CITY OF ORTING
ADDENDUM A-10
REGION 5 ALL HAZARD MITIGATION PLAN
2020-2025 EDITION

Prepared for:

City of Orting
110 Train Street SE
Orting, WA 98360

In Cooperation with:

Pierce County Department of Emergency Management
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ADDENDUM A-10

REGION 5 ALL HAZARD MITIGATION PLAN
2020-2025 EDITION
CITY OF ORTING

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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
CITY OF ORTING
PROCESS SECTION

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Changes To Jurisdiction Plan in this Document

This Process Section for the City of Orting Hazard Mitigation Plan includes the following changes that are documented as a result of a complete review and update of the existing 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. This document when completed and approved will become the City of Orting Hazard Mitigation Plan.

Change Matrix

This Matrix of Changes documents the pertinent changes made from the July 2015 City of Orting 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 City of Orting 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 – City of Orting 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 goals and objectives for this jurisdiction in the Mitigation Strategy.

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 on Orting's demographics in more detail and capturing some of the at-risk populations. This also allowed the city to provide an updated overview of its growing population beyond the 2010 census which is outdated.
	2015 Orting Base Map	The City of Orting Base map and Land Use map was updated for 2020.

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 City of Orting.

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 City of Orting 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 City of Orting 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	The 2020 Plan contains six Appendices including: place for the final resolution and

Appendices.	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."[1]

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-DEPARTMENT
Woody Edvalson	Emergency Manager	City of Bonney Lake
Alan Predmore	Fire Chief/Emergency Manager	City of Buckley
Jeffrey Wilson	Director of Community Development	City of DuPont
Micah Lundborg	Chief of Police	City of Edgewood
Pete Fisher	Police Chief	City of Fife
Robert Eugley	Patrol Officer	City of Fife
John Cheesman	Chief of Police	City of Fircrest
Kelly Busey	Chief of Police	City of Gig Harbor
Carl Desimas	City Planner	City of Gig Harbor
John Unfred	Assistant Police Chief	City of Lakewood
Tony Hernandez	Police Chief	City of Milton
Mark Bethune	City Manager	City of Orting
Kirstin Hofmann	Emergency Manager	City of Puyallup
Chief Armitage	Police Chief	City of Roy
Officer Armitage	Police Officer	City of Roy
Ryan Windish	Community Development Director	City of Sumner
Ute Scofield	Emergency Manager	City of Tacoma
Jacob Rain	EM Program Coordinator	City of Tacoma
Lisa Petorak	Human Resources Manager	City of University Place
Jack Ecklund	Dir. of Engineering & Capital Projects	City of University Place
Daillene Argo	Clerk-Treasurer	Town of Carbonado
Abby Gribi	Town Administrator	Town of Eatonville
Glen Yates	Eatonville Police Department	Town of Eatonville
Emily Terrell	Consultant	Town of South Prairie
Paul Loveless	Town Administrator	Town of Steilacoom
Alan Predmore	Fire Chief	Town of Wilkeson

Table 1-3 Planning Teams – Regional Group

NAME	TITLE	JURISDICTION-DEPARTMENT
Woody Edvalson	Director/EM Coordinator	City of Bonney Lake
Alan Predmore	Fire Chief/EM Director	City of Buckley ~ Town of Wilkeson ~ Town of Carbonado
Daillene Argo	Town Clerk-Treasurer	Town of Carbonado
Mark Bethune	City Administrator	City of Orting
Emily Terrell	Contracted Planner	Town of South Prairie
Ryan Windish	Community Development Director	City of Sumner
Trisha Sumners	Town Clerk-Treasurer	Town of Wilkeson
Jim Jaques	Fire Chief, Asst.	East Pierce Fire & Rescue
Zane Gibson	Fire Chief	Orting Valley Fire
Scott Hubbard	Superintendent	Carbonado Historical School District #19
Jessie Sprouse	Principal/Superintendent	Carbonado Historical School District #19
Kirsten Parker	Director of Human Resources	Dieringer School District
Chris Willis	Executive Director of Student Support Services	Orting School District
Holly Mortenson	Payroll Specialist & Ops Support Asst.	Orting School District
Cheryl Collins	Risk Manager	Sumner-Bonney Lake School District
Michelle Bradshaw	Intervention Specialist	White River School District
Jer Argo	Director of Business and Operations	White River School District
James Oliver	Assistant Director of Operations	Community Health Care
Curt Simonson	HOA President	Crystal River Ranch Association
Gary Castell	HOA Resident	Crystal Village Homeowners Assoc.
Woody Edvalson	Director/EM Coordinator	City of Bonney Lake
Alan Predmore	Fire Chief/EM Director	City of Buckley ~ Town of Wilkeson ~ Town of Carbonado
Daillene Argo	Town Clerk-Treasurer	Town of Carbonado
Mark Bethune	City Administrator	City of Orting
Emily Terrell	Contracted Planner	Town of South Prairie
Ryan Windish	Community Development Director	City of Sumner
Trisha Sumners	Town Clerk-Treasurer	Town of Wilkeson

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 January 2020 between all

Planning Groups. Additional working group drop-in workshops were provided for jurisdictions to continue to work on and update their plans. Two "drop-in" workshops were provided each month from January through June alternating between morning and afternoons to accommodate work schedules.

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. These discipline groups will continue to meet on an annual basis for the relationship building and sharing of mitigation strategies and ideas.

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). The Regional Groups were developed based on geographic location and the commonality of hazards shared and was new with this update. This provided for better community planning, relationship building, and collaboration of mitigation strategies ultimately leading to community resiliency. These Regional groups will continue to meet on an annual basis and as sub committees are developed to work on specific projects the frequency of meetings will potentially increase.

Table 1-4 Planning Team Meetings

Planning Team Meeting #1 – Cities & Towns: PCEM Puyallup Room – February 21, 2019
Planning Team members Debbie Bailey and Wyatt 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 – NE Regional Group: Buckley Fire Station – March 18, 2019
Planning Team members Debbie Bailey and Wyatt 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. 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 – NE Regional Group: Buckley Fire Station – May 15, 2019

Planning Team members Debbie Bailey and Wyatt 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 – NE Regional Group: Buckley Fire Station – July 25, 2019
Planning Team members Debbie Bailey and Wyatt 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 – NE Regional Group: Buckley Fire Station – September 16, 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 – NE Regional Group: Buckley Fire Station – November 4, 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 – NE Regional Group: Buckley Fire Station – December 9 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.

Date	Location	Comments/Outcome
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	

Public Comment

Date	Location	Time
March 2019	Orting Monthly Newsletter	
May 2019	Orting Monthly Newsletter	
May 10, 2019	Orting School District Annual Lahar Evacuation Drill	9:30am
September 2019	Orting Monthly Newsletter	
June 6, 2019	Orting Middle School Carbon River Setback Levee Feasibility Study Open House Public Community	9am – 2pm

	Meeting. Entity and stakeholder groups include, City of Orting, Orting Valley Fire Department, Pierce County Emergency Management, Foothills Rails to Trails Coalition, Pierce County Parks, WA Fish and Wildlife.	
October 5, 2019	Orting Red Hat Days, Orting park	10am – 4pm

Public participation is a key component to strategic planning processes.

Public meetings identify common concerns and ideas regarding hazard mitigation and to discuss specific goals, objectives and measures of the mitigation plan. Citizen participation offers citizens the chance to voice their ideas, interests, and opinions. Integrating public participation into the development of the City of Orting's Hazard Mitigation Plan update has helped to ensure an accurate depiction of the City's' risks, vulnerabilities, and mitigation priorities.

The City of Orting's residents expressed their greatest hazard of concern, a spontaneous lahar occurring at night and not being able to hear notifications. Most who provided feedback hear the monthly lahar sirens and had participated in the annual evacuation drill at least once. Many reported on their evacuation times and were concerned about traffic congestion. Many shared their connection with a vulnerable population and how transportation impacts them. Many shared that someone is dependent on them for transportation or could be, such as children who have just come home from school and parents are not home from work. Several were concerned with where they reside and feasibility of evacuation with these populations. A few were families who recently moved to the area and were not aware of the hazards or efforts the City was taking to prepare. Other hazards such as the Cascadia Subduction Zone earthquake and landslides were also discussed and talked about but mostly in connection with the lahar scenario. For additional documentation see Appendix E.

Elected Officials Meeting

On January 30, 2019, Orting City Administrator Mark Bethune and Pierce County Emergency Management Coordinator Debbie Bailey presented an overview of the Hazard Mitigation Plan update process to the Orting City Council. The major FEMA requirements were discussed, as well as the various sections of the plan, and approval to proceed with the project was granted by the governing body.

Joint Planning Requirement

The City of Orting has the following identified plan which must collaborate with the mitigation plan; these plans are identified in the table below and must be updated within the predetermined timeline.

Plan	Next Update
Orting Comprehensive Plan	June 30, 2020
Critical Areas Ordinance	June 30, 2020
Shoreline Master Program	June 30, 2019

Endnote

[1] 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
CITY OF ORTING
PROFILE SECTION

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Vision Statement

The Vision of the City of Orting is as follows:

Orting is a diverse, thriving and safe community in the foothills of Mount Rainier; a welcoming place to live, work and play.

Services Summary

The City of Orting was incorporated in the year 1889.

The City provides the following services through their own capabilities:

Table 2-1 City Services[1]

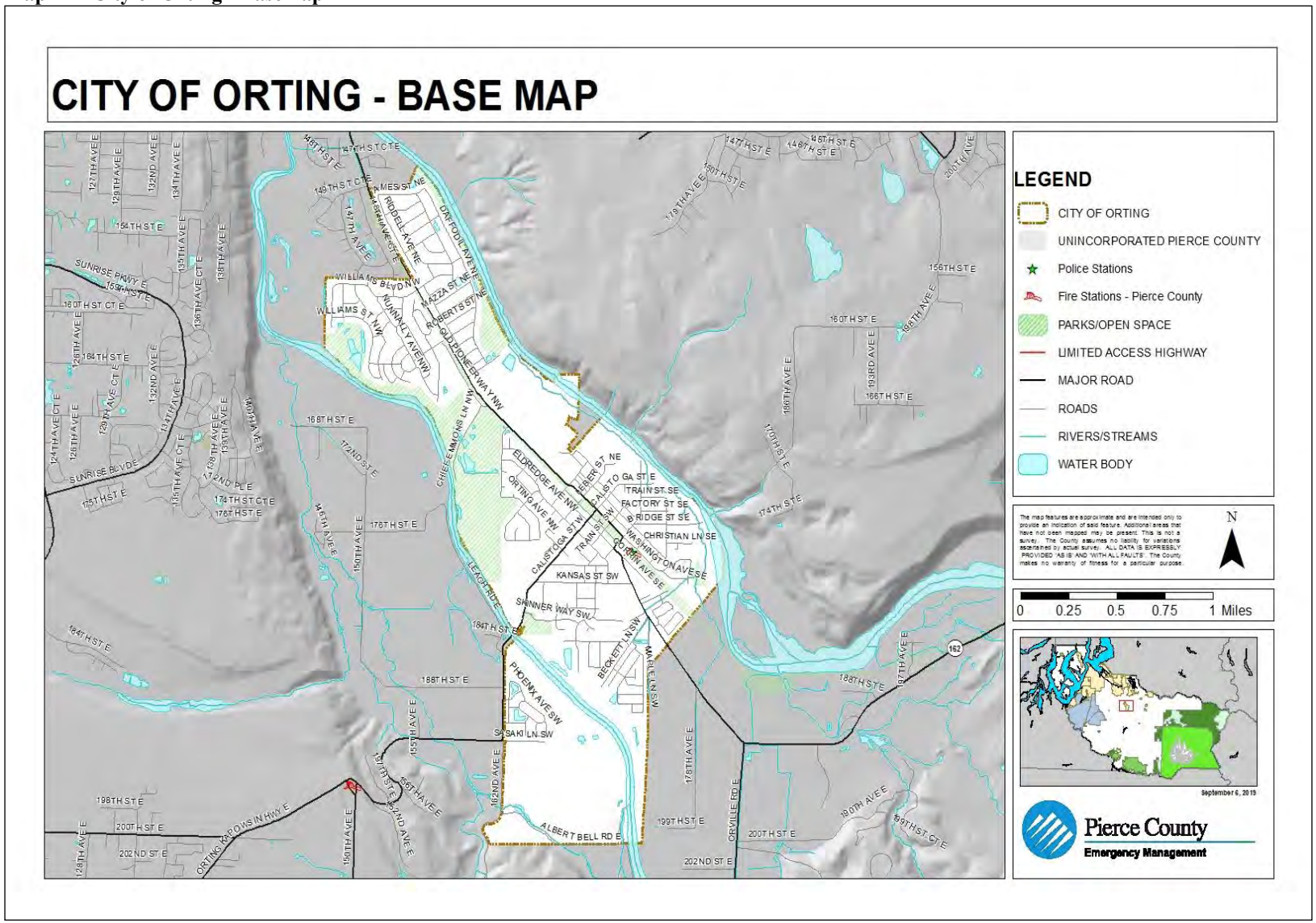
CITY SERVICES			
Service	**Yes**	**Service**	**Yes**
Mayor/City Administrator	Yes	Municipal Airport	No
City Attorney	Yes	Municipal Court	Yes
City Clerk	Yes	Public Works/Improvements	Yes
City Treasurer	Yes	Comprehensive Planning	Yes
Sheriff or Police	Yes	Parking Meter Revenue	No
Parks Commissioners	Yes	Construction and Operation of Boat Harbors, Marinas, Docks, etc.	No
City Council	Yes	Issue Bonds and Levies of General Tax	Yes
License and Tax Fees	Yes	Fire Department/EMS	No
Non-Polluting Power Generation	No	Parking, Off-street Facilities	Yes
Hydroelectric Resources	No	Sanitary Landfill/Refuse Service	No
Radio Communications	No	Sidewalks	Yes
Streets	Yes	Storm Drains	Yes
Wastewater Treatment	Yes	Streets/Alleys	Yes
Water Utility	Yes	Parks and Parkways	Yes
Public Transportation Systems	No	Water Pollution Abatement	Yes
Residential Care Facilities	No	Local Improvement Districts	No
Child Care Facilities	No	Buildings Inspection/Plan Review	Yes
Food Bank	Yes		

Geo-Political Summary

Table 2-2 Geo-Political Summary2

Jurisdiction	Area (sq mi)	Elevation Range (ft.)	Major Water Features	Regional Partners	
				Shared Borders	Land Use Authorities
City of Orting	2.7444	140-360	• Puyallup Watershed • 16-Lower Carbon River Basin • 23-Mid Puyallup River Basin	• Unincorporated Pierce County	• Orting • Unincorporated Pierce County

Map 2- 1 City of Orting - Basemap



Population Summary

Demographics

Table 2-3 Population[3, 4, 5, 6]

Jurisdiction	Population	Population Density (people/sq mi)	Population Served	Projected Year 2022 Population Change (%)	Projected Population Density	Projected 2022 Population Served
City of Orting	6,232	2,271	6,232	26.77%	2,879	7,900
Region 5	795,225	440	795,225	-18.39%	359	648,895

Special Populations

Table 2-4 Special Populations[7]

Jurisdiction	Population	Population 65 Plus	% of Total	Population Under 20	% of Total
City of Orting	6,739	689	10%	2,241	33%
Region 5	795,225	87,770	11%	220,351	28%

Demographic Analysis

In comparison to the last update, the overall population in the City of Orting has increased significantly to a rough estimate of 8,400 for 2019 and it is continuing to rise. Development of single-family residences are rapidly increasing as well increasing density. Orting has also seen a slight increase in the population of its vulnerable residents. The city now has two Adult Family Homes with a capacity for 6 residents. The City is home to the Washington State Soldiers Home with a capacity of 140 assisted living beds and a Skilled Nursing Facility with a capacity of 30 beds. The City's senior (65+) citizens remain at about 10% of the population. The City is home to the Orting School District where approximately 2200 children attend the schools in city limits.

Infrastructure Summary

General

Table 2-5 Parcel Summary[8]

Jurisdiction	# Parcels	Land Value	Average Land Value	Improved Value	Average Improved Value
City of Orting	3,083	$307,422,300	$99,715	$629,670,100	$204,239
Region 5	328,831	$55,032,560,799	$167,358	$82,766,510,038	$251,699

Jurisdiction	Total Assessed Value	Average Assessed Value
City of Orting	$937,092,400	$303,954
Region 5	$137,799,070,837	$419,057

Table 2-6 Housing Summary[9]

Jurisdiction	# Houses	Housing Density	Avg Year Built	Avg Year Built (%)
City of Orting	2,361	860	• <1939: 229 • 1940 – 1979: 242 • 1980 – 2004: 1,269 • 2005> 511	• <1939: 10.1% • 1940 – 1979: 10.7% • 1980 – 2004: 56.3% • 2005> 22.7%
Region 5	291,983	162	• <1939: 34,368 • 1940 – 1979: 126,363 • 1980 – 2004: 139,894 • 2005>22,830	• <1939: 10.6% • 1940 – 1979: 39% • 1980 – 2004: 43.2% • 2005> 7.1%

Jurisdiction Infrastructure

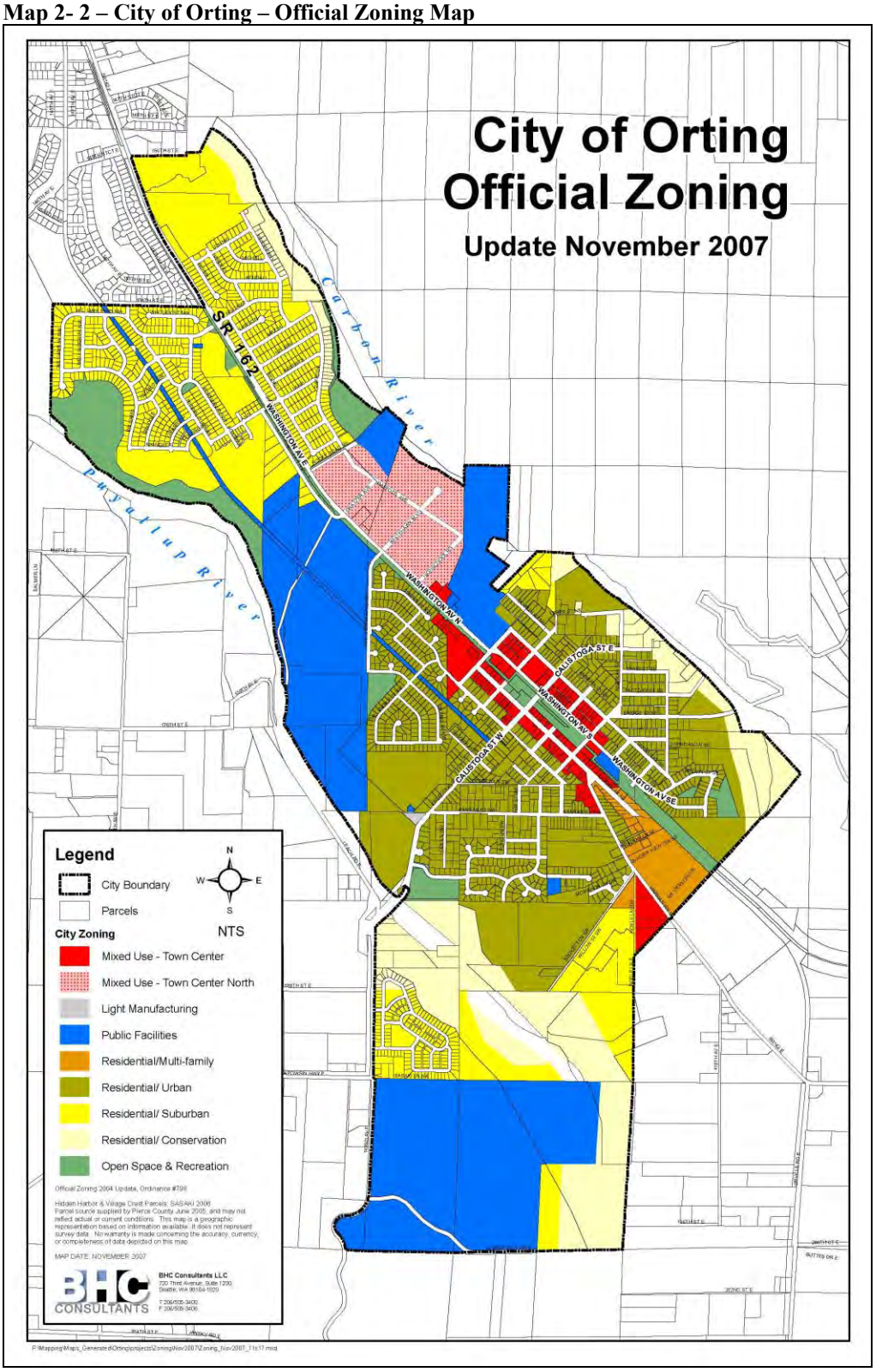
The following table shows the overview of infrastructure owned by the City of Orting. The infrastructure is categorized according to the infrastructure sectors as designated by the Department of Homeland Security. This table is intended as a summary only.

For further details on what is included in the Department of Homeland Security infrastructure sectors, please see the Process Section 1.

Table 2-7 Owned Infrastructure[10]

Total Infrastructure	Emerg. Services	Tele-comm	Trans-poration	Water	Energy	Govern-ment	Commer-cial	Total Value ($)
40	1	0	0	25	0	14	0	$24,696,700

Map 2- 2 – City of Orting – Official Zoning Map



Economic Summary

Table 2-8 Fiscal Summary[11]

Jurisdiction	Operating Costs (per month)	Operating Budgeted Revenues[12]	Operating Budgeted Expenditures[13]	Fund Balance as % of Operating Cost	Avg Fund Balance (5 yrs)
$2,900,000	$3,200,000	$2,900,000	675%	$2,900,000	500%

Table 2-9 Employment Profile[14]

Employment Category (SIC)	City of Orting	Pierce County
Construction/Resources	2,635	23,562
FIRES (Finance, Insurance, Real Estate, and Services)	285	13,807
Manufacturing	2,859	16,766
Retail	1,514	34,462
Services	1,846	128,444
Transportation and Warehousing, Utilities (WTU)	6,141	30,521
Government	202	34,621
Education	586	23,866

Table 2-10 Unemployment Rate[15]

Jurisdiction	Unemployment Rate
City of Orting	Percent is unavailable
Region 5	5.0%
WA State	4.2%

Table 6-11 North American Industry Classification System (NAICS)Table Key

2-DIGIT NAICS RATING	NAICS CATEGORIES
11	Agriculture, Forestry, Fishing and Hunting
21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information
52	Finance and Insurance
23	Real Estate and Rental and Leasing
54	Professional, Scientific and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment and Recreation
72	Accommodation and Food Services
81	Other Services (except Public Administration)

Table 6-12 North American Industry Classification System (SIC)Table Key

Major sector categories combine NAICS categories as follows

SECTOR INDUSTRY COMBINED (SIC)
Construction and Resources (Const/Res): 11,21,23
Finance, Insurance and Real Estate (FIRE): 52,53
Manufacturing: 31-33
Wholesale Trade
Services: 51, 54-56, 61 (private-sector portion), 62,71,72,81
Wholesale Trade, Transportation, and Utilities (WTU): 22, 42, 48,
Government: Public-sector employment, excluding education
Education: 61 (public-sector portion)

Resource Directory

Regional

- City of Orting
  http://www.cityoforting.org

- Pierce County Government
- https://co.pierce.wa.us/

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

- Pierce County PALS
- 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 survey completed by City.
[2] Information from Pierce County GIS application, CountyView Pro (September 2019).
[3] "Population" from Census 2010, Office of Financial Management. It should be noted that current as of April 2019 population estimate based on OFM's Forecasting and Research Division reported Orting's population estimated at 8,380. When 2020 Census becomes available population numbers will be updated using Pierce County GIS application, County View Pro.
[4] "Projected Population Change (%)" from Pierce County Buildable Lands Report, Dec. 2007.
[5] "Projected Population Density" assumes the jurisdiction maintains the same geographic area and boundaries. It does not consider changes in annexation, district mergers, etc.
[6] "Projected 2022 Population" from Pierce County Buildable Lands Report, Dec. 2007.
[7] "Special Population" from Census 2010 block level, Office of Financial Management. Once 2020 Census becomes available PC DEM will rerun population data using Pierce County GIS application, County View Pro.
[8] Information from Pierce County GIS application, CountyView Pro September 2019.
[9] Information from Census 2010, Office of Financial Management.
[10] Information provided by the City of Sumner based from the Department of Homeland Security (DHS) Infrastructure sectors.
[11] Information obtained from the City of Orting's current Budget.
[12] Information provided by City of Orting, non-capital
[13] Information provided by City of Orting, non-capital
[14] Information from Puget Sound Regional Council based on 2018 data. https://www.psrc.org/covered-employment-estimates.
.
[15] Information from Census 2010, Office of Financial Management.

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Section 3

Capability Identification 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---Requirements §201.6(b):
In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process **shall** include:

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

- Does the planning process describe the review and incorporation, if appropriate, of existing plans, studies, reports, and technical information?

Assessing Vulnerability: Analyzing Development Trends---Requirement §201.6(c)(2) (ii)(C):
[The plan **should** describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.]

- Does the plan describe land uses and development trends?

Identification and Analysis of Mitigation Actions: National Flood Insurance Program (NFIP) Compliance---Requirement ***§201.6(c)(3)(ii):***
[The mitigation strategy] must also address the jurisdiction's participation in the National Flood Insurance Program (NFIP), and continued compliance with NFIP requirements, as appropriate.

- Does the new or updated plan describe the jurisdiction(s) participation in the NFIP?

SECTION 3

REGION 5 ALL HAZARD MITIGATION PLAN
2020-2025 EDITION
CITY OF ORTING
CAPABILITY IDENTIFICATION SECTION

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Legal and Regulatory

Table 3-1 Legal and Regulatory

Regulatory Tools (Ordinances and Codes)	Yes or No
Jurisdiction Capabilities	
Building Construction/Design Construction Codes	Yes
Flood Damage Prevention Ordinance	Yes
Growth Management Ordinance	Yes
Critical Area Ordinance	Yes
Hazard Setback Requirements	Yes
Hillside and Steep Slope Ordinance	NA
Land Use and Regulatory Codes	Yes
Mechanical Codes	Yes
Plan Review Requirements	Yes
Plumbing Codes	Yes
Real Estate Disclosure Requirements	No
Storm Water Management	Yes
Subdivision Ordinance or Regulations	Yes
Tax and License Codes	Yes
Wildfire Ordinance	No
Zoning Ordinance	Yes

Administrative Capability

Table 3-2 Administrative Capability

Administrative Tools (Agency, Departments or Programs)	Yes or No
Jurisdiction Capabilities	
Architectural Review Board/Historic Review	Yes
Board of Adjustments/Hearing Examiner	Yes
Building Official	Yes
Chamber of Commerce	Yes
City/Town Council	Yes
City/Town Meetings	Yes
City/Town Planning Commission	Yes
City/Town Website	Yes
Commercial Fire Safety/Code Inspection Program	Yes
Community CPR/First Aid Program	No
Community Emergency Response Teams	Yes
Downtown Revitalization Committee	No
Economic Development Board	Yes
Emergency Manager	Yes
Engineers	Yes
Families First Coalition	Yes
Fire and Injury Prevention Program	Yes
Fire Chief	Yes
Fire Safety & Disaster Classes in Schools	Yes
Flood Plan Manager	Yes
Government TV Access	Yes
Grant Writers	Yes
Home Safety Council	No
Information included in Utility Bills	Yes
Lahar Warning System	Yes
Planners	Yes
Planning Commission	Yes
Police Chief	Yes
Police Department	Yes
Public Utility	Yes
Public Works Department	Yes
Safe Streets Program	No
Safety Fairs	Yes
Stream Team	No
Surveyors	Yes

Table 3-3 Administrative Capability (Cont.)

Administrative Tools (Agency, Departments or Programs)	Yes or No
Regional Capabilities	
Local Business Districts	No
Local Department of Emergency Management	Yes
Local Fire Agencies plus Mutual Aid with others	Yes
Local Hospitals	Yes
Local Law Enforcement Agencies and Mutual Aid with others	Yes
Local Neighborhood Associations	Yes
Local Neighborhood Emergency Teams (NET)	Yes
Local Newspapers	Yes
Local Parks Commission/Board	Yes
Local Power Companies	Yes
Local Parent Teacher's Association	Yes
Neighboring Counties	Yes
Pierce County ALERT	Yes
Pierce County Department of Emergency Management	Yes
Pierce County Fire Chiefs Association	Yes
Pierce County Neighborhood Emergency Teams (PCNET)	Yes
Pierce County Police Chiefs Association	Yes
Pierce County Safe Kids Coalition	Yes
Pierce County Sheriffs Department	Yes
Pierce County WARN	Yes
Puget Sound Clean Air Agency	Yes
Puget Sound Energy	Yes
Puget Sound Regional Council	Yes
Puget Sound Water Quality Management Plan	Yes
Service Organizations	Yes
Tacoma/Pierce County Health Department	Yes
Tribes	Yes

Technical Capability

Table 3-4 Technical Capability

Technical Tools (Plans and Other)	Yes or No
Jurisdiction Capabilities	
After Action Reports of Any Incident	Yes
Capital Improvement Plan	Yes
Comprehensive Emergency Management Plan	Yes
Comprehensive Plan	Yes
Continuity of Governmental Services and Operations Plan (COOP and COG)	Yes
Critical Facilities Plan	Yes
Drainage Master Plan	Yes
Economic Development Plan	Yes
Emergency Evacuation Plan	Yes
Emergency Response Plan	Yes
Generator Placement Plan	Yes
Habitat Plan	Yes
Hazardous Materials Response Plan	Yes
Lahar Evacuation Plan	Yes
Pandemic Flu Plan	Yes
Post-Disaster Recovery Plan	No
Sewer/Wastewater Comprehensive Plan	Yes
Storm Comprehensive Plan	Yes
Water Comprehensive Plan	Yes
Regional Capabilities	
Local and Regional Emergency Exercises – All Types	Yes

Section 4

Risk Assessment Requirements

Identifying Hazards--- Requirement §201.6(c)(2)(i):

[The risk assessment **shall** include a] description of the type … of all natural hazards that can affect the jurisdiction.

- Does the new or updated plan include a description of the types of all natural hazards that affect the jurisdiction?

Profiling Hazards---Requirement §201.6(c)(2)(i):

[The risk assessment **shall** include a] description of the … location and extent of all natural hazards that can affect the jurisdiction. The plan **shall** include information on previous occurrences of hazard events and on the probability of future hazard events.

- Does the risk assessment identify (i.e., geographic area affected) of each hazard being addressed in the new or updated plan?
- Does the risk assessment identify the extent (i.e., magnitude or severity) of each hazard addressed in the new or updated plan?
- Does the plan provide information on previous occurrences of each hazard addressed in the new or updated plan?
- Does the plan include the probability of future events (i.e., chance of occurrence) for each hazard addressed in the new or updated plan?

Assessing Vulnerability: Overview---Requirement §201.6(c)(2) (ii):

[The risk assessment **shall** include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description **shall** include an overall summary of each hazard and its impact on the community.

- Does the new or updated plan include an overall summary description of the jurisdiction's vulnerability to each hazard?
- Does the new or updated plan address the impacts of each hazard on the jurisdiction?

Assessing Vulnerability: Addressing Repetitive Loss Properties---Requirement §201.6(c)(2) (ii):

[The risk assessment] **must** also address the National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged by floods.

- Does the new or updated plan describe vulnerability in terms of the types and numbers of repetitive loss properties located in the identified hazard areas?

Assessing Vulnerability: Identifying Structures---Requirement §201.6(c)(2) (ii)(A):

The plan **should** describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas…

- Does the new or updated plan describe vulnerability in terms of the types and numbers of existing buildings, infrastructure, and critical facilities located in the identified hazard areas?
- Does the new or updated plan describe vulnerability in terms of the types and numbers of future buildings, infrastructure, and critical facilities located in the identified hazard areas?

Assessing Vulnerability: Estimating Potential Losses---Requirement §201.6(c)(2) (ii)(B):

[The plan **should** describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) of this section and a description of the methodology used to prepare the estimate…

- Does the new or updated plan estimate potential dollar losses for vulnerable structures?
- Does the new or updated plan describe the methodology used to prepare the estimate?

Assessing Vulnerability: Analyzing Development Trends---Requirement §201.6(c)(2) (ii)(c):

[The plan **should** describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

- Does the new or updated plan describe land uses and development trends?

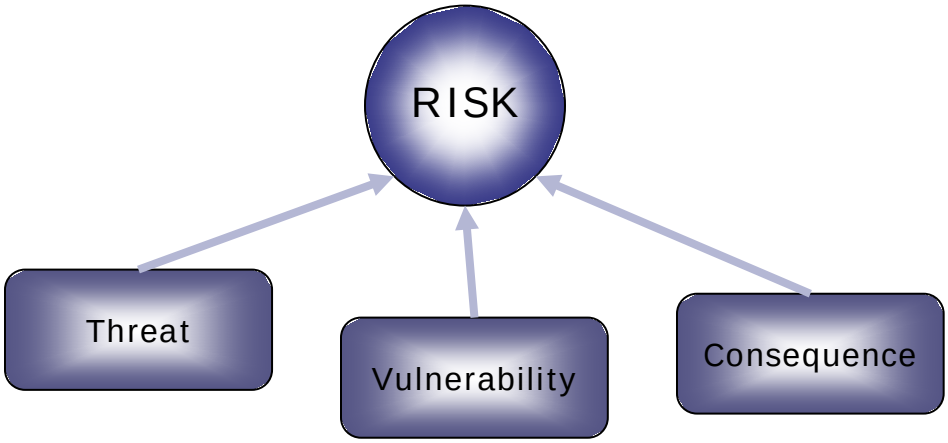
SECTION 4

REGION 5 ALL HAZARD MITIGATION PLAN
2020-2025 EDITION
CITY OF ORTING
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, meteorological, and technological 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, Table 4-1b, and Table 4-1c.

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 for: avalanche, earthquake, landslide, tsunami, volcanic, drought, flood, severe weather, wildland/urban interface fire, abandoned mines, civil disturbance, dam failure, energy

emergency, epidemic, hazardous materials, pipeline, terrorism / active threat, and transportation accident.

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 City of Orting has identified seven major hazards that significantly affect the region. These hazards were chosen based on multiple criteria including high frequency and potential impact. The most common hazards are earthquake, flood, winter/severe storms, landslides, and volcano eruption/lahar. We have included much less likely incidents including active threat / attack tactics, hazardous materials, and terrorism as they are high consequence incidents. They have been identified in all three plans and the likelihood of re-occurrence and potential damage to life and property is illustrated.

The geography and climate of Orting Valley area offers rationale for the threats and vulnerabilities. Orting is essentially in a valley with the Carbon and Puyallup Rivers forming its east and west boundaries. On the east side of the Carbon River are steep hillsides. Climate is generally mild with steady rainfall annually. The makeup of the land and the 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 power, transportation, communications and utilities.

Geological:

- Earthquake
- Landslide
- Volcano/Lahar

Meteorological:

- Flood
- Severe Storms

Technological:

- Hazardous Materials
- Terrorism / Active Threat / Attack Tactics

Geological

Earthquake

Orting 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. Orting is especially vulnerable to liquefaction from a major earthquake with large scale damage to property and lives. More detailed information on the impacts of earthquakes in the Orting region can be found on the Pierce County Department of Emergency Management website, Washington State Department of Natural Resources, through the US Geological Survey, and in the Region 5 All Hazards Mitigation Plan-Base Plan Risk Section.

Landslide

The east boundary of the City is the Carbon River whose east boundary is a steep hillside that is listed as potentially unstable in the Pierce County Hazard Mitigation Plan. While there have not been serious slides in modern memory, there is potential for significant slides that could redirect the Carbon River into Orting and cause severe flooding with anticipated catastrophic damage to property and lives. According to the WA Geologic Survey Geological Information Portal (December 2019), major arterial routes including State Route (SR) 162, Pioneer Way E., Orting Kapowsin Hwy E., and Orville Rd E. are in identified areas where deep-seated and shallow landslides are highly likely to occur in the future.

