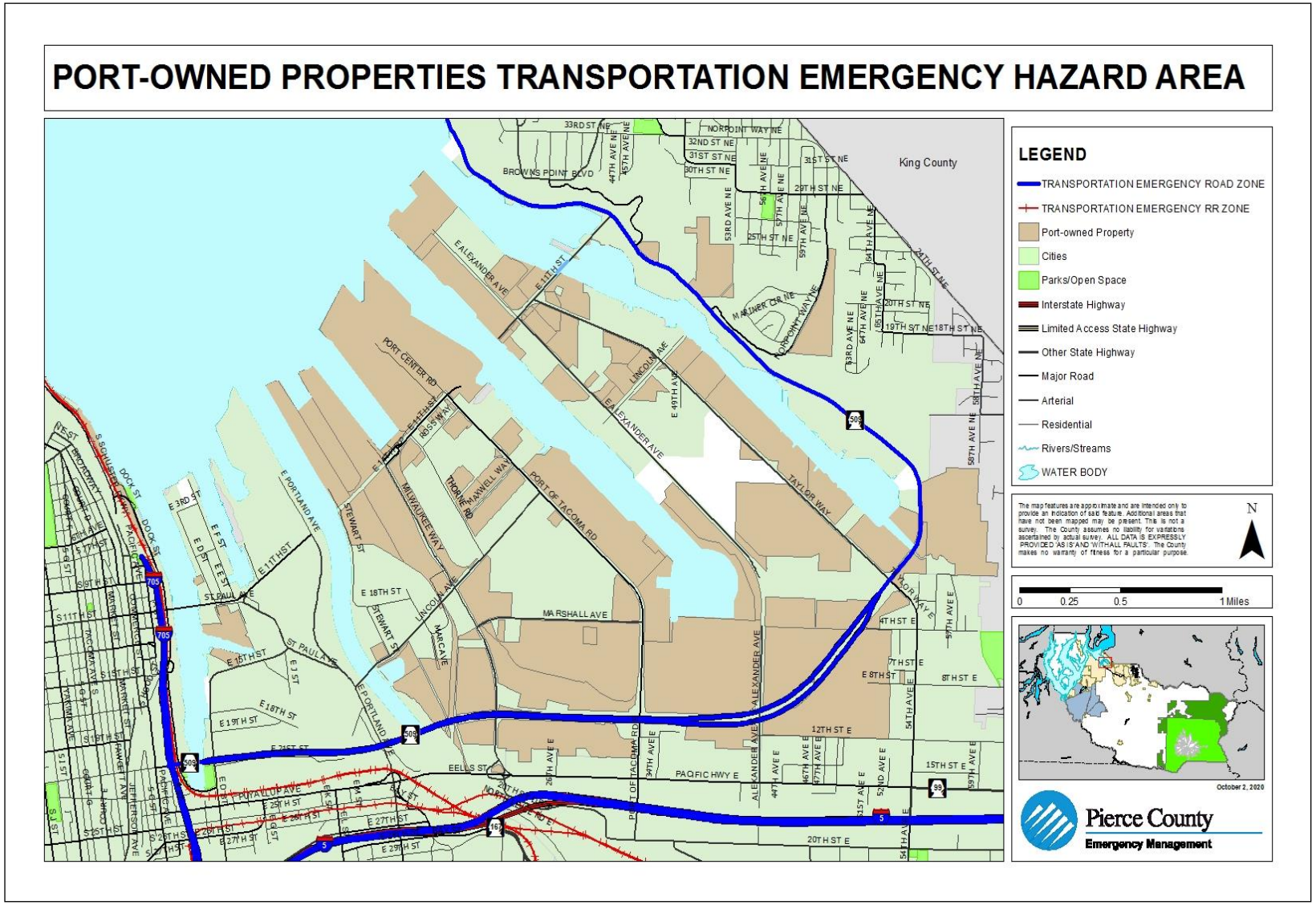


**Table 4-2 Vulnerability Analysis: General Exposure[6]**

| THREAT[7] | | AREA (SQ MI) | | PARCELS | |
|---|---|---|---|---|---|
| | | Total | % Base | Total | % Base |
| **BASE** | | **4.50** | **100%** | **256** | **100%** |
| *Geological* | **Avalanche[8]** | NA | NA | NA | NA |
| | **Landslide - Deep** | 85.43 | 3.1% | 14 | 5.47% |
| | **Landslide - Shallow** | 3.63 | 84.6% | 147 | 57.42% |
| | **Liquefaction[9]** | 4.50 | 100% | 262 | 100% |
| | **Tsunami** | 3.43 | 80.1% | 213 | 83.20% |
| | **Volcanic[10]** | 3.53 | 82.4% | 217 | 84.77% |
| *Meteorological* | **Drought[11]** | 4.50 | 100% | 262 | 100% |
| | **Flood** | 2.87 | 67.1% | 100 | 39.06% |
| | **Severe Weather** | 4.50 | 100% | 262 | 100% |
| | **WUI Fire[12]** | Insufficient GIS data to draw numbers from at this time or map susceptible areas. | | | |
| *Technological* | **Abandoned Mines[13]** | NA | NA | NA | NA |
| | **Civil Disturbance[14]** | 4.50 | 100% | 262 | 100% |
| | **Dam Failure[15]** | 3.50 | 81.7% | 214 | 83.59% |
| | **Energy Emergency[16]** | 4.50 | 100% | 262 | 100% |
| | **Epidemic[17]** | 4.50 | 100% | 262 | 100% |
| | **Hazardous Material[18]** | 4.50 | 100% | 262 | 100% |
| | **Pipeline Hazard[19]** | 1.37 | 32.1% | 62 | 24.22% |
| | **Terrorism[20]** | 4.50 | 100% | 262 | 100% |
| | **Transportation Accidents[21]** | 4.50 | 100% | 262 | 100% |

**Table 4-3 Vulnerability Analysis: General Infrastructure Exposure**

| THREAT[2] | | LAND VALUE | | | IMPROVED VALUE | | | TOTAL ASSESSED VALUE | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Total ($) | % Base | Avg. Value ($) | Total ($) | % Base | Avg. Value ($) | Total ($) | % Base | Avg. Value ($) |
| **BASE** | | $1,092,649,600 | 100% | $4,268,163 | $261,693,000 | 100% | $1,022,238 | $1,354,342,600 | 100% | $5,290,401 |
| *Geological* | **Avalanche** | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | **Landslide - Deep** | $29,384,900 | 2.69% | $6,937,400 | $6,937,400 | 2.65% | $231,247 | $36,322,300 | 2.68% | $1,210,743 |
| | **Landslide - Shallow** | $872,944,400 | 79.89% | $5,938,397 | $233,716,700 | 89.31% | $1,589,910 | $1,106,661,100 | 81.71% | $7,528,307 |
| | **Liquefaction** | $1,011,784,100 | 92.60% | $4,537,148 | $212,749,700 | 81.30% | $954,035 | $1,224,533,800 | 90.42% | $5,491,183 |
| | **Tsunami** | $1,007,123,800 | 92.2% | $4,348,834 | $221,098,200 | 84.49% | $1,018,886 | $1,164,795,100 | 86% | $5,367,719 |
| | **Volcanic** | $943,696,900 | 86.37% | $3,285,102 | $158,072,300 | 74.07% | $745,624 | $854,514,000 | 84.18% | $4,030,726 |
| *Meteorological* | **Drought** | $1,092,649,600 | 100% | $4,268,163 | $261,693,000 | 100% | $1,022,238 | $1,354,342,600 | 100% | $5,290,401 |
| | **Flood** | $686,700,200 | 62.85% | $6,867,002 | $185,160,900 | 70.76% | $1,851,609 | $871,861,100 | 64.38% | $8,718,611 |
| | **Severe Weather** | $1,092,649,600 | 100% | $4,268,163 | $261,693,000 | 100% | $1,022,238 | $1,354,342,600 | 100% | $5,290,401 |
| | **WUI Fire** | Insufficient GIS data to draw numbers from at this time or map susceptible areas. | | | | | | | | |
| *Technological* | **Abandoned Mines** | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | **Civil Disturbance** | $1,092,649,600 | 100% | $4,268,163 | $261,693,000 | 100% | $1,022,238 | $1,354,342,600 | 100% | $5,290,401 |
| | **Dam Failure** | $99,546,200 | 90.66% | $4,628,721 | $205,812,300 | 78.65% | $961,740 | $1,196,358,500 | 88.33% | $5,590,460 |
| | **Energy Emergency** | $1,092,649,600 | 100% | $4,268,163 | $261,693,000 | 100% | $1,022,238 | $1,354,342,600 | 100% | $5,290,401 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Epidemic** | $1,092,649,600 | 100% | $4,268,163 | $261,693,000 | 100% | $1,022,238 | $1,354,342,600 | 100% | $5,290,401 |
| | **Hazardous Material** | $1,092,649,600 | 100% | $4,268,163 | $261,693,000 | 100% | $1,022,238 | $1,354,342,600 | 100% | $5,290,401 |
| | **Pipeline Hazard** | $330,688,000 | 30.26% | $5,333,677 | $55,121,500 | 21.06% | $889,056 | $385,809,500 | 28.49% | $6,222,734 |
| | **Terrorism** | $1,092,649,600 | 100% | $4,268,163 | $261,693,000 | 100% | $1,022,238 | $1,354,342,600 | 100% | $5,290,401 |
| | **Transportation Accidents** | $1,092,649,600 | 100% | $4,268,163 | $261,693,000 | 100% | $1,022,238 | $1,354,342,600 | 100% | $5,290,401 |

**Table 4-4a Consequence Analysis Chart – Geological[22,23]**

| THREAT | | CONSEQUENCE | YES OR NO |
|---|---|---|---|
| *Geological* | **Avalanche** | Impact to the Public | No |
| | | Impact to the Responders | No |
| | | Impact to COG and/or COOP in the Jurisdiction | No |
| | | Impact to Property, Facilities and Infrastructure | No |
| | | Impact to the Environment | No |
| | | Impact to the Jurisdiction Economic Condition | No |
| | | Impact to Reputation or Confidence in Jurisdiction | No |
| | **Earthquake** | Impact to the Public | Yes |
| | | Impact to the Responders | Yes |
| | | Impact to COG and/or COOP in the Jurisdiction | Yes |
| | | Impact to Property, Facilities and Infrastructure | Yes |
| | | Impact to the Environment | Yes |
| | | Impact to the Jurisdiction Economic Condition | Yes |
| | | Impact to Reputation or Confidence in Jurisdiction | Yes |
| | **Landslide** | Impact to the Public | Yes |
| | | Impact to the Responders | Yes |
| | | Impact to COG and/or COOP in the Jurisdiction | Yes |
| | | Impact to Property, Facilities and Infrastructure | Yes |
| | | Impact to the Environment | Yes |
| | | Impact to the Jurisdiction Economic Condition | Yes |
| | | Impact to Reputation or Confidence in Jurisdiction | Yes |
| | **Tsunami** | Impact to the Public | Yes |
| | | Impact to the Responders | Yes |
| | | Impact to COG and/or COOP in the Jurisdiction | Yes |
| | | Impact to Property, Facilities and Infrastructure | Yes |
| | | Impact to the Environment | Yes |
| | | Impact to the Jurisdiction Economic Condition | Yes |
| | | Impact to Reputation or Confidence in Jurisdiction | Yes |
| | **Volcanic[24]** | Impact to the Public | Yes |
| | | Impact to the Responders | Yes |
| | | Impact to COG and/or COOP in the Jurisdiction | Yes |
| | | Impact to Property, Facilities and Infrastructure | Yes |
| | | Impact to the Environment | Yes |
| | | Impact to the Jurisdiction Economic Condition | Yes |
| | | Impact to Reputation or Confidence in Jurisdiction | Yes |

**Table 4-4b Consequence Analysis Chart – Meteorological**

| THREAT | | CONSEQUENCE | YES OR NO |
|---|---|---|---|
| *Meteorological* | **Drought** | Impact to the Public | Yes |
| | | Impact to the Responders | No |
| | | Impact to COG and/or COOP in the Jurisdiction | No |
| | | Impact to Property, Facilities and Infrastructure | No |
| | | Impact to the Environment | Yes |
| | | Impact to the Jurisdiction Economic Condition | No |
| | | Impact to Reputation or Confidence in Jurisdiction | No |
| | **Flood** | Impact to the Public | Yes |
| | | Impact to the Responders | Yes |
| | | Impact to COG and/or COOP in the Jurisdiction | Yes |
| | | Impact to Property, Facilities and Infrastructure | Yes |
| | | Impact to the Environment | Yes |
| | | Impact to the Jurisdiction Economic Condition | Yes |
| | | Impact to Reputation or Confidence in Jurisdiction | Yes |
| | **Severe Weather** | Impact to the Public | Yes |
| | | Impact to the Responders | Yes |
| | | Impact to COG and/or COOP in the Jurisdiction | Yes |
| | | Impact to Property, Facilities and Infrastructure | Yes |
| | | Impact to the Environment | Yes |
| | | Impact to the Jurisdiction Economic Condition | Yes |
| | | Impact to Reputation or Confidence in Jurisdiction | Yes |
| | **WUI Fire** | Impact to the Public | No |
| | | Impact to the Responders | No |
| | | Impact to COG and/or COOP in the Jurisdiction | No |
| | | Impact to Property, Facilities and Infrastructure | No |
| | | Impact to the Environment | No |
| | | Impact to the Jurisdiction Economic Condition | No |
| | | Impact to Reputation or Confidence in Jurisdiction | No |

**Table 4-4c Consequence Analysis Chart – Technological[25]**

| THREAT | | CONSEQUENCE | YES OR NO |
|---|---|---|---|
| *Technological* | **Abandoned Mines** | Impact to the Public | No |
| | | Impact to the Responders | No |
| | | Impact to COG and/or COOP in the Jurisdiction | No |
| | | Impact to Property, Facilities and Infrastructure | No |
| | | Impact to the Environment | No |
| | | Impact to the Jurisdiction Economic Condition | No |
| | | Impact to Reputation or Confidence in Jurisdiction | No |
| | **Civil Disturbance** | Impact to the Public | Yes |
| | | Impact to the Responders | Yes |
| | | Impact to COG and/or COOP in the Jurisdiction | Yes |
| | | Impact to Property, Facilities and Infrastructure | Yes |
| | | Impact to the Environment | Yes |
| | | Impact to the Jurisdiction Economic Condition | Yes |
| | | Impact to Reputation or Confidence in Jurisdiction | Yes |
| | **Dam Failure** | Impact to the Public | Yes |
| | | Impact to the Responders | Yes |
| | | Impact to COG and/or COOP in the Jurisdiction | Yes |
| | | Impact to Property, Facilities and Infrastructure | Yes |
| | | Impact to the Environment | Yes |
| | | Impact to the Jurisdiction Economic Condition | Yes |

| | | | |
|---|---|---|---|
| | | Impact to Reputation or Confidence in Jurisdiction | Yes |
| | **Energy Emergency** | Impact to the Public | Yes |
| | | Impact to the Responders | Yes |
| | | Impact to COG and/or COOP in the Jurisdiction | Yes |
| | | Impact to Property, Facilities and Infrastructure | Yes |
| | | Impact to the Environment | Yes |
| | | Impact to the Jurisdiction Economic Condition | Yes |
| | | Impact to Reputation or Confidence in Jurisdiction | Yes |
| | **Epidemic** | Impact to the Public | Yes |
| | | Impact to the Responders | Yes |
| | | Impact to COG and/or COOP in the Jurisdiction | Yes |
| | | Impact to Property, Facilities and Infrastructure | Yes |
| | | Impact to the Environment | Yes |
| | | Impact to the Jurisdiction Economic Condition | Yes |
| | | Impact to Reputation or Confidence in Jurisdiction | Yes |
| | **Hazardous Materials** | Impact to the Public | Yes |
| | | Impact to the Responders | Yes |
| | | Impact to COG and/or COOP in the Jurisdiction | Yes |
| | | Impact to Property, Facilities and Infrastructure | Yes |
| | | Impact to the Environment | Yes |
| | | Impact to the Jurisdiction Economic Condition | Yes |
| | | Impact to Reputation or Confidence in Jurisdiction | Yes |
| | **Pipeline Hazards** | Impact to the Public | Yes |
| | | Impact to the Responders | Yes |
| | | Impact to COG and/or COOP in the Jurisdiction | Yes |
| | | Impact to Property, Facilities and Infrastructure | Yes |
| | | Impact to the Environment | Yes |
| | | Impact to the Jurisdiction Economic Condition | Yes |
| | | Impact to Reputation or Confidence in Jurisdiction | Yes |
| | **Terrorism** | Impact to the Public | Yes |
| | | Impact to the Responders | Yes |
| | | Impact to COG and/or COOP in the Jurisdiction | Yes |
| | | Impact to Property, Facilities and Infrastructure | Yes |
| | | Impact to the Environment | Yes |
| | | Impact to the Jurisdiction Economic Condition | Yes |
| | | Impact to Reputation or Confidence in Jurisdiction | Yes |
| | **Transportation Accident** | Impact to the Public | Yes |
| | | Impact to the Responders | Yes |
| | | Impact to COG and/or COOP in the Jurisdiction | Yes |
| | | Impact to Property, Facilities and Infrastructure | Yes |
| | | Impact to the Environment | Yes |
| | | Impact to the Jurisdiction Economic Condition | Yes |
| | | Impact to Reputation or Confidence in Jurisdiction | Yes |

# Endnotes

[1] Data source information for the Regulated Floodplain 2017 GIS Feature Class hazard layer is from the Metadata. For additional information contact Dennis Dixon with Pierce County, Planning and Public Works, Surface Water Management Division.
[2] Data source information for the Deep Landslide Susceptibility GIS Feature Class hazard layer is from the Metadata. For additional information contact the Washington Geological Survey.
[3] Data source information for the Shallow Landslide Susceptibility GIS Feature Class hazard layer is from the Metadata. For additional information contact the Washington Geological Survey.
[4] Liquefaction susceptibility is assigned based on criteria described in: Palmer, Stephen P.; Magsino, Sammantha L.; Bilderback, Eric L.; Poelstra, James L.; Folger, Derek S.; Niggemann, Rebecca A., 2007, Liquefaction susceptibility and site class maps of Washington State, by county: Washington Division of Geology and Earth Resources Open File Report 2004-20, 78 plates, with 45 p. text.
http://www.dnr.wa.gov/ResearchScience/Topics/GeologyPublicationsLibrary/Pages/pub_ofr04-20.aspx.
Data source information for the Liquefaction Susceptibility GIS Feature Class hazard layer is from the Metadata. For additional information contact the Washington Geological Survey, Washington Division of Geology and Earth Resources. Last updates to this data set on 2017-01-03.
[5] Lahar parcel and lahar study area were added by The Washington Division of Geology and Earth Resources. Lahar_case_1, Lahar_case_2, lahar_case_3, postlahar, and pyroclastic originated from USGS Open-File Report 2007-2005: Schilling, S. P.; Doelger, S.; Hoblitt, R. P.; Walder, J. S.; Driedger, C. L.; Scott, K. M.; Pringle, P. T.; Vallance, J. W., 2008, Digital data for volcano hazards from Mount Rainier, Washington; Revised 1998: U.S. Geological Survey Open-File Report 2007-1220, ArcInfo coverages and shapefiles.
http://pubs.usgs.gov/of/2007/1220/data.html. This digital data accompanies Volcano Hazards from Mount Rainier, Washington; Revised 1998 (U.S. Geological Survey Open-File Report 98-428): Hoblitt, R. P.; Walder, J. S.; Driedger, C. L.; Scott, K. M.; Pringle, P. T.; Vallance, J. W., 1998, Volcano Hazards from Mount Rainier, Washington; Revised 1998: U.S. Geological Survey Open-File Report 98-428
http://vulcan.wr.usgs.gov/Volcanoes/Rainier/Hazards/OFR98-428/OFR98-428.pdf
[6] Info obtained from Pierce County GIS application, CountyView Pro (2016).
[7] Currently the expanding body of empirical data on climate change supports its basic premise that the long term average temperature of the earth's atmosphere has been increasing for decades *(1850 to 2008)*. This trend is continuing and will create dramatic changes in the local environment of Pierce County. Today, questions revolve around the overall increase in local temperature and its long term effects. Climate change today refers to variations in either regional or global environments over time. Time can refer to periods ranging in length from a few decades to other periods covering millions of years. A number of circumstances can cause climate change. Included herein are such diverse factors as solar cycles, volcanic eruptions, changing ocean current patterns, or even something as unusual as a methane release from the ocean floor. Over the past 150 years good temperature records have allowed comparisons to be made of global temperatures from year-to-year. This has shown an overall increase of approximately 0.7° C during this period. An increasing body of scientific evidence implies that the primary impetus driving climate change today is an increase in atmospheric green house gases.
[8] Jurisdiction is not vulnerable to this hazard, therefore it is marked NA or non-applicable.
[9] It should be noted here that although all residents, all property and all infrastructure of the Port of Tacoma are vulnerable to earthquake shaking, not all are subject to the affects of liquefaction and liquefiable soils which is what is represented here.
[10] The threat of volcanic ashfall affects the entire Region 5 however some jurisdictions are specifically threatened by lahar flows directly from Mt. Rainier; an active volcano.
[11] The entire jurisdiction is vulnerable to drought. There are three things that must be understood about the affect of drought on the jurisdiction: 1) Drought is a Region wide event. When it does affect Pierce County, it will affect every jurisdiction, 2) Drought will gradually develop over time. It is a gradually escalating emergency that may take from months to years to affect the jurisdiction. Initially lack of water may not even be noticed by the citizens. However, as the drought continues, its effects will be noticed by a continually expanding portion of the community until it is felt by all, and 3) Jurisdictions will be affected differently at different times as a drought develops. This will vary depending on the needs of each local jurisdiction. Some examples are: jurisdictions that have industry that

requires a continuous supply of a large quantity of water; others have agriculture that requires water, but may only require it at certain times of the year; and, some jurisdictions have a backup source of water while others do not.

[12] According to the most recent information from the Department of Natural Resources, the Port of Tacoma while undergoing development does not have large areas of forested land that could develop into a wildland/urban interface fire. Further study is needed to determine the extent of the area that could be affected.

[13] The definition of Abandoned Mines comes from the 2010 Pierce County HIRA: Abandoned mines are any excavation under the surface of the earth, formerly used to extract metallic ores, coal, or other minerals, and that are no longer in production.

[14] The definition of Civil Disturbance comes from the 2010 Pierce County HIRA: Civil Disturbance (unrest) is the result of groups or individuals within the population feeling, rightly or wrongly, that their needs or rights are not being met, either by the society at large, a segment thereof, or the current overriding political system. When this results in community disruption of a nature where intervention is required to maintain public safety it has become a civil disturbance. Additionally, the Region 5 Strategic Plan includes Operational Objectives 3 & 4: Intelligence Gathering, Indicators, Warnings, etc; and Intelligence and Information Sharing.

[15] The definition of Dam Failure comes from the 2010 Pierce County HIRA: A dam is any "barrier built across a watercourse for impounding water.[15]" Dam failures are catastrophic events "characterized by the sudden, rapid, and uncontrolled release of impounded water. The vulnerability analysis was based on the potential dam failure from Mud Mountain Dam and Lake Tapps using Pierce County's GIS data which originated from each of the dams emergency plans inundation maps.

[16] The definition of an Energy Emergency comes from the 2010 Pierce County HIRA: Energy emergency refers to an out-of-the-ordinary disruption, or shortage, of an energy resource for a lengthy period of time. Additionally the Region 5 Strategic Plan addresses Energy Emergencies in its Operational Objective 32, Restoration of Lifelines which addresses the restoration of critical services such as oil, gas, natural gas, electric, etc.

[17] The definition of epidemic comes from the TPCHD Flu Plan of 2005: A Pandemic is an epidemic occurring over a very wide area and usually affecting a large proportion of the population. Pandemics occur when a wholly new subtype of influenza A virus emerges. A "novel" virus can develop when a virulent flu strain that normally infects birds or animals infects a human who has influenza; the two viruses can exchange genetic material, creating a new, virulent flu virus that can be spread easily from person-to-person. Unlike the flu we see yearly, no one would be immune to this new flu virus, which would spread quickly, resulting in widespread epidemic disease – a pandemic. (DOH Plan & U.S. Dept. of HHS).

[18] The definition of Hazardous Materials comes from the 2010 Pierce County HIRA: Hazardous materials are materials, which because of their chemical, physical or biological properties, pose a potential risk to life, health, the environment, or property when not properly contained. A hazardous materials release then is the release of the material from its container into the local environment. A general rule of thumb for safety from exposure to hazardous material releases is 1000ft; the Emergency Response Guidebook 2008, established by the US Dept of Transportation, contains advice per specific materials. The vulnerability analysis was broken into two sub sections for a better understanding of the hazard using Pierce County's GIS data with a 500 foot buffer on either side of the railroads and major roadways.

[19] The definition of Pipeline Emergency comes from the 2010 Pierce County HIRA: While there are many different substances transported through pipelines including sewage, water and even beer, pipelines, for the purpose of this chapter, are transportation arteries carrying liquid and gaseous fuels. They may be buried or above ground

[20] The definition of Terrorism comes from the 2010 Pierce County HIRA: Terrorism has been defined by the Federal Bureau of Investigation as, "the unlawful use of force or violence against persons or property to intimidate or coerce a Government, the civilian population or any segment thereof, in furtherance of political or social objectives." These acts can vary considerably in their scope, from cross burnings and the spray painting of hate messages to the destruction of civilian targets. In some cases, violence in the schools has also been labeled as a form of terrorism.

[21] The definition of Transportation Accident comes from the 2010 Pierce County HIRA: Transportation accidents as used in this assessment include accidents involving a method of transportation on the road, rail, air, and maritime systems within the confines of Pierce County. The vulnerability analysis was broken into three sub sections for a better understanding of the hazard using Pierce County's GIS data; Commencement Bay to include inland rivers and streams, railroads, and roads. A 200 foot buffer was applied to all the shorelines and a 500 foot buffer on either side of the railroads and roadways.

[22] In the Impact to Property, Facilities and Infrastructure, both Tables 4-5a and 4-5b, look at the impact to all property, facilities and infrastructure existing in the jurisdiction, not just to that owned by the jurisdiction.
[23] The consideration for each of these hazards, in both Tables 4-5a and 4-5b, as to whether an individual hazard's consequences exist, or not, is based on a possible worst case scenario. It must also be understood that a "yes" means that there is a good possibility that the consequence it refers to could happen as a result of the hazard, not that it will. Conversely "No" means that it is highly unlikely that that consequence will have a major impact, not that there will be no impact at all.
[24] While the major volcanic hazard from Mt. Rainier is from a lahar descending the main river valleys surrounding the mountain, it is not the only problem. Most jurisdictions could receive tephra in greater or lesser amounts, sometimes with damaging results. Consequence analyses in this section take into account the possibility of tephra deposition in addition to a lahar.
[25] The Technological Consequences are added herein to acknowledge the role of human-caused hazards in the health and safety of unincorporated Pierce County. The consequences noted are under the same criteria as natural hazards given their impacts to the departmental assets.

