KITTITAS COUNTY

HAZARD MITIGATION PLAN

Kittitas County Fire District #7 Annex



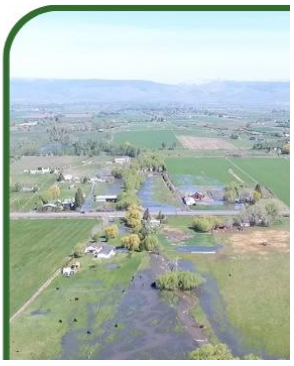














Kittitas County
Public Works Department

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1. INTRODUCTION

This Annex details the hazard mitigation elements specific to the Kittitas County Fire District #7, a participating jurisdiction to the 2025 Kittitas County Hazard Mitigation Plan update. This Annex is not intended to be a standalone document but supplements the information contained in **Volume 1 (Countywide Planning Elements)**. Therefore, all sections of **Volume 1** including the planning process, hazard identification and risk assessment, mitigation strategy (includes mitigation goals and objectives), and plan maintenance apply to and were met by the Kittitas County Fire District #7. This Annex provides additional information specific to the District, with a focus on providing additional details on the hazard risk assessment and mitigation strategy (i.e., mitigation actions) for this community.

2. LOCAL PLANNING TEAM

The Kittitas County Fire District #7 Local Planning Team was comprised of the members listed on **Table 1**.

Table 1. Kittitas County Fire District #7 Local Planning Team Members

Name	Title	Department
Aaron Lowe	Fire Chief	Kittitas County Fire District #7
Kristin Carlson	Public Information Officer	Kittitas County Fire District #7
Eryn A. Micallef	Chief Admin Officer	Kittitas County Fire District #7

3. JURISDICTION PROFILE

Kittitas County Fire District #7 (i.e., Kittitas County Fire & Rescue) is a large rural fire district, encompassing 126 square miles. It is in a high value forest and open range environment along the east slope of the Cascade Mountain Range, 90 miles east of Seattle and 35 miles west of the City of Ellensburg. The district borders the Town of Easton to the west and surrounds the cities of Cle Elum and Roslyn, South Cle Elum, and the township of Ronald (Kittitas County Fire District #6).

The District protects a 20 mile stretch of the Interstate 90 corridor, a major transportation and commerce route from Seattle, and actively responds to wildfires, structure fires, vehicle accidents with extrication rescue, and emergency medical incidents. The call volume for 2023 was 867 incidents. Kittitas County Fire District #7 has 16 paid firefighter positions and 47 volunteer firefighters. Furthermore, the District participates in the countywide mutual aid agreement.

The District population is predominately located in a high wildland urban interface (WUI) zone, along the slopes of the upper Kittitas Valley. In an area with a high potential for intense wildfire behavior, Kittitas County Fire District #7 actively partners with the Washington State Department of Natural Resources and United States Forest Service to prevent and extinguish wildland fires.

3.1. Population

Kittitas County Fire District #7 had a population of 5,072 as of July 1, 2022. Between 2010 and 2020, the population increased by approximately 30.3%; and a population increase of 13.0% occurred between 2020 and 2022. **Table 2** shows the District's population distribution between 2010 and 2022.

Table 2. Population Estimates

Jurisdiction	2010	2020	2022	Population Change *(2010 – 2022)*
Kittitas County Fire District #7	3,445	4,490	5,072	47.2%

3.1.1. Underserved Population

FEMA defines underserved populations as groups that have limited or no access to resources or that are otherwise disenfranchised. These groups may include, but are not limited to, people who are socioeconomically disadvantaged, people with limited English proficiency, geographically isolated or educationally disenfranchised people, people of color as well as those of ethnic and national origin minorities, women and children, individuals with disabilities and others with access and functional needs, and seniors.[1]

The CDC's SVI is considered an appropriate and authoritative dataset to identify areas where efforts can be prioritized to ensure equitable outcomes from mitigation planning and actions. Social vulnerability refers to a community's capacity to prepare for and respond to the stress of natural, human-caused, and technological disasters. CDC's SVI combines 16 census-derived social factors, within four (4) themes (i.e., socioeconomic status, household characteristics, racial and ethnic minority status, and housing type and transportation) that summarizes the extent to which an area is socially vulnerable to disasters. The overall SVI combines all variables to provide a comprehensive assessment, and the possible scores range from zero (0) (lowest vulnerability) to one (1) (highest vulnerability).[2]

The overall SVI score for Kittitas County is 0.3366 which indicates a low to medium level vulnerability. **Table 3** outlines the SVI information for each social factor for the Kittitas County Fire District #7.[3]

Note: *ArcGIS mapping analysis was performed utilizing Census Tract data by overlaying Census Tracts with the District planning area boundary. The information outlined in this section includes data from the entire Census Tracts that intersect the jurisdiction.*

Table 3. Social Vulnerability Index (2022)

Theme	Social Factors	Percent
Socioeconomic Status	People below 150% poverty estimate	16.1%
	Unemployed *(Civilian 16 years old and older)*	2.1%
	Housing Cost Burden	8.6%
	No High School Diploma	6.2%
	No Health Insurance	9.1%
Household Characteristics	65 years old and older	24.6%
	17 years and younger	14.8%

[1] Federal Emergency Management Agency. (n.d.). Glossary: Underserved Population/Communities. Retrieved from https://www.fema.gov/about/glossary.
[2] Centers for Disease Control and Prevention. (2024). CDC/ATSDR SVI 2022 Documentation. Retrieved from https://www.atsdr.cdc.gov/placeandhealth/svi/documentation/pdf/SVI-2022-Documentation-H.pdf.
[3] Centers for Disease Control and Prevention. (2022). CDC/ATSDR Social Vulnerability Index (SVI). Retrieved from https://www.atsdr.cdc.gov/placeandhealth/svi/interactive_map.html.

Theme	Social Factors	Percent
	Civilian with a Disability	16.2%
	Single-Parent Household	1.5%
	English Language Proficiency	0.3%
Racial and Ethnic Minority Status	• Hispanic or Latino (of any race) • Black or African American • Asian • American Indian or Alaska Native • Native Hawaiian or Pacific Islander • Two or More Races • Other Races	15.7%
Housing Type and Transportation	Multi-Unit Structures	2.7%
	Mobile Homes	6.0%
	Crowding	0.4%
	No Vehicle	0.5%
	Group Quarters	0.3%

3.2. Brief History

The District was incorporated, under Title 52 of the Revised Code of Washington (RCW), in 1980. Initially, the District was operated strictly by volunteers until 2019 when the District hired the first full-time firefighter after a Staffing for Adequate Fire and Emergency Response Grants (SAFER) award. Currently, the District has 16 full-time firefights that provide continuous fire protection at three (3) stations. The population within the District's planning area continues to increase and, as a result, the District continues to enhance its service capabilities to match the growth and need.

Currently, Kittitas County Fire District #7 is the second busiest fire district in Kittitas County behind Kittitas Valley Fire Rescue (KVFR). Kittitas County Fire District #7 is the third busiest Fire/EMS agency in the County behind KVFR and Upper Kittitas County Medic One.

3.3. Governing Body Format

The governing body is a three (3) member elected Board of Commissioners that will assume the responsibility for adoption and implementation of this Plan. The Fire Chief is the Chief Executive Officer for the District and is responsible for the administration of any policies or program adopted by the Board of Fire Commissioners.

4. DEVELOPMENT TRENDS

An increase in new homes and vacation home construction resulted in population growth, including a greater recreational intensity in the District. Due to the increase of tourism, recreational activity, and population, the District is expected to continue to experience an increase in overall incident responses. In 2019, the District received 694 calls and a record call volume in 2023 with 867 calls. The District's increase in recreational population occurs during the winter and summer months. The impacts of the increased recreational traffic to Kittitas County and continual commerce traffic along Interstate 90 has increased the severity and occurrence of vehicle accidents.

4.1. Changes in Priority

The overall hazard mitigation priorities have not significantly changed for the Kittitas County Fire District #7 since the last Plan update. However, mitigation actions from the previous Plan were updated, and a more concerted effort on achieving equitable outcomes for all communities, including underserved communities and socially vulnerable populations, has been implemented.

5. CAPABILITY ASSESSMENT

Federal regulations require hazard mitigation plans to identify goals for reducing long-term vulnerabilities to the identified hazards in the planning area (Section 201.6(c)(3)(i)). A critical step in the development of specific hazard mitigation actions and projects is assessing existing authorities, policies, programs, and resources and capabilities to use or modify local tools to reduce losses and vulnerability from profiled hazards.

A capability assessment was conducted for Kittitas County Fire District #7 and participating jurisdictions' authorities, policies, programs, and resources. Goals and mitigation actions were developed using input from this assessment. Information regarding the District's implementation of and continued participation in the National Flood Insurance Program (NFIP) can be found in Section 8 of this Annex.

The Local Planning Team assessed the District's capabilities that can contribute to the reduction of long-term vulnerabilities to hazards. The capabilities include the following categories:

- Planning and Regulatory Capabilities
- Administrative and Technical Capabilities
- Financial Capabilities
- Education and Outreach Capabilities

Additionally, staffing increases to expand on and improve these existing policies and programs to integrate hazard mitigation into the day-to-day activities and programs of the District were considered.

5.1. Planning and Regulatory Capabilities

These include local ordinances, policies, and laws to manage growth and development (e.g., land use plans, capital improvement plans, transportation plans, emergency preparedness and response plans, building codes, WUI codes, and zoning ordinances). Kittitas County Fire District #7 relies on Kittitas County to maintain a strong framework of codes, ordinances, and requirements to help mitigate the impacts of the hazards identified in this Plan. **Table 4** contains a list of legal and regulatory capabilities.

