

Cape Disappointment State Park Utility Infrastructure Improvements, Phase 2 Ilwaco, Pacific County, Washington

Prepared for

Washington State Parks and Recreation Commission (WSPRC)

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ATTACHMENTS

- Attachment A
- Protected Species Documentation

ACRONYMS

BA	biological assessment
BLM	(U.S.) Bureau of Land Management
BMP	best management practice
CFR	Code of Federal Regulations
Corps	(U.S.) Army Corps of Engineers
DPS	Distinct Population Segment
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
FR	Federal Register
HDPE	high-density polyethylene
HMMP	hazardous material management plan
NEPA	National Environmental Policy Act
NOAA Fisheries	National Marine Fisheries Service
Park	Cape Disappointment State Park
PHS	(WDFW) Priority Habitats and Species
RV	recreational vehicle
SR	State Route
USC	United States Code
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service
WDFW	Washington Department of Fish and Wildlife
WSPRC	Washington State Parks and Recreation Commission

EXECUTIVE SUMMARY

The Washington State Parks and Recreation Commission (WSPRC) is proposing water, sewer, telephone service, and electrical infrastructure improvements at Cape Disappointment State Park (Park), located in Pacific County, Washington. The proposed project was separated into two phases to better accommodate permitting requirements and construction schedules. This biological assessment (BA) evaluates Phase 2 improvements. Proposed improvements for Phase 2 include replacement of existing water and sewer force mains and distribution lines, installation of new lines, upgrades to a sewage pump station, dismantling of a second pump station, addition of two new grinder pump stations and associated force mains, decommissioning of the sewage treatment lagoon, and upgrades to electrical and telephone systems.

The proposed improvements would take place between the campgrounds and the Park entrance area. New utilities would primarily be located within existing utility corridors and would primarily remain within the prism of existing roads or developed areas of the Park. Where segments of the utility replacements occur in environmentally sensitive areas such as wetlands, low-impact installation methods such as pipe-bursting, slip-lining, and horizontal directional drilling would be used to eliminate the need for trenching in these areas. A detailed description of these methods is presented in Section 2.4.7.2. Project design and timing were developed to minimize impacts to listed species and their habitats.

Biologists from Parametrix evaluated the proposed project to determine the potential effects on listed and proposed threatened and endangered species and their habitats. Analyses of potential impacts were made based on review of plans for the proposed action, an on-site evaluation of existing habitat conditions, the current and historical distribution data available for the species assessed, and personal communications with agency and local biologists. Based on this review, determinations of impacts were made for the proposed project. These determinations are summarized in Table ES-1.

Table ES-1. Summary of Findings for Listed Species Potentially in the Cape Disappointment State Park Vicinity

Common Name (<i>Scientific Name</i>) DPS/ESU ¹ Name	Federal Status ²	State Status ³	Life Stages Evaluated	Impacts Analysis Determination
Bald eagle (<i>Haliaeetus leucocephalus</i>)	T	ST	Nesting/Wintering	May affect, not likely to adversely affect
Brown pelican (<i>Pelicanus occidentalis</i>)	E	SE	Migratory	May affect, not likely to adversely affect
Short-tailed albatross (<i>Phoebastria albatrus</i>)	E	SC	Migratory	No effect
Western snowy plover (<i>Charadrius alexandrinus nivosus</i>)	T	SE	Nesting/Wintering	No effect
Marbled murrelet (<i>Brachyramphus marmoratus</i>)	T	ST	Nesting/Foraging	may affect, not likely adversely affect
Northern spotted owl (<i>Strix occidentalis caurina</i>)	T	SE	Nesting/Foraging	No effect
Oregon silverspot butterfly (<i>Speyeria zerene hippolyta</i>)	T	SE	Reproduction/Foraging	No effect
Green sea turtle (<i>Chelonia mydas</i>)	E	ST	Marine	No effect
Leatherback sea turtle (<i>Dermochelys coriacea</i>)	E	SE	Marine	No effect

**Table ES-1. Summary of Findings for Listed Species Potentially in the
Cape Disappointment State Park Vicinity (continued)**

Common Name (Scientific Name) DPS/ESU¹ Name	Federal Status²	State Status³	Life Stages Evaluated	Impacts Analysis Determination
Loggerhead sea turtle (<i>Caretta caretta</i>)	T	ST	Marine	No effect
Olive ridley sea turtle (<i>Lepidochelys olivacea</i>)	T	NA	Marine	No effect
Bull trout (<i>Salvelinus confluentus</i>) Columbia River DPS	T	SC	Marine	No effect
chinook salmon (<i>Oncorhynchus tshawytscha</i>) Lower Columbia River ESU	T	SC	Marine	No effect
Chum salmon (<i>O. keta</i>) Lower Columbia River ESU	T	SC	Marine	No effect
Coho salmon (<i>O. kisutch</i>) Lower Columbia River/Southwest Washington ESU	C	NA	Marine	No effect
Steelhead trout (<i>O. mykiss</i>) Lower Columbia River ESU	T	SC	Marine	No effect

Source: USFWS 2004.

¹ DPS/ESU = Distinct Population Segment/Evolutionarily Significant Unit: the discrete fisheries management units by which USFWS and NOAA Fisheries regulate species resources.

² Federal Status Designations: E = Endangered, T = Threatened, C= Candidate.

³ Washington State Status Designations: SE = State Endangered, ST = State Threatened, SC = State Candidate.

The proposed project would have no identified direct effects on listed species. Construction activities would primarily occur within the prism of existing roadways or previously disturbed sites (e.g., the sewage treatment lagoon, West Campground). No suitable habitat associated with identified listed species would be modified or adversely affected as a result of the proposed action. Construction activities will occur outside the critical breeding season for marbled murrelet (April 1 through September 15). Construction is scheduled to conclude prior to the initiation of the bald eagle breeding season (January 1 through August 15) but, with U.S. Fish and Wildlife Service (USFWS) approval, may extend through January as a result of unforeseen project delays. All major construction will be concluded by January 31. Any major construction occurring during January will necessitate monitoring of eagle nesting behavior and may result in the cessation of activities or other restrictions stipulated by USFWS should nesting occur earlier than customarily observed.

Potential indirect effects include noise disturbance during construction from trenching and paving activities and increased construction traffic within the project area. Construction-related noise could also potentially displace waterfowl, a source of food for bald eagles, from O'Neil Lake. Potential indirect effects to threatened and endangered species and their habitats will be minimized by application of project best management practices (BMPs) and work timing restrictions.

The proposed construction sites have no surface water connection with either the Pacific Ocean or the Columbia River. As there is no open hydrologic connection between the project area and these habitats, the possibility of project impacts to marine and Columbia River aquatic species and habitats in these areas is discountable and should not result in take. As such, project impacts are assumed to have ***no effect*** on

the green sea turtle, leatherback sea turtle, loggerhead sea turtle, olive ridley sea turtle, Lower Columbia River Evolutionarily Significant Unit (ESU) chinook salmon, Columbia River ESU chum salmon, Lower Columbia River/Southwest Washington ESU coho salmon, Lower Columbia River ESU steelhead, and Columbia River Distinct Population Segment (DPS) bull trout. Because there will be no project impacts to these species, they will not be evaluated further in this document.

No suitable habitat for short-tailed albatross occurs within 0.25 mile of the proposed action. Given this species' historic absence from the project area, and the lack of suitable habitat in close proximity to construction noise or visual disturbance, the proposed action is assumed to have no effect on the short-tailed albatross, or the habitat required for its continued survival. Potentially suitable nesting habitat for the western snowy plover occurs within 0.25 mile of the proposed action (both West Beach and Waikiki Beach), but such areas are screened from noise and visual disturbance by vegetation and/or topography and this species has not been observed in the Park (Mackey 2004 personal communication). Given this species' historic absence from the project area, and that suitable habitat in close proximity to construction noise or visual disturbance is screened by vegetation, the proposed action is assumed to have no effect on the western snowy plover or the habitat required for its continued survival. Suitable habitat for the northern spotted owl within the Park is isolated from known occupied habitat outside the Park, and there is no documented use of Park habitat by this species (Mackey 2004 personal communication). Given this species' historic absence from the project area, and the lack of suitable habitat in close proximity to construction noise or visual disturbance, the proposed action is assumed to have no effect on the northern spotted owl or the habitat required for its continued survival. The Park lies within the historic range of the Oregon silverspot butterfly; however, there are no recent records of sightings for this species or its host plant, blue violet (*Viola adunca*), within the Park (Sayce 2004). Given this species' absence from the project area, and the lack of suitable habitat, the proposed action is assumed to have no effect on the Oregon silverspot butterfly or the habitat required for its continued survival.

Because there are no recent records in the project area for the short-tailed albatross, western snowy plover, northern spotted owl, or Oregon silverspot butterfly; the lack of suitable habitat in the immediate project vicinity; and there will be no direct disturbance to potential habitat for these species, they are not evaluated further in this document.

Listed species that do occur in the project area and are evaluated in this BA include brown pelicans, marbled murrelets, and bald eagles. Brown pelicans found in the Cape Disappointment area are migratory but have been observed loafing along the North Jetty of Cape Disappointment. Suitable nesting and foraging habitat is present for marbled murrelets and bald eagles within the Park and in proximity to the project area. There are no bald eagle communal roosts identified within the Park boundaries (WDFW 2004). Due to increased noise levels from construction-related traffic and activities, there is the potential for disturbance and the proposed action *may affect, but is not likely to adversely affect* brown pelicans, marbled murrelets, and bald eagles.

1. INTRODUCTION

Section 7 of the Endangered Species Act (ESA) requires federal agencies to ensure that their actions do not jeopardize the continued existence of endangered or threatened species, or critical habitats upon which they depend. Federal actions include those activities which are carried out by federal agencies or their agents; provide project funding, in whole or in part; cross federal property, including rights-of-way; or require the issuing of various types of approvals or permits. To initiate review of a project or action, an agency or its representative requests a list of endangered or threatened species from the U.S. Fish and Wildlife Service (USFWS) and from the National Marine Fisheries Service (NOAA Fisheries). If a listed species is known to occur in the project vicinity, the lead agency or its designee must complete a biological assessment (BA) describing how the project would affect the species. If the assessment determines that a listed species may be affected by the project, the agency must enter into consultation with USFWS and/or NOAA Fisheries to ensure that its actions will conserve the species and its critical habitat.

1.1 PROJECT OVERVIEW

The Washington State Parks and Recreation Commission (WSPRC) is proposing water, sewer, telephone service, and electrical infrastructure improvements at Cape Disappointment State Park (Park), located in Pacific County, Washington (Figure 1). The proposed project was separated into two phases to better accommodate permitting requirements and construction schedules.

- Phase 1 construction began in September 2003. The BA for Phase 1 activities was submitted to USFWS in June 2003, and a biological opinion was issued by USFWS in September 2003 authorizing the evaluated activities. These activities included sewer utility connection to the City of Ilwaco's wastewater treatment facility; construction of two new sewage pump stations; and upgrades in water and electrical transmission between the Park entrance and the City of Ilwaco. The majority of Phase 1 activities occurred within the State Route (SR) 100 right-of-way, North Head Lighthouse Road, and the Old Lighthouse Keeper's Trail.
- Phase 2 improvements are evaluated in this assessment. Phase 2 activities occur within the Park boundaries (Figure 2) and are broken into two parts, depending on the proposed schedule for completion.

Stage 1 - Fall 2004

- Water lines 4 inches and larger will be installed.
- Sewer force main will be installed between the Hookups pump station in Pod 1 and the Park entrance.
- Both grinder pump stations will be installed.
- The Waikiki pump station will be decommissioned.
- The new electrical system will be completely installed, including to all three campground pods.
- A telephone system will be completely installed.

Stage 2 - Fall 2005

- One-inch water lines will be installed in the three West Campground pods.
- Gravity sewer will be installed between the Hookups pump station in West Campground Pod 1 and Pod 3.
- The 60 gravel RV campsites in Pod 1 of the West Campground will be paved.
- The sewage treatment lagoon will be decommissioned.

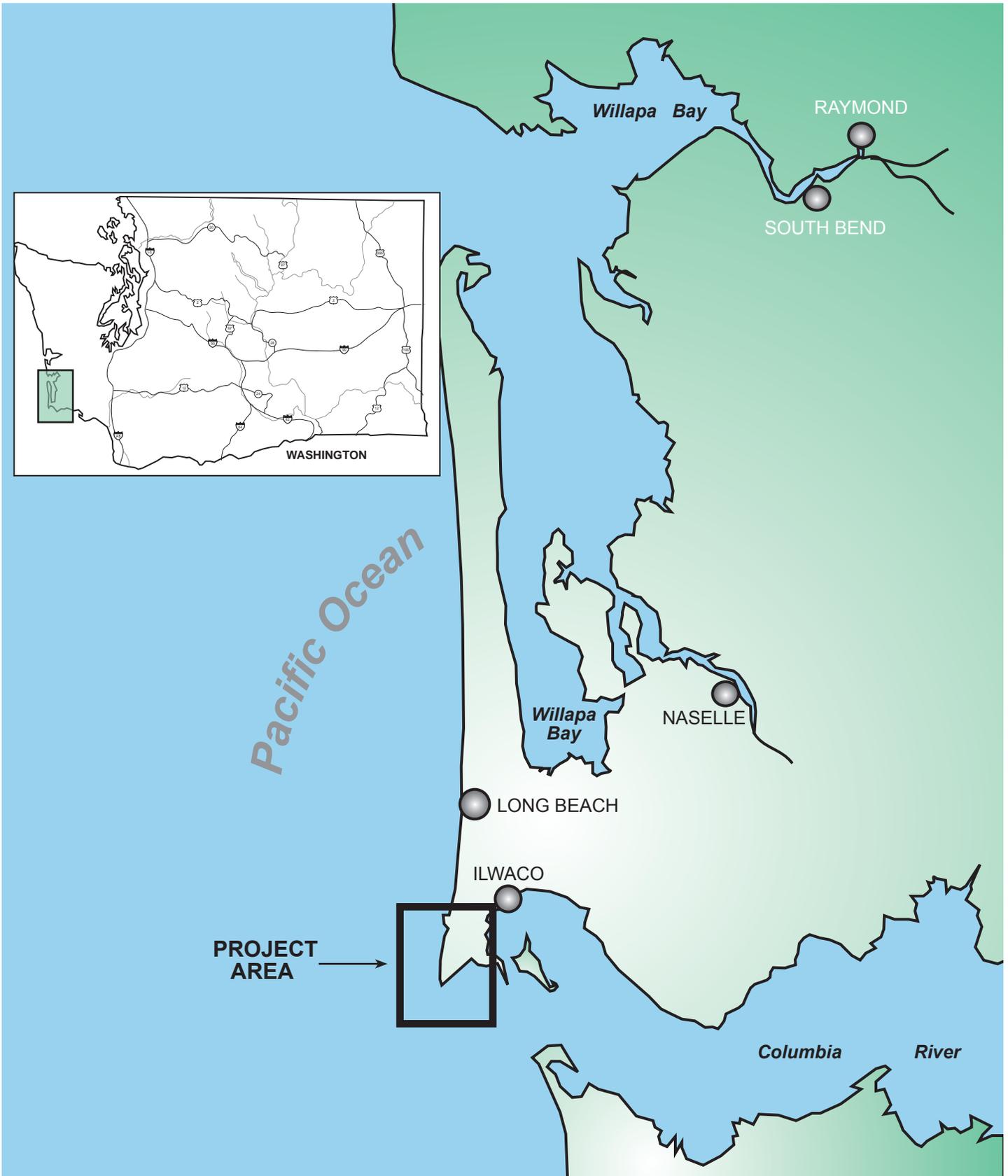
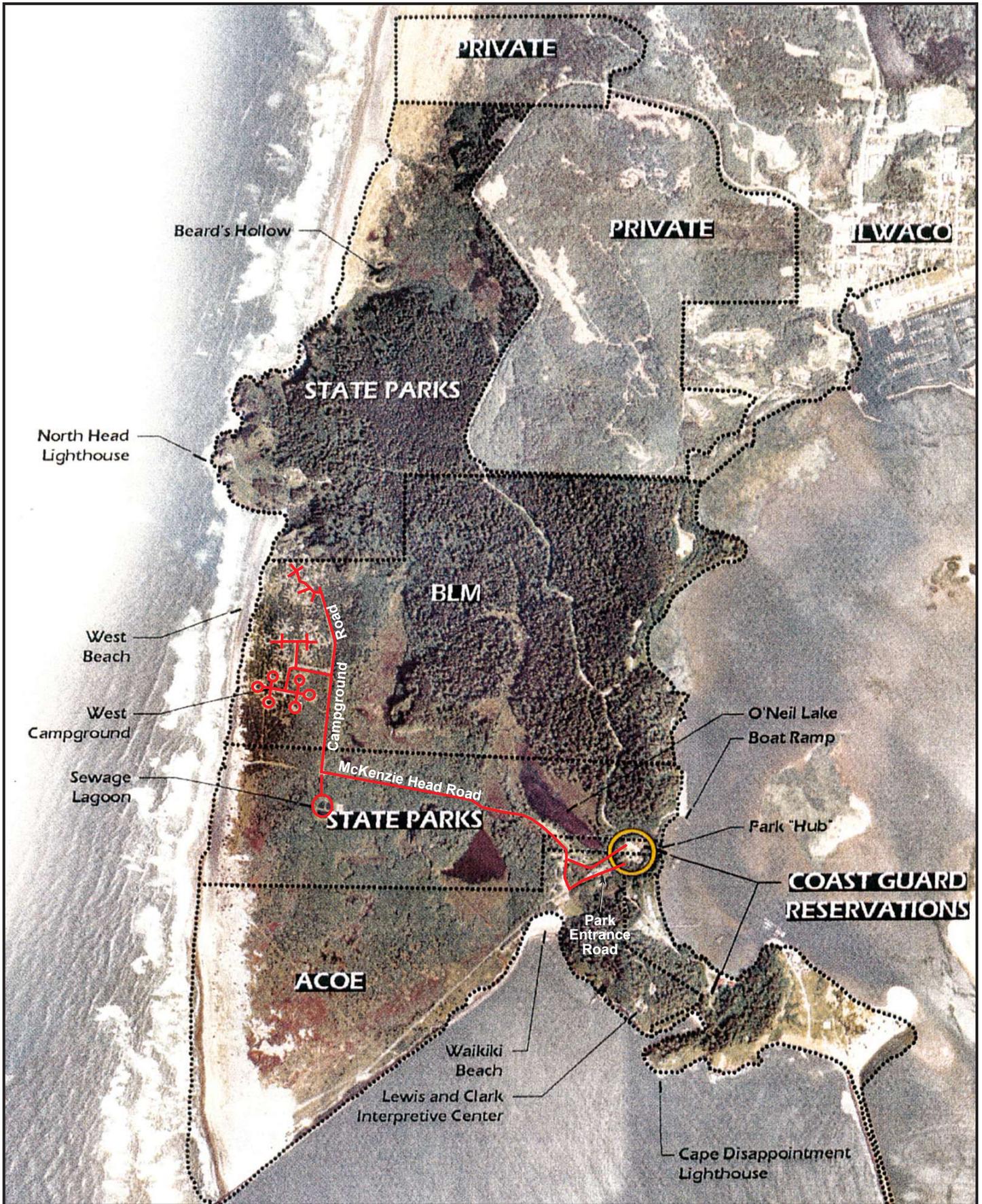
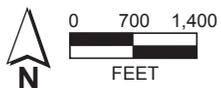


