

Chapter 3.

City of Cle Elum Annex

3.1. HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

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Alternate Point of Contact

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3.2. JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- **Date of Incorporation** - Cle Elum was officially incorporated on February 12, 1902.
- **Current Population** - 1,872 as of 2010 (US Census). The American Community Survey estimated a population of 1,993 in 2017.
- **Population Growth** - The City of Cle Elum has had a growth rate of approximately 7.3 percent since 2000 according to City-Data.com.
- **Location and Description** - The City of Cle Elum is located in Upper Kittitas County at Milepost 83 on Interstate 90 east of Snoqualmie Pass (47°11'39"N 120°56'15"W). It is bordered on the north by the Cle Elum Ridge and the south by South Cle Elum Ridge, including Peoh Point. It has a total land area of 3.22 sq. mi. It is a neighbor town to the City of Roslyn. It is at an altitude of 1,913 feet. The City of Cle Elum sits on the east slopes of the Central Cascade mountain range in the center of Washington State. This area is historically significant for its rich natural resources, fish and wildlife and cultural resources.
- **Jurisdiction Vulnerability to Hazards**— Cle Elum, along with all jurisdictions in Kittitas County, has an overall low vulnerability to avalanche, drought, landslide, and volcano hazards, and an overall high vulnerability to severe weather events. Based on the three dam failure scenarios used in this plan, 62% of Cle Elum’s population and property is at risk of dam failure. Cle Elum has high exposure to earthquakes, and various earthquake scenarios result in losses up to 8% of building value. Cle Elum has 174 buildings (19% of assessed building value) located in the 100- or 500-year floodplain, and therefore a high vulnerability to flood events. Cle Elum has moderate vulnerability to wildfires, with 2% of buildings exposed to the 0-30 Year Fire Interval.
- **Brief History** - The founders of Cle Elum were Thomas L. Gamble (later known as Judge Gamble) and Walter J. Reed. Mr. Gamble took up a quarter section of land in Section 26, Township 20 North, and Range 15 East, in April 1883 with the intent of farming the land. Mr. Reed took a claim adjoining Mr. Gamble’s on the west. On those two preemptive claims the town was laid out. The date of these filings was three years prior to the discovery of coal. Scattered discoveries of coal ledges had been made in 1883 and 1884, but in 1886 a definite discovery of a large ledge of good coal in paying quantities made it clear that an important stage had come in the history of the region and populations in the region began to increase. Meanwhile, the Northern Pacific Railway was seeking a route over the Cascade Mountains. On October 11, 1886, the first Northern Pacific Railroad train pulled into the new Cle Elum station. Following the arrival of the railway, the small

town began to grow rapidly.

In 1913, steps were taken to improve automobile access across the Cascade Mountains via Snoqualmie Pass. A \$1,500,000 levy was approved in 1913 to improve and expand the state's highways. The majority of the levy (\$590,743) went to construction of the Sunset Highway between Spokane and Seattle. This major cross-state highway would pass directly through Cle Elum's business district. As one of the first towns reached after traveling east across the pass, Cle Elum would benefit from the road's construction. That same year, reflecting on the prosperity of the coal mines, the city's second bank was chartered. By 1914, Cle Elum's population had risen to 3,000 from about 100 at the turn of the century.

Cle Elum's greatest disaster occurred on June 25, 1918 when a fire wiped out over 70 acres of the city (29 city blocks), with over \$500,000 dollars in damage. The cause was determined to be a discarded cigarette butt thrown into a pile of garbage behind a theater. Thirty businesses and 205 houses were destroyed, leaving more than 1,800 people homeless. Following the incident, aid poured in from across the state. The Red Cross brought tents from Camp Lewis to house misplaced citizens while soldiers were sent from Ellensburg to guard businesses. Yakima and Portland, Oregon also sent aid to the city. Fortunately no lives were lost in the incident. High insurance rates on Cle Elum's many wooden structures inhibited many people from purchasing it. One of the few buildings in downtown Cle Elum to survive the fire was the Cle Elum State Bank Building, built in 1906 and still standing today. The rest of downtown was quickly rebuilt of brick and many of these buildings still stand.

- **Climate** - Cle Elum gets 22 inches of rain per year. Snowfall is 81 inches. The number of days with any measurable precipitation is 117. On average, there are 199 sunny days per year in Cle Elum. The July high is around 81 degrees. The January low is 20. The city's comfort index, which is based on humidity during the hot months, is a 75 out of 100, where higher is more comfortable. The US average on the comfort index is 44.
- **Governing Body Format** - The City of Cle Elum is governed by a mayor and a seven person council.
- **Development Trends** - With its proximity to the Seattle metropolitan area and vast supply of recreational land, Kittitas County has been called "Seattle's backyard." The majority of development in the Cle Elum area has been for recreational or second homes. Historically, most of the development has occurred in mountainous and forested areas, and many hillsides have been cleared and roads constructed to provide access to these lands. The County has also seen a rise over the past decade of families buying houses in the Cle Elum area and commuting daily to the Seattle area.

3.3. JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 3-1 lists all past occurrences of natural hazards in the county. Repetitive loss records are as follows:

- Number of FEMA Identified Repetitive Flood Loss Properties: 2
- Number of Repetitive Flood Loss Properties that have been mitigated: 0

3.4. HAZARD RISK RANKING

Table 3-2 presents the ranking of the hazards of concern.

3.5. CAPABILITY ASSESSMENT

The assessment of the jurisdiction's legal and regulatory capabilities is presented in Table 3-3. The assessment of the jurisdiction's administrative and technical capabilities is presented in Table 3-4. The

assessment of the jurisdiction’s fiscal capabilities is presented in Table 3-5. Classifications under various community mitigation programs are presented in Table 3-6.

3.6. HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 3-7 lists the initiatives that make up the jurisdiction’s hazard mitigation plan. Table 3-8 identifies the priority for each initiative. Table 3-9 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

3.7. HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps for the City of Cle Elum are included at the end of this chapter. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes.

Table 3-1. Natural Hazard Events

Type of Event	Date	Preliminary Damage Assessment
Flood Event (DR-1817)	1/30/2009	61,688
Earthquake	02-28-2001	N/A
Earthquake	05-03-1996	N/A
Earthquake	01-29-1995	N/A
Earthquake	02-14-1981	N/A
Earthquake	04-29-1965	N/A

Table 3-2. Hazard Risk Ranking

Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1	Flood	27
2	Wildfire	27
3	Earthquake	24
4	Dam Failure	18
5	Severe Weather	18
6	Landslide	10
7	Volcano	6
8	Drought	5
9	Avalanche	1
10	Seiche	0

Table 3-3. Legal and Regulatory Capability

	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Codes, Ordinances & Requirements					
Building Code	Yes	Yes	No	Yes	Title 15 CEMC adopts the 2009 IBC, 7/27/2010
Zoning Code	Yes	No	No	No	Title 17, CEMC, 2001
Subdivisions	Yes	No	No	No	Title 16, CEMC, 2005
Post-Disaster Recovery	No	No	No	No	
Real Estate Disclosure	No	No	Yes	Yes	RCW 64.06.020
Growth Management	Yes	No	No	Yes	RCW 36.70A
Site Plan Review	Yes	No	No	Yes	Title 15 CEMC, 2010
Special Purpose (flood management, critical areas)	Yes	No	No	No	Flood damage Prevention: Title 15, Chapter 15.24; 2002 Critical Areas: Title 18, CEMC, 2010
Building Code	Yes	Yes	No	Yes	Title 15 CEMC adopts the 2009 IBC, 7/27/2010
Planning Documents					
General Plan	Yes	No	No	Yes	
Floodplain or Basin Plan	Yes	No	No	No	Kittitas County Comprehensive Floodplain Management Plan, 1996
Stormwater Plan	Yes	No	No	No	
Capital Improvement Plan	Yes	No	No	No	5-year CIP, updated annually for streets, water, sewer and drainage
Habitat Conservation Plan	No	No	No	No	
Economic Development Plan	Yes	No	No	No	Economic Development Group of Kittitas County & Chamber
Emergency Response Plan	No	No	No	No	Upper County Emergency Management Plan (working with Perteet and other local jurisdictions) in progress
Shoreline Management Plan	Yes	Yes	No	No	
Post-Disaster Recovery Plan	No	No	No	No	

Table 3-4. Administrative and Technical Capability

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Y	Lucy Temple, City Planner Ben Annen, City Engineer
Engineers or professionals trained in building or infrastructure construction practices	Y	Robert Omans, CBO
Planners or engineers with an understanding of natural hazards	Y	Lucy Temple, City Planner Ben Annen, City Engineer
Staff with training in benefit/cost analysis	N	
Floodplain manager	Y	Lucy Temple, City Planner
Surveyors	Y	City Engineers, or contractor
Personnel skilled or trained in GIS applications	Y	Lucy Temple, City Planner
Scientist familiar with natural hazards in local area	N	
Emergency manager	N	
Grant writers	Y	Lucy Temple, City Planner

Table 3-5. Fiscal Capability

Financial Resources	Accessible or Eligible to Use?
Community Development Block Grants	Y
Capital Improvements Project Funding	Y
Authority to Levy Taxes for Specific Purposes	Y
User Fees for Water, Sewer, Gas or Electric Service	Y
Incur Debt through General Obligation Bonds	Y
Incur Debt through Special Tax Bonds	Y
Incur Debt through Private Activity Bonds	N
Withhold Public Expenditures in Hazard-Prone Areas	N
State Sponsored Grant Programs	Y
Development Impact Fees for Homebuyers or Developers	N
Other	N

Table 3-6. Community Classifications

	Participating?	Classification	Date Classified
Community Rating System	No	—	—
Building Code Effectiveness Grading Schedule	Yes	3/3	—
Public Protection	Yes	6/9	—
Storm Ready	No	—	—
Firewise	Yes	—	2009 (first)

