CHAPTER 3.
AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

LAND USE/IMPORTANT FARMLAND/FORMALLY CLASSIFIED LANDS

Affected Environment

Important farmlands consist of prime farmlands, unique farmland, farmlands of statewide importance, and farmlands of local importance. Formally classified lands include wild and scenic rivers, and recreation areas. There are no important farmlands or formally classified lands in the project area. This section provides a general description of the project area and its land use designations.

General Description of the Site

The PHSPA is approximately bordered by Port Townsend Bay on the east, Elkins and Lopeman Roads on the south, Chimacum Creek on the north, and State Route (SR) 19 on the west. According to the Jefferson County Comprehensive Plan, the PHSPA encompasses 1,320 acres. Based on the year 2000 census, the resident population is 2,553. The projected 2024 population is 4,906.

Land Use

Existing Land Use

The existing land use pattern is characterized by commercial development concentrated along the major highway corridors (Rhody Drive, Ness’ Corner Road, and Chimacum Road) and developed single-family neighborhoods in Irondale and Port Hadlock. Scattered multi-family apartment complexes are located mostly at the fringe of the Port Hadlock commercial core area. Single-family residential development accounts for close to half of the existing land use. Most of the residential neighborhoods south of Irondale Road are largely built-out, although a significant number of lots platted early in the 20th century remain undeveloped. In fact, vacant lands constitute about one-third of the PHSPA—mostly north of Irondale Road and south of Chimacum Creek. The remaining land use in the PHSPA includes public and quasi-public facilities. The area also includes several neighborhood parks and open space areas.

Future Land Use

The primary categories for future land use are as follows:

- Urban Residential—The Urban Residential land use designation accounts for the largest share of land use in the PHSPA and includes the following:
  - Urban Low Density Residential zoning allows four to six dwelling units per acre, except for parcels outside the planned sewer service area and within a designated Critical Aquifer Recharge Area, where the maximum density may not exceed 3.5 units per acre. This zone accounts for more than 800 acres although only about one-third of those acres are undeveloped (including mostly vacant platted lots).
  - Moderate Density Residential zoning allows 7 to 14 units per acre and accounts for 55 total acres within the PHSPA.
  - High Density Residential zoning allows 14 to 24 dwelling units per acre.
• Urban Commercial—Almost a quarter of the PHSPA is designated for commercial land use. The Urban Commercial zone is the largest commercial zoning district, covering 272 acres. It includes existing and planned future commercial development in the Port Hadlock core area and along Rhody Drive from Ness’ Corner to the “Dogbone” along SR 19. Visitor-Oriented Commercial zoning is applied to the tourism-oriented potential development area around the Old Alcohol Plant.

• Urban Industrial—Approximately 25 acres of land in the PHSPA are designated as an Urban Light Industrial zone, all but 5 acres of which are already in light industrial use. These uses are located in the southwest corner of the PHSPA well buffered from the bulk of the residential neighborhoods in the community.

• Public Facilities—Public facilities comprise 80 acres, including public park and open space areas, the Library and Chimacum Creek Elementary School, the Jefferson County Sheriff’s Office and Jail, Jefferson County Public Works Department Maintenance Yard, and Public Utility District (PUD) No. 1’s Sparling Well facility along Rhody Drive and the Kivley Well in Port Hadlock.

Future land use and zoning designations for the PHUGA are summarized in Table 3-1 and illustrated in Figure 3-1.

| TABLE 3-1. IRONDALE AND PORT HADLOCK FUTURE LAND USE AND ZONING DISTRICTS |
|-----------------------------------------------|----------------|----------------|
| Land Use Designation                        | Zoning District | Total          | Net Developable Acres<sup>a</sup> | Net Developable Percent of Total |
| Urban Residential                           | Urban Low Density Residential | 801 | 449 | 56% |
| Urban Residential                           | Urban Moderate Density Residential | 66  | 50  | 86% |
| Urban Residential                           | Urban High Density Residential | 50  | 31  | 62% |
| Urban Commercial                            | Urban Commercial | 263 | 161 | 61% |
| Urban Commercial                            | Visitor-Orientated Commercial | 14 | 8 | 57% |
| Urban Industrial                            | Urban Light Industrial | 25 | 15 | 60% |
| Public                                      | Public | 72 | 1 | 1% |
| TOTALS                                      |                  | 1,290 | 715 | 55% |

Source: Jefferson County Central Services, Jefferson County Department of Community Development

<sup>a</sup> Net developable area is the total area on which development, residential or commercial, can take place. It is the Total (Gross) Acres minus critical areas (environmentally sensitive areas), market factor area (land under private ownership which is assumed to remain undeveloped by the owner’s choice), and roads and reduction factor area (area for roads, buffers, easements, etc., that will not be built upon).
3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Figure 3-1. Irondale & Port Hadlock UGA Future Land Use and Zoning Map
Environmental Consequences

The proposed project would likely result in increased populations due to availability of sewer service. Increased areas of commercial and urban zoning will draw more people to the area.