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# SECTION 5

# REGION 5 ALL HAZARD MITIGATION PLAN
# 2020-2025 EDITION
# PORT OF TACOMA
# MITIGATION STRATEGY SECTION

## Table of Contents

## Mitigation Measure Overview

The measures having been identified, defined, and evaluated; the rest of the process involved prioritization. The process relied upon the identified risks and vulnerabilities, the planning team's local expertise, public participation, each organization's needs and capabilities, a cost/benefit review, and input from the chief elected officials. In order to promote implementation of the measures, they were grouped based on the level at which they would be implemented, as described in the Plan Maintenance Section. These levels were:

- **Startup Mitigation Measures:** Those mitigation measures already in existence within the organization and including the maintenance of the Mitigation Plan.
- **Hazard Mitigation Forum (HMF):** Multi-organizational implementation mechanism.
- **Organization-Wide Mitigation Measures:** Mechanism depends on organization.
- **Public Education Mitigation Measures:** Localized level based on targeted communities and their needs and vulnerabilities.

The measures are prioritized within each implementation category. In order to provide consistency, the evaluation process including the eight categories, was used as the basis for the prioritization of measures. This allows for emphasis on the extent to which each measure is cost-effective.

The planning team members from each organization prioritized their organization's potential mitigation measures based on goals addressed with special attention paid to the measure's benefit-cost review, its ability to be implemented, and the extent to which it would mitigate one or multiple relevant hazards.

## Prioritization of Measures

The list was prioritized based on the ongoing work and projects within the port. Mitigation measures are supported and implemented by multiple departments within the port and their implementation is largely based on funding opportunities and constraints, opportunities that arise with the development of new facilities or repairs to existing ones, and operational and organizational adjustments based on leadership priorities and recent events.

**Table 5-1 Port of Tacoma Mitigation Strategy Matrix**

| Implementation Mechanism | Mitigation Measure *(Hazard(s))*[1] | Lead Jurisdiction(s) / Department(s) | Timeline (years) | Plan Goals | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Life and Property | Operations Continuity | Partnerships | Natural Resources | Preparedness | Sustainable Economy |
| **Startup** | 1. Existing Mitigation Actions *(E,L,T,V,D,F,SW,WUI,MM)* | Port of Tacoma | Ongoing | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | 2. Plan Maintenance *(E,L,T,V,D,F,SW,WUI,MM)* | Port of Tacoma | Ongoing | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **HMF** | 1. Pierce County Hazard Mitigation Forum *(E,L,T,V,D,F,SW,WUI,MM)* | PC DEM; Port of Tacoma | Ongoing | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **Port Management** | 1. Capability Identification and Evaluation *(E,L,T,V,D,F,SW,WUI,MM)* | Port of Tacoma | Ongoing | N/A | | | | | |
| | 2. Engineer Future Infrastructure with Auxiliary Power Capability *(E,L,T,V,D,F,SW,WUI,MM)* | Port of Tacoma | Ongoing | ✓ | ✓ | ✓ | | | ✓ |
| | 3. Install Seismic Shutoff Valves to Gas Utility Lines Serving Port Facilities *(E,T,SW,MM)* | Port of Tacoma | Ongoing | ✓ | ✓ | ✓ | | | ✓ |
| | 4. Install Automatic Fire Sprinklers in New Port Buildings *(E,T,V,F,SW,MM)* | Port of Tacoma | Ongoing | ✓ | ✓ | ✓ | | | ✓ |
| | 5. Using Modular Buildings to Ease Replacement and Lower Construction Costs *(E,L,T,V,D,F,SW,WUI,MM)* | Port of Tacoma | Ongoing | ✓ | ✓ | ✓ | | | ✓ |
| | 6. Strengthen and Create Redundancy in Utilities Serving the Port of Tacoma *(E,L,T,V,D,F,SW,WUI,MM)* | Port of Tacoma | Ongoing | ✓ | ✓ | ✓ | | | ✓ |
| | 7. Support Rail Grade Separation Projects *(E,T,V,F,SW,MM)* | Port of Tacoma | Ongoing | ✓ | ✓ | ✓ | | | ✓ |
| | 8. Collaborate with Regional Partners on Mitigation Strategies for the Lower Puyallup River *(E,T,V,F,SW,MM)* | Port of Tacoma with Regional Partners | Ongoing | ✓ | ✓ | ✓ | | | ✓ |
| | 9. Develop and Maintain a Port Business Continuity Plan *(E,L,T,V,D,F,SW,WUI,MM)* | Port of Tacoma | Partially Complete | ✓ | ✓ | ✓ | | ✓ | ✓ |
| | 10. Create and Maintain Emergency "Go Kits" *(E,L,T,V,D,F,SW,WUI,MM)* | Port of Tacoma | Ongoing | ✓ | ✓ | ✓ | | ✓ | ✓ |
| | 11. Enroll Senior Management in the Government Emergency Telecommunication Service and Enroll all Staff Phones in a Wireless Broadband Capabilities Program *(E,L,T,V,D,F,SW,WUI,MM)* | Port of Tacoma | Ongoing | ✓ | ✓ | ✓ | | ✓ | ✓ |
| | 12. Develop Emergency Notification and Evacuation Procedures *(E,L,T,V,F,SW,WUI,MM)* | Port of Tacoma with Regional Partners | Ongoing | ✓ | ✓ | ✓ | | ✓ | ✓ |

| Implementation Mechanism | Mitigation Measure *(Hazard(s))*[1] | Lead Jurisdiction(s) / Department(s) | Timeline (years) | Plan Goals | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Life and Property | Operations Continuity | Partnerships | Natural Resources | Preparedness | Sustainable Economy |
| | 13. Cybersecurity Assessment and Mitigation *(E,L,T,V,F,SW,WUI,MM)* | Port of Tacoma | Ongoing | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | 14. Enhanced Use of Geographic Information System (GIS) *(E,L,T,V,F,SW,WUI,MM)* | Port of Tacoma with Regional Partners | Ongoing | | | ✓ | | ✓ | ✓ |
| | 15. Develop Coverage Areas for Reverse 911 System *(E,L,T,V,D,F,SW,WUI,MM)* | Port of Tacoma and PCDEM | Ongoing | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | 16. Update Terminal Snow Removal Plans *(F,SW)* | Port of Tacoma | Ongoing | ✓ | ✓ | ✓ | | | ✓ |
| | 17. Equip Port Vehicles with Radios (E,L,T,V,F,SW,WUI,MM) | Port of Tacoma | Ongoing | ✓ | ✓ | ✓ | | | ✓ |
| | 18. Create Remote Access Capability for Security Cameras *(E,L,T,V,F,SW,WUI,MM)* | Port of Tacoma | Partially Complete | ✓ | ✓ | ✓ | | | ✓ |
| | 19. Continued Support of Emergency Warning System *(All)* | Port of Tacoma | Ongoing | ✓ | ✓ | ✓ | | ✓ | ✓ |
| | 20. Stone Column Installation in New Pier Construction *(E)* | Port of Tacoma | Ongoing | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | 21. Planning for Potential Sea-Level Rise *(T, F, SW)* | Port of Tacoma | Ongoing | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **Public Education** | 1. Continue Hazard Related Training for Port Officials and Employees *(E,L,T,V,F,SW,WUI,MM)* | Port of Tacoma | Ongoing | ✓ | ✓ | ✓ | | ✓ | ✓ |
| | 2. Train Port Engineers in Post-Earthquake Building Assessment (ATC-20) Class *(E,SW,MM)* | Port of Tacoma with Regional Partners | Ongoing | ✓ | ✓ | ✓ | | ✓ | ✓ |
| | 3. Hazard Related Education and Training for Port Terminal Businesses *(E,L,T,V,D,F,SW,WUI,MM)* | Port of Tacoma with Regional Partners | Ongoing | ✓ | ✓ | ✓ | | ✓ | ✓ |

# Startup Mitigation Measures

## Existing Mitigation Actions

**Hazards:** E, L, T, V, D, F, SW, WUI[1], MM[2]

Port of Tacoma will integrate the hazard mitigation plan into existing plans, ordinances, and programs to dictate land uses within the jurisdiction. Further, Port of Tacoma will continue to implement existing programs, policies, and regulations as identified in the Capability Identification Section of this Plan. This includes continuing those programs that are identified as technical and fiscal capabilities.

1. **Goal(s) Addressed** = Protect Life and Property; Promote A Sustainable Economy; Ensure Continuity of Operations; Increase Public Preparedness for Disasters; Preserve or Restore Natural Resources; Establish and Strengthen Partnerships for Implementation.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be accomplished with local budgets or grants.
4. **Lead Jurisdiction(s) =** Port of Tacoma
5. **Timeline =** Ongoing
6. **Benefit** = Port-Wide
7. **Life of Measure** = Perpetual
8. **Community Reaction** = the proposal is likely to be endorsed by the entire community.

### *Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | ✓ | | |
| **Comments** | | | |
| | | | |

### *Origin*

| Previous Plan | Current Plan |
|---|---|
| ✓ | |

## Plan Maintenance

**Hazards:** E, L, T, V, D, F, SW, WUI[1], MM[2]

Port of Tacoma will adopt those processes outlined in the Plan Maintenance Section of this Plan.

1. **Goal(s) Addressed** = Protect Life and Property; Promote A Sustainable Economy; Ensure Continuity of Operations; Increase Public Preparedness for Disasters; Preserve or Restore Natural Resources; Establish and Strengthen Partnerships for Implementation.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget.
4. **Lead Jurisdiction(s) =** Port of Tacoma
5. **Timeline =** Ongoing
6. **Benefit** = Port-Wide
7. **Life of Measure** = Perpetual
8. **Community Reaction** = the proposal is likely to be endorsed by the entire community.

## *Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | ✓ | | |
| **Comments** | | | |
| | | | |

## *Origin*

| Previous Plan | Current Plan |
|---|---|
| ✓ | |

# Hazard Mitigation Forum

## Pierce County Hazard Mitigation Forum

**Hazards:** E, L, T, V, D, F, SW, WUI[1], MM[2]

Port of Tacoma will work in conjunction with the County through the Pierce County Hazard Mitigation Forum (HMF). The Forum will continue as a means of coordinating mitigation planning efforts among all jurisdictions within the County that have completed a mitigation plan. This ensures efficient use of resources and a more cooperative approach to making a disaster resistant county. The HMF meets annually. This is addressed in the Plan Maintenance Section of this Plan.

1. **Goal(s) Addressed** = Protect Life and Property; Promote A Sustainable Economy; Ensure Continuity of Operations; Increase Public Preparedness for Disasters; Preserve or Restore Natural Resources; Establish and Strengthen Partnerships for Implementation.
2. **Cost of Measure** = Minor
3. **Funding Source and Situation** = Funding could be obtained through local budget.
4. **Lead Jurisdiction(s) =** PC DEM; Port of Tacoma
5. **Timeline =** Ongoing
6. **Benefit** = Regional
7. **Life of Measure** = Perpetual
8. **Community Reaction** = the proposal is likely to be endorsed by the entire community.

### *Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | ✓ | | |
| **Comments** | | | |
| | | | |

### *Origin*

| Previous Plan | Current Plan |
|---|---|
| ✓ | |

# Port Management Measures

## Capability Identification and Evaluation

**Hazards:** E, L, T, V, D, F, SW, WUI[1], MM[2]

Port of Tacoma will develop a consistent and replicable system for evaluating the Port's capabilities. A comprehensive evaluation will lead to specific policy recommendations to more effectively achieve disaster resistant communities. Further, a capability evaluation involves measurable variables so that capabilities may eventually be tracked in conjunction with the implementation of all mitigation measures. This is a key component in evaluating the success of the Port's overall mitigation strategy.

1. **Goal(s) Addressed** = N/A. Goals addressed are contingent upon the mitigation measures resulting from this priority.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s) =** Port of Tacoma
5. **Timeline =** Short-term
6. **Benefit** = Port-Wide
7. **Life of Measure** = Perpetual
8. **Community Reaction** = the proposal is likely to be endorsed by the entire community.

### *Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | ✓ | | |
| **Comments** | | | |
| | | | |

### *Origin*

| Previous Plan | Current Plan |
|---|---|
| ✓ | |

## Engineer Future Infrastructure with Auxiliary Power Capability

**Hazards:** E, L, T, V, D, F, SW, WUI[1], MM[2]

The measure will involve engineering future infrastructure with auxiliary power capability allowing for temporary power to easily connect. The Port of Tacoma will be continue to find infrastructure solutions that help reduce emissions while also ensuring

that the port can maintain operations, even in times of power interruption. This work will be further assessed in an upcoming planning effort, the Port of Tacoma Electrification Roadmap.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Establish and Strengthen Partnerships for Implementation; Promote a Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s) =** Port of Tacoma
5. **Timeline =** Long-term
6. **Benefit** = Port of Tacoma, Regional Partners (Terminal Operators)
7. **Life of Measure** = 50 years
8. **Community Reaction** = the proposal is likely to be endorsed by the entire community.

*Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | ✓ | | |
| **Comments** | | | |
| Not suitable for gantry crane operations | | | |

*Origin*

| Previous Plan | Current Plan |
|---|---|
| ✓ | |

## Install Seismic Shutoff Valves to Gas Utility Lines Serving Port Facilities

**Hazards:** E, T, SW[1], MM[2]

The measure will involve adding seismic shutoff valves to gas utility lines serving the Port of Tacoma facilities.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Establish and Strengthen Partnerships for Implementation; Promote a Sustainable Economy.
2. **Cost of Measure** = Approximately $1,500 per building
3. **Funding Source and Situation** = Funding could be obtained through local budget and grants.
4. **Lead Jurisdiction(s) =** Port of Tacoma with regional partners
5. **Timeline =** On-going
6. **Benefit** = Port of Tacoma, Regional Partners (Terminal Operators)
7. **Life of Measure** = 50 years
8. **Community Reaction** = the proposal is likely to be endorsed by the entire community.

*Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | ✓ | | |
| **Comments** | | | |
| There is limited use of natural gas at Port Facilities. | | | |

*Origin*

| Previous Plan | Current Plan |
|---|---|
| ✓ | |

## Install Automatic Fire Sprinklers in New Port Buildings

**Hazards:** E, T, V, F, SW[1], MM[2]

The measure will involve adding automatic fire sprinklers, beyond minimal code compliance, to new Port Buildings as they are constructed.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Establish and Strengthen Partnerships for Implementation; Promote a Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s) =** Port of Tacoma
5. **Timeline =** Long-term
6. **Benefit** = Port of Tacoma and Regional Partners (Terminal Operators)
7. **Life of Measure** = 50 years
8. **Community Reaction** = the proposal is likely to be endorsed by the entire community.

*Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | ✓ | | |
| **Comments** | | | |
| Not included in mobile structures. | | | |

*Origin*

| Previous Plan | Current Plan |
|---|---|
| ✓ | |

## Using Modular Buildings to Ease Replacement and Lower Construction Costs

**Hazards:** E, L, T, V, D, F, SW, WUI[1], MM[2]

The measure will involve maximizing infrastructure life expectancy and terminal space through the use of modular buildings. Using modular buildings eases replacement and lowers construction costs.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Establish and Strengthen Partnerships for Implementation; Promote A Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budgets or grants.
4. **Lead Jurisdiction(s) =** Port of Tacoma
5. **Timeline =** Long-Term
6. **Benefit** = Port of Tacoma and Regional partners (Terminal operators)
7. **Life of Measure** = Varies
8. **Community Reaction** = the proposal is likely to be endorsed by the entire community.

### *Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | ✓ | | |
| **Comments** | | | |
| Implemented where functionally suitable. | | | |

### *Origin*

| Previous Plan | Current Plan |
|---|---|
| ✓ | |

## Strengthen and Create Redundancy in Utilities Serving the Port of Tacoma

**Hazards:** E, L, T, V, D, F, SW, WUI[1], MM[2]

The measure will involve identifying the regional partners that provide utilities to Port, identifying the specific utility infrastructure that the Port relies upon, identifying the hazard vulnerability in that infrastructure, and developing strategies to strengthen and create redundancies in these infrastructures. This will involve working with regional partners (City of Tacoma, City of Fife, etc.).

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Establish and Strengthen Partnerships for Implementation; Promote A Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget and grants.
4. **Lead Jurisdiction(s) =** Port of Tacoma
5. **Timeline =** Long-term
6. **Benefit** = Port of Tacoma and Regional partners (Terminal Operators)

7. **Life of Measure** = Varies
8. **Community Reaction** = the proposal is likely to be endorsed by the entire community.

*Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | ✓ | | |
| **Comments** | | | |
| Full implementation will require extensive time and capital expense. | | | |

*Origin*

| Previous Plan | Current Plan |
|---|---|
| ✓ | |

---

## Support Rail Grade Separation Projects

**Hazards:** E, T, V, F, SW[1], MM[2]

The measure will involve supporting rail grade separation projects. These rail projects improve efficiency at points where freight is transferred between transportation modes such as ports and rail yards. Eliminating at grade roadways crossing rail lines with a grade separation mitigates rail and road congestion benefiting routine as well as emergency traffic and reduces the chances of collisions between rail and other modal users.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Establish and Strengthen Partnerships for Implementation; Promote A Sustainable Economy.
2. **Cost of Measure** = TBD, depends on individual grade separation project
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s) =** Port of Tacoma with Regional Partners
5. **Timeline =** Long-term
6. **Benefit** = Port of Tacoma and Regional Partners (Terminal operators)
7. **Life of Measure** = Varies
8. **Community Reaction** = the proposal is likely to be endorsed by the entire community.

*Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | ✓ | | |
| **Comments** | | | |
| Lincoln Avenue Grade Separation completed. Additional projects may be identified in the NWSA Gatetway Infrastructure Plan and Tideflats Subarea Plan. | | | |

*Origin*

| Previous Plan | Current Plan |
|---|---|
| ✓ | |

## Collaborate with Regional Partners on Mitigation Strategies for the Lower Puyallup River

**Hazards:** E, T, V, F, SW[1], MM[2]

The measure will involve working with Regional Partners (Cities, County, Tribe, Local District, Army Corps, etc.) on mitigation strategies for the Lower Puyallup River. In 2005, County-wide flood hazard maps were updated and reproduced. Studies have shown the lower Puyallup River Levee System is in need of replacement or rehabilitation in order to provide flood protection from a 100-year flood. Strategies could include: raising levees, creating setback levees, acquisition of property, public education, and response procedures.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Establish and Strengthen Partnerships for Implementation; Promote A Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s) =** Port of Tacoma with Regional Partners
5. **Timeline =** Long-term
6. **Benefit** = Port of Tacoma and Regional partners (Terminal Operators)
7. **Life of Measure** = Varies
8. **Community Reaction** = the proposal would be somewhat controversial.

### *Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | ✓ | | |
| **Comments** | | | |
| | | | |

### *Origin*

| Previous Plan | Current Plan |
|---|---|
| ✓ | |

## Update the Existing Port Business Continuity Plan (BCP)

**Hazards:** E, L, T, V, D, F, SW, WUI[1], MM[2]

The measure will involve updating the 2014 Business Continuity Plan (BCP) for the Port. This plan will provide guidance for the rapid recovery of critical operations and continuity of government in the event of a disaster. The BCP update will be carried out in partnership with the Port of Tacoma Safety Committee.

1. **Goal(s) Addressed** = Protect life and property; Ensure continuity of operations; Establish and strengthen partnerships for implementation; Increase Public Preparedness for Disasters; Promote a Sustainable Economy.
2. **Cost of Measure** = Staff time and materials
3. **Funding Source and Situation** = Funding could be obtained through local budget.
4. **Lead Jurisdiction(s) =** Port of Tacoma
5. **Timeline =** Long-term; update is anticipated by end of CY 2020
6. **Benefit** = Port of Tacoma and Regional Partners
7. **Life of Measure** = Perpetual
8. **Community Reaction** = Likely to be endorsed by the entire community.

### *Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | ✓ | | |
| **Comments** | | | |
| On schedule to complete BCP Update by end of CY 2020. | | | |

### *Origin*

| Previous Plan | Current Plan |
|---|---|
| ✓ | |

---

## Create and Maintain Emergency "Go Kits"

**Hazards:** E, L, T, V, D, F, SW, WUI[1], MM[2]

The measure will involve ensuring that Go Kits are created and maintained. Two types of Go Kits will be provided including one for all staff that includes emergency supplies for three days and special Go Kits for essential Port personnel for times of emergency or disaster. The second type of Go Kit provides the basis for Port personnel to continue operations. Items that may be included for supporting essential services include but are not limited to: laptops, radios, emergency manual, SOPs, vital records and forms. This measure once completed will become a component of the Port Business Continuity Plan.

1. **Goal(s) Addressed** = Protect life and property; Ensure Continuity of Operations, Establish and Strengthen Partnerships for Implementation; Increase Public Preparedness for Disasters; Promote a Sustainable Economy.
2. **Cost of Measure** = Varies for Essential Port Personnel Go Kits; $33 for each Staff Go Kit
3. **Funding Source and Situation** = Funding could be obtained through local budget.
4. **Lead Jurisdiction(s) =** Port of Tacoma

5. **Timeline** = Long-term
6. **Benefit** = Port of Tacoma and Regional Partners
7. **Life of Measure** = Varies
8. **Community Reaction** = the proposal is likely to be endorsed by the entire community.

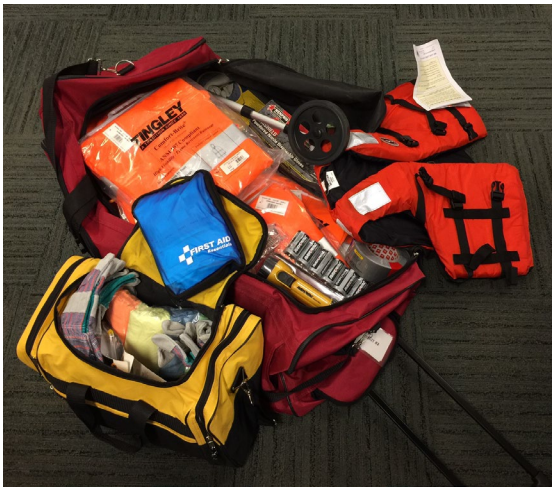
*Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| ✓ | ✓ | | |
| **Comments** | | | |
| All port staff have received their individual Go Kits; Essential Port Personnel Go Kits will be updated as part of the BCP Update. | | | |

*Origin*

| Previous Plan | Current Plan |
|---|---|
| ✓ | |

**Sample "Go Kit" for Essential Port Personnel**




## Enroll Senior Management in the Government Emergency Telecommunications Service (GETS) Program and Enroll all Staff Phones in a Wireless Broadband Capabilities Program

**Hazards:** E, L, T, V, D, F, SW, WUI[1], MM[2]

The measure will involve using the federal government's telecommunication service that provides emergency access to local and long-distance telephone networks increasing the probability of completing emergency calls when normal calling methods fail. This measure once completed will become a component of the Port Business Continuity Plan.

Furthermore, expand emergency communications to port staff through involvement with a wireless broadband capabilities program.

1. **Goal(s) Addressed** = Protect life and property; Ensure Continuity of Operations, Establish and Strengthen Partnerships for Implementation; Increase Public Preparedness for Disasters; Promote a Sustainable Economy.
2. **Cost of Measure** = Varies
3. **Funding Source and Situation** = Funding could be obtained through local budget.
4. **Lead Jurisdiction(s) =** Port of Tacoma
5. **Timeline =** Long-term
6. **Benefit** = Port of Tacoma and Regional Partners
7. **Life of Measure** = Varies
8. **Community Reaction** = the proposal would be endorsed by the entire community.

### *Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | ✓ | | |
| **Comments** | | | |
| Senior Management are enrolled in GETS. All Port of Tacoma phones have been enrolled in the FirstNet wireless broadband service as of 2019. | | | |

### *Origin*

| Previous Plan | Current Plan |
|---|---|
| ✓ | |

## Develop Emergency Notification and Evacuation Procedures

**Hazards:** E, L, T, V, F, SW, WUI[1], MM[2]

The measure will involve developing emergency notification and evacuation procedures. The objective is an integrated Port-wide system to provide notice of an emergency and information on evacuation via a variety of means such as radio, phone, sirens and email. Because certain hazards will not allow for a timely evacuation, the Port of Tacoma shall also look at increasing safety of its structures in the Tideflats for both the initial hazard and sheltering in place if needed. Such examples include seismic retrofits of buildings and the future provision of elevated structures in the event of a tsunami, such as vertical evacuation structures.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations, Establish and Strengthen Partnerships for Implementation; Increase Public Preparedness for Disasters; Promote a Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budgets or grants.

4. **Lead Jurisdiction(s) =** Port of Tacoma and Regional Partners including WSDOT and Cities of Tacoma and Fife
5. **Timeline =** Short-term
6. **Benefit** = Port of Tacoma and Regional Partners
7. **Life of Measure** = Perpetual
8. **Community Reaction** = the proposal is likely to be endorsed by entire community.

### *Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | | ✓ | |
| **Comments** | | | |
| The Port of Tacoma will be updating its All Hazards Emergency Response Procedures including evacuation planning. | | | |

### *Origin*

| Previous Plan | Current Plan |
|---|---|
| ✓ | |

## Cybersecurity Assessment and Mitigation

**Hazards:** E, L, T, V, D, F, SW, WUI[1], MM[2]

Implement a host of strategies to secure and protect the Port's networks. These strategies include, but are not limited to, the implementation of enterprise class firewall and intrusion detection devices and best practices, co-located the data center to a secure commercial data center that is sited off the Tacoma Tideflats, installation of redundant connectivity, and contract for provide host-based detection services. In 2016, the Port of Tacoma procured the services of a third-party firm to conduct a Cybersecurity Assessment intended to identify vulnerabilities in its information technology infrastructure, systems, policies and practices, and develop a prioritized set of actions to mitigate the risks identified. This assessment resulted in a roadmap that serves as an ongoing work plan for the Port's cybersecurity initiatives. The Port intends to conduct such assessments on a regular basis.

1. **Goal(s) Addressed** = Protect life and property; Ensure Continuity of Operations, Establish and Strengthen Partnerships for Implementation; Increase Public Preparedness for Disasters; Promote a Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget.
4. **Lead Jurisdiction(s) =** Port of Tacoma
5. **Timeline =** Long-term
6. **Benefit** = Port of Tacoma and Regional Partners
7. **Life of Measure** = Varies
8. **Community Reaction** = the proposal would be endorsed by the entire community.

*Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | ✓ | | |
| **Comments** | | | |
| | | | |

*Origin*

| Previous Plan | Current Plan |
|---|---|
| | ✓ |

## Enhanced Use of Geographic Information System (GIS)

**Hazards:** E, L, T, V, D, F, SW, WUI[1], MM[2]

This prospective Mitigation Action consists of two components.

1) Work towards integrating existing Statement of Values with existing GIS data to provide improved correlation of values at-risk by hazard type.
2) Explore implementation of HAZUS to provide detailed event-based scenario modeling so as to help direct future mitigation efforts.

1. **Goal(s) Addressed** = Protect life and property; Ensure Continuity of Operations, Establish and Strengthen Partnerships for Implementation; Increase Public Preparedness for Disasters; Promote a Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget.
4. **Lead Jurisdiction(s) =** Port of Tacoma
5. **Timeline =** Long-term
6. **Benefit** = Port of Tacoma and Regional Partners
7. **Life of Measure** = Varies
8. **Community Reaction** = the proposal would be endorsed by the entire community.

The following section confirms the status of the Mitigation Action (above) and identifies whether it was listed in the original Plan document approved in November 2008 (i.e., Previous Plan) or is a more recent addition (i.e., Current Plan).

*Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | ✓ | | |
| **Comments** | | | |
| Hazards will be shared in GIS format on the Port of Tacoma/NWSA GeoHub to raise natural hazard awareness to all staff. | | | |

*Origin*

| Previous Plan | Current Plan |
|---|---|
| | ✓ |

## Develop Coverage Areas for Reverse 911 System

**Hazards:** E, L, T, V, D, F, SW, WUI[1], MM[2]

The measure will involve developing geographic information system coverage areas in the County's Reverse 911 System for the Port. The impacted jurisdiction defines a geographic area and system then calls all land phones in that area alerting them to the given hazard. This system can be used without pre-drawn coverage areas, but by pre-identifying the service areas within the Port the message can be send out more efficiently. The system has proved invaluable in recent floods and windstorms, both declared Federal Disasters, in the County.

1. **Goal(s) Addressed** = Protect life and property; Ensure Continuity of Operations; Establish and Strengthen Partnerships for Implementation; Preserve or Restore Natural Resources; Increase Public Preparedness for Disasters; Promote a Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget.
4. **Lead Jurisdiction(s) =** Port of Tacoma with PCDEM
5. **Timeline =** Ongoing
6. **Benefit** = Port of Tacoma and Regional Partners
7. **Life of Measure** = Varies
8. **Community Reaction** = the proposal would be endorsed by the entire community.

*Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | | ✓ | |
| **Comments** | | | |
| | | | |

*Origin*

| Previous Plan | Current Plan |
|---|---|
| ✓ | |

## Update Terminal Snow Removal Plans

**Hazards:** F**,** SW[1]

The measure will involve updating the Port's terminal snow removal plans to minimize the interruption of inclement weather.

1. **Goal(s) Addressed** = Protect life and property; Ensure continuity of operations, Establish and Strengthen Partnerships for Implementation; Promote a Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget.
4. **Lead Jurisdiction(s) =** Port of Tacoma with Terminal Operators
5. **Timeline =** Long-Term
6. **Benefit** = Port of Tacoma and Regional Partners
7. **Life of Measure** = Varies
8. **Community Reaction** = the proposal is likely to be endorsed by the entire community.

## *Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | ✓ | | |
| **Comments** | | | |
| Response plans updated each Fall. The Snow Removal Plans will be included as part of the Port Business Continuity Plan. | | | |

## *Origin*

| Previous Plan | Current Plan |
|---|---|
| ✓ | |

## Equip Port Vehicles with Radios

**Hazards:** E, L, T, V, F, SW, WUI[1], MM[2]

The measure will involve equipping new Port Vehicles with radios. This measure will enhance the Port's capabilities to communicate during times of emergency or disaster.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Establish and Strengthen Partnerships for Implementation; Promote a Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget.
4. **Lead Jurisdiction(s) =** Port of Tacoma
5. **Timeline =** Long-Term
6. **Benefit** = Port of Tacoma with Regional partners (terminal operators)
7. **Life of Measure** = Varies
8. **Community Reaction** = the proposal is likely to be endorsed by the entire community.

### *Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | ✓ | | |
| **Comments** | | | |
| Operations, Facilities and Equipment Maintenance vehicles only. | | | |

### *Origin*

| Previous Plan | Current Plan |
|---|---|
| ✓ | |

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## Create Remote Access Capability for Security Cameras

**Hazards:** E, L, T, V, F, SW, WUI[1], MM[2]

The measure will involve creating the ability to direct and view Port security cameras from locations other than the Security Center such as Port vehicles and alternate work locations.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Establish and Strengthen Partnerships for Implementation; Promote a Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget.
4. **Lead Jurisdiction(s) =** Port of Tacoma
5. **Timeline =** Long-term
6. **Benefit** = Port of Tacoma and Regional partners (terminal operators)
7. **Life of Measure** = Varies
8. **Community Reaction** = the proposal is likely to be endorsed by the entire community.

*Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | ✓ | | |
| **Comments** | | | |
| | | | |

*Origin*

| Previous Plan | Current Plan |
|---|---|
| ✓ | |

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## Continued Support of Emergency Warning Systems

**Hazards:** All

The measure will involve ongoing deployment of the Port Emergency Warning System (PEWS). The PEWS sirens are located in various locations across the Port of Tacoma, providing emergency notification to most of the Tacoma Tideflats. They are activated for but not limited to the following situations: hazardous materials emergencies, general emergencies, flooding, lahars, and tsunamis. The Port shall continue to support the County's Lahar Warning System. The lahar warning system notifies the Region when there is impending lahar emanating from the flanks of Mt. Rainier. The system is vital to the welfare of all citizens living and working in the valley and Tideflats area.

1. **Goal(s) Addressed** = Protect life and property; Ensure continuity of operations; Establish and strengthen partnerships for implementation; Increase Public Preparedness for Disasters; Promote a Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget.
4. **Lead Jurisdiction(s) =** Port of Tacoma
5. **Timeline =** Ongoing
6. **Benefit** = Port of Tacoma and Regional Partners
7. **Life of Measure** = Varies
8. **Community Reaction =** the proposal is likely to be endorsed by the entire community.

The following section confirms the status of the Mitigation Action (above) and identifies whether it was listed in the original Plan document approved in November 2008 (i.e., Previous Plan) or is a more recent addition (i.e., Current Plan).

*Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | ✓ | | |
| **Comments** | | | |
| Tideflats installation of PEWS (Port Emergency Warning System). The Port continues to | | | |

| |
|---|
| test the PEWS System and include it as part of its ongoing education efforts. |

*Origin*

| Previous Plan | Current Plan |
|---|---|
| ✓ | |

## Stone Column Installation in New Pier Construction

**Hazards:** E

The measure involves installation of 'Stone Columns' along new bulkheads (where applicable) to provide for improved soil densification. 'Stone Columns' help prevent soil liquefaction during an earthquake and lessens the amount of ground movement were the pier meets the land helping to avoid slope failure. As an example, the Port installed~1350 columns (~69,000 LF) at its Pier 4 reconstruction project (completed in 2018). These columns are 3.5' in diameter and extend to a depth of elevation -50 feet (*see sample drawing and photos below*)

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Establish and Strengthen Partnerships for Implementation; Promote A Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s) =** Port of Tacoma with Regional Partners
5. **Timeline =** Long-term
6. **Benefit** = Port of Tacoma and Regional Partners (Terminal operators)
7. **Life of Measure** = Varies
8. **Community Reaction** = the proposal is likely to be endorsed by the entire community.

The following section confirms the status of the Mitigation Action (above) and identifies whether it was listed in the original Plan document approved in November 2008 (i.e., Previous Plan) or is a more recent addition (i.e., Current Plan).

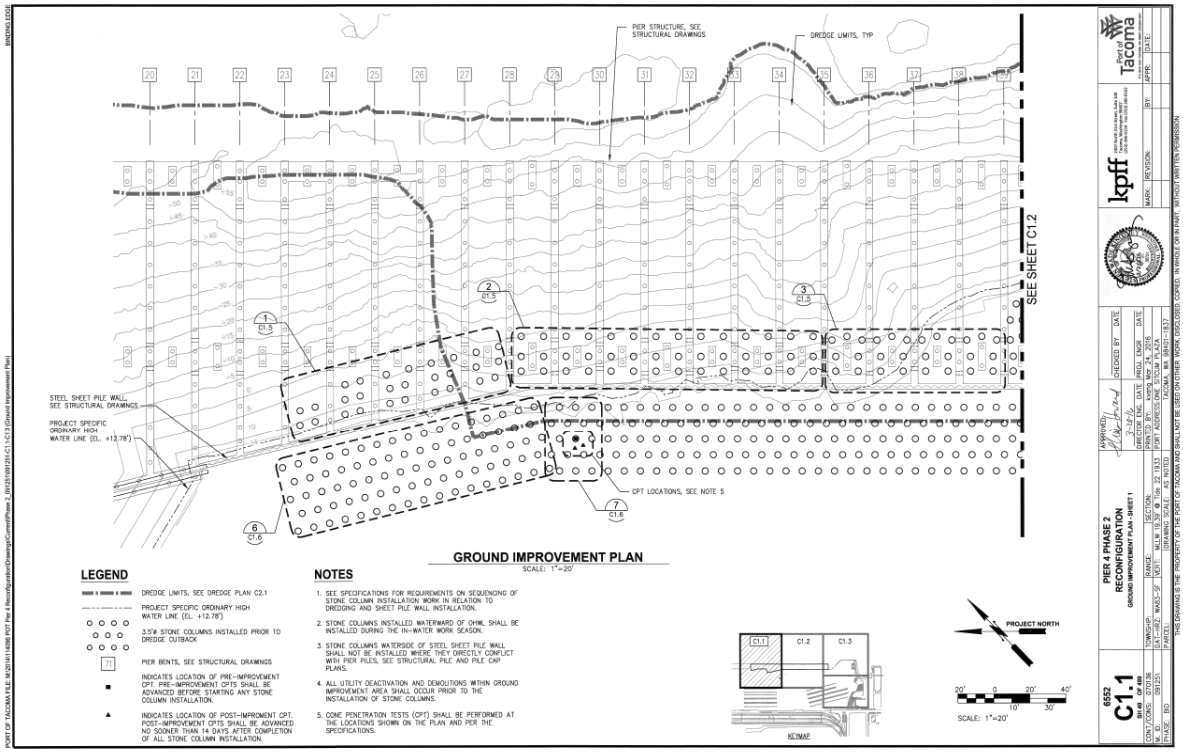
*Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | ✓ | | |
| **Comments** | | | |
| Installed at East Blair One (EB-1) and used in Pier 4 reconfiguration project. | | | |

*Origin*

| Previous Plan | Current Plan |
|---|---|
| | ✓ |

## Sample Ground Improvement Plan




## Pier 4 Reconstruction including 'Stone Column' installation

**Example of 'Stone Column" installation**


## Planning for Potential Sea-Level Rise

**Hazards:** T, F, SW

Evaluate, and if necessary, modify design of future pier structures and related infrastructure (including, but not limited to, rail, rail yards and storm water conveyance systems) in consideration of climate change and the potential for future sea-level rise. The upcoming NWSA Gateway Infrastructure Plan will look at climate change, including sea-level rise, and help establish guidelines for new facility development with respects to sea-level rise.

1. **Goal(s) Addressed** = Protect life and property; Ensure Continuity of Operations, Establish and Strengthen Partnerships for Implementation; Increase Public Preparedness for Disasters; Promote a Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through grants and local budget.
4. **Lead Jurisdiction(s) =** Port of Tacoma
5. **Timeline =** Long-term
6. **Benefit** = Port of Tacoma; Tideflats and supply chain partners
7. **Life of Measure** = Varies
8. **Community Reaction** = the proposal would be endorsed by the entire community.

*Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | ✓ | | |
| **Comments** | | | |
| | | | |

*Origin*

| Previous Plan | Current Plan |
|---|---|
| | ✓ |

# Public Education

## Continue Hazard Related Training for Port Officials & Employees

**Hazards:** E, L, T, V, F, SW, WUI[1], MM[2]

The measure will involve continuing the Hazard Related Disaster Preparedness Training for Port officials and employees. This will build on such classes that involve: Preparedness at Work, Home and on the Road, NIMS Training and Hazard Awareness Training. Preparation will help ensure Port operations and provide a faster response and recovery when hazards do threaten the Port.

1. **Goal(s) Addressed** = Protect life and property; Ensure continuity of operations; Establish and strengthen partnerships for implementation; Increase Public Preparedness for Disasters; Promote a Sustainable Economy
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s) =**Port of Tacoma
5. **Timeline =** Short-term
6. **Benefit** = Port of Tacoma and Regional Partners
7. **Life of Measure** = Varies
8. **Community Reaction** = the proposal is likely to be endorsed by the entire community.

### *Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | ✓ | | |
| **Comments** | | | |
| New employees are briefed on hazards during their new employee orientation. There is ongoing hazard education for port employees through classes such as NIMS (taught in Fall 2019) and public education opportunities such as WA Shakeout or the Tsunami Roadshow. | | | |

### *Origin*

| Previous Plan | Current Plan |
|---|---|
| ✓ | |

## Train Port Engineers in Post-Earthquake Building Assessment (ATC-20) Class

**Hazards:** E, SW[1], MM[2]

The measure will involve the Port engineers taking the ATC-20 Class. This class will provide them with the skills and knowledge to assess damage to buildings after an earthquake. By ensuring this capability at the Port, response and recovery in the aftermath of a seismic event will be faster and more efficient.

1. **Goal(s) Addressed** = Protect life and property; Ensure continuity of operations; Establish and strengthen partnerships for implementation; Increase Public Preparedness for Disasters; Promote a Sustainable Economy.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget.
4. **Lead Jurisdiction(s) =** Port of Tacoma
5. **Timeline =** Long-term
6. **Benefit** = Port of Tacoma and Regional Partners
7. **Life of Measure** = Varies
8. **Community Reaction** = the proposal would be endorsed by the entire community.

### *Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | ✓ | | |
| **Comments** | | | |
| | | | |

### *Origin*

| Previous Plan | Current Plan |
|---|---|
| ✓ | |

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## Hazard Related Education and Training for Port Terminal Businesses

**Hazards:** E, L, T, V, D, F, SW, WUI[1], MM[2]

The measure will involve conducting hazard related education and training for Port Terminal Businesses. The Port businesses play a vital role in the future of the Port. By partnering with other regional governmental partners (Fire District, Cities, County, etc.) the businesses will be provided an awareness level introduction to the hazards in the area building a level of sustainability into Port along with provide a mechanism for leveraging resources before and after an emergency or disaster.

The Port will consider future opportunities to increase hazard awareness and improve safety in the Tideflats by engaging in partnership programs such as the National Weather Service TsunamiReady and StormReady community programs.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Establish and Strengthen Partnerships for Implementation; Increase Public Preparedness for Disasters.
2. **Cost of Measure** = TBD

3. **Funding Source and Situation** = Funding could be obtained through local budgets.
4. **Lead Jurisdiction(s) =** Port of Tacoma and Regional Partners
5. **Timeline =** Long-term
6. **Benefit** = Port of Tacoma businesses and Regional partners
7. **Life of Measure** = Varies
8. **Community Reaction** = the proposal is likely to be endorsed by the entire community.

## *Status Update: 2020 – 2025 Edition*

| Complete | Ongoing | Partially Complete | Deferred |
|---|---|---|---|
| | ✓ | | |
| **Comments** | | | |
| Evaluating opportunities for tenant participation in hazard exercises and educational events Hazard communications may be shared with special groups including labor, employers, and facility security officers. | | | |

## *Origin*

| Previous Plan | Current Plan |
|---|---|
| ✓ | |

# Endnotes

[1] Hazard Codes:
Where necessary, the specific hazards addressed are noted as follows:

| | |
|---|---|
| **A:** | Avalanche |
| **E:** | Earthquake |
| **F:** | Flood |
| **D:** | Drought |
| **T:** | Tsunami |
| **V (L OR T):** | Volcanic (lahar or tephra-specific) |
| **SW:** | Severe Storm (wind-specific) |
| **L:** | Landslide |
| **WUI:** | Wildland/Urban Interface Fire |
| **MM:** | Manmade to include terrorism |
| **ALL:** | All hazards, including some man made. Where only natural hazards are addressed, it is noted. |

[2] While the original Plan was strictly a *Natural* hazard mitigation plan, where a measure stemmed from a facility recommendation (Infrastructure Section) that dealt specifically with potential acts of terrorism, the mitigation strategy has, and will continue to, utilize the associated analysis. The current plan is now *All* Hazards. It is not the intent of this notation to imply that all measures were analyzed with regards to human-made hazards. Rather, the notation merely illustrates the potential on this template for the inclusion of human-made hazard analysis.

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# SECTION 6

# REGION 5 HAZARD MITIGATION PLAN
# 2015-2020 EDITION
# PORT OF TACOMA
# INFRASTRUCTURE SECTION

The Infrastructure Section is exempt from public disclosure pursuant to RCW 42.56.420. Request for public disclosure of this document or parts thereof should be referred immediately to the Port of Tacoma's Commissioners.

Distribution or changes to this document without the express written consent of the Port of Tacoma's Commissioners is prohibited.

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# SECTION 7

# REGION 5 ALL HAZARD MITIGATION PLAN
# 2020-2025 EDITION
# PORT OF TACOMA
# PLAN MAINTENANCE SECTION

## Table of Contents

The planning process undertaken in the last two years provides an important foundation element for planning a disaster resistant Port of Tacoma and Pierce County Region 5.

This Section details the formal process that will guarantee the Port of Tacoma Hazard Mitigation Plan remains an active and relevant document. The Plan Maintenance Section includes a description of the documentation citing the Plan's formal adoption by the Port of Tacoma Commission. The Section also describes the method and schedule of monitoring, evaluating, and updating the Plan within a five-year cycle, the process for incorporating the mitigation strategy into existing mechanisms, and the process for integrating stakeholder participation.

# Plan Adoption

Upon completion of the Port of Tacoma Plan, it will be submitted to Washington State Emergency Management Division (EMD) for a Pre-Adoption Review. The EMD has 30 days to then take action on the Plan and forward it to the Federal Emergency Management Agency (FEMA) Region X for review. This review, which is allowed 45 days by law, will address the federal criteria outlined in FEMA Interim Final Rule 44 CFR Part 201.6. In completing this review there may be revisions requested by the EMD and/or FEMA. Revisions could include changes to background information, editorial comments, and the alteration of technical content. Pierce County Department of Emergency Management (PC DEM) will call a Planning Team Meeting to address any revisions needed and resubmit the changes.

The Port of Tacoma Commission will be invited to formally adopt the Plan via resolution after the Pre-Adoption Review is completed. Once the Commission adopts the Plan, the Port of Tacoma employee assigned with the task of updating the Port of Tacoma Hazard Mitigation Plan will be initially responsible for submitting it, with a copy of the resolution, to the State Hazard Mitigation Officer at the Washington State EMD. EMD will then take action on the Plan and forward it to the FEMA Region X for final approval. Upon approval by FEMA, the District will secure eligibility for both Hazard Mitigation Grant Program and Pre-Disaster Mitigation Grant Program funds.

Appendix A will list the dates and include a copy of the signed Resolution from the jurisdiction as well as a copy of the FEMA approval of the jurisdiction’s Plan. In future updates of the Plan, Appendix C will be used to track changes and/or updates. This plan will have to be re-adopted and re-approved prior to the five-year deadline of 2025.

# Maintenance Strategy

The Port of Tacoma maintenance strategy for implementation, monitoring, and evaluation provides a structure that encourages collaboration, information transference, and innovation. The Port will provide its stakeholders a highly localized approach to loss reduction while serving their needs through coordinated policies and programs. The method’s emphasis on all levels of participation promotes stakeholder involvement and adaptability to changing risks and vulnerabilities. Furthermore, the Port of Tacoma will work to further support hazard

mitigation planning efforts by raising awareness and promoting a culture of safety within the agency and with our partners in the Tacoma Tideflats. The Port will be involved in several planning efforts over the next few years including the Port of Tacoma Strategic Plan, the NWSA Gateway Infrastructure Plan, and the Tideflats Subarea Plan (led by the City of Tacoma). Port staff will help ensure that hazard mitigation is considered as part of these planning efforts. Finally, it will provide a tangible link between stakeholders and the various levels of government service, ranging from tenant customers, labor leaders and other stakeholders to the Department of Homeland Security. Through this strategy, the Port will take action to break the disaster cycle on a local level and help achieve a more disaster resistant industrial community.

## Implementation

The Port of Tacoma has implemented various parts of the previous hazard mitigation plan into other planning documents including its Emergency Preparedness Working Group Plans & Procedures, the Port of Tacoma Strategic Plan that is underway, the NWSA 10 Year Road and Rail Plan, and the plan will be further incorporated into the upcoming NWSA Gateway Infrastructure Plan that will have a resiliency component to it. Furthermore, the Port of Tacoma will push to continue to raise hazard and resiliency awareness in joint efforts with other local jurisdictions such as the City of Tacoma's Tideflats Subarea Plan and the City of Tacoma Resiliency Adaptation Strategy.

In order to ensure efficient and effective implementation, the Port of Tacoma will make use of its capabilities, infrastructure, and dedicated stakeholders. The Port will implement its mitigation strategy over the next five years primarily through its annual budget process, coordination with Tideflats partners (such as the bimonthly Tideflats Facilities Securities Officer meetings), ongoing internal efforts to promote safety (such as the Port of Tacoma's Safety Subcommittee), and varying grant application processes. All programs and entities identified in the Capability Identification Section will serve as the implementing mechanisms within those processes.

In order to ensure efficient and effective implementation, the Port of Tacoma will make use of its capabilities, infrastructure, and dedicated stakeholders. The Port will implement its mitigation strategy over the next five years primarily through its annual budget process, coordination with Tideflats partners (such as the bimonthly Tideflats Facilities Securities Officer meetings), ongoing internal efforts to promote safety (such as the Port of Tacoma's Safety Subcommittee), and varying grant application processes. All programs and entities identified in the Capability Identification Section will serve as the implementing mechanisms within those processes.

The Port will work in conjunction with those departments, agencies and entities identified in both the Capability Identification Section and under each mitigation measure to initiate the mitigation strategy. For example, any infrastructure-related measures will be implemented through the Port's Investment Decision and Development Process (IDDP) and Capital Improvement Plan and the various departments involved through their normal budget schedule. Any regulatory and land use measures will continue to be implemented through collaboration with the various regulatory agencies and, where applicable, the Puyallup Tribe.

Other measures will be implemented through collaboration with the identified jurisdictions listed under each measure's evaluation and through the mechanisms and funding sources identified in the Capability Identification Section.

These efforts fall under a broader implementation strategy that represents a county-wide effort. This strategy must be adaptable to change while being consistent in its delivery.

This method ensures that implementation addresses unique vulnerabilities at the most local level, allows for coordination among and between levels, and promotes collaboration and innovation. Further, it provides a structured system of monitoring implementation. Finally, it is a method that can adapt to the changing vulnerabilities of the Port, the region, and the times.

## Jurisdiction-Level: Risk Management and Planning

The Port of Tacoma Planning Team will be responsible for the overall review of the plan and will designate mitigation measures to those departments responsible for advancing efforts towards implementation. Plan update and implementation will be coordinated with various departments.

Following adoption by the Port of Tacoma Commission, the Port's Planning Team will assume overall program responsibility and work to integrate hazard mitigation planning into other planning efforts. The Planning Team will review the Plan as needed.

## Region 5 Hazard Mitigation Forum

The Pierce County Hazard Mitigation Forum (HMF) represents a broader and multi-jurisdictional approach to mitigation implementation. The HMF will be comprised of representatives from unincorporated Pierce County and all jurisdictions, partially or wholly, within its borders, that have undertaken mitigation planning efforts. The HMF will serve as coordinating body for projects of a multi-jurisdictional nature and will provide a mechanism to share successes and increase the cooperation necessary to break the disaster cycle and achieve a more disaster resistant Pierce County. Members of the HMF will include the following jurisdictions who have completed, or who have begun the process of completing, compliant hazard mitigation plans:

- City of Bonney Lake
- City of Bonney Lake
- City of DuPont
- City of Fife
- City of Gig Harbor
- City of Milton
- City of Puyallup
- City of Sumner
- City of Buckley
- City of Buckley
- City of Edgewood
- City of Fircrest
- City of Lakewood
- City of Orting
- City of Roy
- City of Tacoma

- City of University Place
- Town of Eatonville
- Town of Steilacoom
- Unincorporated Pierce County
- East Pierce Fire and Rescue #22
- Graham Fire and Rescue #21
- Orting Valley Fire and Rescue #18
- Riverside Fire and Rescue #14
- Anderson Island Fire and Rescue #27
- West Pierce Fire and Rescue #3
- Clover Park School District
- Eatonville School District
- Franklin Pierce School District
- Pacific Lutheran University
- Puyallup School District
- Sumner School District
- University Place School District
- Crystal River Ranch HOA
- Pierce Transit
- Riviera Community Club
- Clear Lake Water District
- Fruitland Mutual Water Company
- Lakeview Light and Power
- Mt. View-Edgewood Water Company
- Parkland Light and Water Company
- Spanaway Water Company
- Valley Water District
- Community Health Care
- Kaiser Permenate
- Western State Hospital
- Tacoma Pierce County Health Dept.
- Town of Carbonado
- Town of South Prairie
- Town of Wilkeson
- Central Pierce Fire and Rescue #6
- Gig Harbor Fire and Medic One #5
- Key Peninsula Fire Department #16
- Browns Point Fire Department #13
- Ashford Elbe Fire District #23
- South Pierce Fire and Rescue #17
- Carbonado School District
- Dieringer School District
- Fife School District
- Orting School District
- Peninsula School District
- Steilacoom School District
- Tacoma School District
- Crystal Village HOA
- Metropolitan Park District
- Port of Tacoma
- Taylor Bay Beach Club
- Firgrove Mutual Water Company
- Graham Hill Mutual Water Company
- Lakewood Water District
- Ohop Mutual Light Company
- Peninsula Light Company
- Summit Water and Supply Company
- Cascade Regional Blood Services
- Franciscan Health System
- MultiCare Health System
- Puyallup Tribe of Indians
- Bethel School District

Coordinated by the PC DEM, the PC HMF will meet annually in November. The Port of Tacoma will be an active participant in the PC HMF and will be represented by the designated Planning Partner or their representative. Only through this level of cooperation can these jurisdictions meet all their mitigation goals.

## Regional Mitigation Planning

Pierce County, Region 5 was configured into 5 planning groups based on a commonality in geographical hazards for the 2020-2025 mitigation plan update to foster relationship building and resiliency planning amongst jurisdictions. Although much of the meeting and planning time focused on plan updates and fostered relationship building the resiliency planning

component will continue within multi-jurisdictional groups working together to further reduce risk. This provides another opportunity for continued collaboration planning amongst jurisdictions working and partnering together. The meeting frequency will be driven by the mitigation implementation strategy and combines the three-tiered approach. The Port of Tacoma will continue to engage within the "north group" geographical planning area and will provide the specific department representative to engage in and implement mitigation activities within this geographical group.

## Plan Evaluation and Update

It should be noted this planning update process began in early 2019 following the current CFR 201.6 Hazard Mitigation Planning Requirements. Based on new requirements in the Stafford Act, the Port of Tacoma will evaluate and update the plan to incorporate these new requirements as necessary. Furthermore, if there are additional Stafford Act changes affecting CFR 201.6 in the coming years, the planning process will incorporate those as well.

The Port of Tacoma Plan will guide the Port's mitigation efforts for the foreseeable future. Port of Tacoma representatives on the Planning Team have developed a method to ensure that regular review and update of the Plan occur within a five-year cycle. The Port's Senior Manager, Planning (herein after Senior Planning Manager) will coordinate any reviews noted above.

The PC DEM will collaborate with the Senior Planning Manager and the HMF to monitor and evaluate the mitigation strategy implementation. The PC DEM will track this implementation through Pierce County's GIS database. Findings will be presented and discussed at the annual meeting.

This report will drive the meeting agendas and will include the following:

- Updates on implementation throughout the Port;
- Updates on the PC HMF and mitigation activities undertaken by neighboring jurisdictions;
- Changes or anticipated changes in hazard risk and vulnerability at the City, County, regional, State, FEMA, and Homeland Security levels.
- Problems encountered or success stories;
- Any technical or scientific advances that may alter, make easier, or create measures.