Table 4. Planning and Regulatory Capabilities

Capability Category	Local Authority	Other Authority	State Mandated	Comments
Codes, Ordinances, and Requirements				
Washington State Fire Code	No	No	Yes	The International Fire Code (IFC), Chapter 51-54A of the Washington Administrative Code (WAC), is adopted by the Washington State Building Code Council pursuant to Chapters 19.27 and 70.92 RCW. The Code includes specific amendments to the IFC tailored to the State and it addresses local fire hazards and response capabilities.

Capability Category	Local Authority	Other Authority	State Mandated	Comments
Fire Protection Districts	No	No	Yes	Title 52 of the Revised Code of Washington (RCW) Governs the establishment and operation of the fire protection districts.
Building Code	Yes	No	Yes	Title 14 of the KCC (Buildings and Construction) Adopts the 2018 International Building Code (IBC), as adopted and amended by the State of Washington in Chapter 51-50 WAC. Adopts the 2018 IFC, as adopted and amended by the State of Washington in Chapter 51-54A WAC, including those standards of the National Fire Protection Association specifically referenced in the IFC.
Fire and Life Safety Code	Yes	No	Yes	Title 20 of the Kittitas County Code (KCC). Title 20.10 of the KCC (Wildland Urban Interface Code)
National Fire Protection Association Standards	No	No	No	
Mutual Aid Agreements	Yes	No	No	The District participates in Mutual Aid Agreements with other fire districts within and outside the planning area.
Special Purpose (flood management, critical areas)	Yes	No	No	Flood damage Prevention: Title 15, Chapter 15.24; 2002 Critical Areas: Title 18, CEMC, 2010
Capability Category	**Local Authority**	**Other Authority**	**State Mandated**	**Comments**
Planning Documents				
Comprehensive Plan	Yes	No	Yes	Washington State Growth Management Act, 36.70A RCW, under authority of the Planning Commission Act, 35.63 RCW. Updated annually.
Comprehensive Emergency Management Plan	Yes	No	Yes	38.52 RCW 118-30-060 WAC Last update of the CEMP was 2012.
Community Wildfire Protection Plan	Yes	No	No	Kittitas County Community Wildfire Protection Plan was updated in 2018. An update is planned for 2023/2024 with Community Wildfire Defense Grant (CWDG) Program grant through the Kittitas Fire Adapted Communities Coalition.
Capital Improvement Plan	Yes	No	No	Needs to be updated.
Emergency Response Plans	Yes	No	Yes	Needs to be developed and implemented.

Capability Category	Local Authority	Other Authority	State Mandated	Comments
Community Risk Reduction Programs	Yes	No	Yes	Needs to be developed and implemented.
Post-Disaster Recovery Plan	Yes	No	No	Needs to be developed and implemented.

5.2. Administrative and Technical Capabilities

The administrative and technical capabilities include career staff and volunteer (i.e., public and private) staff for their skills and tools, which can assist in mitigation planning and implementation. This capability includes engineers, planners, emergency managers, GIS analysts, building inspectors, grant writers, and floodplain managers. Small communities may rely on other government entities, such as counties or special districts, for resources. These capabilities may be used to support mitigation activities. **Table 5** lists administrative and technical capabilities.

Table 5. Administrative and Technical Capabilities

Staff/Personnel Resources	Available	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Director, County Engineer, and Planners, Kittitas County Public Works Planners, Kittitas County Community Development Services
Engineers or professionals trained in building or infrastructure construction practices	Yes	Director, County Engineer, and Construction Manager, Kittitas County Public Works Building Official, Plans Examiner, and Building Inspector, Kittitas County Community Development Services
Planners or engineers with an understanding of natural hazards	Yes	Director, County Engineer, and Planners, Kittitas County Public Works Planners, Kittitas County Community Development Services
Staff with training in benefit/cost analysis	No	N/A
Floodplain Manager/Administrator	No	N/A
Surveyors	Yes	County Surveyor and Engineering Techs, Kittitas County Public Works
Personnel skilled or trained in GIS applications	Yes	GIS Analyst, Kittitas County Information Services Planners, Floodplain Mangers, and Engineering Techs, Kittitas County Public Works
Staff familiar with natural hazards in local area	Yes	Fire Chief, to Kittitas County Fire District #7
Emergency Manager	Yes	Kittitas County Sheriff's Office (Emergency Management)
Grant writers	Yes	Fire Chief, Kittitas County Fire District #7

5.3. Financial Resources

Table 6 contains a list of financial capabilities available to the District. These financial resources may be used to support mitigation activities based on procedures for each resource.

Table 6. Financial Resources

Financial Resources	Accessible or Eligible to Use
Community Development Block Grants (CDBG)	No

Financial Resources	Accessible or Eligible to Use
Capital Improvements Project Funding	No
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	No
State Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No

5.4. Education and Outreach Capabilities

Table 7 lists the District's financial and public outreach capabilities. These capabilities include fire safety programs, hazard awareness campaigns, public information, and communications offices. Education and outreach capabilities can be used to inform the public about current and potential mitigation activities.

Table 7. Education and Outreach Resources

Resource	Available	Department/Agency/Position/Description
Public Information Officer	Yes	Volunteer PIO/PEO, Kittitas County Fire District #7
Personnel skilled or trained in website development	Yes	Volunteer PIO/PEO, Kittitas County Fire District #7
Hazard mitigation information available on your website	Yes	Volunteer PIO/PEO, Kittitas County Fire District #7
Utilize social media for hazard mitigation education and outreach	Yes	Volunteer PIO/PEO, Kittitas County Fire District #7
Citizen boards or commissions that address issues related to hazard mitigation	No	N/A
Other programs already in place that could be used to communicate hazard-related information	Yes	Workshops and community outreach on Firewise and being prepared for wildfire.
An established warning systems for hazard events	Yes	Emergency Management, Kittitas County Sheriff's Office

5.5. Needs to Expand/Improve Capabilities

The Kittitas County Fire District #7 identified existing authorities, policies, programs, funding, and/or resources that need to be expanded and/or improved to support the implementation of the hazard mitigation initiatives identified in this Plan (e.g., mitigation actions).

- Building codes, ordinances, and fire/WUI codes should be reviewed based on developing trends in identified hazards and mitigation strategies. This approach intends to enhance their effectiveness in preventing communitywide losses, rather than focusing solely on individual homes. For example, building and fire codes should mitigate the construction of residences in areas that have minimal protection from wildfires. Furthermore, building and fire codes should be updated to comply with the latest international and state building codes.
- Through strategic hiring, training, and staffing improvements, enhance proactive mitigation efforts to better address the needs of the citizens in the District. Additionally, upgrade fire stations and

response vehicles to strengthen the District's ability to minimize the impacts of the identified hazards in this Plan.

- Establish a Community Risk Reduction program with the appropriate staffing to plan, prepare, mitigate, and educate the community within extreme and high risk WUI zones.
- Improve firefighter staffing for incident mitigation to the community.
- Develop and implement a Community Risk Reduction Plan that addresses the hazards in this Hazard Mitigation Plan and the risks within the community to improve safety, reduce harm, and enhance the overall resilience of the District.
- Develop and implement an Emergency Response Plan (ERP) that outlines the procedures and resources needed to respond to fire related incidents and other emergencies. The ERP will serve as a guide for the District's personnel to ensure a coordinated response leveraging mutual aid agreements with the United States Forest Services, Washington State Department of Natural Resources, and local cooperating fire agencies.
- Develop and implement a Post-Disaster Recovery Plan for the District to include catastrophic wildfire recovery.
- Update the District's Capital Improvement Plan.

6. HAZARD MITIGATION PLAN INTEGRATION

The information on hazards, risk, vulnerability, and mitigation contained in this Hazard Mitigation Plan is based on the best available data at the time of the Plan update. Plan integration consists of the incorporation of hazard mitigation into other relevant planning mechanisms (e.g., general planning, staffing planning, and capital improvement planning). It includes the integration of natural hazard information and mitigation policies, principles, and actions into local planning mechanisms and vice versa. Additionally, plan integration is achieved through the involvement of key personnel and community officials in collaborative hazard mitigation planning. Identifying the funding mechanisms or options to integrate the Hazard Mitigation Plan will assist with the integration of this Hazard Mitigation Plan.

6.1. Existing Plan Integration

In the performance period since the adoption of the previous Hazard Mitigation Plan, Kittitas County Fire District #7 made minimal progress on integrating components of the hazard mitigation strategy (e.g., goals, objectives, and actions) into the planning initiatives listed in **Table 8**.

Table 8. Current Plan Integration

Planning Initiative	Description
Community Wildfire Protection Plan	The Community Wildfire Protection Plan (CWPP) references the Hazard Mitigation Plan and components of wildfire hazard mitigation have been implemented into the CWPP.
General Operating Budget	The District uses the hazard risk assessment in the Hazard Mitigation Plan and information outlined in this Annex to direct the District's budget and five (5) year plans.
Capital Improvement Plan	The Capital Improvement Plan (CIP) should continue to utilize flexibility in the CIP to incorporate mitigation measures in planned projects and the project evaluation criteria which includes public health and safety, regulatory compliance, and grant funding requirements.

6.2. Potential Future Integration

As the Hazard Mitigation Plan is implemented, Kittitas County Fire District #7 will use information from the Plan as the best available science and data on hazards. The capability assessment presented in

Section 5 of this Annex identifies codes, plans, and programs that provide opportunities for integration. The Districtwide and local action plans developed for this Hazard Mitigation Plan are related to plan integration. The capability assessment identified plans and programs, listed in **Table 9**, that do not currently integrate goals and recommendations of this Plan but provide opportunities to do so in the future.

