DRAFT DOCUMENT

This document is a draft. It has not been fully reviewed, has not been checked for accuracy and does not reflect any conclusions of the Port, the City of Portland, or any other reviewing agency.

VOLUME 2
NATURAL RESOURCE ELEMENT

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BACKGROUND

1.1 Introduction

The Port of Portland proposes to develop 827 acres of West Hayden Island (WHI) to support marine cargo facilities, which would be built in three phases over several decades. The timing of construction of the three phases would be dependent on the rate at which demand for marine facilities in the Portland metropolitan area develops, but it is expected that the first phase of construction would be completed by 2006 and that all phases would be completed by 2030.

The City of Portland Bureau of Planning prepared the West Hayden Island Goal 5 Analysis in June 1996. That Goal 5 report was the result of an intergovernmental agreement between the Port of Portland and the Portland Bureau of Planning. Since completion of that report, the Goal 5 Administrative Rule has undergone a major revision. As the Port moves forward with its plans to develop West Hayden Island for marine industrial uses, it is necessary to update the Goal 5 analysis to address the new administrative rule provisions.

This Natural Resource Element is an integral part of the West Hayden Island planning documents. This document provides resource inventories, analyzes conflicting uses, and refines the Goal 5 protection plan as appropriate within the site. Mitigation plans have been prepared to address wetlands and upland forests impacted by the development, and these are included by reference as part of the protection plan. Data was collected and analyzed following the procedures and criteria specified in Oregon Administrative Rules (OAR) 660, Division 23, adopted by the Oregon Land Conservation and Development Commission on June 14, 1996. The Goal 5 OAR "establishes procedures and criteria for inventorying and evaluating Goal 5 resources and for developing land use programs to conserve and protect significant Goal 5 resources" (OAR 660-23-000(1)).

The basic components required by OAR 660-23 include:

- Goal 5 resource inventory information
- Determination of Goal 5 significant resources
- Identification of conflicting uses
- Determination of impact area
- Analysis of economic, social, environmental and energy (ESEE) consequences

· Development of a program to achieve Goal 5

At the same time as the WHI planning process is undertaken, the Port is preparing an Environmental Impact Statement (EIS) under the federal National Environmental Policy Act (NEPA). The EIS is in support of application by the Port to the U.S. Army Corps of Engineers for development of the West Hayden Island site. This Natural Resource Element and Goal 5 inventory and analysis is separate from the EIS effort, but relies upon information from the EIS for resource inventory and analysis for data and conclusions.

1.2 History of West Hayden Island

Hayden Island probably originated as a mid-channel bar in a wide, shoaled reach of the Columbia River. Early survey maps (1860-1880) show a complex of shoals, islands and channels in the area of Hayden Island (Figures 1-1 and 1-2). Diking, dredging and groin construction beginning during the early to mid-1900s resulted in stabilization and deepening of the river channel. Disposal of dredged material on Hayden Island changed the shape and size of the island to the present configuration (Figures 1-3 through 1-6).

The earliest written description of Hayden Island was in 1792 by W.R. Broughton who named it Menzies Island after a renowned botanist of the time. In the 1850s, the pioneer Gay Hayden claimed the island and lived there for a few years with his wife. More recently, the western portion of Hayden Island (West Hayden Island) was owned by Portland General Electric (PGE) and James River Corporation, before purchase by the Port of Portland in 1994.

In 1982 the regional government (Metro) expanded the Urban Growth Boundary (UGB) to include West Hayden Island. At that time, the area was re-designated by Multnomah County from "Multiple Use Forestry" to "Future Urban" within the Multnomah County Framework Plan. The impetus for both actions was to provide a future site for waterfront industrial and marine terminal uses.

An important element in the Multnomah County analysis was the finding by the County that additional waterfront acreage was needed within the UGB to meet the forecasted demand for marine terminal uses. That analysis also found that natural resources located on West Hayden Island are significant enough to warrant some level of protection.

Figure 1-1 – West Hayden Island 1860
Figure 1-2 – West Hayden Island 1888
Figure 1-3 – West Hayden Island 1936
Figure 1-4 – West Hayden Island 1940
Figure 1-5 – West Hayden Island 1946
Figure 1-6 – West Hayden Island 1961

Figure 1-1 – West Hayden Island 1860

Figure 1-2 – West Hayden Island 1888

Figure 1-3 – West Hayden Island 1936

Figure 1-4 – West Hayden Island 1940

Figure 1-5 – West Hayden Island 1946

Figure 1-6 – West Hayden Island 1961

Accordingly, the County retained the Significant Environmental Concern (SEC) overlay zone. Multnomah County concluded that marine industrial development on West Hayden Island is appropriate, with some level of environmental review:

> *"Marine economic activities are a crucial sector in the Oregon and Portland region economics. So too are the contributions made by other basic industrial activities."*
>
> *"Wildlife, fishery habitat, potential recreational areas and sites of scenic significance will be balanced with West Hayden Island's unique suitability for water-dependent industrial development through meeting the requirements of the SEC zone, the design review process, and the community planning process." (Multnomah County, Planning Commission Decision, July, 1982)*

Similarly, Metro based its decision primarily on the demonstrated need for additional land available for marine industrial uses. The hearings officer stated that:

> *"There is no dispute in this record that there will be a year 2000 need for additional marine terminal facilities in the region, and that alternative sites elsewhere on the Willamette or Columbia Rivers do not exist."* (Metro, Findings, Conclusions and Recommendation of the Hearings Officer, 1983).

Since inclusion within the UGB, two proposals have been made to develop the area for waterfront industrial and marine terminal uses. Portland General Electric (PGE), the previous owner of a major portion of West Hayden Island, proposed a marine industrial park for the largest land parcel on West Hayden Island. PGE proposed nine marine terminal berths, and 25 industrial warehouse sites. The PGE proposal included major alterations to both the Columbia River and North Portland Harbor (banks, channels, and adjacent land areas) (PGE, 1987). An Environmental Impact Statement (EIS) was prepared for the US Army Corps of Engineers in 1987 for the marine industrial development proposed by PGE (USACE 1987). Although some environmental permits were issued, the proposal was never implemented.

In 1989, the City of Portland included West Hayden Island in a natural resources inventory even though the property was not within city jurisdiction (City of Portland 1989).

In July 1994, the Port of Portland purchased PGE's parcel and the other remaining parcels on West Hayden Island. After purchasing the site, the Port prepared the West Hayden Island Development Program (Port of Portland 1997), with the intention to develop the area along the Columbia River (the north bank) as a deep draft port facility. Studies of West Hayden Island natural resources were conducted for the West Hayden Island Development Program.

The City of Portland Bureau of Planning prepared the West Hayden Island Goal 5 Analysis in June 1996 under an intergovernmental agreement between the Port of Portland and the Portland Bureau of Planning. The current planning efforts to annex

the property into the City of Portland, to update the Goal 5 analysis to address new Goal 5 requirements, and preparation of an EIS for full development of the Island, is consistent with the long-term intents and efforts for development of WHI.

1.3 Ecosystem Context

Hayden Island lies between Columbia River miles 103 and 106 in the Columbia River between Portland, Oregon and Vancouver, Washington, approximately seven miles from downtown Portland. West Hayden Island is the undeveloped portion of an otherwise highly urbanized island in the Columbia River. The developed portion of the larger island contains shopping centers and other commercial development, residential and office development, industrial areas, and some of the most densely developed moorage/marina facilities in the Portland area. Interstate 5 and the Burlington Northern Railroad cross the river and island in the north-south direction. The Oregon and Washington shorelines are primarily port facilities in this reach of the Columbia River to the west of the railroad bridge.

The West Hayden Island Study Area has the following boundaries: the Oregon-Washington state line on the north; the east edge of the Burlington Northern/Santa Fe Railroad (BN/SFRR) main line right-of-way on the east; the present City of Portland city boundary on the south; and an extension of the City boundary on the west (Figure 1-7). The island encompasses 827 acres above the "normal line of high water" (+6.0 ft NGVD).

Federally authorized navigation channels are located on both the north and south sides of West Hayden Island (Figure 1-8). The 40-foot deep Columbia River channel is located close to the Washington shore and extends past West Hayden Island to the I-5 bridge. A 40-foot channel also exists in North Portland Harbor to a point just east of the BPA power line; it is a 20-foot deep channel from there to approximately the BN/SFRR bridge. West Hayden Island is situated between two working harbors, the Vancouver Harbor on the north and the North Portland Harbor on the south. These waterways are used for a wide variety of marine industrial and cargo activity to take advantage of the inland waterway of the Columbia-Snake River system and the deep-draft navigation facilities available from the mouth of the Columbia River to the Portland/Vancouver harbors.

The undisturbed appearance of West Hayden Island is relative. All of the habitats on West Hayden Island have experienced disturbance related to post-European settlement activities, including clearing, farming, grazing and filling. Some of the habitats exist as a direct result of these disturbances; for example, disposal of dredge material along the island shore has added additional uplands and associated vegetation. An aerial photograph from the 1930's (see Figure 1-3) shows two islands that have since been joined by filling and accretion of river deposited sediments.

Figure 1-7 - WHI Study Area

Figure 1-8 - Infrastructure and Historic Features

Relatively recent environmental disturbances on the property include an underground City of Portland sewage outfall that crosses the island just west of the railroad and discharges into the Columbia River; a heavy equipment operator school on the north shore (discontinued in 1997); high voltage electrical power lines and transmission towers; and an electric transformer substation (Figure 1-8).

Cattle have grazed the property for at least several decades. A few one-story mobile structures on the Island are associated with ranching operations. The shore areas are used for log raft storage (south shore) and barge and dredge equipment tie-up (north shore). West Hayden Island also underlies the aircraft flight path to and from the major runway at Portland International Airport.

West Hayden Island has natural resource values in the forms of upland, riparian, wetland, and aquatic habitats. Natural resource values are an important consideration in planning for development. Development of West Hayden Island will take into account the types and extent of environmental impacts, consider methods to avoid and minimize impacts to natural resource values, and identify actions to compensate for impacts that cannot be avoided.

Vegetation on West Hayden Island is characteristic of over 40,000 acres of riparian habitat located on the Columbia River between Sauvie Island and the mouth of the Sandy River, and on the lower Willamette River from Ross Island to its mouth.

West Hayden Island is part of the river-floodplain ecosystem that consists of river channel, groundwater, floodplain and upland components. Historically, this ecosystem exhibited a complex dynamic of interactions between these component parts that provided the background conditions for fish and wildlife species development. Changes to the ecosystem since European settlement have resulted in a very different set of conditions that directly affect fish and wildlife species diversity and abundance.

Prior to diking, dredging and damming of the Columbia River, West Hayden Island was one of many alluvial island/shoal complexes common to the lower river. The changes made to the geomorphology and hydrology of the river by human activities have drastically altered the basic parameters of the ecosystem, thus changing the habitat characteristics for native flora and fauna. Major consequences of river regulation (impoundment) include: 1) a substantial reduction of habitat diversity; 2) a decrease in native bio-diversity and increase in non-native species; and 3) return to normative conditions only where the distance between impoundments is greatest (ISG 1996). The reduction in this habitat has probably contributed to the decline of at least some of the listed salmonid species.

The riverine-riparian relationship in large rivers is distinctly different than in smaller streams. The terms stream-riparian ecosystem and river-floodplain ecosystem have been used to distinguish between these two types (NRC 1992). This distinction is important because the functional roles of the riparian component are usually reversed in the river-

floodplain system compared to the stream-riparian system. In the smaller stream-riparian systems, the riparian zone typically contributes nutrients, water and sediment, and regulates light and temperature in the stream channel. In the larger river-floodplain systems, the channel is typically the donor of water, sediment and inorganic nutrients to the floodplain.

In streams, aquatic productivity is almost exclusively concentrated in the channel. In larger river-floodplain systems, most of the aquatic productivity occurs in the floodplain. This relationship in the larger systems holds if there is an annual, long-lasting flood pulse, a situation that has been drastically altered in the lower Columbia River as a result of river regulation.

Prior to the diking, dredging and damming of the Columbia River, the adjacent floodplains and islands like Hayden Island were a critical component of the ecosystem, with native flora and fauna that evolved to maximize use of the ecosystem patterns. Annual, predictable flood pulses inundated large areas of the floodplain and the islands. The flora and fauna now found in areas like West Hayden Island throughout the lower Columbia River are disturbed remnants. Native chinook and sockeye salmon, with life cycle patterns that evolved in the historic river-floodplain ecosystem, now rarely find inundated floodplain areas during their out-migration as juveniles. This ecosystem context sets the stage for managing natural resources on and around West Hayden Island, and provides a baseline upon which management activities, including resource protection, restoration and enhancement can be planned.

1.4 Regional Context

The wildlife values of West Hayden Island are related to its ecological and landscape context. West Hayden Island is part of a network of natural resource areas in the lower Columbia River corridor. A variety of municipal, county, regional, state and federal lands provide more than 24,000 acres of bottomland habitat in the approximately 20 miles upstream and downstream from the confluence of the Willamette and Columbia Rivers (Figure 1-9). Many of these areas are managed for wildlife resource values, such as waterfowl production. These natural resource areas form a nearly continuous corridor of ponds, marshes and riparian habitat along the rivers, providing food, water, cover, perching, nesting and resting habitat for resident and migratory wildlife.

The relative importance of West Hayden Island wildlife habitat must be viewed in the context of other large natural areas in the vicinity, such as Sauvie Island, Smith and Bybee Lakes, Vancouver Lake lowlands, and Ridgefield Wildlife Refuge, which each provide specific values for wildlife (Table 1-1). Figure 1-10 shows the locations of these regional wildlife resources, as well as habitat types along the Columbia River Corridor. The map is a compilation of three databases, so the vegetation types have been matched as best as possible.

West Hayden Island lies near the confluence of the Willamette and Columbia Rivers. It also lies within two major wildlife corridors: a north-south corridor between Smith and Bybee Lakes and Ridgefield Wildlife Refuge, and an east-west corridor between the

Sandy River and Sauvie Island. The rivers provide a linkage between a variety of natural resource units along the corridor, providing increased habitat diversity and space to accommodate diverse migrant and resident wildlife species.

- ***Table 1-1 Regional Wildlife Areas***

Wildlife Area	**Primary Wildlife Use**	**Acres (approx.)**
Ridgefield National Wildlife Refuge (US Fish & Wildlife Service)	oak groves, pastures and ponds Wintering and migratory waterfowl and riparian species	4,627
Sauvie Island (Oregon Dept of Fish & Wildlife	oak groves, cottonwood groves, pastures, fields; wintering and migratory waterfowl (>150,000) and riparian species; >250 bird species; bald eagles in winter; 37 mammal species, 12 herptile species.	12,000 +
Burlington Bottoms (Oregon Dept of Fish & Wildlife)	cottonwood/willow groves; shallow water ponds; waterfowl and riparian species	428
Vancouver Lake/Shilapoo/ Vicinity Lowlands	open water, wetlands, riparian channels, meadows	2,100
Kelly Point Park (City of Portland)	cottonwood forest, riparian species	101
Smith and Bybee Lakes Management Area (METRO)	Oregon ash, cottonwood, willow forests; open water; wetlands; meadows, managed for waterfowl and western painted turtle	1,925
Columbia Slough (City of Portland)	riverine channel; some wetlands, riparian corridor; variety of fish and wildlife.	456
Government Island (Port of Portland/Oregon Parks and Recreation)	cottonwood, Oregon ash, willow forests; wetlands; meadows; wetland mitigation site; wintering and migratory waterfowl and riparian species	2,050
Sand, McGuire, Lemon Islands	Riparian forest; miscellaneous wildlife	256
Sandy River Delta (US Forest Service)	Meadow and cottonwood river bottomland; wintering and migratory waterfowl and riparian species	1,400
Steigerwald Lake National Wildlife Refuge	Cottonwood river bottomland; wintering and migratory waterfowl and riparian species	627

Figure1-9 Lower Columbia River Habitat

Figure 1-10 Regional Wildlife Resources

Wildlife habitats on West Hayden Island support a variety of mammal, bird, reptile, amphibian and insect species. Recent studies identified seven species of mammals, 81 species of birds, two amphibian species, two reptile species, nine butterfly and moth species, and six aquatic insect species (Smyth 1999).

Threatened, endangered, or sensitive wildlife species, which have been observed on West Hayden Island, include bald eagle, pileated woodpecker, willow flycatcher, and painted turtle (Smyth 1999). Although these species may occasionally use the island, West Hayden Island is not considered critical habitat for these animals. Bald eagle, a recent state and federal threatened species, have been observed perching in trees at the west end of the island during the winter, but there are no known bald eagle nests on West Hayden Island. Pileated woodpecker, a state sensitive vulnerable species, nests in riparian tree snags. Willow flycatcher, a state sensitive species of undetermined status, is a summer resident. One painted turtle, a state sensitive critical species, was observed in a pond on the north side of West Hayden Island connected to the Columbia River.