The Senior Planning Manager and local experts will decide on updates to the strategy based on the above information and a discussion of:

- The various resources available through budgetary means as well as any relevant grants;
- The current and expected political environment and public opinion;
- Meeting the mitigation goals with regards to changing conditions.

PC DEM will work with Senior Planning Manager to review the Risk Assessment Section to determine if the current assessment should be updated or modified based on new information. This will be done during the regularly scheduled reviews of the regional partners Hazard Identification and Vulnerability Analyses and their Comprehensive Emergency Management Plans.

Additional reviews of this Plan will be required following disaster events and will not substitute for the annual meeting. Within ninety days following a significant disaster or an emergency event impacting the Port, the individual responsible for risk management and/or the Senior Planning Manager will provide an assessment that captures any "success stories" and/or "lessons learned." The assessment will detail direct and indirect damages to the Port and its infrastructure, response and recovery costs, as part of the standard recovery procedures that use EMD Forms 129, 130, and 140. This process will help determine any new mitigation initiatives that should be incorporated into the Plan to avoid or limit similar losses due to future hazard events. In this manner, recovery efforts and data will be used to analyze mitigation activities and spawn the development of new measures that better address any changed vulnerabilities or capabilities. Any updates to the Plan will be addressed at the annual November meeting.

As per 44 CFR 201.6, the Port of Tacoma must re-submit the Plan to the State and FEMA with any updates every five years. This process will be coordinated by PC DEM through the Pierce County Hazard Mitigation Forum. In 2020 and every five years following at the Hazard Mitigation Forum, the Port of Tacoma will submit the updated plan to PC DEM. The PC DEM Mitigation and Recovery Program Coordinator will collect updates from the Region 5 Plan jurisdictions and submit them to the State EMD and FEMA.

# Stakeholder and Public Involvement

Each of the 76 Region 5 jurisdictions has been tasked with providing documentation on stakeholder and public involvement including a brief description for each meeting held, a summary on attendance, any feedback received from stakeholder and the public and an overall description of what was accomplished.

Prior to submitting the Plan to the Washington State Department of Emergency Management and FEMA for the five-year review, the Senior Planning Manager, Director, Strategic Operations Projects and Risk Manager or alternate will hold a stakeholder information and comment meeting. This meeting will provide a stakeholder forum wherein terminal operators, labor leaders and others can express their concerns, opinions, or ideas about the Port of Tacoma Plan.

Thereafter, the Port of Tacoma will conduct a regular review to ensure all elements of the mitigation plan are updated and accurate and the Port of Tacoma will look for new innovative ways for stakeholder and public involvement.

The Senior Planning Manager will retain copies of the Plan and will make it available to stakeholders and, upon request, to members of the general public.

# APPENDIX A

# REGION 5 ALL HAZARD MITIGATION PLAN
# 2020-2025 EDITON
# PORT OF TACOMA

## Plan Adoption

The *"Region 5 All Hazard Mitigation Plan"* was adopted by the Port of Tacoma's Commissioner's on XXX by resolution number XXX. The following page shows a copy of that resolution.

(Placeholder for Resolution)

(Placeholder for Resolution)

The plan was reviewed and approved as follows:

| AGENCY | REPRESENTATIVE | DATE |
|---|---|---|
| Washington State Military Dept., Emergency Management Division | Tim Cook<br>Hazard Mitigation Programs Manager | Approved— |
| FEMA Region X | Tamra Biasco<br>Chief, Risk Analysis Branch<br>Mitigation Division | Approved— |

FEMA letter of pre-approval and letter of approval follows below.

(Placeholder for FEMA-Approval Letter)

(Placeholder for FEMA-Approval Letter, page 2)

(Placeholder for FEMA-Approval Letter, page 3)

# APPENDIX A

# REGION 5 ALL HAZARD MITIGATION PLAN
# 2015-2020 EDITION
# PORT OF TACOMA

## Plan Adoption

The *"Region 5 All Hazard Mitigation Plan"* was adopted by the Port of Tacoma's Commissioner's on November 15, 2016 by resolution number 2016-07-PT. The following page shows a copy of that resolution.

## Resolution 2016-07-PT

Port of Tacoma

**A Resolution of the Port of Tacoma Commission adopting the Port of Tacoma's Addendum to the Region 5 All Hazard Mitigation Plan**

**WHEREAS,** the Federal Disaster Mitigation Act of 2000 requires that for all disasters declared on or after November 1, 2004, applicants for sub-grants following any disaster must have an approved Natural Hazard Mitigation Plan in accordance with 44 CFR 201.6 prior to receipt of Hazard Mitigation Grant Program project funding; and

**WHEREAS,** the Federal Disaster Mitigation Act of 2000 requires that for Pre-Disaster Mitigation grant program project funding on or after November 1, 2003, applicants must have an approved Natural Hazard Mitigation Plan in accordance with 44CFR 201.6 prior to receipt of project funding; and

**WHEREAS,** the All Hazard Mitigation Plan Update represents the commitment of the Port of Tacoma along with other surrounding government entities to reduce the risks from natural, human-made and technological hazards, serving as a guide for decision makers as they commit resources to reducing the affects of hazards, and it is in the public interest to proceed with the planning process in a timely manner; and

**WHEREAS,** the Port of Tacoma has participated with the Pierce County Department of Emergency Management in the development of the District's All Hazard Mitigation Plan Update, and recognizes the economic loss, personal injury, and damage that can arise from these hazards; and

**WHEREAS,** reduction of these impacts can be achieved through a comprehensive coordinated planning process which includes an updated risk assessment that provides the factual basis for activities proposed in the mitigation strategies to reduce losses and vulnerabilities, a five-year cycle for plan maintenance, and documentation of formal adoption by the Port of Tacoma; and

**WHEREAS,** the 2015-2020 Region 5 All Hazard Mitigation Plan Edition has been completed and approved by the State and the Federal Emergency Management Agency; and

**WHEREAS,** the Port of Tacoma has reviewed and approved the All Hazard Mitigation Plan Update;

**NOW, THEREFORE BE IT HEREBY RESOLVED** that the Port of Tacoma Commission, Pierce County, Washington HEREBY RESOLVES as follows:

The Port of Tacoma Addendum to the Region 5 All Hazard Mitigation Plan, an update to the Port's Natural Hazard Mitigation Plan, is hereby adopted and shall be in full force and effect upon passage and signatures hereon.

ADOPTED by a majority of the members of the Port of Tacoma Commission at a special meeting held on the **15th day of November 2016,** a majority of the members being present and voting on this resolution and signed by its President and attested by its Secretary under the official seal of said Commission in authentication of its passage this 15th day of November 2016.

Constance T. Bacon, President
Port of Tacoma Commission

ATTEST:

Clare Petrich, First Assistant Secretary
Port of Tacoma Commission

The plan was reviewed and approved as follows:

| AGENCY | REPRESENTATIVE | DATE |
|---|---|---|
| Washington State Military Dept., Emergency Management Division | Tim Cook<br>Hazard Mitigation Programs Manager | Approved— |
| FEMA Region X | Tamra Biasco<br>Chief, Risk Analysis Branch<br>Mitigation Division | Approved— February 2, 2015 |

FEMA letter of pre-approval and letter of approval is attached below:

U.S. Department of Homeland Security
FEMA Region X
Federal Regional Center
130 228th Street, SW
Bothell, WA 98021-8627

FEMA

February 2, 2015

Mr. Tim Cook
Hazard Mitigation Programs Manager
Washington State Emergency Management Division
Building 20, MS TA-20
Camp Murray, Washington 98430-5122

Dear Mr. Cook:

As requested, the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) has completed a pre-adoption review of the ***Region 5 Hazard Mitigation Plan.*** The plan successfully contains the required criteria, excluding the adoption, for hazard mitigation plans, as outlined in 44 CFR Part 201. This letter serves as Region 10's commitment to approve the plan upon receiving documentation of its adoption by the participating jurisdictions.

The plan will not be formally approved by FEMA until it is adopted. Each jurisdiction is not eligible for mitigation project grants until the plan is formally approved by FEMA.

Please contact our Regional Mitigation Planning Manager, Kristen Meyers, at (425) 487-4543 with any questions.

Sincerely,

Tamra Biasco
Chief, Risk Analysis Branch
Mitigation Division

KM:bb

www.fema.gov

**U.S. Department of Homeland Security**
FEMA Region 10
130 228th Street, SW
Bothell, Washington 98021-8627

FEMA

October 9, 2018

The Honorable Douglas Richardson
Chair, Pierce County Council
930 Tacoma Avenue South
Tacoma, Washington 98402

Dear Chair Richardson:

On July 23, 2015, the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) Region 10, approved the *Region 5 (Pierce County) Hazard Mitigation Plan* as a multi-jurisdictional local plan as outlined in Code of Federal Regulations Title 44 Part 201. This approval provides the below jurisdictions eligibility to apply for the Robert T. Stafford Disaster Relief and Emergency Assistance Act's, Hazard Mitigation Assistance grants through July 22, 2020, through your state.

| COUNTY / CITIES / TOWNS | | |
|---|---|---|
| City of Bonney Lake | City of Lakewood | Town of Eatonville |
| City of Buckley | City of Milton | Town of Carbonado |
| City of DuPont | City of Orting | Town of South Prairie |
| City of Edgewood | City of Roy | Town of Steilacoom |
| City of Fife | City of Sumner | Town of Wilkeson |
| City of Fircrest | City of Tacoma | Pierce County |
| City of Gig Harbor | *City of Puyallup* | |
| FIRE PROTECTION DISTRICTS | | |
| Anderson Island Fire & Rescue (PCFD #27)- | East Pierce Fire and Rescue | Orting Valley Fire & Rescue (PCFD #18) |
| Ashford Fire (PCFD #23)- | Gig Harbor Fire & Medic One (PCFD #5) | South Pierce Fire & Rescue (PCFD #17) |
| Browns Point – Dash Point Fire (PCFD #13) | Graham Fire & Rescue (PCFD #21) | Riverside Fire & Rescue (PCFD #14) |
| Central Pierce Fire & Rescue (PCFD #6) | Key Peninsula Fire (PCFD #16) | West Pierce Fire & Rescue (PCFD #3) |
| SCHOOL AND PARK DISTRICTS | | |
| Carbonado SD | Franklin Pierce SD | Steilacoom Historic SD No. 1 |
| Clover Park SD | Metro Parks Tacoma | Sumner SD |
| Dieringer SD | Orting SD | Tacoma SD #10 |
| Eatonville SD | Peninsula SD | University Place SD |
| Fife SD | Puyallup SD | White River SD |
| WATER DISTRICTS AND OTHERS | | |
| Clear Lake WD | Lakewood Water District | Pierce Transit |
| Port of Tacoma | *Community Health Care* | |

www.fema.gov

The updated list of approved jurisdictions includes the City of Puyallup and Community Health Care that recently adopted the City of Puyallup Addendum to the *Region 5 (Pierce County) Hazard Mitigation Plan*. To continue eligibility, jurisdictions must review, revise as appropriate, and resubmit the plan within five years of the original approval date.

Additionally, this letter acknowledges that the following organizations, while not local governments, participated in, and adopted the plan. These organizations may be eligible to apply for the Hazard Mitigation Grant Program as private non-profits.

OTHER PLAN PARTICIPANTS

| | | |
|---|---|---|
| Pacific Lutheran University | Firgrove Mutual Inc. | Fruitland Mutual Water Company |
| Graham Hill Mutual Water Co., Inc. | Mt. View-Edgewood Water Company | Ohop Mutual Light Company |
| Spanaway Water Company | Summit Water & Supply Company | Tanner Electric Company |
| Herron Island Homeowners Association | Crystal Village Homeowners Association | Taylor Bay Beach Club |
| Raft Island Improvement Association | Riviera Community Club | Crystal River Ranch Association |
| Cascade Regional Blood Services | Dynamic Partners | Group Health Cooperative |
| Western State Hospital | Lakeview Light & Power | Franciscan Health System |

If you have questions regarding your plan's approval or FEMA's mitigation grant programs, please contact Derrick Hiebert, State Mitigation Strategist with Washington Emergency Management Division, at (253) 512-7142, who coordinates and administers these efforts for local entities.

Sincerely,

Mark Carey, Director
Mitigation Division

Enclosures

cc: Tim Cook, Washington Emergency Management Division

KS:rg

# APPENDIX A

# REGION 5 HAZARD MITIGATION PLAN
# 2008-2013 EDITION
# PORT OF TACOMA

## Plan Adoption

The *"Region 5 Hazard Mitigation Plan"* was adopted by the Port of Tacoma's Board of Commissioners on November 6, 2008 by resolution number 2008-14. The following page shows a copy of that resolution.

**PORT OF TACOMA**
**RESOLUTION NO. 2008-14**

A RESOLUTION adopting a Natural Hazards Mitigation.

WHEREAS, the Port of Tacoma's natural history demonstrates a vulnerability to natural hazards and disasters arising from its physical features, and

WHEREAS, the Port of Tacoma Commission recognizes the economic loss, personal injury and damage that can arise from these natural hazards, and

WHEREAS, the Federal Emergency Management Agency (FEMA), pursuant to the Disaster Mitigation Act of 2000 requires that local governments prepare natural hazard mitigation plans as a condition of future project funding, and

WHEREAS, the Port of Tacoma, along with over 50 other local government jurisdictions, participated in a planning effort lead by Pierce County's Department of Emergency Management, and

WHEREAS, FEMA has approved the Port of Tacoma's draft plan.

NOW, THEREFORE, be it resolved by the Port of Tacoma Commission that the attached Natural Hazards Mitigation plan be approved and adopted by the Port Commission.

ADOPTED by a majority of the members of the Port Commission of the Port of Tacoma at a regular meeting held on the **6th day of November, 2008**, a majority of the members being present and voting on this resolution and signed by its President and attested by its Secretary under the official seal of said Commission in authentication of its passage this 6th day of November 2008.

Dick Marzano
Dick Marzano, President
Port of Tacoma Commission

ATTEST:

R. Ted Bottiger, Secretary
Port of Tacoma Commission

The plan was reviewed and approved as follows:

| AGENCY | REPRESENTATIVE | DATE |
|---|---|---|
| FEMA Region X | Mark Carey<br>Mitigation Division Director | Approved—November 24, 2008 |

Letter of approval follows below.

U.S. Department of Homeland Security
Region X
130 228th Street, SW
Bothell, WA 98021-9796

FEMA

January 30, 2009

Mr. Steven C. Bailey, Director
Pierce County Department of Emergency Management
2501 South 35th Street
Tacoma, Washington 98409-7405

Dear Mr. Bailey:

On November 28, 2008, the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) approved the ***Region 5 Hazard Mitigation Plan*** as a multi-jurisdictional local plan as outlined in 44 CFR Part 201. With approval of this plan, the following entities are now eligible to apply for the Robert T. Stafford Disaster Relief and Emergency Assistance Act's hazard mitigation project grants through November 28, 2013:

| Cities and Towns: | Fire Districts: | School Districts: | Utilities: |
|---|---|---|---|
| **City of Buckley** | **Lakewood Fire Department (PCFD #2)** | **Carbonado SD** | **Clear Lake Water District** |
| **City of Dupont** | ***Gig Harbor Fire & Medic One (PCFD #5)*** | **Dieringer SD** | ***Fruitland Mutual Water Company*** |
| **City of Edgewood** | ***Central Pierce Fire & Rescue (PCFD #6)*** | ***Eatonville SD*** | ***Graham Hill Mutual Water Company*** |
| ***City of Fife*** | **PCFD #8** | **Fife SD** | ***Lakeview Light and Power*** |
| **City of Fircrest** | ***PCFD #13*** | ***Franklin Pierce SD*** | **Lakewood Water District** |
| **City of Gig Harbor** | ***South Pierce Fire & Rescue (PCFD #15)*** | ***Orting SD*** | **Mt. View-Edgewood Water Company** |
| ***City of Orting*** | ***Key Peninsula Fire Department (PDFD #16)*** | ***Peninsula SD*** | ***Port of Tacoma*** |
| **Town of Eatonville** | ***Graham Fire and Rescue (PCFD #21)*** | ***University Place SD*** | ***Summit Water and Supply Company*** |
| **Town of South Prairie** | **PCFD #23** | ***White River SD*** | |
| **Town of Wilkeson** | | ***Pacific Lutheran University*** | |

The list of approved jurisdictions has been updated to include the jurisdictions in italics above, which have recently adopted the Region 5 Hazard Mitigation Plan. To continue eligibility, the plan must be reviewed, revised as appropriate, and resubmitted within five years of the original approval date.

www.fema.gov

If you have questions regarding your plan's approval or FEMA's mitigation grant programs, please contact our State counterpart, Washington Emergency Management Division, which coordinates and administers these efforts for local entities.

Sincerely,

Mark Carey, Director
Mitigation Division

cc: Mark Stewart, Washington Emergency Management Division

KM:bb

# APPENDIX B

# REGION 5 ALL HAZARD MITIGATION PLAN
# 2020-2025 EDITION
# PORT OF TACOMA

## Region 5 Hazard Mitigation Planning Team

**Port of Tacoma**

| NAME | TITLE | JURISDICTION-DEPARTMENT |
|---|---|---|
| Alisha Pena | Senior Planner | Northwest Seaport Alliance/Port of Tacoma |
| Joe O'Brien | Operations & Safety Superintendent | Northwest Seaport Alliance/Port of Tacoma |
| Lou Paulsen | Director of Strategic Operations Projects & Risk Management | Northwest Seaport Alliance/Port of Tacoma |

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# APPENDIX C

# REGION 5 ALL HAZARD MITIGATION PLAN
# 2020-2025 EDITION
# PORT OF TACOMA

## Plan Revisions

| RECORD OF CHANGES | | | |
|---|---|---|---|
| **Change Number** | **Description of Change (with page numbers)** | **Date** | **Authorized by:** |
| 1 | The logo was updated and changed | 6/1/2016 | Marty Kapsh |
| | Updated changes were done to Section 1 | | Lou Paulsen |
| | Updated changes were done to Section 2<br>The basemap was corrected and additional maps were inserted. | 8/30/2016 | Lou Paulsen |
| | Updated changes were done to Section 3<br>Additional capabilities were added to this section. | 9/2/2016 | Lou Paulsen |
| | Updated changes were done to Section 4<br>Hazard maps were updated with corrected boundaries and GIS hazard analysis rerun. | 9/7/2016 | Lou Paulsen |
| | Updated changes were done to Section 5<br>Mitigation measures were updated and status for each was added under each measure. | 9/2/2016 | Lou Paulsen |
| | Updated changes were done to Section 6<br>Infrastructure was updated. | 9/2/2016 | Lou Paulsen |
| | Updated changes were done to Section 7<br>The maintenance responsibility of the plan was updated. | 9/2/2016 | Lou Paulsen |
| | | | |
| | | | |
| | | | |
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# APPENDIX D

# REGION 5 ALL HAZARD MITIGATION PLAN 2020-2025 EDITION PORT OF TACOMA

## OVERVIEW

This appendix contains the spatial results from the Hazus Earthquake Scenario results showing the Essential Facilities for 90% functionality for Day 1 and Day 7 following an earthquake event based on three earthquakes scenarios. Information was based on ShakeMaps developed by U.S. Geological Survey for a 7.1M earthquake occurring on the Tacoma Fault, 7.2M earthquake on the Nisqually Fault and a 7.2M earthquake on the SeaTac Fault. There was a total of four Essential Facilities that were modeled; fire stations, police stations, schools and hospitals. Additional information can be found in the Risk Assessment Section of the Pierce County All Hazard Mitigation Plan.

### Inherent Errors

As a special note to the Gig Harbor and Key Peninsula areas St. Anthony's Hospital is not identified on Maps D-6, D-7, D-15, D-16, D-24 or D-25 due to the recent construction of St. Anthony's Hospital and lack of data. With future updates of the Region 5 All Hazard Mitigation Plan, St. Anthony's Hospital will be included in the scenario analysis. If this information becomes available prior to the five-year update in 2020, revised analysis will be done and the revised maps will be distributed to the City of Gig Harbor, Gig Harbor Fire & Medic One and the Key Peninsula Fire Department.

It has been identified that the police station located to the west side of Orting is not in the correct location as seen on Maps: D-4, D-5, D-13, D-14, D-22 and D-23. The police department shares a building with the Fire District #18 at 401 Washington Ave S, which is located in the middle of town. As Hazus-MH is updated the police station will show a co-location with the fire station at this same location. If this information becomes available prior to the five-year update in 2020, revised analysis will be done, and the revised maps will be distributed to the City of Orting and to Pierce County Fire District #18.

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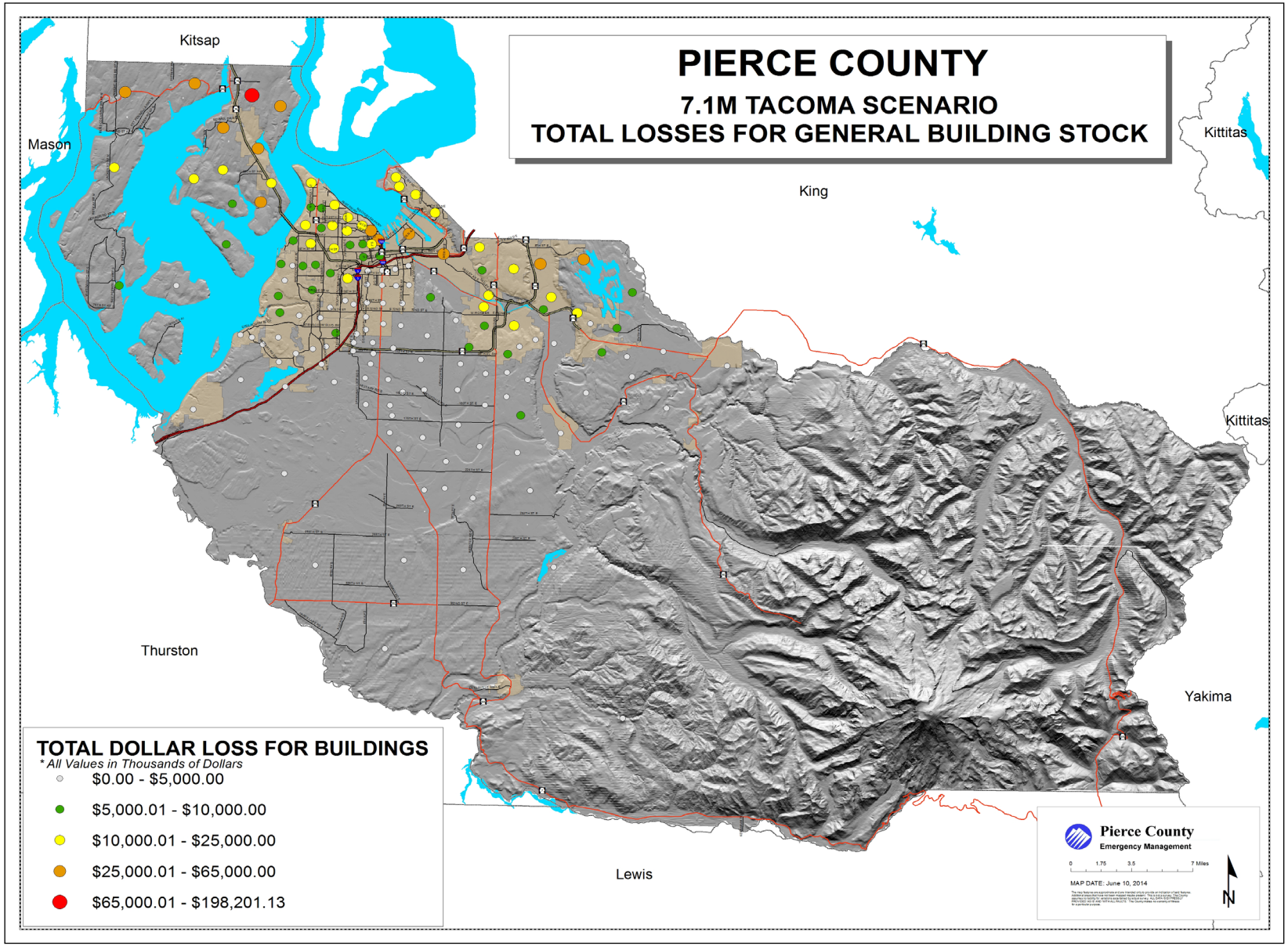
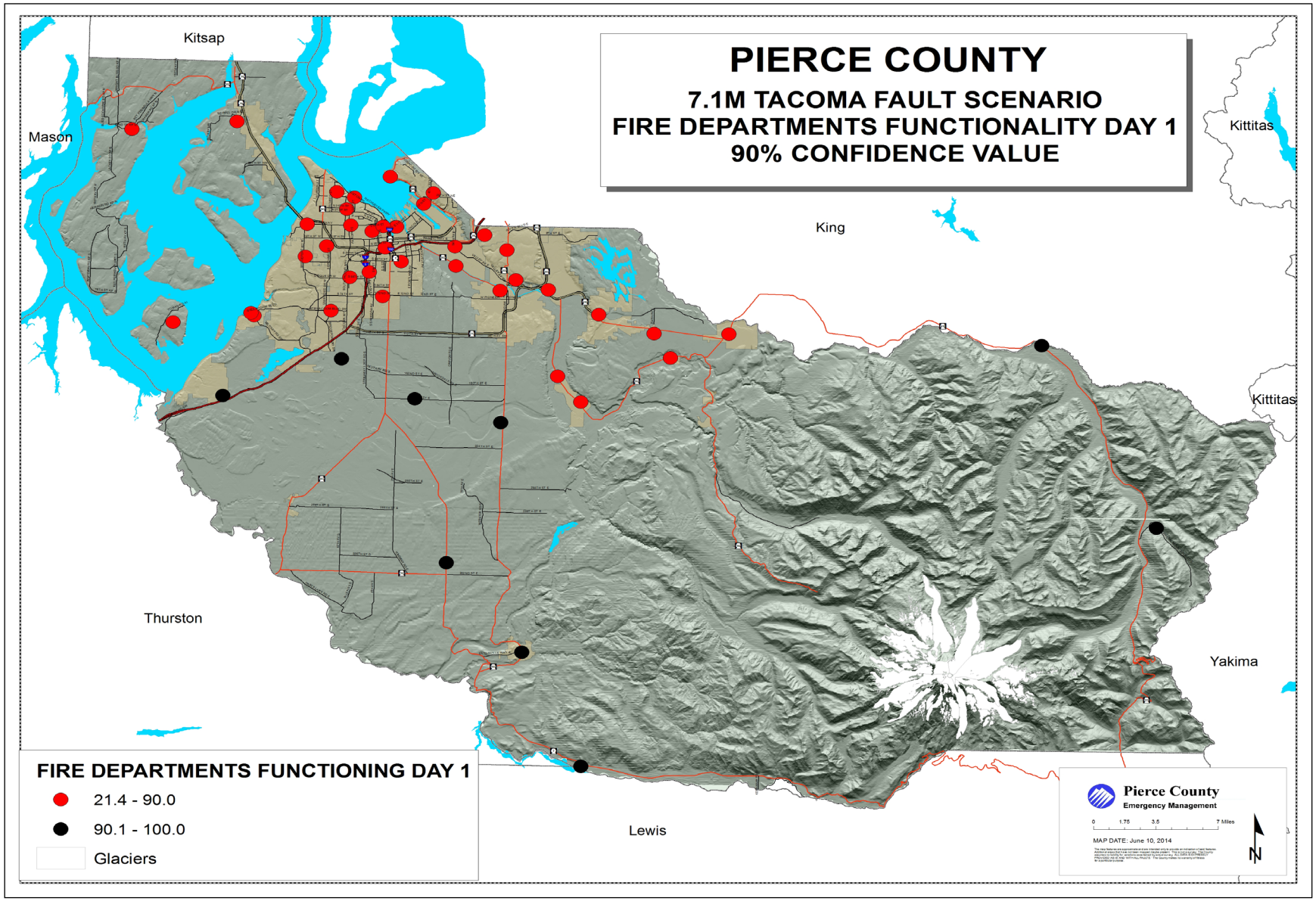
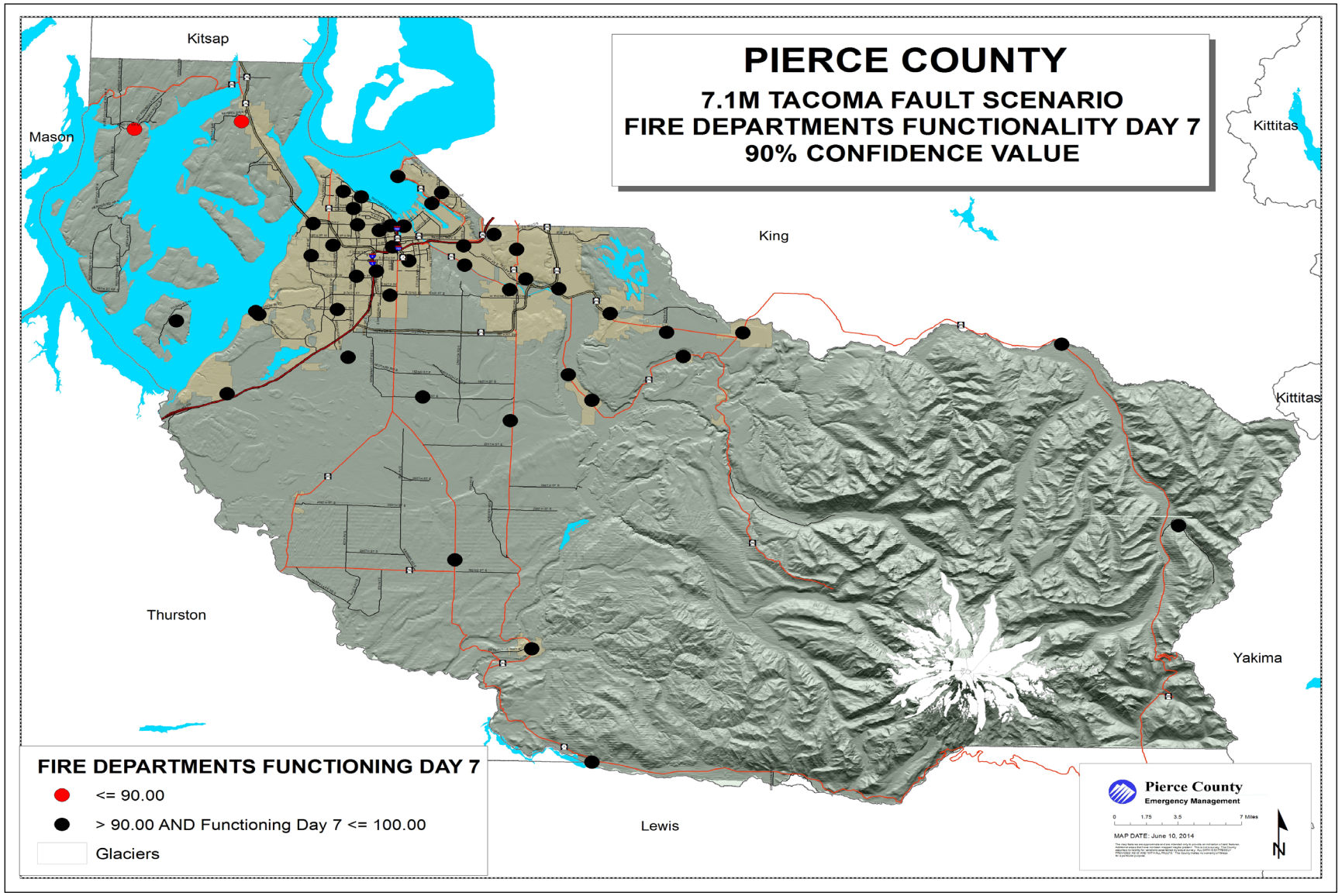
**Map D-1 Pierce County Tacoma Fault Scenario Total Losses Map**