Table 9. Potential Future Integration

Planning Initiative	Description
Community Wildfire Protection Plan	The Hazard Mitigation Plan and County's Community Wildfire Protection Plan (CWPP) should be aligned where mitigation actions support the goals of the CWPP. The wildfire analysis in this Hazard Mitigation Plan can inform updates and revisions to the CWPP.
Emergency Response Plan	Once developed, the Emergency Response Plan will include information from this Hazard Mitigation Plan to continue a comprehensive approach to wildfire mitigation and response.
Community Risk Reduction Programs	The District will integrate the risk assessment of this Hazard Mitigation Plan with the Community Risk Reduction Programs to enhance the community's resilience by addressing vulnerabilities and reducing risks through comprehensive strategies.
Capital Improvement Plan	The District will continue to ensure consistency between this Hazard Mitigation Plan and future updates of the CIP. The Hazard Mitigation Plan may identify new possible funding sources for capital improvement projects and may result in modifications to proposed projects based on results of the risk assessment.

The District's Local Planning Team will identify all relevant planning initiatives that are scheduled to be updated in the next year and during the annual update process of the Hazard Mitigation Plan. Additionally, opportunities to integrate key elements of the Hazard Mitigation Plan, specifically any relevant strategies, into the planning initiatives will be identified by the Local Planning Team. Mitigation actions were identified to promote plan integration in future revisions of this Plan.

7. SIGNIFICANT HAZARD HISTORICAL OCCURENCES

A complete risk assessment, including past incidents, for each identified hazard of concern can be found in **Volume 1** of this Plan. **Table 10** provides information on significant hazard events that uniquely impacted Kittitas County Fire District #7.

Table 10. Significant Past Events

Date	Event Type	Description
August 2017	Wildfire	On August 11, 2017, a wildfire started in the Wenatchee National Forest caused by lightning strikes. The wildfire burned approximately 36,800 acres and no structures were damaged. Additionally, the incident caused a massive evacuation, and it severely deteriorated the air quality in the area causing disruptions to the community.[4] A Local State of Emergency was declared on August 29, 2017, and a Fire Management Assistance Declaration was issued on September 2, 2017 (FM-5200).

[4] United States Department of Agriculture, Forest Services and United States Department of the Interior, Bureau of Land Management. (2017). 2017 Pacific Northwest Fire Narrative. Retrieved from https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd572804.pdf.

Date	Event Type	Description
August 2012	Wildfire	On August 13, 2012, a wildfire started near the City of Cle Elum in the vicinity of the Taylor Bridge construction site (within the District). The fire was caused by a spark from a welding operation. The wildfire burned approximately 23,500 acres and destroyed approximately 61 residences. Hundreds of residents were evacuated, some minor injuries were reported, but no fatalities.[5] A Local State of Emergency was declared on August 13, 2012, and a Fire Management Assistance Declaration was issued on August 14, 2012 (FM-5055).

8. NATIONAL FLOOD INSURANCE PROGRAM

As a special district, the Kittitas County Fire District #7 is not eligible to participate in FEMA's National Flood Insurance Program (NFIP). Further information on Kittitas County's NFIP and Community Rating System (CRS) participation is available on **Volume 1** of this Plan.

9. HAZARD VULNERABILITY AND IMPACT ASSESSMENT

Exposure and vulnerability to certain hazards affect the entire County and others are geographically defined. Although the entire County may be vulnerable to these hazards, their impacts may vary based on existing community conditions (e.g., underserved, or functional access needs populations may be more susceptible based on certain conditions, vulnerabilities, or needs).

Table 11 outlines the ***unique vulnerabilities and impacts*** for the Kittitas County Fire District #7 and only addresses the hazards that are relevant and unique to the jurisdiction. A complete risk assessment for each identified hazard of concern is in **Volume 1** of this Plan. Hazard mapping can be found in **Appendix A** of this Annex.

Table 11. Hazard Vulnerability and Impact Assessment

Hazards	Vulnerabilities and Impacts
Avalanche	The Local Planning Team determined that the District does not have unique vulnerabilities and impacts to avalanches.
Dam and Levee Failure	The Local Planning Team determined that the District does not have unique vulnerabilities and impacts to dam and levee failure.
Drought	Drought conditions can significantly impact the District by placing increased stress on the areas with dense vegetation
Earthquake	The Local Planning Team determined that the District does not have unique vulnerabilities and impacts to earthquakes.
Flood	Fire Station 73 is located within a FEMA Flood Zone. While this fire station has not been impacted by past flood events, the lowest finished floor is below the base flood elevation. Additionally, the service area for Fire District 7 includes densely populated areas within the Yakima River floodplain at flood risk (e.g. Elk Meadows and Elk Meadows Park)
Landslide	The Local Planning Team determined that the District does not have unique vulnerabilities and impacts to landslides.

[5] Hobbs, R. and Berglund, C. (2017). Between Two Fires: Lessons Learned in Kittitas County. Retrieved from https://fireadaptednetwork.org/between-two-fires-lessons-learned-in-kittitas-county/.

Hazards	Vulnerabilities and Impacts
Severe Weather *(thunderstorms, hail, tornado, strong winds/damaging winds, extreme temperatures)*	Thunderstorms accompanied by lightning pose a significant threat to the District, with the potential to ignite significant wildfires, overwhelming the response capabilities of local, state, and Federal resources.
Volcanic Activity	The Local Planning Team determined that the District does not have unique vulnerabilities and impacts to volcanic activity.
Wildfire *(wildfire smoke)*	Heavy fuel loads and topography are present throughout the majority of the District. Fire can spread rapidly, cause significant damage to the community as a whole, and put many people at risk. Many homes within the District are located on steep hillsides with narrow, unpaved roads. These conditions can prolong recovery efforts, as rebuilding infrastructure and homes may take considerable time.
Winter Weather *(ice storms, heavy snow, and blizzards)*	The Local Planning Team determined that the District does not have unique vulnerabilities and impacts to winter weather.
Communicable Diseases/Pandemic	The Local Planning Team determined that the District does not have unique vulnerabilities and impacts to communicable diseases/pandemics.

The District evaluated whether vulnerability and impact in hazard prone areas had increased, decreased, or remained the same for each natural hazard identified in this Hazard Mitigation Plan. Climate change, changes in population, infrastructure expansion, and economic shifts that can affect vulnerability were considered. For example, if planned development is in an identified hazard areas or is not built to the updated building codes, it may increase the community's vulnerability to future hazards and disasters. On the other hand, if development occurred with mitigation practices in place, the vulnerability may have remained the same or decreased. Additionally, shifting demographics (e.g., underserved population) were taken into consideration.

Table 12 outlines if climate change has increased or decreased the District's vulnerability (i.e., exposure) and impact to each natural hazard over the past five (5) years, and the effect of climate change in the future probability of occurrence and impacts from each natural hazard.

Table 12. Climate Change Current and Future Vulnerability and Impact

Hazard	Vulnerability and Impact
Current Vulnerability and Impact	
Avalanche	Remained the Same
Communicable Diseases/Pandemic	Remained the Same
Dam and Levee Failure	Remained the Same
Drought	Increased
Earthquake	Remained the Same
Flood	Increased
Landslide	Increased
Severe Weather *(thunderstorms, hail, tornado, strong winds/damaging winds, extreme temperatures)*	Increased
Volcanic Activity	Remained the Same
Winter Weather *(ice storms, heavy snow, blizzards)*	Increased
Wildfire *(Wildfire Smoke)*	Increased

Hazard	Vulnerability and Impact
Future Vulnerability and Impact	
Avalanche	No Change Anticipated
Communicable Diseases/Pandemic	No Change Anticipated
Dam and Levee Failure	Increase
Drought	Increase
Earthquake	No Change Anticipated
Flood	Increase
Landslide	Increase
Severe Weather *(thunderstorms, hail, tornado, strong winds/damaging winds, extreme temperatures)*	Increase
Volcanic Activity	No Change Anticipated
Winter Weather *(ice storms, heavy snow, blizzards)*	Increase
Wildfire *(Wildfire Smoke)*	Increase

Table 13 outlines if changes in population within the District over the past five (5) years have increased or decreased the vulnerability (i.e., exposure) and impact to these natural hazards, and the anticipated effects changes in population may have on the future probability of occurrence and impacts from these natural hazards.

Table 13. Changes in Population Current and Future Vulnerability and Impact

Hazard	Vulnerability and Impact
Current Vulnerability and Impact	
Avalanche	Increased
Communicable Diseases/Pandemic	Increased
Dam and Levee Failure	Remained the Same
Drought	Increased
Earthquake	Remained the Same
Flood	Remained the Same
Landslide	Remained the Same
Severe Weather *(thunderstorms, hail, tornado, strong winds/damaging winds, extreme temperatures)*	Remained the Same
Volcanic Activity	Remained the Same
Winter Weather *(ice storms, heavy snow, blizzards)*	Increased
Wildfire *(Wildfire Smoke)*	Increased
Future Vulnerability and Impact	
Avalanche	Increase
Communicable Diseases/Pandemic	Increase

Hazard	Vulnerability and Impact
Dam and Levee Failure	No Change is Anticipated
Drought	Increase
Earthquake	No Change is Anticipated
Flood	No Change is Anticipated
Landslide	Increase
Severe Weather *(thunderstorms, hail, tornado, strong winds/damaging winds, extreme temperatures)*	No Change is Anticipated
Volcanic Activity	No Change is Anticipated
Winter Weather *(ice storms, heavy snow, blizzards)*	Increase
Wildfire *(Wildfire Smoke)*	Increase

Table 14 outlines if development over the past five (5) years has increased or decreased the jurisdiction's vulnerability (i.e., exposure) and impact to these natural hazards, and the anticipated effects changes in development may have on the future probability of occurrence and impacts from these natural hazards.