Table 3-7. Hazard Mitigation Action Plan Matrix

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
Initiative #CE-1 —Consider participation in the Community Rating System						
New and Existing	Flood	All	City Council	Low	General Fund	Short-term
Initiative #CE-2 —Adopt appropriate regulatory standards that will reduce the risk of natural hazards through updates to existing code affecting critical areas regulations, flood hazard regulations, shoreline regulations, and updates to the county’s comprehensive plan.						
New	All Hazards	1, 3, 4, 9, 10	Community Development	Low	General Fund	Short-term
Initiative #CE-3 —Provide Pre-Disaster Mitigation by repairing the left bank of the Yakima River adjacent to Interstate 90 and Hanson Ponds. Acquire funding to complete design, permitting, and construction of the repair.						
Existing	Flooding	1, 3, 10	Public Works	Medium	FEMA HMGP	Immediate
Initiative #CE-4 —Continue to maintain compliance and good standing under the National Flood Insurance Program.						
New and Existing	Flood	1, 2, 3, 4, 6, 8, 10	Community Development	Low	General Fund	Short-term, ongoing
Initiative #CE-5 —Consider participation in the National Weather Service “Storm Ready” program.						
New and Existing	Flood, Severe Weather	6, 7, 9	Public Works	Low	General Fund	Short term
Initiative #CE-6 —Where appropriate, support retrofitting, purchase, or relocation of structures in hazard-prone areas to protect structures from future damage, with properties with exposure to repetitive losses as a priority.						
Existing	All Hazards	1, 2, 8, 10	Community Development	High	HMGP Funding, Local Contribution	Long-term, depends on funding
Initiative #CE-7 —Continue to support participation in the “Firewise” program by expanding the number of project sites within Cle Elum and promoting Firewise strategies through active community outreach.						
New and Existing	Wildfire	1, 3, 6, 7, 9	Community Development	Low	General Fund	Short-term, ongoing
Initiative #CE-8 —Set the course for sustained operations of critical city functions by the development of a continuity of operations plan and/or a post-disaster recovery plan.						
New and existing	All Hazards	1, 6, 9	Emergency Management Staff	Medium	General Fund, DHS Grant Funding	Long-term
Initiative #CE-9 —Educate the public on natural hazards, the risks they pose and way to reduce those risk through existing public information programs with the City.						
New and Existing	All Hazards	6, 7, 9	City Council	Low	General Fund	Short-term, ongoing
Initiative # CE-10 —Continue to support the implementation, monitoring, maintenance and updating of this plan.						

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
New and Existing	All Hazards	All	City Council, Fire Chief	Low	HMGP, General Fund, Road Fund	Short-term, ongoing
Initiative #CE-11 —Continue to support through active participation the countywide initiatives identified in Volume 1 of the Kittitas County Hazard Mitigation Plan.						
New and Existing	All Hazards	5, 6, 9	All City Agencies	Low	General Fund	Short-term, ongoing
Initiative #CE-12 —Implement fuels reduction strategies and maintain vegetation to reduce wildfire intensity in the Wildland Urban Interface across all property ownerships.						
New and Existing	Wildfire	1, 3, 4, 8, 10	All City Departments	Medium	General Fund	Short-term, ongoing
Initiative #CE-13 —Provide emergency power for all city facilities and utilities.						
New and Existing	All Hazards	1, 10	All City Departments	High	HMGP Grant Funds	Short-term
Initiative #CE-14 —Protect backup water source by relocating the Cle Elum River backup wellfield controls to higher ground.						
Existing	Flood, Dam Failure	1, 8	Public Works	High	HMGP Grant Funds	Short-term
Initiative #CE-15 — Implement alternative methods and strategies to provide sustainable vegetation and debris removal in the Wildland Urban Interface by incorporating equipment to better dispose and reuse material i.e., Tub Grinders. Sustainable processing of vegetation and organic matter can ultimately lead to new opportunities for biomass energy utilization and material needed for restoration.						
New and Existing	Wildfire	1, 7, 10	Public Works	Medium	HMA Funds, General Funds	Ongoing, Short-term

Table 3-8. Mitigation Strategy Priority Schedule

Initiative #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/Budgets?	Priority*
CE-1	10	Medium	Low	Yes	No	Yes	Medium
CE-2	5	High	Low	Yes	No	Yes	High
CE-3	3	High	Medium	Yes	Yes	No	High
CE-4	7	Medium	Low	Yes	No	Yes	High
CE-5	3	High	Low	Yes	Yes	Yes	High
CE-6	4	High	High	Yes	Yes	No	Medium
CE-7	5	High	Low	Yes	Yes	Yes	High
CE-8	3	High	Medium	Yes	Yes	No	Medium
CE-9	3	Low	Low	Yes	Yes	Yes	High
CE-10	10	High	Low	Yes	Yes	Yes	High
CE-11	3	Medium	Low	Yes	No	Yes	High
CE-12	5	High	Medium	Yes	Yes	Yes	Medium
CE-13	2	High	High	Yes	Yes	No	High
CE-14	2	High	High	Yes	Yes	No	High
CE-15	3	High	Medium	Yes	Yes	No	Medium

* See Section 1.3 for definitions of high, medium and low priorities.

Table 3-9. Analysis of Mitigation Initiatives: Initiative Addressing Hazard, by Mitigation Type

Hazard Type	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Avalanche	2, 10	6	9, 11		8, 13, 14	
Dam failure	2, 10	6, 14	9, 11		8, 13, 14	
Drought	2, 10		9, 11		8, 13, 14	
Earthquake	2, 10	6	9, 11		8, 13, 14	
Flood	1, 2, 4, 10	1, 4, 6, 14	1, 4, 9, 11	1, 3, 4	1, 4, 5, 8, 13, 14	1, 3
Landslide	2, 10	6	9, 11		8, 13, 14	
Severe Weather	2, 10	6	9, 11		5, 8, 13, 14	
Seiche	2, 10	6	9, 11		8, 13, 14	
Volcano	2, 10	6	9, 11		8, 13, 14	
Wildfire	2, 7, 10, 12	6, 7, 12, 15	7, 9, 11	7, 15	8, 13, 14	

1. Prevention: Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
2. Property Protection: Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
3. Public Education and Awareness: Actions to inform citizens and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
4. Natural Resource Protection: Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
5. Emergency Services: Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
6. Structural Projects: Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.