Forest habitat provides nesting, roosting, and perching locations for a number of bird species. Snags and downed large woody debris are abundant in both upland and wetland forested communities. Snags and mature trees provide important nesting sites for cavity nesters. Waterfowl use on West Hayden Island is generally restricted to winter months and migration periods. A limited amount of nesting by mallard and wood duck has also been observed. Although waterfowl are present on the island, more suitable habitat with greater food and cover resources is available in the vicinity on Sauvie Island, Smith and Bybee Lakes, Vancouver Lake lowlands, Ridgefield wildlife refuge, Government Island and other areas.

2

GOAL 5 ANALYSIS

2.1 Introduction

The planning documents for West Hayden Island identify the long-term plans for development of the Island for marine industrial uses. This development consists of three planning subdistricts as shown on Figure 2-1:

- **Subdistrict A:** Industrial development to accommodate water-related and water-dependent industrial use
- **Subdistrict B:** Conservation, enhancement and mitigation, a natural protection area with no public access
- **Subdistrict C:** Development of a passive recreation area that also provides for resource protection, enhancement, and mitigation

OAR 660, Division 23 "establishes procedures and criteria for inventorying and evaluating Goal 5 resources and for developing land use programs to conserve and protect Goal 5 resources. Division 23 explains how local governments apply Goal 5 when … amending acknowledged comprehensive plans and land use regulations" (OAR 660-23-000).

This Natural Resource Element document addresses the process for identifying Goal 5 resources and determining their significance. This includes an inventory, evaluation, analysis and significance determination for each Goal 5 resource category; an explanation of the relationship of Goal 5 to other goals and Metro regional resources; and the Economic/Social/Environmental/Energy (ESEE) decision process to determine the consequences that could result from a decision to allow, limit or prohibit a conflicting use.

OAR 660-23-020(2) provides for a safe harbor determination in lieu of the standard Goal 5 process. The OAR states:

> *A "safe harbor" consists of an optional course of action that satisfies certain requirements under the standard process. Local governments may follow safe harbor requirements rather than addressing certain requirements in the standard Goal 5 process.*

Figure 2-1 West Hayden Island Subdistricts (established by West Hayden Island Plan District)

Rather than pursue safe harbor provisions, the standard ESEE process has been followed for all Goal 5 resources to assess their significance and the ramifications of the proposed West Hayden Island development.

2.2 Inventory, Evaluation, Analysis, And Significance Determination

The standard Goal 5 resource inventory process generally consists of the following four steps (OAR 660-23-030):

1) collect information;
2) determine adequacy of the information;
3) determine resource significance; and
4) adopt a list of significant resource sites.

This section of the Goal 5 evaluation addresses the first three steps. Following these steps, Goal 5 requires that conflicting uses within the inventoried Goal 5 resource areas be identified. That fourth step is addressed in the ESEE analysis.

Inventory information is presented for each applicable Goal 5 resource category in the following sections. Information provided for each resource category includes:

- notification of state and federal resource agencies;
- inventory information sources;
- a determination of the information adequacy;
- resource location;
- resource quality, including value relative to other examples of the resource;
- resource quantity, including the relative abundance or scarcity of the resource; and
- resource type significance, based on:
  - ♦ quality, quantity and location information
  - ♦ significance criteria set out in OAR 660-23-090 through 660-23-230
  - ♦ additional criteria adopted by the City of Portland, if any.

GOAL 5 RESOURCE: RIPARIAN CORRIDOR

Riparian corridors are a Goal 5 resource that include the water areas, fish habitat, adjacent riparian areas, and wetlands within the riparian area boundary (OAR 660-23-090[1]). Riparian corridor definitions in OAR 660-23-090(1) include:

- *water area* is the area between the banks of a lake, pond, river, and perennial or fish-bearing intermittent stream, excluding man-made farm ponds
- *fish habitat* means those areas upon which fish depend in order to meet their requirements for spawning, rearing, food supply, and migration
- *riparian area* is the area adjacent to a river, lake or stream, consisting of the area of transition from an aquatic ecosystem to a terrestrial ecosystem

Terrestrial, amphibian, and aquatic species may depend upon different portions of the riparian corridor for movement, spawning, rearing, feeding, and resting during different parts of the year. Riparian corridor resource sites also provide other functions, including water quality, hydrologic control, education, and recreational opportunities.

When following the standard inventory practice under OAR 660-23-030, local governments shall collect information regarding all water areas, fish habitat, riparian areas, and wetlands within riparian corridors. At a minimum, the following information is required under OAR 660-23-090(4), where available, in order to inventory riparian corridors along rivers, lakes, and streams within the jurisdiction:

- Oregon Department of Forestry (ODF) stream classification maps;
- United States Geological Service (USGS) 7.5 minute quadrangle maps;
- National Wetlands Inventory (NWI) maps;
- Oregon Department of Fish and Wildlife (ODFW) maps indicating fish habitat;
- Federal Emergency Management Agency (FEMA) flood maps; and
- Aerial photographs.

A *Preliminary Draft Environmental Impact Statement* has been prepared by the U.S. Army Corps of Engineers for the Port of Portland Marine Cargo Facilities at West Hayden Island (1999). As part of this document, baseline studies were conducted to document existing conditions on West Hayden Island. These studies included a Local Wetland Inventory (LWI) and Oregon Freshwater Wetland Assessment Methodology (OFWAM) Report for WHI; Seasonal Fish Use of Shallow Water Habitats in the Lower Columbia River, West Hayden Island (RM 102) to Sandy River Delta (RM 125); and Wildlife and Vegetation Baseline Studies Report for West Hayden Island.

These reports provide documentation of the riverine deep, shallow water, and off-channel habitats that comprise the riparian corridor in the WHI study area.

Resource Agency Notification

Oregon Department of Forestry
Oregon Division of State Lands, April 1, 1998
Oregon Department of Fish and Wildlife, April 1, 1998
Oregon Department of Environmental Quality, April 1, 1998
U.S. Army Corps of Engineers, October 29, 1997; April 1, 1998; July 15, 1998
U.S. Department of Fish and Wildlife, January 2, 1998; April 1, 1998
National Marine Fisheries Service (NMFS), April 1, 1998; draft Biological Assessment submitted in 1999

Information Sources

- City of Portland, Bureau of Planning 1986, *Columbia Corridor Inventory of Wetland Bodies and Wildlife Habitat Areas*
- TetraTech 1993, *Lower Columbia River Bi-State Study*
- Smyth 1995, *Baseline Report for West Hayden Island Goal 5 Inventory and Assessment*
- Fishman Environmental Services 1995, Aquatic Biology Investigations

- Fishman Environmental Services 1997, Studies of Dredged Material Rehandling Sites
- Fishman Environmental Services 1997, Benthic Invertebrate and Sediment Report
- URSG 1998, *Oregon Freshwater Wetland Assessment Methodology*
- URSG 1999, *Local Wetland Inventory for West Hayden Island*
- Ellis 1999, *Draft Report: Seasonal Fish Use of Shallow Water Habitats in the Lower Columbia River, West Hayden Island (RM 102) to Sandy River Delta (RM 125)*
- Oregon Natural Heritage Program, 1998
- USGS map, Portland, Oregon/Washington and Vancouver, Washington 7.5 minute quadrangles
- NWI map, Portland, Oregon/Washington and Vancouver, Washington quadrangles
- FEMA flood mapping, Multnomah County, unincorporated areas 410179 0065 and 410179 0155 panels
- Ward and Farr 1988, *Oregon Slough Baseline Data Collection Study*
- Ellis 1999, Biological Assessment for Listed Proposed Threatened and Endangered Fish Species (pending)

Information Adequacy

OAR 660-23-090 requires the use of a standard Goal 5 inventory process set out in OAR 660-23-030 to inventory and determine the significance of riparian corridors. Compliance with the four steps established by OAR 660-23-030 is set out below:

1) Collect information about Goal 5 resource sites;
Information from the sources described in OAR 660-23-090(4)(a through f) was compiled for the West Hayden Island (WHI) study area. Additional information compiled includes a Local Wetland Inventory (LWI) and Oregon Freshwater Wetland Assessment Report for West Hayden Island, and Draft Report: Seasonal Fish Use of Shallow Water Habitats in the Lower Columbia River, West Hayden Island (RM 102) to Sandy River Delta (RM 125). The Preliminary Draft Environmental Impact Statement, Marine Cargo Facilities at West Hayden Island, Fish and Aquatic Resources was also reviewed.

2) Determine the adequacy of the information
Per OAR-660-23-030(3)(a) descriptions of the quality, quantity, and a map depicting the location of the resource area has been provided. Fish habitat, riparian area, and water area data are supplemented by the additional reports under (1) above. The information sources are sufficient to indicate a resource site's value relative to other known examples of the same resource (OAR 660-23-030(3)(b), and to estimate the relative abundance of the resource (OAR 660-23-030(3)(c).

3) Determine significant riparian corridors using the criteria in OAR 660-23-030(4)
Quality, quantity, and location information has been compiled regarding riparian corridors on and near WHI. Portions of wetlands and wildlife habitat within the riparian corridor were determined to be significant under Goal 5 (refer to Goal 5 – Wetlands and Goal 5 – Wildlife Habitat).

4) Adopt the list of significant riparian corridors as part of the comprehensive plan, or as a land use regulation.

These significant riparian corridors will be adopted into the WHI Planning Document as Environmental Overlay Zones, which will serve as a comprehensive planning tool for WHI.

This analysis included all the determinations required above, and considered additional information referenced under "Information Sources." The procedures and documentation meet or exceed the requirements for complying with Goal 5 (OAR 660-23-000).

Resource Location

The northern boundary of the riparian corridor study area for WHI extends from the Burlington Northern railroad bridge (RM 105.6) downstream to the western end of the island (RM 102.7) The Washington side of the main Columbia River channel was not included in the study area because all potential impacts would be localized in nature and would not affect the Washington side of the river. The study area on the south side of WHI extends from the Burlington Northern railroad bridge across Oregon Slough (RM 3.0) downstream to the end of WHI (RM 0.0).

All of the natural resource habitat types within the WHI study area are considered a Goal 5 riparian corridor resource.

Resource Quality

The riparian corridor consists of four resource units: water areas, which include the *riverine deep* and *shallow water* habitats discussed in Goal 5 – Wildlife Habitat; fish habitat; adjacent riparian areas, which are comprised of the terrestrial areas under Goal 5 – Wildlife Habitat; and wetlands within the riparian area boundary, discussed under Goal 5 – Wetlands (OAR 660-23-090[1]).

In 1987, the City of Portland rated 21 natural areas located in the Columbia Corridor planning area, which extends from the Willamette River to NE 185th Avenue between the Columbia River and Columbia Boulevard. WHI was rated the second of the 21 wildlife habitat sites in terms of habitat quality and quantity, after Smith and Bybee Lakes natural area. West Hayden Island as a whole received a rating of 95 of 100 possible points under the WHA forms. This rating is reinforced by the rating of 99 from preliminary assessments performed for the *Columbia Corridor Inventory of Wetland Bodies and Wildlife Habitat Areas.*

- ***Water Areas***

Shallow water resource areas include areas that are tidally to permanently inundated. This resource type is generally sparsely vegetated, primarily with annual grasses, forbs, and some aquatic species. The functions provided by this resource are at a comparable level to those provided by other water areas in similar positions in the Columbia River basin (PDEIS, 1999). This resource unit produces food, water, resting, rearing, refuge, and other values to a variety of bird, mammal, invertebrate, and fish species (both native and commercially valuable non-native species). It also offers habitat for benthic invertebrates and plant and animal plankton. Shallow water provides water quality functions such as contaminant dilution, and hydrologic functions including flood storage and desynchronization. These areas also offer opportunities for recreational and commercial use of the Columbia River waterway.

Riverine deep resource areas consist of portions of the Columbia River and North Portland Harbor with bottom elevations lower than -18.2 NGVD. This resource type is permanently inundated and devoid of plant life. Aquatic worms, amphipods, clams, and aquatic fly larva provide a source of food for anadromous fish and white sturgeon. Riverine deep areas also provide contaminant dilution, flood storage and conveyance, migratory pathways for anadromous fish, recreational opportunities, and a transportation corridor for marine cargo. Conditions in this resource area in the WHI study area are comparable to conditions throughout the Lower Columbia River waterway.

During the past 10 years, NMFS has listed 10 Evolutionarily Significant Units (ESUs) of anadromous salmonids (salmon and steelhead) in the Columbia River Basin as threatened or endangered under the Endangered Species Act. These listings have been required due to large and continuing declines in the numbers of adult salmonids returning from the ocean to their spawning grounds in fresh water. The lower Columbia River in the vicinity of the project is used as a migratory pathway for adults moving upstream to their spawning ground and juveniles moving downstream to the ocean. Individuals from all ten of the listed ESUs could potentially be found in the study area; Ellis (1998) observed juvenile chinook, coho, and sockeye salmon, and steelhead trout in the study area during his investigations.

The Columbia River mainstream from the mouth to the confluence with the Snake River has been designated critical habitat for listed Snake River salmonids. The critical habitat areas include the riverine deep and shallow water habitat areas, and off-channel habitat areas such as Benson Pond and its associated wetlands. Riparian areas within 300 feet of the normal high water line (approximately 6 feet NGVD) are also included within the definition of critical habitat (58 FR 68543). Listed species include some natural sockeye, chinook, and coho salmon runs; and Snake River Basin, Lower Columbia, and Upper Columbia steelhead. Refer to the Biological Assessment for more information on species in the study area listed under the Endangered Species Act.

- ***Fish Habitat***

Fish habitat refers to those areas upon which fish depend in order to meet their requirements for spawning, rearing, food supply, and migration. Water Areas described above are also included under this designation.

The only wetland habitat area also designated as fish habitat is emergent/open-water, river-linked, ESA-listed fish resource. These areas are periodically connected to the main river channel by a narrow outlet during periods of high flow in the winter and spring. Juvenile chinook salmon and other salmonids were observed in this resource area during 1998.

Benson Pond and the emergent/open water wetland associated with it scored highly on the WHA for rearing and refuge of juvenile salmonids as well as rearing and spawning habitat for a variety of other fish species, according to the Biological Assessment prepared for WHI. However, the OFWAM notes that juvenile salmonids may become trapped in the pond as the water level drops and the pond becomes hydrologically

isolated from the Columbia River. Wildlife habitat in this area received a score of *moderate* for provided food, water, and territory for a variety of species, as well as potential amphibian breeding habitat. This area also contributes to water quality in the Columbia River, although any effect on water quality is minimal due to the relatively small size of the resource area compared to the water volume in the Columbia River.

♦ ***Riparian Area***

This resource unit is the area adjacent to a river, lake or stream, consisting of the area of transition from an aquatic ecosystem to a terrestrial ecosystem. It includes upland areas adjacent to the edge of shallow water (+6 feet NGVD) and wetland boundaries. Detailed discussion of the functions and values of the riparian areas on WHI may be found under Goal 5 – Wetlands and Goal 5 – Wildlife Habitat later in this document; an abbreviated description of these resources is presented below.

The riparian upland forest areas on WHI are typical of Columbia River bottomland forests and islands. This area includes wildlife habitat that ranges from *low* to *high* under the WHA protocol. Areas receiving a rating of *low* were the most heavily grazed and damaged by cattle. Due to access difficulty, educational opportunities are low.

Beach/shoreline areas received WHA scores ranging from a low of 19 to a high of 54 (of a 100 possible) points. The highest scores occurred in the upper beach habitat which is seasonally inundated. This area is vegetated with weedy forbs and has little vegetative structure.

The dredge material spoils area has little cover; most of the available cover consists of weedy annual species and Himalayan blackberry. This area was not evaluated under the WHA or OFWAM.

Forested wetlands (interior and river-linked) received evaluations of *diverse* for wildlife habitat, with the forested river-linked wetlands also providing *intact* (although negligible) hydrologic control and water quality functions. The emergent/open water interior wetlands provided *moderate* habitat values, and do not provide hydrologic control and water quality functions due to their lack of connection to the Columbia River. The emergent/open water, river-linked wetlands also provided a *moderate* level of wildlife habitat, but fish use is prevented by a flap gate excluding water from the Columbia River. Consequently, potential water quality and hydrologic control benefits are lost.

Benson Pond and the emergent/open water, river-linked wetlands associated with it provide fish habitat for salmonids and other species, as well as other terrestrial, aquatic, and amphibian species. This area also has intact (although negligible) hydrologic control and water quality functions.

The wetlands at WHI are typical of those found on the islands or in the floodplain areas adjacent to the Columbia River. They are not protected by special regulatory rules or statutes (other than Section 404 of the Clean Water Act and the Oregon Removal-Fill Law), nor are they uncommon in the State of Oregon (OFWAM, 1999).

