

City of North Bend Plan Annex

Introduction

The City of North Bend prides itself as being the gateway to the Cascades, with a recently adopted brand statement – “We are a highly livable small town that is the premier outdoor recreation destination in the Puget Sound Region.” A logging town historically, North Bend saw slow growth throughout the last century. The recent past has seen an increase in population, as is the case in the entire region. People move here both as a community near outdoor recreation and mountain activities, as well as suburban enclave with reasonable access to the major economic centers to the west (Seattle, Bellevue, Issaquah).

Most North Bend is surrounded by rural and resource lands, except for the City of Snoqualmie directly to the west. Nearby lands include unincorporated King County, constituting parklands, resource lands and a handful of single-family residential neighborhoods, as well as forested resource lands managed by both the Washington State Department of Natural Resources, and the United States Forest Service. This ring of green mountains around the City provides a natural feel not found in most other cities within King County. It also presents a unique suite of hazards. North Bend contains two rivers within its city limits, the South Fork and Middle Fork of the Snoqualmie River, making almost half the city regulated floodplain. One edge of the City contains debris flow hazard, where high gradient streams cross through a neighborhood at the base of Rattlesnake Ridge. Both wildfire and drought risks are now becoming a reality for North Bend.

Jurisdiction Profile

Incorporated in 1909, the City of North Bend, WA is a small community of approximately 7,000 residents in 4.41 square miles, located 36 miles east of Seattle along Interstate-90. North Bend contains two rivers and is ringed by forested mountains.

North Bend’s government is a mayor-council form with a seven-member council that create policy and a mayor that is the City’s separately-elected chief executive officer.



Development Trends

North Bend has seen substantial growth in the recent past. From 2010 to 2019 the WA OFM states the population has grown from 5,731 to an estimated 7,136, an increase of 21.5%. Most of this increase was single-family home construction in low density (4 units/acre) lands outside of the downtown core. As residential development slows, due to both market conditions and infrastructure capacity, the City is looking to increase commercial development to create a better balance.

Changes in Vulnerability — Since the 2015 RHMP update North Bend’s population has increased enough to require increased capacity in critical infrastructures such as its wastewater treatment plant, and continued improvements to its transportation system. Regional changes in climate are bringing increased threat of drought and wildfire to this community. On the plus side, the City has made several steps to increase resilience, including moving its City Hall outside of the floodplain, and advancing its NFIP CRS class from a 6 to a 5.

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City of North Bend Risk Summary

North Bend explored all the natural and human-caused hazards that are a focus of the regional plan. Not all the hazards in the regional plan are relevant to the community, so a focus was made on those with consequences to North Bend.

- Naturally-Caused Hazards Focus includes: flood, severe weather & severe winter weather (combined), earthquake, erosion, landslides, and wildfire
- Human-Caused Hazards Focus includes: civil disturbance, cyber-attack, dam failure, hazardous materials incident, public health emergency, structure fire, and terrorism

More human caused hazards do threaten North Bend than what is covered below, but a potential instance would be minor, at a level that could be addressed by our local fire department (Eastside Fire & Rescue) and police department (North Bend & Snoqualmie Police).

To fill the narratives and maps below, data provided by King County GIS and documentation from King County Office of Emergency Management were augmented with North Bend data, documentation, and knowledge of the local community. The assessments are intentionally brief, yet sufficiently succinct to provide information on potential impacts during a disaster, and to prioritize addressing vulnerabilities on a citywide planning scale.

Hazard Risk and Vulnerability Summary

HAZARD	RISK SUMMARY	VULNERABILITY SUMMARY	IMPACT SUMMARY
Avalanche	No risk in city limits, avalanche-prone terrain does not exist within or immediately adjacent to the City.	No vulnerability in city limits	No impact in city limits
Earthquake	North Bend is particularly exposed to earthquakes, due to adjacency to faults, and geologic characteristics similar to other valley bottoms in the Puget Sound Region (see Figure 1, below). Several faults are located just west of the city limits, some within the southwestern edge of the City. These faults are almost completely within the Rattlesnake Mountain fault zone. Also, according to the FEMA RiskMap exercise, 93% of lands within the city limits are moderately or highly prone to liquefaction.	North Bend is susceptible to major damage, and potentially long periods of time in isolation in the event of a major earthquake due to the amount of bridges in the transportation network. There are 21 bridges in or immediately adjacent to the City (See Figure 3, below). This vulnerability is compounded with the presence of liquefaction-prone soils. Though not always directly correlated to damage from earthquakes, it is important to note the ages of North Bend's building stock in relation to the building construction regulations of the time. According to the FEMA RiskMAP analysis, of the 3096 buildings accounted for within the city limits, 646 (20.9%) are pre-code construction (pre 1950), 513	Vulnerable populations are more likely to suffer during a severe earthquake event, due to the buildings to which they reside, lack of general resources, and lack of funding to bridge themselves financially if employment is stalled. One vulnerable area would be those living in the multi-family housing units in our High-Density Residential Zone near Si View Park. There are several locally owned small businesses that would be largely affected from lack of transportation and

	<p>According to the Puget Sound Seismic Network there is a 10-20% chance a subduction zone earthquake will happen in the next 50 years, which would severely affect North Bend.</p>	<p>(16.6%) are low-code construction (1951 to 1974), 1419 (45.8%) are moderate-code construction (1975 to 2003), and 545 (17.6%) are high-code construction (2004 to present). Almost two thirds of North Bend's building stock were constructed during a time of moderate building code standards or better.</p> <p>Disruption to communication, electricity, water and other utilities would be expected during a major earthquake event.</p> <p>No major hospital exists within North Bend's City limits, only a clinic and three pharmacies. The nearest hospital to the City is Snoqualmie Valley Hospital, which is on Snoqualmie Ridge and approximately 6 miles from downtown North Bend. Snoqualmie Valley Hospital does have an emergency room, but it is limited in capacity. The nearest major hospital with an emergency room is Swedish Issaquah Highlands, which is approximately 14 miles from downtown North Bend.</p>	<p>utilities for long periods of time. It is unknown currently how many businesses have continuity plans in case of a large disaster.</p> <p>More than half of North Bend's employees live outside the City. A disrupted transportation system means several businesses would not have employees temporarily.</p> <p>Reaching definitive medical care under two hours may not be possible during a large earthquake event, hence medical services akin to a wilderness setting.</p> <p>Basic government services are likely to be interrupted for several days to several weeks relative to the magnitude of the event.</p>
Flood	<p>There have been 15 damaging floods from the Snoqualmie River in the North Bend vicinity since 1975. The City of North Bend, like many other jurisdictions in King County, was founded close to the banks of a river because the river environment provided opportunities for navigation, commerce, fishing, logging, and agriculture. Thus, older and in some cases historical portions of the City, including</p>	<p>While severe floods in recent years have closed roads, damaged bridges and impacted the levee systems on the Snoqualmie River, North Bend has been spared the worst of the flooding in the upper Snoqualmie Valley. Most of the flood damage has occurred in King County downstream of the North Bend City limits and in the City of Snoqualmie. For the most part, the existing levee system has effectively protected the North Bend downtown core. North Bend has four repetitive loss properties. Brief explanations of the City's four</p>	<p>Businesses that are disrupted by floods often must be closed (in 1990 some businesses closed for several days). A review of the 31 flood insurance claims concluded that businesses filed claims at about the same level.</p> <p>Public expenditures on flood fighting, sandbags, fire department calls, clean up and repairs to damaged public</p>