Table 14. Changes in Development Current and Future Vulnerability and Impact

Hazard	Vulnerability and Impact
Current Vulnerability and Impact	
Avalanche	Remained the Same
Communicable Diseases/Pandemic	Remained the Same
Dam and Levee Failure	Remained the Same
Drought	Increase
Earthquake	Remained the Same
Flood	Remained the Same
Landslide	Increase
Severe Weather *(thunderstorms, hail, tornado, strong winds/damaging winds, extreme temperatures)*	Remained the Same
Volcanic Activity	Remained the Same
Winter Weather *(ice storms, heavy snow, blizzards)*	Remained the Same
Wildfire *(Wildfire Smoke)*	Increased
Future Vulnerability and Impact	
Avalanche	Increase
Communicable Diseases/Pandemic	No Change Anticipated
Dam and Levee Failure	No Change Anticipated
Drought	Increase
Earthquake	No Change Anticipated
Flood	No Change Anticipated

Hazard	Vulnerability and Impact
Landslide	No Change Anticipated
Severe Weather *(thunderstorms, hail, tornado, strong winds/damaging winds, extreme temperatures)*	No Change Anticipated
Volcanic Activity	No Change Anticipated
Winter Weather *(ice storms, heavy snow, blizzards)*	No Change Anticipated
Wildfire *(Wildfire Smoke)*	Increase

The District anticipates more development to occur within the planning area increasing the population and structures that are expected to be exposed or vulnerable to wildfires. However, any new assets (e.g., new construction in hazard prone areas) should be constructed to adhere to the latest building codes and standards, and mitigation to protect them from identified and anticipated hazards, especially those that are expected to increase due to climate change.

10. HAZARD RISK RANKING

Table 15 presents the local hazard ranking for Kittitas County Fire District #7 of all hazards of concern listed in **Volume 1** of this Plan. This ranking summarizes how hazards vary for this jurisdiction. As described in detail in **Volume 1**, the ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and the economy.

It is important to note that the sub hazards for severe weather (i.e., strong wind/damaging winds, thunderstorms, cold wave/extreme cold, heat wave/extreme heat, hail and tornado) and wildfire (i.e., wildfire smoke) were individually ranked in the hazard risk ranking; however, severe weather and wildfire are each considered as the main hazard throughout this Annex and **Volume 1**.

Table 15. Hazard Risk Ranking

Hazard Event	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score *(Probability x Consequence)*
Winter Weather *(Blizzard/Heavy Snow, Ice Storm)*	3	15	16	24	55	77
Wildfire	3	15	11	29	55	77
Earthquake	2	12	16	33	61	59
Strong Wind / Damaging Winds *(Severe Weather)*	3	9	16	15	40	59
Wildfire Smoke *(Wildfire)*	3	9	10	20	39	57
Flood	2	18	11	29	58	57
Communicable Diseases / Pandemic	2	18	10	20	48	48
Thunderstorms *(Severe Weather)*	2	6	16	22	44	45

Hazard Event	Probability Factor	Sum of Weighted Extent Factors	Sum of Weighted Vulnerability Factors	Sum of Weighted Impact Factors	Consequence Score	Total Risk Score *(Probability x Consequence)*
Cold Wave / Extreme Cold *(Severe Weather)*	2	12	12	20	44	45
Heat Wave / Extreme Heat *(Severe Weather)*	2	12	12	17	41	42
Drought	2	9	6	26	41	42
Landslide	2	9	6	13	28	31
Avalanche	2	9	6	13	28	31
Dam and Levee Failure	1	12	11	26	49	27
Hail *(Severe Weather)*	1	6	16	16	38	22
Tornado *(Severe Weather)*	1	6	14	16	36	21
Volcanic Activity	1	12	6	14	32	19

Consequence: *Sum of all weighted factors.*
Extent: *Sum of the weighted Extent factors.*
Vulnerability: *Sum of the weighted Vulnerability factors.*
Impact: *Sum of the weighted Impact factors.*
Total Risk Score* *= Probability x Consequence*
** Normalized to 100*

Total Risk Score Legend

Classification	Probability Factor	Extent	Vulnerability	Impact	Consequence Score	Total Risk Score
Low (L)	1	0 – 6	0 – 6	0 – 12	0 – 24	0 – 24
Medium (M)	2	7 – 12	7 – 12	13 – 26	25 – 50	25 – 52
High (H)	3	13 – 18	13 – 18	27 – 39	51 – 75	53 and above

*The **legend**—specifically the assignment of low, medium, and high—provides an additional means to qualitatively assess the probability factor, sum of weighted factors, and the total risk scores for each hazard. The **Consequence Score** represents the sum of the Extent, Vulnerability, and Impact Factors. The **Total Risk Score** is a measure of Probability and Consequence.*

11. MITIGATION ACTIONS

This section includes the mitigation actions that were developed to address identified risks and vulnerabilities to hazards identified in this Plan. This Plan serves only to recommend mitigation measures based on the potential for risk reduction and available funding. Implementation of mitigation actions is dependent on risk reduction priorities, feasibility, and available funding. It is also dependent on the cooperation and support of the jurisdiction and/or department responsible for each action item.

Kittitas County Fire District #7 agreed upon **11** mitigation actions that apply to the jurisdiction's properties where they have jurisdictional responsibility and authority. A summary of the District's mitigation actions status is listed in **Table 16**.

Table 16. Kittitas County Fire District #7 Mitigation Actions Summary

Status	Mitigation Action Total
Ongoing	9
In Progress/In Work	0
Not Started	0
Delayed/Deferred	0
New	2
TOTAL	**11**
Completed	0
Deleted/No Longer Needed	0

Mitigation Actions per Hazard			
Avalanche	6	Landslide	6
Dam and Levee Failure	6	Severe Weather	7
Drought	6	Volcanic Activity	6
Earthquake	7	Wildfire	9
Flood	8	Winter Weather	7

These shared actions, some of which address all hazards, help to meet the following requirements:

- Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure?
- Does the Plan include one (1) or more action(s) per jurisdiction for each hazard identified within the risk assessment?

A detailed explanation of the Mitigation Strategy can be found in Chapter 5 of **Volume 1**.

Mitigation Action	Ensure a reliable source of water for fire suppression that meets acceptable standards for minimum volume and flow requirements is readily available for existing and new development.				
Action Number	KCFD7-1	**Year Initiated / Anticipated Year of Initiation**	2012	**Prioritization Score**	31/40
Goal(s) Addressed		1, 5	**Hazard(s) Mitigated**	Wildfire	
Project Status		Ongoing	If *Deleted/No Longer Needed*, provide reason.		
Benefits *(Loss Avoided)*		High			
Lead Agency / Organization	Kittitas County Fire District #7, Kittitas County Community Development Services		**Supporting Agency / Organization** *(If applicable)*	n/a	
Additional Participating Jurisdictions *(If applicable)*	n/a				
Project Duration	Short Term		**Estimated Cost**	Medium	
Potential Funding Source	Local Budgeted Funds, Other		If *Other*, you **must** identify a funding source.	Developers Fund	
			Please provide further detail on Potential Funding Source.	General District Fund (Staff Time)	
Implementation Priority	High	**Changes in Priority** *(If applicable)*			

Mitigation Action	Develop and maintain a coordinated approach between fire jurisdictions and water supply agencies to identify needed improvements to the water distribution system, initially focusing on areas of highest wildfire risk.				
Action Number	KCFD7-2	**Year Initiated / Anticipated Year of Initiation**	2012	**Prioritization Score**	34/40
Goal(s) Addressed		1, 5	**Hazard(s) Mitigated**	Wildfire	
Project Status		Ongoing	If *Deleted/No Longer Needed*, provide reason.		
Benefits *(Loss Avoided)*		High			
Lead Agency / Organization	Kittitas County Fire District #7		**Supporting Agency / Organization** *(If applicable)*	n/a	
Additional Participating Jurisdictions *(If applicable)*	n/a				
Project Duration	Ongoing		**Estimated Cost**	Low	
Potential Funding Source	Local Budgeted Funds		If *Other*, you **must** identify a funding source.	n/a	
			Please provide further detail on Potential Funding Source.	General District Fund (Staff Time)	
Implementation Priority	High	**Changes in Priority** *(If applicable)*			

Mitigation Action	Enforce a minimum road width of 20 feet on all roadways greater than 50 feet in length				
Action Number	KCFD7-3	**Year Initiated / Anticipated Year of Initiation**	2012	**Prioritization Score**	31/40
Goal(s) Addressed		1, 5	**Hazard(s) Mitigated**	Avalanche, Dam and Levee Failure, Drought, Earthquake, Flood, Landslide, Severe Weather, Volcano Activity, Wildfire, Winter Weather	
Project Status		Ongoing	If *Deleted/No Longer Needed*, provide reason.		
Benefits *(Loss Avoided)*		High			
Lead Agency / Organization	Kittitas County Fire District #7, Kittitas County Fire Marshal		**Supporting Agency / Organization** *(If applicable)*	n/a	
Additional Participating Jurisdictions *(If applicable)*	n/a				
Project Duration	Ongoing		**Estimated Cost**	Low	
Potential Funding Source	Local Budgeted Funds		If *Other*, you **must** identify a funding source.	n/a	
			Please provide further detail on Potential Funding Source.	County General Fund (Staff Time), General District Fund (Staff Time)	
Implementation Priority	High	**Changes in Priority** *(If applicable)*			

Mitigation Action	Implement a Firewise Program by creating a 30 feet defensible space along all public roadways which allows safe evacuation routes.				
Action Number	KCFD7-4	**Year Initiated / Anticipated Year of Initiation**	2012	**Prioritization Score**	33/40
Goal(s) Addressed		1, 5	**Hazard(s) Mitigated**	Avalanche, Dam and Levee Failure, Drought, Earthquake, Flood, Landslide, Severe Weather, Volcano Activity, Wildfire, Winter Weather	
Project Status		Ongoing	If *Deleted/No Longer Needed*, provide reason.		
Benefits *(Loss Avoided)*		High			
Lead Agency / Organization	Kittitas County Community Development Services, Kittitas County Fire District #7		**Supporting Agency / Organization** *(If applicable)*	Washington State Department of Natural Resources	
Additional Participating Jurisdictions *(If applicable)*	n/a				
Project Duration	Ongoing		**Estimated Cost**	Low	
Potential Funding Source	Local Budgeted Funds		If *Other*, you **must** identify a funding source.	n/a	
			Please provide further detail on Potential Funding Source.	County General Fund (Staff Time), General District Fund (Staff Time), Washington State Department of Natural Resources grants	
Implementation Priority	Medium	**Changes in Priority** *(If applicable)*			

