Chapter 5.
City of Roslyn Annex

5.1. HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

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5.2. JURISDICTION PROFILE

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

- **Date of Incorporation** - 1886
- **Current Population**—893
- **Population Growth** - While Roslyn has experienced a 12.4 percent decrease in population from 2000 to 2011, the surrounding communities and county have seen a net increase in population.
- **Location and Description** - Roslyn is nestled in the foothills of the east-central Cascades in predominantly Ponderosa pine and Douglas fir forest. The City is a gateway to the Alpine Lakes Wilderness Area and Lake Cle Elum. To the north of Roslyn there is a 300+ acre urban forest that is abutted by 20-acre parcels and Plum Creek Timber holdings to the top of the Cle Elum Ridge. To the west is the township of Ronald, to the east Cle Elum, and south is the Master Planned Resort of Suncadia. SR 903 runs through Roslyn from the southeast to the northwest. Exit 80 (just east of Snoqualmie Pass) is the turn off for Roslyn from Interstate 90, which runs from Seattle to Spokane (and beyond).
- **Jurisdiction Vulnerability to Hazards** - Roslyn, 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. Unlike other jurisdictions, none of Roslyn's population or property is at risk of dam failure. Roslyn has high exposure to earthquakes, and various earthquake scenarios result in losses up to 1% of building value. Roslyn has 16 buildings (3% of assessed building value) located in the 100- or 500-year floodplain, and therefore a moderate vulnerability to flood events. Roslyn has moderate vulnerability to wildfires, with 9% of buildings exposed to the 0-30 Year Fire Interval.
- **Brief History** - Incorporated in 1886, the coal-mining town of Roslyn played an important role in Washington State history. Extensive coal fields in the area fueled the Northern Pacific Railroad's trains during construction and early operation of a direct rail line through the Cascade Mountains.

  Men from coal mining regions in the United States, Europe and elsewhere came to work in the mines. English, Italian and Slavic immigrants were among the early settlers and a significant proportion of the town's early residents were foreign born. In 1888, responding to a strike, the Northern Pacific Coal Company recruited more than 300 African-American miners from Virginia, North Carolina and Kentucky and brought them, with their families, to work in the

mines. At one time, 24 ethnic groups and nationalities were living in Roslyn. Today, many of the original families continue to make Roslyn their home.

- **Climate -** The climate of Roslyn is a mountainous climate that can be quite variable. Summers are generally warm and sunny; the months of July, August and September are usually characteristic of this season. The average temperatures in the high 70s to the mid-80s with a highest recorded temperature of 105ºF in 1967. There is little to no rainfall during these months, and the danger of wildfire is extremely high. Winter is typically at its peak from November through February and typically has temperatures ranging from the mid-teens to mid-30; the lowest recorded temperature was –33ºF in 1950. Most of the precipitation falls during these months in the form of snow with heavy accumulations. Average snowfall for the City of Roslyn is 78.5 inches per year. This is also the period when Roslyn experiences flooding events, when there is a rain-on-snow event. This occurs when warm moist air from the Pacific is channeled into the area, often leading to extended periods of rain.
- **Governing Body Format -** Roslyn is governed by an elected mayor/council form of government with seven council seats. The City is run through the administrative office. Current departments include Administrative/Finance, Planning, Public Works, and Volunteer Fire Department. The Police Department is a part of a regional partnership between Roslyn, Cle Elum, and the Town of South Cle Elum.

  The City operates a water system managed through the Public Works Department. The City provides water to the City of Roslyn, Kittitas Water District #2 (Ronald), the Roslyn/Cle Elum School District, and other homes and businesses south of the City. The water source is Domerie Creek, located approximately 5-½ miles from Roslyn on the east side of the Cle Elum River. Water is gravity fed from the source to a slow sand filtration treatment plant located outside of Ronald, where it continues to a 1 million gallon reservoir above the Roslyn historic cemeteries.

  Sanitary services are provided by the City of Roslyn in its transmission facilities and a Regional Wastewater Treatment plant located in and owned by the City of Cle Elum. The Kittitas Water District #2 (Ronald) is connected to the transmission system at Runje Field. Sewage flows via gravity toward Roslyn's old sewage lagoons where flow data is captured as it continues towards Cle Elum. One 5-acre lagoon is maintained as a stormwater attenuation facility during times of heavy rain and flood events.

  Fire service is provided by the Roslyn Fire Department, which has a 100-percent volunteer staff and one fire station.
- **Development Trends -** There are significant impacts due to increase development pressures outside of the city limits. Little to no regulation of grade and fill through the county and increased impervious surfaces have created increased stormwater runoff that causes the City's stormwater system to flood on a regular basis. The City of Roslyn is currently working with engineers to complete a stormwater study and create a stormwater utility to help and protect public and private property from such incidences.

5.3. JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 5-1 lists all past occurrences of natural hazards in the county. Repetitive loss records are as follows:

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

5.4. HAZARD RISK RANKING

Table 5-2 presents the ranking of the hazards of concern.

5.5. CAPABILITY ASSESSMENT

The assessment of the jurisdiction's legal and regulatory capabilities is presented in Table 5-3. The assessment of the jurisdiction's administrative and technical capabilities is presented in Table 5-4. The assessment of the jurisdiction's fiscal capabilities is presented in Table 5-5. Classifications under various community mitigation programs are presented in Table 5-6.

5.6. HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 5-7 lists the initiatives that make up the jurisdiction's hazard mitigation plan. Table 5-8 identifies the priority for each initiative. Table 5-9 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

5.7. FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The City of Roslyn is in need of an updated detailed flood study. The July 2014 City of Roslyn Stormwater Comprehensive Plan revealed the City's stormwater system is undersized. Several areas in the City are classified as being in a flood hazard area, when they are in reality outside it, and several areas are classified as outside the flood hazard area, but have recently flooded. Additionally, recent infrastructure projects have potentially altered stormwater flow and the floodplain, and new development is stressing the already undersized stormwater system.

5.8. HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps for the City of Roslyn 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 5-1. Natural Hazard Events

Type of Event	Date	Preliminary Damage Assessment
Wildfire	8/11/2017	N/A
Flooding	3/31/2011	N/A
Flooding	1/17/2011	N/A
Flooding	1/9/2009	$51,446.96
Winter Weather	12/2008	$5,113.04
Winter Weather	12/15/2006	$150,000[a]
Drought	5/2005	N/A
Winter Weather	1/17/2005	$333[a]
Drought	5/2004	N/A
Drought	7/2001	N/A
Earthquake	2/28/2001	N/A
Winter Weather	1/14/1998	N/A
Winter Weather/Flooding	12/27/1996	N/A
Winter Weather	1/6/1996	$5,333[a]
Flooding	02/1995	N/A
Flooding	11/1995	N/A
Winter Weather	2/18/1993	$2,381[a]
Winter Weather	12/8/1992	$714[a]
Winter Weather	12/29/1990	$1,282[a]
Flooding	11/25/1990	N/A
Winter Weather	2/1/1989	$128,205[a]
Winter Weather	12/2/1985	N/A
Winter Weather	1/2/1974	$5,000[a]
Winter Weather	1/24/1972	$25,642[a]
Winter Weather	12/30/1968	N/A

Table 5-2. Hazard Risk Ranking

Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1	Flood	54
2	Wildfire	54
3	Severe Weather	51
4	Earthquake	30
5	Drought	18
6	Volcano	16
7	Landslide	6
8	Dam Failure	1
9	Avalanche	0
10	Seiche	0

Table 5-3. Legal and Regulatory Capability

	Local Authority	State or Federal Prohibitions	Other Jurisdictional Authority	State Mandated	Comments
Codes, Ordinances & Requirements					
Building Code	Y	N	N	Y	RMC, IBC/IRC 2015
Zoning Code	Y	N	N	Y	Title 18 RMC, WA GMA 2007
Subdivisions	Y	N	N	Y	Title 17 & 18 RMC
Post Disaster Recovery	Y	N	Y	Y	Eastern Washington Stormwater Management Plan
Real Estate Disclosure	N	N	Y	Y	RCW 64.06.020
Growth Management	Y	N	N	Y	RCW 36.70A
Site Plan Review	Y	N	Y	Y	WA GMA 2007
Special Purpose (flood management, critical areas)	Y	N	N	N	Title 18 RMC
Planning Documents					
General Plan	Y	N	N	Y	City of Roslyn, Washington Updated Comprehensive Plan 2008
Floodplain or Basin Plan	Y	N	Y	Y	RMC Title 15.15
Stormwater Plan	Y	N	N	Y	Eastern Washington Stormwater Management Plan; City of Roslyn Stormwater Comprehensive Plan
Capital Improvement Plan	Y	N	N	Y	City of Roslyn Capital Improvement Plan, City of Roslyn Stormwater Comprehensive Plan
Habitat Conservation Plan	Y	N	Y	Y	Roslyn Urban Forest Land Stewardship Plan
Economic Development Plan	Y	N	N	Y	City of Roslyn, Washington Updated Comprehensive Plan
Emergency Response Plan	N	N	N	N	Upper Kittitas County Emergency Response Plan in development
Shoreline Management Plan	N	N	N	Y	
Post Disaster Recovery Plan	N	N	N	N	