Mitigation

The increased population will be accommodated by increases in allowable residential densities made possible by availability of sewer service.

TOPOGRAPHY, GEOLOGY, AND SOILS

Affected Environment

Topography

Ground elevations in the Port Hadlock area range from 0 to about 130 feet above sea level. The terrain gently slopes across most of the PHSPA, with some areas near the coastline having slopes greater than 15 percent. Figure 3-2 shows the topography of the area.

Geology

Most of the study area is underlain by Quaternary Vashon Recessional Outwash, which generally consists of loose, clean, stratified sands and gravels (Simonds et al., 2004; Grimstad, 1981). There is some Quaternary Vashon Till in the southern portion of the study area, west of the southern cove in Port Townsend Bay. Vashon till deposits generally consist of a compact unsorted mixture of clay to boulder size particles. Occasional sand and gravel lenses may be present. A geologic map provided by Jefferson County (1995) also indicates Vashon Recessional Outwash over much of the study area, with a large area of Vashon Lacustrine Deposits in the area bounded by the northern reach and mouth of Chimacum Creek and the coastline (Jefferson County, 1995). Lacustrine deposits are typically fine-grained (silt and clay) lake-bottom deposits.

Soils

HWA Geosciences, Inc. conducted a reconnaissance to evaluate hydrogeologic and soil conditions in the region for potential land application sites for reclaimed water (Appendix A Sewer Facility Plan). The study found that much or all of the study area is underlain by relatively well-drained, granular soils, with few areas of steep slopes or wetlands. Much of the study area is underlain by three major soil types:

- Cassolary sandy loam—The Cassolary series consists of well-drained soils on upland terraces, formed in reworked glacial and marine sediments.
- Dick loamy sand—The Dick series consists of somewhat excessively drained, sandy soils, formed in glacial outwash on plains and terraces.
- Hoypus gravelly sandy loam—The Hoypus series consists of somewhat excessively drained, gravelly soils, formed in glacial outwash on terraces.

A preliminary review of selected well logs from the study area on file at the Washington Department of Ecology was conducted. Wells in low-lying areas in the Chimacum Creek valley indicate outwash (sand and gravel) near the surface, with static groundwater levels of 19 to 60 feet. Three wells east of SR 19 indicate clay near the surface. This area is mapped as outwash, but is outside the proposed project area. Wells in the upland area east of Chimacum Road indicate glacial till (“hardpan” or gravel and clay). Figure 3-3 shows part of the soil survey map for the study area.
3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Figure 3-2. Topography
Figure 3-3. Soil Types
3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Geologic Hazard Areas
The PHSPA includes some geologically hazardous areas, which are susceptible to erosion, sliding, earthquakes, or other geological events. These include steep slopes and marine bluffs adjacent to Port Townsend Bay and lower Chimacum Creek. Protection of these areas is regulated under Section 3.6.7 of the Unified Development Code (UDC).

Erosion Hazard
Erosion hazard areas contain soils that, according to the U.S. Soil Conservation Service soil classification system, may experience severe to very severe erosion. Erosion hazard includes the transport of soil by wind and water. The susceptibility of soil to erosion depends on the size of the soil particles, the amount of precipitation, topography, and the type and density of vegetation.

The erosion hazard for any soil type increases as slope increases. Slopes less than 15 percent predominate within the PHSPA and will generally be suitable for infiltration sites, provided that adequate erosion control measures are taken during construction and site use. Slopes greater than 15 percent are found along the coastline, and are generally not suitable for infiltration sites. Infiltration near steep slopes may impact slope stability, or may cause undesirable discharge at the base of the slope or on slope faces. These steep and unstable slopes are shown on Figure 3-4.

Landslide Hazard
Landslide hazard areas are areas potentially subject to landslides based on geologic, topographic and hydrological factors, including bedrock and soil characteristics and stratigraphy, slope, and hydrology. Areas with significant slopes in the PHSPA are located along the coastline, and moderate slopes are located near the northern boundary of the area, as indicated on Figure 3-4.

Seismic Hazard
Jefferson County sits atop the Juan De Fuca tectonic plate, which is moving eastward underneath the North American plate at a rate of less than 3 centimeters a year. The County is vulnerable to shallow earthquakes. Vulnerable areas are shown in Figure 3-5. Seismic hazard areas are areas associated with active faults and earthquakes. The potential for ground-shaking, differential settlement, or soil liquefaction in these areas poses significant, predictable hazards to life and property. Seismic-induced events also include tsunamis, surface faulting or seiches (oscillations of large bodies of water).

Environmental Consequences
Steep slopes and marine bluffs adjacent to Port Townsend Bay and lower Chimacum Creek are prone to impacts related to erosion, seismic events and landslides, but these areas will not have a significant impact on the candidate wastewater treatment plant sites.

