WAC 197-11-970
DETERMINATION OF NONSIGNIFICANCE
CARTY LAKE SEDIMENT REMEDIATION
RIDGEFIELD, WA

Description of proposal:

Under a Consent Decree between the Department of Ecology (Ecology), Port of Ridgefield (Port), and City of Ridgefield, the Port proposes to remediate sediment in the southernmost end of Carty Lake. Carty Lake is located adjacent to the Pacific Wood Treating toxic cleanup site in Ridgefield, Washington, and is within the Ridgefield National Wildlife Refuge (Refuge). Operations of the former Pacific Wood Treating company, which operated from 1964 to 1993, contaminated sediments within the lake.

The remedial action will remove sediments containing chlorinated dibenzo-p-dioxins and dibenzofurans (dioxins), pentachlorophenol, arsenic, and chromium that are present above levels considered safe for ecological health. Ecology selected the remedial action in accordance with the Model Toxics Control Act, Washington Administrative Code 173-340-380. The design and details for the basis of the remedial action are provided in the Pacific Wood Treating Cleanup Action Plan from November 5, 2013.

The selected cleanup for Carty Lake includes mechanical sediment excavation, paired with the placement of a clean sand layer over the excavated areas to stabilize any loose sediments remaining after excavation. A temporary isolation barrier will be applied across the southern end of the lake and water remaining within the work area (if any) will be removed so that excavation work can occur under dry conditions, which will reduce the amount of dewatering needed for the excavated sediments. Sediments will be removed from the wetland area and placed in a previously constructed sediment handling area on adjacent Port property. Sediments will be dewatered if needed before loading into trucks for disposal at a permitted nonhazardous waste landfill.

There are currently two failing retaining walls to the south and to the east of the construction area, at the border between the Refuge and Port property. An earthen and rock embankment will be constructed to stabilize the failing walls. Following construction, the excavated area of the wetland and the newly placed earthen embankment will be planted with appropriate plant communities to restore native conditions. Mitigation for permanent impact to a maximum of 0.23 acres of wetlands beneath the new embankment will be undertaken through purchasing mitigation bank credits. In-water work will be performed under the U.S. Army Corps of Engineers, Nationwide Permit #38.

Work in the uplands adjacent to the lake and on the neighboring Port property will include creating a gravel ramp from the Port property to access the Carty Lake lowlands. The project also includes temporarily removing and stockpiling part of the soil cap that was placed on the Port property under previous cleanup work and constructing a staging and sediment handling area at that location. Construction and excavation work is planned for a two-month period in late summer 2014. Best management practices will be applied to all aspects of the project, under Ecology oversight, to protect water quality and prevent discharges of contaminated sediments or waters. The Port will obtain a construction stormwater general permit.

Project proponent:
Port of Ridgefield, under Consent Decree with Ecology (Consent Decree No. 13-2-03830-1, filed in Clark County Superior Court, November 5, 2013).

Location of proposal
Carty Lake, within Ridgefield National Wildlife Refuge, in the SE ¼, Section 48, Township 4 north, Range 1 west, and Port property located at 111 Division Street, Ridgefield, WA 98642.

Lead Agency
Washington State Department of Ecology

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030 (2)(c). A federal Environmental Assessment (EA) was prepared for this project by the U. S. Fish and Wildlife Service (USFWS) because of their role in permitting the action on refuge property. A Finding of No Significant Impact was issued by USFWS on 1/14/14. Ecology has adopted the Final Environmental Assessment, Proposed Carty Lake Remedial Action at Ridgefield National Wildlife Refuge (February 5, 2014) in lieu of preparing a SEPA checklist. Ecology's decision was made after review of the EA and other information developed under the cleanup consent decree. This information is on file with Ecology and available to the public on request.

Compliance with requirements of local and state permits
Because the project is being completed under a Model Toxics Control Act Consent Decree, the Port is not required to obtain local or state permits that would otherwise be required for this type of work. However, Ecology must ensure that the project meets the substantive requirements of local and state permits. The applicable local and state permits for which this project must meet substantive requirements are the Washington Department of Fish and Wildlife Hydraulic Project Approval, the City of Ridgefield Shoreline Management Permit, and the City of Ridgefield grading permit. Attachment A provides a description of the substantive requirements for each of these permits.

☐ There is no comment period for this DNS.

☐ This DNS is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on the DNS.

☒ This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal for 14 days from the date below. Comments must be submitted by April 25, 2014.

Comments should be directed to Joyce Mercuri, Site Manager, at Joyce.Mercuri@ecy.wa.gov, or P. O. Box 47775, Olympia, WA 98504-7775

Responsible official: Rebecca Lawson, P.E., LHG
Position/title: Section Manager, Toxic Cleanup Program/Southwest Regional Office
Phone: (360) 407-6241
Address: P.O. Box 47775, Olympia, WA 98504-7775

Date 4/10/14 Signature Rebecca S. Lawson

FINAL ENVIRONMENTAL ASSESSMENT
Proposed Carty Lake Remedial Action at Ridgefield National Wildlife Refuge

Prepared for

U.S. FISH AND WILDLIFE SERVICE

February 5, 2014

Project No. 9003.01.40

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CONTENTS

ACRONYMS AND ABBREVIATIONS

BMP	best management practice
CCP	Comprehensive Conservation Plan
EA	Environmental Assessment
Ecology	Washington State Department of Ecology
LPP	Land Protection Plan
LRIS	Lake River Industrial Site
MBCA	Migratory Bird Conservation Act of 1929
MBCC	Migratory Bird Conservation Commission
NEPA	National Environmental Policy Act
NWRS	National Wildlife Refuge System
Port	Port of Ridgefield
PWT	Pacific Wood Treating Co.
Refuge	Ridgefield National Wildlife Refuge
USFWS	U.S. Fish and Wildlife Service
WAC	Washington Administrative Code
WillametteCRA	Willamette Cultural Resources Associates, Ltd.