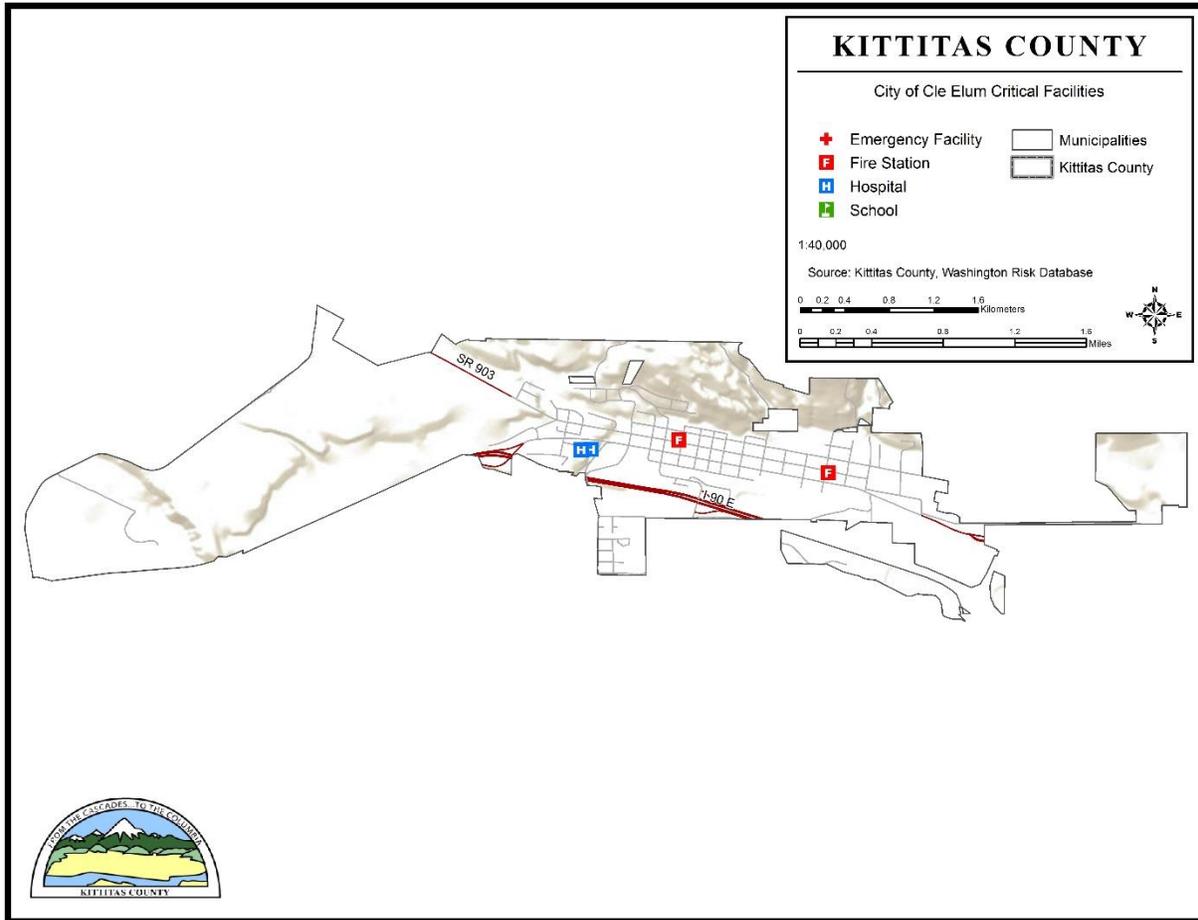


Figure 3-1. Cle Elum Critical Facilities

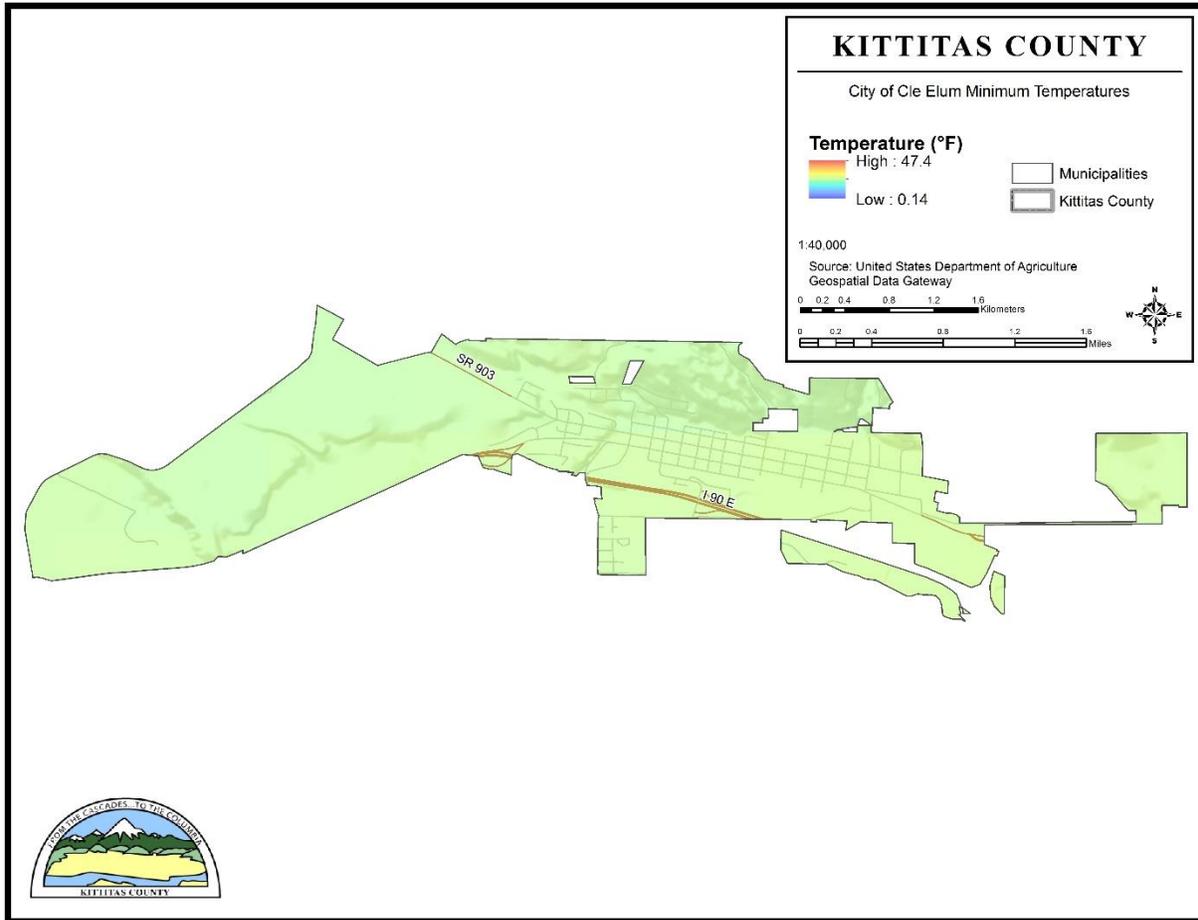


Figure 3-2. Cle Elum Minimum Temperatures

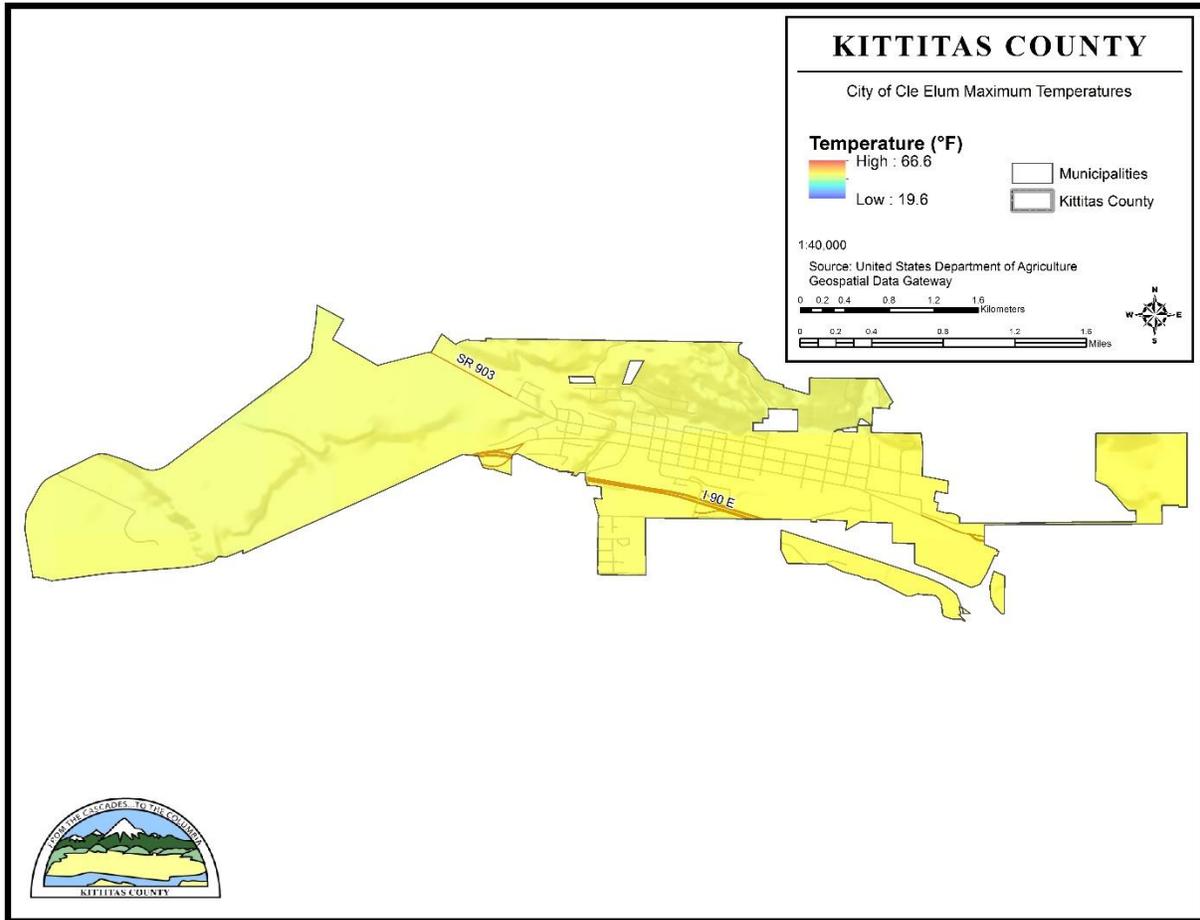


Figure 3-3. Cle Elum Maximum Temperature

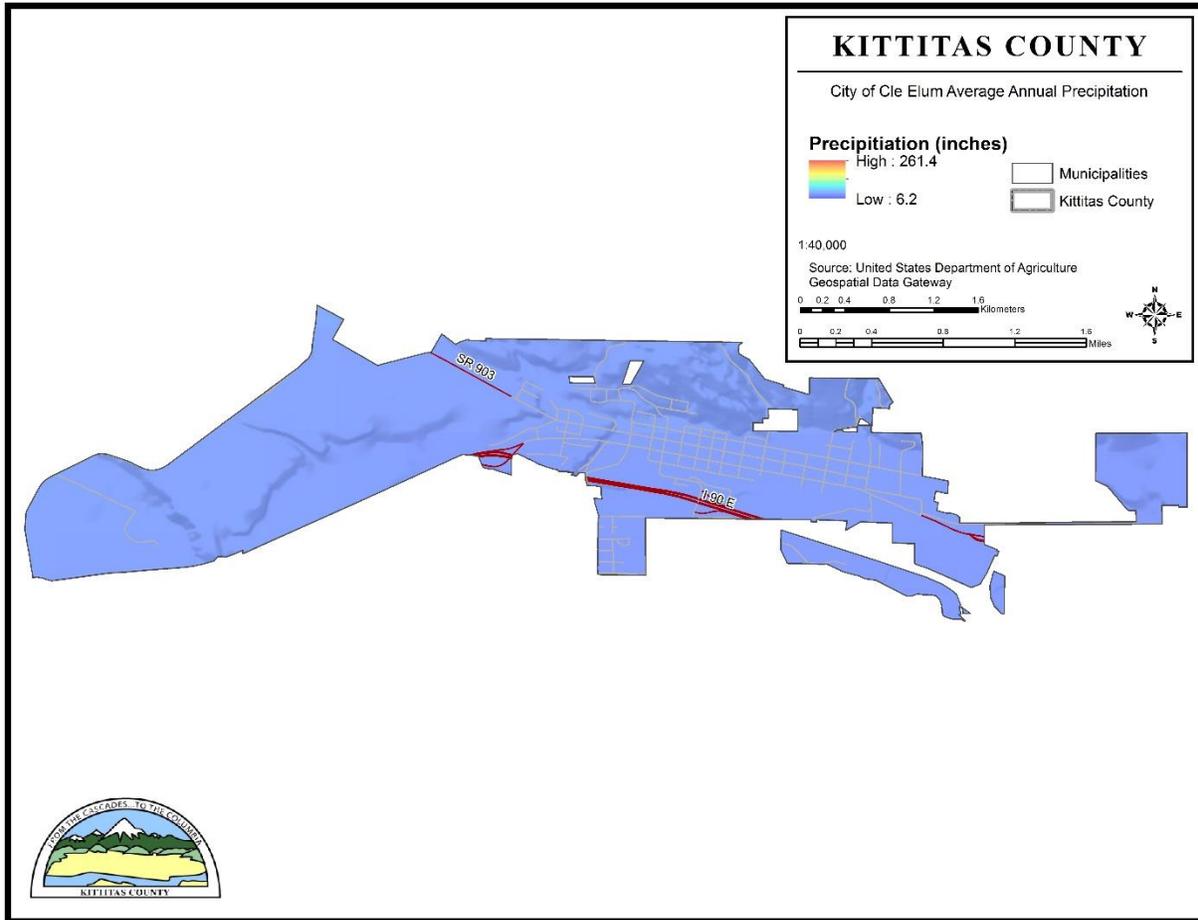


