

KITTITAS
COUNTY

HAZARD MITIGATION PLAN

Kittitas County Fire District #1
Annex



Kittitas County
Public Works Department

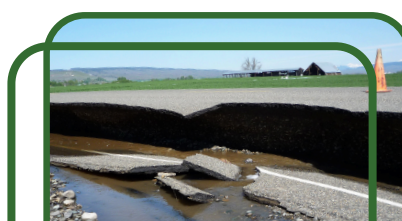




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1. INTRODUCTION

This Annex details the hazard mitigation elements specific to the Kittitas County Fire District #1, a participating jurisdiction to the 2024 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 #1. 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 #1 Local Planning Team was comprised of the members listed on **Table 1**.

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

Name	Title	Department
Brandon Schmidt	Fire Chief	Kittitas County Fire District #1

3. JURISDICTION PROFILE

The Kittitas County Fire District #1 is mostly a rural area with small to medium residential areas combined through the wildland urban interface (WUI) areas. The District provides emergency medical service and fire protection for over 43.5 square miles, which is intersected by 11 miles of Interstate 90, 10 miles of State Road 10, nine (9) miles of State Road 97, 12 miles of the Yakima River, and 12 miles of BNSF Railway track. All service is provided by a crew of 28 volunteer firefighters, nine (9) of which are emergency medical technicians. Funding comes to the junior taxing district through property taxes and grants.

3.1. Population

The Kittitas County Fire District #1 had a population of 2,040 as of July 1, 2022. Between 2010 and 2020, the population increased by approximately 11.1%; and a population increase of 2% 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 #1	1,800	2,000	2,040	13.3%

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 #1.³

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 the best available 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	13.6%
	Unemployed (Civilian 16 years old and older)	1.5%
	Housing Cost Burden	6.4%
	No High School Diploma	4.7%
	No Health Insurance	5.3%
Household Characteristics	65 years old and older	21.0%
	17 years and younger	20.2%
	Civilian with a Disability	12.7%
	Single-Parent Household	1.2%
	English Language Proficiency	0.0%
Racial and Ethnic Minority Status	<ul style="list-style-type: none"> 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 	14.1%

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
Housing Type and Transportation	Multi-Unit Structures	1.1%
	Mobile Homes	6.3%
	Crowding	0.3%
	No Vehicle	0.3%
	Group Quarters	0.2%

3.2. Brief History

The District was created in April 1943.

3.3. Governing Body Format

The governing body is a three (3) member elected Board of Commissioners comprised of an appointed Fire Chief, an appointed Captain, and a District Secretary. The Board will assume the responsibility for adoption and implementation of this Plan. The District's firefighters consist of volunteers.

4. DEVELOPMENT TRENDS

Call volume continues to rise. In 2017, the District received 200 calls for the first time. In 2019 and again in 2023, the district responded to 261 calls, which is the current record. The population and construction within the District continue to rise, along with traffic volume on Interstate 90. Additionally, wildfires in the County are occurring more frequently and the District is responding to surrounding districts more often through Mutual Aid Agreements.

4.1. Changes in Priority

In the last five (5) years, power outages due to extreme weather events have increased in frequency and cause service disruptions in the District. Therefore, acquiring a secondary power source (e.g., solar and natural gas generators) has become a priority for the District to increase power system resilience and reduce service disruptions. Additionally, 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 #1 and participating jurisdictions' authorities, policies, programs, and resources. Goals and mitigation actions were developed using input from this assessment. Information regarding the District's jurisdictions' 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, ways 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, and zoning ordinances). Kittitas County Fire District #1 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.
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)
National Fire Protection Association Standards	No	No	No	



Capability Category	Local Authority	Other Authority	State Mandated	Comments
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	RCW 38.52 118-30-060 WAC The County Comprehensive Emergency Plan (CEMP) was last updated in 2016, and an update is in progress.
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	The 2011 Capital Facilities Plan, is adopted as part of the 2016 Comprehensive Plan.
Emergency Response Plans	Yes	No	Yes	
Community Risk Reduction Programs	Yes	No	Yes	
Post-Disaster Recovery Plan	Yes	No	No	

5.2. Administrative and Technical Capabilities

The administrative and technical capabilities include community (i.e., public and private) staff and their skills and tools, which can be used for 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	No	N/A
Engineers or professionals trained in building or infrastructure construction practices	No	N/A
Planners or engineers with an understanding of natural hazards	No	N/A



Staff/Personnel Resources	Available	Department/Agency/Position
Staff with training in benefit/cost analysis	No	N/A
Floodplain Manager/Administrator	No	N/A
Surveyors	No	N/A
Personnel skilled or trained in GIS applications	No	N/A
Staff familiar with natural hazards in local area	Yes	Fire Chief, Kittitas County Fire District #1
Emergency Manager	Yes	Fire Chief, Kittitas County Fire District #1
Grant writers	Yes	Fire Chief, Kittitas County Fire District #1

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)	Yes
Capital Improvements Project Funding	Yes
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	No
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
Public Information Officer	Yes	Kittitas County Fire District #1
Personnel skilled or trained in website development	No	N/A
Hazard mitigation information available on your website	No	N/A
Utilize social media for hazard mitigation education and outreach	No	N/A



Resource	Available	Department/Agency/Position
Citizen boards or commissions that address issues related to hazard mitigation	Yes	Board of Fire Commissioners, Kittitas County Fire District #1
Other programs already in place that could be used to communicate hazard-related information	No	N/A
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 #1 identified existing authorities, policies, programs, funding, and/or resources that need to be expanded and/or improved in order to support the implementation of the hazard mitigation initiatives identified in this Plan (e.g., mitigation actions).

- In order to increase the District's capability to apply for hazard mitigation grants and fund the local match for hazard mitigation grants, the District needs to expand its grant writing capabilities by potentially hiring more grant writers.
- Better GIS integration in the District's planning and communication capabilities could improve the District's ability to implement the mitigation actions identified in this Plan.
- Building codes and ordinances should be reviewed based on developing trends in identified hazards and mitigation measures that can make them more effective at preventing losses. Furthermore, building codes should be updated to comply with the latest international and state building codes.

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 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 staff and community officials in collaborative hazard mitigation planning.