Figure 1
Vicinity Map



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— Project Locations

Figure 2
Cape Disappointment State Park
Property Boundaries

Proposed construction activities for all Phase 2 activities will occur on property owned and/or managed by the WSPRC, the Bureau of Land Management (BLM), and the U.S. Army Corps of Engineers (Corps). Construction proposed to occur on federal lands requires a right-of-way grant, which constitutes the federal nexus for this action, necessitating compliance with the National Environmental Policy Act (NEPA) and Section 7 of the ESA. The right-of-way grant would authorize the installation and maintenance of the proposed water, sewer, electrical, and telephone infrastructure improvements for Phase 2. The granting of right-of-ways for the transmission line and fiber optic cable is authorized by Title 43, Chapter 35, Subchapter V of the Federal Land Policy and Management Act of 1976 (43 USC 1761).

Biologists from Parametrix evaluated the proposed project to determine the potential effects on listed and proposed threatened and endangered species and their habitats. Analyses of potential impacts were made based on review of plans for the proposed action, an on-site evaluation of existing habitat conditions, the current and historical distribution data available for the species assessed, and personal communications with agency and local biologists. Based on this review, determinations of impacts were made for the proposed project.

1.2 RELEVANT SPECIES

Parametrix acquired USFWS information regarding threatened and endangered fish, wildlife, and plant species that might occur in Pacific County. Although USFWS has recently stopped providing project-specific species lists, the project-specific species list for the Phase 1 BA was consulted. Additional information on rare plants, select rare animal species, and high-quality wetland and terrestrial ecosystems was obtained from the Washington State Department of Natural Resources (Washington Natural Heritage Program 2004). Information on aquatic listed species under the jurisdiction of NOAA Fisheries was obtained from its web site (NOAA Fisheries 2004). Biologists from WSPRC and Washington Department of Fish and Wildlife (WDFW) staff were consulted as to the documented and potential use of the Park by listed species, and the suitable habitat present in the Park for such species.

Short-tailed albatross are migratory in the region and are primarily associated with coastal areas. Habitat suitable for this species does occur along the cliff areas associated with North Head, but the species has not been observed in the Park (Mackey 2004 personal communication). Areas of potentially suitable habitat are within 0.5 mile of the proposed action, but such areas are screened from noise and visual disturbance by vegetation and topography. No suitable habitat occurs within 0.25 mile of the proposed action. Project impacts to this species and its habitat are discountable and should never result in take. Given this species' historic absence from the project area, and the lack of suitable habitat in close proximity to construction noise or visual disturbance, the proposed action is assumed to have *no effect* on the short-tailed albatross, or the habitat required for its continued survival. This species is not evaluated further in this document.

The western snowy plover nests on sand spits near river outlets and on level sandy beaches and coastal dune ecosystems. Plovers forage along ocean beaches or on the margins of alkaline lakes. Habitat potentially suitable for this species does occur along the West Beach and Waikiki Beach areas, but the species has not been observed in the Park (Mackey 2004 personal communication). The closest known population of snowy plovers is near Leadbetter, in the northern portion of the Long Beach Peninsula. Areas of potentially suitable habitat within the Park are within 0.25 mile of the proposed action (both West Beach and Waikiki Beach), but such areas are screened from noise and visual disturbance by vegetation and/or topography. Project construction would not directly disturb potential suitable nesting habitat. Project impacts to this species and its habitat are discountable and should never result in take.

Given this species' historic absence from the project area, and that suitable habitat in close proximity to construction noise or visual disturbance is screened by vegetation, the proposed action is assumed to have **no effect** on the western snowy plover or the habitat required for its continued survival. This species is not evaluated further in this document.

The northern spotted owl tends to breed in late-successional mixed coniferous forests. It prefers large forest stands (more than 1,200 acres) with multiple layers and a closed canopy (Csuti et al. 1997). While suitable habitat structural conditions can be found in the Park, the approximately 500 acres of late-successional forested area in the Park is considerably smaller than normally associated with this species' survival needs (Mackey 2004 personal communication). Suitable habitat within the Park is isolated from known occupied habitat outside the Park, and no migration corridor with suitable habitat requirements exists. Further, there is no documented use of Park habitat by this species (Mackey 2004 personal communication). Areas of potentially suitable habitat are within 0.5 mile of the proposed action, but such areas are screened from noise and visual disturbance by vegetation. The proposed action will also occur outside the critical nesting season for the spotted owl (March 15 through August 31). No adverse modification of suitable habitat is proposed as part of this action. Project impacts to this species and its habitat are discountable and should never result in take. Given this species' historic absence from the project area, and the lack of suitable habitat in close proximity to construction noise or visual disturbance, the proposed action is assumed to have **no effect** on the northern spotted owl or the habitat required for its continued survival. This species is not evaluated further in this document.

The Park lies within the historic range of the Oregon silverspot butterfly; however, there are no recent records of sightings within the Park. Suitable habitat associated with this species, blue violet (*Viola adunca*), has not been observed during vegetation surveys conducted for the Park (Sayce 2004). This species and its respective habitat have been documented approximately 6 miles north of the Park (Mackey 2004 personal communication; Sayce 2004). Project impacts to this species and its habitat are discountable and should never result in take. Given this species' absence from the project area, and the lack of suitable habitat, the proposed action is assumed to have **no effect** on the Oregon silverspot butterfly or the habitat required for its continued survival. This species is not evaluated further in this document.

This BA addresses the potential for take, as well as direct and indirect effects, on brown pelicans, marbled murrelets, and bald eagles, their habitat, and prey. The assessment is based upon literature review, life-history analyses, habitat requirements, agency coordination, NOAA Fisheries and USFWS species lists for the Pacific County area (USFWS 2004; NOAA Fisheries 2004), the Washington Natural Heritage Program Pacific County rare plants list (Washington Natural Heritage Program 2004), Priority Habitats and Species (PHS) data from WDFW (WDFW 2004), and field reconnaissance by Parametrix staff (Parametrix 2003; 2004).

2. PROPOSED ACTION

2.1 PROJECT BACKGROUND

WSPRC seeks to expand and improve the infrastructure at Cape Disappointment State Park to better accommodate current and future Park uses. Additionally, improvements proposed for the park would provide service improvements to the USCG facility and the Lewis and Clark Interpretive Center. To this end, water, electrical, telephone, and sewer infrastructure is proposed for replacement and upgrade. In particular, the current system of sewage treatment, a three-cell sewage treatment lagoon, is to be decommissioned, and waste redirected to the City of Ilwaco's wastewater treatment facility. The proposed improvements have a discrete sequence for implementation to minimize service disruptions to facilities on the peninsula. As such, the proposed construction was separated into two distinct phases. Figure 3 details project phasing.

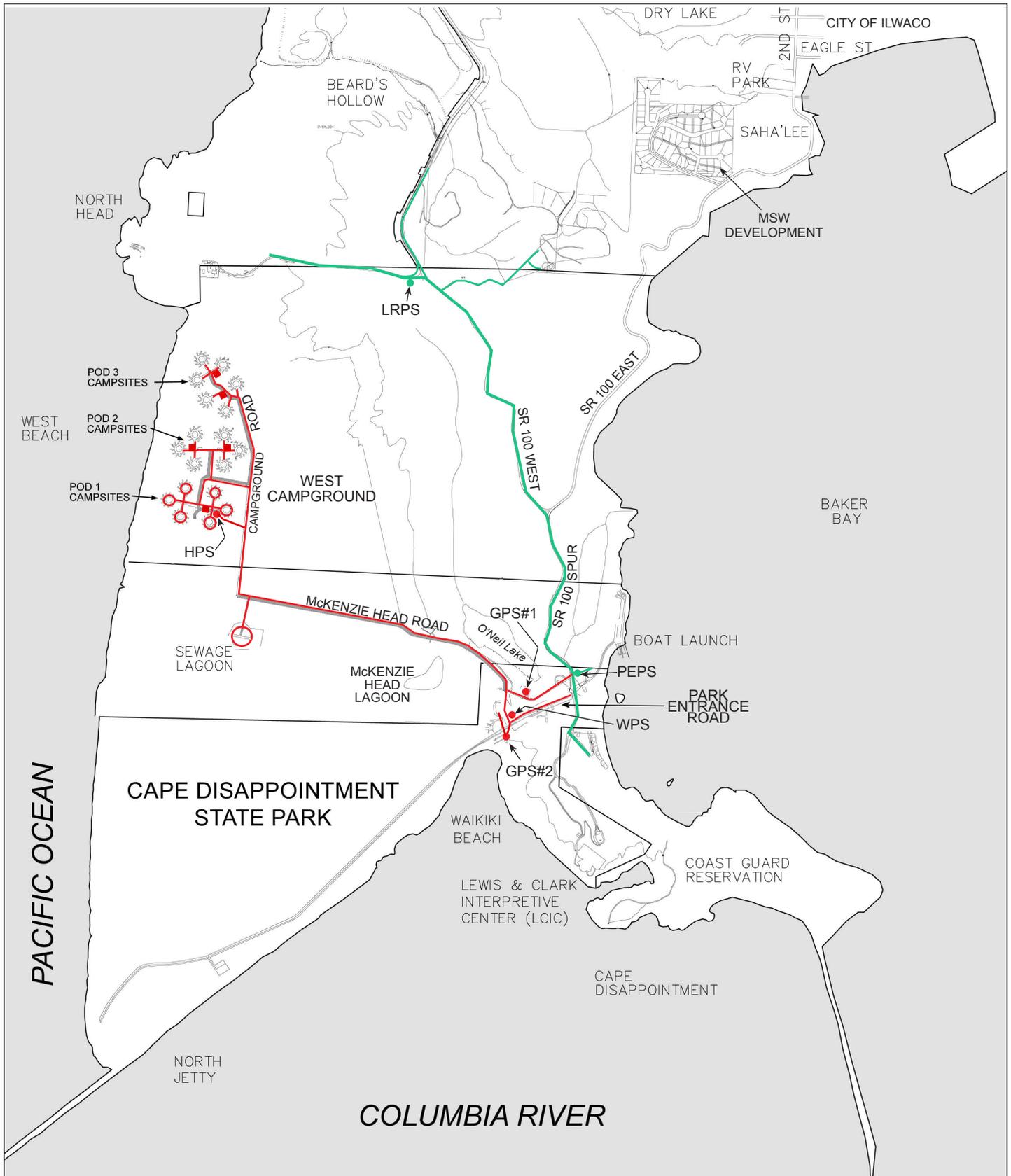
Phase 1: Improvements included installation or replacement of sewer and water utility lines from the city of Ilwaco to the Park entrance.

- New sewer force main, water, and phone conduit were extended along SR 100 and SR 100 Spur from the North Head Lighthouse Road to the Park entrance.
- New sewer, water, electrical, and phone services were extended along North Head Lighthouse Road and to Beard's Hollow, consistent with the future expansion of Park facilities at those locations. In total, approximately 26,500 linear feet of new water main and new sewer main were installed. All utilities were buried in a trench within the existing road prism.
- New sewer, water, and electrical services were extended along SR 100 from the Park entrance to the USCG station. In total, approximately 594 linear feet of new water main and new sewer main were installed along SR 100 and 297 linear feet along Coast Guard Road. All utilities were buried in a trench within the existing road prism.
- Two new sewage pump stations were constructed to convey sewage to the City of Ilwaco's wastewater treatment facility.
- Fire hydrants, gate valves, air release valves, and pressure reduction stations were included as required.
- Utility trenches in SR 100 were repaved; North Head Lighthouse Road was entirely repaved.

Utilities were principally sited along SR 100, North Head Lighthouse Road, and Old Lighthouse Keeper's Trail. Phase 1 activities were evaluated in a stand-alone BA and NEPA Environmental Assessment. The USCG was the lead federal agent for the action.

Phase 2: Proposed improvements would replace and expand utilities within the Park and tie into utilities completed under Phase 1. Improvements include:

- Replacement of the water distribution system throughout the Park and expanding water service to the middle and northern campground clusters (Pods 2 and 3, respectively).
- The sewage distribution system will be replaced throughout the Park. The sewage conveyance system will be redirected to the Phase 1 sewer transmission system and sewage will be transferred to the City of Ilwaco's wastewater treatment facility, bypassing the sewage lagoon. In areas where the sewer utility is not located under the road prism, pipe-bursting techniques will be used to eliminate the need for trench excavation and habitat disturbance.