	<p>North Bend's downtown core, are in areas that are vulnerable to flooding. Approximately 42 percent of North Bend's land area is mapped or identified as 100-year floodplain.</p>	<p>relatively minor repetitive loss properties are:</p> <ul style="list-style-type: none"> • Repetitive Loss #69324 (residential property) – flooding is caused by backwater effects of creek flow due to insufficient conveyance capacity. • Repetitive Loss #183878 (residential property) – flooding here is basement flooding caused by backwater effects of localized drainage. • Repetitive Loss #184102 (residential property) – flooding here is caused by seepage of river water through the river levees. • Repetitive Loss #184405 (residential property) – flooding here is caused by seepage of river water through the river levees. <p>Additional repetitive loss properties are located outside of the North Bend City limits, but within the designated Urban Growth Area (currently unincorporated King County).</p>	<p>property affect all residents of North Bend. In 1990, 1995, 1996, 2003, 2006, February 2007, December 2007, December 2008 and January 2009, there were presidential disaster declarations that provided disaster assistance to local governments and non-profit organizations in King County.</p> <p>Loss of road access is a major flood impact that can affect all residents and businesses in North Bend, not just those that own property in the floodplain. In 1990, Bendigo Boulevard at South Fork Avenue and Mt Si Boulevard were closed due to the amount of water flowing over the road. Many other local roads also had water flowing over them limiting access. This required detouring of traffic, and caused delays in the delivery of goods, and restricted access to some businesses and homes, etc.</p> <p>There are two assisted living facilities located in the floodplain, which would need assistance with evacuation in the case of a catastrophic flooding event. Details of these facilities is contained in the Sever</p>
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			Weather/Winter Weather section below.
Landslide	<p>According to the FEMA RiskMAP analysis results no landslide hazards exist within the City Limits, except for a small area where SE North Bend Way is close to the Middle Fork of the Snoqualmie River.</p> <p>The City maintains a debris flow hazard layer produced from technical reports. There is a stated debris flow hazard in the southwest corner of the City Limits. This is due to several high gradient streams above the existing residential developments.</p>	<p>During periods of major rainfall, the residences in and around the debris flow hazard, approximately November through January, are at most risk.</p> <p>Approximately 40 homes and 4 apartments are within the footprint of the debris flow hazard layer. These residences are in the upper section of the Forster Woods Neighborhood and the Arrive Apartment Complex.</p>	<p>Impact from landslides within the City Limits is almost exclusively to those homes in the debris flow zone. Risk to such an event is most likely in conjunction with a severe weather event. No additional impacts to vulnerable populations are expected from this hazard.</p> <p>Environmental impacts would include sedimentation to the Ribary and Gardiner Creek systems, and potential destruction of riparian habitat.</p> <p>Infrastructure systems such as power, gas, water, and sewer may be impacted locally.</p>
Severe Weather/Winter Weather (combined due to large overlap)	<p>North Bend receives considerably more rain per annum than any other incorporated area in King County, with exception only to its neighbor Snoqualmie. Within the City Limits annual rainfall varies, with the western edge of town receiving approximately 60in per year, and the eastern edge closer to 90in per year. During severe weather events North Bend experiences blockages in its transportation network due to road flooding, as well as power outages.</p>	<p>Those without shelter would be the most vulnerable during a weather event in North Bend. Cold events may require opening additional shelter spaces. Low income populations are vulnerable as well, with limited funds for utilities and paycheck continuity if work is interrupted. During major snow events those who live on the lower priority roads for plowing are vulnerable as well; the City prioritizes plowing by street use volume, meaning some roads may not be cleared for a few days. Local businesses may be at risk if they are closed for several days and do not have continuity measures in place. Residents on long private roads would need the ability to facilitate their own</p>	<p>Resident impacts include property damage, interruption to daily activities, and injuries. Longer-term severe weather such as droughts take longer to materialize, but can lead to other hazards such as wildfire, thus affecting health through poor air quality. North Bend currently has two full-care nursing homes. Regency North Bend is a rehabilitation and nursing center located in the downtown core, and houses approximately 40 people. Red Oak</p>

	<p>Occasionally precipitation comes in the form of snow. This past February 2019 saw an extraordinary snow event, where North Bend received 30 inches. This event followed three previous snowfall events the past week, totaling as much as 24 inches. Over \$243,000 was spent on labor, contractor assistance, fuel, parts and materials, and damages. A city emergency was declared, but no funding assistance was available because the disaster was considered a snow removal event.</p> <p>In addition to precipitation events, heavy winds, extreme cold and ice, extreme heat, and drought are all potential hazards within North Bend.</p>	<p>snow removal, as this is not a City function. Aboveground power lines are a risk for wind events with tree-fall. All residents would be vulnerable during multi-day events.</p>	<p>Retirement Center, which houses approximately 50 residents, is located just east of downtown next to Torguson Park. Both facilities would need attention during a major weather event.</p> <p>Small businesses could have interrupted capital flows during multi-day storms. Also, several commercial areas, including North Bend's downtown, are within flood zones and could be interrupted.</p> <p>Impacts from urban flooding during long periods of rainfall cause property damage, especially in low-lying areas with a high groundwater table.</p> <p>Normal government operation would often be interrupted during severe storms, as was the case during the February 2019 snowstorm where normal operations halted for a week.</p>
Tsunami	No risk in city limits	No vulnerability in city limits	No impact in city limits
Volcano	There are no volcanos near North Bend, nor is North Bend within a lahar zone	In case of an eruption ash may fall on North Bend	If ash fall occurs there is potential for respiratory issues among vulnerable populations.
Wildfire	North Bend has not been considered at risk for wildfires in the past. This has changed in recent years. Longer dryer summers have made the City more	Populations at the fringes of the City and adjacent to large wooded areas, especially in the western, eastern, and southern edges of the City Limit have a direct threat to wildfire.	Communities adjacent to Rattlesnake Ridge, Mt. Si, Meadowbrook and Tollgate Farms, and other vegetated areas in the eastern

	<p>prone to a major wildfire event. The summers of 2017 and 2018 saw not only a larger fire presence on the western slope of the Cascade Range, but deteriorated air quality in North Bend and around the region not seen in recent history.</p> <p>For a sense of local wildfire risk to North Bend one can view the Washington State DNR's Wildland Urban Interface (WUI) study results (Figure 5, below). Specific to North Bend, high fire risk exists in the lands surrounding the City Limits. An explanation of the WUI study and the significance of its results can be found in the wildfire risk assessment of the main RHMP document.</p>	<p>North Bend also may have a higher risk of smoke exposure and PM2.5 than other communities in King County due to the proximity of adjacent wildlands and Snoqualmie Pass, where eastern airflow often occurs during times of inland high pressure.</p> <p>Building codes and general site design criteria are not designed for wildfire resilience because they are a rare occurrence (200 to 300-year interval), and because the nature of the event would most likely be catastrophic. Though structural fire standards are met with all new development, with either adequate water flow and proximity of hydrants, or sprinklering.</p>	<p>portion of the City are at greater risk.</p> <p>Vulnerable populations, especially those with respiratory issues are at greater health risk during times of large regional wildfires and associated air quality declines.</p> <p>The economy of North Bend would suffer, because residents and visitors from neighboring communities would less likely leave their homes.</p>
Civil Disturbance	<p>To the knowledge of municipal staff North Bend does not have a history of civil disturbance nor an elevated threat for a city of its size, but some attention should be paid to the possibility.</p>	<p>North Bend would be most vulnerable to such instances as violent demonstrations, or riots during large city events in the downtown. It is important to continue to maintain a strong relationship with the North Bend/Snoqualmie Police.</p> <p>Government facilities and businesses would be the most vulnerable during such an event.</p>	<p>Such an event would affect the local economy, as well as public perception of rule and order. Relative to the scale of the event more serious ramifications may occur.</p>
Cyber Attack	<p>The threat of a cyber attack is always possible, and phishing of City employees in North Bend occurs daily, though there have been no known instances of penetration of systems. Last year the City migrated almost all of</p>	<p>North Bend's water and wastewater systems are run via a SCADA system. With this some level of vulnerability exists. An organized attack could potentially hinder distribution systems until the problem is solved, effecting the lives of residents as well as the health of the Snoqualmie River,</p>	<p>A cyber attack could affect the distribution of water supply to residents within the North Bend water system. It would also affect the operation of North Bend's wastewater treatment plant.</p>

	<p>it's files and systems onto cloud-based servers, making its information and daily processes less vulnerable to hacking.</p>	<p>downstream of the City's wastewater treatment plant. With current protective systems in place it is felt the most vulnerable threat to security would have to come from somewhere internally.</p> <p>Though the threat always exists, North Bends digital infrastructure is seen to have a low level of vulnerability relative to before.</p>	<p>A cyber attack on government computers could hinder day-to-day operations within the City from the short to mid-term.</p>
Dam Failure	<p>Though no dams are upstream of the City Limits within its two major watersheds, the Middle Fork and South Fork of the Snoqualmie River, Masonry Dam, which holds the City of Seattle's water supply in Chester Morse Lake is nearby. Failure of Masonry Dam would present a longer-term environmental threat to North Bend because the Dam provides the City with mitigation water for the South Fork during times of low flow. This is considered an issue outside the domain of this RHMP Annex.</p>	<p>According to the Seattle Public Utilities Masonry Dam Emergency Action Plan (2014 Update) inundation maps North Bend would not be affected by a catastrophic dam failure. This dam is located within the Cedar River Watershed, outside of City Limits.</p> <p>A secondary vulnerability to a failure of Masonry Dam would be the loss of the mitigation water resource North Bend uses to augment low in-stream flows on the Snoqualmie River. This is a requirement for North Bend set forth by the Washington State Department of Ecology.</p>	<p>In the event of a Masonry Dam failure major casualties and property damage could occur in areas just outside the City, meaning City resources may be needed. Secondary effects would mean the City loses its mitigation water for summer instream flows threatening riparian habitat in the South Fork and proving very costly. Another secondary effect would be the draining of Rattlesnake Lake, which has become a very popular outdoor destination.</p>
Hazardous Materials Incident	<p>No major sources of hazardous materials exist in North Bend, although there are minor sources throughout the City. There are 8 gas stations clustered off both Exits 31 and 34, 2 dry cleaners, and several small light industrial and automotive mechanic shops through out the City.</p>	<p>Despite small and desegregated pollution sources throughout the City, hazards do exist. A large portion of the central section of the City is a CARA 1 zone. This coupled with a shallow groundwater table in the rainy months provides a higher than comfortable threat to water supply. North Bend's development review team is acutely aware of these vulnerabilities and the state laws that apply, hence certain land use</p>	<p>A contaminant plume resulting from an accident at any of the mentioned facilities in town could result in at the least minor and temporary environmental damage, and at the most a semi-permanent water supply contamination problem.</p>