Volcano/Lahar

All the City of Orting is directly affected by volcanic hazards. The City was covered and still sits on at least 20’ of lahar debris from the Electron mudflow about 500 years ago. There was apparently no eruption from Mt. Rainier before the lahar which causes concern for the citizens.

Citizens will be required to evacuate the city and reach high ground within 42 minutes of the sounding of the lahar sirens (a Pierce County Emergency Management and U.S. Geological Survey managed lahar warning system) which are located throughout the city.

Evacuation routes for vehicles are limited to the highway going through town to head south or north and one road heading west. These are all two-lane roads and will be quickly gridlocked. The city’s current plan is to educate the public to walk out to high ground west of the city.

Though lahars are rare, the impact to the city is potentially catastrophic with complete destruction of buildings and potential loss of life.

The City and the school district, with help from the County, State, and other local jurisdictions practice school evacuation once a year where citizens are also invited to walk out.

Meteorological

Flood

Since the City of Orting is in a valley and between two rivers, it is prone to flooding on an annual basis. The City recently completed a new setback levee on the Puyallup River, but it has not been certified by FEMA or the Army Corps of Engineers due to another levee in Pierce County south of the City which could break and bring flooding all the way to Orting. Pierce County is working on funding to build a new setback levee in its place. 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 swelling due to heavy rainfall in urban areas and ice melting from Mt. 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. Not far behind was the flood of 2006. 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. Historically the highest frequency flood areas in Orting are from the Puyallup River over topping to the west side of the City. Again, the new levee has resulted in no overtopping since its completion in 2017. The County levee just south of the city remains a risk as well as the Carbon River which forms the east side boundary of the City.

The City is a member of the National Flood Insurance program and Federal CRS program and maintains a flood plan that includes finished floor elevation certifications and compensatory storage that has reduced development.

Severe Storms

Severe storms impacting Orting occur annually and has required disaster declarations in five of the last 10 years. These events include windstorms, snowstorms, and ice storms. The city experiences power outages annually as a result of these storms. The damages/costs to our citizens are high.

Technological

Hazardous Materials

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

No significant incidents have occurred within the City of Orting which is still a bit more rural and outside the main thoroughfares of the larger urban areas of Pierce and King Counties, thus dangerous materials are less likely to come through the city. There is no railroad only a two-lane highway through the city.

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 Orting.

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

Terrorism / 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 threat have increased in the United States. Orting has experienced break-ins to its utility system, while probably not terrorism events, have forced the city to increase its protection of such facilities.

Orting's greatest threat probably comes from a school shooting type incident. Our police department trains regularly for this type of incident.

Changes in Development

Over the past 20 years, Orting has experienced steady growth in residential areas, mostly single families. Most of the growth experienced has been along the perimeter of the city or in areas with larger undeveloped parcels. This has been a continuation of the development patterns Orting has been experiencing for the past few decades.

The City of Orting adopted FEMA's most current flood maps in 2018. The City continues to work with landowners to establish Base Flood Elevation (BFE). The City is a member of the National Flood Insurance Program (NFIP) and Federal Community Rating System (CRS) program. Development has been slowed due to the city's acceptance of Compensatory Storage.

The City recently completed a new Public Works facility that is more resilient to hazards and better equips our teams to respond to emergency situations.

The City is now in the process of building a new City Hall, Police Station, and Court/Council Chambers that will replace a 100-year-old building and again make the city more resilient to hazards.

As development continues and more people are moving into the City of Orting, the risk of identified hazards impacting the population increases. The City of Orting continues to monitor the infrastructure, incorporate elements of the mitigation plan into existing plans, ordinances, and programs to dictate land uses and educate the public of hazards through community outreach.

Section 5, Mitigation Strategies, identifies measures to build the resiliency within the City and have been reviewed and reprioritized to reflect the changes in development trends.

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

HAZARD		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 Areas Vulnerable to Avalanche Pierce County Avalanches of Record
	EARTHQUAKE	N/A--7/22/2001 Nisqually Delta N/A--6/10/2001 Satsop DR-1361-WA--2/2001 Nisqually N/A--7/2/1999 Satsop DR-196-WA--4/29/1965 Maury Island, South Puget Sound N/A--4/13/1949 South Puget Sound N/A--2/14/1946 Maury Island	40 years or less occurrence Historical record—about every 23 years for intraplate earthquakes.	Types of Earthquakes Major Faults in the Puget Sound Basin Seattle and Tacoma Fault Segments Pierce County Seismic Hazard Major Pacific Northwest Earthquakes Notable Earthquakes Felt in Pierce County Salmon Beach, Tacoma Washington following Feb 2001 Earthquake Liquefaction Niigata Japan-1964 Lateral Spreading – March 2001
	LANDSLIDE	DR-1671-WA--2006 DR-1361-WA--2001 DR-1159-WA--12/96-2/1997 DR-852-WA--1/1990 DR-545-WA--12/1977 State proclamations: 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. 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 Pierce County Landslide Deposits, Scarps and Flanks, and Susceptibility Landslide Facts for Pierce County – Shallow Landslide Susceptibility Pierce County Deep Landslide Hazard Area Pierce County Shallow Landslide Hazard Area Pierce County Slope Stability Areas Pierce County Comparison of Landslide Susceptible Areas Notable Landslides in Pierce County Ski Park Road – Landslide January 2003 SR-165 Bridge Along Carbon River – Landslide February 1996 Aldercrest Drive – Landslide
	TSUNAMI	N/A--A.D. 900 Seattle Fault EQ Sourced Tsunami N/A--1894 Puyallup River Delta 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 Hawaii 1949 – Wave Overtakes a Seawall Tsunamis in Washington State Tsunami Inundation and Current Based on Earthquake Scenario Notable Tsunamis in Pierce County Salmon Beach, Pierce County 1949 – Tsunamigenic Subaerial Landslide Salmon Beach, Pierce County 1949 – Tsunamigenic Subaerial Landslide 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 Tephra Types and Sizes Lahars, Lava Flows and Pyroclastic Hazards of Mt. Rainier Estimated Lahar Travel Times for Lahars 10^7 to 10^8 Cubic Meters in Volume 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 Recent and Projected Temperatures for the Pacific Northwest Puget Sound Projected Warming Puget Sound Projected Precipitation Change Projected Decline in Snowpack Projected Sea Level Risk – Tacoma Sea Level Rise Inundation Area in 2100 Tacoma Tideflats Climate Impacts and Natural Hazards Comparison of the South Cascade Glacier: 1928 to 2003 Lower Nisqually Glacier Retreat: 1912 to 2001
	DROUGHT	Many dry seasons but no declarations State proclamations: 18-05--7/31/2018	50 years or less occurrence	Sequence of Drought Impacts Palmer Drought Severity Index Pierce County Watersheds %Area of Basin in Drought Conditions Since 1895 %Time in Severe to Extreme Drought: 1895-2004 %Time in Severe to Extreme Drought: 1985-1995 Notable Droughts Affecting Pierce County Columbia River Basin USDA Climate Zones – Washington State
	FLOOD	DR-WA 1817--01/2009 DR-1734-WA--12/2007 DR-1671-WA--11/2006 DR-1499-WA--10/2003 DR-1159-WA--12/96-2/97 DR-1100-WA--1-2/1996 DR-1079-WA--11-12/1995 DR-896-WA--12/1990 DR-883-WA--11/1990 DR-852-WA--1/1990 DR-784-WA--11/1986 DR-545-WA--12/1977 DR-492-WA--12/1975 DR-328-WA--2/1972 DR-185-WA--12/1964	5 years or less occurrence 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 Historical Flooding in Lower Puyallup River Levees and Revetments in the Lower Puyallup River Summary of Damages to Lower Puyallup River Facilities Middle Puyallup River Historical Flooding in Middle Puyallup River Levees and Revetments in the Middle Puyallup River Summary of Damages to Lower Middle River Facilities Upper Puyallup River Historical Flooding in Upper Puyallup River Levees and Revetments in the Upper Puyallup River Summary of Damages to Upper Puyallup River Facilities Lower White River Historical Flooding in Lower White River Levees and Revetments in the Lower White River Summary of Damages to Lower White River Facilities Upper White River Historical Flooding in Upper White River Levees and Revetments in the Upper White River Summary of Damages to Upper White River Facilities Greenwater River Historical Flooding in Greenwater River Carbon River Historical Flooding in Carbon River South Prairie Creek Historical Flooding in South Prairie Creek Middle Nisqually River Historical Flooding in Middle Nisqually River Upper Nisqually River

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

Table 4-2c WA Region 5 Hazard Identification Summary – Technological

HAZARD		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. 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 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 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 Pierce County Civil Disturbance High Probability Locations Zoomed In Map
	DAM FAILURE	Not Applicable	No occurrences in Pierce County 50+ years recurrence for WA State	Reasons for Dam Failures Nationally PC Dams that Pose a High or Significant Risk to the Public Pierce County High and Significant Risk Dams Dam Failures in WA State 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) Recurrence rate – 50+ years (major)	Tacoma Power Outage 1929, USS Lexington provides power
	EPIDEMIC / PANDEMIC	Not Applicable	Epidemic: • 1976-2014 Ebola outbreaks • Flu occurs annually Pandemics: • 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 • Chlorine Spill Port of Tacoma February 12, 2007 Large incidents five year recurrence Small incidents one week recurrence	List of constituents or ingredients found in Bakken crude oil Environmental Protection Agency's Identified Top Five Facilities Exxon Valdez Oil Spill, 1989 Pierce County Spill data from May 2018 to May 2019 Dalco Passage oil spill (October 13, 2004)
	PIPELINE FAILURE	Not Applicable	• Northwest Pipeline Corporation natural gas incident May 1st 2003, in Sumner 10 years recurrence	Cities and Towns with interstate pipelines within, or within 1 mile of city limits Olympic Pipeline Rupture 06/10/99 Pierce County Pipelines Whatcom Falls Park, 2003
	TERRORISM ACTIVE THREAT CYBER ATTACK	Not Applicable	Minor incident –recurrence 1-year Major Incident – recurrence 10 years	250 Active Shooter Incidents in the U.S. from 2000-2017: Incidents per year 250 Active Shooter Incidents in the U.S. from 2000-2017: Casualty Breakdown per year 250 Active Shooter Incidents in the U.S. from 2000-2017: Location Categories Occurrences in the Puget Sound

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

City of Orting Hazard Maps and Overview of Data Source Descriptions

Regulated Floodplain[1]

Summary:

The flood hazard map delineates the flood hazard risk of the City of Orting. 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:

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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 City of Orting 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[7]

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. There were only a couple of reported Tier II sites identified within the City of Orting.

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

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.

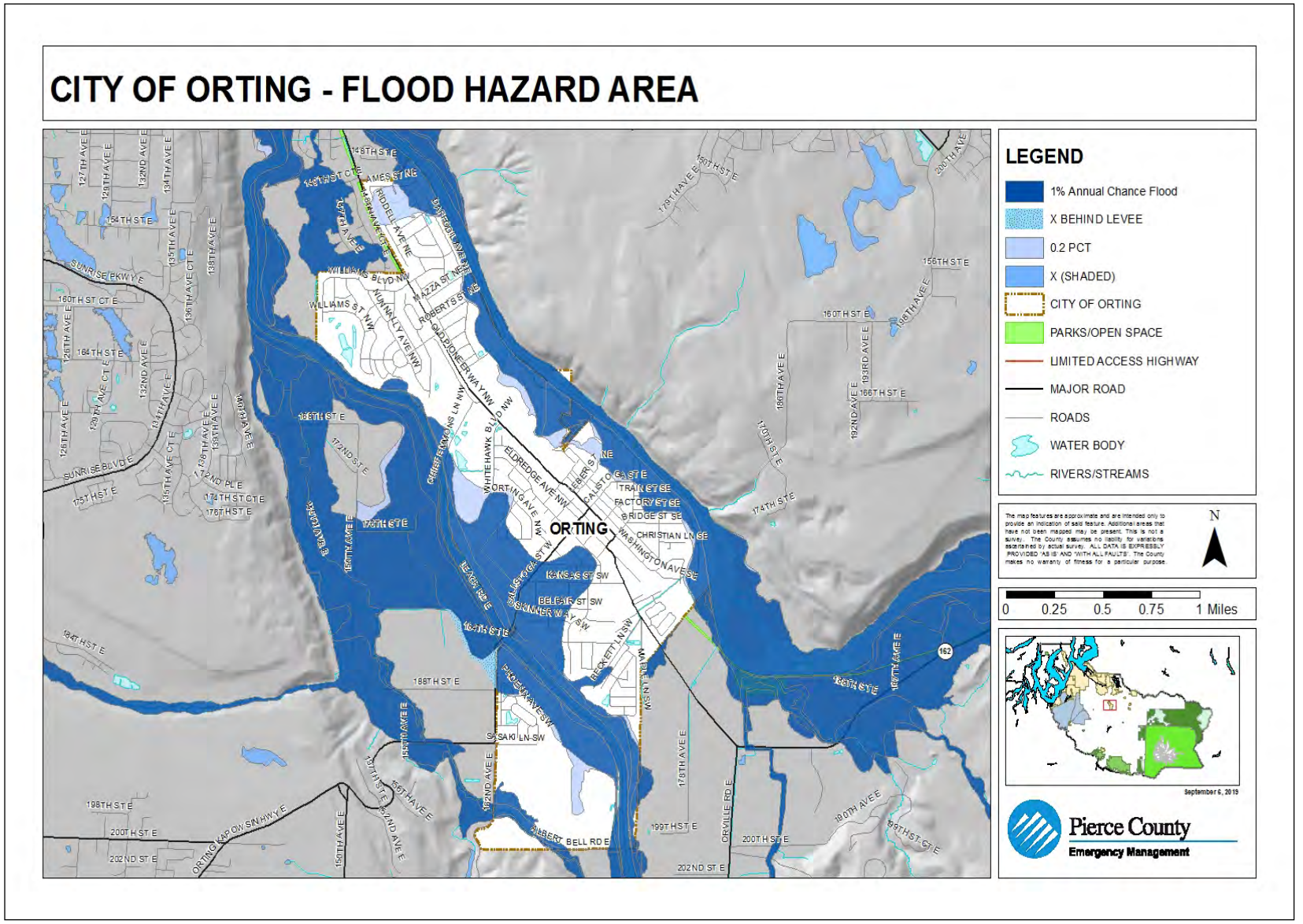
The Pierce County parcel geodatabase is derived from the Pierce County Assessor-Treasurer's Office and they edit and maintain their "parcel" geodatabases daily. The GIS polygon data includes condominium parcel information but does not include mobile home data. A "Total Base" value is determined for each 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

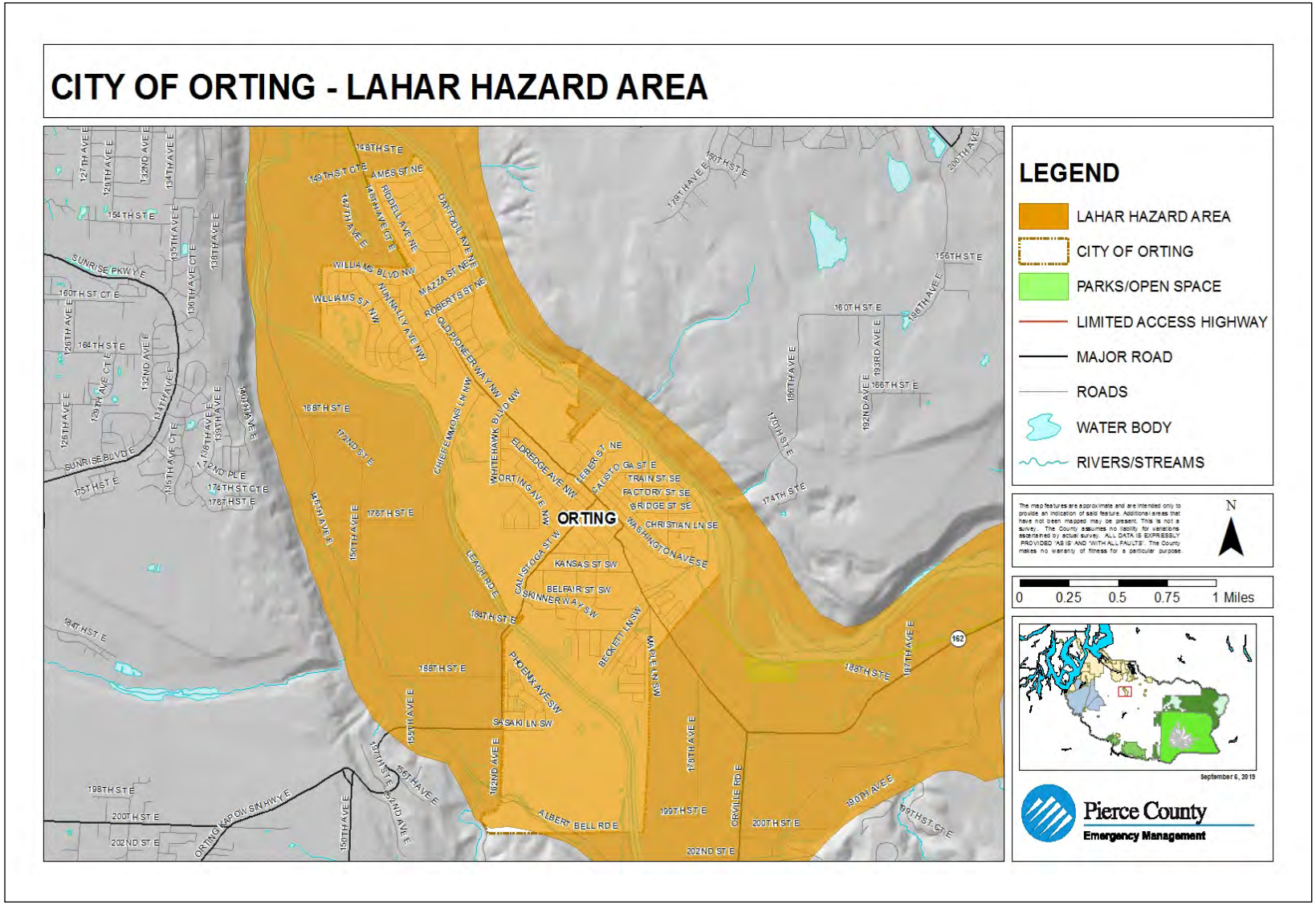
acknowledged that this population data is 10 years old and outdated and will be replaced within the plan once the 2020 census data becomes available sometime in 2021. Profile Section 2 provides a heading “Demographic Analysis” for jurisdictions to identify their current populations as best described 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.

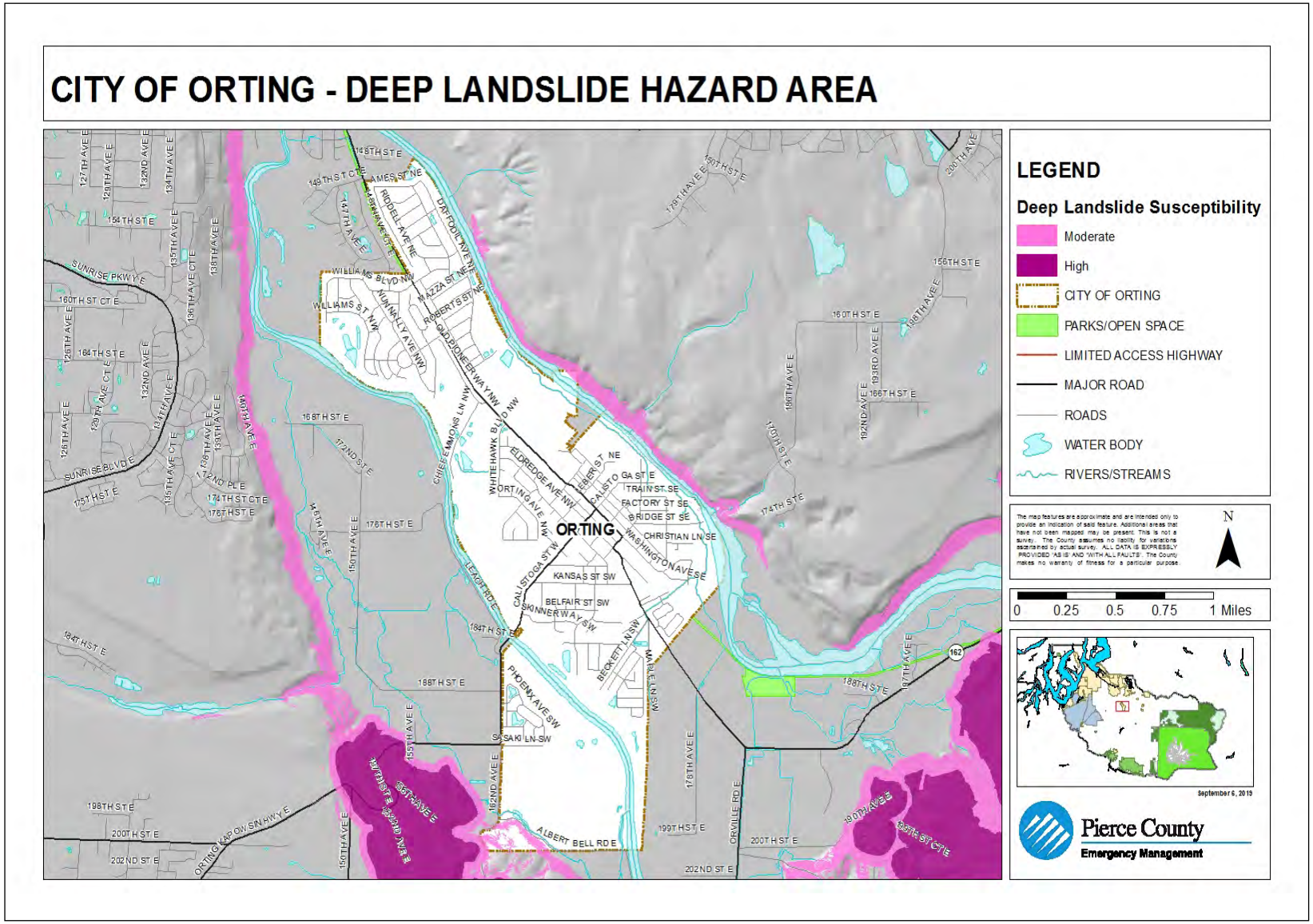
Map 4-1 City of Orting – Flood Hazard Map



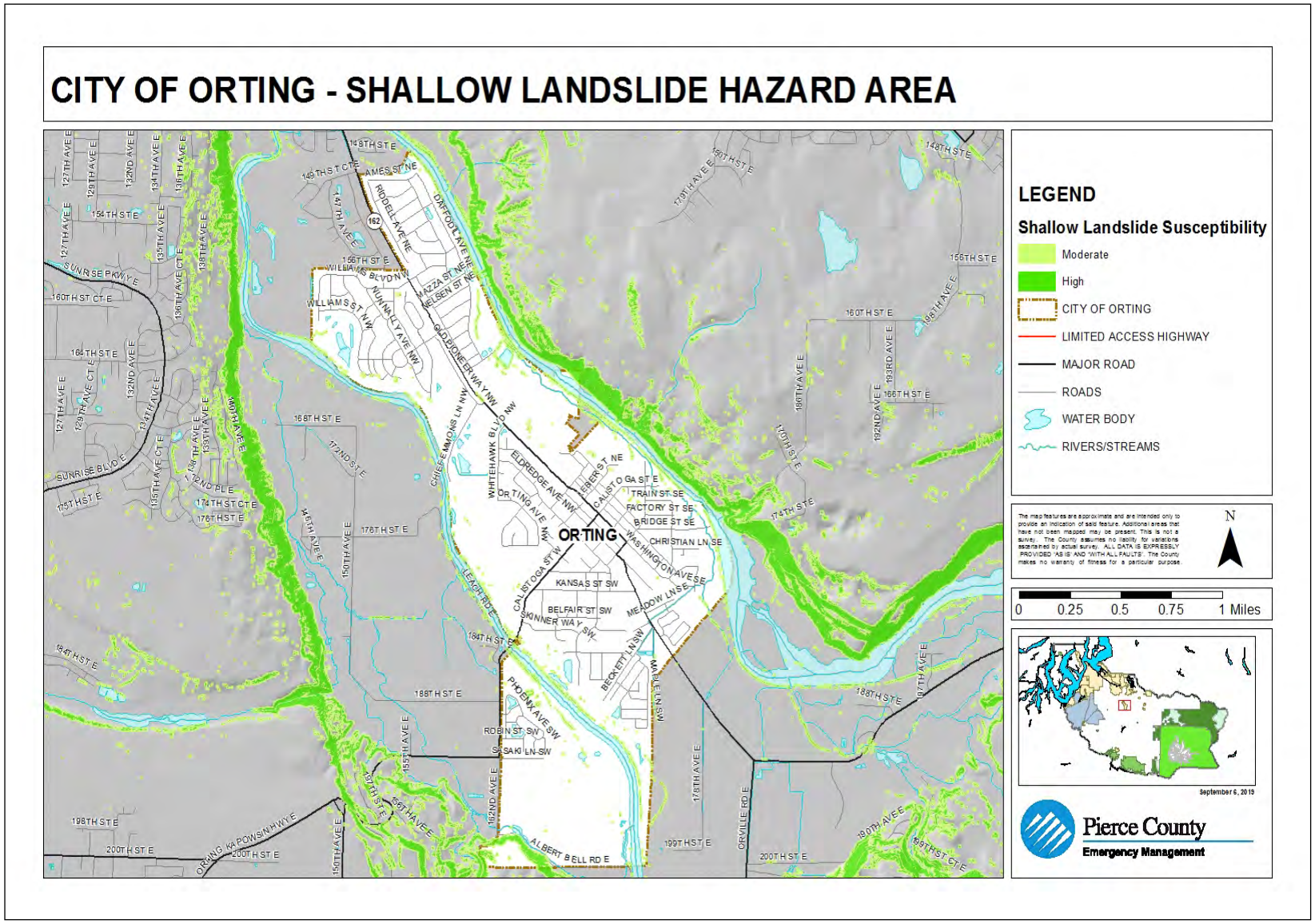
Map 4-2 City of Orting – Lahar Hazard Map



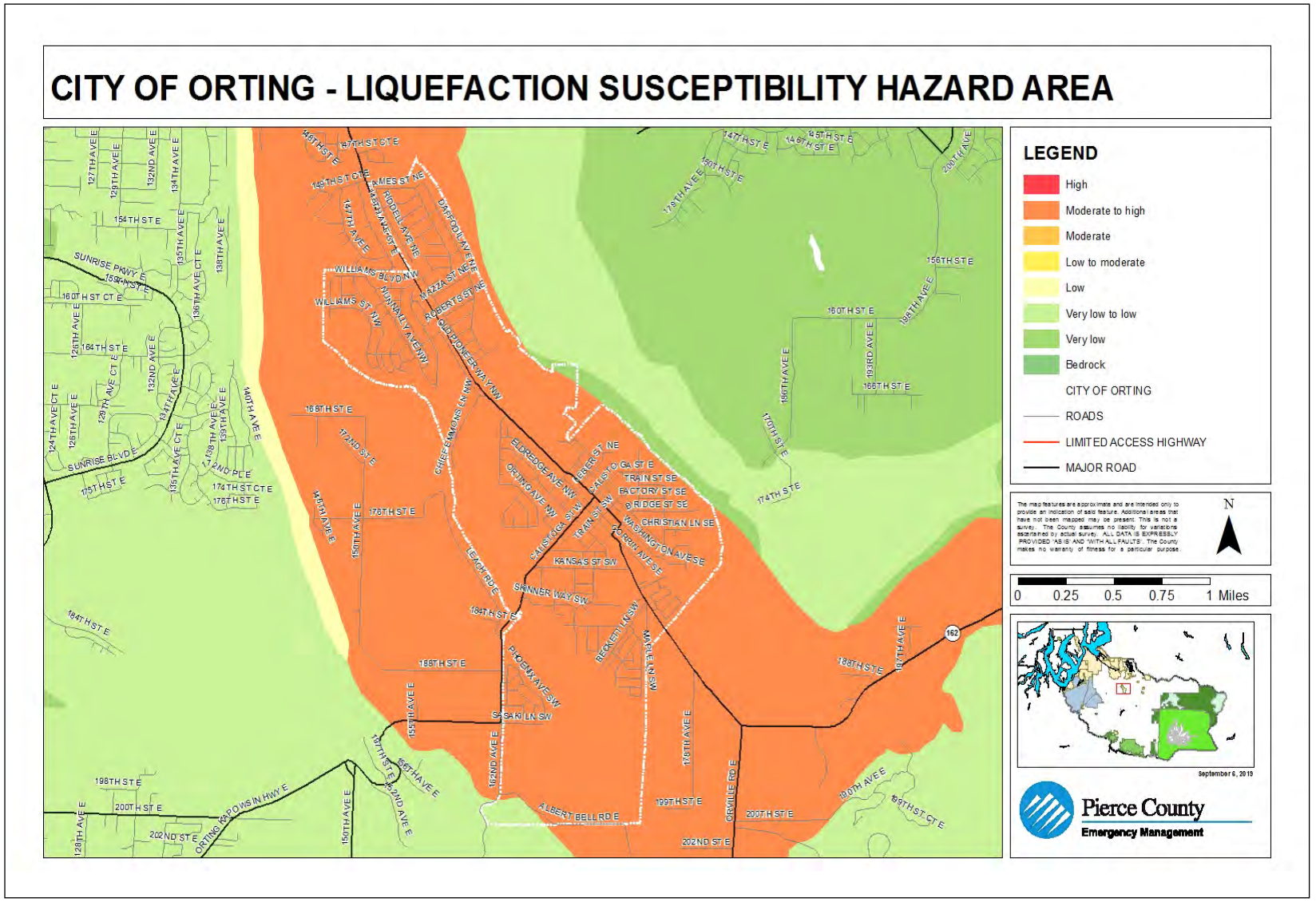
Map 4-3 City of Orting – Deep Landslide Hazard Map



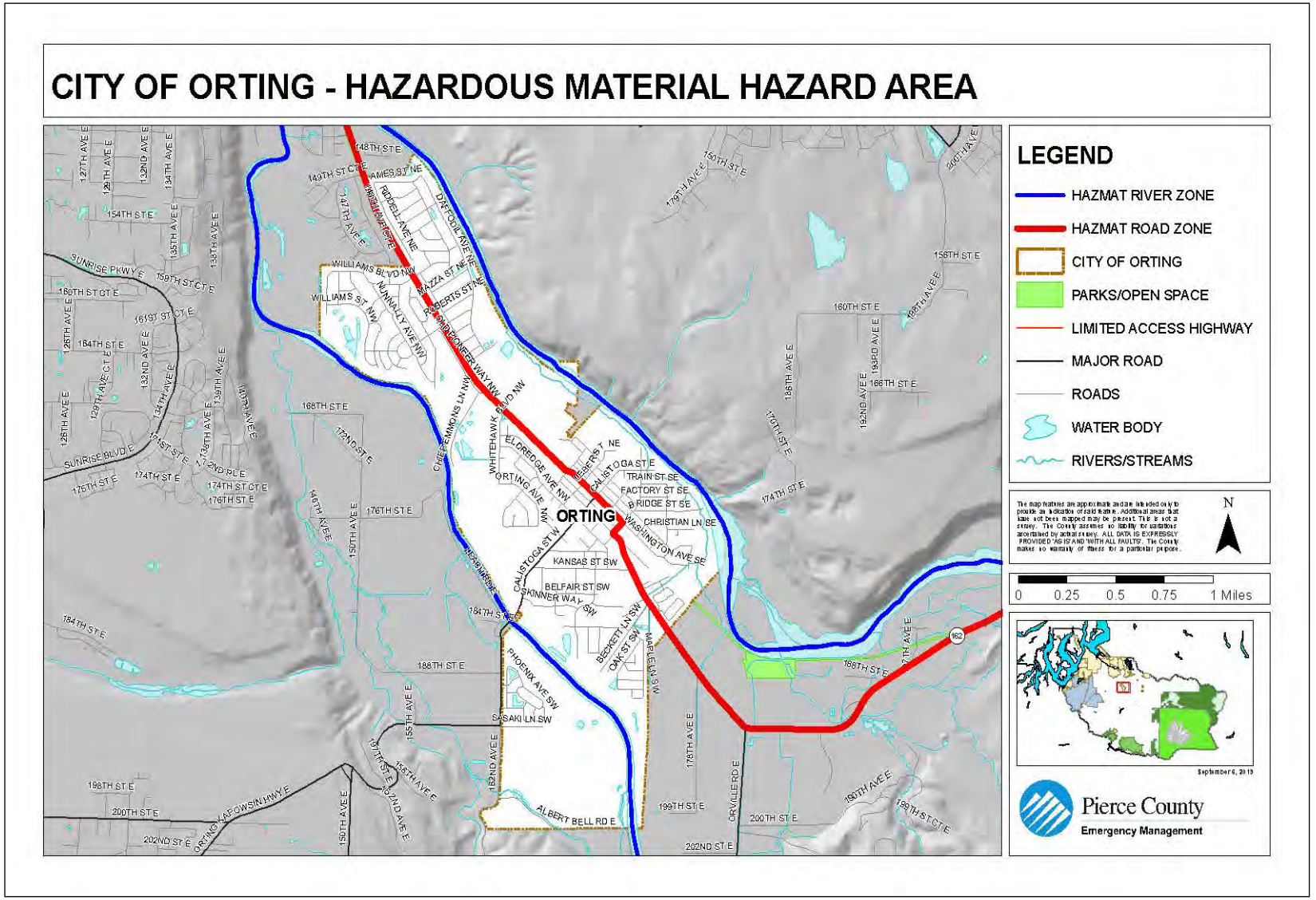
Map 4-4 City of Orting – Shallow Landslide Hazard Map



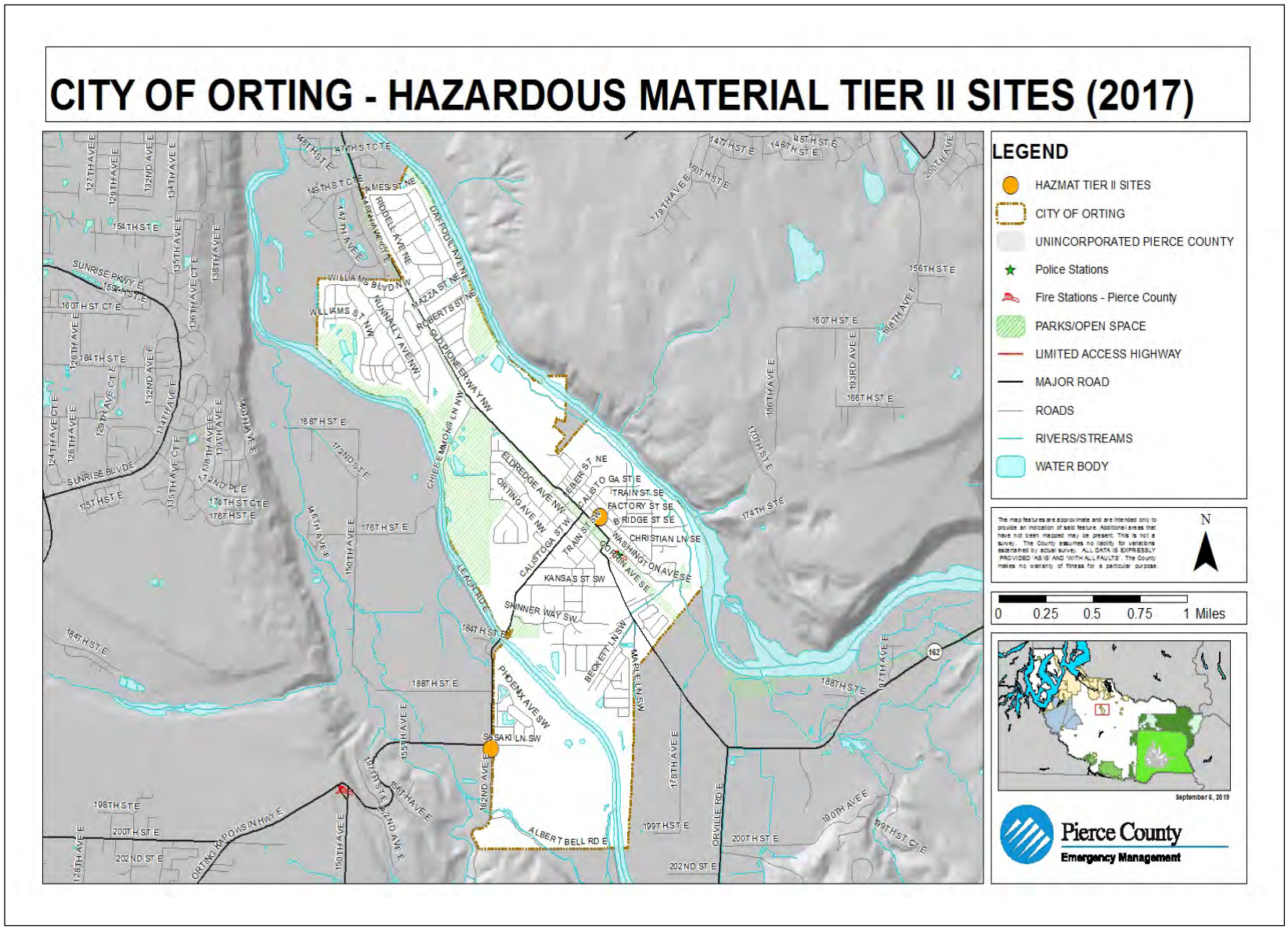
Map 4-5 City of Orting – Liquefaction Susceptibility Hazard Area



