

RESOLUTION NO. 2021-06

A RESOLUTION of the City Council of the City of Lakewood, Washington, adopting the Region 5 All Hazard Mitigation Plan (2020-2025) Edition and the 2021 Addendum to the Region 5 Hazard Mitigation Plan.

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

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

**WHEREAS**, the All Hazard Mitigation Plan Update represents the commitment of the City of Lakewood along with other surrounding government entities to reduce the risks from natural, man-made 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 Lakewood has participated with the Pierce County Department of Emergency Management in the development of the City of Lakewood's All Hazard Mitigation Plan Update, and recognizes the economic loss, personal injury, and damage that can arise from these hazards; and

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

**WHEREAS**, the 2020-2025 Region 5 All Hazard Mitigation Plan Edition has been completed and approved by the State and the Federal Emergency Management Agency; and

**WHEREAS**, the City of Lakewood could risk not receiving future disaster funding if the All Hazard Mitigation Plan Update is not adopted; and

**WHEREAS**, the Lakewood City Council reviewed the All Hazard Mitigation Plan Update.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF LAKEWOOD, WASHINGTON, HEREBY RESOLVES, as follows:

Section 1. The Region 5 All Hazard Mitigation Plan, 2020-2025 Edition, is hereby adopted as set forth in Exhibit A, which is attached.

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

PASSED by the City Council this 19<sup>th</sup> day of April, 2021.

CITY OF LAKEWOOD



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Don Anderson, Mayor

Attest:



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Briana Schumacher, City Clerk

Approved as to form:



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Heidi Ann Wachter, City Attorney



CITY OF LAKEWOOD  
ADDENDUM A-8  
REGION 5 HAZARD MITIGATION PLAN  
2020-2025 EDITION

**Prepared for:**

City of Lakewood  
6000 Main Street SW  
Lakewood, WA 98499

*In Cooperation with:*

Pierce County Department of Emergency Management  
2501 S. 35<sup>th</sup> Street, Suite D  
Tacoma, WA 98409

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

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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 LAKEWOOD  
PROCESS SECTION

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## Changes To Jurisdiction Plan in this Document

This Addendum to the Region 5 Hazard Mitigation Plan includes the following changes that are documented as a result of a complete review and update of the existing plan for the City of Lakewood. 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) this Plan will be an Addendum to the 2020 comprehensive and FEMA approved Region 5 All Hazard Mitigation Plan and 3) 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 an additional Addendum to the other jurisdictions encompassed in the 2020 approved Region 5 All Hazard Mitigation Plan.

## Change Matrix

This Matrix of Changes documents the pertinent changes made from the July 2015 City of Lakewood 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 Lakewood 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 Lakewood Region 5 Hazard Mitigation Plan 2020-2025 Update**

<b>Section 1 – Plan Development, Process Section</b>		
<b>Section or Part of Plan</b>	<b>New in 2020 Plan</b>	
Section 1 – Process Section	Section 1 – Process Section	
	The 2020 Process Section contains updated Planning Meeting overviews, Planning Team Members, Drop-in schedule, Public Comment dates, Elected Official Meetings and updated dates for Plans that collaborate with the mitigation plan.	
<b>Section 2 – Participating Jurisdiction Profiles</b>		
<b>Section or Part of Plan</b>	<b>Previous</b>	<b>2020 Plan</b>
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 Lakewood'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.

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

<b>Section 4 – Vulnerability, Risk Analysis</b>	
<b>Section or Part of Plan</b>	<b>2020 Plan</b>
Vulnerability and Hazard Impact Analysis	This section was added to provide a better understanding on how the identified hazards affect the City of Lakewood 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 Lakewood 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.

<b>Section 5 – Mitigation Strategy</b>	
<b>Section or Part of Plan</b>	<b>2020 Plan</b>
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.

<b>Section 6 – Infrastructure</b>	
<b>Section or Part of Plan</b>	<b>2020 Plan</b>
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.

<b>Section 7 – Plan Maintenance</b>	
<b>Section or Part of Plan</b>	<b>2020 Plan</b>
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.

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

## Plan Process

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

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

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

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

## Public Involvement Process

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

“Involving stakeholders who are not part of the core team in all stages of the process will introduce the planning team to different points of view about the needs of the community. It will also provide opportunities to educate the public about hazard mitigation, the planning process, and findings, and could be used to generate support for the mitigation plan.”<sup>1</sup>

In order to accomplish this goal and to ensure that the updated Region 5 Hazard Mitigation Plan is comprehensive, the six 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**

<b>NAME</b>	<b>TITLE</b>	<b>JURISDICTION-DEPARTMENT</b>
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
Dailene 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**

<b>NAME</b>	<b>TITLE</b>	<b>JURISDICTION-DEPARTMENT</b>
Jeffrey S. Wilson	Director Community Development	City of DuPont
John Unfred	Assistant Police Chief	City of Lakewood
Christine Badger	Emergency Manger	City of Lakewood
Paul Loveless	Town Administrator	Town of Steilacoom
John Ecklund	Director of Engineering	City of University Place
Lisa Petorak	HR Manager	City of University Place
Hallie McCurdy	Assistant Fire Chief	West Pierce Fire & Rescue #3
Christine Badger	Emergency Manger	West Pierce Fire & Rescue #3
Randy Granum	Risk Manager	Clover Park School District
Susanne Beauchaine	Executive Director for Human Resources	Steilacoom Historical School District
Torey Heidelberg	Preparedness/Safety Cor.	University Place School District
Don Stanley	Operations Department Head	Lakewood Water District
Linda Horey	Emergency Management Program Specialist	Western State Hospital
John Cammon	Maintenance Superintendent	Riviera Community Club
Sgt Jason Harms	Pierce Transit Police	Pierce Transit

## 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**

<p><b>Planning Team Meeting #1 – Cities &amp; Towns: PCEM Puyallup Room – February 21, 2019</b></p> <p>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.</p>
<p><b>Planning Team Meeting #2 – SW Regional Group: PCEM Nisqually Room – March 25, 2019</b></p> <p>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.</p> <p>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.</p>
<p><b>There was not a Regional Planning Meeting in April of 2019</b></p>
<p><b>Planning Team Meeting #3 – SW Regional Group: PCEM Nisqually Room – May 28, 2019</b></p> <p>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.</p>
<p><b>There was not a Regional Planning Meeting in June of 2019</b></p>
<p><b>Planning Team Meeting #4 – SW Regional Group: PCEM Nisqually Room – July 18, 2019</b></p>



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 12<sup>th</sup> and 19<sup>th</sup>.

**There was not a Regional Planning Meeting in August of 2019**

**Planning Team Meeting #5 – SW Regional Group: PCEM Nisqually Room – September 19, 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 – SW Regional Group: PCEM Nisqually Room – October 31, 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 – SW Regional Group: PCEM Nisqually Room – December 3, 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
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 and Process

Date	Location	Time
September 3, 2019	Lakewood Farmer's Market 6000 Main St SW, Lakewood, WA 98499	10:00 am – 3:00 pm
October 2, 2019	Lakewood Police Station 9401 Lakewood Dr. SW, Lakewood, WA 98499	5:15 pm – 6:15 pm
January 16, 2020 – February 15, 2020	Social Media Lakewood Police Department Facebook Page	On going

In updating our mitigation plan, we utilized an inclusive process to involve the whole community to develop the best plan that is reasonable to address the specific hazards within our jurisdiction. To accomplish this, we utilized a variety of tactics including an online survey, outreach booth at our local farmer's market, social media, and sought input from our Public Safety Advisory Committee and City Council at one of their public meetings.

*City Council Meeting:* During a regular scheduled Council meeting, the planning process was presented to our City Council. Input was sought from them as well. (agenda in Appendix E)

*Outreach booth:* During one of our local Farmer’s Markets, we manned a booth to engage with our community members in order to educate the public on specific hazards and to seek their input to our plan. Fliers with information explaining this process and contact information were distributed. (Pictures and flier in Appendix E)

*Advisory Committee:* Lakewood has a Public Safety Advisory Committee, which is a committee appointed by the City Council to advise them on all matters concerning public safety. These meetings are held monthly and are open to the public. At their regular meeting, their input, as well as any citizens attending, was sought into our mitigation plan. (agenda and minutes in Appendix E)

This was probably the most effective outreach we had because several committee members took the time to read the plan and provided us with valuable feedback. One caught that we missed the addition of two passenger rail incidents. We also appreciated the opportunity to explain how processes work and implement some expectation management around mitigation strategies. There was a theme of suggestions and inquires that required further explanation as to existing plans, why we identified a need and specific details of gaps. In summary, the projects discussed included a generator for our Vehicle and Facilities Maintenance Facility and the expansion of the Department Operations Center at Station 21.

*Social Media:* We used our Police Department’s social media platform on Facebook to publicize the online survey and solicit feedback or input into our plan. (screenshot in Appendix E)

*Online Survey:* In conjunction with our County Department of Emergency Management, we offered citizens the ability to submit feedback, suggestions, or concerns via an online survey. We promoted this survey using our Police Department’s Facebook account.

## Elected Officials Meetings

On July 8, 2019, Debbie Bailey presented in front of the Lakewood City Council with the assistance of Assistant Chief of Police John Unfred. She first explained the overarching project of updating local jurisdictions’ mitigation plans and then went into detail about the purpose, components, and processes involved in this update. Debbie provided reading material to the Council – in particular, a list of all jurisdictions participating in this update, as well as a short brochure explaining the mitigation plan and how it benefits the whole community. Once she was finished presenting, the Council had the opportunity to ask questions and provide comments. Many Council members provided positive feedback regarding the City of Lakewood’s involvement in this planning process, while others asked questions about the project timeline, grant funding opportunities, and the applicability of specific mitigation projects for their jurisdiction. After the commentary period ended, the Council unanimously voted to approve the City of Lakewood’s participation in the update of their Hazard Mitigation Plan.

## Joint Planning Requirement

The City of Lakewood 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.

<b>Plan</b>	<b>Next Update</b>
City of Lakewood Comprehensive Plan	June 2020

## Endnote

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

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SECTION 2

REGION 5 ALL HAZARD MITIGATION PLAN  
2020-2025 EDITION  
CITY OF LAKEWOOD  
PROFILE SECTION

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# Mission Statement

The mission of the City of Lakewood is as follows:

**The City of Lakewood enhances the quality of life of our residents by providing essential services in a fiscally responsible manner, ensuring public safety, promoting economic development and preserving our natural environment.**

# Services Summary

The City of Lakewood was incorporated in the year 1996.

The jurisdiction provides the following services through their own capabilities:

**Table 2-1 City Services<sup>1</sup>**

<b>CITY SERVICES</b>			
<b>Service</b>	<b>Yes</b>	<b>Service</b>	<b>Yes</b>
Mayor/City Manager	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	No	Construction and Operation of Boat Harbors, Marinas, Docks, etc.	Yes
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	No
Hydroelectric Resources	No	Sanitary Landfill/Refuse Service	No
Radio Communications	Yes	Sidewalks	Yes
Streets	Yes	Storm Drains	Yes
Wastewater Treatment	No	Streets/Alleys	Yes
Water Utility	No	Parks and Parkways	Yes
Public Transportation Systems	No	Water Pollution Abatement	Yes
Residential Care Facilities	No	Local Improvement Districts	Yes
Child Care Facilities	No		



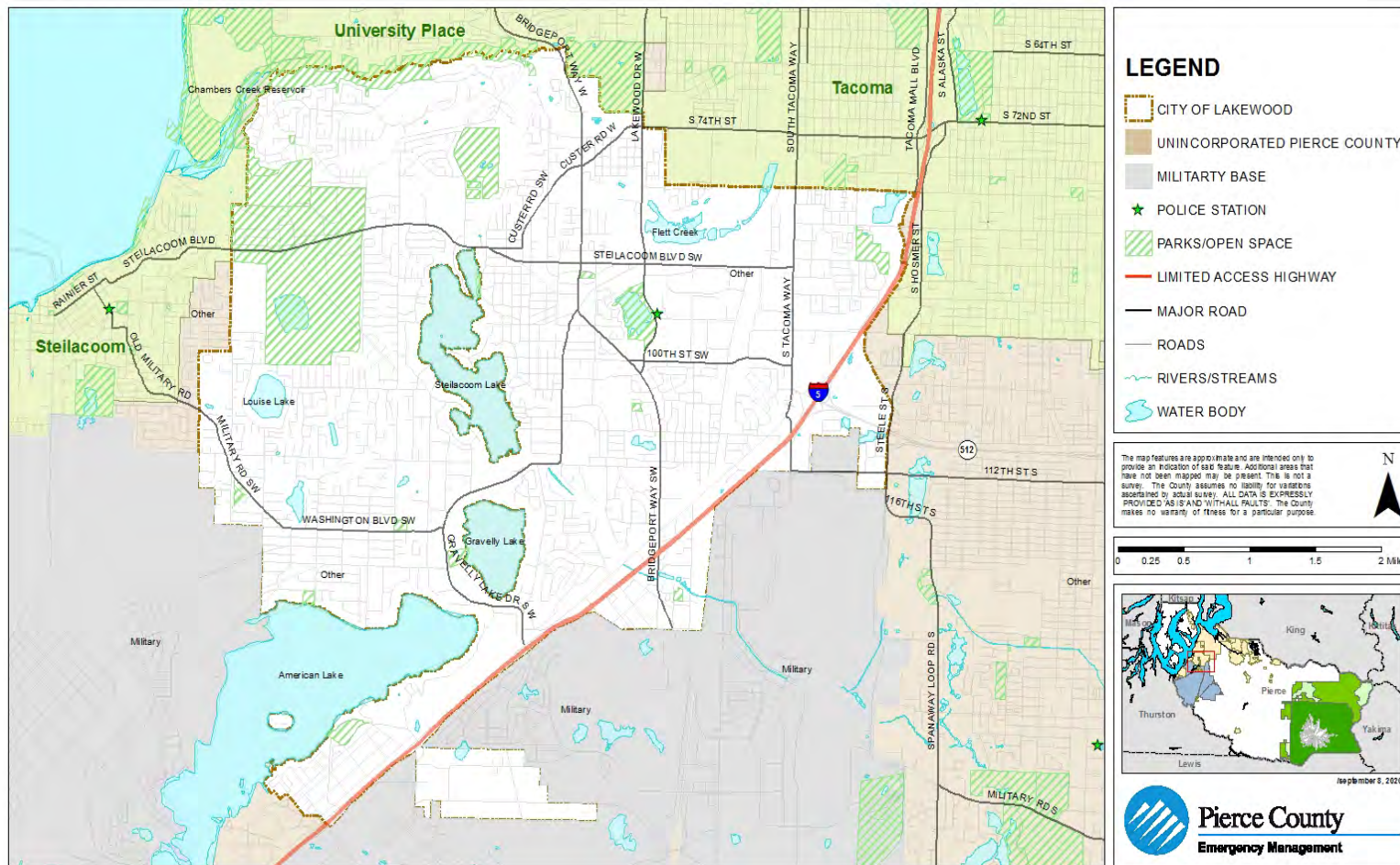
# Geo-Political Summary

**Table 2-2 Geo-Political Summary<sup>2</sup>**

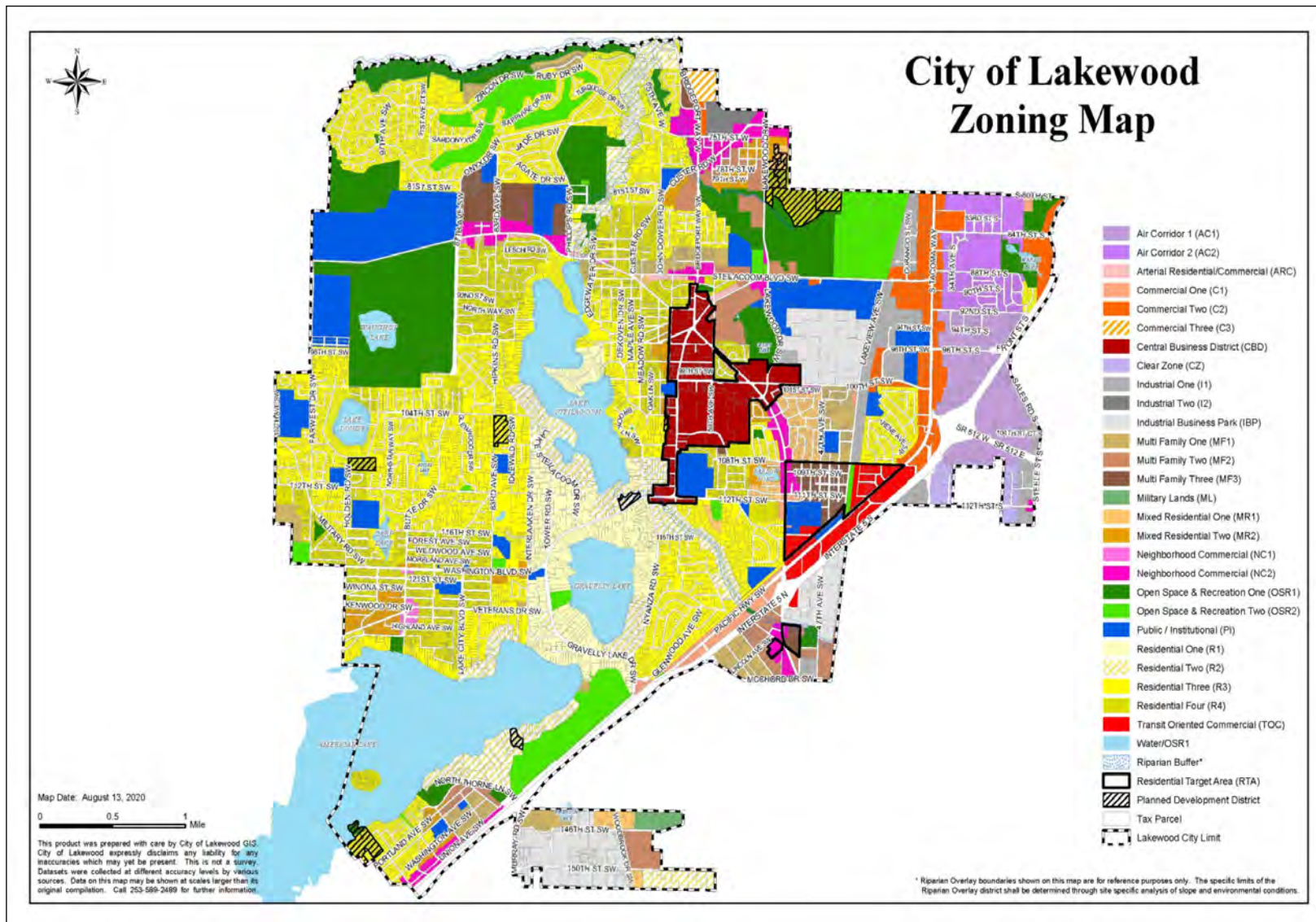
Jurisdiction	Area (sq mi)	Elevation Range (ft)	Major Water Features	Regional Partners	
				Shared Borders	Land Use Authorities
City of Lakewood	17.2405	60-380	<ul style="list-style-type: none"> <li>• Chambers Clover Watershed</li> <li>• 2-Chambers Bay Basin</li> <li>• 6-Clover Creek/Steilacoom Basin</li> <li>• 9-American Lake Basin</li> </ul>	<ul style="list-style-type: none"> <li>• University Place</li> <li>• Tacoma</li> <li>• Steilacoom</li> <li>• Unincorporated Pierce County</li> <li>• Western State Hospital</li> <li>• Camp Murray</li> <li>• WA—DNR</li> <li>• Joint Base Lewis-McChord</li> </ul>	<ul style="list-style-type: none"> <li>• Lakewood</li> <li>• University Place</li> <li>• Tacoma</li> <li>• Steilacoom</li> <li>• Unincorporated Pierce County</li> <li>• WA—DSHS</li> <li>• WA—EMD</li> <li>• WA—DNR</li> <li>• WA—F &amp;W</li> <li>• US DoD (Joint Base Lewis-McChord)</li> </ul>

Map 2- 1 City of Lakewood - Basemap

# CITY OF LAKEWOOD - BASE MAP



Map 2-2 City of Lakewood Zoning Map



# Population Summary

## Demographics

**Table 2-3 Population<sup>3, 4, 5, 6</sup>**

Jurisdiction	Population	Population Density (people/sq mi)	Population Served	Projected Year 2022 Population Change (%)	Projected Population Density	Projected 2022 Population Served
City of Lakewood	57,431	3,331	57,431	25.37%	4,176	72,000
Region 5	795,225	440	795,225	-18.39%	359	648,895

Population data in Tables 2-3 and 2-4 are outdated and based off the Washington State Office of Financial Management (OFM) 2010 Census data. Once the 2020 Census data becomes available these population numbers will be updated and replaced in the plan. The same situation occurs with all population figures in Section 4 Risk Assessment assessing the risk and vulnerability for all identified hazards in Unincorporated Pierce County.

## Special Populations

**Table 2-4 Special Populations<sup>7</sup>**

Jurisdiction	Population	Population 65 Plus	% of Total	Population Under 20	% of Total
City of Lakewood	57,431	7,735	13%	14,646	26%
Region 5	795,225	87,770	11%	220,351	28%

## Demographic Analysis

The City of Lakewood is located in southern Pierce County. According to the US Census 2017 Estimate, the city has a population of approximately 60,538, which is an increase from the 2015 estimate of 59,097. Lakewood has a population density of 3,387 people per square mile. This increase in population and density create a more vulnerable community. Nearly 22 percent of Lakewood residents are under the age of 18 and approximately 15 percent are over 65.

Lakewood is a very diverse community as shown by the following race demographics as estimated in 2017.

- White – 58%
- Black or African American - 12.1%
- American Indian and Alaska Native – 2.1%
- Asian – 8.9%
- Native Hawaiian and Other Pacific Islander – 3.1%
- Some other race – 5.5%
- Two or more races 10.3%

Fifteen percent of Lakewood residents are foreign born and the Clover Park School District reported that 33.7% of students enrolled in school are of Hispanic or Latino descent. The City of Lakewood has a higher poverty rate than other nearby communities at 19.7%, with a staggering 72% of students in the Clover Park School District receiving free or reduced lunch. The vulnerability of this population is higher than that of the rest of the city.

# Infrastructure Summary

## General

**Table 2-5 Parcel Summary<sup>8</sup>**

Jurisdiction	# Parcels	Land Value	Average Land Value	Improved Value	Average Improved Value
City of Lakewood	17,583	\$373,441,800	\$218,492	\$5,299,939,100	\$301,424
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 Lakewood	\$9,141,685,400	\$519,916
Region 5	\$137,799,070,837	\$419,057

**Table 2-6 Housing Summary<sup>9</sup>**

Jurisdiction	# Houses	Housing Density	Avg Year Built	Avg Year Built (%)
City of Lakewood	26,548	1,540	<ul style="list-style-type: none"> <li>• &lt;1939: 721</li> <li>• 1940 – 1979: 17,065</li> <li>• 1980 – 2004: 8,305</li> <li>• 2005&gt;: 505</li> </ul>	<ul style="list-style-type: none"> <li>• &lt;1939: 2.7%</li> <li>• 1940 – 1979: 64.1%</li> <li>• 1980 – 2004: 31.2%</li> <li>• 2005&gt;: 3.9%</li> </ul>
Region 5	291,983	162	<ul style="list-style-type: none"> <li>• &lt;1939: 34,368</li> <li>• 1940 – 1979: 126,363</li> <li>• 1980 – 2004: 139,894</li> <li>• 2005&gt;: 22,830</li> </ul>	<ul style="list-style-type: none"> <li>• &lt;1939: 10.6%</li> <li>• 1940 – 1979: 39%</li> <li>• 1980 – 2004: 43.2%</li> <li>• 2005&gt;: 7.1%</li> </ul>

## Jurisdiction Infrastructure

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

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

**Table 2-7 City: Owned Infrastructure<sup>10</sup>**

Total Infrastructure	Emerg. Services	Tele-comm	Transportation	Water	Energy	Government	Commercial	Total Value (\$)
4	0	0	0	0	0	4	0	\$27,398,600

# Economic Summary

**Table 2-8 Fiscal Summary<sup>11</sup>**

Jurisdiction	Operating Costs (per month)	Operating Budgeted Revenues <sup>12</sup>	Operating Budgeted Expenditures <sup>13</sup>	Fund Balance as % of Operating Cost	Avg Fund Balance (5 yrs)
City of Lakewood	\$3,206,000	\$41,764,000	\$38,468,000	21.1%	\$7,274,000

**Table 2-9 Employment Profile<sup>14</sup>**

Employment Category (SIC)	City of Lakewood	Pierce County
Construction/Res	1,678	24,297
Finance, Insurance, and Real Estate (FIRE)	1,193	13,640
Manufacturing	1,067	17,239
Retail	3,067	34,957
Services	11,407	132,801
Warehousing, Transportation, and Utilities (WTU)	2,086	30,278
Government	4,870	34,915
Education	2,822	24,382

**Table 2-10 Economic Summary<sup>15</sup>**

Jurisdiction	Unemployment Rate
City of Lakewood	13.1%
Region 5	9.6%
WA State	8.4%

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

<b>2-DIGIT NAICS RATING</b>	<b>NAICS CATEGORIES</b>
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**

<b>SECTOR INDUSTRY COMBINED (SIC)</b>
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 Lakewood  
<http://www.cityoflakewood.us/>
- Pierce County Government  
<https://co.pierce.wa.us/>
- Pierce County DEM  
<https://www.co.pierce.wa.us/104/Emergency-Management>
- Pierce County Planning & Public Works  
<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/](http://www.census.gov/)

## Endnotes

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<sup>1</sup> Information from a survey completed by the City.

<sup>2</sup> Information from Pierce County GIS application, CountyView Pro (2020).

<sup>3</sup> “Population” from Census 2010, Office of Financial Management. It should be noted that current (as of April 2020) population of City of Lakewood is reported by the Office of Financial Management as 60,030. Once 2020 Census becomes available, PC DEM will rerun population data using Pierce County GIS application, County View Pro.

<sup>4</sup> “Projected Population Change (%)” from Pierce County Buildable Lands Report, Dec. 2007.

<sup>5</sup> “Projected Population Density” is based on an assumption of the jurisdiction maintaining the same geographic area and boundaries. It does not consider changes in annexation, district mergers, etc.

<sup>6</sup> “Projected 2022 Population” from Pierce County Buildable Lands Report, Dec. 2007.

<sup>7</sup> “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.

<sup>8</sup> Information from Pierce County GIS application, CountyView Pro 2020.

<sup>9</sup> Information from Office of Financial Management 2020.

<sup>10</sup> Information provided by the City of Lakewood based from the Department of Homeland Security (DHS) Infrastructure sectors.

<sup>11</sup> Information provided by City of Lakewood.

<sup>12</sup> Information provided by City of Lakewood, non-capital.

<sup>13</sup> Information provided by City of Lakewood, non-capital.

<sup>14</sup> Information from Puget Sound Regional Council based on 2018 data. <https://www.psrc.org/covered-employment-estimates>.

<sup>15</sup> Information from Census 2010, Office of Financial Management, 2020.

## 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?

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CAPABILITY IDENTIFICATION SECTION

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# Legal and Regulatory

**Table 3-1 Legal and Regulatory**

Regulatory Tools (Ordinances and Codes)	Yes or No
<b>Jurisdiction Capabilities</b>	
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	Yes
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
<b>Jurisdiction Capabilities</b>	
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	WPFR
Community CPR/First Aid Program	No
Community Emergency Response Teams (or PCNET)	Yes
Downtown Revitalization Committee	Yes
Economic Development Board	Yes
Emergency Manager	Yes
Engineers	Yes
Families First Coalition	No
Fire and Injury Prevention Program	WPFR
Fire Chief	WPFR
Fire Safety & Disaster Classes in Schools	WPFR
Flood Plan Manager	No
Government TV Access	No
Grant Writers	Yes
Home Safety Council	Yes
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	No

**Table 3-3 Administrative Capability (Cont)**

<b>Administrative Tools (Agency, Departments or Programs)</b>	<b>Yes or No</b>
<b>Regional Capabilities</b>	
Local Business Districts	Yes
Local Department of Emergency Management	Yes
Local Fire Agencies plus Mutual Aid with others	WPFR
Local Hospitals	Yes
Local Law Enforcement Agencies and Mutual Aid with others	Yes
Local Neighborhood Associations	Yes
Local Newspapers	Yes
Local Parks Commission/Board	Yes
Local Power Companies	Yes
Local Parent Teacher’s Association	Yes
Neighboring Counties	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	WPFR
Pierce County Sheriffs Department	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 Tools**

Technical Tools (Plans and Other)	Yes or No
<b>Jurisdiction Capabilities</b>	
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	No
Drainage Master Plan	No
Economic Development Plan	Yes
Emergency Evacuation Plan	No
Emergency Response Plan	Yes
Generator Placement Plan	In process
Habitat Plan	No
Hazardous Materials Response Plan	WPFR
Lahar Evacuation Plan	No
Pandemic Flu Plan	Yes
Post-Disaster Recovery Plan	Yes
Sewer/Wastewater Comprehensive Plan (Pierce Co. PW)	Yes
Storm Comprehensive Plan	Yes
Water Comprehensive Plan (Lakewood Water District)	Yes
<b>Regional Capabilities</b>	
Coordinated Water System Plan and Regional Supplement 2001	Yes
Local and Regional Emergency Exercises – All Types	Yes



# Fiscal Capability

**Table 3-5 Fiscal Capability**

<b>Fiscal Tools (Taxes, Bonds, Fees, and Funds)</b>	<b>Yes or No</b>
<b><u>Jurisdiction Capabilities</u></b>	
<b>TAXES:</b>	
Authority to Levy Taxes	Yes
<b>BONDS:</b>	
Authority to Issue Bonds	Yes
<b>FEES:</b>	
Fees for Water, Sewer, Gas or Electric Service	No
Impact Fees for Homebuyers/Developers for New Developments/Homes	Yes
Local Improvement District (LID)	Yes
<b>FUNDS:</b>	
Capital Improvement Project Funds	Yes
Enterprise Funds	No
General Government Fund (Departments)	Yes
Internal Service Funds	Yes
Special Revenue Funds	Yes
Withhold Spending in Hazard-Prone Areas	N/A
<b><u>Regional Capabilities</u></b>	
Pierce County Land Conservancy	Yes
Cascade Land Conservancy	No

# Specific Capabilities

**Table 3-6 Specific Capabilities**

<b>Jurisdiction Specific Capabilities</b>
<b><u>Legal &amp; Regulatory</u></b>
<b><u>Administrative &amp; Technical</u></b>
<b><u>Fiscal</u></b>

## National Flood Insurance Program (NFIP) Capability

### NFIP Status

The City entered the NFIP on October 25, 1977. The City is in good standing in the NFIP as certified by Washington State Department of Ecology. The last Community Assistance Visit (CAV) was completed in August of 2007.

## 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?

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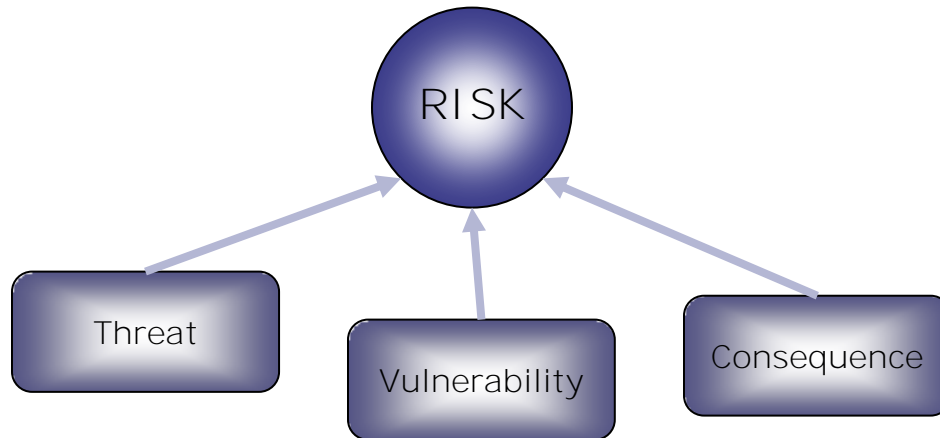
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## Section Overview

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



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

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

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

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

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

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

## Vulnerability and Hazard Impact Analysis

### Identified Hazards Affecting the City of Lakewood

Through the Mitigation, Hazard Identification Risk Assessment (HIRA) and Comprehensive Emergency Management Plan (CEMP) planning processes, the City of Lakewood has identified seven major natural hazards and six technological hazards that may significantly affect the fire district. These hazards were chosen based on multiple criteria including high frequency and potential impact.

#### Geological:

- Earthquake
- Landslide
- Tsunami/Seiche
- Volcanic Eruption

#### Meteorological:

- Drought/WUI
- Flood
- Severe Weather

#### Technological / Human-caused

- Civil Disturbance
- Energy Emergency
- Epidemic/Pandemic
- Hazardous Materials
- Terrorism / Active Threat / Cyber Attack
- Transportation Incident

### Introduction

- The National Threat and Hazard Identification and Risk Assessment (THIRA)<sup>1</sup> published by FEMA July 2019 provides scenarios and introduced an important concept: Plausible Concurrent Operations. Plausible Concurrent Operations represents ongoing response and recovery operations and are a way of recognizing that multiple events that have no connection to one another may overlap and impact an already vulnerable jurisdiction. An example of Plausible Concurrent Operations would be responding and recovering from a pandemic outbreak and then a month later there is an earthquake. Secondary hazards such as a tsunami, landslides, fires, liquefaction, hazardous material spills, energy emergency following an earthquake are incorporated with their primary hazard and are not listed as separate concurrent operations.



- May of 2020, we are several months into the COVID-19 pandemic outbreak as we are writing this analysis. The probability of a concurrent incident for all jurisdictions is extremely high during this COVID-19 outbreak.
- The concurrent scenarios/hazards of most concern include:
  - epidemic/pandemic
  - earthquake (includes tsunami, liquefaction, landslides, fire, hazardous material spills, energy emergency)
  - a lahar
  - severe weather
  - terrorism and active threat / attack tactics
- Although not listed above civil disturbance can have a high consequence when paired with epidemic/pandemic.

The vulnerability and impact analysis incorporated many findings from other assessments for a holistic approach. The assessments and key findings are briefly captured here but additional details can be found in the Base Plan Section 4: Pierce County Hazard Identification & Risk Assessment.

## Geological

### *Earthquake*

The Pierce County Region averages at least one earthquake every ten years. More recently they have become more frequent. There are three distinct earthquake threats in our region. Deep earthquakes, like the 2001 Nisqually Earthquake, which was a magnitude 6.8; earthquakes on the Seattle or Tacoma Faults that could have a magnitude up to 8.0; and the Cascadia Subduction Zone located off the Washington Coast that could have a magnitude 9.0 or higher earthquake. Any of these types of earthquakes could cause millions, if not billions of dollars in damage within the region.

### *Landslide*

There are many areas throughout the City of Lakewood where slopes exceed 15% and the glacial till is overlain by well-drained soils. When these hillsides become wet, it is possible for the slope to fail. These areas are also at an increased risk of damage resulting from an earthquake or slope settlement. The largest steep slope hazard area lies along Chambers Creek, affecting both Lakewood and University Place.

### *Tsunami / Seiche*

Pierce County has been impacted by three tsunamis generated in the Puget Sound in the past 120 years. The largest of these, the 1894 tsunami, originated in Commencement Bay and destroyed 300 feet of dock and sent a ten-foot wave into Old Town Tacoma. With eight miles of Puget Sound waterfront acting as the western border of the District, there is a risk of either a tsunami or seiche. A seiche is a standing wave in an enclosed or partially enclosed body of water. The phenomenon has been observed on lakes, reservoirs, swimming pools and bays.

## *Volcanic*

While the City of Lakewood will not likely be directly impacted by a volcanic event, it will likely be an area of refuge from citizens throughout Pierce County whose homes would be affected if Mount Rainier erupted. Another risk is that of isolation. Many of the roads utilized for commerce and travel to work may be impacted in the event of a volcanic eruption.