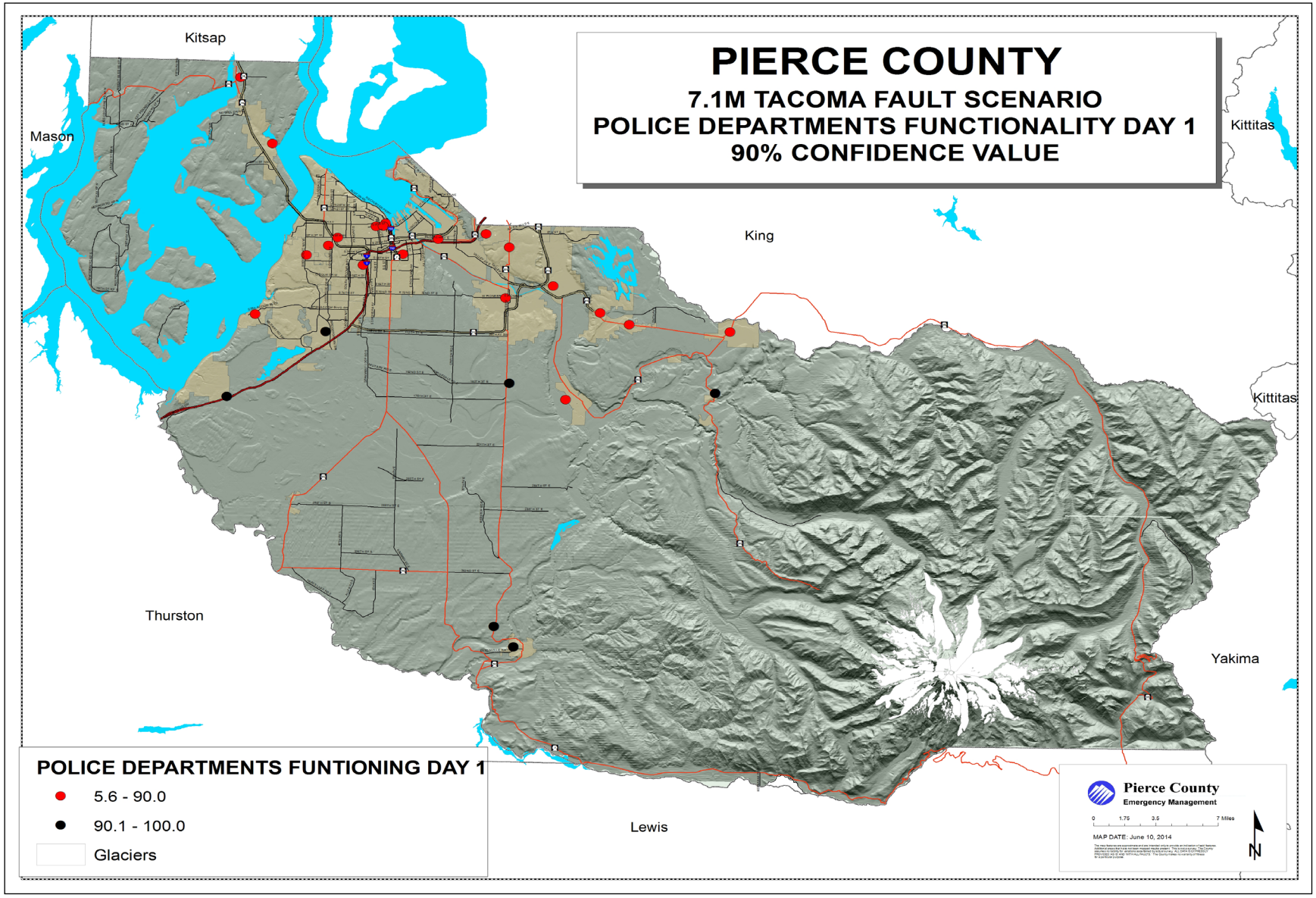
**Map D-2 Pierce County Tacoma Fault Scenario Fire Department Functionality Day 1 Map**



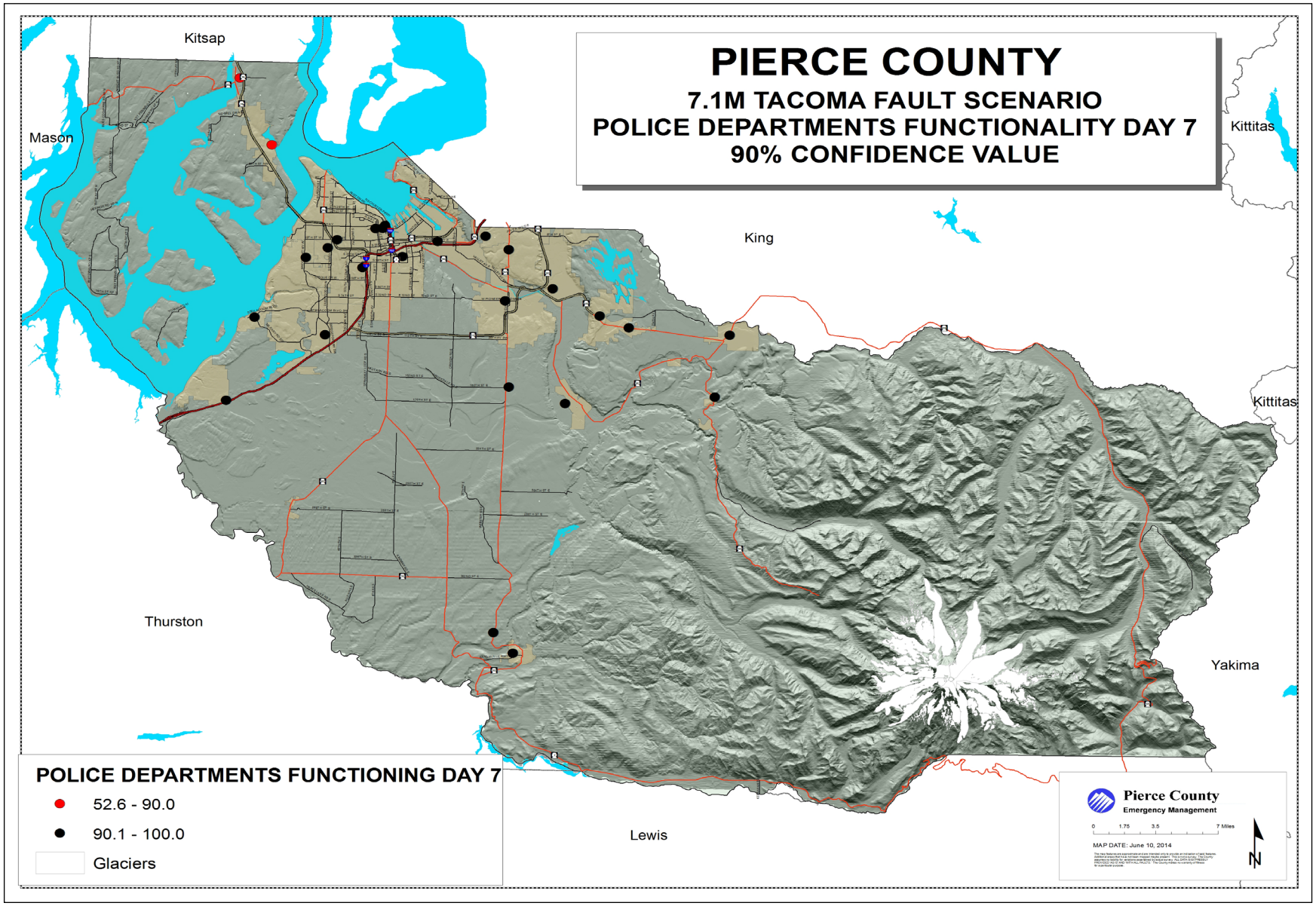
**Map D-3 Pierce County Tacoma Fault Scenario Fire Department Functionality Day 7 Map**



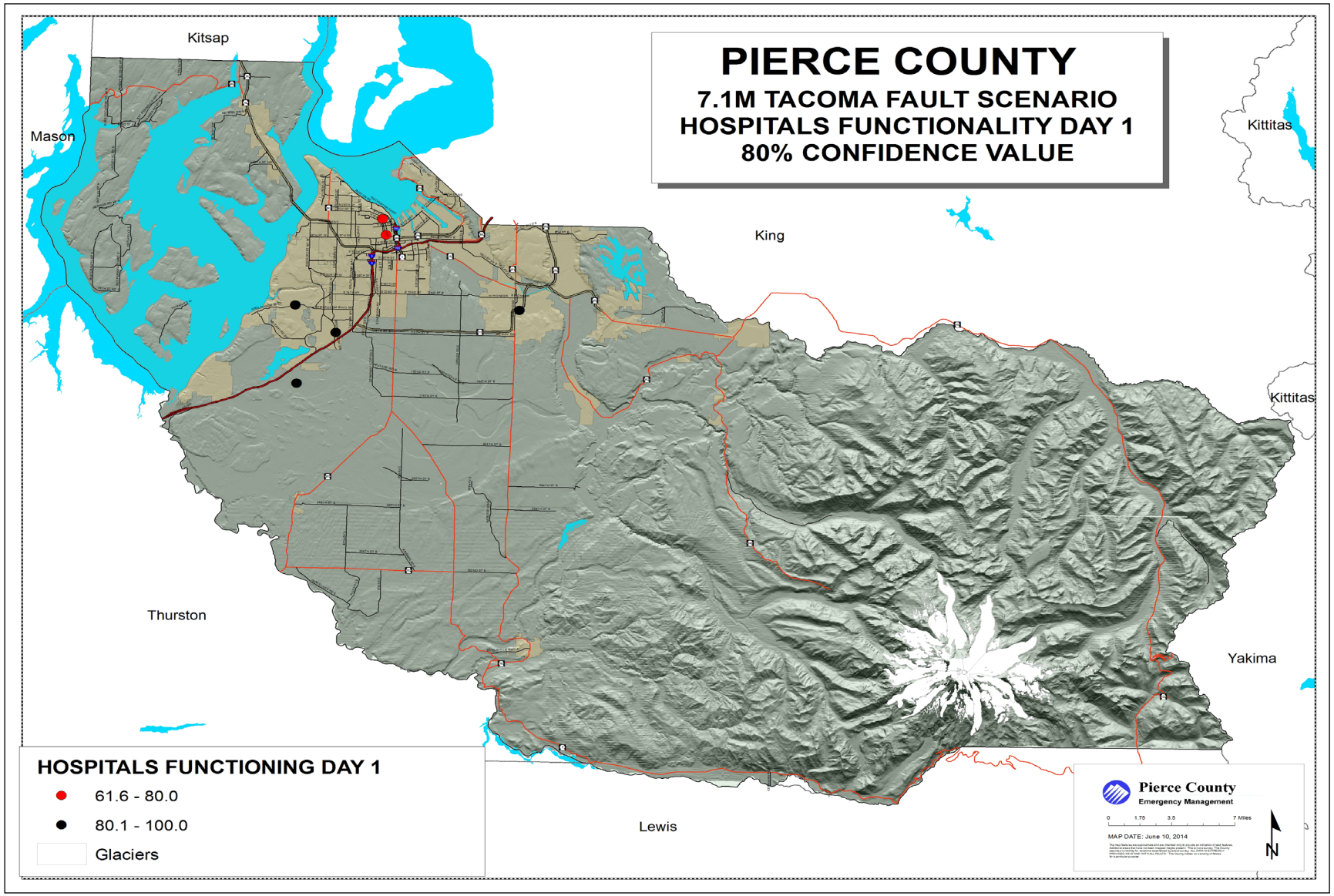
**Map D-4 Pierce County Tacoma Fault Scenario Police Department Functionality Day 1[1]**



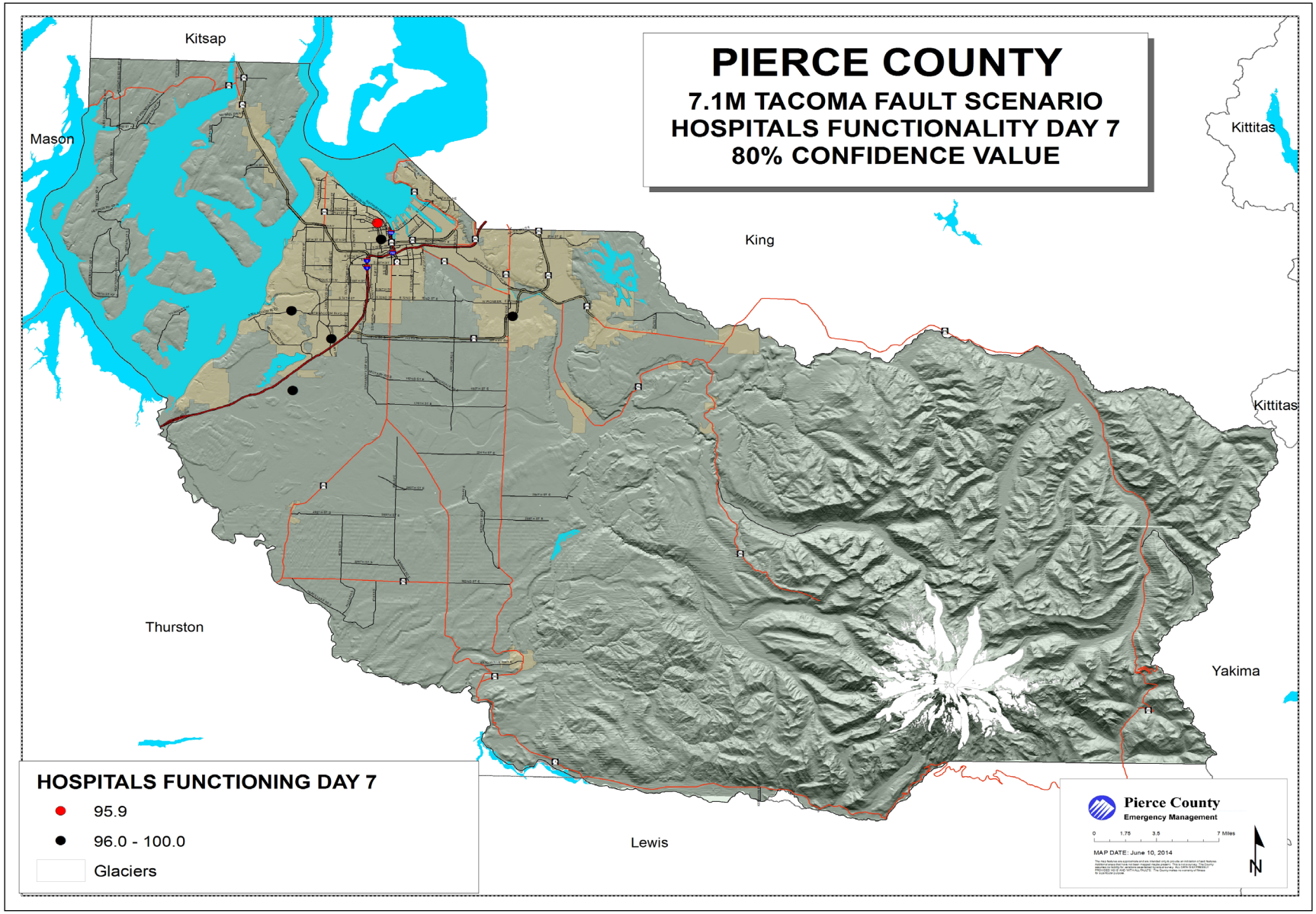
**Map D-5 Pierce County Tacoma Fault Scenario Police Department Functionality Day 7 Map[2]**



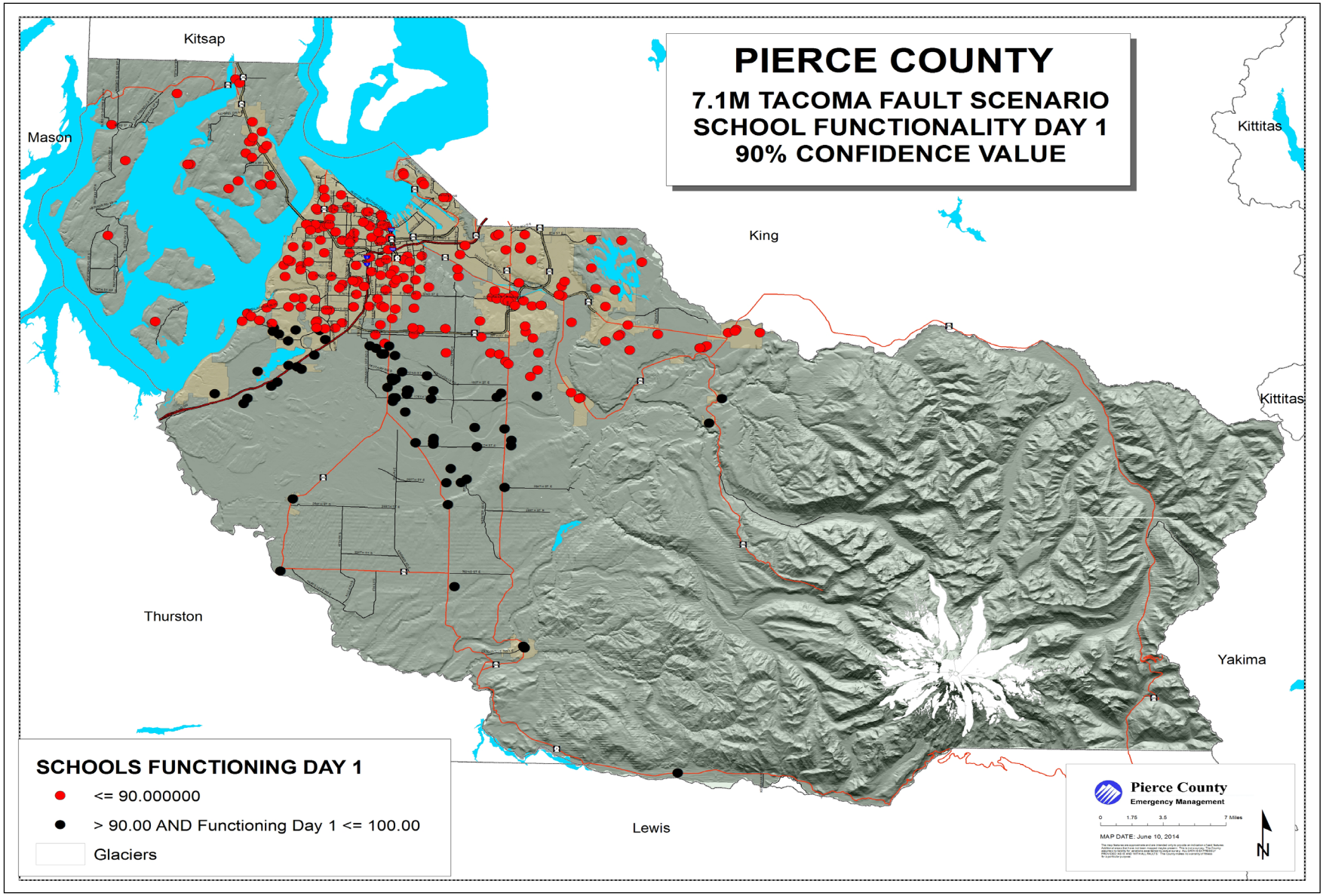
**Map D-6 Pierce County Tacoma Fault Scenario Hospitals Functionality Day 1 Map[3]**



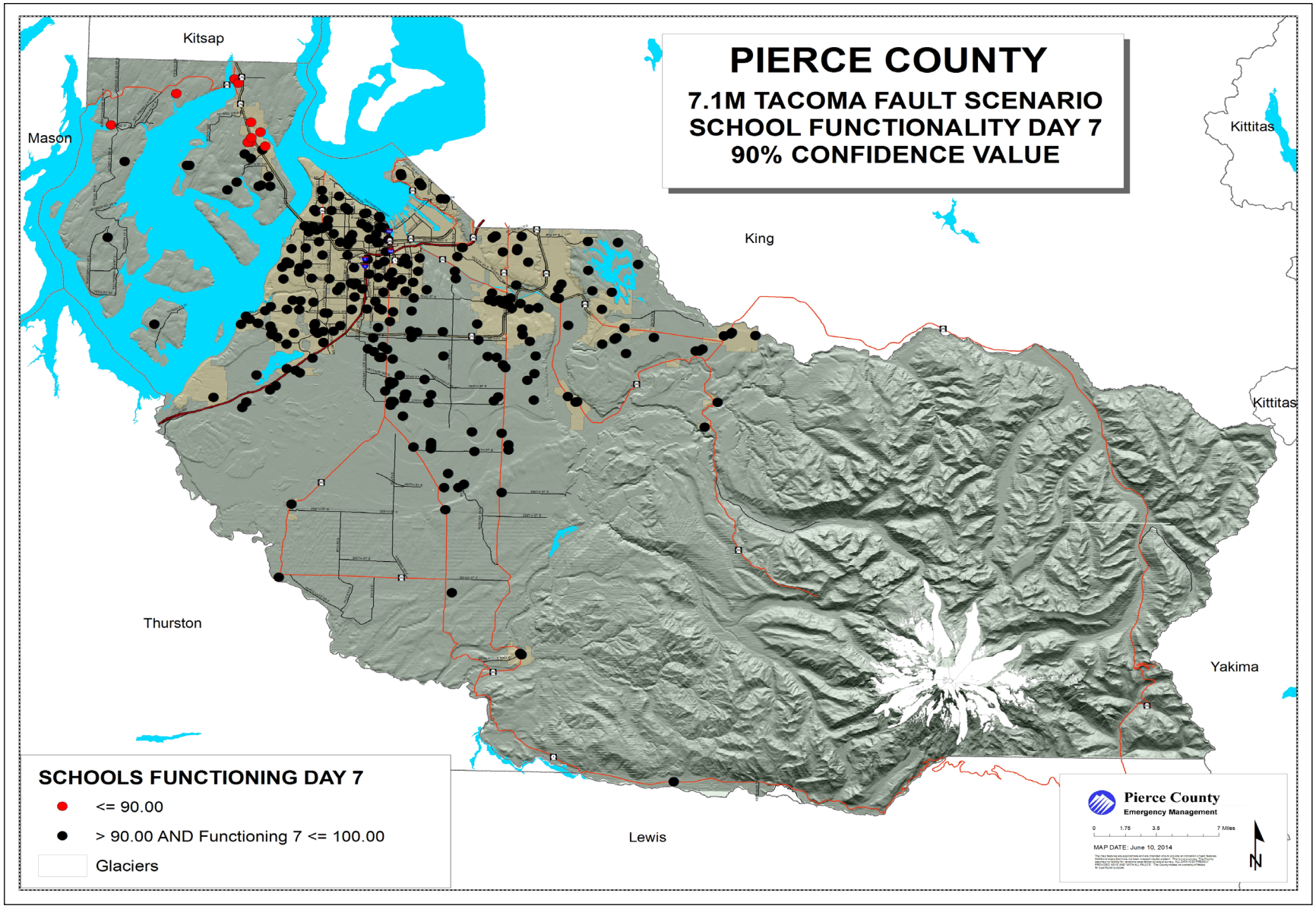
**Map D-7 Pierce County Tacoma Fault Scenario Hospitals Functionality Day 7 Map[4]**