Resource Quantity

The riparian corridor study area consists of:

- water areas: shallow water resource unit – 211 acres
  riverine deep resource unit – 718 acres
- riparian zone: approximately 22 acres of mixed habitat (based upon +6 feet NGVD at a 5:1 slope over 6 lineal miles of shoreline)
- fish habitat: emergent/open water wetland, river-linked, ESA fish – 7 acres

Past shoreline developments have resulted in major reductions in off-channel fish habitat, and modifications to shallow water habitat conditions within the river channel. Ken Bierly of the Division of State Lands (DSL) estimates cumulative wetland habitat loss in the Columbia River estuary at 30 percent or more (Bierly, 1991). Upland, wetland, and aquatic habitat types are typical for the Columbia River bottomland and are found in other areas of similar elevation in the Columbia River basin.

Resource Significance

The process for determining significance of the riparian corridor under Goal 5 is set forth under OAR 660-23-090(4). Data from the mapping required under OAR 660-23-090(4), and data from the wetland and wildlife habitat components of the OFWAM and WHA and Oregon Natural Heritage Program database were used to establish significance. The WHI riparian corridor, including water areas, fish habitat, and riparian areas as defined under OAR 660-23-090, is determined to be significant under Goal 5 based upon presence of chinook, coho, and sockeye salmon, and steelhead trout; designated critical habitat for ESA-listed species, and the presence of a major corridor linking habitat areas in the region.

The area designated as critical habitat extends 300 feet landward from the ordinary high water line (58 FR 68543). The critical habitat boundary includes areas not determined to be significant under Goal 5 using the OFWAM or WHA methodologies. This 300-foot band around WHI is approximately 6 lineal miles long, from the southern Burlington Northern railroad bridge terminus clockwise to the northern railroad bridge terminus, for a total of 218 acres.

GOAL 5 RESOURCE: WETLANDS

Wetlands include a variety of areas, including marshes, creek banks, bogs, and other areas that stay wet during a portion of the year. For the purposes of Goal 5, wetlands are defined as:

> areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. 33 CFR 328.3(b); ORS 196.800(16); OAR 660-23-100(3)

The process to identify and evaluate wetlands is different than used for the other Goal 5 resources. The Goal 5 process for wetland resources includes the following steps, as cited in OAR 660-23-100[3]:

1) Conduct a Local Wetland Inventory (LWI) using the standards and procedures of OAR 141-86-110 through 141-86-240;

2) Adopt the LWI as part of the comprehensive plan or as a land use regulation;

3) Determine significant wetlands using the criteria in ORS 197.279(3)(b); and

4) Adopt the list of significant wetlands as part of the comprehensive plan, or as a land use regulation.

URS Greiner Woodward Clyde (URSG) prepared a LWI for West Hayden Island; this report was submitted to the US Army Corps of Engineers and the DSL in August, 1999. Upon concurrence by these agencies, this LWI will be incorporated into the West Hayden Island Planning Document, which will serve as the comprehensive planning tool for this area. ORS 197.279(3) requires DSL to promulgate rules to be used to determine the significance of wetlands under Goal 5. DSL's rules are found at OAR 141-86-300 et. seq.

Step 3) involves an evaluation of wetland functions and values applying the Oregon Freshwater Wetland Assessment Methodology, using criteria established by the DSL in OAR 141-86-300 through 350. This rule provides standard criteria by which local governments can meet their obligations for freshwater wetland planning as set forth by the Land Conservation and Development Commission in Goal 5 (see OAR 660-23-100).

URSG assessed the relative functions and values of the wetlands on West Hayden Island using the OFWAM; URSG departed from standard OFWAM methodology by including wetlands below 0.5 acre, which are typically not evaluated under the OFWAM. The OFWAM analyzed these functions and returned low, medium, or high scores for a variety of functions for each wetland area.

The criteria established by DSL are used to determine Locally Significant Wetlands (LSWs). The LSW rules allow local governments to determine whether certain functions apply to the local situation. A determination of LSW is made for wetlands with high values for certain functions, including wildlife habitat, fish habitat, hydrologic control, and water quality, and other criteria under OAR 141-86-300. The values for each of these criteria and others are determined by the OFWAM. A list of LSWs on West Hayden Island as determined by the OFWAM may be found in Table 2-1 and are shown on Figure 2-2.

Resource Agency Notification

- US Fish and Wildlife Service, January 2, 1998
- US Army Corps of Engineers, October 29, 1997; July 15, 1998
- Oregon Division of State Lands, April 1, 1998

Information Sources

- Smyth 1995, *Baseline Report for West Hayden Island Goal 5 Inventory and Assessment*
- Fishman Environmental Services, 1995, 1997, *Wetland Delineation Report*
- URSG 1998, *Oregon Fresh Water Assessment for West Hayden Island*
- Smyth 1999, *Wildlife and Vegetation Baseline Studies Report for West Hayden Island*
- URSG 1999, Local Wetland Inventory for West Hayden Island
- URSG 1999, Draft Biological Assessment for rare, threatened, and endangered plants (pending)
- Ellis 1999, Draft Biological Assessment for Listed and Proposed Listed Threatened and Endangered Fish Species (pending)

Information Adequacy

OAR 660-23-100(3) lists the documentation required for a Goal 5 assessment:

1) Conduct a Local Wetland Inventory (LWI) using the standards and procedures of OAR 141-86-110 through 141-86-240;
An LWI has been prepared for WHI and was submitted to the Corps and DSL in August 1999 for concurrence.

2) Adopt the LWI as part of the comprehensive plan or as a land use regulation; *Upon concurrence by DSL and the Corps, the LWI will be adopted into the West Hayden Island Planning Document, which will serve as the comprehensive plan for areas documented by the LWI.*

3) Determine significant wetlands using the criteria in ORS 197.279(3)(b); *The OFWAM was used to evaluate wetland functions in all wetlands in the study area, rather than those greater than 0.5 acre, which is the typical methodology. Biological Assessments were conducted to evaluate the presence of listed threatened, endangered, and sensitive species, and species of concern. Adequate investigations have been conducted to determine which of the wetlands described by the LWI are "locally significant wetlands" (LSW) as defined by the Division of State Lands under OAR 141-86-300 through 350.*

4) adopt the list of significant wetlands as part of the comprehensive plan, or as a land use regulation

These significant wetlands will be adopted into the WHI Planning Document, which will serve as a comprehensive planning tool for WHI.

Figure 2-2 Locally Significant Wetlands

This analysis included all the determinations required above and considered additional supporting data referenced under "Information Sources." The procedures and documentation meet or exceed the requirements for complying with Goal 5 (OAR 660-23-000).

Resource Location

The locations of the jurisdictional wetlands on WHI were located and mapped consistent with state-mandated criteria in the LWI process. The wetlands that satisfy the criteria for LSW may be found on Figure 2-2.

These wetlands consist of the following habitat types: forested wetlands, river-linked (3 areas); forested wetlands, interior (7 areas); and emergent/open water river-linked wetlands, ESA-listed fish present (1 site) were the locations that satisfied DSL's criteria for LSW under OAR 141-86-300 through 350. Forested, river-linked wetlands are located on the south side of the island and are connected to the Columbia River during annual high water events. Forested interior wetlands are isolated from the Columbia River during typical annual high water events. Benson Pond and a wetland area on the south side of the island constitute the emergent/open water river-linked wetland with ESA fish present.

Resource Quality

The wetlands evaluated by the OFWAM are shown in Figure 2-2. Table 2-1 rates these areas for the following (WHI OFWAM, August 1999):

- Water quality – water quality was impacted at all sites in the study area
- Hydrologic control (the wetland's ability to store water and reduce peak flows) – intact to impacted
- Sensitivity to impact – all sites are potentially sensitive to future impacts
- Enhancement potential – high to moderate potential for enhancement
- Education – not appropriate for all sites
- Recreation – all sites lack opportunities for recreation
- Aesthetics – sites vary from not pleasing to pleasing
- Wildlife habitat – some to diverse wildlife habitat
- Fish habitat – impacted to none

While each of these functions contributes to the overall value of a wetland, the four functions used by DSL to determine LSWs are Wildlife Habitat, Fish Habitat, Water Quality, and Hydrologic Control (OAR 141-86-350[2]). To qualify as a *Goal 5 significant wetland,* the area must have (OAR 141-86-350[2)]:

- one of the following functional ratings: *diverse* wildlife habitat, *intact* fish habitat, *intact* hydrologic control function, or *intact* water quality function;
- less than one-quarter mile horizontal distance from a water-quality limited water body (although a local government may determine that a wetland is not significant under this subsection upon documentation that the wetland does not provide water quality improvements under the specified parameters, e.g. temperature, pH);

- presence of one or more rare plant communities, as defined in ORS 141-86-350(3); and
- presence of any species listed under the Endangered Species Act by the federal government as threatened or endangered, or listed by the state as sensitive, threatened, or endangered unless the appropriate federal or state agency indicates that the wetland is not important for the maintenance of the species.

Because West Hayden Island is a Columbia River island situation, the effect of improving both downstream water quality (Water Quality function) and downstream flooding (Hydrologic Control function) is limited. For example, the wetlands within a quarter-mile (1300 feet) of the shoreline provide a minimal improvement to water quality (water temperature in summer, total dissolved gas, pH in spring and removal of toxic materials) due to their small size in relation to the large volume of water in the Columbia River, and the lack of contaminant sources within the on-island drainage areas that provide surface flow to these wetlands (there are no surface streams on the island). Also, the hydrologic source of most West Hayden Island wetlands is high groundwater or precipitation, rather than a direct connection to the Columbia River. Their effect in improving water quality by receiving over-bank flood waters and then dispersing them is miniscule. The same is true for hydrologic control; the effect of West Hayden Island wetlands in reducing downstream flooding is insignificant due to their relatively small size in relation to the volume of water in the Columbia River. Reducing downstream flows by storing flood waters is insignificant in relation to the high flows of the Columbia River observed during flood events (OBAI 1998).

In this context, the rating of having impacted water quality means that the wetland could potentially improve the quality of the water passing through it (wetlands existing in areas with high water quality would not provide much improvement). The volume of the Columbia River is so large relative to the wetlands that the water quality improvement they would actually provide is probably insignificant.

The same could be said for the next function described as "impacted or intact hydrologic control," since the amount of water that could be stored in these wetlands, compared to the size of the Columbia River during a flood, is very small.

The rating of being potentially sensitive to future impacts was applied to these wetlands because the Columbia River regime is affected by dams and irrigation withdrawals, upstream water quality is moderate, and surrounding land uses are agricultural (grazing). These wetlands are therefore not in a natural, pristine condition. Wetlands with degraded functions tend to be less able to withstand additional impacts without experiencing further degradation.

Most of these wetlands have degraded functions, and therefore have moderate to high enhancement potential. These wetlands have low potential for educational use because access is restricted, there are some visible hazards, wildlife and fish values are moderate, and public access would be difficult to create. Available public access points and handicapped access vary between wetlands. Recreational opportunity is also limited due to property access restrictions. Aesthetic ratings were based on the extent of visual

contrast, visual detractors and their ease of removal, types of odors and noises, and the number of different classes of wetlands visible from the primary viewing area. All three possible ratings were assigned among the various wetlands for aesthetics.

Five of the natural resource habitat types within the West Hayden Island study area are considered a Goal 5 wetland resource. These include forested wetlands, river-linked; forested wetlands, interior; emergent/open water wetlands, river-linked; emergent/open water interior wetlands; and emergent/open water wetlands, river-linked, ESA fish present. The basis for this determination is explained under Resource Significance below.

The forested, river-linked wetlands provide a variety of food, cover, nesting, and denning opportunities for riparian wildlife species; shade production; insect production; direct export of organic materials to the riverine system; limited backwater habitat for aquatic species; and other functions. Forested wetlands provide feeding and refuge areas for a variety of bird, mammal, amphibian, reptile, and invertebrate species. Areas with seasonal ponding provide amphibian breeding habitat.

These areas scored high for wildlife habitat (food, cover, breeding sites, diverse species and structure), amphibian breeding habitat, potential educational value, shading and cooling effect of forest cover, scenic value, and intact (though negligible) hydrologic control. The water quality function was determined to be degraded.

The forested interior wetlands provide functions similar to those listed above for river-linked forested wetlands except for backwater aquatic habitat and direct export to the riverine system.

Benson Pond and its related wetland area provides habitat for fish, including juvenile salmonids; foraging habitat and refuge for waterfowl, wading birds, and diving birds; potential habitat for turtles (one painted turtle was observed in 1997); habitat for breeding amphibians; foraging habitat for insectivorous birds; and watering opportunities for wildlife.

Benson Pond scored high for rearing and refuge of juvenile salmonids as well as rearing spawning habitat for a variety of other fish species, according to the Biological Assessment prepared for WHI. Wildlife habitat received a score of moderate for providing food, water, and territory, and potential amphibian breeding habitat was present. The water quality function was degraded, as in the other sites, but the hydrologic control function remains intact.

The emergent/open water interior wetlands and emergent/open water river-linked wetlands fail to meet the criteria for Goal 5 significance. Wildlife habitat ratings are *moderate* under the OFWAM; hydrologic control functions are *intact* and water quality functions are *degraded*, but contributions are considered negligible and therefore do not result in a determination of significance under Goal 5.

Resource Quantity

There are 18.3 acres of significant Goal 5 wetlands in the WHI study area. There are an additional 21.0 acres of Goal 5 wetlands that did not qualify as significant under the OFWAM, but may have enhancement potential.

Resource Significance

The wetlands on WHI may be classified in three ways:

- Jurisdictional wetlands
- Goal 5 resource wetlands
- Goal 5 significant wetlands

All of the wetlands on WHI are *jurisdictional wetlands*, which means that they are regulated under the Clean Water Act [(CWA - 33 CFR s/s 1251 et. seq. (1977)] at the federal level through the Corps, and under the Removal-Fill Law (RFL - ORS 196.800 through 196.990) by DSL at the state level. Although some jurisdictional wetlands do not qualify for regulation under Goal 5 (ORS 660-23-100), they remain subject to regulation under the CWA and RFL and any impacts to these areas must be permitted through DSL and the Corps.

Five types of wetlands qualify as *Goal 5 resource wetlands*, which means that they are subject to further analysis under the Goal 5 process as outlined above and in ORS 660-23-100. The functions of these wetlands must be evaluated under the OFWAM to determine whether they are *significant* wetlands under Goal 5.

Three types of Goal 5 resource wetlands were determined to be significant under Goal 5 based upon the criteria established by DSL under OAR 660-23-100. *Goal 5 significant wetlands* must be listed in the WHI Planning Document and adopted into the Comprehensive Plan. These areas and the basis for their determination are discussed below.

The forested, river-linked wetlands and forested interior wetlands were determined to be significant under Goal 5, based upon diverse wildlife habitat and intact hydrologic control as evaluated under the OFWAM, which are three of the four criteria established by DSL as a basis for a significance determination for Goal 5 resources.

In addition to the three criteria listed above, the emergent/open water river-linked wetlands were also determined to be significant under Goal 5 based upon the presence of critical habitat for ESA-listed juvenile salmonids. Presence of ESA-listed species or habitat critical to their survival is also a criterion for a significance determination. The Biological Assessment notes, however, that Benson Pond may have a detrimental effect upon young salmonids, if they are trapped in Benson Pond as the water level drops.

The remaining wetlands on WHI include emergent/open water wetlands, river-linked (one site), and emergent/open water wetlands, interior (15 sites). These areas did not meet the criteria for significance under Goal 5. The wildlife habitat rating of these areas is moderate due to more limited wildlife feeding, nesting, and refuge opportunities,

primarily because the vegetation is degraded due to cattle grazing. A rating of diverse is required to satisfy the wildlife habitat criterion (ORS 141-86-350[2][a]).

Both of these resources are hydrologically isolated from the Columbia River. The emergent/open water interior wetlands are higher than the annual high-water events and are thus unable to contribute to hydrologic control or water quality even though they are within ¼ mile of a Section 303(d) listed water body (ORS 141-86-350[2][b]). The emergent/open water river-linked wetlands are isolated via a flap gate that prevents river water from entering these areas, but allows export of water and nutrients from the wetland to the riverine system. Neither of these areas provides fish habitat for the ESU salmonid runs in the Columbia River as surface water ponding is seasonal, precipitation- and groundwater-driven and without connection to streams or the Columbia River (ORS 141-86-350[4][d]).

In summary, all wetlands on West Hayden Island are jurisdictional under the Clean Water and Removal – Fill Acts. Of these wetlands, five wetland types were considered Goal 5 resources under 660-23-100 and the functions of these wetlands were evaluated using the OFWAM evaluation. Three of the Goal 5 resource wetland types were determined to be Goal 5 significant wetlands. These wetlands are identified on Figure 2-2.

GOAL 5 RESOURCE: WILDLIFE HABITAT

Wildlife habitat is an area upon which wildlife depends to meet requirements for food, water, shelter, and reproduction (OAR 660-23-110[b]). A species may not depend upon the same types of habitat throughout the year. Migratory songbirds, for example, nest in one location and overwinter in other areas, often thousands of miles apart. The Goal 5 process is used to inventory and determine the significance of wildlife habitat within a resource site, as defined under OAR 660-23-010(10).