Table 5-4. Administrative and Technical Capability

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Y	Planning Dept./City of Roslyn/Planner, Perteet, Inc. (Engineer)
Engineers or professionals trained in building or infrastructure construction practices	Y	Perteet, Inc. (Engineer)
Planners or engineers with an understanding of natural hazards	Y	Perteet, Inc. (Engineer)
Staff with training in benefit/cost analysis	Y	
Floodplain manager	Y	City of Roslyn Planner
Surveyors	Y	Perteet, Inc. (Engineer)
Personnel skilled or trained in GIS applications	Y	Perteet, Inc. (Engineer)
Scientist familiar with natural hazards in local area	Y	Perteet, Inc. (Engineer)
Emergency manager	N	
Grant writers	Y	Staff and Contracted

Table 5-5. 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	Can, but don't
State Sponsored Grant Programs	Y
Development Impact Fees for Homebuyers or Developers	Y
Other	N

Table 5-6. 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	Mod/High	2001/2011

Table 5-7. Hazard Mitigation Action Plan Matrix

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
Initiative #R-1—Utilize and enhance existing programs to raise public awareness about natural hazards, the risk they pose and ways to reduce those risks.						
New and Existing	All Hazards	1, 2, 3, 4, 5, 6, 9	City	Low	General Fund	Short-term, Ongoing
Initiative #R-2—Maintain political support for hazard mitigation and response planning and programs by annually monitoring the progress of initiatives identified in this plan.						
New and Existing	All Hazards	1, 2, 3, 4, 5, 9	City	Low	General Fund	Short-term, Ongoing
Initiative #R-3—Leverage mitigation opportunities by establishing and maintaining partnerships between public and private sectors						
Existing	All Hazards	1, 5, 9	City	Low	General Fund	Ongoing
Initiative #R-4— Develop a continuity of operations plan and/or a post-disaster recovery plan to sustain operation of critical Town functions.						
New and existing	All Hazards	1, 6, 9	City	Medium	General Fund, DHS grant funding	Long-term, depends on funding
Initiative # R-5—Replace vulnerable bridge crossings with restrained piping where feasible and cost-effective.						
Existing	Flood, Dam Failure, Earthquake	1, 7	City	High	Grants, Loans, Enterprise & Surplus Funds	Short-term, Ongoing
Initiative #R-6—Replace main transmission waterline (to bridge)						
Existing	Earthquake	1, 7	City	$2,000,000, High	Grants, Loans, Enterprise & Surplus Funds	Short-term
Initiative #R-7—Replace main transmission waterline (bridge to treatment plant)						
Existing	Earthquake	1, 7	City	High	Grants, Loans, Enterprise & Surplus Funds	Long-term, depends on funding
Initiative #R-8—Replace main transmission waterline (treatment plant to reservoir)						
Existing	Earthquake	1, 7	City	High	Grants, Loans, Enterprise & Surplus Funds	Long-term, depends on funding
Initiative #R-9—Complete replacement of pinch point (stormwater system) at Penn Place Apartments						
New and Existing	Flooding	1, 7, 8	City	High	Grants, Loans, Enterprise & Surplus Funds	Short-Term, depends on funding
Initiative #R-10—Replace V-ditch catch basins with Type-40 catch basins						
New and Existing	Flooding	1, 7, 8, 10	City	Medium	Grants, Loans, Enterprise & Surplus Funds	Short-term, Ongoing
Initiative #R-11—Replace trunk lines and add access points for stormwater system						

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
New and Existing	Flooding	1, 7, 8	City	High	Grants, Loans, Enterprise & Surplus Funds	Long-Term, depends on funding
Initiative #R-12—Construct adequate intake structures at inlets to stormwater system						
New and Existing	Flooding	1, 7, 8, 9, 10	City	High	Grants, Loans, Enterprise & Surplus Funds	Long-term, depends on funding
Initiative #R-13—Create channel roughness and other water-retaining systems in the Roslyn Urban Forest						
New and Existing	Flooding	1, 9, 10	City	High	Grants, Loans, Enterprise & Surplus Funds	Long-Term, depends on funding
Initiative #R-14—Provide adequate drainage for road beds and trails in the Roslyn Urban Forest						
New and Existing	Flooding, Severe weather	1, 9, 10	City	High	Grants, Loans, Enterprise & Surplus Funds	Long-term, depends on funding
Initiative #R-15—Maintain shaded fuel break at forested perimeter of the Roslyn Urban Forest						
New and Existing	Wildfire	1, 2, 4, 10	City	Low	Grants & General Fund	Short-term, Ongoing
Initiative #R-16—Implement Roslyn Urban Forest Land Stewardship Plan and dry site management techniques to increase forest health and Firewise entire forest						
New and Existing	Wildfire	1, 2, 10	City	High	Grants & General Fund	Long-term, depends on funding
Initiative #R-17—Purchase water tender for fire department						
New and Existing	Wildfire	1, 6, 9	City/RFD	High	AFG Grants & General Fund	Short-term, depends on funding
Initiative #R-18—Provide wildland fire training for fire department						
New and Existing	Wildfire	1, 6, 9	City/RFD	Low	AFG Grants & General Fund	Short-term, Ongoing
Initiative #R-19—Maintain road beds in the Roslyn Urban Forest for emergency traffic						
New and existing	Wildfire	1, 9, 10	City	Medium	AFG Grants & General Fund	Short-term, depends on funding
Initiative #R-20—Retrofit buildings for earthquake protection (focusing on historic structures)						
Existing	Earthquake	1, 2, 4, 7, 8	City	High	Grants	Long-term, depends on funding
Initiative #R-21—Purchase land for stormwater retention (Duck Town)						
New and Existing	Flooding, Severe Weather	1, 4, 7, 8, 10	City	High	Grants, Stormwater Funds	Long-term, depends on funding

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
Initiative #R-22—Clear and maintain creeks that capture flows from storm system (Pioneer Park/Runje Field & Duck Town)						
New and Existing	Flooding	1, 2, 8, 10	City	Medium	Grants, Stormwater Funds	Short-term
Initiative #R-23—Install adequate stormwater system in Brookside Neighborhood						
New and Existing	Flooding	1, 2, 10	City	High	Grants, Stormwater Funds	Long-term, depends on funding
Initiative #R-24—Install adequate stormwater system in Downtown core						
New and Existing	Flooding	1, 2, 10	City	High	Grants, Stormwater Funds	Long-term, depends on funding
Initiative #R-25—Install adequate stormwater system in Pioneer Park/Runje Field						
New and Existing	Flooding	1, 2, 10	City	High	Grants, Stormwater Funds	Long-term, depends on funding
Initiative #R-26—Install adequate stormwater system in 5th Street Addition neighborhood						
New and existing	Flooding	1, 2, 10	City	High	Grants, Stormwater Funds	Long-term, depends on funding
Initiative #R-27—Install adequate stormwater system in 3rd Street neighborhood						
New and Existing	Flooding	1, 2, 10	City	High	Grants, Stormwater Funds	Long-term, depends on funding
Initiative #R-28—Manage potential increased runoff from new development by adopting regulations that require new developments to mitigate their impacts.						
New	Flooding, Severe Weather	1, 2, 3, 4, 7, 9, 10	City/County	Low	General Fund	Short-term
Initiative #R-29—Reduce water system losses with waterline upgrades and repairs						
Existing	Drought	1, 2, 4, 5, 6, 7, 9	City	Medium	Water Fund/Grants	Short-term, Ongoing
Initiative #R-30—Adopt development practices that require new developments to bury utility cables in business zones and major transportation routes						
New and Existing	Severe Weather	1, 2, 4, 8, 9	City	Low	Developer	Short-term
Initiative #-31—Continue to support the implementation, monitoring, maintenance and updating of the Kittitas County Hazard Mitigation Plan.						
New and Existing	All Hazards	All	City	Low	HMGP, General Fund, Road Fund	Short-term, ongoing

Applies to new or existing assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost	Sources of Funding	Timeline
Initiative #R-32—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 #R-33—Consider participation in the National Weather Service "Storm Ready" program.						
New and Existing	Flood, Severe Weather	6, 7, 9	City	Low	General Fund	Short term
Initiative #R-34—Conduct a detailed flood study for the City of Roslyn						
New and Existing	Flood	1, 3, 6, 7, 9	City	Medium	General Fund, Grants	Short-term

Table 5-8. 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*
R-1	7	Medium	Low	Yes	Yes	Yes	High
R-2	7	Medium	Low	Yes	Yes	Yes	High
R-3	3	Medium	Low	Yes	No	Yes	High
R-4	1	High	High	Yes	No	Yes	Medium
R-5	2	High	Medium	Yes	Yes	Yes	Medium
R-6	2	High	High	Yes	Yes	No	High
R-7	2	High	High	Yes	Yes	No	High
R-8	2	Medium	High	No	Yes	No	High
R-9	3	High	High	Yes	Yes	No	Medium
R-10	4	High	Medium	Yes	Yes	Yes	High
R-11	3	High	High	Yes	Yes	No	High
R-12	5	High	High	Yes	Yes	No	High
R-13	3	High	High	Yes	Yes	No	Medium
R-14	4	Medium	Low	Yes	Yes	Yes	Medium
R-15	5	High	Medium	Yes	Yes	No	Medium
R-16	3	Medium	Medium	Yes	Yes	No	Medium
R-17	3	High	Medium	Yes	Yes	No	High
R-18	3	High	Low	Yes	No	Yes	High
R-19	3	Medium	Medium	Yes	Yes	Yes	Medium
R-20	5	Medium	High	No	Yes	No	Low
R-21	5	High	High	Yes	Yes	No	Medium
R-22	4	Medium	Medium	Yes	Yes	No	Medium
R-23	3	High	High	Yes	Yes	No	Low
R-24	3	High	High	Yes	Yes	No	High
R-25	3	High	High	Yes	Yes	No	Low
R-26	3	High	High	Yes	Yes	No	Low
R-27	3	High	High	Yes	Yes	No	Low
R-28	7	High	High	Yes	Yes	Yes	High
R-29	7	Medium	Low	Yes	Yes	Yes	Medium
R-30	5	Medium	Medium	Yes	No	Yes	Medium
R-31	10	Medium	Low	Yes	Yes	Yes	High
R-32	3	Medium	Low	Yes	Yes	Yes	High
R-33	3	High	Low	Yes	Yes	Yes	High
R-34	5	High	Medium	Yes	Yes	Yes	High