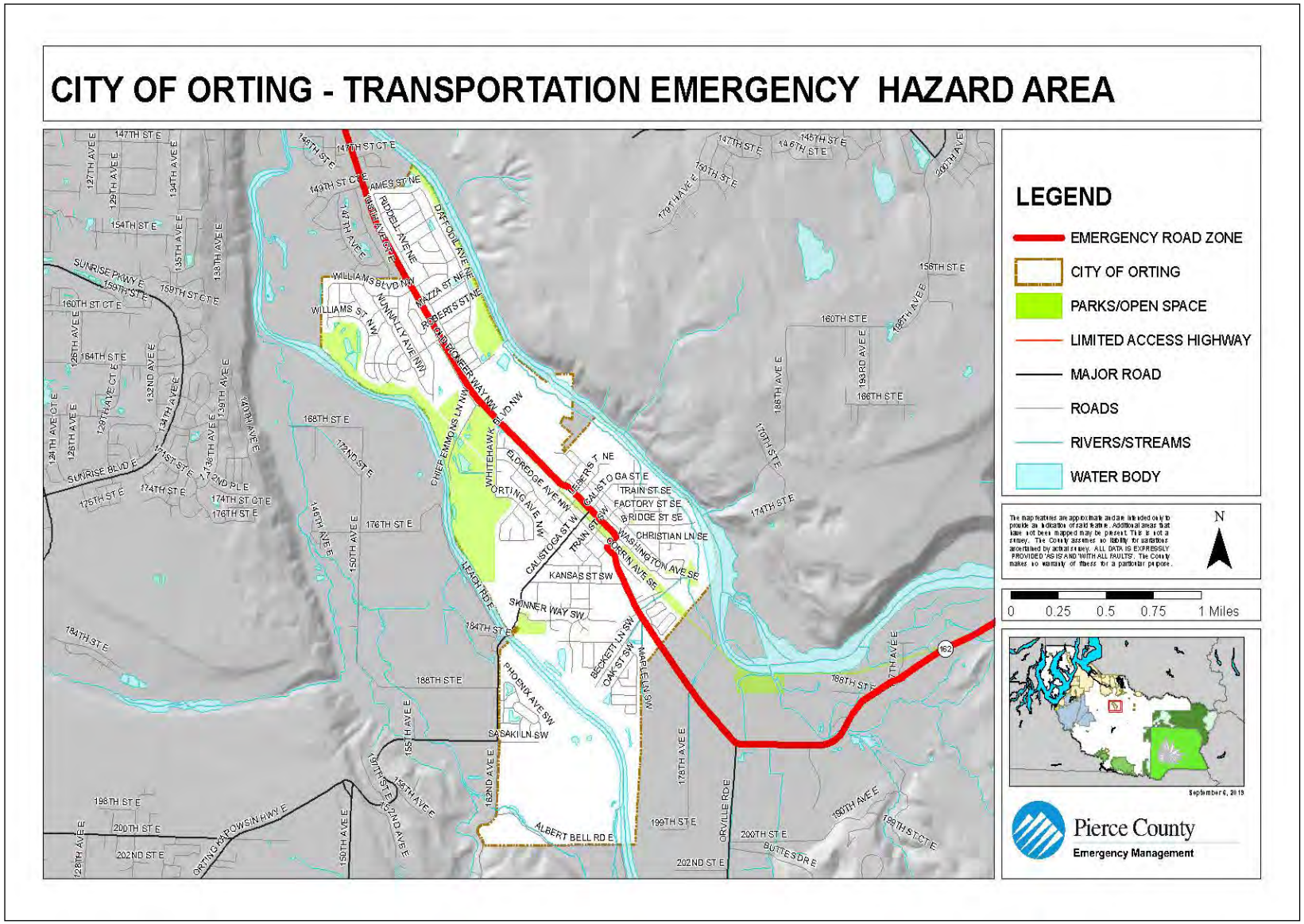
Map 4-6 City of Orting – Hazardous Material Hazard Area Map



Map 4-7 City of Orting – Hazardous Material Tier ll Sites (2017)



Map 4-8 City of Orting – Emergency Transportation Hazard Area Map



Vulnerability Analysis

Table 4-2 Vulnerability Analysis: General Exposure[9]

THREAT[10]		AREA (SQ MI)		PARCELS	
		Total	% Base	Total	% Base
BASE		**2.37**	**100%**	**3,083**	**100%**
Geological	**Avalanche[11]**	NA	NA	NA	NA
	Liquefaction Susceptibility[12]	2.37	100%	3,083	100%
	Landslide-Deep	1.63	68.77%	22	.7%
	Landslide-Shallow	1.27	53.5%	159	5.2%
	Tsunami	NA	NA	NA	NA
	Volcanic[13]	2.37	100%	3,083	100%
Meteorological	**Drought[14]**	2.37	100%	3,083	100%
	Flood	.76	32.06%	544	17.64%
	Severe Weather	2.37	100%	3,083	100%
	WUI Fire[15]	NA	NA	NA	NA
Technological	**Abandoned Mines[16]**	NA	NA	NA	NA
	Civil Disturbance[17]	2.37	100%	3,083	100%
	Dam Failure[18]	NA	NA	NA	NA
	Energy Emergency[19]	2.37	100%	3,083	100%
	Epidemic[20]	2.37	100%	3,083	100%
	Hazardous Material[21]	1.63	68.7%	2,628	85.2%
	Pipeline Hazard[22]	NA	NA	NA	NA
	Terrorism[23] / Active Threat	2.37	100%	3,083	100%
	Transportation Accidents[24]	1.63	68.7%	2,628	85.2%

Table 4-3 Vulnerability Analysis: Population Exposure[25]

THREAT[2]		POPULATION			SPECIAL POPULATIONS (OF TOTAL EXPOSED POPULATION)			
		Total	% Base	Density (pop/sq mi)	65+ yrs		20- yrs	
					#	%	#	%
BASE		**6,739**	**100%**	**2,843**	**689**	**10%**	**2,241**	**33%**
Geological	**Avalanche**	NA	NA	NA	NA	NA	NA	NA
	Liquefaction Susceptibility	6,739	100%	2,843	689	10%	2,241	33%
	Landslide-Deep	765	11.4%	1,600	40	.59%	281	4.1%
	Landslide-Shallow	2,633	39.1%	2,070	326	4.8%	840	12.4%
	Tsunami	NA	NA	NA	NA	NA	NA	NA
	Volcanic	6,739	100%	2,843	689	10%	2,241	33%
Meteorological	**Drought**	6,739	100%	2,843	689	10%	2,241	33%
	Flood	4,357	64.7%	5,728	548	8.13%	1,401	20.78%
	Severe Weather	6,739	100%	2,843	689	10%	2,241	33%
	WUI Fire	NA	NA	NA	NA	NA	NA	NA
Technological	**Abandoned Mines**	NA	NA	NA	NA	NA	NA	NA
	Civil Disturbance	6,739	100%	2,843	689	10%	2,241	33%
	Dam Failure	NA	NA	NA	NA	NA	NA	NA
	Energy Emergency	6,739	100%	2,843	689	10%	2,241	33%
	Epidemic	6,739	100%	2,843	689	10%	2,241	33%
	Hazardous Material	6,156	91.3%	3,779	550	8.1%	2,064	30.6%
	Pipeline	NA	NA	NA	NA	NA	NA	NA
	Terrorism / Active Threat	6,739	100%	2,843	689	10%	2,241	33%
	Transportation Accidents	6,156	91.3%	3,779	550	8.1%	2,064	30.6%

Table 4-4 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		**$307,422,300**	**100%**	**$99,715**	**$629,670,100**	**100%**	**$204,239**	**$937,092,400**	**100%**	**$303,954**
Geological	**Avalanche**	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Liquefaction Susceptibility	$307,422,300	100%	$99,715	$629,670,100	100%	$204,239	$937,092,400	100%	$303,954
	Landslide-Deep	$12,901,600	4.2%	$586,436	$25,912,700	4.1%	$1,177,850	$38,814,300	4.1%	$1,764,286
	Landslide-Shallow	$29,267,000	9.5%	$184,069	$58,297,500	9.3%	$366,650	$87,564,500	9.3%	$550,720
	Tsunami	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Volcanic	$307,422,300	100%	$99,715	$629,670,100	100%	$204,239	$937,092,400	100%	$303,954
Meteorological	**Drought**	$307,422,300	100%	$99,715	$629,670,100	100%	$204,239	$937,092,400	100%	$303,954
	Flood	$58,482,000	19%	$47,567	$228,719,200	36.6%	$110,760	$287,201,200	31%	$527,943
	Severe Weather	$307,422,300	100%	$99,715	$629,670,100	100%	$204,239	$937,092,400	100%	$303,954
	WUI Fire	NA	NA	NA	NA	NA	NA	NA	NA	NA
Technological	**Abandoned Mines**	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Civil Disturbance	$307,422,300	100%	$99,715	$629,670,100	100%	$204,239	$937,092,400	100%	$303,954
	Dam Failure	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Energy Emergency	$307,422,300	100%	$99,715	$629,670,100	100%	$204,239	$937,092,400	100%	$303,954

	Epidemic	$307,422,300	100%	$99,715	$629,670,100	100%	$204,239	$937,092,400	100%	$303,954
	Hazardous Material	$261,680,100	85.1%	$99,574	$538,392,000	85.5%	$204,868	$800,072,100	85.4%	$304,441
	Pipeline Hazard	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Terrorism / Active Threat	$307,422,300	100%	$99,715	$629,670,100	100%	$204,239	$937,092,400	100%	$303,954
	Transportation Accidents	$261,680,100	85.1%	$99,574	$538,392,000	85.5%	$204,868	$800,072,100	85.4%	$304,441

Table 4-5a Consequence Analysis Chart – Geological[26,27]

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
	Liquefaction Susceptibility	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	No
		Impact to COG and/or COOP in the Jurisdiction	No
		Impact to Property, Facilities and Infrastructure	Yes
		Impact to the Environment	Yes
		Impact to the Jurisdiction Economic Condition	No
		Impact to Reputation or Confidence in Jurisdiction	No
	Tsunami	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
	Volcanic[28]	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 4-5b Consequence Analysis Chart – Meteorological

THREAT		CONSEQUENCE	YES OR NO
Meteorological	**Drought**	Impact to the Public	Yes
		Impact to the Responders	Yes
		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	Yes
		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	No
		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	Yes
		Impact to the Responders	Yes
		Impact to COG and/or COOP in the Jurisdiction	No
		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	No

Table 4-5c Consequence Analysis Chart – Technological[29]

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	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
	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	No
	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	No
		Impact to the Environment	No
		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	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
	Terrorism / Active Threat	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	No
		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.

[7] 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

[9] The Terrorism and Active Threat / Attack Tactics chapters have many similarities and can even be connected in an incident. For this edition of the mitigation plan terrorism and active threat / attack tactics are discussed as one. For the remainder of this risk assessment Terrorism and Attack Tactics are discussed as one due to the many comparisons. Although Cyber Attack is another new chapter in this update, there was not enough time to assess the jurisdictions individually and will be expanded upon in the next update. Info obtained from Pierce County GIS application, CountyView Pro (November 2019).

[10] 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 2019)*. 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. Several 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.

[11] The City of Orting is not vulnerable to this hazard; therefore, it is marked NA or not-applicable.

[12] It should be noted here that although all residents, all property and all infrastructure of the City of Orting are vulnerable to earthquake shaking, not all are subject to the affects of liquefaction and liquefiable soils which is what is represented here.

[13] 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.

[14] The entire jurisdiction is vulnerable to Drought. There are three things that must be understood about the effect 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.

[15] According to the most recent information from the Department of Natural Resources, the City of Orting 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.

[16] The definition of Abandoned Mines comes from the 2020 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.

[17] The definition of Civil Disturbance comes from the 2020 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.

[18] The definition of Dam Failure comes from the 2020 Pierce County HIRA: A dam is any "barrier built across a watercourse for impounding water.[18]" 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 dam's emergency plans inundation maps.

[19] The definition of an Energy Emergency comes from the 2020 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.

[20] The definition of Epidemic comes from the Centers for Disease Control: 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.

[21] The definition of Hazardous Materials comes from the 2020 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 material 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 2016, 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.

[22] The definition of Pipeline Emergency comes from the 2020 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.

[23] The definition of Terrorism comes from the 2020 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 and not all are related to Terrorism which is why Active Threat / Attack Tactics has been added to the Pierce County HIRA as its own chapter.

[24] The definition of Transportation Accident comes from the 2020 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.

[25] All census data is based off the block level 2010 census from OFM. Once the 2020 census data becomes available these numbers will be updated.

[26] 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.

[27] 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.

[28] 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 consider the possibility of tephra deposition in addition to a lahar.

[29] 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

Mitigation Strategy Requirements

Mitigation Strategy---Requirement §201.6(c)(3):

The plan **shall** include a strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.

Local Hazard Mitigation Goals---Requirement §201.6(c)(3)(i):

[The hazard mitigation strategy **shall** include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

- Does the new or updated plan include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards?

Identification and Analysis of Mitigation Actions---Requirement §201.6(c)(3) (ii):

[The mitigation strategy **shall** include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

Identification and Analysis of Mitigation Actions: National Flood Insurance Program (NFIP) Compliance---Requirement ***§201.6(c)(3)(ii):***

[The mitigation strategy] must also address the jurisdiction's participation in the National Flood Insurance Program (NFIP), and continued compliance with NFIP requirements, as appropriate.

- Does the new or updated plan identify and analyze a comprehensive range of specific mitigation actions and projects for each hazard?
- Do the identified actions and projects address reducing the effects of hazards on new buildings and infrastructure?
- Do the identified actions and projects address reducing the effects of hazards on existing buildings and infrastructure?
- Does the new or updated plan describe the jurisdiction(s) participation in the NFIP?
- Does the mitigation strategy identify, analyze and prioritize actions related to continued compliance with the NFIP?

Implementation of Mitigation Actions---Requirement: §201.6(c)(3) (iii):

[The mitigation strategy section **shall** include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization **shall** include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

- Does the new or updated mitigation strategy include how the actions are prioritized? (For example, is there a discussion of the process and criteria used?)
- Does the new or updated mitigation strategy address how the actions will be implemented and administered, including the responsible department, existing and potential resources and the timeframe to complete each action?
- Does the new or updated prioritization process include an emphasis on the use of cost-benefit review to maximize benefits?
- Does the updated plan identify the completed, deleted or deferred mitigation actions as a benchmark for progress, and if activities are unchanged (i.e., deferred), does the updated plan describe why no changes occurred?

SECTION 5

REGION 5 ALL HAZARD MITIGATION PLAN
2020-2025 EDITION
CITY OF ORTING
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 city. Development is occurring at a rapid pace within the city and the inevitable growth that follows helps and hinders some of the projects and mitigation strategies. We based the city's mitigation measures on what seemed reasonable, possible, and plausible given the abilities and time of the city and its staff members.

Table 5-1 City of Orting 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,V,D,F,WUI,SW,MM)*	Orting	Ongoing	✓	✓	✓	✓	✓	✓
	2. Plan Maintenance *(E,L,V,D,F,WUI,SW,MM)*	Orting	Ongoing	✓	✓	✓	✓	✓	✓
HMF	1. Pierce County Hazard Mitigation Forum (*E,L,V,D,F,WUI,SW,MM)*	PC DEM; Orting	Ongoing	✓	✓	✓	✓	✓	✓
City Government	1. Capability Identification and Evaluation (*E,L,V,D,F,WUI,SW,MM)*	Orting	1-2	N/A					
	2. Evacuation Route Sidewalk Expansion *(V,F)*	Orting	3	✓		✓			
	3. Evacuation Rendezvous Site Equipment *(V,F)*	Orting	3	✓		✓			
	4. Support Implementation of Pedestrian Evac Bridge *(V,F)*	Orting and Regional Partners	5	✓		✓			✓
	5. Purchase/Install Manholes/Tide-Flex Valves (*F,SW)*	Orting – Public Works	5	✓	✓		✓		✓
	6. Implement Community Emergency Response Team (*F,SW*)	Orting – Police Department	2	✓	✓	✓		✓	✓
	7. Continue CRS Program *(F,SW)*	Orting - Public Works	Ongoing	✓	✓	✓		✓	✓
	8. National Flood Insurance Program *(F)*	Orting (Community Development); PC PWU	Ongoing	✓	✓	✓	✓	✓	
Public Education	1. Continue Lahar Evacuation Drills *(V)*	Orting/School District/FD 18	Ongoing	✓		✓		✓	
	2. Public Education *(E,L,D,F,SW,WUI)*	Orting	Ongoing	✓		✓		✓	

Startup Mitigation Measures

Existing Mitigation Actions

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

The City of Orting will integrate the hazard mitigation plan into existing plans, ordinances, and programs to dictate land uses within the jurisdiction. Further, Orting will continue to implement existing programs, policies, and regulations as identified in the Capability Identification Section of this Plan. This includes such actions as updating the Critical Area Regulations and any ensuing land use policies with best available science. It also includes continuing those programs that are identified as technical 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) =** City of Orting
5. **Timeline =** Ongoing
6. **Benefit** = City-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
	X		
Comments			
This plan is ongoing.			

Origin

Previous Plan	Current Plan
X	X

Plan Maintenance

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

Orting 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** = $1,000
3. **Funding Source and Situation** = Funding could be obtained through local budget.
4. **Lead Jurisdiction(s) =** City of Orting
5. **Timeline =** Ongoing
6. **Benefit** = City-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
	X		
Comments			
This plan is ongoing.			

Origin

Previous Plan	Current Plan
X	X

Pierce County Hazard Mitigation Forum

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

Orting 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; every October. 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; City of Orting
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
	X		
Comments			
This is a continuous work-in-progress.			

Origin

Previous Plan	Current Plan
X	X

City Government Mitigation Measures

Capability Identification and Evaluation

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

Orting will develop a consistent and replicable system for evaluating the City'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 City'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) =** City of Orting
5. **Timeline =** Short-term
6. **Benefit** = City-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
	X		
Comments			
This is a continuous work-in-progress.			

Origin

Previous Plan	Current Plan
X	X

Evacuation Route Sidewalk Expansion

Hazards: V, F[1]

In the event of a volcanic lahar, the safest evacuation plan is for students and citizens to walk out of town to high ground at the Pierce County Rock Quarry. Currently, the sidewalks along this route are 4' to 5' wide which constricts flow of evacuees. The City plans to increase sidewalk width to 8' along the pedestrian route wherever possible.

1. **Goal(s) Addressed** = Protect Life and Property; Establish and Strengthen Partnerships for Implementation; Promote a Sustainable Economy.
2. **Cost of Measure** = 1.5 miles of sidewalk improvements at $2 million.
3. **Funding Source and Situation** = Funding could be obtained through state and federal grants.
4. **Lead Jurisdiction(s) =** Pierce County Public Works
5. **Timeline =** Long-term
6. **Benefit** = City of Orting, others in Valley, First Responders
7. **Life of Measure** = 75 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
	X		
Comments			
The City has made steady improvements to the evacuation route including new sidewalks every year. We are currently applying for a grant to extend sidewalks in the area of the Soldiers Home. The citizen approval of Initiative 976 in 2019 has removed about 75% of the city's funding for sidewalk improvements.			

Origin

Previous Plan	Current Plan
	X

Evacuation Rendezvous Site Equipment

Hazards: V, F[1]

In the event of a volcanic lahar, the safest evacuation plan is for students and citizens to walk out of town to high ground at the Pierce County Rock Quarry. The Quarry has administration and maintenance structures for temporary shelter. There is a need to store emergency supplies including water, food, medical equipment, and portable restroom facilities.

1. **Goal(s) Addressed** = Protect Life and Property; Establish and Strengthen Partnerships for Implementation; Promote a Sustainable Economy.
2. **Cost of Measure** = $50,000
3. **Funding Source and Situation** = Funding could be obtained through state and federal grants.
4. **Lead Jurisdiction(s) =** City of Orting
5. **Timeline =** Long-term
6. **Benefit** = Citizens of Orting
7. **Life of Measure** = 75 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
	X		

Comments
The City is currently in negotiations with Pierce County to lease facilities at the Rock Quarry. The City expects to have an agreement in 2020. The City Council approved of a $20,000 in Hazard Mitigation supplies for 2020.

Origin

Previous Plan	Current Plan
	X

Support Implementation of Pedestrian Evacuation Bridge

Hazards: V, F[1]

City of Orting is now the lead agency for the design and construction of a pedestrian evacuation bridge system formerly known as "Bridge for Kids". Funding is in hand to complete the design and engineering for the first bridge over SR162, which is Phase 1. The City is currently seeking funding for construction. Phase 2 will be a bridge crossing the Carbon River that will connect to trails coming down the hill from the new development in Cascadia. This will allow students and others in the City of Orting a timely evacuation route from the City.

1. **Goal(s) Addressed** = Protect Life and Property; Establish and Strengthen Partnerships for Implementation; Promote a Sustainable Economy.
2. **Cost of Measure** = $45 million
3. **Funding Source and Situation** = Funding could be obtained through state and federal grants.
4. **Lead Jurisdiction(s) =** Pierce County Public Works
5. **Timeline =** Long-term
6. **Benefit** = City of Orting, others in Valley, First Responders
7. **Life of Measure** = 75 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
	X		
Comments			
Phase 1 is 90% completed (design & engineering). The City received $100,000 in a state grant in 2019 for construction. The city is applying for $4 million in grants during 2020. Phase 1 will cost approximately $6 million			

Origin

Previous Plan	Current Plan
X	X

Purchase/Install Manholes/Tide-Flex Valves

Hazards: F, SW[1]

Purchase and install manholes with special tide-flex valves (one-way backflow valve) to prevent river water from flowing into the city and maintain fish habitat.

1. **Goal(s) Addressed** = Protect Life and Property; Promote A Sustainable Economy; Ensure Continuity of Operations; Preserve or Restore Natural Resources.
2. **Cost of Measure** = $250,000 each (need 2) or a total of $500,000
3. **Funding Source and Situation** = Funding could be obtained through Storm Impact Fee for match, REET or state and federal grants.
4. **Lead Jurisdiction(s) =** City of Orting – Public Works
5. **Timeline =** Long-Term
6. **Benefit** = Entire city and population, reduces impact of flooding. Levee system benefit in relieving pressure.
7. **Life of Measure** = 20 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
	X	X	
Comments			
The city received a FEMA grant for $250,000 for the first manhole and tideflex valve in 2018. The Design and engineering is complete. The expects the grant to be available to complete the project in 2020.			

Origin

Previous Plan	Current Plan
X	

Implement Community Emergency Response Team

Hazards: F, SW[1]

The measure would involve the City's Police Chief recruiting and training interested in citizens to assist the City in hazard events.

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** = $2,000 annually in training, staff time, and materials.
3. **Funding Source and Situation** = Funding could be obtained through local budget as well as state and federal grants.
4. **Lead Jurisdiction(s) =** City of Orting – Police Department
5. **Timeline =** Long-term
6. **Benefit** = City of Orting

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

Status Update: 2020 – 2025 Edition

Complete	Ongoing	Partially Complete	Deferred
	X		
Comments			
The first CERT team has been identified and the manager of the team is receiving training in March 2020. The team will participate in ongoing emergency preparedness meetings with the city and participate in the school evacuation drill in May of 2020.			

Origin

Previous Plan	Current Plan
	X

Continue CRS Program

Hazards: F, SW[1]

The measure would involve the City to continue development in the NFIP CRS Program. Currently, the City has a rating of 7. The City will work to improve their rating.

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** = $10,000 annually in staff time and materials
3. **Funding Source and Situation** = Funding could be obtained through local budget as well as state and federal grants.
4. **Lead Jurisdiction(s) =** City of Orting – Public Works
5. **Timeline =** Long-term
6. **Benefit** = City of Orting, surrounding jurisdictions and environment
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
	X		
Comments			
The City successfully completed the CRS program evaluation in 2019. The City has contracted with a CRS specialty consultant to help us keep the program intact and up to date starting in 2020.			

Origin

Previous Plan	Current Plan
X	

National Flood Insurance Program

Hazards: F

Orting will ensure that the City is compliant with the National Flood Insurance Program by updating floodplain identification and mapping, enforcing the flood damage prevention ordinance, and providing public education on floodplain requirements and impacts. The City of Orting will be an active participant in the Pierce County Flood Control District.

1. **Goal(s) Addressed** = Protect life and property; Ensure Continuity of Operations; Increase Public Preparedness; Increase and Strengthen Partnerships; Protect the Environment; Increase Public Preparedness
2. **Cost of Measure** = Staff time, special materials required, permits
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants
4. **Lead Jurisdiction(s) =** Orting (Community Development); PC PWU
5. **Timeline =** Ongoing
6. **Benefit** = City-wide; 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
	X		
Comments			
The city continues to be a member of the NFIP. Although the city completed a new setback levee in 2018 it has not yet received accreditation due to a county levee up stream that is deficient. The City is working with the County to build a new levee that would allow the city's levee to be accredited. That new levee will probably not be completed until about 2026.			

Origin

Previous Plan	Current Plan
X	

Public Education Mitigation Measures

Continue Lahar Evacuation Drills

Hazards: V[1]

On average the Orting Region citizens have about 45 minutes to evacuate from a lahar originating from Mt. Rainier. This measure will improve on current school and neighborhood evacuation drills.

1. **Goal(s) Addressed** = Protect Life and Property; Establish and Strengthen Partnerships for Implementation; Increase Public Preparedness for Disasters.
2. **Cost of Measure** = $5,000 per exercise
3. **Funding Source and Situation** = Funding could be obtained through City funds and state/federal grants.
4. **Lead Jurisdiction(s) =** City of Orting - Administrator
5. **Timeline =** Ongoing
6. **Benefit** = City of Orting Neighborhoods
7. **Life of Measure** = Perpetual
8. **Community Reaction** = the proposal would be somewhat controversial.

Status Update: 2020 – 2025 Edition

Complete	Ongoing	Partially Complete	Deferred
	X		
Comments			
The City has successfully completed a school evacuation drill for the last 10 years. The state took notice and is now requiring similar evacuation drills for other jurisdiction's schools.			

Origin

Previous Plan	Current Plan
X	

Public Education

Hazards: E, L, D, F, SW, WUI[1]

This measure will have the City partner with Pierce County to establish hazard response training for citizens in Orting.

1. **Goal(s) Addressed** = Protect Life and Property; Establish and Strengthen Partnerships for Implementation; Increase Public Preparedness for Disasters.
2. **Cost of Measure** = $5,500 annually
3. **Funding Source and Situation** = Funding could be obtained through local budgets or grants.
4. **Lead Jurisdiction(s) =** City of Orting - Administration
5. **Timeline =** Ongoing

6. **Benefit** = City of Orting & residents
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
	X		
Comments			
The City of Orting is contracted with Pierce County's Emergency Management Department to provide education to citizenry of hazard mitigation. Currently a marketing document has been developed and just awaits printing. The City will purchase the marketing materials and distribute at city wide events.			

Origin

Previous Plan	Current Plan
X	

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.

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Section 6

Infrastructure Requirements

Assessing Vulnerability: Identifying Structures---Requirement §201.6(c)(2) (ii)(A):

The plan **should** describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas.

- Does the new or updated plan describe vulnerability in terms of the types and numbers of existing buildings, infrastructure, and critical facilities located in the identified hazard areas?
- Does the new or updated plan describe vulnerability in terms of the types and numbers of future buildings, infrastructure, and critical facilities located in the identified hazard areas?

Assessing Vulnerability: Estimating Potential Losses---Requirement §201.6(c)(2) (ii)(B):

The plan **should** describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) of this section and a description of the methodology used to prepare the estimate.

- Does the new or updated plan estimate potential dollar losses to vulnerable structures?
- Does the new or updated plan describe the methodology used to prepare the estimate?

SECTION 6

REGION 5 ALL HAZARD MITIGATION PLAN
2015-2020 EDITION
CITY OF ORTING
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 City of Orting's City Manager.

Distribution or changes to this document without the express written consent of the City of Orting's City Manager is prohibited.

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Section 7

Plan Maintenance Procedures Requirements

Monitoring, Evaluating, and Updating the Plan---Requirement §201.6(c)(4)(i):

[The plan maintenance process **shall** include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

- Does the new or updated plan describe the method and schedule for monitoring the plan, including the responsible department?
- Does the new or updated plan describe the method and schedule for evaluating the plan, including how, when and by whom (i.e. the responsible department)?
- Does the new or updated plan describe the method and schedule for updating the plan within the five-year cycle?

Incorporation into Existing Planning Mechanisms---Requirement §201.6(c)(4) (ii):

[The plan **shall** include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate…

- Does the new or updated plan identify other local planning mechanisms available for incorporating the mitigation requirements of the mitigation plan?
- Does the new or updated plan include a process by which the local government will incorporate the mitigation strategy and other information contained in the plan (e.g., risk assessment) into other planning mechanisms, when appropriate?
- Does the updated plan explain how the local government incorporated the mitigation strategy and other information contained in the plan (e.g., risk assessment) into other planning mechanisms, when appropriate?

Continued Public Involvement---Requirement §201.6(c)(4) (iii):

[The plan maintenance process **shall** include a] discussion on how the community will continue public participation in the plan maintenance process.

- Does the new or updated plan explain how continued public participation will be obtained? (For example, will there be public notices, an on-going mitigation plan committee, or annual review meetings with stakeholders?)

SECTION 7

REGION 5 ALL HAZARD MITIGATION PLAN
2020-2025 EDITION
CITY OF ORTING
PLAN MAINTENANCE SECTION

Table of Contents

The updated planning process began in the spring of 2012 and is continuing to build on the foundation of breaking the disaster cycle by planning for a disaster resistant City of Orting and Pierce County Region 5. This Section details the formal process that will guarantee the City of Orting's All 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 Orting City Council. The Section also describes: the method and schedule of monitoring, evaluating, and updating within a five-year cycle; the process for incorporating the mitigation strategy into existing mechanisms; and, the process for integrating public participation throughout the plan maintenance. The Section serves as a guide for implementation of the hazard mitigation strategy.

Plan Adoption

Upon completion of the City of Orting Plan, it will be submitted to Washington State Emergency Management Division (EMD) for a Pre-Adoption Review. The EMD has 30 days to then act 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 Orting City Council is responsible for the adoption of the Plan after the Pre-Adoption Review by the EMD and the FEMA Region X. Once the City adopts the Plan, the Program Coordinator of the Mitigation and Recovery Division of Emergency Management will be responsible for submitting it, with a copy of the resolution, to the State Hazard Mitigation Officer at the Washington State EMD. EMD will then act on the Plan and forward it to the FEMA Region X for final approval. Upon approval by FEMA, the City will gain 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 July 2025.

Maintenance Strategy

The City of Orting's maintenance strategy for implementation, monitoring, and evaluation provides a structure that encourages collaboration, information transference, and innovation. Through a multi-tiered implementation method, the City will provide its staff and citizens 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 public involvement and adaptability to changing risks and vulnerabilities. Finally, it will provide a tangible link between staff, students and the various levels of government service, ranging

from community action to the Department of Homeland Security. Through this strategy, the City will attempt to break the disaster cycle and achieve a more disaster resistant community.

Implementation

The City of Orting continually evaluates and updates regulations to implement this plan. In 2018, the City of Orting adopted the new FEMA flood maps. The city continues to require base flood elevations on all new residential and commercial construction. In 2016, the City adopted storm water regulations consistent with the Department of Ecology 2012 Storm Water Management Manual including compensatory storage. Throughout all of these processes for adoption the public was informed and had the opportunity to comment. The City is a member of the National Flood Insurance Program (NFIP) and Federal Community Rating System (CRS) program. Development has been slowed due to the city's acceptance of Compensatory Storage.

The City completed construction of a new Public Works facility in 2018 that is more resilient to hazards and better equips our teams to respond to emergency situations. The City is now in the process of building a new City Hall, Police Station, and Court/Council Chambers with an Emergency Operations Center that will replace a 100-year-old building and again make the city more resilient to hazards. During 2019 the city completed new Emergency Operations Plans for Lahar and Earthquake. The city purchased a new outdoor tent with marketing and education materials in 2018 to educate the public on hazard mitigation and this was set up during all city-wide events. The City continues to implement the largest hazard evacuation drill in the state. In 2014 The City completed a 1.5-mile setback levee. This was our highest priority for hazard mitigation since 2004. Our next priority is to build a new pedestrian evacuation bridge system. The first phase, a pedestrian bridge over the state highway is at 90% completion of design and engineering. Funding for construction has been a big hurdle. We were only able to garner $100,000 for the state capital budget in 2019. The overall cost will be about $50 million. Grants have been hard to come by.

In order to ensure efficient and effective implementation, the City of Orting will make use of its capabilities, infrastructure, and dedicated population. The City will implement its mitigation strategy over the next five years primarily through its annual City budget process and varying grant application processes. The City of Orting will be highly dependent upon grants, seeking them out for infrastructure and capital improvement plans due to a small general fund. All programs and entities identified in the Capability Identification Section will serve as the implementing mechanisms within those processes.

The City of Orting's Administration will work in conjunction with those departments/agencies/entities identified in both the Capability Identification Section and under each mitigation measure to initiate the overall mitigation strategy. For example, any infrastructure-related measures will be implemented through the Capital Improvement Plan and the various departments involved through their normal budget schedule. Any regulatory and land use measure's will continue to be implemented through collaboration with the Planning Commission and the City Building Department, and its updates or amendments of the City's Comprehensive Plan. Updates to the Comprehensive Plan will include hazard

mitigation as necessary. Other measures will be implemented through collaboration with the identified jurisdictions/departments 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.

The mitigation implementation strategy is a three-tiered method that emphasizes localized needs and vulnerabilities while addressing City as well as multi-jurisdictional policies and programs. The first tier is implementation through individual citizen level Public Education Programs already existing on the City's website. In addition there are education programs arranged through City events at the individual level and through CERT, PC NET and neighborhood hazard drills such as the Lahar Warning System. The second is the City-Wide mechanism for implementation, in this case the City Administration. The third tier is a more external and multi-jurisdictional mechanism, the Hazard Mitigation Forum (HMF).