The Uniform Building Code defines four zones for seismic hazard. Due to limited detail associated with the seismic hazard data, the zones for the proposed project area cannot be determined. The susceptibility of any liquefaction for the wastewater treatment plant candidate sites is low.

Mitigation
Design of all of the facilities and pipelines will take into consideration the soil limitations of the sites. The geological hazardous areas will not have a significant impact on the candidate wastewater treatment plant sites and therefore no mitigation is necessary.
Figure 3.4. Erosion Hazard Areas
WATER AND WETLANDS

Affected Environment

Surface Water

The major surface water in the area is Chimacum Creek, which flows north and then east to discharge into Port Townsend Bay. The lower 2 miles of the Creek flow through a forested ravine and extensive riparian and estuarine wetlands. Figure 3-6 illustrates the surface water bodies and wetlands.

Wetlands

Wetlands are integral features to the landscape of Jefferson County. They provide important habitat for fish and wildlife, reduce flooding of developed areas, and help recharge the groundwater. In some areas, wetlands act as water storage and groundwater discharge points. These functions can be vital to support stream flows during times when the flows are the lowest. Still other wetlands are important at river mouths and along the marine shorelines. These estuarine and salt marsh wetlands are vital to the health of fish and wildlife populations; they are extremely productive and often act as nurseries, or areas where juveniles are able to forage and grow with protection from predators.

The biological and ecological functions of a wetland relate directly to its classification. The classification system translates into wetland protections provided under the UDC. Jefferson County uses the rating system developed by the Washington Department of Ecology, which defines four classes of wetlands. Class 1 wetlands are those that meet any of the following criteria:

- Wetlands with the documented presence of species proposed or listed by the federal government or State of Washington as endangered or threatened
- Sites that are documented or qualify as Natural Heritage wetlands sites or high quality native wetland communities, where significant functional values have not been altered (e.g. soils, hydrology, vegetation), and are not predominantly characterized by non-native plant species
- Regionally rare wetland communities, i.e., one of five or fewer examples of the wetland type based on plant association
- Wetlands with irreplaceable ecological functions, including peat wetlands that have not been subject to significant hydrological modification and mature forested wetlands greater than 1 acre in size
- Wetlands with a total area of 10 acres or more that include three or more wetland classes including an open water zone
- Wetlands with documented habitat for listed or candidate sensitive or priority species of plants, fish, or wildlife recognized by applicable federal or state agencies.

Class 2 wetlands are wetlands that are not Class 1 wetlands and meet any of the following criteria:

- Wetlands that display significant functions and values that may not be adequately replicated through creation or restoration, including peat wetlands with significant hydrologic modification and forested wetlands that are not mature
- Wetlands 1 acre or greater in size that include 40 to 60 percent open water in dispersed patches or are classified as forested
- Wetlands that are associated with other water bodies.
Class 3 wetlands are wetlands that do not meet Class 1 or Class 2 criteria, are isolated wetlands 1 acre in area or greater, and have more than one dominant plant species. Class 4 wetlands are wetlands that do not meet the criteria for Class 1, 2 or 3 wetlands.

Requests were made to the U.S. Department of Fish and Wildlife (USFWS), the Washington Department of Fish and Wildlife (WDFW) and the Washington Department of Natural Resources (DNR) to review the proposed project for any concerns regarding wetlands or other natural resources in the project area. Letters to these agencies and a response from WDFW are included in Chapter 6 of this report.

There are sensitive areas/wetlands along the shorelines of Chimacum Creek and Port Townsend Bay. The only other sensitive area/wetland is just north of the candidate wastewater treatment plant site. However, the mapping does not distinguish the class of wetland.

**Groundwater**

The Vashon Advance Aquifer is a widely used aquifer on the west side of the Chimacum Creek Basin, with deposits up to 200 feet thick. Several layers, such as the Sparling Aquifer, are very productive. Groundwater flows from high areas toward low areas, and thus flow paths converge on Chimacum Creek. In the downstream reaches of Chimacum Creek where the creek is incised into the Vashon Recessional Outwash and the local water table is higher than the average stream stage, the stream gains water from the groundwater system. However, winter stream stages can be higher than the local water table, causing the creek to lose water to the groundwater system. The average net exchange between groundwater and Chimacum Creek is a gain of about 6 cubic feet per second (cfs) (Simonds et al., 2004).

The entire PHSPA is served by a public water system owned and operated by PUD No. 1. The system draws groundwater from two wells. The primary source is the Sparling Well, at the intersection of Rhody Drive and Kennedy Road on the western border of the PHSPA. A secondary well, the Kivley Well, is southeast of the Port Hadlock core area. The locations of the wells are shown on Figure 3-7.