OAR 660-23-110(2) requires the use of standard inventory processes set out in OAR 660-23-030 to inventory and determine the significance of wildlife habitat within a resource site. That process is modified by OAR 660-23-110 in some instances, for example when determining the minimum information to be collected:

- Obtain current habitat inventory information from the Oregon Department of Fish and Wildlife (ODFW) and other state and federal agencies, using the standards and procedures of OAR 660-23-250(5) and OAR 660-23-030. These inventories shall include at least the following:
  1) Threatened, endangered, and sensitive wildlife species information;
  2) Sensitive bird inventories; and
  3) Wildlife species of concern and/or habitats of concern identified and mapped by ODFW.

OAR 660-23-030 defines the criteria for determining the significance of wildlife habitat resources under Goal 5. A wildlife habitat determination of significance under Goal 5 is based upon the following criteria, as set forth under OAR 660-23-030(4):

- The location, quality, and quantity information;
- Supplemental and superceding significance criteria set out in OAR 660-23-090 through 660-23-230; and
- Any additional criteria adopted by the local government, provided these criteria do not conflict with the requirements of OAR 660-23-090 through 660-23-230.

Resource Agency Notification

- City of Portland, 1995
- U.S. Fish and Wildlife Service (USFWS), January 2, 1998
- Oregon Department of Fish and Wildlife (ODFW)
- Oregon Natural Heritage Program (ONHP)
- National Marine Fisheries Service (NMFS)

Information Sources

- City of Portland Bureau of Planning 1986, *Columbia Corridor Inventory of Wetland Bodies and Wildlife Habitat Areas*
- Smyth 1995, *Baseline Report for West Hayden Island Goal 5 Inventory and Assessment*
- City of Portland Bureau of Planning 1996, *West Hayden Island, Goal 5 Analysis*
- Oregon Natural Heritage Program, March 2, 1998
- Ellis Ecological Services/URSG, October 16, 1998, *Draft Report: Seasonal Fish Use of Shallow Water Habitats in the Lower Columbia River, West Hayden Island (RM 102) to Sandy River Delta (RM 125) (SFU Report)*
- URSG 1998, *Oregon Freshwater Wetland Assessment (OFWAM) for West Hayden Island*
- Ellis 1999, Biological Assessment for Listed/Proposed Threatened and Endangered Fish Species
- Ellis 1999, Biological Assessment for Listed/Proposed Threatened and Endangered Plant Species [
- Smyth 1999, *Wildlife and Vegetation Baseline Studies Report for West Hayden Island*
- URSG 1999, *Local Wetland Inventory (LWI) for West Hayden Island*

Information Adequacy

OAR 660-23-110(2) requires the use of the standard Goal 5 inventory process set forth in OAR 660-23-030 to inventory and determine the significance of wildlife habitat. That process is modified by OAR 660-23-110(3) regarding information to be collected. Compliance with the four steps established by OAR 660-23-030 is set out below:

1) Gather information regarding wildlife habitat under the standard inventory process in OAR 660-23-030(2).

The information considered and studies conducted for this analysis are listed above under Information Sources. *This information was used to evaluate wildlife habitat conditions within the WHI resource site and to compare the quality and quantity of the habitat on WHI to other known examples of this resource within the region.*

2) Determine the adequacy of the information;
Per OAR 660-23-030(3), descriptions of the quality, quantity, and a map depicting the location of each wildlife habitat resource area have been provided. The descriptions indicate a

resource site's value relative to other known examples of the same resource. Information regarding the relative abundance or scarcity of the resource is also included. Wildlife usage of the site was documented in Baseline Report for West Hayden Island Goal 5 Inventory and Assessment (1995) *and* Wildlife and Vegetation Baseline Studies Report for West Hayden Island. *The OFWAM and Wildlife Habitat Assessment (WHA) methodologies were used to evaluate wildlife habitat in uplands and wetlands on the resource site. WHAs were performed for other sites in the region as part of the* Columbia Corridor Inventory of Wetland Bodies and Wildlife Habitat Areas. *Information regarding critical habitat for species listed under the Endangered Species Act (ESA) was obtained from the ONHP database and U.S. Fish and Wildlife list of threatened, endangered, candidate, and species of concern lists.*

3) Determine the significance of the resource sites; and,
The complete significance determination is set out below. Data from the WHA and the wildlife component of the OFWAM were used to determine significance of wildlife habitat in the WHI resource site.58 FR 68543 defines the limits of critical habitat for several ESA-listed anadromous fish.

4) Adopt the list of significant resource sites as part of the comprehensive plan, or as a land use regulation.
The significant wildlife habitat resource sites, as determined by the above methodologies, will be adopted as part of the WHI Planning Document, which will serve as a comprehensive planning tool for WHI.

This analysis included all of the determinations required above, and considered additional data referenced under "Information Sources." The procedures and documentation meet or exceed the requirements for complying with Goal 5 (OAR 660-23-000).

Resource Location

The northern boundary of the wildlife habitat resource area on WHI extends from the Burlington Northern railroad bridge (RM 105.6) downstream to the western end of the island (RM 102.7). The Washington side of the main Columbia River channel was not included in the study area because all potential impacts would be localized in nature and would not affect the Washington side of the river. The study area on the south side of WHI extends from the Burlington Northern railroad bridge across Oregon Slough (RM 3.0) downstream to the end of WHI (RM 0.0). Figure 1-9 shows the location of WHI in relation to other wildlife habitat resources in the region.

Figure 2-3 Wildlife Habitat Areas

The locations of wildlife habitat areas on WHI may be found on Figure 2-3. The wildlife habitats on WHI are a mosaic of five basic habitat types: riparian upland forest (RF), wetland forest (WF), emergent wetland (EM), upland meadow (UM), and beach/shoreline (BH) habitat. Fish habitat includes shallow water (normal line of high water to -18.2 feet NGVD), and riverine deep water habitat (below -18.2 feet NGVD).

Resource Quality

In 1987, the City of Portland rated 21 natural areas located in the Columbia Corridor planning area. Within that corridor, which extended from the Willamette River to NE 185th Avenue between the Columbia River and Columbia Boulevard, WHI was rated the second of 21 wildlife habitat sites in terms of habitat quality and quantity, after Smith and Bybee Lakes natural area (Bureau of Planning, 1986).

Wildlife Habitat Assessment (WHA) forms were completed for each type of habitat and for the WHI resource site as a whole in the *Baseline Report for West Hayden Island Goal 5 Inventory and Assessment* (Smyth 1995). The WHA process analyzes physical environments for characteristics for which wildlife have known preferences, including food, water, and cover, and rates those characteristics numerically for comparison purposes. Each location is also rated for its uniqueness, level of disturbance, and interspersion with other natural areas.

West Hayden Island as a whole received a score of 95 (of a maximum 100 points), based on WHA ratings of *high* for water, food, interspersion, and uniqueness; a *moderately high* rating for cover; and a rating of *medium* for disturbance (due to cattle grazing). Earlier preliminary assessments, completed as part of the *Columbia Corridor Inventory of Wetland Bodies and Wildlife Habitat Areas*, gave WHI a similar score of 99 (Bureau of Planning, 1986). Scores for the other habitat units in the study area received scores ranging from 9 to 95.

Most of the island supports a deciduous upland riparian forest. Interspersed within the upland forest matrix are upland meadow, and emergent and forested wetland habitats. Because of this close relationship, this complex essentially functions as one habitat unit in providing wildlife habitat and life history requirements. Open water emergent wetlands located within the forest provide an easily accessible and relatively secure source of drinking water for all species as well as breeding areas for native amphibians. For example, the long-toed salamander lays its egg masses and its larva rear in shallow water wetlands, while the adult salamanders require upland forest leaf litter and downed logs for thermal protection and foraging areas. The forest complex also provides suitable nesting, foraging, hiding, and travel habitat for many local and neo-tropical migrant bird species. Dead wood, standing and downed, provides nesting, foraging, hiding, and thermal cover for many species.

West Hayden Island provides suitable habitat for a number of species protected under state and federal laws (refer to Table 2-2). Bald eagle (federal and state

threatened), painted turtle (state critical), pileated woodpecker (state vulnerable), little willow flycatcher (federal species of concern and state vulnerable) and bank swallow (state undetermined) have been observed on WHI. Although they were not observed, WHI may also provide habitat for the tricolored blackbird and red-legged frog, and peregrine falcon (federal and state endangered). Aleutian Canada goose (federal threatened, state endangered) and Columbia white-tailed deer (federal endangered) have been observed within a five-mile radius of WHI, but have not been observed on WHI itself.

The Columbia River mainstem from the mouth to the confluence with the Snake River has been designated critical habitat for listed Snake River salmonids. The critical habitat areas include the riverine deep and shallow water habitat areas, plus riparian areas within 300 feet of the normal high water line (approximately 6 feet NGVD). Listed species include some natural sockeye, chinook, and coho salmon runs; and Snake River Basin, Lower Columbia, and Upper Columbia steelhead. Refer to the Biological Assessment for more information on Endangered Species Act-listed species in the study area.

Resource Quantity

Wildlife habitat within the WHI study area includes approximately 488 acres of riparian forest, 127 acres of upland meadow, 33 acres of shoreline habitat, and 40 acres of wetland (emergent, open water, and forested). The shallow water habitat areas include approximately 211 acres of the shallow edge of WHI. Riverine deep habitat surrounding WHI is approximately 718 acres in size.

West Hayden Island contains one of the largest remnant stands of the historically abundant cottonwood-ash floodplain forests in the Lower Columbia area. Development for residential, commercial, and industrial uses has reduced most habitat types from historic levels. In 1976, the Corps estimated that there were approximately 11,500 acres of cottonwood habitat between river mile 12 and river mile 145 on the Columbia River (between Astoria and the Bonneville Dam). West Hayden Island represents an estimated four percent of that habitat (this figure is likely to increase with updated acreage estimates).

Resource Significance

The location of WHI is wildlife habitat significant under Goal 5 for several reasons. Hayden Island is one of four major islands in the Portland Metropolitan Area; the others are Ross Island, Sauvie Island, and Government Island. West Hayden Island, along with other natural areas, functions as part of a network of natural areas allowing the movement of wildlife in areas that are otherwise highly urbanized. Since WHI is located near the confluence of the Columbia and Willamette Rivers, it affects fish passage along river corridors, and wildlife movement among wetland and upland habitats on the island.

Along with currently protected natural resources in the Columbia Slough area and Smith and Bybee Lakes, WHI is part of an east-west and north-south bird connection between the Columbia Gorge and Columbia River islands to the east, Sauvie Island and Forest Park to the west, and the Vancouver Lake and Ridgefield areas to the north.

Table 2-2 West Hayden Island Wildlife Inventory (page 3 of 3)

These natural areas form nearly continuous corridors of water and vegetation close to the Willamette and Columbia Rivers, and provide food, water, cover, perching, nesting, and resting for native birds and animals. Occasional large natural areas along these corridors are desirable to provide habitat diversity and rest areas necessary for a variety of species (see Table 2-2 for a list of species found on WHI). These corridors allow for the introduction, recharge, and passage of bird and animal species not normally observed in large cities, such as bald eagle and great blue heron. As wildlife move through these corridors, they are sometimes able to disperse into adjacent urban areas.

West Hayden Island's location within an area designated as critical habitat for federally-listed endangered species also contributes to a significance determination. Fish habitat is discussed in the Goal 5 – Riparian Corridor section.

The quantity of wildlife habitat resources on WHI is also significant. West Hayden Island is the third largest island on the lower Columbia and Willamette Rivers, behind Sauvie and Government Islands. The site also contains approximately 488 acres of cottonwood-ash riparian forest. Few local natural areas contain such a large contiguous area of this riparian forest community.

In 1976, the Corps estimated that there were approximately 11,500 acres of cottonwood habitat between river mile 12 and river mile 145 on the Columbia River (between Astoria and the Bonneville Dam). West Hayden Island represents an estimated four percent of that habitat.

The quality of WHI wildlife habitat resources is generally significant but varies, in part, with the type of resource. According to the *Columbia Corridor Inventory of Wetland Bodies and Wildlife Habitat Areas*, the WHI resource area is the second-highest quality habitat area in the Columbia Corridor and one of the highest within the City of Portland. Two state-listed sensitive wildlife species and two federally-listed threatened species have been observed on WHI (Table 2-2).

The site contains high habitat diversity in terms of habitat structure and interspersion of different habitat types. Natural vegetation communities are generally well-developed, in good health, and relatively characteristic of early Lower Columbia floodplain forests.

Wetlands are distributed across WHI and vary in type, habitat value, and other functions. Of the 40 acres of wetland habitat in the WHI study area, 18.3 acres were determined to be significant Goal 5 wetlands under OAR 660-23-100 and ORS 141-86-350. An additional 21 acres of Goal 5 wetlands did not qualify as significant under the OFWAM based upon *moderate* or lower wildlife habitat ratings; insignificant contributions to hydrologic control, water quality; and lack of ESA-listed species habitat ***[confirm upon completion of the Plant Biological Assessment]***. These areas have been degraded by past cattle grazing, but may have enhancement potential. Refer to Goal 5 Analysis – Wetlands for a detailed discussion of these areas.

Although Benson Pond scored high for rearing and refuge of juvenile salmonids as well as rearing and spawning habitat for a variety of other fish species, it was noted that fish remaining in the pond beyond June may be entrapped as Columbia River water levels

recede below 10 feet NGVD and become easy prey for birds and predator fish species. Thus, the habitat quality for this area, although Goal 5 significant, is of limited benefit to these species because of the potential for entrapment.

The dredge material spoil site in the northeast quadrant totals about 100 acres. This area was not found to contain significant Goal 5 resource quality, quantity, or location as part of the City's preliminary inventory review. Among other factors, habitat assessment scores are consistently below 30, mitigating (or contributing) factors generally absent, the area provides limited connection or buffer to adjoining habitats, and no significant plant or animal communities or species are present. This area is shown as "dredge material" on Figure 2-3.

GOAL 5 RESOURCE: FEDERAL WILD AND SCENIC RIVER

OAR 660-23-120 states that local governments shall amend acknowledged plans and land use regulations to address any federal Wild and Scenic River and associated corridor established by the federal government that is not addressed by the acknowledged plan.

The Columbia River at West Hayden Island is not considered a Federal Wild and Scenic River. Therefore, this Goal 5 resource category is not applicable and no additional inventory or evaluation is required.

GOAL 5 RESOURCE: OREGON SCENIC WATERWAYS

OAR 660-23-130 requires local governments to amend acknowledged plans and land use regulations to address any Oregon Scenic Waterways and associated corridor that is not addressed by the acknowledged plan.

The Columbia River at West Hayden Island is not a recognized Oregon Scenic Waterway. Therefore, this Goal 5 resource category is not applicable and no additional inventory or evaluation is required.

GOAL 5 RESOURCE: GROUNDWATER RESOURCES

OAR 660-23-140 specifies that significant groundwater resources protected under Goal 5 are limited to:

(a) Critical groundwater areas and groundwater-limited areas designated by the Oregon Water Resources Commission (OWRC), subject to the requirements in section (3) of the rule applied in conjunction with the requirements of OAR 660-23-030 through 060-23-050. OAR 660-23-140(3) defines critical groundwater areas and groundwater-limited areas as those designated by order of the OWRC pursuant to ORS 537.505 et seq. OAR 660-23-030 defines the steps to inventory the resource, OAR 660-23-040 defines the ESEE decision process, and ORS 060-23-050 requires a program to achieve Goal 5, if warranted.

(b) Wellhead protection areas, subject to the requirements of OAR 660-23-140 (4) and (5) instead of the requirements in OAR 660-23-030 through 660-23-050. Wellhead protection areas are defined as the surface and subsurface area surrounding a water well, spring, or well field, supplying a public water system, through which contaminants are reasonably likely to move toward and reach that water well, spring, or wellfield [(OAR 660-23-14-(1)(e)]. A well head protection area is a significant groundwater resource only if the area has been so delineated and either:
   (1) The public water system served by the wellhead area has a service population greater than 10,000 or has more than 3,000 service connections and relies on groundwater from the wellhead area as the primary or secondary source of drinking water; or
   (2) The wellhead protection area is determined to be significant under criteria established by a local government, for the portion of the wellhead protection area within the jurisdiction of the local government.

An investigation of Oregon Department of Water Resources (ODWR) and Department of Geology and Mineral Industries (DOGAMI) records indicates that there are no designated areas of critical groundwater or groundwater-limited areas, and there are no wellhead protection areas as defined by OAR 660-23-140. Therefore, this Goal 5 resource category is not applicable and no additional inventory or evaluation is required.

GOAL 5 RESOURCE: APPROVED OREGON RECREATION TRAILS

OAR 660-23-150 defines *recreation trail* as an Oregon Recreation Trail designated by rule adopted by the Oregon Parks and Recreation Commission (OPRC). Local governments are not required to inventory recreation trails but are required to designate all OPRC designated trails as significant Goal 5 resources. Local governments are also not required to amend acknowledged land use plans or regulations in order to supplement OPRC protection of recreation trails.