## Meteorological

### *Drought and WUI*

The Puget Sound region is susceptible to a Wildland Urban Interface (WUI) fire event. While individual communities have different exposures, the development of extended dry conditions in the summer months leads to increased risk. The causes of WUI fires range from weather related events to human caused.

### *Flood*

There are very few areas identified in the City of Lakewood as being at risk for floods. The areas at risk do not flood often, but during periods of heavy rain it is possible. The areas identified as being at risk of flood are the banks of Chambers Creek at the border of Lakewood and University Place, and Flett and Clover Creeks in Lakewood.

### *Severe Storm*

The City of Lakewood enjoys a very mild climate. July is on average the warmest month, with the highest recorded temperature of over 100 degrees in 2009. The summer of 2015 was one of the hottest and driest on record with more than 10 days over 90 degrees. On average, December is the coolest month with the lowest recorded temperature being five degrees in 1985. The average yearly rainfall is 39 inches and the average snowfall is eight inches. The number of days with measurable precipitation on average each year is 146, with the remaining days varying from sunny, to partly cloudy, to overcast. Severe weather is a risk to the community. Windstorms, hail, snow, and ice storms have all impacted the City of Lakewood in the past. While tornadoes have not occurred in our jurisdiction, they have taken place recently in areas nearby.

## Technological

### *Civil Disturbance*

Civil disturbances are the result of groups or individuals feeling their needs or rights are being infringed upon, either by society at large, a segment thereof, or the current overriding political system. When this results in community disruption where intervention is required to maintain public safety it has become a civil disturbance. Civil disturbance spans a wide variety of actions and includes, but is not limited to; labor unrest, strikes, civil disobedience, demonstrations, riots or rebellion. Triggers could include; racial tension, immigration status, religious conflict, unemployment, a decrease in normally accepted goods or services such as water, food, or gas shortages, or unpopular political actions. There has never been an issue with civil disturbances

within the City of Lakewood’s borders, but they have occurred in the County. Civil disturbances can affect the region’s economic vitality should businesses be forced to close or highways and other infrastructure severely impacted.

### *Cyber Attack*

- Cyber Critical Infrastructure CyberSecurity Consultants provides services to many in Pierce County including South Sound 9-1-1, Pierce County Radio Communications, Washington State Patrol, and many other local agencies. In 2019, the top threats were:
  1. Phishing/spearphishing.
  2. Ransomware.
  3. Distributed Denial-of-Service (DDoS) attack.
  4. Advance Persistent Threat.
  5. Fileless Malware.
- The top vectors or common access points were:
  1. Email attachments/links.
  2. Drive-by or download.
  3. Webserver/Web app.
  4. USB drives.
- During times of disaster there is a significant increase in scams, phishing attacks, and Advance Persistent Threat attacks to gain access to financial and cyber systems.
- In COVID-19 there was a significant increase in attacks against medical centers and collaboration platforms.

### *Energy Emergency*

A utility emergency may involve one or more of the following; natural gas, heating oil, gasoline, coal, electricity or water. These types of emergencies can create a great risk to first responders. They must mitigate the hazards so neither they, nor the public are injured. No matter what type of utility is involved, when a lack of resources disrupts business and the day-to-day lives of citizens, it can become an emergency. This is especially true during periods of inclement weather or other types of disasters.

### *Epidemic/Pandemic*

The Tacoma Pierce County Health Department informs local healthcare providers, including the EMS Division of the City of Lakewood, when there is some sort of communicable health risk in the region. The main health risk in recent years has been influenza. Many diseases that Americans have not worried about for years, if not decades have returned (such as measles). It is important for the City of Lakewood to heed these advisories to protect the health of first responders and the community alike. The impacts of epidemics/pandemics could include loss of life or short- or long-term debilitation of victims. It could create an economic impact due to missed work, which affects not only the employee, but the employer as well. A serious epidemic or pandemic would likely cause a strain on the current public health and medical resources, of which the City of Lakewood is a part. The City of Lakewood supports the local health

community in preventing an epidemic by offering necessary immunizations to employees and their families.

### *Hazardous Materials*

There are several facilities in the fire district known to store and/or utilize hazardous materials. Assessing the known locations of hazardous materials and the routes those materials travel allows for preplanning and provides an overview of the level of risk from a hazardous materials event. There are approximately 30 facilities in the City of Lakewood required to complete Tier II reporting. Tier II reports are forms that organizations and businesses throughout the United States with hazardous chemicals above certain quantities, are required by the EPA to complete. Most of these facilities are in the commercial core of Lakewood. In 2018, a large hazardous materials facility opened its doors in Woodbrook. Another hazardous material that should be recognized is meth labs. Several have been found in wooded areas and are cleaned-up by Washington Department of Ecology.

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

Attacks can be perpetrated by many different actors with different motivations, such as terrorists, violent extremists, and targeted violent offenders. All use violent tactics to harm people and/or property. The consequences of the attack depend on the tactics employed by the threat actor, such as active shooter(s) events, bombings, arson, murder, vehicle ramming, kidnapping and hostage-taking, maritime attack, and hijacking or skyjacking. The threat of terrorism and violent extremism has grown with the interconnectedness afforded by the internet. Terrorist organizations can reach anyone around the world to support or participate in attacks. It remains nearly impossible to predict violent attacks, but security and intervention measures are continuing to evolve with the use of new tactics employed by threat actors. The city could be vulnerable to such attacks.

### *Transportation Incident*

Interstate 5 runs through the City of Lakewood. The average daily vehicle count is over 120,000 vehicles per day with approximately 10 percent of these being large trucks. Of the large trucks on Interstate 5, approximately 3 percent transport a hazardous material and an additional 3 percent transport “super heavy” loads. West Pierce Fire & Rescue and the City of Lakewood responds on average to one collision per week involving a “heavy truck” on Interstate 5. As the population in our area continues to increase this will only worsen. Rail transit is also a risk in our community. There were two passenger train derailments in July and December of 2017 and there have been several freight train derailments in Pierce County over the past 10 years. There is also the potential of an aircraft incident as the runway for the airfield at Joint Base Lewis McChord borders the city. The Pierce County Ferry system is another transportation risk in the City of Lakewood.

## Changes in Development

The City of Lakewood identified strategic business locations and residential neighborhoods that were ready for redevelopment. Targeted locations for revitalization in Lakewood included

Pacific Highway, the International District, and the neighborhoods of Woodbrook, Springbrook, Kendrick, Lakeview and Lake City. In addition, the Lakewood Downtown subarea plan, will replace the existing auto-oriented development and replace it with higher quality, denser urban redevelopment to make the city's commercial core accessible and inviting to pedestrians.

The City of Lakewood has moved toward higher density mixed use developments and will continue to do so for the foreseeable future. Due to the changes in development, the population of the city has increased over the last five years according to the US Census estimates. As development continues and population continues to grow in Lakewood, the risk of identified hazards impacting the population increases. Lakewood continues to monitor the infrastructure, incorporate elements of the mitigation plan into the 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**

	<b>HAZARD</b>	<b>DECLARATION # DATE/PLACE</b>	<b>PROBABILITY/ RECURRENCE</b>	<b>MAPS, FIGURES AND TABLES</b>
<b><u>Geological</u></b>	<b><u>AVALANCHE</u></b>	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
	<b><u>EARTHQUAKE</u></b>	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
	<b><u>LANDSLIDE</u></b>	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: 20-02 – 01/20/2020 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
	<b><u>TSUNAMI</u></b>	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
	<b><u>VOLCANIC</u></b>	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 <sup>7</sup> to 10 <sup>8</sup> Cubic Meters in Volume Pierce County Eruptive Events and Lahars

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

	<b>HAZARD</b>	<b>DECLARATION # DATE/PLACE</b>	<b>PROBABILITY/ RECURRENCE</b>	<b>MAPS, FIGURES AND TABLES</b>
<b>Meteorological</b>	<b><u>CLIMATE CHANGE</u></b>	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
	<b><u>DROUGHT</u></b>	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
	<b><u>FLOOD</u></b>	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

<b>Meteorological</b>				<p>Historical Flooding in Middle Nisqually River  Upper Nisqually River  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</p>
	<b><u>SEVERE WEATHER</u></b>	<p>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</p>	<p>The recurrence rate for all types of severe storms is 5 years or less.</p>	<p>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</p>
	<b><u>WUI FIRE</u></b>	<p>EM-3372-WA Aug-Sept. 2015  State proclamations:  17-12--9/2/2017 Norse Peak Fire  15-11--6/26/2015</p>	<p>Based on information from WA DNR the probability of recurrence for WUI fire hazard to Pierce County is 5 years or less.</p>	<p>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</p>



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

	<b>HAZARD</b>	<b>DECLARATION # DATE/PLACE</b>	<b>PROBABILITY/ RECURRENCE</b>	<b>MAPS, FIGURES AND TABLES</b>
<b>Technological</b>	<b><u>ABANDONED MINES</u></b>	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, <u>The Washington State Coal Mine Map Collection: A Catalog, Index, and User’s Guide</u> , Open File Report 94-7, June 1984 Pierce County 2014 HIRA
	<b><u>CIVIL DISTURBANCE</u></b>	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
	<b><u>DAM FAILURE</u></b>	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
	<b><u>ENERGY EMERGENCY</u></b>	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
	<b><u>EPIDEMIC / PANDEMIC</u></b>	EM-3507-WA 03/12/2020	Epidemic: • 1976-2014 Ebola outbreaks • Flu occurs annually Pandemics: • 2009-2010 “Swine Flu” recurrence rate – 20 years	Individuals hoping to avoid contacting disease
	<b><u>HAZARDOUS MATERIALS</u></b>	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)
	<b><u>PIPELINE FAILURE</u></b>	Not Applicable	• Northwest Pipeline Corporation natural gas incident May 1 <sup>st</sup> 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
	<b><u>TERRORISM ACTIVE THREAT CYBER ATTACK</u></b>	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
<b><u>TRANSPORTATION ACCIDENT</u></b>	Not Applicable State proclamations: 17-13--12/18/2017 Amtrak 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

# The City of Lakewood Hazard Maps and Overview of Data Source Descriptions

## Regulated Floodplain<sup>2</sup>

### Summary:

The flood hazard map delineates the flood hazard risk to the City of Lakewood. 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 2017 shows 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<sup>3</sup>

#### 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:

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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<sup>4</sup>

### 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<sup>5</sup>

### 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 Lakewood 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.

## 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-foot 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 potential 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 are 12 reported Tier II sites identified within the City of Lakewood.

## Pipelines

### Summary:

These data sets are for the purpose of tracking all gas transmission pipelines, hazardous liquid transmission pipelines, and liquefied natural gas (LNG) plants in Pierce County. The data will be used to support the risk assessment associated with the county's liquid and gas pipeline infrastructure.

### Description:

The National Pipeline Mapping System (NPMS) is a geographic information system (GIS) dataset containing the location and selected attributes of the major gas transmission and hazardous liquid transmission pipelines and liquefied natural gas (LNG) plants operating in Pierce County. Effective October 1, 2015 pipeline and LNG plant data is contributed annually by pipeline operators as required by the Pipeline Safety: Miscellaneous Changes to Pipeline Safety Regulations (<http://www.regulations.gov/#!documentDetail;D=PHMSA-2010-0026-0054>).

A 1,000-foot buffer was placed around these identified areas for potential hazard risks related to an 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 that occurred. To reduce clutter and overlapping of data the 1,000-buffer zone was not included on the map, but data was analyzed within those perimeters.

#### Use Limitations:

The NPMS pipeline data is available to pipeline operators and federal, state, and local government officials.

Use Constraints: Neither the United States Government nor any party involved in the creation and compilation of NPMS data and maps guarantees the accuracy or completeness of the products. NPMS data should be considered no more accurate than +/-500 feet and must never be used as a substitute for contacting the appropriate local one-call center prior to digging.

Last updated: 2018-07-30.

### 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



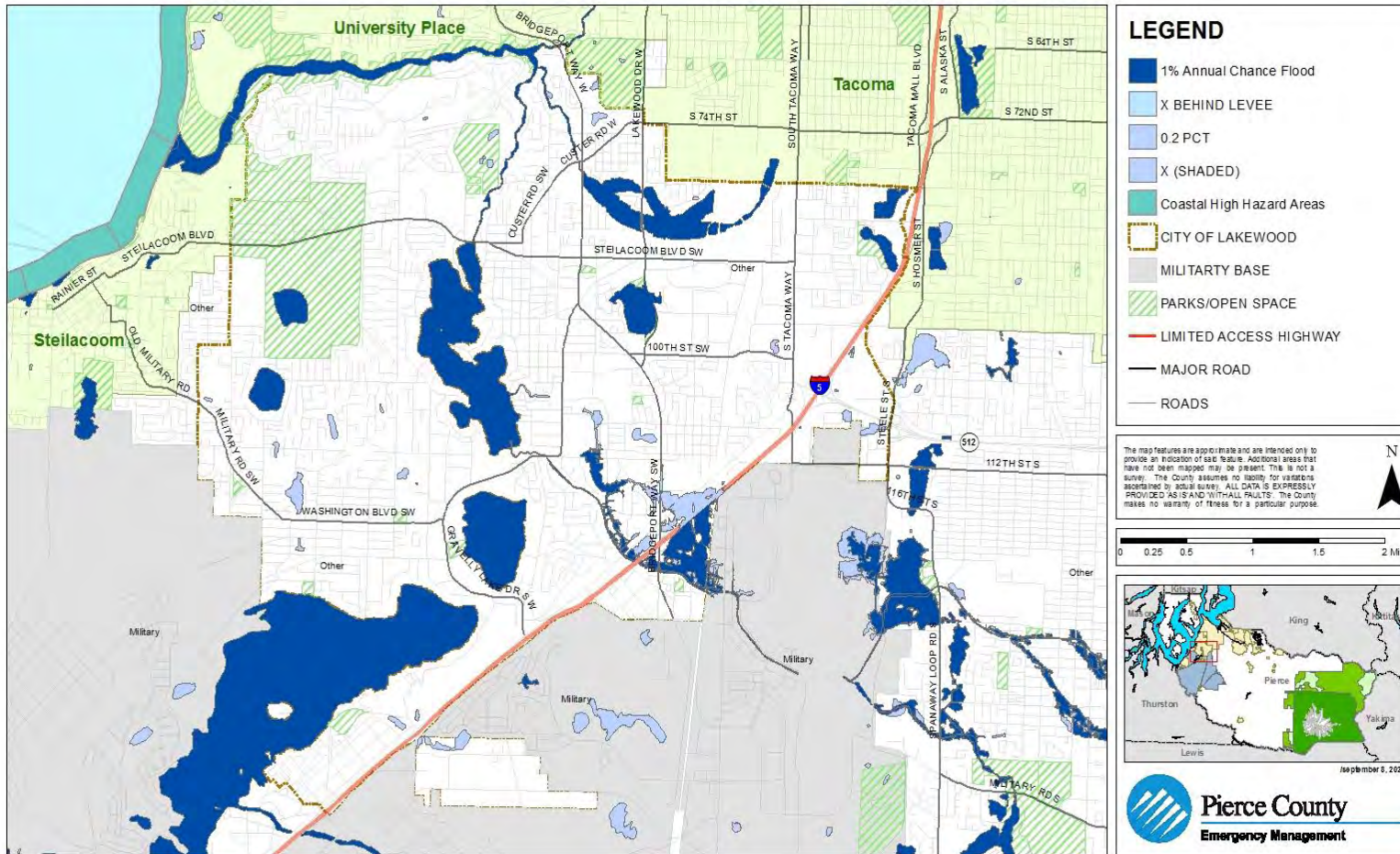
Base” value is determined for each jurisdiction based on their boundaries and then an analysis is performed to determine the risk percent of each hazard within those boundaries. The tax parcel geodatabase provides information for the square miles, parcels, land value, improved value and total assessed 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.

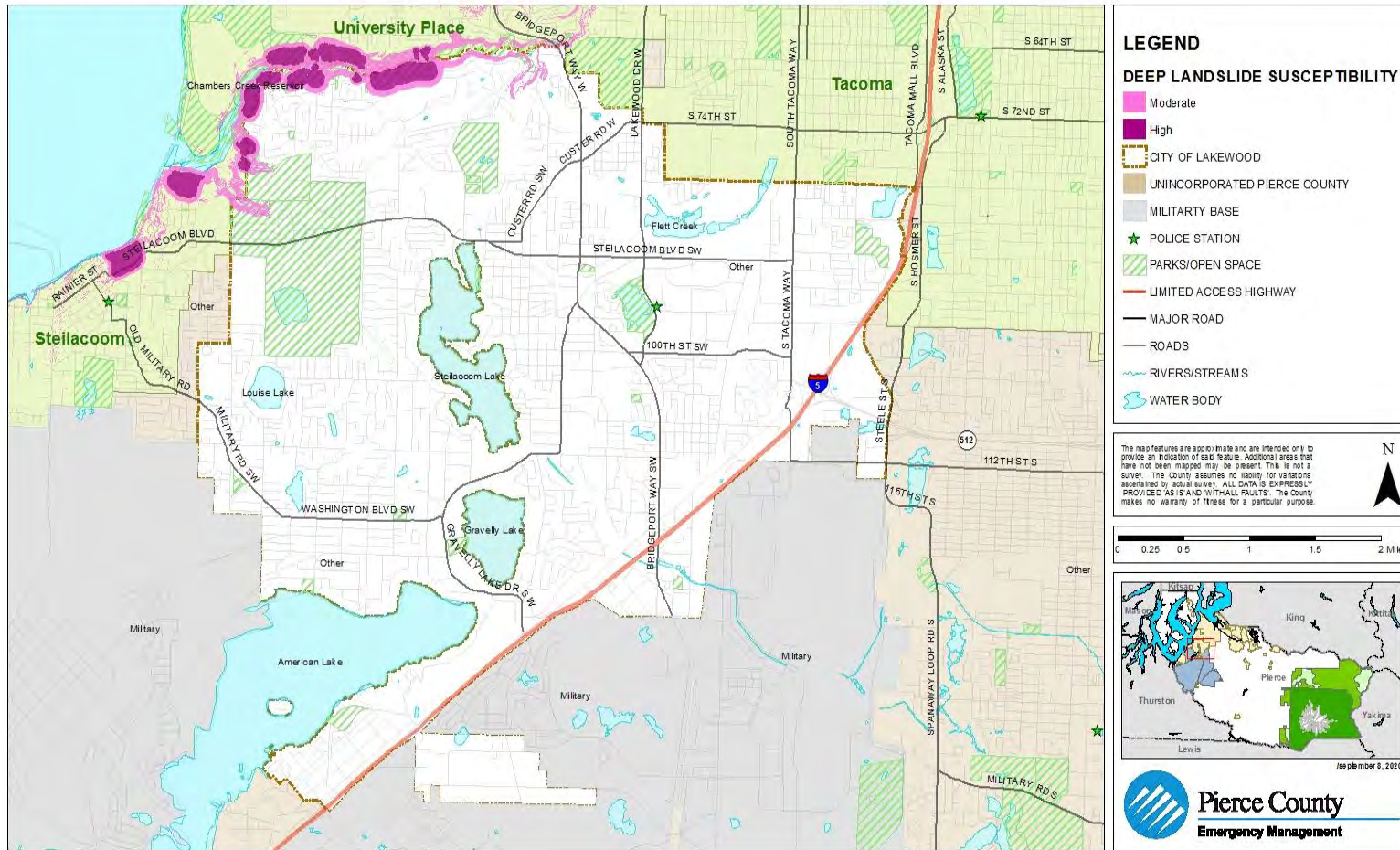
Map 4-1 City of Lakewood – Flood Hazard Map

# CITY OF LAKEWOOD - FLOOD HAZARD AREA

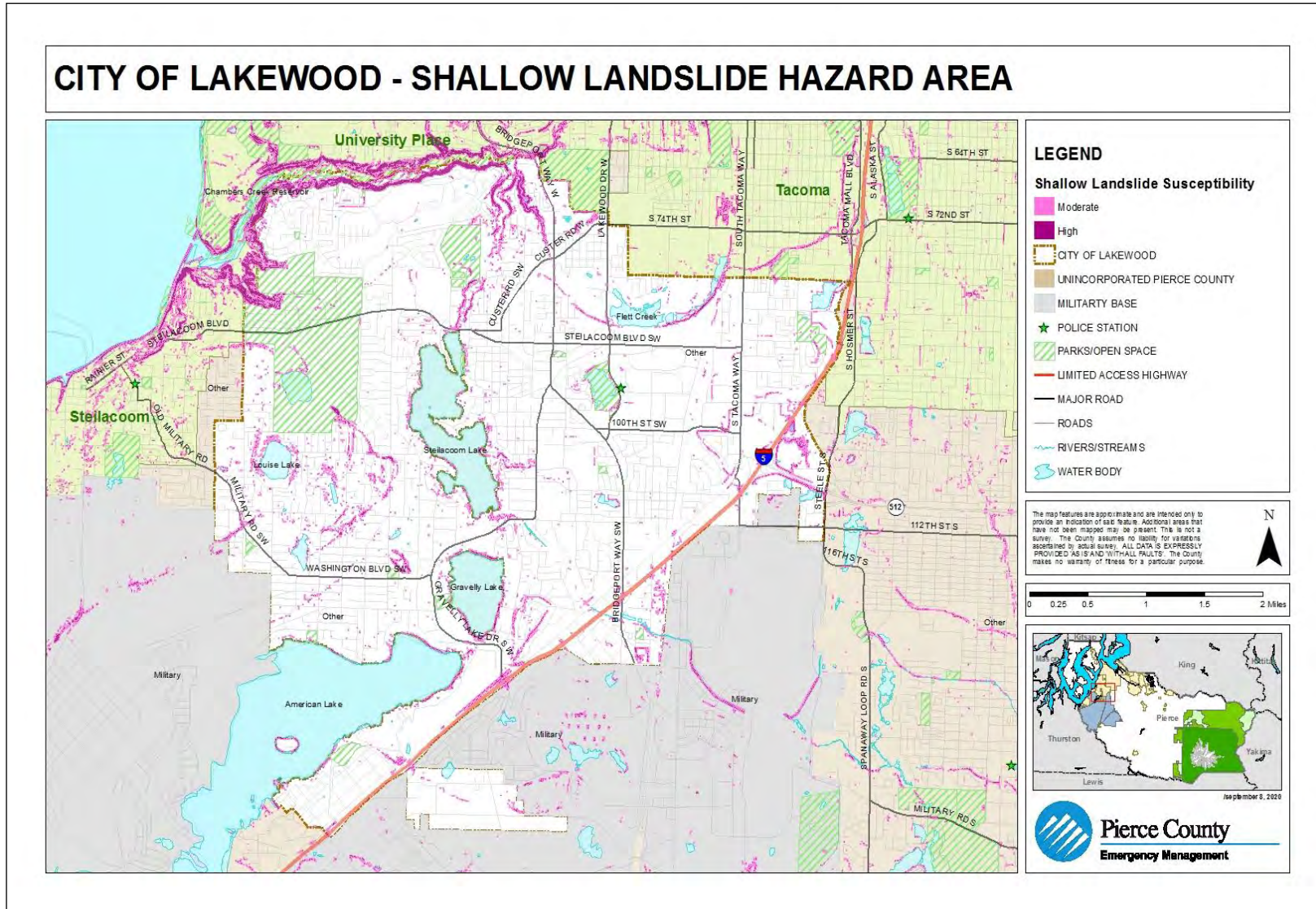


Map 4-2 City of Lakewood – Deep Landslide Hazard Map

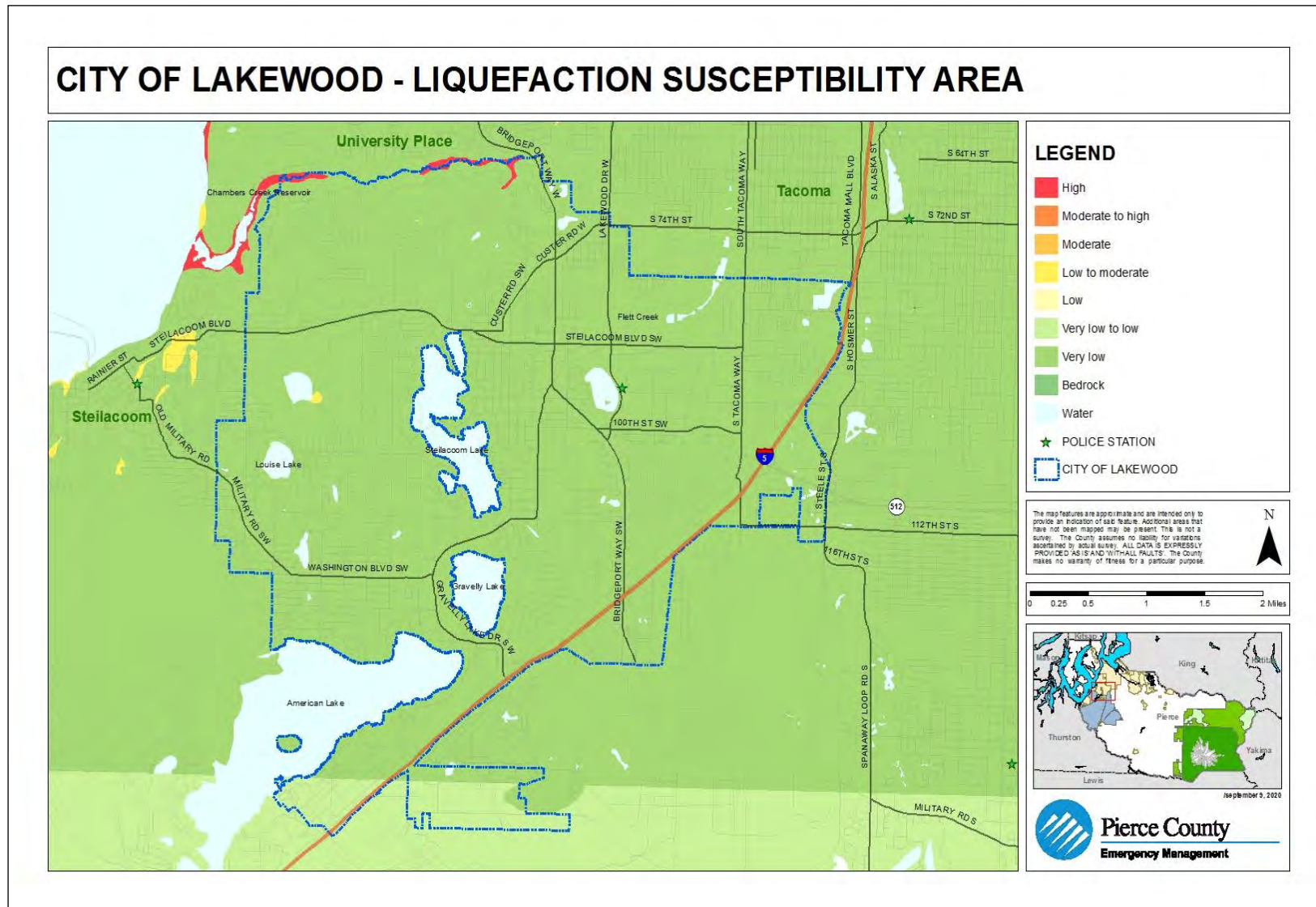
# CITY OF LAKEWOOD - DEEP LANDSLIDE HAZARD AREA



Map 4-3 City of Lakewood – Shallow Landslide Hazard Map

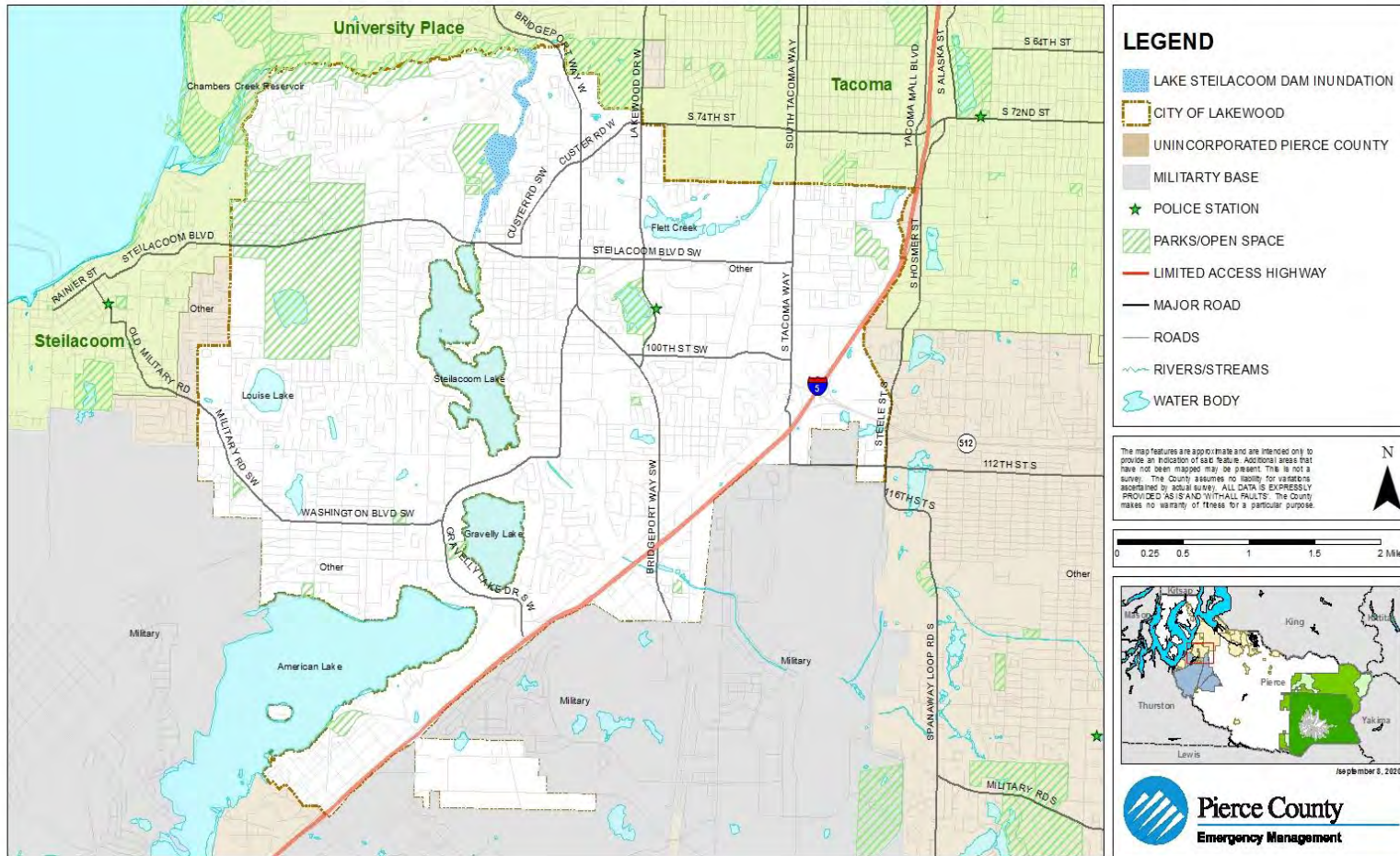


Map 4-4 City of Lakewood – Liquefaction Susceptibility Hazard Map



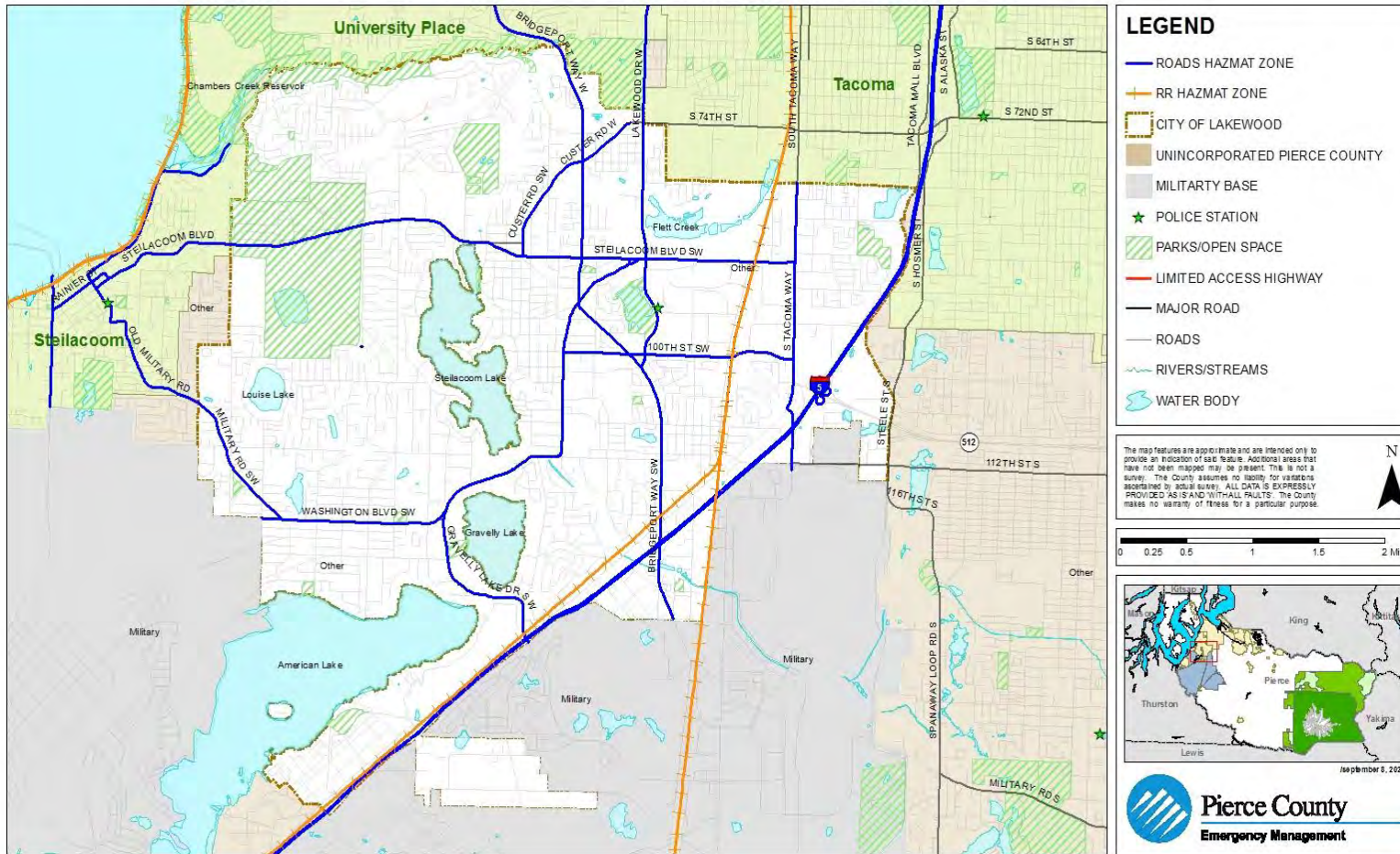
Map 4-5 City of Lakewood – Dam Failure Hazard Area Map