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— Phase 1
— Phase 2

Legend

Phase 1

PEPS = Park Entrance Pump Station
LRPS = Lighthouse Road Pump Station

Phase 2

HPS = Hookups Pump Station
WPS = Waikiki Pump Station
GPS#1 = Contact Station Grinder Pump Station
GPS#2 = Waikiki Grinder Pump Station
■ = Campground Comfort Stations



Figure 3
Cape Disappointment State Park
Utility Improvements Phases 1 & 2

- The sewage treatment lagoon will be decommissioned: liquids will be decanted, the biosolids and other material will be used to fill the lagoon, the clay liner of the lagoon will be breached to allow drainage, and the berms will be leveled and mixed with the biosolids and fill material from Phase 1 construction (currently stored on site).
- The electrical grid in the Park entrance area and campground Pod 1 will be upgraded to a three-phase system, and the RV sites in the pod will be upgraded to 5-amp service. In Pods 2 and 3, electrical service will be provided by a single-phase system.
- Telephone service will be extended to the middle and northernmost campground clusters (Pods 2 and 3, respectively).

2.2 LOCATION

Cape Disappointment State Park (Park) is located in Pacific County, at the mouth of the Columbia River, at the southwestern tip of Washington State (T9N R11W Sections 4 and 5; T10N R11W Section 32; Willamette Meridian). The Park is 1,882 acres in size and comprises land owned by WSPRC, BLM, the Corps, and the USCG. Privately owned land is located north and northeast of the Park. The Park is located 2 miles southwest of Ilwaco, Washington and is bounded on the west by the Pacific Ocean, partially on the east by Baker Bay, and on the south by the Columbia River.

2.3 DESCRIPTION OF PROJECT VICINITY AND PROJECT ACTION AREA

2.3.1 The Project Vicinity

The project vicinity refers to the general location of the proposed action and is inclusive of the entire Cape Disappointment State Park and its immediate environs. The project vicinity is used to describe effects or areas in a non-specific manner, which are both inclusive of and outside the project action area (defined below).

2.3.2 The Project Action Area

The project action area comprises “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 CFR §402.02). The action area for the project is defined as the immediate work and construction area and all terrestrial habitats within a 0.5-mile radius of the project area. The action area also includes aquatic habitats adjacent to construction areas and all aquatic habitats connected by surface waters. For this action, aquatic habitats include wetlands occurring at the Park entrance, along McKenzie Head Road, Campground Road, and the sewage lagoon and access road. Also included are O’Neil Lake and the open water habitats connected to the wetland complex along McKenzie Head Road. Further, the action area also includes habitat within 0.25-mile of haul routes along SR 100 within the Park boundaries, where construction-related truck traffic could constitute an indirect effect.

2.4 CONSTRUCTION ACTIVITIES

The proposed project will improve the existing infrastructure at the Park, including the water, sewer, electrical, and telephone systems. All Phase 2 activities occur within the Park boundaries. The schedule for all Phase 2 improvements has been planned to avoid construction-related disturbance during the critical breeding seasons for protected species. The critical breeding season for bald eagles runs from January 1 through August 15. The critical breeding season for marbled murrelets runs from April 1

through September 15. To avoid these periods, activities will be phased to occur in two stages, with Stage 1 occurring between September and December of 2004, and Stage 2 occurring between September and December of 2005. Given the narrow construction window and considering prior experience with the Phase 1 action, it is possible that activities associated with Stage 1 of Phase 2 could possibly run into January of 2005. Should construction be required in January 2005, specific bald eagle monitoring protocols will be instituted to ensure the project does not affect bald eagle nesting behavior. Such protocols could result in the cessation of activities prior to completion, in extreme circumstances. Specific phasing of construction activities is detailed in Section 2.4.1.

2.4.1 Schedule

Stage 1 - Fall 2004

The following improvements are proposed for the fall of 2004:

- Installation of water lines 4 inches and larger.
- Installation of sewer force main between the Hookups pump station in Pod 1 and the Park entrance.
- Installation of two grinder pump stations.
- Partial dismantling of the existing Waikiki pump station.
- Installation of new electrical service, including to all three campground pods.
- Installation of telephone system.
- If funding and construction scheduling allow it, completion of hookups to campsites; otherwise, the final installation will take place in Stage 2.

Stage 2 - Fall 2005

The following improvements are proposed for the fall of 2005:

- Installation of 1-inch water lines in campground pods.
- Installation of gravity sewer between the Hookups pump station in campground Pod 1 and Pod 3.
- Paving of the gravel RV campsites in Pod 1.
- Decommissioning of the sewage treatment lagoon.

The full decommissioning of the sewage lagoon is scheduled for completion during fall 2005. However, due to funding and schedule constraints, final decommissioning may include work in fall 2006. This assessment assumes that all avoidance and minimization defined for Phase 2 applies to all actions, regardless of when they occur. Should the full decommissioning of the sewage lagoon be postponed until 2006, all timing restrictions and best management practices identified in this BA must be complied with to maintain the determination of effect, as detailed in Section 5.

2.4.2 Improvements to the Water System

All of the approximately 12,000 linear feet of existing water lines (1-inch through 6-inch diameter) within the Park will be replaced (Figure 4).

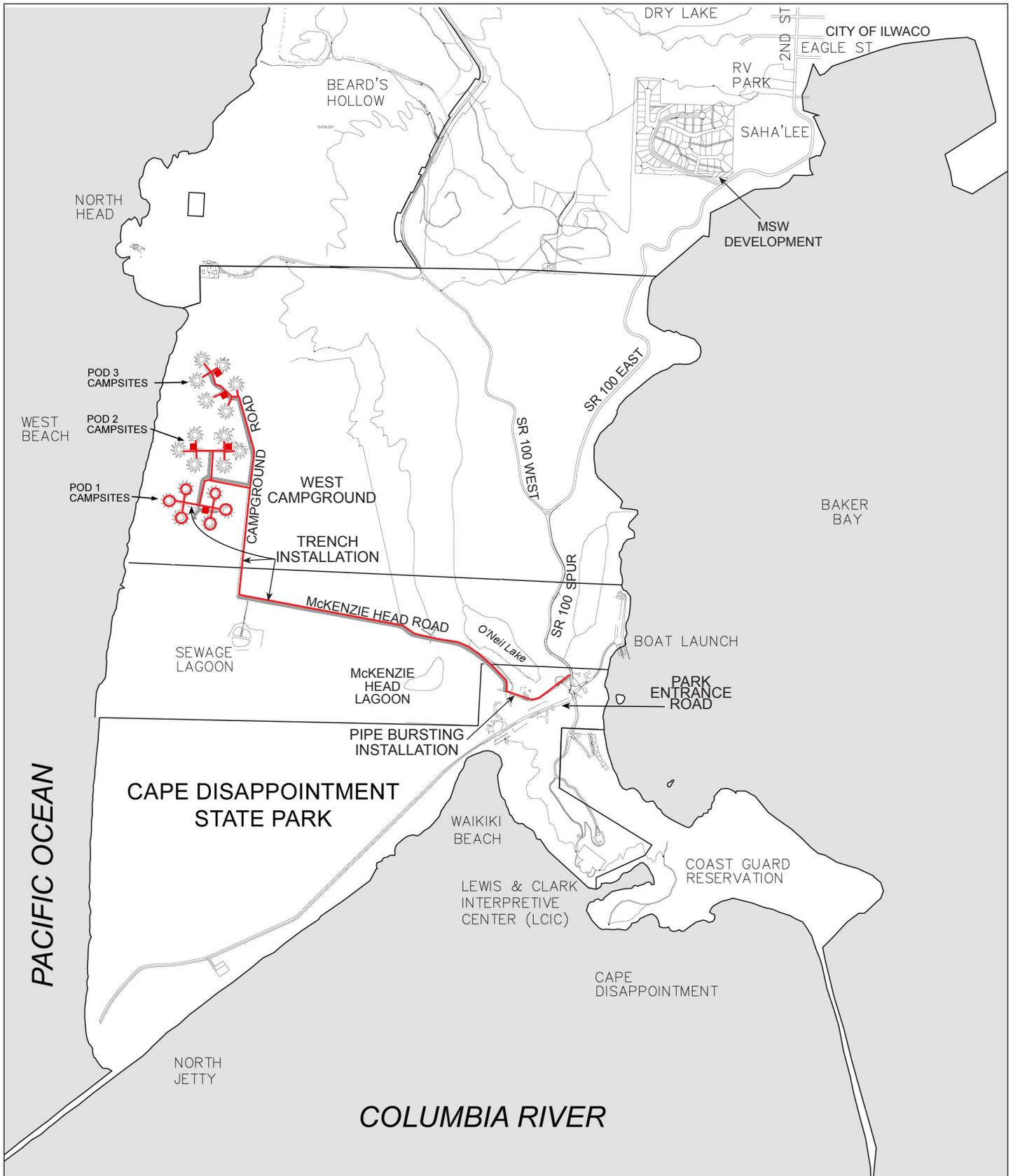
- Approximately 7,175 linear feet of new 6-inch main, of high-density polyethylene (HDPE) construction with fused joints, will be installed from the Park entrance at SR 100 to campground Pods 1 and 2, including the interior roads serving these pods. The new line will begin at the meter that was installed in Phase 1, which is located just west of the SR 100 Spur and approximately 200 feet north of the intersection with Park Entrance Road. The alignment between the meter and McKenzie Head Road will be along the paved road that lies north of and parallel to Park Entrance Road. It then continues west along McKenzie Head Road to Campground Road.
- Along Campground Road, north of the interior road leading to Pods 1 and 2, 1,550 linear feet of 4-inch line will be installed and will extend to the comfort stations in Pod 3.
- The existing service to all 60 campsites in Pod 1 and each of the six hose bibs in both campground Pods 2 and 3 will be replaced with 3,000 linear feet of new 1-inch water line, of polyethylene construction. The existing water lines in the campground area will be abandoned.
- Gate valves, hydrants, and air release valves will be installed as required.

Two methods of installation will be used for the water lines. Between the meter and McKenzie Head Road, the 6-inch line will be installed using the pipe-bursting method along the alignment of the paved road that lies to the north of Park Entrance Road. With this method of installation, a new line is pulled through the existing line, which ruptures the old pipe as it is pulled through. This method is often used in environmentally sensitive areas to reduce or eliminate the need for trench excavation, and it will be used on this project for segments that are not located within the existing road prism or previously improved areas. Along McKenzie Head Road and Campground Road, the line will be installed in a trench within the road prism. This method of installation will be continued along Campground Road and the interior campground roads that lead west from it into campground Pods 1, 2, and 3.

2.4.3 Improvements to the Sewer System

Sewer system improvements are designed to allow the decommissioning of the sewage lagoon and to transfer Park wastewater to the City of Ilwaco's wastewater treatment plant through the wastewater conveyance system constructed in Phase 1. Elements of the Phase 2 work include:

- Replacement of sewer lines throughout the Park.
- New gravity sewer line between Trailer dump and new Waikiki grinder pump station.
- New replacement force mains to redirect the flow to the new Park entrance pump station.
- Rehabilitation of the Hookups pump station.
- Installation of two new grinder pump stations.
- Dismantling of the Waikiki pump station.



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■ = Campground Comfort Stations



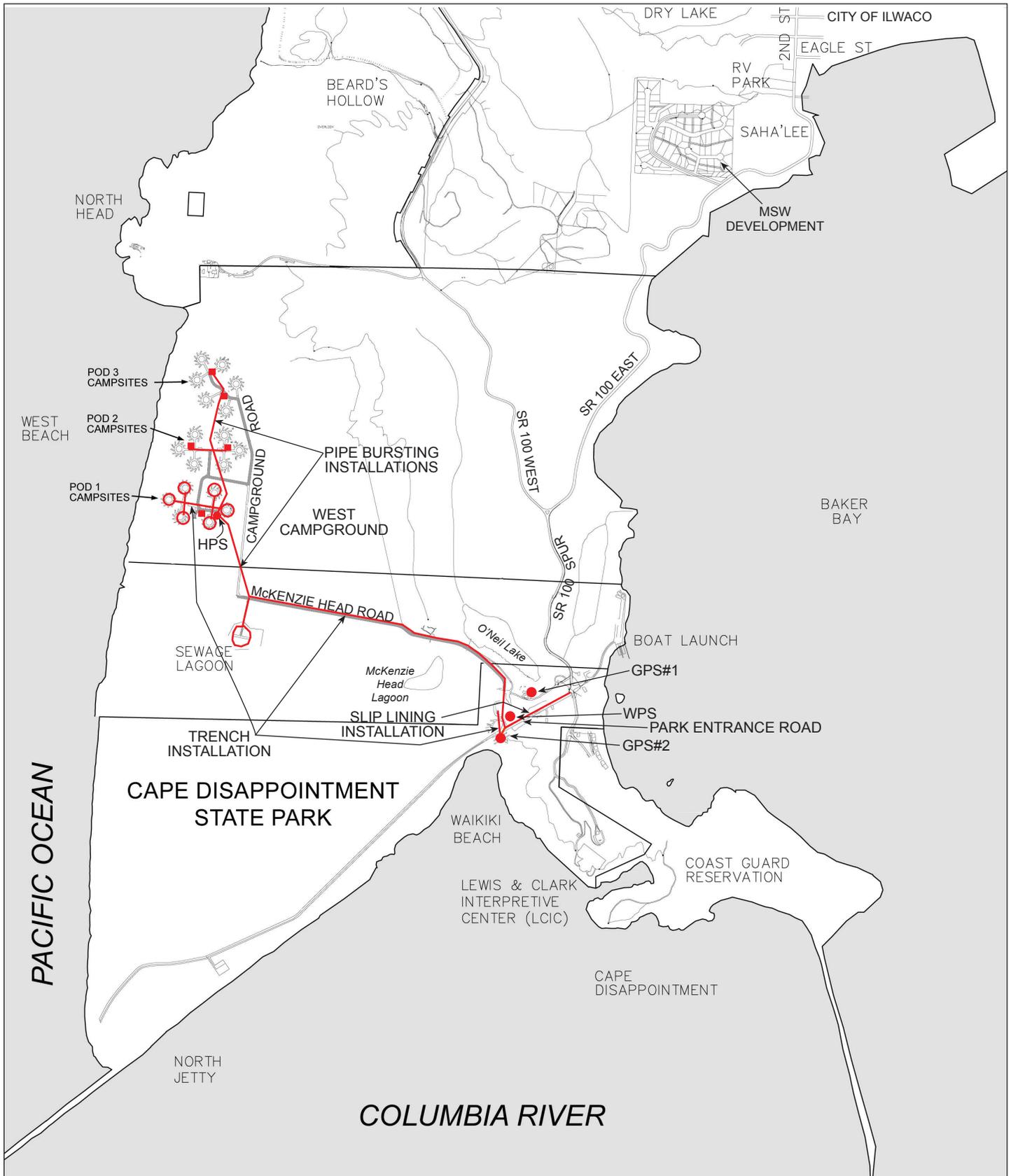
Figure 4
Cape Disappointment State Park
Water System Improvements

Approximately 8,100 linear feet of new 6-inch pressure force main, of HDPE construction with fused joints, will be installed between Manhole 4 at the intersection of SR 100 and Park Entrance Road and the Hookups pump station located in Pod 1 (Figure 5). Subsections of this alignment are as follows:

- From Manhole 4 to the Waikiki lift station, 900 linear feet of 6-inch force main will be installed using the slip-lining method, where a smaller size pipe is inserted into a larger pipe, in this case the existing 8-inch sewer line.
- A new grinder pump station will be installed 40 feet northeast of the Park contact station to service existing sewer lines to the O'Neil Lake comfort station, the Park contact station, and the maintenance facilities.
- A second grinder pump will be installed at the southwest corner of McKenzie Head Road and Park Entrance Road, near the Waikiki comfort station parking lot. The grinder pump station will service this comfort station and the trailer dump sewer service. The two new grinder pump stations will replace the Waikiki pump station. The grinder pump stations are 5- by 8-foot polyethylene tanks that are installed below grade. Each grinder pump station will require approximately 60 cubic yards of excavation, 30 cubic yards of backfill, and 200 square feet of land disturbance.
- The Waikiki pump station will be partially dismantled by removing the top section to 4 feet below grade. The disturbed ground area, 3 feet in diameter, will be revegetated with grass.
- Utility connections such as adjusting the distribution lines will be made to several facilities, including the contact station, trailer dump, and the Waikiki and O'Neil Lake comfort stations. This is required to divert the flow of sewage to the new grinder pump stations.
- Within the road prism of McKenzie Head Road, 5,900 linear feet of 6-inch sewer force main will be replaced by the open cut trench method, and the pavement will be replaced. The metal culvert near the road leading to the sewage lagoon will receive a concrete cap and will then be encased in concrete down to the base of the culvert. The water and sewer lines will be installed by the horizontal directional drilling method under the pipe culvert. A drilling rod with a cutting tool will be inserted into a starting hole close to the culvert and directed down under the culvert and up again to a location on the other side. The hole behind the drilling head will be kept open with bentonite. A pipe will then be connected to the end of the drilling rod and pulled through the hole. This method of installation can be done without any additional excavation by mounting the drill rig on the ground.
- Approximately 1,300 linear feet of existing 4-inch force main, located between McKenzie Head Road (near the access road to the sewage lagoon) and the Hookups pump station in Pod 1, will be upsized to 6-inch force main. Since this segment follows the existing underground alignment through terrestrial and wetland resources, pipe-bursting will be used to avoid trenching.