6.1. Existing Plan Integration

In the performance period since the adoption of the previous Hazard Mitigation Plan, Kittitas County Fire District #1 made 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
Identification of Potential Fuel Breaks	Utilized the wildfire risk data included in the Hazard Mitigation Plan to identify possible fuel breaks within the District.
Emergency Response Plan	This Hazard Mitigation Plan is integrated with the District's Emergency Response Plan for a comprehensive approach to reduce wildfire risks and ensure coordinated response to the hazards. The District uses the data from the Community Wildfire Protection Plan (CWPP) and this Hazard Mitigation Plan and evaluates the probability of each hazard, prioritizing and working to obtain funding to help reduce the risk from each hazard.



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 #1 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	This 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	Updates to 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 #1.



Table 10. Significant Past Events

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. 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. ⁴ 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 #1 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).

A complete risk assessment for each identified hazard of concern is in **Volume 1** of this Plan. **Table 11** provides information on a several key vulnerabilities for Kittitas County Fire District #1. 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. The following routes within the District are within inundation areas – Interstate 90, State Road 10, Thorp Highway, and State Road 97.
Drought	The Local Planning Team determined that the District does not have unique vulnerabilities and impacts to droughts.
Earthquake	The Local Planning Team determined that the District does not have unique vulnerabilities and impacts to earthquakes.
Flood	The Local Planning Team determined that the District does not have unique vulnerabilities and impacts to flooding.
Landslide	The Local Planning Team determined that the District does not have unique vulnerabilities and impacts to landslides.
Severe Weather (thunderstorms, hail, tornado, strong winds/damaging winds, extreme temperatures)	The District is located between the cities of Cle Elum and Ellensburg. If access routes are affected during a severe weather event, the District may not have access to food, fuel, and medical services, among other resource needs.

⁴ 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
Volcanic Activity	The Local Planning Team determined that the District does not have unique vulnerabilities and impacts to volcanic activity.
Wildfire (wildfire smoke)	The Local Planning Team determined that the District does not have unique vulnerabilities and impacts to wildfires.
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
<i>Current Vulnerability and Impact</i>	
Avalanche	Remained the Same
Communicable Diseases/Pandemic	Remained the Same
Dam and Levee Failure	Remained the Same
Drought	Remained the Same
Earthquake	Remained the Same
Extreme Cold/Extreme Heat (<i>Severe Weather</i>)	Remained the Same
Flood	Remained the Same
Landslide	Remained the Same
Severe Weather (<i>thunderstorms, hail, strong winds/damaging winds, and tornado</i>)	Remained the Same
Volcanic Activity	Remained the Same
Winter Weather (<i>ice storms, heavy snow, blizzards</i>)	Remained the Same
Wildfire (<i>Wildfire Smoke</i>)	Increased
<i>Future Vulnerability and Impact</i>	
Avalanche	No Change Anticipated
Communicable Diseases/Pandemic	No Change Anticipated



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



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



Hazard	Vulnerability and Impact
Extreme Cold/Extreme Heat (<i>Severe Weather</i>)	No Change Anticipated
Flood	Increase
Landslide	Increase
Severe Weather (<i>thunderstorms, hail, strong winds/damaging winds, and tornado</i>)	Increase
Volcanic Activity	No Change Anticipated
Winter Weather (<i>ice storms, heavy snow, blizzards</i>)	Increase
Wildfire (<i>Wildfire Smoke</i>)	Increase

The District does not anticipate future major assets to be exposed or vulnerable to any of the hazards identified in this Plan. Any new assets (e.g., new construction in hazard prone areas) will 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 #1 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.

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 (<i>Blizzard/Heavy Snow, Ice Storm</i>)	3	15	16	24	55	77
Flood	2	18	16	31	65	63
Earthquake	2	12	16	33	61	59
Strong Wind / Damaging Winds (<i>Severe Weather</i>)	3	9	16	15	40	59
Wildfire Smoke (<i>Wildfire</i>)	3	9	10	20	39	57
Wildfire	2	15	11	27	53	53
Thunderstorms (<i>Severe Weather</i>)	2	6	16	26	48	48
Communicable Diseases / Pandemic	2	18	10	20	48	48
Cold Wave / Extreme Cold (<i>Severe Weather</i>)	2	12	12	20	44	45
Drought	2	9	6	29	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)
Heat Wave / Extreme Heat (Severe Weather)	2	12	12	17	41	42
Dam and Levee Failure	1	18	16	29	63	34
Hail (Severe Weather)	1	6	16	16	38	22
Tornado (Severe Weather)	1	6	16	16	38	22
Volcanic Activity	1	12	6	15	33	20
Avalanche	1	6	6	13	25	15
Landslide	1	6	6	13	25	15
<p>Consequence: Sum of <u>all</u> weighted factors. Extent: Sum of the weighted <u>Extent</u> factors. Vulnerability: Sum of the weighted <u>Vulnerability</u> factors. Impact: Sum of the weighted <u>Impact</u> factors. Total Risk Score* = Probability x Consequence * Normalized to 100</p>						
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
<p>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.</p>						



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 #1 agreed upon **nine (9)** mitigation actions that apply to the jurisdiction's properties where they have jurisdictional responsibility and authority. One (1) mitigation action was completed, and one (1) mitigation action was deleted/no longer needed. A summary of the District's mitigation actions status is listed in **Table 16**.

Table 16. Kittitas County Fire District #1 Mitigation Actions Summary

Status		Mitigation Action Total	
Ongoing		6	
In Progress/In Work		1	
Not Started		0	
Delayed/Deferred		1	
New		1	
TOTAL		9	
Completed		1	
Deleted/No Longer Needed		1	
Mitigation Actions per Hazard			
Avalanche	4	Landslide	4
Dam and Levee Failure	4	Severe Weather	4
Drought	4	Volcanic Activity	4
Earthquake	4	Wildfire	9
Flood	4	Winter Weather	4