This method ensures that implementation speaks to 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 City, the region, and the times. These three levels and their means of implementation and collaboration are described below.

Public Education Programs

At the individual citizen level, public education programs provide the City with a localized mechanism for implementation. This approach to mitigation can adapt to the varying vulnerabilities and needs within the growing City and region. Public education programs are also a means for involving the public in mitigation policy development. Departments conducting mitigation-related programs will provide the existing targeted neighborhoods and special-needs populations a catalogue of mitigation measures from which individuals can choose those that would be most effective in their neighborhood. For example, currently Orting is working to develop CERT teams throughout the city and maintain existing PC NET neighborhoods with PC DEM. This combined effort will allow better preparedness and response to disasters. They provide a coordinated group of communities through which individuals can implement home and neighborhood level mitigation measures.

Jurisdiction-Wide: City's Emergency Management Team

The City's Emergency Management Team (EMT) will be the body responsible for determining the direction of the Plan's implementation. The EMT is responsible to the Mayor. The EMT follows the general policy as set by the City Council.

Initially, the EMT will be responsible for the overall review of the plan and will designate mitigation measures to those departments responsible for their implementation. This will be done with assistance from the City Administrator, the Police Chief, Fire Chief, Building

Official and Public Works Director. The EMT will address the Plan on an annual basis during the month of October. The EMT will monitor the plan's implementation throughout the year and report to the Mayor at this annual meeting. Evaluation and updates will be completed at this meeting. Recommendations will be made to coincide with the normal budgeting processes and provide an ample time period for review and adoption of any necessary changes to the implementation schedule. The entire plan will be updated every five years with coordination from the EMT and City Administrator and approval from the City Council.

Hazard Mitigation Forum

The PC Hazard Mitigation Forum (HMF) represents a broader and multi-jurisdictional approach to mitigation implementation. The PC 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 PC 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 disaster resistant Pierce County. Members of the PC HMF will include the following jurisdictions who have completed, or who have begun the process of completing, DMA compliant 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 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.
- City of Buckley
- City of Buckley
- City of Edgewood
- City of Fircrest
- City of Lakewood
- City of Orting
- City of Roy
- City of Tacoma
- 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 City of Orting will be an active participant in the PC HMF and will be represented by the City

Administrator or his designee. Only through this level of cooperation can these jurisdictions meet all of 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 City of Orting will continue to engage within the "north east 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 process began in early 2019 following the then current CFR 201.6 Hazard Mitigation Planning Requirements. Based on new requirements in the Stafford Act, the City of Orting 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 City of Orting Plan will guide the City's mitigation efforts for the foreseeable future. City of Orting Representatives on the Planning Team has developed a method to ensure that regular review and update of the Plan occur within a five-year cycle. The Emergency Management Team will coordinate any reviews through the November meeting noted above.

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

City Administration will provide a report of the Plan's implementation to the EMT which meets at least twice each year. This report will drive the meeting agendas and will include the following:

- Updates on implementation throughout the City;
- 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 EMT 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 the City Administrator 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 City of Orting, the City Administrator will provide an assessment that captures any "success stories" and/or "lessons learned." The assessment will detail direct and indirect damages to the City 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 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 City of Orting 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 2025 and every five years following at the Hazard Mitigation Forum, the City Administration and the EMT will submit the updated plan to PC DEM. PC DEM's Mitigation and Recovery Program Manager will collect updates from the Region 5 Plan jurisdictions and submit them to the State EMD and FEMA.

Continued Public Involvement

City of Orting is dedicated to continued public involvement and education in review and updates of the Plan. City Administration and the City Administrator will retain copies of the City website.[1] Announcements regarding the Plan's adoption and the annual updates to the Plan will be advertised on the City of Orting website.

The three-tiered implementation method provides an opportunity for continuous public involvement. Public Education campaigns are a means of informing the public on updates and implementation activities. Further, prior to submitting the Plan to WA EMD and FEMA for

the five-year review, the City Administrator and the EMT will hold a public information and comment meeting. This meeting will provide citizens a forum during which they can express their concerns, opinions, or ideas about the City of Orting's All Hazard Mitigation Plan. This meeting will be advertised by the City through a variety of media, including the Local Newspaper and a posting on the City's website.

The City of Orting will conduct a review on a yearly basis to ensure all elements of the mitigation plan are updated and accurate. Each of the 76 jurisdictions has been tasked with providing documentation on public involvement including:

- a brief description for each public hearing held,
- a summary on attendance,
- any feedback received from the public and,
- an overall description of what was accomplished.

Even further, the City of Orting will provide proof of their attempts for public involvement such as screenshots of websites including date ranges, flyers and other relevant material documenting the public involvement process. Lastly, the City of Orting will look for new innovative ways for public involvement.

Endnotes

[1] http://www.cityoforting.org

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APPENDIX A

REGION 5 ALL HAZARD MITIGATION PLAN
2020-2025 EDITION
CITY OF ORTING

Plan Adoption

The *"Region 5 Hazard Mitigation Plan"* was adopted by the City of Orting's City Council 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 Hazard Mitigation Programs Manager	Approved—
FEMA Region X	Tamra Biasco Chief, Risk Analysis Branch 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
CITY OF ORTING

Plan Adoption

The *"Region 5 Hazard Mitigation Plan"* was adopted by the City of Orting's City Council on August 12, 2015 by resolution number 2015-7. The following page shows a copy of that resolution.

CITY OF ORTING
WASHINGTON
RESOLUTION NO. 2015-7

A RESOLUTION OF THE CITY OF ORTING, WASHINGTON, ADOPTING THE REGION 5 ALL HAZARD MITIGATION PLAN 2015-2020 EDITION; ADOPTING THE CITY OF ORTING ADDENDUM TO THE REGION 5 HAZARD MITIGATION PLAN; AND UPDATING THE PIERCE COUNTY NATURAL HAZARD MITIGATION PLAN

WHEREAS, the City of Orting is vulnerable to the human and economic costs of natural, technological and societal disasters; and

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 44 CFR 201.6 prior to receipt of project funding; and

WHEREAS, the Region 5 All Hazard Mitigation Plan 2015-2020 Edition represents the commitment of the City of Orting along with other surrounding government entities to reduce the risks from natural, manmade and technological hazards, serving as a guide for decision makers as they commit resources to reducing the effects of hazards, and it is in the public interest to proceed with the planning process in a timely manner; and

WHEREAS, the City of Orting has participated with the Pierce County Department of Emergency Management in the development of the City of Orting's All Hazard Mitigation Plan Addendum, and recognizes the economic loss, personal injury, and damage that can arise from these hazards and updates the Pierce County Natural Hazard Mitigation Plan; 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 City of Orting; and

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

WHEREAS, the City of Orting could risk not receiving future disaster funding if the All Hazard Mitigation Plan 2015-2020 City of Orting Addendum is not adopted; and

WHEREAS, the Orting City Council reviewed the All Hazard Mitigation Plan, 2015-2020 Edition;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF ORTING, WASHINGTON, DOES RESOLVE AS FOLLOWS:

Section 1. The Region 5 All Hazard Mitigation Plan, 2015-2020 Edition, is hereby adopted as set forth in Exhibit A, which is attached.

Section 2. The City of Orting Addendum to the Region 5 Hazard Mitigation Plan, an update to the City of Orting Natural Hazard Mitigation Plan, is hereby adopted and shall be in full force and effect upon passage and signatures hereon.

PASSED BY THE CITY COUNCIL AT A REGULAR MEETING THEREOF ON THE 12TH DAY OF AUGUST, 2015.

CITY OF ORTING

Joachim Pestinger, Mayor

ATTEST/AUTHENTICATED:

Rachel Pitzel, City Clerk

Approved as to form:

John P. Long, Jr., City Attorney

Filed with the City Clerk: 08/12/15
Passed by the City Council: 08/12/15
Resolution No.: 2015-7

The plan was reviewed and approved as follows:

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

FEMA Pre-Adoption Review and Letter of approval follows 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
CITY OF ORTING

Plan Adoption

The *"Region 5 Hazard Mitigation Plan"* was adopted by the City of Orting's City Council on October 8, 2008 by resolution number 2008-18. The following page shows a copy of that resolution.

CITY OF ORTING
WASHINGTON

RESOLUTION NO. 2008-18

A RESOLUTION OF THE CITY OF ORTING, WASHINGTON, ADOPTING A NATURAL HAZARD MITIGATION PLAN FOR THE CITY

WHEREAS, the City of Orting has participated with the Pierce County Department of Emergency Management and 48 other local jurisdictions in the development of the City of Orting Natural Hazard Mitigation Plan; and

WHEREAS, the Federal Emergency Management Agency (FEMA) has mandated that all local and state governmental entities develop and submit for approval a Natural Hazard Mitigation Plan to address pre-disaster planning issues; and

WHEREAS, the Natural Hazard Mitigation Plan is completed and ready for adoption by the City of Orting; and

WHEREAS, the Natural Hazard Mitigation Plan has been submitted and approved by the State and FEMA;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF ORTING, WASHINGTON, DOES RESOLVE AS FOLLOWS:

Section 1. The City of Orting herby adopts the, "Natural Hazard Mitigation Plan."

Section 2. The Mayor is authorized to pursue available funding opportunities to implement mitigation initiatives designated by the plan.

PASSED BY THE CITY COUNCIL AT A REGULAR MEETING THEREOF ON THE 8th DAY OF OCTOBER, 2008.

CITY OF ORTING

Cheryl M. Temple

Cheryl M. Temple, Mayor

ATTEST/AUTHENTICATED:

Susan J. Davis, Finance Director/City Clerk

Approved as to form:

Chris Bacha,
Kenyon Disend, PLLC
City Attorney

Filed with the City Clerk: 10/8/08
Passed by the City Council: 10/8/08
Resolution No.: 2008-18
Date Posted: 10/9/08

The plan was reviewed and approved as follows:

AGENCY	REPRESENTATIVE	DATE
FEMA Region X	Mark Carey 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
CITY OF ORTING

Region 5 Hazard Mitigation Planning Team

City of Orting

NAME	TITLE	JURISDICTION-DEPARTMENT
Mark Bethune	City Manager	City of Orting - Administration

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APPENDIX C

REGION 5 ALL HAZARD MITIGATION PLAN
2020-2025 EDITION
CITY OF ORTING

Plan Revisions

RECORD OF CHANGES			
Change Number	**Description of Change (with page numbers)**	**Date**	**Authorized by:**

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APPENDIX D

REGION 5 ALL HAZARD MITIGATION PLAN 2020-2025 EDITION CITY OF ORTING HAZUS RISK ASSESSMENT FLOOD AND EARTHQUAKE SCENARIO

OVERVIEW

Hazus is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose to the Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

Appendix D contains the loss estimation maps for all 18 City and Town groups within the Region 5 Mitigation Plan for earthquake for their essential facilities and flood modeling for the City of Fife, the City of Orting and the City of Sumner. Hazus has the capability to model a wide variety of loss estimates and this Appendix does not cover all of Hazus modeling capabilities. Further loss estimation will be incorporated into future updates of the mitigation plans.

Hazus-MH Flood

The spatial results from the Hazus Flood Scenario maps are included. These Hazus flood maps are based on a 0.1% chance of a flood event occurring on the Puyallup River. The study region included all of Pierce County, but Flood Spatial Analysis outcomes focused specifically on the City of Fife, City of Orting and the City of Sumner. The results from this Flood Scenario will be discussed in this section of the plan as opposed to the Risk Section as this time. With future updates of the jurisdictional mitigation plans and further flood analysis the methodology will be discussed within the Risk Section of the Region 5 Base Plan.

As a disclaimer for the data below, the *Totals* only reflect data for those census tracts/blocks included within the Pierce County study region. The estimates of social and economic impacts contained within the below report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results below and the actual social and economic losses following a specific Flood.

General Description of Region for Analysis

The flood loss estimates provided were first based on Pierce County and then brought down to a jurisdictional level for the City of Fife, City of Orting and the City of Sumner. The total geographical size of the study region is 1,640 square miles and contains 11,683 census blocks. Hazus estimates losses based on census tracts/blocks and further analysis using *User Defined Facilities* can be incorporated into the model for a detailed building specific study. For this report the analysis was kept on a census block level and the estimate totals were aggregated based on the census blocks. The maps depict the total estimate amounts per census block. The region contains over 292 thousand households and has a total population of 795,147 people (2010 Census bureau data).

There are an estimated 255,988 buildings in the region with a total building replacement value (excluding contents) of 45,413 million dollars. Approximately 95.46% of the buildings (and 75.72% of the building value are associated with residential housing.

General Building Stock

Hazus estimates that there are 255,988 buildings in the Pierce County region which have an aggregate total replacement value of 45,413 million (2013 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Pierce County and the Scenario based on the probability of a 0.1% chance of flooding on the Puyallup River.

Table 1: Building Exposure by Occupancy Type for Pierce County

Occupancy	Exposure ($1000)	Percent of Total
Residential	34,384,947	75.70%
Commercial	6,667,405	14.7%
Industrial	521,117	1.10%
Agricultural	59,762	0.10%
Religion	500,163	1.10%
Government	1,223,025	2.70%
Education	2,056,956	4.50%
Total	**45,413,375**	**100.00%**

Table 2: Building Exposure by Occupancy Type for the Puyallup River 0.1% Scenario Flood Event

Occupancy	Exposure ($1000)	Percent of Total
Residential	1,865,321	57.1%
Commercial	844,508	25.8%
Industrial	215,651	6.60%

Agricultural	10,053	0.30%
Religion	25,355	0.80%
Government	140,212	4.30%
Education	166,297	5.10%
Total	**3,267,397**	**100.00%**

Essential Facility Inventory

For essential facilities, there are 7 hospitals in the region with a total bed capacity of 1,990 beds. There are 299 schools, 47 fire stations, 28 police stations.

Flood Scenario Parameters

To define the flood loss estimate for this scenario, Hazus used a 100 Year Return Period. Future analysis will include a 500 Year Return Period and a possible 10 Year Return Period for compared analysis. The depth grid used to generate this analysis included a 1/3 Arc Second DEM from USGS and the reaches were built using a 2.0 square miles search radius.

Building Damage

Hazus estimates that about 4,692 buildings will be at least moderately damaged. This is over 82% of the total number of buildings in the scenario. There are an estimated 245 building that will be completely destroyed.

Essential Facility Damage

Before the flood analyzed in this scenario, the region had 1,900 hospital beds available for use. On the day of the scenario flood event, the model estimates that 1,900 hospital beds are available in the region. The table below describes the potential damages.

Table 3: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderated	At Least Substantial	Loss of Use
Fire Stations	47	5	0	4
Hospitals	7	0	0	0
Police Stations	28	3	0	3
Schools	299	12	0	12

Table 4: Expected Damage to the City of Orting Essential Facilities

	Number of Critical Facilities Exposure in the 0.1% Annual Chance Floodplain		
	Total Building Inventory within Pierce County	Building Exposure in the 0.0% Annual Chance Floodplain	City of Orting's Building Exposure in the 0.1% Annual Chance Floodplain
Fire Stations	47	4	0
Hospitals	7	0	0
Police Stations	28	3	0
Schools	299	12	0

Table 4 indicated that the City of Orting does not have any Essential Facilities that are located within the 0.1% Annual Chance of flooding on the Puyallup River. There is one Police Station located outside of the City of Orting's city limits and can be seen on Map Appendix D-1.

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 2025, 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 2025, 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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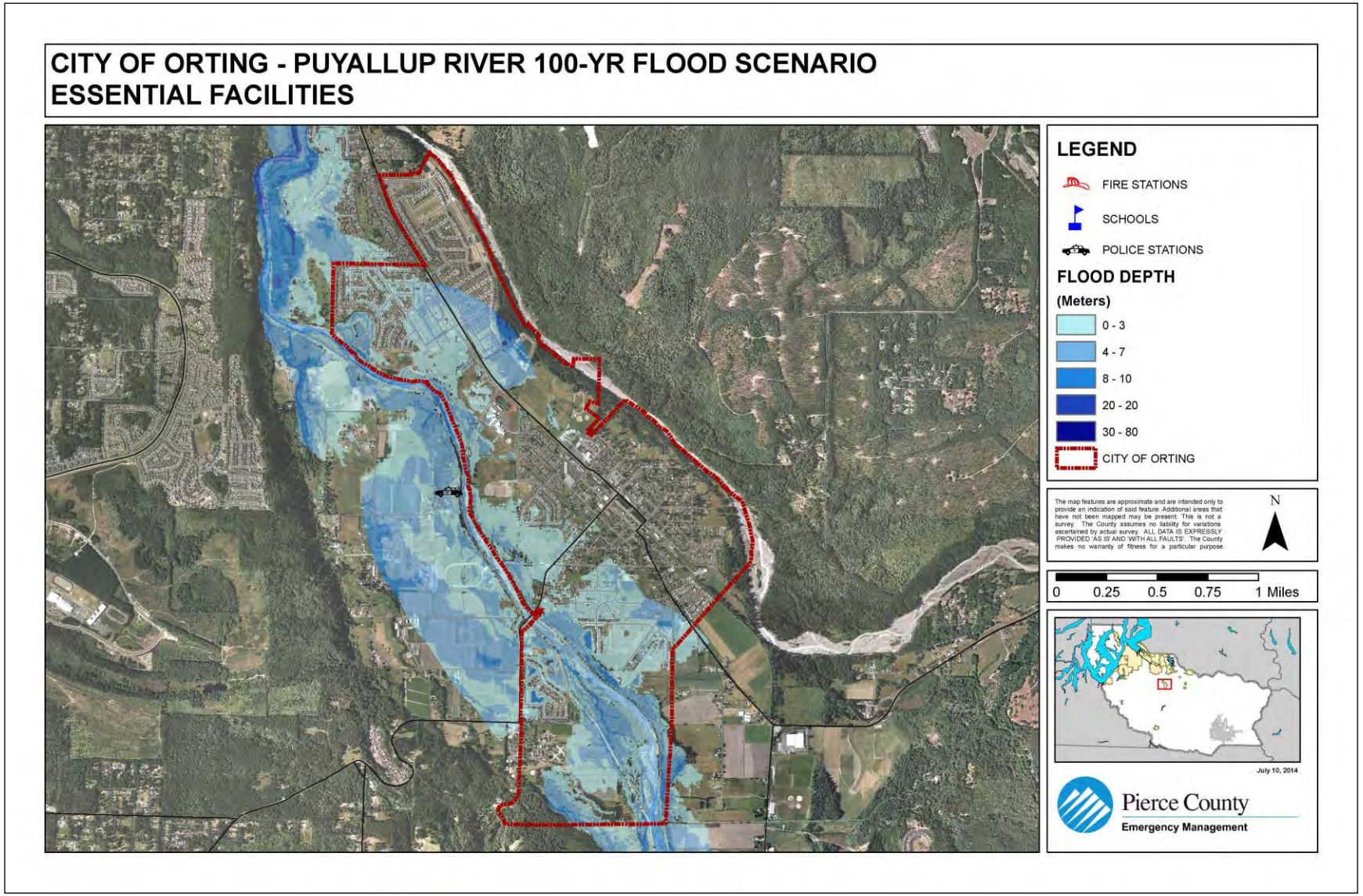
Map Appendix D-1: City of Orting Essential Facilities[1]



Induced Flood Damage

Debris Generation

Hazus estimated the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.) This distinction is made because of the different types of material handling equipment required to handle the debris.

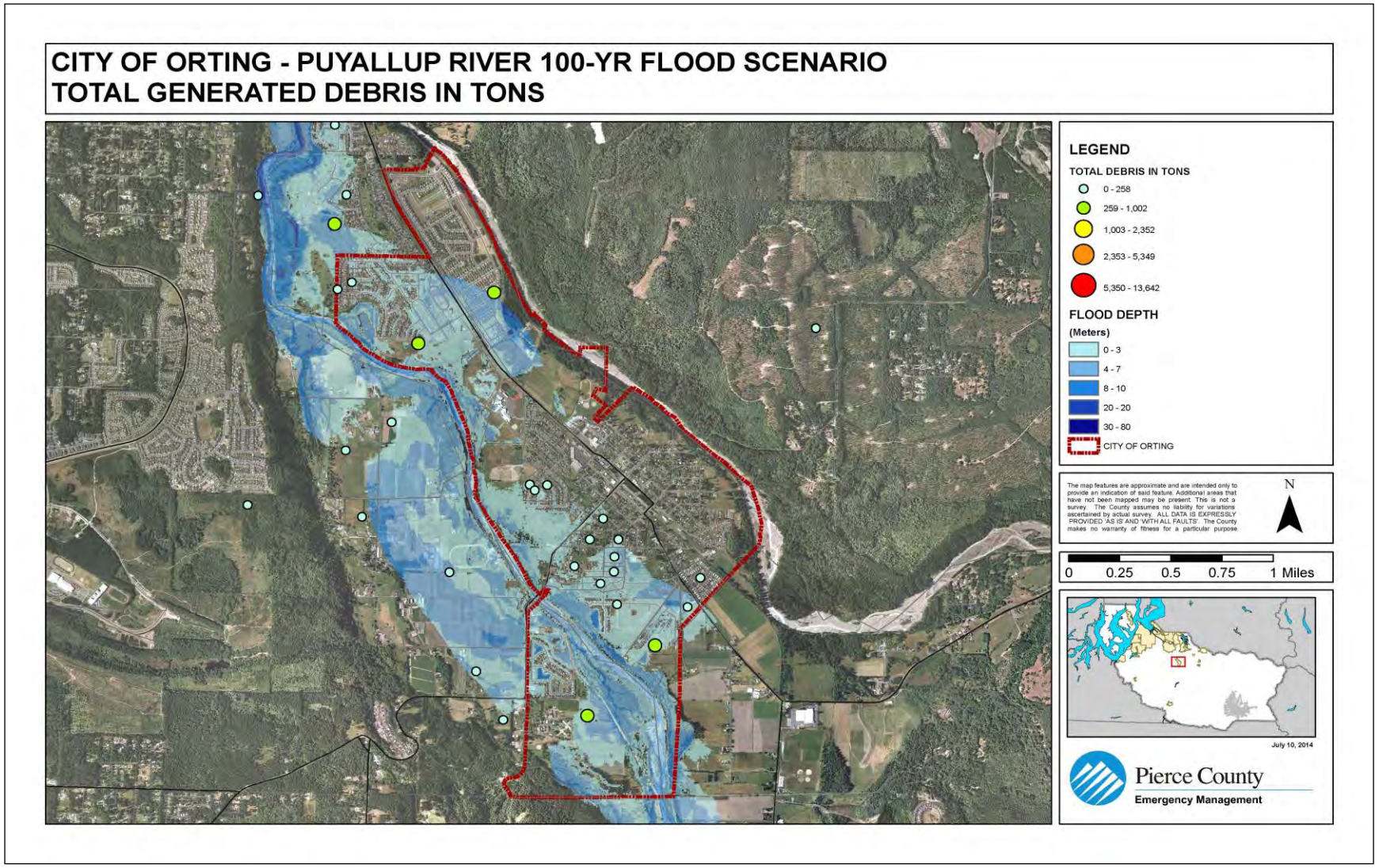
The model estimates that a total of 88,195 tons of debris will be generated from the entire Study Region. Of the total amount, Finishes comprises 47% of the total, Structure comprises 29% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 3,528 truckloads @ 25 tons/truck to remove the debris generated by the flood.

For the City of Orting the model estimated that a total of 2,058 tons of debris will be generated. Of the total amount, Finishes comprises 1,575 tons and the Structure comprises 208 tons. Map Appendix D-2 indicates the census blocks and total debris in tonnage amounts.

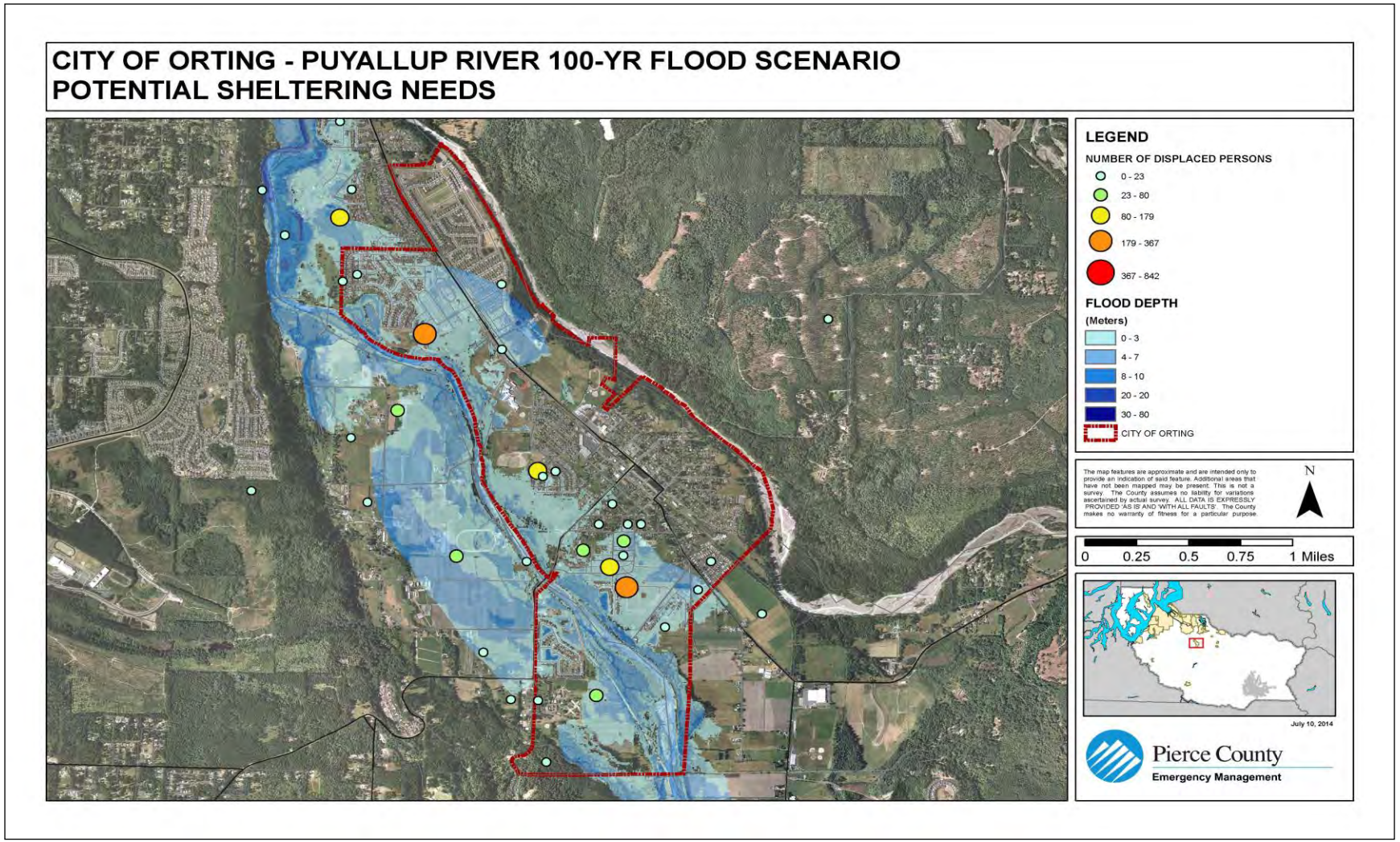
Shelter Requirements

Hazus estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. Hazus also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 5,783 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 15,584 people (out of a total population of 795,147) will seek temporary shelter in public shelters. The City of Orting will have a total of 969 displaced persons who may seek shelters. Map Appendix D-3 indicated the location within the census blocks and number of displace persons.

Map Appendix D-2: City of Orting Debris Generation



Map Appendix D-3: City of Orting Shelter Requirements



Economic Loss

The total economic loss estimated for the flood is 969.85 million dollars, which represents 29.68% of the total replacement value of the flood scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displace from their homes because of the flood.

The total building-related losses were 955.56 million dollars for Pierce County. 1% of the estimated losses were related to the business interruption of the regions. The residential occupancies made up 50.89% of the total loss. Table 5 below provides a summary of the losses associated with the building damage.

Table 5: Building-Related Economic Loss Estimates - (Millions of dollars)

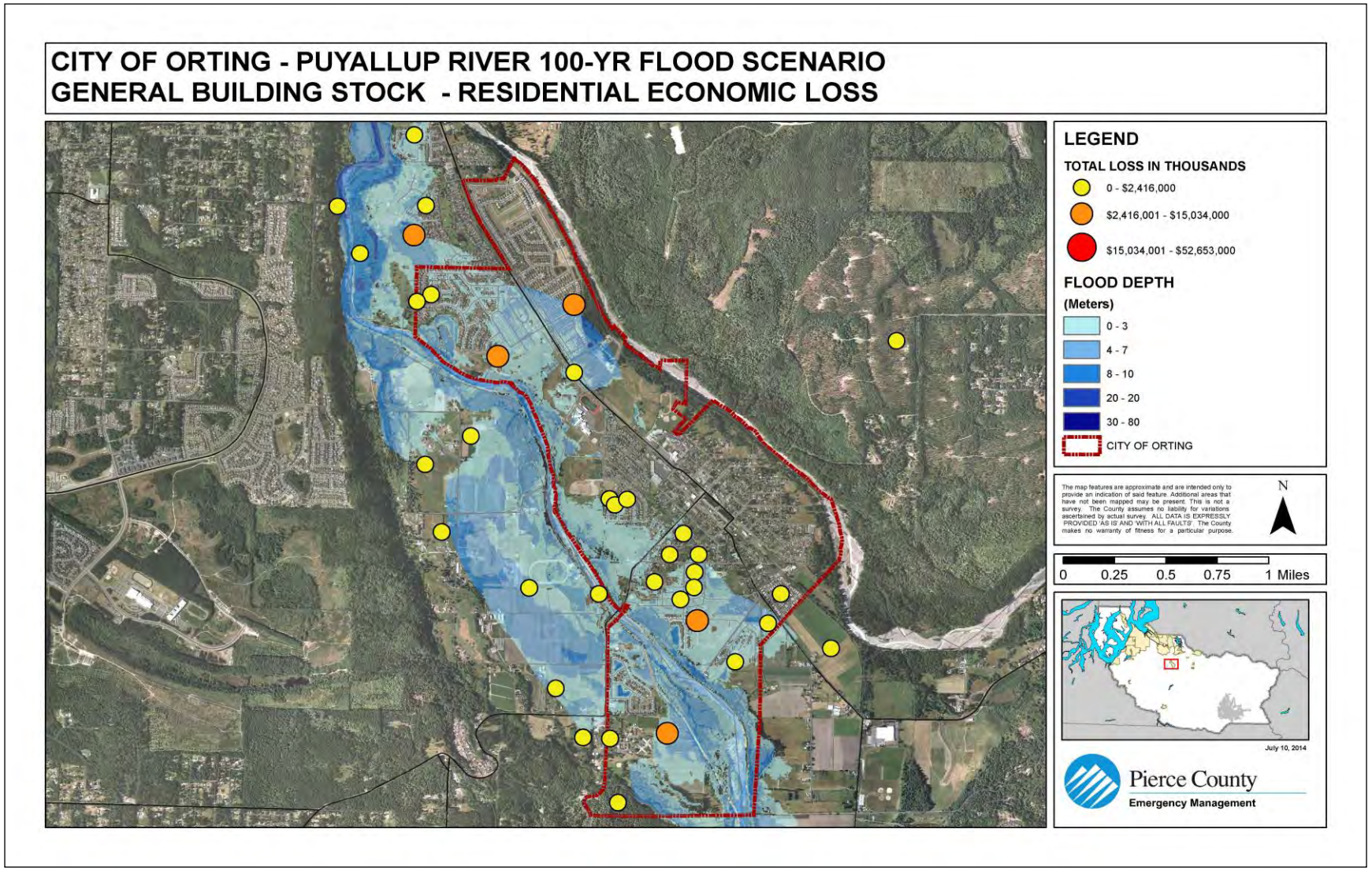
Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	302.6	125.46	17.46	26.72	472.23
	Content	198.58	162.96	189.25	68.15	438.94
	Inventory	0	30.89	12.46	1.03	44.38
	Subtotal	**492.17**	**319.31**	**48.17**	**95.9**	**955.56**
Business Interruption						
	Income	0.13	1.76	0.04	0.39	2.31
	Relocation	0.64	0.96	0.04	0.24	1.87
	Rental Income	0.30	0.66	0	0.02	0.99
	Wage	**0.32**	**2.58**	0.04	6.19	9.13
	Subtotal	**1.38**	**5.96**	**0.13**	**6.83**	**14.3**
ALL	Total	493.55	325.27	**48.3**	**102.73**	**969.85**

The table below describes the total economic losses for the City of Orting. Analysis was only done for economic loss estimates for residential and commercial areas in Orting. Map Appendix D-4 and Map Appendix D-5 are the total combined economic losses for the census block.