Additional activities include:

- Approximately 300 linear feet of 8-inch gravity sewer will be installed between the trailer dump and the new Waikiki grinder pump station using the open cut trenching method.
- Approximately 1,800 linear feet of 6-inch gravity sewer, of polyvinyl chloride (PVC) construction, will be installed between the Hookups pump station and Pod 3. Because the route extends through natural areas, this segment will also be installed using the pipe-bursting method. From this main line, 4-inch lines extend to the comfort stations in all three campground pods and will be installed by trenching excavation.



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- Legend**
 HPS = Hookups Pump Station
 WPS = Waikiki Pump Station
 GPS#1 = Contact Station Grinder Pump Station
 GPS#2 = Waikiki Grinder Station
 ■ = Comfort Station

Figure 5
Cape Disappointment State Park
Sewer System Improvements

- The sewer lines to each RV site in Pod 1 will be replaced with new 4-inch lines. They will be installed by standard open trench excavation adjacent to the existing lines, as this is a previously improved area. The old sewer lines will be abandoned in place.
- The 2-horsepower pumps inside the Hookups pump station will be replaced with 10-horsepower pumps to meet the additional dynamic head¹ required to pump sewage to the Park Entrance pump station through the new 6-inch force main.

2.4.4 Decommissioning of the Sewage Treatment Lagoon

The proposed sewage pumping upgrades will allow the Park to abandon the existing sewage lagoon. The flow from the Hookups pump station and all flow from the Park hub would be conveyed to the Park Entrance pump station, which was completed in Phase 1. This facility pumps to the Ilwaco wastewater treatment facility. Sewage will no longer be directed to the lagoon. The sewage pumping upgrades will allow the Park to abandon the sewage lagoon (Figure 6).

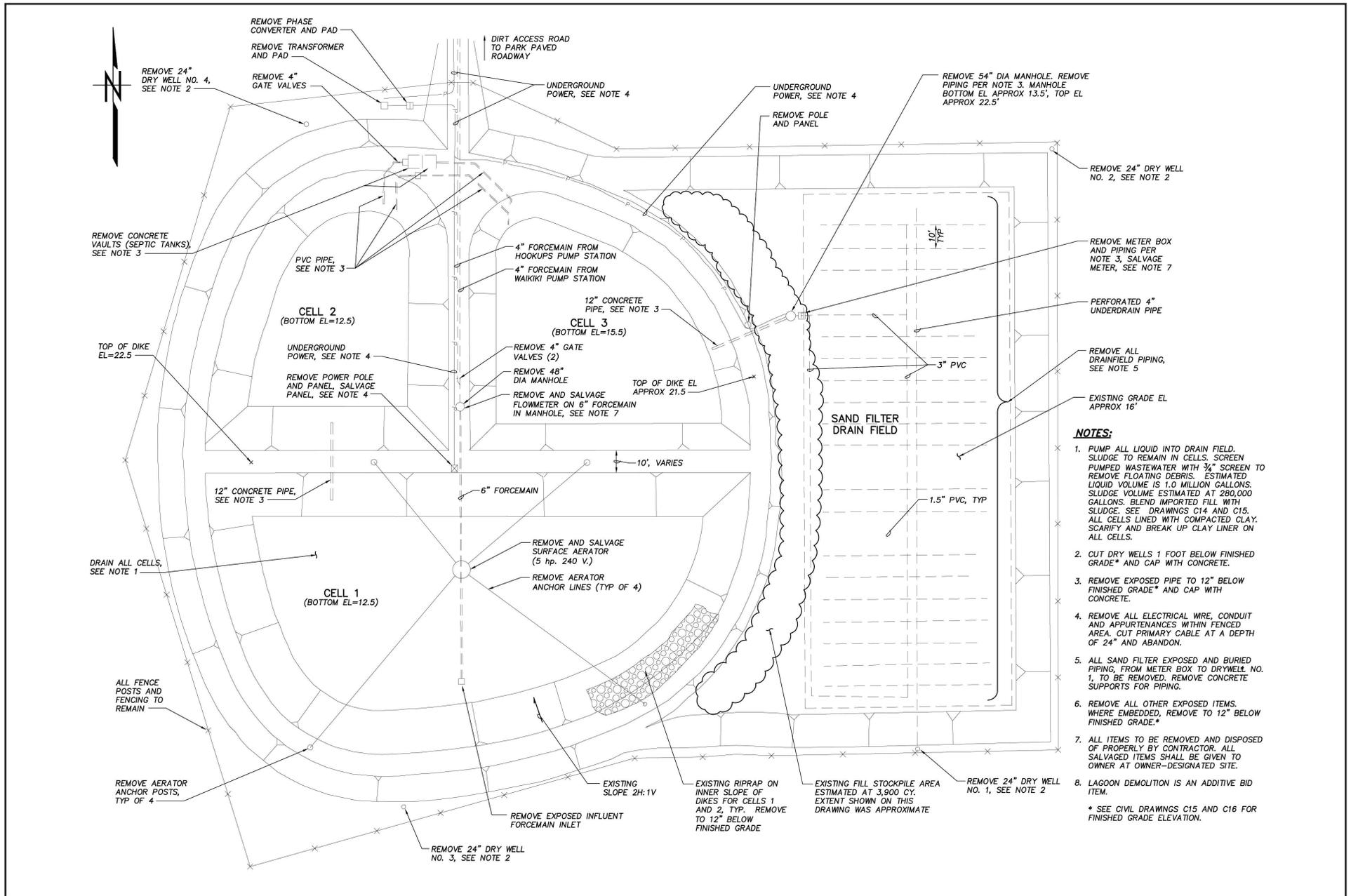
As part of Phase 2 investigations, 12 biosolid samples were collected from the three cells in the sewage lagoon. Each cell was divided into quadrants. Using a biosolids sampling bailer, one sample was collected at a random location within each quadrant. Samples were analyzed for pollutants (metals, fecal coliform, ammonia, total Kjeldahl nitrogen, nitrate nitrogen, nitrite nitrogen, and percent solids). The detected concentration levels of biosolid pollutants were well below the pollutant concentration limits set forth by Washington Administrative Code (WAC 173-308-160).

Decommissioning will consist of the lagoon effluent being decanted. The clay liner will be scarified or otherwise breached to allow discharge to the surrounding soil. The dike surrounding the lagoon will be leveled, and imported fill material will be placed in the lagoon. The biosolids from the lagoon will be put to beneficial use as a soil amendment in the immediate area of the lagoon treatment facility. The remaining biosolids will be mixed with the fill material retained from Phase 1 and spread over the sand filter bed and former lagoon area. The area will then be revegetated. The final elevation of the lagoon area will be approximately 19 feet above mean sea level. According to Ecology, the lagoon site shall be left undisturbed for approximately 3 years before new development occurs on site. Additional sampling must occur 30 days prior to beneficial use (Saul 2003).

The sewage lagoon decommissioning sequence will include the following steps:

- Phase 2 sewer revisions will eliminate all flow into the sewage lagoon in December 2004.
- Much of the liquids will evaporate during the summer of 2005. Excessive liquids can be disposed of on the existing drain field.
- Biosolids will be sampled to confirm the results of the initial sampling and ensure that the sludge can be disposed of on site as a soil amendment.
- A general contract for Phase 2 work that is not completed in 2004 and the lagoon decommissioning should be awarded in September 2005.
- Biosolids will be screened to remove floatables, which consist of mostly plastics from the biosolids. This material will be hauled to a landfill.

¹ Dynamic head is the energy needed to push the material through the piping system. More energy would be needed to push the material farther through new pipeline.



- Biosolids will be dewatered as required and set aside.
- Fill material will be added in lifts, and biosolids will be worked into the fill at each lift.
- Ecology requires that the area be closed to the public for 3 years.

Should the full decommissioning of the sewage lagoon be postponed until 2006, all timing restrictions and best management practices (BMPs) identified in this BA must be complied with to maintain the determination of effect, as detailed in Section 5.

2.4.5 Improvements to the Electrical Power and Telephone Systems

Electrical power service within the Park entrance area and campground Pod 1 will be upgraded from a single-phase, direct buried system to a three-phase primary distribution system. In Pods 2 and 3, electrical service will be provided by a single-phase system (Figure 7).

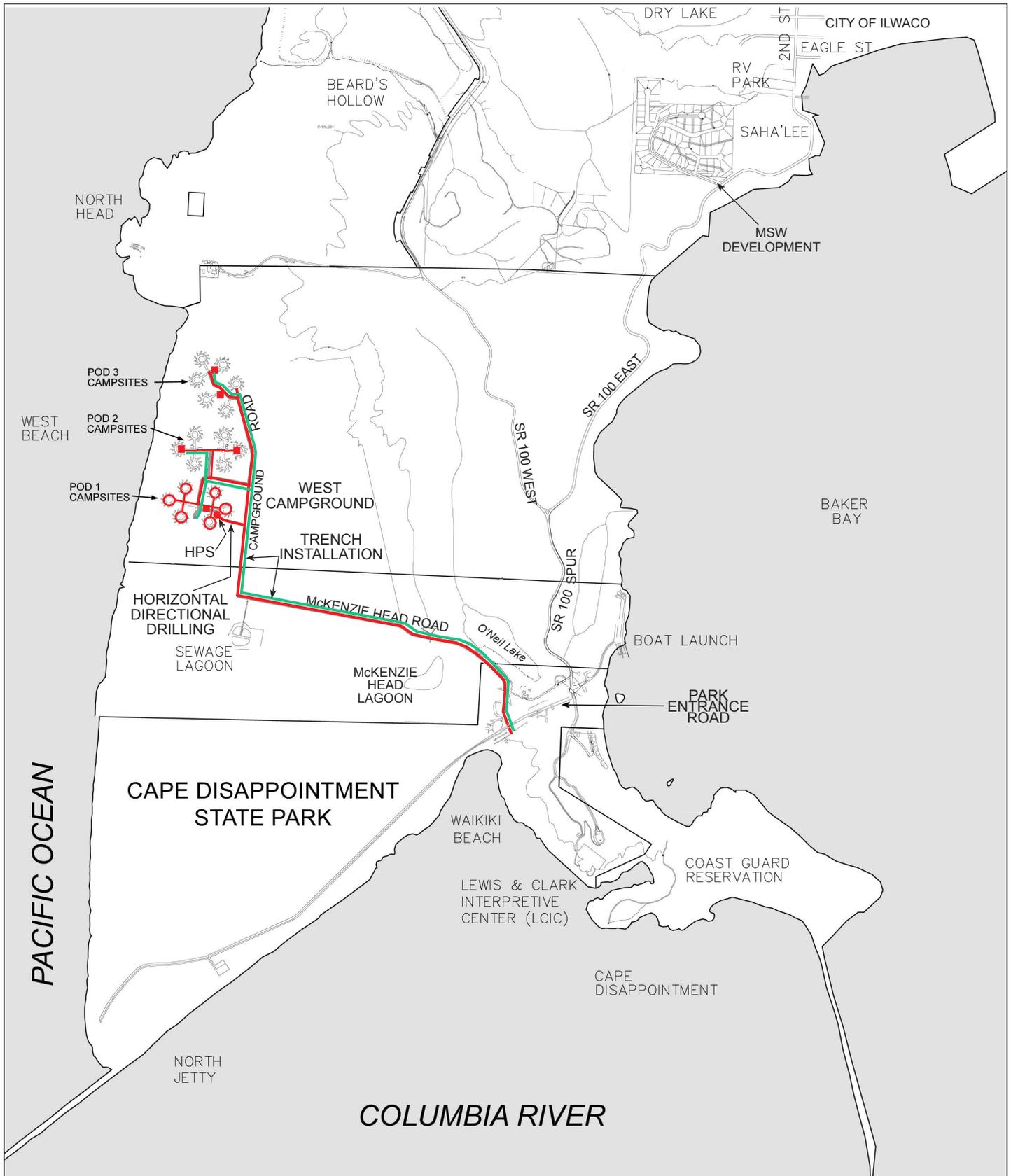
The Park entrance area, which includes the contact station, residences, maintenance shops, and the pump stations, is on a single-phase electrical underground primary service. The current system is over 30 years old and “direct buried,” a type of system that does not last as long as duct bank and manhole systems. The current power supply to the campgrounds is transmitted via overhead power lines coming into the campgrounds from North Head Lighthouse to the north. The power lines are underground between Pods 1 and 3.

The capacity of the existing system for the RV camping area is currently inadequate for the projected demand and loads. The shortfall is primarily because of the transformers and the 120-volt circuits to each campsite. The installation of the new system will include a 50-amp circuit for each RV site. The new power distribution system will consist of 9,200 linear feet of buried conduit between the Park entrance and the three campground pods, via McKenzie Head Road. The conduit will be installed in the same trenches as the sanitary sewer line, within the road prism. Where the sewer line leaves the road prism just before the intersection of McKenzie Head Road and Campground Road, the electrical conduit will follow the water line north on Campground Road. It will access Pods 1 and 2 not via the access road, but via a 410 linear foot line running due west from Campground Road to the Hookups pump station. Horizontal directional drilling will be used to install this line. Pacific County Public Utility District (PUD) No. 2 will be installing the conduit, vaults, electrical cable, and transformers in the trenches provided by this project. The old power line, along with its two overhead poles, will be removed by the PUD after the new power system is completed. The pole at the North Head Lighthouse housing facility will be pulled down and removed. The pole on the beach north of campground Pod 3 is inaccessible by vehicle, so it will be cut down and left with the other driftwood in this area.

Telephone service will be extended to the comfort stations in all three campground pods, and will involve approximately 8,100 linear feet of telephone conduit. The new conduit will be trenched with the new water service. In Pods 2 and 3, only the comfort stations on the west side of the pods will receive pay phone service.

2.4.6 Other Construction Activities

The 60 gravel RV campsites in Pod 1 will be paved, which will encompass a 49,500-square-foot area. The materials required include 312 cubic yards of asphalt concrete pavement underlain by 1,100 cubic yards of crushed rock base course.



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- Electrical
- Telephone
- Comfort Station
- HPS = Hookups Pump Station

Figure 7
Cape Disappointment State Park
Telephone and Electrical Service
Improvements

2.4.7 Project Construction Details

Most of the utility alignments follow existing roads and will be installed within the road prism by open trenching. The only open trenching outside the road prism will be within the campground circles, and between the Trailer dump and the new Waikiki grinder pump station. In environmentally sensitive areas, utilities will be installed using pipe-bursting, slip-lining, and horizontal directional drilling to minimize surface disturbance.

2.4.7.1 Construction Outside the Existing Road Prisms

In areas outside the road prism and in or adjacent to natural areas, slip-lining and pipe-bursting will be used. Between Manhole 4 in the Park hub area and the intersection of Park Entrance Road and McKenzie Head Road, the new sewer force main will be slip-lined into the existing gravity sewer line. Between the intersection of the lagoon entrance road and McKenzie Head Road, and the Hookups pump station in Pod 1, the force main will be pipe-burst. The gravity sewer extended north from the Hookups grinder pump station to Pod 3 will also be pipe-burst. The water main between the meter at SR 100 Spur and McKenzie Head Road will be installed using the pipe-bursting method. A third alternative method to trenching will be used at the steel culvert on McKenzie Head Road, where horizontal directional drilling is required to install lines beneath the culvert. This method will also be used to install the 410 linear feet of power conduit between Campground Road and the Hookups pump station.

