



NATURAL ENVIRONMENT ELEMENT

Purpose

This Natural Environment Element, added to the Comprehensive Plan as a part of the 2024 periodic update, contains the goals and policies necessary to support the City's responsibility and desire for preserving, protecting, and enhancing the natural environment through implementing regulations, guidelines, and standards. It also addresses strategies for managing risks posed by natural hazards such as floods, wildfire, and lahars. It is maintained to direct land use and City decisions and policies over the next 20 years.

The opening discussion of the Natural Environment element contains the data and background information that informs the goals and policies that follow.

Discussion

The Carbon and Puyallup Rivers

Orting is bordered on the northeast by the Carbon River and on its southwest boundary by the Puyallup River. The Carbon River flows from the Carbon Glacier on the north side of Mt. Rainier, and joins with the Puyallup river just northwest of Orting. According to the Statewide Washington Integrated Fish Distribution (SWIFD) dataset managed by the Washington Department of Fish and Wildlife, the Carbon River supports runs of cutthroat, steelhead, and bull trout, and chinook, chum, coho, and pink salmon. Many of these fish are also supported by nearby streams that feed the Carbon River.

The Puyallup River has two source points on the west side of Mt. Rainier; the Puyallup Glacier and the Tahoma Glacier. The SWIFD dataset indicates that the Puyallup River supports chinook, chum, coho, and pink salmon, and steelhead and bull trout. Orting falls within the Puyallup watershed.

Both the Carbon and Puyallup rivers flow northwest into the Puget Sound (Commencement Bay) and are regionally significant in terms of fish and wildlife habitat, and human use and recreation.

Orting's geographic situation requires unique land use considerations throughout the city and evaluation of flood risks in a significant portion of the city. This element includes an exploration of flood risk data and flood hazard maps that inform many land use decisions. In addition to assessing



risks to property from flooding associated with the rivers, it is important to consider the effects of land use decisions on the rivers and areas adjacent to the rivers.

Both rivers are classified as Shorelines of the State, which means they are protected under the Shoreline Management Act (1971). The primary goal of the Act is “to prevent the inherent harm in an uncoordinated and piecemeal development of the state’s shorelines.” The City’s Shoreline Master Program (SMP) (2019) implements the state’s Shoreline Management Act (SMA). The SMP includes:

- An inventory of the natural characteristics and land use patterns along shorelines covered by the SMA;
- Shoreline development regulations;
- A permit system to further the goals and policies of both the SMA and the SMP; and
- A Restoration Plan that includes goals, policies, and actions for restoration of impaired shoreline ecological functions.

According to the SMP there are 4.5 miles of river shoreline within city limits. The SMP provides environmental protection and consistency of development along the rivers and their associated 100-year floodways. The SMP designates a shoreline jurisdiction and establishes regulations and requirements for development in that shoreline environment. All of the shorelines within the city have been designated Urban Conservancy. No development except for limited public facilities is allowed within the first 150 feet of the shoreline jurisdiction along the rivers.

The City conducted a comprehensive update of the SMP in 2007 which included the preparation of a detailed inventory and characterization of the shoreline conditions along the Carbon and Puyallup Rivers to document “baseline conditions” for future permitting purposes. In addition, “opportunity sites” for potential shoreline restoration and increased public access were identified. A minor update of the SMP was adopted in 2013, and again in 2019.

| The current SMP, or as amended, is adopted as a part of this Comprehensive Plan.

Commented [NS1]: June 25, 2024 modification

WRIA 10 Watershed

Orting falls within Water Resource Inventory Area (WRIA) 10. The Washington Department of Ecology (Ecology) states that “WRIAs are areas defined by higher elevation that capture precipitation and funnel rain and snowmelt through smaller subbasins into streams, tributaries, and rivers.” WRIA 10 is referred to as the Puyallup-White watershed, and includes the Puyallup, Carbon, and White Rivers. The watershed extends from Mt. Rainier National Park to the Port of Tacoma. Ecology regulates and manages water availability for each WRIA; WRIA 10 is regulated by the Watershed Restoration and Enhancement Plan, adopted by Ecology in 2021.

Water Quality Protection Measures

The City has adopted Best Management Practices (BMPs) to protect water quality. BMPs are a structure or operation intended to prevent pollutants from coming into contact with stormwater through physical separation of areas or careful management of activities that are sources of

pollutants. Operational source control BMPs are non-structural practices that prevent or reduce pollutants from entering stormwater.

The City requires mitigation of stormwater-related impacts through adherence with the City's adopted stormwater design manual (~~2012~~ 2019 Ecology Stormwater Management Manual for Western Washington, ~~as amended in 2014~~, together with the 2019 City of Orting Stormwater Management Manual Amendment); the 2012 Low Impact Development ~~Technical Guidance~~ Manual ~~for the Puget Sound~~ Volume 5 of the 2019 Ecology Stormwater Management Manual for Western Washington; and the 2013 Rain Garden Handbook for Western Washington as measures to help avoid increases in discharge to water.

These measures are further described in the Capital Facilities Element of this plan.

Critical Areas

The protection of critical areas is a key component of the City's land use plan. Critical areas are those which are environmentally sensitive and must be protected according to state statute. The plans and regulations designed to protect critical areas are not intended to deny a reasonable use of private and public property, but to assure that development on or near critical areas is accomplished in a manner that is sensitive to the environmental resources of the community.

As mandated by the GMA, the City's Critical Areas Ordinance (CAO), codified at Orting Municipal Code Title 11, promotes the maintenance, enhancement, and preservation of critical areas and environmentally sensitive natural systems by avoiding or minimizing adverse impacts from construction and development. Under the state GMA, local governments are required to use the Best Available Science (BAS) when reviewing and revising policies and regulations for critical areas per WAC 365-196-485.

Wetlands

Wetlands are defined in WAC 197-11-756 "[...]as areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar area."

Most, but not all, mapped potential wetland areas in Orting are associated with the Carbon and Puyallup rivers, and many of the larger wetland areas fall within existing reserves, parks, or open green spaces. The Pierce County Wetland Inventory and the National Wetland Inventory provide general wetland data and locations as shown on **Figure NE-1** however, studies conducted by the City or by individual property owners yield more specific and accurate data. Wetlands are regulated by Orting's Critical Areas Ordinance, according to the Washington State Department of Ecology requirements and are classified using the Washington State Wetland Rating System for Western Washington.