Mitigation Action	Replace or significantly retrofit existing fire stations to meet critical infrastructure standards.				
Action Number	KCFD7-5	**Year Initiated / Anticipated Year of Initiation**	2012	**Prioritization Score**	32/40
Goal(s) Addressed		5	**Hazard(s) Mitigated**	Earthquake, Flood, Severe Weather, Wildfire, Winter Weather	
Project Status		Ongoing	If *Deleted/No Longer Needed*, provide reason.		
Benefits *(Loss Avoided)*		Medium			
Lead Agency / Organization	Kittitas County Fire District #7		**Supporting Agency / Organization** *(If applicable)*	n/a	
Additional Participating Jurisdictions *(If applicable)*	n/a				
Project Duration	Long Term		**Estimated Cost**	High	
Potential Funding Source	Local Budgeted Funds		If *Other*, you **must** identify a funding source.	n/a	
			Please provide further detail on Potential Funding Source.	General District Fund (Staff Time)	
Implementation Priority	High	**Changes in Priority** *(If applicable)*			

Mitigation Action	Ensure all dead end public roads have adequate turn around for fire equipment.				
Action Number	KCFD7-6	**Year Initiated / Anticipated Year of Initiation**	2012	**Prioritization Score**	31/40
Goal(s) Addressed		1, 5	**Hazard(s) Mitigated**	Avalanche, Dam and Levee Failure, Drought, Earthquake, Flood, Landslide, Severe Weather, Volcano Activity, Wildfire, Winter Weather	
Project Status		Ongoing	If *Deleted/No Longer Needed*, provide reason.		
Benefits *(Loss Avoided)*		Medium			
Lead Agency / Organization	Kittitas County Community Development Services, Kittitas County Fire District #7		**Supporting Agency / Organization** *(If applicable)*	n/a	
Additional Participating Jurisdictions *(If applicable)*	n/a				
Project Duration	Ongoing		**Estimated Cost**	Low	
Potential Funding Source	Local Budgeted Funds		If *Other*, you **must** identify a funding source.	n/a	
			Please provide further detail on Potential Funding Source.	County General Fund (Staff Time), General District Fund (Staff Time)	
Implementation Priority	High	**Changes in Priority** *(If applicable)*			

Mitigation Action	Actively support and participate in the implementation, monitoring, maintenance, and updating of the Kittitas County Hazard Mitigation Plan, as outlined and defined in Volume 1.				
Action Number	KCFD7-7	**Year Initiated / Anticipated Year of Initiation**	2012	**Prioritization Score**	39/40
Goal(s) Addressed		1, 2, 3, 4, 5	**Hazard(s) Mitigated**	Avalanche, Dam and Levee Failure, Drought, Earthquake, Flood, Landslide, Severe Weather, Volcano Activity, Wildfire, Winter Weather	
Project Status		Ongoing	If *Deleted/No Longer Needed*, provide reason.	n/a	
Benefits *(Loss Avoided)*		High			
Lead Agency / Organization	Kittitas County Fire District #7		**Supporting Agency / Organization** *(If applicable)*	n/a	
Additional Participating Jurisdictions *(If applicable)*	n/a				
Project Duration	Ongoing		**Estimated Cost**	Low	
Potential Funding Source	Local Budgeted Funds		If *Other*, you **must** identify a funding source.	n/a	
			Please provide further detail on Potential Funding Source.	General District Fund (Staff Time)	
Implementation Priority	High	**Changes in Priority** *(If applicable)*			

Mitigation Action	Continue to support countywide initiatives related to hazard mitigation efforts identified in Volume 1 of the Kittitas County Hazard Mitigation Plan.				
Action Number	KCFD7-8	**Year Initiated / Anticipated Year of Initiation**	2012	**Prioritization Score**	39/40
Goal(s) Addressed		1, 2, 3, 4, 5	**Hazard(s) Mitigated**	Avalanche, Dam and Levee Failure, Drought, Earthquake, Flood, Landslide, Severe Weather, Volcanic Activity, Wildfire, Winter Weather	
Project Status		Ongoing	If *Deleted/No Longer Needed*, provide reason.	n/a	
Benefits *(Loss Avoided)*		High			
Lead Agency / Organization	Kittitas County Fire District #7		**Supporting Agency / Organization** *(If applicable)*	n/a	
Additional Participating Jurisdictions *(If applicable)*	n/a				
Project Duration	Ongoing		**Estimated Cost**	Low	
Potential Funding Source	Local Budgeted Funds		If *Other*, you **must** identify a funding source.	n/a	
			Please provide further detail on Potential Funding Source.	General District Fund (Staff Time)	
Implementation Priority	High	**Changes in Priority** *(If applicable)*			

Mitigation Action	Coordinate with the Kittitas County Sheriff's Office (Emergency Management) to develop a plan for recreational visitors to be able to receive information through an alerting systems (e.g., Everbridge) for a limited time. This will allow visitors to receive important alerts and evacuation information if an emergency occurs while visiting in the County.				
Action Number	KCFD7-9	**Year Initiated / Anticipated Year of Initiation**	2025	**Prioritization Score**	36/40
Goal(s) Addressed		1, 2, 4	**Hazard(s) Mitigated**	Avalanche, Dam and Levee Failure, Drought, Earthquake, Flood, Landslide, Severe Weather, Volcanic Activity, Wildfire, Winter Weather	
Project Status		New	If *Deleted/No Longer Needed*, provide reason.	n/a	
Benefits *(Loss Avoided)*		Medium			
Lead Agency / Organization	Kittitas County Fire District #7		**Supporting Agency / Organization** *(If applicable)*	Kittitas County Sheriff's Office (Emergency Management)	
Additional Participating Jurisdictions *(If applicable)*	n/a				
Project Duration	Long Term		**Estimated Cost**	Low	
Potential Funding Source	Local Budgeted Funds		If *Other*, you **must** identify a funding source.	n/a	
			Please provide further detail on Potential Funding Source.	General District Fund (Staff Time)	
Implementation Priority	High	**Changes in Priority** *(If applicable)*			

Mitigation Action	Partner with the Kittitas County Flood Control Zone District to identify and implement actions to reduce flood susceptibility and ensure continuity of services at Fire Station 73 given the flood risk to this critical facility. Planning will consider both near-term actions such as potential building retrofit for greater flood resilience and the temporary and/or permanent housing of building functions at alternative locations, as well as long-term actions such facility succession planning for when the current structure exceeds its design life.				
Action Number	KCFD7-10	**Year Initiated / Anticipated Year of Initiation**	2026	**Prioritization Score**	26/40
Goal(s) Addressed		1, 2, 3, 5	**Hazard(s) Mitigated**	Flood	
Project Status		New	If *Deleted/No Longer Needed*, provide reason.	n/a	
Benefits *(Loss Avoided)*		High			
Lead Agency / Organization	Kittitas County Fire District #7		**Supporting Agency / Organization** *(If applicable)*	Kittitas County Public Works	
Additional Participating Jurisdictions *(If applicable)*	n/a				
Project Duration	Short-Term		**Estimated Cost**	Medium to High	
Potential Funding Source	Local Budgeted Funds, HMGP, FMA, FEMA PA		If *Other*, you **must** identify a funding source.	n/a	
			Please provide further detail on Potential Funding Source.	General District Fund (Staff Time), Flood Control Zone District	
Implementation Priority	High	**Changes in Priority** *(If applicable)*			

APPENDIX A. HAZARD MAPS

Figure 1	Kittitas County Fire Rescue #7 Planning Area
Figure 2	Liquefaction susceptibility (Earthquake) *Helps assess potential damage from earthquakes in the District.*
Figure 3	Special Flood Hazard Area (SFHA) *Includes each Flood Zone, and the 500-year floodplain. Flood Insurance Rate Maps (FIRMs) show the flood zones, floodplain boundaries, and Base Floor Elevation (BFE) and are used for floodplain management, flood insurance ratings, and to determine flood insurance requirements. FIRMs show areas with a 1% chance of flooding each year, commonly known as the 100-year floodplains, and are illustrated as the SFHA. The 500-year floodplains show areas with a 0.2% chance of flooding each year.*
Figure 4	Cle Elum Dam Inundation Area
Figure 5	Easton Dan Inundation Area
Figure 6	Keechelus and Kachees Dam Inundation Area
Figure 7	Wildfire Likelihood Map *Wildfire likelihood is the annual probability of wildfire burning in a specific location.*
Figure 8	Wildfire Risk to Homes Map *Wildfire risk to homes measures the relative consequence of wildfire to residential structures everywhere on the landscape, whether a home actually exists there or not.*