1 PURPOSE AND NEED FOR ACTION

1.1 Background

The Ridgefield National Wildlife Refuge (Refuge) is managed by the U.S. Fish and Wildlife Service (USFWS) under the U.S. Department of the Interior and is a unit of the National Wildlife Refuge System (NWRS).

The mission of the NWRS is:

> To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans. (National Wildlife System Administration Act of 1966, as amended [16 U.S.C. 668dd-668ee])

The goals of the NWRS are (601 FW 1):

- Conserve a diversity of fish, wildlife, and plants and their habitats, including species that are endangered and threatened with becoming endangered.
- Develop and maintain a network of habitats for migratory birds, anadromous and interjurisdictional fish, and marine mammal populations that is strategically distributed and carefully managed to meet important life history needs of these species across their ranges.
- Conserve those ecosystems, plant communities, wetlands of national or international significance, and landscapes and seascapes that are unique, rare, declining, or underrepresented in existing protection efforts.
- Provide and enhance opportunities to participate in compatible wildlife-dependent recreation (hunting, fishing, wildlife observation and photography, and environmental education and interpretations).
- Foster understanding and instill appreciation of the diversity and interconnectedness of fish, wildlife, and plants and their habitats.

RIDGEFIELD NATIONAL WILDLIFE REFUGE PURPOSES AND OBJECTIVES

On May 18, 1965, the Migratory Bird Conservation Commission (MBCC), under the authority of the Migratory Bird Treaty Act (MBCA) of 1929, approved the establishment of the Refuge and identified a 6,130.8-acre acquisition boundary for the Refuge. The stated purpose of the new Refuge, from Memorandum 1 of the MBCC, was to "provide wintering habitat for dusky Canada goose and other waterfowl." The memorandum also specified peak populations of migratory waterfowl, including 3,000 geese and 125,000 ducks, and required that the Refuge also provide for "breeding and migration use" for waterfowl.

The importance of the Refuge to dusky Canada geese was explicitly recognized in the Memorandum:

> The dusky Canada goose has an extremely limited winter range, concentrated along the Willamette and lower Columbia rivers. This subspecies is limited in numbers and requires protection and habitat to insure its continued existence.

The Memorandum also specifically mentioned that the Refuge would provide "substantial public shooting" and "[a] portion of the area in line with management findings, not to exceed 40 percent, will be considered for waterfowl hunting in the future." A number of tracts on the River S and Carty units, totaling 2483.03 acres, were acquired under this purchasing authority using Migratory Bird Conservation funds. Tract 21-I on the Carty Unit (24.99 acres) was also donated to the USFWS under authority of MBCA.

Subsequent MBCC memoranda (Memorandum 4, dated August 5, 1965; Memorandum 6, dated January 22, 1974; and Memorandum 8, dated February 5, 1985) reapproved the purchase price of remaining acreage within the acquisition boundary because of increased land values. In all of these memoranda, the justification for acquisition was "to provide resting and wintering area for migratory waterfowl." Tracts on the Roth Unit, totaling 510.4 acres, were acquired under this purchasing authority using Migratory Bird Conservation funds.

The Environmental Impact Statement, Land Acquisition—Zimmerly Tract for Addition to Ridgefield National Wildlife Refuge, Washington, dated March 1980, covered the acquisition of 1,610 acres of Bachelor Island within the approved refuge boundary. In the environmental impact statement, the USFWS stated that its objective for the acquisition was "to preclude uses that would be incompatible with wildlife use, such as industrial, commercial, or residential development, and to gain the capability to manage land for increased wildlife benefits." The environmental impact statement mentioned the following species and species groups as priorities for management: wintering waterfowl, bald eagle, sandhill crane, and great blue heron.

The Environmental Assessment (EA), Acquisition of Remaining Tracts, Ridgefield NWR, Clark County, Washington, dated December 1983, applied to 1,609.97 acres of Bachelor Island and 589.31 acres of the Ridgeport Dairy, the remaining tracts within the approved refuge boundary. In the EA, the USFWS stated that its objectives for the acquisition were:

> To preclude activities, such as industrial, commercial, and residential development, that would be incompatible with wildlife use; to prevent changes in the present pattern of land use; and to gain authority to manage the lands for increased wildlife benefits…To increase overwintering carrying capacity for dabbling ducks…To maintain current capacity in support of existing overwintering use by Canada geese, swans, and diving ducks.