Commented [NS2]: June 25, 2024 modification:
Updated per ORD 2022-1096

Geologic Hazard Areas

Geologically hazardous areas “include areas susceptible to erosion, sliding, earthquake, or other geological events. They pose a threat to the health and safety of citizens when incompatible commercial, residential, or industrial development is sited in areas of significant hazard. Some geological hazards can be reduced or mitigated by engineering, design, or modified construction or mining practices so that risks to public health and safety are minimized. When technology cannot reduce risks to acceptable levels, building in geologically hazardous areas must be avoided.” (WAC 365-190-120)

The topography of the land within Orting’s city limits is generally very flat. However, along the banks of the Carbon and Puyallup Rivers near the borders of the city, there are some steep areas that pose erosion and landslide risks. Regionally, western Washington is at risk for earthquake events of varying severity. According to the Washington Department of Natural Resources, Orting falls within an area of Moderate to High liquefaction susceptibility, meaning that during an earthquake, saturated sand and silt have a higher risk of taking on the characteristics of a liquid. Liquefaction poses a risk of increased damage during an earthquake.

Critical Aquifer Recharge Areas (CARAs)

Groundwater is water that has collected beneath the surface in underground basins called aquifers and is typically accessed as a water source by drilling wells. Groundwater is important both for human use, and for maintaining stream flows in dry seasons. Contamination of soil and surface water can damage or pollute groundwater reserves. In order to maintain water quality and prevent damage to ecosystems, some areas are designated as protected aquifer recharge areas, or Critical Aquifer Recharge Areas (CARAs).

As depicted in **Figure NE-2**, much of Orting lies within CARAs which are defined by the Growth Management act as, “areas with a critical recharging effect on aquifers used for potable water.” These areas are protected and maintained to avoid contamination of groundwater sources, such as wells¹. They are classified by the Orting CAO as either High, Medium, or Low Significance, depending on the physical characteristics of the soil in the area. Based on local conditions, the City classifies wellhead protection areas as CARAs. Wellhead protection areas are defined by the boundaries of the 10-year groundwater time of travel, or boundaries established using alternate criteria approved by the Department of Health in those settings where groundwater time of travel is not a reasonable delineation criterion, in accordance with WAC 246-290-135. Protection of these sites is of vital importance as the City uses well water to provide potable drinking water to citizens. As required by federal law, water used for municipal drinking water is monitored and tested to ensure it meets the required standards.

While development is allowed in these areas, certain uses with a high risk for contamination require a hydrogeologic assessment to ensure that the use will not pose a threat to the aquifer system.

¹ The Washington State Department of Health (DOH) Source Water Assessment Program (SWAP) mapping program should also be consulted for permitting land uses that may impact CARAs, available at <https://fortress.wa.gov/doh/swap/index.html>

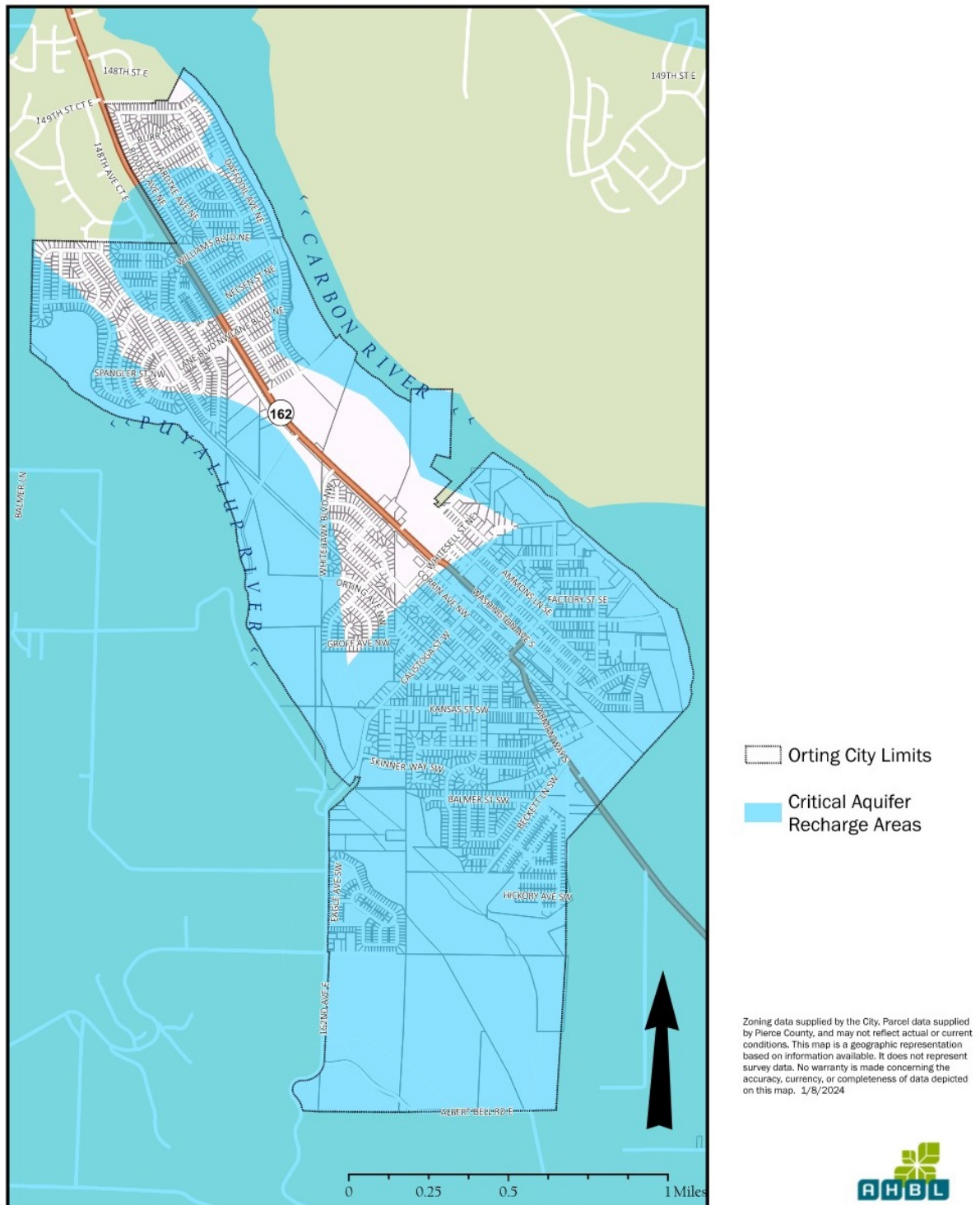


Figure NE-2: Critical Aquifer Recharge Areas

Fish and Wildlife Habitat Conservation Areas

Critical Fish and Wildlife Habitat Conservation areas are those areas identified as being of critical importance in the maintenance and preservation of fish, wildlife, and natural vegetation.