Figure 3-4. Cle Elum Average Annual Precipitation

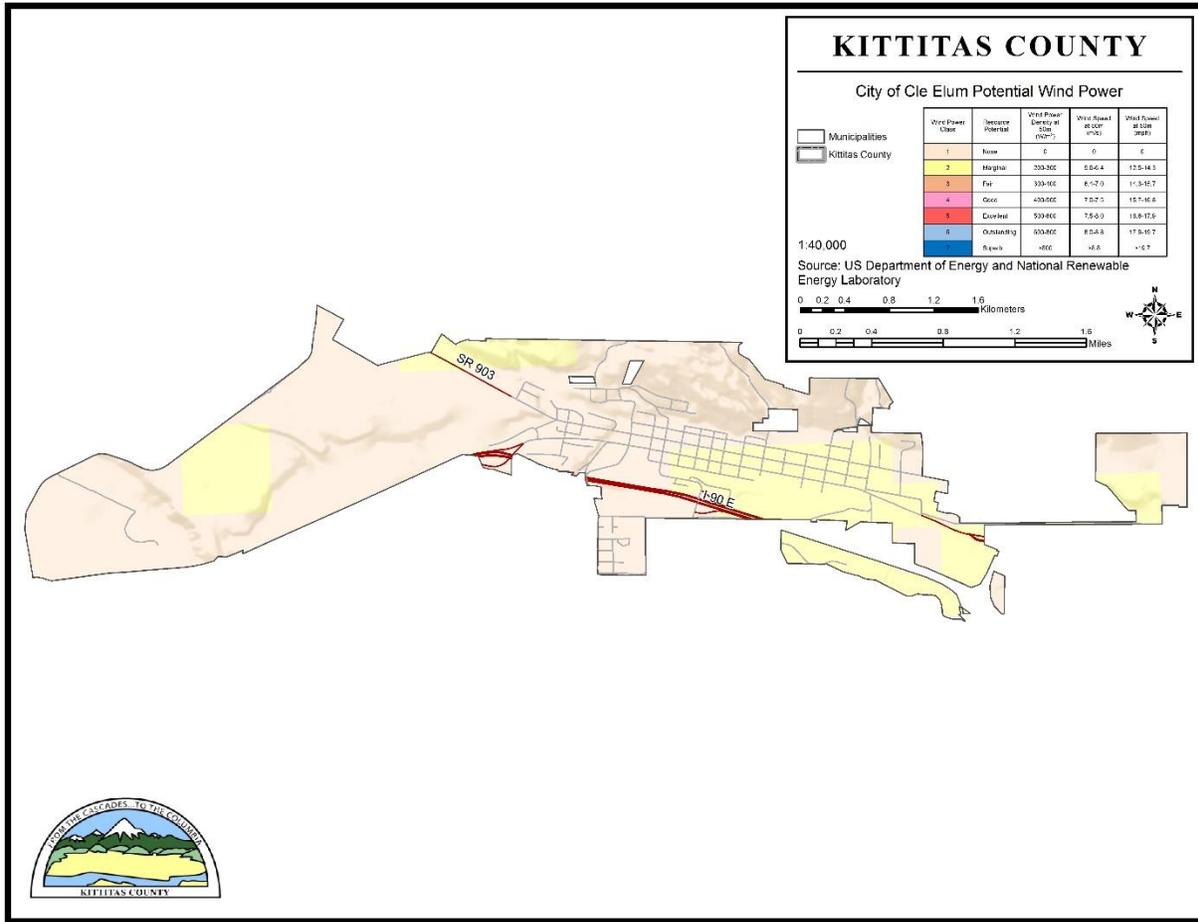


Figure 3-5. Cle Elum Potential Wind Power

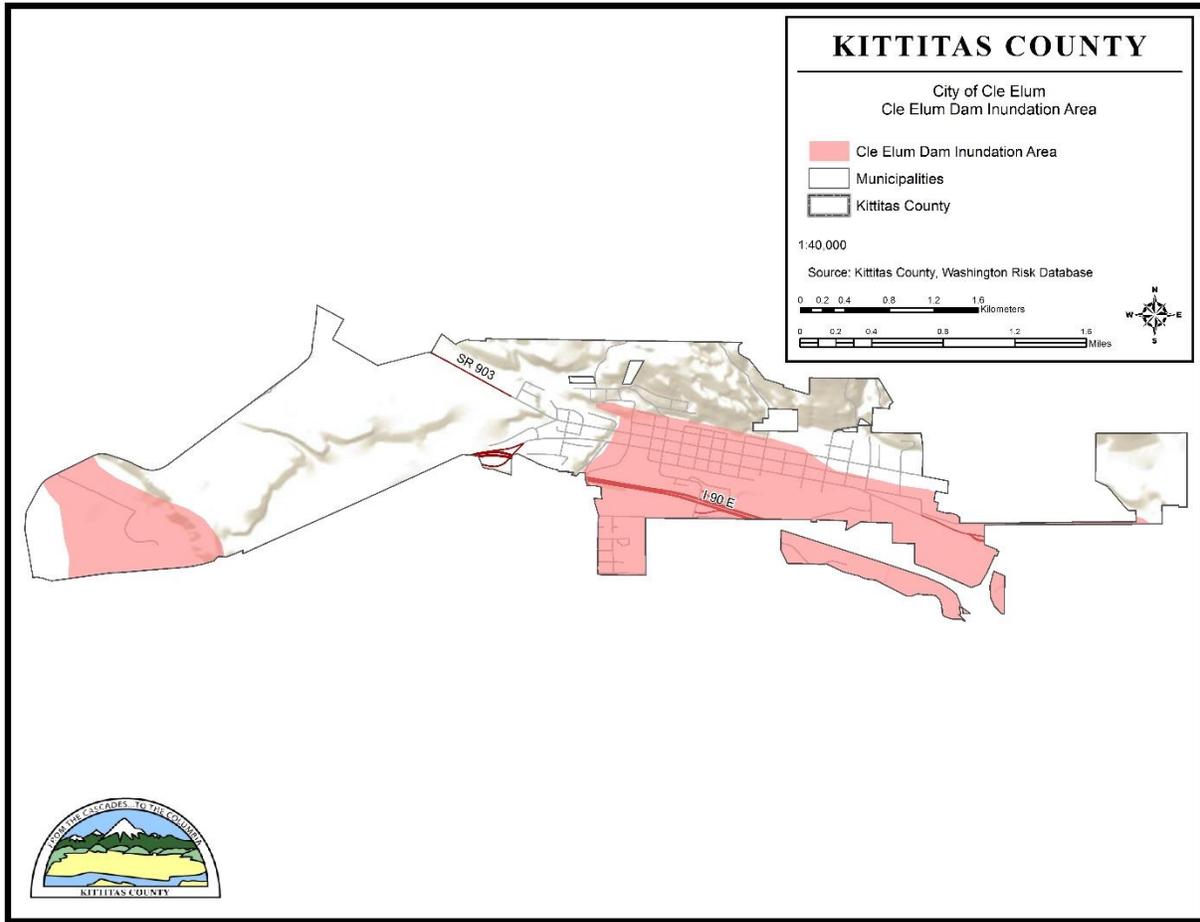


Figure 3-6. Cle Elum Dam Inundation Area for the City of Cle Elum

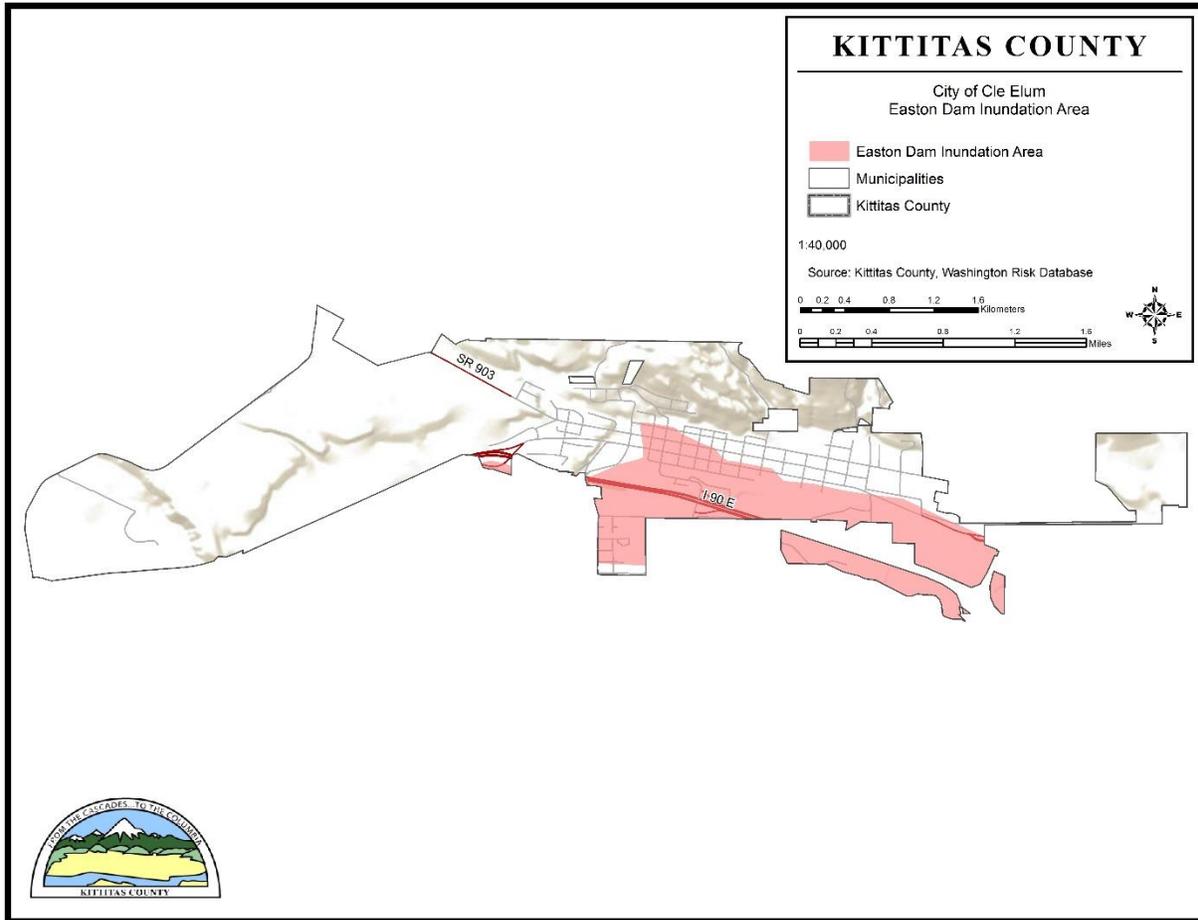