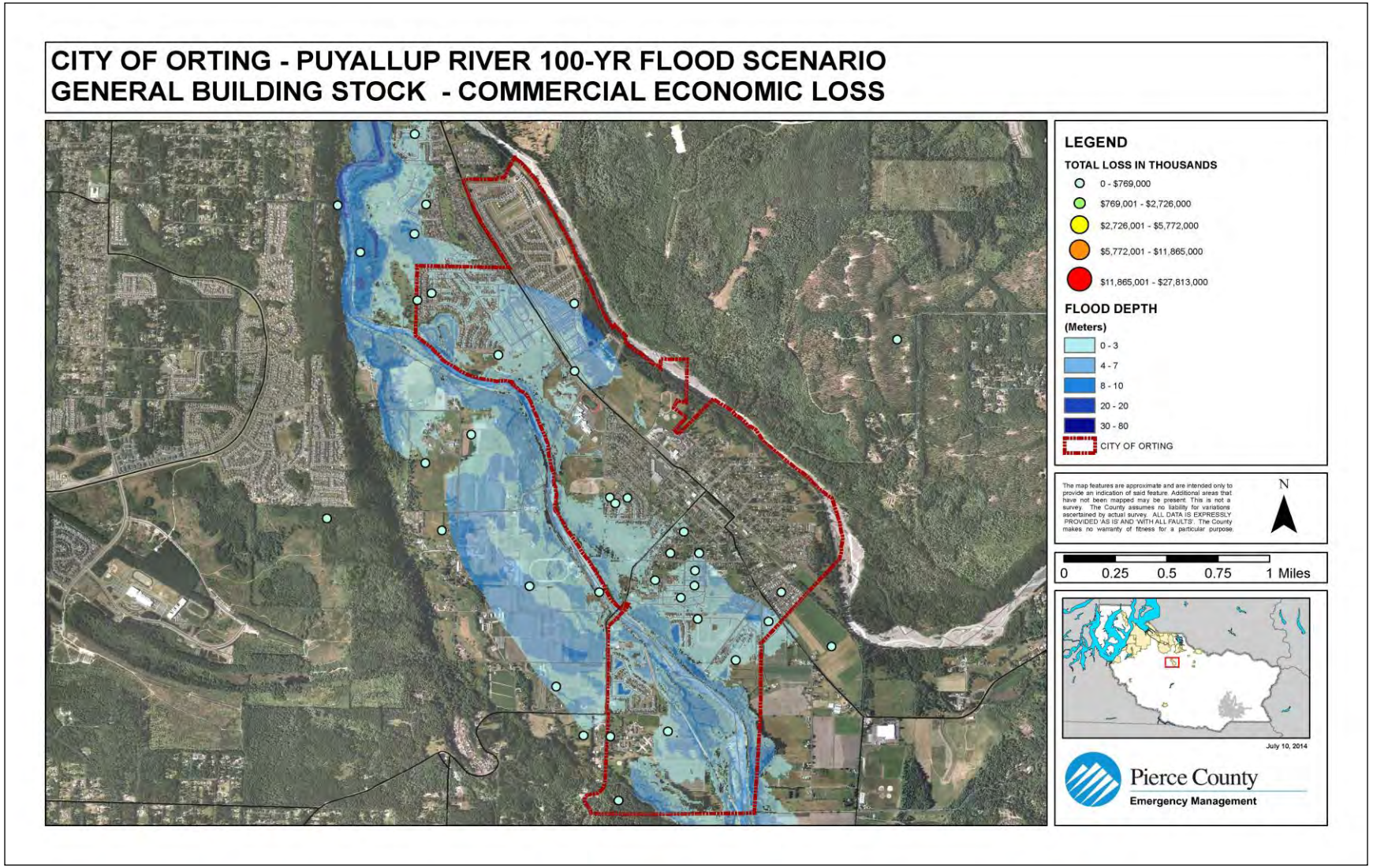
Table 6: Building-Related Economic Loss Estimates for the City of Orting (Thousands of dollars)

Category	Area	Residential	Commercial	Total
Building Loss				
	Building	15,422	119,000	134,422
	Content	9,486	213,000	222,486
	Inventory	0	92,000	92,000
	Subtotal	**24,908**	**424,000**	**448,908**
Business Interruption				
	Income	0	2	2
	Relocation	86	1	87
	Rental Income	18	2	20
	Wage	0	6	6
	Subtotal	**104**	**11**	**115**
ALL	Total	**25,012**	**424,011**	**449,023**

Map Appendix D-4: City of Orting Residential Economic Loss



Map Appendix D-5: City of Orting Commercial Economic Loss



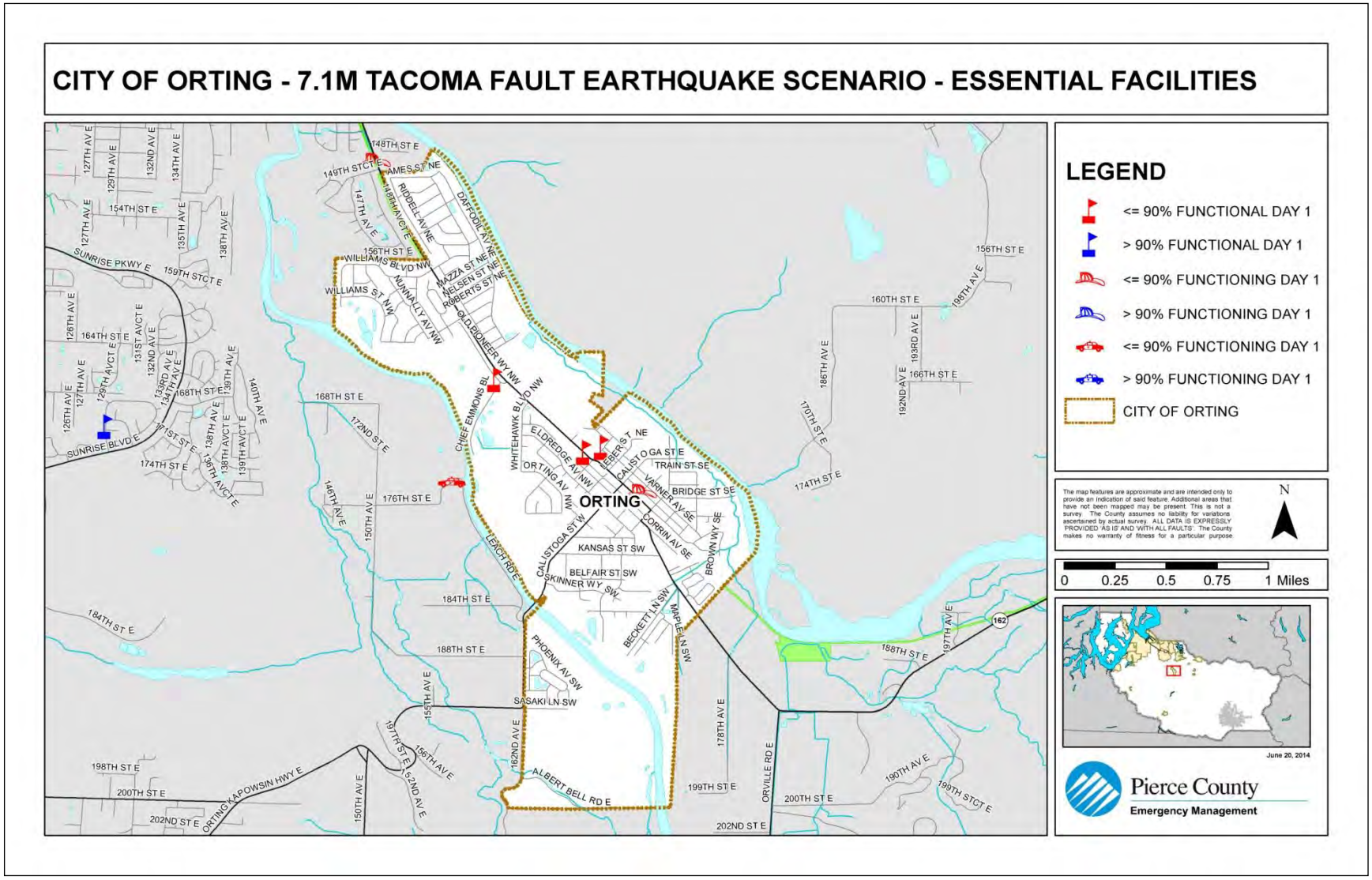
Hazus-MH Earthquake

This appendix also 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 Region 5 All Hazard Mitigation Plan.

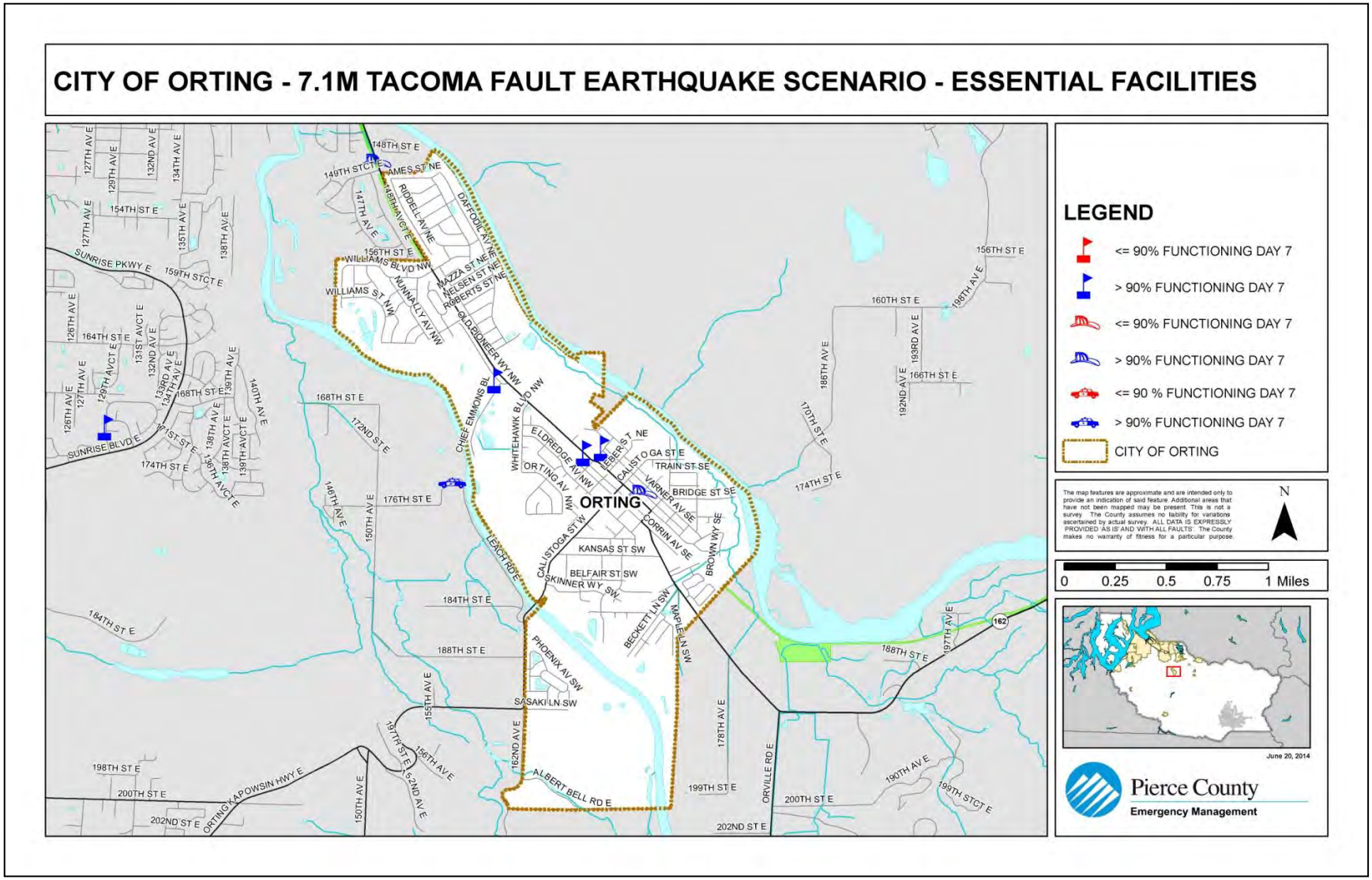
As a special note to the Gig Harbor and Key Peninsula areas St. Anthony's Hospital is not identified on Maps D-17, D-18, D-26, D-27, D-35 or D-36 due to the recent construction of St. Anthony's Hospital and lack of data. With future updates of the Region 5 All Hazard Mitigation Plan, St. Anthony's Hospital will be included in the scenario analysis. If this information becomes available prior to the five-year update in 2025, 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.

Additionally, it has been identified that the police station located to the west side of Orting is not in the correct location. 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 2025, revised analysis will be done and the revised maps will be distributed to the City of Orting and to Fire District #18.

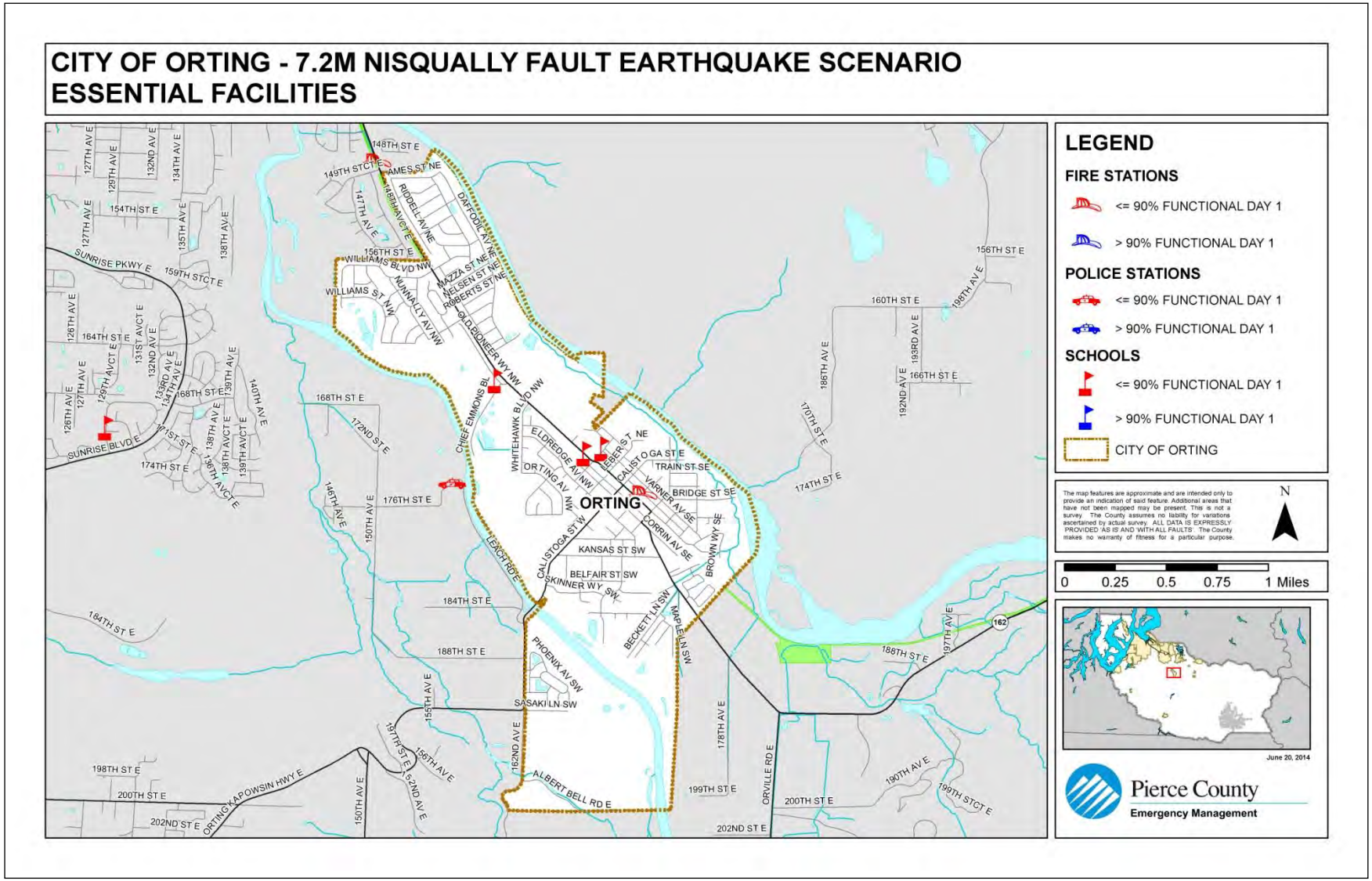
Map D-6 City of Orting Tacoma Fault Scenario Essential Facilities Day 1 Map[2]



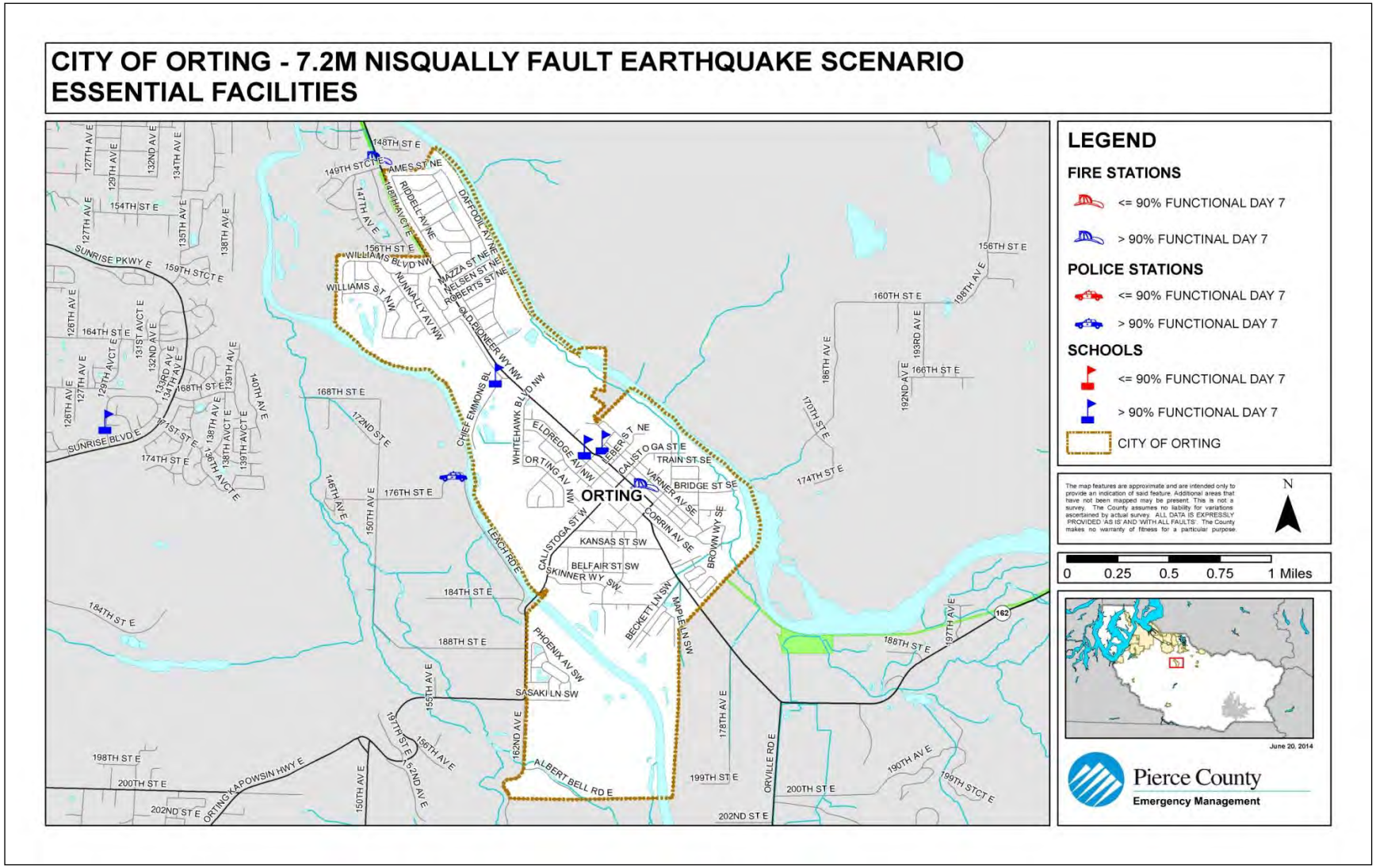
Map D-7 City of Orting Tacoma Fault Scenario Essential Facilities Day 7 Map[3]



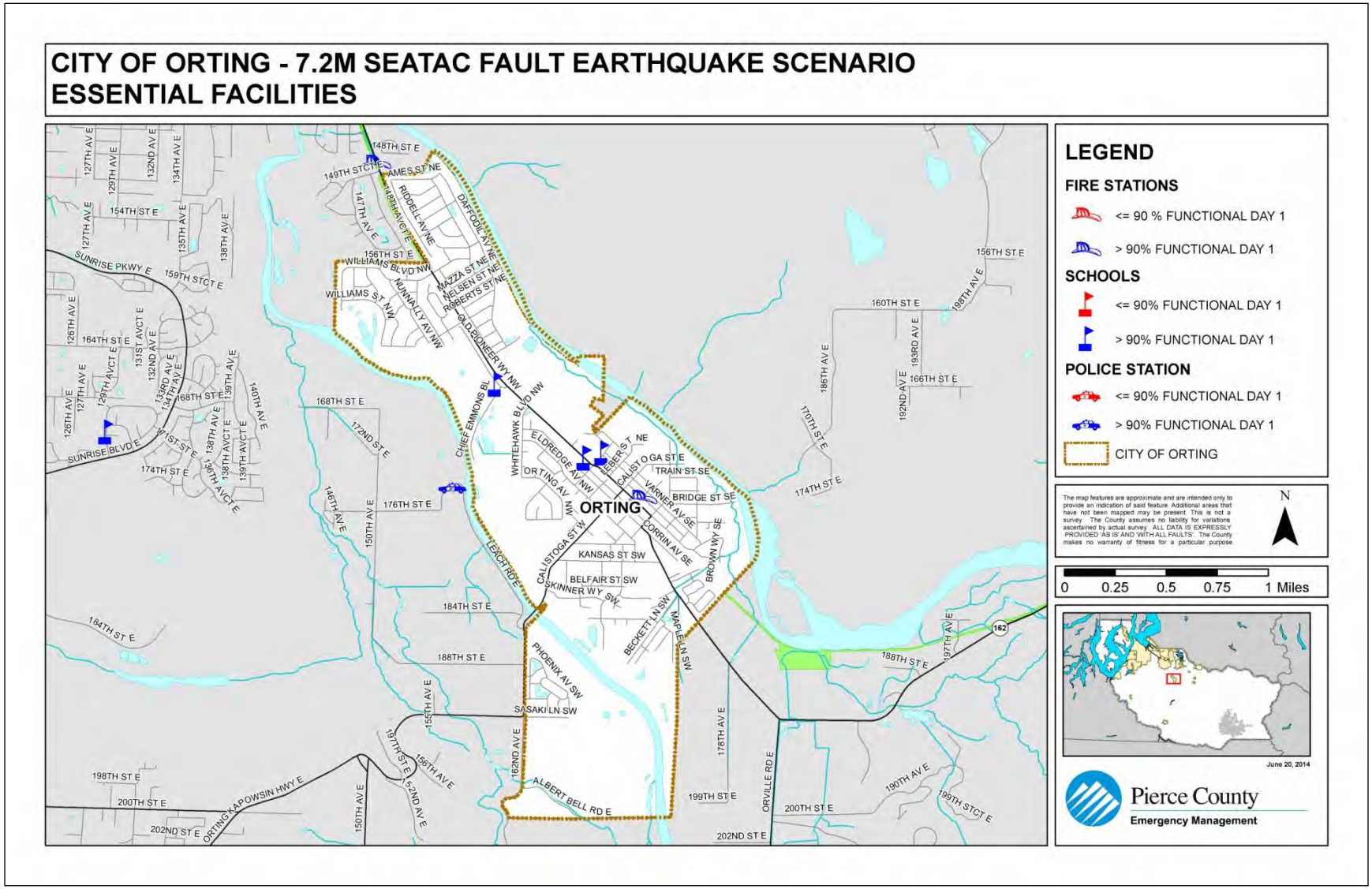
Map D-8 City of Orting Nisqually Fault Scenario Essential Facilities Day 1 Map[4]



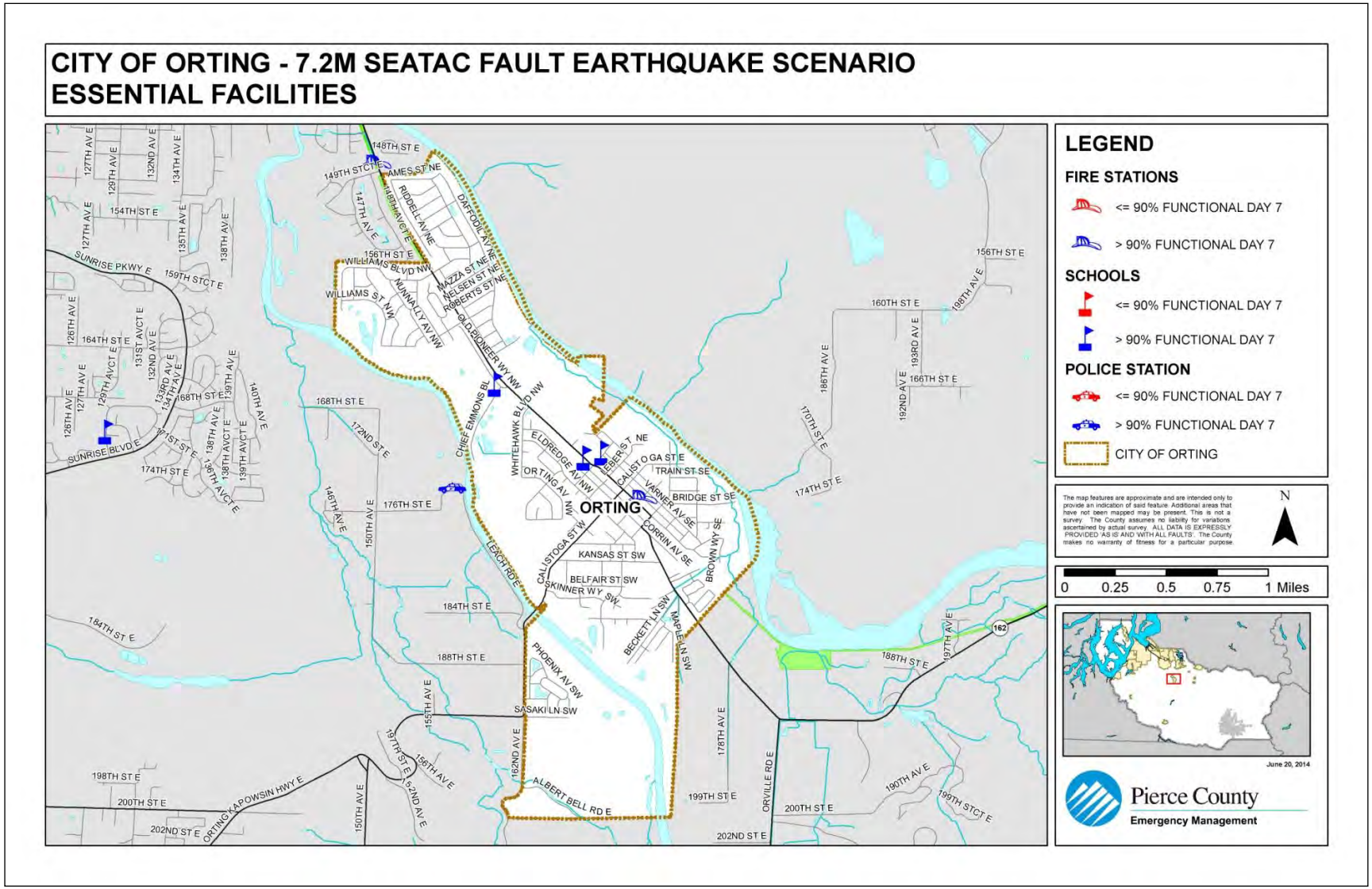
Map D-9 City of Orting Nisqually Fault Scenario Essential Facilities Day 7 Map[5]



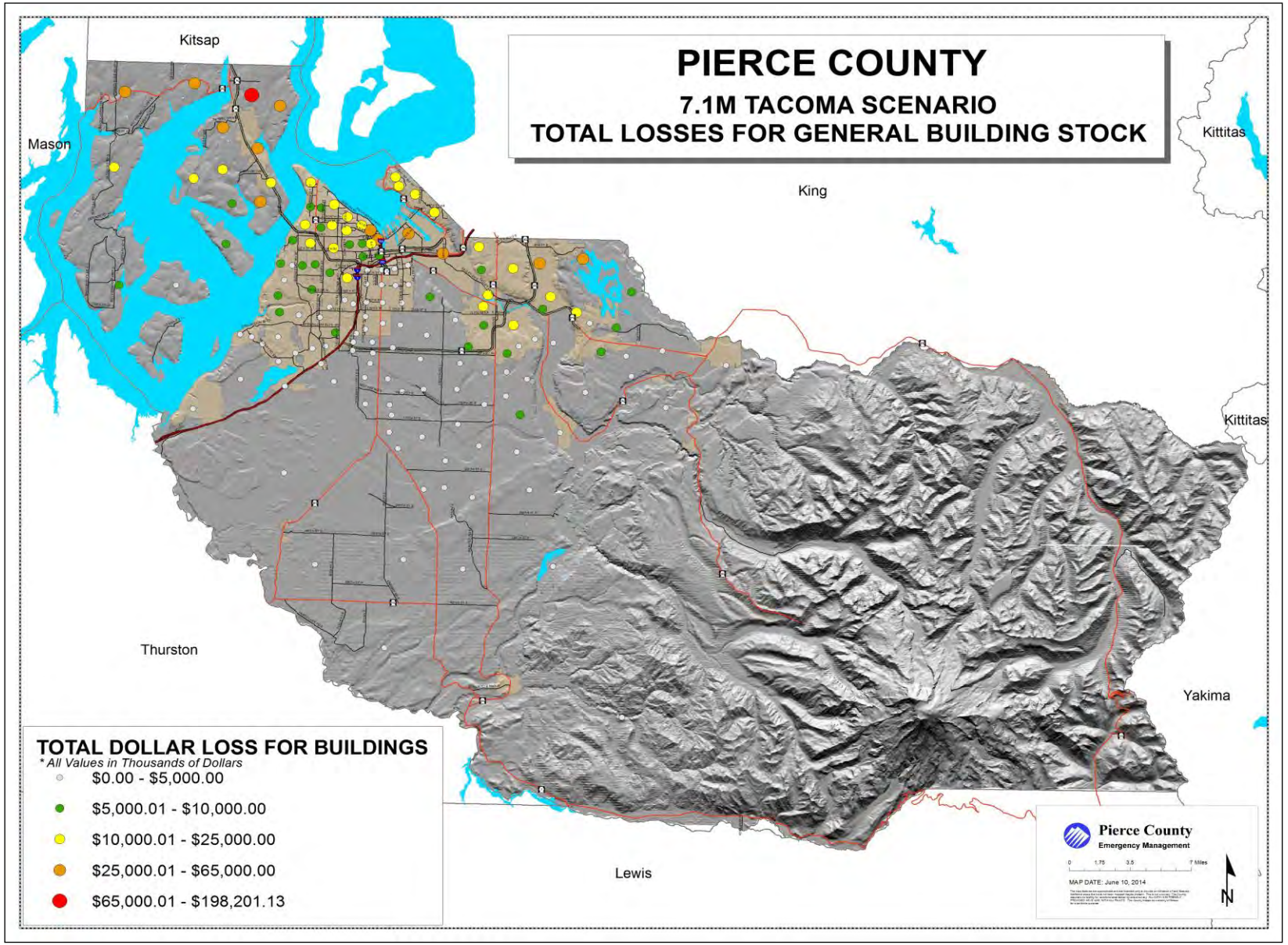
Map D-10 City of Orting SEATAC Fault Scenario Essential Facilities Day 1 Map[6]



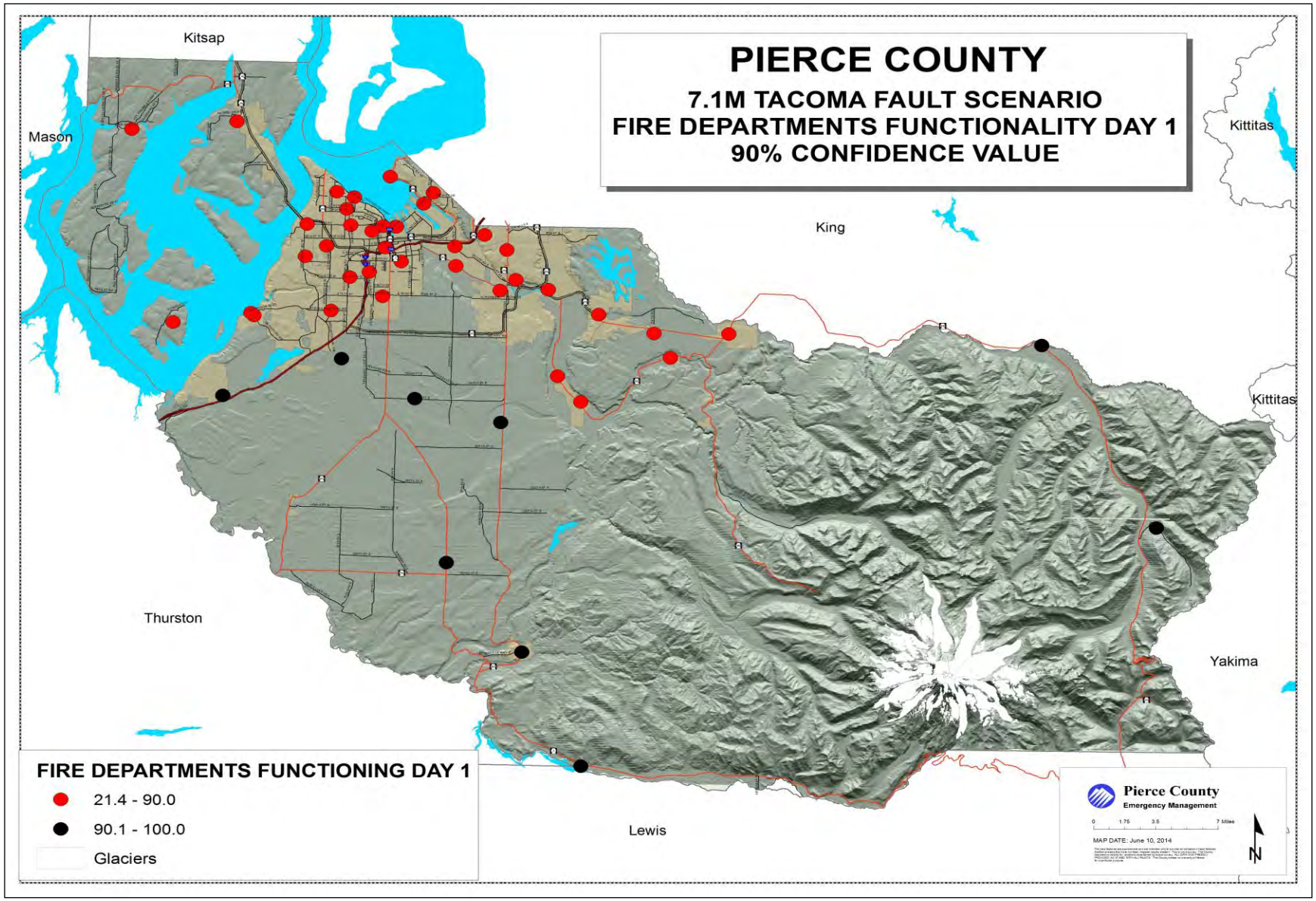
Map D-11 City of Orting SEATAC Fault Scenario Essential Facilities Day 7 Map[7]



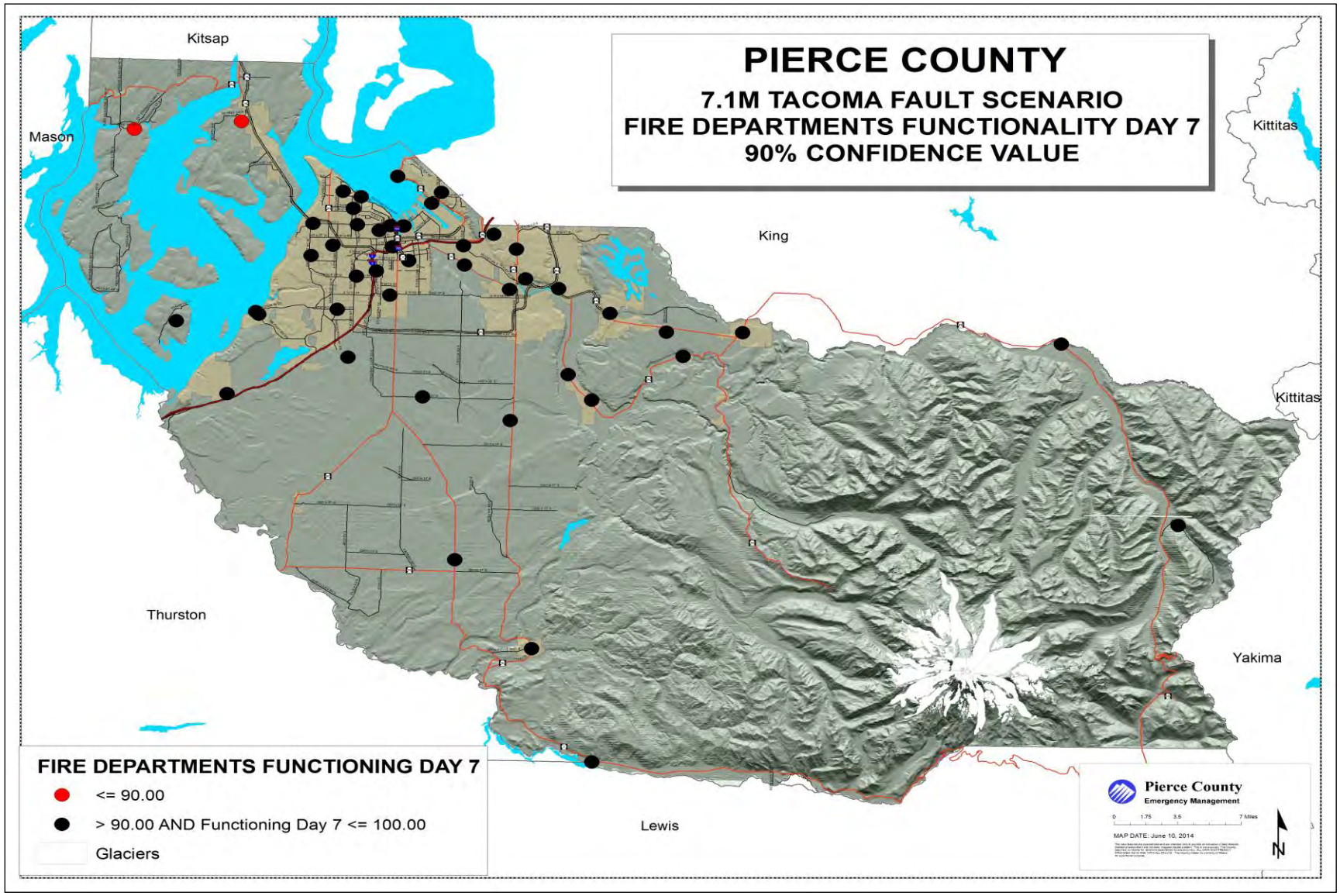
Map D-12 Pierce County Tacoma Fault Scenario Total Losses