The Washington Department of Fish and Wildlife (WDFW) maintains maps and data regarding Priority Habitats and Species and Habitats (PHS). The PHS system indicates locations for threatened, endangered, or otherwise protected species and their habitats. As discussed elsewhere in this Plan, the Carbon and Puyallup rivers and their banks provide habitat to several species of birds and fish, including salmon. The freshwater wetland areas near the riverbanks also provide habitat to the Little Brown Bat.

Potential threatened or endangered species include:

- Oregon spotted frog
- Streaked horned lark
- Marbled murrelet
- Fisher
- Marsh sandwort
- Golden paintbrush
- Bull trout
- Chinook salmon
- Steelhead
- North American wolverine

Commented [NS3]: June 25, 2024 modification

The City is located within the Pacific Flyway, a migratory bird route that extends from Alaska to South America.

Flood Hazard Areas

The Carbon and Puyallup Rivers are susceptible to annual flooding events that pose threats to life and safety and may cause significant property damage. Snowmelt from the Cascade Mountain range also contributes substantially to flooding. Flood-related damage occurs nearly every year. The flooding events of November 2006 and February 2009 caused significant flooding when prolonged precipitation accompanied by snowmelt, caused by a warm-weather trend known as a "Pineapple Express," caused many rivers and creeks throughout the Puyallup/Carbon watershed to rise to 100-year flood levels, causing flooding in both rural and urban areas. There was also a major flooding event in 2014, but the city remained protected by the levee system.

Flood hazard areas exist along the Puyallup and Carbon rivers and **Figure NE-3** shows the approximate location and extents of these areas as documented by the Federal Emergency Management Administration (FEMA) Flood Insurance Rate Maps (FIRMs) released in March 2017.

The zones depicted on Figure NE-3 are defined as follows:

- Floodway: The floodway is the channel of a stream plus any adjacent areas that must be kept free of encroachment.
- Special flood hazard areas (SFHA) are areas that will be inundated by the flood event having a 1% chance of being equaled or exceeded in any given year; this is also referred to as the base flood or the 100-year flood.

Other mapped Flood Areas include the 500-year flood area and areas protected by levees from the 100-year flood.

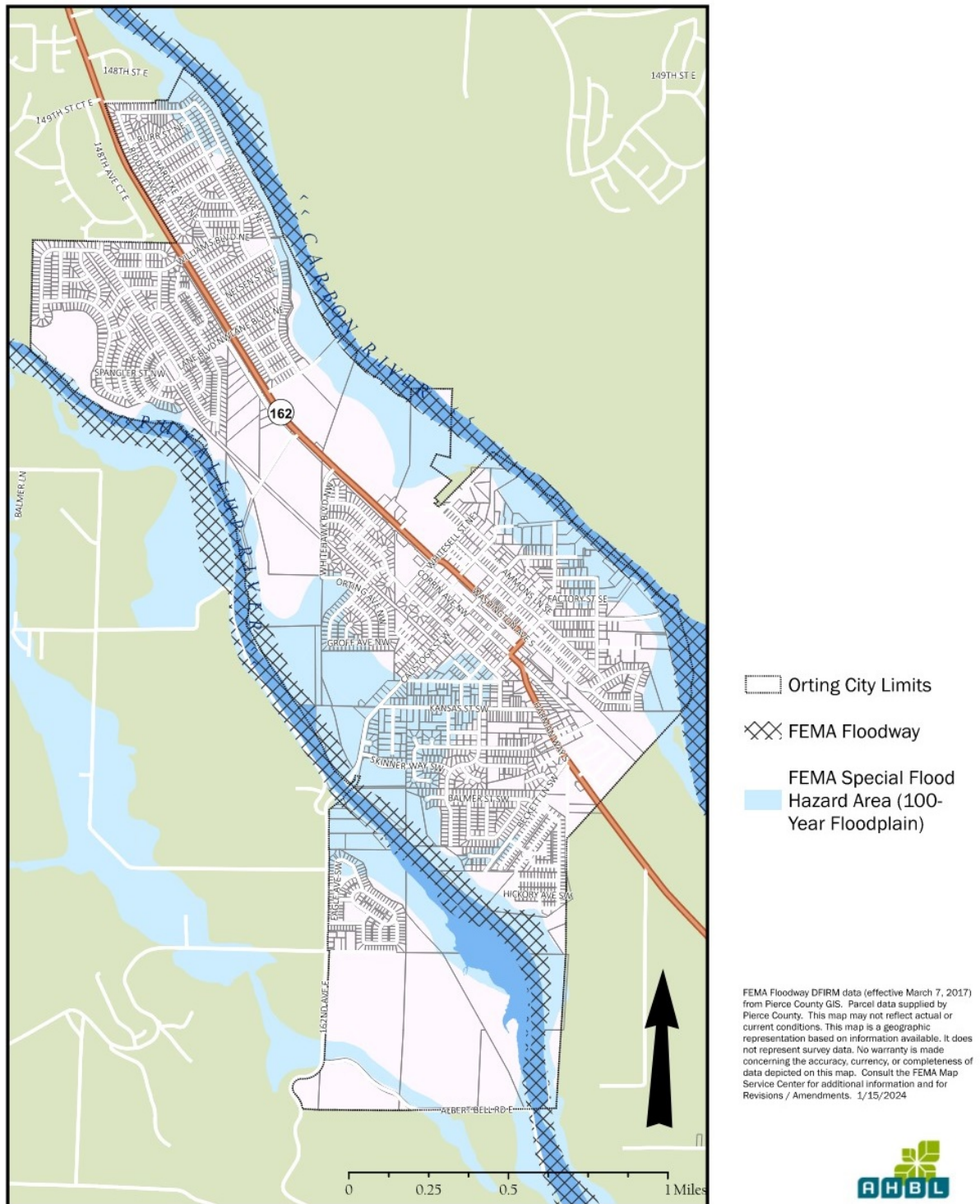


Figure NE-3: Flood Hazards

Flooding occurs when climate, geology, and hydrology combine to create conditions where river and stream waters flow outside of their usual course and “overspill” beyond their banks. In Orting, the combination of these factors creates chronic seasonal flooding conditions. Mt. Rainier’s snowmelt provides a continuous water source throughout the year and can contribute significantly to the development of flooding.

