Chapter 5. Natural Environment

~~5.1 Community Key Goals – Natural Environment~~

- ~~Support standards that maintain or improve environmental quality.~~
- ~~Preserve the City's natural systems to protect public health, safety and welfare, and to maintain the integrity of the natural environment.~~
- ~~Support regulation of activities in sensitive and hazardous areas to ensure high environmental quality and to avoid risks or actual damage to life and property.~~
- ~~Coordinate implementation of regulation and preservation efforts through the Comprehensive Plan, Critical Areas Ordinance, Shoreline Master Program, and other applicable City plans and regulations, depending on the nature and location of the natural resource to be protected.~~ {Key goals are integrated into the goals and policies of this chapter}

5.1~~2~~ Plan Context

The Natural Environment Chapter implements the vision of Poulsbo as a city enriched with valued natural features that enhance the quality of life for the community. The streams, forested hillsides, marine shoreline, and other natural features have shaped Poulsbo's character. Residents and visitors value natural resources and count on them being protected to enjoy into the future.

As Poulsbo continues to grow, the impact of that growth on the natural environment becomes more pronounced. In order to adequately meet the need for protection and preservation, the Natural Environment Chapter sets a framework that recognizes the relationship between Poulsbo's natural environment, land use planning, and a variety of regulatory and non-regulatory efforts. Impacts of development are minimized primarily through regulations on development, while most enhancements to the natural environment are primarily through non-regulatory and voluntary efforts.

Balancing the conservation and protection of the natural environment with population growth, economic development goals, and increasing recreational access is a key purpose of statewide planning rules and regulations. Direction is provided through statewide planning goals, the Growth Management Act (GMA), and the Shoreline Management Act (SMA). Statewide Planning Goal 10 (RCW 36.70A.020) instructs jurisdictions to: "Protect the environment and enhance the state's high quality of life, including air and water quality, and the availability of water."

~~The Washington State Growth Management Act requires every county and city to adopt policies and development regulations that designate and protect critical areas (RCW 36.70A.060(2)). Critical areas are defined in RCW 36.70A.030(5) as:~~

~~a) Wetlands;~~
~~b) Areas with a critical recharging effect of aquifers used for potable water;~~
~~c) Frequently flooded areas~~
~~d) Geologically hazardous areas~~
~~e) Fish and wildlife habitat conservation areas.~~ {moved to section 5.3 under "Critical Areas"}

~~These five critical areas are defined, mapped and regulated in the City's Critical Areas Ordinance (CAO), which was revised to ensure the inclusion of Best Available Science (BAS) in 2007 (Ordinance 2007-24). As part of the public hearing process to the 2007 update, the City prepared a CAO Adoption Document which provides a detailed explanation of how the ordinance is in compliance with GMA; how best available science was applied; and addressed many of the public comments received during the course of the public process. Review the current CAO and the Adoption Document to fully ascertain the how, why, and what of the City's critical area protection measures is recommended.~~

This Chapter includes goals and policies to protect the natural environment and to guide future growth in a manner that minimizes impacts. The Natural Environment goals and policies address:

- Environmental Stewardship
- Critical Areas
  ~~Wetlands~~
  ~~Aquifer Recharge Areas~~
  ~~Frequently Flooded Areas~~

~~Geologically Hazardous Areas~~
~~Fish and Wildlife Habitat Conservation Areas~~

- Shorelines and Liberty Bay
- Water Quality and Basin Planning
- Climate Change
- Air Quality
- Urban Forestry

~~Poulsbo faces a number of challenges in continuing to achieve the community's desired land use vision, while accommodating the growth that is expected over the next twenty years. These include:~~

- ~~Making choices about the City's future that balances consideration of environmental stewardship and urban growth and development.~~
- ~~Improving the water quality of Liberty Bay and creeks within the city limits and urban growth area.~~
- ~~Storm flow surges in stream systems due to existing development that was not required to meet today's storm water regulations.~~
- ~~Need for basin-wide control and management of storm water, at existing and future developments, to minimize changes to stream hydrology.~~
- ~~Improving the City-owned storm water facilities annual inspection and maintenance program.~~

~~5.3 Shoreline Management~~ {moved to new section 5.2 under "Shoreline Management"}

~~The shorelines of Liberty Bay and the Dogfish Creek estuary are regulated through the Shoreline Master Program (SMP). RCW 90.58.020 and .100 provide policy direction for the SMP to:~~

- ~~Protect the natural character, functions, resources and ecology of the shoreline;~~
- ~~Increase public access to publicly owned areas of the shoreline;~~
- ~~Increase recreational opportunities for the public in the shoreline;~~
- ~~Mitigate and restore habitat impacts to ensure no net loss of habitat function;~~
- ~~Maintain the public right of navigation;~~
- ~~Prioritize water-dependent and single-family residential uses and development;~~
- ~~Coordinate shoreline management with other relevant local, state and federal regulations;~~
- ~~Prevent and/or minimize flood damage;~~
- ~~Protect private property rights;~~
- ~~Protect and restore sites with historic, cultural and/or educational value.~~

~~The Shoreline Management Act (RCW 90.58) establishes the concepts of *preferred uses* and *priority uses* in shoreline areas. RCW 90.58.020 indicates that *preferred uses* are those "which are consistent with control of pollution and prevention of damage to the natural environment or are unique to or dependent upon use of the state's shorelines." This section further states that *priority uses* include single family residences, ports, shoreline recreational uses, water dependent industrial and commercial developments and other developments that provide opportunities for the public to access the shoreline environment. To the maximum extent possible, the shorelines should be reserved for "water-oriented" uses, including "water-dependent", "water-related" and "water-enjoyment" uses, as defined in the Act.~~

~~The overarching policy is that "the public's opportunity to enjoy the physical and aesthetic qualities of natural shorelines of the state shall be preserved to the greatest extent feasible consistent with the overall best interest of the state and the people generally." Coordinated planning is necessary in order to protect the public interests associated with the shorelines of the state, while, at the same time, recognizing and protecting private property rights.~~

~~The 2003 SMP Guidelines (WAC 173-26, Part III) includes a requirement for "no net loss" of shoreline ecological function. The Department of Ecology's SMP Handbook indicates that "no net loss" means that "over time, the existing condition of shoreline ecological functions should remain the same as when the SMP is implemented. The no net loss standard is designed to halt the introduction of new detrimental impacts to shoreline ecological functions resulting from new development." WAC 173-26-186(8) directs that master programs "include policies and regulations designed to achieve no net loss of those ecological functions." The goals and policies of the SMP are required to be incorporated into the City's Comprehensive Plan.~~

5.24 Goals and Policies

Environmental Stewardship

Of the many roles the City of Poulsbo must fulfill, and one of its most demanding, is that of steward of the city's natural environment. The demand is challenging to the city because it has the requirement to accommodate and plan for urban densities, with the responsibility to ensure that the environment is managed wisely. Through the Comprehensive Plan, numerous goals and policies are articulated to help the city achieve its vision for the future; no one goal or policy is pursued to the exclusion of others. In weighing environmental protection against other needs, including urban growth, housing, economic development and recreation opportunities, the City balances these goals and achieves protection through a variety of means, including regulation of property, incentives, and public programs.

GOAL NE-1

Protect, sustain, and provide for healthy and diverse ecosystems within the Liberty Bay watershed.

Policy NE-1.1

The City shall protect critical areas, habitat and the natural environment~~al quality~~ through land use plans, surface water management plans and programs, comprehensive park plans, development regulations and site-specific project review. {to address PSRC Vision 2050 consistency checklist}

Policy NE-1.2

The City shall maintain regulations such as the Critical Areas Ordinance (CAO), which provide protection for all regulated critical areas – a) wetlands; b) areas with a critical recharging effect on aquifers (aquifer recharge areas); c) frequently flooded areas; d) fish and wildlife habitat conservation areas; and e) geologically hazardous areas.