Portions of the PHSPA are vulnerable to groundwater pollution and are designated as a Critical Aquifer Recharge Area (CARA) due to their hydrogeologic soil characteristics and the presence of public water supply wellheads. There is a designated wellhead protection area around the PUD’s Sparling Well and the Kivley Well. Figure 3-7 shows critical aquifer protection areas (CARA), from the Jefferson County GIS database. Figure 3-8 shows the wellhead protection areas, from the Washington State Department of Ecology Facility/Site Identification System.

**Environmental Consequences**

Preliminary well log findings suggest that much of the water discharged to surface or near surface at the candidate wastewater treatment plants sites will likely discharge into Chimacum Creek. Further site explorations should allow for estimates of the relative amounts of vertical recharge to the Vashon Advance Aquifer versus recharge to the creek.

Removing a large population from septic systems will concentrate infiltration, which is currently distributed across the region, at the infiltration site. This may cause small changes to shallow groundwater levels, wetlands, and Chimacum Creek.

**Mitigation**

Potential decreases in groundwater flow from concentrating the infiltration at one site may be mitigated by recharging Chimacum Creek flows with high quality reclaimed water from the treatment plant.
Figure 3-7. CARA and PUD Well Locations
Figure 3-8. Locations of Wellhead Protection Areas
Some of the candidate sites intersect with the wetland area along Chimacum Creek, and pieces of the wetland may need to be removed. All efforts will be made to keep construction away from the wetlands and Chimacum Creek. If construction on the wetland is necessary, appropriate permits will be obtained and appropriate mitigation as required by Jefferson County and the U.S. Army Corps of Engineers will be implemented.

The CARA is subject to enhanced wastewater treatment standards which, among other requirements, limit land use activities, establish minimum lot sizes for uses dependent upon on-site septic systems, and require best management practices (BMPs) for siting such development (Jefferson County UDC, Sections 3.6.5 and 6.18; and Jefferson County Code, Chapter 8.15). The water will be suitable for percolation as it will be treated to Class A standards, so no other mitigation is necessary.

**WATER QUALITY**

Washington State Department of Ecology’s Water Quality Program is charged with protecting, preserving and enhancing Washington’s surface water and groundwater quality, preventing generation of pollutants and achieving a water quality stewardship ethic and an educated public. The program focuses on wastewater discharge permits, nonpoint sources of pollution, water quality standards, and financial and technical assistance.

Ecology is responsible for issuing wastewater discharge permits under the State Water Pollution Control Act (RCW Chapter 90.48). Under the act, Ecology operates a state waste discharge permit program for discharges to surface water and groundwater, sewerage systems, and storm drains. Ecology also has authority to carry out provisions of the federal Clean Water Act. Ecology issues both State Water Pollution Control Act and National Pollutant Discharge Elimination System permits.

**Affected Environment**

The affected environment for water quality issues includes all surface water and groundwater in the PHSPA, as described in the preceding section of this chapter (Water and Wetlands).

Most of the roads in the PHSPA are constructed to rural stormwater management standards. Road ditches are used to collect, convey, treat and discharge stormwater runoff. There are two locations where stormwater discharges directly to Port Townsend Bay: the outfall from the storm sewer system located in the Port Hadlock Core and the drainage system for Fourth Avenue and Moore Street in Irondale. Water quality sampling indicates that stormwater runoff at these two sites has levels of pollutants typically found in urban stormwater, including metals, oil, grease, fecal coliform bacteria, nitrogen, phosphorous and suspended solids. No degradation of marine waters related to these discharges was observed.

Under Section 303(d) of the federal Clean Water Act, the Washington Department of Ecology identifies water bodies that do not meet water quality standards. Jefferson County’s surface waters are generally in good condition; however, Chimacum Creek was placed on the 303(d) list for exceeding standards for water temperature and fecal coliform.

**Environmental Consequences**

As additional development occurs within the PHSPA, the amount of impervious surfaces will increase, which will ultimately increase peak surface water runoff rates. The PHSPA has approximately 18 percent impervious surface coverage (2003). Based on projected development due to designation as a UGA, the impervious surface coverage in 2024 would be approximately 28 percent. The increased runoff would also likely contain increased levels of contaminants that could adversely affect surface water and groundwater quality and fish habitat.
No construction activities are proposed within surface waters; however, construction activities could occur within or near the Chimacum Creek shoreline. During construction, on-land clearing, grubbing, grading and excavation to construct the various facilities could result in temporary erosion from disturbed soil and increased sedimentation. Overall, the potential for erosion and sedimentation to enter surface waters from construction and operational activity on the existing site is expected to be minimal due to the lack of slope and low erosion potential of site soils.

**Mitigation**

A stormwater management plan has been created for the Port Hadlock UGA. It is a planning document that provides guidance for minimizing adverse effects of stormwater runoff on groundwater and surface water, including aquatic resources and habitats, and water quality. The plan provides recommendations for improvements and programs, including a cost analysis and an implementation schedule.