		types are disallowed in these areas.	
Public Health Emergency	<p>North Bend, due to its isolation and lack of population relative to other municipalities in King County may be at less risk. Though if a health incident were to happen the City's isolation may work at a disadvantage, with the closest hospital being 6 miles away, and the closest hospital with a major emergency room facility being 14 miles away.</p> <p>As of October 2019, North Bend citizens in the eastern portion of the City Limits had an E-coli outbreak in the water supply of areas served by the Sallal Water Association, a private water purveyor. Though no illness has been reported officially, this incident had a major effect on residents' lives, requiring water to be boiled before use. Sallal now must chlorinate their water for at least one year.</p>	<p>The physically vulnerable populations of North Bend would be at most risk. Specifically, those with jeopardized immune systems, young children and senior citizens, and those that are financially disadvantaged.</p>	<p>In general, a major health incident could impact the entire City, stunting economic activity and services available.</p> <p>As is the case with the recent e-coli outbreak within the Sallal Water Association, the impact is severe in terms of affecting businesses and the daily lives of residents in this area. Bottled water must be procured and used, or water must be boiled. This severely limits what can be done in these areas.</p> <p>There are no anticipated impacts to property, infrastructure, or the environment with a health incident. Health systems, the economy and government operations would be affected relative to the size of an outbreak.</p>
Structure Fire	<p>Most residential structures are stick-built within the City, hence some level of risk, though most of the housing stock is built intentionally to retard fires and is either near a hydrant with adequate flows or is sprinkled. North Bend still allows fireworks for Independence Day, which presents more</p>	<p>Though North Bend is vulnerable to structure fires, occurrences are rare. The City uses the International Building Code and most of the building stock was constructed post-WWII, but structure fires are still a threat. Eastside Fire & Rescue Station 87 is in the center of the City, and generally has 3 firefighters on shift at any given time.</p>	<p>The impact of structure fires would be isolated to those whose buildings were involved, be it a local business or a residence. Such fires present a hazard and associated stresses to the firefighters involved, but a fire event generally will not affect government operations or other components of the community.</p>

	risk than municipalities that do not.		
Terrorism	<p>No City is completely free of a terrorism threat. The most vulnerable moments for the City throughout the year would be during any of the several community events that occur in the downtown core. These events often involve street closures, which are then densely populated with community members and partygoers. Other instances with the largest threat for terrorism would be indoor gatherings such as those at a City Council event, or the North Bend Theater.</p>	<p>Acts of terrorism during community events could prove to be devastating if the malintent were successful. Acts of violence could prove deadly in many forms. The effects of a terrorist event such as an active shooter are completely relative to the specific event.</p>	<p>Something as acute as an active shooter, or longer-term such as exposure to a biological chemical could be devastating to this community.</p> <p>The City of North Bend and Snoqualmie Police Department are very aware of potential threats. Often a volunteer amateur radio team, North Bend ARES, Team is deployed to support policing during community events. The City is considering active shooter training for employees.</p>

Hazard and Asset Overview Map(s)

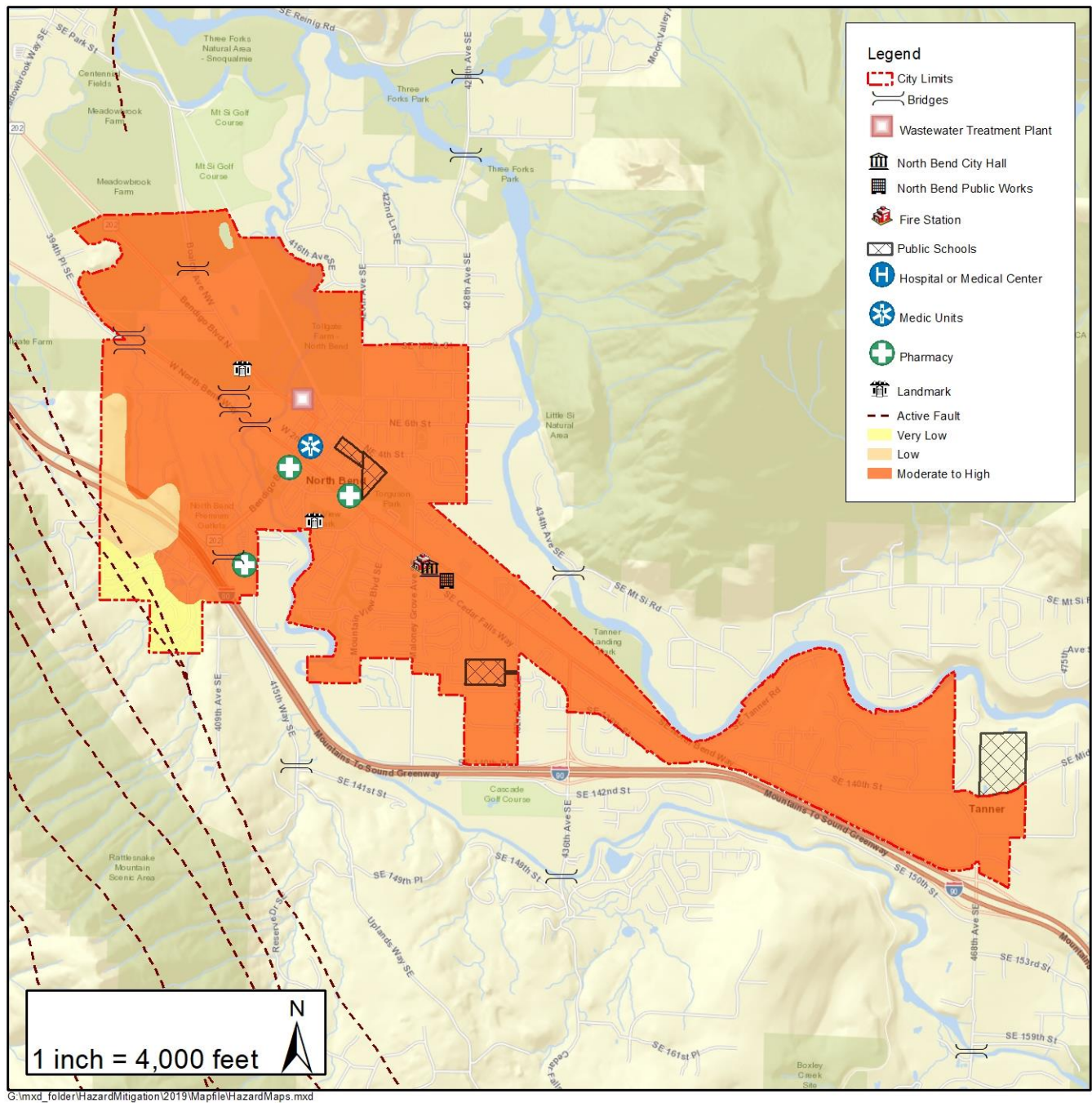


Figure 1: Earthquake Hazard - Liquefaction potential within City Limits, with critical facilities shown.

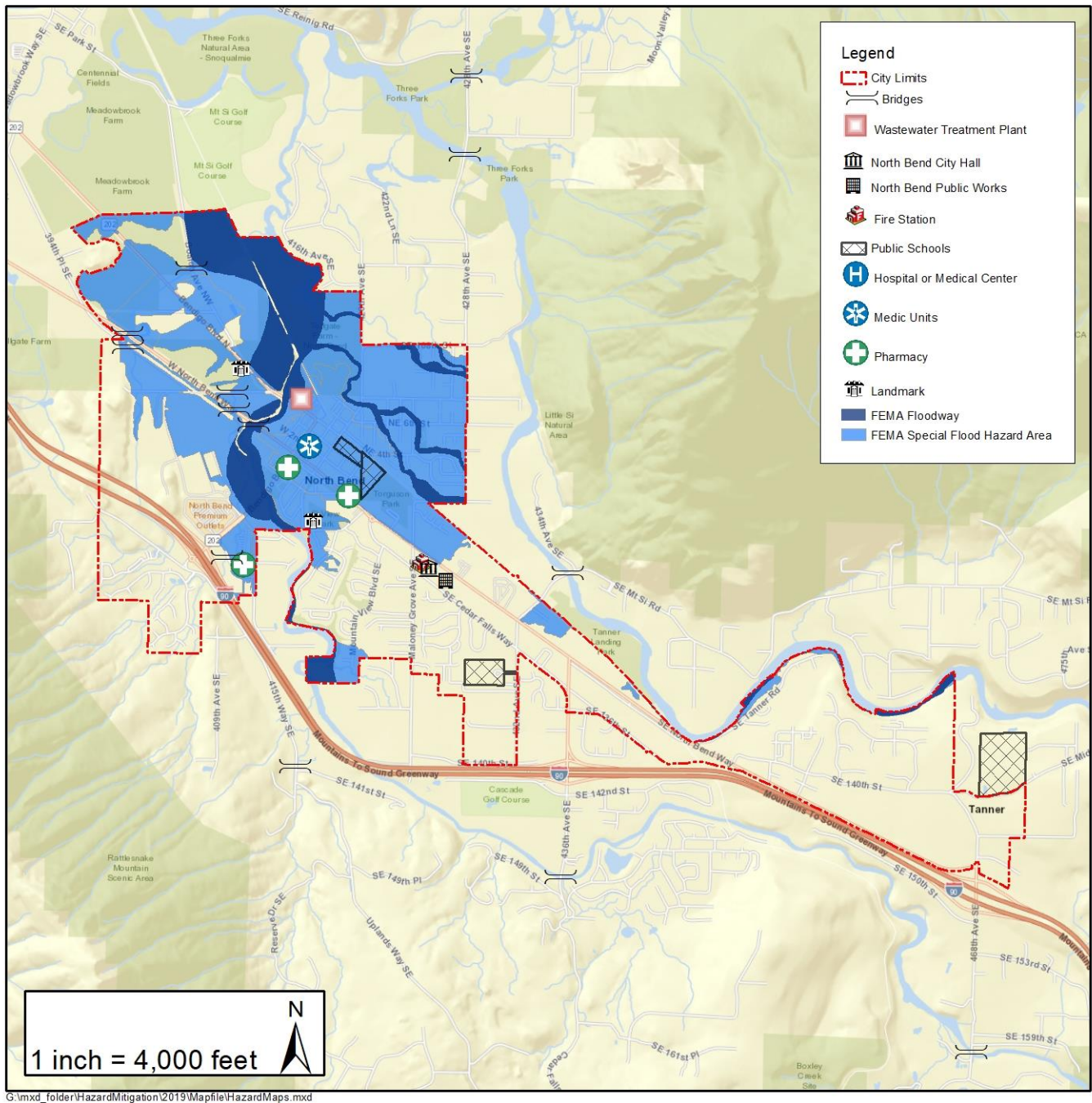


Figure 2: Flooding Hazard – Special Flood Hazard Area (1% chance event) and floodway, with critical facilities shown.