- *The City's CAO development standards shall incorporate and utilize appropriate and applicable best available science for purposes of designating and protecting all regulated critical areas and give "special consideration" to conservation and protection measures for anadromous fisheries. {to address Commerce Periodic Update checklist}*
- *The City shall continue to require, as set forth in the CAO, completion of environmental studies by qualified professionals to assess the impact of proposed development on critical areas. {consolidated from NE-1.4}*
- *The City's CAO shall include penalties to be imposed on property owners or developers who degrade the function or values of wetlands. {consolidated from NE-2.4}*

Policy NE-1.3

The City shall coordinate planning with adjacent jurisdictions, tribes, countywide planning groups and watershed groups, ~~should work in concert with state and regional agencies, as well as with neighboring jurisdictions and tribes,~~ to protect critical area habitat and water quality ~~sensitive areas and the City's natural environment~~. The city will participate ~~cooperate~~ in watershed planning efforts and consider watershed impacts during decision making. {to address PSRC Vision 2050 consistency checklist}

~~Policy NE-1.4~~

~~The City will continue to require completion of environmental studies by qualified professionals to assess the impact of proposed development on critical areas. The Critical Areas Ordinance shall set forth when and how the environmental studies shall be required.~~ {consolidated into NE-1.2}

Policy NE-1.4 ~~5~~

The City shall ~~continue to implement low impact development~~ promote innovative and environmentally sensitive practices ~~techniques~~ in site planning, design, materials selection, construction, and maintenance. ~~for storm water management and mitigation.~~ {to address PSRC Vision 2050 consistency checklist}

Policy NE-1.5 ~~6~~

The City shall support ~~encourage~~ environmental stewardship on private and public lands through partnerships and voluntary efforts ~~where appropriate, public-private partnerships and voluntary efforts~~ to protect, restore and enhance the quality and functions of the City's critical areas and ~~their~~ associated buffers. {to address PSRC Vision 2050 consistency checklist}

Policy NE-1.6 ~~7~~

~~City regulated environmental protection cannot constitute a legal "takings" of land and~~ The City shall ~~must~~ provide provisions for reasonable use of property according to legal precedent and laws.

~~Policy NE-1.8~~

~~Critical areas within the shoreline shall be protected by the standards in the CAO, unless the SMP provides for a critical area that is more stringent than that provided in the CAO, in which case the more stringent protection shall apply.~~ {moved under Shoreline section as Policy NE-7.5.}

Policy NE-1.7

Support integrated and interdisciplinary approaches for environmental planning and assessments. {to address PSRC Vision 2050 consistency checklist}

Policy NE-1.8

Support hydrological functions and water quality, including restoring shorelines and estuaries, removing fish-blocking culverts, reducing use of toxic products, and retrofitting basins to manage stormwater. {to address PSRC Vision 2050 consistency checklist}

Critical Areas

The Washington State ~~Growth Management Act~~ GMA requires every county and city to adopt policies and development regulations that designate and protect critical areas (RCW 36.70A.060(2)), which are defined, mapped (to the greatest extent feasible), and regulated in the City's Critical Areas Ordinance (CAO). Critical areas are defined in RCW 36.70A.030(5) as~~:~~ Wetlands~~;~~, Areas with a critical recharging effect of aquifers used for potable water~~;~~, Frequently flooded areas~~;~~, Geologically hazardous areas~~;~~, and Fish and wildlife habitat conservation areas. {moved from section 5.1}

Science plays a central role in delineating critical areas, identifying functions and values, and identifying protection strategies. GMA requires counties and cities to include the best available science (BAS) when reviewing and revising their critical areas policies and regulations (RCW 36.70A.172) to protect the functions and values of critical areas and must give "special consideration" to conservation or protection measures necessary to preserve or enhance anadromous fisheries.

Wetlands

Wetlands are designated critical areas that are integral features of Poulsbo landscape and the local hydrologic cycle. In wetlands, the presence of water at or near the surface creates distinct soil types and supports a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

~~Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, such as irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm pond, and landscape amenities, or those wetlands created after July 1, 1990 that were unintentionally created as a result of the construction of a road, street or highway. Wetlands may include those artificial wetlands intentionally created from non-wetland areas created to mitigate conversion of wetlands. *(See RCW 36.70A.030(21) for complete wetland definition).*~~

Wetlands reduce floods, contribute to stream flows, and improve water quality, provide fish and wildlife habitat, and offer opportunities for research and scientific study and outdoor education. Each wetland provides various beneficial functions, but not all wetlands perform all functions, nor do they perform all functions equally well. Large wetlands, and those hydrologically associated with lakes and streams, have relatively more important functions in the watershed than small, hydrologically isolated wetlands.

~~Undeveloped land adjacent to a wetland provides a buffer to help minimize the impacts of urbanization. The long-term function of a wetland is dependent on land development strategies that protect wetland buffers.~~

~~Poulsbo has successfully (through acquisition and regulation) protected its larger wetlands, specifically those wetlands associated with the Dogfish Creek estuary. In addition to fish and wildlife benefits, publicly owned wetlands provide significant value to the community in the form of open space, passive recreation, education and cultural resources. Privately owned wetlands are important components of the hydrologic cycle and are amenities for property owners.~~

~~The city has mapped general locations of wetland areas for planning purposes, but the large-scale mapping is too imprecise to record the location of wetlands on specific sites. The City's wetland mapping combines hydric soils maps from the U.S.~~

~~Department of Agriculture and wetlands identified and delineated through the development review process. Site-specific wetland delineations by qualified professionals are required during the development review process.~~

GOAL NE-2

Protect the water quality, flows and ecological integrity of wetlands by appropriately regulating land uses and storm water, through the development review process.

Policy NE-2.1

The City's Critical Areas Ordinance shall protect existing wetland functions in order to maintain water quality, retention, and wildlife habitat. New development adjacent to protected wetlands shall be subject to vegetative buffers as identified in the Critical Areas Ordinance and other applicable development standards that ensure protection of the wetland and buffer during development. {consolidated from NE-2.3}

Policy NE-2.2

The City shall continue to update its existing wetland database using the most recent information available by including~~.~~ ~~Wetland~~ identification and delineations completed in conjunction with a land use permit ~~will be entered into the database.~~

~~Policy NE-2.3~~

~~Use of fencing, flagging, or tape to mark wetland boundaries and buffers during construction shall be required as a land use permit condition. No construction activity or mechanical equipment shall be allowed in these delineated areas.~~ {consolidated into NE-2.1}

~~Policy NE-2.4~~

~~The City's Critical Areas Ordinance shall include penalties to be imposed on property owners or developers who degrade the function or values of wetlands.~~ {consolidated into NE-1.2}

Policy NE-2.3~~5~~

Wetland identification, delineation and rating shall be as according to Washington State Department of Ecology's currently adopted manual and rating system, or as amended hereafter. The City's Critical Areas Ordinance identifies these documents as the appropriate documents for wetland identification, delineation, and rating.

Critical Aquifer Recharge Areas

Groundwater aquifers supply water to lakes, wetlands, and streams and to public and private wells that provide drinking water. Rainfall contributes to surface water and recharges the groundwater as precipitation infiltrates through the soil. Land development changes the natural aquifer hydrologic cycle and reduces the land's capacity to absorb and retain rainfall and reduces the groundwater recharge potential.

The GMA requires the classification of recharge areas for aquifers according to the vulnerability of the aquifer. Vulnerability is the combined effect of hydrogeological susceptibility to contamination and the contamination loading potential. High vulnerability is indicated by land uses that contribute contamination that may degrade groundwater and hydrogeological conditions that facilitate degradation. Low vulnerability is indicated by land uses that do not contribute contaminants that degrade ground water and those conditions that do not facilitate digression.

~~The Kitsap County Ground Water Management Plan (1991) identifies the Poulsbo Aquifer as a concern because it has high permeability and potential for contamination. Aquifer recharged areas have been mapped to assist the City in identifying areas where special conditions may be necessary to ensure Poulsbo's ground water resource is protected from contamination. Additional data on groundwater from the 2014/15 U.S. Geological Survey Scientific Investigation Report prepared in cooperation with the Kitsap Public Utility District was also reviewed and mapped as appropriate.~~

GOAL NE-3

Ensure safe and adequate water supplies and protect groundwater quality from potential contaminant sources.

Policy NE-3.1

The city, Kitsap Public Utility District, Kitsap County Health Department, and Kitsap County will continue to be responsible for coordinating water quality protection and planning in multi-jurisdictional watersheds.

Policy NE-3.2

The city, in cooperation with the Kitsap Public Utility District, should continue to identify and map aquifer recharge areas within the city and its urban growth area. Such areas shall be subject to regulations to protect the integrity of identified aquifer recharge areas.