The 40-Mile Loop Trail in Portland has been designated as an Oregon Recreation Trail. The proposed bridge from North Marine Drive to West Hayden Island, and the proposed road on West Hayden Island from the new bridge to the existing Hayden Island road system will have bike lanes and sidewalks. North Marine Drive is part of the 40-Mile Loop Trail system which will have a direct connection to West Hayden Island when the proposed bridge is built. This route may see increased bicycle and pedestrian traffic from people using the 40-Mile Loop Trail. It will be a future City of Portland decision to submit the new West Hayden Island bridge and roadway to be included as part of the Oregon Recreational Trail system.

The City of Portland has not supplemented the OPRC protection of recreation trails to include any proposed developments on West Hayden Island. At such time in the future as this may occur, requirements of OAR 660-23-040 and 660-23-050 must be followed. Since no approved Oregon Recreation Trails exist on the island, this Goal 5 resource is not applicable.

GOAL 5 RESOURCE: NATURAL AREAS

OAR 660-23-160 (1) defines *natural areas* as areas listed in the Oregon State Register of Natural Heritage Resources. In 1977/1978 the Oregon Natural Heritage Program conducted an inventory of Oregon Natural Areas for Multnomah County. West Hayden Island was not included on this list as an Oregon Natural Area. Therefore, this Goal 5 resource is not applicable.

GOAL 5 RESOURCE: WILDERNESS AREAS

OAR 660-23-170 defines *wilderness areas* as those areas designated as wilderness by the federal government. Local governments are not required to inventory wilderness areas, except that local governments shall list all federally designated wilderness areas as significant Goal 5 resources as provided under OAR 660-23-030 (5). Local governments shall amend acknowledged plans to recognize any wilderness areas designated after the last periodic review or acknowledgment. A local government need not complete the Goal 5 process in OAR 660-23-040 and 660-23-050 for wilderness areas unless it chooses to provide additional protection for the wilderness area, such as the regulation of conflicting uses in an impact area adjacent to the wilderness area.

There are no Wilderness Areas on West Hayden Island, so this portion of the Goal 5 rule does not apply.

GOAL 5 RESOURCE: MINERAL AND AGGREGATE RESOURCES

Information was requested from DOGAMI, DSL and the USCOE about sand resources in the West Hayden Island study area. The on-island portion of the site has little or no mineral resource value. Sands beneath the site are considered "dirty" containing both silt and organic material. Gravel beneath the site is found at a depth of 50 to 60 feet bgs and is therefore not an accessible source of aggregate material.

DSL authorizes removal of aggregate resources from state waters, and the USCOE authorizes these extraction activities from navigable waters of the United States, such as the Columbia and Willamette Rivers. Presently there is a pending application for the area between Columbia River miles 102.25 and 106.30 in the navigation channel. All recent permits for sand extraction in the lower Columbia River are for areas in the federal navigation channel. Fish concerns related to Endangered Species Act listings tend to limit these authorizations to the navigation channel.

The federal navigation project in the West Hayden Island area includes sections referred to as the Vancouver Range, Vancouver Upper Channel, and Vancouver Lower Turning Basin. All of these areas are on the Washington side of the state line except a portion of the Vancouver Range off the west end of Hayden Island. There is also an anchorage area designated in the Columbia River between Hayden Island and the navigation channel downstream of the transmission lines at approximately river mile 103.2. This area is in Oregon, and is occasionally dredged to maintain depth by the Port of Portland.

OAR 660-23-180(1) defines *aggregate resources* as "...naturally occurring concentrations of stone, rock, sand and gravel, decomposed granite, lime, pumice, cinders, and other naturally occurring solid materials used in road building." Columbia River sand meets this definition. An aggregate resource site is considered significant if adequate information regarding the quantity, quality and location of the resource demonstrates that the site meets Oregon Department of Transportation (ODOT) specifications for base rock; the material meets local government standards for roadway material; or the aggregate site is on an inventory of significant aggregate sites in an acknowledged plan.

From available information, the river sand resource in the West Hayden Island study area does not meet these criteria and therefore does not constitute a significant Goal 5 resource.

GOAL 5 RESOURCE: ENERGY SOURCES

Under OAR 660-23-190(1)(a), *energy source* includes naturally occurring locations, accumulations, or deposits of natural gas, surface water (dam sites), geothermal, solar and wind areas, or energy sources applied for or approved through the Oregon Energy Facility Siting Council (EFSEC) or the Federal Energy Regulatory Commission (FERC). West Hayden Island has no energy sources as defined under this rule. Therefore, this Goal 5 resource does not apply.

GOAL 5 RESOURCE: HISTORIC RESOURCES

For purposes of Goal 5, the following definitions apply (OR 660-23-200):

(a) "Designation" is a decision by a local government declaring that a historic resource is "significant" and including the resource on the list of significant historic resources.

(b) "Historic areas" are lands with buildings, structures, objects, sites, or districts that have local, regional, statewide, or national historic significance.

(c) "Historic resources are those buildings, structures, objects, sites, or districts that have a relationship to events or conditions of the human past.

(d) "Historic resources of statewide significance" are buildings, structures, objects, sites, or districts listed in the National Register of Historic Places, and within approved national register historic districts pursuant to the National Historic Preservation Act of 1966.

(e) "Protect" means to require local government review of applications for demolition, removal, or major exterior alteration of a historic resource.

Goal 5 encourages local jurisdictions to maintain a current inventory of historic resources. As part of the EIS inventory, cultural and historic inventories were conducted on the island. No areas were identified that are to be protected or preserved. This inventory also identified no locally designated historic resources on West Hayden Island and no resources listed in the National Register of Historic Places or within approved National Register historic districts pursuant to the National Historic Preservation Act of 1966. Therefore, this Goal 5 resource does not apply.

GOAL 5 RESOURCE: CULTURAL RESOURCES

Cultural resources as a Goal 5 resource was not changed when Goal 5 was modified in 1996 and was included by reference from the previous Goal 5 rule.

Since 1986, several archaeological investigations have been conducted on West Hayden Island. These investigations identified no historically significant cultural resources on the island.

Although no historically significant cultural resources have been identified on West Hayden Island, several factors make it a possible location for Native American and early historical cultural sites. The lower Columbia River was extensively used by Native Americans, and numerous archaeological sites have been located along the banks of the lower Columbia River. In addition, West Hayden Island was known to support farming as early as 1850. Previous geotechnical coring indicates that many of the shoreline areas were filled with dredged material to a depth of roughly 18 feet (Ellis 1997). It is unlikely that construction in these areas will disturb cultural resources if ground disturbance does not extend below this depth. However, state law requires that, in the event that archeological materials are identified during project construction, a data recovery effort will be implemented to minimize impacts to cultural resources.

Because no sites of cultural significance have been identified, this Goal 5 resource does not apply.

GOAL 5 RESOURCE: OPEN SPACE

Local governments and state agencies are encouraged to maintain current inventories of open space resources. OAR 660-023-0220(1) states that for purposes of the Goal 5 rule, *open space* includes parks, forests, wildlife preserves, nature reservations or sanctuaries, and public or private golf courses. None of the resources on West Hayden Island have been inventoried by local governments or state agencies or designated as a specific open space resource. Therefore, this Goal 5 resource does not apply.

When Subdistricts B and C are designated as Open Space in the Comprehensive Plan, the City may consider including these areas as Goal 5 resources in the City inventory.

GOAL 5 RESOURCE: SCENIC VIEWS AND SITES

Local governments are not required to amend acknowledged comprehensive plans in order to identify scenic views and sites. If local governments decide to amend acknowledged plans in order to provide or amend inventories of scenic resources, the requirements of OAR 660-23-030 through 660-23-050 shall apply.

The Columbia River on both the north and south sides adjacent to West Hayden Island has been identified by the City of Portland as a Scenic Corridor. The City of Portland Scenic Resources Protection Plan describes this corridor as follows: “the most

spectacular view from the Columbia River is to the east, where Mt. Hood is frequently visible above the river and bridges. The Columbia River shoreline tends to be less developed than along the Willamette River shoreline, although the Port of Portland does have a loading terminal east of Kelley Point Park. There are several houseboat moorages along the Columbia, particularly on and near Hayden and Tomahawk Islands. The western portion of Hayden Island, Lemon Island and Government Island are all relatively undeveloped and offer views of natural areas. Other points of interest along the river are the airport and beaches."

Upon annexation of the West Hayden Island property into the City of Portland, the City may choose to amend its comprehensive plan to recognize the marine industrial development views along the Columbia River.

A summary of Goal 5 Significant Resources, identified in Section 2.2, are shown on Figure 2-4.

2.3 METRO REGIONAL RESOURCES

"Metro" is the Metropolitan Service District organized under ORS Chapter 268, and operating under the 1992 Metro Charter, covering 24 cities and certain urban portions of Multnomah, Clackamas, and Washington counties. "Regional resource" is a site containing a significant Goal 5 resource, including but not limited to a riparian corridor, wetland, or open space area, which is identified as a regional resource on a map adopted by Metro ordinance (OAR 660-23-080).

West Hayden Island contains significant Goal 5 resources as identified in this West Hayden Island Goal 5 Analysis (Figure 2-4). Those resources in Subdistrict A are exempt from Metro's water quality rules (Title 3). Metro's mapping and designation of regional Goal 5 resources and subsequent rules have yet to be determined. At the conclusion of the WHI annexation process and with adoption of the WHI area plan and supporting documents, this local Goal 5 analysis will have been conducted for all Goal 5 resources on WHI. Any resources identified by Metro as regional resources following that adoption will, as applicable, be evaluated in the following periodic review.

Local governments are required to complete the Goal 5 process for all regional resources prior to or during the first periodic review following Metro's adoption of a regional resources map, unless Metro adopts a regional functional plan by ordinance to establish a uniform time for all local governments to complete the Goal 5 process for particular regional resource sites [OAR 660-23-080(2)]. The West Hayden Island Goal 5 Analysis, upon adoption, will become a part of the City of Portland's Goal 5 inventory. The ESEE in this planning document will supplement the City of Portland ESEE. The Goal 5 inventory and analysis for West Hayden Island meets the requirements of OAR 660-23-080 and will provide a data source for Metro as it identifies and maps regional resources.

Figure 2-4 Goal 5 Significant Resources

Metro may adopt one or more regional functional plans to address all applicable requirements of Goal 5 for one or more resource categories and to provide time limits for local governments to implement the plan. Such functional plans shall be submitted for acknowledgment under the provisions of ORS 197.251 and 197.274. Upon acknowledgement of Metro's regional resource functional plan, local governments within Metro's jurisdiction shall apply the requirements of the functional plan for regional resources rather than the requirements of the Goal 5 rule [OAR 660-23-080(3)]. Metro has adopted Title 3: Water Quality, Flood Management and Fish and Wildlife Conservation. Section 3.07.350 of Title 3 (Fish and Wildlife Habitat Conservation Area) relates to future Goal 5 implementation. Metro has mapping of regional resources and is preparing measures to implement Section 3.07.350 of Title 3. Upon adoption of these implementation measures, local jurisdictions will then be required to incorporate the measures into their local plans. Metro adoption of new functional plan language is expected in 2001.

2.4 RELATIONSHIP OF GOAL 5 TO OTHER GOALS

Under 660-23-240(1), the requirements of Goal 5 do not apply to the adoption of measures required by Goals 6 and 7. However, to the extent that such measures exceed the requirements of Goals 6 and 7 and affect a Goal 5 resource site, the local government shall follow all applicable steps of the Goal 5 process.
The WHI Goal 5 work has followed the applicable steps of the Goal 5 process and are consistent with OAR 660-23-040. Land use findings will demonstrate compliance with Goals 6 and 7. No actions proposed under Goal 5 impact requirements of Goals 6 and 7.

The requirements of Goals 15, 16, 17, and 19 supersede requirements of Goal 5 for natural resources that are also subject to and regulated under one or more of those goals [660-23-240(2)].
Goal 15 applies to the Willamette River Greenway, and Goals 16, 17 and 19 apply to coastal shorelands, beaches and ocean resources. These goals are not applicable to West Hayden Island.

Local governments are required to follow the procedures and requirements of OAR 660-23 in the adoption or amendment of all plan or land use regulations pertaining to Goal 5 resources for post-acknowledgement plan amendments (PAPAs) initiated on or after September 1, 1999.
OAR 660-23 has been addressed for all resources on West Hayden Island. Land use findings will demonstrate compliance with OAR 660-23.

Local governments must apply Goal 5 in consideration of a PAPA if the PAPA affects a Goal 5 resource. Under OAR 660-23-250(3), a PAPA would affect a Goal 5 resource if:

(a) The PAPA creates or amends a resource list or a portion of an acknowledged plan or land use regulation adopted in order to protect a significant Goal 5 resource or to address specific requirements of Goal 5;
(b) The PAPA allows new uses that could be conflicting uses with a particular significant Goal 5 resource site on an acknowledged resource list; or

(c) The PAPA amends an acknowledged UGB and factual information is submitted demonstrating that a resource site, or the impact areas of such site, is included in the amended UGB area.

The West Hayden Island Area Plan is an amendment to the Portland comprehensive plan that affects several Goal 5 resources and is intended to implement Goal 5 for those resources. The Area Plan, Plan District, and Natural Resource Element together create a significant resource list, the Goal 5 decision and the program to achieve the City's Goal 5 decision relative to significant Goal 5 resources. Hence, the WHI Area is consistent with OAR 660-23-250(3).

Local governments are required to amend acknowledged plan or land use regulations at periodic review to address amended Goal 5 requirements if one or more of the following conditions apply, unless exempted by the director:

(a) The plan was acknowledged to comply with Goal 5 prior to the applicability of OAR 660, Division 16, and has not subsequently been amended in order to comply with that division;
(b) The jurisdiction includes riparian corridors, wetlands, or wildlife habitat as provided under OAR 660-23-180; or
(c) New information is submitted at the time of periodic review concerning resource sites not addressed by the plan at the time of acknowledgement or in previous periodic reviews, except for historic, open space, or scenic resources.

The West Hayden Island Area Plan and Goal 5 analyses includes riparian corridors, wetlands, or wildlife habitat as provided under OAR 660-23-180. The West Hayden Island Goal 5 analysis represents a new inventory undertaken as part of the planning process and establishes implementing measures through the Plan District. The West Hayden Island Planning documents revise the City of Portland's previously acknowledged Goal 5 inventory. This effort is not being conducted as a part of a Goal 5 periodic review task, but the information will ultimately be included in the City of Portland's periodic review update at the appropriate time.

OAR 660-23-250(8) requires local governments to apply the requirements of this division to work tasks in periodic review work programs approved or amended under ORS 197.633(3)(g) after September 1, 1996. Local governments shall apply OAR 660, Division 16, to work tasks in periodic review work programs approved before September 1, 1996, unless the local government chooses to apply this division to one or more resource categories, and provided:

(a) The same division is applied to all work tasks concerning any particular resource category;
(b) All the participating local governments agree to apply this decision for work tasks under the jurisdiction of more than one local government; and
(c) The local government provides written notice to the department. If application of this division will extend the time necessary to complete a work task, the director or the commission may consider extending the time for completing the work task as provided in OAR 660-25-170.

The West Hayden Island Goal 5 analysis was initiated after September 1, 1996, therefore, the requirements of this division apply.

2.5 ECONOMIC, SOCIAL, ENVIRONMENTAL AND ENERGY (ESEE) DECISION PROCESS

For all significant Goal 5 resource sites, local government must develop a program to achieve Goal 5 based on an analysis of the economic, social, environmental and energy (ESEE) consequences that could result from a decision to allow, limit, or prohibit a conflicting use (OAR 660-23-040). The steps to be followed in conducting an ESEE analysis [OAR 660-23-040 (2) through (5)] include:

(a) **Identify conflicting uses.** To identify conflicting uses that exist or could occur with regard to significant Goal 5 resource sites, local governments must examine land uses allowed outright or conditionally within the zones applied to the resource site and its impact area. If no uses conflict with a significant resource site, acknowledged policies and land use regulations may be considered sufficient to protect the resource site (based on applicable zoning, not property ownership). If one or more significant Goal 5 resource sites would have conflicting uses with another significant resource site, the local government must determine the level of protection for each significant site using the ESEE process and/or the requirements in OAR 660-23-090 through 660-23-230.

(b) **Determine the impact area.** The impact area is to be drawn to include only the area in which allowed uses could adversely affect the identified resource. This defines the geographic limits within which to conduct an ESEE analysis for the identified significant resource site.

(c) **Analyze the ESEE consequences.** The analysis of the ESEE consequences that could result from decisions to allow, limit or prohibit a conflicting use may address each of the identified conflicting uses or it may address a group of similar conflicting uses. The analysis of the ESEE consequences is to be adopted either as part of the plan or as a land use regulation.