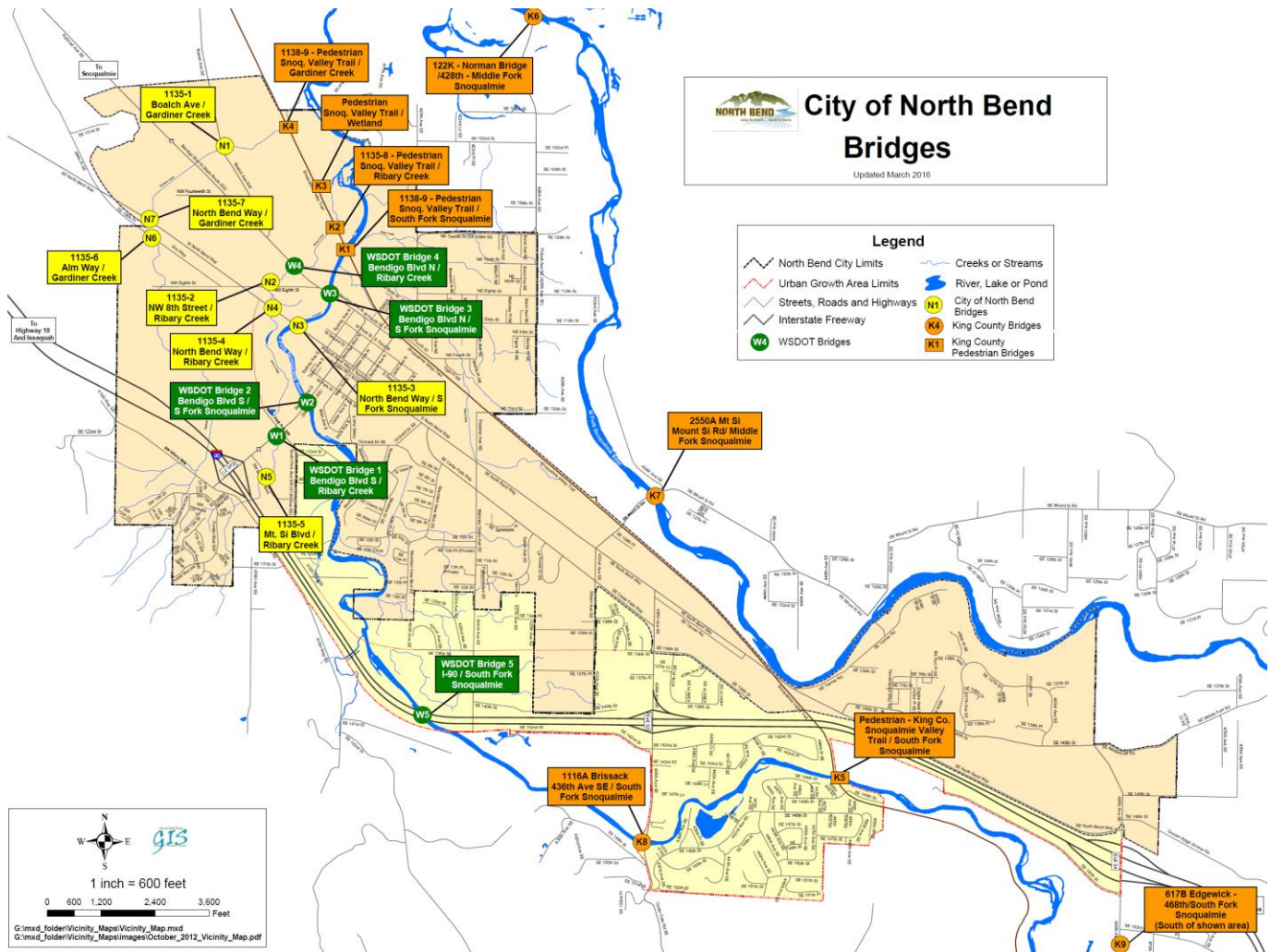


Figure 3: Earthquake and Flooding Hazard – Comprehensive map of bridges (vehicular and pedestrian) in and immediately adjacent to North Bend

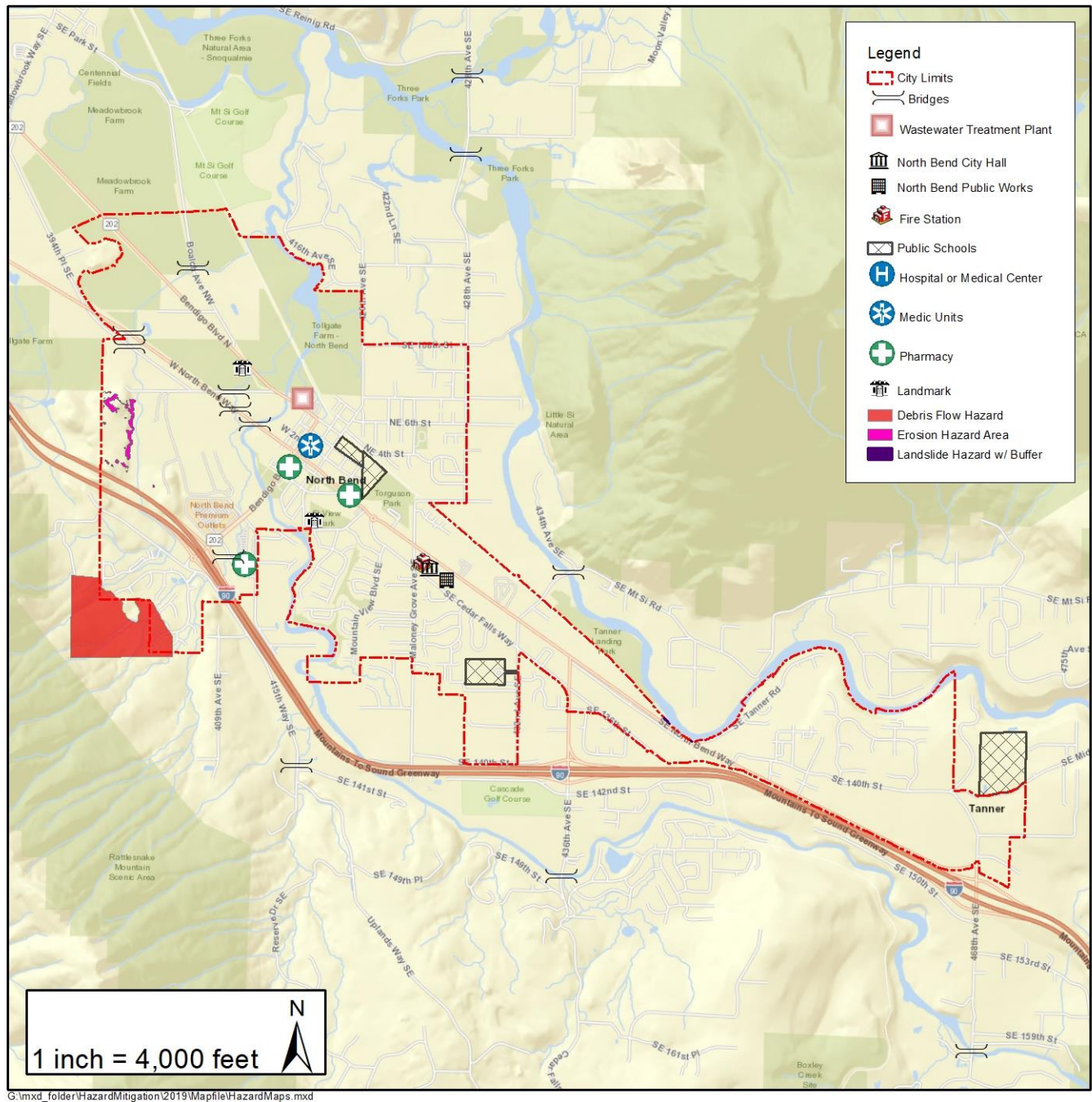


Figure 4: Landslide Hazard – Debris Flow, Erosion and Landslide Hazard within City Limits, with critical facilities shown (landslide hazard and buffer barely visible where SE North Bend Way and the Middle Fork of the Snoqualmie River are closest).