Policy NE-3.3

Proposed development in areas identified as a Critical Aquifer Recharge Area may be required to prepare a hydrogeological report. The City's Critical Areas Ordinance shall set forth the criteria for when such a report is required and the information to be included.

Policy NE-3.4

The City shall include regulations in its Critical Areas Ordinance to enhance recharge of the Poulsbo aquifer. These regulations should include: low impact development standards that provide for infiltration of storm water; and small-scale, Best Management Practices required for smaller development that is exempted from requirements for constructed storm water facilities.

Frequently Flooded Areas

Frequently flooded areas are lands in the floodplain subject to at least a one percent or greater chance of flooding in any given year, or within areas subject to flooding due to high groundwater. These areas include, but are not limited to, streams, rivers, lakes, coastal areas, wetlands, and areas where high groundwater forms ponds on the ground surface. The Federal Emergency Management Agency (FEMA) delineates flood hazards along major river and stream corridors to identify areas at risk from floodwater. This information is used for both floodplain management and insurance rating. FEMA ~~mapping delineates flood hazard areas, which were updated in 2010; these~~ maps have been adopted by the city. ~~The mapping includes those areas inundated by 100-year and 500-year floods.~~ When assessing the potential for a flood hazard on a given site, ~~the~~ City~~'s development review~~ staff utilizes the FEMA maps; therefore, flood hazards are not reproduced on the City's Critical Area maps.

~~Flooding is caused by excess surface water runoff and results in creating property damage, public safety hazards, and destroying aquatic and riparian habitat. In recognition of this situation, the Federal Flood Insurance Program was created to guarantee protection of lands in flood hazard areas if eligibility requirements are met. The standard set by the program is the preservation of the 100-year floodplain. The 100-year floodplain is the area of land flooded by a storm that has a 1 percent probability of occurring in any year.~~

Alterations to natural floodplains generally result in increasing the flooding risk to people and property, and impact fish and wildlife habitat. Traditional flood control practices have been particularly damaging to fish and wildlife habitat, but contemporary methods are striving to provide an acceptable level of flood protection to people and property, while at the same time preserving and enhancing fish and wildlife habitat. Reducing risk to people and property is best achieved by limiting floodplain development and ensuring that allowed development does not increase flood elevations and flow velocities, change flood flow patterns, reduce flood storage, increase erosion, or increase the area of flood inundation.

~~Only one stream in the City of Poulsbo has a designated floodplain: Dogfish Creek. Several other areas in the city have flood hazard designations; they include Liberty Bay, Dogfish Creek, and Bjorgen Creek in the vicinity of Hwy 305. The city updated the Floodplain Management Chapter (PMC 15.24) through the adoption of a Flood Prevention Ordinance (Ordinance 2005-27) that was updated in 2010 (Ordinance 2010-21). These ordinances were reviewed and approved by the Washington State Department of Ecology (DOE).~~

GOAL NE-4

Reduce the risk of damage to life, property, and the natural environment from flooding through appropriate regulatory means.

Policy NE-4.1

The City shall preserve the natural flood storage functions of 100-year floodplains where feasible. The City shall encourage and emphasize non-structural methods for flood prevention and damage reduction, as appropriate. No blockage of floodwaters shall be allowed that could impact neighboring properties.

Policy NE-4.2

Encourage maintenance of natural *vegetation* in floodplains to minimize runoff into streams and reduce the damage caused by increased stream flow, stream velocity, and flooding.

Geologically Hazardous Areas

Geologically hazardous areas are places highly susceptible to erosion, landslides, earthquakes, or other geologic events. In Poulsbo, the most hazardous of these areas is typically found along the marine shorelines and stream ravines. Poulsbo's landscape is typical of North Kitsap County, with numerous hills and valleys, streams, and frontage on the waters of Puget Sound. Elevations range from sea level to 440 feet, with moderate to steep slopes. Two ridges run along each side of Liberty Bay and gradually rise in elevation to the north, accentuating the general topographic trend in Poulsbo. The west leg of the ridge slopes gradually toward Liberty Bay, while the eastern leg slopes in a broken pattern of knolls, valleys, and benches to the eastern shore.

~~As described in the Soil Survey of Kitsap County, Washington, the soils of Kitsap County formed mainly in glacial drift deposited by the most recent several continent-sized glacial ice sheets. This 3,000-foot glacier, emanating from Canada, formed most of the topography and waterways of the area between 13,000 and 15,000 years ago.~~

~~The predominant deposit, and therefore parent soil material, is glacial till. It generally consists of compact basalt till covered by a thin discontinuous layer of ablation till. The Kapowsin, Poulsbo and Sinclair soils, prominent soils in Poulsbo, were formed in this till material.~~

~~Underlying these glacial deposits is sediment deposited during previous glacial or interglacial periods. This sediment, generally exposed only on sea cliffs, consists primarily of stratified clay, silt, sand and gravel. Where this deposit has glaciolacustrine properties, Kitsap soils formed. Kitsap soils are prominent soils on the eastern shoreline of Liberty Bay, and north of Hostmark to Bond Road.~~

~~Geologically Hazardous Areas and Areas of Geologic Concern have been identified and mapped. The map is intended to serve as a guide to the general location, based upon identified soil types, the potential likelihood of a geological hazardous area. Site specific topographic, survey and geologic information is required with development proposals to determine the existence and extent of such areas, and if such hazards can be mitigated.~~

GOAL NE-5

Manage development in geologically hazardous areas to protect public health and safety.

Policy NE-5.1

The Critical Areas Ordinance shall provide standards that assist in protecting human life, property and essential services from potential geologically hazardous areas. Site-specific studies submitted with development proposals in areas mapped as geologically hazardous shall be required to evaluate the risk, potential impacts and identify necessary mitigations of the proposed development.

Policy NE-5.2

The City shall classify and map ~~of~~ all known geologically hazardous areas and areas of geologic concern. Incorporate information from site-specific geotechnical reports and erosion problems into the City's Geographic Information System to ensure the map remains relevant.

Policy NE-5.3

Protect geologically hazardous areas, especially forested steep slopes, recognizing that these areas provide multiple critical area functions, such as preserving vegetated areas for wildlife habitat, linking habitats to valley riparian areas, stabilizing slopes, and allowing for groundwater infiltration providing a water source to wetlands and streams.

Policy NE-5.4

Minimize and control soil erosion during and after development through the use of best available technology, best management practices, and other development restrictions. Allow the City to place additional conditions when determined necessary in identified Geologically Hazardous Areas.

Fish and Wildlife Habitat Conservation Areas

Fish and wildlife habitat conservation means land management for maintaining population of species in suitable habitats within their natural geographic distribution so that the habitat available is sufficient to support viable populations over the long term and isolated subpopulations are not created. This does not mean maintaining all individuals of all species at all times, but it does mean not degrading or reducing populations or habitats so that they are no longer viable over the long term. Counties and cities should engage in cooperative planning and coordination to assure long term population viability.

Fish and wildlife habitat conservation areas contribute to the state's biodiversity and occur on both publicly and privately-owned lands. Designating these areas is an important part of land use planning for appropriate densities, urban growth boundaries, open space corridors, and incentive-based land conservation and stewardship programs. (WAC 365-190-130(1).