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	Participate, in coordination with Kittitas Fire Adapted Communities, in the “Firewise” Program by identifying project site locations and promoting Firewise techniques as a defensible space initiative throughout the District.				
Action Number	KCFD1-1	Year Initiated / Anticipated Year of Initiation	2019	Prioritization Score	32/40
Goal(s) Addressed		1, 3, 4	Hazard(s) Mitigated	Wildfire	
Project Status		Ongoing	<i>If Deleted/No Longer Needed, provide reason.</i>	n/a	
Benefits <i>(Loss Avoided)</i>		High			
Lead Agency / Organization	Kittitas County Fire District #1		Supporting Agency / Organization <i>(If applicable)</i>	Kittitas Fire Adapted Communities Coalition, Washington State Department of Natural Resources, Kittitas County Conservation District	
Additional Participating Jurisdictions <i>(If applicable)</i>	n/a				
Project Duration	Long Term		Estimated Cost	Medium	
Potential Funding Source	Local Budgeted Funds, BRIC, HMGP, HMGP Post Fire		<i>If Other, you must identify a funding source.</i>	n/a	
			Please provide further detail on Potential Funding Source.	General Operating Budget (Staff Time)	
Implementation Priority	High	Changes in Priority <i>(If applicable)</i>			



Mitigation Action	Continue to provide fire safety, fire prevention and Firewise education to neighborhoods, schools, and community via websites, social media, signage, and public outreach.				
Action Number	KCFD1-2	Year Initiated / Anticipated Year of Initiation	2019	Prioritization Score	31/40
Goal(s) Addressed		1, 3, 4	Hazard(s) Mitigated	Wildfire	
Project Status		Ongoing	If Deleted/No Longer Needed, provide reason.	n/a	
Benefits (Loss Avoided)		High			
Lead Agency / Organization	Kittitas County Fire District #1		Supporting Agency / Organization (If applicable)	n/a	
Additional Participating Jurisdictions (If applicable)	n/a				
Project Duration	Long Term		Estimated Cost	Medium	
Potential Funding Source	Local Budgeted Funds, Other		If Other, you <u>must</u> identify a funding source.	Washington State Department of Natural Resources – Wildfire Ready Neighbor grants	
			Please provide further detail on Potential Funding Source.	General Operating Budget (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	KCFD1-3	Year Initiated / Anticipated Year of Initiation	2019	Prioritization Score	28/40
Goal(s) Addressed		1	Hazard(s) Mitigated	Wildfire	
Project Status		Ongoing	If Deleted/No Longer Needed, provide reason.	n/a	
Benefits (Loss Avoided)		High			
Lead Agency / Organization	Kittitas County Fire District #1		Supporting Agency / Organization (If applicable)	Kittitas Reclamation District, Other Irrigation Districts, Other Water Districts	
Additional Participating Jurisdictions (If applicable)	n/a				
Project Duration	Ongoing		Estimated Cost	Medium	
Potential Funding Source	Local Budgeted Funds		If Other, you <u>must</u> identify a funding source.	n/a	
			Please provide further detail on Potential Funding Source.	General Operating Budget (Staff Time)	
Implementation Priority	Medium	Changes in Priority (If applicable)	With water availability for emergency services constantly cut via code changes by County government, the District has to get creative and approach additional organizations for water access.		



Mitigation Action	Require that development in high fire hazard areas provide adequate access roads, onsite fire protection systems, evacuation signage and fire breaks.				
Action Number	KCFD1-4	Year Initiated / Anticipated Year of Initiation	2019	Prioritization Score	26/40
Goal(s) Addressed	1, 2		Hazard(s) Mitigated	Wildfire	
Project Status	Ongoing		If Deleted/No Longer Needed, provide reason.	n/a	
Benefits (Loss Avoided)	High				
Lead Agency / Organization	Kittitas County Fire Chiefs Association		Supporting Agency / Organization (If applicable)	Kittitas County Fire District #1, Washington State Department of Natural Resources, Kittitas County Conservation District, Kittitas Fire Adapted Communities Coalition	
Additional Participating Jurisdictions (If applicable)	n/a				
Project Duration	Ongoing		Estimated Cost	Low	
Potential Funding Source	Local Budgeted Funds		If Other, you <u>must</u> identify a funding source.	n/a	
			Please provide further detail on Potential Funding Source.	General Operating Budget (Staff Time)	
Implementation Priority	Medium	Changes in Priority (If applicable)	Continue to advocate the importance of safe access for the public and responders along with water availability and systems (e.g., hydrants and sprinklers), to the BOCC and public. Attend variety meetings, planning meetings, etc.		



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	KCFD1-5	Year Initiated / Anticipated Year of Initiation	2019	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 #1		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 <u>must</u> identify a funding source.	n/a	
			Please provide further detail on Potential Funding Source.	General Operating Budget (Staff Time)	
Implementation Priority	High	Changes in Priority (If applicable)			



Mitigation Action	Continue to support through active participation the countywide initiatives identified in Volume 1 of the Kittitas County Hazard Mitigation Plan.				
Action Number	KCFD1-6	Year Initiated / Anticipated Year of Initiation	2019	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 #1		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 <u>must</u> identify a funding source.	n/a	
			Please provide further detail on Potential Funding Source.	General Operating Budget (Staff Time)	
Implementation Priority	High	Changes in Priority (If applicable)			



Mitigation Action	Construct crew quarters, in order to improve response time, capabilities, and quality of service.				
Action Number	KCFD1-7	Year Initiated / Anticipated Year of Initiation	2028	Prioritization Score	29/40
Goal(s) Addressed		1	Hazard(s) Mitigated	Avalanche, Dam and Levee Failure, Drought, Earthquake, Flood, Landslide, Severe Weather, Volcanic Activity, Wildfire, Winter Weather	
Project Status		Delayed/Deferred	If Deleted/No Longer Needed, provide reason.	n/a	
Benefits <i>(Loss Avoided)</i>		Medium			
Lead Agency / Organization	Kittitas County Fire District #1		Supporting Agency / Organization <i>(If applicable)</i>	n/a	
Additional Participating Jurisdictions <i>(If applicable)</i>	n/a				
Project Duration	Long Term		Estimated Cost	High	
Potential Funding Source	Local Budgeted Funds		If Other, you <u>must</u> identify a funding source.	n/a	
			Please provide further detail on Potential Funding Source.	Capital Improvement Funds	
Implementation Priority	Medium	Changes in Priority <i>(If applicable)</i>	Currently, it has moved lower on the priority list due to other capital expenditures.		