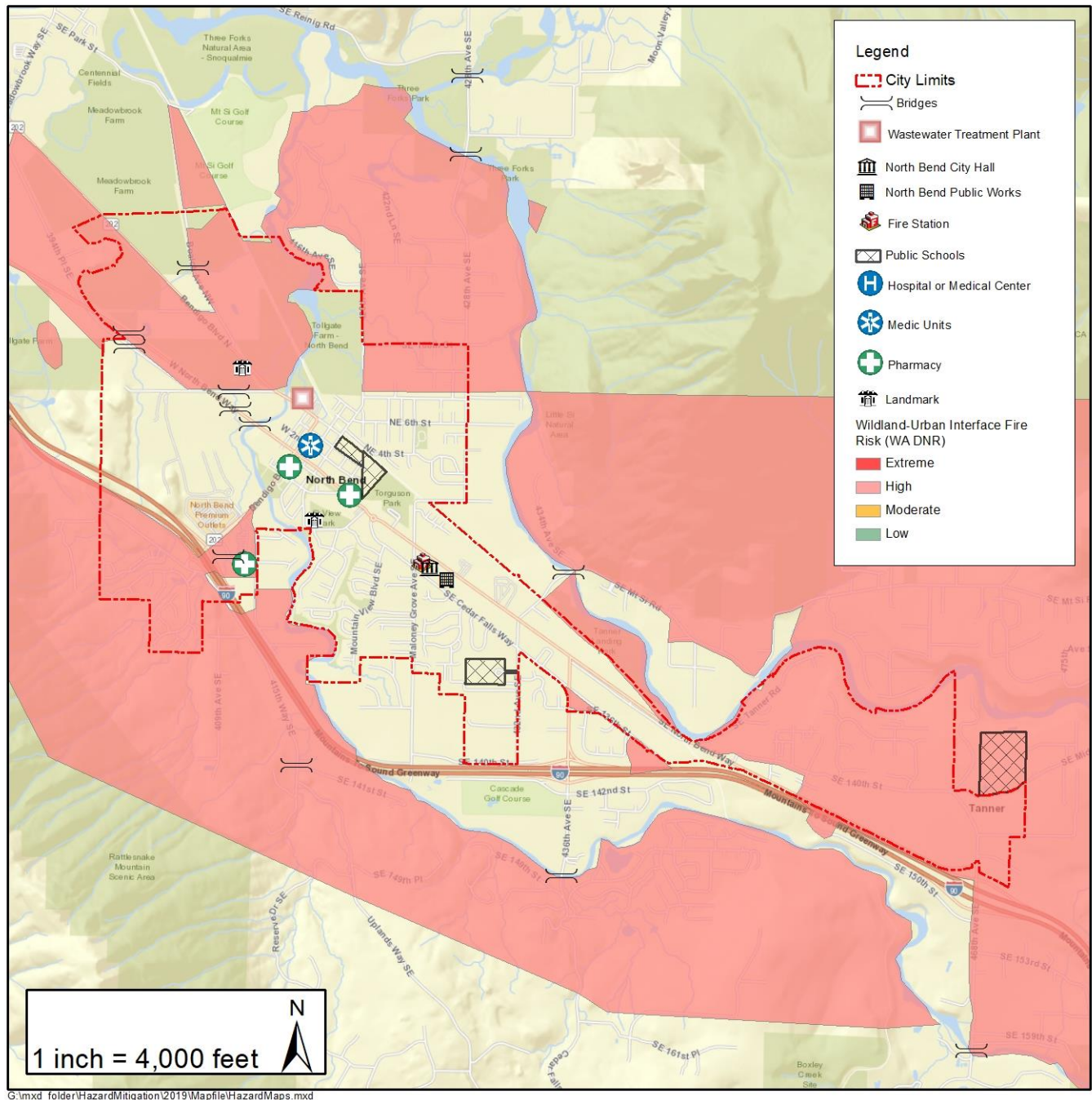


Figure 5: Wildfire Hazard – Wildland Urban Interface Fire Risk, with critical facilities shown.

Plan Update Process

The City of North Bend participated in the multi-jurisdictional planning process led by King County, conducting its update in the most detailed manner possible given limited staff resources. The update was mostly completed by the primary plan preparer through review of existing plans/documentation, avid communication with internal staff and consultants, and King County. The update was reviewed and edited by several key staff members, then reviewed by elected officials as a final step to mark completion. Mitigation strategies were developed as a result of public outreach results, communication with City Council members, and reviewing related City plans and documents to verify consistency.

General steps for the update process consisted of:

1. Researching and documenting existing hazard mitigation related materials in the City
2. Summarizing vulnerabilities to hazards
3. Public outreach and integration of results
4. Input from elected officials
5. Development of mitigation strategies
6. Culmination and approval of Annex

Jurisdiction Planning Team

NAME	TITLE	ORGANIZATION	CONTRIBUTION
Jesse Reynolds, AICP	Long Range Planner	City of North Bend	Contributor
Mark Rigos, PE	Deputy City Administrator, Public Works Director	City of North Bend	Reviewer
David Miller, AICP	Community and Economic Development Director	City of North Bend	Reviewer
Tom Mohr, PE	Deputy Public Works Director	City of North Bend	Reviewer
Don DeBerg, PE	City Engineer	City of North Bend	Reviewer
Chris Cote	SCADA Administrator	City of North Bend	Reviewer
Mike McCarty, AICP	Senior Planner	City of North Bend	Reviewer
Jamie Burrell	Senior Planner	City of North Bend	Reviewer
Carrie Smith	Public Works Office Coordinator	City of North Bend	Reviewer
Erin Mitchell	Accounting Assistant, Emergency Management Team	City of North Bend	Reviewer

Plan Update Timeline

PLANNING ACTIVITY	DATE	SUMMARY	ATTENDEES
Letter of Intent to participate in the RHMP 2020 Update Signed	January 17, 2019	Letter of Intent authorized and signed by North Bend Community and Economic Development Director	David Miller, Janice Rahman
RHMP 2020 Kickoff Meeting	February 25, 2019	Initial meeting with King County staff to discuss 2020 RHMP update process, and plan requirements	Derrick Hiebert, Jesse Reynolds, Mike McCarty, Carrie Smith, Mike Sippo
Background Information Gathering and Culmination	March to July 2019	Review 2015 Annex, RiskMap data from King County, and existing North Bend GIS data for a baseline. Review of internal plans and reports, including: 2019 Capital Improvement Plan, 2015 Comprehensive Plan, 2019 Shoreline Master Plan, 2014 Stormwater Comprehensive Plan Update.	Jesse Reynolds
Complete hazard risk and vulnerability summary	July to September 2019	Create narratives of risks from background information, GIS analysis and interviewing North Bend employees and consultants	Jesse Reynolds
Detail hazard mitigation strategies and finish RHMP Annex draft	October 2019	Combine information culminated from abovementioned steps to assemble a complete RHMP Annex	Jesse Reynolds
Internal Staff and King County Review of RHMP Annex draft	October to November 2019	Internal staff to review sections of plans and provide input, specifically with mitigation strategies. Draft was also sent to Derrick Hiebert for input	Don DeBerg, Mark Rigos, David Miller, Chris Cote, Carrie Smith, Mike McCarty, Jamie Burrell, Erin Mitchell, Derrick Hiebert
Review of RHMP Annex final draft by North Bend Elected Officials	November 2019	Review by North Bend's Mayor and City Council Committee for Public Health & Safety (November 11 th Meeting)	Mayor Ken Hearing, Councilmember Alan Gothelf, Councilmember Ross Loudanback, Councilmember Martin Volken
RHMP 2020 Update completed and sent to King County	November 2019	Address final edits and send Derrick Hiebert final draft	Jesse Reynolds

Public Outreach

Three events open to the public were held throughout the Annex development process, each of a unique nature. The first event was a traditional outreach event held in the North Bend Public Library and was designed to be an opportunity to receive live input from community members. The second event was an online survey created to reach those who are unable to attend live evening events. The third event was a Council Committee meeting covering mitigation strategies. This meeting was open to the public, and public input was made.

Public Outreach Events

EVENT	DATE	SUMMARY	ATTENDEES
Public Outreach Hazard Mitigation Event at North Bend Library	July 24, 2019 from 6 to 8pm	A workshop held at the North Bend Public Library designed to explain the RHMP, conduct a SWOT exercise to assess perceived community resilience to hazards, group presentations resulting from the exercise, an informational moment on the NFIP and North Bend's participation, and conclusion. The event was advertised on the City website and announced multiple times on Facebook and Nextdoor.	Jesse Reynolds, Derrick Hiebert, Jason Sharron – event was open to the public
Google Survey	Survey open from mid-August to mid-September	A Google Survey was created for public input and links were posted on the City website, City Facebook, and City Nextdoor. Repostings were made on Facebook and Nextdoor to increase participation. The survey was designed to gauge public sentiment on North Bend's assets and their resilience to natural and human-made disasters. Disasters were summarized and presented to the Council Public Health and Safety Committee and used to refine mitigation strategies. Results are available here: https://forms.gle/wQS4YEE1KRW7bpkJ7	37 community participants
City Council Public Health and Safety Committee	October 8, 2019 from 4:30 to 6pm	A meeting to solicit Council input on a draft list of mitigation strategies, open to public input. This meeting was attended by North Bend's Community Emergency Response Team (CERT) lead. The results of this meeting were a cogent list of strategies to give focus.	Jesse Reynolds, Mark Rigos, Councilmember Loudenback, Councilmember Gothelf – event was open to the public

Jurisdiction Hazard Mitigation Program

Hazard mitigation strategies were developed through a two-step process. North Bend conducted an internal meeting with the planning team to identify a comprehensive range of mitigation strategies. These strategies were then prioritized using a process established at the county level and documented in the base plan.