~~Fish and wildlife habitat conservation areas include (WAC 365-190-130(2)):~~

~~a. Areas with which endangered, threatened and sensitive species have a primary association;~~
~~b. Habitats and species of local importance, as determined locally;~~
~~c. Commercial and recreational shellfish areas;~~
~~d. Kelp and eelgrass beds; herring, smelt and other forage fish spawning areas;~~
~~e. Naturally occurring ponds under twenty acres and their submerged aquatic beds that provide fish or wildlife habitat;~~
~~f. Waters of the State;~~
~~g. Lakes, ponds, streams and rivers planted with game fish by a government or tribal entity; and~~
~~h. State natural area preserves, natural resource conservation areas and state wildlife areas.~~

~~Basin Overview~~

~~The Poulsbo watershed is defined by the convergence of two glacially formed hills and contains a series of small natural systems. The largest stream system in the city is Dogfish Creek. The Dogfish Creek watershed includes the main stem of Dogfish Creek, and the East and South Forks. The main stem flows in a southerly direction, draining the Big Valley area. The East Fork flows in a southwesterly direction draining Lincoln Hill and Bond Road areas. The South Fork flows north and northwest along and adjacent to State Highway 305 and is located entirely within the existing city limits.~~

~~The South Fork is smaller in size than the other two forks; however, it drains a much more urbanized watershed, and is subject to periodic flooding. All of the creeks and small streams within the city limits drain into Liberty Bay. The watershed has no lakes, but some surface storage is provided in the large marshy area near the main stem of Dogfish Creek. The water quality of streams is generally suitable for most purposes throughout most of the year.~~

~~North Fork of Johnson Creek is a Type 3 stream that lies primarily in the unincorporated portion of the City's Urban Growth Area, with only the headwaters, upper and lower stream reach located in the city limits at this time. Bjorgen Creek is a Type 3 stream that flows south from the Deer Run subdivision through recently annexed land and ultimately ends at Liberty Bay. Lemolo Creek is located just east of the Poulsbo UGA boundary in the Noll Road vicinity and flows south into Liberty Bay. The majority of these three stream systems run through undeveloped or low-density areas within the City or its outlying area.~~

~~Poulsbo Creek is a small stream system that flows through a portion of the city known as Old Town. Historically, this creek has been regulated only as a drainage way, but through the City's CAO update, Washington State Fish and Wildlife reclassified the creek as a regulated stream.~~

~~Liberty Bay is the major body of surface water in the city.~~

~~Beneficial uses of surface water are listed in the Water Quality Standards for Surface Water of the State of Washington (WAC 173-201A). These include drinking water; salmonid and fish habitat; shellfish; wildlife habitat; recreation; commerce and navigation; stock and crop water. Water quality is especially important for maintaining safe drinking water and swimming areas, and for maintaining healthy fish, shellfish and wildlife populations.~~

~~Although urbanization within the city limits has affected shoreline and in-stream habitat conditions, watershed-scale processes (especially processes occurring in the upper basin) have also affected the health of Poulsbo's streams and shoreline areas. Many of the factors that affect habitat quality are the result of actions that extend beyond the City's jurisdiction. Additional measures that address basin hydrology, sediment transport, impervious surface area, and water~~

~~quality on a watershed scale will need to be explored and pursued in conjunction with Kitsap County if long-term and sustainable habitat improvements are to be achieved.~~

~~Streams in Poulsbo's urban area have all been impacted to some degree by development. Challenges include blocked culverts, severe channel down-cutting, areas of moderate to sever erosion, invasive non-native vegetation, and inadequate vegetative cover and lack of large woody debris. Recommendations to improving the existing conditions have been identified and include replacing culverts to allow for fish passage or better flow control; develop and implement a stream channel rehabilitation program for degraded reaches; implementation of a vegetation management plan to improve/enhance vegetated buffer areas; and ensure storm water receive maximum water quality treatment per the City's adopted storm water management manual.~~

~~Classification and Designation~~

Streams Classification

All identified streams in the city are classified according to the Washington State stream classification systems. The City's CAO utilizes the State Interim Water Typing in WAC 222-16-031 to define stream types. This stream classification system provides "special consideration" of anadromous fisheries. The city further classified South Fork of Dogfish Creek into five distinct reaches, each with requirements and consideration to the specific reach.

Fish and Wildlife Habitat Conservation Area Designation

Washington State Department of Fish and Wildlife (WDFW) has developed a catalog of habitats and species considered to be priorities for conservation and management. WAC 365-190-130(4) strongly suggests that local jurisdictions base their fish and wildlife habitat conservation areas designation on the WDFW priority habitat and species listings.

According to the ~~August 2008 (updated 4/20/2014)~~ WDFW Priority Habitats and Species List ~~prepared by~~, *priority species* include Federal and State Endangered, Threatened, Sensitive, and Candidate species; animal aggregations (e.g. heron colonies, bat colonies) considered vulnerable; and species of recreational, commercial, or tribal importance that are vulnerable. These priority species require protective measures for their survival due to their population status, sensitivity to habitat alteration, and/or recreational, commercial, or tribal importance. *Priority habitats* are habitat types or elements which offers unique or significant value to a diverse assemblage of species. A priority of habitat may consist of a unique vegetation type (e.g. shrub-steppe) or dominant plant species (e.g. juniper savannah), a described successional stage (e.g. old-growth forest), or a specific habitat feature (e.g. cliffs.)

~~The Fish and Wildlife Habitat Conservation Areas section of the City's CAO uses the WDFW Priority Species and Habitat List as the foundation for the designation of Fish and Wildlife Habitat Conservation Areas (see PMC 16.20.310).~~

All of the WDFW priority habitat and species that are applicable to Kitsap County and Poulsbo are species of fish, shellfish, birds, and mammals that are aquatic, marine or water dependent. Regulatory measures, such as required buffers, resource management areas, setbacks, preparation of habitat management plans, and other development standards apply to ~~these five~~ Fish and Wildlife Habitat Conservation Areas ~~and are~~ as identified in the City's CAO.

~~Therefore, it is clear based on the WDFW species listing that the City's streams, shoreline and Liberty Bay are its primary fish and wildlife habitat conservation areas. For this reason, the City's CAO has designated all of the following as "Fish and Wildlife Habitat Conservation Areas" (PMC 16.20.310 A-F; and Table 16.20.315):~~

~~A. South Fork of Dogfish Creek Stream/Riparian Corridor Conservation Areas.~~
~~B. Streams. (All streams that meet the criteria for Types S, F, Np, Ns as set forth in WAC 222-16-031 of DNR Water Typing System)~~
~~C. Saltwater Shorelines. (Including commercial and recreational shellfish areas; riparian areas; shoreline feeder bluffs; kelp and eelgrass beds; and herring, sand lance and smelt spawning areas, and juvenile salmonid migratory corridors).~~
~~D. Lakes less than 20 acres.~~
~~E. Class 1 and Class 2 Wildlife Habitat Conservation Areas.~~
~~F. Areas of Rare Plant Species and High-Quality Ecosystems.~~

~~Anadromous Fish~~

~~GMA further requires jurisdictions to give "special consideration" to preserve anadromous fish. The term "anadromous" refers to fish that spawn in freshwater streams or lakes, migrate to saltwater for a portion of their life cycle, and then return to fresh water.~~

~~To give special consideration includes protecting the habitat important for all salmonid life stages that occur in Poulsbo's streams. Fish species listed as threatened or endangered under the federal Endangered Species Act (ESA) are protected in accordance with the Act. Bull Trout, Chinook Salmon, Chum Salmon, and Rainbow Trout/Steelhead are the anadromous fish that have been identified as Federal Threatened Species that have or may frequent Liberty Bay and its streams.~~

~~While any future ESA response will be coordinated with regional salmon recovery planning efforts, the City has taken a proactive role in maintaining and restoring the fish habitat of Dogfish Creek and the Liberty Bay Estuary through such park projects as the acquisition of Fish Park, Wilderness Park, and Centennial Park.~~

~~Mapping~~

~~The city has mapped stream hydrology types as identified by the Department of Natural Resources adopted stream typing data and classifications; and fish and wildlife habitat conservation areas are based on the Washington State Department of Fish and Wildlife priority habitat and species list and digital GIS data provided by WDFW to the City.~~

~~The city utilizes the WDFW Priority Habitat and Species digital data, and the Natural Heritage Program GIS Data Set provided by Washington State Department of Natural Resources, to identify areas within the city limits that may be subject to the requirements for Wildlife Habitat Conservation Areas, Areas of Rare Plant Species and High Quality Ecosystems. These maps provide only generalized information to protect these sensitive species and ecosystems and are updated as these State agencies provide the city with new information.~~

GOAL NE-6

Protect biological diversity by appropriately regulating fish and wildlife habitat conservation areas.

Policy NE-6.1

The City's Critical Areas Ordinance shall require vegetative buffers along surface waters to protect anadromous fish and wildlife habitat. New development shall be subject to buffers or resource management areas, as identified in the Critical Areas Ordinance and other applicable development standards.

Policy NE-6.2

The City shall protect the natural habitat functions of listed or candidate Endangered Species. The City's Critical Areas Ordinance shall establish appropriate protection measures and procedures for habitat conservation.