2.4.7.2 Pipe-Bursting, Slip-Lining, and Horizontal Directional Drilling

Two primary installation methods for pipe replacement will be utilized to replace pipes in environmentally sensitive areas to reduce or eliminate trench excavation: pipe-bursting and slip-lining. The pipe-bursting method requires a cable to be threaded through the existing pipe. A cone-shaped cutter head is attached to the cable and the new pipe is fitted to the rear of the cutter head. The cutter head and pipe assembly is then pulled back through the existing pipe, bursting the old pipe and forcing the broken pipe pieces outward; the new pipe is pulled into place as the cutter head moves forward. By this method, pipes can be replaced and enlarged up to two sizes in diameter without excavating a trench. The only excavation would be for access pits at both ends of the pipe replacement. The length of pipe replacement that can be pipe burst is a factor of the pipe size, the soil type, the type of pipe being burst, and the capacity of the pulling machine.

With the slip-lining method, a smaller pipe is inserted into a larger existing pipe. Once the new pipe has been connected to another existing line, the cable used for pulling the smaller pipe is pulled back out of the system. Only one area of excavation is required for this method.

A third installation method is horizontal directional drilling, which involves inserting a drilling rod with a cutting tool into a starting hole close to the feature to be drilled under, and directing it down under the feature and up again to a location on the other side. The hole behind the drilling head will be kept open with bentonite. A pipe will then be connected to the end of the drilling rod and pulled through the hole. This method can be used without any additional excavation by mounting the drill rig on the ground.

2.4.7.3 Utility Trenching

Trenching for the water and sewer utilities will be excavated by a tractor-mounted backhoe to about 3.5 feet deep. Three inches of imported pipe bedding material will be placed in the bottom of the trench and leveled for the pipe. The pipe will be installed and checked for alignment, then more pipe bedding material will be installed and compacted around the pipe. The power or telephone conduits, toning wire,

and warning tape will then be installed, and the trench will be backfilled and compacted in 6-inch lifts. The trenching moves continuously with the backhoe excavating ahead of the crews installing the pipes, conduit, pipe bedding, and backfilling. The contractor would not be allowed to have more than 100 feet of trench open at any one time.

2.5 WORK TIMING

Construction of Phase 2 has been scheduled to avoid critical breeding/nesting seasons associated with protected species. At issue are breeding/nesting timing restrictions for bald eagles (January 1 to August 15) and marbled murrelets (April 1 to September 15). Construction will be limited to occur from September through December for both 2004 and 2005. Because of the constrained construction window, construction activity sequencing, and project funding, some Phase 2 activities will be deferred to 2005 for completion. Whether occurring in 2004 or 2005, all construction is scheduled to be completed by December 31 of each year. Because there are no active bald eagle nests within 0.5 mile of the work areas, construction may be extended to January 31 if approved by USFWS. Work between December 31 and January 31 would require monitoring of active bald eagle nests during construction activities by a qualified biologist, as specified in a monitoring plan to be developed in conjunction with USFWS.

2.5.1 Construction Activities Permitted During Critical Breeding Season

Certain activities associated with project construction, particularly those that do not involve heavy equipment, material hauling, or excessive noise levels, may occur during the restricted breeding season, as such activities will not rise to the level of disturbance or adverse effect. Such activities could include:

- Temporary bypass pumping.
- Pulling of power and/or telephone cables into buried conduits.
- Mechanical and electrical work to replace equipment inside the Hookups pump station.
- Roadway striping.
- Hydroseeding.

2.6 EROSION AND SEDIMENT CONTROL PLAN

The erosion and sediment control plan will comply with the specific requirements of Pacific County codes and ordinances pertaining to construction practices and temporary erosion control and sediment control measures and methods as they apply to work performed for this action. Activities will comply with all temporary erosion control procedures and requirements outlined and/or specified on the County-approved plans, specifications, and final construction permit(s).

Erosion control materials will include silt fence of Permea-Tex silt control fence, or approved equal. Quarry spalls will be in accordance with Washington State Department of Transportation Standard Specification (8-inch-maximum size, 3/4-inch-minimum [10 percent passing] size). Temporary silt fence will be applied on either side of McKenzie Head Road, surrounding the sewage lagoon, in designated areas along Campground Road and Pod 1 campsites, and surrounding all areas of excavation (excluding trend excavation within a roadway prism). Filter fabric fences will be removed when they have served their purpose, but not before the upslope area has been permanently protected and stabilized.

2.7 SPILL PREVENTION PLAN

To minimize and avoid impacts to sensitive habitats and surrounding areas, the spill prevention plan states that petroleum products, industrial chemicals, and similar toxic or volatile materials shall be stored in durable containers approved by the engineer and located in areas so that any accidental spillage will not drain into any water. Substantial quantities of such materials shall be stored in an area surrounded by containment dikes of sufficient capacity to capture an aggregate capacity of all tanks.

The contractor shall develop and submit to the engineer a hazardous material management plan (HMMP), which, at a minimum, includes and addresses the following:

- Site description and drawing that indicates the location of equipment and material storage areas, location of fueling areas, and proximity to storm drainage areas.
- Hazardous materials contractor personnel will be available 24 hours a day to administer and respond to HMMP requirements. Information shall include contact name, phone and fax numbers, and address.
- An inventory list of all known hazardous material(s) to be used during all phases of the construction project.
- Materials Safety Data Sheets shall be included in the HMMP for all materials on the hazardous materials list.
- Identification of containers with a legible label containing the material's product name, as was written on the material's original container label.
- Storage and handling of hazardous material containers. All materials shall be stored in secondary containment with a minimum capacity of 110 percent storage volume of the largest container. Container lids shall be secured to prevent spills or leaking and shall be stored under waterproof covering.
- Implementation of hazardous material spill prevention methods, including material transfers, vehicle and equipment fueling, vehicle and equipment maintenance, small engine fueling and maintenance, equipment storage, and spill prevention kits.
- The HMMP shall contain information on how the contractor shall control and respond to hazardous material spills. At a minimum, the contractor's employee responsible for the spill must take appropriate immediate action to protect human health and the environment.
- The HMMP shall contain information on how the contractor shall characterize, clean up, and remove all hazardous material and waste generated from contractor operations.

3. WILDLIFE HABITAT BASELINE CONDITIONS

3.1 DESCRIPTION OF HABITAT

The Park is bounded on the west by the Pacific Ocean, partially on the east by Baker Bay, and on the south by the Columbia River. Cape Disappointment State Park hosts a diversity of habitat types and plant communities, including headland bluffs, coastal dunes, shorelands, forests, and freshwater and estuarine wetlands. The Park is located within the Sitka spruce forest zone, which is characterized by a proximity to the Pacific Ocean; a moderate climate; generally low elevation (below 450 feet); and dense, productive conifer forests (Franklin and Dyrness 1987). Topographically, the western and southern portions of the Park are relatively flat and generally below 75 feet in elevation, while the relief and elevation increase along the northern and eastern area of the Park. The principal plant community types within the Park follow the rise in topography, with wetlands predominating in the southern and western portions of the Park and upland forests prevalent to the east and north.

Sayce (2004) identified 13 plant community types in a recent botanic survey of the Park. Over 400 vascular plant species have been found within the Park, including three rare species. In addition, the Washington Natural Heritage Program (2004) has identified several high-quality plant communities that are of conservation significance within the Park: Sitka spruce (*Picea sitchensis*) forest, portions of native coastal headland herbaceous vegetation, and saltwater and freshwater wetlands. Although the park supports a rich mosaic of native vegetation communities, most in very good condition, a variety of introduced plant species have also been identified within the Park. The WSPRC is in the process of drafting an integrated weed management plan that will establish thresholds and priorities for noxious weed control and develop control prescriptions for the entire Park unit.

Sitka spruce forest (approximately 600 acres) is the predominant upland cover type and is found primarily on the east side of the Park. Four distinct associations are found within the Sitka spruce forest: Sitka spruce/salal (*Gaultheria shallon*); Sitka spruce/salal-salmonberry (*Rubus spectabilis*); Sitka spruce/salmonberry; and Sitka spruce/sword fern (*Polystichum munitum*). The largest contiguous portion of forest is located near the center of the Park and has relatively narrow road corridors transecting its interior. One smaller patch is located along the northeast edge of the Park, and the other stand is located along the western side of the isthmus just north of the USCG station. The four Sitka spruce associations, taken together, form the best example of outer coastal Sitka spruce forest in Washington south of Olympic National Park and have been designated by WSPRC as a Natural Forest Area.

The proposed alignment for Phase 2 improvements is outside of the Sitka spruce forest, and there will be no project-related impacts to this cover type.

In addition to these upland communities, the Park also contains significant wetland plant communities. Coastal littoral processes, tides, wind, currents, river flow, groundwater retention, and precipitation influence Cape Disappointment State Park. The Park receives approximately 100 inches of annual precipitation. The Park contains both saltwater and freshwater shoreline, including the Pacific Ocean, Baker Bay, O'Neil Lake, and McKenzie Head Lagoon. Prior survey work, site visits, and aerial photography analysis have identified more than 370 acres of freshwater wetlands and saltwater marshes in Cape Disappointment State Park (WSPRC unpublished data; Sayce 2004).

The shores of Baker Bay support a sandy, low-salinity marsh dominated by Lyngby's sedge (*Carex lyngbyei*). There are only three known occurrences of this ecosystem in the state, one of which abuts the Park shoreline. Beard's Hollow supports two low-elevation freshwater wetland associations: slough sedge

(*Carex obnupta*)–Pacific silverweed (*Argentina egedii*) herbaceous vegetation and Hooker’s willow (*Salix hookeriana*)/slough sedge–Pacific silverweed vegetation. Both associations are confined to dune systems on the outer coast and are either vulnerable or possibly imperiled in the state, as very few freshwater wetlands in Washington’s Pacific Northwest Coast ecoregion are found in such close association with the outer coastal dune system. Neither of these dune systems are located within the project area, and they will not be affected by project implementation.

The wetlands along the Baker Bay shoreline include several small saltwater marshes. These wetlands are relatively unaffected by recreational use. Wetlands in Beard’s Hollow and along Baker Bay are outside the project area and will not be affected by project activities.

For this action, hydrologic resources include wetlands occurring in the Park entrance area and along McKenzie Head Road, Campground Road, and the sewage lagoon and its access road. Surface waters include O’Neil Lake, the largest freshwater body in the Park (40 acres), and McKenzie Head Lagoon (30 acres) at the foot of McKenzie Head. Wetlands associated with O’Neil Lake are the most accessible of the Park’s wetlands, with a number of campsites situated along its shore. McKenzie Head Lagoon is relatively undisturbed. These open-water areas are hydrologically connected through the palustrine wetlands to the west and by culverts under McKenzie Head Road. There are no permanent or fish-bearing streams in the Park.

The western two-thirds of the McKenzie Head Road (approximately 3,300 feet) pass through a complex of palustrine forested and palustrine scrub-shrub wetlands. The predominant vegetation in this area is red alder (*Alnus rubra*) with a slough sedge understory. The proposed alignment for the utility upgrades will remain within the prism of McKenzie Head Road for much of this area. Work outside the road prism will include pipe-bursting of gravity sewer from the Pod 3 campground to the Hookups pump station; pipe-bursting from the Hookups pump station force main to the sewage lagoon entrance road; slip-lining force main inside gravity sewer to Manhole 4 at the Park hub; and pipe-bursting the water line from the Park entrance meter to McKenzie Head Road. Horizontal directional drilling will be used to install the water and sewer lines under the metal culvert near the road leading to the sewage treatment lagoon and water line connection from Campground Road to the Pod 1 comfort station. The only open trenching outside the road prism will be within the campground circles. Pipe-bursting, slip-lining, and horizontal directional drilling are construction techniques that allow subsurface installation of the utilities without disturbing surface features. See Section 2.4.7.2 for a more detailed discussion of these construction methods. BMPs will be used to avoid impacts to wetlands and surface waters in the project area. Through the proposed construction methods and the use of BMPs, no adverse effects to Park wetlands or surface waters are anticipated from project implementation.

Currently, no federally listed plant species are known to occur in the Park; however, rare plant surveys conducted in 2003 found three species of plants designated as special status species by the State of Washington: coyote brush (*Baccharis pilularis*), ocean-bluff bluegrass (*Poa unilateralis*), and floating water pennywort (*Hydrocotyle ranunculoides*) (Sayce 2004).

3.2 HABITAT FOR LISTED SPECIES

The North Jetty is a habitat element that provides loafing habitat for brown pelicans (*Pelecanus occidentalis*). The pelicans use the seaward end of the jetty, which is more than 0.5 mile from the proposed Phase 2 work areas (WDFW 2004). The waters of the Pacific Ocean and Columbia River provide foraging habitat for brown pelicans. Project construction and implementation will not affect the North Jetty or the marine and estuarine waters in the project vicinity.

The Sitka spruce forest contains habitat for bald eagles (*Haliaeetus leucocephalus*) and marbled murrelets (*Brachyramphus marmoratus*), both federally listed species. Both WDFW and USFWS consider this stand to be occupied by nesting murrelets. Removing or disturbing trees may be considered “take” and is prohibited without an incidental take permit from USFWS following the consultation requirements under Section 7 of the ESA. No Sitka spruce forest is located within the Phase 2 project area, and this habitat type will not be adversely affected or modified by project implementation.

4. WILDLIFE SPECIES EVALUATIONS

4.1 BROWN PELICANS

4.1.1 ESA Status and Life History

The brown pelican was listed as an endangered species by the USFWS on October 13, 1970 (35 FR 16047). By 1985, brown pelican populations on the Atlantic Coast of the U.S. had recovered to the point they were removed from the list of endangered species (USFWS 1985). However, the Pacific Coast population of brown pelicans is still considered endangered. Along the Pacific Coast, breeding takes place from southern California to Peru and central Chile. The southern California population of brown pelicans today is estimated at 4,500 to 5,000 breeding pairs (USFWS 2000b). Brown pelicans mainly prefer coastal habitat; they forage in open water for fish, and loafing and nocturnal roosting habitat consists mainly of sand spits, offshore sand bars, and islets (TNC 2000).

4.1.2 Occurrences of Brown Pelicans in the Project Area

Brown pelicans found in the Cape Disappointment area are migratory. They do not breed in Oregon or Washington. Each year after breeding (June to October) and before the wintering period, 200 or more brown pelicans can be observed loafing along the North Jetty of Cape Disappointment (WDFW 2002, 2004). Priority Habitats and Species (PHS) data from WDFW do not indicate any roosting areas within the project action area (WDFW 2004).

4.1.3 Critical Habitat

Critical habitat has not been designated for brown pelicans.

4.2 MARBLED MURRELET

4.2.1 ESA Status and Life History

Marbled murrelets are marine birds that forage in nearshore environments and nest in mature conifer forests, breeding from northern California up to the Bering Sea in Alaska (Smith et al. 1997). Marbled murrelets were listed as threatened under the ESA in 1992 due to a decline in abundance and habitat degradation in the southern portion of their range. Exact numbers are unknown. The breeding population in Washington is estimated to be between 1,900 and 3,500 pairs (Speich et al. 1992).

Nesting stands in Washington are found west of the Cascade crest at low to moderate elevations (Smith et al. 1997). Marbled murrelets have been detected up to 43 miles inland, but they are most abundant in old-growth/mature forests that are near the coast (Hamer 1990). The nesting period for marbled murrelets extends from April 1 to September 15. Marbled murrelets generally forage for small fish in nearshore and protected coastal waters throughout the year, including bays, inlets, fjords, lagoons, coves, and exposed outer coasts (Nelson 1997).