# CITY OF LAKEWOOD - DAM FAILURE-LAKE STEILACOOM DAM BREACH

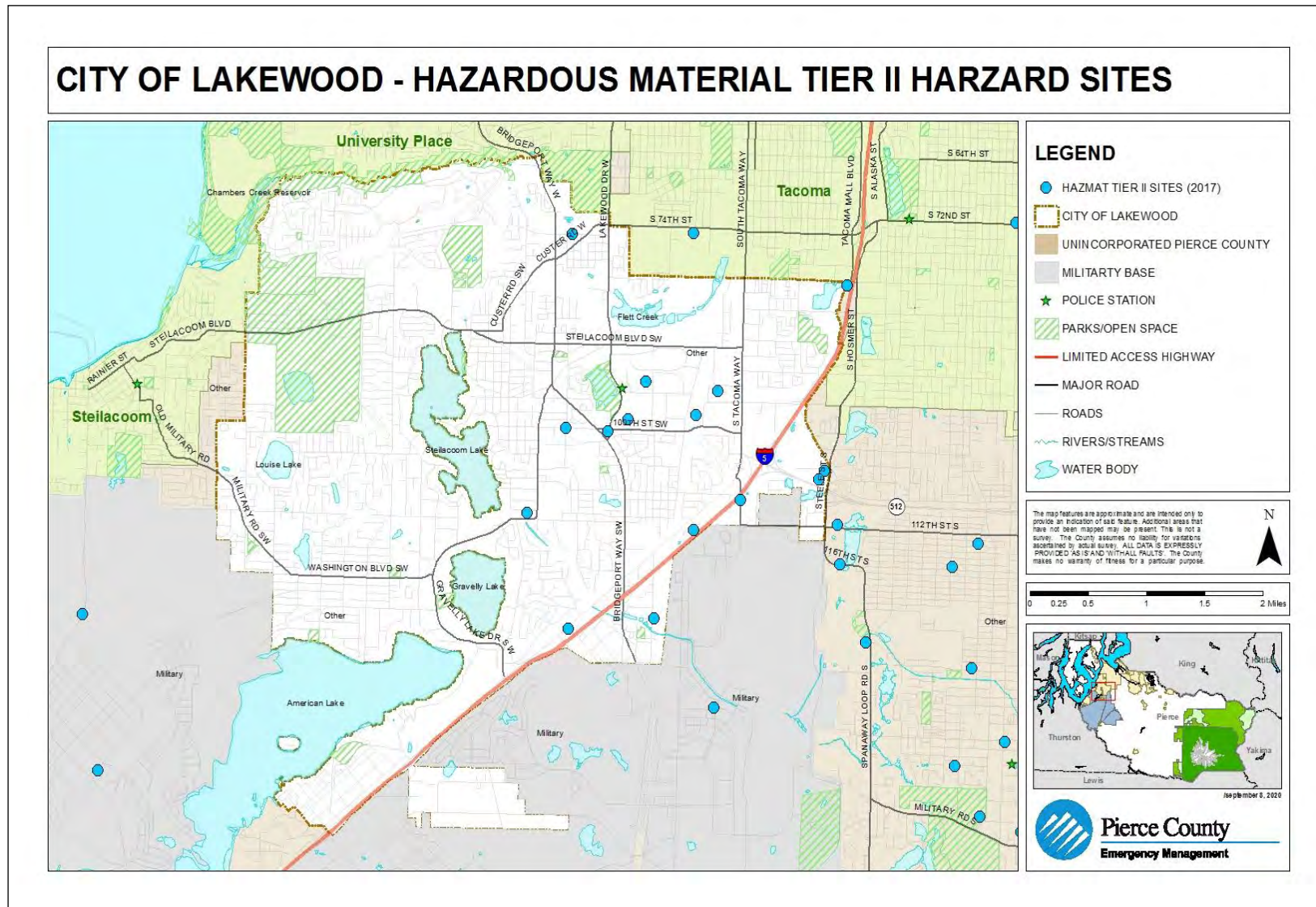


Map 4-6 City of Lakewood – Hazardous Material Hazard Area Map

# CITY OF LAKEWOOD - HAZARDOUS MATERIAL HAZARD AREA



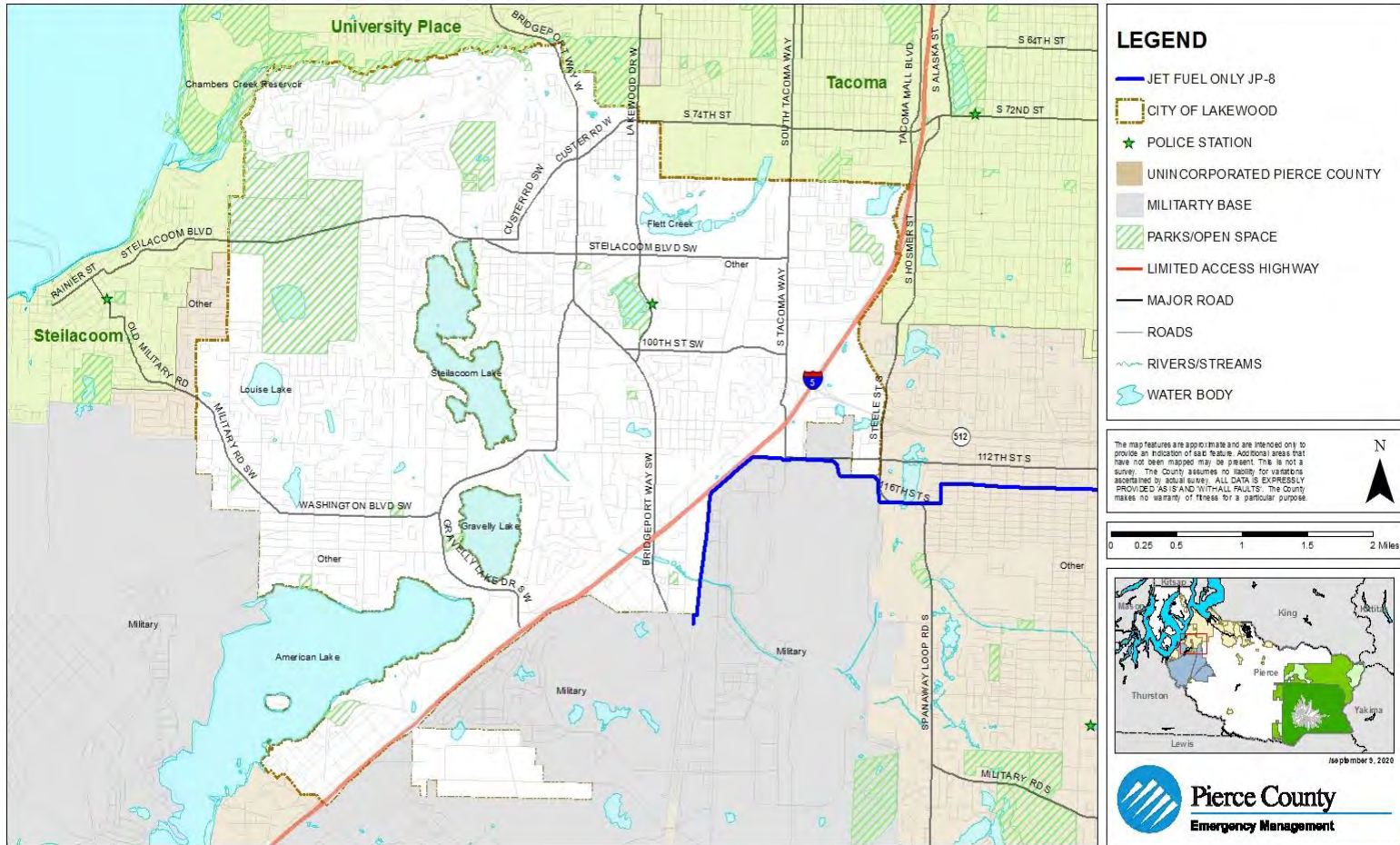
Map 4-7 City of Lakewood – Hazardous Material Tier II Sites 2017 Hazard Area Map





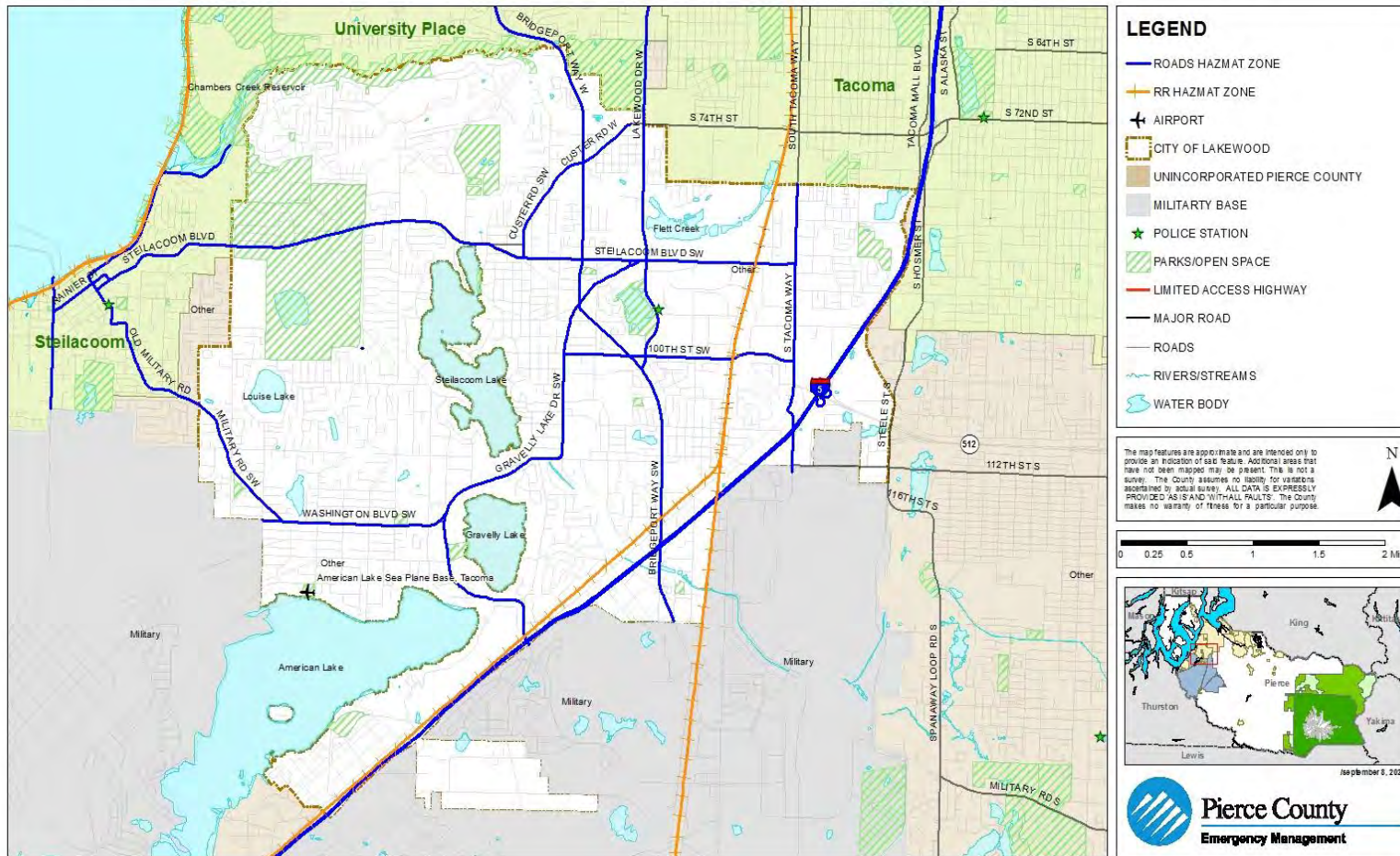
Map 4-8 City of Lakewood – Pipeline Hazard Area Map

# CITY OF LAKEWOOD - PIPELINE HAZARD AREA



Map 4-9 City of Lakewood – Transportation Emergency Area Map

# CITY OF LAKEWOOD - EMERGENCY TRANSPORTATION HAZARD AREA



# Vulnerability Analysis

**Table 4-2 Vulnerability Analysis: General Exposure**

THREAT	AREA (SQ MI)		PARCELS		
	Total	% Base	Total	% Base	
<b>BASE</b>	<b>14.32</b>	<b>100%</b>	<b>17,583</b>	<b>100%</b>	
<i>Geological</i>	Avalanche	NA	NA	NA	
	Liquefaction Susceptibility	.16	1.1%	27	3.2%
	Landslide-Deep	.97	6.7%	567	.7%
	Landslide-Shallow	6.83	47.7%	3,749	21.3%
	Tsunami	NA	NA	NA	NA
	Volcanic <sup>6</sup>	14.32	100%	17,583	100%
<i>Meteorological</i>	Drought <sup>7</sup>	14.32	100%	17,583	100%
	Flood	3.91	27.3%	1,457	8.3%
	Severe Weather	14.32	100%	17,583	100%
	WUI Fire <sup>8</sup>	Insufficient GIS data to draw numbers from at this time or map susceptibility			
<i>Technological</i>	Abandoned Mines <sup>9</sup>	NA	NA	NA	NA
	Civil Disturbance <sup>10</sup>	14.32	100%	17,583	100%
	Dam Failure <sup>11</sup>	.27	1.9%	131	.75
	Energy Emergency <sup>12</sup>	14.32	100%	17,583	100%
	Epidemic <sup>13</sup>	14.32	100%	17,583	100%
	Hazardous Material <sup>14</sup>	11.21	78.3%	13,192	75%
	Pipeline Hazard <sup>15</sup>	.46	3.2%	142	.81%
	Terrorism <sup>16</sup> / Active Threat	14.32	100%	17,583	100%
Transportation Accidents <sup>17</sup>	11.21	78.3%	13,192	75%	

**Table 4-3 Vulnerability Analysis: Population Exposure<sup>18</sup>**

THREAT <sup>2</sup>	POPULATION			SPECIAL POPULATIONS (OF TOTAL EXPOSED POPULATION)			
	Total	% Base	Density (pop/sq mi)	65+ yrs		20- yrs	
				#	%	#	%
<b>BASE</b>	<b>58,163</b>	<b>100%</b>	<b>4,061</b>	<b>7,735</b>	<b>10%</b>	<b>14,646</b>	<b>100%</b>
<i>Geological</i>	Avalanche	NA	NA	NA	NA	NA	NA
	Liquefaction Susceptibility	1,375	2%	8,480	345	4%	239
	Landslide-Deep	5,369	9.2%	5,558	998	12.9%	1,072
	Landslide-Shallow	36,396	62.6%	5,328	5,245	67.8%	8,874
	Tsunami	NA	NA	NA	NA	NA	NA
	Volcanic	58,163	100%	4,061	7,735	10%	14,646
<i>Meteorological</i>	Drought	58,163	100%	4,061	7,735	10%	14,646
	Flood	11,426	19.6%	2,925	1,517	20%	2,992
	Severe Weather	58,163	100%	4,061	7,735	10%	14,646
	WUI Fire	Insufficient GIS data to draw numbers from at this time or map susceptibility					
<i>Technological</i>	Abandoned Mines	NA	NA	NA	NA	NA	NA
	Civil Disturbance	58,163	100%	4,061	7,735	10%	14,646
	Dam Failure	740	1%	2,737	170	2%	132
	Energy Emergency	58,163	100%	4,061	7,735	10%	14,646
	Epidemic	58,163	100%	4,061	7,735	10%	14,646
	Hazardous Material	49,660	85.4%	4,430	6,559	84.8%	12,623
	Pipeline	2,726	5%	5,870	151	2%	853
	Terrorism / Active Threat	58,163	100%	4,061	7,735	10%	14,646
	Transportation Accidents	49,660	85.4%	4,430	6,559	84.8%	12,623

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

THREAT <sup>2</sup>		LAND VALUE			IMPROVED VALUE			TOTAL ASSESSED VALUE		
		Total (\$)	% Base	Avg. Value (\$)	Total (\$)	% Base	Avg. Value (\$)	Total (\$)	% Base	Avg. Value (\$)
<b>BASE</b>		<b>\$3,841,746,300</b>	<b>100%</b>	<b>\$218,492</b>	<b>\$5,299,393,100</b>	<b>100%</b>	<b>\$301,424</b>	<b>\$9,141,685,400</b>	<b>100%</b>	<b>\$519,916</b>
<i>Geological</i>	<b>Avalanche</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
	<b>Liquefaction Susceptibility</b>	\$3,869,600	.1%	\$143,319	\$3,937,400	.1%	\$145,830	\$7,807,000	.1%	\$289,148
	<b>Landslide-Deep</b>	\$85,692,000	2.2%	151,132	\$212,591,900	4%	\$374,942	\$298,283,900	3.3%	\$5,369
	<b>Landslide-Shallow</b>	\$1,358,502,00	35.4%	\$362,364	\$2,001,920,900	37.8%	\$533,988	\$3,360,422,900	36.8%	\$896,352
	<b>Tsunami</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
	<b>Volcanic</b>	\$3,841,746,300	100%	\$218,492	\$5,299,393,100	100%	\$301,424	\$9,141,685,400	100%	\$519,916
<i>Meteorological</i>	<b>Drought</b>	\$3,841,746,300	100%	\$218,492	\$5,299,393,100	100%	\$301,424	\$9,141,685,400	100%	\$519,916
	<b>Flood</b>	\$789,503,400	20.6%	\$541,869	\$831,874,700	15.7%	\$570,950	\$1,621,378,100	18%	\$1,112,820
	<b>Severe Weather</b>	\$3,841,746,300	100%	\$218,492	\$5,299,393,100	100%	\$301,424	\$9,141,685,400	100%	\$519,916
	<b>WUI Fire</b>	Insufficient GIS data to draw numbers from at this time or map susceptibility								
<i>Technological</i>	<b>Abandoned Mines</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
	<b>Civil Disturbance</b>	\$3,841,746,300	100%	\$218,492	\$5,299,393,100	100%	\$301,424	\$9,141,685,400	100%	\$519,916
	<b>Dam Failure</b>	\$29,033,900	.76%	\$221,633	\$26,556,100	.50%	\$202,718	\$55,590,00	.61%	\$424,351
	<b>Energy Emergency</b>	\$3,841,746,300	100%	\$218,492	\$5,299,393,100	100%	\$301,424	\$9,141,685,400	100%	\$519,916

	<b>Epidemic</b>	\$3,841,746,300	100%	\$218,492	\$5,299,393,100	100%	\$301,424	\$9,141,685,400	100%	\$519,916
	<b>Hazardous Material</b>	\$3,046,230,400	79.3%	\$230,915	\$4,228,726,000	79.8%	\$320,552	\$7,274,956,400	79.6%	\$551,467
	<b>Pipeline Hazard</b>	\$87,071,600	2.27%	613,180	\$96,598,400	1.82%	\$680,270	\$183,670,00	2.01%	\$1,293,451
	<b>Terrorism / Active Threat</b>	\$3,841,746,300	100%	\$218,492	\$5,299,393,100	100%	\$301,424	\$9,141,685,400	100%	\$519,916
	<b>Transportation Accidents</b>	\$3,046,230,400	79.3%	\$230,915	\$4,228,726,000	79.8%	\$320,552	\$7,274,956,400	79.6%	\$551,467

**Table 4-5a Consequence Analysis Chart – Geological<sup>1920</sup>**

THREAT		CONSEQUENCE	YES OR NO
<i>Geological</i>	<b>Avalanche</b>	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	
	<b>Earthquake</b>	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	
	<b>Landslide</b>	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	No
	Impact to Reputation or Confidence in Jurisdiction	No	
	<b>Tsunami</b>	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		
<b>Volcanic<sup>21</sup></b>	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	No	
Impact to Reputation or Confidence in Jurisdiction	No		

**Table 4-5b Consequence Analysis Chart – Meteorological**

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

**Table 4-5c Consequence Analysis Chart – Technological<sup>22</sup>**

THREAT		CONSEQUENCE	YES OR NO
<i>Technological</i>	<b>Abandoned Mines</b>	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
	<b>Civil Disturbance</b>	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	No
		Impact to the Jurisdiction Economic Condition	No
	<b>Dam Failure</b>	Impact to Reputation or Confidence in Jurisdiction	Yes
		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



		Impact to Reputation or Confidence in Jurisdiction	No
<b>Energy Emergency</b>		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	No
		Impact to the Jurisdiction Economic Condition	Yes
		Impact to Reputation or Confidence in Jurisdiction	Yes
<b>Epidemic</b>		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
<b>Hazardous Materials</b>		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
<b>Pipeline Hazards</b>		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
<b>Terrorism</b>		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	No
		Impact to the Jurisdiction Economic Condition	Yes
		Impact to Reputation or Confidence in Jurisdiction	Yes
<b>Transportation Accident</b>		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	No
		Impact to Reputation or Confidence in Jurisdiction	Yes

## Endnotes

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<sup>1</sup> A THIRA expands on the existing hazard identification and risk assessment and provides a comprehensive approach for assessing risks and associated impacts using a scenario to assess a range of capabilities.

<sup>2</sup> 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.

<sup>3</sup> 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.

<sup>4</sup> 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.

<sup>5</sup> 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](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.

<sup>6</sup> 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.

<sup>7</sup> 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.

<sup>8</sup> 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.

<sup>9</sup> 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.

<sup>10</sup> 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.

<sup>11</sup> The definition of Dam Failure comes from the 2020 Pierce County HIRA: A dam is any “barrier built across a watercourse for impounding water.”<sup>11</sup> 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.

<sup>12</sup> 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.

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<sup>13</sup> 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.

<sup>14</sup> 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.

<sup>15</sup> 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.

<sup>16</sup> 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.

<sup>17</sup> 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.

<sup>18</sup> 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.

<sup>19</sup> 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.

<sup>20</sup> 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.

<sup>21</sup> 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.

<sup>22</sup> 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 LAKEWOOD  
MITIGATION STRATEGY SECTION

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## 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 calculated risk posed to the community and the relative need to apply the mitigation strategy. Specifically, we introduced a new strategy for Transportation Accidents as there have been several rail accidents in the vicinity and a new high-speed rail service is planned to re-start operations within 2020. Some measures reflect long term progress. For instance, our Road Maintenance and Operations Shop was able to be outfitted with a generator switch and electrical connections during the previous plan period. In this next plan period, we will work to purchase and install the actual generator. 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 Lakewood Mitigation Strategy Matrix**

Implementation Mechanism	Mitigation Measure ( <i>Hazard(s)</i> ) <sup>1</sup>	Lead Jurisdiction(s) / Department(s)	Timeline (years)	Plan Goals					
				Life and Property	Operations Continuity	Partnerships	Natural Resources	Preparedness	Sustainable Economy
<b>Startup</b>	1. Existing Mitigation Actions ( <i>E,L,V,D,F,WUI,SW,MM</i> )	Lakewood - Administration	Ongoing	✓	✓	✓	✓	✓	✓
	2. Plan Maintenance ( <i>E,L,V,D,F,WUI,SW,MM</i> )	Lakewood - Administration	Ongoing	✓	✓	✓	✓	✓	✓
<b>HMF</b>	1. Pierce County Hazard Mitigation Forum ( <i>E,L,V,D,F,WUI,SW,MM</i> )	PC DEM; Lakewood - Administration	Ongoing	✓	✓	✓	✓	✓	✓
	1. Complete, Distribute, Train on a Multi-Agency response to Transportation Accident Plan (MM)	Lakewood	1 to 2	✓	✓	✓		✓	
	2. Purchase and Install generators at Road Operations & Parks Maintenance Shops ( <i>E,SW,MM</i> )	Lakewood – Public Works Road Operations	5	✓	✓			✓	✗
	3. Identify Critical Routes and Determine Alternate Routes ( <i>E,F,SW</i> )	Lakewood – Public Works Engineering	5	✓	✓	✓			
	4. Radio Communications Set-Up Between all City-Owned Vehicles, Buildings, and EOC ( <i>E,F,SW</i> )	Lakewood	5	✓	✓				
	5. Evacuation Plan Template for Multiple Events ( <i>E,V,F,SW,WUI,MM</i> )	Lakewood - Police with West Pierce Fire & Rescue	1 to 2	✓	✓	✓			—
	6. Seismic Review and Retrofit of all Bridges, Culverts, and Retaining Walls within and Through the City ( <i>E,F,SW</i> )	Lakewood – Public Works Engineering	5	✓		✓			↘
	7. Battery Back-Up (Uninterrupted Power Supply (UPS)) for All Major Traffic Signals ( <i>E,F,SW</i> )	Lakewood – Public Works Road Operations	5	✓	✓				
	8. Complete, Distribute, Train Staff on Continuity of Operations Plan (COOP) ( <i>E,V,F,WUI,SW,MM</i> )	Lakewood	Ongoing	✓	✓	✓		✓	↘
	9. Essential Records Protection ( <i>E,V,F,SW,WUI,MM</i> )	Lakewood - IT and City Clerk	Ongoing	✓	✓	□			↘
	10. Capability Identification and Evaluation ( <i>E,L,V,D,F,WUI,SW,MM</i> )	Lakewood	Ongoing	✓	✓	✓	✓	✓	↘
	11. Illicit Discharge and Spill Response ( <i>MM</i> )	Lakewood – Public Works Engineering	Ongoing	✓	□	✓	✓	✓	□
	12. Develop Mutual Aid Agreements with Other Public Agencies to Support in Roadway Clearing and Repair ( <i>E,F,SW</i> )	Lakewood – Public Works Road Operations	Ongoing	✓	✓	✓			
	13. Significant Tree Pruning and Maintenance ( <i>E,D,SW</i> )	Lakewood – Public Works Road Operations	Ongoing	✓	✓		✓	✓	
	14. Utility Coordination ( <i>E,L,V,F,SW,WUI,MM</i> )	Lakewood	Ongoing	✓	✓	✓			

Implementation Mechanism	Mitigation Measure ( <i>Hazard(s)</i> ) <sup>1</sup>	Lead Jurisdiction(s) / Department(s)	Timeline (years)	Plan Goals					
				Life and Property	Operations Continuity	Partnerships	Natural Resources	Preparedness	Sustainable Economy
	15. Accurate Mapping of All Roadways- Electronic and Hard Copy ( <i>E,L,F,SW,MM</i> )	Lakewood - GIS	Ongoing	✓	✓				
	16. Traffic Control Devices for Setting Blockades and Detour Routes ( <i>E,L,F,SW,MM</i> )	Lakewood – Public Works Road Operations	Ongoing	✓	✓				
	17. Generator Retrofit of Park Operations Center ( <i>E,SW,MM</i> )	Lakewood - Parks	Complete	✓	✓			✓	
	18. Structural Retrofit of Park Operations Center ( <i>E,SW</i> )	Lakewood – Parks	Complete	✓	✓			✓	
	19. Create an Emergency Operations Center in Lakewood City Hall ( <i>E,V,F,SW,WUI,MM</i> )	Lakewood - Emergency Management	Complete	✓	✓	✓		✓	✓
	20. National Flood Insurance Program ( <i>F</i> )	Lakewood (Community Development); PC PWU	Complete	✓	✓	✓	✓	✓	☐
<b><u>Public Education</u></b>	1. Flood Preparedness and Response ( <i>F</i> )	Lakewood – Public Works	Ongoing	✓	✓	✓	✓		
	2. Disaster Preparedness Training ( <i>E,V,F,SW,WUI,MM</i> )	Lakewood - HR and PC Health Department	Ongoing	✓	✓				

# Startup Mitigation Measures

---

## Existing Mitigation Actions

**Hazards:** E, L, V, D, F, WUI, SW<sup>1</sup>, MM<sup>2</sup>

The City of Lakewood will integrate the hazard mitigation plan into existing plans, ordinances, and programs to dictate land uses within the jurisdiction. Further, Lakewood 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 Lakewood - Administration.
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			

*Origin*

Previous Plan	Current Plan
X	X

---

## Plan Maintenance

**Hazards:** E, L, V, D, F, WUI, SW<sup>1</sup>, MM<sup>2</sup>

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

1. **Goal(s) Addressed** = Protect Life and Property; Promote A Sustainable Economy; Ensure Continuity of Operations; Increase Public Preparedness for Disasters; Preserve or Restore Natural Resources; Establish and Strengthen Partnerships for Implementation.
2. **Cost of Measure** = TBD
3. **FUNDING SOURCE AND SITUATION** = FUNDING COULD BE OBTAINED THROUGH LOCAL BUDGET.
4. **Lead Jurisdiction(s)** = City of Lakewood - Administration
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			

*Origin*

Previous Plan	Current Plan
X	X

# Hazard Mitigation Forum

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## Pierce County Hazard Mitigation Forum

**Hazards:** E, L, V, D, F, WUI, SW<sup>1</sup>, MM<sup>2</sup>

Lakewood 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 Lakewood
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			

*Origin*

Previous Plan	Current Plan
X	X

# City Government Mitigation Measures

---

## Complete, Distribute, and Train on a Multi-Agency response to Transportation Accident Plan

**Hazards:** MM<sup>2</sup>

Lakewood will develop a Multi-Agency plan for responding to transportation accidents within the City. Sometime during 2020, high-speed passenger rail service is expected to resume along the existing tracks, which cut through the heart of the commercial and commuting corridor of the City. Interstate 5, with large volumes of commercial vehicle traffic, also travels through the City. Lakewood will work with our response partners to develop a plan for coordinating a response to large-scale transportation accidents using NIMS practices.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Establish and Strengthen Partnerships for Implementation, Increase Public Preparedness for Disasters, Promote a Sustainable economy.
2. **Cost of Measure** = TBD
3. **FUNDING SOURCE AND SITUATION** = FUNDING COULD BE OBTAINED THROUGH LOCAL BUDGET OR GRANTS.
4. **Lead Jurisdiction(s)** = City of Lakewood
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
Comments			
This is a new mitigation strategy based on recent transportations accidents that have been experienced in the area.			

*Origin*

Previous Plan	Current Plan
	X

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## Purchase and Install Generators at Road Operations & Parks Maintenance Shops

**Hazards:** E, SW<sup>1</sup> MM<sup>2</sup>

Purchase and install generators at the Road Operations and Parks Maintenance shops so in the event power is lost, the operations center will have power to coordinate Road Operations activities. In addition the fuel for all Road Operations and Parks vehicles and equipment is located at the Parks Maintenance shop, which needs to power to operate. Both of these functions are critical to the City’s ability to respond to natural and man-made disasters, particularly those affecting our critical infrastructure.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Increase Public Preparedness for Disasters, Promote a Sustainable economy.
2. **Cost of Measure** = \$20,000
3. **Funding Source and Situation** = There is no current funding source for tis strategy.
4. **Lead Jurisdiction(s)** = City of Lakewood
5. **Timeline** = Short-Term
6. **Benefit** = Road Operations and Parks Operations
7. **Life of Measure** = 30 years
8. **Community Reaction** = the proposal is likely to be endorsed by the entire community.

*Status Update: 2020 – 2025 Edition*

Complete	Ongoing	Partially Complete	Deferred
Comments			
This is a new strategy. Under the previous plan, we were able to complete the electrical wiring necessary to attach generators to the facilities. In the next five years, we hope to install the actual generators.			

*Origin*

Previous Plan	Current Plan
	X

## Identify Critical Routes and Determine Alternate Routes

**Hazards:** E, F, SW<sup>1</sup>

The City is unique with its bodies of water and neighborhoods surrounded by other jurisdictional boundaries – effectively making them islands with one route in and out. Determine these isolated areas and determine alternate access routes (e.g. via through private property, via Fort/Base lands, etc.) and develop agreements as needed that can be implemented during an emergency.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Establish and Strengthen Partnerships for Implementation.
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 Lakewood – Public Works
5. **Timeline** = Long-term
6. **Benefit** = Traveling public and/or emergency vehicles over specific route.
7. **Life of Measure** = 100 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			
<b>This was in our last plan but was deferred. We want to include in the new plan.</b>			

*Origin*

Previous Plan	Current Plan
X	X

Radio Communications Set-Up Between all City-Owned Vehicles, Buildings, and EOC

**Hazards:** E, F, SW<sup>1</sup>

Provide radios for back-up radio communication (when all of the cell phones go down). Determine if communication can also be set up with other public agencies providing mutual aid.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants and state or federal grants.
4. **Lead Jurisdiction(s)** = City of Lakewood – Public Works
5. **Timeline** = Short-term
6. **Benefit** = Traveling public and/or emergency vehicles over specific route.
7. **Life of Measure** = 100 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			
<b>This was in our last plan but was deferred. We want to include in the new plan.</b>			

*Origin*

Previous Plan	Current Plan
X	X

Evacuation Plan Template for Multiple Events



**Hazards:** E, V, F, WUI, SW<sup>1</sup>, MM<sup>2</sup>

The police department will develop an SOP that will outline recommended techniques and procedures for conducting an evacuation of an area or complex in the event of different types of emergencies such as a train derailment, active shooter, bomb threat, or other events.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Establish and Strengthen Partnerships for Implementation.
2. **Cost of Measure** = Staff Time
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s)** = City of Lakewood - Police Department and Lakewood Fire
5. **Timeline** = Ongoing
6. **Benefit** = Residents and businesses of Lakewood, visitors and regional partners
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 was in our last plan but was deferred. We want to include in the new plan.			

*Origin*

Previous Plan	Current Plan
X	X

Seismic Review and Retrofit of all Bridges, Culverts, and Retaining Walls within and Through the City

**Hazards:** E, F, SW<sup>1</sup>

All City bridges, culverts, and wall structures will be reviewed for seismic vulnerability and retrofitted as needed. These include WSDOT and RR bridges that are within City’s jurisdictional boundaries.

1. **Goal(s) Addressed** = Protect Life and Property, Establish and Strengthen Partnerships for Implementation; Promote a Sustainable Economy.
2. **Cost of Measure** = TBD
3. **FUNDING SOURCE AND SITUATION** = FUNDING COULD BE OBTAINED THROUGH LOCAL BUDGETS GRANTS AND FEDERAL BRAC FUNDING.
4. **Lead Jurisdiction(s)** = City of Lakewood – Public Works
5. **Timeline** = Long-Term
6. **Benefit** = Traveling public and/or emergency vehicles over specific route.
7. **Life of Measure** = 100 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			
Load rating of all bridges complete. Now we need seismic review of each bridge.			

*Origin*

Previous Plan	Current Plan
X	X

Battery Back-Up (Uninterrupted Power Supply (UPS)) for All Major Traffic Signals

**Hazards:** E, F, SW<sup>1</sup>

Provide UPS (battery back-up) for all major traffic signals in the City.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budgets or grants and federal ITS grants.
4. **Lead Jurisdiction(s)** = City of Lakewood – Public Works
5. **Timeline** = Long-term
6. **Benefit** = Traveling public and/or emergency vehicles over specific routes.
7. **Life of Measure** = 100 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
		30% complete	
Comments			
Work in progress. Want to keep in new plan.			

*Origin*

Previous Plan	Current Plan
X	X

Complete, Distribute and Train Staff on Continuity of Operations Plan (COOP)

**Hazards:** E, V, F, WUI, SW<sup>1</sup>, MM<sup>2</sup>

The City of Lakewood will develop a COOP that enables staff to prepare for an emergency or disaster situation.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Establish and Strengthen Partnerships for Implementation; Increase Public Preparedness for Disasters; Promote a Sustainable Economy.
2. **Cost of Measure** = Staff time and materials
3. **Funding Source and Situation** = Funding could be obtained through local budget.
4. **Lead Jurisdiction(s)** = City of Lakewood
5. **Timeline** = Ongoing
6. **Benefit** = Residents and businesses of Lakewood, visitors and regional partners
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			
<b>We completed our COOP revision in June 2019. We will now move forward with training staff, exercising it, and then adjusting the plan.</b>			

*Origin*

Previous Plan	Current Plan
X	X

## Essential Records Protection

**Hazards:** E, V, F, WUI, SW<sup>1</sup>, MM<sup>2</sup>

Protect and/or provide a safe backup of essential records. This will be accomplished by developing an essential records protection schedule and records prevention response and recovery procedures.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Promote a Sustainable Economy.
2. **Cost of Measure** = Staff time and possible storage fees
3. **Funding Source and Situation** = Funding could be obtained through local budget general fund or grants or Washington State Archives.
4. **Lead Jurisdiction(s)** = City of Lakewood - General Services and City Clerk
5. **Timeline** = Short-term
6. **Benefit** = City Hall employees, Community and citizens, regional partners
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			

**Efforts to protect paper records have made progress. There has been substantial progress in upgrading and hardening the electronic storage facilities for essential records. We are close to having two separate electronic servers, in two different locations constantly backing each other up, providing full redundancy.**

*Origin*

Previous Plan	Current Plan
X	X

## Capability Identification and Evaluation

**Hazards:** E, L, V, D, F, WUI, SW<sup>1</sup>, MM<sup>2</sup>

Lakewood 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.