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

Table 5-9. 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	—	—	—	—	—	—
Dam Failure	1, 2, 3, 4, 31	1, 2, 3, 4, 5	1, 2, 3, 31, 32	1, 2, 3	1, 2, 3, 32	1, 2
Drought	1, 2, 3, 4, 29, 31	1, 2	1, 2, 29, 31, 32	1, 2, 29	1, 2, 3, 32	1, 2 6
Earthquake	1, 2, 3, 4, 5, 6, 7, 8, 20, 31	1, 2, 3, 4, 20	1, 2, 3, 31, 32	1, 2, 3	1, 2, 3, 32	1, 2, 5, 6, 7, 8, 20
Flood	1, 2, 3, 4, 9, 10, 11, 12, 13, 14, 21, 22, 23, 24, 25, 26, 27, 28, 31, 34	1, 2, 3, 4, 9, 10, 11, 12, 13, 14, 21, 22, 23, 24, 25, 26, 27, 28	1, 2, 3, 31, 34, 33	1, 2, 3, 28	1, 2, 3, 32, 33	1, 2, 9, 10, 11, 12, 13, 23, 24, 25, 26, 27
Landslide	31		31, 32		32	
Severe Weather	1, 2, 3, 4, 31, 34	1, 2, 3, 4, 30	1, 2, 3, 31, 34, 33	1, 2, 3	1, 2, 3, 32, 33	1, 2, 30
Seiche	—	—	—	—	—	—
Volcano	1, 2, 3, 4, 31	1,2, 3, 4	1, 2, 3, 31	1, 2, 3	1, 2, 3	1, 2
Wildfire	1, 2, 3, 4, 15, 16, 19, 31	1, 2, 3, 15, 16, 17, 18, 19	1, 2, 3, 31	1, 2, 3, 15, 16, 17, 18, 19	1, 2, 3, 17, 18	1, 2

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.