4.2.2 Occurrences of Marbled Murrelets in the Project Area

WSPRC recorded four marbled murrelet occurrences within the Park in prior years. None of the recorded sites fall within 0.5 mile of the project action area. None of the PHS mapped nest sites were within 0.5 mile of the project work areas. However, the Cape Disappointment area contains suitable, high-quality

murrelet nesting habitat within 0.25 mile of the project alignment. The likelihood of marbled murrelet occupancy in the Sitka spruce/salal mature forests is moderate, although nesting attempts and/or success are unknown. McKenzie Head, south of McKenzie Head Road, is in close proximity to project actions. While forested, this area is less than 7 contiguous acres, a criterion established by USFWS to be suitable habitat for marbled murrelets. There are no records of murrelet use or activity in the McKenzie Head forested area (Mackey 2004 personal communication).

The project action area also includes nearshore foraging habitat for marbled murrelets; however, no project activities will have direct or indirect impacts on the marine environment.

4.2.3 Critical Habitat

The USFWS designated critical habitat for the marbled murrelet in Washington, Oregon, and California in 1996. The critical habitat designation included 11 units in Washington State, including 1.2 million acres of federal land, 421,500 acres of state forest land, and 2,500 acres of private land. Not all suitable habitat is included in this designation, as only areas deemed most essential to murrelet survival in terms of quality, distribution, and ownership are included.

USFWS has not designated critical habitat in or near (within 1.5 miles) the project site or action area (USFWS 1996, 2000a). Although habitat within Cape Disappointment State Park has not been officially designated as critical, much of the Park contains high-quality marbled murrelet habitat, including the project action area. Critical habitat was not designated within the Park because it was assumed that State Park status provides protection from adverse effects.

4.3 BALD EAGLES

4.3.1 ESA Status and Life History

Bald eagles were first protected by the Bald Eagle Protection Act of 1940 and later listed as endangered under the Endangered Species Preservation Act of 1966. Due to an increasing population, in 1978 the eagle was downlisted to threatened in five states, including Washington. The continued recovery of the bald eagle population has led the USFWS to propose delisting the bald eagle (USFWS 1999). A final ruling on delisting has yet to occur.

Recovery has been dramatic in Washington State, where there are now over 600 nesting pairs. Washington State also supports the largest wintering population of bald eagles in the conterminous U.S. Wintering bald eagles can be found throughout the state where waterfowl and fish congregate, including the inland waters and shorelines of Cape Disappointment and the Long Beach Peninsula.

Nesting, foraging, and perching habitat for bald eagles is typically associated with water features such as rivers, lakes, and coast shorelines where eagles prey upon fish, waterfowl, and seabirds (Stalmaster 1980, 1983, 1987). Suitable nesting habitat for bald eagles is typically in mature forests that contain large, dominant trees for nesting that are in close proximity to aquatic foraging habitat (Anthony and Isaacs 1989). In Washington, nearly all bald eagle nests (99 percent) are within 1 mile of a lake, river, or marine shoreline and 97 percent are within 3,000 feet (WDFW 2001). Unoccupied nests may indicate that suitable physical habitat attributes are available but human activity precludes their successful use (Anthony and Isaacs 1989). Bald eagles prefer high structures for perching, such as trees along the shoreline, but will also use cliffs, pilings, and open ground. They are usually seen foraging in open areas having wide views (Stalmaster and Newman 1979).

4.3.2 Occurrences of Bald Eagles in the Project Area

WDFW PHS data (WDFW 2004) document three bald eagle nests in the Park, all in the Sitka spruce forest. The closest nest to the project area, located approximately 900 feet away, was last documented as active in 2001 (WDFW 2004). The two nests active in 2003 in the PHS data are over 0.5 mile from the project area. The Oregon Cooperative Fish and Wildlife Research Unit records five nest sites within the Park, and more accurately reflects data maintained by WSPRC (OCFWRU 2004). Of the two additional nests identified in this data set, one is an alternative nest clustered close to two previously identified nests, and the second is located approximately 0.5 mile northeast of the project area, near Baker Bay. Only the previously identified nest within 900 feet of the project area is in close proximity to the proposed action.

4.3.3 Critical Habitat

Critical habitat has not been designated for bald eagles.

5. EFFECTS DETERMINATIONS FOR LISTED SPECIES

The proposed project has no identified direct effects on protected species. Construction activities will primarily occur within the prism of existing roadways or previously disturbed sites (e.g., the sewage treatment lagoon, West Campground). No suitable habitat associated with identified species will be modified or adversely affected as a result of the proposed action.

5.1 EFFECTS ANALYSIS FOR BROWN PELICAN

5.1.1 Direct and Indirect Effects

The preferred foraging habitat for brown pelicans is found in the marine and estuarine areas surrounding Cape Disappointment. PHS data indicate a loafing area along the seaward end of the North Jetty, which is well outside of the project action area. As the proposed project action area would not represent the typical foraging or resting habitat available for brown pelicans in the vicinity, and since PHS data do not indicate any roost sites in the action area, no significant direct or indirect effects on foraging or prey availability are expected. Long-term degradation of foraging habitat is not expected, and the survival and reproductive success of brown pelicans should be unaffected.

Disturbance of brown pelicans or prey species from construction-related noise is a potential indirect effect associated with the project. Ambient noise levels in the vicinity of the project are low. A sound level analysis indicated that the average noise levels throughout the proposed project site would be 52 dBA. The highest peak noise readings (i.e., readings greater than 55 dBA) reflected automobile traffic directly adjacent to or near the location being monitored. Noise generated during construction would represent an unavoidable short-term indirect effect. The duration and level of construction noise will be highest during trenching, excavation, and repaving activities. For example, construction noise levels typically range from 75 dBA for concrete vibrators to approximately 91 dBA for backhoes, graders, concrete mixers, and trucks. These predicted noise levels are considerably higher than the ambient noise levels along the proposed alignment. BMPs, such as installing and maintaining mufflers and sound attenuation devices on all equipment and vehicles, will help to minimize noise impacts.

Further measures to minimize noise impacts from project-related construction include construction timing and construction area road closures. The Park campgrounds will be closed the entire month of October to accelerate the construction process and ensure completion by December 31. The ambient noise levels overall will be lower than at other times of the year. All construction activities likely to cause noise disturbance in excess of ambient conditions will be completed by the end of December 2004 or 2005, or January 2005 pending approval of USFWS. This deadline coincides with the onset of the critical breeding/nesting season for bald eagles.

Construction activities proposed to occur under Stage 2 of Phase 2, specifically decommissioning of the sewage treatment lagoon, will likely have even fewer impacts on Park resources. The final decommissioning of the lagoon will necessitate the use of bulldozers and backhoes. All material for the decommissioning is already on site. The site is removed from identified suitable murrelet habitat and known bald eagle nests by more than 0.5 mile. As such, indirect effects from noise should not rise to the level of either a direct or indirect effect on listed species or their habitats. Since elements of the final decommissioning of the sewage lagoon have not been finalized, or may be altered, this assessment stipulates that final decommissioning be held to the avoidance and minimization measures detailed in this document to further ensure that such activity has no appreciable effect on protected species. Should project design, timing, or impacts change significantly from those described in this document, reconsultation may be necessary for this activity.

5.1.2 Cumulative Effects

Cumulative impacts combine the effects of the proposed project and other major foreseeable projects. Any activities associated with future actions that would increase human presence could have cumulative impacts on wildlife and protected species. Impacts typically associated with human presence include increases in noise, air pollution such as dust during construction and particulates associated with vehicle emissions and campfires, vegetation disturbance, and trash generation. These activities may result in wildlife avoidance of certain areas and/or changes in natural wildlife behavior (such as nesting and foraging). The Phase 2 improvements will provide infrastructure capacity to serve additional visitors to the Park. The Master Plan is also aimed at providing Park improvements to increase the number of visitors. However, the Master Plan will also provide policies that strive to balance the need to serve additional capacity with the need to preserve and protect the natural areas and features of the site. Even so, it is likely that there will be some cumulative increase in impacts to wildlife at the Park.

The projects at the Park that could potentially result in cumulative impacts when combined with the proposed utility improvements include the following:

- Cape Disappointment State Park Infrastructure Improvements, Phase 1 Environmental Assessment/BA. Under this action, WSPRC replaced the Park's water distribution system and built a new sewer collection system. The Park's water distribution and sewer collection system were designed for connection to the City of Ilwaco's water and sewer system. The environmental assessment and BA were approved with a finding of no significant impact and a biological opinion, respectively, in the fall of 2003, and the utility improvements were completed in early 2004.
- Cape Disappointment State Park Master Plan. The Park Master Plan serves to provide the long-term (20-year planning horizon) management guidance for the operation and improvement of the Park. The goal of the Master Plan is to enhance high-quality recreational opportunities for Park visitors while protecting important natural and cultural resources. Key elements of the Park Master Plan include changes to the long-term boundary, land classification program, and transportation system, as well as improved visitor contact, replacement camping and overnight accommodations, isthmus redesign and improvements, identification of cultural landscapes, expanded and improved day facilities, and an expanded trail system.
- Confluence Project at Cape Disappointment State Park. The Confluence Project has contracted with artist Maya Lin to design several art installations in Washington State commemorating the Lewis and Clark Corps of Discovery's bicentennial, including a project situated in the isthmus at Cape Disappointment State Park. Proposed concepts include environmental art that promotes the natural and historic connections across the isthmus, and the development of a site-specific work of art on the shores of Baker Bay, east of the boat ramp parking area (WSPRC 2003).
- Lewis and Clark National and State Historical Parks. Under this action, Fort Clatsop National Memorial is expanded to include Station Camp, Clark's Dismal Nitch (Megler Safety Rest Area), and a Thomas Jefferson National Memorial on federal land within the Park. The National Park Service unit's name is changed to Lewis and Clark National and State Historical Parks. In addition, legislation creates a collaborative thematic relationship between the National Park Service at Fort Clatsop National Memorial and WSPRC at Cape Disappointment State Park, Fort Columbia State Park, and Station Camp State Park. The thematic partnership would also be extended to WSDOT at the Megler Safety Rest Area and to Oregon State Parks at Fort Stevens State Park and Ecola State Park to interpret and preserve sites associated with the Lewis and Clark expedition (WSPRC 2003).

- North Jetty Repairs. The North Jetty is maintained by the Corps, and this area is experiencing coastal erosion and undercut conditions due to storm surges and high tides. The Corps is currently evaluating the types of repairs needed, and the jetty rehabilitation actions are expected to take place within the next 5 to 10 years (WSPRC 2003).
- Private Land Development. Two sizeable private developments are located adjacent to the Park. These developments include Discovery Heights, a 300-acre resort development, and the Realvest property, which is also proposed for resort development. These private properties are within the City of Ilwaco's jurisdiction, and Phase 1 of the Discovery Heights Resort Development was approved for construction in 2003. Discovery Heights is situated adjacent to the northern boundary of the BLM-owned portion of the Park, between the SR 100 Loop roads. The Realvest property is situated immediately north of Beard's Hollow between the Pacific Ocean and SR 100 Loop Road (WSPRC 2003).

When combined with the other past, present, and future planned actions, the proposed utility improvements would contribute to cumulative effects because this action provides additional capacity to the Park's utility infrastructure to meet current and projected visitation and demand. For brown pelicans, these potentially adverse effects would be minor in intensity, of short duration, and would be diminished somewhat based on the fact that the Park Master Plan contains policies that protect natural areas. Additionally, separate site-specific environmental analysis would be required for future actions that result in potential adverse effects to federally protected species.

5.1.3 Interdependent and Interrelated Effects

Interdependent actions have no independent utility apart from the proposed action (50 CFR §402.02). Interrelated actions are part of a larger action and depend on the larger action for their justification (50 CFR §402.02).

Infrastructure improvements proposed in Phase 2 would constitute interdependent actions. Phase 1 activities were evaluated in a separate BA, as proposed activities are removed in both space and time from those occurring during Phase 2. As such, evaluation of Phase 2 activities focuses on a different project area and action area, and Phase 2 activities would affect resources in a different manner than those identified in Phase 1.

All actions proposed under Phase 2 are consistent with long-range Park planning efforts addressed in the Cape Disappointment State Park Master Plan (WSPRC 2004). As such, the Master Plan can be considered an interrelated action to the project under evaluation. Sewer, water, and electrical upgrades were designed with future Park expansion taken into consideration. However, final determination of the location(s) and timing of Park expansion are being evaluated in the ongoing Master Planning process. Under the Park Master Plan, total campsites will be reduced in number from 250 to 200, decreasing long-term park visitation capacity. Any Park expansion will be permitted independently of the actions proposed under Phase 2.

5.1.4 Determination

Because of potential noise disturbance impacts associated with construction of Phase 2 and proposed BMPs to address such disturbances specific to the project area, the proposed project **may affect, but is not likely to adversely affect** wintering and migrating brown pelicans in the project action area.

5.2 EFFECTS ANALYSIS FOR MARBLED MURRELETS

5.2.1 Direct and Indirect Effects

The proposed project has no identified direct effects on marbled murrelets. No suitable habitat associated with identified species will be modified or adversely affected as a result of the proposed action.

Indirect effects upon nesting marbled murrelets would potentially include noise disturbance and attraction of predatory species. WSPRC data do not indicate any known occupancy sites of marbled murrelets within 0.5 mile of the project action area. Suitable and high-quality habitat is found within 0.25 mile of the proposed project alignment. Noise disturbance of occupied or suitable nesting habitat within 0.25 mile of the project alignment is limited to construction activities occurring near the Park entrance and along the eastern end of McKenzie Head Road. Construction activities are scheduled to begin in September 2004 and again in September 2005, after the critical nesting season. Potentially adverse noise disturbances related to construction activities include excavation and truck traffic. To minimize potential impacts, construction activities will be extremely short in duration, and all equipment will have additional mufflers installed to further reduce noise disturbance.

Construction projects frequently attract scavenger species such as crows to project sites. Crows in particular, and other species, are known to harass marbled murrelets, resulting in decreased breeding success, nest abandonment, and direct mortality. Food waste and other trash discarded by construction crews have been identified as one mechanism by which scavenger species are drawn to construction sites. Strict trash removal BMPs will be established and agreed to by project contractors to minimize the potential for scavenger harassment.

5.2.2 Cumulative Effects

When combined with the other past, present, and future planned actions, the proposed utility improvements would contribute to cumulative effects because this action provides additional capacity to the Park's utility infrastructure to meet current and projected visitation and demand. For marbled murrelets, these potentially adverse effects would be minor in intensity, of short duration, and would be diminished somewhat based on the fact that the Park Master Plan contains policies that protect natural areas, such as the Natural Forest Area. Additionally, separate site-specific environmental analysis would be required for future actions that result in potential adverse effects to federally protected species.

5.2.3 Interdependent and Interrelated Effects

Interdependent and interrelated effects associated with the proposed Phase 2 construction improvements and the Cape Disappointment State Park Master Plan center on increased visitor access to the Park facilities and general environs. The likely result of increased Park usage associated with the Lewis and Clark bicentennial could include increases in disturbance related to human presence. Human presence can result in species displacement due to noise, physical presence, or attraction of nuisance species.

The Cape Disappointment State Park Master Plan will address some of these concerns by addressing Park expansion and development within the context of natural resource sensitivity and preservation. Under the Park Master Plan, total campsites will be reduced in number from 250 to 200, decreasing long-term park visitation capacity. Further, electrical improvements in the Park may reduce the number of power outages, thereby reducing noise disturbance associated with emergency generator operation. Also, waste management within the Park is designed to reduce scavenger species, which may harass murrelets.

While projected increases in Park use are not quantifiable in relation to their potential impact on murrelets, it is likely that increased visitor use of the park will constitute a slight long-term adverse effect on murrelets and murrelet habitat located near visitor facilities, such as trails, campground areas, roads, and permanent structures.

5.2.4 Determination

Because of potential noise disturbance impacts associated with construction of Phase 2 and proposed BMPs to address such disturbances specific to the project area, any effects on marbled murrelets that may occur would be minimal, would have no measurable effect on the survival of the species, and should not approach the level of take. As such, the proposed project **may affect, but is not likely to adversely affect** marbled murrelets in the project action area.