- Goal(s) Addressed** = N/A. Goals addressed are contingent upon the mitigation measures resulting from this priority.
- Cost of Measure** = TBD
- FUNDING SOURCE AND SITUATION** = FUNDING COULD BE OBTAINED THROUGH LOCAL BUDGET OR GRANTS.
- Lead Jurisdiction(s)** = City of Lakewood
- Timeline** = Short-term
- Benefit** = City-Wide
- Life of Measure** = Perpetual
- 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			
<b>Ongoing strategy with constant updates.</b>			

*Origin*

Previous Plan	Current Plan
X	X

## Illicit Discharge and Spill Response

**Hazards:** MM<sup>2</sup>

- Have trained personnel and materials on hand to respond to reports of illicit discharges and spills to surface and groundwater in the city.
  - Have contact information for spill response personnel from the state Department of Ecology and Pierce County.
  - Educate the public and target audiences (e.g., businesses with high potential for spills) regarding the impacts and consequences of illicit discharges.
1. **Goal(s) Addressed** = Protect Life and Property; Increase Public Preparedness for Disasters; Preserve or Restore Natural Resources; Establish and Strengthen Partnerships for Implementation.
  2. **Cost of Measure** = TBD
  3. **Funding Source and Situation** = Funding could be obtained through local budget or grants and state or federal grants.
  4. **Lead Jurisdiction(s)** = City of Lakewood - Public Works Department
  5. **Timeline** = Ongoing
  6. **Benefit** = Water bodies and groundwater in Lakewood/Citizens of Lakewood
  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			
Continual strategy.			

*Origin*

Previous Plan	Current Plan
X	X

## Develop Mutual Aid Agreements with Other Public Agencies to Support in Roadway Clearing and Repair

**Hazards:** E, F, SW<sup>1</sup>

The City has no equipment of its own at this time. Therefore, the City would need outside assistance of equipment and operators to assist in clearing and repairing roadways. Other public agencies within Lakewood have readily available equipment and could be utilized for local support. For example: Lakewood Water District, Lakeview Light and Power, Pierce County Public Works, WSDOT, Camp Murray, Fort Lewis.

1. **Goal(s) Addressed** = Protect life and property; Ensure continuity of operations; Establish and strengthen partnerships for implementation.
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 Lakewood – Public Works
5. **Timeline** = Short-term
6. **Benefit** = Traveling public and/or emergency vehicles over specific route.

- 7. **Life of Measure** = 100 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			
<b>Ongoing strategy.</b>			

*Origin*

Previous Plan	Current Plan
X	X

## Significant Tree Pruning and Maintenance

**Hazards:** E, D, SW<sup>1</sup>

Trees within the City of Lakewood Parks system will be pruned or removed according to a plan developed in 2005 to enhance the overall health and safety of the park trees.

- 1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Preserve or Restore Natural Resources; Increase Public Preparedness for Disasters.
- 2. **Cost of Measure** = \$15,000
- 3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
- 4. **Lead Jurisdiction(s)** = City of Lakewood – Parks Department
- 5. **Timeline** = Ongoing
- 6. **Benefit** = Park staff and City of Lakewood
- 7. **Life of Measure** = Perpetual
- 8. **Community Reaction** = the proposal would be endorsed by the entire community.

*Status Update: 2020 – 2025 Edition*

Complete	Ongoing	Partially Complete	Deferred
	X		
Comments			
<b>Continual strategy</b>			

*Origin*

Previous Plan	Current Plan
X	X

## Utility Coordination

**Hazards:** E, L, V, F, SW, WUI<sup>1</sup>, MM<sup>2</sup>

Facilitate coordination of utility emergency response contacts.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Establish and Strengthen Partnerships for Implementation; Ensure Continuity of Operations.
2. **Cost of Measure** = Staff Time
3. **Funding Source and Situation** = Funding could be obtained through local budgets or grants and state or federal grants.
4. **Lead Jurisdiction(s)** = City of Lakewood – Public Works Department
5. **Timeline** = Ongoing
6. **Benefit** = City Departments, staff and citizens
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			
<b>Continual strategy</b>			

*Origin*

Previous Plan	Current Plan
X	X

Accurate Mapping of All Roadways- Electronic and Hard Copy

**Hazards:** E, L, F, SW<sup>1</sup>, MM<sup>2</sup>

Mapping of all Cities public and private roadways will be mapped accurately in order to track and communicate blocked and alternate routes. This will be available electronically via network computer access; local computer access; and hard copy (for redundancy) and in case of power loss.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations.
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 Lakewood - GIS
5. **Timeline** = Ongoing
6. **Benefit** = ALL traveling public, emergency and utility responders
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	X		
Comments			
<b>This has been completed but is a continual strategy to keep it up to date.</b>			

*Origin*

Previous Plan	Current Plan
X	X

---

## Traffic Control Devices for Setting Blockades and Detour Routes

**Hazards:** E, L, F, SW<sup>1</sup>, MM<sup>2</sup>

Obtain trailer and traffic control devices (barricades, barrels, signs, etc.) for setting blockades and detour routes in case of road hazard.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants and state or federal grants.
4. **Lead Jurisdiction(s)** = City of Lakewood – Public Works
5. **Timeline** = Short-term
6. **Benefit** = ALL traveling public, emergency and utility responders
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	X		
Comments			
<b>This was essentially completed with the purchase of a trailer containing multiple types of barricades. However, we continue to add and replace additional barricades, so this could be continual.</b>			

*Origin*

Previous Plan	Current Plan
X	X

---

## Generator Retrofit of Park Operations Center

**Hazards:** E, SW<sup>1</sup> MM<sup>2</sup>

As part of the electrical upgrades to the shop, a generator switch will be installed so in the event power is lost, the operations center will have power to operate the fueling station, and most power operations in the shop.

9. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Increase Public Preparedness for Disasters.
10. **Cost of Measure** = Already implemented as electrical upgrades to operation center
11. **Funding Source and Situation** = Funding could be obtained through local budget and grants.
12. **Lead Jurisdiction(s)** = City of Lakewood - Parks Department



- 13. **Timeline** = Short-Term
- 14. **Benefit** = Parks Operation Center, City of Lakewood
- 15. **Life of Measure** = 30 years
- 16. **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 was completed.			

*Origin*

Previous Plan	Current Plan
X	X

## Structural Retrofit of Park Operations Center

**Hazards:** E, SW<sup>1</sup>

Collar ties were added to the roof to strengthen the integrity of the Park Operations Center. Posts and walls were added to strengthen the loft inside the shop, and a sheer wall was added inside to add strength against side to side movement.

- 1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Increase Public Preparedness for Disasters.
- 2. **Cost of Measure** = Already implemented as part of upgrades made to the operations center.
- 3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
- 4. **Lead Jurisdiction(s)** = City of Lakewood – Parks Department
- 5. **Timeline** = Short-term
- 6. **Benefit** = Park Operations, City of Lakewood
- 7. **Life of Measure** = 30 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			
This was completed.			

*Origin*

Previous Plan	Current Plan
X	X

## Create an Emergency Operations Center in Lakewood City Hall

**Hazards:** E, V, F, WUI, SW<sup>1</sup>, MM<sup>2</sup>

The City of Lakewood will create an emergency operations center that has the necessary equipment for city EOC staff to operate effectively.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Establish and Strengthen Partnerships for Implementation; Increase Public Preparedness for Disasters; Promote a Sustainable Economy.
2. **Cost of Measure** = Time and Materials and special equipment
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s)** = City of Lakewood - Emergency Management Director
5. **Timeline** = Short-term
6. **Benefit** = Residents and businesses of Lakewood, visitors, community and regional partners
7. **Life of Measure** = 5-10 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			
<b>We created an EOC, but it was done in the Police Station and not City Hall. But it is complete.</b>			

*Origin*

Previous Plan	Current Plan
X	X

## National Flood Insurance Program

**Hazards:** F

Lakewood 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 Lakewood 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)** = Lakewood (Community Development); PC PWU
5. **Timeline** = On-going
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			
<p><b>The City amended its floodplain regulations to be compliant back in 2017 or 2018. This was followed by adopting updated shoreline regulations. The City has since found an error in the federal floodplain map and has submitted a request to amend the map to fix this.</b></p>			

*Origin*

Previous Plan	Current Plan
X	X

# Public Education Mitigation Measures

---

## Flood Preparedness and Response

### Hazards: F<sup>1</sup>

- Have sandbags and sand on hand and placed at strategic locations throughout the city.
  - Have a stockpile of signs and barricades for warning of water over roadways or road closures.
  - Have maps, rakes, boots, rain gear and other equipment on hand for City staff to assist in flood response.
  - Coordinate with the Pierce County Lakewood Road Shop and DEM for their assistance with flood response.
  - Coordinate personnel resources for sandbagging parties.
  - Have contracts on hand to hire private contractors to assist as needed.
1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Preserve or Restore Natural Resources; Establish and Strengthen Partnerships for Implementation.
  2. **Cost of Measure** = TBD
  3. **Funding Source and Situation** = Funding could be obtained through local budget or grants and state or federal grants.
  4. **Lead Jurisdiction(s)** = City of Lakewood - Public Works Department
  5. **Timeline** = Ongoing
  6. **Benefit** = Areas of city affected by flooding (neighborhoods, businesses, etc.)
  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	X		
Comments			
We have substantially completed this strategy, however, we continue to enhance with additional equipment and supplies.			

*Origin*

Previous Plan	Current Plan
X	X

---

## Disaster Preparedness Training

### Hazards: E, V, F, WUI, SW<sup>1</sup>, MM<sup>2</sup>

Develop and implement training program for city employees on disaster preparedness.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations.
2. **Cost of Measure** = Staff time and materials
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants and state or federal grants.
4. **Lead Jurisdiction(s)** = City of Lakewood - Human Resources and PC Health Department
5. **Timeline** = Short-term
6. **Benefit** = City staff and citizens, visitors and regional partners
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	X		
Comments			
<b>We trained 100% of City Staff by 2018. However, we will continue this strategy as refresher training and for new employees.</b>			

*Origin*

Previous Plan	Current Plan
X	X

# Endnotes

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<sup>1</sup> 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.

<sup>2</sup> While this Plan is strictly a *Natural* hazard mitigation plan, where a measure stems from a facility recommendation (Infrastructure Section) that deals specifically with terrorism, the mitigation strategy will use that analysis. Other measures, such as those that deal with multi-hazard community preparedness or recovery planning, mitigate man-made hazards and are noted as such. It is not the intent of this notation to imply that all measures were analyzed with regards to man-made hazards or that measures were identified with that in mind. Rather, the notation merely illustrates the potential on this template for the inclusion of man-made hazard analysis.

## 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 LAKEWOOD 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 Lakewood's City Manager.

Distribution or changes to this document without the express written consent of the City of Lakewood'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 LAKEWOOD  
PLAN MAINTENANCE SECTION

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The updated planning process began in the spring of 2019 and is continuing to build on the foundation of breaking the disaster cycle by planning for a disaster resistant City of Lakewood and Pierce County Region 5. This Section details the formal process that will guarantee the City of Lakewood 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 Lakewood 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 Lakewood Plan, it will be submitted to Washington State Emergency Management Division (EMD) for a Pre-Adoption Review. The EMD has 30 days to then take action on the Plan and forward it to the Federal Emergency Management Agency (FEMA) Region X for review. This review, which is allowed 45 days by law, will address the federal criteria outlined in FEMA Interim Final Rule 44 CFR Part 201.6. In completing this review there may be revisions requested by the EMD and/or FEMA. Revisions could include changes to background information, editorial comments, and the alteration of technical content. Pierce County Department of Emergency Management (PC DEM) will call a Planning Team Meeting to address any revisions needed and resubmit the changes.

The Lakewood 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 Police Chief 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 take action 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 \_\_\_\_\_ 2025.

## Maintenance Strategy

The City of Lakewood 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 of Lakewood will provide its 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 citizens and the various levels of government service, ranging from

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

## Implementation

In the past, a dedicated effort to promote the Mitigation Plan within the city’s “Family of Plans” was not as strong as it could have been. There has been some staff/middle-management turnover which may account for some of this as well as the lack of understanding of what mitigation is and how it can easily crosswalk into other plans.

In order to ensure efficient and effective implementation, the City of Lakewood will implement its mitigation strategy over the next five years primarily through its annual plan review, budget process and varying grant application processes. It is the intent of the City to better integrate and implement the Mitigation Plan with our external partners and plans managed by internal departments such as *Public Works, Engineering and Community Development in addition to Emergency Management.*

The City Administration will work in conjunction with those departments identified in both the Capability Identification Section and under each mitigation measure to initiate the mitigation strategy. For example, any infrastructure-related measures will be jointly implemented through the Capital Improvement Plan and the various departments involved through the normal budget schedule. Any regulatory and land use measures will continue to be implemented through collaboration with Community Development and its updates of the City's Comprehensive Plan. 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 Lakewood's as well as multi-jurisdictional policies and programs. The first tier is implementation through individual citizen level—existing Public Education Programs in the City of Lakewood (for example, at the individual level through the Public Safety Fair and at the neighborhood level through PC NET). 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 City’s changing vulnerabilities, 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, Lakewood's 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 a 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.

### *Jurisdiction-Wide: City Administration*

The City Administration will be the body responsible for determining the direction of the Plan's implementation. The City Administration is responsible to the City Council for the day-to-day operations of the City and its departments, the annual budget, and personnel. The City Manager follows the general policy as set by the City Council. The City Manager's office is responsible for the City's selection, evaluation, and training of all city staff. It oversees, coordinates, and manages the activities of all city departments and offices in carrying out the requirements of ordinances, laws, rules and regulations.

Initially, the City Manager's office 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 both the Police Chief and the Emergency Management Coordinator. The Emergency Management Coordinator will address the Plan on an annual basis during the month of October. The Police Chief and Emergency Management Coordinator will monitor the plan's implementation throughout the year and report to the City Manager 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.

Eventually, the City Manager's office may choose to cede this responsibility to a special committee. This committee would be composed of representatives from the departments identified in the Capability Identification Section as having a role in hazard mitigation. The Committee would ultimately provide a mechanism for coordination among those departments engaged in mitigation to ensure that a comprehensive and efficient approach be undertaken in the City's efforts at all-hazards mitigation.

## *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 all 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 2000 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
- 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



- Mt. View-Edgewood Water Company
- Parkland Light and Water Company
- Spanaway Water Company
- Valley Water District
- Community Health Care
- Kaiser Permanente
- Western State Hospital
- Tacoma Pierce County Health Dept.
- 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 Lakewood will be an active participant in the PC HMF and will be represented by the designated Planning Partner or their representative. Only through this level of cooperation can these jurisdictions meet all their mitigation goals.

## Regional Mitigation Planning

Pierce County, Region 5 was configured into 5 planning groups based on a commonality in geographical hazards for the 2020-2025 mitigation plan update to foster relationship building and resiliency planning amongst jurisdictions. Although much of the meeting and planning time focused on plan updates and fostered relationship building the resiliency planning component will continue within multi-jurisdictional groups working together to further reduce risk. This provides another opportunity for continued collaboration planning amongst jurisdictions working and partnering together. The meeting frequency will be driven by the mitigation implementation strategy and combines the three-tiered approach. The City of Lakewood will continue to engage within the “southwest 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 Lakewood 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 Region 5 Plan will guide the City’s mitigation efforts for the foreseeable future. City of Lakewood representatives on the Planning Team have developed a method to ensure that regular review and update of the Plan occur within a five year cycle. The Emergency Management Coordinator will coordinate any reviews through October meeting noted above.

PC DEM will collaborate with the emergency management coordinator and the PC HMF to 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.

Police and Community Development Department will provide a report of the Plan's implementation to the City Manager at the annual meeting. 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 City Manager and local experts will decide on updates to the strategy based on the above information and a discussion of:

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

PC DEM will work with the Emergency Management Coordinator to review the Risk Assessment Section to determine if the information should be updated or modified based on new information. This will be done during the regularly scheduled reviews of the Hazard Identification and Vulnerability Assessment and the Comprehensive Emergency Management Plan.

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, the emergency management coordinator 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 October meeting.

As per 44 CFR 201.6, the City of Lakewood 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 of Lakewood City Manager and/or the Emergency

Management Coordinator 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

The City of Lakewood is dedicated to continued public involvement and education in review and updates of the Plan. The Emergency Management Coordinator and those departments with hazard mitigation measures identified will retain copies of the Plan and will post it on the City of Lakewood's website.<sup>1</sup> Announcements regarding the Plan's adoption and the annual updates to the Plan will be advertised on the City of Lakewood 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 of Lakewood will hold a public information and comment meeting. These meetings will provide the public a forum for which it can express its concerns, opinions, or ideas about Lakewood. These meetings will be advertised in the City of Lakewood through a variety of media, including the city's "Connections" newsletter and local newspaper

The City of Lakewood 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 having to provide documentation on public involvement including a brief description for each public hearing held, a summary on attendance, any feedback received from the public and the an overall description of what was accomplished. Even further, the City of Lakewood 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 Lakewood will look for new innovative ways for public involvement.

## Endnotes

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<sup>1</sup><https://www.cityoflakewood.us/>

## APPENDIX A

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

### Plan Adoption

The "Region 5 Hazard Mitigation Plan" was adopted by the City of Lakewood's City Council on April 19, 2021 by Resolution No. 2021-06. The following page shows a copy of that resolution.

RESOLUTION NO. 2021-06

A RESOLUTION of the City Council of the City of Lakewood, Washington, adopting the Region 5 All Hazard Mitigation Plan (2020-2025) Edition and the 2021 Addendum to the Region 5 Hazard Mitigation Plan.

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

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

**WHEREAS**, the All Hazard Mitigation Plan Update represents the commitment of the City of Lakewood along with other surrounding government entities to reduce the risks from natural, man-made 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 Lakewood has participated with the Pierce County Department of Emergency Management in the development of the City of Lakewood's All Hazard Mitigation Plan Update, and recognizes the economic loss, personal injury, and damage that can arise from these hazards; and

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

**WHEREAS**, the 2020-2025 Region 5 All Hazard Mitigation Plan Edition has been completed and approved by the State and the Federal Emergency Management Agency; and

**WHEREAS**, the City of Lakewood could risk not receiving future disaster funding if the All Hazard Mitigation Plan Update is not adopted; and

**WHEREAS**, the Lakewood City Council reviewed the All Hazard Mitigation Plan Update.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF LAKEWOOD, WASHINGTON, HEREBY RESOLVES, as follows:

Section 1. The Region 5 All Hazard Mitigation Plan, 2020-2025 Edition, is hereby adopted as set forth in Exhibit A, which is attached.

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

PASSED by the City Council this 19<sup>th</sup> day of April, 2021.

CITY OF LAKEWOOD



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Don Anderson, Mayor

Attest:



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Briana Schumacher, City Clerk

Approved as to form:



---

Heidi Ann Wachter, City Attorney

The plan was reviewed and approved as follows:

<b>AGENCY</b>	<b>REPRESENTATIVE</b>	<b>DATE</b>
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 LAKEWOOD

### Plan Adoption

The “*Region 5 Hazard Mitigation Plan*” was adopted by the City of Lakewood’s City Council on July 6, 2015 by resolution number 2015-21. The following page shows a copy of that resolution.

RESOLUTION NO. 2015-21

A RESOLUTION of the City Council of the City of Lakewood adopting the Region 5 All Hazard Mitigation Plan – 2015-2020 Edition and the City of Lakewood Addendum to the Region 5 Hazard Mitigation Plan; and Updating the 2004 Pierce County Natural Hazard Mitigation Plan.

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

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

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

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

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

**WHEREAS**, the City of Lakewood could risk not receiving future disaster funding if the All Hazard Mitigation Plan Update is not adopted; and

**WHEREAS**, the City Council of the City of Lakewood reviewed the All Hazard Mitigation Plan Update.

**NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF LAKEWOOD, WASHINGTON HEREBY RESOLVES**, as follows:

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

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

PASSED by the City Council this 6<sup>th</sup> day of July, 2015.

  
Don Anderson, Mayor

Attest:

  
Alice M. Bush, City Clerk

Approved as to form:

  
Heidi Waechter, City Attorney

The plan was reviewed and approved as follows:

<b>AGENCY</b>	<b>REPRESENTATIVE</b>	<b>DATE</b>
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 Letter and FEMA Letter of approval will follow below.

U.S. Department of Homeland Security  
FEMA Region X  
Federal Regional Center  
150 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](http://www.fema.gov)





**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	<i>City of Puyallup</i>	

**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	<i>Community Health Care</i>	

[www.fema.gov](http://www.fema.gov)

Chair Richardson  
October 9, 2018  
Page 2

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.

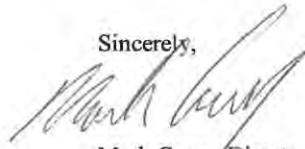
Additionally, this letter acknowledges that the following organizations, while not local governments, participated in, and adopted the plan. These organizations may be eligible to apply for the Hazard Mitigation Grant Program as private non-profits.

**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 UPDATE CITY OF LAKEWOOD

### Plan Adoption

The “*Region 5 Hazard Mitigation Plan*” was adopted by the City of Lakewood’s City Council on November 3, 2008 by resolution number 2008-33. The following page shows a copy of that resolution.

RESOLUTION NO. 2008-33

A RESOLUTION of the City Council of the City of Lakewood, Washington, adopting the City of Lakewood Hazard Mitigation Plan.

WHEREAS, the City of Lakewood has participated with the Pierce County Department of Emergency Management in the development of the Hazard Mitigation Plan ; and

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

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

WHEREAS the Hazard mitigation Plan has been submitted and approved by the State and the Federal Emergency Management Agency; and

WHEREAS, the Lakewood City Council reviewed the Hazard mitigation Plan preparation process in a Council Study Session on March 10, 2008; and

WHEREAS, the City of Lakewood could risk not receiving future disaster funding if the Hazard mitigation Plan is not adopted;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF LAKEWOOD, WASHINGTON HEREBY RESOLVES as follows:

Section 1. That the Hazard Mitigation Plan is hereby adopted.

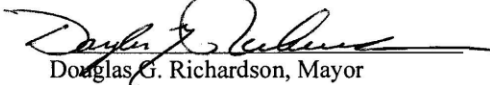
Section 2. This Resolution shall be in full force and effect upon passage and signatures hereon.

PASSED by the City Council this 3<sup>rd</sup> day of November, 2008.

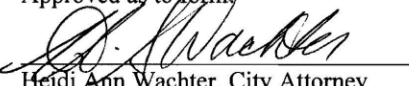
CITY OF LAKEWOOD

Attest:

  
Alice M. Bush, MMC, City Clerk

  
Douglas G. Richardson, Mayor

Approved as to form:

  
Heidi Ann Wachter, City Attorney

The plan was reviewed and approved as follows:

<b>AGENCY</b>	<b>REPRESENTATIVE</b>	<b>DATE</b>
FEMA Region X	Mark Carey Mitigation Division Director	Approved—

Letter of approval follows below.



**FEMA**

July 9, 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 24, 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 24, 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 Lakewood	Key Peninsula Fire Department (PDFD #16)	Peninsula SD	Ohop Mutual Light Company
City of Milton	PCFD #18	Puyallup SD	Port of Tacoma
City of Orting	Graham Fire and Rescue (PCFD #21)	Steilacoom Historical SD	Summit Water and Supply Company
City of Tacoma	PCFD #23	Tacoma SD	Valley Water District
Town of Eatonville	PCFD #27	University Place SD	
Town of South Prairie		White River SD	
Town of Wilkeson		Pacific Lutheran University	

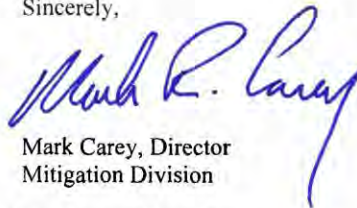
[www.fema.gov](http://www.fema.gov)

Mr. Bailey  
July 9, 2009  
Page 2

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.

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

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APPENDIX B

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

Region 5 Hazard Mitigation Planning Team

**City of Lakewood**

<b>NAME</b>	<b>TITLE</b>	<b>JURISDICTION-DEPARTMENT</b>
Christine Badger	Emergency Management Coordinator	City of Lakewood
John Unfred	Emergency Deputy Director	City of Lakewood
Hallie McCurdy	Assistant Fire Chief	West Pierce Fire & Rescue

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APPENDIX C

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

Plan Revisions

<b>RECORD OF CHANGES</b>			
<b>Change Number</b>	<b>Description of Change (with page numbers)</b>	<b>Date</b>	<b>Authorized by:</b>

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## APPENDIX D

# REGION 5 ALL HAZARD MITIGATION PLAN 2020-2025 EDITION CITY OF LAKEWOOD AND PIERCE COUNTY SCENARIO

## OVERVIEW

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

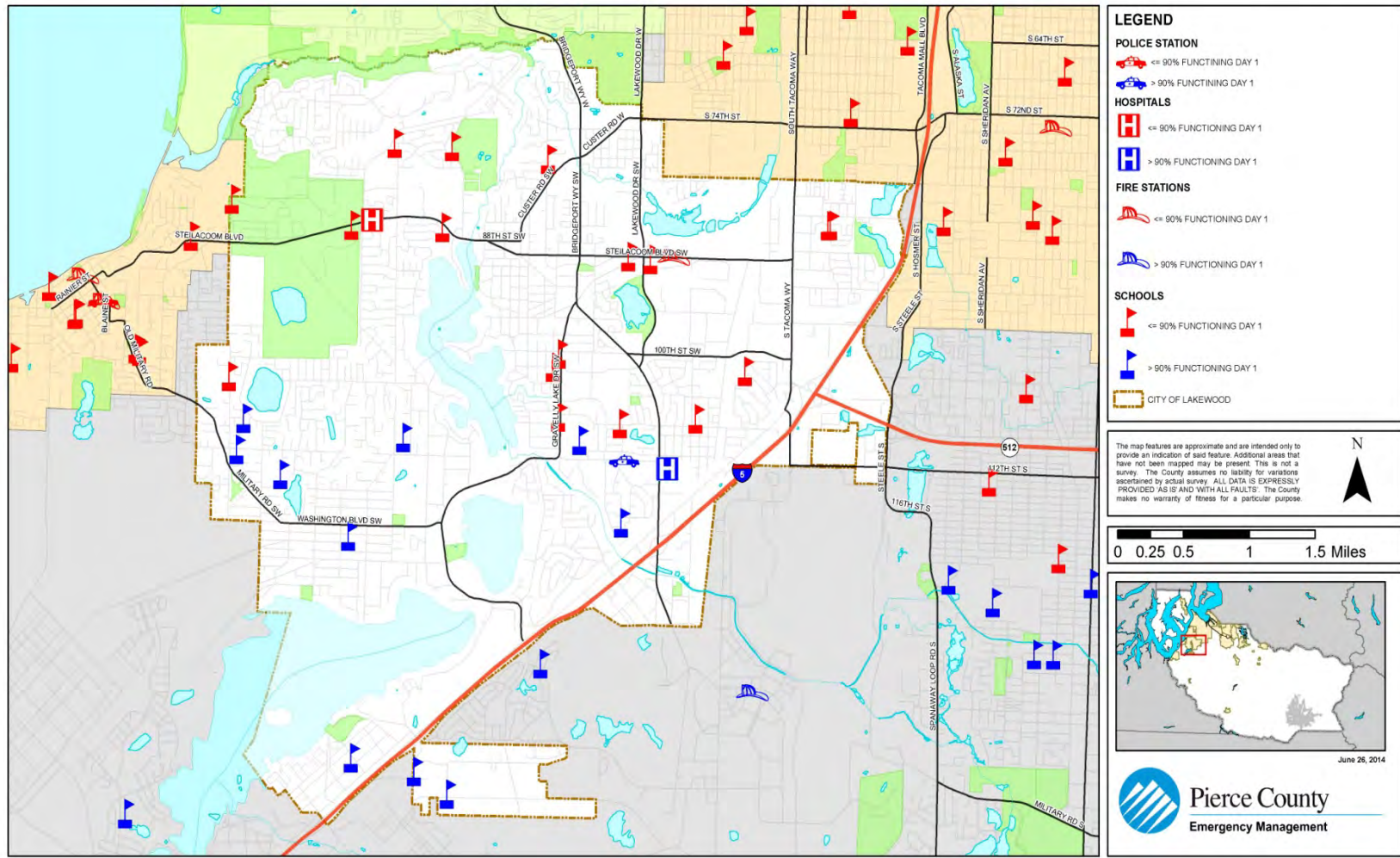
### Inherent Errors

As a special note to the Gig Harbor and Key Peninsula areas St. Anthony's Hospital is not identified on Maps D-11, D-12, D-20, D-21, D-29 or D-30 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.

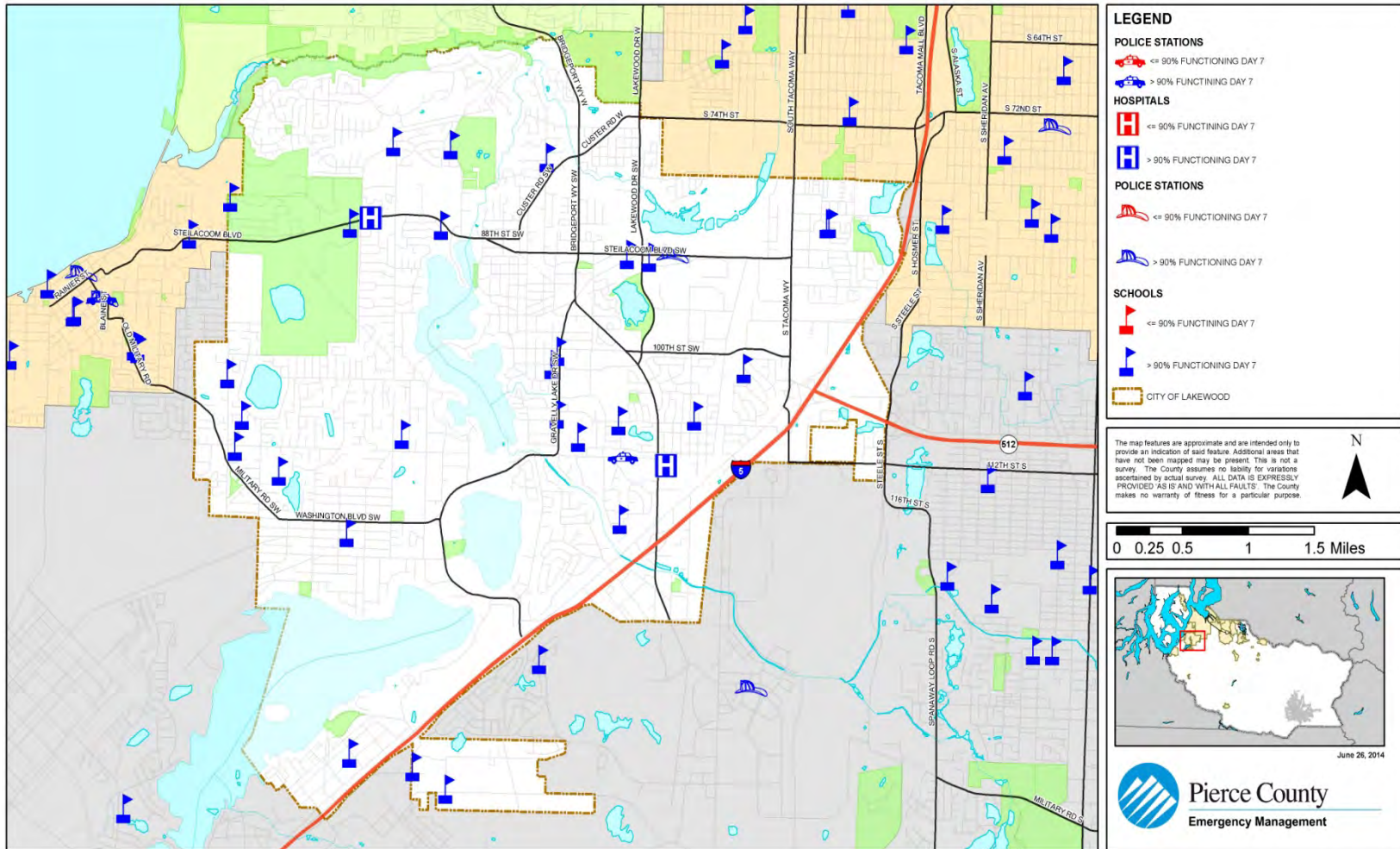
It has been identified that the police station located to the west side of Orting is not in the correct location as seen on Maps: D-9, D-10, D-18, D-19, D-27 and D-28. The police department shares a building with the Fire District #18 at 401 Washington Ave S, which is located in the middle of town. As 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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# CITY OF LAKEWOOD - 7.1M TACOMA EARTHQUAKE SCENARIO - ESSENTIAL FACILITIES