Replacing effluent from septic tanks with Class A reclaimed water from a state-of-the-art wastewater treatment plant will provide additional water quality protection to both surface water and groundwater. The proposed membrane bioreactor treatment system will produce Class A reclaimed water, which meets strict standards of the Washington Departments of Ecology and Health for use in nondrinking purposes and is likely better than the water quality produced by the existing septic systems. Acceptable uses for Class A reclaimed water include landscape and agricultural irrigation, heating and cooling, and industrial processing, as well as safe discharges into freshwater. Advanced wastewater treatment using an MBR system is also more likely to remove contaminants such as pharmaceuticals and personal care products that could affect aquatic life.

During construction, the use of appropriate BMPs will reduce potential contamination of surface water runoff by construction equipment (e.g., hydraulic fluids, gasoline and oil). Physical barriers such as straw bales, filter fabric and other temporary erosion control measures will be installed to control runoff and erosion. Disturbed areas will be revegetated with a native grass mix to prevent erosion and excessive runoff, thereby protecting water quality.

**COASTAL RESOURCES**

**Affected Environment**

Jefferson County is a coastal zone county. The Coastal Zone Management Act requires that all federal activities be consistent with approved state coastal zone management programs to the maximum extent possible. This project appears to be consistent with Washington’s Coastal Zone Management Program and enforceable policies (State Environmental Policy Act, Water Quality, Air Quality and the Shoreline Master Program).

The Washington Coastal Zone Management Program is administered by the Department of Ecology. A letter was sent to Ecology’s Coastal Zone Management division requesting review of the proposed project and identification of significant coastal resources that may occur in the project area (see letter in Chapter 6). The project site is less than a mile west of Port Townsend Bay.

**Environmental Consequences**

No permanent significant impacts on coastal resources are expected from the project. Site clearing, earthwork and other construction activities will create a potential for temporary soil erosion and sedimentation into adjacent surface waters (Chimacum Creek) during construction. Implementation of the Sewer Facility Plan would provide additional water quality protection by treating the wastewater to Class A standards before discharging it.
Mitigation

An erosion and sedimentation control plan will be developed as part of the final design of the proposed facilities and will be incorporated into construction documentation to minimize impacts from erosion during construction. Structural erosion controls might include fabric filter fences, gravel berms, and other BMPs. Monitoring and maintenance of such control measures would be conducted throughout construction to ensure proper performance.

BIOLOGICAL RESOURCES

Federal agencies that provide funding, permitting, licensing, or other authorization for this project must assure that their responsibilities under section 7(a)(2) of the Endangered Species Act of 1973, as amended, are met. Section 7(a)—Consultation/Conference requires:

- Federal agencies to use their authorities to carry out programs to conserve endangered and threatened species.
- Consultation with the USFWS when a federal action may affect a listed endangered or threatened species, in order to ensure that any action authorized, funded, or carried out by a federal agency is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. The process is initiated by the federal agency after it has determined if its action may affect (adversely or beneficially) a listed species.
- Conference with the USFWS when a federal action is likely to jeopardize the continued existence of a proposed species or result in destruction or an adverse modification of proposed critical habitat.

In addition to threatened and endangered species, federal agencies are obligated, under Section 305(b)(2) of the Magnuson-Stevens Fisheries Conservation and Management Act (MSA) to consult with National Oceanic and Atmospheric Administration (NOAA) Fisheries regarding actions authorized, funded or undertaken by the agency that may adversely affect essential fish habitat. The MSA defines essential fish habitat as waters and substrate necessary to fish covered under the MSA for spawning, breeding, feeding, or growth to maturity.

Requests were made to the USFWS, NOAA Fisheries, the WDFW and Washington DNR to review the proposed project for any state or federally listed threatened or endangered species, habitat and any other important state natural resources that may be present in the project area. Letters sent to these agencies and corresponding responses, if any, are included in Chapter 6 of this report.

Affected Environment

Threatened and Endangered Species

According to the USFWS (November 20, 2006) the following listed and proposed endangered and threatened species, critical habitat, candidate species and species of concern may occur in Jefferson County:

- Listed
  - Wintering bald eagles (Haliaeetus leucocephalus) occur in the county from about October 31 through March 31.
  - There are three bald eagle communal winter night roosts located in the county.
There are two bald eagle wintering concentrations located in the county along the Quinault River and the Washington coast.

There are 91 bald eagle nesting territories located in the county. Nesting activities occur from about January 1 through August 15.

Brown pelicans (Pelecanus occidentalis) occur along the outer coast of the county.

Bull trout (Salvelinus confluentus) occur in the county.

Chum summer-run Hood Canal salmon (Oncorhynchus keta) occur in the county.

Green sea turtles (Chelonia mydas) may occur along the outer coast in the county.