The Land Protection Plan (LPP) for Proposed Acquisitions to the Ridgefield NWR, dated November 1984, covered the same areas identified in the December 1983 EA. The LPP mentioned the following species and groups as priorities for management: wintering waterfowl, bald eagle, sandhill crane, and great blue heron. In February 1985, Tracts 23 and 23a (1,609.97 acres) on Bachelor Island were purchased from Bachelor Island Ranch, Inc. with Migratory Bird Conservation funds.

The Preliminary Project Proposal (May 1989) and the Decision Document (Categorical Exclusion), Acquisition of Port of Vancouver Tract, Ridgefield NWR, Clark County, Washington (October, 1989) acquired 520.81 acres (Tract 12) of the Ridgeport Dairy Unit. Described in the Categorical Exclusion for the property transfer, the USFWS stated its objectives for the acquisition:

> To preclude human activities, such as land development and commercial enterprise (both with potential for altering habitat and polluting areas) that would be incompatible with wildlife use; to prevent major changes in the present pattern of wildlife use; and to manage added refuge land for increased wildlife benefits.

The Categorical Exclusion mentioned the following species and species groups as priorities for management:

> over 20 species of waterfowl wintering along the lower Columbia River including mallard, pintail, and blue winged teal…; six subspecies of Canada geese (Taverner's, dusky, western, cackling, lesser, and the endangered Aleutian [the Aleutian is no longer listed as an endangered species]); bald eagle; peregrine falcon; tundra swan; sandhill crane; shorebirds; marshbirds; and songbirds.

It should be noted that the status of some of these species has since changed (e.g., because of recovery, the Aleutian Canada goose has been removed from the federal list of threatened and endangered species) and the taxonomy of Canada geese has changed (e.g., the various types are now included in two different species). Tract 12 was purchased from the Port of Vancouver in March 1991, using Land and Water Conservation Funds, under the authority of the Fish and Wildlife Act of 1956. This is the only portion of the Refuge for which this funding source was used, all other tracts being purchased with Migratory Bird Conservation funds.

The MBCC's Memorandum 10, dated March 1995, approved the purchase price for 68.5 acres (Tracts 14 and 14a) of the Ridgeport Dairy Unit. The purpose of this acquisition was "to preserve a major wintering area for migratory waterfowl along the Pacific Coast."

These tracts were purchased on September 5, 1995, with Migratory Bird Conservation funds.

SUMMARY OF PURPOSES AND MANAGEMENT DIRECTION FOR REFUGE

The purposes for the Refuge have been identified in legal documentation establishing and adding to the Refuge's lands. Because the Refuge was originally established to preserve migration and wintering habitat for dusky Canada geese and other migratory waterfowl in the Pacific Flyway, this represents a priority for managing to achieve refuge purposes. In accordance with Director's Order No. 132, all lands acquired since the original establishment of the Refuge retain this purpose. Along with specifying management approaches for achieving refuge purposes specifically as they pertain to dusky Canada geese and other migratory waterfowl, legal documentation regarding adding lands to the Refuge identified managing habitats for the following species or species groups as management priorities:

- Bald eagle
- Sandhill crane

- Great blue heron
- Peregrine falcon
- Shorebirds
- Marshbirds
- Songbirds

The Refuge has developed a Comprehensive Conservation Plan (CCP), finalized in 2010, that provides a 15-year management plan that is consistent with USFWS policy and legal mandates. The CCP establishes operational goals and objectives for wildlife, habitat, and public use. The goals are to:

- Protect, maintain, and, where feasible, restore habitat for priority species, including dusky Canada geese and other waterfowl, and imperiled federal and state-listed species
- Meet Pacific Flyway management plan goals for dusky Canada geese and cackling geese
- Maintain high-quality green forage for geese in improved pastures and wet meadows, and increase cropland and wet meadow acreage
- Manage wetlands to increase productivity and reduce water pumping costs
- Manage invasive species and state- and county-listed noxious weeds
- Increase enhancement and restoration of bottomland forest and oak woodland habitats
- Conduct habitat assessments to guide stream and tidally influenced wetland restorations
- Increase inventory and monitoring efforts
- Conduct studies to assess the feasibility of reintroducing native species such as Columbian white-tailed deer and western pond turtle
- Maintain current public use areas and closures
- Maintain the current waterfowl hunt area
- Develop a new access point to the Refuge's River "S" Unit, including a two-lane bridge and 1-mile entrance road
- Shorten the auto tour route slightly to provide habitat for dusky Canada geese and cranes
- Construct a new 1.5-mile dike top walking trail

REGULATORY CONTEXT

A Special Use Permit enables non-NWRS entities to engage in activities on a national wildlife refuge, including implementation of environmental remedial action. Issuing a Special Use Permit is a federal action that triggers the need for the USFWS to address several environmental compliance requirements, including an EA to meet National Environmental Policy Act (NEPA) requirements.

1.2 Proposed Action

The Port of Ridgefield (the Port) proposes to remediate sediment in the southern end of Carty Lake. Carty Lake is located in the Refuge, adjacent to the former Pacific Wood Treating Co. (PWT) site in Ridgefield, Washington (see Figure 1-1). PWT operated a wood-treating facility from 1964 to 1993 at the Port's Lake River Industrial Site (LRIS); historical PWT activities impacted sediments in the southern end of Carty Lake. The proposed Carty Lake remedial action involves mechanical sediment excavation, the placement of a clean layer of sand to manage residuals, and stabilization of a treated-wood bulkhead (Washington State Department of Ecology [Ecology], 2013b). The action includes in-water and upland components; the proposed actions are conducted primarily on Refuge property, with some upland project components extending to the LRIS (see Figure 1-2). Construction is proposed to take place over a two-month period in summer 2014.