The combination of being an NFIP community with a CRS 5 rating, and last February's major snowstorm in recent memory, the bulk of mitigation efforts lie within floodplain management and preparedness for severe and winter weather. Though despite limited staff and budget beyond what is necessary to address the abovementioned, North Bend plans to take creative approaches to ameliorating its hazard mitigation resilience to other types of events. These approaches include: public awareness, enhanced transportation network resilience, expanding relationships with adjacent landowners, and improving cybersecurity.

Plan Integration

North Bend's intention with this Annex to the King County Plan is beyond just filling requirements, but as a primer and base guide to help integrate hazard mitigation into everyday practice at the City. Hazards are hard to ignore in a city nestled on the edge of the Cascade Mountains, with two rivers within city limits, not to mention the plethora of potential human-caused disasters that could occur in any setting. For this reason and for the sake of community resilience North Bend has been and to a greater degree will be dedicated to integrating the contents of this Annex and the Regional Plan into our planning mechanisms.

In the past, hazard mitigation content from the Annex has been integrated into other Planning and Public Works mechanisms through various actions. The first sections of the *Hazard Mitigation Authorities, Responsibilities, and Capabilities* section below showcase how hazard mitigation is currently integrated into City plans and programs. Activities the City has accomplished as a result of past Annexes to the Regional Plan include the following:

- Bridges – The Annex has been used in conjunction with bridge inspection reports to identify critical structures and prioritize maintenance and repairs.
- Liquefaction Potential – This portion of the Annex has informed the City where additional geotechnical analysis is needed for newly constructed city-owned structures.
- Seismic Potential – This portion of the Annex has been used to inform the writers of both the water and sewer planning documents of areas of high seismic vulnerability in the City. Both plans accounted for and reflect this vulnerability, with the water plan recommending specific projects to mitigate for seismic activity.
- Emergency Contacts – Creation of the Annex forced the City to reach out to other entities to begin forming valuable relationships where none existed before. These could prove invaluable in times of emergency.
- Removal of Critical Facilities from the floodplain – The Annex was referenced to help gain momentum to relocate North Bend's City Hall outside of the Special Flood Hazard Area.

Plan Goals

- Continue to maintain NFIP CRS 5 rating
- Enhance resilience to severe/winter storms
- Strengthen EOC capabilities
- Increase earthquake resilience
- Continue increasing transportation network resilience
- Expand relationship with adjacent land managers by adding hazard mitigation coordination
- Enhance cybersecurity within the City

With this Annex update the City plans to take a more integrated approach to hazards mitigation by further integrating its content into other planning mechanisms, specifically North Bend's Comprehensive Plan (Comp Plan). The City is in the process of preparing for a multi-year Comp Plan update, and is currently conducting preliminary spatial analysis, calculations, and reporting to determine available land capacity for future growth. Once the full Comp Plan update ensues, during the years of 2021 through 2024, hazards mitigation will be a key topic integrated throughout all appropriate elements of the Plan. Like other jurisdictions within Washington State that plan under the Growth Management Act of 1990, the Comp Plan is the backbone of all other planning efforts and associated documents for the next eight years.

Integrating hazard mitigation into our Comp Plan as our mainstay planning mechanism has been evident through several actions as primer to the full update. North Bend planning staff have participated in the Washington State Department of Commerce's "Integrating Natural Hazards into Washington Comprehensive Plans 2019 Workshop Series." North Bend also volunteered to be a case study for a masters-level hazard mitigation course at the University of Washington, where final products from the course will be used as insights while kicking off the integration of earthquake and wildfire resilience content into our Comp Plan. Currently, North Bend's Planning Staff is assisting King County develop concepts on how to integrate hazard mitigation into the countywide planning policy update. All these instances will be reflected upon when conducting the Comp Plan update process.

North Bend's Comp Plan is the basis of all other planning mechanisms and is often referenced as other subsidiary citywide and subarea plans and initiatives are created and pursued. For this reason, it has been decided to integrate hazard mitigation into all appropriate elements of the plan, versus creating a standalone hazards mitigation element, to ensure cost-effective risk-reducing projects and actions become the norm. This will make it so when addressing such topics as land use, housing, transportation, capital facilities, utilities, parks & open space, and environmental assets, hazard mitigation will already be a part of the base document. This will help us inform municipal code updates such as zoning and critical areas, economic development initiatives, capital facilities planning, and transportation project prioritization, to name a few.

Plan Monitoring, Implementation, and Future Updates

King County leads the mitigation plan monitoring and update process and schedules the annual plan check-ins and bi-annual mitigation strategy updates. Updates on mitigation projects are solicited by the County for inclusion in the countywide annual report. As part of participating in the 2020 update to the Regional Hazard Mitigation Plan, North Bend agrees to convene its internal planning team at least annually to review their progress on hazard mitigation strategies and to update the plan based on new data or recent disasters.

As part of leading a countywide planning effort, North Bend will review and address any federal notices of funding opportunities sent by the King County Emergency Management for the Hazard Mitigation Assistance Grant Program. Proposals from North Bend will be assessed by King County according to the prioritization process identified in this plan. King County will, where possible, support North Bend submitting grant proposals. This will be a key strategy to implement the plan.

The next plan update is expected to be due in April 2025. All jurisdictions will submit letters of intent by 2023, at least two years prior to plan expiration. The county will lead the next regional planning effort, beginning at least 18 months before the expiration of the 2020 plan.

Continued Public Participation

King County, North Bend, and local volunteer groups already maintain substantial public outreach capabilities, focusing on personal preparedness and education. Information on progress in implementing the hazard mitigation plan will be integrated into public outreach efforts. This will provide North Bend residents, already engaged in personal preparedness efforts, with context and the opportunity to provide feedback on the county's progress and

priorities in large-scale mitigation. In the vertical integration of risk-reduction activities from personal to local to state and federal, it is important that the public understand how its activities support, and are supported by, larger-scale efforts.

The outreach and mitigation teams will also continue to work with media and other agency partners to publicize mitigation success stories and help explain how vulnerabilities are being fixed. When possible, public tours of mitigation projects will be organized to allow community members to see successful mitigation in action.

Hazard Mitigation Authorities, Responsibilities, and Capabilities

The following is a list of Plans that relate to hazard mitigation performed by North Bend.

Plans

PLAN TITLE	RESPONSIBLE AGENCY	POINT OF CONTACT	RELATIONSHIP TO HAZARD MITIGATION PLAN
Comprehensive Plan	City of North Bend	David Miller	Relates to “Earthquake,” “Flood,” and “Landslide” hazards.
Comprehensive Emergency Management Plan	City of North Bend	Mark Rigos	Relates to all hazards
Floodplain Management Plan	City of North Bend	Tom Mohr	Relates to “Flood,” and “Severe Weather” Hazards”
Stormwater Master Plan	City of North Bend	Tom Mohr	Relates to “Flood,” and “Severe Weather” Hazards”
Capital Improvement Plan	City of North Bend	Mark Rigos	Relates to all hazards.
Annual Budget	City of North Bend	Dawn Masko	Funds all hazard mitigation related planning efforts
Equipment Replacement Schedule	City of North Bend	Dawn Masko	Relates to all hazards.

The following is a list of programs, policies, and municipal codes regarding hazard mitigation in North Bend.

Programs, Policies, and Processes

PROGRAM/POLICY	RESPONSIBLE AGENCY	POINT OF CONTACT	RELATIONSHIP TO HAZARD MITIGATION PLAN
Emergency Services Department Code (Chapter 2.68)	City of North Bend	Mark Rigos	Relates to all hazards.
Health and Safety (Title 8)	City of North Bend	Colin Mercer	Relates to “Wildfire,” “Terrorism,” and “Hazardous Materials Release”

Public Peace, Morals, and Welfare (Title 9)	North Bend and Snoqualmie Police Department	Captain Nick Almquist	Relates to “Civil Unrest” and “Terrorism”
Environmental Protection (Title 14)	City of North Bend	David Miller	Relates to “Drought,” “Flood,” “Landslide,” and “Winter Storm”
Building Codes (Title 15)	City of North Bend	Colin Mercer	Relates to “Earthquake,” “Flood,” and “Winter Storm”
Zoning (Title 18)	City of North Bend	David Miller	Relates to “Flood”
Public Works Standards	City of North Bend	Tom Mohr	Relates to “Earthquake,” “Flood,” “Winter Storm,” and “Transportation Accident”
Social Media Program	City of North Bend	Jill Green	Relates to all hazards.
Stormwater Management Program	City of North Bend	Tom Mohr	Relates to “Flood” and “Severe Weather” hazards.
Landscape Review Program	City of North Bend	David Miller	Relates to “Landslide” hazard.
IT Security Policy	City of North Bend	Dawn Masko	Relates to “Cyber-Attack” hazard.
Purchasing Policy	City of North Bend	Dawn Masko	Relates to all hazards except “Cyber-Attack,” “Public Health Incident,” and “Terrorism.”