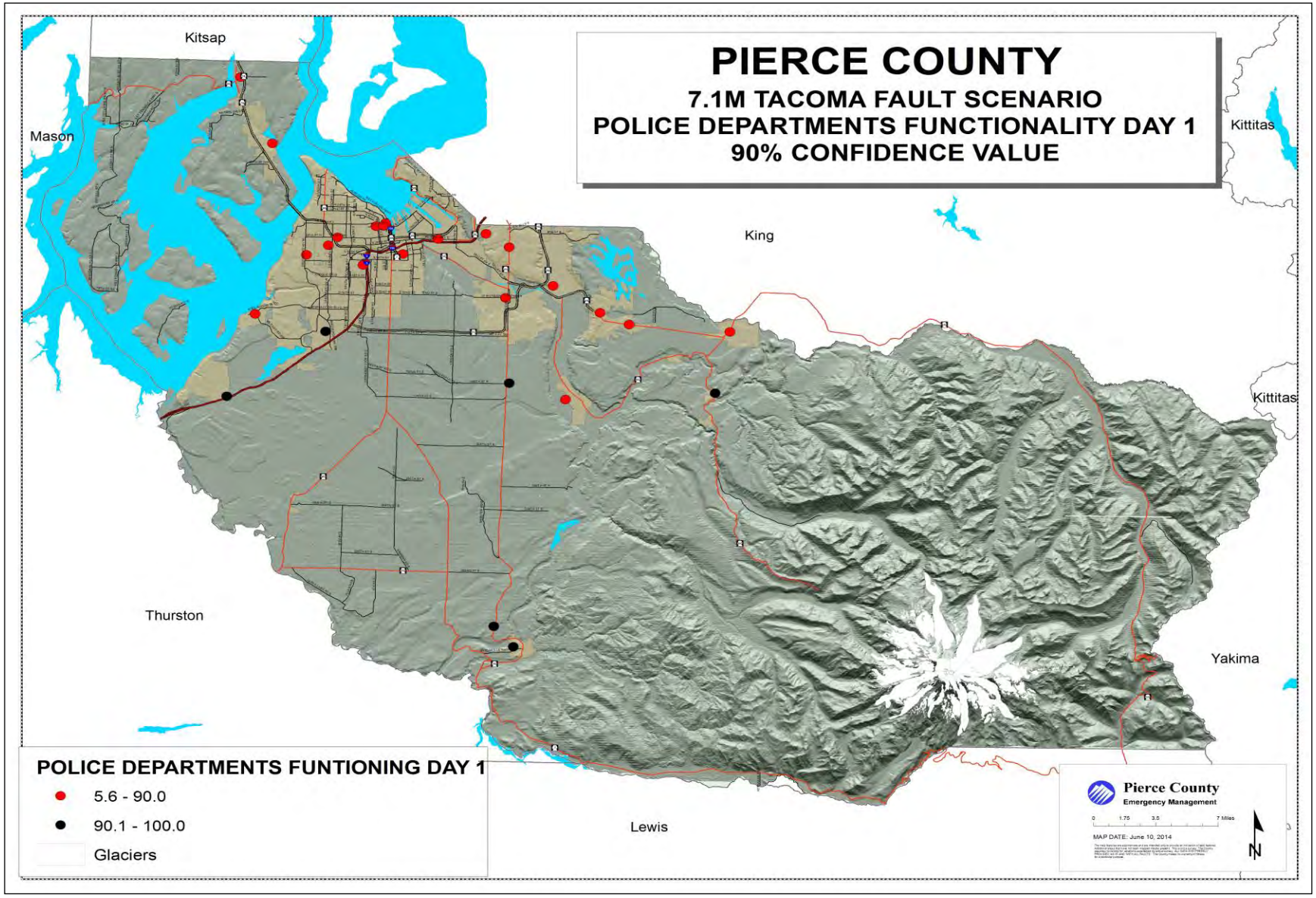
Map D-13 Pierce County Tacoma Fault Scenario Fire Department Functionality Day 1



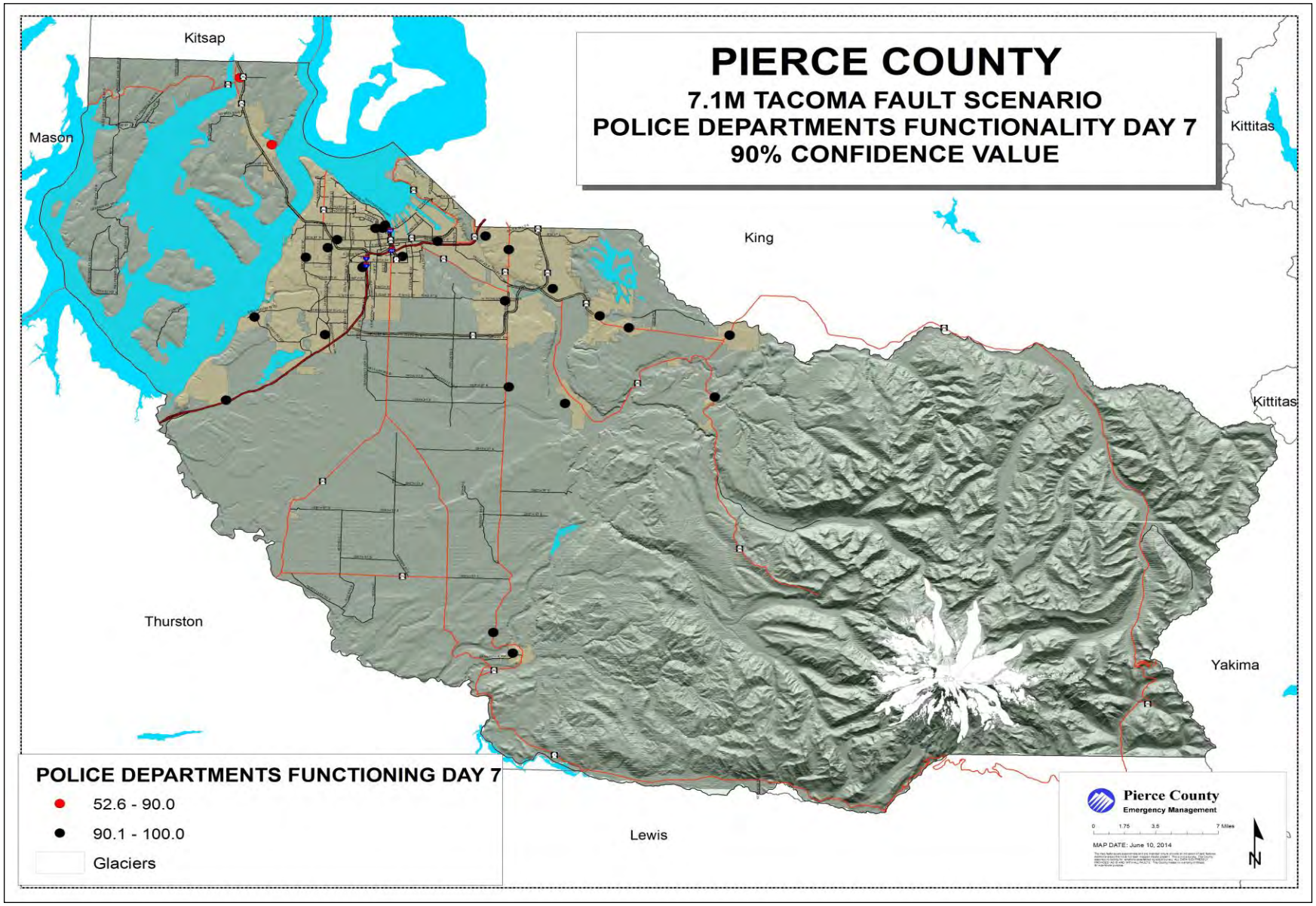
Map D-14 Pierce County Tacoma Fault Scenario Fire Department Functionality Day 7



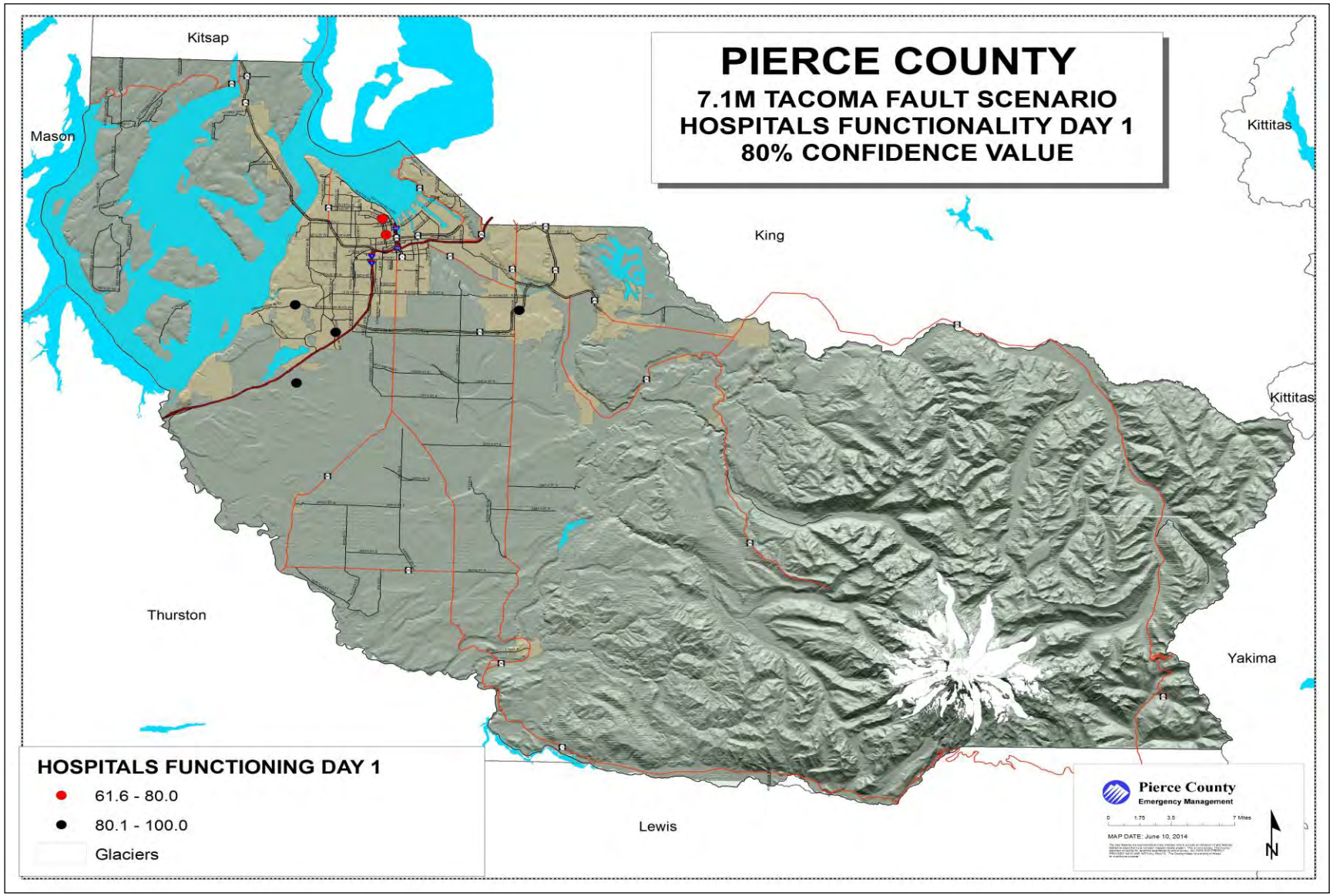
Map D-15 Pierce County Tacoma Fault Scenario Police Department Functionality Day 1[8]



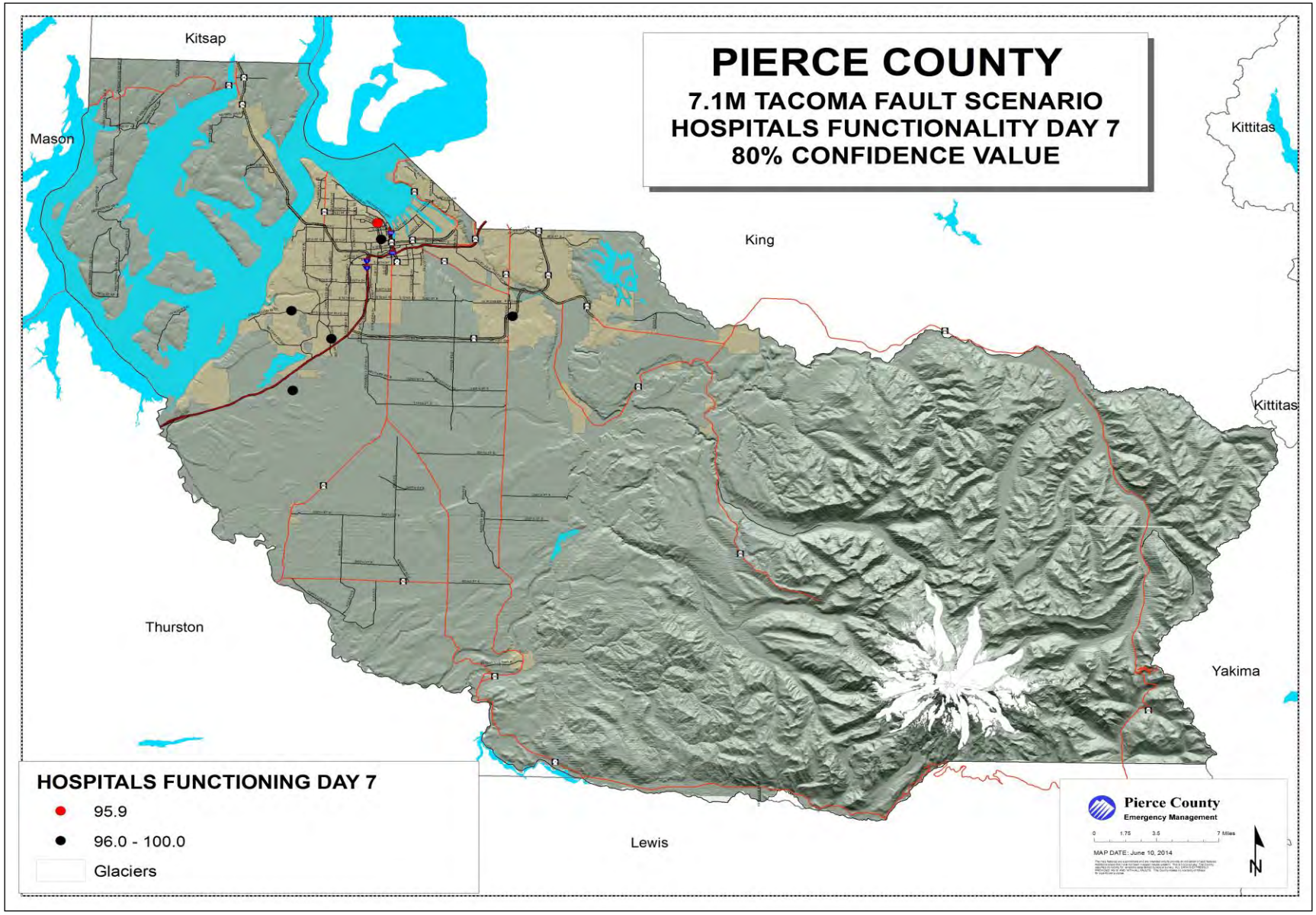
Map D-16 Pierce County Tacoma Fault Scenario Police Department Functionality Day 7[9]



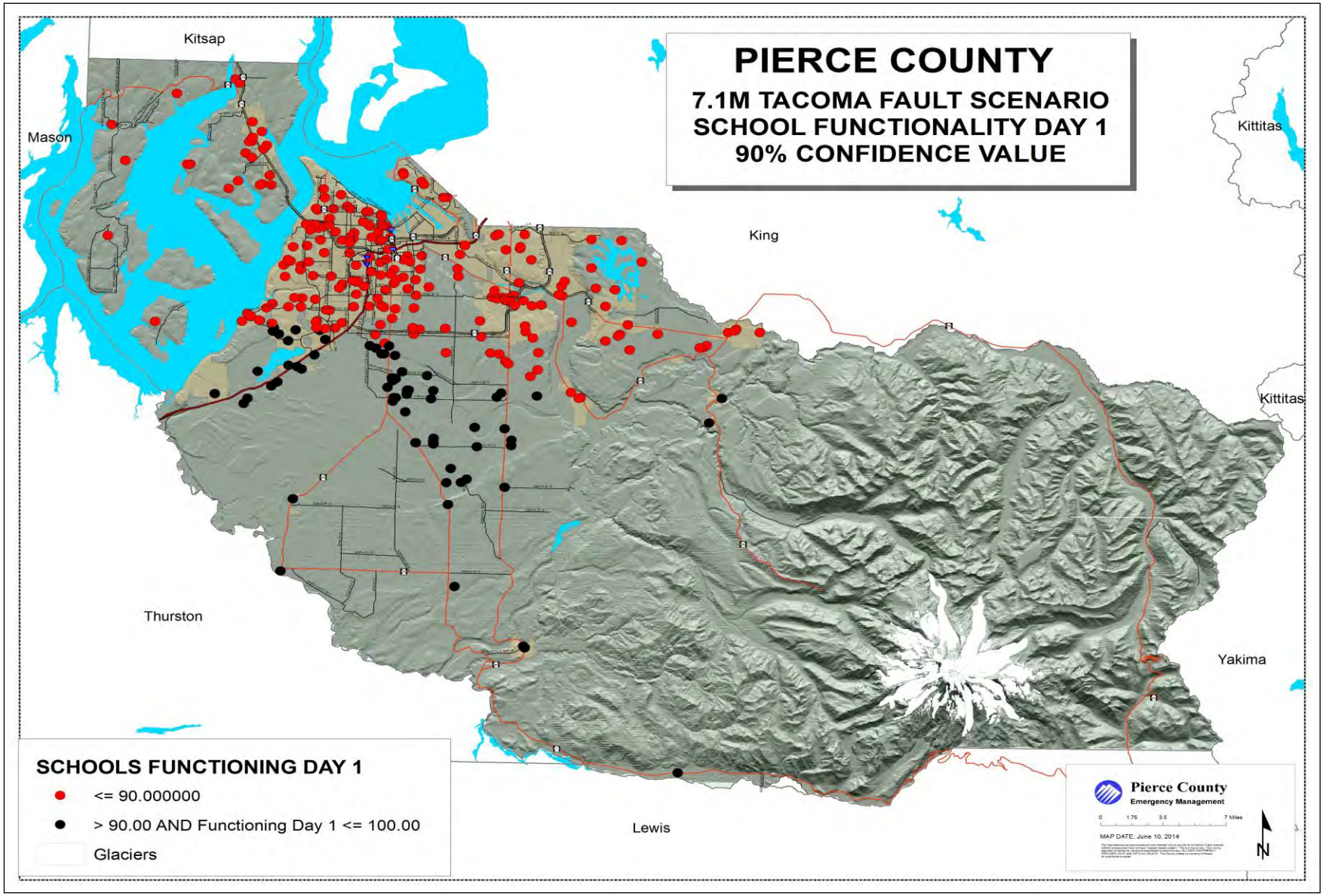
Map D-17 Pierce County Tacoma Fault Scenario Hospitals Functionality Day 1[10]



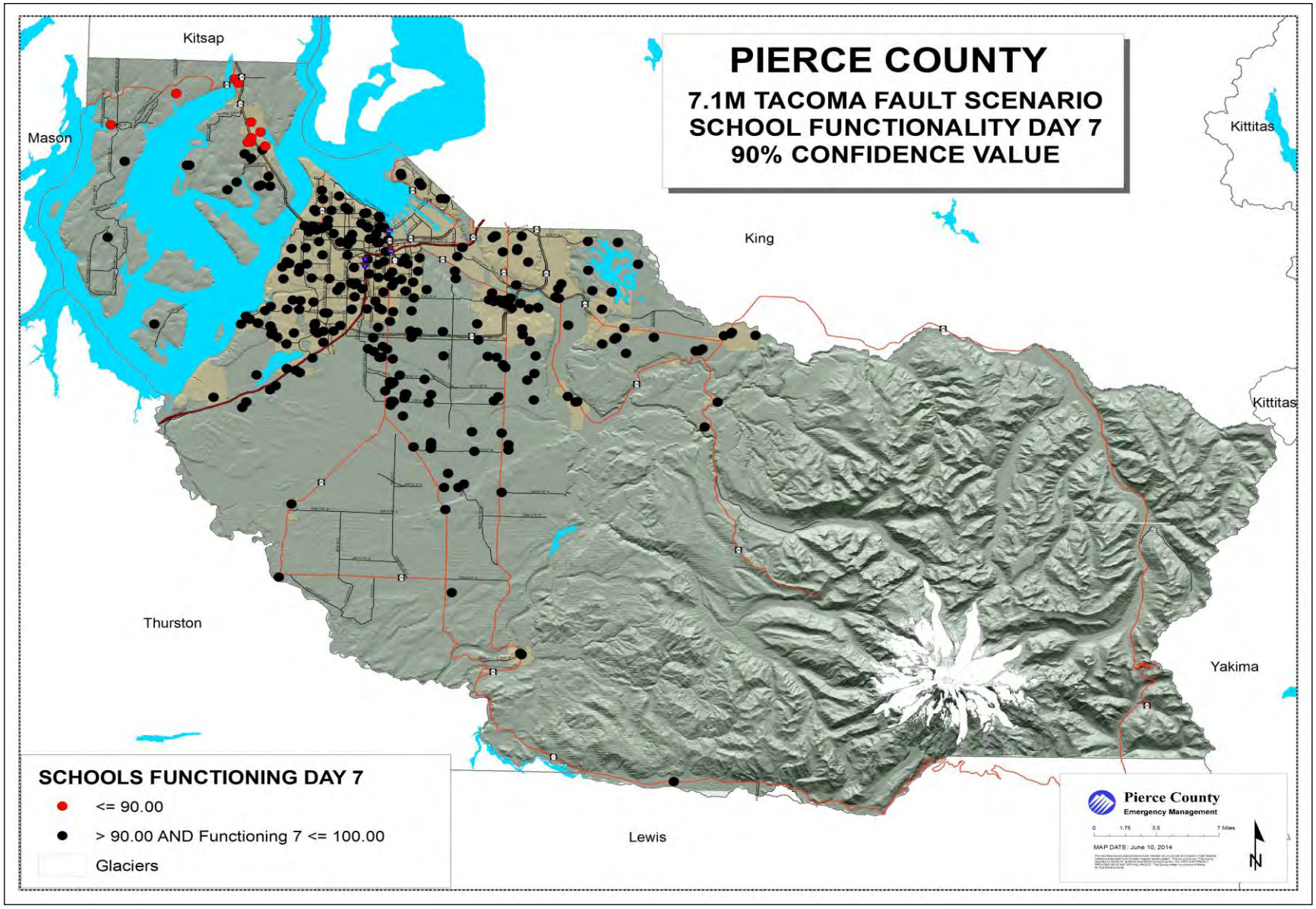
Map D-18 Pierce County Tacoma Fault Scenario Hospitals Functionality Day 7[11]



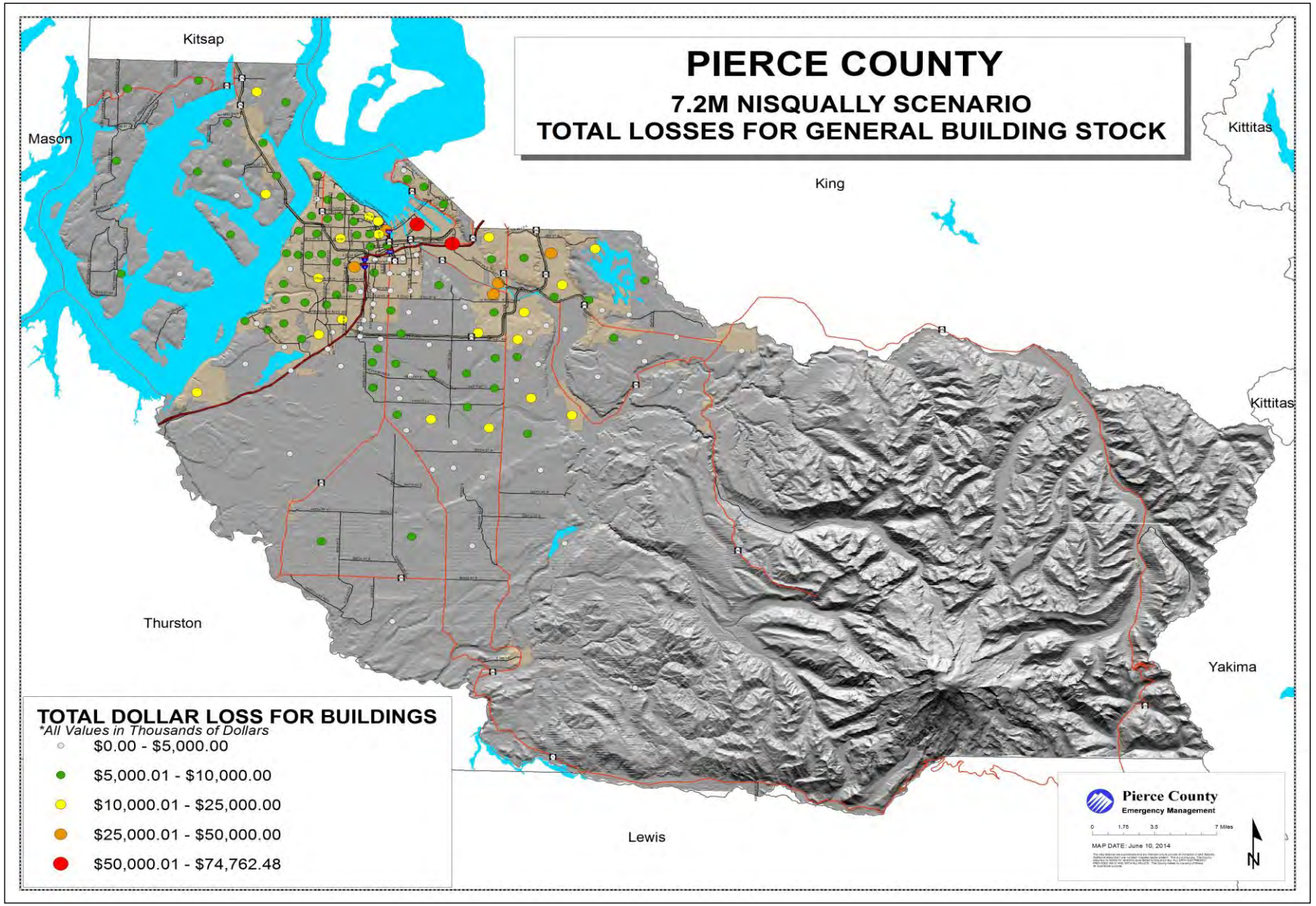
Map D-19 Pierce County Tacoma Fault Scenario School Functionality Day 1



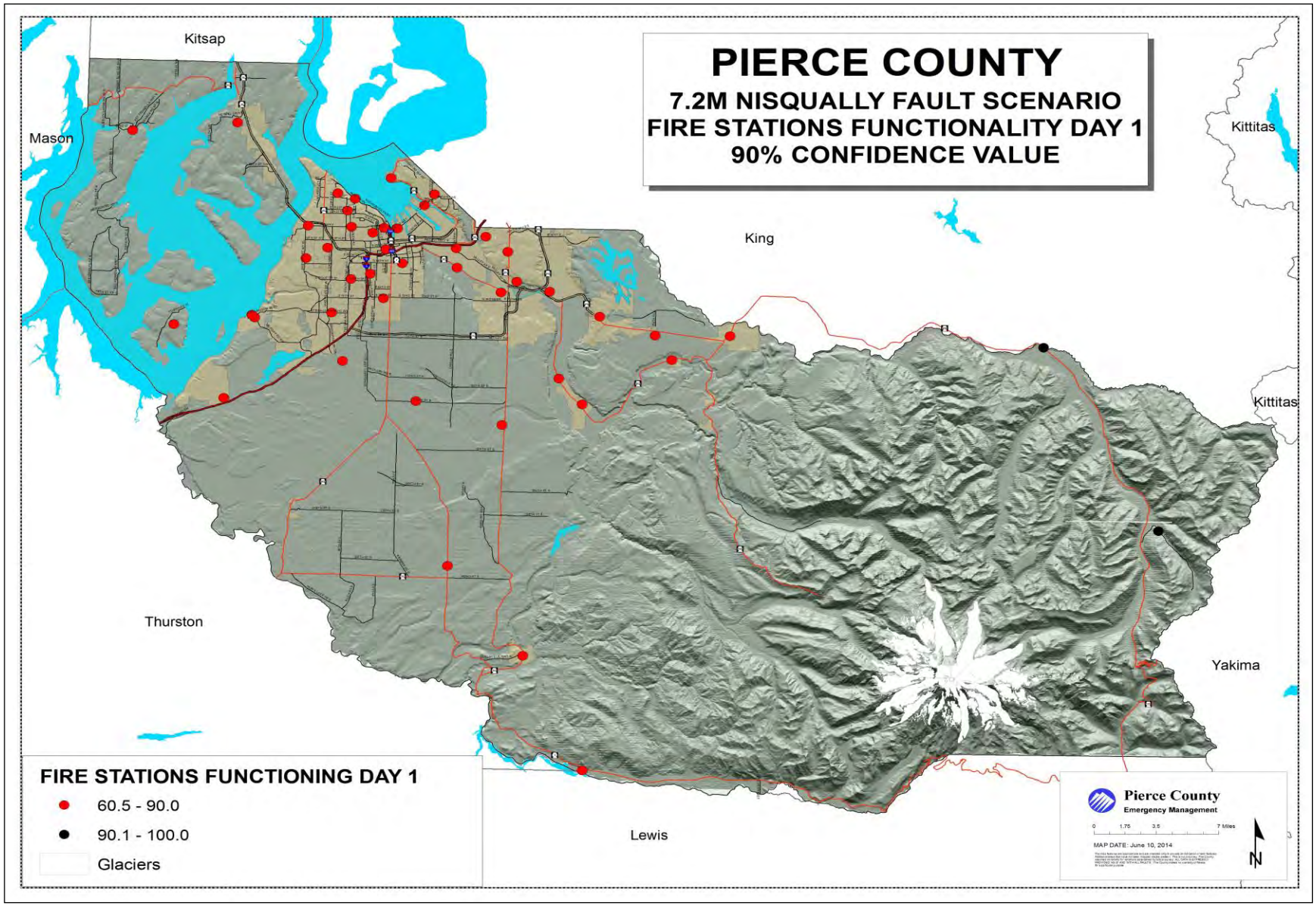
Map D-20 Pierce County Tacoma Fault Scenario School Functionality Day 7



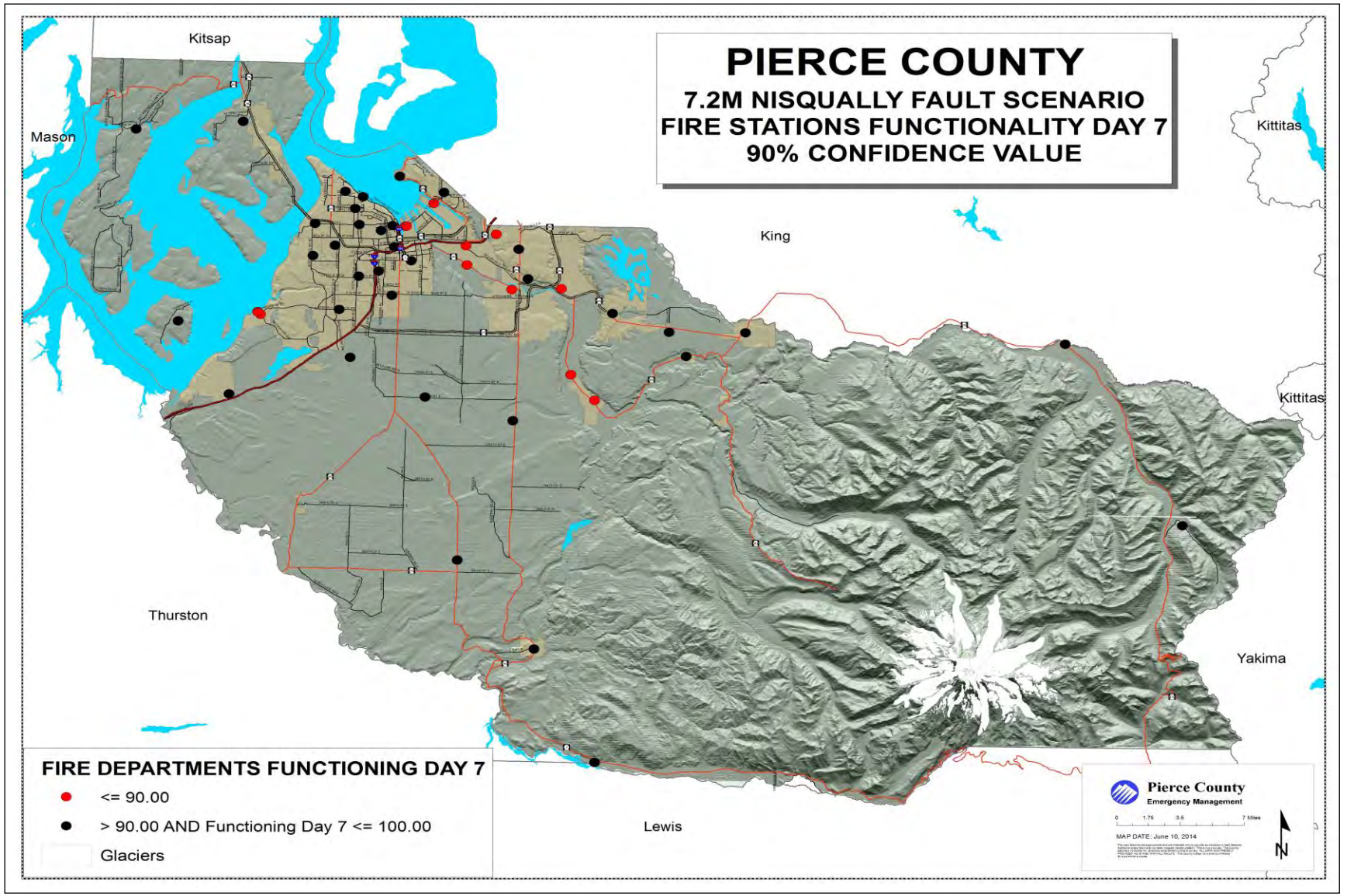
Map D-21 Pierce County Nisqually Fault Scenario Total Losses