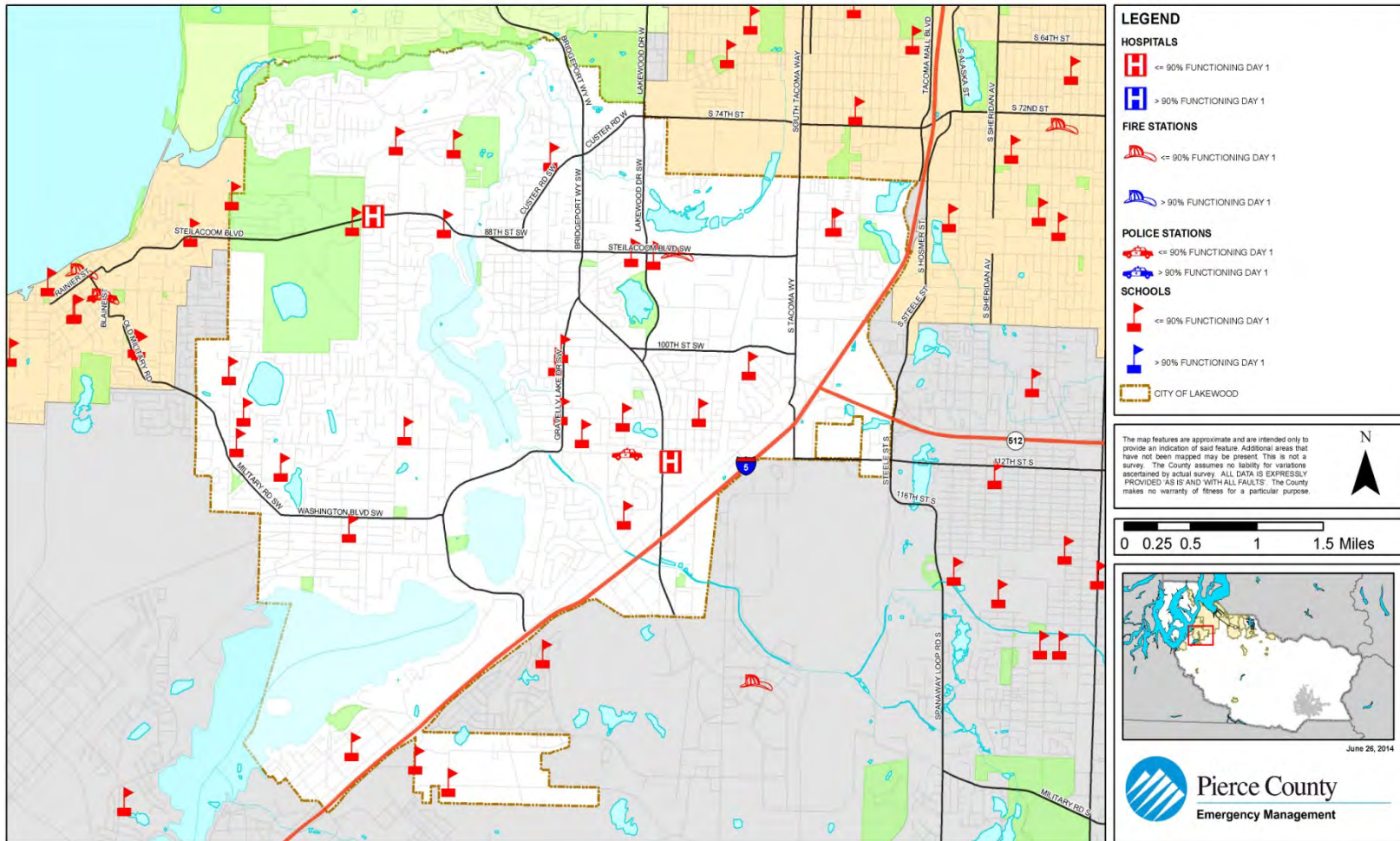
# CITY OF LAKEWOOD - 7.1M TACOMA EARTHQUAKE SCENARIO - ESSENTIAL FACILITIES





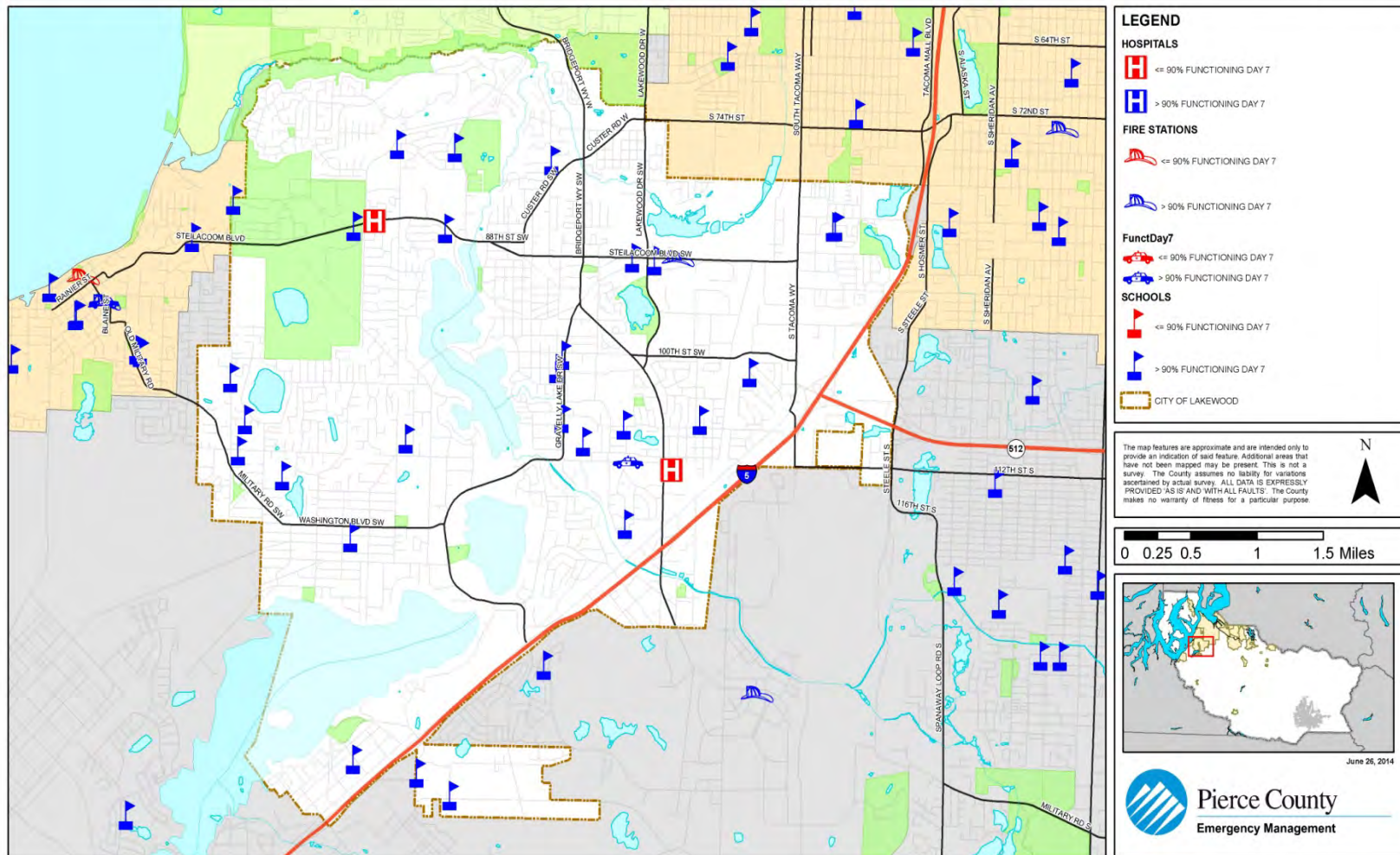
Map D-3 City of Lakewood Nisqually Fault Scenario Essential Facilities Day 1

# CITY OF LAKEWOOD - 7.2M NISQUALLY EARTHQUAKE SCENARIO - ESSENTIAL FACILITIES

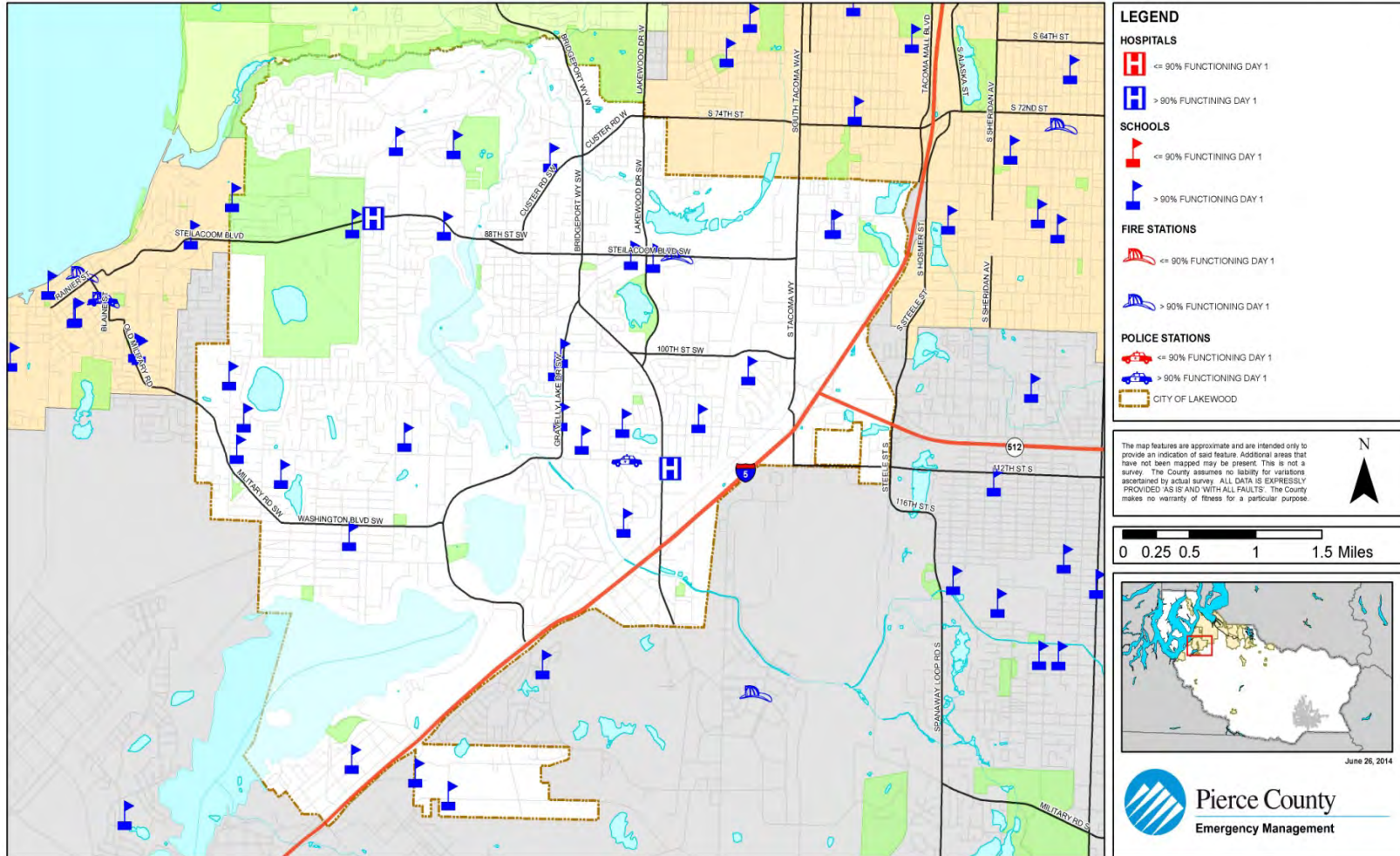


APPENDIX D-5

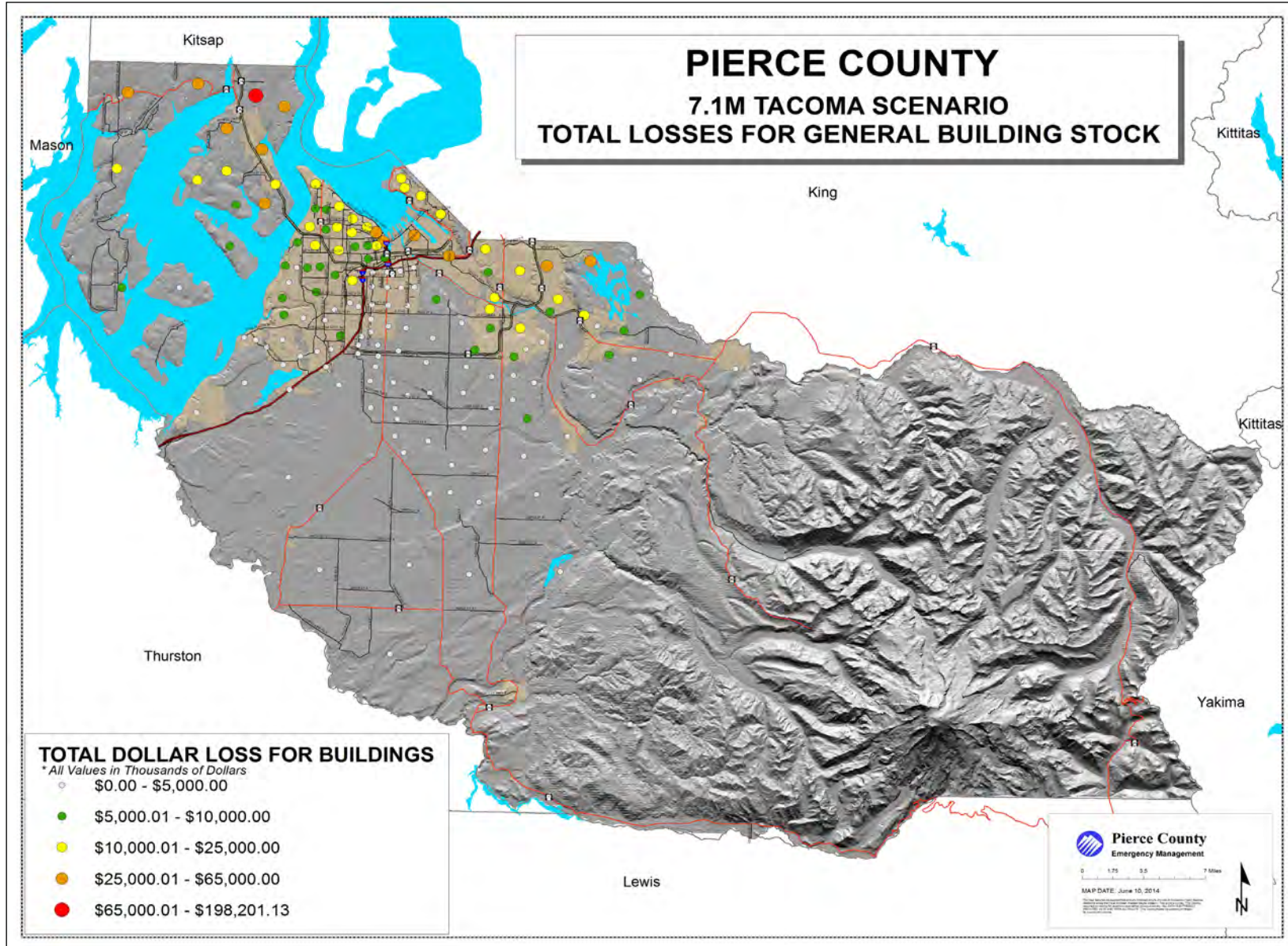
# CITY OF LAKEWOOD - 7.2M NISQUALLY EARTHQUAKE SCENARIO - ESSENTIAL FACILITIES



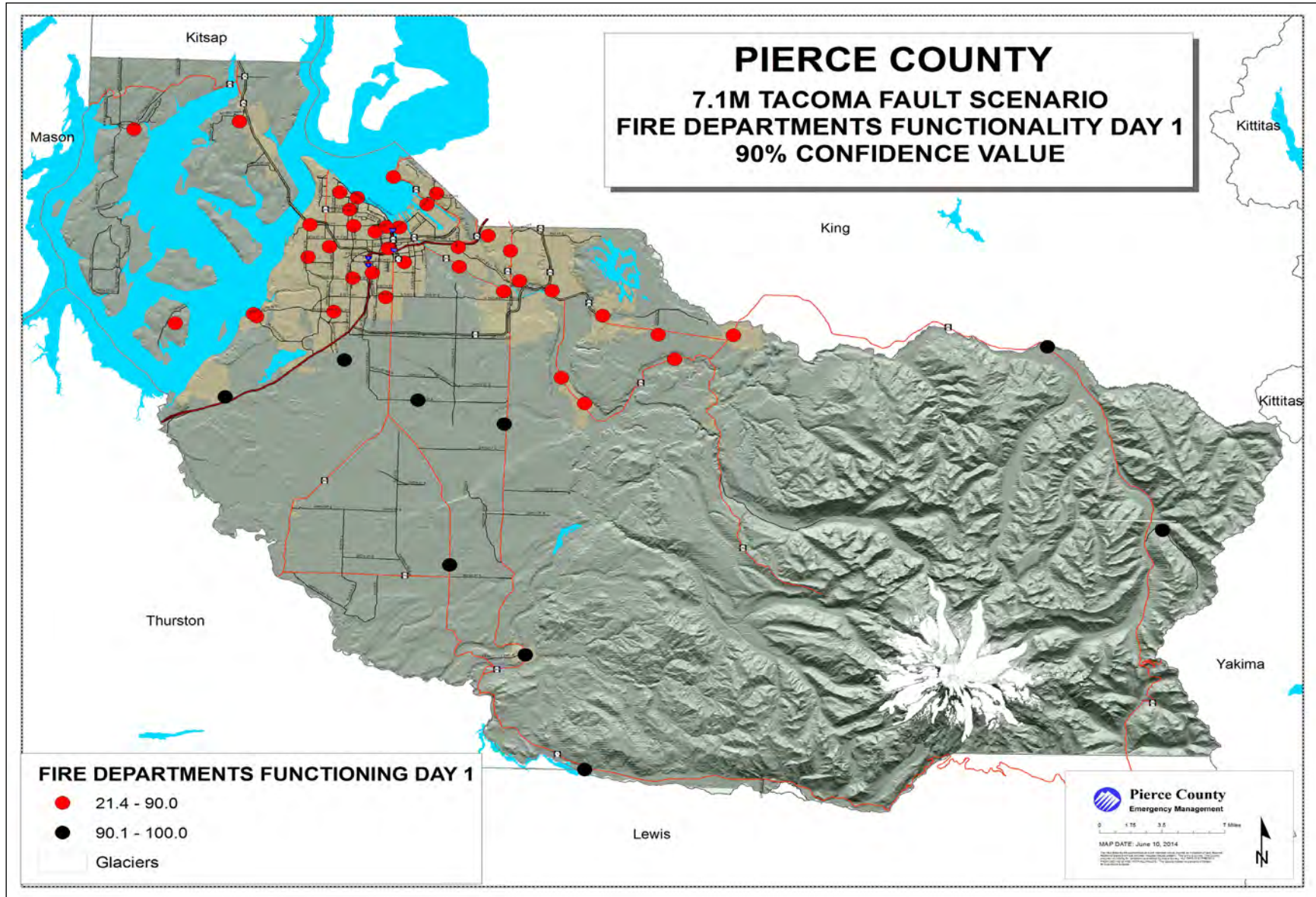
# CITY OF LAKEWOOD - 7.2M SEATAC EARTHQUAKE SCENARIO - ESSENTIAL FACILITIES



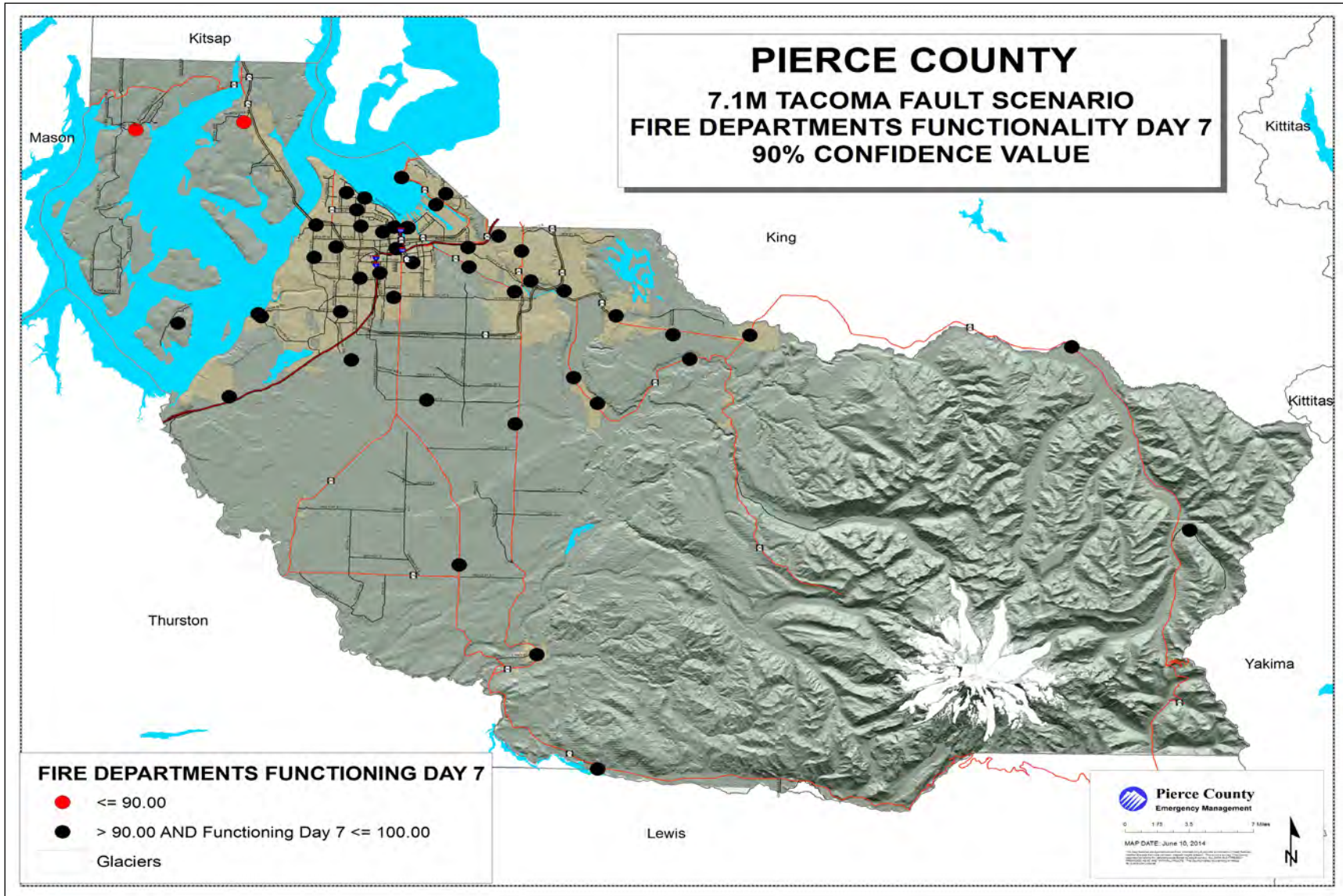
Map D-6 Pierce County Tacoma Fault Scenario Total Losses



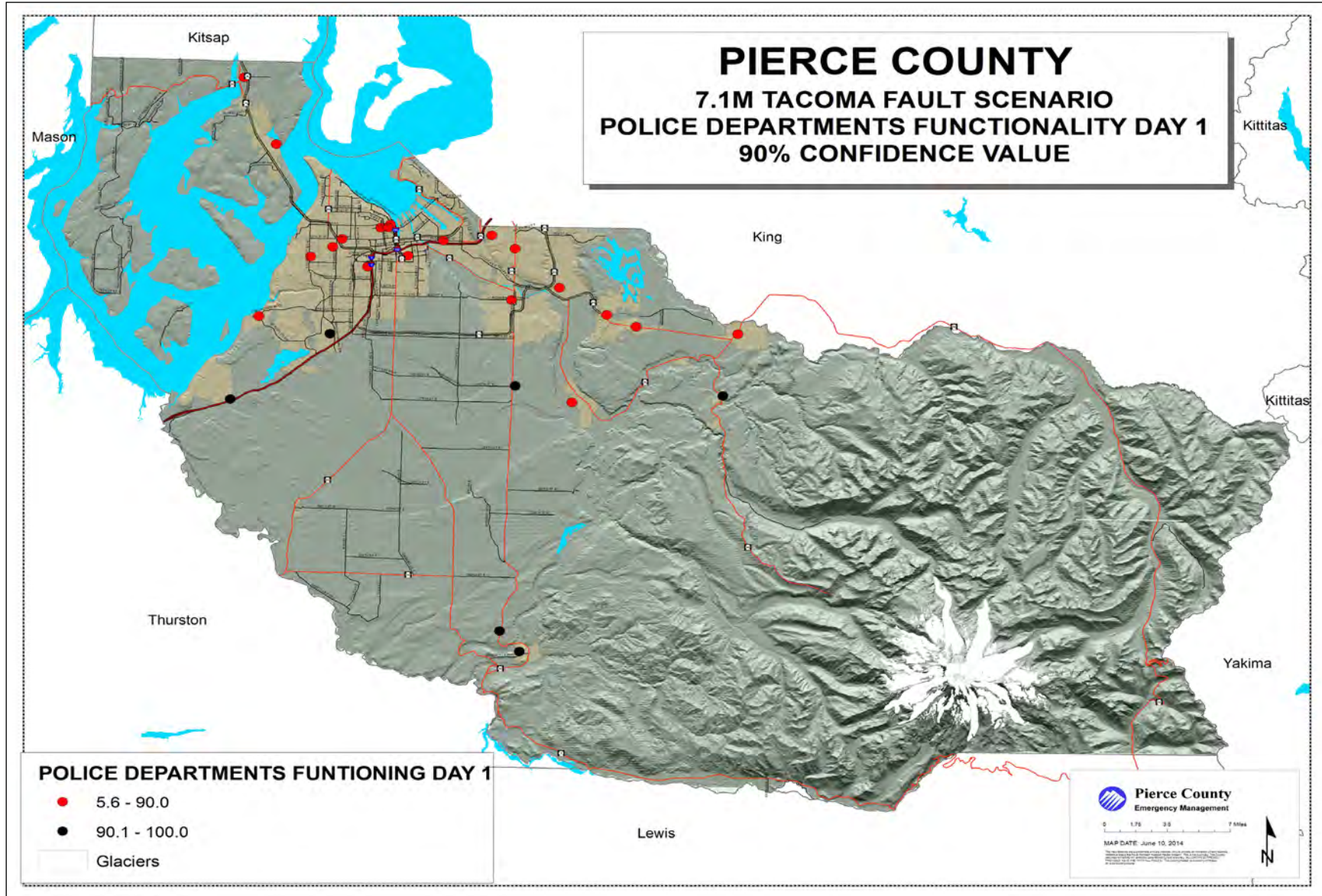
Map D-7 Pierce County Tacoma Fault Scenario Fire Department Functionality Day 1



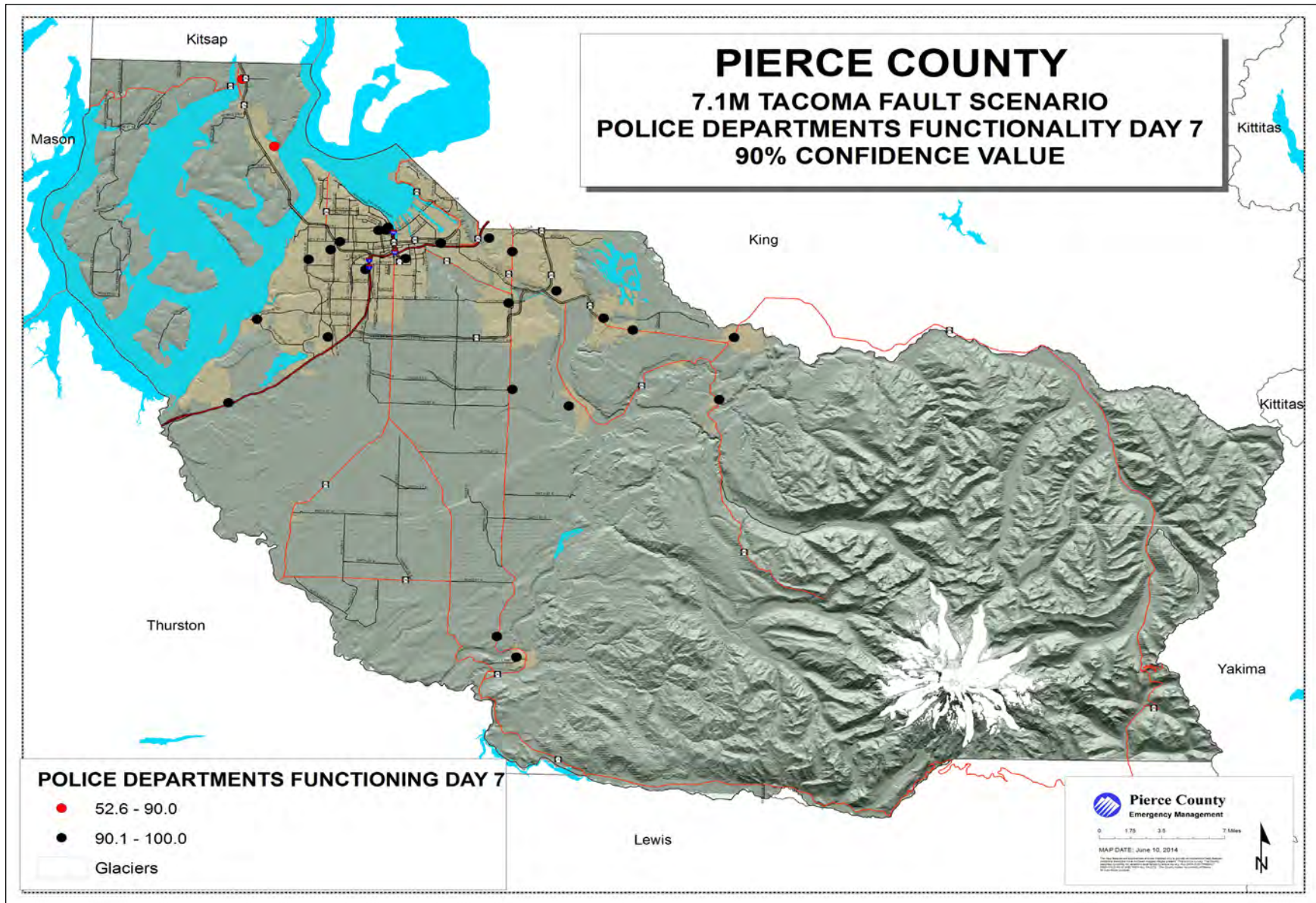
Map D-8 Pierce County Tacoma Fault Scenario Fire Department Functionality Day 7



Map D-9 Pierce County Tacoma Fault Scenario Police Department Functionality Day 1<sup>1</sup>

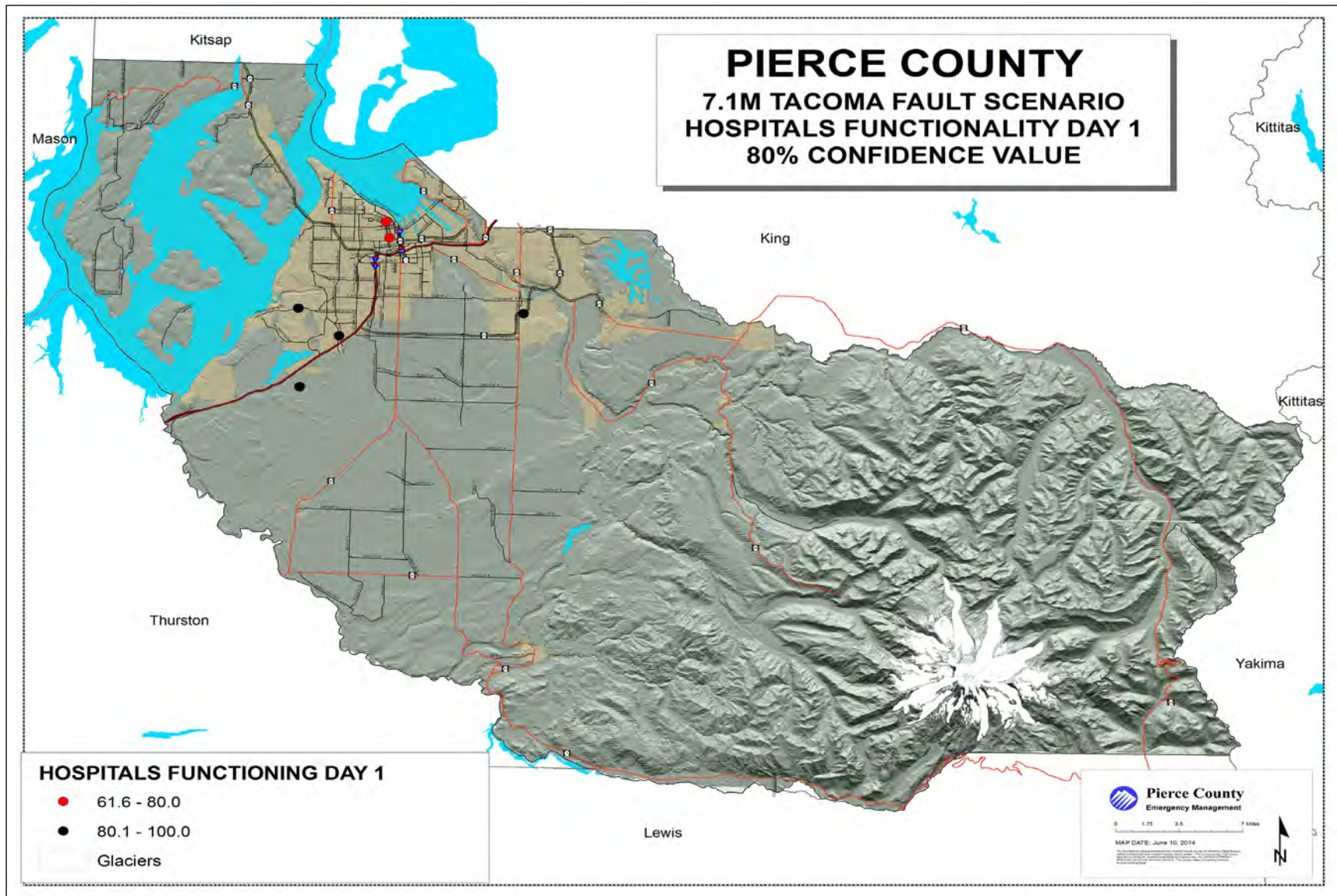


Map D-10 Pierce County Tacoma Fault Scenario Police Department Functionality Day 7<sup>2</sup>

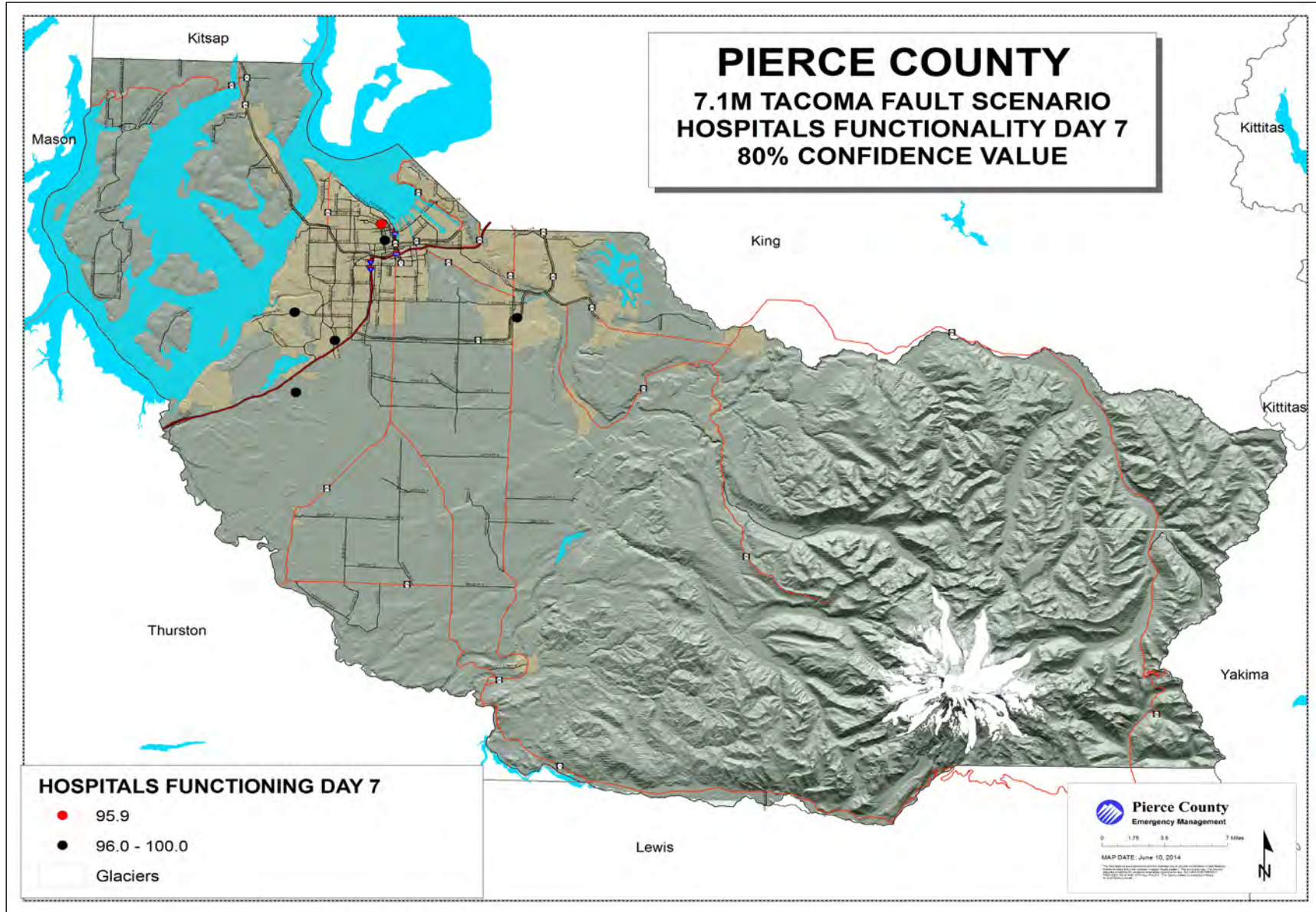




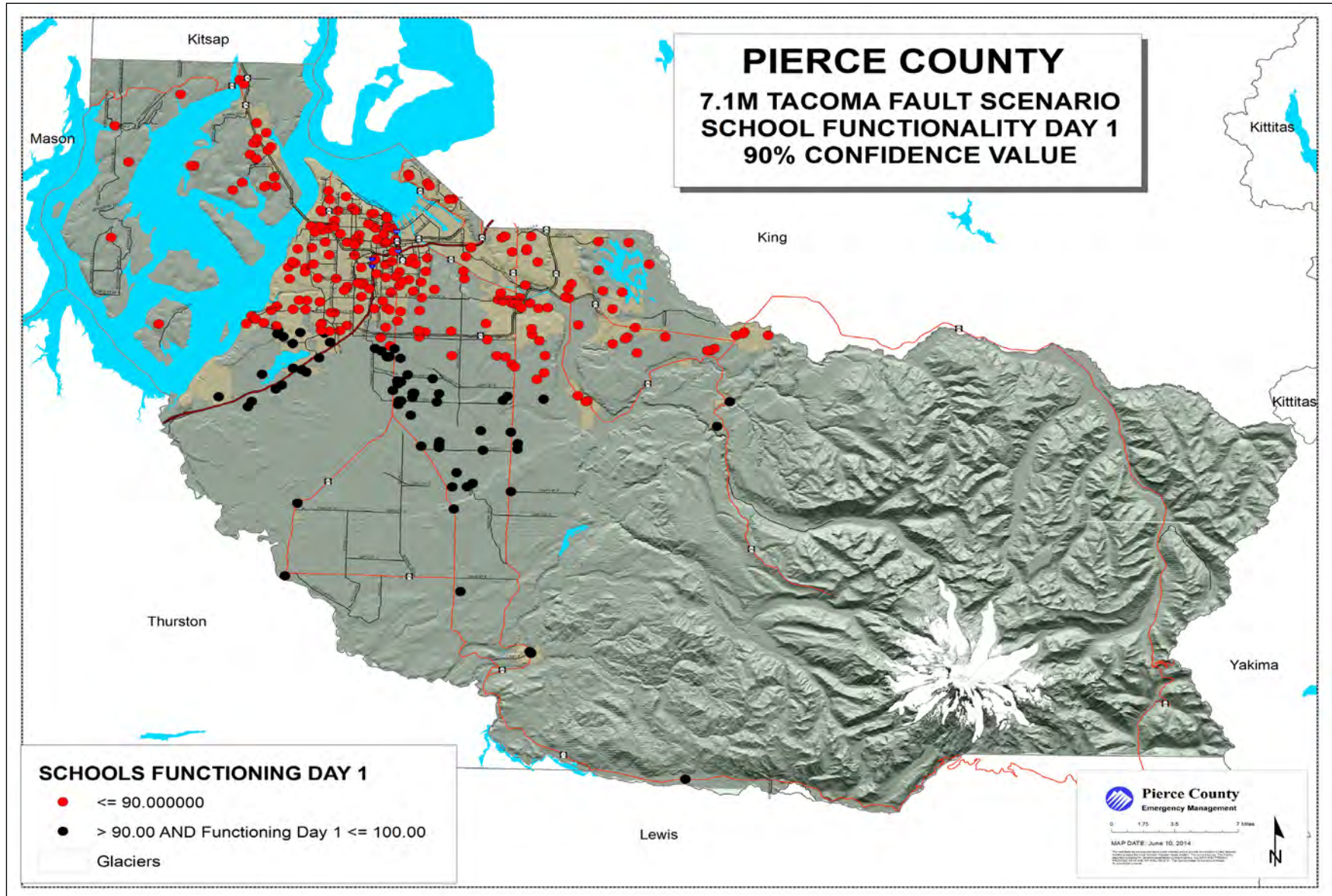
Map D-11 Pierce County Tacoma Fault Scenario Hospitals Functionality Day 1<sup>3</sup>