Policy NE-6.3

The City shall continue acquiring appropriate land when it becomes available and affordable, primarily to preserve its function as fish and wildlife habitat. The Dogfish Creek estuary shall continue to be a priority habitat area for acquisition.

Policy NE-6.4

Encourage public-private partnerships and voluntary efforts to protect, restore, and enhance fish and wildlife habitat. Support these efforts on public lands by continuing the successful Parks and Recreation Department work parties, and other approved volunteer coordination efforts.

Policy NE-6.5

Encourage informational and educational programs and activities dealing with the protection of wildlife. An example of such a program is the Backyard Wildlife Sanctuary program established by the State's Department of Fish and Wildlife.

Policy NE-6.6

The City's Critical Areas Ordinance shall include penalties to be imposed on property owners or developers who degrade the habitat function or values of streams or stream buffers.

Policy NE-6.7

Use of fencing, flagging, or tape to mark stream buffer boundaries during construction shall be required as a land use permit condition. No construction activity or mechanical equipment shall be allowed in these delineated areas.

Policy NE-6.8

Avoid/minimize fine sediment inputs to creeks by eliminating or controlling sediment sources by requiring best management practices and the preparation of an erosion and sediment control plan for sites where vegetation clearing, earth movement, or other soil disturbing activities are proposed to occur.

~~Policy NE-6.9~~

~~Recommendations from two stream corridor ecological analyses should be reviewed for any appropriate inclusion in the City's storm water management programs or development regulations These reports have been prepared by P.A. Fishman of SWCA Environmental Consultants, and include:~~

- *~~"Ecological Condition and CAO Recommendations for North Fork Johnson Creek Corridor, Poulsbo, Washington."~~*
- *~~"Proposed Natural Resource Buffers for Lemolo Creek Corridor, Poulsbo, Washington."~~ {deleted as a more recent (2021) best available science report will be used to review Fish and Wildlife Habitat Conservation Areas development regulations.}*

Policy NE-6.~~9~~ 9 ~~10~~

The City shall implement as appropriate the "Dogfish Creek Restoration Project Master Plan," prepared by ICF International, July 2010. The City shall coordinate with the Suquamish Tribe on the planting plan and scheduling of the habitat rehabilitation installation.

Policy NE-6. ~~10~~ 10 ~~11~~

Encourage best management practices in the use of herbicides and pesticides near surface waters.

Shorelines and Liberty Bay

~~The shorelines of Liberty Bay and the Dogfish Creek estuary are regulated through the Shoreline Master Program (SMP). RCW 90.58.020 and .100 provide policy direction for the SMP to:~~

- ~~Protect the natural character, functions, resources, and ecology of the shoreline;~~
- ~~Increase public access to publicly owned areas of the shoreline;~~
- ~~Increase recreational opportunities for the public in the shoreline;~~
- ~~Mitigate and restore habitat impacts to ensure no net loss of habitat function;~~
- ~~Maintain the public right of navigation;~~
- ~~Prioritize water-dependent and single-family residential uses and development;~~
- ~~Coordinate shoreline management with other relevant local, state and federal regulations;~~
- ~~Prevent and/or minimize flood damage;~~
- ~~Protect private property rights;~~
- ~~Protect and restore sites with historic, cultural and/or educational value.~~

The Shoreline Management Act (SMA) (RCW 90.58) establishes the concepts of *preferred uses* and *priority uses* in shoreline areas. RCW 90.58.020 indicates that *preferred uses* are those "which are consistent with control of pollution and prevention of damage to the natural environment or are unique to or dependent upon use of the state's shorelines." This section further states that *priority uses* include single family residences, ports, shoreline recreational uses, water dependent industrial and commercial developments and other developments that provide opportunities for the public to access the shoreline environment. To the maximum extent possible, the shorelines should be reserved for "water-oriented" uses, including "water-dependent", "water-related" and "water-enjoyment" uses, as defined in the ~~Act~~ SMA.

The overarching policy is that "the public's opportunity to enjoy the physical and aesthetic qualities of natural shorelines of the state shall be preserved to the greatest extent feasible consistent with the overall best interest of the state and the people generally." Coordinated planning is necessary in order to protect the public interests associated with the shorelines of the state, while, at the same time, recognizing and protecting private property rights.

~~The 2003 SMP Guidelines (WAC 173-26, Part III) includes a requirement for "no net loss" of shoreline ecological function. The Department of Ecology's SMP Handbook indicates that "no net loss" means that "over time, the existing condition of shoreline ecological functions should remain the same as when the SMP is implemented. The no net loss standard is designed to halt the introduction of new detrimental impacts to shoreline ecological functions resulting from new development." WAC 173-26-186(8) directs that master programs "include policies and regulations designed to achieve no~~

~~net loss of those ecological functions." The goals and policies of the SMP are required to be incorporated into the City's Comprehensive Plan.~~

Shoreline Environment Designations ~~Management~~

The City's shoreline jurisdiction includes all Liberty Bay shorelines and aquatic areas within the city limits and the tidally influenced (estuarine) portion of Dogfish Creek north of Lindvig Way, and shorelands from 0-200 feet of the ordinary high-water mark (OHWM) of Liberty Bay. The City has also "predesignated" all of the shorelines within its unincorporated Urban Growth Area, and the SMP ~~will~~ addresses these shorelines as well as those located within the City limits. ~~However, in the absence of an interlocal agreement with Kitsap County, the City will not have any regulatory authority in the predesignated areas until they are annexed. No "optional expansion" of jurisdiction for critical areas and buffers per RCW 90.58.030(2)(f)(ii) and WAC 173-26-221(2)(a) is included in this SMP.~~

~~There are a number of local tools used to implement the goals and policies of the Act. Development regulations such as the Zoning Ordinance and Critical Areas Ordinance support the SMP in regulating development along the City's shorelines. Capital improvement plans, such as sewer, water, parks and transportation, also help the City maintain a balance of providing public services and access on the shoreline, while ensuring environmental protection.~~

As required by the ~~Shoreline Management Act~~ SMA, the City has established shoreline environment designations, which serve as an "overlay" to the City's comprehensive plan land use designations. These designations are applied to specific shoreline areas to guide the use and development of these areas. There are six environments applied to the City's shorelines – Shoreline Residential 1 and 2, High Intensity, Urban Conservancy, Natural and Aquatic; these environments have been mapped and are identified on Figure NE-6.

GOAL NE-7

Ensure no net loss of shoreline ecological values and functions, as required by the Shoreline Management Act 90.58 RCW.

Policy NE-7.1

Proposed development projects shall be reviewed for consistency with the no net loss policy, taking into account (1) the environmental limitations and sensitivity of the shoreline area; (2) proposed mitigation for anticipated impacts; (3) the level of infrastructure and services available; and (4) other comprehensive planning considerations.

Policy NE-7.2

New development and redevelopment in all shoreline environment designations shall be consistent with the "preferred use" and "priority use" provisions as set forth in 90.58.020 RCW and WAC 173-26-201, or their successors.

Policy NE-7.3

The City should identify potential opportunities within City-owned shoreline properties for offsite mitigation of shoreline impacts, through restoration of native vegetation and/or habitat functions within the shoreline buffer area.

Policy NE-7.4

The City should encourage appropriate multiple users and uses to share current and future over-water and in-water facilities and structures, to minimize the need for new, individual over-water and in-water facilities and structures.

Policy NE-7.5

Designated critical areas within the shoreline shall be protected by the standards in the Critical Areas Ordinance (CAO), unless the SMP provides for protection that is more stringent than provided in the CAO, in which case the more stringent protection shall apply. {moved from Policy NE-1.8.}

GOAL NE-8

Manage the City's shorelines by implementing specific policies, use regulations, and development standards for each of the shoreline environments* identified *in the City's Shoreline Master Plan.

Shoreline Residential

The Shoreline Residential (SR) environment is intended to accommodate residential development consistent with the City's shoreline management standards; protect ecological functions and natural habitat, and restoration when feasible; and provide public access and recreational uses, where appropriate.