1.3 Need and Purpose for the Proposed Action

The project purpose is to conduct remedial actions required by Ecology to address legacy contamination in sediments in Carty Lake, as described in the Ecology-issued cleanup action plan for the former PWT site (Ecology, 2013b). Through the completion of a remedial investigation and feasibility study conducted consistent with an Agreed Order between the Port and Ecology, it was determined that Carty Lake sediments are contaminated at levels that present unacceptable risk both to human and to ecological receptors, including benthic organisms and fish.

The purpose of this remedial action is to address the presence of chemicals above screening criteria or cleanup levels, including chlorinated dibenzo-p-dioxins and dibenzofurans (dioxins), pentachlorophenol, and metals (arsenic and chromium) found in sediment in the southern portion of Carty Lake. Dioxins were identified as the primary chemical of concern. The remedial action was selected by Ecology (Ecology, 2013b) in accordance with Washington Administrative Code (WAC) 173-340-380.

1.4 Public Involvement

Ecology and the Port have addressed community concerns throughout the history of former PWT site cleanup actions. Consistent with WAC 173-340-600, Ecology provided public notice for the cleanup action plan, and public comments on the project were solicited from the community during the formal comment period (July 25, 2013, through August 23, 2013). A public participation plan describing the tools that Ecology uses to inform the public about site activities has been developed (Ecology, 2013a). In addition, a public open house was held in February 2012 at the Ridgefield Community Center, 210 N. Main Avenue, Ridgefield, Washington, in an effort to inform interested parties of the cleanup actions related to the former PWT site.

Public comment was solicited by USFWS on the draft EA document at http://www.fws.gov/ridgefieldrefuges/ridgefield/. Comments were requested by December 27, 2013. No comments were received and formal responses are therefore not included in this final EA document.

2 ALTERNATIVES, INCLUDING PREFERRED ACTION

2.1 Alternative A—No Action

Under the No Action Alternative, the Port would not conduct the remedial action required by Ecology in Carty Lake. The existing contaminated sediments would remain in Carty Lake, non-native vegetation would remain in the project footprint, and additional components associated with the project would not be constructed. The vegetated upland footprint and the wetland footprint would not be modified in the Carty Unit.

2.2 Alternative B—Carty Lake Remedial Action (Preferred Alternative)

Under Alternative B, the Port would conduct cleanup actions and construct associated components. The Alternative consists of in-water and upland components. The in-water components would consist of:

- Removal of up to 5,200 cubic yards (area of up to 1.5 acres) of contaminated sediment via mechanical sediment excavation conducted in the dry, and placement of an approximately 1-foot-thick, clean sand layer (up to 2,100 cubic yards).
- Installation of a temporary isolation barrier to facilitate dewatering of the sediment excavation area.
- Restoration of the wetland habitat by removal of non-native plants and planting of native wetland plant communities in the construction area.
- Evaluation and implementation of best management practices (BMPs); BMPs may include operational controls, excavation methods, and construction dewatering of the south end of Carty Lake.
- Disposal of excavated material as nonhazardous material waste at a Subtitle D landfill facility.
- Implementation of a long-term institutional control on fish consumption to protect human health; an updated characterization of sediment conditions may be needed before initiation of any future activities, such as in-water construction or sediment excavation that may result in significant sediment disturbance.

Upland actions would include the following:

- Access improvements, e.g., clearing and grubbing, construction of a permanent access ramp from the Port's property to the Carty Unit, and construction of a staging area.

- Construction of an earth and rock embankment to permanently stabilize the soils behind the existing treated-wood bulkhead. Embankments will be planted with native vegetation selected in consultation with the USFWS.
- Evaluation and implementation of BMPs.
- Paving of a portion of the Cell 2 hard trail on Port property (work delayed from a previous upland remedial action to provide better construction access for the Carty Lake remedial action).

2.3 Other Alternatives—Alternatives Considered but Eliminated from Further Study

- The USFWS agrees that Alternative B is consistent with the goals of the Refuge and minimizes environmental impacts. The USFWS and the Port coordinated design of Alternative B, including the following elements:
- Sediment excavation is designed to result in a leave surface that is a minimum of 6 inches deeper than the existing elevation. The depth increase will suppress red canary grass reestablishment.
- Bank stabilization on the southern side of the wetland is designed at a 2:1 slope. This slope was selected as the preferred alternative among several design options because it minimizes encroachment into the wetland. Other evaluated stabilization designs (e.g., 3:1 slope, ecology blocks) would result in greater encroachment or were infeasible.
- Bank stabilization along the eastern side of the wetland was redesigned from a 3:1 soil slope to a 2.5:1 (minimum) slope to avoid wetland encroachment.
- A native planting plan consistent with USFWS objectives is in development.