(d) **Develop a program to achieve Goal 5.** Based on the ESEE analysis, local governments must determine whether to allow, limit or prohibit identified conflicting uses for significant resource sites. A decision to prohibit or limit conflicting uses protects a resource site. A decision to allow some or all conflicting uses for a particular site may also be consistent with Goal 5 provided it is supported by the ESEE analysis. One of the following determinations must be reached with regard to conflicting uses for a significant resource site:

   (a) The significant resource is of such importance compared to the conflicting uses and the ESEE consequences of allowing the conflicting uses are so detrimental to the resource, that the conflicting uses should be prohibited.

   (b) Both the resource site and the conflicting uses are important compared to each other and, based on the ESEE analysis, the conflicting uses should be allowed in a limited way that protects the resource site to a desired extent.

(c) The conflicting use should be allowed fully, notwithstanding the possible impacts on the resource site. The ESEE analysis must demonstrate that the conflicting use is of sufficient importance relative to the resource site and must indicate why measures to protect the resource to some extent should not be provided per OAR 660-23-040(5)(b).

Identification of Conflicting Uses

In Section 2.2 of this document, West Hayden Island Goal 5 resources were inventoried and a significance determination was made. Goal 5 resources identified as significant include wetlands, wildlife habitat and riparian corridor resources (Figure 2-4). This discussion identifies existing and potential conflicting land uses on West Hayden Island.

This Goal 5 evaluation is the result of an annexation and PAPA request made by the Port of Portland, the current owner of WHI. West Hayden Island is located within Multnomah County, within the Portland urban growth boundary, and it is under the planning jurisdiction of the City of Portland. Multnomah County has adopted ordinances that implement its comprehensive plan in relation to WHI. ORS 215.130(2) states:

> *An ordinance designed to carry out a county comprehensive plan and city comprehensive plan shall apply to … the area within the county also within the boundaries of a city as a result of extending the boundaries of the city or creating a new city unless, or until the city has by ordinance or other provision provided otherwise … .*

Oregon's courts have found that ORS 215.130(2) makes a county's comprehensive plan applicable in newly annexed areas until the city provides otherwise (see Multnomah County v. City of Fairview, 96 OR App 14, 771 p2d 289 (1988). The proposed PAPA and zone change are intended to assure that the necessary transition from the County's comprehensive plan to the City's comprehensive plan occurs in a timely fashion. The Port of Portland's proposed comprehensive plan designations, IS and OS, and zoning designations, IH and OS, consistent with the proposed comprehensive plan designations, will likely be in effect upon annexation. Hence, those plan designations and the accompanying zoning districts have been used to identify potential conflicts as part of this Goal 5 analysis.

Table 2-3 shows the allowed, conditional, limited, and prohibited uses in both of these zoning categories. This is compared with uses allowed under current City Code. Based on the proposed uses for the IH and OS zones, Table 2-4 shows the potential conflicts of the proposed development in relation to the identified significant resources on West Hayden Island.

Table 2-3 Uses Permitted in WHI Plan District Heavy Industrial (IH) and Open Space (OS) Zones			
Categories	**IH (Sub district A)**	**OS (Sub district B**	**OS (Sub district C)**
Residential Categories- none			
Commercial Categories			
Office	L/CU	N	N
Vehicle Repair	Y	N	N
Industrial Categories			
Manufacturing And Production	Y	N	N
Warehouse And Freight Movement	Y	N	N
Wholesale Sales	Y	N	N
Industrial Service	Y	N	N
Railroad Yards	Y	N	N
Waste-Related	L/CU	N	N
Marine Terminal Uses	Y	N	N
Water-Related/Water-Dependent Industrial Uses (in river)	Y	Y	Y
Institutional Categories			
Basic Utilities	Y	Y	Y
Community Service	N	CU	CU
Parks And Open Areas	Y	Y	Y
Daycare	L/CU	N	N
Other Categories			
Agriculture	Y	Y	Y
Aviation And Surface Passenger Terminals	CU	N	N
Detention Facilities	CU	N	N
Mining	CU	N	N
Communication Broadcast Facilities	L/CU	L/CU	L/CU
Rail Lines And Utility Corridors	Y	Y	Y
Environmental Mitigation	Y	Y	Y

Note: City of Portland uses permitted in IH and OS zones that are not permitted in the WHI plan district are not shown in this table.

Y = Yes, Permitted Outright
L= Allowed, special limitations apply
CU = Conditional Use Review Required
N= No, Prohibited

Table 2-4 West Hayden Island Development Program Goal 5 Resource Conflicts

Zone	*Conflicts with Goal 5 Significant Resources – Riparian Corridor, Wildlife Habitat, Wetlands*
Conflicts with proposed IH zone uses – Subdistrict A	Off-shore berth Grain/bulk terminal Container terminal Grain/bulk or container terminal Vehicle bridge Intermodal yard secondary rail bridge Rail line access Rail loop
Conflicts with proposed OS zone uses – Subdistrict B	Increased exposure to elements (wind and light) due to opening up adjacent forest canopy Proposed mitigation construction and maintenance Resource isolated by surrounding development (decreased habitat value)
Conflicts with proposed OS zone uses – Subdistrict C	Boaters drawn to remaining natural areas (worse in B) Increased human presence, litter, dogs, noise from recreational trail users and boaters Increased exposure to elements (wind and light) due to opening up adjacent forest canopy Proposed mitigation construction and maintenance Resource isolated by surrounding development (decreased habitat value) Trail and other recreational facilities such as viewing platform.

Determination of Impact Area

The West Hayden Island Study Area has the following boundaries: the Oregon-Washington state line on the north; the Burlington Northern/Santa Fe Railroad (BN/SFRR) main line right-of-way on the east; the south edge of the Portland Harbor on the south; and an extension of the City boundary on the west (see Figure 1-7).

OAR 660-23-010(3) defines *impact area* as "a geographic area within which conflicting uses could adversely affect a significant Goal 5 resource." Local governments are to determine an impact area for each significant resource site, such area to be drawn to include only the area in which allowed uses could adversely affect the identified resource. The impact area defines the geographic limits within which to conduct an ESEE analysis for the identified significant resource site. (OAR 660-23-040(3).

Conflicting uses are defined in OAR 660-23-010(1) as a "land use or other activity reasonably and customarily subject to land use regulations that could adversely affect

a significant 5 resource (except as provided in OAR 660-23-180(1)(b)). Local governments are not required to regard agricultural practices as conflicting uses."

The focus of conflicting use analysis is on uses that potentially conflict with all identified Goal 5 significant resources on and around West Hayden Island. The entire study area contains significant natural resources under Goal 5; therefore the study area is assumed to be coterminus with the impact area.

Economic, Social, Environmental and Energy Consequences of Permitting, Limiting or Prohibiting Conflicting Uses

Local governments must determine whether to allow, limit, or prohibit identified conflicting uses for significant resource sites. This decision is based upon and supported by the ESEE analysis. ESEE consequences are defined by Goal 5 as "...the positive and negative economic, social, environmental and energy (ESEE) consequences that could result from a decision to allow, limit, or prohibit a conflicting use" (OAR 660-23-010 (2)). One of the following determinations must be reached by the local government with regard to conflicting uses for a significant resource site [OAR 660-23-040(5)]:

- **Prohibit conflicting uses.** This means that a significant resource is found to be of such importance compared to the conflicting uses, and the ESEE consequences of allowing the conflicting uses are so detrimental to the resource, that the conflicting uses are prohibited [OAR 660-23-040(5)(a)].
- **Limit the conflicting use.** This means that both the significant resource and the conflicting uses are important compared to each other and, based on the ESEE analysis, the conflicting uses should be allowed in a limited way that protects the resource site to a desired extent [OAR 660-23-040(5)(b)].
- **Allow the conflicting use**. A local government may decide that the conflicting use should be allowed fully, notwithstanding the possible impacts on the resource site. The ESEE analysis must demonstrate that the conflicting use is of sufficient importance relative to the resource site, and must indicate why measures to protect the resource to some extent should not be provided (OAR 660-23-040(5)(c). This would generally mean placing no additional natural resource protection measures on the development site beyond those required by the base zone (IH or OS). For the WHI site, however, requirements of the Plan District and referenced mitigation plans must also be considered since they modify the underlying base zone requirements.

The ESEE analysis need not be lengthy or complex, but should enable reviewers to gain a clear understanding of the conflicts and the consequences to be expected (OAR 660-23-040(1)). To identify conflicting uses, local governments are to examine land uses allowed outright or conditionally within the zones applied to the resource site and its impact area. Uses not expected to occur need not be addressed. The following analysis reviews the ESEE consequences of allowing, limiting or prohibiting conflicting uses identified in Table 2-4 and assumes that uses proposed under the West Hayden Island development program and in the West Hayden Island planning documents will occur on the site.

Proposed Conflicting Uses on West Hayden Island

The Port of Portland proposes to develop West Hayden Island for several uses as noted on Table 2-3. These include zoning and developing about 610 land acres and 290 in-river acres as IH to allow Subdistrict A to develop for marine-related and marine-dependent industrial uses. About 100 acres of Subdistrict A are currently used for

dredge spoil disposal and do not contain significant Goal 5 resources. The remainder of Subdistrict A contains wetlands, wildlife habitat and riparian corridor resources.

West Hayden Island provides a unique location for natural resources as well as for economic development. Therefore, the remainder of the island not identified for marine industrial development will be enhanced and protected for public use (Subdistrict C - east of the proposed bridge) and for wildlife and natural values (Subdistrict B - west of the proposed bridge). These encompass about 52 and 165 acres, respectively, and are proposed for OS zoning. The conflicting uses to be reconciled on West Hayden Island in the OS zone are primarily those related to human intrusion into natural resource areas.

The development footprint (Subdistrict A) was defined through an iterative process. The 1987 EIS prepared by the Corps of Engineers for marine industrial development proposed by PGE looked at environmental issues on West Hayden Island relative to the proposed development and permits were issued to PGE. From 1995 to 1997, the Port conducted an extensive study of West Hayden Island which included evaluation of environmental resources relative to marine industrial needs of the Port. This effort resulted in the adoption by the Port Commission of the West Hayden Island Development Program in March 1997. This Development Plan was updated in 1999 to reflect more current needs and to begin the process of annexing the property into the City of Portland. Advisory committees composed of local residents, business and agency staff worked with the Port throughout development of both development plans, providing recommendations and direction on how development can occur consistent with the needs of the Port, at the same time minimizing impacts to local property owners and business and maintaining environmental values. The zoning proposed for West Hayden Island is a result of recommendations of the Advisory Committee that provision should be made for public access and recreation for a portion of the property (Subdistrict C) and that the majority of remaining open space should be preserved and enhanced for natural values (Subdistrict B).

The Port of Portland proposal is to permit conflicting uses in the IH zone and limit conflicting uses in the OS zone. The conflicting uses affecting Subdistrict B (OS) are incidental from development of the remainder of the property (resource isolation, increased exposure to elements because of decreased tree canopy in Subdistrict A). For those areas where conflicting uses occur directly (IH, Subdistrict A), several resource protection components have been developed to minimize overall impacts of industrial and recreational development. These include environmental overlay zones, mitigation plans for wetlands and uplands, and development standards for the north shore area. The uses permitted in each zone are also tailored to marine-related and marine-dependent industrial uses or limited recreational uses and are more limiting than the IH and OS zones generally in the City code (see Figure 2-3). Limiting the uses in the proposed zoning districts is intended to reserve this property for water related and water dependent uses, and to further reduce potential impacts from the wider range of uses normally permitted in the City code.

♦ *Economic Consequences*

Background

An economic analysis was prepared to determine the general need for water-dependent industrial land in the City of Portland and the Portland metropolitan area over the next twenty years (Hobson Johnson & Associates, April 1999, Volume 3). This study also addressed the specific need and role for the West Hayden Island site in Portland's marine industrial future. This is summarized in the following paragraphs.

Portland's position as a major intermodal transportation hub has been one of the region's primary generators of economic activity. To accommodate the need for future marine cargo capacity to maintain and expand the Portland metropolitan area opportunities as a major international shipping and trading center requires large land parcels of rail-serviced, waterfront property on a deep-water shipping channel. The projected need for land in the Portland area to serve marine cargo uses is projected at between 686 and 1,021 additional acres by 2020. In 1987, 1991, 1993, and 1999, the Corps of Engineers, PGE, and the Port, respectively, conducted analyses of likely candidate sites for marine development with the conclusion that there are no viable alternatives to West Hayden Island for development of a modern marine terminal complex that meets site selection criteria and the regional need for marine facilities (US Army Corps of Engineers, Draft Federal Environmental Impact Statement, 1999).

Development of West Hayden Island is expected to generate a substantial level of employment during construction and subsequent operation. Development of the site is projected to create over 7,600 person years of construction employment, 1,620 direct permanent jobs, and 2,900 indirect permanent jobs. A substantial level of employment is also associated with exporters and importers using Port services.

There are also significant economic values associated with natural resources found on West Hayden Island. These are discussed in detail in the Goal 5 inventory discussion and include wetlands, fish and wildlife habitat, and riparian corridors and the ancillary benefits they provide that supports the Portland area economy and livability. Benefits are derived from water quality, the air quality and microclimate benefits of urban forests, and open space and scenic amenities. Large natural areas also play an important role in the regional economy by attracting and helping to retain industry that provides high quality jobs, contributing to tourism, supporting recreation, and contributing to property values. Although difficult to quantify, the benefits from conserving natural resources are important to the region.

WHI is currently private property that has been heavily grazed by cattle, but also provides significant natural resource areas. Subdistrict B will maintain its current character as a privately owned open area and will include mitigations for development on the remainder of the Island. Subdistrict C will provide for passive public recreation to provide opportunities to experience the natural riparian environment and the views to the south of the industrial activity at Terminal 6 in the Rivergate area. Anticipated

uses in Subdistrict C include a parking area and trails but will restrict public access from sensitive wildlife areas.

Consequences of Prohibiting Conflicting Uses

Prohibiting all conflicting uses in the IH and OS zoning districts would set aside the substantial effort has been expended over the years to bring the WHI property into the City of Portland and to design a development program for marine-related industrial development on the property. There would be no economic benefit to the Port of Portland, current owners of the property. However, more important is the lost opportunity for development of the site for marine-industrial development.

The marketing study prepared by Hobson and Johnson, and previous decisions by federal, regional and County agencies, indicates that there are no viable alternatives to West Hayden Island for development of a modern marine terminal complex within the Portland metropolitan area. To the extent that the proposed Port of Portland Development Plan is not implemented, the ability of the Portland metropolitan area and the region to maintain its position as a viable major transportation hub and international shipping and trading center will diminish. The Port of Portland would be unable to respond to the identified need for marine development land. Customers of the Port would face additional transportation costs and may be unable to expand to efficiently and effectively meet the anticipated growth need and expectation of their industry.

For Subdistricts B and C, the availability of both subdistricts to accommodate ancillary uses to the water-related and water-dependent uses in the IH zone are important for those uses that traverse the island, such as utility and transportation corridors. The Advisory Committee for the WHI Area Plan effort helped define the uses that would occur in Subdistricts B and C and guiding principles for open space development and natural resource preservation were developed (see WHI Area Plan Document). Low ecological impact "passive" recreational uses, such as hiking, running, wildlife observation, nature study, canoeing or kayaking were deemed appropriate uses for Subdistrict C. These natural values, combined with the opportunity to connect to the existing Portland trail system reinforce the economic values of natural resource areas and associated public recreation opportunities. There are limited opportunities for this type of recreation close-in to Portland and to the residents of Hayden Island. The opportunity to provide this recreation and natural resource to Portland area residents and visitors will not occur if the conflicting use is not permitted.

Consequences of Limiting Conflicting Uses

Limiting the conflicting uses does not provide the property owner or the region with full economic returns that could be realized if the Island were developed with no regard to the existing natural resources. However, by allowing the conflicting use in a limited manner, the owner and the Region can realize economic gain to support regional marine development needs while preserving natural values to the extent possible. The City of Portland, the Region and Oregon will benefit economically by the provision of marine-industrial property to accommodate long term demands and needs. This includes

benefits from new jobs created, both direct and indirect; increased tax base from industrial development; increased markets for suppliers, and more.

As part of the Port of Portland West Hayden Island development plan, mitigation is proposed for impacts to fish and wildlife, wetlands, and upland riparian forest. Mitigation plans have been prepared as a separate element of the WHI Planning Documents and are incorporated into the WHI Plan District to ensure implementation. Both the wetlands and uplands mitigation plans address mitigation for impacts associated with full development of Subdistrict A.

The Plan District requirements for development of Subdistricts B and C limit and minimize the conflicting uses. Although recreation opportunities are provided in Subdistrict C, they are balanced with natural resources and are limited to passive uses, such as walking trails and viewing areas. Protection and resource enhancement and mitigation in Subdistrict B is consistent with current natural resource values.