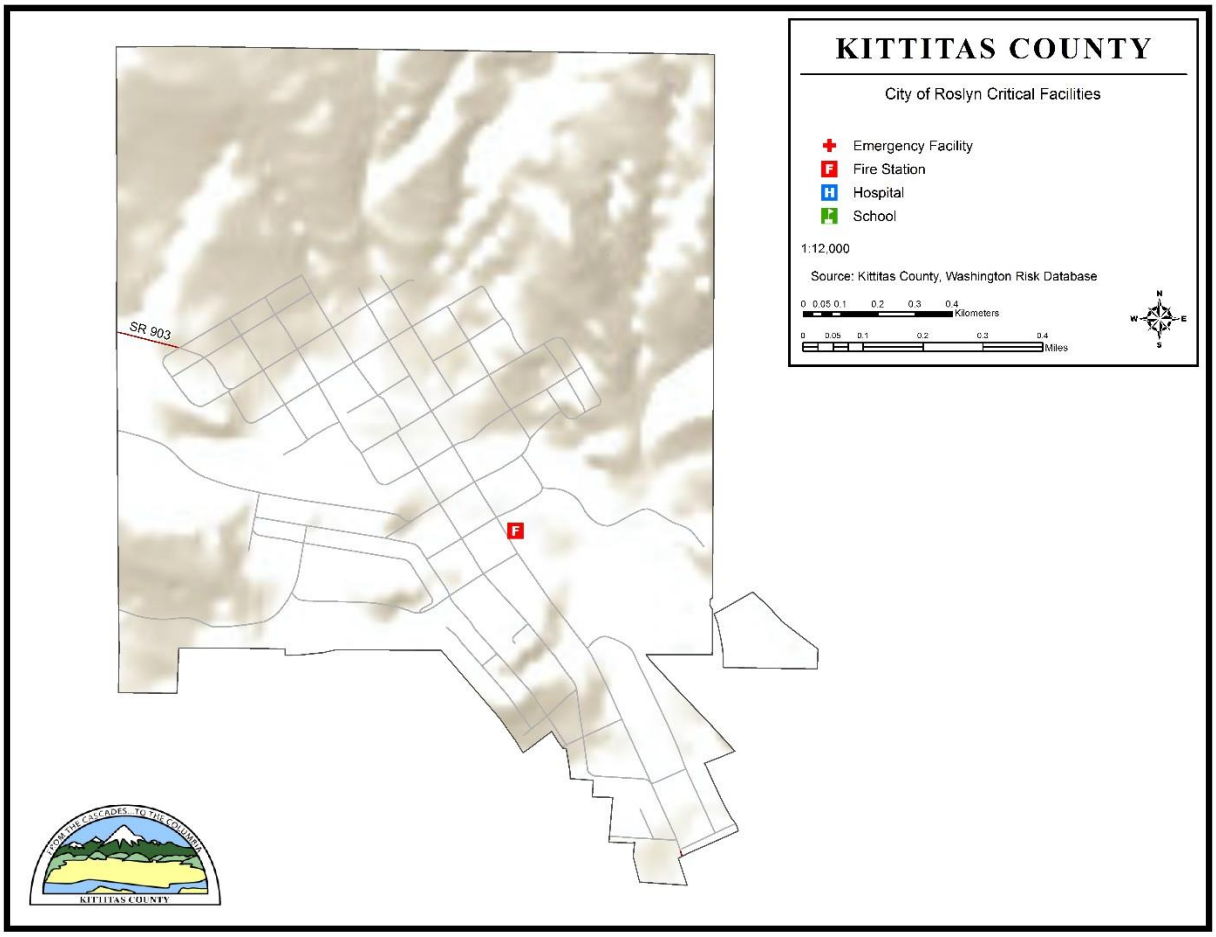


Figure 5-1. City of Roslyn Critical Facilities

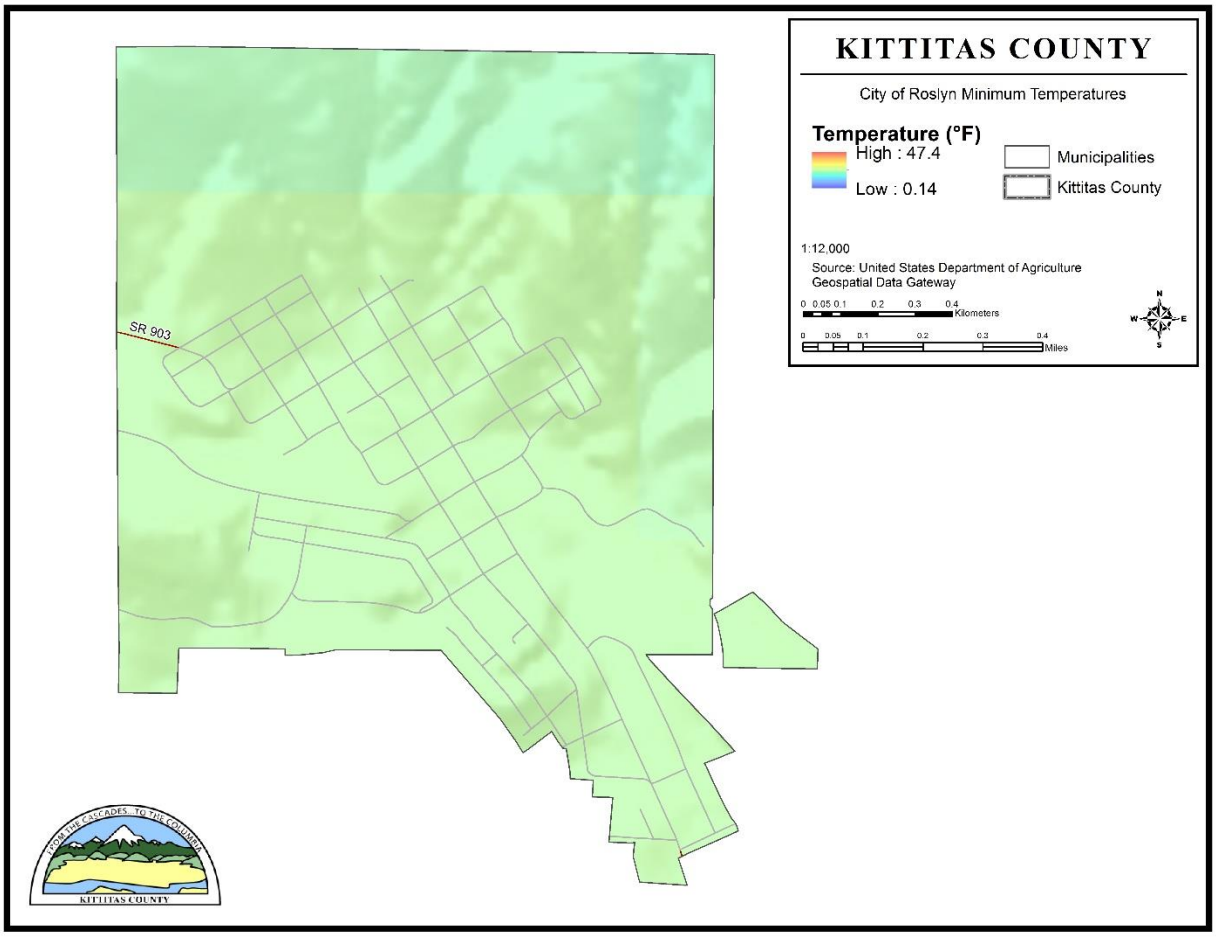


Figure 5-2. City of Roslyn Minimum Temperatures

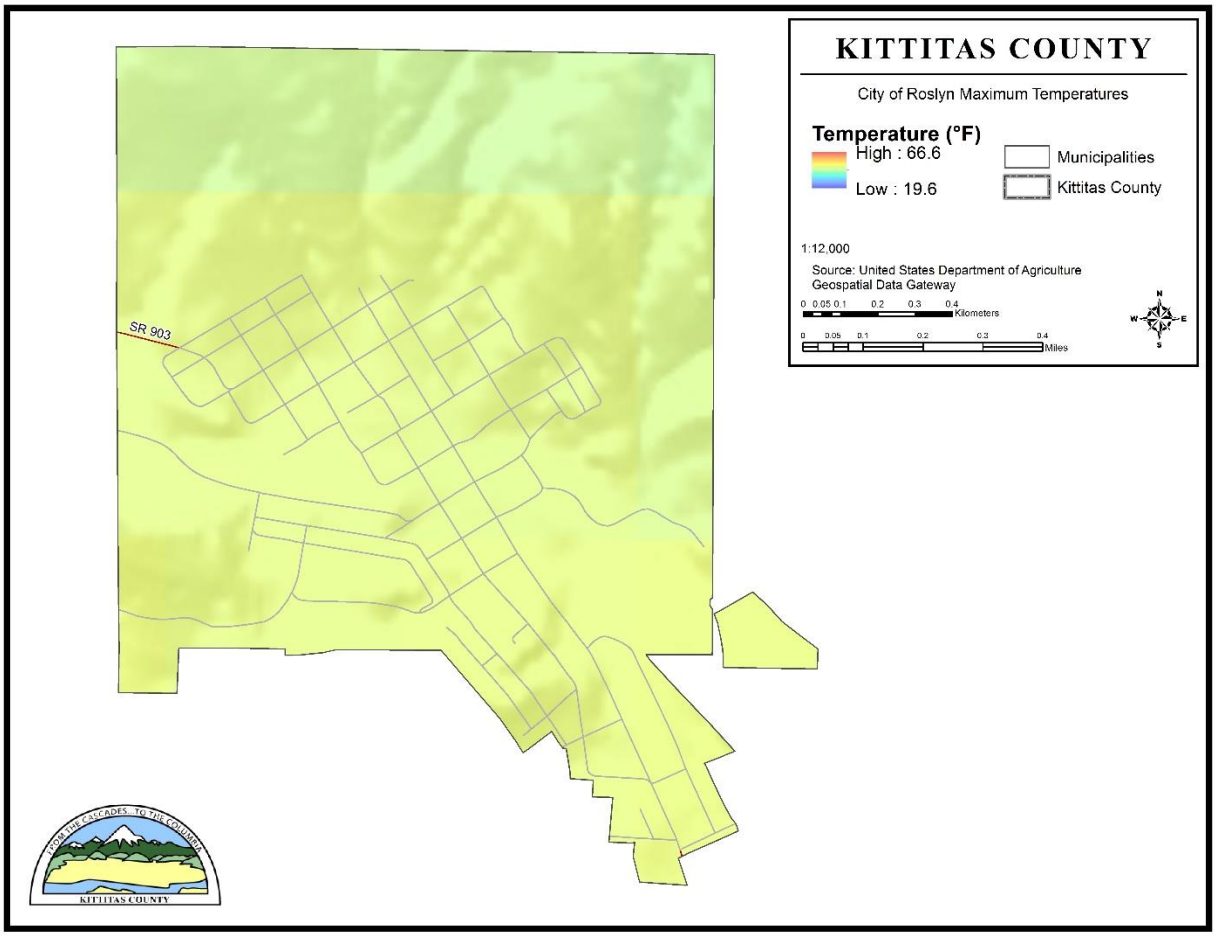


Figure 5-3. City of Roslyn Maximum Temperatures

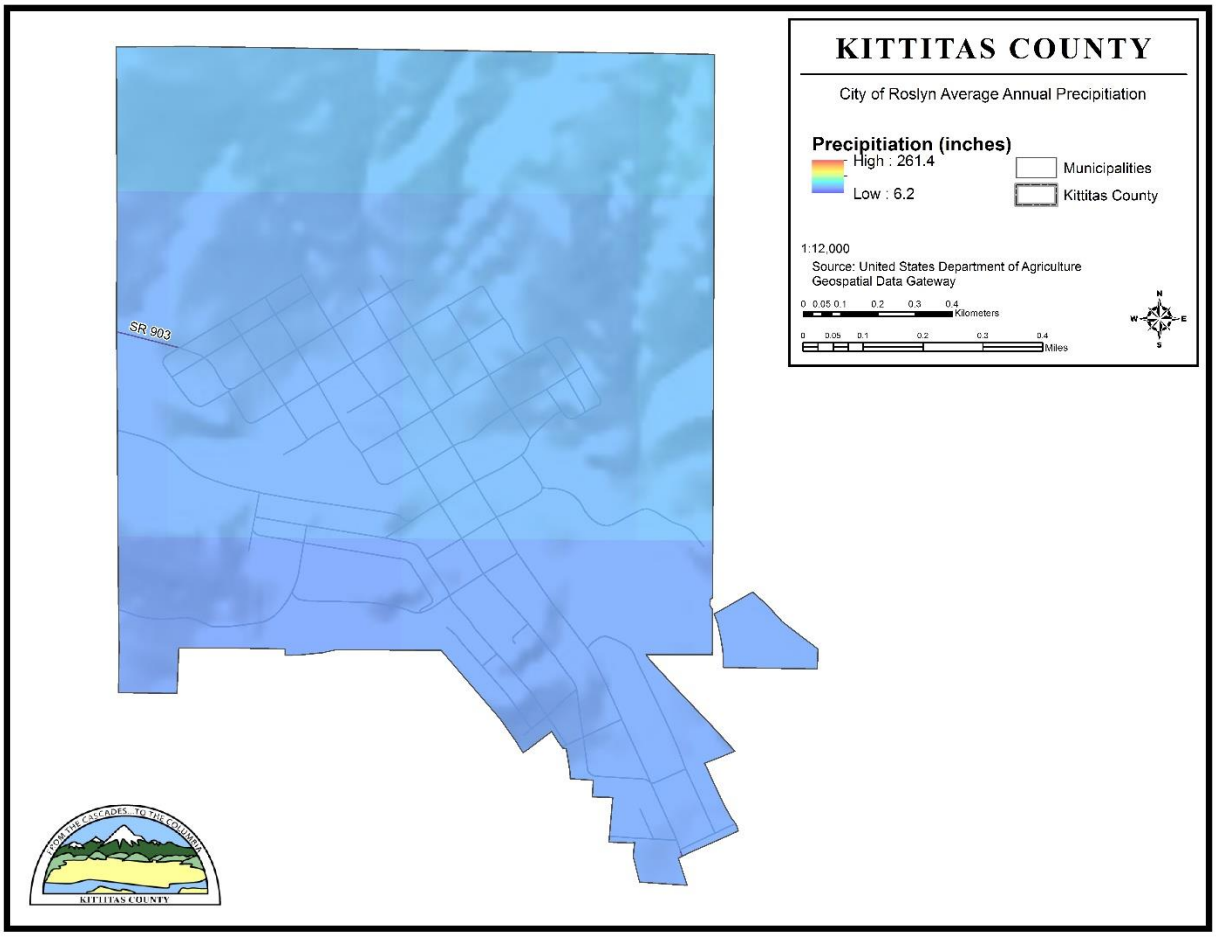


Figure 5-4. City of Roslyn Average Annual Precipitation

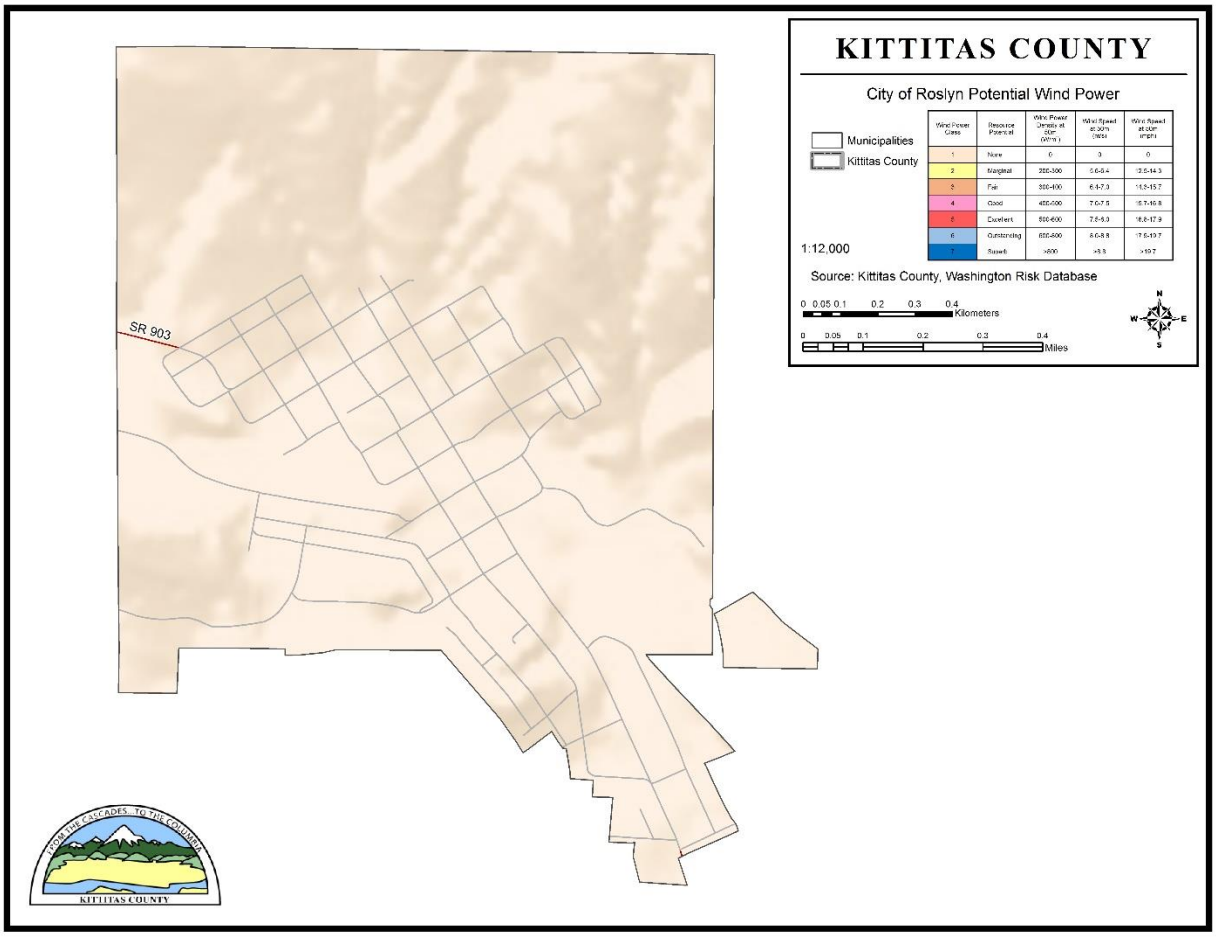


Figure 5-5. City of Roslyn Potential Wind Power

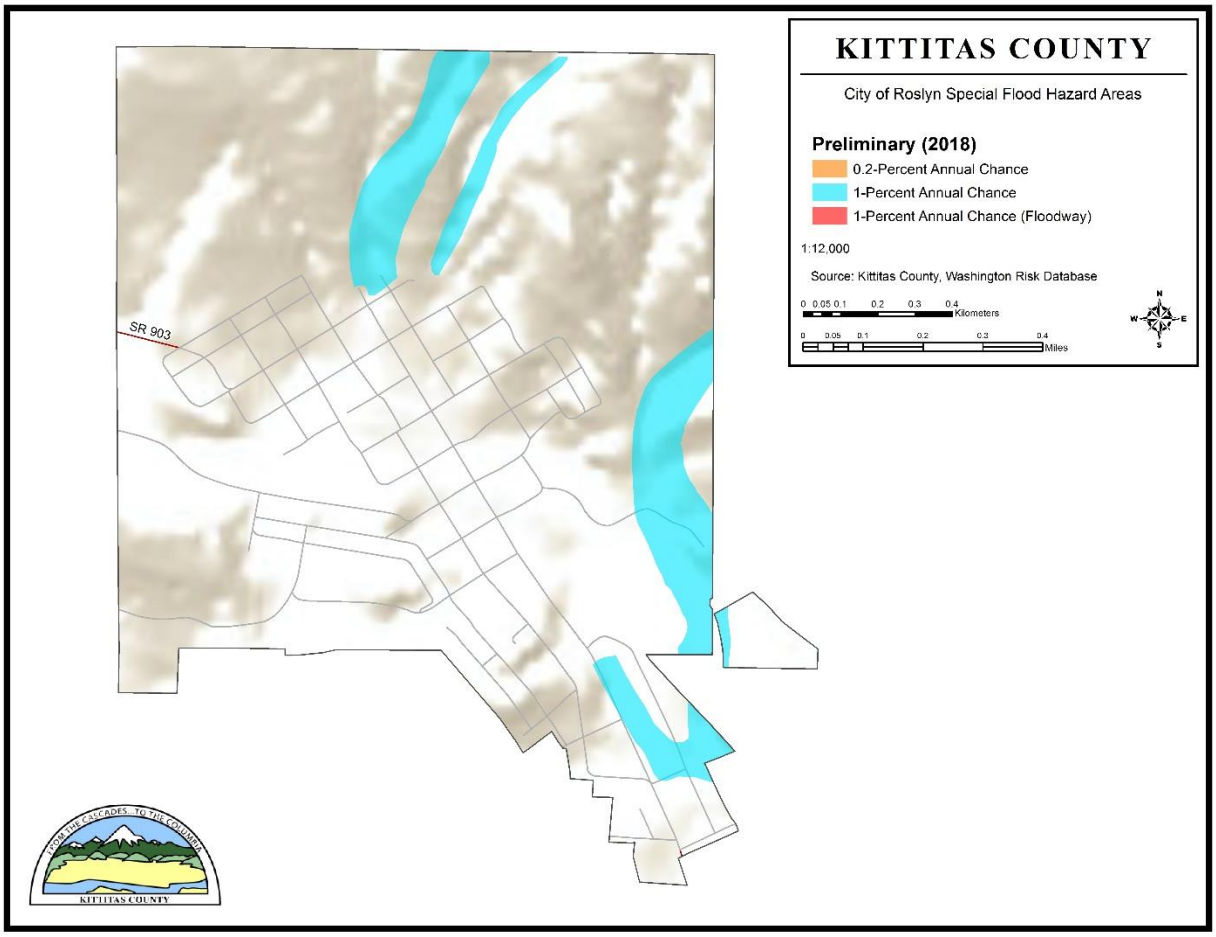