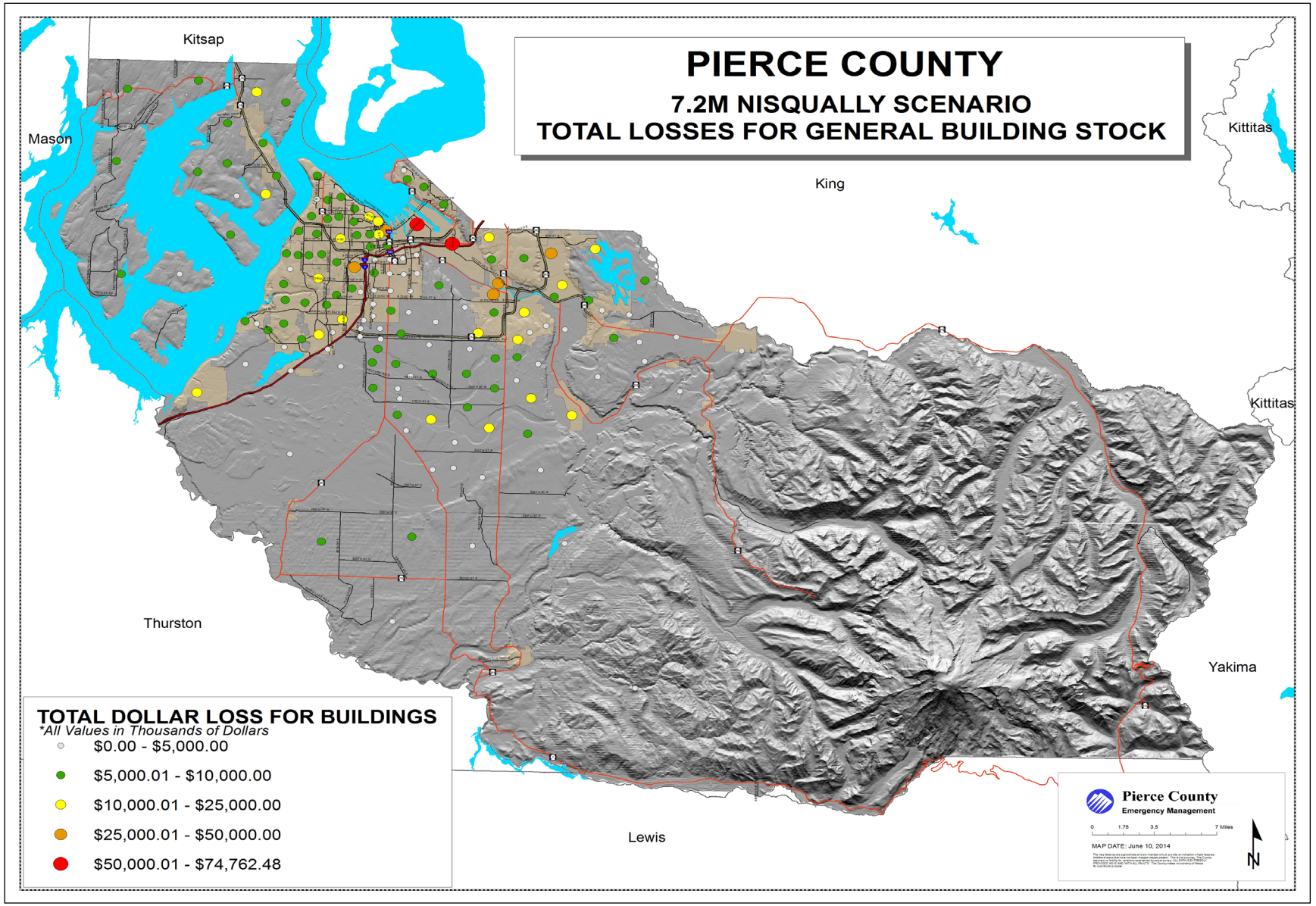
**Map D-8 Pierce County Tacoma Fault Scenario School Functionality Day 1 Map**



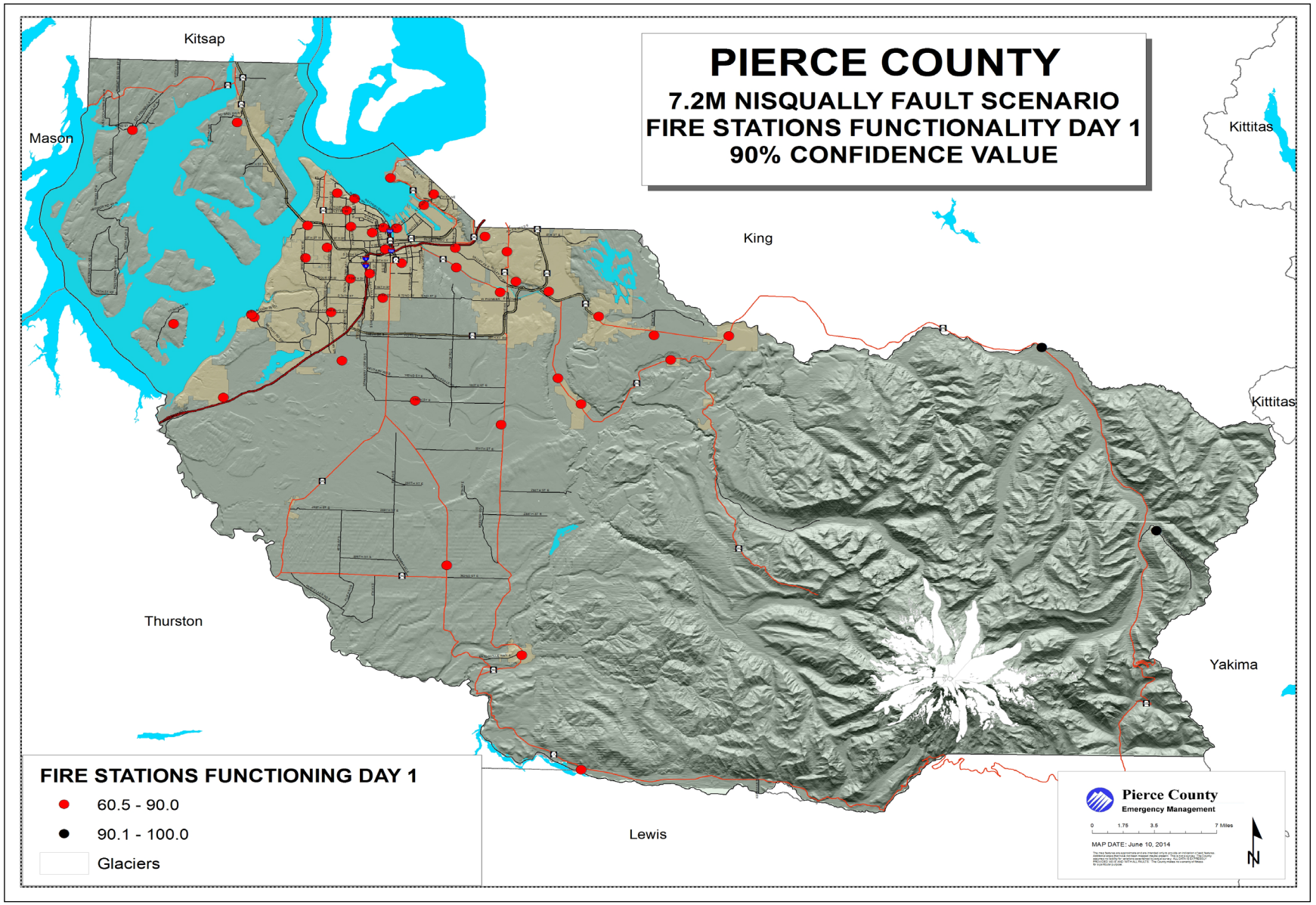
**Map D-9 Pierce County Tacoma Fault Scenario School Functionality Day 7 Map**



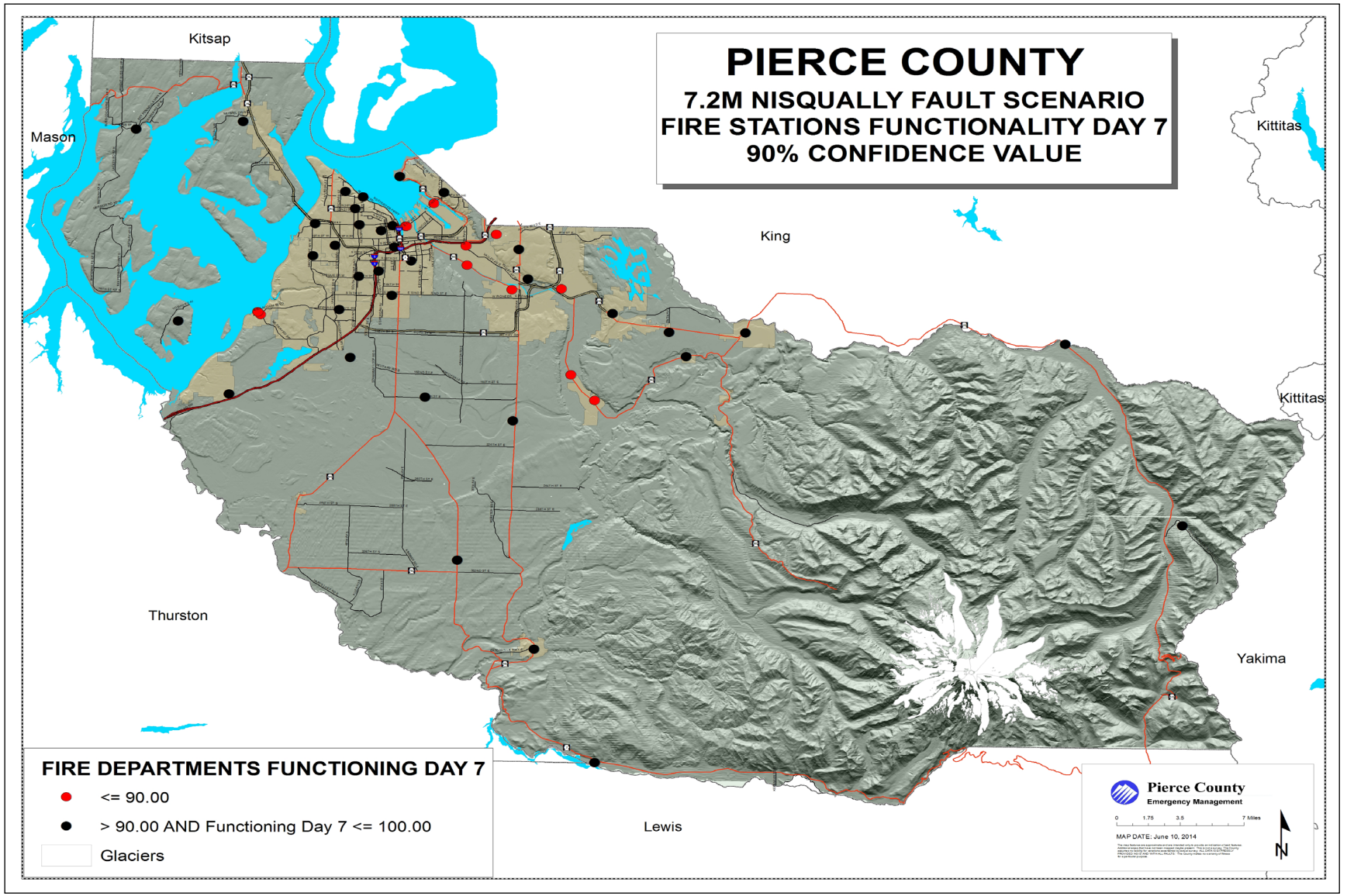
**Map D-10 Pierce County Nisqually Fault Scenario Total Losses Map**



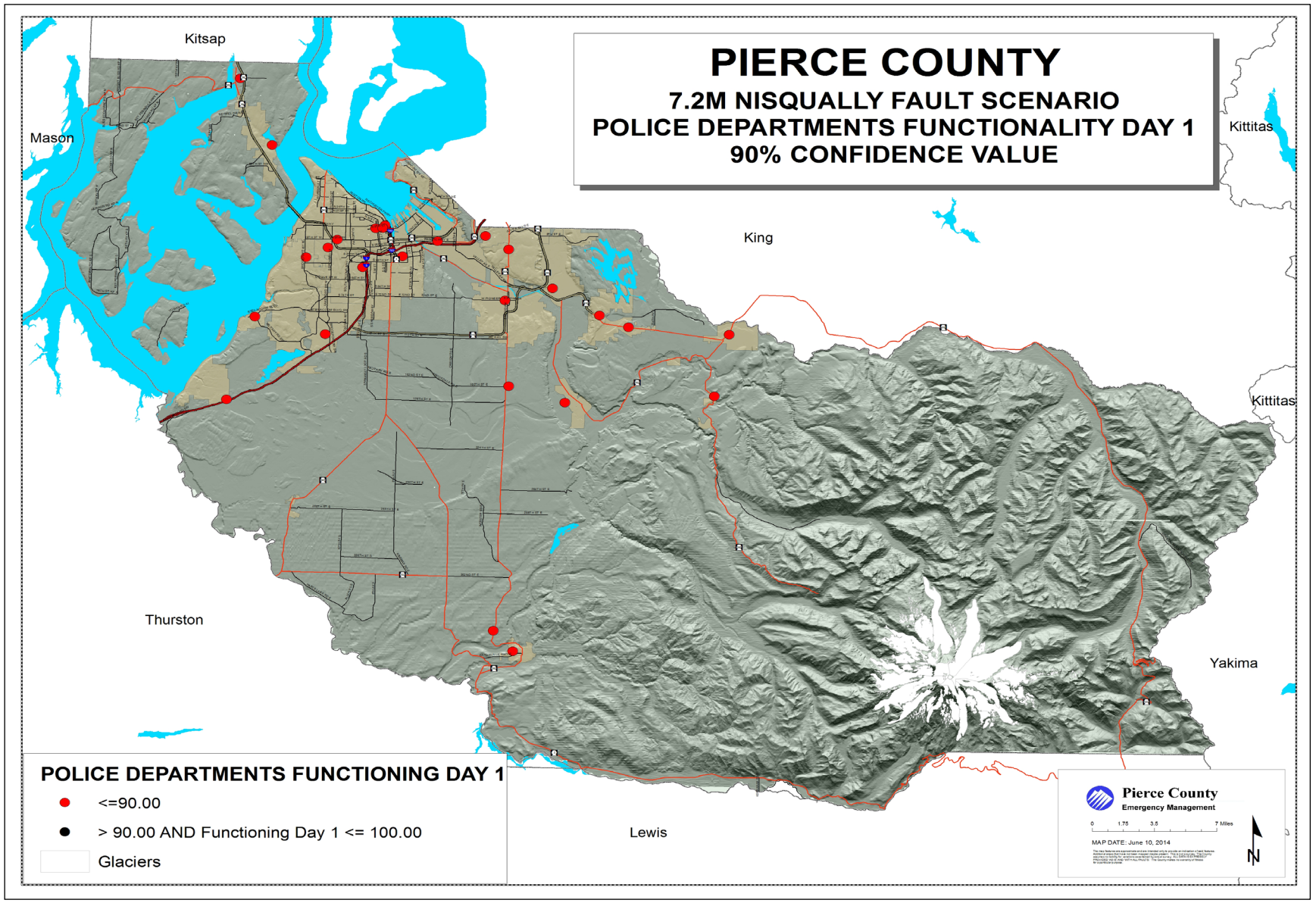
**Map D-11 Pierce County Nisqually Fault Scenario Fire Stations Functionality Day 1 Map**



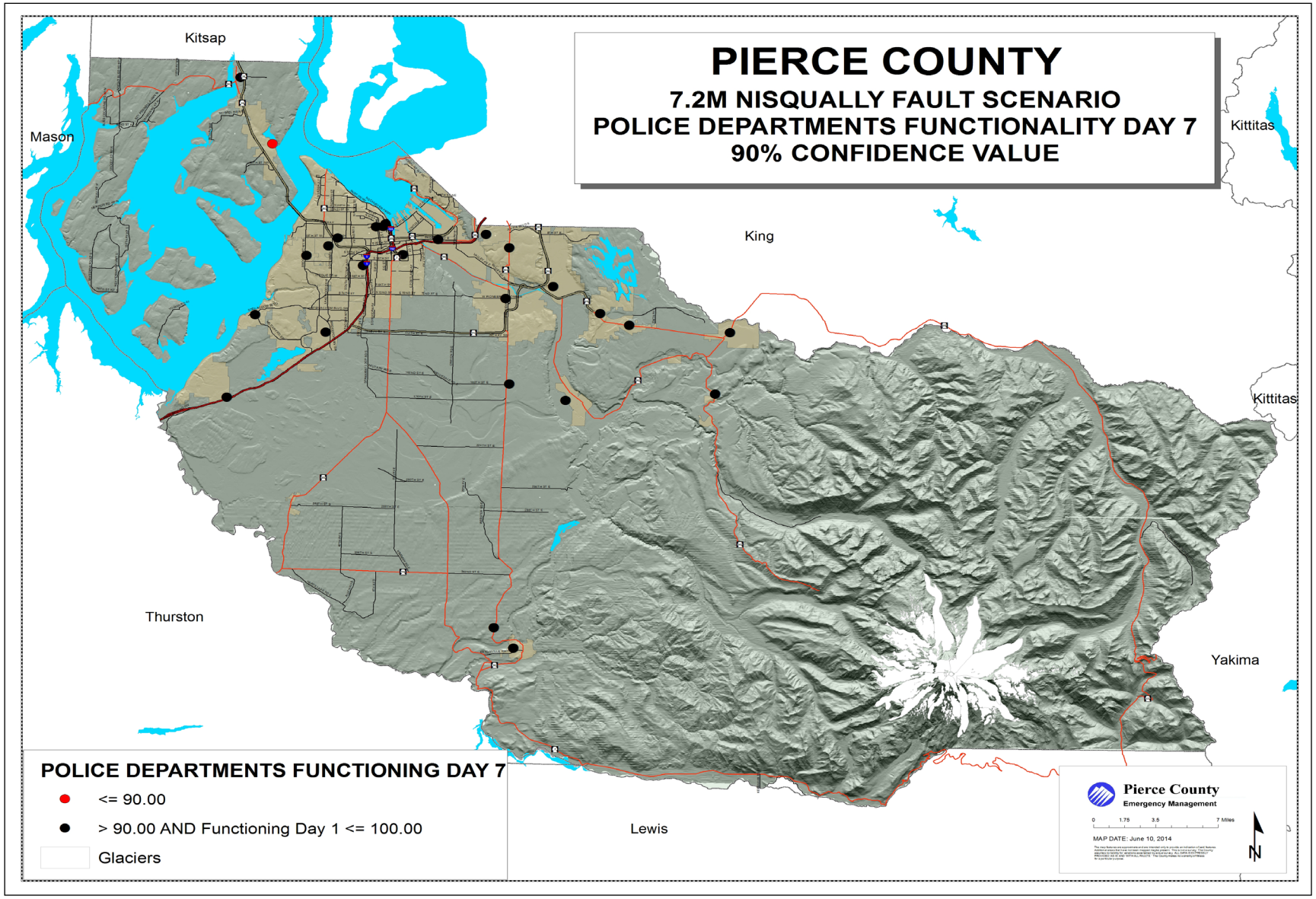
**Map D-12 Pierce County Nisqually Fault Scenario Fire Stations Functionality Day 7 Map**



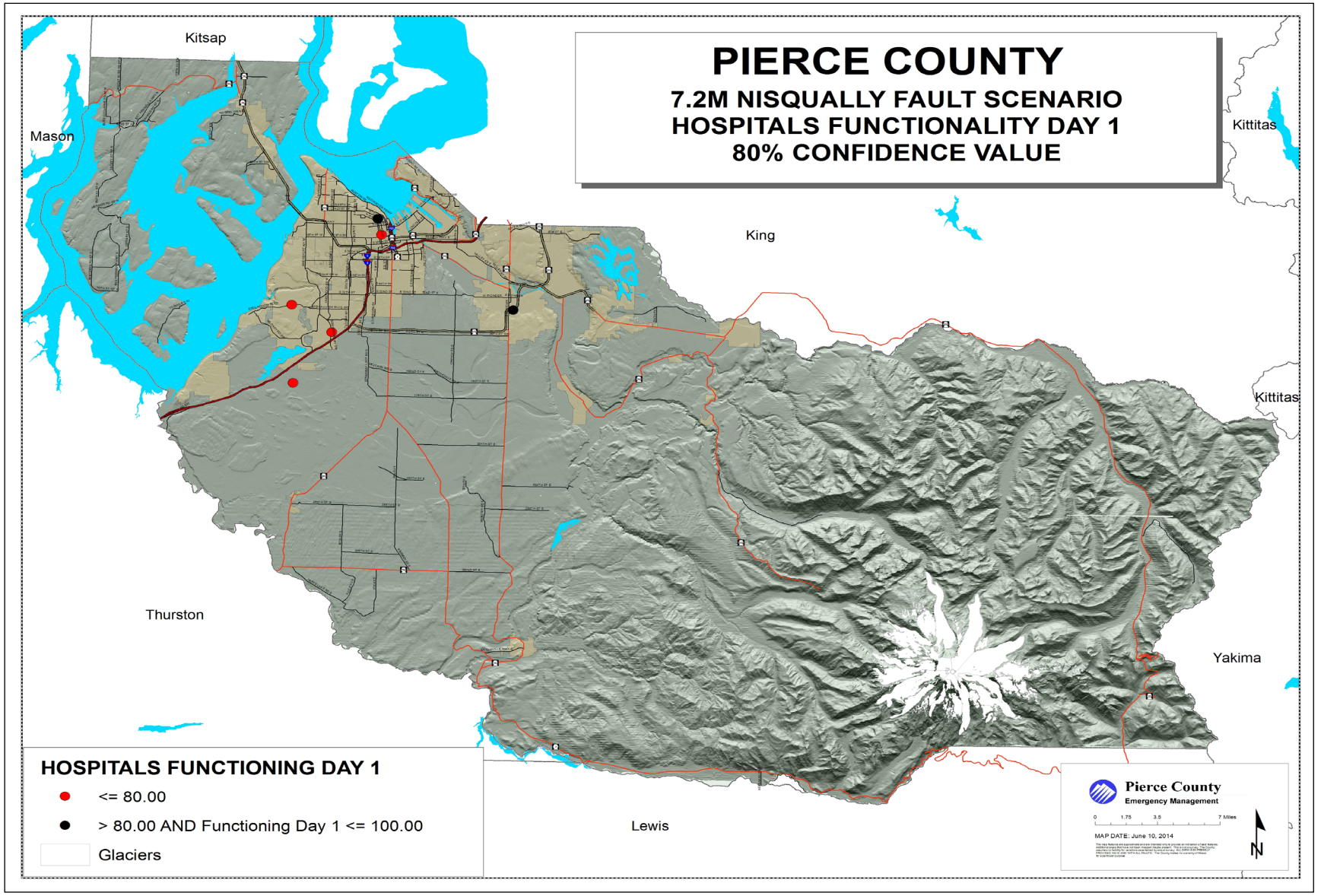
**Map D-13 Pierce County Nisqually Fault Scenario Police Departments Functionality Day 1 Map**[5]



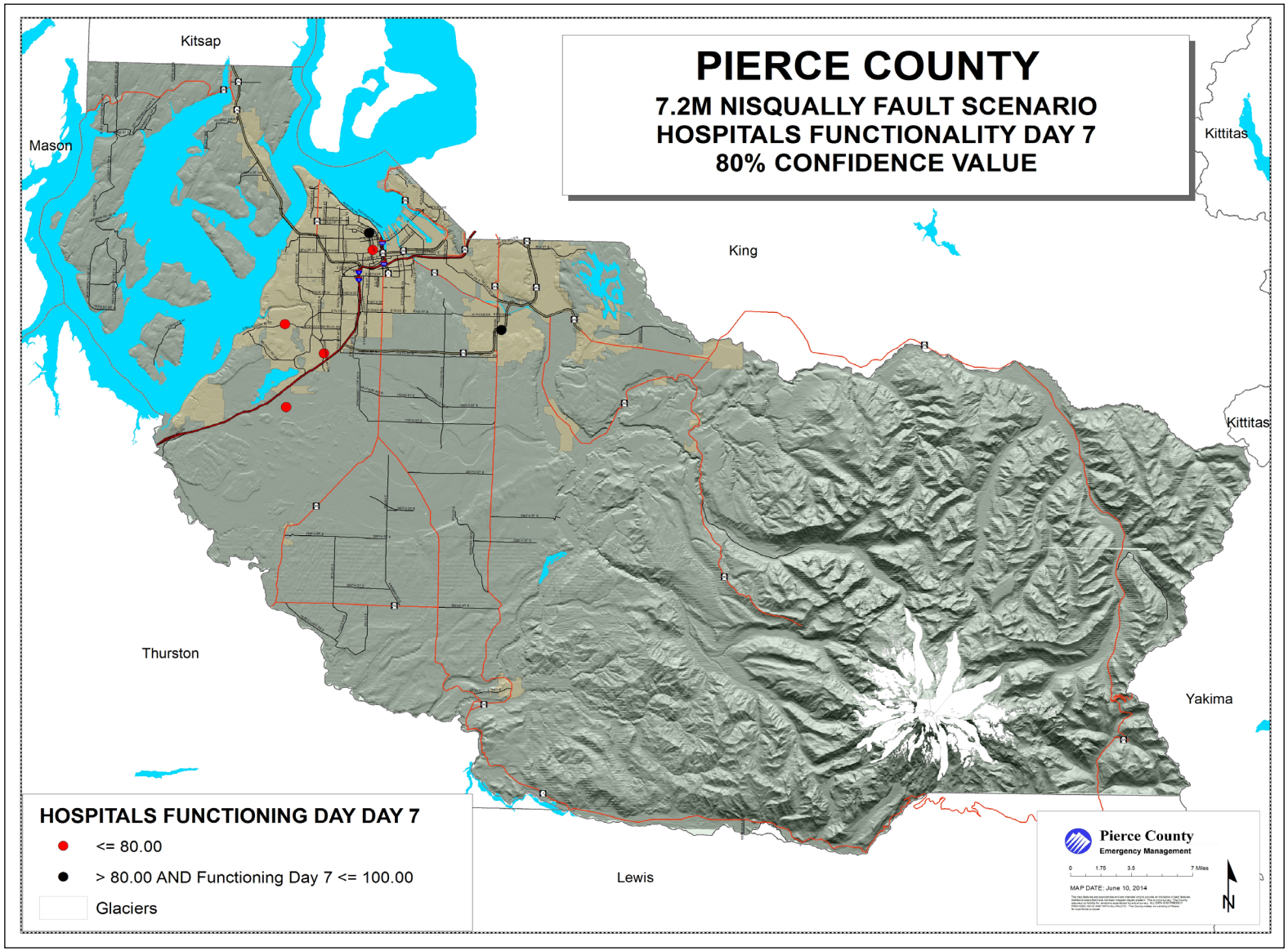
**Map D-14 Pierce County Nisqually Fault Scenario Police Departments Functionality Day 7 Map[6]**