Mitigation Action	Replace the 1990 water tender for a new, tactical water tender more suited for wildland fires.				
Action Number	KCFD1-8	Year Initiated / Anticipated Year of Initiation	2019	Prioritization Score	30/40
Goal(s) Addressed		1	Hazard(s) Mitigated	Wildfire	
Project Status		Completed	If Deleted/No Longer Needed, provide reason.	n/a	
Benefits <i>(Loss Avoided)</i>		High			
Lead Agency / Organization	Kittitas County Fire District #1		Supporting Agency / Organization <i>(If applicable)</i>	n/a	
Additional Participating Jurisdictions <i>(If applicable)</i>	n/a				
Project Duration	Short Term		Estimated Cost	Medium	
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 Operating Budget	
Implementation Priority	Medium	Integration Ideas <i>(Optional)</i>			



Mitigation Action	Conduct a study on evacuation routes (including inundation patterns and high-water evacuation routes in case of dam and levee failure).				
Action Number	KCFD1-9	Year Initiated / Anticipated Year of Initiation	n/a	Prioritization Score	n/a
Goal(s) Addressed		1, 3, 4	Hazard(s) Mitigated	Avalanche, Dam and Levee Failure, Drought, Earthquake, Flood, Landslide, Severe Weather, Volcanic Activity, Wildfire, Winter Weather	
Project Status		Deleted/No Longer Needed	If Deleted/No Longer Needed, provide reason.	Other entities are working on this, including FEMA.	
Benefits (Loss Avoided)		n/a			
Lead Agency / Organization	Kittitas County Fire District #1, Kittitas County Sheriff's Office (Emergency Management), United States Bureau of Reclamation		Supporting Agency / Organization (If applicable)	n/a	
Additional Participating Jurisdictions (If applicable)	n/a				
Project Duration	n/a		Estimated Cost	n/a	
Potential Funding Source	n/a		If Other, you <u>must</u> identify a funding source.	n/a	
			Please provide further detail on Potential Funding Source.	n/a	
Implementation Priority	n/a	Changes in Priority (If applicable)			



Mitigation Action	Complete mitigation projects in site-specific location including, but not limited to, thinning and/or fire break development near Elk Heights.				
Action Number	KCFD1-10	Year Initiated / Anticipated Year of Initiation	2019	Prioritization Score	33/40
Goal(s) Addressed	1, 5		Hazard(s) Mitigated	Wildfire	
Project Status	In Progress/In Work		If Deleted/No Longer Needed, provide reason.	n/a	
Benefits (Loss Avoided)	High				
Lead Agency / Organization	Kittitas County Fire District #1, Washington State Department of Natural Resources		Supporting Agency / Organization (If applicable)	Kittitas County Conservation District, Kittitas Fire Adapted Communities Coalition	
Additional Participating Jurisdictions (If applicable)	n/a				
Project Duration	Ongoing		Estimated Cost	Medium	
Potential Funding Source	Local Budgeted Funds, Other		If Other, you <u>must</u> identify a funding source.	Regional Challenge Grants	
			Please provide further detail on Potential Funding Source.	General Operating Budget (Staff Time)	
Implementation Priority	High	Changes in Priority (If applicable)	One (1) thinning and prescribed burn project has been completed. RSG was used for a portion of the thinning project. Chipping program through the Kittitas County Conservation District is ongoing.		



Mitigation Action	Retrofit the District's fire stations with a secondary power source (e.g., generator) to increase power system resilience and mitigate the impacts of natural hazards while increasing the resilience of critical functions.				
Action Number	KCFD1-11	Year Initiated / Anticipated Year of Initiation	2025	Prioritization Score	37/40
Goal(s) Addressed		1, 2	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 #1		Supporting Agency / Organization (If applicable)	n/a	
Additional Participating Jurisdictions (If applicable)	Kittitas County Conservation District				
Project Duration	Short Term		Estimated Cost	Medium	
Potential Funding Source	Local Budgeted Funds, BRIC, HMGP, HMGP Post Fire		If Other, you <u>must</u> identify a funding source.	n/a	
			Please provide further detail on Potential Funding Source.	General Operating Budget (Staff Time)	
Implementation Priority	High	Changes in Priority (If applicable)			



APPENDIX A. HAZARD MAPS

Figure 1	Kittitas County Fire Rescue #1 Planning Area
Figure 2	Liquefaction Susceptibility (Earthquake) <i>Helps assess potential damage from earthquakes in the District.</i>
Figure 3	Special Flood Hazard Area (SFHA) <i>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.</i>
Figure 4	Cle Elum Dam Inundation Area
Figure 5	Keechelus and Kachees Dam Inundation Area
Figure 6	Wildland Fire Hazard Area
Figure 7	Wildland Urban Interface Map