Consequences of Permitting Conflicting Uses

The location of the Port's future marine cargo facilities at West Hayden Island is part of a long-term strategy adopted in 1991 by the Port Commission to meet the need for marine development land. The Port's proposed marine complex at West Hayden Island is intended to respond to that need for future waterfront development land and to maintain the continued viability of Portland's and Oregon's economies. Development of WHI for marine industrial uses would provide new job opportunities and support economic growth throughout the region based on domestic and international trade.

The Port of Portland represents an important element in the regional infrastructure, supporting the basic industries of the region. Continued growth of the marine industrial component of the Portland economy will help to maintain the position of the City of Portland as a major port city on the West Coast. It would also help ensure the continued supply of goods to and from the region.

The existing significant natural resources in Subdistrict A would be lost for the most part as the site is built out. The natural resource areas in Subdistrict B are consistent with existing resource values and will be enhanced through mitigation for development within the IH zone. To the extent that these mitigation plans improve wetland, wildlife and riparian values, the economic value of these natural resource areas will be enhanced.

Within Subdistrict C, the conflicting use is primarily impervious parking and human intrusion into the resource area. From an economic standpoint, the opportunity to improve passive recreation opportunities for Portland area residents and visitors enhances the attractiveness of the Portland area for residents and businesses. It provides the opportunity for enjoyment of natural systems in a controlled and focused manner, while protecting the majority of remaining natural resource areas on the Island (Subdistrict B).

♦ *Social Consequences*

Background

Other Goal 5 analysis conducted by the City of Portland have evaluated the following social factors: recreational and educational opportunities; historic, heritage, and cultural values; visual variety and impact; urban design and image of the city; screening and buffering of incompatible uses; and health, safety and welfare. These same factors are evaluated below to ensure consistency with the previous analyses:

- As private property, WHI is not available for public use for recreation, education or other use except by special permission from the owner.
- Although the Island is situated in a major transportation corridor that would lend itself to human occupation over time, numerous cultural and historic on-site inventories and investigations have identified no unique artifacts, structures, or areas of concern on the Island.
- The City of Portland is proud of its image of urban development interspersed with natural areas, such as the forested area of WHI. It is also proud of its vibrant economy as a port city. Both are important elements of urban design and both are important to perpetuate the image of the Portland area as an economically viable region that values, enhances and protects its natural beauty in balance with economic development.
- Natural resources, such as those on West Hayden Island, can act as an edge to different land uses, separating and buffering them from each other visually and by distance. Natural areas provide an attractive transition from development to other recreational and nature-oriented pursuits as are provided in a river corridor.
- The health, safety and welfare consequences can be considered from a physical or socio-economic perspective. Physical activities, such as filling within wetland and floodplain areas must be considered to ensure that flood danger is not increased because of reduced capacity to store floodwaters. In addition, urban forests help reduce air pollution problems and are often associated with stress reduction because of the restorative nature of natural environments. Along with these physical benefits, the importance of the regional economic base and supporting infrastructure are important to the vitality of business, employment, and the community which are important for the welfare of the residents of the Portland area.

Consequences of Prohibiting Conflicting Uses

The one OS zoned area will be developed for public passive recreation. In both the natural systems will be enhanced and protected in conjunction with development of the IH zone uses. If marine-industrial uses do not occur on the site, the OS zone protection, set-aside, and improvements for public recreation, education and for natural area enhancement will not occur. Public access will not be made available to this private property for recreational use.

WHI has been inventoried several times to identify areas of cultural or historic significance. Current state and federal law protects cultural resources. Although no areas have been identified that are to be protected or preserved, it is possible that artifacts may be unearthed with regrading of the property for industrial development. If this occurs, it could provide the opportunity to confirm early uses of the Island and to add to the cultural and historic information on development of the area that will not occur if the conflicting use is prohibited.

Although the majority of Hayden Island is developed and dominated by the extensive parking lots of the Jantzen Beach Shopping Center, the forested area of West Hayden Island provides some visual relief from this intensive development and its surrounding area. Prohibiting development of the IH zoned area would maintain the existing forested area as it is today and would maintain the current visual amenity. The majority of surrounding land uses, however, are industrial and port-related facilities, so the benefits from this visual amenity are minimal.

Not allowing the OS zone as a conflicting use will eliminate the opportunity to protect, set aside, and enhance 165 acres of natural area and 52 acres of additional passive recreation and education areas to the residents and visitors of the Portland area at a close-in location. The potential to extend the 40-Mile Loop trail will not occur if additional access is not provided to the island. Close-in recreational and wildlife viewing areas are important elements of the urban design and image of the City that are regularly promoted as Portland area assets. Residents of Hayden Island will continue to leave the island for these passive recreational uses if this conflicting use is not permitted.

The health, safety and welfare consequences of prohibiting the conflicting use primarily relate to socioeconomic issues. If the marine industrial development does not occur, the Port of Portland and the local economy will be limited in its ability to continue to grow to meet the demands of a growing regional population and an international shipping and trade center. Related new jobs and expansion of the businesses that rely on the marine industrial facilities of the Port would not occur. This could contribute to the indirect impacts of lower employment, less economic vitality and choices, less construction and increased vacancy rates.

Consequences of Limiting Conflicting Uses

The primary consequence of limiting conflicting uses is to reduce the amount of land or opportunity for development of West Hayden Island for marine-industrial and related purposes. To the extent that limiting this development precludes the ability of the site to meet modern port facility siting requirements and therefore prevents the Port from meeting the identified need for a marine facility, the same consequences of prohibiting the conflicting uses will occur.

The Port of Portland operates in a market-driven environment. The proposed development area (Subdistrict A) was determined as a result of modern port development criteria, interests expressed by potential future clients, and a minimization review to determine the most suitable areas for phasing development.

The conflicting uses proposed in the OS zone were intended to have the least negative impacts on the existing natural systems. By limiting the development of the IH zone to Subdistrict A as proposed by the Port of Portland, the areas zoned OS are proposed to be enhanced to replace some of the lost natural values and to provide additional recreational opportunities to the surrounding community. This opens a new recreational opportunity to the community that complements the City parks and open space program and furthers the intent of open space in proximity to urban areas.

Consequences of Permitting Conflicting Uses

The passive recreation and enhancement for natural areas that are proposed in the OS zone will occur as part of the overall development program for the IH zone. Any protection of these natural areas is by private property owner choice. With the provisions of the Plan District, these areas will be protected and enhanced for public use and enjoyment.

WHI has been inventoried several times to identify areas of cultural or historic significance. Although no areas have been identified that are to be protected or preserved, it is possible that artifacts may be unearthed with regrading of the property for industrial development. If this occurs, it could provide the opportunity to confirm early uses of the Island and to add to the cultural and historic information on development of the area. State and federal law requires review processes to identify and protect these resources if this occurs.

Although the majority of Hayden Island is developed and dominated by the extensive parking lots of the Jantzen Beach Shopping Center and residential structures or boats, the forested area of West Hayden Island provides some visual relief from this intensive development and its surrounding area. Development of the marine-industrial uses will affect 240 acres of riparian forest habitat. Although mitigation will occur to enhance 70 acres of forest on-site and an additional 170 acres off-site, the net effect will be loss of this visual resource on the island and any accompanying benefits to air quality.

The image of the City of Portland is one of good urban design with opportunities to work, shop, live and recreate in close proximity. It encourages use of non-auto modes of transportation to commute among these activities. Providing access to West Hayden Island from Marine Drive provides the opportunity to expand the City 40-mile loop trail. It also provides close-in opportunities for passive recreation and to enjoy protected natural resource areas that are enhanced to maximize wildlife and natural resource values. Prohibiting the conflicting uses will keep this area in private ownership and unavailable to the public for these recreational and educational uses. Enhancements will not occur that are intended to improve habitat and natural resource values.

Waterfront recreational opportunities, such as fishing, wildlife viewing, and hiking are limited within the City of Portland, particularly along the Columbia River. The 1991 Parks Futures Plan identified an extreme shortage of public land as a major constraint to the current and future recreational use of the Columbia River riverfront (City of

Portland, Bureau of Parks and Recreation, 1991). Currently, West Hayden Island is not available for public use. The Port plans to set aside areas for public recreational uses. These areas will become accessible with the construction of a connecting bridge from Marine Drive as part of the Port development plan. The passive recreation and enhancement for natural areas that are proposed in the OS zone will occur as part of the overall development program for the island. Protection is currently afforded to these natural areas by private property owner choice. With the provisions of the Plan District, these areas will be protected and enhanced for public use and enjoyment.

The WHI Plan District includes development standards to provide screens and buffers between IH conflicting uses and surrounding land uses. These include standards for lighting, landscaping, and other standards required to meet regulations related to fish and wildlife habitat, water quality, erosion control, noxious plant control, flood management, and threatened and endangered species. These buffers will not be as extensive as the existing natural resource areas. However, improvements will occur where, for example, noxious weeds are controlled and replaced with native species.

The health, safety and welfare consequences of permitting the conflicting use primarily relate to socioeconomic issues. Development of a marine industrial complex will position the Port of Portland to meet its goals for continued growth and development over the next 20 years. The related new job creation and expansion of the businesses that rely on the marine industrial facilities of the Port will continue to support the economic infrastructure and maintain the viability of the Portland economy. This could contribute to the indirect impacts of lower unemployment, improved economic vitality and choices, more construction and reduced vacancy rates.

- ***Environmental Consequences***

Background

The Goal 5 resource analyses concluded that there are 18.3 acres of Goal 5 significant wetlands on West Hayden Island. Although the entire Island is considered riparian corridor, 300 feet inland and the channel of the Columbia River is considered Goal 5 significant. Because of size, location, quality of habitat, and proximities, the entire island is considered Goal 5 significant for wildlife habitat.

The environmental values of west Hayden Island are related to its ecological and landscape context. West Hayden Island is part of a network of natural resource areas in the lower Columbia River corridor. A variety of municipal, county, regional, state and federal lands provide more than 26,000 acres of bottomland habitat in the approximately 20 miles up- and downstream from the confluence of the Willamette and Columbia Rivers. WHI contains 827 of these 26,000 acres. Other sites are as large as 12,000 acres on Sauvie Island and over 4600 acres at Ridgefield National Wildlife Refuge.

Vegetation on WHI is characteristic of over 40,000 acres of riparian habitat located on the Columbia River between Sauvie Island and the mouth of the Sandy River, and on the lower Willamette River from Ross Island to its mouth.

The location of West Hayden Island is significant under Goal 5 for several reasons. Both on-site and off-site consequences are important considering the location of the island within an area designated as critical habitat for federally listed endangered species (salmon) and its location as an island within a river corridor that provides east-west as well as north-south bird and animal connections in the region. Cumulative consequences are also important, understanding that the West Hayden Island project is a contributor to the long-term changes in the environment.

Consequences of Prohibiting Conflicting Uses

Full protection of all natural resources on West Hayden Island would preclude all development of the island, including the Port's proposed marine terminal. The environmental consequences of no development on the island would maintain the island in its current state, including the range of values identified in the natural resource inventory and analyses from providing wildlife habitat to entrapment of juvenile fish in Benson Pond.

Within Subdistrict B, current natural systems would remain as they are. No degradation of the area would occur, but no resource enhancement would occur either. The passive recreation and viewing areas would not be developed in Subdistrict C and the intrusion of human activities would not occur in those designated areas. Additional enhancement of natural areas in this subdistrict also would not occur without development of the Island as proposed by the Port.

Consequences of Limiting Conflicting Uses

As part of the development proposal by the Port of Portland, an EIS is being prepared to support permit applications. Wetland and Upland Mitigation plans have been developed to minimize the environmental consequences of marine industrial development and to replace destroyed or enhance remaining environmental resources. These mitigation plans are referenced by the WHI Plan District as part of development standards for the property. Additionally, North Shore Development Standards have been prepared to guide the redevelopment of the north shore riparian habitat areas, which function as the transition area between the river aquatic ecosystems and the island terrestrial ecosystems.

To the extent that these mitigation plans limit or minimize the conflicting uses, the short-term and cumulative conflicts between development of WHI for marine-industrial uses and environmental values in the region is reduced. The conflicting uses proposed in the OS zone were intended to have the least negative impacts on the existing natural systems while mitigating for marine industrial uses and providing additional recreational opportunities for local and regional residents.

Consequences of Permitting Conflicting Uses

There will be a loss of off-channel flood storage and wetland areas due to proposed fills. The development area is anticipated to remove approximately 4.05 thousand acre feet of flood storage capacity based on a conservative approximation that the fill area has a footprint of 300 acres. However, the capacity of the lost storage in relation to the volume of water flowing past the site during a major flood is negligible and is not expected to have long-term consequences.

Development of the IH zone (Subdistrict A) would result in the permanent removal of 20.7 acres of wetlands over the 30-year development timeframe. This is slightly more than half (53.4%) of the 40.98 acres of wetlands currently on WHI. Of these, approximately 18.3 acres are Goal 5 significant wetlands. Assuming that the proposed mitigation plans function as designed, there will be approximately 48 acres of wetlands present on WHI after mitigation is implemented, for a net gain of approximately 8 acres (20%) of wetlands over existing conditions. The mitigation areas would be predominantly forested but have high interspersion of other habitats, including open water, emergent, and scrub-shrub; would provide off-channel habitat for listed salmonids which would not trap fish; and would provide habitat for the wildlife groups currently present and using WHI wetlands. Invertebrate habitat quality in the mitigation wetlands would be good quality, water quality functions would be maintained or enhanced, and flow reduction would increase because live storage would be created.

Effects on migration of salmonids are a minor concern for the proposed development. Off-channel habitat is relatively rare in the Portland reach of the Columbia River compared to historic conditions, and this habitat lack is one of the many factors in salmonid declines. Due to the scarcity of off-channel habitat and its importance to juvenile anadramous salmonids, the proposed conservation and enhancement measures in the mitigation plan should more than compensate for short-term and cumulative impacts associated with proposed shoreline modifications.

Allowing the IH conflicting use will eliminate much of the forest habitat on West Hayden Island. It will fragment the existing forest and reduce the functions and values of the existing forest by reducing the size of this forest habitat. The diversity and number of species will be reduced as full development is approached. WHI is one of the few remaining examples of riparian forest within the metropolitan region and much of the environmental value of the site is associated with its size, its position in the Columbia River ecosystem, and the mosaic of habitats it provides.

Implementation of the initial phase of the marine-industrial development program will result in the direct loss of 127 acres of riparian forest, 42 acres of upland meadow, and 33 acres of beach/shoreline wildlife habitat. The loss of the bottomland forest habitat would reduce the amount of suitable nesting, foraging, migratory, and dispersal habitat for nesting neo-tropical birds and breeding and dispersal habitat for amphibians and reptiles. Project impacts would also result in the loss of older trees that not only provide current habitat, but would also be the source for recruitment of snags and downed logs for future dead wood habitat for cavity nesting birds, hiding and foraging areas for birds, small mammals, and amphibians, and food and cover for insects.

Mitigation for these impacts was developed as part of the EIS and is included by reference as part of the WHI Plan District. The mitigation plan will include acre for acre replacement of 240 acres of existing riparian forest habitat, which includes enhancement of 70 acres of forest on the project site and an additional 170 acres off-site. Because on- and off-site mitigation will replace habitat and habitat values, no cumulative impacts are expected, over time, within the broader project vicinity.

The OS zone includes about 217 acres that will be set aside as permanent open space. Of that area, about 162 acres will be mitigation area, designed as wetland and wildlife habitat (Subdistrict B and C). Active recreational use will not be encouraged. The mitigation areas will be predominantly forested but will have high interspersion of other habitats, including open water, emergent, and scrub-shrub. It will provide off-channel habitat for listed salmonids which would not trap fish and would provide habitat for the wildlife groups currently present and using WHI wetlands. Invertebrate habitat quality in the mitigation wetlands is expected to be of good quality, water quality functions will be maintained or enhanced, and flow reduction will increase because live storage will be created.

- ***Energy Consequences***

Background

The marine facilities proposed for development on West Hayden Island are needed to accommodate future marine activity. Energy consumption for the purpose of constructing and maintaining these facilities will be similar whether the marine facilities are constructed on West Hayden Island or some other location in the Pacific Northwest. As other available lands are developed, similar energy requirements would be anticipated. For development that must occur outside the Portland region because of the lack of sufficient marine industrial land, the energy impacts would occur in those areas outside the Portland area.

For the OS zone, the primary energy consequence is related to transportation. No buildings will be constructed and minimal infrastructure will be required.

Consequences of Prohibiting Conflicting Uses

Although energy consequences of developing a marine industrial site would be similar in any location, the transportation required from exporters and importers in Portland, the Willamette Valley, Eastern Oregon and Southern Washington would increase directly proportional to the additional distance needed to access the new facility. The West Hayden Island site is unique because of its location at a transportation hub – heavy rail, deep water, air and interstate highways all converge at this location to maximize the opportunities for cost-effective shipping and trade. To the extent that alternative sites do not provide this mix of transportation options, loss of revenues due to decreased access or increased transport costs and energy consumption will occur.