The following is a list of public agencies responsible for hazard mitigation in and around North Bend.

Entities Responsible for Hazard Mitigation

AGENCY/ORGANIZATION	POINT OF CONTACT	RESPONSIBILITY(S)
City of North Bend	Mark Rigos	Primary jurisdiction
WSDOT	Kayla Grayson	Transportation on regional roadways (I-90 & SR-202)
WA Dept. of Ecology	Ria Burns	Water quality and environmental health
WA Dept. Natural Resources	Laurie Benson	Agency managing surrounding wildlands
WA Dept. of Health	Brietta Carter	Drinking water quality
United States Forest Service	Martie Schramm	Agency managing surrounding wildlands
King County Public Health	Patty Hayes	Overall oversight and management of vectors as well as outbreaks and general public health-related info
King County Emergency Management	Jason Shirron	North Bend liaison for the agency managing regional EOC, in addition to surrounding wildlands and rivers
North Bend/Snoqualmie Police Department	Captain Nick Almquist	Police services within North Bend
Eastside Fire & Rescue	Chief Jeff Clark	Fire and EMS services within North Bend

Snoqualmie Valley Transit	Amy Biggs	Local public transportation agency
Snoqualmie School District	Ryan Stokes	Administration of all public schools in North Bend
Seattle Public Utilities	Kathy Curry	Partial supplier of water for North Bend. Also manages dam near the City.
Republic Services	Russell Joe	Solid waste
Puget Sound Energy	Sandy Leek	Electrical utility
Tanner Electric	Steve Walter	Electrical utility
Sallal Water Co-op	Ted Stonebridge	Water utility
Century Link	Bill Davis	Communications utility

National Flood Insurance Program

National Flood Insurance Program Compliance

What department is responsible for floodplain management in your community?	A joint effort between Public Works and Community and Economic Development Departments
Who is your community's floodplain administrator? (title/position)	David Miller, AICP Community and Economic Development Director
What is the date of adoption of your flood damage prevention ordinance?	October 16, 2018
When was the most recent Community Assistance Visit or Community Assistance Contact?	October 8, 2019
Does your community have any outstanding NFIP compliance violations that need to be addressed? If so, please state what they are?	None
Do your flood hazard maps adequately address the flood risk within your community? If so, please state why.	Yes, because they cover more than the areas inundated during the most severe floods on record.
Does your floodplain management staff need any assistance or training to support its floodplain management program? If so, what type of training/assistance is needed?	Yes. More training is always welcome, specifically: development in the floodplain, drainage issues, Elevation Certificate training, CRS training.
Does your community participate in the Community Rating System (CRS)? If so, what is your CRS Classification and are you seeing to improve your rating? If not, is your community interested in joining CRS?	North Bend is a CRS 5 Community; and has no plans currently to pursue a CRS 4 status.
How many Severe Repetitive Loss (SRL) and Repetitive Loss (RL) properties are located in your jurisdiction?	SRL: 0 RL: 4
Has your community ever conducted an elevation or buy out of a flood-prone property? If so, what fund source did you use? If not, are you interested in pursuing buyouts of flood prone properties?	No, but the King County River and Floodplain Management Division has purchased and demolished repetitive loss properties within North Bend City Limits.



Hazard Mitigation Strategies

North Bend's 2015 Hazard Mitigation Strategy update identified seven strategies. Of these strategies all are ongoing. Instead of copying these strategies into the 2020 section, it was decided to translate their content into revamped goals that better fit our City scenario five years later. All the substantive content from the 2015 goals remains, just in a different format. To broaden the range of the 2020 strategies, some of the on-going 2015 strategies were consolidated into single thematic strategies. For example, all NFIP related efforts (maintaining good standing, addressing hazard-prone structures, CRS status) now fall under the new floodplain management strategy. Another example is the old NB-5 regarding agency coordination and drills now falls under both the new NB-3 and NB-6. In addition to the revamped 2015 strategies, strategies addressing hazards not considered in the 2015 update are now present. These include cybersecurity, coordination with adjacent land managers regarding wildfire and landslide hazards and increasing city infrastructure resilience beyond just stormwater.

2015 Hazard Mitigation Strategy Status

STRATEGY	DESCRIPTION	PRIORITY	STATUS
NB-1	Continue to maintain compliance and good standing under the National Flood Insurance Program. This will be accomplished through the implementation of floodplain management programs that, at a minimum, will meet the minimum requirements of the NFIP, which include the following: <ul style="list-style-type: none"> •Enforcement of the adopted flood damage prevention ordinance, •Participating in floodplain identification and mapping updates, and •Providing public assistance/information on floodplain requirements and impacts 	High	On-going, via 2020 Strategy NB-1
NB-2	Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with properties with exposure to repetitive losses as a priority	Low	On-going, via 2020 Strategy NB-1
NB-3	Continue to maintain/enhance the City's classification under the Community Rating System	High	On-going, via 2020 Strategy NB-1
NB-4	Continue to maintain our equipment to be fully available in the event of severe storms and weather	Medium	On-going, via 2020 Strategy NB-2
NB-5	Continue coordinating amongst neighboring agencies during emergency events; coordination shall include planning, training and drills	High	On-going, via 2020 Strategies NB-2, NB-3, NB-5, & NB-6
NB-6	Implement capital improvement projects identified in stormwater management plan	High	On-going, via 2020 Strategy NB-1 & NB-5
NB-7	Continue to enforce building codes on new construction and remodels	High	On-going, via 2020 Strategy

2020 Hazard Mitigation Strategies

STRATEGY	LEAD AGENCY/POC	TIMELINE	PRIORITY
NB-1, Enhance Flood Resilience	City of North Bend (Addresses Flood, Severe/Winter Weather)	On-going	High
NB-2, Enhance Severe/Winter Storm Resilience	City of North Bend (Addresses Flood, Severe/Winter Weather)	On-going	High
NB-3, Strengthen EOC Capabilities	City of North Bend (Addresses all hazards relevant to North Bend)	2022	High
NB-4, Increase Earthquake Resilience	City of North Bend (Addresses Earthquake)	On-going	Medium
NB-5, Infrastructure Resilience	City of North Bend (Addresses all hazards relevant to North Bend)	On-going	Medium
NB-6, Coordination with Adjacent Land Managers	City of North Bend (Addresses Flood, Landslide, Wildfire)	On-going	Low
NB-7, Enhance Cybersecurity	City of North Bend (Addresses Cyber Attack, Terrorism)	2022	Medium

Hazard Mitigation Strategy

NB-1: Enhance Flood Resilience

Lead Points of Contact (Title) City Administrator	Partner Points of Contact (Title) City Public Works and Community and Economic Development, King County Flood Control District, WA Dept of Ecology, Puget Sound Partnership, Salmon Recovery Funding Board	Hazards Mitigated / Goals Addressed NB-1 addresses flooding, severe storms and winter weather hazards	Funding Sources and Estimated Costs Regular staff time for CRS SR202 Culvert Replacement Project Cost Estimate – \$500,000 Nintendo Levee Setback Cost Estimate - \$10,000,000 Two (2) Bendigo Blvd S. Fork Bridge Replacements - \$25,000,000 each
Strategy Vision/Objective Reduce risk to public and private property during flood events.			
Mitigation Strategy Continue to maintain the City’s good standing with the National Flood Insurance Program (NFIP) and Community Rating System (CRS) 5 rating, including all related activities. Specific activities include: <ul style="list-style-type: none">• Pursue capital projects to lessen flood hazard• Retrofit, purchase, or relocation of structures in hazard prone areas• Continue to enforce building codes for development in the floodplain• Implement capital improvement projects identified in Stormwater Management Plan			
2-Year Objectives Continue CRS 5 maintenance, creating efficiency in tasks where possible, secure funding for Nintendo Levee Setback & SR202 Culvert Replacement Project	5-Year Objectives CRS 5 maintenance, complete Nintendo Levee Setback & SR202 Culvert Replacement Project Cost	Long-Term Objectives CRS 5 maintenance, exploration of other capital improvements to lessen flood hazard relative to NFIP Map update results, replacement of both the Bendigo Boulevard South Fork Bridges	
Implementation Plan/Actions <ul style="list-style-type: none">• Continue to disallow development in the floodway and follow NFIP standards when reviewing floodplain development.• Solidify CRS 5 rating by further integrating best management practices and documentation into daily employee routines.• Pursue capital projects to lessen flood hazards, specifically the SR202 Culvert Replacement Project & Nintendo Levee Setback. Replacement of both the Bendigo Boulevard South Fork Bridges to allow for greater conveyance would come at much later dates.			
Performance Measures Increased resilience to changing hydrologic regimes due to climate change, measured by: minimal damage to older buildings from flood events, no damage to new commercial buildings from flood events, no inundation of new homes.			