Leatherback sea turtles (Dermochelys coriacea) may occur along the outer coast in the county.

Loggerhead sea turtles (Caretta caretta) may occur along the outer coast in the county.

Marbled murrelets (Brachyramphus mammoratus) occur in the county. Nesting murrelets occur from April 1 through September 15.

Northern spotted owls (Strix occidentalis caurina) occur in the county throughout the year.

Olive ridley sea turtles (Lepidochelys olivacea) may occur along the outer coast in the county.

Short-tailed albatross (Phoebastria albatrus) may occur in the county.

• Proposed
  – None

• Candidate
  – Pacific Fisher (Martes pennanti pacifica) (West Coast distinct population segment).

• Species of Concern
  – Aleutian Canada goose (Branta canadenis leucopareia)
  – California wolverine (Gulo gulo luteus)
  – Cascades frog (Rana cascadae)
  – Coastal cutthroat trout (Oncorhynchus clarki clarki)
  – Destruction Island shrew (Sorex trowbridgii destructioni)
  – Long-eared myotis (Myotis evotis)
  – Northern goshawk (Accipiter gentilis)
  – Northern sea otter (Enhydra lutris kenyoni)
  – Olive-sided flycatcher (Contopus cooperi)
  – Olympic torrent salamander (Rhyacotriton olympicus)
  – Pacific lamprey (Lampetra ayresi)
  – Pacific Townsend’s big-eared bat (Corynorhinus townsendii townsendii)
  – Peregrine falcon (Falco peregrinus)
The project area is located within the Hood Canal Chum/Strait of Juan de Fuca Evolutionarily Significant Unit (ESU). An ESU is defined as a distinctive group of Pacific salmon, steelhead, or sea-run cutthroat trout. This ESU includes summer-run chum salmon populations in Hood Canal in Puget Sound and in Discovery and Sequim Bays on the Strait of Juan de Fuca. Hood Canal summer-run chum salmon are defined as fish that spawn from mid-September to mid-October. The present status of salmonids in the project area is as follows:

- Threatened—Chum summer-run Hood Canal salmon, Hood Canal Chum/Strait of Juan de Fuca ESU.

The following is a list of endangered and threatened plant species listed by the Washington DNR for Jefferson County (http://www.dnr.wa.gov/nhp/refdesk/lists/plantsxco/jefferson.html).

- Cut-leaf Synthyris (Synthyris pinnatifida var. lanuginosa)
- Quinault Fawnlily (Erythronium quinaultense)
- Golden Paintbrush (Castilleja levisecta).

**Fish and Wildlife**

Mammals that inhabit the project area could include rabbits, squirrels, raccoons, deer and various small rodents. The candidate project sites are mostly open space, so wildlife populations may currently use the area for migration purposes.

The study area supports some bird species. Common species of birds in the study area include robin, crow, black-capped chickadee, winter wren, European starling, song sparrow, junco, red-winged blackbird, spine siskin, tree swallow and red-breasted nuthatch. Great blue herons, Canada geese, mallards and several other species of waterfowl inhabit the wetland areas in the study area, and various shorebirds may be found along the shorelines.

Critical habitat within the Hood Canal Chum/Strait of Juan de Fuca ESU includes all marine, estuarine and river reaches accessible to listed chum salmon. Chimacum Creek and Port Townsend Bay are both considered critical habitat.

According to data provided by WDFW, there are priority anadromous and priority resident fish that use Chimacum Creek. Priority anadromous fish presence includes coho and chum salmon, steelhead, and sea-run cutthroat trout.

**Environmental Consequences**

**Plants and Animals**

The wastewater treatment plant and all allied facilities could occupy as much as 16 acres (6 acres for the reclamation plant, 9 acres for the effluent reuse area, and 1 acre for the influent pump station site). The amount and type of vegetation removed will depend on the location chosen. Removed vegetation will likely include grasses, shrubs, and some trees. Construction of the plant will increase the impervious area.
by 3 to 6 acres. It is not known how much material will need to be excavated or filled, as the site has not been chosen yet.

Sewer piping will be constructed primarily within the roadways. Most adjacent lands are residential yards and vacant lots. There will be no significant increase in impervious area from constructing the piping. The collection system improvements may involve some excavation and fill.

The potential for the proposed project improvements to impact threatened, endangered plant and animal species would be minimal. According to the Washington Natural Heritage Program, which is under the Washington DNR, there are no records of rare plants or high quality native ecosystems in the vicinity of the project.

**Fisheries and Aquatic Resources**

No significant impacts on fisheries or aquatic resources are expected from the facilities proposed in the Sewer Facility Plan. Transferring the residential and commercial facilities from septic systems to a sewer system might cause small changes to Chimacum Creek. The result of this project will be increased water quality protection, with subsequent benefits to fisheries and other aquatic life.