~~The Shoreline Residential environment is identified on Figure NE-6 and is divided into two sub-designations: Shoreline Residential-1 (SR-1) and Shoreline Residential-2 (SR-2). The SR-1 environment primarily includes those areas of the shorelands within the established shoreline buffer (100' from the ordinary high water mark), and/or on the water side of "buffer interruptions" such as major roads.~~

~~The SR-2 environment primarily includes those areas of the shorelands outside of the established shoreline buffer and/or on the upland side of "buffer interruptions," such as major roads. Within these areas, new residential development is permitted according to the applicable shoreline and zoning development standards, with an emphasis on transition from the preservation-oriented focus of SR-1 to adjacent residential development located outside of the shoreline jurisdiction.~~ {Repetitive with PMC 16.08.160, CAO}

Policy NE-8.1

New development and redevelopment in the ~~Shoreline Residential (~~SR~~)~~ environment shall be of a type consistent with a residential environment and shall be compatible with surrounding residential land uses.

Policy NE-8.2

In the SR-1 environment, the existing natural environment should be preserved as much as possible, with new development and enlargement of existing structures within the buffer area being limited to water-dependent use, reasonable use, and/or limited expansion.

Policy NE-8.3

The SR-2 environment use regulations shall provide a transition between the preservation focus of the SR-1 environment, to the adjacent residential development outside of the shoreline jurisdiction.

Policy NE-8.4

When new development or redevelopment is proposed with more than four dwelling units, designated public access and designated public views shall be preserved, and enhanced when possible.

High Intensity

The High Intensity (HI) *shoreline* environment provides for those areas of existing moderate commercial and mixed commercial/residential development. This environment allows for optimum use of shoreline areas that are presently developed with commercial uses, while seeking opportunities to protect habitat and ecological functions from further degradation. ~~The identified HI areas include the downtown waterfront and an area near the head of Liberty Bay.~~

Policy NE-8.5

As set forth in WAC 173-26-211(5)(d) or as subsequently amended, new uses in the HI environment should be prioritized. First priority should be given to water-dependent uses. Second priority should be given to water-related uses and third priority to water-enjoyment uses. New non-water oriented uses are allowed under the following circumstances: as a minor part of mixed use development that includes water-dependent uses; when accessory to uses that are water-dependent, water-related or for water-enjoyment; when the site is physically separated from the shoreline from another property or public right-of-way; or when there is no direct access to the shoreline from the site.

Policy NE-8.6

Full utilization of the area designated as the HI environment should be achieved before further expansion of the HI environment is allowed unless it is demonstrated that the demand for water-oriented commercial uses cannot be satisfied within the existing HI environment designation.

Policy NE-8.7

Existing non-water oriented uses in the HI environment, such as restaurants and retail shops, may continue to operate under the provisions of the City's zoning ordinance. Redevelopment should be encouraged as water related or water enjoyment uses that will take advantage of water views, and provide public views and public access where feasible.

Policy NE-8.8

Compatibility of adjacent land uses and activities in the HI environment shall be encouraged through the design and location of new development and redevelopment, as well as landscaping, visual screening, signage, and lighting, to minimize potential adverse impacts to neighboring properties and protect the aesthetic qualities of the shoreline.

Urban Conservancy

The Urban Conservancy (UC) shoreline environment preserves existing natural landforms and native shoreline vegetation as much as possible, while promoting public shoreline access, views and recreation along with continuance of existing developed uses. ~~The UC designation applies to several shoreline properties located at the west side of the intersection of Lindvig Way and Bond Rd, adjacent to the Dogfish Creek estuary.~~

Policy NE-8.9

New development, or redevelopment or change of land use on commercially zoned property in the UC environment shall not increase the existing density or intensity of land use, exceed the size and scale of existing structures within the shoreline buffer and setback, or extend further waterward than the existing development.

Policy NE-8.10

Standards should be established for shoreline stabilization measures, vegetation conservation, and shoreline modification in the UC environment, with the intent to protect against further degradation of shoreline values and functions.

Policy NE-8.11

In the UC environment, water-oriented uses shall be encouraged over nonwater-oriented uses for new development or redevelopment.

Policy NE-8.12

Restoration of shoreline ecological functions, maintenance of designated public views, and establishment/maintenance of public access shall be priorities when new development or redevelopment is proposed in the UC environment.

Policy NE-8.13

The City should explore opportunities to acquire property from willing landowners within the UC areas where there are opportunities for expanding public park lands, improving shoreline and estuary restoration and protection efforts, and increasing public access.

Natural

The Natural (N) shoreline environment is established to protect and restore shoreline areas that are relatively free from human influence, undeveloped, and/or include intact or minimally degraded shoreline functions that are sensitive to proposed impacts from development. ~~N areas within the city include the majority of Fish Park, and areas of Muriel Iverson Waterfront Park, Net Shed Park, American Legion Park, and Nelson Park, that are within 0-100 feet of the ordinary high-water mark of Liberty Bay and/or the estuarine portion of Dogfish Creek.~~

Policy NE-8.14

The N environment in public shoreline parks should be retained for public recreation and public access, and managed to maximize environmental *preservation*, with a focus on retaining and restoring natural shoreline and habitat functions.

Policy NE-8.15

Within the N environment, scientific, historical, cultural and educational research uses, and low-intensity recreational access uses, may be allowed *provided* that no net loss of shoreline values and functions will result.

Policy NE-8.16

N areas along the Dogfish Creek estuary shall continue to be preserved and restored, and the establishment and maintenance of public access, public enjoyment, and public views shall be encouraged where a net loss of ecological functions will not occur.

Policy NE-8.17

The City should explore opportunities to acquire property or obtain public use easements from willing landowners within 0-100 feet of the shoreline, when such acquisition would benefit existing and proposed shoreline public access paths and/or would adjoin existing public shoreline parks.

Aquatic

The Aquatic (A) shoreline environment includes all lands waterward of the ordinary high-water mark within the City's jurisdiction, including public and private tidelands, state submerged lands, and areas designated as critical saltwater habitat.

Policy NE-8.18

Regulations for the A environment should promote preservation and restoration of nearshore ecological function, and preservation and restoration of identified critical saltwater habitat areas.

Policy NE-8.19

Overwater or in-water development and uses on navigable waters or submerged lands should be located and designed to minimize interference with surface navigation; to minimize adverse visual impacts; and to allow for the safe, unobstructed passage of fish and wildlife, particularly those species dependent on migration or on the nearshore environment.

Policy NE-8.20

Uses and activities in the A environment should be reviewed for compatibility with adjacent upland uses and environments.

Policy NE-8.21

New or expanded overwater or in-water structures should not be allowed except as part of a permitted water-dependent use that requires the specific overwater or in-water structure to function correctly.

Policy NE-8.22

Public recreational use of state uplands and submerged lands shall be protected against competing uses that would interfere with or restrict these uses.

Policy NE-8.23

Future aquaculture uses are not anticipated within the City's shoreline jurisdiction, for reasons including geographical limitations (shallow, tidal bay), potential conflicts with navigation, and water-quality concerns. However, some scale or form of aquaculture ~~in support of future restoration or enhancement efforts~~ may be appropriate and may be considered ~~by the City on a case-by-case basis~~ through a Shoreline Conditional Use permit. {to address recent amendments to SMP regarding aquaculture}

Public Access

The ~~Shoreline Master Program~~ SMP Guidelines require dedication and improvement of public access in developments for water-enjoyment, water-related, and nonwater-dependent uses and for the subdivision of land into more than four parcels, except when it is demonstrated to be infeasible due to reasons of incompatible uses, safety, security, or impact to the shoreline environment or due to constitutional or other legal limitations that may be applicable [WAC 173-26-221(4)(d)(iii)]. Alternatively, the local government may opt to develop a shoreline public access plan that provides more effective public access than the above requirement, as described in WAC 173-26-221(4)(c).

GOAL NE-9

The City shall develop a shoreline public access plan, consistent with the requirements of WAC 173-26-221(4)(c), which identifies existing and proposed public shoreline access points, requirements for dedication of public shoreline access

with new shoreline development or redevelopment, and other opportunities for increasing and improving public access to the City's shorelines and the waters of Liberty Bay.

Policy NE-9.1

The shoreline public access plan should be consistent with and supportive of other relevant comprehensive plan elements, especially the transportation and recreation elements, and with other approved plans and projects for public shoreline access, circulation, and recreation.

Policy NE-9.2

Public participation and input shall be invited, in accordance with the requirements of WAC 173-26-201 (3)(b)(i), to identify and prioritize in the shoreline access plan the preferences of the City's residents for new and improved access points and other amenities that will increase the public's ability to enjoy the City's shorelines and the waters of Liberty Bay.