The infrastructure to develop West Hayden Island currently exists. The property is within the urban growth boundary and is readily accessible by public services and transportation. The energy requirements of developing less accessible or less urban sites will be a consequence of prohibiting this conflicting use.

If the conflicting uses are not permitted on West Hayden Island, residents of the island and others within the Portland area who would visit the site for recreation or nature viewing would go elsewhere. To the extent that they choose other sites at greater distance or that cannot be accessed by non-auto means, additional energy will be consumed for these trips.

Consequences of Limiting Conflicting Uses

The WHI development proposal has been modified over time to reduce consequences for environmental issues but to also provide the maximum opportunity to meet the long-term economic goals of the Port. Although limiting the amount of development of West Hayden Island could result in reduced competitive advantage for the Port of Portland, Subdistrict A was defined to maximize the criteria for a desirable marine industrial facility.

The conflicting uses proposed in the OS zone were intended to have the least negative impacts on the existing natural systems and to improve the remaining natural resources to the extent possible.

Consequences of Permitting Conflicting Uses

West Hayden Island is the closest port location to exporters and importers in Portland, the Willamette Valley, Eastern Oregon and Southern Washington. It provides the shortest route to ocean vessels in the Northwest, which is critical for port competitiveness, transportation economy, and fuel efficiency. By truck or rail, the shorter distance to West Hayden Island means less time and money for shippers, less fuel consumption and emissions into the environment, and less demand on road and rail capacity by trade. Because of its proximity to the major residential communities of the Portland and Vancouver metropolitan areas, employee commutes are also minimized.

With 60 to 80 percent of Portland's projected trade growth expected to move by rail, West Hayden Island will provide the rail connections the market needs. No other site in the Pacific Northwest provides the rail efficiencies inherent to West Hayden Island's unique location. By minimizing the distance between rail and deepwater connections, West Hayden Island will relieve congestion in the I-5 rail corridor and provide added capacity for Puget Sound rail traffic and the future high-speed passenger rail service planned between Eugene, Oregon and Vancouver, BC. Accommodation of rail traffic will also reduce demands on the roadway system of I-5 and I-205 by providing a freight transportation alternative to trucks.

In general, moving freight over water is more energy efficient than moving freight on land by rail or truck. As a result, marine facilities have historically been located as far up-

river as possible. Development of Port facilities elsewhere along the lower Columbia would require major investments in transportation and other public infrastructure which would require substantial energy investments for construction and maintenance of a second major Port facility.

The availability of natural resources in the OS zone on West Hayden Island provides opportunities for wildlife observation, recreation, and educational purposes to residents of Hayden Island and the greater Portland metropolitan area. Because resources are closer to users, less transportation energy is used in reaching them. The proximity of natural and passive recreation areas in close proximity to the Portland area reinforces the urban form of multiple uses within non-auto accessibility.

When the 40-Mile Loop, Columbia Slough Trail, and bicycle path along Airport Way and north-south connections are completed, a greater range of transportation modes, including bicycling and walking, will be possible within the Columbia corridor. Separation of pedestrian and bicycle routes from roadways increases safety, and therefore makes alternative forms of transportation more attractive. Although these impacts will not be great, less reliance on automobiles for recreation and some commuter activities will reduce energy requirements for these uses as well as reduce energy requirements for overall road construction and maintenance.

2.6 Program to Achieve Goal 5

Under Goal 5, a "program to achieve the goal" is "a plan or course of proceedings and action either to prohibit, limit or allow uses that conflict with significant Goal 5 resources, adopted as part of the comprehensive plan and land use regulations (i.e., zoning standards, easements, cluster developments, preferential assessments, or acquisitions of land or development rights)" OAR 660-23-010(6). The recommended Goal 5 decision for the WHI resource site, made pursuant to OAR 660-23-040(5), limits the conflicting uses that are allowed on WHI. The Goal 5 administrative rule directs local governments to adopt comprehensive plan provisions and land use regulations to implement such decisions [see OAR 660-23-050(1)]. This section explains generally the comprehensive plan provisions and land use regulations that were developed and are to be adopted to implement the City's Goal 5 decision. The program to achieve Goal 5 for WHI was prepared with the assistance of an Advisory Committee and with recognition of the value of WHI's significant natural resources. The overall Goal 5 implementation program includes changes to City Comprehensive Plan map designations, new base zoning, imposition of environmental overlays, adoption of the WHI Plan District that specifies development standards, and a mitigation program to offset adverse environmental impacts.

The ESEE analysis and the recommended decision to limit uses on WHI recognize the need to resolve the conflict between the site's significant natural resources and the uniqueness of WHI as a development opportunity to meet a critical economic need. The Port, working with City staff, developed the WHI Plan District to direct any development allowed on WHI with the intent to balance development and recreational

needs with environmental protection. The WHI Plan District is one part of the WHI Area Plan that was created to establish the land use policy framework needed to allow marine industrial development while ensuring preservation of important natural resources.

To implement the Goal 5 decision, the Plan District incorporates a modified version of the City's IH zone and two versions of the City's OS zone. This approach was selected to permit very limited and specific uses, and establish environmental overlay areas and development and revegetation standards that minimize impacts from development on wildlife, flood storage capacity, water quality functions and other recognized functions of natural resources.

The Plan District incorporates three zoning subdistricts. Subdistrict A is a modified version of the IH district and establishes a new use category, the marine terminal use, specifically to provide the land and water access needed for a marine terminal facility and associated uses. Environmental mitigation is also allowed in Subdistrict A. The Port's entire marine terminal development is confined to Subdistrict A and most uses not associated with this development are prohibited. Subdistrict A was specifically proposed to include nonsignificant portions of West Hayden Island (dredge disposal material area) to further limit the intrusion of development on the site's important natural areas.

Subdistrict B is intended to protect much of WHI's remaining natural area. It is a variation of the City's OS zoning district but is more restrictive. Subdistrict B restricts public access due to the area's fragile nature and incorporates an environmental overlay to protect the area's natural resources. Environmental mitigation is allowed in Subdistrict B as are utility corridors and river-related and river-dependent uses.

Subdistrict C is another modified version of City OS zoning, but it allows more public access and use than is allowed in Subdistrict B. Subdistrict C allows passive recreational activities such as trails. The trails allowed in Subdistrict C are intended to connect to the 40-Mile Loop, the Marine Drive, and the Peninsula Crossing Trails in the future. Subdistrict C also allows environmental mitigation, basic utilities, utility corridors and river-related and river-dependent uses.

Subdistrict C provides protection for natural resources and wildlife habitat while making the natural areas available for passive recreation. Subdistrict C provides additional natural areas close to Portland's urban center which are accessible through a variety of transportation methods including walking and biking. Subdistrict C, and to a lesser extent Subdistrict B, recognizes that managing natural areas for public use enhances the quality of urban life.

The Plan District incorporates the wetland and upland compensation mitigation plans developed as part of the Corps of Engineers' environmental impact statement for the WHI marine terminal project. These mitigation plans will replace resource values lost to development by enhancing and preserving other parts of WHI and additional off-site mitigation for upland forests. The North Shore Development Standards also provide protection for resources through bioengineering of banks and riparian plantings.

The WHI Area Plan establishes the policy framework needed to comprehensively manage development and resource protection on WHI. The Plan District component of the Area Plan is the regulatory mechanism that will implement those policies. As required by Goal 5, the Area Plan includes the necessary comprehensive plan amendments, land use regulations and enforcement mechanisms to implement the City's Goal 5 decision. The Plan District includes development standards that are clear and objective and performance standards that are enforceable. The Plan District defines allowed conflicting uses, clearly specifies the area in which such uses may occur, and places limitations on these uses. The zoning subdistricts also specify the boundaries of areas to be protected as natural areas and establishes clearly the limitation and restrictions on uses in such areas. Consequently, the proposed program to achieve the City's Goal 5 decision to limit conflicting uses meets the relevant Goal 5 criteria for such a program (see OAR 660-23-050).

2.7 Recommendation For A Decision Regarding Conflicting Uses

The above ESEE analysis considers the value and importance of the WHI resource site with respect to its environmental and social contribution to the Portland area. For example, the site provides substantial value as habitat for fish and wildlife, contributes to water quality and it contains a substantial amount of wetlands. In its present condition, the site contributes to the local economy because, to the extent that it aids in maintaining or improving air and water quality, public or private money need not be spent on those issues. Similarly, WHI contributes with respect to recovery of endangered species, that is, to the extent that WHI contributes salmon habitat and food sources, public and private dollars need not be expended to make that contribution.

Development of WHI would also contribute economically to Portland and the region by allowing uses in the IH zone or other zoning districts. However, use of this site generally for residential, commercial or retail development, although likely to result in a substantial economic benefit, is not responsive to a unique demand for such uses or to a unique need for land on which to develop such uses. Further, use of WHI for such development does not support the reasons behind Multnomah County's decision to have WHI incorporated into the urban growth boundary or the Metro Council's decision to approve that UGB modification.

Allowing fully the conflicting uses represented in the City's IH zoning, as a way to achieve Goal 5, would have an unnecessary and unacceptable effect on significant riparian corridors, wetlands and wildlife habitat. Such a decision would eliminate the environmental, social and economic contribution made by the site's natural resources without a substantial gain to the community to offset the loss.

Prohibiting completely the conflicting uses represented by the uses allowed in IH and OS zoning districts would prevent the city from attaining any economic benefit that might be generated from development on WHI. Such a decision would prevent use of the resource site for utility corridors, recreation and other uses with minor adverse

environmental impacts that may be easily rectified. Such a decision would prevent even limited use of WHI for particularly important and unique development. Such a decision would place too much emphasis on the environmental and economic value of the site's natural resources, which, while great in relation to the Hayden Island, are less important when considered from the larger regional perspective.

The natural resources on WHI are valuable and important to the community. To allow residential, commercial or general industrial development even in a limited fashion that does not respond to a particular or unique need would fail to recognize the environmental and economic value of WHI's natural resources. Similarly, allowing such development, even if limited, that does not provide a substantial and wide reaching economic benefit would fail to offset the importance and value inherent in WHI's natural resources. Consequently, allowing limited development for standard residential, commercial or industrial uses that does not require WHI's unique location and does not respond to a critical need are not appropriate for WHI given the area's locally important environmental functions.

The potential economic benefits of allowing development on WHI are also important. The Port of Portland owns WHI and has proposed a specific but limited development. The Port's proposed use for a portion of WHI is as a marine terminal facility and includes accessory infrastructure and support facilities such as railyards, berths, office space and other structures and uses. As far back as 1982, when approving PGE's request to include WHI within the City's UGB, Multnomah County found a demonstrated need for additional land in the UGB to provide for waterfront industrial uses. In April 1983, the Metro Council amended Ordinance No. 83-151 to include WHI in the UGB. Metro's decision was based on the identified long-term regional need for water-dependent marine terminal and industrial facilities. That need has grown more critical in the intervening years.
Metro's record indicates that alternative sites to meet the need for marine industrial land located elsewhere on the Willamette and Columbia Rivers did not exist. The unique ability of WHI to accommodate this use is reinforced by the analysis of alternatives included in the draft EIS prepared by the Corps of Engineers. After considering 16 other sites ranging from the mouth of the Columbia River to Portland, no other suitable site was identified to accommodate the broadly recognized need for marine terminal facilities.

Development of such a facility would occur in response to a critical economic need in terms of jobs and support for industrial and commercial activities in the City, the region and beyond. Parties benefitting from such a development include the City, the Port, international and domestic shippers, marine industries, industry and businesses accessory to shipping and transportation, grain growers and shippers, automobile shippers and dealers and others. WHI represents a unique site at which the identified critical need for a marine terminal and marine industrial facilities can be met and represents significant economic benefit that will be gained by the community.

The resulting environmental impacts from the Port's proposal must be considered. The Port's proposal is limited to a portion of WHI. The terminal project is subject to regulation by the state and federal governments and is the subject of an environmental

impact statement. The project is undergoing formal consultation between the Corps and the U.S. Fish and Wildlife Service and the National Marine Fisheries Service under the federal Endangered Species Act. The state and federal processes will influence the final project size and design and while it will be no larger than presently proposed, it may be smaller. The Port's proposal represents a comprehensive management plan that, while developing a marine terminal and supporting facilities, also includes zoning that protects natural areas and allows some recreation. In addition, the Port's proposal includes compensatory mitigation to offset environmental impacts from the development and long-term protection of environmental values.

The natural resources on WHI are important to the community. However, when viewed in the larger whole, WHI's resources represent a much smaller environmental and economic contribution. For example, as is explained in the ESEE analysis, WHI's contribution to detention of floodwaters is relatively small. The same is true with respect to WHI's contribution to air and water quality.

WHI makes up an important but relatively small (only about 827 acres) resource site which is one of several such sites in the region. WHI represents a one-of-a-kind location for the Port's marine terminal facility the benefits of which will be far reaching and significant. With the proposed limited development, portions of WHI will be preserved. The Port's comprehensive management plan precludes additional development that would incrementally continue to devalue remaining natural resource values. As proposed, the public would benefit from recreational uses and protection of some resources. On balance, the Port's development proposal will contribute significantly to the community and the recognized benefits of the project will offset the environmental and economic benefits lost through the project's associated adverse impacts to WHI's significant natural resources.

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REFERENCES

Ellis Ecological Services/URSG, 1999. *Draft Biological Assessment for Listed and Proposed Listed Threatened and Endangered Fish Species, Phase 1 West Hayden Island Port Facilities Development.* Port of Portland, Oregon. Prepared for the U.S. Army Corps of Engineers.

Ellis Ecological Services/URSG, October 16, 1998, *Draft Report: Seasonal Fish Use of Shallow Water Habitats in the Lower Columbia River, West Hayden Island (RM 102) to Sandy River Delta (RM 125).* Report submitted to United States Army Corps of Engineers.

FEMA flood mapping, Multnomah County, unincorporated areas 410179 0065 and 410179 0155 panels.

Fishman Environmental Services, 1995. *Aquatic Biology Investigations*. Report submitted to Port of Portland.

Fishman Environmental Services, 1995a. *Wetland Delineation - West Hayden Island Final Report.* Prepared for the Port of Portland.

Fishman Environmental Services, 1997. *West Hayden Island Supplement Wetland Determination Wetland #22.* Prepared for the Port of Portland.

Fishman Environmental Services, 1997. *Benthic Invertebrate and Sediment Report*

Fishman Environmental Services, 1997a. *Studies of Dredged Material Rehandling Sites*

Hobson Johnson & Associates. 1999. *West Hayden Island Planning Document, Volume 3 Draft Market Study.* Prepared for the Port of Portland.

Oregon Division of State Lands. 1991. Personal communication: Ken Bierly.

Portland, City of, 1986, *Columbia Corridor Inventory of Wetland Bodies and Wildlife Habitat Areas.* City of Portland Bureau of Planning, Portland, Oregon.

Portland, City of, 1996, *West Hayden Island, Goal 5 Analysis.* City of Portland Bureau of Planning, Portland, Oregon.

Smyth, Maurita, August 29, 1995. *Final Baseline Report for West Hayden Island Goal 5 Inventory and Assessment.* City of Portland Bureau of Planning.

Smyth, Maurita, February 18, 1999. *Wildlife and Vegetation Baseline Studies Report for West Hayden Island.* Report submitted to URS Greiner Woodward Clyde.

TetraTech, 1993. *Lower Columbia River Bi-State Study*.

URS Greiner Woodward Clyde (URSG), August 1999. *Oregon Freshwater Wetland Assessment for West Hayden Island.* Report submitted to Port of Portland.

URSG, August 1999. *Local Wetland Inventory for West Hayden Island.* Report submitted to Port of Portland.

URS Greiner Woodward Clyde, 1999. *Biological Assessment for Listed and Proposed Listed Threatened and Endangered Plant Species. Phase 1 West Hayden Island Port Facilities Development.* Port of Portland, Oregon. Prepared for the U.S. Army Corps of Engineers.

United States Army Corps of Engineers, Portland District. August 1999. *Preliminary Draft Federal Environmental Impact Statement, Port of Portland Marine Cargo Facilities at West Hayden Island, Multnomah County, Oregon.* Volumes 1 through 3.

United States Department of the Interior, Oregon Natural Heritage Program. Letter to Maurita Smyth from Connie Levesque, dated March 2, 1998.

United States Department of the Interior, Oregon Natural Heritage Program. Letter to Maurita Smyth from Gary Miller dated January 2, 1998. Reply number 1-7-98-SP-148. Database search for listed threatened and endangered species, species of concern, and state sensitive species.

United States Department of the Interior, United States Geological Survey map, Portland, Oregon/Washington and Vancouver, Washington 7.5 minute quadrangles.

United States Department of the Interior, United States Fish and Wildlife National Wetland Inventory map, Portland, Oregon/Washington and Vancouver, Washington 7.5 minute quadrangles.

Ward and Farr, 1988. *Oregon Slough Baseline Data Collection Study.*