**Mitigation**

**Plants and Animals**

The candidate sites for the wastewater treatment plant are not critical habitat and the project should not significantly disturb plants and animals in the area. Any new plantings will consist of native trees and shrubs. Pipelines will be constructed in existing roadways and roadway shoulders and should not adversely effect habitat. However, depending on the final location for the treatment plant, a biological assessment may be required.

**Fisheries**

To combat the potential loss of septic system additions to base flow and stream flow, all efforts will be made to ensure that the Class A standard reclaimed water is percolated to the groundwater to enhance stream flows in the lower reaches of Chimacum Creek, which are used for spawning and migration.

An erosion and sedimentation control plan will be developed as part of the final design of all facility construction and will be incorporated into construction documentation to minimize impacts from erosion during construction. Construction would likely be performed during dry periods, followed by immediate revegetation as appropriate. Structural erosion controls might include fabric filter fences, gravel berms, and other BMPs. Monitoring and maintenance of such control measures would be conducted throughout construction to ensure proper performance. These measures will lessen the potential for impact on fish and other wildlife habitat.

**CULTURAL RESOURCES**

**Affected Environment**

The Chimacum Tribe used to occupy the Port Hadlock area. After their decline, the area became inhabited by the S’Klallam Tribe. Port Hadlock was an important tribal center known as the Capital of Puget Sound Clans. If potentially significant archaeological sites are discovered during excavation, construction will be halted and a qualified archaeologist will be retained to determine an appropriate course of action.
If federal funds or permits are involved in implementing the Sewer Facility Plan’s recommended projects, Section 106 of the National Historic Preservation act and its implementing regulations (36 CFR 800) must be followed. The Section 106 process seeks to accommodate historic preservation concerns with the needs of federal undertakings through consultation among the agency official and other parties with an interest in the effects of the undertaking on historic properties, commencing at the early stages of project planning. The goal of consultation is to identify historic properties potentially affected by the undertaking, assess its effects, and seek ways to avoid, minimize or mitigate any adverse effects on historic properties (36 CFR 800.1).

The Washington State Office of Archaeology and Historic Preservation and the Jamestown S’Klallam Tribe were contacted as part of a procedural request for a determination of the presence of any archaeological and/or historic resources in the project area. Letters and responses are contained in Chapter 6.

**Environmental Consequences**

No direct impacts on archaeological or historic resources are expected to result from implementation of the projects proposed in the Sewer Facility Plan; however, some resources of archaeological significance could be discovered at the proposed wastewater treatment plant site. Most of the sewer lines will be constructed in existing roadways. However, all appropriate measures will be taken prior to and during construction to minimize the potential for disturbing any archaeological resources.

**Mitigation**

The Washington State Office of Archaeology and Historic Preservation recommended a professional archaeological survey of the identified area of potential effect as well as consultation with the concerned tribes’ cultural committees and staff regarding cultural resource issues. The County will commence with an archaeological survey prior to construction of the proposed facilities. If archaeological resources are found during construction, all work will be halted and the State Office of Archaeology and Historic Preservation will be contacted.

**SOCIO-ECONOMIC/ENVIRONMENTAL JUSTICE ISSUES**

**Affected Environment**

Federal agencies are required to identify and address disproportionately high and adverse human health or environmental effects of proposed actions on minority and low-income populations. This requires identifying minority and low-income populations currently living in the project area, as well as identifying cultural, social, occupational, historical and economic characteristics of these populations that may cause the proposed action to have a disproportionately high and adverse effect on them.

Demographic information was found in Census 2000 information. Table 3-2 summarizes 2000 U.S. Census data on ethnicity and race for the 20-year service boundary. Non-white minorities make up 10 percent of the 2000 Census population. According to the data, it does not seem that any groups are geographically concentrated.
### TABLE 3-2.
IRONDALE AND PORT HADLOCK UGA 2000
CENSUS DATA

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>2,722</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>2,451</td>
<td>90%</td>
</tr>
<tr>
<td>Black</td>
<td>7</td>
<td>0%</td>
</tr>
<tr>
<td>American Indian</td>
<td>60</td>
<td>2%</td>
</tr>
<tr>
<td>Asian</td>
<td>38</td>
<td>1%</td>
</tr>
<tr>
<td>Hawaiian/ Polynesian Islands</td>
<td>3</td>
<td>0%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>64</td>
<td>2%</td>
</tr>
<tr>
<td>Other</td>
<td>17</td>
<td>1%</td>
</tr>
<tr>
<td>Multiple Races</td>
<td>146</td>
<td>5%</td>
</tr>
</tbody>
</table>

Economic information from the 2000 Census for the Port Hadlock and Irondale CDP (census data place) indicates a median annual household income of $32,202. The estimated median income from 2006 is $37,293. The median household and family incomes for the United States in 2005 are $46,242 and $55,832, respectively. The PHSPA falls below the median for the U.S.