Flooding is most common from October through April, when storms from the Pacific Ocean, 100 miles away, bring intense rainfall to the area. Larger floods result from heavy rains that continue over the course of several days, augmented by snowmelt at a time when the soil is near saturation from previous rains. Frozen topsoil also contributes to the frequency of floods.

About 10 years ago the Calistoga Reach Setback Levee and Side-Channel Construction project was completed. The project reduced flood risk and helped restore salmon habitat on 3.5 miles of the Puyallup River.

By reconnecting side channels, moving 1.5 miles of the levee back to give the river more room, and installing log jams that effectively slow the river down, the Calistoga Reach Floodplains by Design project has proven to be a success for the community.

The City of Orting participates in the National Flood Insurance Program (NFIP) that makes available federally backed flood insurance for all structures, whether or not they are located within the floodplain. Title 14 of the Orting Municipal Code “Flood Control” governs development and uses in frequently flooded areas. The City also provides useful information about flooding on the City’s website.

Topography and Soils

Topography within the City is generally flat across the valley floor, with steeper slopes surrounding the developed areas. The valley floor slopes gently from south (300 feet NAVD 88) to north (140 feet NAVD 88). Most of the soil in the valley is comprised of alluvial deposits from the White, Carbon, and Puyallup Rivers. A large portion of the soils can be attributed to mudflows from eruptions of Mt. Rainier. Infiltration capabilities vary, based on the amount of fine silts and clays in the top layers. Overall, the soils in the valley infiltrate poorly.

Additionally, the area within Orting’s city limits consists mostly of the Puyallup-Sultan soil association. According to the National Cooperative Soil Survey, the Puyallup soil association is commonly used for growing crops such as hay and row crops. Native vegetation such as the Douglas fir, western red cedar, black- and salmonberries, and ferns grow well in this soil.

Climate and Climate Change

The Puget Sound region has already experienced measurable effects of a changing climate, and this trend will likely continue. According to Pierce County, average temperatures in the Pacific Northwest have increased by 1.3 degrees Fahrenheit since 1895. The County predicts that extreme heat events will become more likely in the coming years. Western Washington has also seen an increase

in wildfires and according to the EPA, Washington has experienced an increase of 2.83 acres of burned land per square mile from 2002-2020, compared to 1984-2001 (EPA, 2022).

Pierce county also predicts impacts to rivers, including the Carbon and Puyallup rivers, due to glacial changes on Mt. Rainier. Glaciers and snowpack on the mountain have been receding due to temperature changes, exposing more soil, and decreasing summer stream flows. Increased sedimentation which occurs as a result of these processes poses a greater flood risk, as it raises the elevation of stream and river channels. Other impacts associated with climate change, which should be taken into account when planning, are rising sea levels, increased severe weather events, and more extreme precipitation. Increased water temperature and acidity and decreased air quality will likely affect wildlife in the region as well.

In 2023 the state legislature passed HB 1181 and added **Climate Change and Resiliency** as the 14th Growth Management Act goal. Under the new law, the city is required to have a “Climate” Element in the future and must:

- Add a greenhouse gas emissions reduction sub-element by June 30, 2029. The sub-element and implementing development regulations must identify actions Orting will take that will result in reductions in overall greenhouse gas (GHG) emissions generated by the transportation and land use systems within the jurisdiction but without increasing emissions elsewhere; result in reductions in vehicle miles traveled within the jurisdictions but without increasing emissions elsewhere; and prioritize reductions that would benefit overburdened communities in order to maximize the co-benefits of reduced air pollution and environmental justice.
- Add a resiliency sub-element by June 30, 2029. This requirement can potentially be satisfied by adopting by reference a FEMA natural hazard mitigation plan that is in substantial conformance with this sub-element.
- Update the Transportation Element by June 30, 2029, to include certain climate change related topics, including a prohibition on denying a development permit because a project may cause the transportation level of service to fall below the minimum standard where multimodal mitigation is possible.
- By June 30, 2034, update the land use, capital facilities, park and recreation, and utilities elements to include certain climate change related topics.

The State’s Health Environment for All (or HEAL) Act defines Environmental Justice as “The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, rules, and policies. Environmental justice includes addressing disproportionate environmental and health impacts in all laws, rules, and policies by prioritizing vulnerable populations and overburdened communities, striving for the equitable distribution of resources and benefits, and

- Include consideration of environmental justice² in order to avoid worsening environmental health disparities.

The city will fortunately be eligible for grant funding from the Department of Commerce to fund these future changes.

Natural Resources and Energy Conservation

Trees enhance the natural environment and help provide many benefits. Trees provide oxygen, purify the air, slow and absorb stormwater runoff, mask noise and screen from visual trespass, stabilize slopes, prevent erosion, and provide shade. They can greatly enhance a community's appearance, and provide natural beauty. Trees also provide habitat for birds and animals.

Street trees can provide added benefits by visually enhancing a roadway and can help to provide a unifying look. Street trees can shade public areas and parking lots, and help control temperatures.

The retention of native vegetation and significant trees is a required stormwater management technique within the City of Orting which aids in the conservation of natural resources. The standards for the preservation of significant trees and vegetation are contained in the Orting Municipal Code.

In addition to the energy saving benefits from trees, the City of Orting has adopted a suite of building codes adopted by the Washington State Building Code Council WAC Title 15 to aid in the conservation of energy and resources.

Hazard Mitigation Planning

The Disaster Mitigation Act of 2000 established a new federal priority for pre-disaster planning and mitigation as opposed to post-disaster assistance. FEMA leads this program through the provision of planning guidelines and grants. The state of Washington Department of Emergency Services manages the program.

Orting adopted a Comprehensive Flood Hazard Mitigation Plan under the program in 2009 and has completed the Calistoga Setback Levee along the Puyallup River between the Calistoga Bridge and Village Green Wetland Park. This project is further described in the Capital Facilities Element.

The City is also included in the Pierce County Region 5 Hazard Mitigation Plan, a multi-jurisdictional plan encompassing 77 jurisdictions including municipalities, fire districts, school districts, universities, and other special-purpose districts. The Plan is a natural hazard mitigation plan in which all jurisdictions worked together to develop shared goals and a foundation for mitigation measures.