Figure 1. Kittitas County Fire District #7 Planning Area

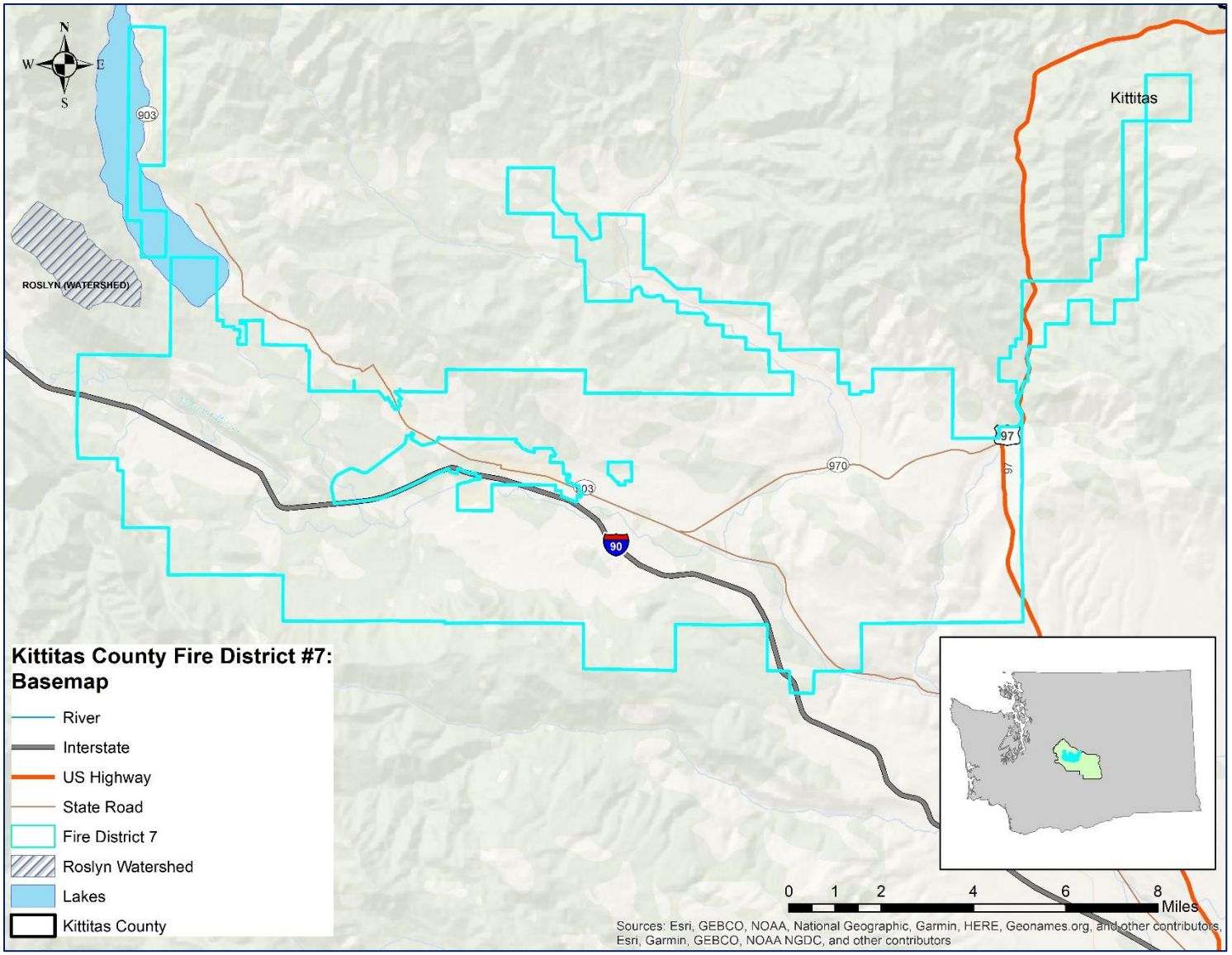


Figure 2. Liquefaction Susceptibility (Earthquake)