Alternative B[1] is one of four alternative remedial actions considered during a feasibility study (MFA, 2013) conducted for Carty Lake as part of the remediation planning process in accordance with the Model Toxics Control Act. The feasibility study evaluated a range of potential remediation options against a set of criteria defined in state regulations (WAC 173-340-350). The feasibility study was reviewed and approved by Ecology, and Alternative B was selected as the preferred remediation option. Other feasibility study Alternatives are not evaluated further for the EA but are briefly summarized below; details are provided in the cleanup action plan for the former PWT Site (Ecology, 2013b).

The feasibility study Alternatives assessed protection of human health and the environment, removal and capping of impacted sediment, and/or institutional controls to manage the potential for exposure to impacted sediment. A No Action Alternative was considered, but was dismissed from further evaluation, as it is not protective of human health and the environment. Alternative 1 (Monitored Natural Recovery) was not selected because it is less protective of human health and the environment over the short and long terms, as high chemical concentrations would remain (i.e.,

[1] Alternative B is called "Alternative 2" in the feasibility study.

there would be no removal) and the remedy would require a prolonged restoration time frame. The other Alternatives all include the same amount of sediment removal, with varying amounts of clean sand placement. Alternatives 3 (Focused Dredge and Expanded Residuals Cap) and 4 (Focused Dredge and Full Residuals Cap) achieve a level of protectiveness similar to that of the selected Alternative (Alternative B; see Section 2.2), with a higher level of disturbance to sediments (e.g., Alternative 4 includes covering all of Carty Lake with a clean sand layer) and with a significantly higher cost. The selected Alternative B provides a high degree of certainty for long-term protectiveness, provides immediate short-term reductions in surface concentrations (including achieving concentrations protective of ecological receptors upon implementation), avoids unnecessary short-term habitat disturbance by minimizing the project footprint, and is proportionately cost effective when the benefits are considered. All alternatives require institutional controls to continue to limit consumption of fish from Carty Lake.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Habitat, Wildlife, and Fish

This section presents a general description of the plant communities, wildlife, and fish that may be present near the project area and that have the potential to be influenced by project activities. Following these descriptions, an analysis of how project Alternatives may impact valued ecological entities is presented.

HABITAT

Oregon ash, black cottonwood, and several willow species comprise the vast majority of the canopy cover in forested habitat of the Refuge. The understory is typical of lower Columbia River floodplain habitats, with nettles, red-osier dogwood, and non-native Himalayan blackberry providing the bulk of the shrub and forb layer. Remnant stands of western red cedar and Douglas fir occur on the highest portions of the Carty Unit, with species such as snowberry and Himalayan blackberry dominating the understory. Oregon white oak woodlands (Washington State priority designated habitat) occur to the east and north of Carty Lake but not near the project area at the southern end of Carty Lake.

Virtually all of the grasslands in the Refuge have been impacted by past agricultural activities, including row crop and field crop production and grazing. Near Carty Lake, non-native reed canary grass is ubiquitous and generally dominates the shoreline, forming dense monocultures; Himalayan blackberry is dominant along the bulkhead separating the Carty Unit and the LRIS.

Carty Lake is a 52-acre lake in the Carty Unit "lowlands." The National Wetlands Inventory classifies much of Carty Lake as a lacustrine, limnetic, unconsolidated bottom, permanently tidal. The southern portion of the lake is classified as palustrine, emergent and persistent; the western side

is subdesignated as temporarily or seasonally flooded; and the eastern side is subdesignated as temporary-tidal. Washington State priority designated palustrine aquatic habitats are present within 0.15 mile of the project area. Because Carty Lake lacks a consistent connection with the Columbia River system, the lake's functionality has been reduced, particularly with respect to anadromous fish-rearing habitat and native mussel beds. As with similar wetlands on the Refuge, water quality and aquatic plants have been negatively impacted by introduced carp. The southern end of Carty Lake is underwater for most of the year or exists as a wetland at the margin of the lake. Aquatic plants, including wapato (*Sagittaria latifolia*), occur in the lake, and the fringe wetland is dominated by non-native, invasive reed canary grass (ELS, 2013).

A western Washington wetlands delineation and rating for the southern end of Carty Lake in the project area was conducted in 2013 (ELS, 2013). The project area is classified as a Category II lake fringe wetland; the wetland boundary is shown in Figure 1-2. The assessment found that water quality functions scored high, with the vegetation exceeding 33 feet in width and herbaceous plants covering more than 90 percent of the area. The hydrologic functions scored low, receiving 4 out of the possible 12 for lake-fringe. The wetland scored 25 out of 48 in habitat functions, based on the high species diversity and complex habitat structure. However, species evenness is relatively low, with reed canary grass widespread. In addition, the standard wetland rating system is limited in its application to this site because it does not account for contamination impacts in scoring habitat quality. Carty Lake is not designated as federal critical habitat.

ENDANGERED SPECIES ACT SPECIES

The Columbian white-tailed deer (*Odocoileus virginianus leucurus*) is federally designated as endangered and historically occurred in Clark County. Columbian white-tailed deer were recently transplanted from Julia Butler Hansen National Wildlife Refuge to the Refuge (USFWS, 2012) and are present in the Carty Unit. Other federally designated species are not known to occur in or near the project area. Because Carty Lake does not maintain connectivity with Gee Creek (a 4th order tributary of the Columbia River located north and east of Carty Lake) or the Columbia River, federally listed anadromous species are unlikely to utilize Carty Lake; in addition, the proposed project would be conducted in the dry. In the Blackwater Island Research Natural Area (located in the Carty Unit), there are three sites where the federally listed threatened plant water howellia (*Howellia aquatilis*) is known to occur; however, the Natural Area is more than 1 mile north of the project area. The Refuge will perform an intraservice consultation pursuant to Section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) regarding the proposed remedial action.