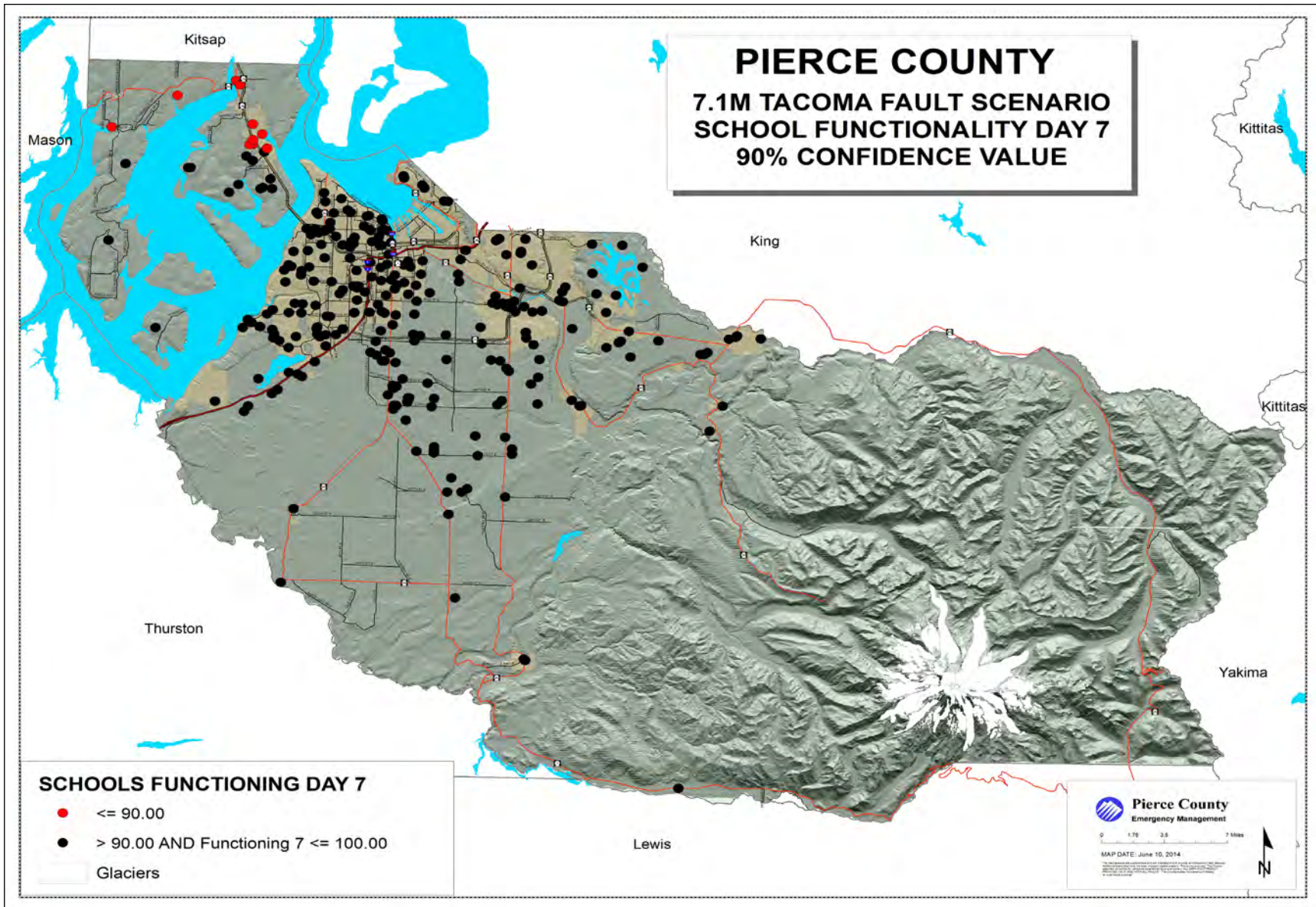
Map D-12 Pierce County Tacoma Fault Scenario Hospitals Functionality Day 7<sup>4</sup>



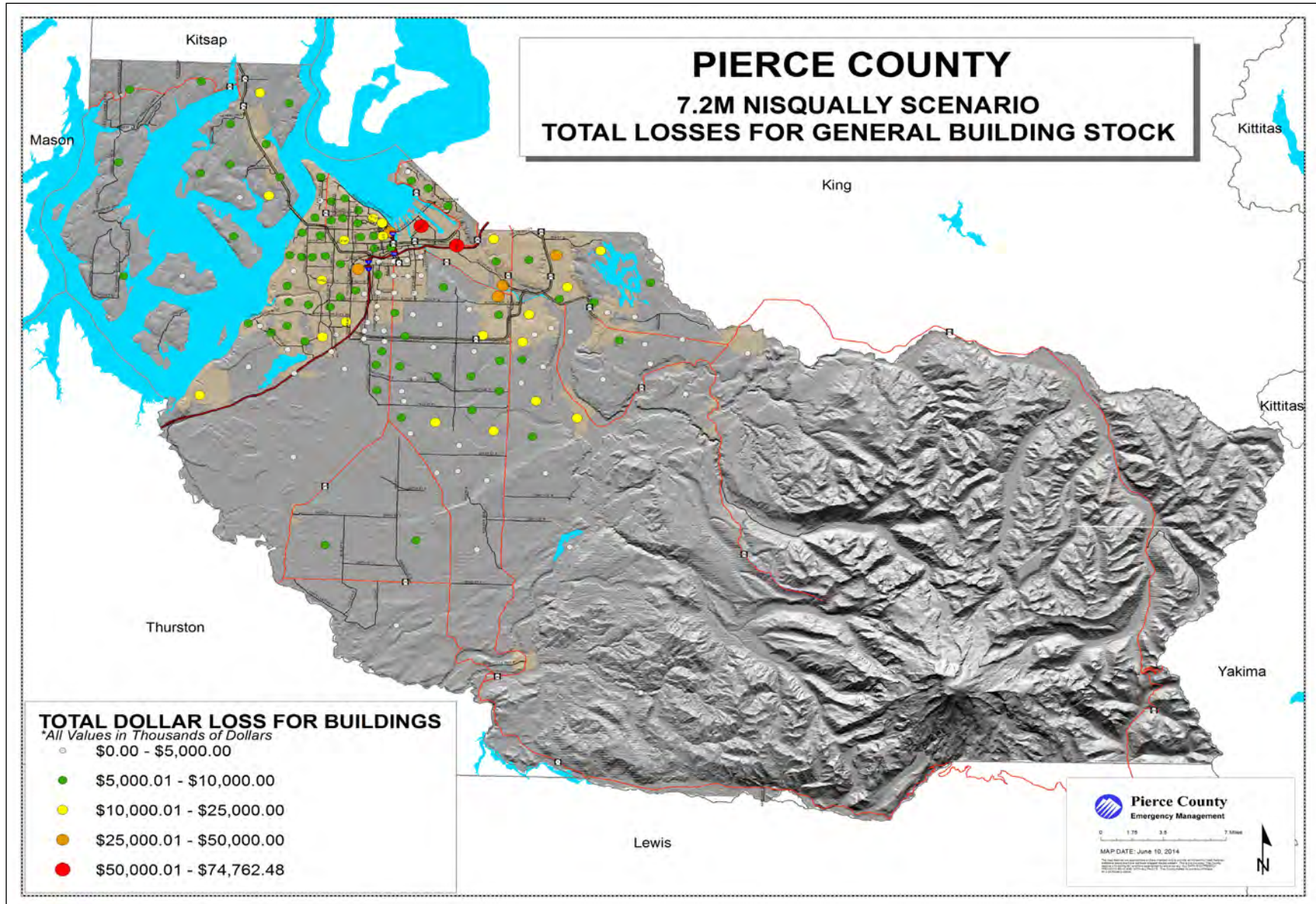
Map D-13 Pierce County Tacoma Fault Scenario School Functionality Day 1



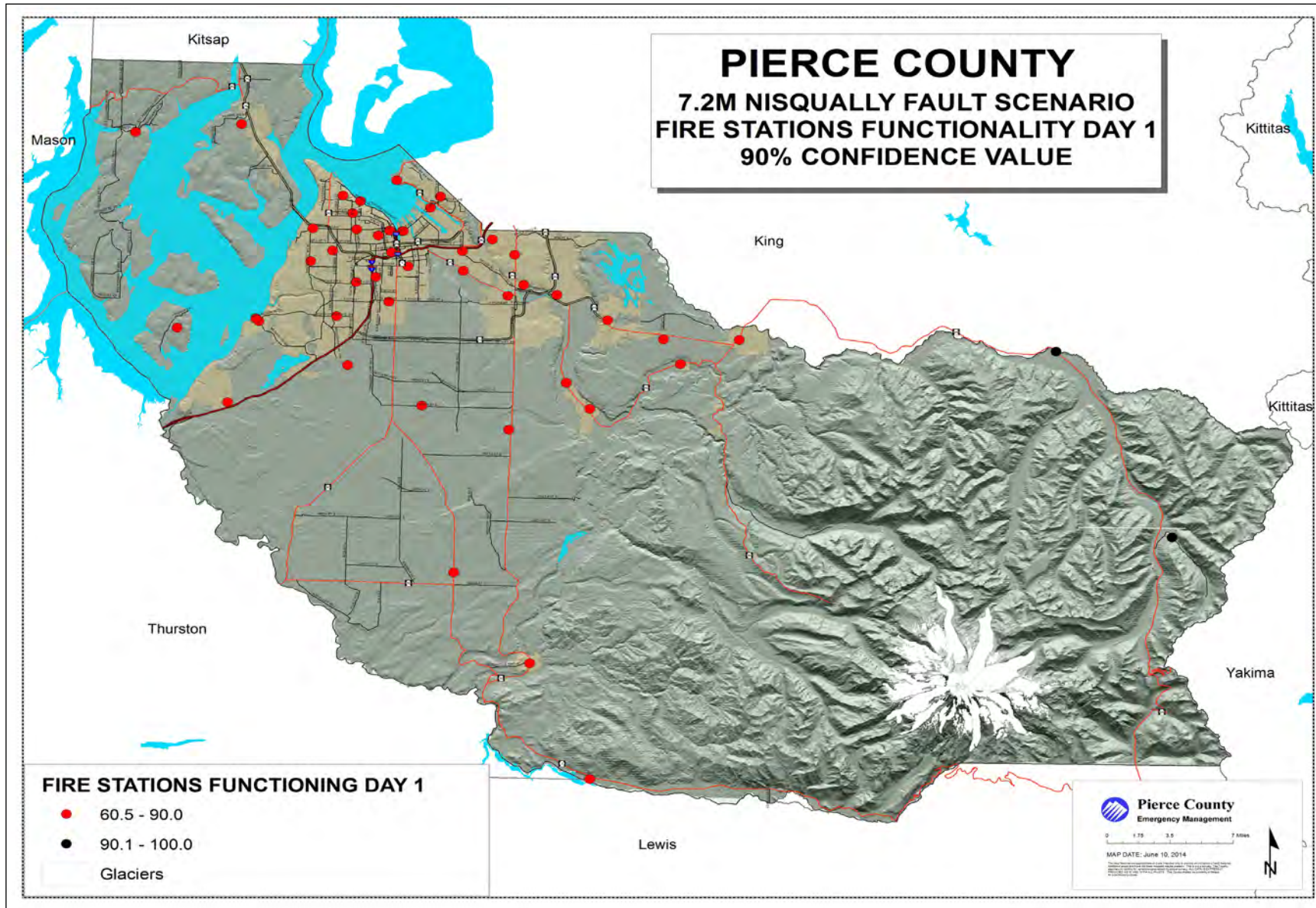
Map D-14 Pierce County Tacoma Fault Scenario School Functionality Day 7



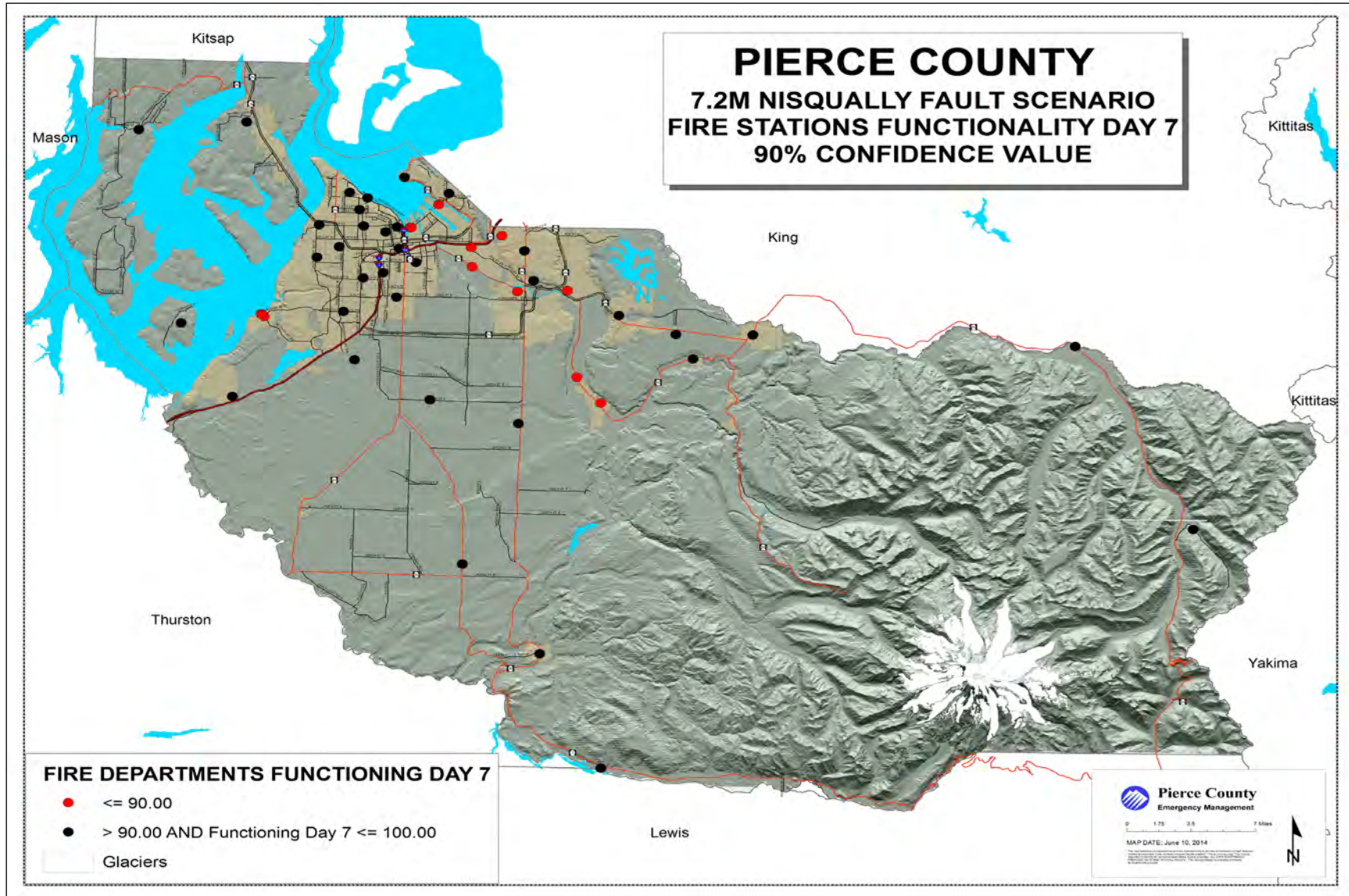
Map D-15 Pierce County Nisqually Fault Scenario Total Losses



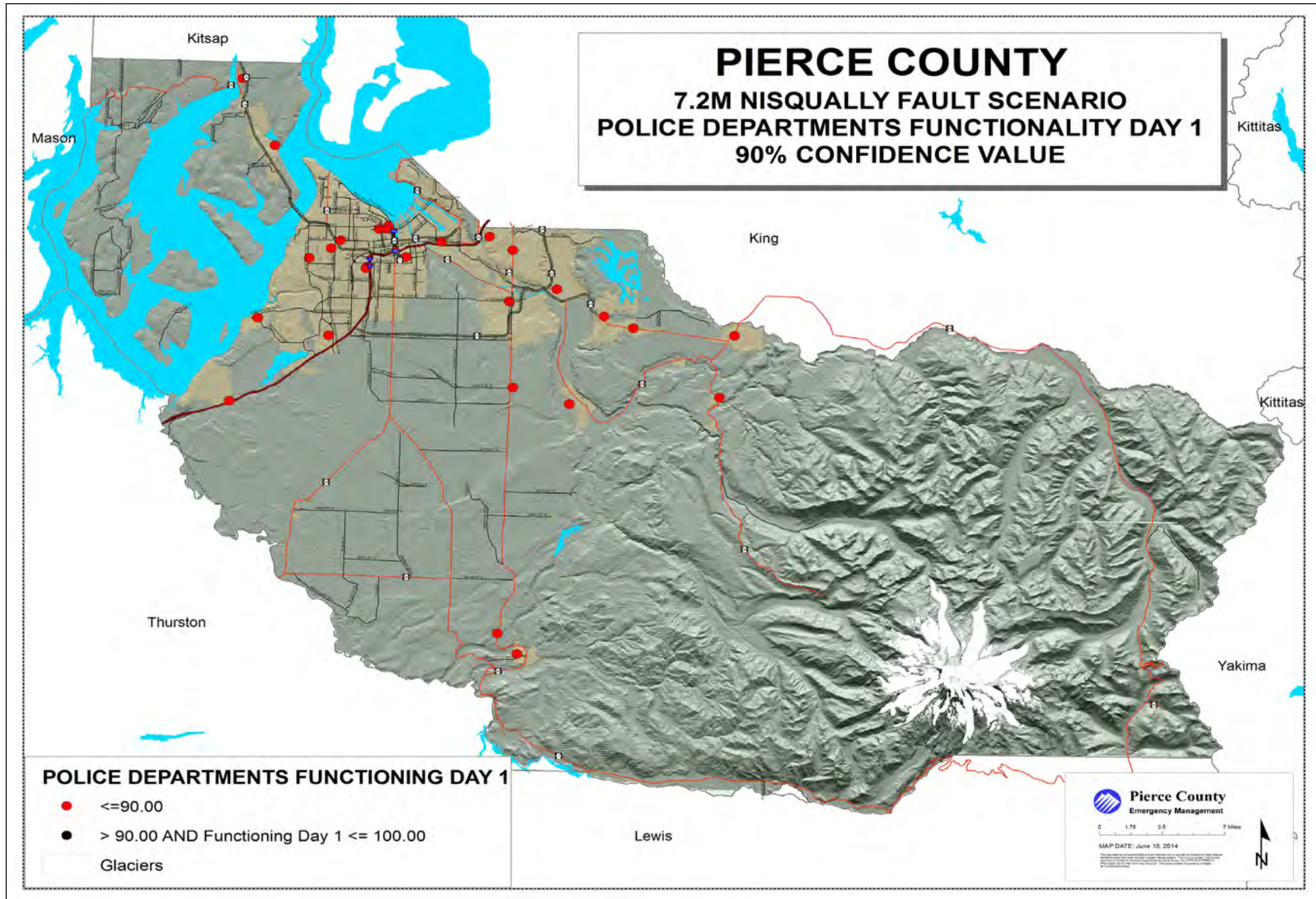
Map D-16 Pierce County Nisqually Fault Scenario Fire Stations Functionality Day 1



Map D-17 Pierce County Nisqually Fault Scenario Fire Stations Functionality Day 7

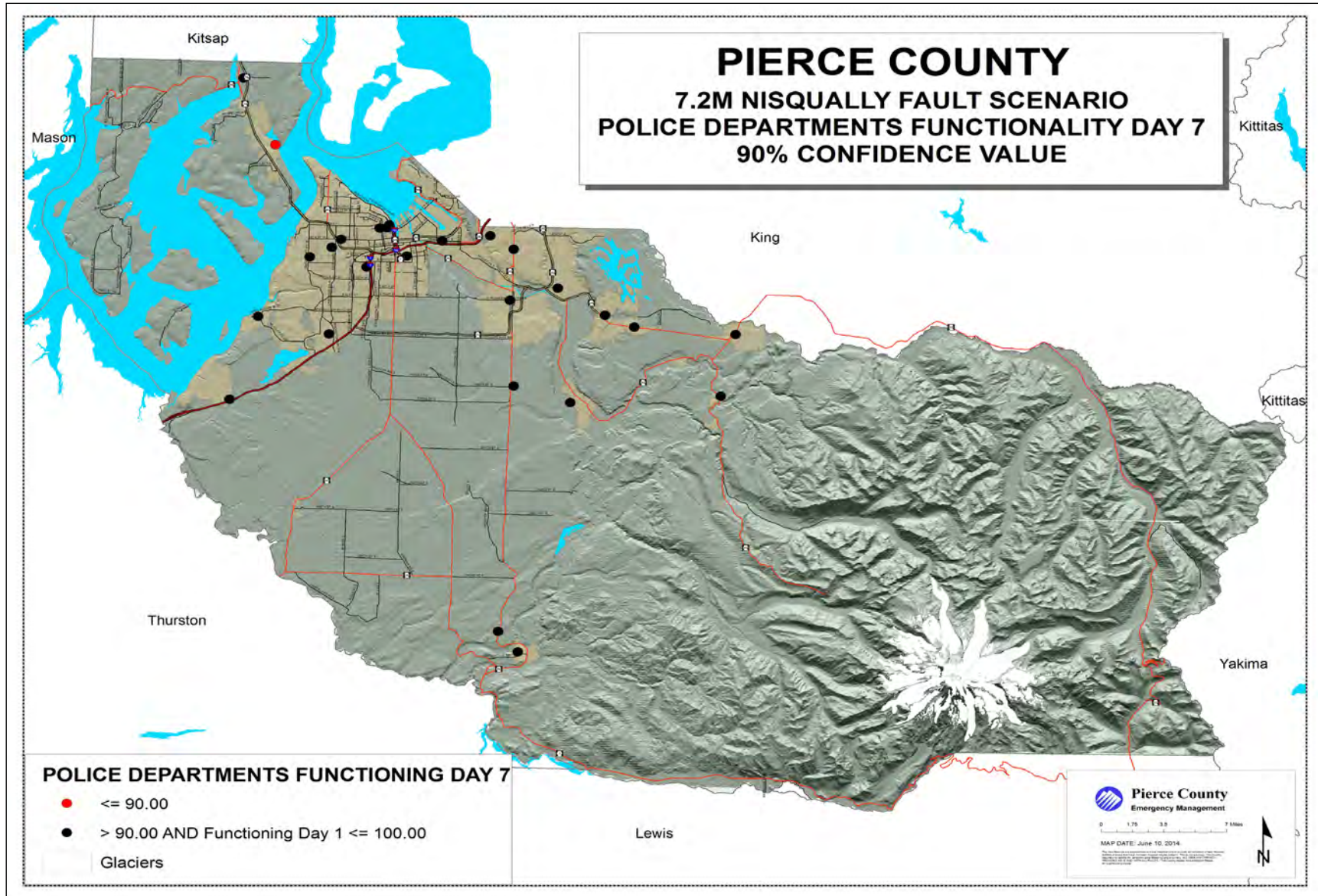


Map D-18 Pierce County Nisqually Fault Scenario Police Departments Functionality Day 1 <sup>5</sup>

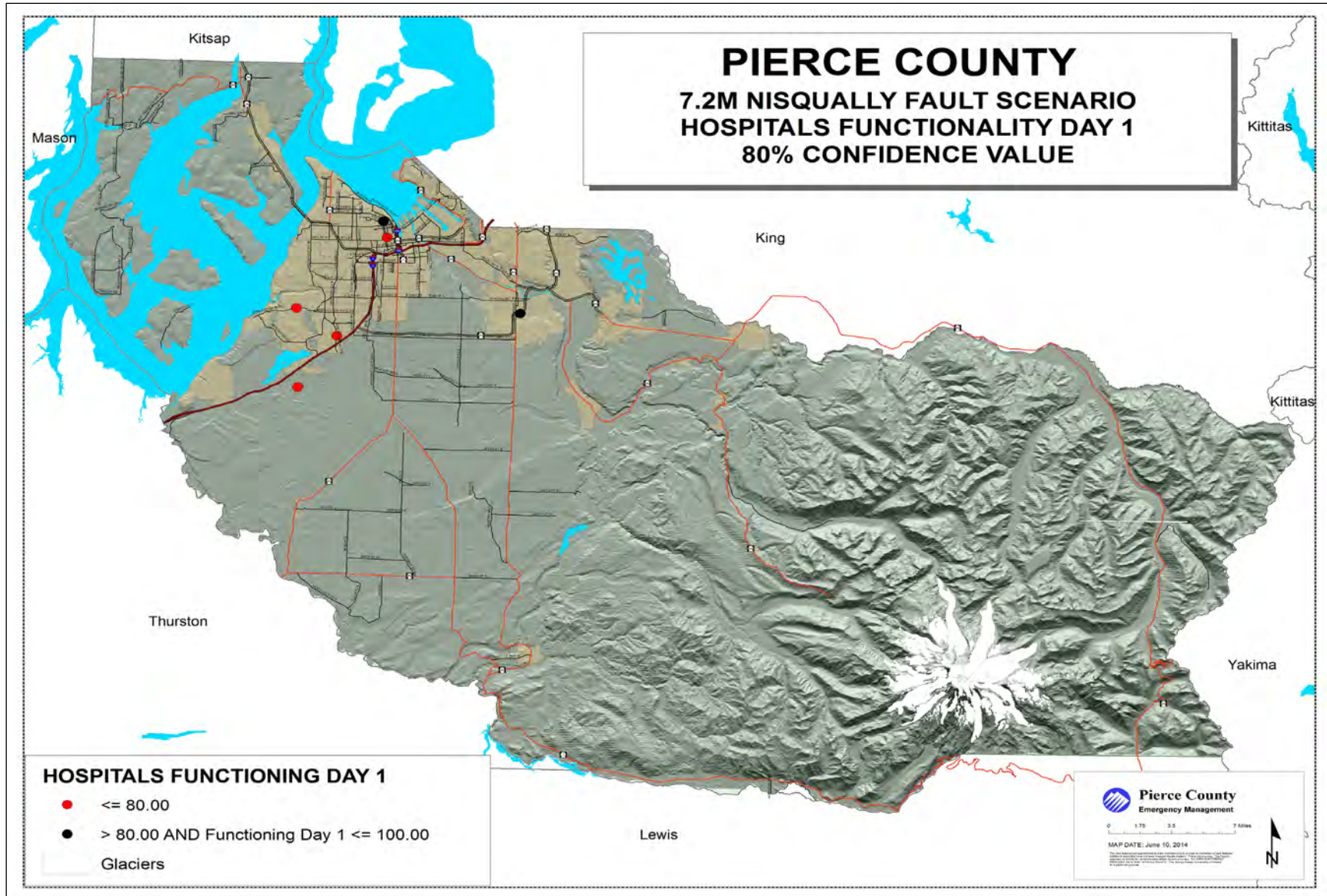




Map D-19 Pierce County Nisqually Fault Scenario Police Departments Functionality Day 7 <sup>6</sup>

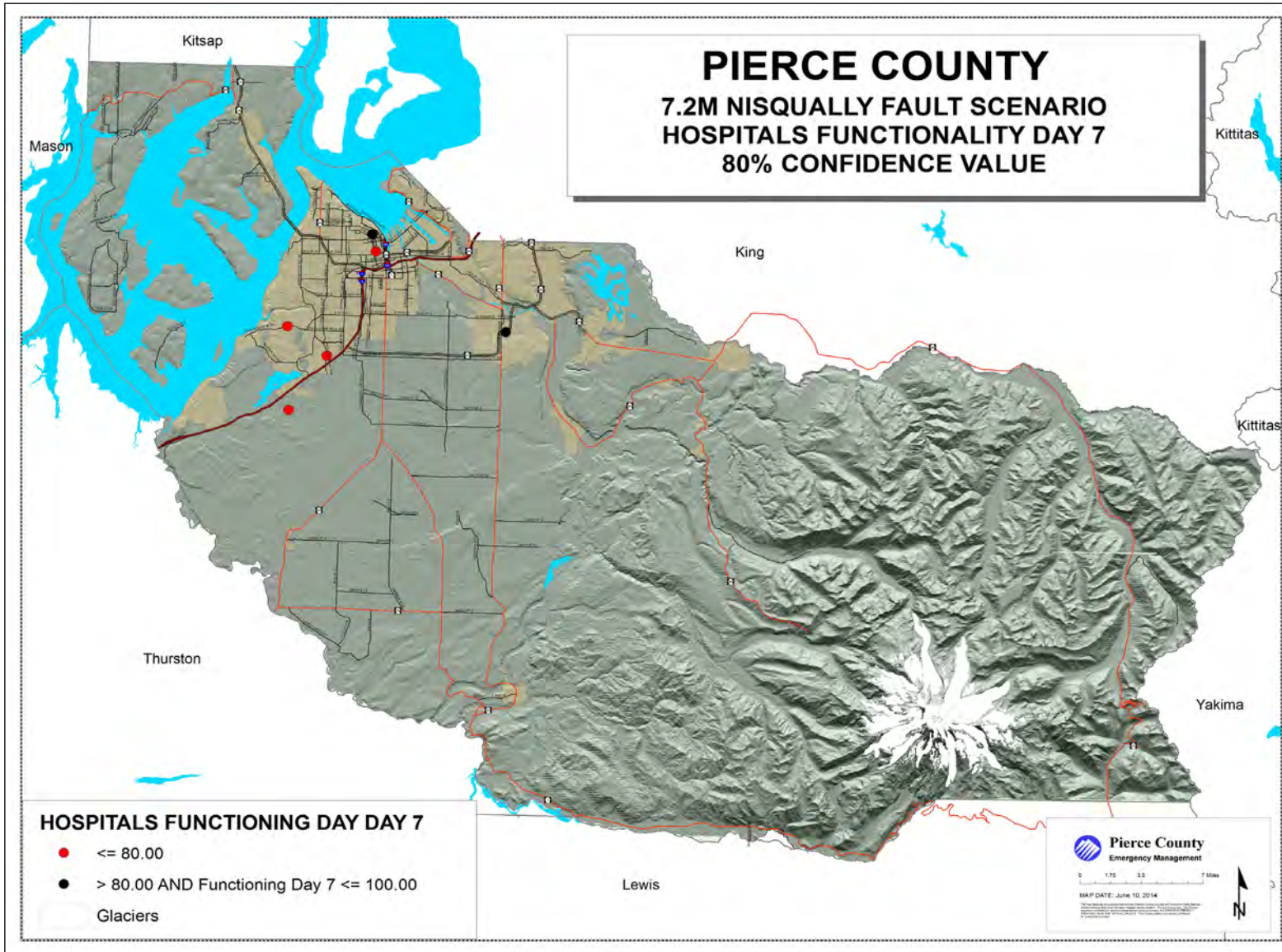


Map D-20 Pierce County Nisqually Fault Scenario Hospital Functionality Day 1 <sup>7</sup>