Figure 1. Kittitas County Fire District #1 Planning Area

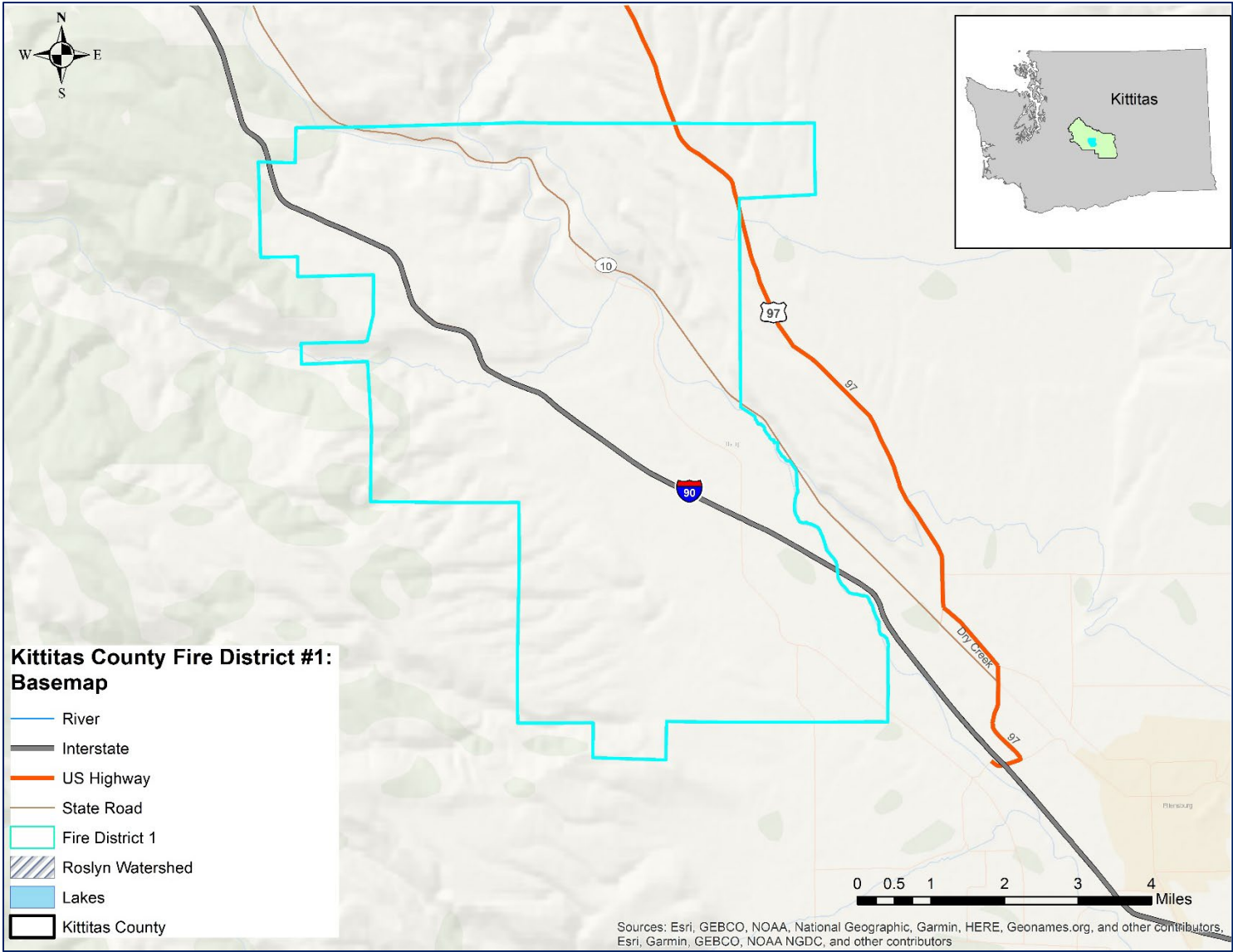




Figure 2. Liquefaction Susceptibility (Earthquake)