3.1.1 Wildlife

Surveys and incidental observations have documented over 200 species of birds utilizing the Refuge either seasonally or on a permanent basis (USFWS, 2009, 2010). Over 30 species of waterfowl have been observed, and the Refuge provides important wintering habitat for Canada geese, cackling geese, and tundra swans. Washington State priority designated waterfowl habitat and purple martin foraging areas occur in the vicinity of Carty Lake; priority bald eagle breeding areas are located over 0.5 mile northeast of the project area. Sandhill cranes use the Refuge during migrations, and small numbers overwinter on the Refuge, primarily roosting along the shore of Campbell Lake. These

cranes forage in pastures maintained in the Bachelor Island, River S, and Ridgeport Units. Over 40 species of neotropical migrants either visit during migrations or remain to breed at the Refuge.

Twenty-three species of mammals have been verified on the Refuge (USFWS, 2009, 2010). Common species include the Townsend vole, beaver, raccoon, eastern cottontail, coyote, and black-tailed deer. Non-native nutria (*Myocastor coypus*) are commonly observed in Carty Lake. In December 2012, the USFWS proposed an emergency translocation of rare Columbian white-tailed deer (*Odocoileus virginianus leucurus*) from Julia Butler Hansen Refuge near Cathlamet, Washington, to the Refuge (USFWS, 2012). Emergency relocation of the deer to the Refuge began in January 2013. Surveys conducted on the Refuge during the mid-1990s identified eight species of amphibians and five species of reptiles. Common species include western painted turtles, Pacific tree frogs, bullfrogs, red-legged frogs, and western garter snakes.

An extensive survey of invertebrates on the Refuge has not been conducted (USFWS, 2010). However, the USFWS is concerned about protecting pollinators, given the apparent declines in the populations of several types of pollinating insects. Historical flood events have deposited sandy soils on portions of the Carty Unit. These sandy areas provide burrowing sites for native bees such as the miner bee (Andrena aculeate), and the project is sited such that these areas would not be disturbed.

3.1.2 Fish

The Columbia River and its tributaries support a diversity of anadromous and resident fish species. It also hosts a variety of introduced warm-water fish such as bluegill, largemouth bass, and walleye. More than 40 species of fish have been documented in the Refuge and in the waterways that flow in and around it. Fish found in Carty Lake include primarily warm-water fish: introduced common carp and largescale sucker. Other fish commonly found in the Refuge where Carty Lake lies include introduced goldfish, longnose dace, largescale sucker, brown bullhead, mosquitofish, three-spine stickleback, introduced largemouth bass, introduced black crappie, introduced white crappie, introduced bluegill, and introduced yellow perch. Because Carty Lake does not maintain connectivity with the Columbia River, state-listed and federally listed anadromous species are unlikely to use Carty Lake for spawning or rearing habitat (USFWS, 2010).

Pacific salmon critical habitat is identified in Gee Creek to the northeast of Carty Lake; coastal cutthroat trout (federally designated as threatened), coho salmon (federally designated as threatened), and Pacific smelt (eulachon) (federally designated as threatened) may occur in Gee Creek, based on surveys conducted in the last ten years (USFWS, 2010). If a Gee Creek connection is constructed in the future, salmonids and eulachon may access Carty Lake. Other salmonid populations listed as threatened or endangered (e.g., sockeye) may pass by the Refuge in the Columbia River during migrations.

3.1.3 Environmental Consequences

Under Alternative A, no proposed remedial action would occur and therefore impacts to habitat, wildlife, or fish associated with the action would not occur. Existing wetland habitat would not be covered or converted. However, habitat in the proposed project area is currently severely degraded,

as sediment conditions are not protective of benthos and species that rely on benthos. Several other factors currently negatively impact habitat conditions in the remedy area. While the wetland hosts a relatively high numeric species diversity, species composition is dominated by two non-native invasives (reed canary grass and Himalayan blackberry). The south end of Carty Lake is shallow or seasonally inundated, supporting establishment and propagation of reed canary grass, which outcompetes native species. The buffer habitat around the wetland is characterized by a failing treated-wood retaining wall that is covered with Himalayan blackberry.

Under Alternative B, sediment excavation, clean sand placement, and bulkhead stabilization would take place in the southeastern portion of the Carty Unit. The area surrounding Carty Lake has a long history of agricultural practices; both the upland and the wetland areas in the project area are dominated with non-native plants and provide only modest food and cover resources for native wildlife. Wildlife species that are likely to use the upland areas include Townsend's vole, deer mouse, eastern cottontail, red-tailed hawk and American kestrel, among others. The construction would temporarily disturb wildlife because of increased noise, traffic, and lighting; however, similar available habitat for these species is relatively common in the region. Many species temporarily displaced should return once construction is completed.

Columbian white-tailed deer are present in the Carty Unit but are not known to occur regularly near the project area. If deer are present, the project construction is expected to have a minor, short-term impact on deer feeding and traveling through the site. It is anticipated that the deer likely would avoid the site during construction activity. Once the project was completed, the deer would be expected to return to former uses of the area.