Figure 3-7. Easton Dam Inundation Area for the City of Cle Elum

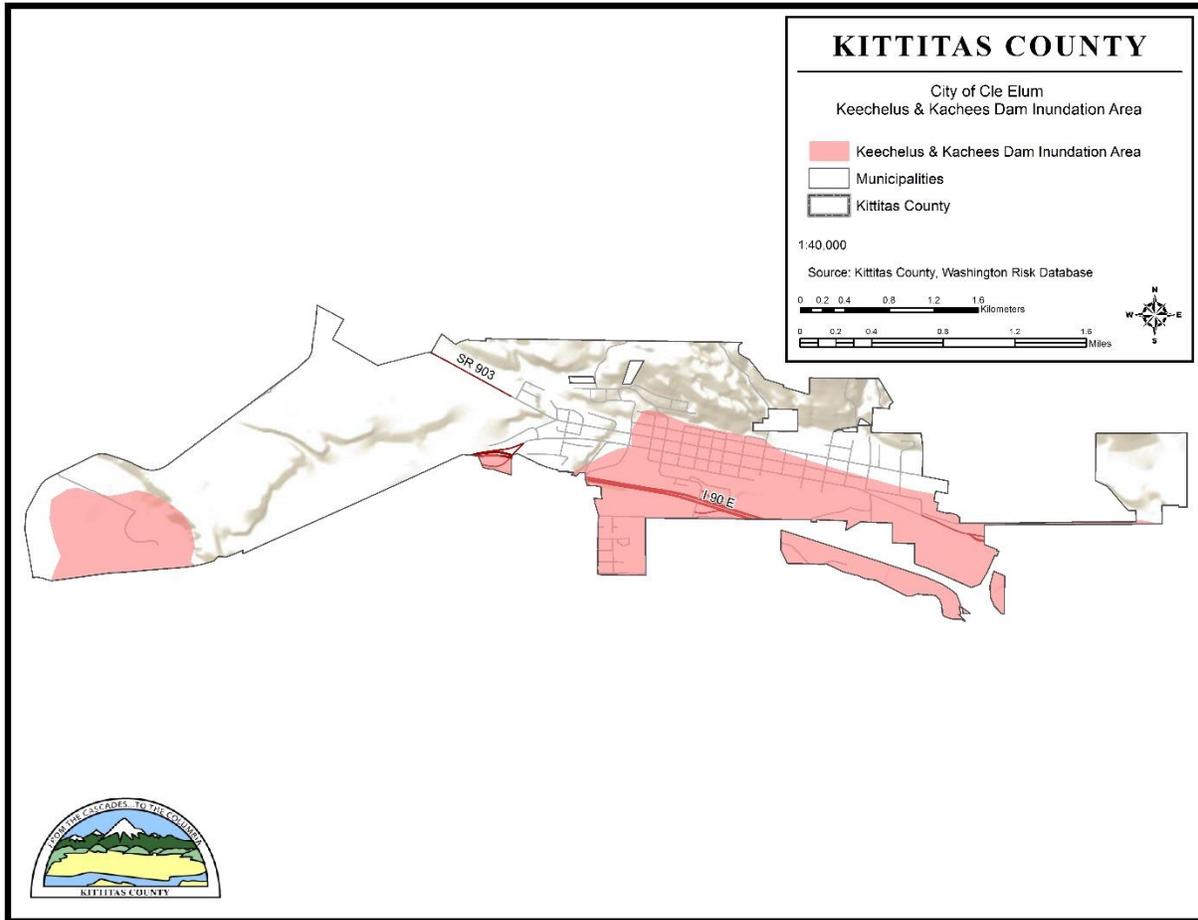


Figure 3-8. Keechelus and Kachees Dam Inundation Area for the City of Cle Elum

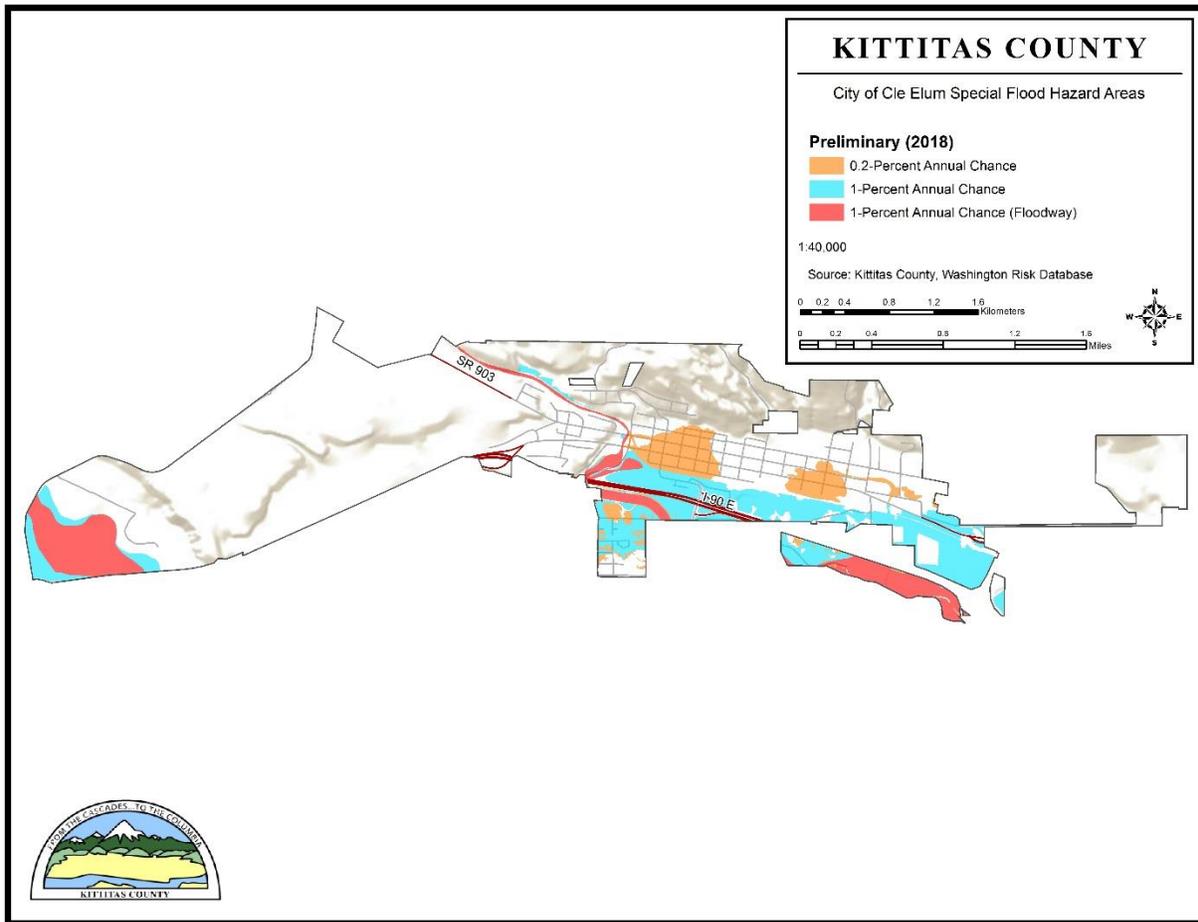


Figure 3-9. Cle Elum Special Flood Hazard Areas

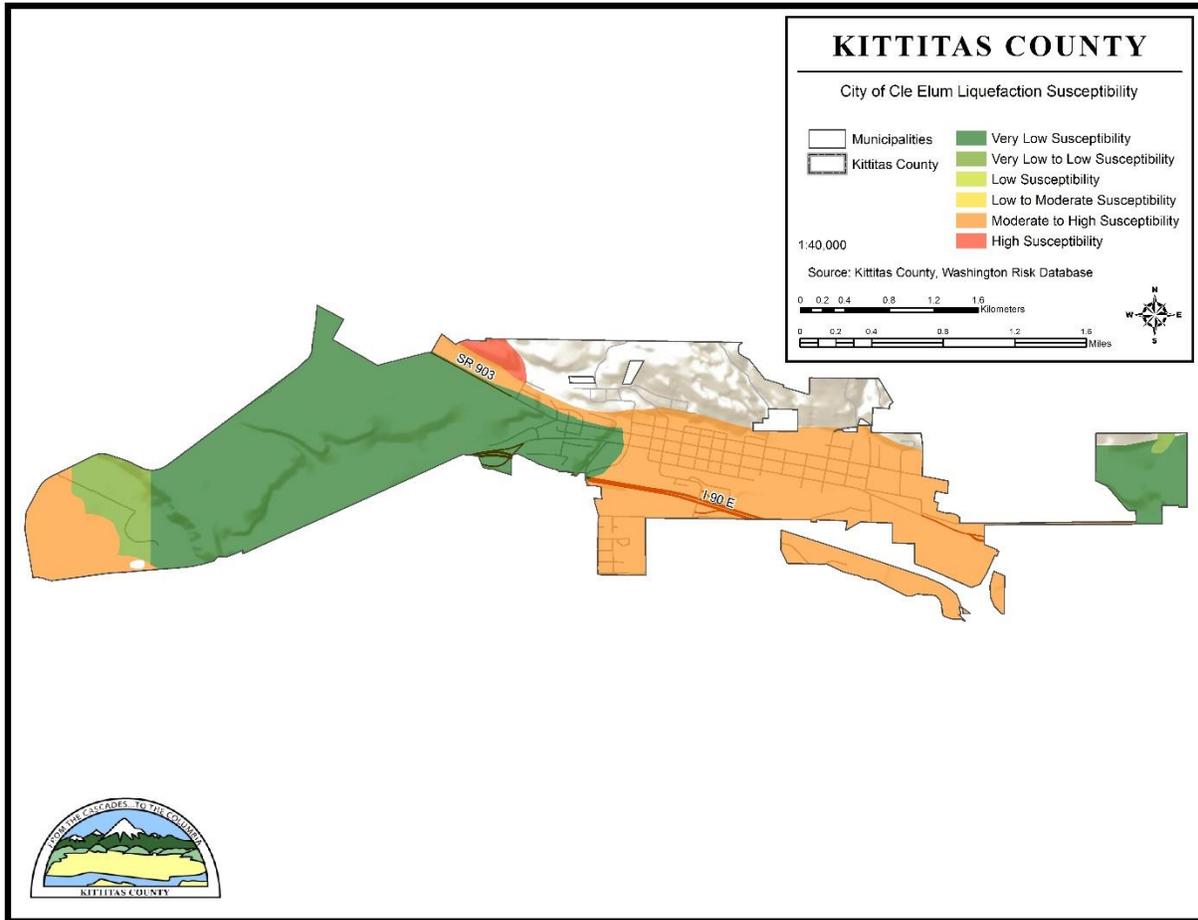