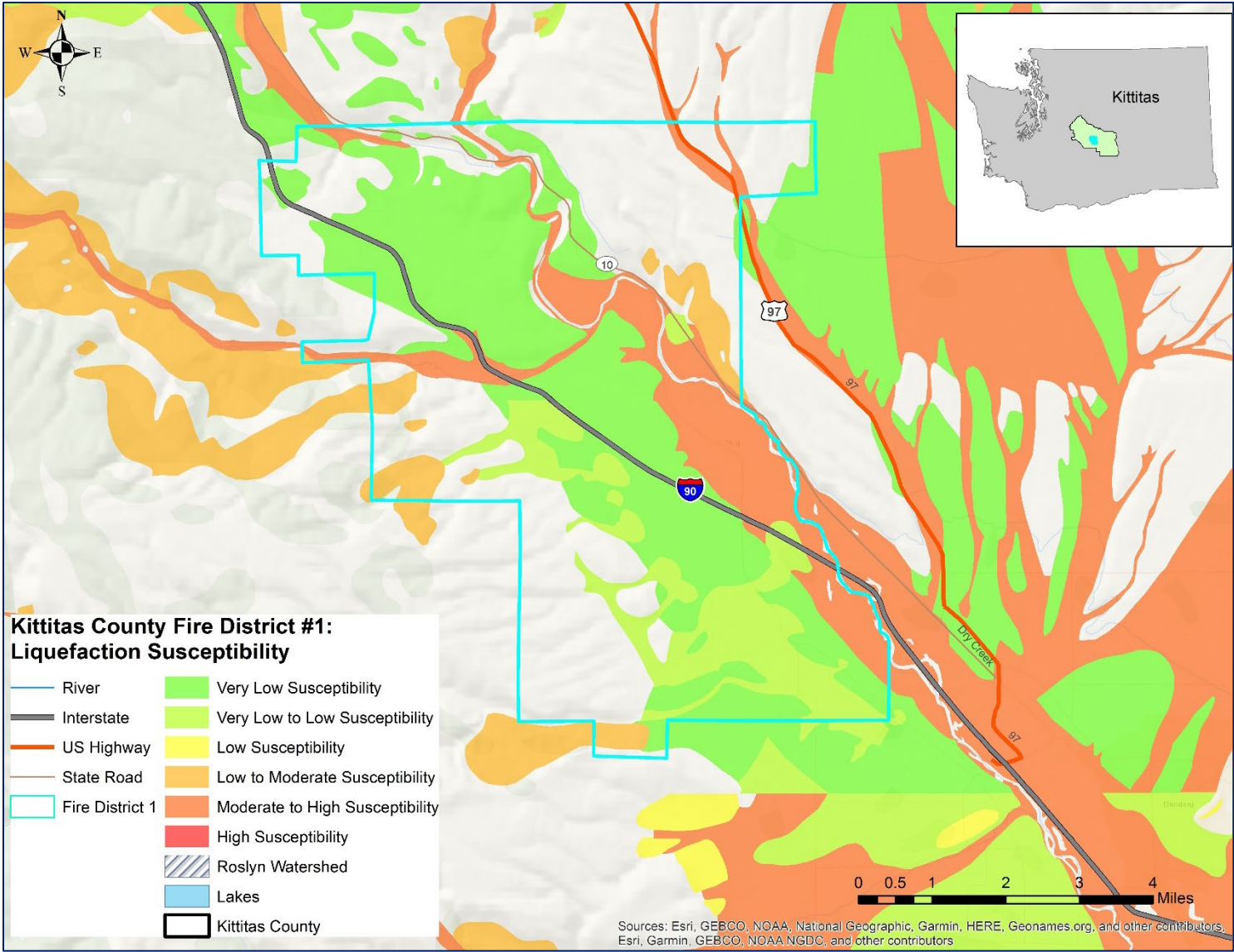




Figure 3. Special Flood Hazard Area

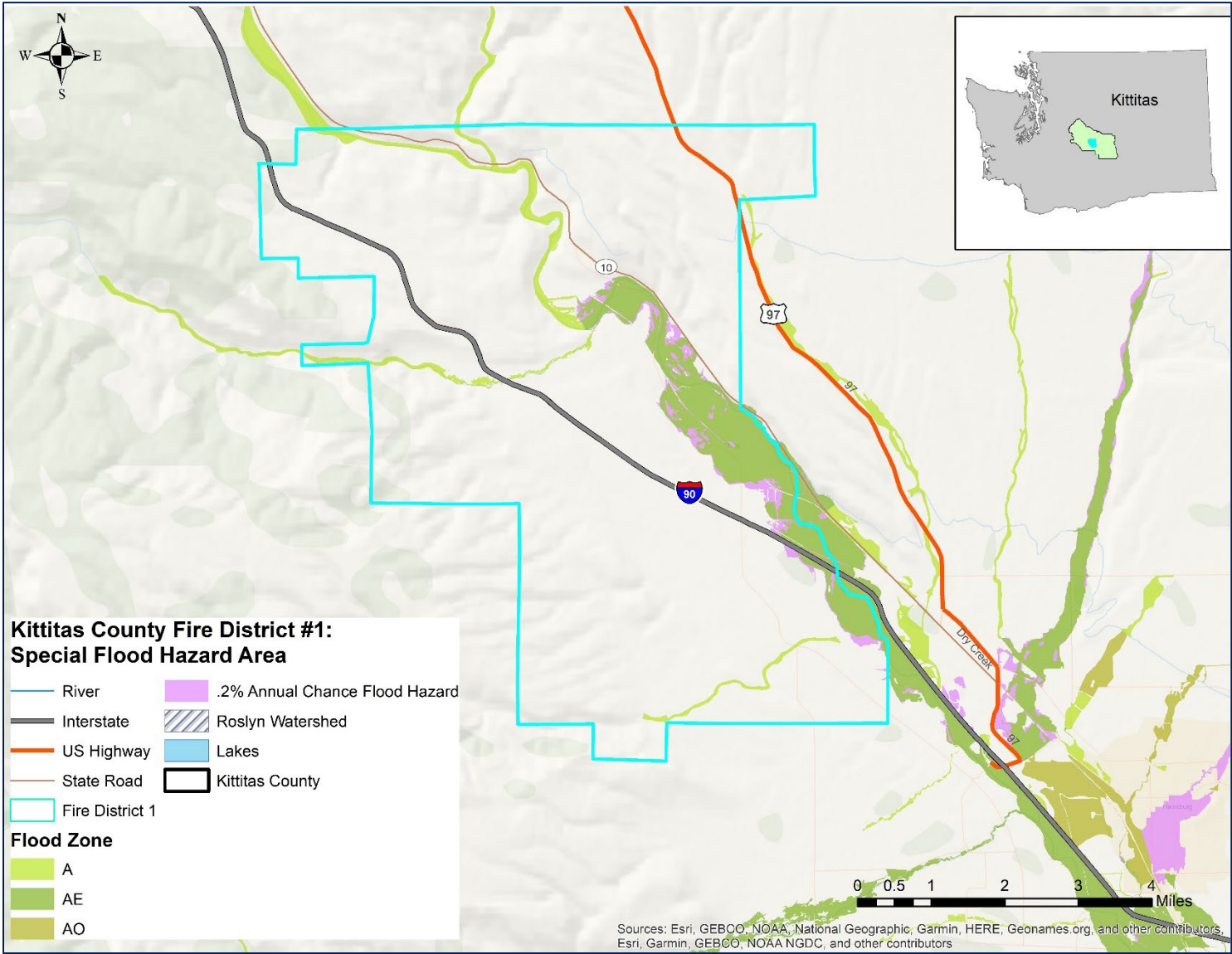




Figure 4. Cle Elum Dam Inundation Area

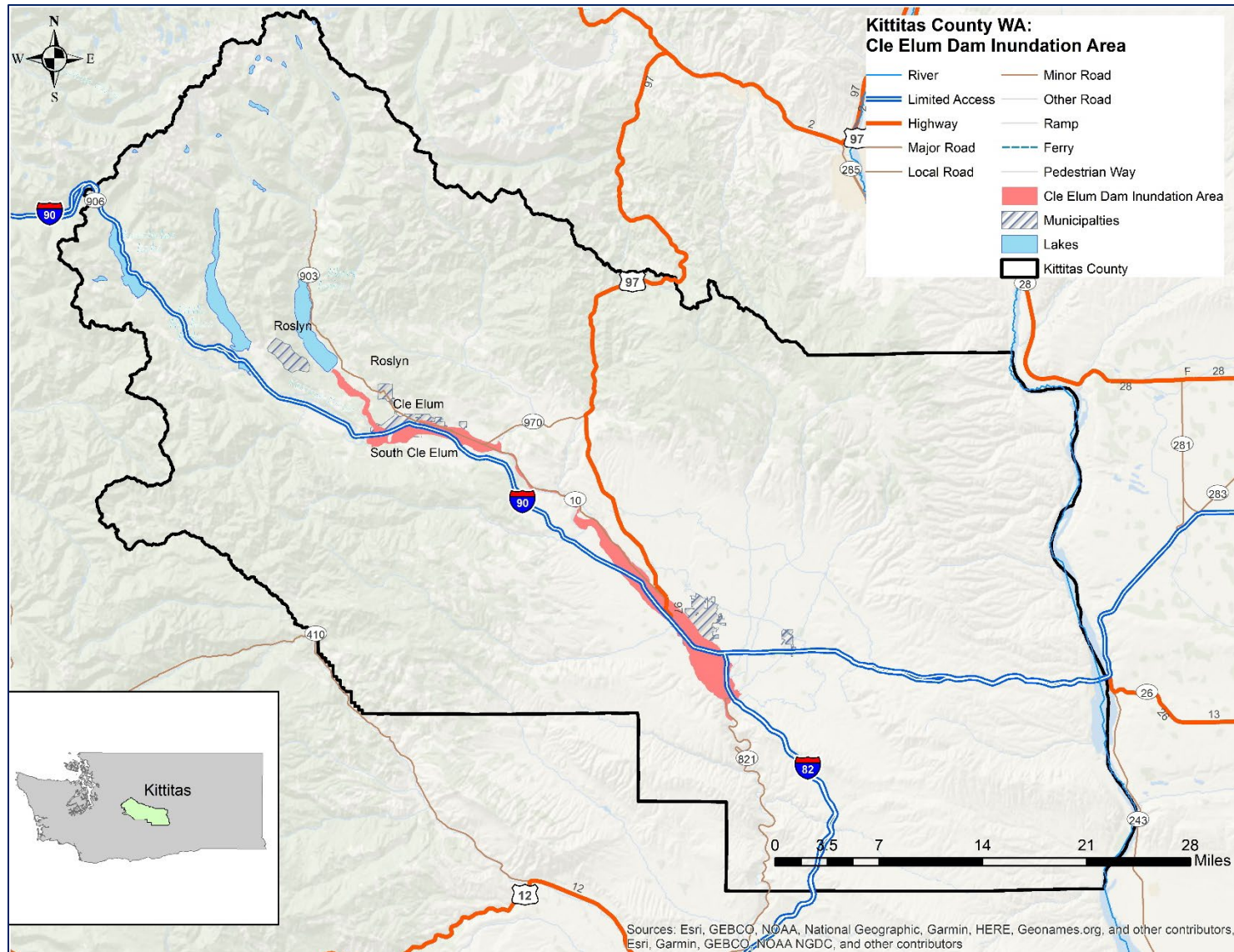