² The definition of "Environmental Justice" is from the HEAL act which was passed into law in 2021 and created requirements for state agencies. While it does not impose specific requirements on the City of Orting, the City could utilize the framework and tools that resulted from the Act to assess and address potential Environmental Justice issues within the City. Additionally, these tools can help to ensure appropriate consideration is given to environmental health disparities that exist among the local population.

The Plan is maintained by the Pierce County Department of Emergency Management, and is available online at <https://www.piercecountywa.gov/943/Emergency-Planning>.

The City has plans and programs in place to address future impacts of potential natural hazards. The City is a participant in the Pierce County Forum's development of the Region 5 All Hazard Mitigation Plan process. That plan contains an extensive city-specific mitigation strategy for avoiding and/or addressing impacts of natural hazards including floods, lahars, storms, and other events. The City has implemented some of these strategies through the completion of setback levees, and the on-going planning for the Carbon River Evacuation Bridge (Bridge for Kids). In addition, the City manages public education and involvement activities related to the strategies. The City is also a part of the East Pierce Interlocal Coalition for Emergency Management which is a group of seven jurisdictions that coordinate emergency management planning, including evacuation training, seeking out grant opportunities, and collaborating on planning documents.

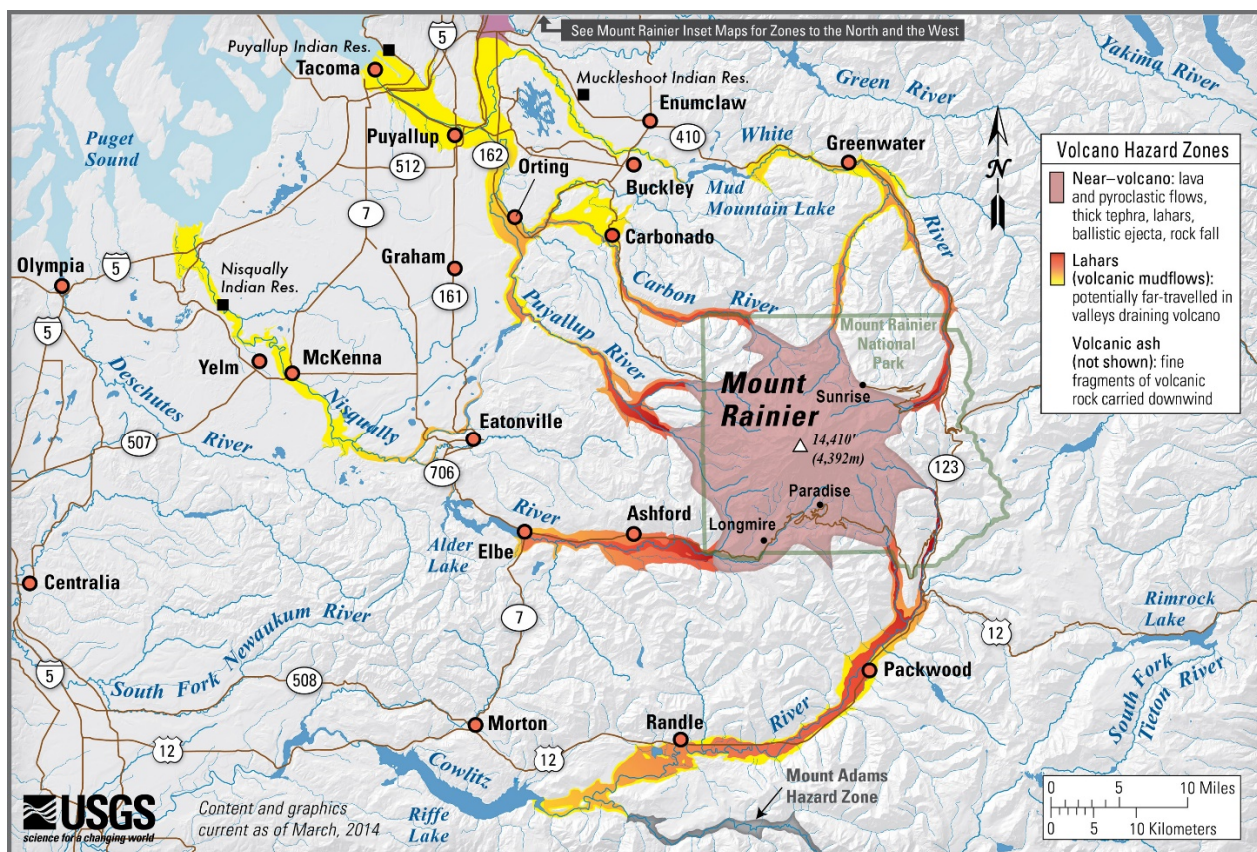


Figure NE-4: Hazard zones for lahars, lava flows and pyroclastic flows from Mount Rainier

Source: USGS Communications and Publishing, 2016

[Accessed at <https://www.usgs.gov/media/images/mt-rainier-lahar-hazard-map>]

Mt. Rainier Lahar Preparedness

The greatest hazard from Mt. Rainier is a potential lahar event, also known as volcanic mudflows or debris flows (illustrated in **Figure NE-4**). The city is located on top of the Electron Mudflow pathway, one of three major lahar events from the last 10,000 years and is at risk of experiencing future lahar events. The United States Geological Survey (USGS) and Pierce County Emergency Management have taken steps to monitor seismic activity on Mt. Rainier to provide early warning of volcanic activity. A lahar event could result from:

- A Volcanic Eruption causing rapid melting of snow and glaciers (Pyroclastic flows).
- Mobilization of soil sediments as a result of heavy rains.
- Sulfuric breakdown of Mt. Rainier western flanks resulting in a collapse of the western flank.
- Earthquake caused landslides which can occur without forewarning of rising magma.
- Release of debris dammed lakes.

Figure NE-5 shows that Orting is situated in an area mapped as “Case 2 Lahar” severity rating, as delineated by Cascade Volcano Observatory scientists³. These are areas that could be affected by relatively large non-cohesive lahars, which most commonly are caused by the melting of snow and glacier ice by hot rock fragments during an eruption, but which can also have a non-eruptive origin. The average time interval between Case 2 lahars from Mount Rainer is near the lower end of the 100 to 500-year range, making these flows analogous to the so-called “100-year flood” commonly considered in engineering practice.