5.3 EFFECTS ANALYSIS FOR BALD EAGLES

5.3.1 Direct and Indirect Effects

The proposed project has no identified direct effects on bald eagles. No suitable habitat associated with bald eagles will be modified or adversely affected as a result of the proposed action.

Indirect effects upon wintering bald eagles would potentially include noise disturbance to bald eagles and disturbance to waterfowl prey during construction activities. While bald eagles will vary in their sensitivity to disturbance, they generally will nest, forage, and winter away from human disturbance. The proposed project may have an indirect effect on nesting bald eagles, as there is one known historic nest within 0.25 mile of the proposed project alignment. The Bald Eagle Recovery Plan regulates activities during the January 1 to August 15 eagle breeding season if a project occurs within 0.5 mile of a nest and is in line of sight, or within 0.25 mile of a nest and is not in line of sight (USFWS 1986). The project area is obscured from line of sight to the nests by vegetation and topography.

Noise disturbance to nest sites within 0.5 mile of the project alignment is limited to construction activities occurring near the Park entrance. Construction activities are scheduled to begin in September 2004 and again in September 2005, after the critical nesting season. Potentially adverse noise disturbances related to construction activities include excavation, road paving, and truck traffic. To minimize potential impacts, construction activities will be of short duration, and all equipment will have additional mufflers installed to further reduce noise disturbance.

The Park campground will be closed the entire month of October to accelerate the construction process and ensure completion by December 31, or January 31 at the latest with USFWS approval. It is concluded that noise disturbance originating from construction activities near O'Neil Lake and the Park entrance will not constitute an adverse effect on nesting bald eagles since construction will be outside the critical breeding season.

The USFWS indicates that wintering bald eagles may be present in the project vicinity; however, noise impacts would be limited to the project action area, thus affecting a very small area of bald eagle or prey habitat in the greater Cape Disappointment area. Noise disturbance from construction activities could potentially displace foraging bald eagles or prey species from O'Neil Lake. Such disturbance would be short in duration. Further, O'Neil Lake is subject to habitual tourist-related disturbances, which may exceed noise generated from the proposed construction. Given the widespread availability of alternate foraging habitat along the Columbia River for waterfowl, the continued availability of other prey (fish, seabirds) in the vicinity, and the short duration of construction proposed to occur within the wintering season, the impact on bald eagles is expected to be negligible.

5.3.2 Cumulative Effects

When combined with the other past, present, and future planned actions, the proposed utility improvements would contribute to cumulative effects because this action provides additional capacity to the Park's utility infrastructure to meet current and projected visitation and demand. For bald eagles, these potentially adverse effects would be minor in intensity, of short duration, and would be diminished somewhat based on the fact that the Park Master Plan contains policies that protect natural areas, such as the Natural Forest Area. Additionally, separate site-specific environmental analysis would be required for future actions that result in potential adverse effects to federally protected species.

5.3.3 Interdependent and Interrelated Effects

Interdependent and interrelated effects associated with the proposed Phase 2 construction improvements and the Cape Disappointment State Park Master Plan center on increased visitor access to the Park facilities and general environs. The likely result of increased Park usage could include increases in disturbance related to human presence. Human presence can result in species displacement due to noise, physical presence, or attraction of nuisance species.

The Cape Disappointment State Park Master Plan will address some of these concerns by addressing Park expansion and development within the context of natural resource sensitivity and preservation. Under the Park Master Plan, total campsites will be reduced in number from 250 to 200, decreasing long-term park visitation capacity. Further, electrical improvements in the Park may reduce the use of RV generators, thereby reducing noise disturbance. Also, waste management within the Park is designed to reduce scavenger species, which may harass bald eagles.

While projected increases in Park use are not quantifiable in relation to their potential impact on bald eagles, some elements of the proposed improvements may decrease the more serious disturbances already existing on site. Both Phase 1 and Phase 2 actions were designed to avoid the critical bald eagle nesting/breeding season to minimize project impacts to bald eagles and their habitat. Further, the proximity of at least one bald eagle nest to Park campground facilities indicates a measure of tolerance to disturbances arising from Park use.

5.3.4 Determination

Because of potential noise disturbance impacts associated with construction of Phase 2 and proposed BMPs to address such disturbances specific to the project area, the proposed project **may affect, but is not likely to adversely affect** wintering or migratory bald eagles in the project action area.

6. CONSERVATION MEASURES

Conservation measures include those efforts to minimize and avoid potential impacts to listed species and their associated habitats in the project area. Conservation measures include techniques included in the project design and proposed for implementation in project construction, maintenance, and management.

6.1 SUMMARY OF PROJECT IMPACTS

6.1.1 Avoidable Impacts

There are no direct impacts to listed species anticipated from construction and implementation of Phase 2. Foraging habitat for brown pelicans, bald eagles, and marbled murrelets and nesting habitat for bald eagles and marbled murrelets will not be altered or degraded. Indirect impacts include potential disturbance of listed species from construction-related noise. Suitable murrelet nesting habitat occurs within 0.25 mile of the project area, but is shielded by vegetation and topography. One bald eagle nest occurs within 0.25 mile of the project area and was last active during 2001. Timing construction activities to avoid the critical nesting periods for marbled murrelets and bald eagles will significantly reduce the potential for disturbing nesting birds. The selected route for the proposed utility upgrades avoids important foraging areas for listed species.

Implementing the conservation measures described below during construction will substantially reduce the risk of harm to brown pelicans, bald eagles, marbled murrelets, and their habitats.

6.1.2 Unavoidable Impacts

There are no unavoidable impacts anticipated to listed species from construction of the proposed Phase 2 improvements. The project area and action area do not include high-quality habitat for listed species, and project construction and implementation is not expected to impact habitat for these species. Where construction-related noise may affect waterfowl or foraging bald eagles at O'Neil Lake, the period of disturbance is anticipated to be of short duration and should not pose a risk to the health of listed species or their prey.

6.2 MEASURES TO AVOID IMPACTS

Incorporating conservation measures into a proposed action is done to avoid, minimize, rectify, or compensate for impacts to species and critical habitat. WSPRC and Parametrix have designed the proposed action to incorporate conservation measures during construction as listed below. The following measures will be incorporated into project construction and operation to minimize and avoid potential project impacts:

- Project construction will occur outside the critical nesting/breeding season for marbled murrelets (April 1 to September 15) and bald eagles (January 1 to August 15). Construction will be limited to occur from September 15 through December 31 for both 2004 and 2005.
- With approval from USFWS and development of a bald eagle monitoring plan, construction may be continued into and during the month of January 2005.
- The Park campground will be closed during October 2004 to permit construction activities to proceed without hindrance from additional traffic in the project area. The closure will ensure the

completion of the construction activities within the work window, avoiding the critical breeding seasons for bald eagles and marbled murrelets.

- All construction machinery shall be equipped with noise-attenuating mufflers.
- Strict trash removal BMPs will be established and followed by project contractors to minimize attracting scavengers to work areas.
- An erosion and sediment control plan will be developed prior to construction and implemented during construction to minimize impacts to foraging habitats and prey used by listed species.
- The contractor shall develop and implement an HMMP, if needed.

7. REFERENCES

- Anthony, R.G. and F.B. Isaacs. 1989. Characteristics of bald eagle nest sites in Oregon. *Journal of Wildlife Management* 53:148-159.
- Csuti, B., A. Kimerling, T. O'Neil, M. Shaughnessy, E. Gaines, and M. Huso. 1997. *Atlas of Oregon Wildlife: Distribution, Habitat, and Natural History*. Oregon State University Press. Corvallis, Oregon.
- Franklin, J.F. and C.T. Dyrness. 1987. *Natural vegetation of Oregon and Washington*. Oregon State University Press, Corvallis, Oregon. 452 pp.
- Hamer, T.E. 1990. Habitat relationships of marbled murrelets (*Brachyramphus marmoratus*) in western Washington. Washington Department of Wildlife.
- Mackey, D. 2004. Personal communications via email and telephone. Washington State Parks and Recreation Commission.
- Nelson, S.K. 1997. Marbled Murrelet (*Brachyramphus marmoratus*). In *The Birds of North America*, No. 276 (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, Pennsylvania and The American Ornithologists' Union, Washington, D.C.
- NOAA Fisheries. 2004. Summary of salmon and steelhead listings. Online version available at: <http://www.nwr.noaa.gov/1salmon/salmesa/pubs/1pgr.pdf>. Accessed July 15, 2004.
- OCFWRU (Oregon Cooperative Fish and Wildlife Research Unit). 2004. Oregon Cooperative Fish and Wildlife Research Unit data on bald eagle nest location and activity 1999-2003, as reported by cooperating state and federal agencies. Provided by Steve Helm, biologist, Army Corps of Engineers, August 03, 2004.
- Parametrix. 2003. Wetlands field reconnaissance by Parametrix biologist, Gail Shaloum. June 5, 2003. Cape Disappointment State Park, Washington.
- Parametrix. 2004. Wetlands field reconnaissance by Parametrix biologist, Brad Rawls. July 23, 2004. Cape Disappointment State Park, Washington.
- Ralph, C.J. 1994. Evidence of changes in populations of marbled murrelets in the Pacific Northwest. Pp. 286-292 in *A century of avifaunal change in western North America* (J.R. Jehl, Jr. and N.K. Johnson, eds.). *Stud. Avian Biol.* No. 15.
- Ralph, C.J. and S.L. Miller. 1995. Offshore population estimates of marbled murrelets in California. Pp. 353-360 in *Ecology and Conservation of the Marbled Murrelet* (C.J. Ralph, G.L. Hunt, M.G. Rapheal, and J.F. Piatt, eds.). USDA General Technical Report PSW-GTR-152. Albany, California.
- Saul, I. 2003. Technical Memorandum Fort Canby State Park Lagoon Biosolids Testing Results. Fort Canby State Park Infrastructure Improvements - Phase 2. Parametrix. Portland, Oregon.
- Sayce, K. 2004. Plant Habitat Survey Cape Disappointment State Park. ShoreBank Pacific, Ilwaco, Washington.

- Smith, M.R., W. Mattocks, Jr., and K.M. Cassidy. 1997. Breeding Birds of Washington State. Volume 4 Washington State Gap Analysis – Final Report. K. M. Cassidy, C.E. Grue, M.R. Smith, and K.M. Dvornich (eds.). Seattle Audubon Society Publications in Zoology No. 1, Seattle, Washington. 538 pp.
- Speich, S.M, T.R. Wahl, and D.A. Manuwal. 1992. The numbers of Marbled Murrelet in Washington marine waters. Pp. 48-60 *in* Status and conservation of the Marbled Murrelet in North America (H.R. Carter and M.L. Morrison, eds.). Proc. West. Found. Vertebrate Zoology 5.
- Stalmaster, M.V. 1980. Management strategies for wintering bald eagles in the Pacific Northwest. pp. 49-67 *in*: Proceedings of the Washington Bald Eagle Symposium. R.L. Knight, G.T. Allen, M.V. Stalmaster, and C.W. Servheen (eds.). The Nature Conservancy, Seattle, Washington.
- Stalmaster, M.V. 1983. An energetics simulation model for managing wintering bald eagles. *Journal of Wildlife Management*. 47:349-359.
- Stalmaster, M.V. 1987. The bald eagle. Universe Books, New York, New York. 227 pp.
- Stalmaster, M.V. and J.R. Newman. 1979. Perch-site preferences of wintering bald eagles in northwest Washington. *Journal of Wildlife Management* 43:221-224.
- TNC (The Nature Conservancy). 2000. Wings Info Resources/Species Information and Management Abstracts: Brown Pelican (*Pelecanus occidentalis*). Available at: <http://www.tnc.org/wings/wingsresource/brpe.html>.
- USFWS (U.S. Fish and Wildlife Service). 1985. Endangered and threatened wildlife and plants; removal of the brown pelican in the southeastern United States from the list of endangered and threatened wildlife. 50 FR 4938.
- USFWS (U.S. Fish and Wildlife Service). 1986. Recovery Plan for the Pacific Bald Eagle. U.S. Fish and Wildlife Service. Portland, Oregon. 160 pp.
- USFWS (U.S. Fish and Wildlife Service). 1996. Endangered and threatened wildlife and plants; final designation of critical habitat for the marbled murrelet; Final Rule May 24, 1996. U.S. Fish and Wildlife Service. 61 FR 26255.
- USFWS (U.S. Fish and Wildlife Service). 1999. Endangered and threatened wildlife and plants; Proposed rule to remove the Bald Eagle in the lower 48 states from the list of endangered and threatened wildlife; Proposed Rule July 6, 1999. U.S. Fish and Wildlife Service. 64 FR 36453.
- USFWS (U.S. Fish and Wildlife Service). 2000. Brown Pelican (*Pelecanus occidentalis occidentalis*) Wildlife Fact Sheet. Available at: http://species.USFWS.gov/bio_plcn.html.
- USFWS (U.S. Fish and Wildlife Service). 2004. Listed and proposed endangered and threatened species, critical habitat, candidate species, and species of concern that may occur in Western Washington (FWS REF: 1-3-04-SP-0983). Letter report, June 2, 2004. Western Washington Fish and Wildlife Office, Olympia, Washington.
- Washington Natural Heritage Program. 2004. Letter report, data query dated June 2004. Washington Natural Heritage Program, Olympia.

WDFW (Washington Department of Fish and Wildlife). 2001. Washington State status report for the bald eagle. Washington Department of Fish and Wildlife, Wildlife Program, Olympia, Washington.

WDFW (Washington Department of Fish and Wildlife). 2002. Priority habitats and species data, Cape Disappointment quadrangle. WDFW Habitat Program, Olympia, Washington.

WDFW (Washington Department of Fish and Wildlife). 2004. Priority habitats and species data, Cape Disappointment quadrangle, May 24, 2004. WDFW Habitat Program, Olympia, Washington.

WSPRC (Washington State Parks and Recreation Commission). 2003. Draft Environmental Impact Statement dated October 2003.

WSPRC (Washington State Parks and Recreation Commission). 2004. Cape Disappointment State Park Master Plan. Final Environment Impact Statement dated February 2004. Ilwaco, Washington.

ATTACHMENT A

Protected Species Documentation



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Western Washington Fish and Wildlife Office
510 Desmond Drive SE, Suite 102
Lacey, Washington 98503
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JUN 8 2004

Dear Species List Requester:

We (U.S. Fish and Wildlife Service) are providing the information you requested to assist your determination of possible impacts of a proposed project to species of Federal concern. Attachment A includes the listed threatened and endangered species, species proposed for listing, candidate species, and/or species of concern that may be within the area of your proposed project.

Any Federal agency, currently or in the future, that provides funding, permitting, licensing, or other authorization for this project must assure that its responsibilities under section 7(a)(2) of the Endangered Species Act of 1973, as amended (Act), are met. Attachment B outlines the responsibilities of Federal agencies for consulting or conferencing with us.

If both listed and proposed species occur in the vicinity of a project that meets the requirements of a major Federal action (i.e., "major construction activity"), impacts to both listed and proposed species must be considered in a biological assessment (BA) (section 7(c); see Attachment B). Although the Federal agency is not required, under section 7(c), to address impacts to proposed species if listed species are not known to occur in the project area, it may be in the Federal agency's best interest to address impacts to proposed species. The listing process may be completed within a year, and information gathered on a proposed species could be used to address consultation needs should the species be listed. However, if the proposed action is likely to jeopardize the continued existence of a proposed species, or result in the destruction or adverse modification of proposed critical habitat, a formal conference with us is required by the Act (section 7(a)(4)). The results of the BA will determine if conferencing is required.

The Federal agency is responsible for making a determination of the effects of the project on listed species and/or critical habitat. For a Federal agency determination that a listed species or critical habitat is likely to be affected (adversely or beneficially) by the project, you should request section 7 consultation through this office. For a "not likely to adversely affect" determination, you should request our concurrence through the informal consultation process.

Candidate species and species of concern are those species whose conservation status is of concern to us, but for which additional information is needed. Candidate species are included as an advance notice to Federal agencies of species that may be proposed and listed in the future. Conservation measures for candidate species and species of concern are voluntary but recommended. Protection provided to these species now may preclude possible listing in the future.