Figure 5-6. City of Roslyn Special Flood Hazard Areas

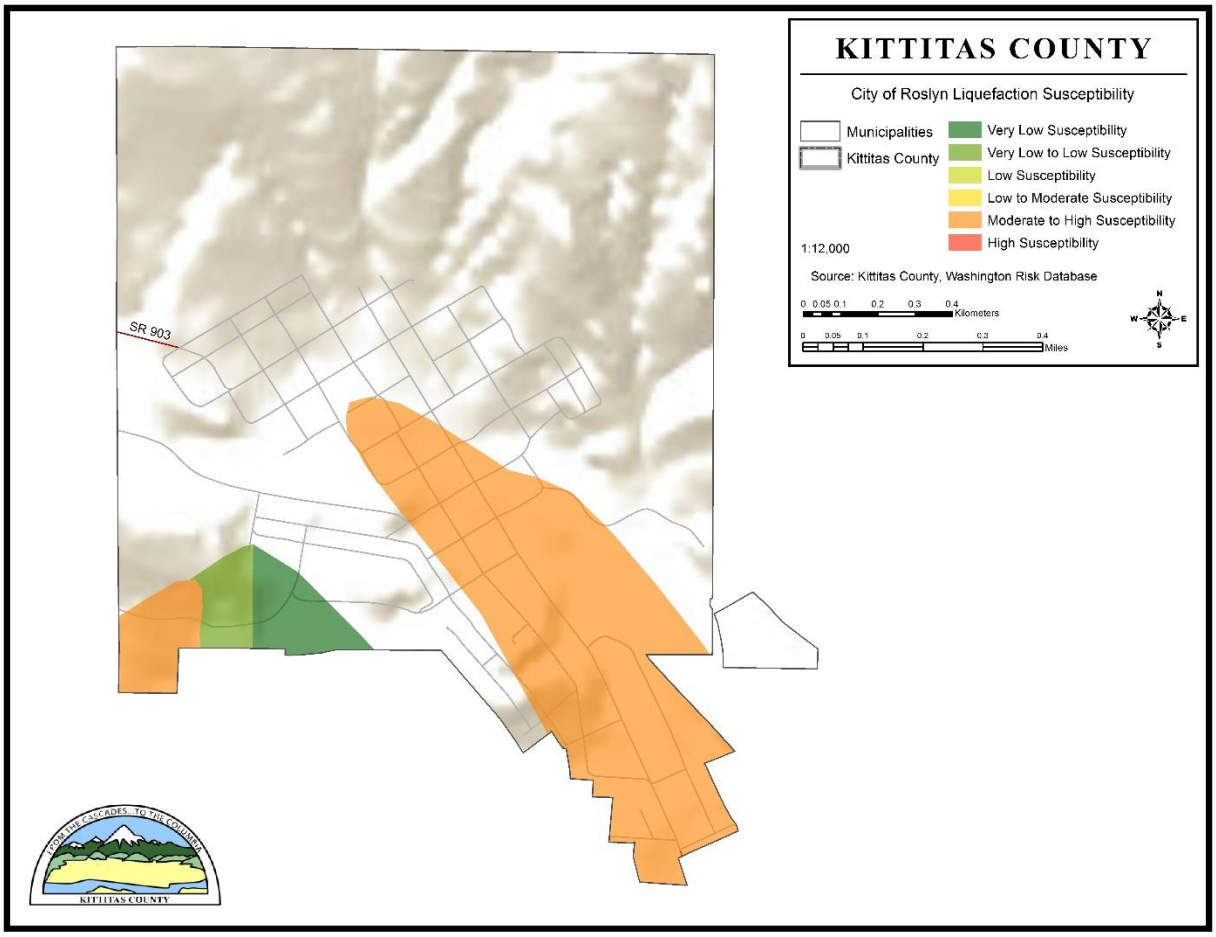
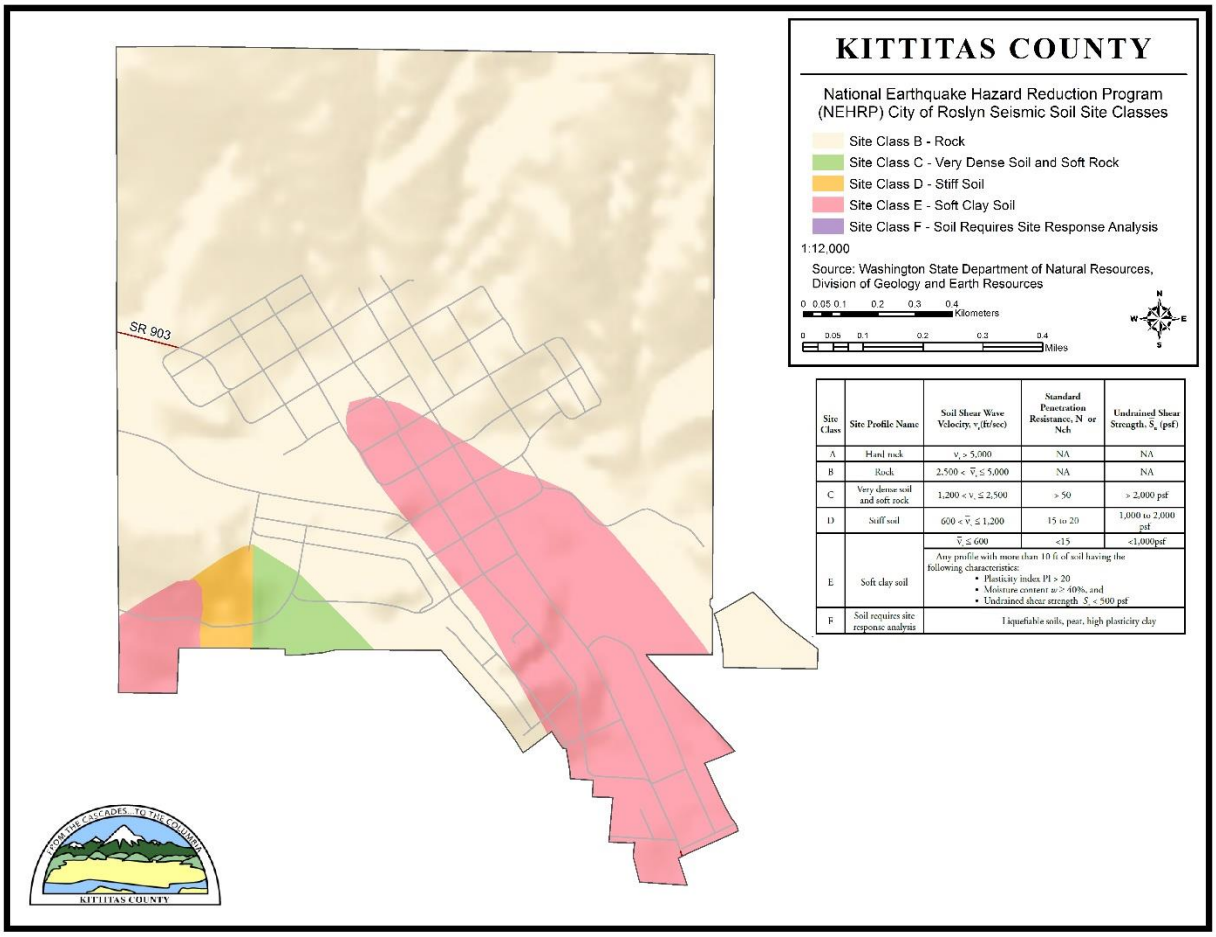


Figure 5-7. City of Roslyn Liquefaction Susceptibility



Site Class	Site Profile Name	Soil Shear Wave Velocity, v_s (ft/sec)	Standard Penetration Resistance, N or Nch	Undrained Shear Strength, $\bar{S}_u$ (psf)
A	Hard rock	v_s > 5,000	NA	NA
B	Rock	2,500 < $\bar{v}_s$ ≤ 5,000	NA	NA
C	Very dense soil and soft rock	1,200 < v_s ≤ 2,500	> 50	> 2,000 psf
D	Stiff soil	600 < $\bar{v}_s$ ≤ 1,200	15 to 20	1,000 to 2,000 psf