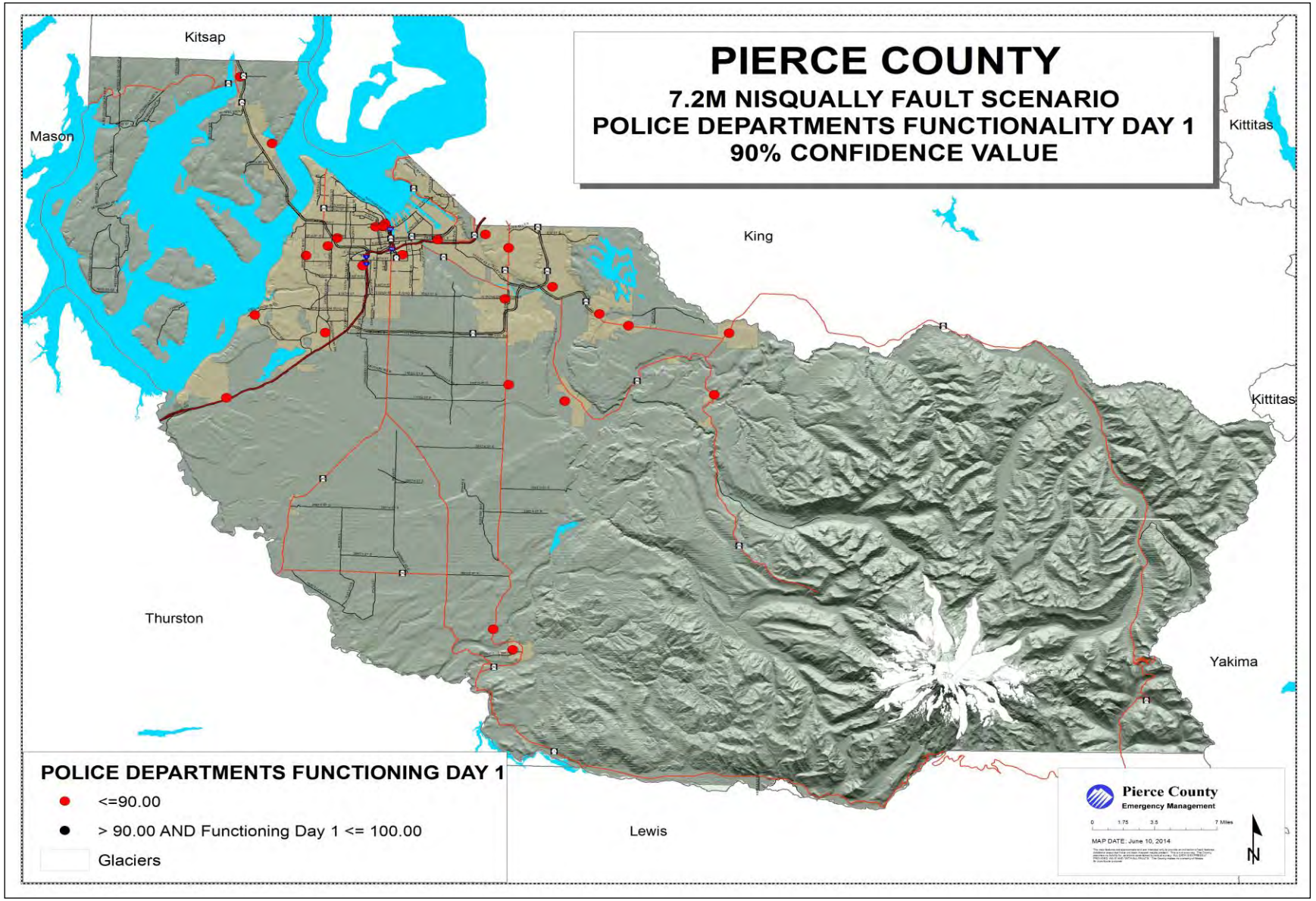
Map D-22 Pierce County Nisqually Fault Scenario Fire Stations Functionality Day 1



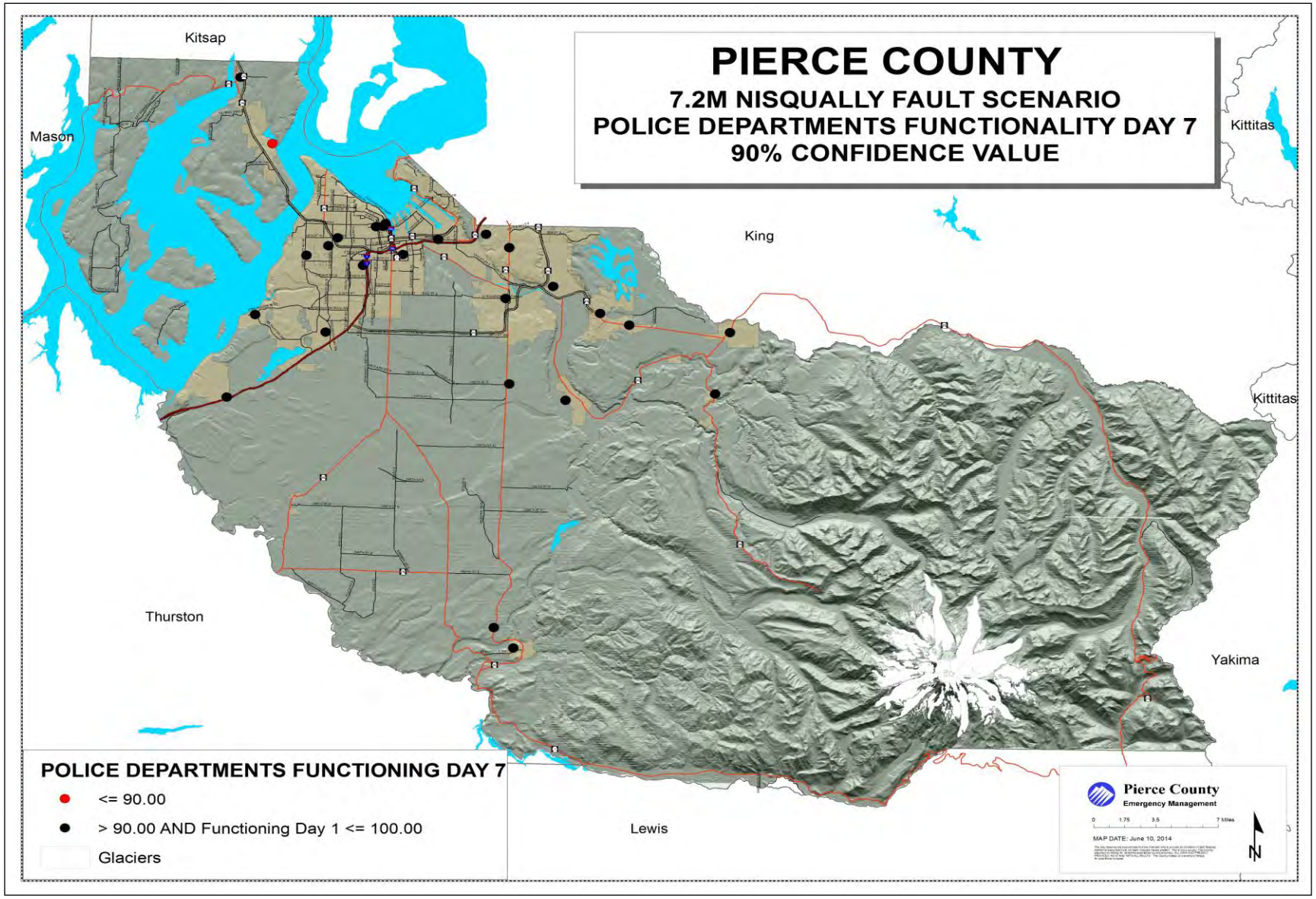
Map D-23 Pierce County Nisqually Fault Scenario Fire Stations Functionality Day 7



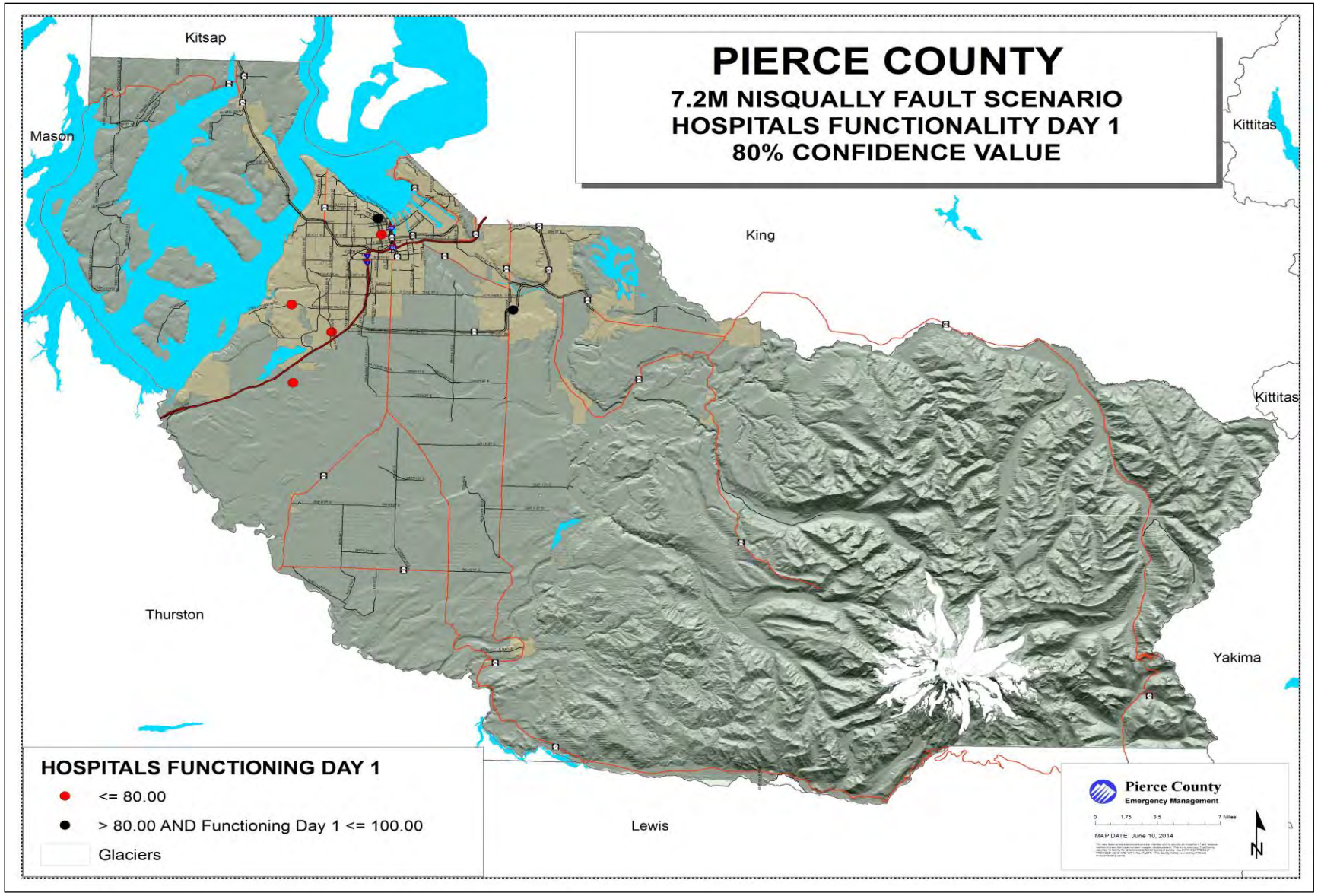
Map D-24 Pierce County Nisqually Fault Scenario Police Departments Functionality Day 1 [12]



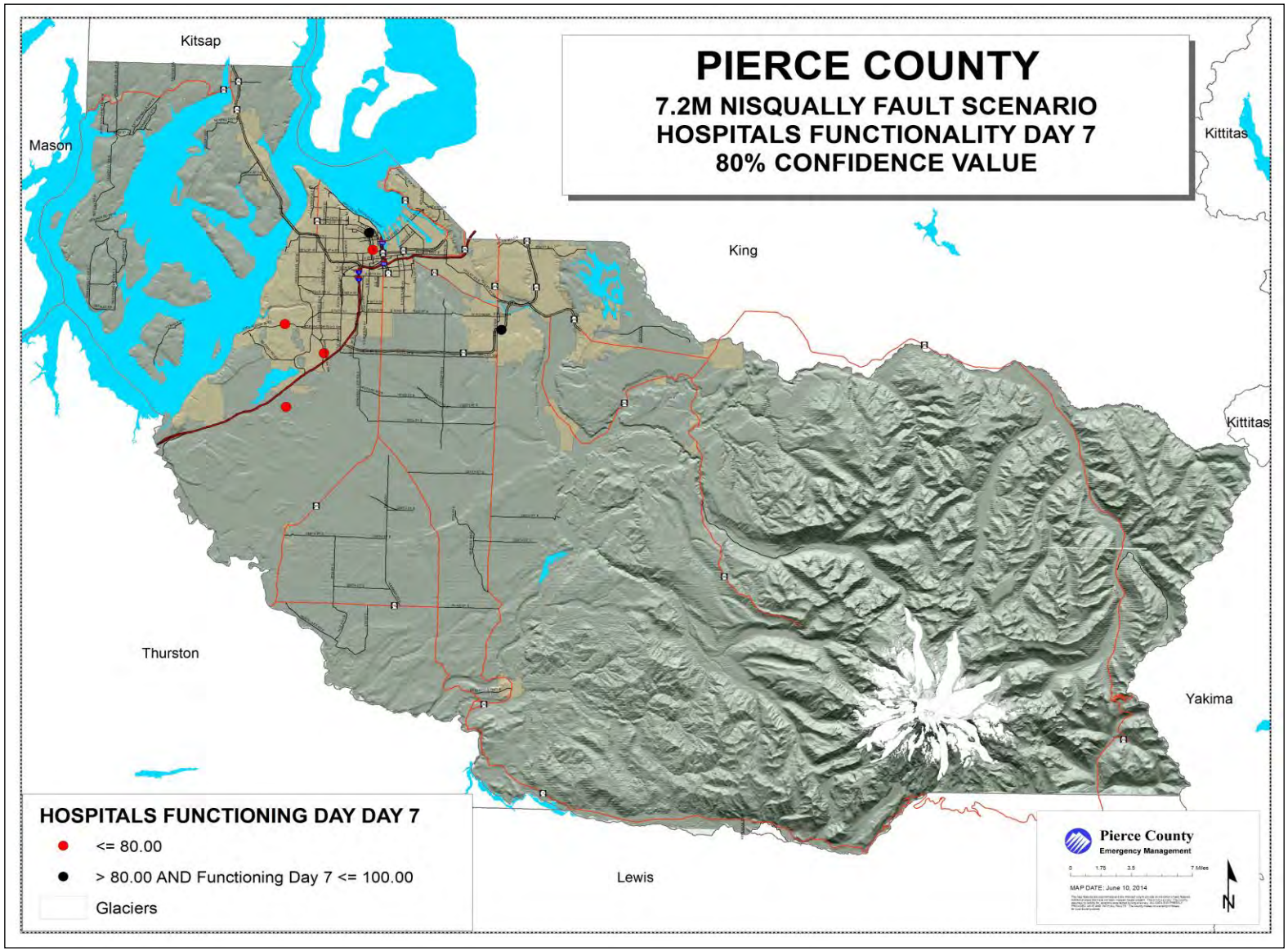
Map D-25 Pierce County Nisqually Fault Scenario Police Departments Functionality Day 7 [13]



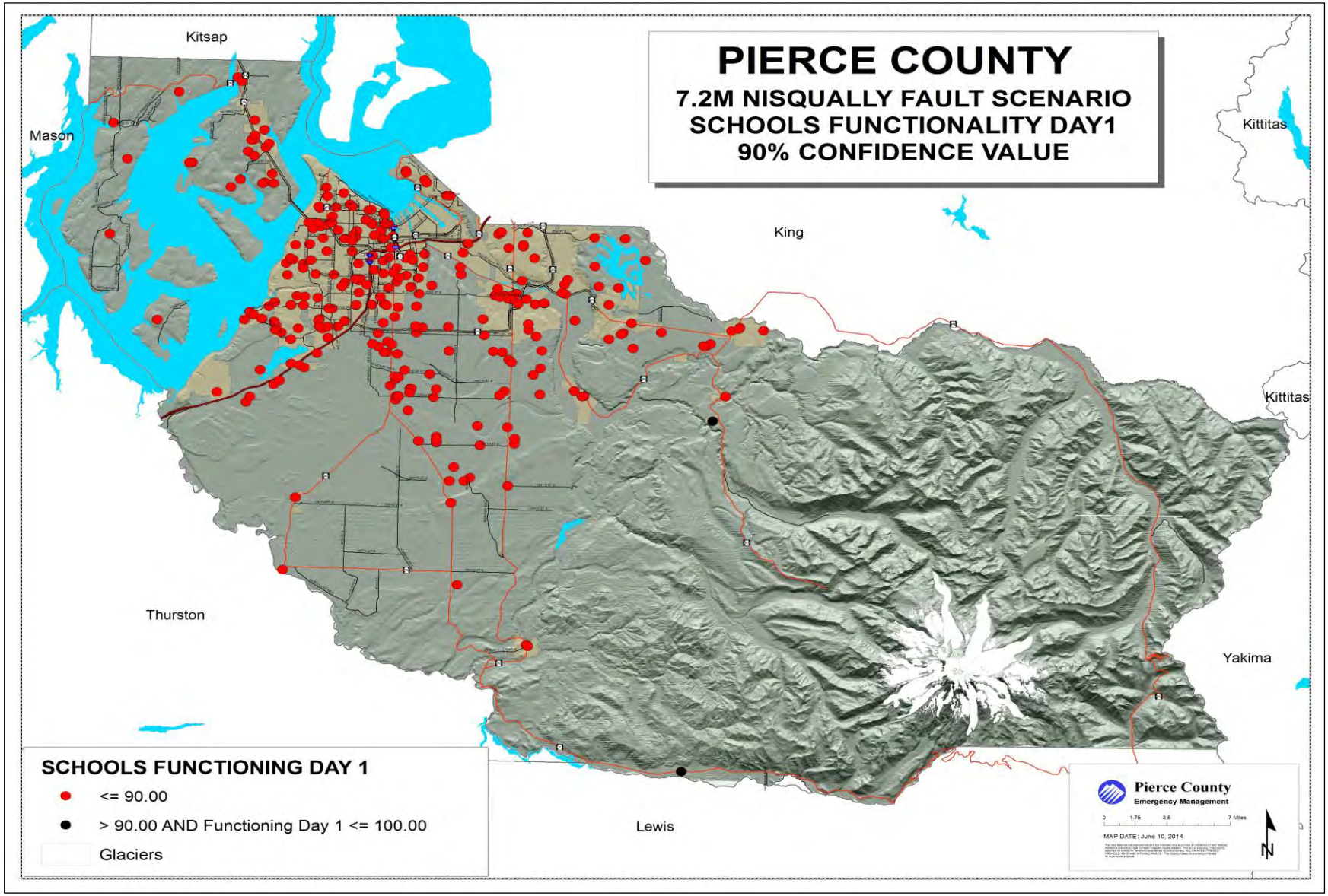
Map D-26 Pierce County Nisqually Fault Scenario Hospital Functionality Day 1 [14]



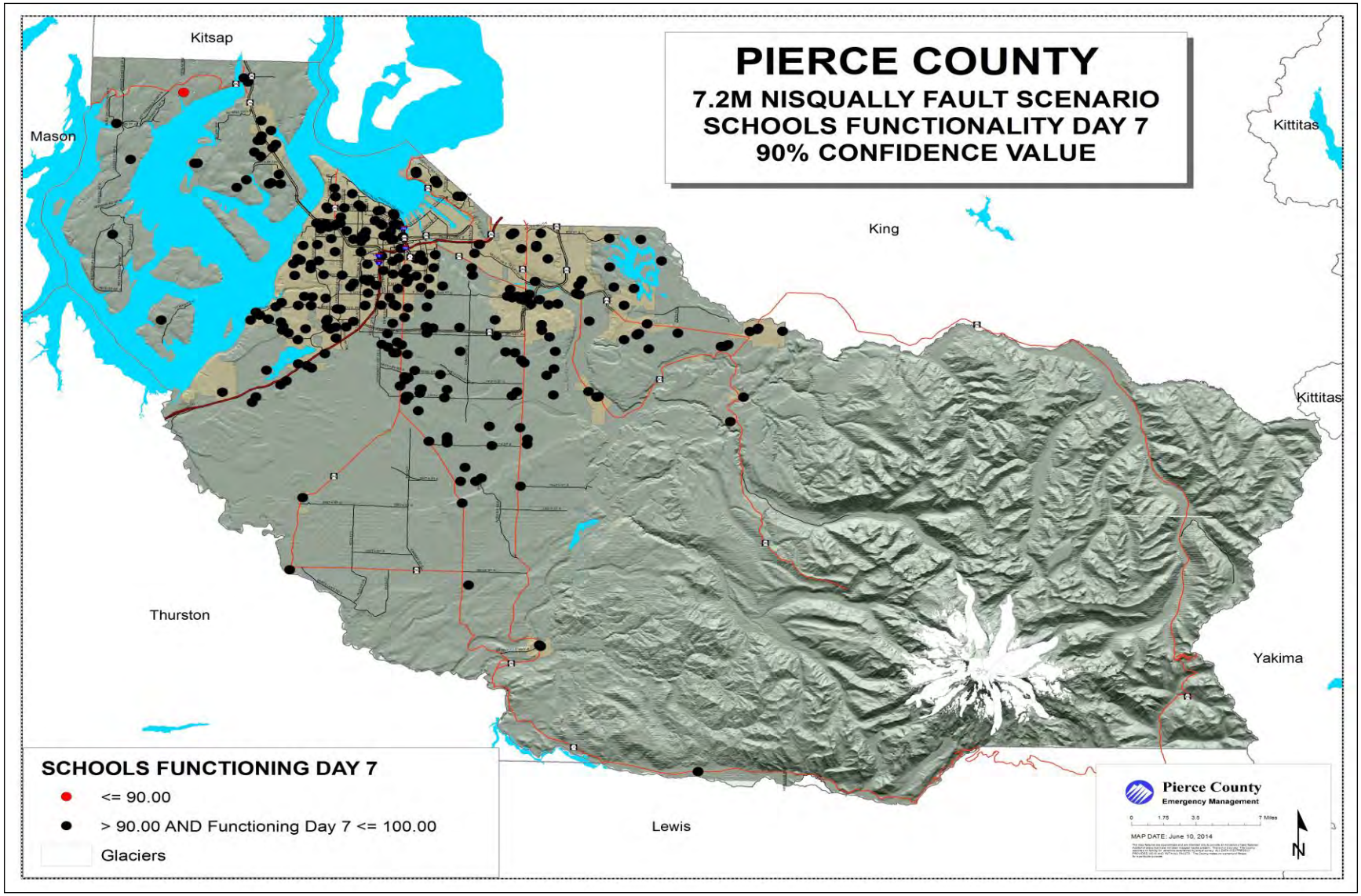
Map D-27 Pierce County Nisqually Fault Scenario Hospital Functionality Day 7[15]



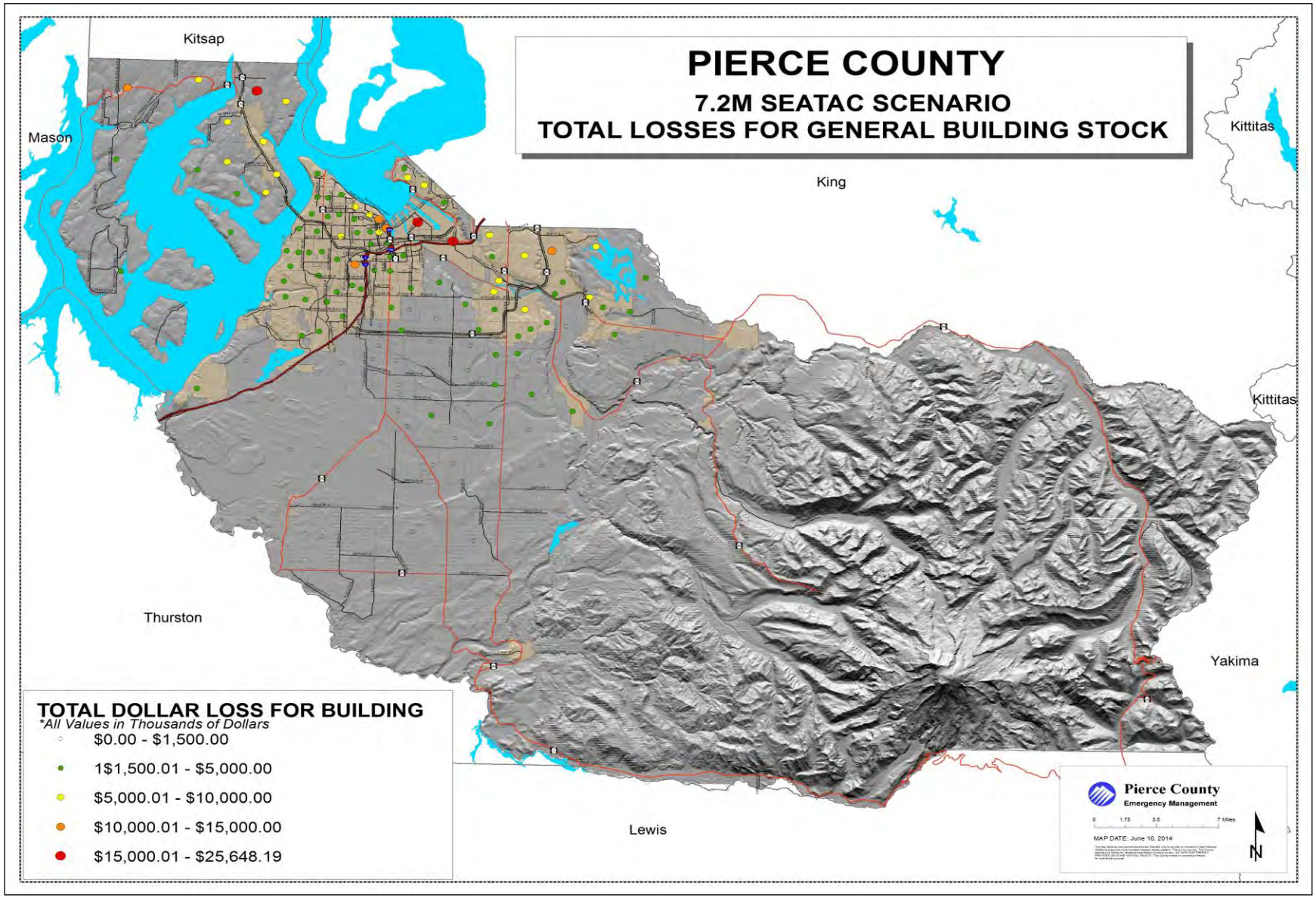
Map D-28 Pierce County Nisqually Fault Scenario Schools Functionality Day 1



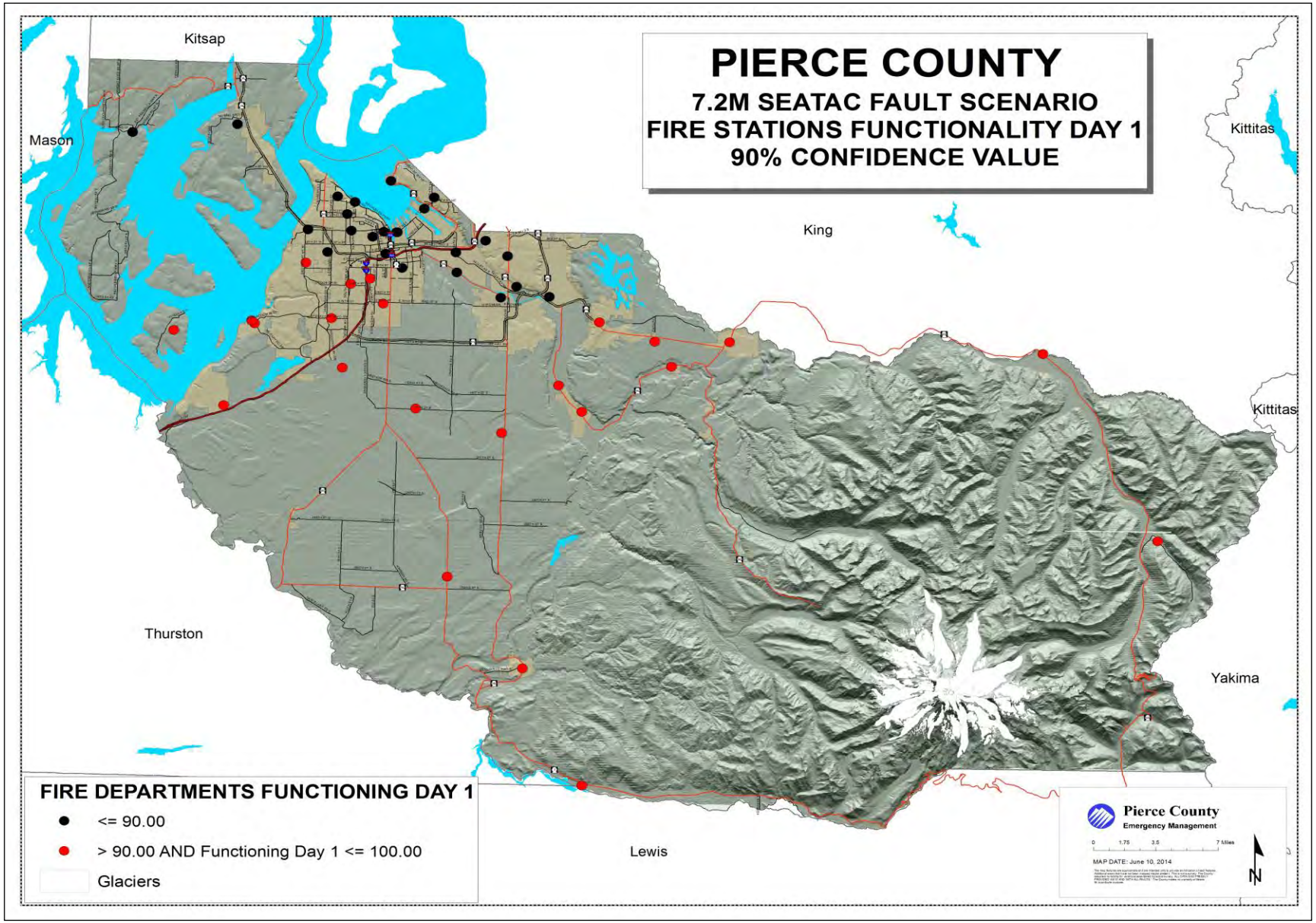
Map D-29 Pierce County Nisqually Fault Scenario Schools Functionality Day 7



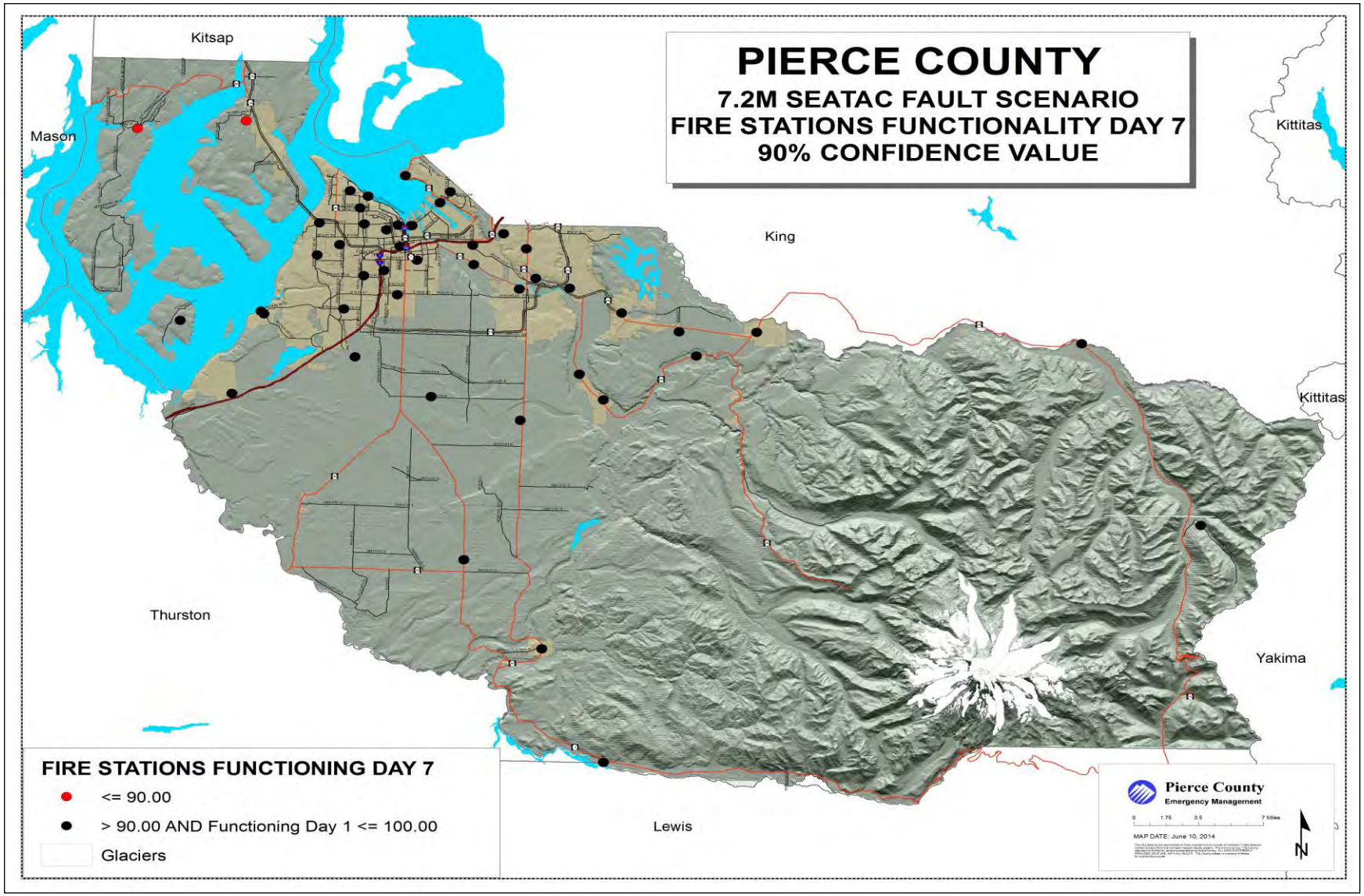
Map D-30 Pierce County SEATAC Fault Scenario Total Losses