For other federally listed species that may occur in the vicinity of your project, contact the National Marine Fisheries Service (NOAA Fisheries) at (360) 753-9530 to request a list of species under their jurisdiction. For wetland permit requirements, contact the Seattle District of the U.S. Army Corps of Engineers for Federal permit requirements and the Washington State Department of Ecology for State permit requirements.

Thank you for your assistance in protecting listed threatened and endangered species and other species of Federal concern. If you have additional questions, please contact Tami Black at (360) 753-4322 or Yvonne Dettlaff at (360) 753-9582.

Sincerely,

A handwritten signature in cursive script that reads "L. Karola Owens". The signature is written in dark ink and is positioned above a horizontal line.

for Ken S. Berg, Manager
Western Washington Fish and Wildlife Office

Enclosure(s)

**LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES,
CRITICAL HABITAT, CANDIDATE SPECIES, AND SPECIES OF CONCERN
THAT MAY OCCUR IN WESTERN WASHINGTON**

**PREPARED BY
THE U.S. FISH AND WILDLIFE SERVICE
WESTERN WASHINGTON FISH AND WILDLIFE OFFICE**

(Revised May 5, 2004)

**FWS REF: 1-3-04-SP-0983
FT. CANBY STATE PARK UTILITIES IMPROVEMENTS PROJECT**

PACIFIC COUNTY

LISTED

Wintering bald eagles occur in the county. Wintering activities occur from October 31 through March 31.

There are nine bald eagle winter communal night roosts located in the county.

There are 25 bald eagle nesting territories located in the county. Nesting activities occur from about January 1 through August 15.

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

Bull trout (*Salvelinus confluentus*) occur in the county.

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

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

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

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

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

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

Oregon silverspot butterflies (*Speyeria zerene hippolyta*) occur in the county.

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

Western snowy plover (*Charadrius alexandrinus nivosus*) occur in the county.

Major concerns that should be addressed in your biological assessment of the project impacts to listed species include:

1. Level of use of the project area by listed species.
2. Effect of the project on listed species' primary food stocks, prey species, and foraging areas in all areas influenced by the project.
3. Impacts from project construction (*i.e.*, habitat loss, increased noise levels, increased human activity) that may result in disturbance to listed species and/or their avoidance of the project area.

CRITICAL HABITAT

Critical habitat for the marbled murrelet has been designated in Pacific County.

Critical habitat for the western snowy plover has been designated in Pacific County.

PROPOSED

Critical habitat for bull trout (Columbia River distinct population segment) has been proposed in Pacific County.

CANDIDATE

Streaked horned lark (*Eremophila alpestris strigata*)

SPECIES OF CONCERN

Aleutian Canada goose (*Branta canadensis leucopareia*)

Coastal cutthroat trout (*Oncorhynchus clarki clarki*)

Columbia torrent salamander (*Rhyacotriton kezeri*)

Long-eared myotis (*Myotis evotis*)

Long-legged myotis (*Myotis volans*)

Makah's copper (butterfly) (*Lycaena mariposa charlottensis*)

Newcomb's littorine snail (*Algamorda newcombiana*)

SPECIES OF CONCERN (Pacific County, Cont'd)

Northern goshawk (*Accipiter gentilis*)

Olive-sided flycatcher (*Contopus cooperi*)

Pacific lamprey (*Lampetra tridentata*)

Pacific Townsend's big-eared bat (*Corynorhinus townsendii townsendii*)

Peregrine falcon (*Falco peregrinus*)

River lamprey (*Lampetra ayresi*)

Tailed frog (*Ascaphus truei*)

Van Dyke's salamander (*Plethodon vandykei*)

Western toad (*Bufo boreas*)

Dodecatheon austrofrigidum (frigid shootingstar)

Filipendula occidentalis (queen-of-the-forest)

Sanicula arctopoides (footsteps-of-spring; bear's foot sanicle)



June 4, 2004

Patricia Wifler
Parametrix Inc
5808 Lake Washington Blvd NE – Ste 200
Kirkland WA 98033-7350

**SUBJECT: Fort Canby State Park Utility Improvements Project, No. 236-2542-007
(02/033) (T09N R11W S04,05,08,09; T10N R11W S32)**

We've searched the Natural Heritage Information System for information on rare plants and high quality native wetland and terrestrial ecosystems in the vicinity of your project. A summary of information is enclosed. In your planning, please consider protection of these significant natural features. Please contact us for consultation on projects that may have an effect on these rare species or high quality ecosystems.

The information provided by the Washington Natural Heritage Program is based solely on existing information in the database. There may be significant natural features in your study area of which we are not aware. These data are being provided to you for informational and planning purposes only - the Natural Heritage Program has no regulatory authority. This information is for your use only for environmental assessment and is not to be redistributed. Others interested in this information should be directed to contact the Natural Heritage Program.

The Washington Natural Heritage Program is responsible for information on the state's rare plants as well as high quality ecosystems. For information on animal species of concern, please contact Priority Habitats and Species, Washington Department of Fish and Wildlife, 600 Capitol Way N, Olympia WA 98501-1091, or by phone (360) 902-2543.

Please visit our internet website at <http://www.dnr.wa.gov/nhp> for more information. Lists of rare plants and their status, as well as rare plant fact sheets, are available for download from the site. Please feel free to call me at (360) 902-1667 if you have any questions, or by e-mail at sandra.moody@wadnr.gov.

Sincerely,

Sandy Swope Moody, Environmental Review Coordinator
Washington Natural Heritage Program

Enclosures

Asset Management & Protection Division, PO Box 47014, Olympia WA 98504-7014
FAX 360-902-1789

WASHINGTON NATURAL HERITAGE PROGRAM

CRITERIA FOR HIGH-QUALITY WETLAND ECOSYSTEMS

The WNHP does not maintain a comprehensive inventory of all wetlands in the state. The database includes information only on those areas that have been surveyed by the program scientists and found to be relatively undisturbed high-quality wetlands. For wetlands included in the database, the physical characteristics, biota, ecosystem functions, processes and settings are essentially natural. For example, to be included in the WNHP database, a freshwater wetland site must meet these six criteria:

1. A native wetland ecosystem type (element) considered important for preservation within the state.
2. Little or no human-caused changes to wetland topography or soils.
3. No human caused changes to hydrology of the wetland, or the wetland appears to have recovered from any changes.
4. Few or no exotic plant species.
5. Little human-caused disturbance of native vegetation, or vegetation has recovered from past disturbance.
6. No major water quality problems.

Criteria 2-6 are weighted based on the amount of disturbance present in all known examples of a given wetland type. Thus a disturbed wetland may be included in the WNHP Information System if it has one of the highest quality examples remaining of a particular wetland type. On the other hand, an equally disturbed site may not be included in the WNHP Information System if it contains a wetland type which has many other undisturbed examples. A severe degree of disturbance would exclude a site from being entered into the WNHP Information System, even if no better examples of that wetland type exist.

CRITERIA FOR HIGH-QUALITY TERRESTRIAL ECOSYSTEMS

Occurrences of terrestrial ecosystem types are determined by the characteristics of each individual ecosystem type. Ecological quality refers to both the ecological condition and the ecological viability of a particular community.

Condition is determined by relative importance of native versus non-native species, extent and nature of human-caused disturbance, and how well the occurrence represents the ecosystem type definition. Viability is determined by size of the area and landscape setting.

Minimum criteria for an occurrence of a terrestrial ecosystem:

1. Native plants dominate the site: tree layers composed of only native species, at least 80 percent of the shrub and herbaceous layers are composed of native plants. Non-native plants are generally insignificant.
2. Little or insignificant disturbance to vegetation by logging, conversion to agriculture, heavy grazing, residential development, or other recent human extractive activities that alter the ecosystem processes.
3. Large enough for minimal viability and ecological function: at least 100 acres for forests in the montane provinces and at least four average tree heights wide at its narrowest width, at least 20 acres for forest in the Puget Lowlands, and at least 10 acres for native grasslands.

The degree to which these criteria are applied to a site depends on characteristics of the particular ecosystem types present. Some ecosystem types are found almost exclusively as small patches, perhaps in areas smaller than in criterion 3. In this case, meeting criteria 1 and 2 would be sufficient. Large but moderately disturbed ecosystems representative of types that have been altered throughout their range because of various land uses may need only meet criteria 1 and 3.

WASHINGTON NATURAL HERITAGE INFORMATION SYSTEM
 ENDANGERED, THREATENED AND SENSITIVE PLANTS &
 HIGH QUALITY WETLAND ECOSYSTEMS AND HIGH QUALITY TERRESTRIAL ECOSYSTEMS
 IN THE VICINITY OF FORT CANBY STATE PARK UTILITY IMPROVEMENTS PROJECT
 REQUESTED BY PARAMETRIX INC

Data Current as of June 2004
 Page 1 of 1

<u>TOWNSHIP, RANGE AND SECTION</u>	<u>ELEMENT NAME</u>	<u>STATE STATUS</u>	<u>FEDERAL STATUS</u>
T10N R11W S32 NWofSE	<i>Hydrocotyle ranunculoides</i> (Floating water pennywort)	S	
T10N R11W S32 SWofNW	<i>Baccharis pilularis</i> (Coyotebush)	T	
T10N R11W S32	<i>Poa unilateralis</i> (Ocean-bluff bluegrass)	T	
T09N R11W S05 NW			
S06			
S08 NE			
S09 NWofSW			
T10N R11W S32 S2	PICEA SITCHENSIS / GAULTHERIA SHALLON		
T09N R11W S05	FOREST		
S04 W2	(SITKA SPRUCE / SALAL)		
S09 NW			
T09N R11W S05 S2	<i>Hydrocotyle ranunculoides</i>	S	
S08 N2	(Floating water pennywort)		
S09 W2ofNW			
T09N R11W S04 W2	SANDY, LOW SALINITY, LOW MARSH		
S09 N2	CAREX LYNGBYEI HERBACEOUS VEGETATION (LYNGBY'S SEDGE)		
	SCHOENOPLECTUS (AMERICANUS, PUNGENS) TIDAL HERBACEOUS VEGETATION (THREE-SQUARE BULRUSH)		

WASHINGTON NATURAL HERITAGE INFORMATION SYSTEM
Rare Plant Species

FEDERAL STATUS DEFINITIONS- (Note: Federally listed plant species are subject to the US Endangered Species Act.)

LE = Listed Endangered: Any taxon that is in danger of extinction throughout all or a significant portion of its range and that has been formally listed as such in the Federal Register under the Federal Endangered Species Act.

LT = Listed Threatened: Any taxon that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and that has been formally listed as such in the Federal Register under the Federal Endangered Species Act.

PE = Proposed Endangered: Any taxon that is in danger of extinction throughout all or a significant portion of its range and that has been proposed for listing as such in the Federal Register under the Federal Endangered Species Act.

PT = Proposed Threatened: Any taxon that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and that has been proposed for listing as such in the Federal Register under the Federal Endangered Species Act.

C = Candidate species: Taxa for which current information indicates the probable appropriateness of listing as Endangered or Threatened and that has been published in the Federal Register as a candidate for listing under the Federal Endangered Species Act.

SC = Species of Concern: Species whose conservation standing is of concern but for which status information is still needed. Species of concern lists are not published in the Federal Register.

STATE STATUS DEFINITIONS- (Note: The state ESA does not include provisions to list or protect rare plant species – the state rare plant list is advisory only.)

E = Endangered: Any taxon in danger of becoming extinct or extirpated from Washington within the foreseeable future if factors contributing to its decline continue. Populations of these taxa are at critically low levels or their habitats have been degraded or depleted to a significant degree.

T = Threatened: Any taxon likely to become Endangered in Washington within the foreseeable future if factors contributing to its population decline or habitat degradation or loss continue.

S = Sensitive: Any taxon that is vulnerable or declining and could become Endangered or Threatened in the state without active management or removal of threats.

X = Possibly Extinct or Extirpated from Washington: Based on recent field searches, a number of plant taxa are considered to be possibly extinct or extirpated from Washington. Taxa in this group are all high priorities for field investigations. If found, they will be assigned one of the above status categories.

R = Review: Taxa of potential concern, but for which no status has yet been assigned.
Group 1 = Taxa in need of additional field work before a status can be assigned.
Group 2 = Taxa with unresolved taxonomic questions.

W = Watch: Taxa more abundant and/or less threatened in Washington than previously assumed.

Non-Vascular Plant:

P = Priority: At this time, there is insufficient information to assign a statewide status to the non-vascular taxa. For now, the lichen and macrofungi lists have been divided into two priority groups based on criteria of occurrence pattern, vulnerability, threats, degree of protection, and taxonomy.



State of Washington
DEPARTMENT OF FISH AND WILDLIFE

Mailing Address: 600 Capitol Way N • Olympia, WA 98501-1091 • (360) 902-2200, TDD (360) 902-2207
Main Office Location: Natural Resources Building • 1111 Washington Street SE • Olympia, WA

Date: MAY 24 2004

Dear Habitats and Species Requester:

Enclosed are the habitats and species products you requested from the Washington Department of Fish and Wildlife (WDFW). This package may also contain documentation to help you understand and use these products.

These products only include information that WDFW maintains in a computer database. They are not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife, nor are they designed to provide you with guidance on interpreting this information and determining how to proceed in consideration of fish and wildlife. These products only document the location of important fish and wildlife resources to the best of our knowledge. It is important to note that habitats or species may occur on the ground in areas not currently known to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site-specific surveys are frequently necessary to rule out the presence of priority habitats or species.

Your project may require further field inspection or you may need to contact our field biologists or others in WDFW to assist you in interpreting and applying this information. Generally, for assistance on a specific project, you should contact the WDFW Habitat Program Manager for your county and ask for the area habitat biologist for your project area. Refer to the enclosed directory for those contacts.

Please note that sections potentially impacted by spotted owl management concerns are displayed on the 1:24,000 scale standard map products. If specific details on spotted owl site centers are required they must be requested separately.

These products are designed for users external to the forest practice permit process and as such, does not reflect all the information pertinent to forest practice review. The Forest Practice Rules adopted August 22, 1997 by the Forest Practice Board and administered by the Washington Department of Natural Resources require forest practice applications to be screened against marbled murrelet detection areas and detection sections. Marbled murrelet detection locations are included in the standard priority habitats and species products, but the detection areas and detection sections are not included. If your project is affected by Forest Practice Regulations, you should specially request murrelet detection areas.

WDFW updates this information as additional data become available. Because fish and wildlife species are mobile and because habitats and species information changes, project reviews for fish and wildlife should not rest solely on mapped information. Instead, they should also consider new information gathered from current field investigations. Remember, habitats and species information can only show that a species or habitat type is present, they cannot show that a species or habitat type is not present. These products should not be used for future projects. Please obtain updates rather than use outdated information.

Because of the high volume of requests for information that WDFW receives, we need to charge for these products to recover some of our costs. Enclosed is an invoice itemizing the costs for your request and instructions for submitting payment.

Please note that sensitive information (e.g., threatened and/or endangered species) may be included in this request. These species are vulnerable to disturbances and harassment. In order to protect the viability of these species we request that you not disseminate the information as to their whereabouts. Please refer to these species presence in general terms. For example: "A Peregrine Falcon is located within two miles of the project area".

If your request required a Sensitive Fish and Wildlife Information Release Agreement and you or your organization has one on file, please refer to that document for conditions regarding release of this information.

For more information on WDFW you may visit our web site www.wdfw.wa.gov or visit the Priority Habitats and Species site at www.wdfw.wa.gov/hab/phspage.htm .

For information on the state's endangered, threatened, and sensitive plants as well as high quality wetland and terrestrial ecosystems, please contact the Washington Department of Natural Resources, Natural Heritage Program at PO Box 47014, Olympia Washington 98504-7014, by phone (360) 902-1667 or visit the web site at www.dnr.wa.gov/nhp .

If you have any questions or problems with the information you received please call me at (360) 902-2543 or fax (360) 902-2946.

Sincerely,



Lori Guggenmos, GIS Programmer
Priority Habitats and Species

Enclosures