E	Soft clay soil	$\bar{v}_s$ ≤ 600	<15	<1,000psf
		Any profile with more than 10 ft of soil having the following characteristics: • Plasticity index PI > 20 • Moisture content w ≥ 40%, and • Undrained shear strength $\bar{S}_u$ < 500 psf		
F	Soil requires site response analysis	Liquefiable soils, peat, high plasticity clay		

Figure 5-8. NEHRP Seismic Soil Site Classes for the City of Roslyn

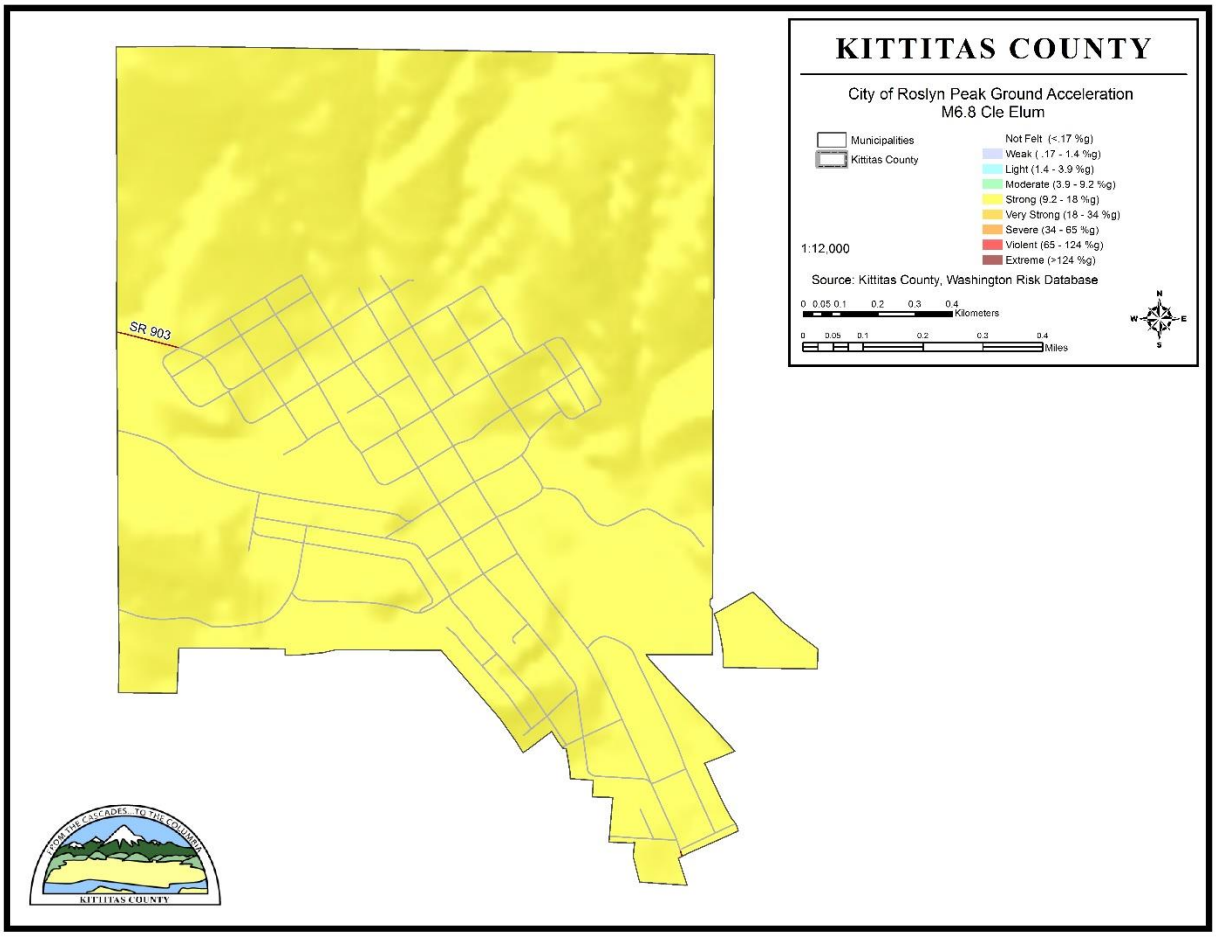


Figure 5-9. Cle Elum Earthquake Scenario Peak Ground Acceleration for the City of Roslyn