Figure 5. Keechelus and Kachees Dam Inundation Area

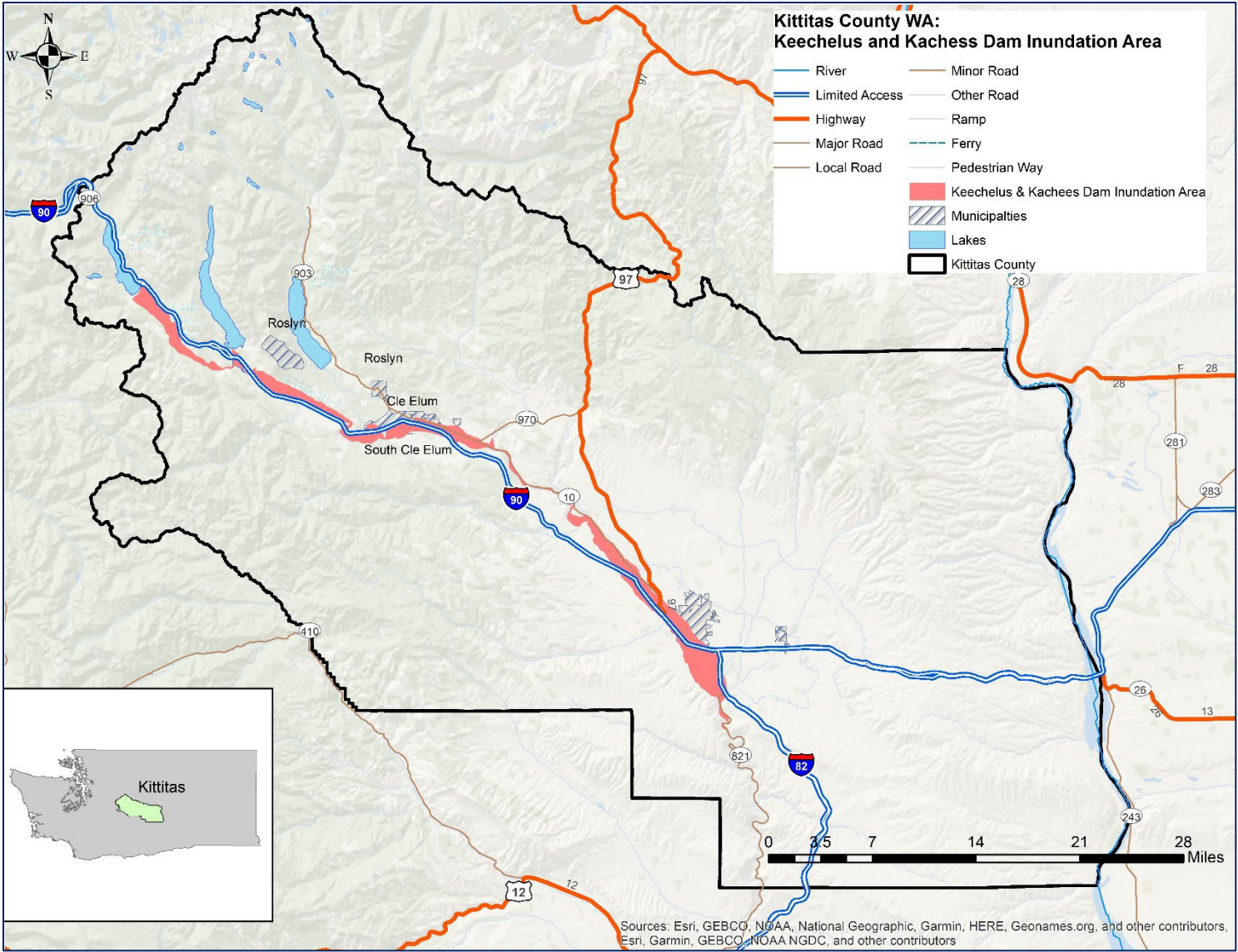




Figure 6. Wildland Fire Hazard Area

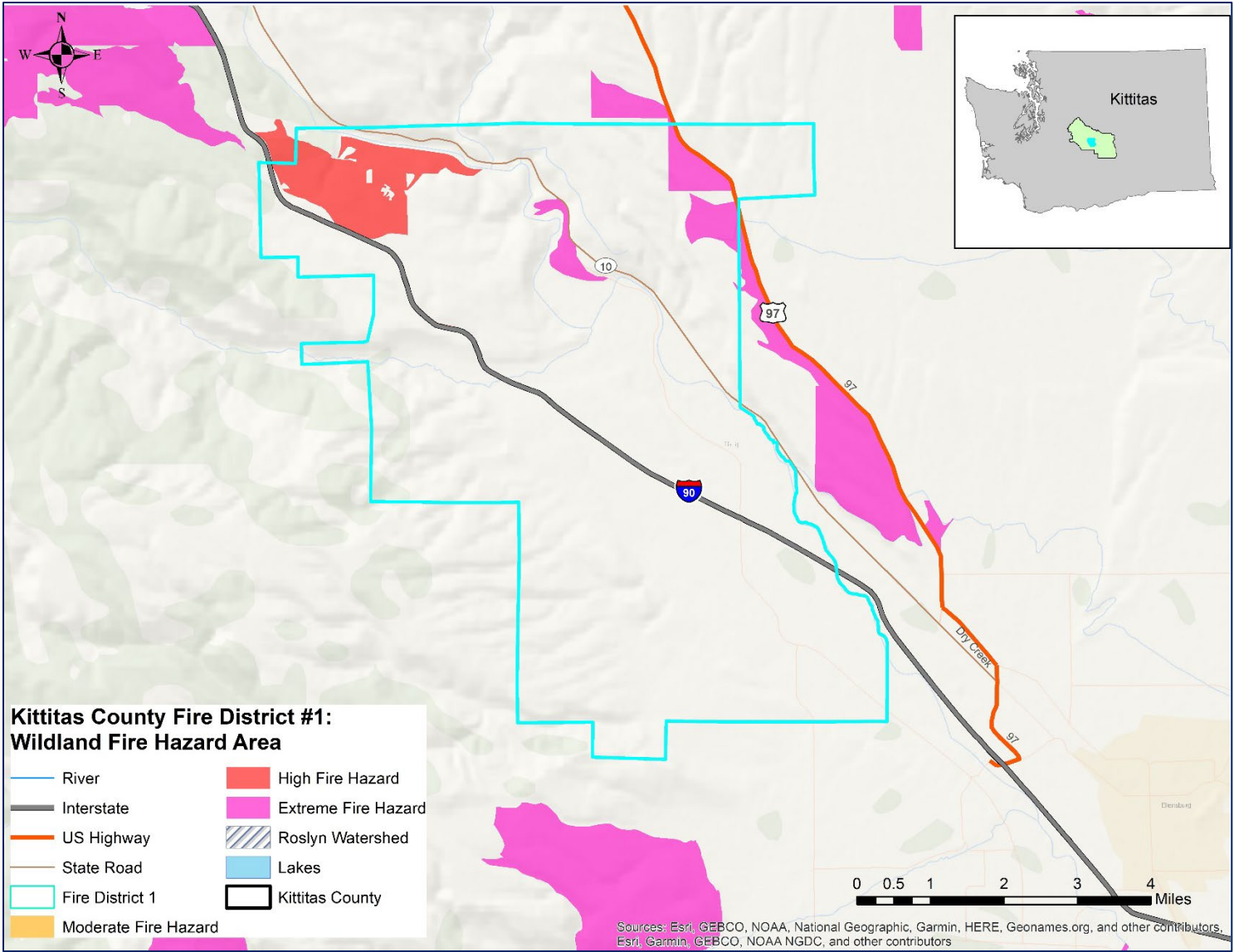