#### Environmental Consequences

Population would not be immediately affected, as there would be no housing or business displacement. The portion of low-income households within the service area is not known, due to lack of available information. All households and commercial facilities would gain access to sewer by the year 2024 and it is estimated all households and commercial facilities would be connected to sewer by the year 2030. Building the sewer system will increase costs for the users. Estimates of costs indicate that each household will be required to pay approximately an additional $60 per month for operations and maintenance (O&M) and administration costs. Capital costs per household could range from $13,070 (with 45 percent in grants) to $20,900 (without grants). These costs will replace any septic system maintenance costs and replacements. According to the Washington Department of Ecology, a household is considered in hardship if its monthly sewer rates are greater than 2.0 percent of the median household income. For the 2009 estimate this equates to $69.44 per month, which is greater than the predicted costs.

#### Mitigation

The cost of providing the proposed facilities will be minimized by obtaining grants and low-interest loans from various sources; however, a final funding plan has not been determined. A detailed analysis of the annual revenue requirement should be conducted to determine the level of funding required from user rates on an annual basis, based on anticipated customer growth, sources of funds and projected expenses. Additional sources to decrease costs could be low-income assistance (e.g., U.S. Rural Development Authority housing loans), the health department loan program, congressional line-item/legislative methods, exploring opportunities for O&M savings, and maximizing initial participation and community involvement.
MISCELLANEOUS

Transportation

Affected Environment

The major roads in the PHSPA are SR 19 (Rhody Drive), SR 116 (Ness’ Corner Road and Oak Bay Road), Irondale Road and Chimacum Road. The roads surrounding the candidate wastewater treatment plant sites are Chimacum Road, Elkins Road, and Lopeman Road. Analysis of transportation needs based on proposed land use changes and population growth are contained in the Port Hadlock UGA Transportation Plan. The plan projects that there will be significant impacts on the transportation system during the 2004-2024 transportation element planning period and significant transportation improvements will be required.

Environmental Consequences

While the initial implementation of the PHUGA will not require transportation improvements, development that is anticipated to occur after construction of the sewer system will generate additional traffic that will require transportation improvements in order to maintain the County’s adopted transportation level of service standards. Construction traffic would increase on the roads surrounding the potential wastewater treatment plant construction site. Additional impacts would be experienced during the construction of sewer pipelines, which occur primarily in the roadways mentioned above.

Mitigation

Traffic safety and access would be provided to mitigate potential adverse impacts resulting from construction traffic.

Air Quality

The Olympic Region Clean Air Agency (ORCAA) is the regional agency responsible for enforcing air quality laws in Jefferson, Thurston, Mason, Pacific, Grays Harbor and Clallam Counties. It is one of seven local air pollution authorities in Washington State. ORCAA regulates sources of air pollution ranging from refineries, hospitals, dry cleaners, gas stations and auto body shops, to home fireplaces and wood stoves. Air quality agencies typically are concerned about odor generation from wastewater treatment facilities. Based on the size of the predicted flows, the ORCAA has indicated that permits will not be required.

Affected Environment

The treatment facility will likely be located just south of Port Hadlock (Figure 1-2). The surrounding area is light industrial, public, and low-density residential. No air quality monitoring stations are located near the recommended general location of the proposed treatment facility. The nearest monitoring station is in Port Townsend. Overall air quality is good, based on the air quality at Port Townsend.

Environmental Consequences

Some short-term exhaust and particulate emissions would be generated by construction equipment and construction activities. Vehicles entering and leaving construction sites would generate dust. Any restorative paving operations using asphalt would result in short-term odors.

Gravity collection systems in small service areas do not have a significant potential for odor or corrosion. Odor may be an issue where turbulent flows exist, such as the discharge point into a pump station wet well. There may also be occasional odors associated with the treatment plant and disposal, but these are
not expected to result in significant air quality impacts. The rapid-rate infiltration basins are not expected to be a source of odor.

Directing growth into compact urban areas as the GMA proposes should reduce vehicle travel and thereby reduce total emissions into the atmosphere.

There will be no significant impacts on air quality after project completion; odor control facilities will reduce potential for odors that might emanate from the treatment plant. The closest residence is at least 1,000 feet away.

**Mitigation**

MBRs will be used as the treatment technology in the proposed plant. MBRs have a relatively small footprint and so can be covered to capture and eliminate odors.

**Noise**

**Affected Environment**

No specific noise data exist for the project area. Noise levels are not generally high at similar sites.

**Environmental Consequences**

No significant noise impacts would result from the proposed action. A temporary increase in noise levels would result from construction activities and truck traffic. Vehicular traffic on roads surrounding the construction site would contribute to ambient noise levels.

**Mitigation**

There are no official noise regulations for Jefferson County; however, construction crews will attempt to minimize noise pollution and adhere to acceptable noise levels.