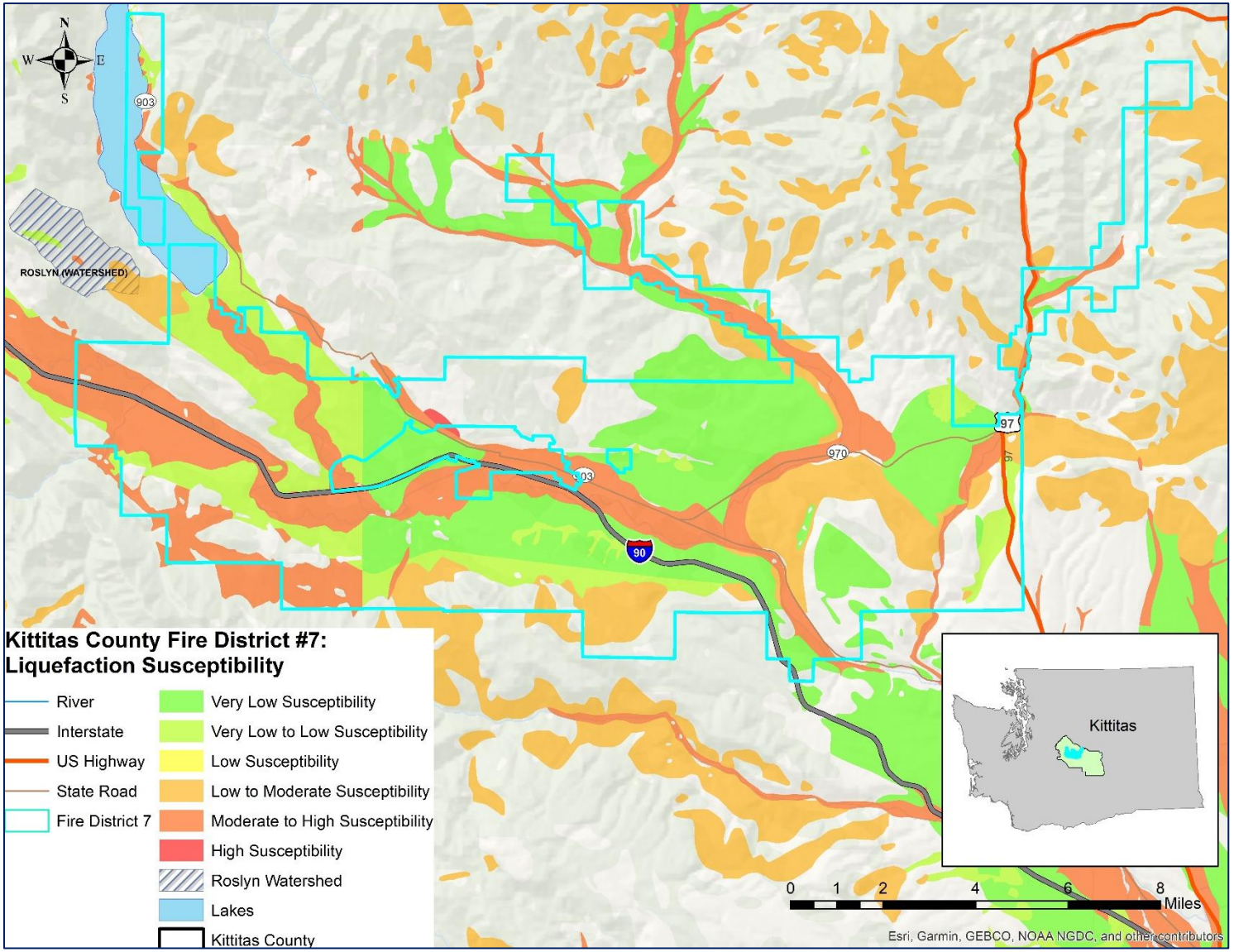


Figure 3. Special Flood Hazard Area

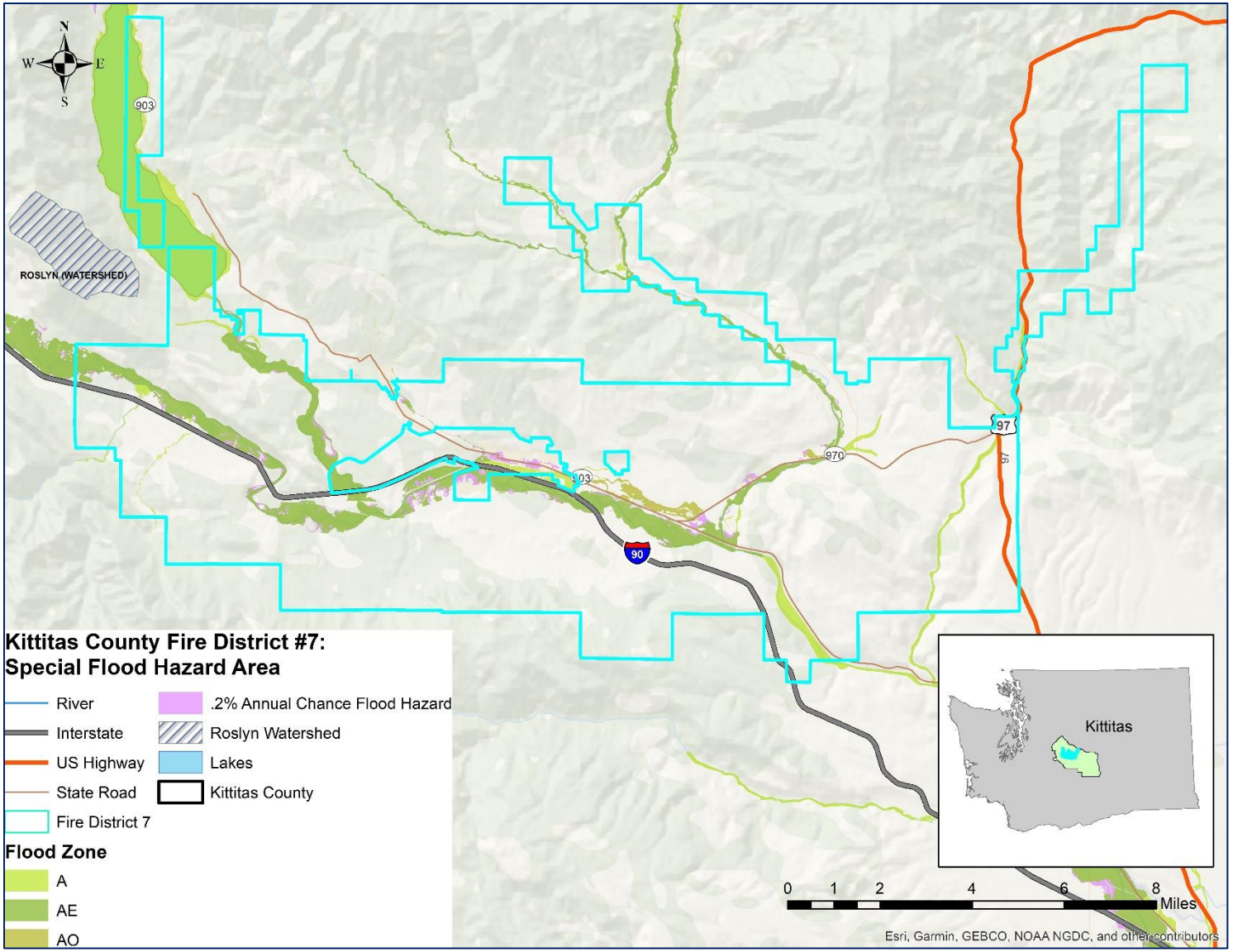


Figure 4. Cle Elum Dam Inundation Area

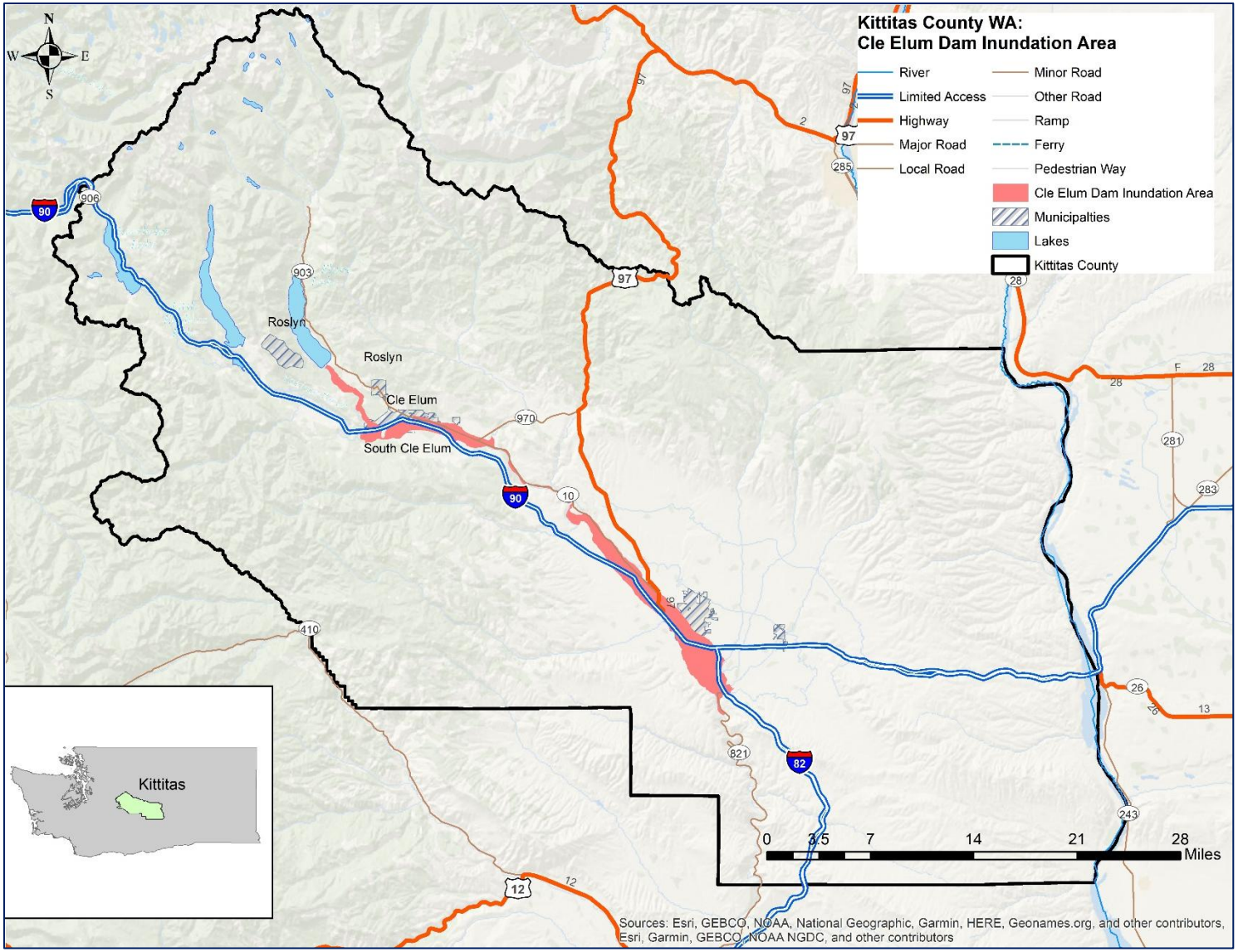


Figure 5. Easton Dam Inundation Map

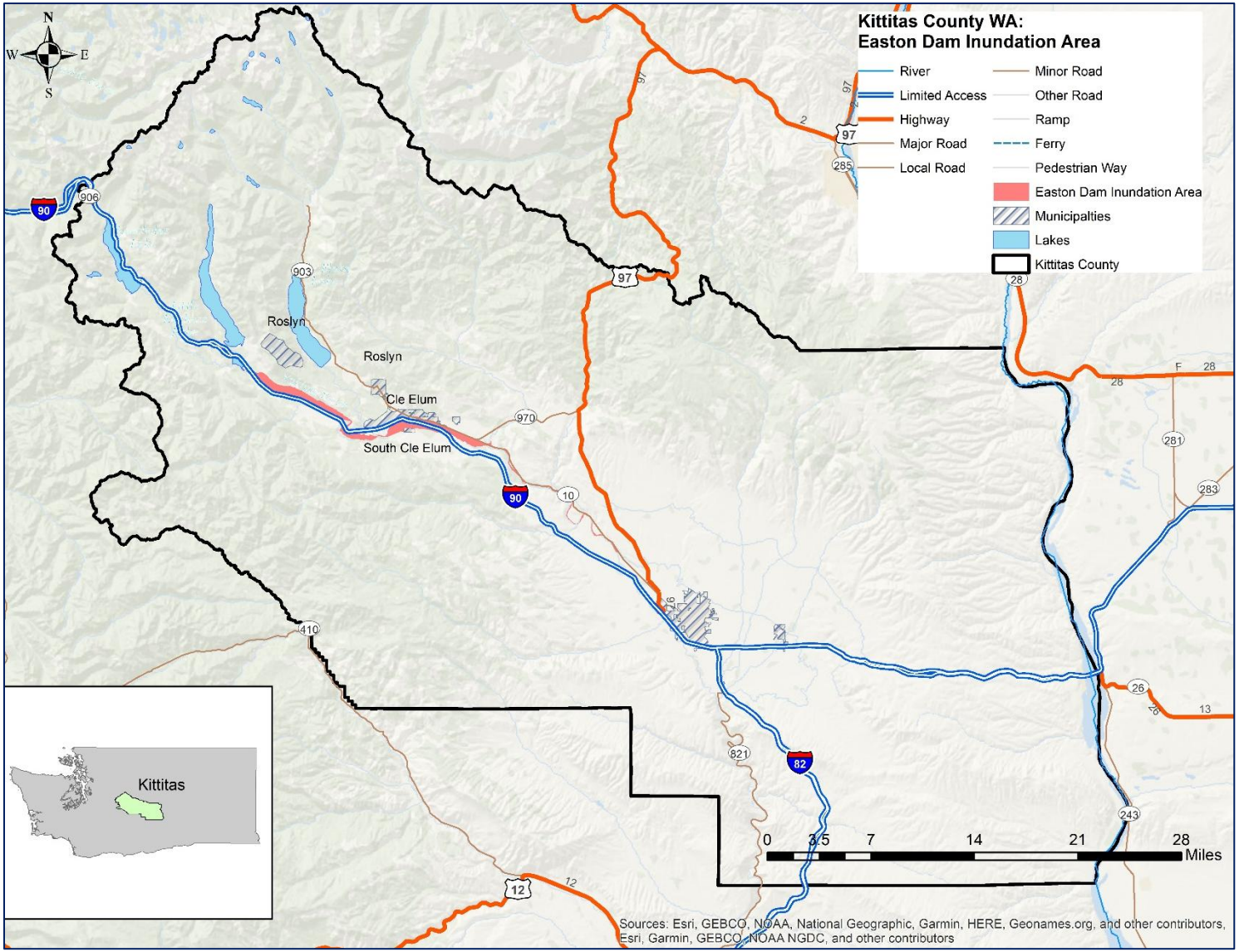


Figure 6. Keechelus and Kachees Dam Inundation Area