The City has instituted the following procedures:

- 1 - Lahar sirens are tested monthly.
- 2 - Evacuation signage leading out of the city.
- 3 - Annual School District evacuation drill.
- 4 - Website and packages to citizens identifying the current pedestrian evacuation to the Peirce County Rock Quarry.

³ Additional information on the dataset is available at https://matterhorn.co.pierce.wa.us/GISmetadata/pdbplan_volcanic_hazards.html

The city is located at the confluence of the Puyallup and Carbon rivers, both of which originate on Mt. Rainier. Any lahar that originates on the north face of Mt. Rainier will flow down the Puyallup River and/or Carbon River valleys. USGS estimates that the city will have approximately 42 minutes to evacuate once a lahar event is confirmed.



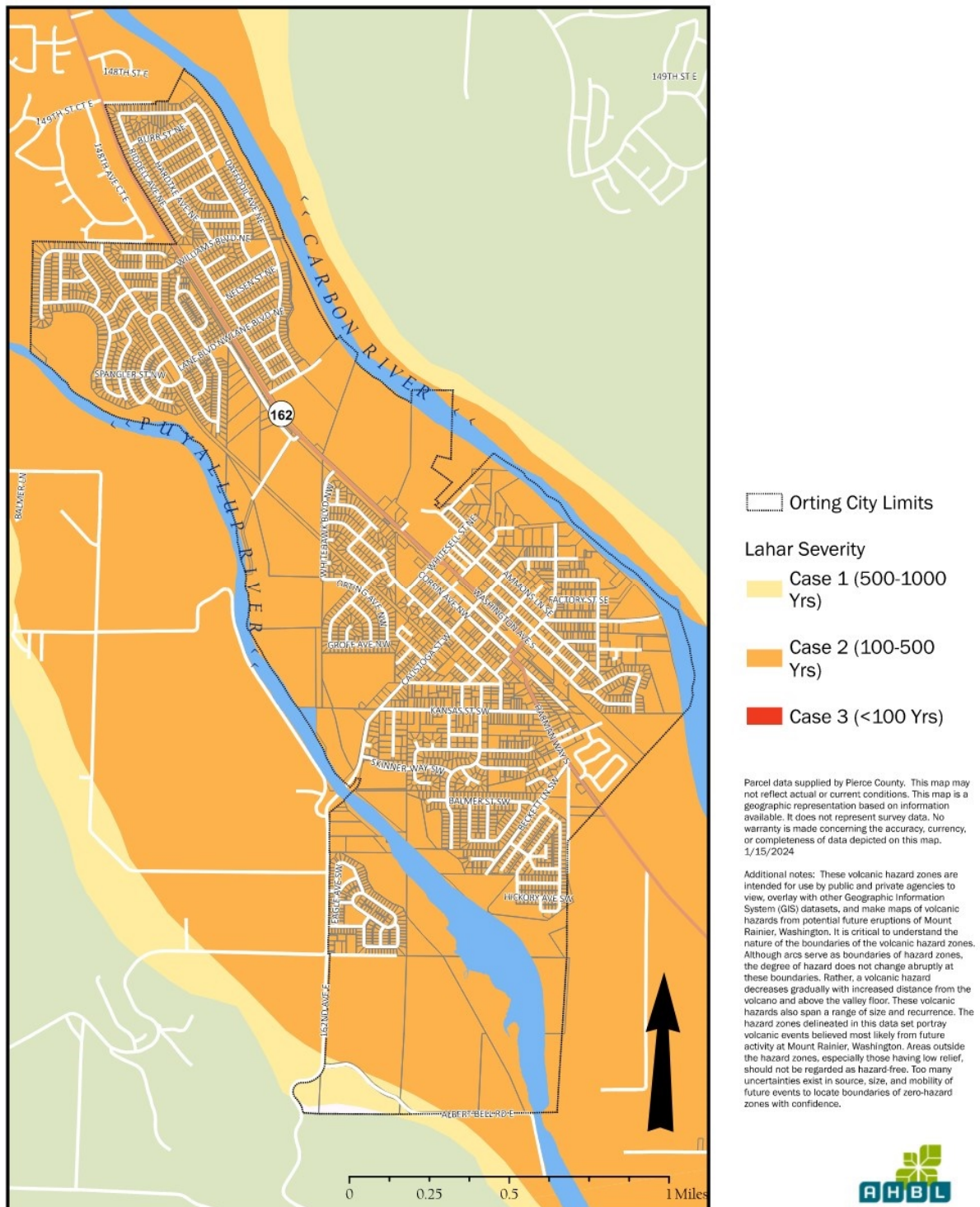


Figure NE-5: Lahar Severity Map

Needed Evacuation Route Improvements

Sensors on Mt. Rainier are intended to warn residents in the valley of a Lahar in progress. The current pedestrian evacuation route leads to Pierce County Rock Quarry. Based on the 2024 Orting School District evacuation drills, it takes an average of 47 minutes for a majority of the students to evacuate to this location. Remaining children and seniors are vulnerable with inadequate time to evacuate by foot. The current evacuation plan relies heavily on motor vehicle evacuation. The risks of over-reliance on a Motor Vehicle Plan include roads becoming congested and an increased risk for vehicular accidents. Pedestrian evacuation is the most reliable way to evacuate people on the valley floor within a short time period.

Orting Emergency Evacuation Bridge System

Founded in 2002, the Bridge for Kids non-profit organization was awarded grant money from the State and Federal Government of nearly \$2.4 million to do a feasibility study and eventually design a more effective evacuation route off the valley floor. Pierce County Public Works administered the design process and funds. The engineering firm, BergerABAM was contracted to design the evacuation route and structures needed to meet ADA compliance and the 40-minute criteria.

The proposed three-component Emergency Evacuation Bridge System as presented in October 2014, was adopted by the City Council. The project is now identified as the “Orting Emergency Evacuation Bridge System.” It consists of a bridge over the state highway at Rocky Road NE, an evacuation designation of Rocky Road NE, and an ADA compliant Bridge over the Carbon River. Through a stewardship agreement with the Federal Highway Administration (FHWA), the Washington State Department of Transportation (WSDOT) retained the approval authority for the final Bridge for Kids Alternative Analysis Report, which the Bridge for Kids Committee played a central role in developing. WSDOT determined that Pierce County had delivered a product meeting the intent of the federal grant funds.