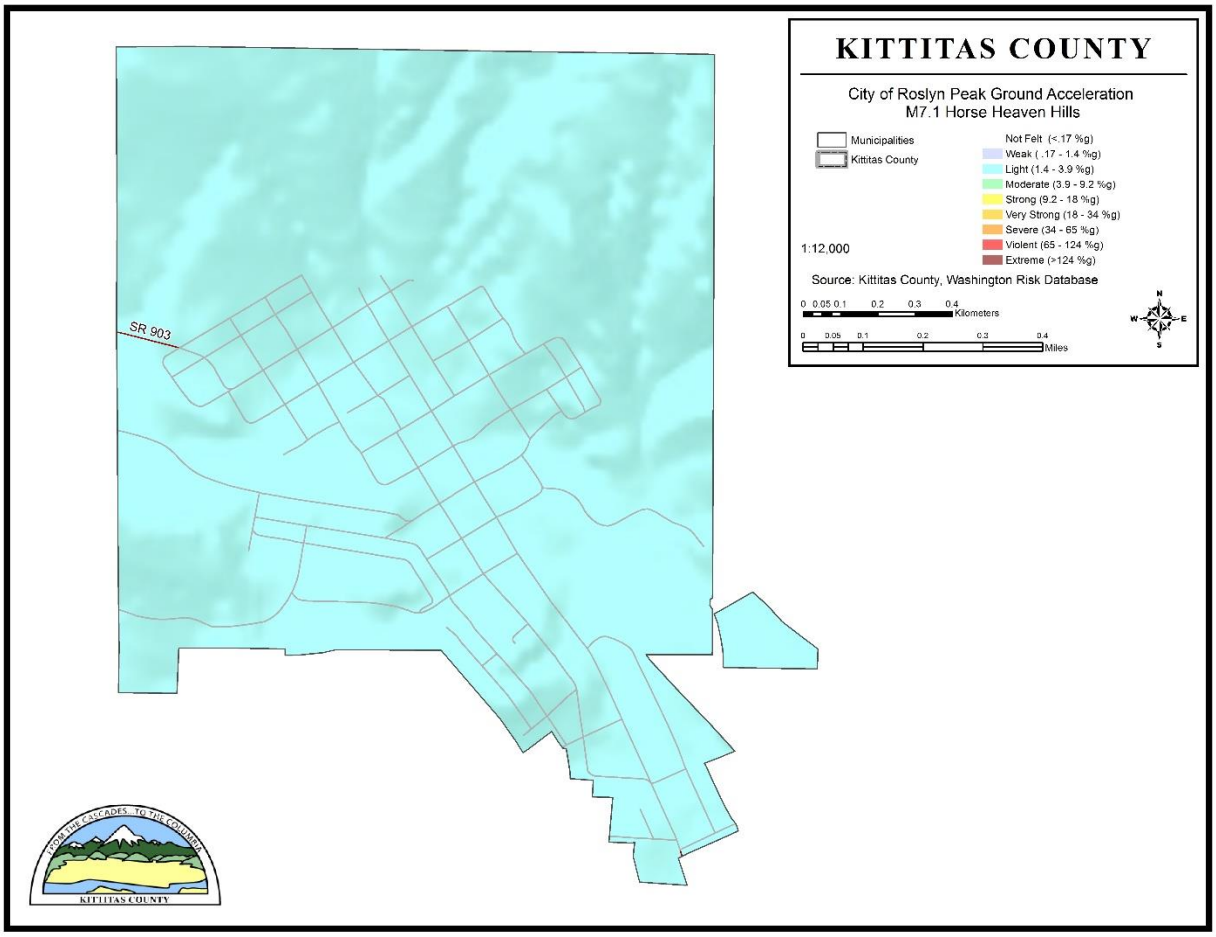


Figure 5-10. Horse Heaven Hills Earthquake Scenario Peak Ground Acceleration for the City of Roslyn

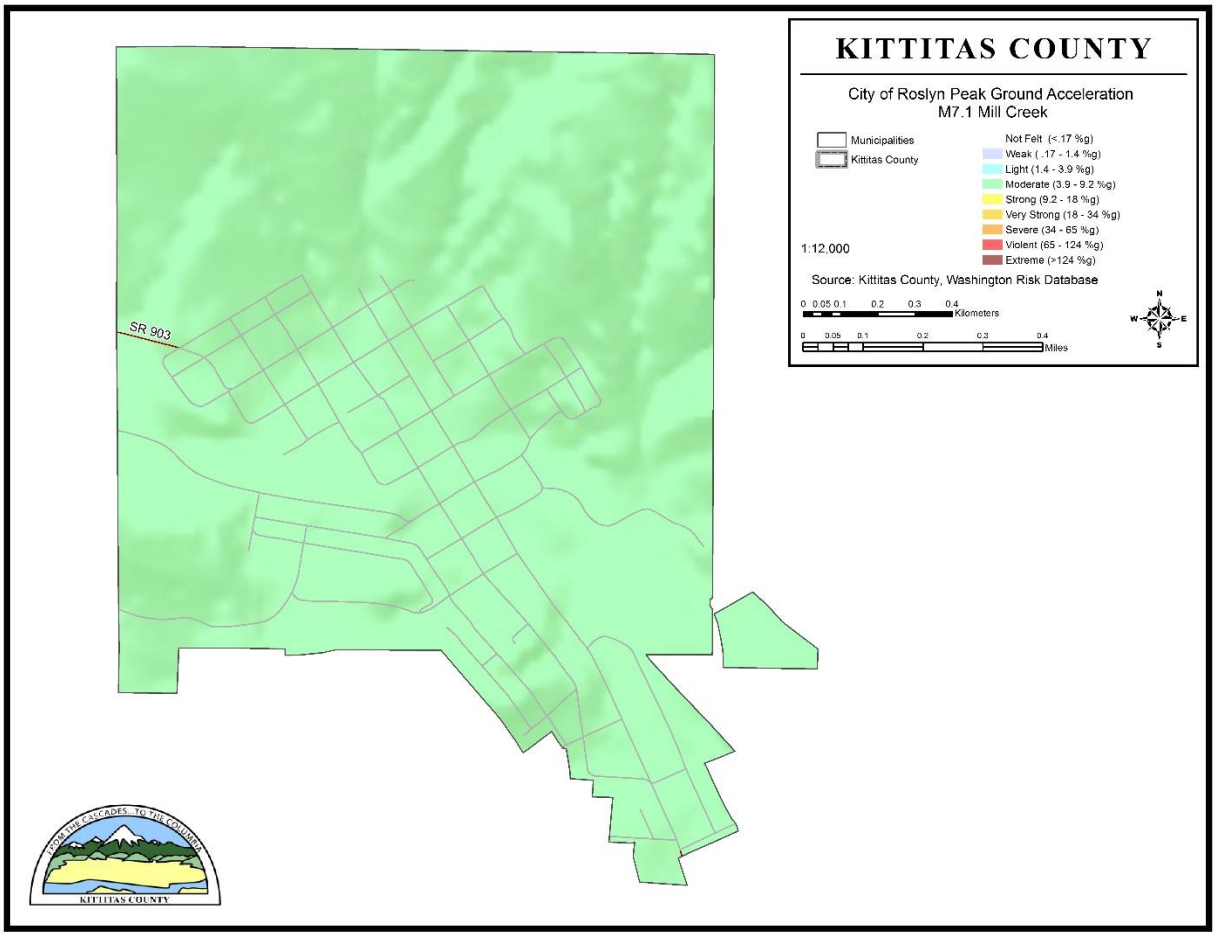


Figure 5-11. Mill Creek Earthquake Scenario Peak Ground Acceleration for the City of Roslyn