Figure 3-10. Cle Elum Liquefaction Susceptibility

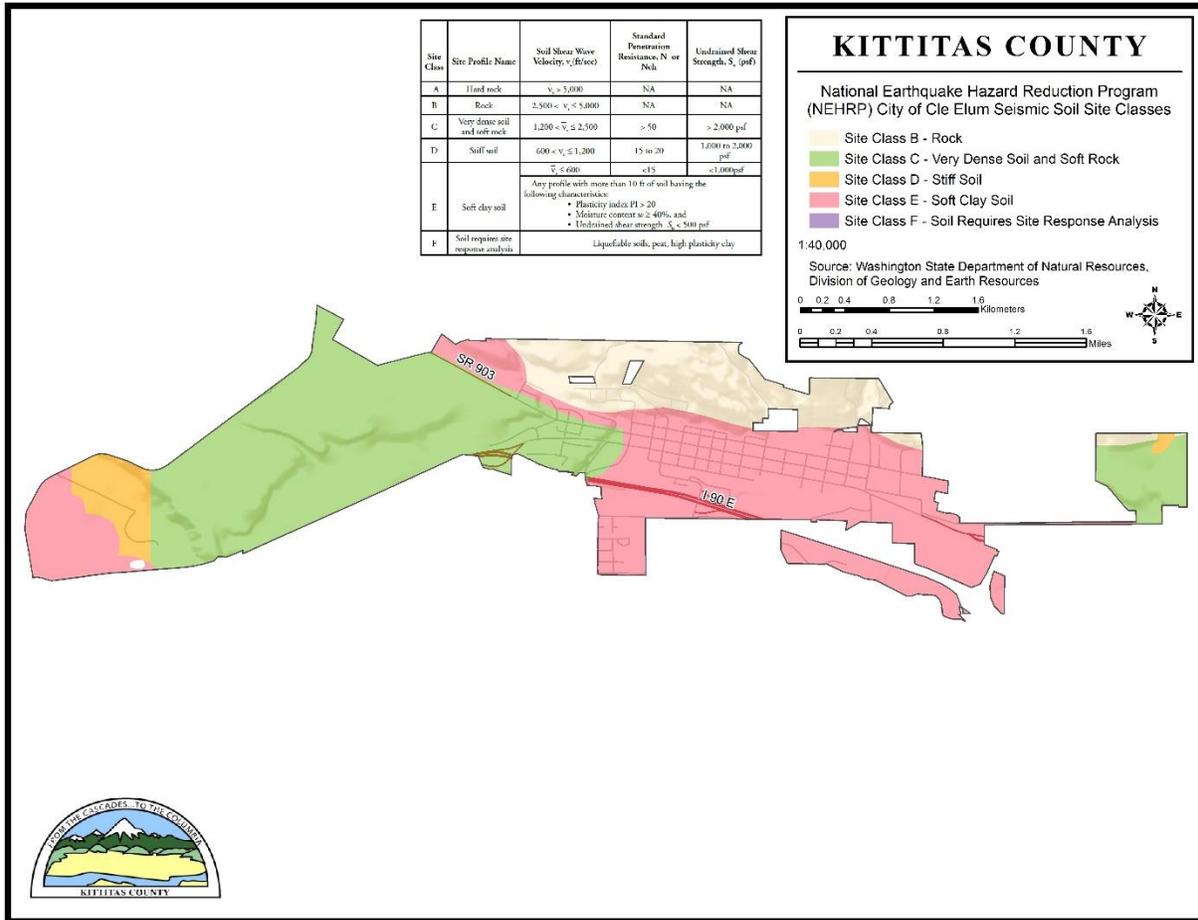


Figure 3-11. NEHRP Seismic Soil Site Classes for the City of Cle Elum

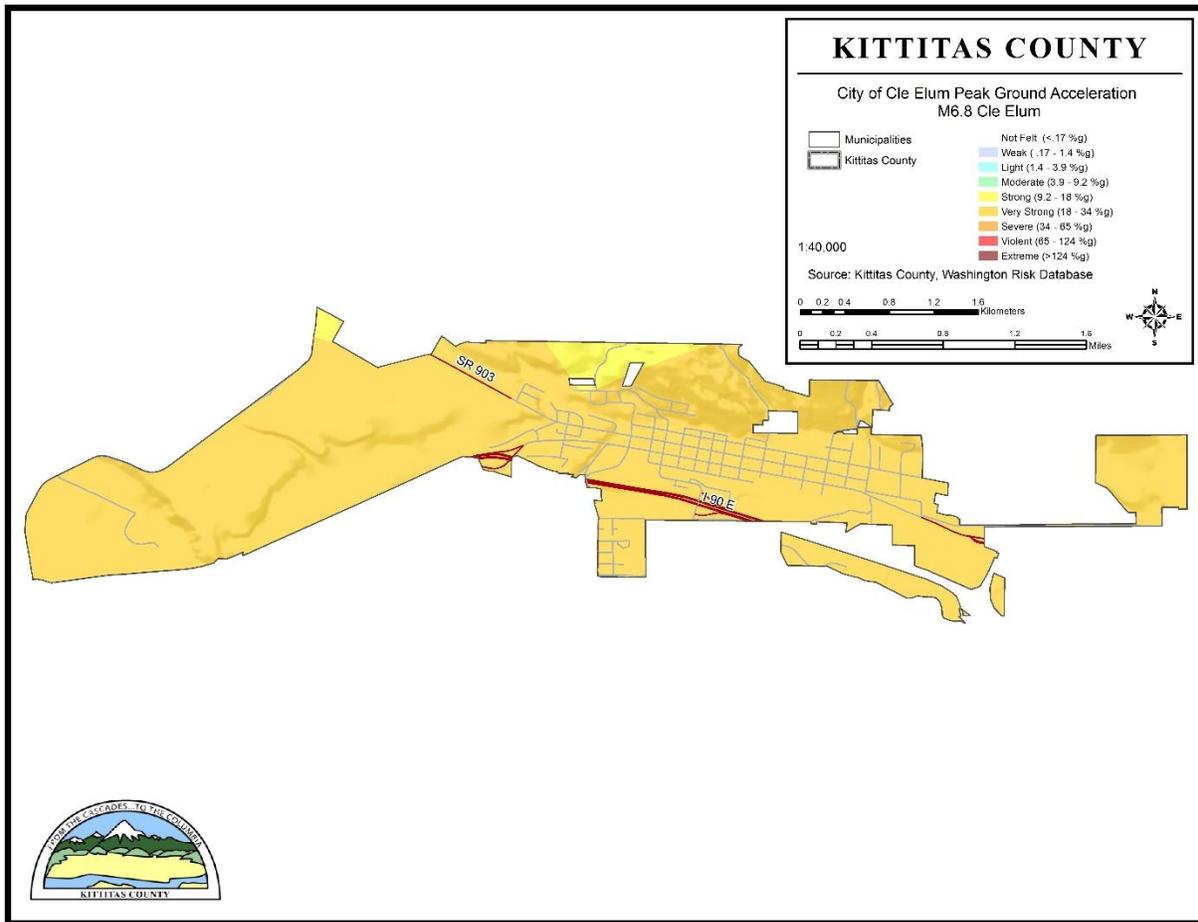


Figure 3-12. Cle Elum Earthquake Scenario Peak Ground Acceleration for the City of Cle Elum