Shoreline Features *{moved from Goal/Policies NE-11}*

GOAL NE-10 ~~11~~

Protect the historic, archaeological, and cultural features and qualities of the Poulsbo shoreline.

Policy NE-10.~~11.~~1

Where possible, *identified* archaeological areas and historic sites along the City's shorelines should be permanently preserved.

Policy NE-10.~~11.~~2

Consideration should be given to the National Historic Preservation Act of 1966 and Chapter 43.51 RCW to provide for the protection, rehabilitation, restoration and reconstruction of sites, buildings, and structures located along the shoreline that are significant to history, architecture, archaeology, or culture.

~~*Liberty Bay*~~ Water Quality and Basin Planning

{new section to address ongoing water quality and watershed basin efforts/planning}

Liberty Bay and its tributaries are located both within and outside of the city limits of Poulsbo, and are identified within Water Resource Area (WRIA) 15. Liberty Bay is about 4 miles long and ¾ mile wide. The deepest point is 39' at its center. Extensive tide flats cover much of the northern Liberty Bay at low tide. Circulation is somewhat limited due to the enclosed shape of the bay.

The Liberty Bay watershed is about 22,000 acres. There are nine primary streams in the watershed, five of which are all or partly located in Poulsbo: ~~There are six major creeks in the watershed: Little Scandia Creek, Big Scandia~~ Poulsbo Creek~~,~~ Bjorgen Creek, ~~Daniels Creek,~~ Dogfish Creek ~~(including all major tributaries),~~ Barrantes Creek, and Johnson Creek. At 4,700 acres, the largest drainage in the watershed is Dogfish Creek, which forms the head of Liberty Bay.

Over 50% of the historically forested watershed is now developed, with over ~~17~~30% of that area classified as impervious. Most of the highly developed areas are concentrated near Poulsbo and Keyport. Concentrated forests and small farms cover the rest of the watershed.

Water quality is the primary consideration for the continued health of Liberty Bay. Good water quality sustains aquatic life, but quickly deteriorates when pollutants, such as sediment, nutrients, organic material, and toxicants are either dumped or discharged into the surface water, or are washed in by storm water runoff. Control of pollutants at their source is the first and best method to prevent water quality problems. Reducing non-point source pollution, the contaminated runoff from land surfaces, remains a major goal that involves the entire community. Each individual, business, and government entity is a potential contributor to water quality improvements by reducing or eliminating erosion, reducing or eliminating the use of herbicides, pesticides and fertilizers; and by properly using and disposing of oil and grease and hazardous materials like paints and solvents.

~~Liberty Bay, like much of Puget Sound, has experienced significant impacts on its ecological integrity and water quality. About half of the shoreline of Liberty Bay is armored and a greater portion has been developed. These shoreline modifications have altered nearshore processes and affected nearshore habitat conditions.~~

~~In addition, violations of water quality standards, most notably for microbial pollution, are a recurring problem in Liberty Bay. As a result, tribal, commercial and recreational shellfish harvest is now restricted to a fraction of historic levels. However, in spite of negative impacts on its water quality, Liberty Bay retains a level of natural ecosystem structure and function. Ecological conditions in the Liberty Bay watershed are generally supportive of aquatic life – although there is room for improvement. Water quality conditions are also generally supportive of recreational beneficial uses such as swimming and boating activities, although there are improvements still needed to fully support shellfish harvesting throughout the bay.~~

~~Much has been accomplished within the Liberty Bay watershed in the past decade. The Kitsap County Health District (KCHD) and Kitsap Conservation District's Liberty Bay Watershed Restoration Pollution Identification and Correction program has significantly reduced bacterial pollution in Dogfish Creek and Liberty Bay through correction and restoration efforts with septic systems and agricultural sites. The City, KCHD and the Washington Department of Ecology (DOE) have also been working to reduce bacterial pollution from storm water draining into the South Fork of Dogfish Creek and Liberty Bay. The Port of Poulsbo and the three marinas located in Liberty Bay have all instituted best management practices to reduce pollution. A historic undersized culvert located at the mouth of Dogfish Creek was replaced with a bridge, now allowing unrestricted passage to salmonids and other aquatic biota, as well as restoring natural tidal flushing into the creek. New parks established by the City along the Liberty Bay shoreline and two existing parks along the shoreline, have enhanced the shoreline with natural vegetation.~~

~~Continuing improvements in nearshore habitat conditions, water quality, storm water management and biological integrity could eventually result in the full restoration of beneficial uses throughout Liberty Bay.~~

~~In 2016, the City in coordination with DOE, Kitsap County Health District, Kitsap County and others, completed " Liberty Bay Total Maximum Daily Load (TMDL) Implementation Plan". The purpose of this plan is to identify and prioritizes actions that will help to preserve, protect, and restore water quality and natural systems in Liberty Bay, while at the same time providing infrastructure that supports both existing and future development. From this plan, the City has identified specific restoration and corrective action projects and efforts that can be programmed into its storm water capital improvement plan.~~

GOAL NE-11~~10~~

Protect the water quality and ecological integrity of Liberty Bay by appropriately regulating land uses and storm water through the development review process, and by participating in watershed planning efforts.

~~Policy NE-10.1~~

~~Protect shoreline ecological processes and functions through regulatory and non-regulatory means, including acquisition of key properties on the Liberty Bay estuary and shoreline; regulation of new development through the City's Shoreline Master Program; and incentives to encourage ecologically sound design.~~ {Addressed in other policies}

Policy NE-11.1~~10 2~~

Protect critical saltwater habitats in recognition of their importance to the marine ecosystem of Liberty Bay and Puget Sound. These habitats can provide critical reproduction, rearing and migratory nursery areas for fish, juvenile salmon, mollusks such as oysters, marine plants and animals. Habitats of special concern include kelp beds; marine vegetation areas including eelgrass beds; spawning areas for herring, smelt and sand lance; juvenile salmonid migration corridors; rock sole spawning beds; rockfish settlement and nursery areas; and lingcod settlement and nursery areas.

~~Policy NE-10.3~~

~~The City shall, provide regulations to sustain shoreline ecological functions and natural resources, and to encourage and facilitate the restoration of existing impaired ecological functions.~~ {Addressed in other policies}

Policy NE-11.2 ~~10.4~~

The City will continue to implement, as appropriate, recommendations of the City of Poulsbo Liberty Bay TMDL Implementation Plan (2016).

Policy NE-11.3

Cooperate with regional and local agencies to monitor surface water quality and implement measures to identify and address any sources of pollution. {Added to acknowledge water quality improvement work by City and Health Dept.}

Policy NE-11.4

Cooperate with regional and state governments and agencies in the development and implementation of watershed management plans or other types of basin plans which are upstream or downstream from Poulsbo. {Added to acknowledge on-going watershed and basin planning}.

Climate Change {New Section to address Vision 2050 Consistency Checklist}

Climate change refers to significant and long-term alterations in the Earth's average weather patterns, including temperature, precipitation, wind, and other climate-related factors. Addressing climate change requires a comprehensive approach that encompasses both mitigation (reducing emissions) and adaptation (preparing for the impacts). Efforts to combat climate change encompass a wide range of actions, including policy initiatives, technological innovations, sustainable land management, and changes in individual and community behavior. Mitigating climate change not only helps to protect the planet's ecosystems and biodiversity but also safeguards the well-being and prosperity of current and future generations.

GOAL NE-12

Support achievement of regional and state greenhouse gas emissions reduction goals.

Policy NE-12.1

Collaborate with other government agencies (such as Puget Sound Regional Council, Puget Sound Clean Air Agency, Washington State Department of Ecology, Kitsap County, other cities) and the private sector to develop and implement strategies for addressing climate change and greenhouse gas reductions.

Policy NE-12.2

Encourage conservation by use of alternative energy sources and energy management technologies.

Policy NE-12.3

Protect natural resources that sequester and store carbon such as wetlands, estuaries, stream buffers and urban tree canopy.

Policy NE-12.4

Reduce vehicle miles traveled and driving alone through land use and transportation strategies that provide opportunities and access to walking, biking, and transit. Support regional and state efforts to electrify the transportation system.