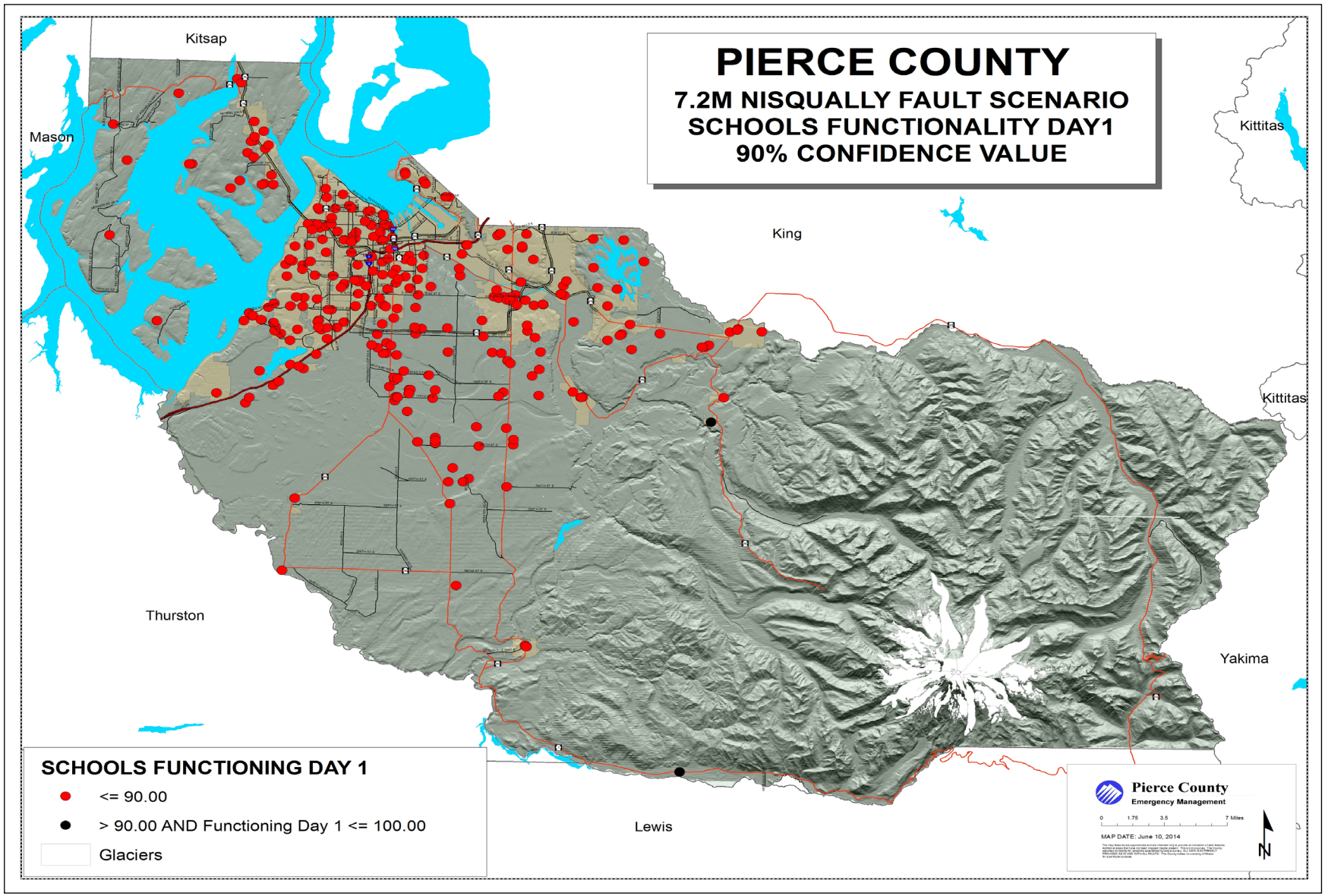
**Map D-15 Pierce County Nisqually Fault Scenario Hospital Functionality Day 1 Map**[7]



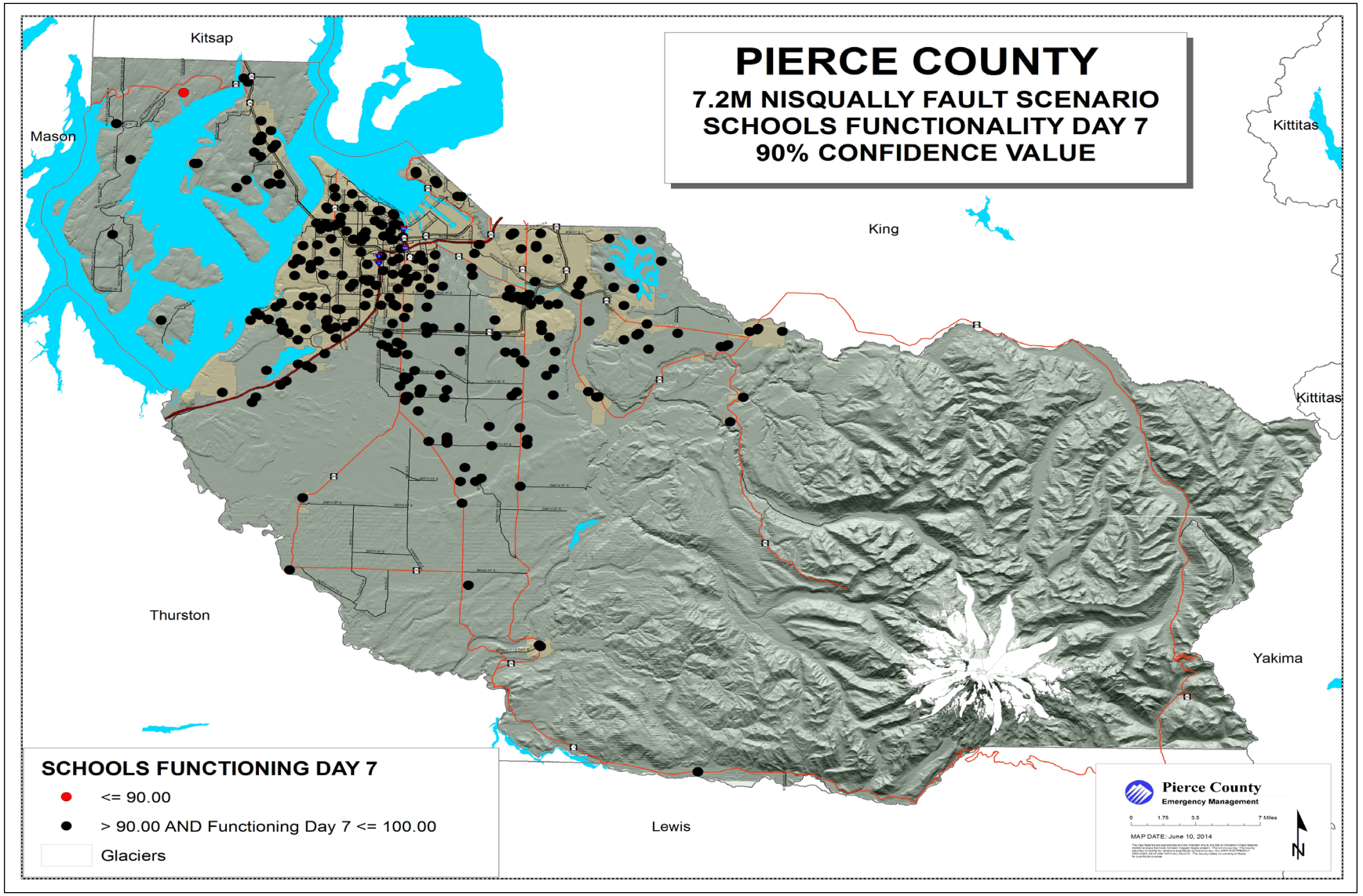
**Map D-16 Pierce County Nisqually Fault Scenario Hospital Functionality Day 7 Map**[8]



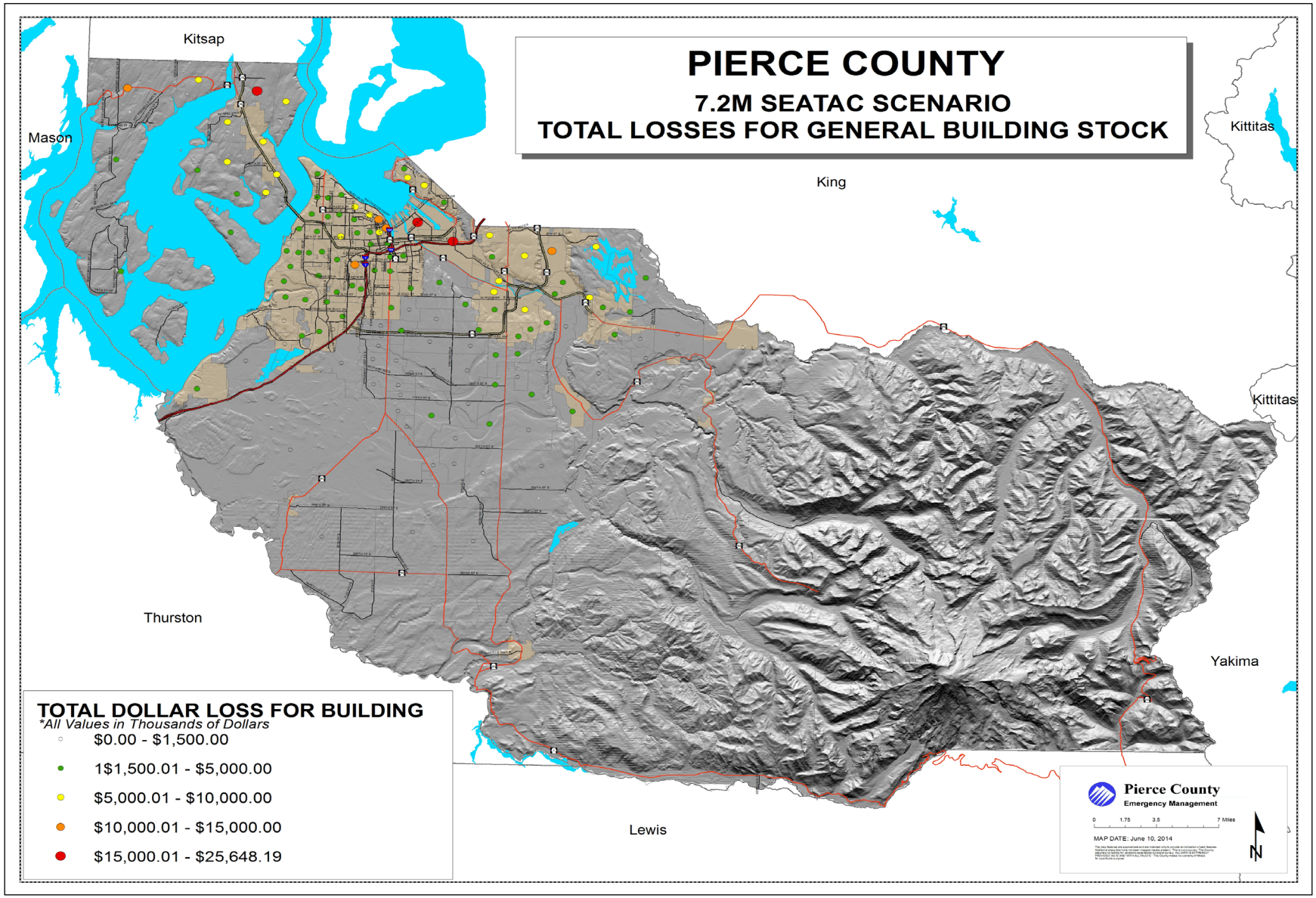
**Map D-17 Pierce County Nisqually Fault Scenario Schools Functionality Day 1 Map**



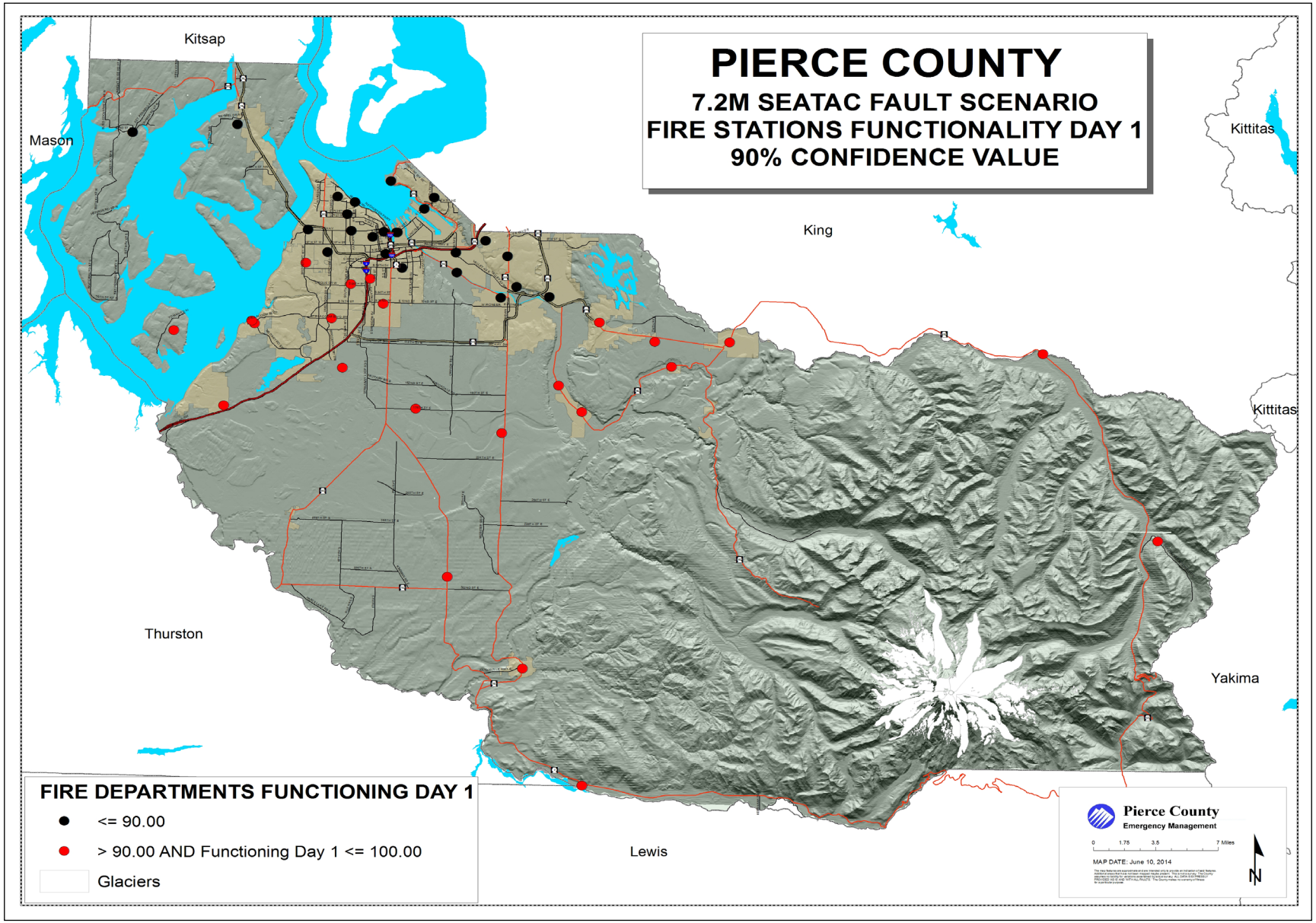
**Map D-18 Pierce County Nisqually Fault Scenario Schools Functionality Day 7 Map**



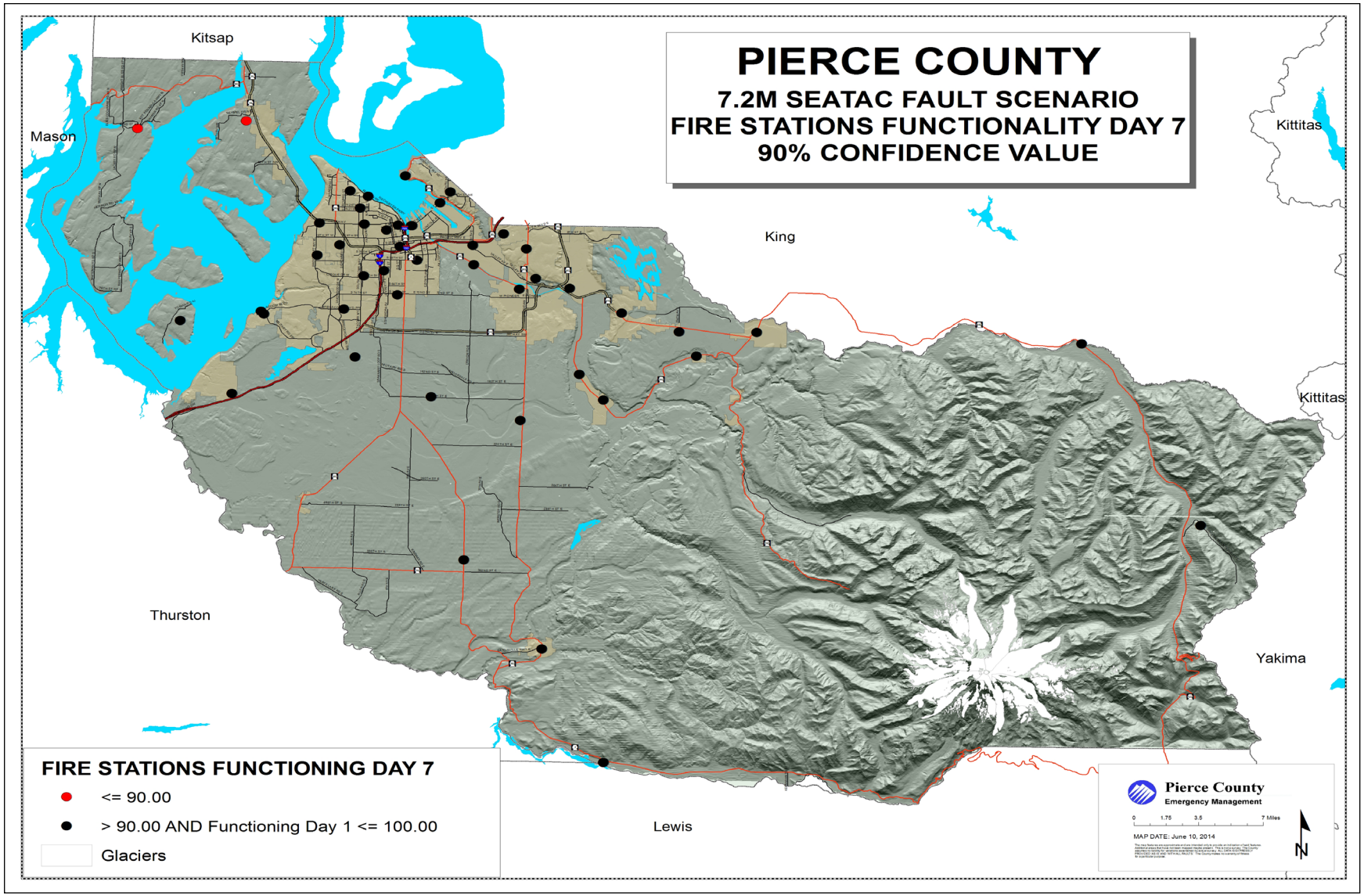
**Map D-19 Pierce County SEATAC Fault Scenario Total Losses Map**



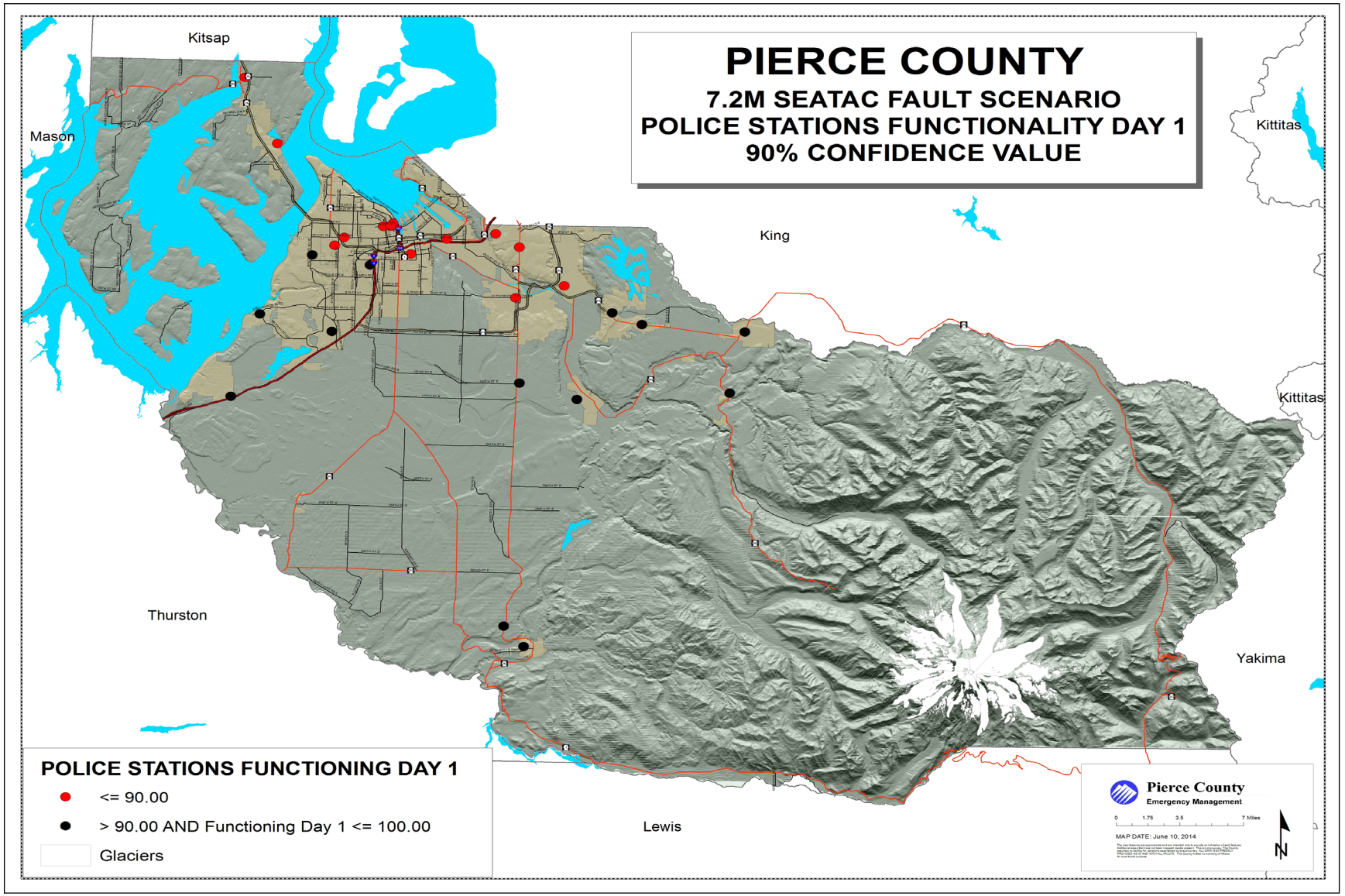
**Map D-20 Pierce County SEATAC Fault Scenario Fire Stations Functionality Day 1 Map**



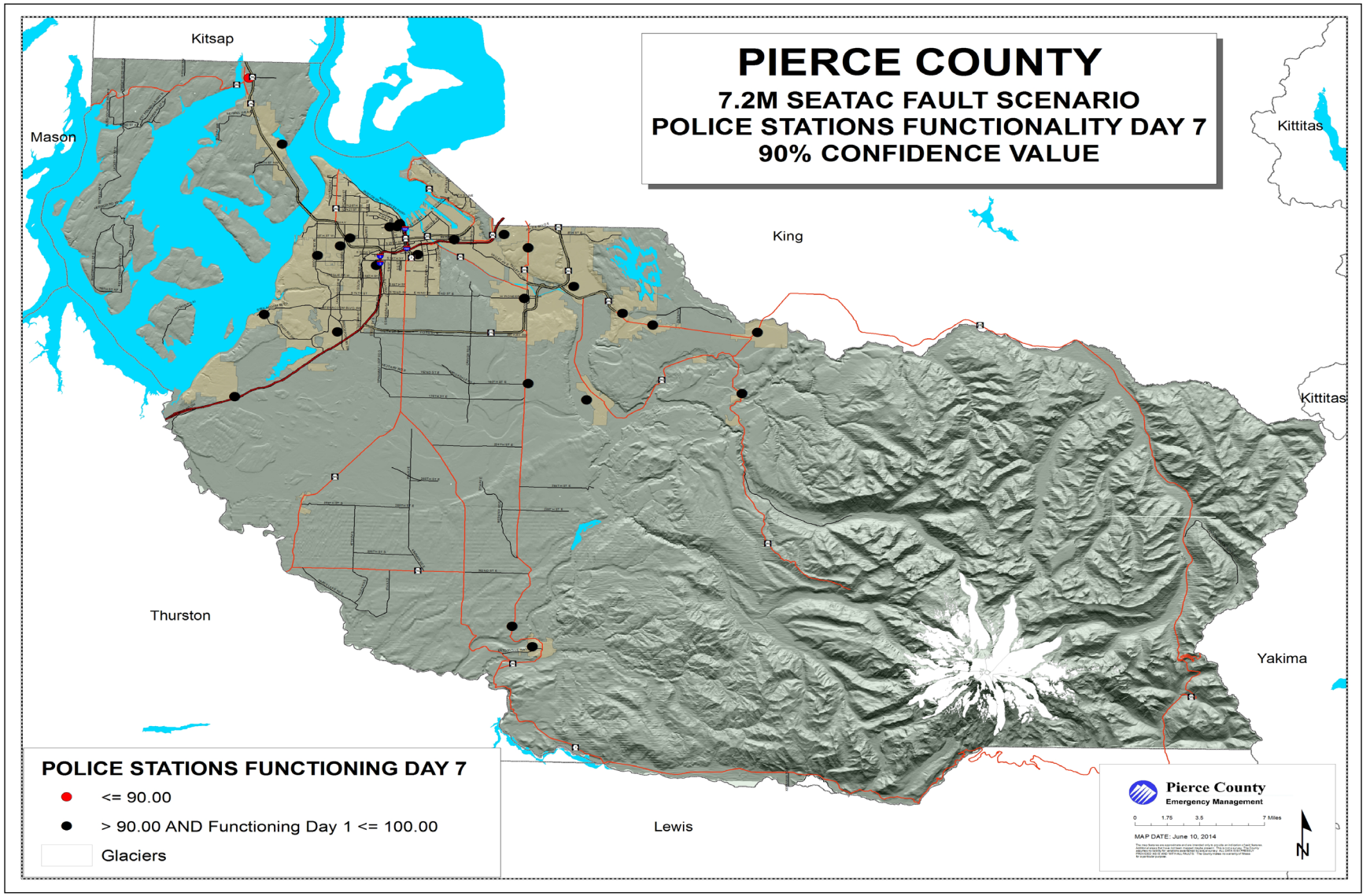
**Map D-21 Pierce County SEATAC Fault Scenario Fire Stations Functionality Day 7 Map**