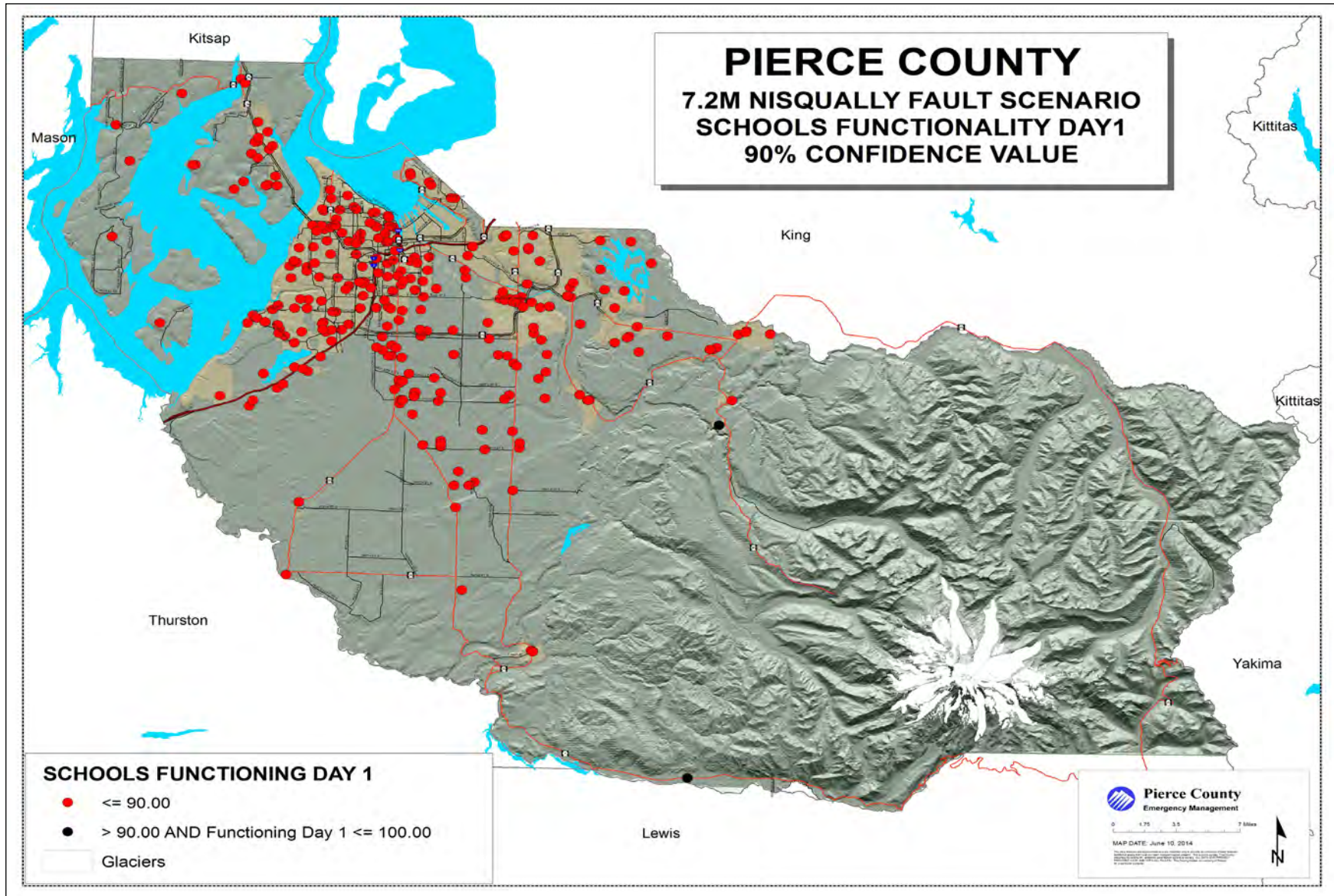


APPENDIX D-22

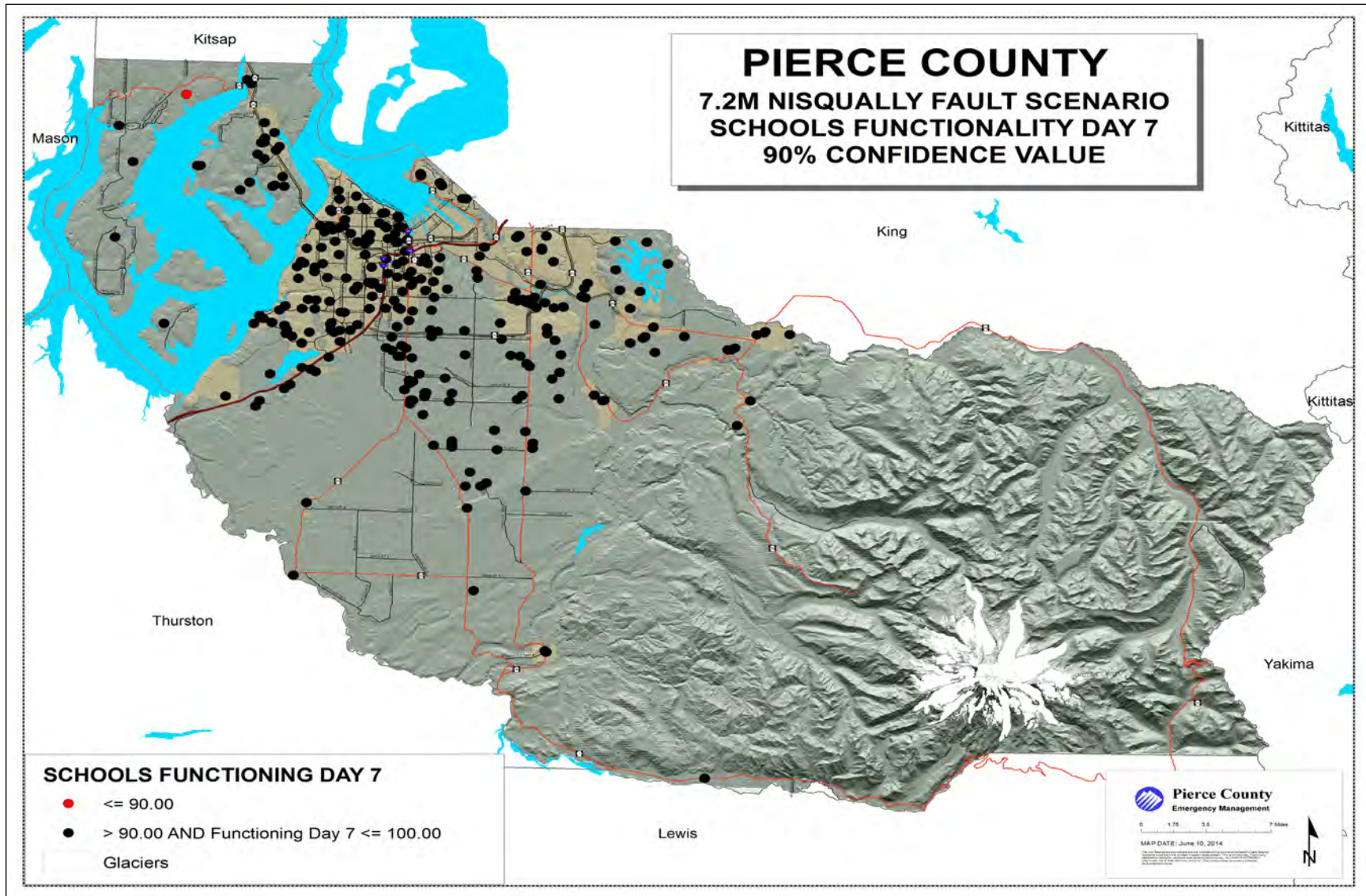
Map D-21 Pierce County Nisqually Fault Scenario Hospital Functionality Day 7<sup>8</sup>



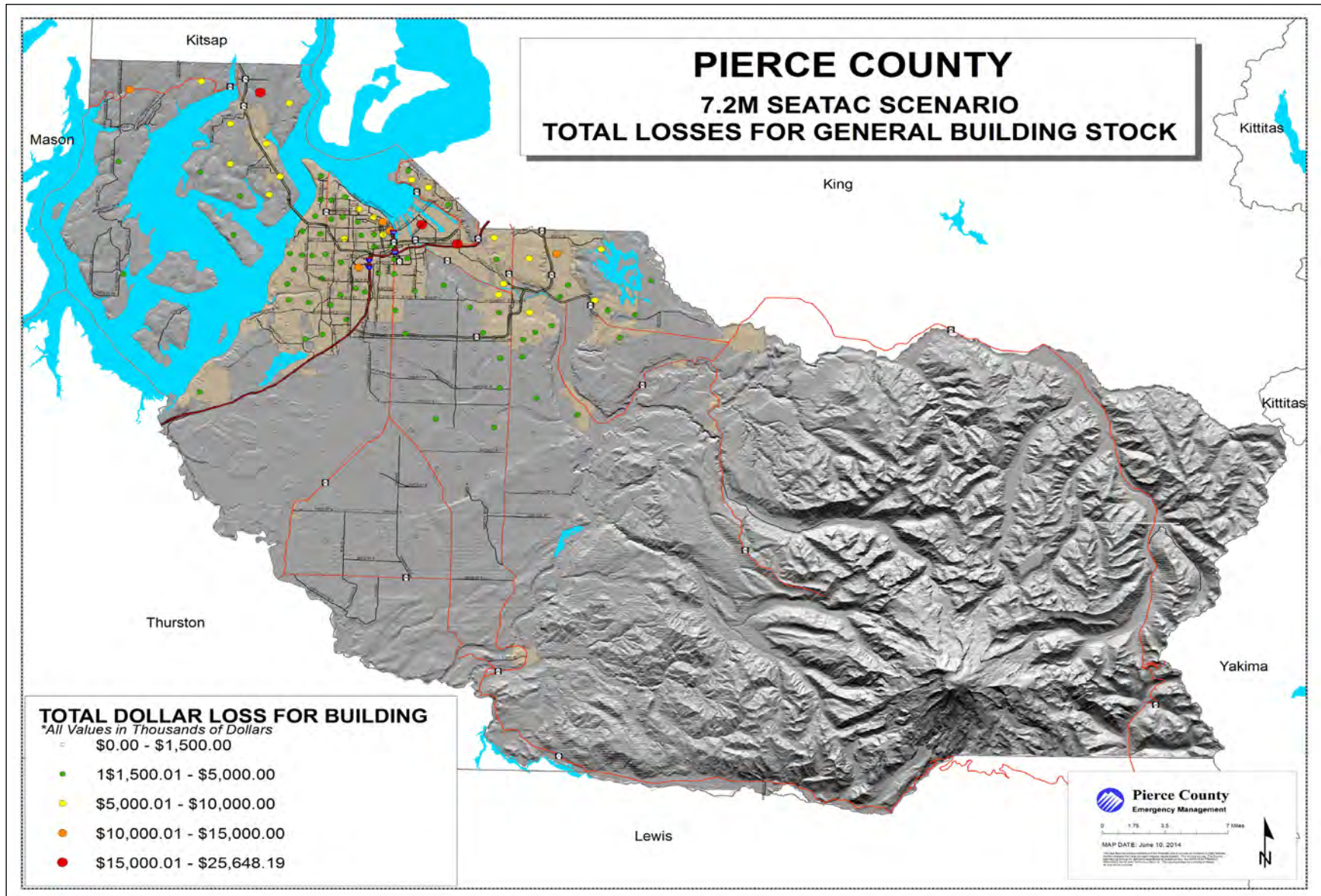
Map D-22 Pierce County Nisqually Fault Scenario Schools Functionality Day 1



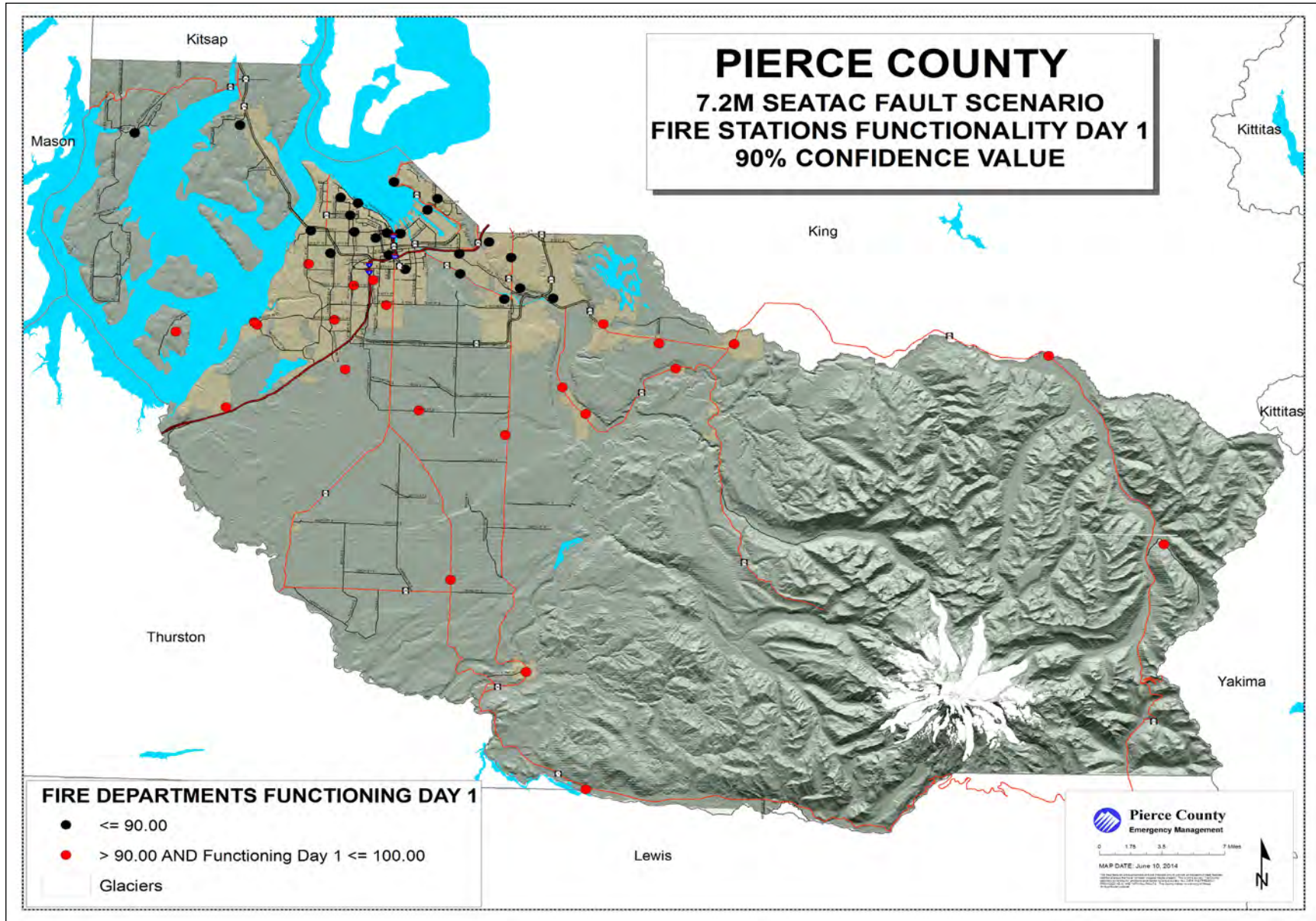
Map D-23 Pierce County Nisqually Fault Scenario Schools Functionality Day 7



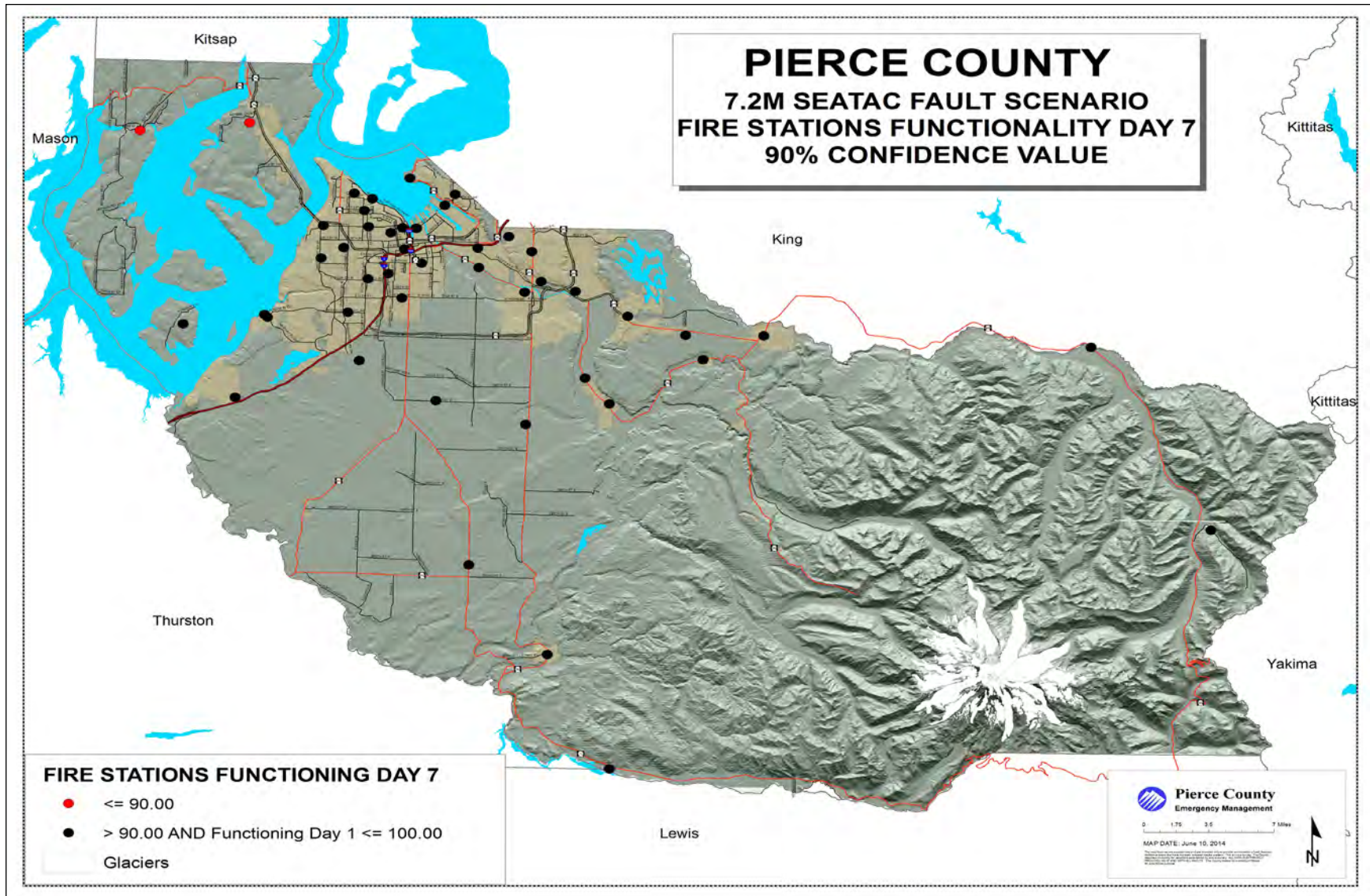
Map D-24 Pierce County SEATAC Fault Scenario Total Losses



Map D-25 Pierce County SEATAC Fault Scenario Fire Stations Functionality Day 1

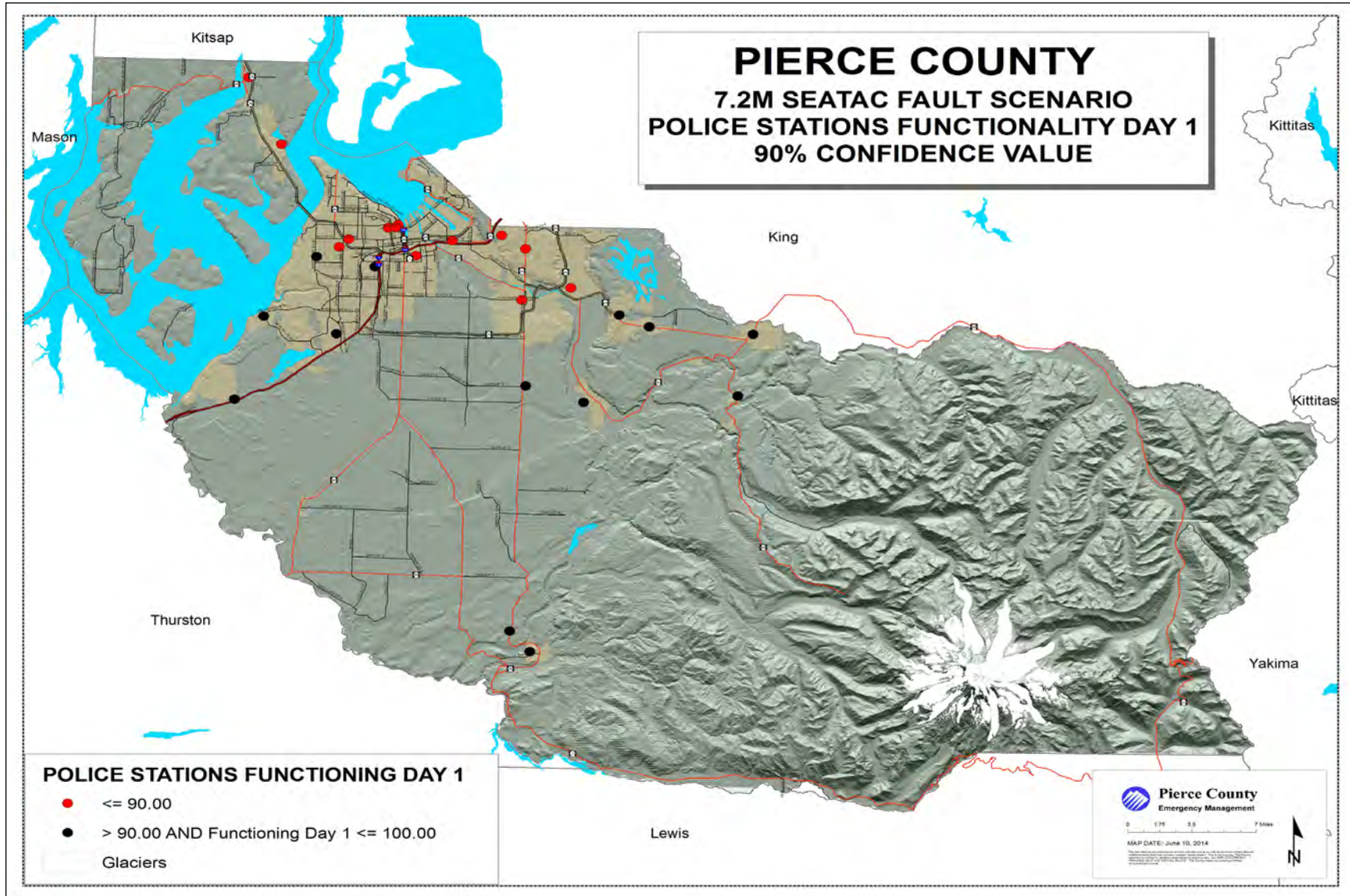


Map D-26 Pierce County SEATAC Fault Scenario Fire Stations Functionality Day 7

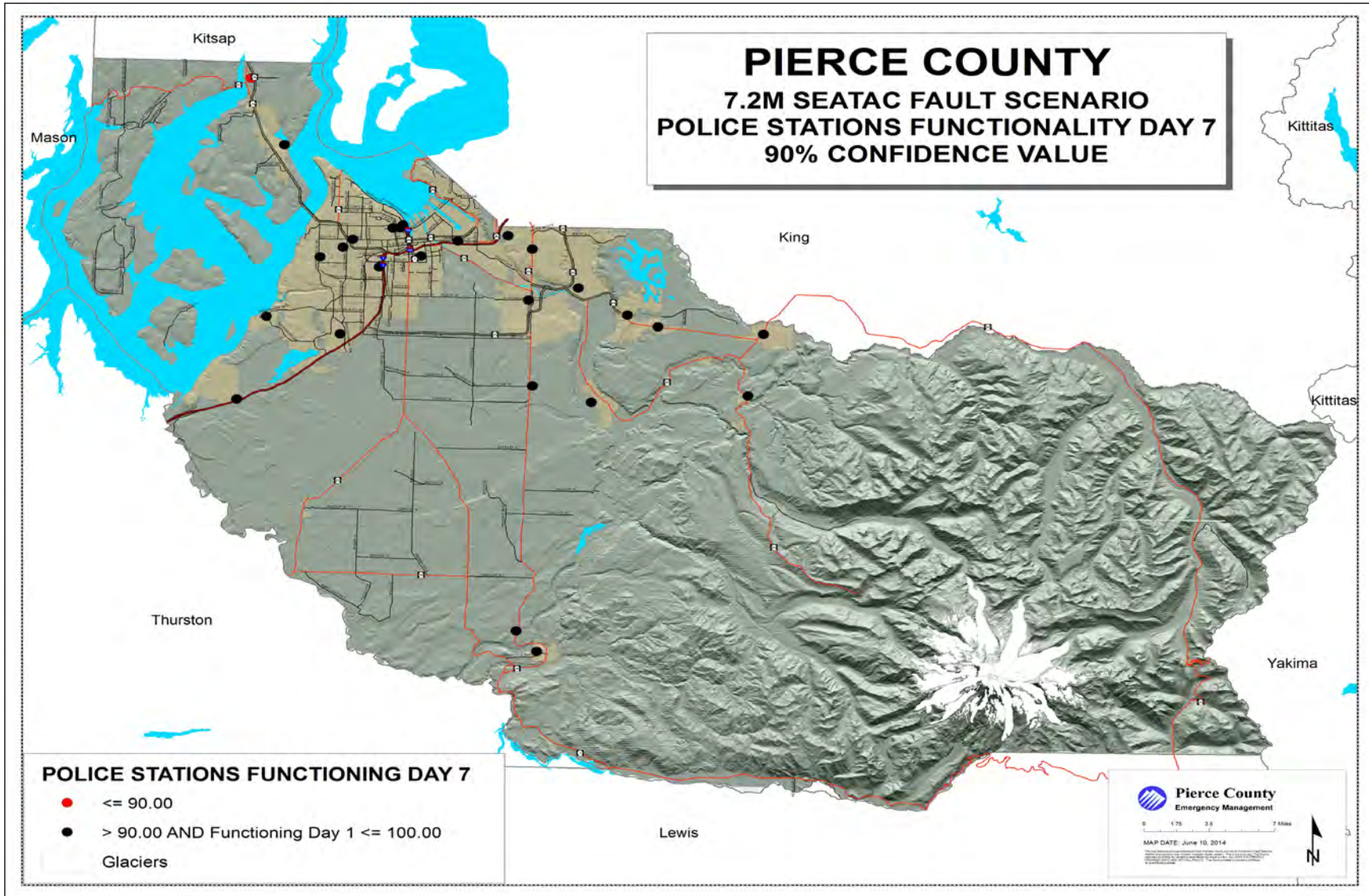




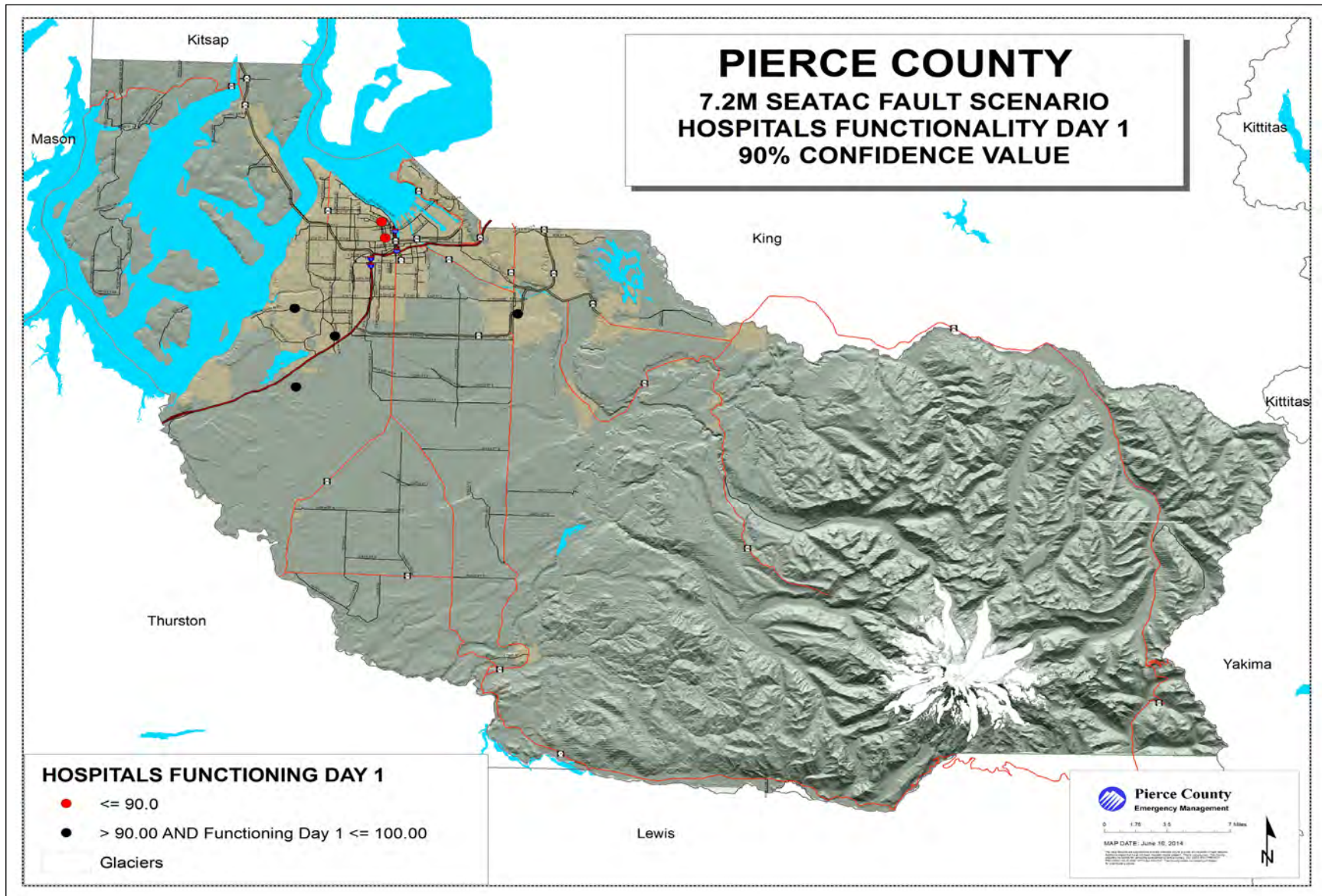
Map D-27 Pierce County SEATAC Fault Scenario Police Department Functionality Day 1<sup>9</sup>



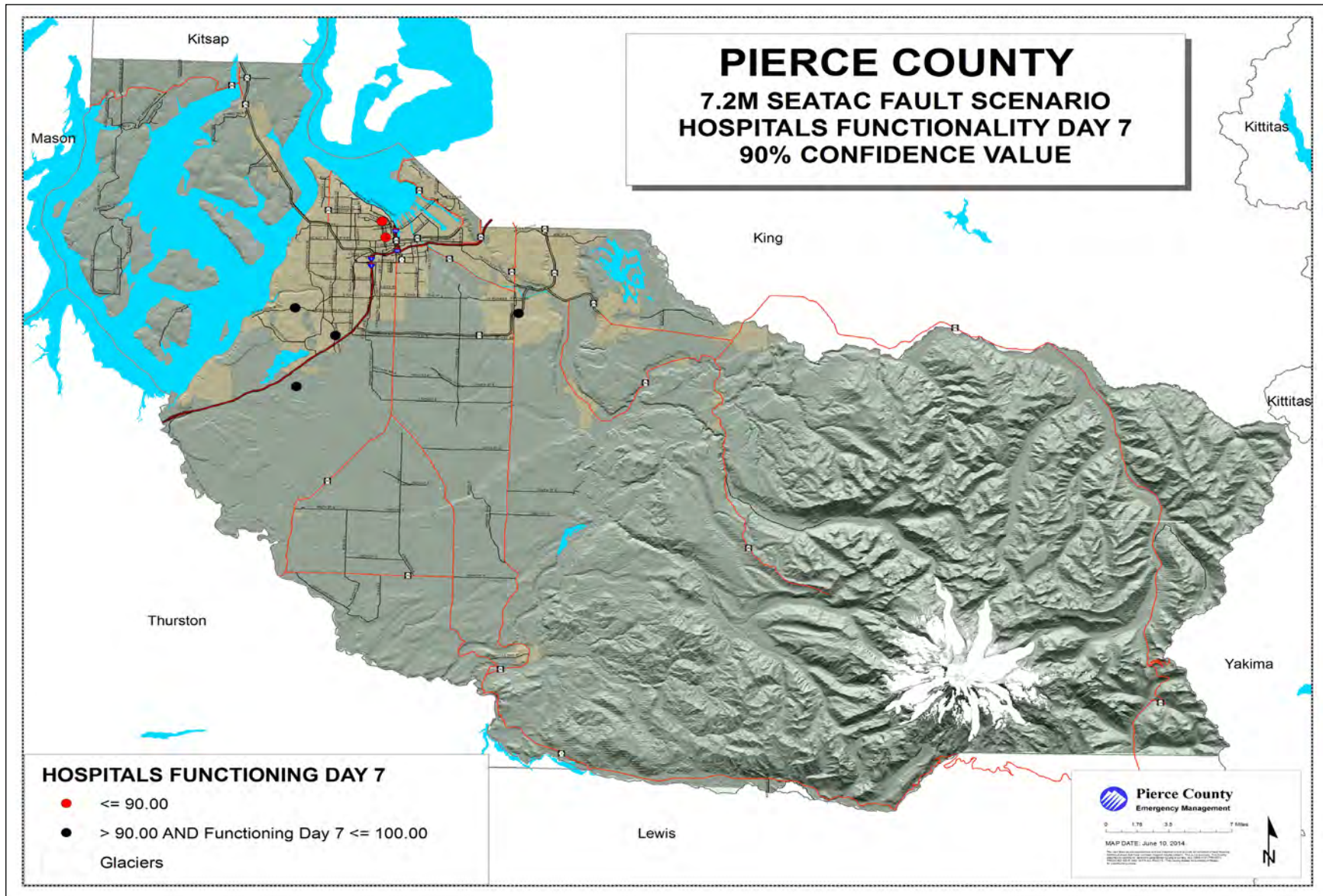
Map D-28 Pierce County SEATAC Fault Scenario Police Department Functionality Day 7<sup>10</sup>



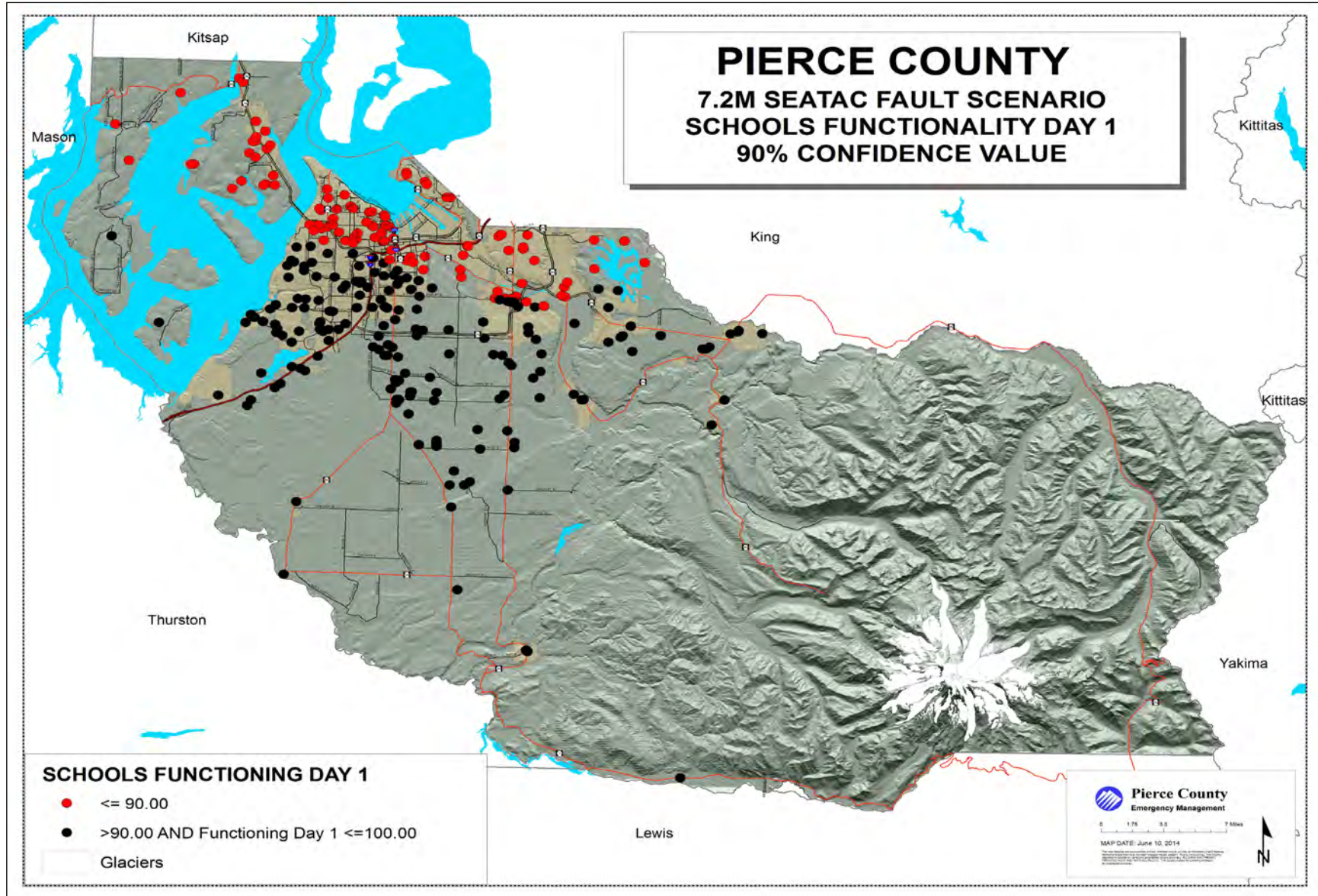
Map D-29 Pierce County SEATAC Fault Scenario Hospital Functionality Day 1 Map<sup>11</sup>



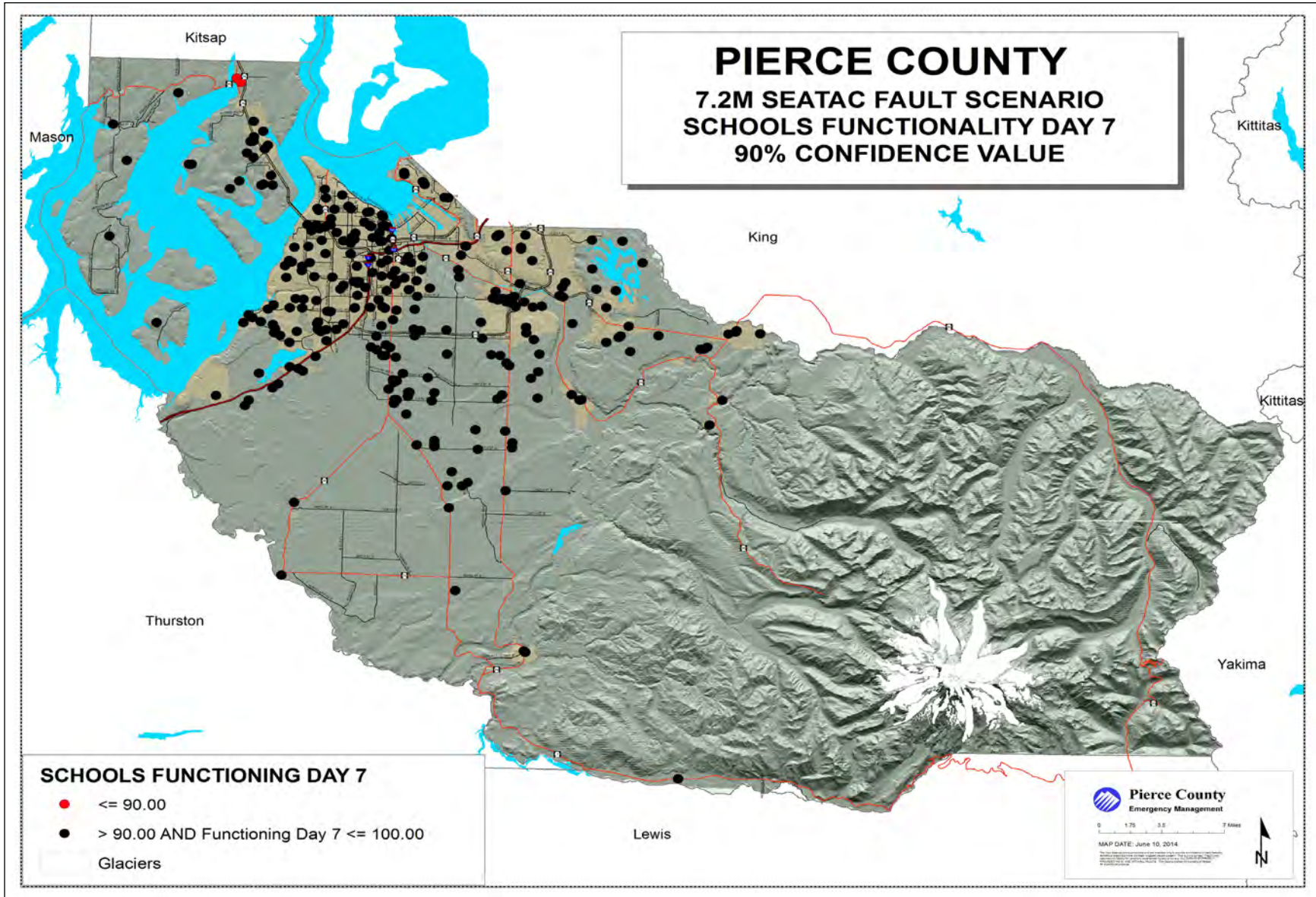
Map D-30 Pierce County SEATAC Fault Scenario Hospital Functionality Day 7<sup>12</sup>



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



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



## Endnotes

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<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> 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.