Construction would take place in summer, when water levels are typically lowest and the southern end is not inundated. If surface water is present in the project area, it will be pumped from the excavation area to the main body of Carty Lake. This would result in a temporary reduction of available habitat for fish and other mobile, aquatic-dependent species. Similar aquatic habitat is available near the project area, and the excavation footprint in the 52-acre lake is minimal (approximately 1.5 acres).

Removal of sediment and placement of clean sand would temporarily decrease the abundance of benthic infauna in the excavation footprint. Although benthic prey species would be displaced, populations are expected to fully recover after sediment removal activities are completed; Bolam and Rees (2003) reviewed literature on macrofaunal recovery at coastal dredge sites and found that, generally, recovery took between one and four years in unstressed sites and nine months or less in naturally stressed sites. Adjacent undisturbed habitat north of the project area would provide an established source of benthic invertebrates to colonize the surface substrate. Since new invertebrate communities would recolonize the excavation area, no long-term loss of biological productivity or prey base for fish is expected.

Construction would eliminate existing vegetation in the project footprint, primarily non-native and some native species. The project area would be revegetated with a diverse palette of native species suited for particular habitat zones (e.g., upland and wetland) following construction, improving habitat structure and habitat quality for associated wildlife. Up to 0.23 acre of existing wetland habitat would be covered by the southern bulkhead stabilization embankment and rounded

gravel/rock fish mix stabilization material. However, the revegetated, stabilized embankments would improve wetland buffer habitat. A plant monitoring and maintenance plan would be implemented to ensure long-term success. A permanent gravel access ramp from Port-owned property to the Carty Unit would be constructed, covering some upland habitat on the Refuge consisting of reed canary grass.

The primary environmental consequence of Alternative B is a reduction in fish and wildlife exposure to a continued release of a suite of contaminants into the aquatic environment. The proposed sediment removal would immediately reduce contaminants to below levels protective of ecological receptors. The sand layer would enhance contaminant sequestration in the short term and would provide a clean substrate for benthic community colonization and native plantings.

In summary, Alternative B would result in temporary disturbance of wildlife during construction activities, a temporary decrease in benthic populations, and some loss of degraded habitat. Over the long term, habitat quality would be significantly enhanced because of contaminant removal, removal of non-native invasive species, deepening of the wetland bottom to encourage suppression of invasive species, and planting and maintenance of native vegetation. Wildlife and fish would benefit from removal of sediment contamination to levels protective of ecological receptors and native plantings.

3.2 Physical Environment

The approximately 8.6-acre site is situated in and adjacent to Carty Lake in the southeast corner of the Refuge Carty Unit "lowlands" (see Figure 3-1). The Carty Unit contains forested lands, wetlands, and pasture areas that historically were used for agricultural production. The Carty Unit is bordered by the Port-owned property immediately south and east, Lake River to the west, privately owned farmland and natural areas to the north, and Burlington Northern-Santa Fe railroad tracks to the east. A portion of the Port property is separated from the southern portion of Carty Lake by a treated wooden soldier pile and lagging bulkhead. This bulkhead is approximately 1,800 feet long and between 7 and 10 feet tall.

With the exception of the existing treated-wood bulkhead and the associated grade change, the topography of the project area consists of gently rolling terrain with elevations ranging from 7 feet to 34 feet National Geodetic Vertical Datum of 1929/1947. The 100-year floodplain elevation of Gee Creek (located to the north and east of Carty Lake) is approximately 23.8 feet at the Burlington Northern Santa Fe railroad culvert (see Figure 3-1); this portion of Gee Creek and large portions of the Carty Unit function as a backwater of the Columbia River during the 100-year flood. The 100-year floodplain elevation of Carty Lake is, therefore, approximately 23.8 feet.

Grain size distribution and hydrodynamics indicate that Carty Lake features a low-energy, depositional environment (MFA, 2013). Percent fines in Carty Lake are uniformly high, generally over 75 percent fines. During the rainy season, Gee Creek and Carty Lake can be hydraulically connected at the lake's northern end. During most of the year, Carty Lake has no outlet. Water fluctuations are generally muted and range from 3 to 10 feet, with increases and decreases occurring gradually because there is no direct connection with the Columbia River. Water levels in the project

area are generally shallow and the southern lake end can be dry during low-water conditions (e.g., in the summer).

Carty Lake has limited recreational uses (USFWS, 2010), which can include wildlife photography, wildlife observation, environmental education, and fishing. Boating is not allowed. Trails lead to the Gee Creek portion of the Carty Unit for fishing. Carty Lake itself is not currently readily accessible to visitors; the Refuge maintains a mowed seasonal footpath along the north end of the lake, but this path is flooded during high-water periods and is not heavily used. However, the potential exists for the Refuge to work with the Port to develop a loop trail adjacent to Carty Lake for the public to access from the Port property.

In the future, the USFWS may consider the feasibility of reconnecting Carty Lake either to the Columbia River via Gee Creek or to Lake River through a constructed channel. Of the two options, the Gee Creek connection likely would be most feasible in terms of construction and access for salmonids (USFWS, 2010). The resulting hydrology of the lake could vary considerably, depending on the option selected; however, some changes to the fish, wildlife, and vegetation communities would be expected.