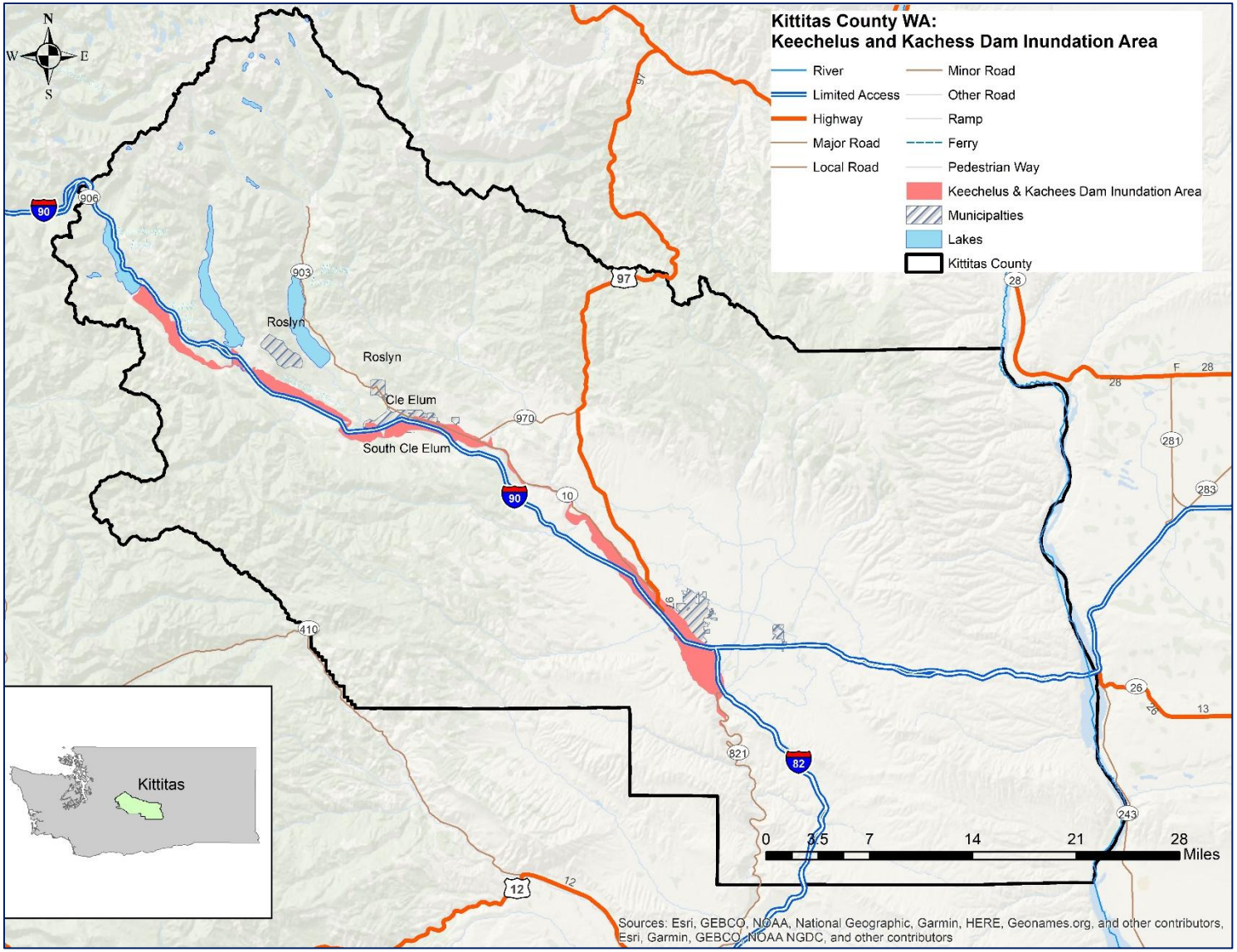


Figure 7. Wildfire Likelihood

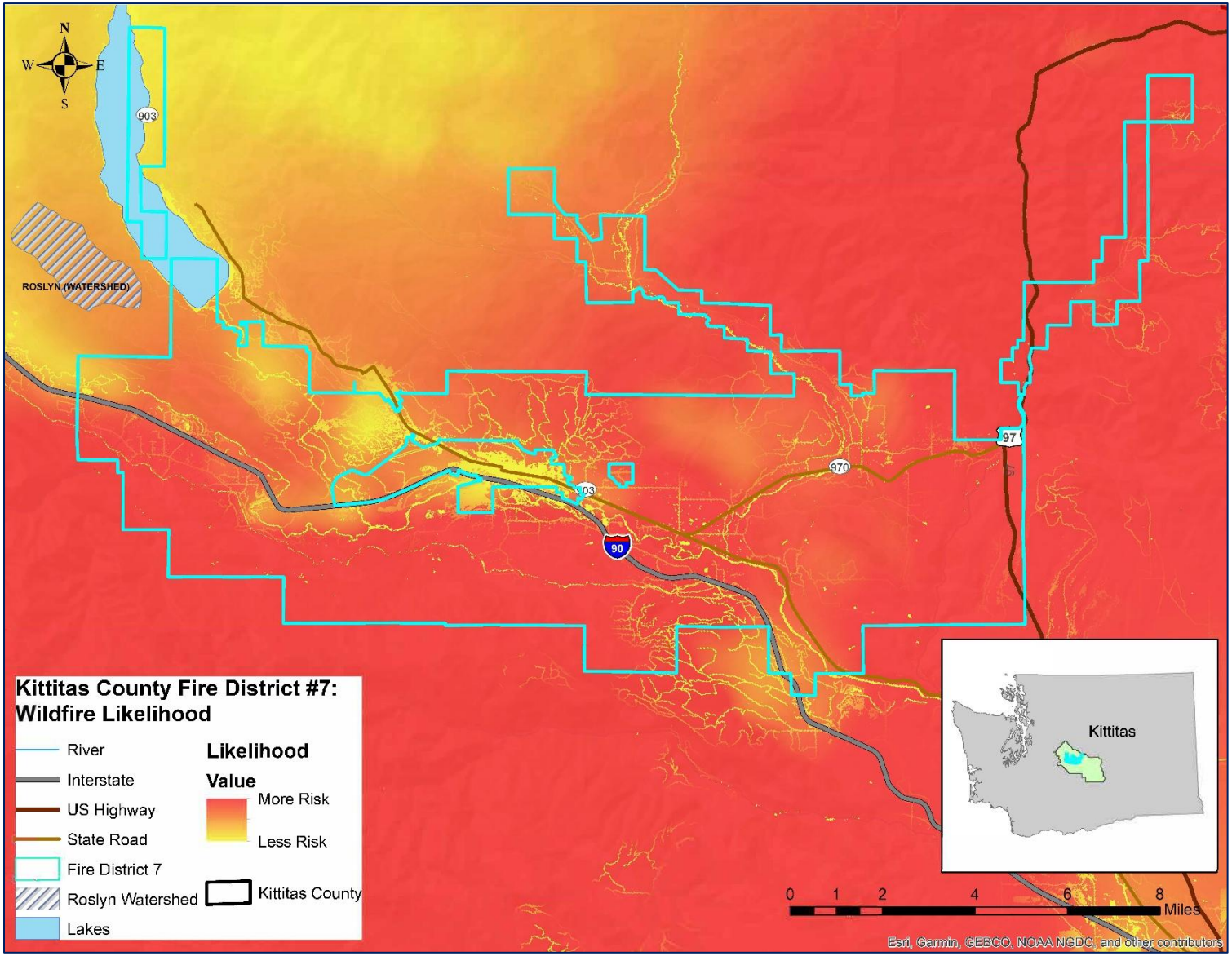
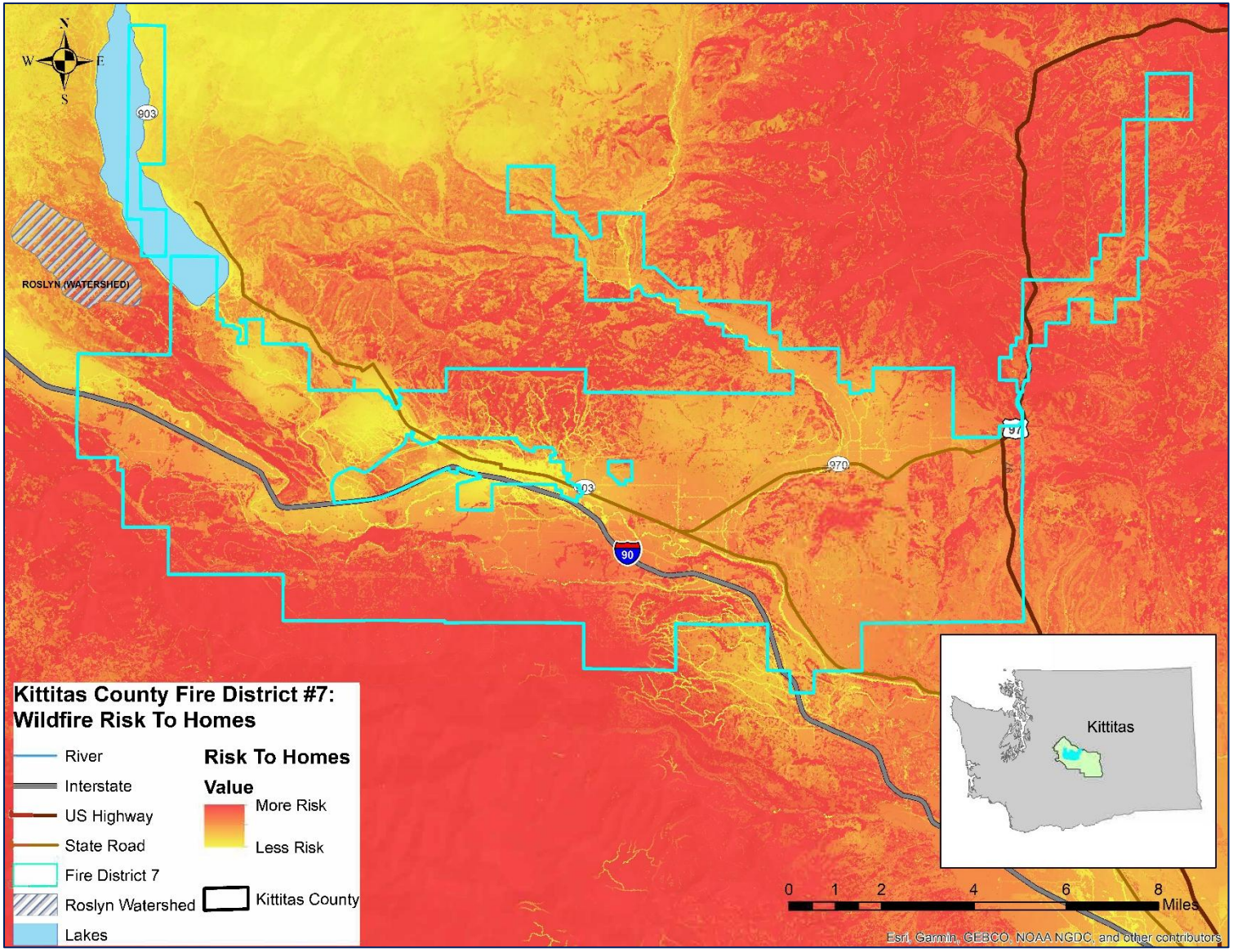


Figure 8. Wildfire Risk to Homes



APPENDIX B. PLAN ADOPTION

[*Placeholder for adoption documentation after State and FEMA Approval*]