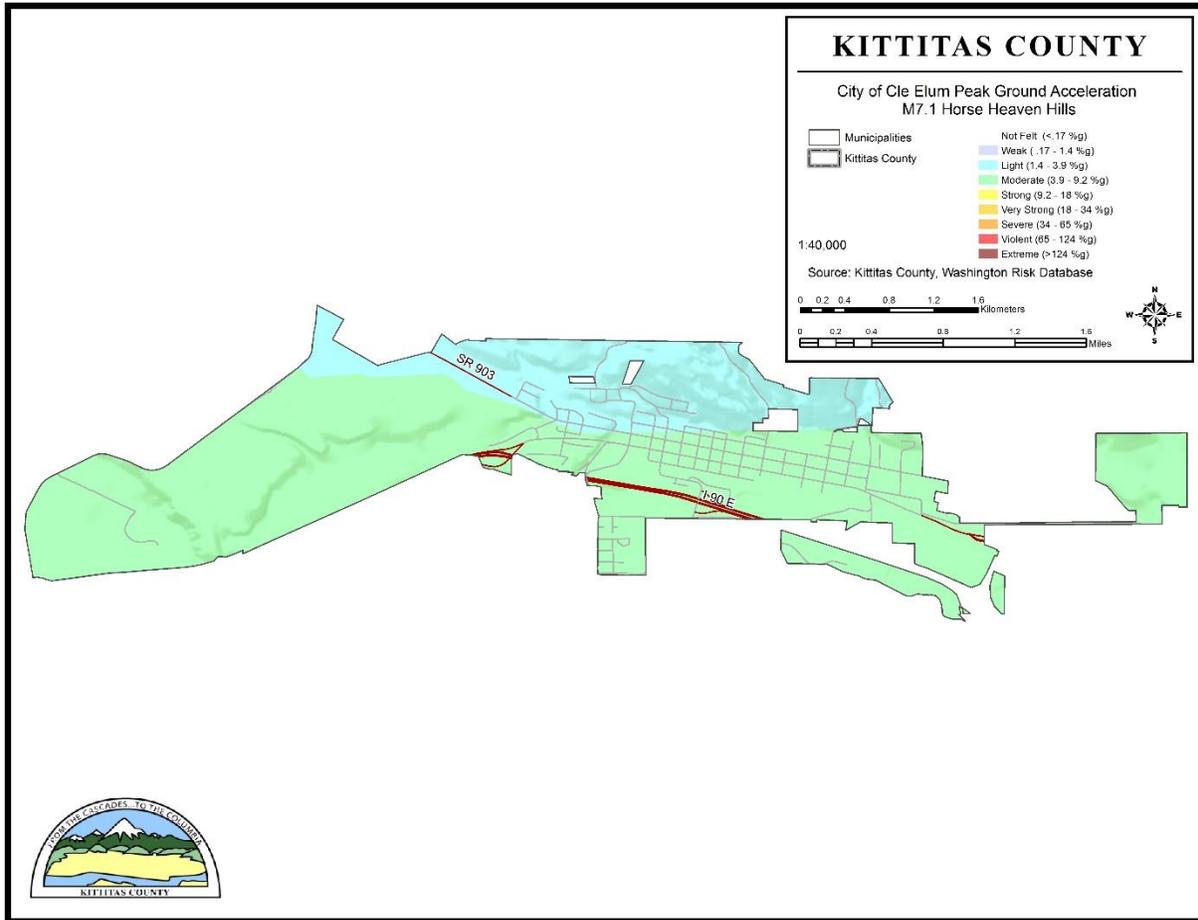


Figure 3-13. Horse Heaven Hills Earthquake Scenario Peak Ground Acceleration for the City of Cle Elum

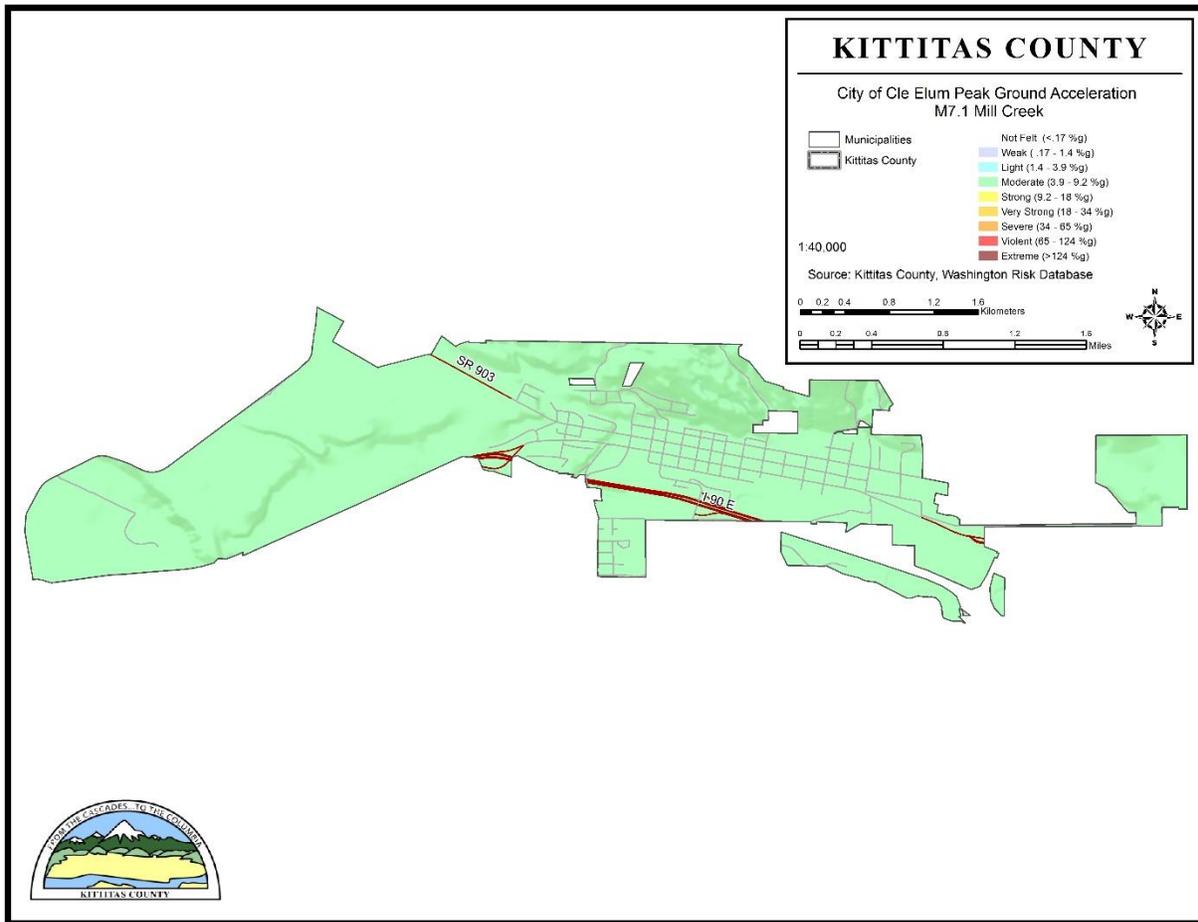


Figure 3-14. Mill Creek Earthquake Scenario Peak Ground Acceleration for the City of Cle Elum

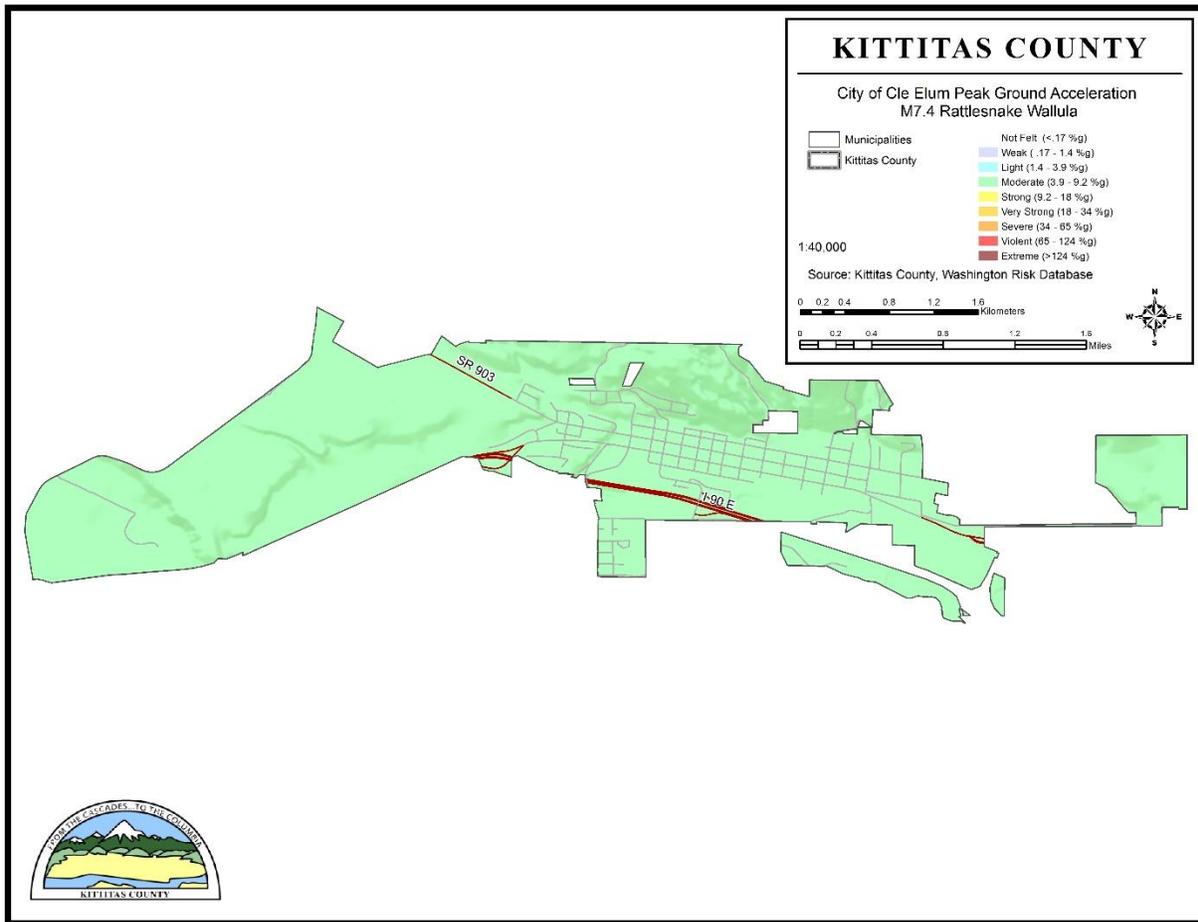


Figure 3-15. Rattlesnake Wallula Earthquake Scenario Peak Ground Acceleration for the City of Cle Elum