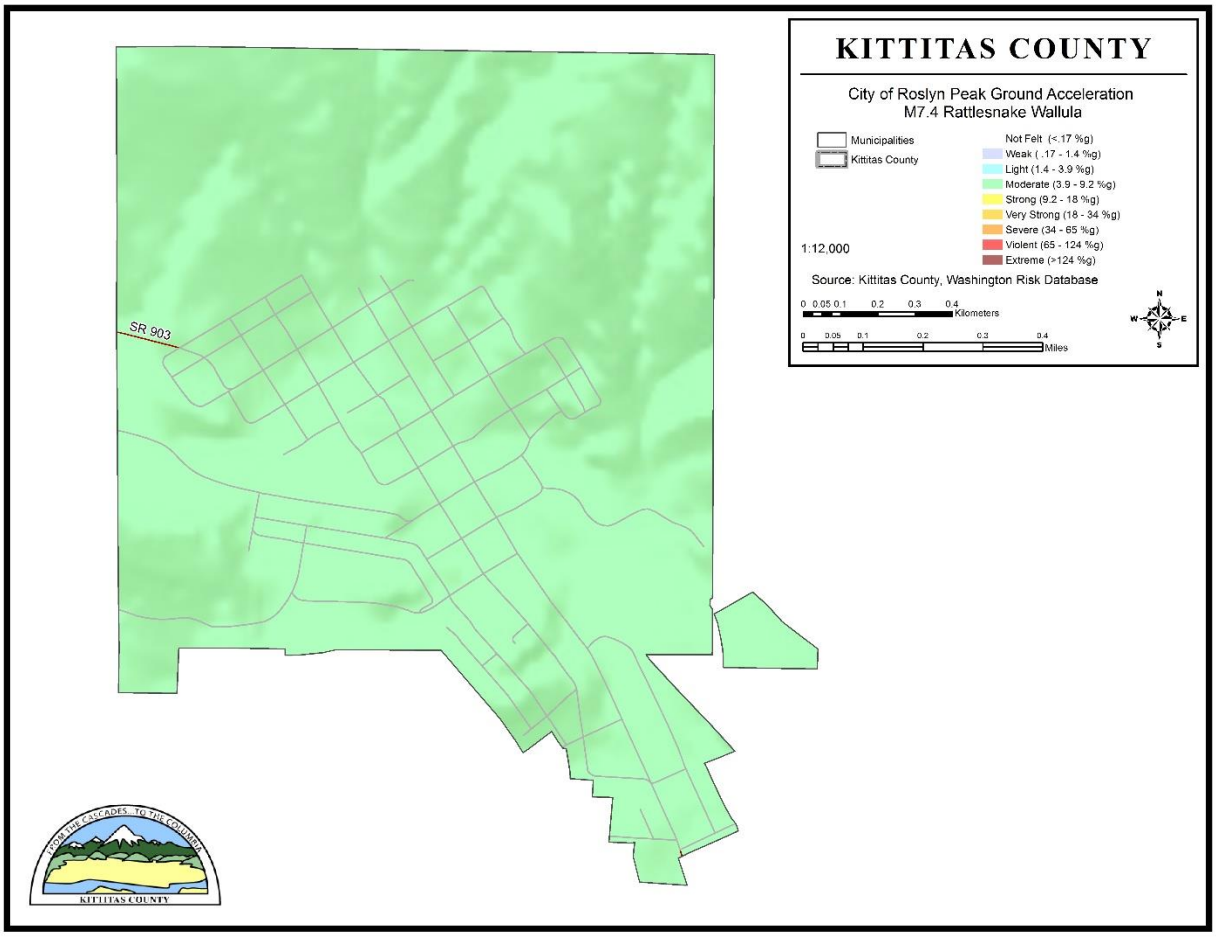


Figure 5-12. Rattlesnake Wallula Earthquake Scenario Peak Ground Acceleration for the City of Roslyn

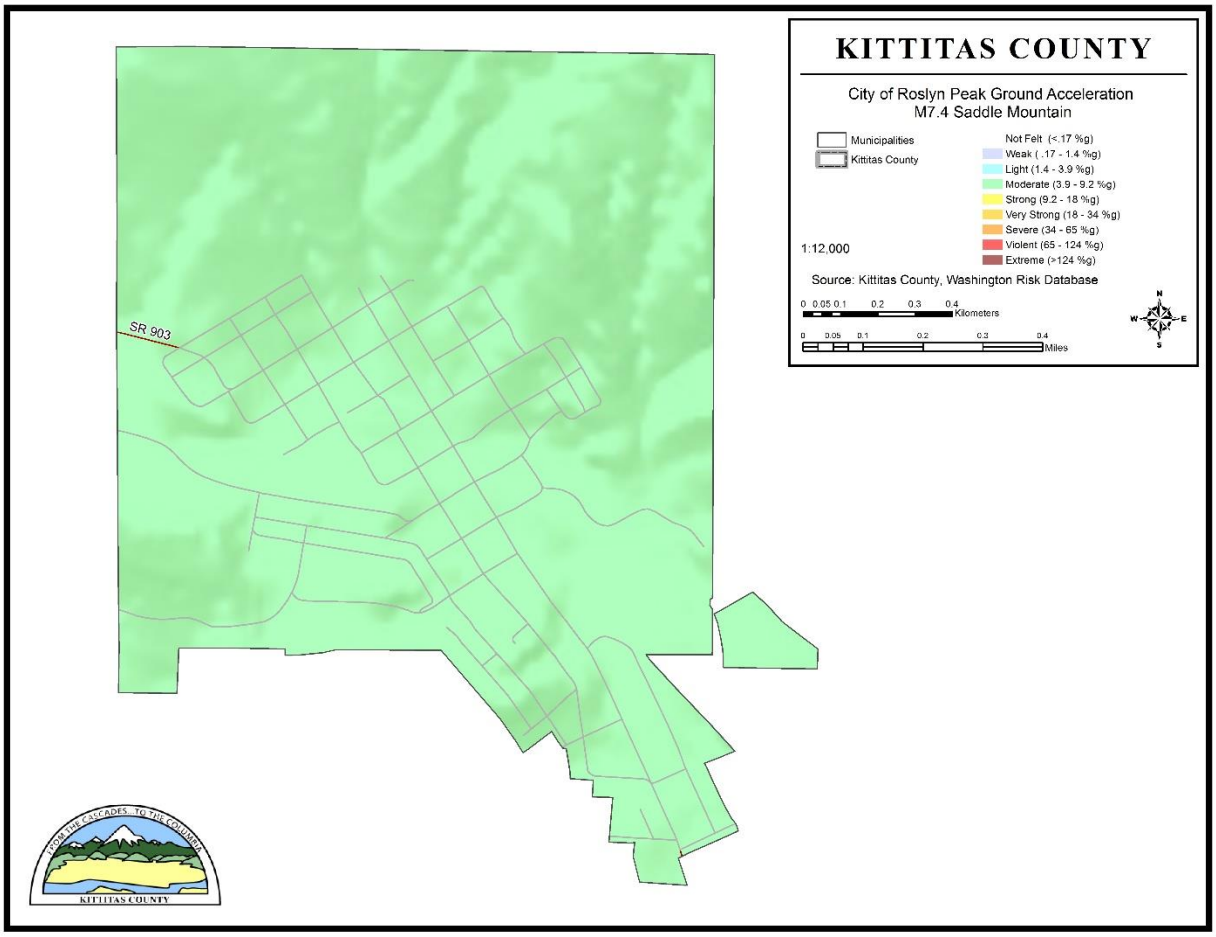


Figure 5-13. Saddle Mountain Earthquake Scenario Peak Ground Acceleration for the City of Roslyn

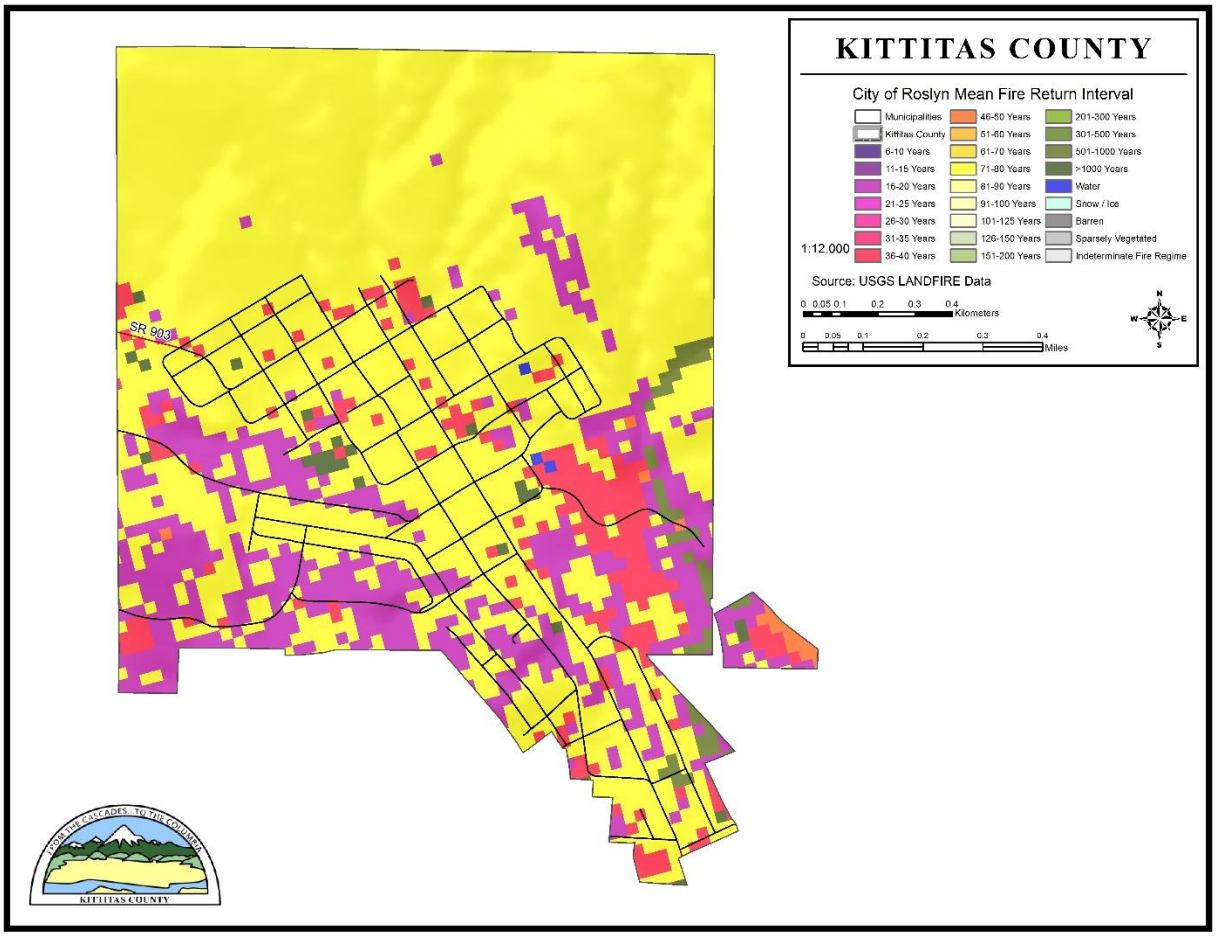


Figure 5-14. City of Roslyn Mean Fire Return Interval