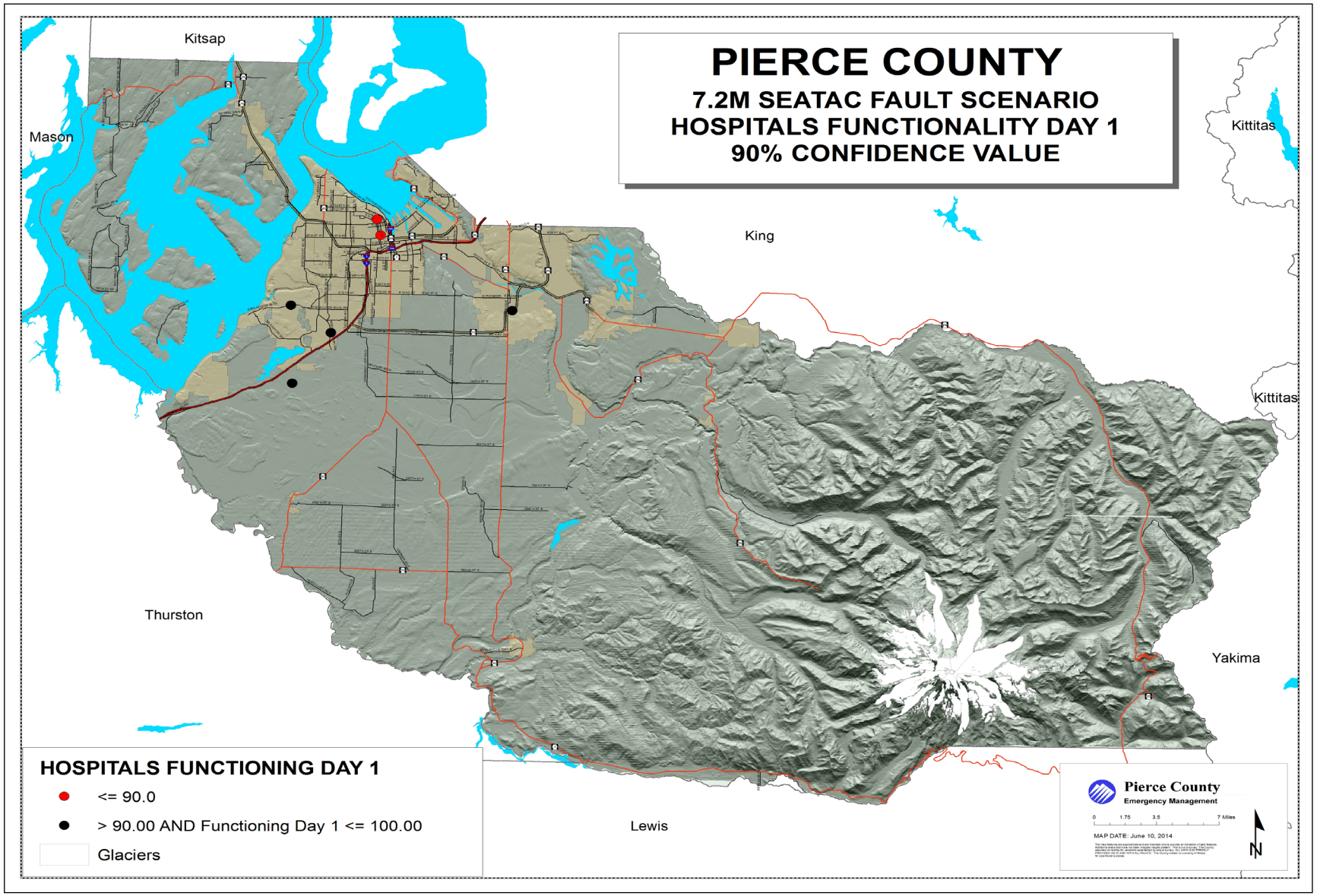
**Map D-22 Pierce County SEATAC Fault Scenario Police Department Functionality Day 1 Map[9]**



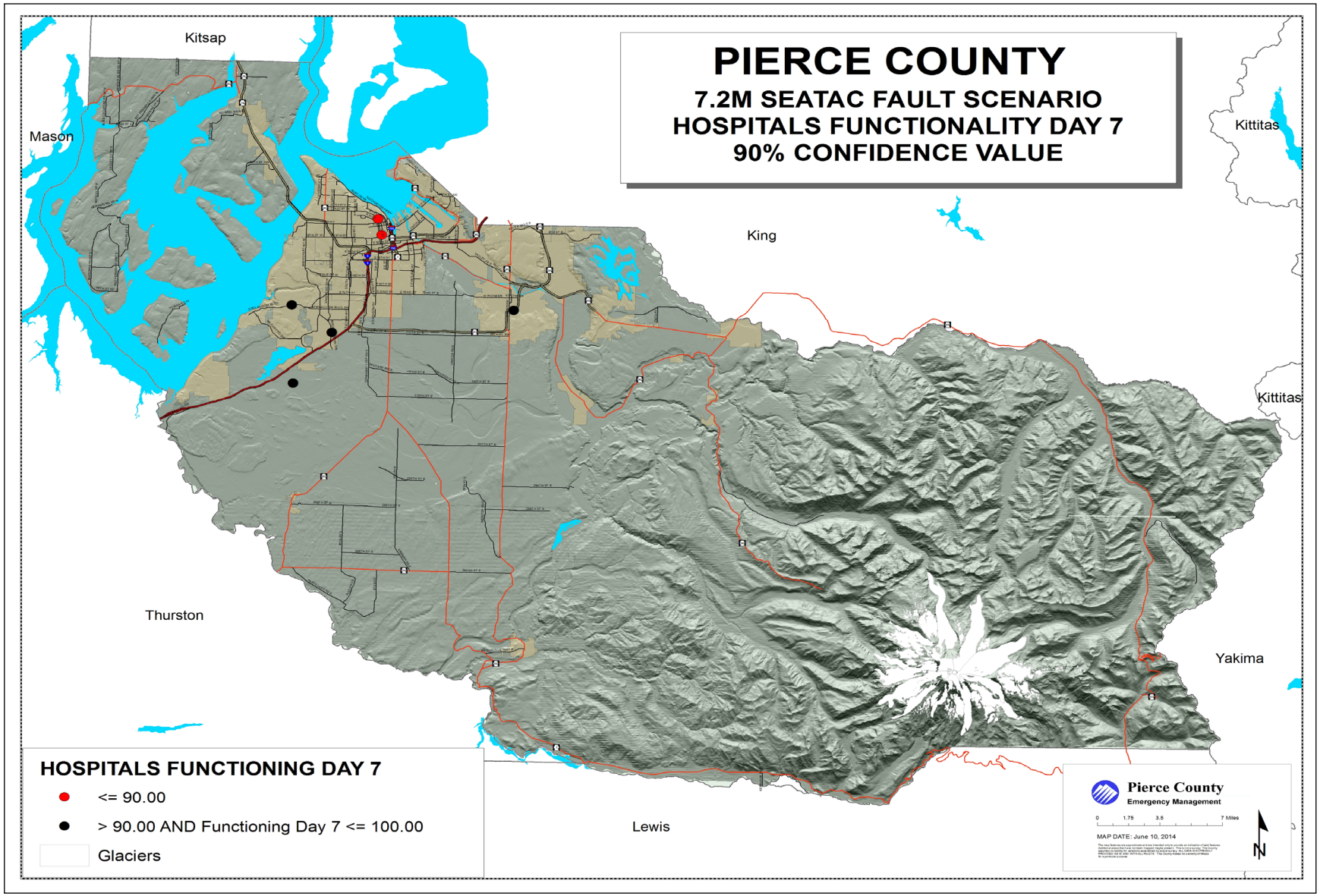
**Map D-23 Pierce County SEATAC Fault Scenario Police Department Functionality Day 7 Map[10]**



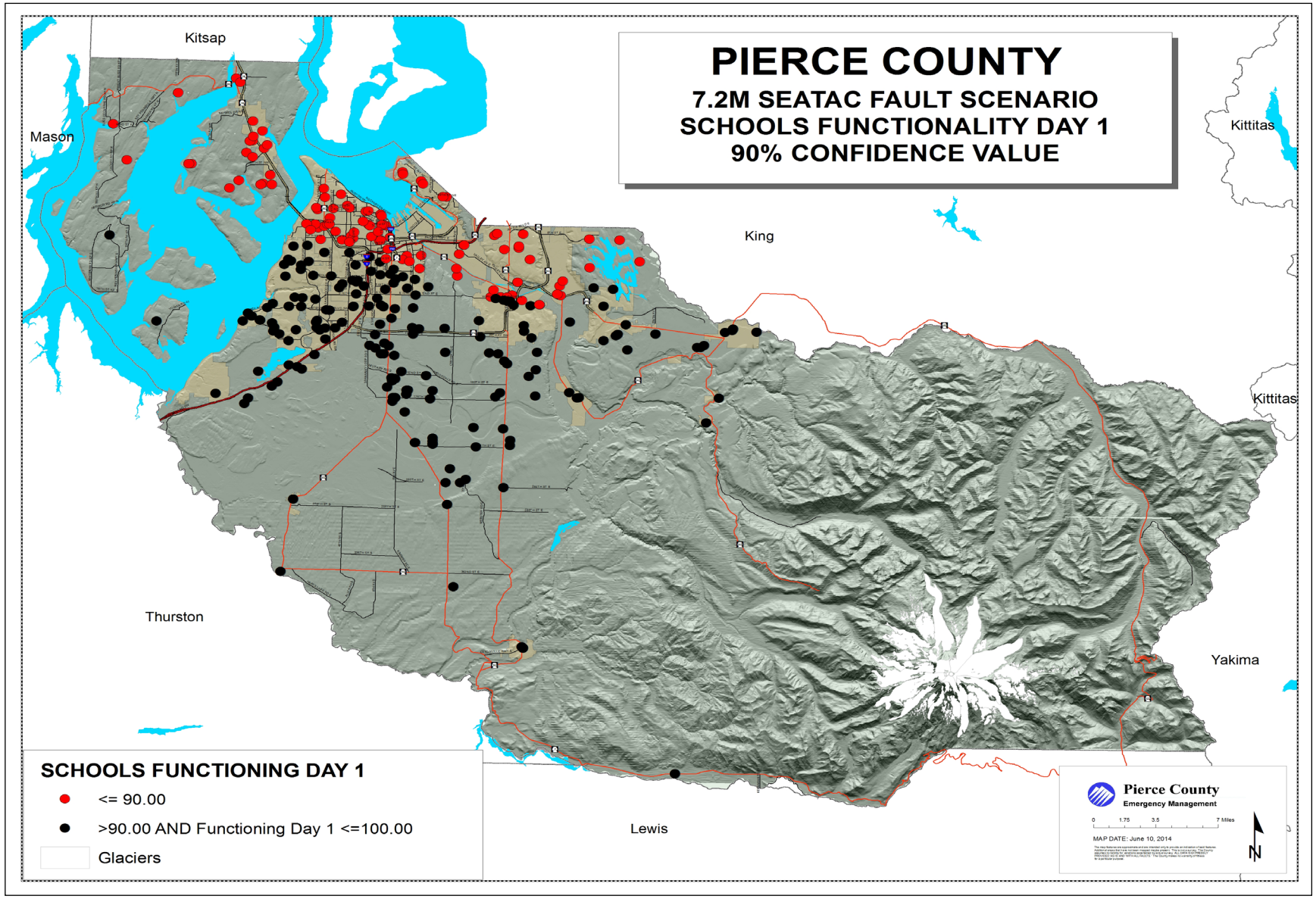
**Map D-24 Pierce County SEATAC Fault Scenario Hospital Functionality Day 1 Map**[11]



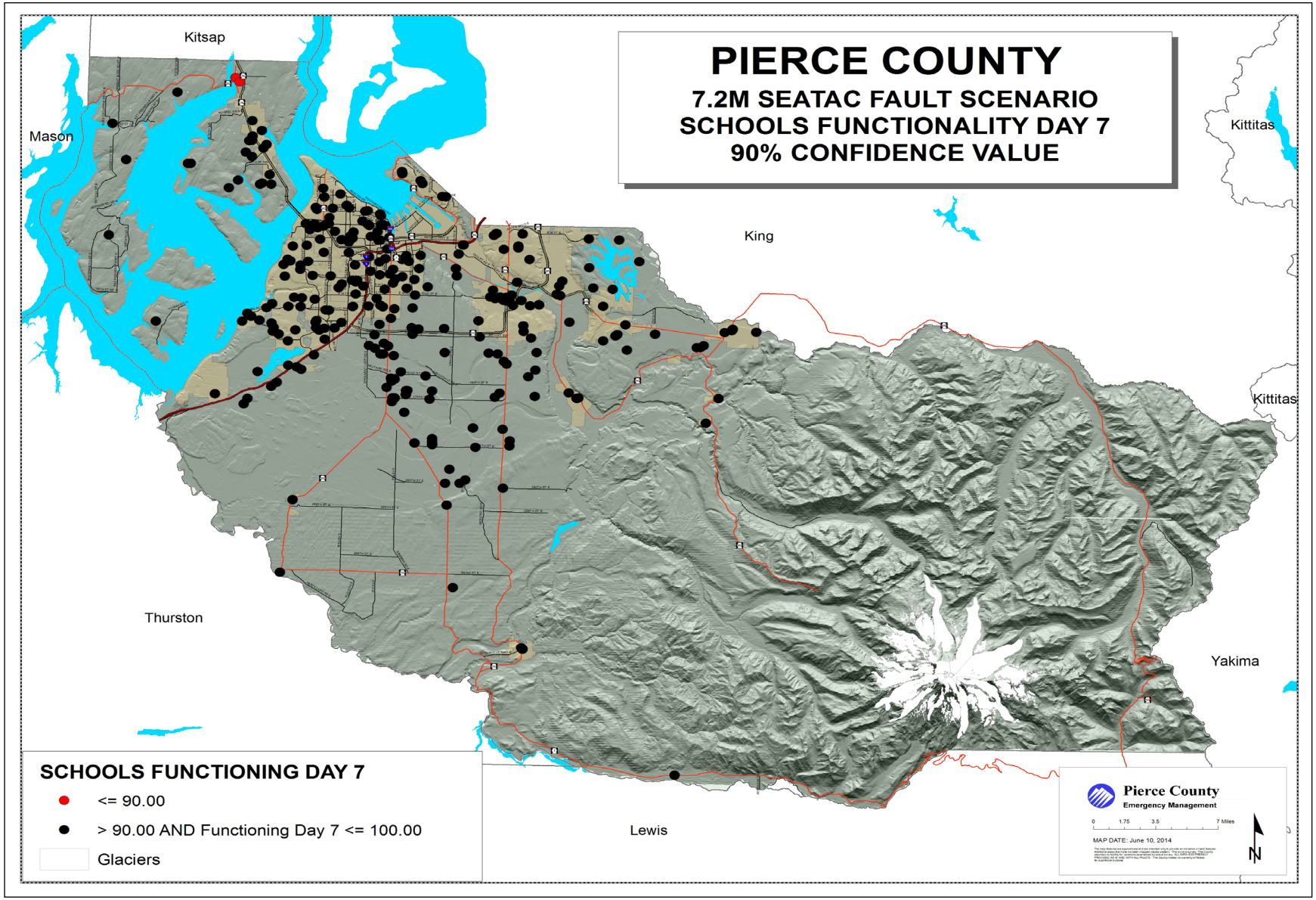
**Map D-25 Pierce County SEATAC Fault Scenario Hospital Functionality Day 7 Map[12]**



**Map D-26 Pierce County SEATAC Fault Scenario Schools Functionality Day 1 Map**



**Map D-27 Pierce County SEATAC Fault Scenario Schools Functionality Day 7 Map**



# Endnotes

[1] Hazus has placed the police station location incorrectly for the City of Orting. It should be located in the middle of the city with Fire District #18 as they share the same building.

[2] Hazus has placed the police station location incorrectly for the City of Orting. It should be located in the middle of the city with Fire District #18 as they share the same building.

[3] St. Anthony's Hospital is not included on the map due to the recent construction of the hospital lack of data at the time the analysis was done.

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# APPENDIX E

# REGION 5 ALL HAZARD MITIGATION PLAN
# 2020-2025 EDITION
# PORT OF TACOMA
# DOCUMENTATION RECORDS

## TABLE OF CONTENTS

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# PUBLIC COMMENT DOCUMENTATION

Public Meetings for 2020-2025 Edition – Special Commission Meeting

**SPECIAL COMMISSION MEETING – AUGUST 15, 2019**

Port of Tacoma

**BOARD OF COMMISSIONERS**
**Pierce County Skills Center (PCSC)**
**16117 Canyon Road East, Puyallup, Washington**

**COMMISSIONERS PRESENT:**
Clare Petrich, President
Don Johnson, Vice President
Dick Marzano, 1st Assistant Secretary
Don Meyer, 2nd Assistant Secretary
John McCarthy, Secretary

**COMMISSIONER EXCUSED:**

**STAFF PRESENT:**
Eric Johnson, Executive Director
Carolyn Lake, Legal Counsel
Scott Francis, Director, Real Estate
Alisha Peña, Sr. Planner
Evette Mason, Mgr. Government Affairs
Rod Koon, Sr. Mgr. Communications
Hughes Wike, Engineering Project Mgr. II
Deanna Seaman, Sr. Project Mgr. Water Quality
Leilani Berinobis, Executive Administrative Assistant
Juliet Campbell, Clerk

**11:30 AM EXECUTIVE SESSION**

CALL TO ORDER AND RECESS INTO EXECUTIVE SESSION:
Commissioner Petrich called the meeting to order at 11:30 a.m. and recessed into executive session for 30 minutes to discuss three litigation/potential litigation items per RCW 42.30.110(1)(i). No votes or actions were taken.

**12:00 NOON SPECIAL COMMISSION MEETING**

1. RETURN TO ORDER:
   Commissioner Petrich reconvened the special commission meeting at 12:05 p.m. and lead the Pledge of Allegiance.

   Michelle Ledbetter, Director of the Pierce County Skills Center (PCSC) provided an overview of the PCSC. PCSC is a regional facility where students from multiple school districts gain access to high-demand career and technical education programs. They serve 10 school districts, 27 high schools. A video highlighting students and programs at the PCSC was played.

   The PCSC is looking for future partnerships with the Port. They will soon have shop space opening in one of their buildings and will be looking toward maritime careers and positions available in the Port. SeaScouts, Cal-Maritime Academy, and the Tideflat Certification Program at the Tacoma School District were discussed.

2. CONSENT AGENDA:
   **It was moved and seconded** to approve the Consent Agenda, including approval of the July 18, 2019 minutes, and approval of the payment of checks 223823 through 224108, and wire transfers in the total amount of $15,292,605.10 during the period of July 6, 2019 through August 2, 2019.
   **The motion carried unanimously.**

3. PUBLIC COMMENT:

   Tom Seigel, Bethell School District superintendent. Commented on the lack of Pierce Transit access. There are 202 square miles, and only 3 miles of transit, all along Pacific Avenue. He said there is no bus service to Frederickson, no service on Meridian or Canyon. Expanding transit service to Canyon would decrease congestion for trucks and allow more students to attend the PCSC. Advised that the Bethel School District Board of Directors intends to approve a resolution to the Pierce County Council and Pierce Transit Board to expand bus lanes into this area.

Commissioner Petrich announced that item 5C was pulled from the action agenda.

4. STAFF UPDATES:

   A. All Hazard Mitigation Plan Update

   *Presenter(s): Alisha Peña, Debbie Bailey*

   - The existing All Hazard Mitigation Plan will expire July 23, 2020.
   - The plan is a roll-up of several different actions and initiatives undertaken by Port staff on a regular basis. It is a coordinated effort of 81 jurisdictions divided into 5 regions. The Puyallup Tribe has its own standalone plan.
   - Debbie Bailey from the Pierce County Department of Emergency Management provided an overview of the Plan, the process and the reasons for the Port's participation.
   - There are 7 sections to the plan, the greatest emphasis will be on sections 4 (risk assessment) and section 5 (mitigation strategies).
   - Plans are approved by the state and FEMA. If approved, staff will return with the approved Plan for adoption by the Commission by resolution.
   - Maintaining the Plan opens up grant funding opportunities including the Pre-Disaster Mitigation Grant and a Post Hazard Mitigation grant.
   - Public outreach is a requirement of the process. Commissioner Meyer wants to make certain our customers are contacted as part of this. One of the groups the Port will be engaging with is the Facility Security Officers (FSO) meeting. The FSO meetings include representations from labor, from terminal operators, U.S. Coast Guard, etc.

   B. 2019 Q2 Performance Goals and Expectations

   *Presenter(s): Eric Johnson*

   - The creation of a timeline and scope for updating the Port of Tacoma Strategic Plan by Q4 is underway. Eric Johnson intends to request authorization at next month's meeting to publish an RFP, interview consultants and execute a contract. Commissioner Meyer wants the definition of transportation to include road and rail. Commissioner Johnson emphasized the need for an implementation plan along with the strategic plan.
   - The Thorne Road property development design authorization is now expected to come before the Commission in September 2019.
   - The Port received a letter of support from the Puyallup Tribe for the Wapato Creek project.
   - Puyallup River Bridge opening has been delayed until Q3 2019. The bridge is anticipated to open in the second half of September. It will be able to accommodate empty container trucks.

- Commissioner McCarthy stressed the importance of the South Intermodal Yard and acquiring that property to control the Port's usage of the property. He said that should be a high priority in terms of land use.

C. Frederickson Town Center Update
*Presenter(s): Rod Koon*

- Provided a recap of the development of Frederickson.
- The Port first bought property in Frederickson in 1968. Part of the concept of the Port was to have property away from the waterfront where manufacturing could take place and some of the products could be shipped through the Port. This would be property the Port was willing to sell versus long-term leases.
- Businesses in Frederickson include the Boeing Wing Responsibility Center, Toray Composites, YCA Timber, Medallion Foods, JamesHardie, Carlson, Ikea and others.
- Some statistics on Frederickson include there are 21 acres of industrial lands. There are 37 companies located there accounting for approximately 4300 jobs, $350 million in wages and 2.4 billion in economic impact.
- The last two parcels were marketed as one, and they are under a pending sale expected to close toward the end of the year.
- Commissioners commented on the intergovernmental cooperation that was required to make Frederickson a success. It was noted that projects such as these, and having educational institutions like PCSC in the area, keep good paying jobs in the community.

5. ACTION AGENDA:

A. Building Demolitions
*Presenter(s): Scott Francis, Hughes Wike*
**It was moved and seconded** to authorize project authorization in the amount of $2,077,000, for total authorized amount of $2,458,000, for the building demolitions at 2306 and 2338 East 11th Street, 3502 Lincoln Avenue, and 1110 Alexander Avenue, Master Identification Nos. 101442.01, 101442.02, 101442.03 and 101452.01.
**The motion carried unanimously.**

- Commissioner Meyer would like staff to investigate a design-build/design-demolish process in the future.
- All three properties have potential tenants once they become available.

B. Interlocal Agreement with City of Tacoma
*Presenter(s): Deanna Seaman*
**It was moved and seconded** to authorize the Port of Tacoma Executive Director to execute a one-year extension of the Interlocal Agreement with the City of Tacoma for Mutual Cooperation & Support Regarding Agency Stormwater Management.
**The motion carried unanimously.**

- Merita Trohimovich, P.E. Principal Engineer, City of Tacoma Surface Water Center for Urban Waters attended the meeting and expressed appreciation for the cooperative nature of the agreement.

C. *PULLED*

6. GENERAL BUSINESS:
   A. Executive Director Events, Announcements, and Recognitions
      - The Port's annual boat tours were a success.
      - The Port was represented by two commissioners and the executive director at the Puyallup River Bridge renaming ceremony.
      - The Port's Touch-a-Truck event is happening in September.
      - The Port's Strategic Plan RFP will come before the Commission next month.
      - TOTE Maritime has announced they will relocate to Tacoma.
      - Interest rates have hit record lows and the Port's finance team will be looking into refinancing debt.
      - The regular September Commission has been rescheduled. It will be a special meeting and is scheduled for September 26, 2019.
      - There is a Study Session scheduled for August 16, 2019 with University of Washington Tacoma.

7. COMMISSIONER COMMENT:

Commissioner Marzano: Thanked staff volunteers for the various Port activities at community events such as the boat tours and farmers markets.

Commissioner Meyer: Would like the Port's executive director to give some thought on how the Port may want to position itself on the issue of public transportation raised by Superintendent Seigel.

Commissioner Johnson: Skill-based training is critical regardless of profession. Places like the PCSC provide insight for young people to know what they want and, importantly, what they don't want in life.

Commissioner McCarthy: He appreciates the sound and room setup. He will be taking a grandchild to the Touch-a-Truck event. He and Commissioner Petrich attended the renaming ceremony of the Puyallup River Bridge. He requested an update on Sound Transit 3 station locations near the Tideflats.

Commission Petrich: Provided an update related to the Subarea Plan. The Port identified Greg Underbrink VP of Business Development for Ports America and Brenda Martin, VP of Husky Terminals as interested in serving as possible Port appointees in the Business and Industry category. In the Water Quality category, the Port identified Joel Baker UWT Director Center for Urban Waters and Bruce Martin, Westrock Energy Resource Manager.

8. ADJOURNMENT: There being no further business before the Commission, the meeting adjourned at 1:38 p.m.

Clare Petrich, President
Port of Tacoma Commission

ATTEST:

Don Johnson, Vice President
Port of Tacoma Commission

Juliet Campbell, Clerk of the Port
Port of Tacoma

# Public Meetings for 2020-2025 Edition – South Sound Facility Security Officers

Port of Tacoma

## South Sound Facility Security Officers

Location: Fabulich Bldg. Date: February 11, 2020 Facilitator: Gerry Fiola, Chief Port of Tacoma, Security

**AGENDA**

1. Introductions
2. Hazard Mitigation Plan Update.....Alisha Pena
3. Coronavirus Update .....USCG
4. Homeless Encampments .....Gerry Fiola
5. Food Trucks.....Louis Cooper
6. Roundtable

**General Reminders:**

- Next South Sound FSO Mtg. Tuesday April 14th 1200-1330

**Tentative 2020 Schedule for AMSC Meetings**

AMSC Executive Meetings (EC) (Classified up to Secret) *Port Readiness Committee meetings in the afternoon)

- Thursday 5 March 2020 10:00 - 12:00 JHOC Conference Room*
- Thursday 4 June 2020 10:00 - 12:00 JHOC Conference Room
- Thursday 17 Sept 2020 10:00 - 12:00 JHOC Conference Room*
- Thursday 3 Dec 2020 10:00 - 12:00 JHOC Conference Room

AMSC General Meetings (GC)

- Thursday 12 March 2020 10:00 -12:00 Seattle
- Thursday 11 June 2020 10:00 -12:00 Location TBD
- Thursday 24 Sept 2020 10:00 -12:00 Location TBD
- Thursday 10 Dec 2020 10:00 -12:00 Location TBD

Adjourn

3600 Port of Tacoma Road Suite 106, Tacoma WA 98424 |Phone: 253.383.9472 | www.portoftacoma.com