The design for the project was funded by the Washington State Department of Transportation and Washington State Department of Commerce. Conceptual drawings are shown in **Figure NE-6**. In the event of a lahar from Mt. Rainier or a major flood event, students and residents will be able to utilize the bridge to safely cross SR-162. By removing the existing at-grade highway crossing with the bridge over the highway a safer pedestrian access to schools, commercial centers and to the Foothills Trail will be available.

The Orting Emergency Evacuation Bridge project will construct a new elevated pedestrian bridge across SR 162. The bridge provides a single 112-foot main span across SR 162. Construction of the project is estimated to cost between \$7.0 million and \$7.5 million and is anticipated to be completed in 2025.



Figure NE-6: Bridge Design Conceptual Drawings

Wildfires

Orting is situated in a narrow valley proximate to beautifully forested areas. Additionally, new development expands into areas that were previously undisturbed, resulting in an expansion of an area that is commonly considered the “Wildland – Urban Interface” as depicted⁴ in **Figure NE-7**.

The Wildland-Urban Interface (WUI) can be thought of as a zone where natural areas and development meet. This is where the possible threat of wildfires on structures is increased due to the proximity of fire-prone vegetation near the structures. Climate conditions, weather patterns,

⁴ The Washington State Department of Natural Resources (DNR) provides these geographic data as is; DNR makes no guarantee or warranty concerning the accuracy of information contained in the geographic data. DNR further makes no warranties, either expressed or implied as to any other matter whatsoever, including, without limitation, the condition of the product, or its fitness for any particular purpose. The burden for determining fitness for use lies entirely with the user. Although these data have been processed successfully on computers of DNR, no warranty, expressed or implied, is made by DNR regarding the use of these data on any other system, nor does the fact of distribution constitute or imply any such warranty. In no event shall the DNR have any liability whatsoever for payment of any consequential, incidental, indirect, special, or tort damages of any kind, including, but not limited to, any loss of profits arising out of use of or reliance on the geographic data or arising out of the delivery, installation, operation, or support by DNR

topography, hydrology, and development conditions all contribute to the set of conditions that can increase potential threat of catastrophic events.

Through implementation of land use and related land development policies and regulations, the City can support mitigation, particularly where firefighting (or suppression) systems may be limited.

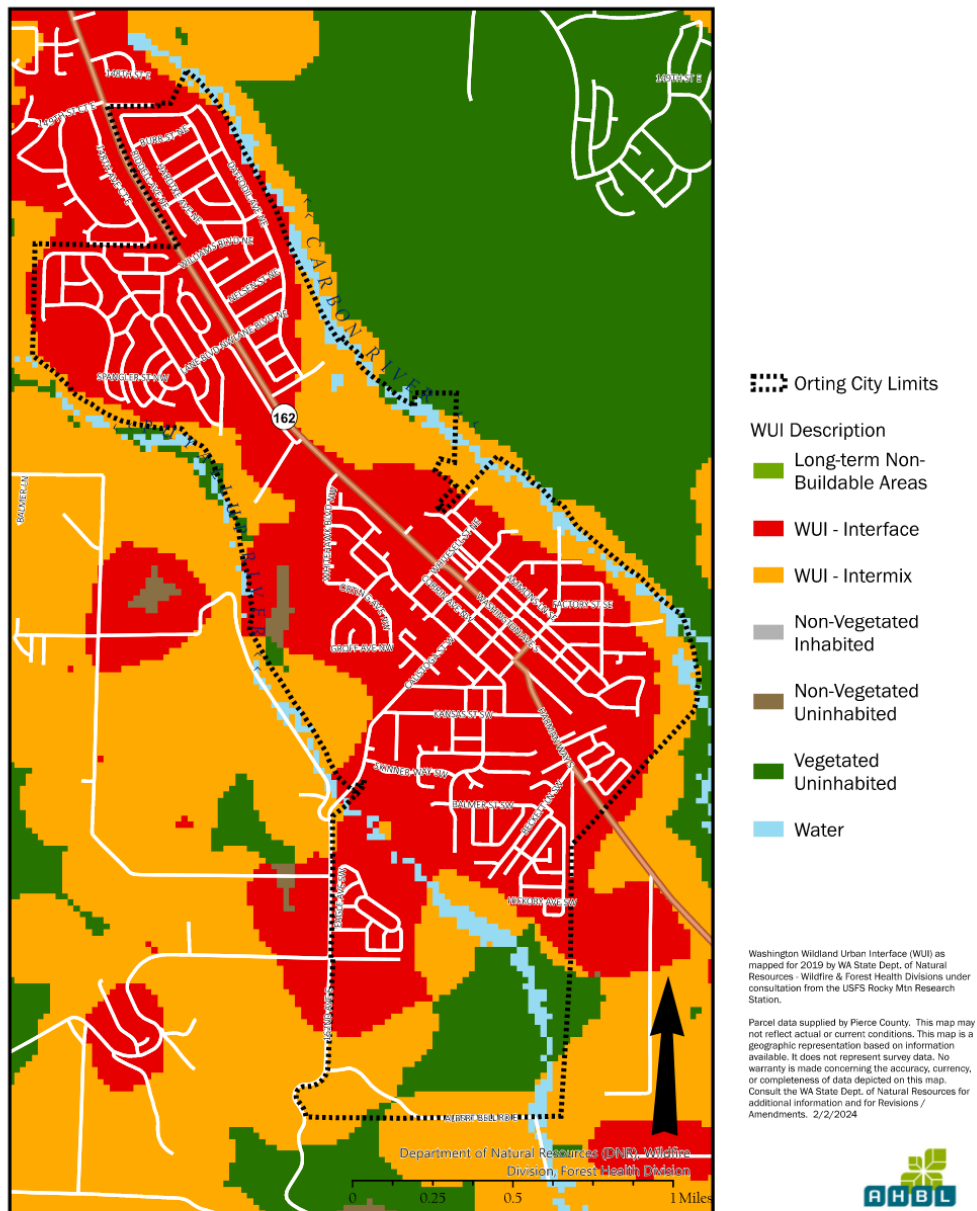


Figure NE-7: Wildland Urban Interface (WUI)

Goals & Policies

Critical Areas

Goal NE 1 *Protect the City's critical areas.*

- NE 1.1 All development activities shall be located, designed, constructed, and managed to avoid disturbance of and minimize adverse impacts to fish and wildlife resources, including spawning, nesting, rearing and habitat areas and migratory routes, resulting in no net loss of critical area functions.
- NE 1.2 Prohibit the unnecessary disturbance of natural vegetation in new development, in accordance with the Critical Areas Ordinance.
- NE 1.3 Where there is a high probability of erosion, grading should be kept to a minimum and disturbed vegetation should be restored as soon as feasible. In all cases, appropriate measures to control erosion and sedimentation shall be required.
- NE 1.4 Seek to retain as open space wetlands, river and stream banks, ravines, and any other areas that provide essential habitat for endangered or threatened plant or wildlife species.
- NE 1.5 Protect wetlands to enable them to fulfill their natural functions as recipients of floodwaters and as habitat for wildlife through the critical areas ordinance.
- NE 1.6 Advance integrated and interdisciplinary approaches for environmental planning and assessments and ensure the use of the Best Available Science.
- NE 1.7 Alternative domestic waste systems are discouraged, and must meet Pierce County Department of Health standards for soil suitability and location.