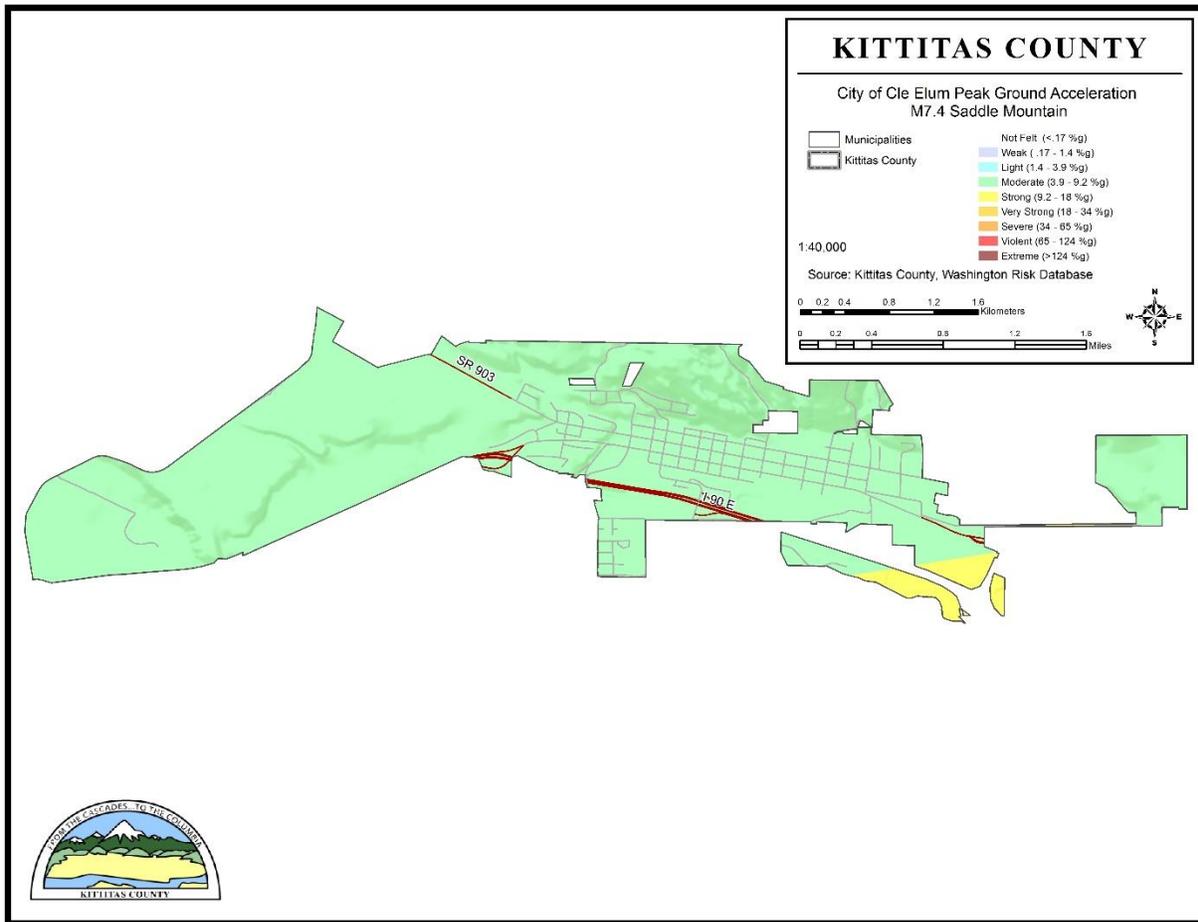


Figure 3-16. Saddle Mountain Earthquake Scenario Peak Ground Acceleration for the City of Cle Elum

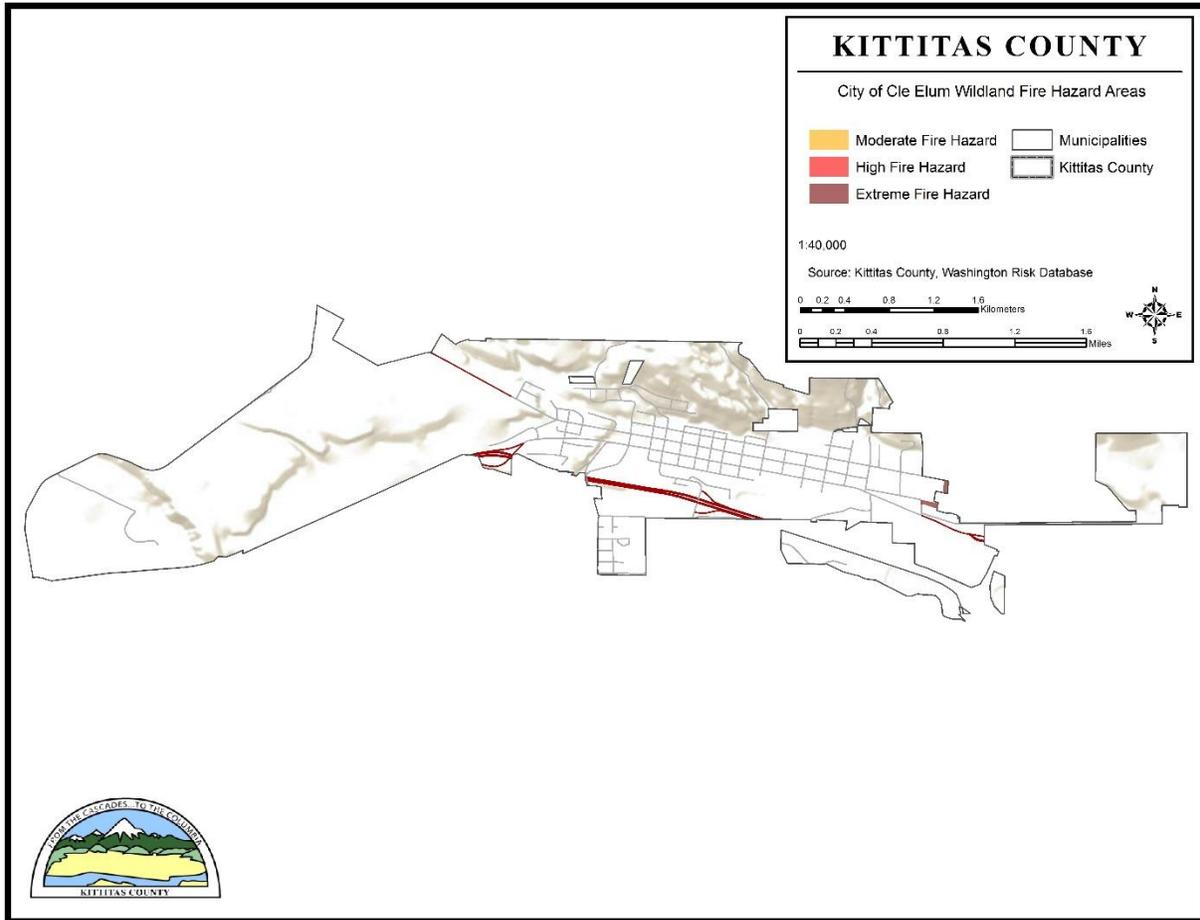


Figure 3-17. Cle Elum Wildland Fire Hazard Areas

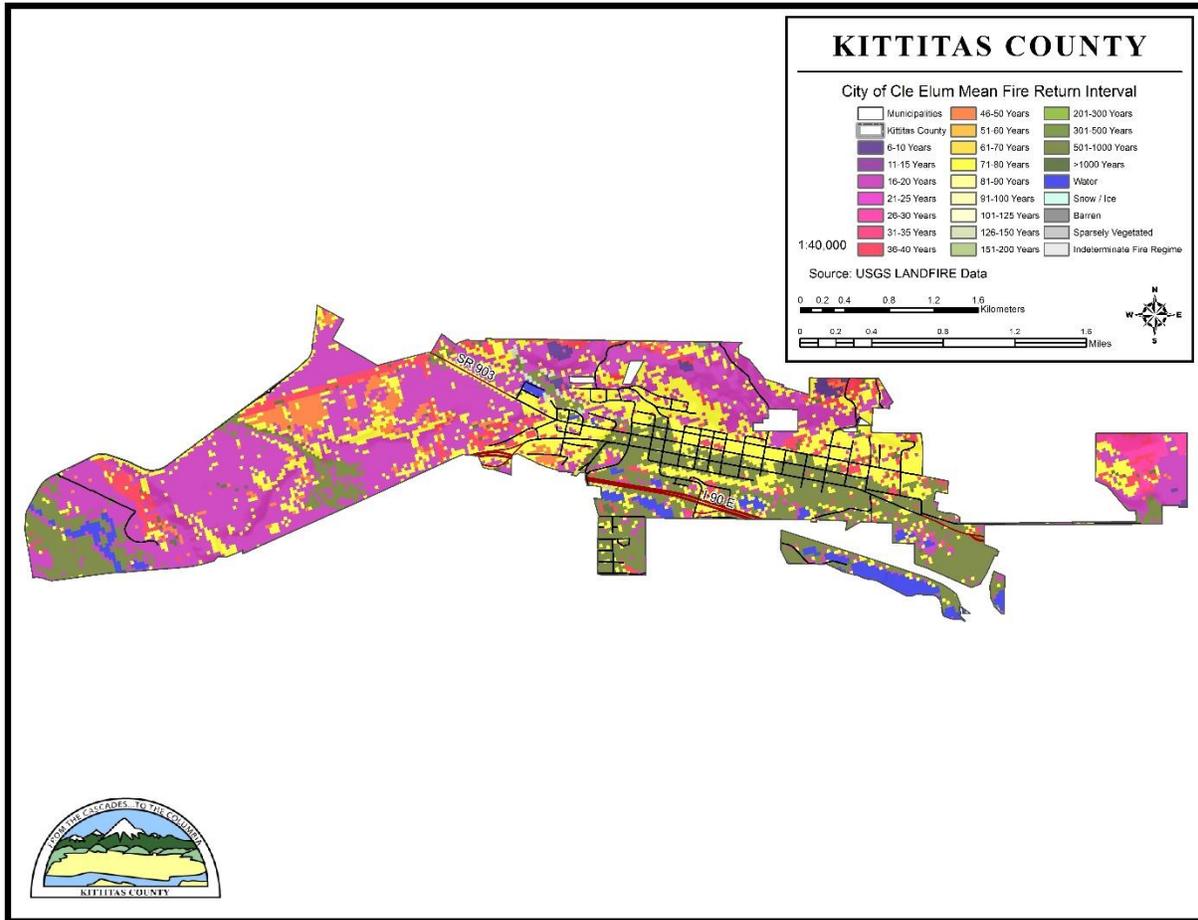


Figure 3-18. Cle Elum Mean Fire Return Interval