NB-2: Enhance Severe/Winter Storm Resilience

Lead Points of Contact (Title) City Administrator	Partner Points of Contact (Title) City Public Works and Community and Economic Development	Hazards Mitigated / Goals Addressed NB-2 addresses flooding, severe storms and winter weather hazards	Funding Sources and Estimated Costs Existing capital in City General Fund
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Strategy Vision/Objective

Enhance resilience to severe and/or winter storms and severe storms that affect the City's residents, businesses, and built capital.

Mitigation Strategy

- Maintenance of City heavy equipment
- Maintain and increase contracts and interlocal agreements with neighboring agencies (WSDOT with snow plow resources, support from Eastside Fire and Rescue)
- Establish new or continue on-call agreements with local private companies for such activities as debris removal, plowing, and structural assessments.
- Increase sandbagging capacity
- Continue to support King County levee maintenance efforts

2-Year Objectives

Maintenance of City heavy equipment, establish and continue on-call agreements with local contractors, increase sandbagging capacity

5-Year Objectives

Maintenance of City heavy equipment, increase training & capabilities of City Staff for EOC operation (see strategy NB-3)

Long-Term Objectives

Maintenance of City heavy equipment, increase training & capabilities of City Staff for EOC operation (see strategy NB-3)

Implementation Plan/Actions

- Assess City heavy equipment inventory, maintain equipment where possible, procure new equipment where needed
- Update interlocal agreements with neighboring jurisdictions, agencies with emergency management support, and local contractors with heavy equipment and operators
- Establish an on-call agreement with a structural engineering firm for building, bridge, and road assessments when needed
- Continue to require undergrounding of utilities through private development and programmatic actions

Performance Measures

Increased performance of City during severe and winter storm events.

NB-3: Strengthen EOC Capabilities

Lead Points of Contact (Title) City Administrator	Partner Points of Contact (Title) City Public Works and Community and Economic Development	Hazards Mitigated / Goals Addressed NB-3 addresses all hazards relevant to North Bend	Funding Sources and Estimated Costs Existing capital in City General Fund, staff time, approximately \$50,000 for CEMP update
Strategy Vision/Objective Strengthen the capabilities of our Emergency Operations Center			
Mitigation Strategy Take a creative approach to strengthening EOC capabilities and efficiency despite lack of budget for a dedicated Emergency Manager. This will be accomplished through staff training, solidifying a decentralized and agile emergency management team, updating the CEMP, practicing EOC activation, and increasing coordination with community groups.			
2-Year Objectives Update existing CEMP, solidify relationships with and support the North Bend ARES TEAM & North Bend CERT, continue to encourage staff training in WebEOC	5-Year Objectives Solidify a decentralized and agile emergency management team		Long-Term Objectives Have a full-time employee dedicated Emergency Management, EOC Operations, Hazard Mitigation
Implementation Plan/Actions <ul style="list-style-type: none">Continue to train staff in proper EOC practices through FEMA protocolsUpdate CEMPPractice tabletop scenario exercises using trained EM leadersIncorporate community support such as NBAT and CERT, as well as neighboring agenciesContinue sending staff to WebEOC training			
Performance Measures Increased performance of City and coordinating with partners during EOC activation.			

NB-4: Increase Earthquake Resilience

Lead Points of Contact (Title) City Administrator	Partner Points of Contact (Title) City Public Works and Community and Economic Development	Hazards Mitigated / Goals Addressed NB-4 addresses earthquake hazards	Funding Sources and Estimated Costs Staff time, on-call contract cost relative to use
Strategy Vision/Objective Increase earthquake resilience for the City in preparation for a major event.			
Mitigation Strategy Take systematic steps to increase earthquake resilience through education, increasing contracts and relationships with consultants, capital improvements, and code enforcement			
2-Year Objectives Increased education in residents, on-call contracts with structural engineering firm and debris removal companies or ILAs, all new structures built to latest standards	5-Year Objectives Continued undergrounding of electrical utilities and improvement of other infrastructure/utilities in preparation for major earthquake event		Long-Term Objectives All electrical utilities are undergrounded; water and other infrastructure systems are as resilient as possible; an educated and prepared population
Implementation Plan/Actions <ul style="list-style-type: none">Earthquake and communication campaign for residentsOn-call contract with structural engineering firm to assess bridges after earthquake eventContinue enforcement of building codes and construction oversightAddress water system resilience shortcomings through capital improvementsContinue to require undergrounding of utilities through private development and programmatic actionsWork with small local businesses on continuity for multi-day hazard events			
Performance Measures Outside of a major earthquake event the City will become proficient in tabletop exercises. In the case of a major earthquake event citizens will be prepared for self-sufficiency, infrastructure will be assessed in reasonable time.			

NB-5: Increase City Infrastructure Resilience

Lead Points of Contact (Title) City Administrator	Partner Points of Contact (Title) City Public Works and Community and Economic Development	Hazards Mitigated / Goals Addressed NB-5 addresses all hazards relevant to North Bend	Funding Sources and Estimated Costs Utility Funds, Infrastructure and Mitigation Grants. For costs see Implementation Plan
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Strategy Vision/Objective

Continue to enhance City infrastructure encouraging resilience and redundancy with potential natural and human hazards in mind.

Mitigation Strategy

A suite of systematic actions addressing current infrastructure shortcomings, as well as increasing capacities. These include increasing wastewater treatment facilities and capacity, improving road circulation and resilience during disasters that involve power outages via the construction of roundabouts, increasing road connections where feasible, solidify a plan with a private water purveyor supplying water to the eastern portion of the City.

2-Year Objectives

Develop plan of action with Sallal Water Association. Complete Phase I of Wastewater Treatment Plant updates. Continue roundabout construction. Continue coordination with Tanner Electric and PSE to improve their electrical systems

5-Year Objectives

Complete Phase II of Wastewater Treatment Plant Updates. Continue roundabout construction. Add proposed road connections. Explore structural enhancements to bridges.

Long-Term Objectives

Efficiently operating infrastructure systems with adequate capacity for future anticipated growth.

Implementation Plan/Actions

- Negotiate a water supply deal with Sallal Water Association
- Continue coordination with Tanner Electric and PSE to increase electrical grid resilience.
- Complete Phase II of North Bend's Wastewater Treatment Plant Updates
- Construct all proposed roundabouts within the city to alleviate dependence of electricity for traffic flows and improve circulation
- Add road connections where feasible
- Investigate, fund, and manage structural enhancements to bridges

Performance Measures

During times of normalcy all infrastructure systems operate efficiently. During disasters infrastructure operates at an acceptable level commensurate to the specific event.

NB-6: Coordination with Adjacent Land Managers

Lead Points of Contact (Title) City Administrator	Partner Points of Contact (Title) City Public Works and Community and Economic Development	Hazards Mitigated / Goals Addressed NB-6 addresses flooding, landslide and wildfire hazards	Funding Sources and Estimated Costs
Strategy Vision/Objective Through coordination with adjacent land managers, take steps to increase North Bend’s resilience to wildfires (primary) and landslides (secondary).			
Mitigation Strategy Leverage our successes and expand current relationships with King County, Washington State Department of Natural Resources, and the United States Forest Service beyond outdoor recreation coordination to advocate for forest management practices that alleviate both wildfire and landslide hazards.			
2-Year Objectives Explore potential avenues of collaboration in wildfire prevention and healthy forest initiatives for lands surrounding North Bend	5-Year Objectives Lobby for potential resource allocations for prescribed burns, noxious (and flammable) weed removal, and other mitigation measures preventing wildfires and landslides	Long-Term Objectives Surrounding forests are healthy and viable with minimal catastrophic wildfire and landslide potential	
Implementation Plan/Actions <ul style="list-style-type: none">• Create communication channels between EF&R, KC, DNR, and USFS• Explore the use of the “Good neighbor partnership” to encourage DNR’s forest health initiatives on USFS lands as a tool to mitigate hazards in North Bend’s wildland-urban interface.• Explore noxious weed issues in relation to wildfire hazards on undeveloped lands within North Bend, specifically scotch broom in the eastern portion of the city.			
Performance Measures Successfully promote measures to increase wildland resiliency to natural disasters.			

NB-7: Enhance City Cybersecurity

Lead Points of Contact (Title) City Administrator	Partner Points of Contact (Title) City Public Works and Community and Economic Development	Hazards Mitigated / Goals Addressed NB-7 addresses cyber-attack and terrorism hazards	Funding Sources and Estimated Costs \$150,000 for SCADA updates. No other estimated costs currently.
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Strategy Vision/Objective
Build off recent IT-related actions and continue to enhance cybersecurity within the City.

Mitigation Strategy

- Implement cybersecurity educational requirements for employees
- Update legacy systems to the Cloud when the technology is available (GIS, Accounting, Permitting)
- Move SCADA radio systems to secured ethernet-based system

2-Year Objectives

Increase cybersecurity per education of employees

5-Year Objectives

Move all SCADA systems from radio to secured ethernet

Long-Term Objectives

Migrate all City systems on protected and backed up in the cloud.

Implementation Plan/Actions

Work with North Bend's IT consultants to find an online educational seminar on cybersecurity for all employees to review.

When budget allows and timing is appropriate, allocate funding to update SCADA systems to be as secure as possible.

Work with vendors of legacy software systems to integrate such systems to the cloud when possible.

Performance Measures

City of North Bend is educated in proper cybersecurity protocols and all information systems are as resilient to attacks as possible.