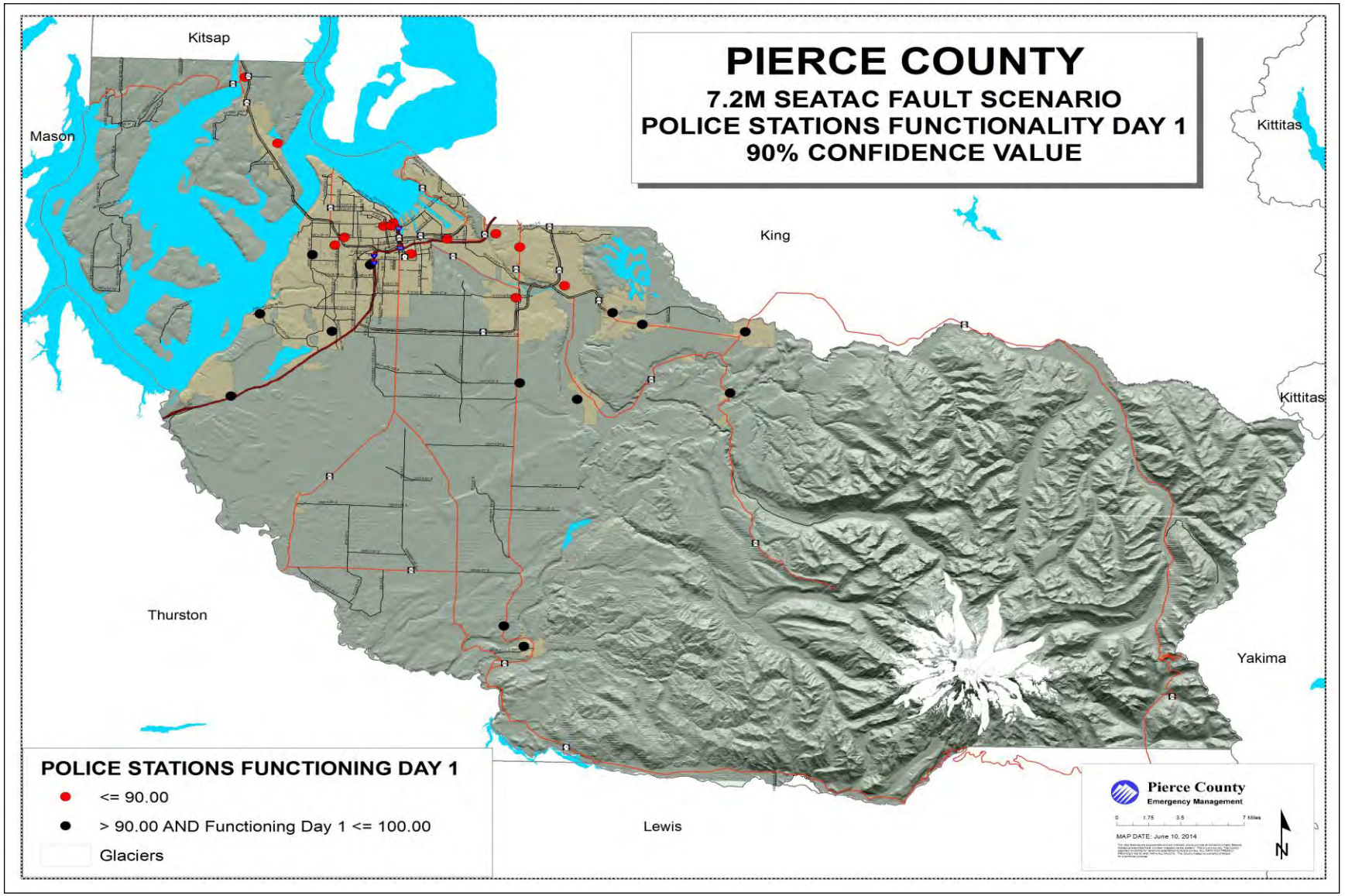
Map D-31 Pierce County SEATAC Fault Scenario Fire Stations Functionality Day 1



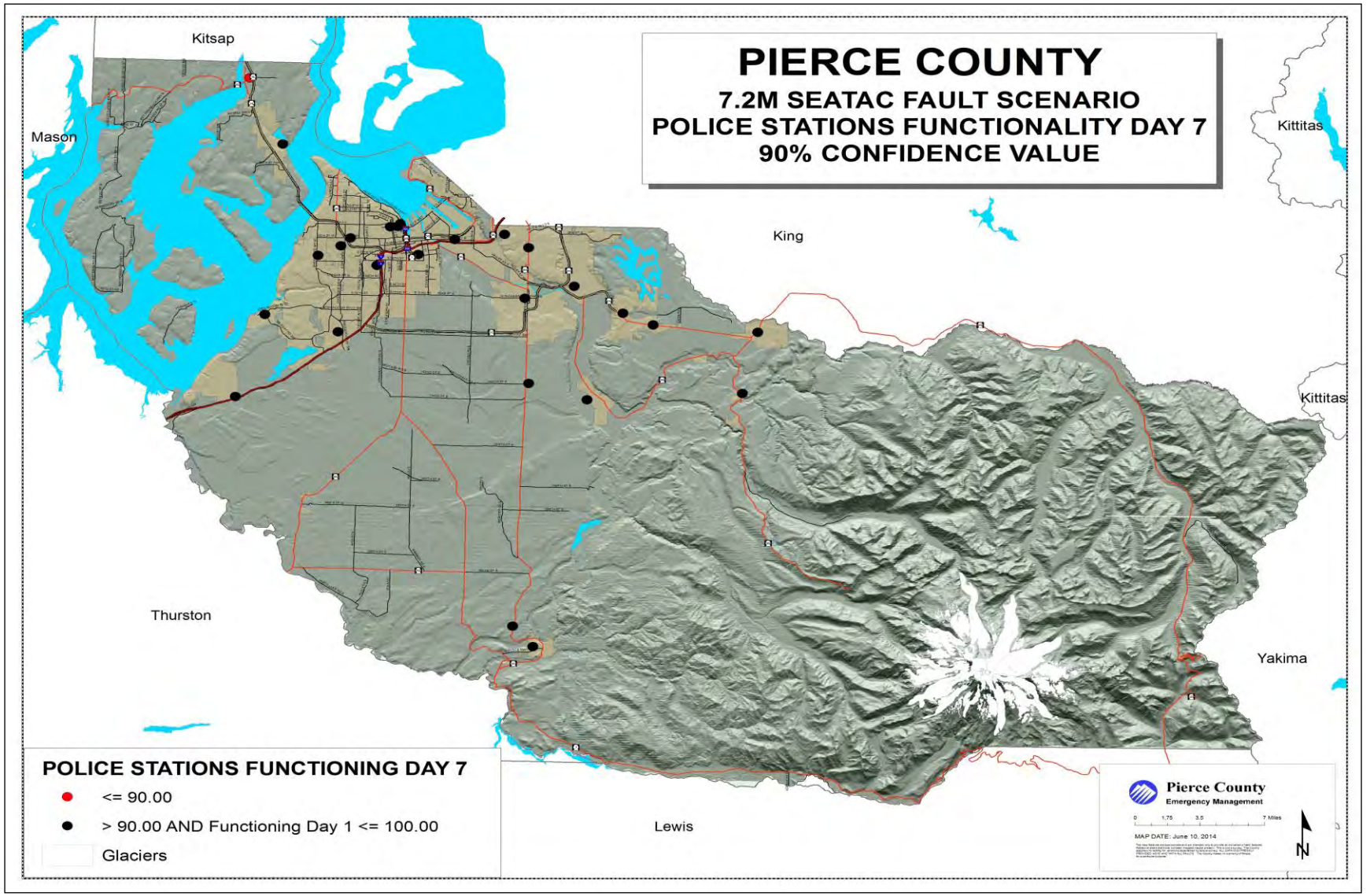
Map D-32 Pierce County SEATAC Fault Scenario Fire Stations Functionality Day 7



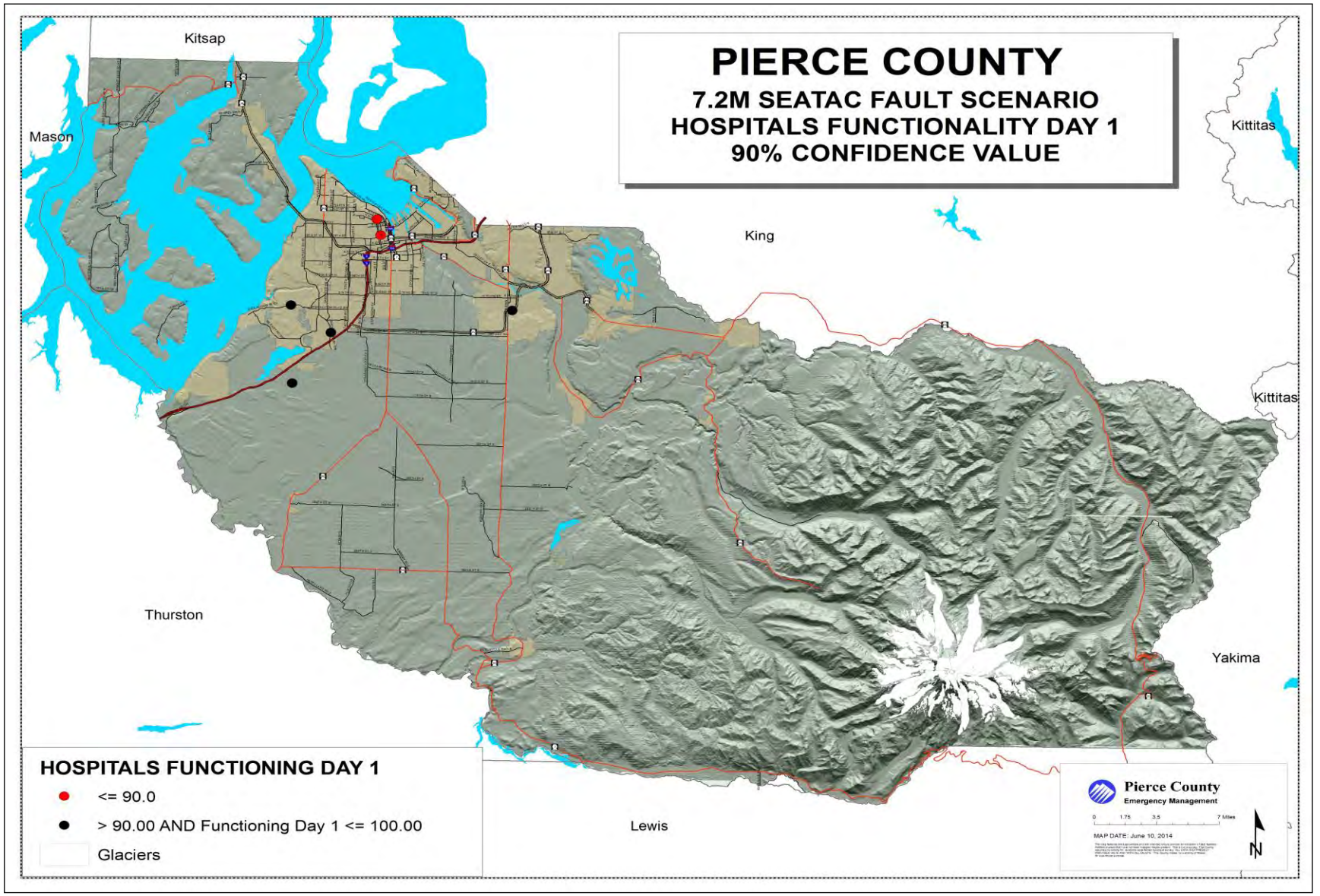
Map D-33 Pierce County SEATAC Fault Scenario Police Department Functionality Day 1 [16]



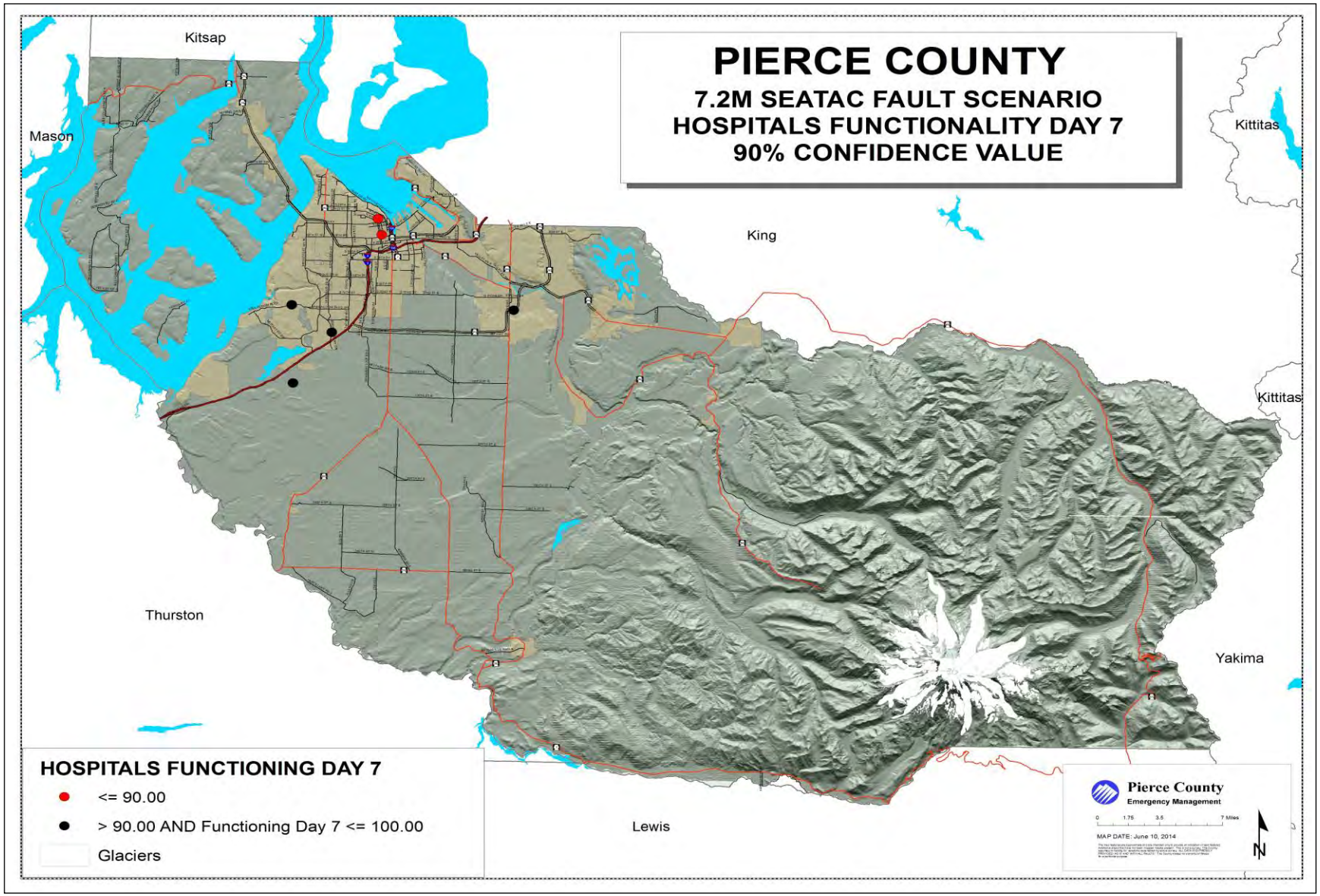
Map D-34 Pierce County SEATAC Fault Scenario Police Department Functionality Day 7[17]



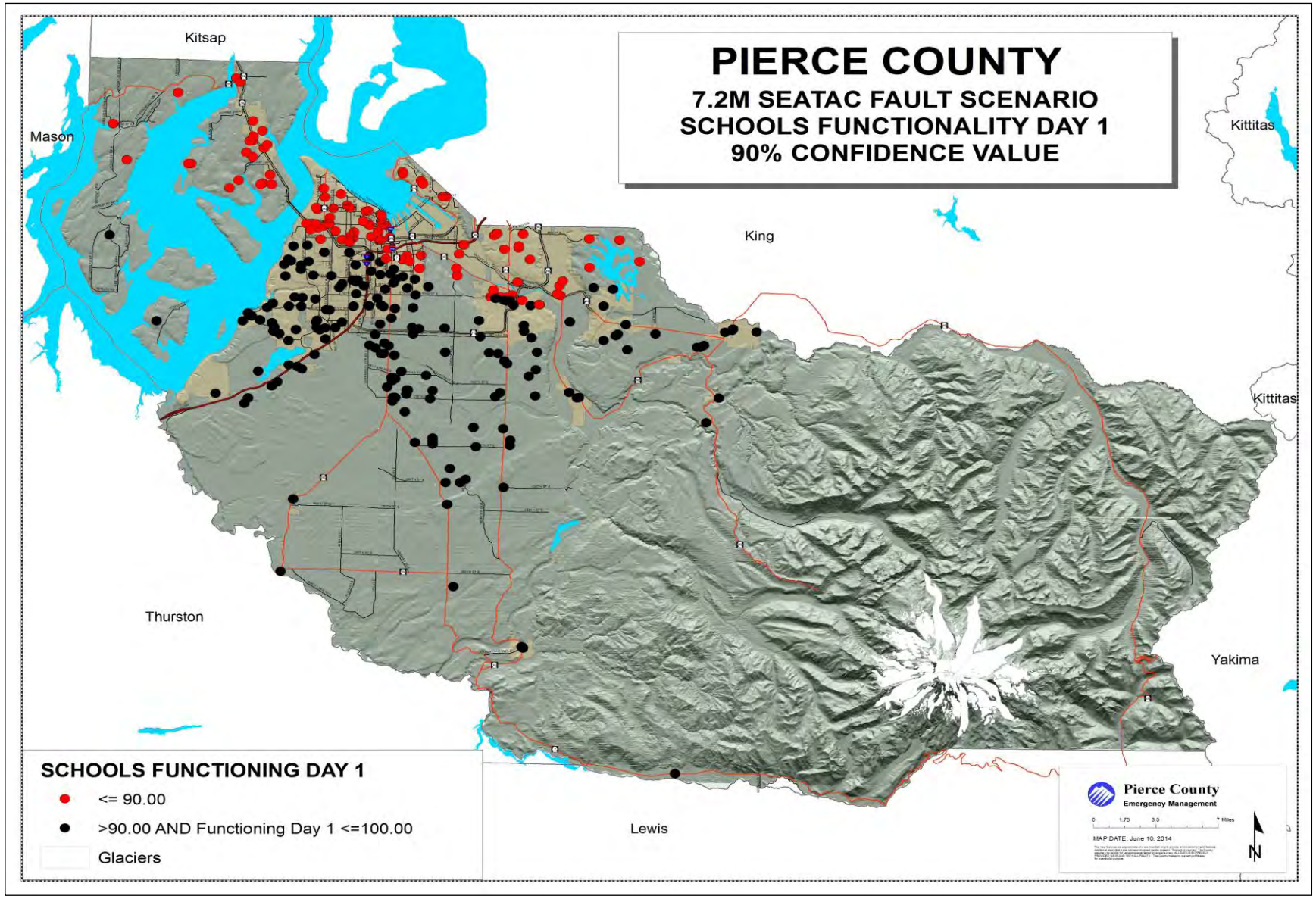
Map D-35 Pierce County SEATAC Fault Scenario Hospital Functionality Day 1 Map[18]



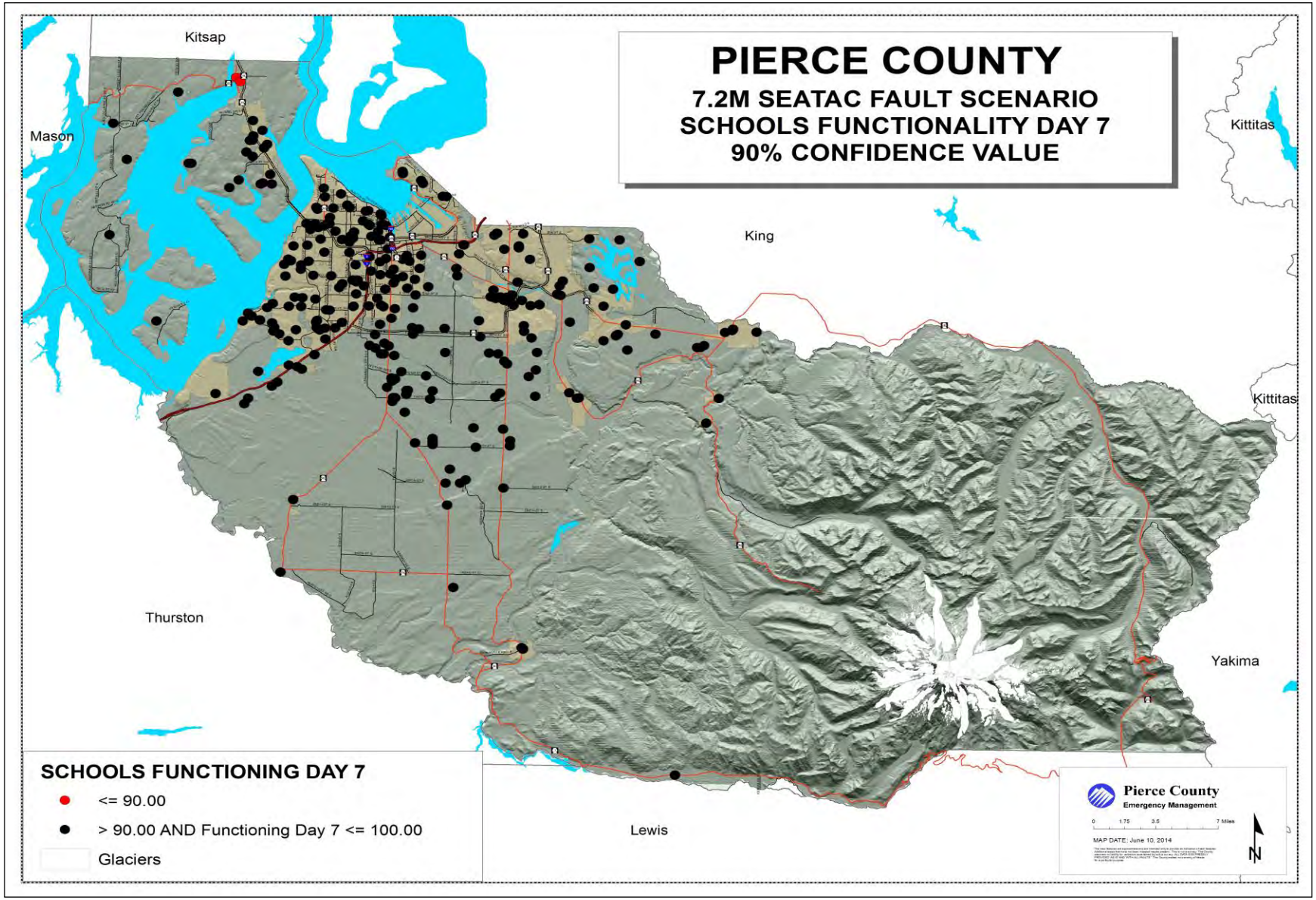
Map D-36 Pierce County SEATAC Fault Scenario Hospital Functionality Day 7[19]



Map D-37 Pierce County SEATAC Fault Scenario Schools Functionality Day 1



Map D-38 Pierce County SEATAC Fault Scenario Schools Functionality Day 7



Endnotes

[1] The location of the police station is not in the correct location. The correct location is a shared building with the Fire District #18 in the middle of town.
[2] The location of the police station is not in the correct location. The correct location is a shared building with the Fire District #18 in the middle of town.
[3] The location of the police station is not in the correct location. The correct location is a shared building with the Fire District #18 in the middle of town.
[4] The location of the police station is not in the correct location. The correct location is a shared building with the Fire District #18 in the middle of town.
[5] The location of the police station is not in the correct location. The correct location is a shared building with the Fire District #18 in the middle of town
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[7] The location of the police station is not in the correct location. The correct location is a shared building with the Fire District #18 in the middle of town
[8] 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.
[9] 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.
[10] 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.
[11] 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.
[12] 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.
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APPENDIX E

REGION 5 ALL HAZARD MITIGATION PLAN
2020-2025 EDITION
CITY OF ORTING
DOCUMENTATION RECORDS

TABLE OF CONTENTS

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PUBLIC COMMENT DOCUMENTATION

Public Meetings for 2020-2025 Edition

Figure E-1 March Monthly Newsletter

Orting City News

March 2019 VOL. 1

New City Facilities

New City Hall Facility

A new City Hall is in the works. The Building will include a Police Station, Court and City Council Chambers, Parks & Rec and Administration. Construction is expected to begin in May with completion near the end of the year. The location is on Bridge Street and Washington Ave. This process began about three (3) years ago when the Fire District approached the city to purchase the Public Safety Building for expansion needs. The new facility will better serve our citizens with ADA accessibility and our growth needs. The cost is to be about $7 million.

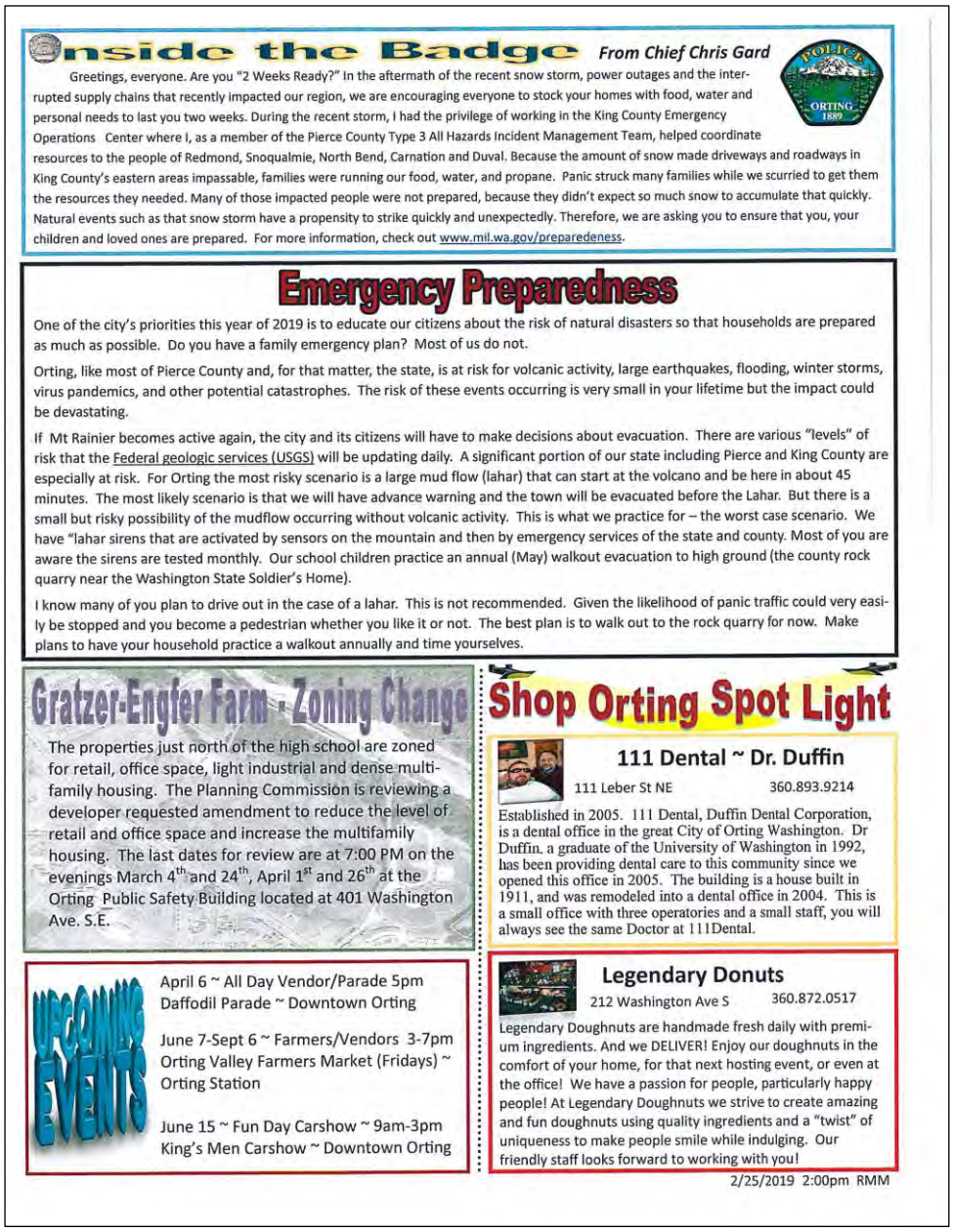
Public Works Facility

The City is also building a new Public Works Facility next to the Wastewater Plant. Most of you have probably watched the building going up in recent weeks. The city saved for twenty (20) years to build this facility. The facility is expected to be completed in the summer. The cost will be about $2.5 million.

Daffodil Parade - New Float

The Daffodil Festival and parade is right around the corner - April 6th. This year we will be treating to a brand new community float. This is a must see event in Orting going back 85 years! The Lions Club will be back with their famous Barbecued Chicken and many other vendors and activities for the whole family! Special "Thank You!" to the hard working Orting Chamber of Commerce, Mary Grover, Chris Hopfauf and Carly White who are leading the charge of the Float Committee and getting the new float!

Figure E-1 March Monthly Newsletter cont.



Inside the Badge

From Chief Chris Gard

Greetings, everyone. Are you "2 Weeks Ready?" In the aftermath of the recent snow storm, power outages and the interrupted supply chains that recently impacted our region, we are encouraging everyone to stock your homes with food, water and personal needs to last you two weeks. During the recent storm, I had the privilege of working in the King County Emergency Operations Center where I, as a member of the Pierce County Type 3 All Hazards Incident Management Team, helped coordinate resources to the people of Redmond, Snoqualmie, North Bend, Carnation and Duval. Because the amount of snow made driveways and roadways in King County's eastern areas impassable, families were running our food, water, and propane. Panic struck many families while we scurried to get them the resources they needed. Many of those impacted people were not prepared, because they didn't expect so much snow to accumulate that quickly. Natural events such as that snow storm have a propensity to strike quickly and unexpectedly. Therefore, we are asking you to ensure that you, your children and loved ones are prepared. For more information, check out www.mil.wa.gov/preparedeness.

Emergency Preparedness

One of the city's priorities this year of 2019 is to educate our citizens about the risk of natural disasters so that households are prepared as much as possible. Do you have a family emergency plan? Most of us do not.

Orting, like most of Pierce County and, for that matter, the state, is at risk for volcanic activity, large earthquakes, flooding, winter storms, virus pandemics, and other potential catastrophes. The risk of these events occurring is very small in your lifetime but the impact could be devastating.

If Mt Rainier becomes active again, the city and its citizens will have to make decisions about evacuation. There are various "levels" of risk that the Federal geologic services (USGS) will be updating daily. A significant portion of our state including Pierce and King County are especially at risk. For Orting the most risky scenario is a large mud flow (lahar) that can start at the volcano and be here in about 45 minutes. The most likely scenario is that we will have advance warning and the town will be evacuated before the Lahar. But there is a small but risky possibility of the mudflow occurring without volcanic activity. This is what we practice for – the worst case scenario. We have "lahar sirens that are activated by sensors on the mountain and then by emergency services of the state and county. Most of you are aware the sirens are tested monthly. Our school children practice an annual (May) walkout evacuation to high ground (the county rock quarry near the Washington State Soldier's Home).

I know many of you plan to drive out in the case of a lahar. This is not recommended. Given the likelihood of panic traffic could very easily be stopped and you become a pedestrian whether you like it or not. The best plan is to walk out to the rock quarry for now. Make plans to have your household practice a walkout annually and time yourselves.

Gratzer-Engfer Farm - Zoning Change

The properties just north of the high school are zoned for retail, office space, light industrial and dense multi-family housing. The Planning Commission is reviewing a developer requested amendment to reduce the level of retail and office space and increase the multifamily housing. The last dates for review are at 7:00 PM on the evenings March 4th and 24th, April 1st and 26th at the Orting Public Safety Building located at 401 Washington Ave. S.E.

Shop Orting Spot Light

111 Dental ~ Dr. Duffin

111 Leber St NE 360.893.9214

Established in 2005. 111 Dental, Duffin Dental Corporation, is a dental office in the great City of Orting Washington. Dr Duffin, a graduate of the University of Washington in 1992, has been providing dental care to this community since we opened this office in 2005. The building is a house built in 1911, and was remodeled into a dental office in 2004. This is a small office with three operatories and a small staff, you will always see the same Doctor at 111Dental.

Legendary Donuts

212 Washington Ave S 360.872.0517

Legendary Doughnuts are handmade fresh daily with premium ingredients. And we DELIVER! Enjoy our doughnuts in the comfort of your home, for that next hosting event, or even at the office! We have a passion for people, particularly happy people! At Legendary Doughnuts we strive to create amazing and fun doughnuts using quality ingredients and a "twist" of uniqueness to make people smile while indulging. Our friendly staff looks forward to working with you!

Upcoming Events

April 6 ~ All Day Vendor/Parade 5pm
Daffodil Parade ~ Downtown Orting

June 7-Sept 6 ~ Farmers/Vendors 3-7pm
Orting Valley Farmers Market (Fridays) ~
Orting Station

June 15 ~ Fun Day Carshow ~ 9am-3pm
King's Men Carshow ~ Downtown Orting

2/25/2019 2:00pm RMM

CONTINUED PUBLIC INVOLVEMENT

Figure E-2 Community Outreach – Open House Preparedness Fair

Figure E-3 Community Outreach – Red Hat Days

Figure E-4 Carbon River Setback Levee Feasibility Study

From: Mark Bethune
To: Debbie Bailey; Randy Brake
Subject: FW: Carbon River near Bridge Setback Levee Feasibility Study
Date: Thursday, June 6, 2019 11:42:39 AM

Public works director will be there.

From: Greg Reed
Sent: Thursday, June 6, 2019 9:06 AM
To: Mark Bethune; Mayor Penner; Tim Lincoln
Subject: RE: Carbon River near Bridge Setback Levee Feasibility Study

I'd be happy to Mark, I feel we absolutely need to be there, I'll man the booth.

Greg

From: Mark Bethune
Sent: Wednesday, June 5, 2019 4:02 PM
To: Mayor Penner; Greg Reed; Tim Lincoln
Subject: FW: Carbon River near Bridge Setback Levee Feasibility Study

Fyi. Greg would you or any of your staff want to have a booth during their open house – storm water info? I will still be out of the country that day or would do it myself. See notes below

From: Randy Brake [mailto:randy.brake@piercecountywa.gov]
Sent: Wednesday, June 5, 2019 1:53 PM
To: Mark Bethune
Cc: Mike Halliday; Rob Wenman
Subject: RE: Carbon River near Bridge Setback Levee Feasibility Study

Dear Mark:
Hello, and thank you for your email. Pierce County Surface Water Management (PCSWM) will be sending out the attached meeting invitation notice to the residents and property owners within and near the study area. That will be great if a City of Orting representative would be available to participate in the meeting, with an information table or display. The information topic and subject matter is per the City's choice and preference.

Respective to the reader board and not knowing the lines and character limitation, will the following verbiage (or similar) work and fit on the reader machine?

Open House Invite
Carbon River Study
June 22 Orting Middle School 9-2

Thank you again in this regards and we look forward to the community meeting and visiting with the various community members.

Sincerely,

Randy Brake
Pierce County Planning and Public Works
253-798-4651 | randy.brake@piercecountywa.gov

From: Mark Bethune <MBethune@cityoforting.org>
Sent: Thursday, May 16, 2019 10:31 AM
To: Randy Brake <randy.brake@piercecountywa.gov>
Cc: Mayor Penner <Penner@cityoforting.org>; Greg Reed <GReed@cityoforting.org>; Jane Montgomery <JMontgomery@cityoforting.org>
Subject: RE: Carbon River near Bridge Setback Levee Feasibility Study

Sounds good. We support you having a community meeting on the 22nd. We are hoping you can extend personal invitations to those property owners who would be impacted. I'm on vacation that week but I will check to see if other staff can do a booth. Give us some material/headings to put on the city web site and the reader board.

From: Randy Brake [mailto:randy.brake@piercecountywa.gov]
Sent: Wednesday, May 15, 2019 9:30 AM
To: Mark Bethune; HUNGERFORD, JC (JHungerford@parametrix.com)
Cc: Mike Halliday; Rob Wenman
Subject: Carbon River near Bridge Setback Levee Feasibility Study

Dear Mark and JC:
Hello and good morning. We would like to thank you and the City Council again for taking time to hear about the County's current Carbon River Setback Levee Feasibility study. It was beneficial to hear the various council members comments, concerns and questions. The comments and input were duly noted and will surely help to inform and guide the study findings, recommendations and conclusions.

As noted during the presentation, one of the next steps of the study will be to hold a public community meeting, in order to present the study information, receive input and comments from the local community, interested parties and especially from residents living near the study area. We are planning to hold the community meeting on Saturday, June 22 at the

Orting Middle School (from 9am to 2:00pm).

We are planning to structure the meeting as an open house format where there will be multiple exhibit stations pertaining to the study and a presentation on the study (morning and afternoon hours). People will have the opportunity to ask questions, express their concerns and comments. We would also like to invite other entities and stakeholder groups for their participation interest in hosting separate display stations on subject matter and topics of their interest and choice. Entity and stakeholder groups include, City of Orting, Orting Valley Fire Department, Pierce County Emergency Management, Foothills Rails to Trails Coalition, Pierce County Parks, WA Fish and Wildlife and other entities as applicable.

We would like to know of the City's interest and/or concerns regarding the proposed community meeting and participation level at this point in the planning effort. We would be glad to meet or hold a conference call to discuss more of the particulars regarding the community meeting. Thank you in this regards.

Sincerely,

Randy Brake
Surface Water Management Engineer
Pierce County Planning and Public Works
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