Policy NE-12.5

Encourage the reduction of building energy consumption through green building practices and promote the adaptive reuse of existing buildings recognizing the emission-reduction benefits of retaining existing buildings.

GOAL NE-13

Support regional, state, and local efforts to increase climate resilience by participating in resilience planning and climate preparedness.

Policy NE-13.1

Support state, regional and countywide actions that support resilience by identifying and addressing the impacts of climate change and natural hazards on land, water, infrastructure, and health.

Policy NE-13.2

Address rising sea water by planning the siting of new hazardous industries and essential public services away from the 500-year floodplain. {500-year floodplain language directly from PSRC Vision 2050}

Policy NE-13.3

Assess potential vulnerabilities of the City's infrastructure to climate change impacts, such as flooding, storm surge, sea-level rise, and land hazards.

Policy NE-13.4

Enhance the City's urban tree canopy to support community resilience, mitigate urban heat and stormwater runoff. This can be accomplished through a program of tree planting in public areas, including street trees, public parks, public open spaces, and public facilities. Consider programs that create incentives for residents and business to plant trees on their private property, in addition to any required applicable landscaping standards.

Policy NE-13.5

In coordination with regional fire districts and Washington Department of Natural Resources, encourage the implementation of Firewise concepts in forest and urban interface / intermix areas. {required per RCW 36.70A.070(1), as amended in 2023}

Policy NE-13.6

Provide educational material and resources for new and existing property owners to use in lowering their risk for wildland fires, including fire resistive construction techniques, construction and maintenance of defensible spaces, and fire-resistant landscapes, fuel reduction, and land use practices. {required per RCW 36.70A.070(1), as amended in 2023}

Air Quality {New Section to address Vision 2050 Consistency Checklist}

Air quality within the Puget Sound airshed is regulated at both the national level and the regional level through the Clean Air Act (42 U.S.C. ch.85). Air quality is generally assessed in terms of whether concentrations of air pollutants are higher or lower than ambient air quality standards set to protect human health and welfare. Air pollution has a disproportionate effect on sensitive groups such as children, the elderly, and people with heart and lung diseases. Air pollution is also a quality-of-life issue. The main sources of air pollution in the Puget Sound region are vehicular and marine traffic, industrial emissions, wood stoves and fireplaces, outdoor burning, and other sources such as lawnmowers, aircraft, trains, and other recreational vehicles.

GOAL NE-14

Support compliance with federal, state, regional and local air quality standards through coordinated, long-term strategies that address the many contributors to air pollution.

Policy NE-14.1

Improve air quality through continued coordinated land use and transportation planning and management.

Policy NE-14.2

Promote alternatives to the single-occupancy vehicle, including telecommuting/teleworking, car sharing, and transit, as strategies for reducing trips and vehicle-related air pollution.

Policy NE-14.3

Reduce airborne particulates through a street sweeping program, dust abatement on construction sites, covered loads of hauled materials, and other methods to reduce dust sources.

Policy NE-14.4

Consider policies and programs for purchasing clean and efficient fuels for city vehicles and equipment.

Urban Forestry {Moved from Land Use Chapter w/proposed edits}

The urban forest is an important part of the Poulsbo landscape. Urban forests are dynamic ecosystems that provide critical benefits to people and wildlife. Urban forests help to filter air and water, control storm water, reduce the impact of high winds, conserve energy, and provide animal habitat and shade. They add beauty, form, and structure to urban design. By

reducing noise and providing places to recreate, urban forests strengthen social cohesion, spur community revitalization, and add economic value to communities.

Climate change and its impact on existing and new trees as well as new wildland urban interface (WUI) requirements will continue to impact the ways the city regulations tree protection and preservation. Balancing these sometimes competing requirements with property owners' rights to develop and manage their property is an ongoing challenge.

~~However, balancing these benefits with a property owner's right to develop and manage their property is an ongoing challenge.~~

GOAL NE-15

Recognize that trees provide many important benefits to our natural and built community - such as reducing erosion, moderating the temperature, cleaning the air, providing wildlife habitat, producing oxygen, and beautifying the community. The City shall recognize and enhance these benefits by encouraging the preservation and management of trees on public and private lands, protecting trees from unnecessary removal or damage during development, and promoting the planting of new trees.

Policy NE-15.1 ~~LU-14.1~~

Continue to support and assist the City's Tree Board in its efforts for the promotion, preservation, and enhancement of Poulsbo's public tree resources.

Policy NE-15.2 ~~LU-14.2~~

Maintain or increase the tree canopy in the city through tree retention and/or replacement by:

- *Implementing educational programs for property owners and managers;*
- *Provide incentives for tree retention and planting, including the City's Heritage Tree program;*
- *Prohibit or limit the amount of significant tree removal on undeveloped property without an approved land use development permit;*
- *Protect healthy stands or groves of trees on property proposed for development;*
- *Require where appropriate, financial assurances for required tree planting and maintenance.*

Policy NE-15.3 ~~LU-14.3~~

Street trees shall be a priority for any public improvement on the City's Urban Collector, Commercial Collector and Neighborhood Collector street classifications. Further, street trees will be required for all Residential Collector streets created through new residential developments. Types, sizing, and space requirements shall be as established in the City's Master Public ~~Street~~ Tree Plan (as amended). Street trees should be installed in planter strips or tree wells located between the curb and any sidewalk where feasible. Where streets are not a practical location, consider designating areas within the development where trees will be required to be planted on developable lots or separate tracts of land.

Policy NE-15.4 ~~LU-14.4~~

Existing trees within a proposed development project is an important factor in its site planning, including determination of building, parking, open space and other feature locations. Tree preservation provisions that encourage the early consideration of tree protection during design and planning of development proposals shall be developed for inclusion in the City's Development Regulations. ~~Maximum tree retention and a treed appearance will be achieved when development occurs through the following:~~

- ~~*Establish a minimum tree retention requirement of significant trees and other applicable development standards within the City's zoning ordinance.*~~
- ~~*Prioritize the retention of viable tree clusters, forested slopes, treed gullies, and trees that are of a species that are long-lived, well-shaped to shield wind, and located so they can survive within a development without other nearby trees.*~~
- ~~*Establish best management practices based on current landscape industry standards.*~~ {deleted to be less specific and determine appropriate standards through development regulations process}.

Policy NE-15.5 ~~LU-14.5~~

Appropriate native tree species or non-native trees naturally adapted to local conditions should be encouraged and incorporated, in all new public project landscaping. City public projects and capital improvement projects should be designed to preserve trees to the maximum extent possible.

Policy NE-15.6 ~~LU-14.6~~

~~Except as required by regulations adopted by the Department of Natural Resources~~, No forest harvesting of property (i.e. forest practice conversion type activity) or tree cutting/clearing shall be approved or authorized by the City until such time as the City has approved a land use development permit. ~~Further, the City shall not approve a clearing and/or grading permit until such time as the City has approved a land use development permit.~~ {edited to reflect new process in Tree Cutting Ordinance}.

Policy NE-15.7 ~~LU-14.7~~

Identify and plant suitable native trees and ~~native~~ vegetation within degraded stream and wetland buffers and on steep slopes as a critical step in ecological conservation and erosion control. ~~Provide for the retention and new plantings suitable as native trees and vegetation on steep slopes.~~

Policy NE-15.8

When funding is available, complete an assessment of the urban tree canopy to evaluate the extent, health, and diversity of trees across the city.

Policy NE-15.9 ~~LU-14.8~~

Encourage and incorporate into the City's tree canopy adequate species diversity and an appropriate mix of tree types (evergreen vs. deciduous) to protect the health of the urban forest.

Policy NE-15.10 ~~LU-14.9~~

Acknowledge that the addition and retention of trees may impact public views. Maintenance practices of trees and shrubs should maintain or enhance designated shoreline public views.

Policy NE-15.11

Maintain the city's status as a Tree City USA as designated by the Arbor Day Foundation through the following measures: a. Maintain certification through various programs and activities long term. b. Strive to achieve annual growth awards from the Arbor Day foundation as a part of long-term implementation of the Tree City designation. c. Consider programs and policies which will further recognize the city's efforts in relation to community forestry.

Policy NE-15.12

Upon consultation with the City Arborist, consider additional planning or resource documents (such as tree stewardship guide) related to ongoing tree stewardship and protection. {new policy that considers potential resource documents that could be developed}