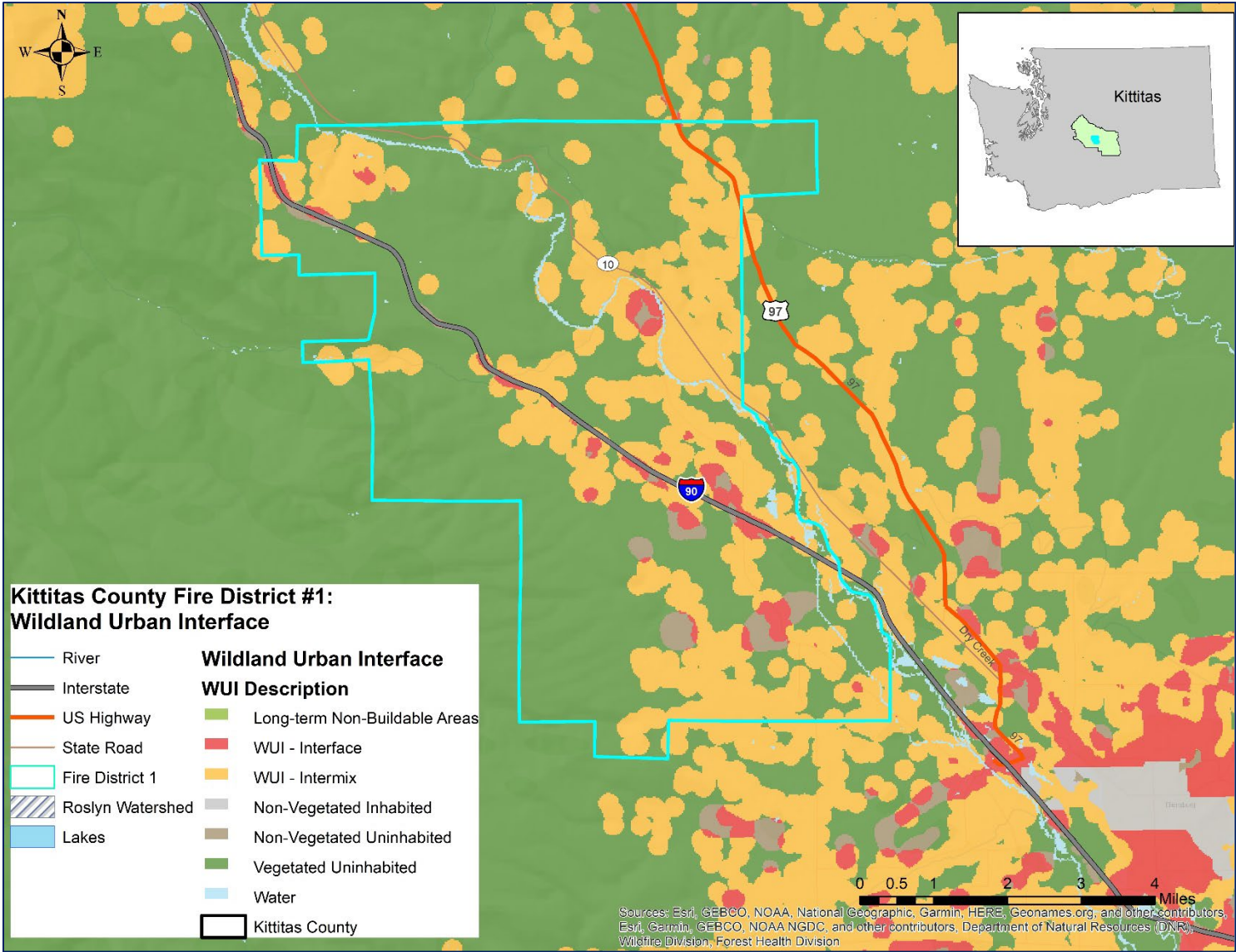




Figure 7. Wildland Urban Interface





APPENDIX B. PLAN ADOPTION

[Placeholder for adoption documentation after State and FEMA Approval]