<sup>4</sup> 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.

<sup>5</sup> 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.

<sup>6</sup> 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.

<sup>7</sup> 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.

<sup>8</sup> 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.

<sup>9</sup> 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.

<sup>10</sup> 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.

<sup>11</sup> 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.

<sup>12</sup> St. Anthony's Hospital is not included on the map due to the recent construction of the hospital lack of data at the time the analysis was done.

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APPENDIX E

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

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# PUBLIC COMMENT DOCUMENTATION

Elected Officials Meeting – July 8, 2019



## LAKWOOD CITY COUNCIL STUDY SESSION AGENDA

Monday, July 8, 2019

7:00 P.M.

City of Lakewood  
City Council Chambers  
6000 Main Street SW  
Lakewood, WA 98499

Page No.

### CALL TO ORDER

### ITEMS FOR DISCUSSION:

- (3) 1. Hazard Mitigation Plan Update. – *Ms. Debbie Bailey, Pierce County Emergency Management*
- (7) 2. Joint Lodging Tax Advisory Committee meeting. – (Workplan)
- (10) 3. Six Year (2019-2024) Information Technology Strategic Plan Update. – (Memorandum)

### ITEMS TENTATIVELY SCHEDULED FOR THE JULY 15, 2019 REGULAR CITY COUNCIL MEETING:

1. Police Commissioning Ceremony.
2. Proclamation declaring July 27, 2019 as Pierce County Trails Day. – *Mr. Larry Leveen, Forever Green Trails*
3. Authorizing the execution of an interlocal agreement with the Washington State Department of Social and Health Services, in the amount of \$621,000, relative to the Western State Hospital community partnership program. – (Motion – Consent Agenda)
4. Authorizing the execution of an interlocal agreement with the Washington State Department of Social and Health Services, in the amount of \$90,000, relative to the Western State Hospital police protection program. – (Motion – Consent Agenda)
5. Appointing Carroll Ray Dodson to serve on the Public Safety Advisory Committee through August 6, 2022. – (Motion – Consent Agenda)
6. Approval of the special assessment roll for the American Lake – Lake Management District No. 1. – (Resolution – Consent Agenda)

*The Council Chambers is accessible to persons with disabilities. Equipment is available for the hearing impaired. Persons requesting special accommodations or language interpreters should contact the City Clerk, 253-983-7705, as soon as possible in advance of the Council meeting so that an attempt to provide the special accommodations can be made.*

<http://www.cityoflakewood.us>

7. Renewing interim controls initially adopted January 22, 2019 governing Wireless Service Facilities. – (Ordinance – Regular Agenda)
8. Adopting amendments to the Lakewood Comprehensive Plan, including the future land use and zoning map, and Lakewood Municipal Code Title 18A. – (Ordinance – Regular Agenda)

**REPORTS BY THE CITY MANAGER**

**CITY COUNCIL COMMENTS**

**ADJOURNMENT**

*The Council Chambers is accessible to persons with disabilities. Equipment is available for the hearing impaired. Persons requesting special accommodations or language interpreters should contact the City Clerk, 253-983-7705, as soon as possible in advance of the Council meeting so that an attempt to provide the special accommodations can be made.*

<http://www.cityoflakewood.us>



State of Washington  
Emergency Management  
Division



Local Mitigation  
Planning  
Requirements  
Of the Disaster  
Mitigation Act of  
2000

§201.6 of the Interim Final Regulations

November 2002

- (3) A mitigation 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. This section **shall** include:
  - (i) A description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.
  - (ii) 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.
  - (iii) An action plan describing how the actions identified in paragraph (c)(2)(ii) of this section 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.
  - (iv) For multi-jurisdictional plans, there **must** be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.
- (4) A plan maintenance process that includes:
  - (i) A section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.
  - (ii) 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.

- (iii) Discussion on how the community will continue public participation in the plan maintenance process.
- (5) Documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council). For multi-jurisdictional plans, each jurisdiction requesting approval of the plan **must** document that it has been formally adopted.

(d) Plan review.

- (1) Plans **must** be submitted to the State Hazard Mitigation Officer for initial review and coordination. The State will then send the plan to the appropriate FMA Regional Office for formal review and approval.
- (2) The Regional review will be completed within 45 days after receipt from the State, whenever possible.
- (3) 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.

**Successful HMGP applicants, as well as communities desiring to apply for mitigation grant funds in the future, will be required to develop an All Hazard Mitigation Plan utilizing these criteria.**

**For additional information please contact the HMGP Section at (253) 512-7073**

\*Jurisdictions with HMGP project or planning funds will have specific due dates for submission of their plans. To receive Pre-Disaster Mitigation project grants, their mitigation plan must be submitted and approved prior to November 1, 2003.

Local Mitigation Plan is the hazard mitigation plan required of a local or Indian tribal government acting as a **subgrantee as a condition of receiving a project subgrant under the HMGP** as outlined in 44 CFR 201.6.

Subgrantee means the government or other legal entity to which a subgrant is awarded and which is accountable to the grantee for the use of the funds provided. **Subgrantees can be a State agency, local government, private non-profit organizations, or Indian tribal government** as outlined in Sec. 206.433. Indian tribal governments acting as a subgrantee are accountable to the State grantee.

Plan requirement. (1) For all disasters declared on or after November 1, 2004\*, local and tribal government applicants for subgrants, must have an approved local mitigation plan in accordance with 44 CFR 201.6 prior to receipt of HMGP subgrant funding. Until November 1, 2004\*, local mitigation plans may be developed concurrent with the implementation of subgrants

**Sec. 201.6 Local Mitigation Plans**

The local mitigation plan is the representation of the jurisdiction's commitment to reduce risks from natural hazards, serving as a guide for decision makers as they commit resources to reducing the effects of natural hazards. Local plans will also serve as the basis for the State to provide technical assistance and to prioritize project funding.

**(a) Plan requirement.**

- (1) For disasters declared after November 1, 2004, a local government **must** have a mitigation plan approved pursuant to this section in order to receive HMGP project grants. Until November 1, 2004, local mitigation plans may be developed concurrent with the implementation of the project grant.
- (2) Regional Directors may grant an exception to the plan requirement in extraordinary

circumstances, such as in a small and impoverished community, when justification is provided. In these cases, a plan will be completed within 12 months of the award of the project grant. If a plan is not provided within this timeframe, the project grant will be terminated, and any costs incurred after notice of grant's termination will not be reimbursed by FEMA.

- (3) Multi-jurisdictional plans (e.g. watershed plans) may be accepted, as appropriate, as long as each jurisdiction participates in the process, answers all the questions and has officially adopted the plan. State-wide plans will not be accepted as multi-jurisdictional plans.

**(b) Planning process.** An open public involvement process is essential to the development of an effective plan. 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.

**(c) Plan content.** The plan **shall** include the following:

- (1) Documentation of 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.

(2) A risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments **must** provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment **shall** include:

- (i) A description of the type, 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.
- (ii) 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. The plan **should** describe vulnerability in terms of:
  - (A) The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas;
  - (B) 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;
  - (C) 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.
- (iii) For multi-jurisdictional plans, the risk assessment section **must** assess each jurisdiction's risks where they vary from the risks facing the entire planning area.

**REGION 5 HAZARD MITIGATION PLANNING SUMMARY**

<b>Region 5 Hazard Mitigation Planning Effort Jurisdiction Participants (81)</b>	
<p><b><u>21-Cities and Towns Group</u></b></p> <ol style="list-style-type: none"> <li>1. City of Bonney Lake</li> <li>2. City of Buckley</li> <li>3. City of Dupont</li> <li>4. City of Edgewood</li> <li>5. City of Fife</li> <li>6. City of Fircrest</li> <li>7. City of Gig Harbor</li> <li>8. City of Lakewood</li> <li>9. City of Milton</li> <li>10. City of Orting</li> <li>11. City of Puyallup</li> <li>12. City of Roy</li> <li>13. City of Sumner</li> <li>14. City of Tacoma</li> <li>15. City of University Place</li> <li>16. Town of Carbonado</li> <li>17. Town of Eatonville</li> <li>18. Town of South Prairie</li> <li>19. Town of Steilacoom</li> <li>20. Town of Wilkeson</li> <li>21. Pierce County Unincorporated</li> </ol>	<p><b><u>15-School District Group</u></b></p> <ol style="list-style-type: none"> <li>1. Carbonado School District</li> <li>2. Clover Park School District</li> <li>3. Dieringer School District</li> <li>4. Eatonville School District</li> <li>5. Fife School District</li> <li>6. Franklin Pierce School District</li> <li>7. Orting School District</li> <li>8. Pacific Lutheran University</li> <li>9. Peninsula School District</li> <li>10. Puyallup School District</li> <li>11. Steilacoom School District No. 1</li> <li>12. Sumner/Bonney Lake School District</li> <li>13. Tacoma School District</li> <li>14. University Place School District</li> <li>15. White River School District</li> </ol>
<p><b><u>12-Fire District Group</u></b></p> <ol style="list-style-type: none"> <li>1. Fire District #3 - West Pierce</li> <li>2. Fire District #5 - Gig Harbor)</li> <li>3. Fire District #6 - Central Pierce</li> <li>4. Fire District #13 - Browns Point</li> <li>5. Fire District #14 - Riverside</li> <li>6. Fire District #16 - Key Peninsula</li> <li>7. Fire District #17 South Pierce</li> <li>8. Fire District #18 - Orting</li> <li>9. Fire District #21 - Graham</li> <li>10. Fire District #22 – East Pierce</li> <li>11. Fire District #23 – Ashford - Elbe</li> <li>12. Fire District #27 – Anderson Island</li> </ol>	<p><b><u>14-Utility Group</u></b></p> <ol style="list-style-type: none"> <li>1. Clear Lake Water District</li> <li>2. Firgrove Mutual District</li> <li>3. Fruitland Mutual Water Company</li> <li>4. Graham Hill Mutual Water Company</li> <li>5. Lakeview Light and Power</li> <li>6. Lakewood Water District</li> <li>7. Mt. View-Edgewood Water Company</li> <li>8. Ohop Mutual Light Company</li> <li>9. Parkland Light and Water</li> <li>10. Peninsula Light Company</li> <li>11. Spanaway Water Company</li> <li>12. Summit Water and Supply Company</li> <li>13. Tanner Electric</li> <li>14. Valley Water District</li> </ol>
<p><b><u>10-Special Purpose Group</u></b></p> <ol style="list-style-type: none"> <li>1. American Red Cross</li> <li>2. Crystal River Ranch</li> <li>3. Crystal Village</li> <li>4. Herron Island Improvement Club</li> <li>5. Metro Parks</li> <li>6. Pierce Transit</li> <li>7. Port of Tacoma</li> <li>8. Raft Island</li> <li>9. Riviera Community Club</li> <li>10. Taylor Bay</li> </ol>	<p><b><u>9-Health &amp; Medical Group</u></b></p> <ol style="list-style-type: none"> <li>1. Cascade Regional Blood Services</li> <li>2. Community Health Care</li> <li>3. Dynamic Partners</li> <li>4. Franciscan</li> <li>5. Group Health</li> <li>6. Madigan Hospital</li> <li>7. MultiCare</li> <li>8. Pierce County Health Department</li> <li>9. Western State Hospital</li> </ol>

# PUBLIC COMMENT DOCUMENTATION

Farmers Market Outreach Booth – September 3, 2019

## Hazard Mitigation 2020-2025



### What is Hazard Mitigation?

Actions taken to reduce or eliminate the long-term risk to people, property, or the environment from hazards and their effects.

Examples:

- Hazardous Area Regulations
- Property Buy-Outs
- Elevating Homes
- Flood Control Dams
- Structural Seismic Retrofit
- Non-Structural Seismic Retrofit

**What is Hazard Mitigation Planning?** The process of determining the best means of how to reduce or eliminate the loss of life and property damage resulting from hazards.

### Why do we need the plan?

The Disaster Mitigation Act of 2000 requires that local governments and public service agencies prepare natural hazard mitigation plans as a condition of future funding. Federal law requires an update, approval, and adoption of local mitigation plans every five years in order to remain eligible for



## Hazard Mitigation 2020-2025

pre- and post-disaster mitigation funding. Since the first adoption of the plan, Pierce County has received hazard mitigation funds from five federally declared disasters totaling over \$5 million.

### **What are the goals of the Mitigation Plan?**

- 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

### **What is Pierce County's public participation process?**

In order to ensure that the updated Region 5 All Hazard Mitigation Plan be comprehensive, the seven planning groups in conjunction with Pierce County Department of 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.

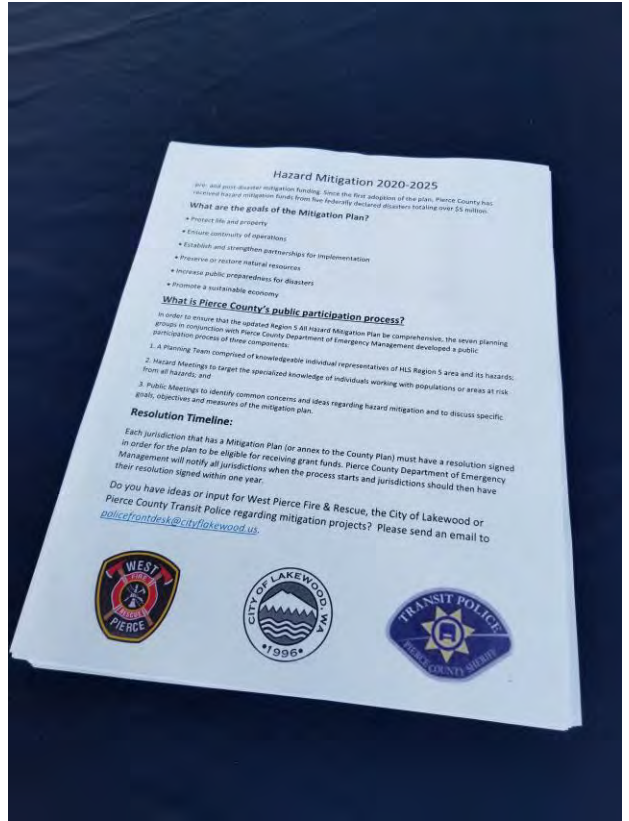
### **Resolution Timeline:**

Each jurisdiction that has a Mitigation Plan (or annex to the County Plan) must have a resolution signed in order for the plan to be eligible for receiving grant funds. Pierce County Department of Emergency Management will notify all jurisdictions when the process starts and jurisdictions should then have their resolution signed within one year.

Do you have ideas or input for West Pierce Fire & Rescue, the City of Lakewood or Pierce County Transit Police regarding mitigation projects? Please send an email to [policefrontdesk@cityflakewood.us](mailto:policefrontdesk@cityflakewood.us).

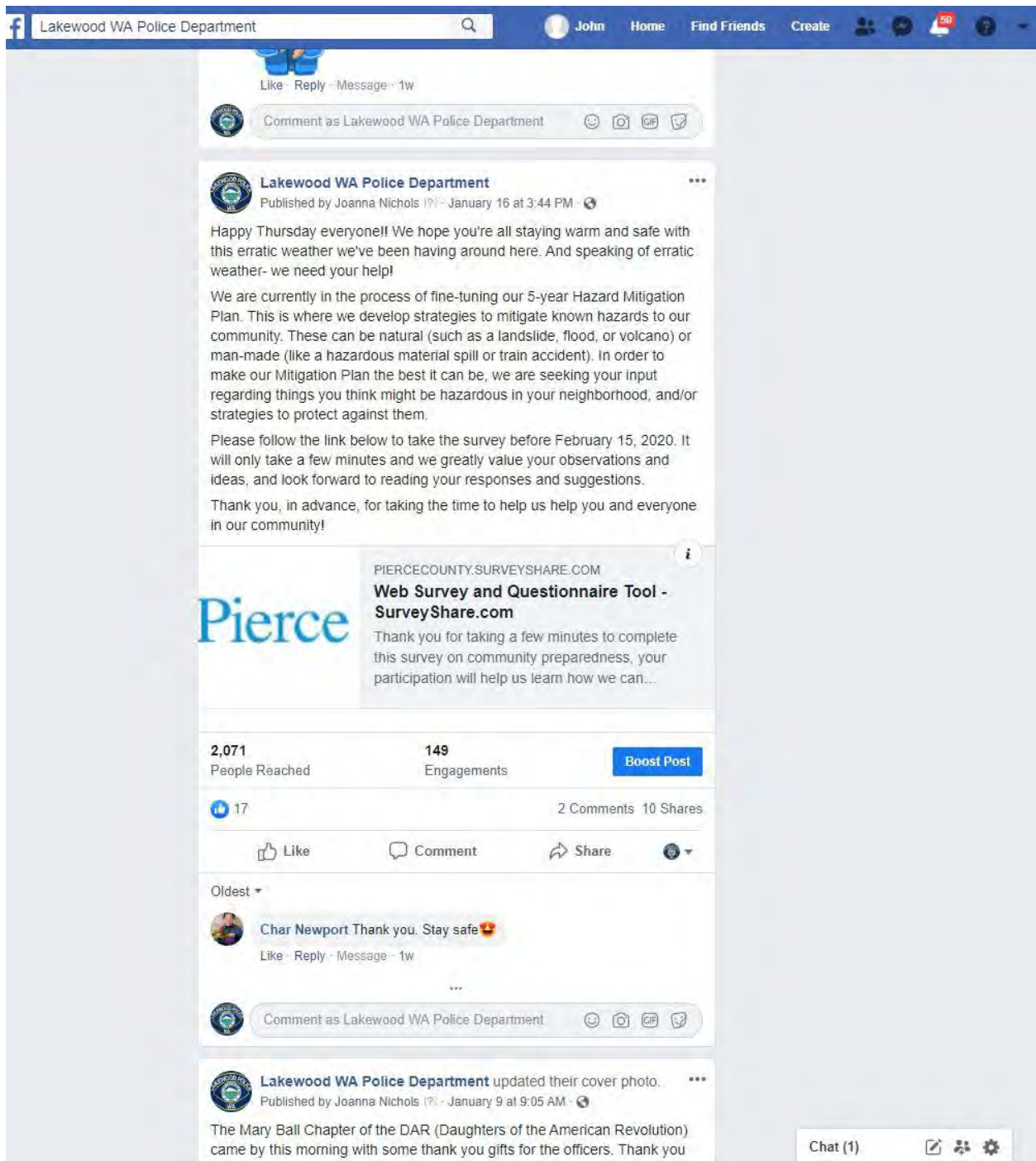








# Social Media Screen Shot – January 16, 2020 – February 15, 2020



# Public Safety Advisory Committee Agenda – October 2, 2019



## **PUBLIC SAFETY ADVISORY COMMITTEE**

Alan Hart • James Hairston • Ken Witkoe  
Michael Arnett • Mark Peila • Ray Dotson • Mark Terry  
Council Member Marie Barth, Committee Liaison  
Police Chief Mike Zaro, Committee Staff Support

### **Regular Meeting, Wednesday, October 2, 2019 at 5:15 p.m**

Lakewood Police Department  
9401 Lakewood Drive SW  
Lakewood, WA 98499

1. Call to Order
2. Roll Call
3. Approval of Minutes
4. Public Comments- (Members of the audience may comment on items that are not included on the agenda. Each person will be allowed 3 minutes to speak.)
5. Fire Department Comments
  - Presentation on Hazard Mitigation Plan
6. City Council Liaison Comments
7. Police Department Comments
8. Youth Council Comments
9. Unfinished Business
  - Fireworks Recommendation to Council
10. New Business
  - Preview of Next Meeting (December)
11. Reports from Board Members & Staff
  - Community Outreach Reports & Open Discussion on Public Safety
  - Pending Policy / Ordinance Changes
12. Adjournment

The Lakewood Police Station is accessible to persons with disabilities. Persons requesting special accommodations or language interpreters should contact Joanna Nichols, 830-5002, as soon as possible in advance of the meeting so that an attempt to provide the special accommodations can be made.

# Public Safety Advisory Committee Minutes – October 2, 2019



## **PUBLIC SAFETY ADVISORY COMMITTEE**

Regular Meeting Minutes  
Wednesday, October 2, 2019  
Lakewood Police Department  
9401 Lakewood Drive SW  
Lakewood, WA 98499

### CALL TO ORDER

The meeting was called to order at 5:14 p.m.

### ROLL CALL

Public Safety Advisory Committee Members Present: Alan Hart, James Hairston, Ken Witkoe, Michael Arnett, Ray Dotson, Mark Terry and Mark Peila

Public Safety Advisory Committee Members Excused: None

Public Safety Advisory Committee Members Absent: None

City Councilmember Present: Councilmember Marie Barth

Fire Department Staff Present: Assistant Fire Chief Hallie McCurdy

Lakewood Youth Council Present: Joo Gyeong Kim.

Staff Present: Chief Mike Zaro and Committee Staff Support; Joanna Nichols, Administrative Assistant

### APPROVAL OF MINUTES

Mark Peila motioned to approve August's meeting minutes. All ayes; minutes were approved.

#### PUBLIC COMMENT

Kent Troy from the Oakbrook Neighborhood was in attendance and asked about a bicycle campaign, teaching proper rules for the road for both bicycles and cars sharing the road with the bicyclists, come spring.

#### FIRE CHIEF COMMENTS

Assistant Fire Chief Hallie McCurdy discussed the Mitigation Plan. Discussion ensued. Assistant Fire Chief McCurdy will email the plan to Joanna Nichols so she can send it out to PSAC members for perusal. Any comments or recommendations regarding the plan can be sent directly to Assistant Fire Chief McCurdy.

#### CITY COUNCIL LIAISON COMMENTS

Councilmember Marie Barth passed around the newest Community Economic Development brochure. Discussion ensued.

Michael Arnett asked about the development that was supposed to be going in on Military and 112<sup>th</sup>/Vernon. Councilmember Marie Barth stated she would try to find out and email it to Mr. Arnett.

#### POLICE CHIEF COMMENTS

Chief Michael Zaro went over the questions Chair Alan Hart had sent him prior to the meeting, which included shots fired reports on social media, car thefts/vehicle prowls, as well as discussing the Coffee with a Cop event which had one session that morning and another was happening now, during the meeting. Chief Zaro stated the Department intended to do another retail theft emphasis, also.

Chief Michael Zaro also stated he wanted to do another speed emphasis in the next month or two. Discussion ensued.

Alan Hart asked about the Fallen Officer Food Drive. Chief Michael Zaro stated it will be on November 26<sup>th</sup> this year, from 6 a.m. until 5:30 p.m. The Blood Drive portion will also be happening again, from 9 a.m. until 3 p.m.

Mark Peila asked about the Citizens Academy. Chief Michael Zaro gave a recap, stating there are only three classes left.

Ken Witkoe asked for a Reserve Program. Chief Michael Zaro stated he would have someone here at the next meeting.

YOUTH COUNCIL COMMENTS

Joo Gyeong Kim was present, but had to leave prior to her turn to share information.

UNFINISHED BUSINESS

The fireworks subcommittee/letter of recommendation was discussed. It was decided to vote on what recommendation to forward to the City Council. Vote was: 5 leave ordinance as is/status quo; 2 total ban. The subcommittee will write up a new recommendation letter, with help from Joanna Nichols, as needed; if anyone has anything else to add, they can send it to Ken or Joanna by October 31<sup>st</sup>. Ken will have the final letter to Joanna by November 15<sup>th</sup>.

NEW BUSINESS

Alan Hart stated that we need to start discussing SummerFest now. It will be on July 11<sup>th</sup>, 2020. A subcommittee was formed to work out the logistics for SummerFest, consisting of James Hairston, Mark Peila and Ray Dotson.

Alan Hart reminded everyone that each member had to take the OPMA (Open Public Meetings Act) training, and to speak with Joanna Nichols if you needed the links for the training to be resent.

Alan Hart stated that it was time to vote in the new Chair and Vice Chair.

REPORTS FROM BOARD MEMBERS & STAFF

Ray Dotson volunteered to attend the Tillicum Neighborhood Association Meetings. Other members gave their meeting reports, as applicable.

Michael Arnett asked some questions regarding protocols for Animal Control call outs. Discussion ensued.

ADJOURNMENT

Mark Peila motioned to adjourn the meeting; all ayes. Meeting adjourned at 6:40 p.m.

Public Safety Advisory Committee:

Attest:

\_\_\_\_\_  
Alan Hart, Vice Chair

\_\_\_\_\_  
Joanna Nichols, Secretary

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APPENDIX F

REGION 5 ALL HAZARD MITIGATION PLAN  
2020-2025 EDITION  
CITY OF LAKEWOOD  
COMPLETED/DEFERRED MITIGATION STRATEGIES

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## Deferred or Completed Mitigation Strategies

The following mitigation strategies were removed from the Section 5 Mitigation Plan and placed in Appendix F to retain them. They have either been deferred or completed. In the future as mitigation strategies are completed, they will be moved to this location to provide a history of accomplishments. Deferred mitigation strategies can be moved back into the “working” mitigation strategies of Section 5 at any time.

**Table F-1 City of Lakewood Mitigation Strategy Matrix**

Implementation Mechanism	Mitigation Measure ( <i>Hazard(s)</i> ) <sup>1</sup>	Lead Jurisdiction(s) / Department(s)	Timeline (years)	Plan Goals					
				Life and Property	Operations Continuity	Partnerships	Natural Resources	Preparedness	Sustainable Economy
<b>Deferred</b>	1. Identify Critical Routes and Determine Alternate Routes ( <i>E,F,SW</i> )	Lakewood – Public Works Engineering	5	✓	✓	✓			
	2. Radio Communications Set-Up Between all City-Owned Vehicles, Buildings, and EOC ( <i>E,F,SW</i> )	Lakewood	5	✓	✓				
	3. Evacuation Plan Template for Multiple Events ( <i>E,V,F,SW,WUI,MM</i> )	Lakewood - Police with West Pierce Fire & Rescue	1 to 2	✓	✓	✓			—
<b>Completed</b>	1. Generator Retrofit of Park Operations Center ( <i>E,SW,MM</i> )	Lakewood - Parks	Complete	✓	✓			✓	
	2. Structural Retrofit of Park Operations Center ( <i>E,SW</i> )	Lakewood – Parks	Complete	✓	✓			✓	
	3. Create an Emergency Operations Center in Lakewood City Hall ( <i>E,V,F,SW,WUI,MM</i> )	Lakewood - Emergency Management	Complete	✓	✓	✓		✓	✓
	4. National Flood Insurance Program ( <i>F</i> )	Lakewood (Community Development); PC PWU	Complete	✓	✓	✓	✓	✓	☐

# Deferred Mitigation Measures

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## Identify Critical Routes and Determine Alternate Routes

**Hazards:** E, F, SW<sup>1</sup>

The City is unique with its bodies of water and neighborhoods surrounded by other jurisdictional boundaries – effectively making them islands with one route in and out. Determine these isolated areas and determine alternate access routes (e.g. via through private property, via Fort/Base lands, etc.) and develop agreements as needed that can be implemented during an emergency.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Establish and Strengthen Partnerships for Implementation.
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 Lakewood – Public Works
5. **Timeline** = Long-term
6. **Benefit** = Traveling public and/or emergency vehicles over specific route.
7. **Life of Measure** = 100 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			
This was in our last plan but was deferred. We want to include in the new plan.			

*Origin*

Previous Plan	Current Plan
X	

---

## Radio Communications Set-Up Between all City-Owned Vehicles, Buildings, and EOC

**Hazards:** E, F, SW<sup>1</sup>

Provide radios for back-up radio communication (when all of the cell phones go down). Determine if communication can also be set up with other public agencies providing mutual aid.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations.
2. **Cost of Measure** = TBD
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants and state or federal grants.
4. **Lead Jurisdiction(s)** = City of Lakewood – Public Works

5. **Timeline** = Short-term
6. **Benefit** = Traveling public and/or emergency vehicles over specific route.
7. **Life of Measure** = 100 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			
<b>This was in our last plan but was deferred. We want to include in the new plan.</b>			

*Origin*

Previous Plan	Current Plan
X	

## Evacuation Plan Template for Multiple Events

**Hazards:** E, V, F, WUI, MM, SW<sup>1</sup>

The police department will develop an SOP that will outline recommended techniques and procedures for conducting an evacuation of an area or complex in the event of different types of emergencies such as a train derailment, active shooter, bomb threat, or other events.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Establish and Strengthen Partnerships for Implementation.
2. **Cost of Measure** = Staff Time
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s)** = City of Lakewood - Police Department and Lakewood Fire
5. **Timeline** = Ongoing
6. **Benefit** = Residents and businesses of Lakewood, visitors and regional partners
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			
<b>This was in our last plan but was deferred. We want to include in the new plan.</b>			

*Origin*

Previous Plan	Current Plan
X	

# Completed Mitigation Measures

---

## Generator Retrofit of Park Operations Center

**Hazards:** E, MM, SW<sup>1</sup>

As part of the electrical upgrades to the shop, a generator switch will be installed so in the event power is lost, the operations center will have power to operate the fueling station, and most power operations in the shop.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Increase Public Preparedness for Disasters.
2. **Cost of Measure** = Already implemented as electrical upgrades to operation center
3. **Funding Source and Situation** = Funding could be obtained through local budget and grants.
4. **Lead Jurisdiction(s)** = City of Lakewood - Parks Department
5. **Timeline** = Short-Term
6. **Benefit** = Parks Operation Center, City of Lakewood
7. **Life of Measure** = 30 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			
This was completed.			

*Origin*

Previous Plan	Current Plan
X	

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## Structural Retrofit of Park Operations Center

**Hazards:** E, SW<sup>1</sup>

Collar ties were added to the roof to strengthen the integrity of the Park Operations Center. Posts and walls were added to strengthen the loft inside the shop, and a sheer wall was added inside to add strength against side to side movement.

1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Increase Public Preparedness for Disasters.
2. **Cost of Measure** = Already implemented as part of upgrades made to the operations center.
3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
4. **Lead Jurisdiction(s)** = City of Lakewood – Parks Department
5. **Timeline** = Short-term
6. **Benefit** = Park Operations, City of Lakewood

- 7. **Life of Measure** = 30 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			
<b>This was completed.</b>			

*Origin*

Previous Plan	Current Plan
X	

Create an Emergency Operations Center in Lakewood City Hall

**Hazards:** E, V, F, WUI, MM, SW<sup>1</sup>

The City of Lakewood will create an emergency operations center that has the necessary equipment for city EOC staff to operate effectively.

- 1. **Goal(s) Addressed** = Protect Life and Property; Ensure Continuity of Operations; Establish and Strengthen Partnerships for Implementation; Increase Public Preparedness for Disasters; Promote a Sustainable Economy.
- 2. **Cost of Measure** = Time and Materials and special equipment
- 3. **Funding Source and Situation** = Funding could be obtained through local budget or grants.
- 4. **Lead Jurisdiction(s)** = City of Lakewood - Emergency Management Director
- 5. **Timeline** = Short-term
- 6. **Benefit** = Residents and businesses of Lakewood, visitors, community and regional partners
- 7. **Life of Measure** = 5-10 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			
<b>We created an EOC, but it was done in the Police Station and not City Hall. But, it is complete.</b>			

*Origin*

Previous Plan	Current Plan
X	

---

## National Flood Insurance Program

### Hazards: F

Lakewood 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 Lakewood 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)** = Lakewood (Community Development); PC PWU
5. **Timeline** = On-going
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			
<p><b>The City amended its floodplain regulations to be compliant back in 2017 or 2018. This was followed by adopting updated shoreline regulations. The City has since found an error in the federal floodplain map and has submitted a request to amend the map to fix this.</b></p>			

*Origin*

Previous Plan	Current Plan
X	



# Endnotes

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## <sup>1</sup> 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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