Commented [A4]: These policies are moved here from the Land Use element Goal LU 11. We have shown proposed edits with tracked changes.

General

Goal NE 2 *Protect local surface water and groundwater quality.*

- NE 2.1 Agricultural land uses within the Carbon and Puyallup River floodplains shall use Best Management Practices as recommended by the U.S.D.A. Soil Conservation Service to minimize the use of chemicals that may later be released into surface waters and to minimize erosion of soil into surface waters.
- NE 2.2 Alternative domestic waste systems are discouraged, and must meet Pierce County Department of Health standards for soil suitability and location.
- NE 2.3 The City shall consider the impacts of new development on water quality as part of its review process and require any appropriate mitigating measures. Impacts on fish resources shall be a priority concern in such reviews.

Commented [A5]: From former Pol. LU 11.7

Commented [A6]: From former Pol. LU 11.8

NE 2.4 The City's Shoreline Master Program shall govern the development of all designated Shorelines of the State within Orting. Lands adjacent to these areas shall be managed in a manner consistent with that program.

Commented [A7]: From Former Pol LU 11.9

NE 2.5 Implement the use of source-control Best Management Practices (BMPs) to benefit plants, animals, fish, and related habitats. BMPs are a structure or operation intended to prevent pollutants from coming into contact with stormwater through physical separation of areas or careful management of activities that are sources of pollutants. Operational source control BMPs are non-structural practices that prevent or reduce pollutants from entering stormwater.

Commented [A8]: NE 2.5 and 2.6 Newly added

NE 2.6 Encourage the use of Low-Impact Development principles (i.e., reducing impervious surfaces, reducing stormwater runoff, and encouraging native plantings) to reduce and to mitigate against the discharge of pollutants.

Goal NE 3 *Promote equity and environmental justice in environmental planning and land use decisions, and balance economic viability with critical areas protection.*

NE 3.1 Support programs to ensure that all residents, regardless of race, social, or economic status, have clean air, clean water, and other elements of a healthy environment and prioritize the reduction of impacts to vulnerable populations that have been disproportionately affected. Address impacts to vulnerable populations and areas that have been or will be disproportionately affected by climate change.

Commented [A9]: NE 3.1 is newly added (Environmental Justice requirements)

NE 3.2 Support and incentivize environmental stewardship on private and public lands

Goal NE 4 *Consider and plan for the impacts of climate change, and promote methods for the reduction of environmental impacts.*

NE 4.1 Protect and restore natural resources that sequester and store carbon.

Commented [A10]: Goal NE 4 and policies are newly added (Partial compliance with the Climate Action bill)

NE 4.2 Support programs and policies to identify and address the impacts of climate change and natural hazards on the region to increase resiliency.

NE 4.3 Address rising sea water by siting and planning for relocation of hazardous industries and essential public services away from the 500-year floodplain.

NE 4.4 Encourage non-motorized forms of transportation, carpooling and other trip-reduction measures.

NE 4.5 Establish a network of paths and multi-use trails throughout the city.

NE 4.6 Encourage energy-efficient homes, buildings, and building systems.

- NE4.7 By June 30, 2029 add a Climate Element, comprised of two sub-elements (a Greenhouse Gas Emissions Reduction sub-element and a Resiliency sub-element) to this Plan (pending the availability of grant funding).

Goal NE 5 *Support Wildland-Urban Interface (WUI) hazard mitigation planning and implement adopted mitigation initiatives.*

Commented [A11]: Goal 5 and policies are newly added (Requirement for WUI planning)

- NE 5.1 Implement the provisions of the Wildland-Urban Interface (WUI) code as adopted by the Washington State Legislature, in order to reduce and mitigate the risk to lives and property posed by wildfires.
- NE 5.2 Inform the public of the Wildland Urban Interface (WUI) mapping products produced by the Washington State Department of Natural Resources.
- NE 5.3 Consider implementation of selected "Firewise" principles, as established by the National Fire Protection Association, which can assist in hazard abatement and mitigation.
- NE 5.4 Require proposed developments to provide sufficient and adequate access for firefighting equipment.
- NE 5.5 Require bridges, culverts, road drains and other structures shall be constructed and maintained in a manner to accommodate firefighting apparatus on a year-round basis.

Shoreline

The Goals and Policies in the City of Orting Shoreline Master Program (as adopted via Ordinance 2019-1045 or as amended) are incorporated into this Plan by reference.

Commented [A12]: This is a proposed addition.

Emergency Management

Commented [NS13]: This section is newly added

Goal NE 6 *Protect life and property and avoid (or mitigate) significant risks to public / private property and to public health and safety.*

- NE 6.1 Review divisions of land (subdivisions and short plats) for the ability for future development to protect people and property from wildfires and other emergency situations. Providing more than one route "out" of an area is an example of a way to ensure safety and mitigate against potential threats.
- NE 6.2 Implement "Firewise" principles and advise property owners on steps they can take to protect life and property from wildfire threat, particularly in remote areas and in areas on the urban fringe and in locations where the diversity and amount of fire

equipment and available fire-fighting personnel is limited, and especially in cases where property may be difficult to access (such as steep slopes).

- NE 6.3 Coordinate the following with local agencies and jurisdictions to assure quick responses in case of emergencies: the transportation/circulation system, emergency services plan, signage, and general access provisions.
- NE 6.4 Continue to coordinate with Orting Valley Fire & Rescue as well as regional, state and federal agencies to ensure comprehensive emergency management planning is conducted and ready to implement.