3.2.1 Environmental Consequences

Under Alternative A, the remedial action would not take place, and thus there would be no immediate impacts from the construction on the physical environment. The potential for contaminant transport from the site would remain. The current treated-wood bulkhead is degraded and portions have begun to fail. Complete failure of the wall in the future could result in release of soils into Carty Lake.

Under Alternative B, removal of sediment and placement of clean sand in an area of up to 1.5 acres would temporarily alter existing surface substrate (predominantly fines and some sand) to consist of sand until naturally occurring processes redeposit fines. The bathymetry of the excavation footprint would be deepened a minimum of 6 inches. A temporary isolation berm (likely sandbags) to facilitate excavation in the dry would be removed upon construction completion.

Remedial construction would include a permanent transition from the grades on the Port property to the Refuge in the form of constructed earthen embankments against the existing southern and eastern walls of the bulkhead. Stabilization of the embankments would ensure long-term containment of residual contamination in subsurface soils south and east of the Carty Unit. The embankments would functionally replace the existing bulkhead and would generally consist of common borrow or structural fill and topsoil fill with an outer layer of topsoil approximately 18 inches thick. To eliminate the impact of the eastern embankment on the wetland, the eastern embankment would be constructed at a slope no greater than 2.5H:1V, outside the wetland boundary where possible. For the southern embankment area, a retaining wall structure (to replace the southern wall) was evaluated in collaboration with USFWS staff in an effort to determine the most effective way to minimize impact to the wetland; however, the structure was considered impractical because of significant challenges in managing contaminated soil that is contained behind the existing soldier pile wall, as well as because of cost. To minimize the embankment footprint in the area, this portion of the embankment would be constructed at a nominal 2H:1V slope.

Embankments would be revegetated with native species to enhance habitat structure and control soil erosion.

A permanent gravel access ramp to the Carty Unit from the existing Cell 2 hard trail on Port-owned property would be constructed, reducing the vegetation (currently primarily reed canary grass) footprint in the Carty Unit. A temporary staging area for construction would be identified outside the wetland boundary to avoid wetland impacts and would be sized to minimize soil disturbance. The permanent access and staging footprint in the Refuge would occupy about 0.03 acre and 0.23 acre, respectively.

It is anticipated that traffic use may increase because of construction of the permanent access ramp. Use would generally be limited to one Refuge person's access. Therefore, the minimal increase in traffic would not significantly affect local air quality.

Currently, there is little human noise at the project site and infrequent use by people. During construction, the project site would be subjected to an increase in noise and activity. After completion of construction, the noise and activity would greatly diminish but might remain slightly above current levels because of improved access.

Construction impacts will be temporary, controlled, and eliminated or minimized where possible, and appropriate BMPs will be utilized. A perimeter sediment control (silt) fence placed along the limits of construction will prevent unnecessary impacts to roadways, adjacent properties, and the main portion of Carty Lake. Removal of sediment will be completed with the excavation in an isolated and dewatered condition, using land-based, fixed-arm equipment (excavator). Construction is scheduled for summer, when water levels are typically lowest and the southern end is not inundated; if surface water is present it will be pumped and treated for turbidity, if necessary, prior to discharge to the main body of Carty Lake. Because construction will be conducted in the dry, direct impacts to water quality (e.g., turbidity, dissolved oxygen) will be minimized or eliminated. The sediment handling and dewatering area will be constructed and managed consistent with all erosion-control BMPs to prevent exposed or stockpiled soil erosion due to wind or other natural events and to prevent free decant water from migrating into the adjacent Refuge. During dewatering operations, water quality will be closely monitored for turbidity; water will be treated prior to discharge if necessary. Because of the proximity of the main body of Carty Lake, debris booms and supporting vessels will be required to be on hand and deployed if and when needed. All equipment will be fueled upland or, where fueling near or in water is necessary, within a floating sorbent boom. In order to prevent the migration of site sediments and soil off site during transport of sediment to the landfill, a gravel construction entrance will be built.

3.3 Cultural Resources

A Cultural Resources Inventory and Survey was prepared in 2013 by Willamette Cultural Resources Associates, Ltd. (WillametteCRA) for the proposed remedial action (WillametteCRA, 2013). The cultural resources survey was conducted to specifically address the Archaeological Resources Protection Act, Section 106 of the National Historic Preservation Act, and NEPA requirements. The primary goal of the cultural resources survey and inventory was to assess the likelihood that an undertaking at the site will directly or indirectly alter the character or use of historic properties.

The cultural material located does not constitute an archaeological record that is eligible for the National Register of Historic Places. After a survey of 2 acres and an excavation of 19 shovel probes, one previously unrecorded resource, a precontact lithic isolate, was identified. This artifact is isolated, and it is the professional opinion of WillametteCRA that no significant archaeological or historic resources would be affected by the proposed remedial action. No additional archaeological investigations for the area are recommended at this time.

3.3.1 Environmental Consequences

Under Alternative A, the site and, subsequently, associated resources would not be disturbed.

In regard to Alternative B, the Cultural Resources Inventory and Survey indicated that it is unlikely that significant cultural resources would be found at the site. However, an Inadvertent Discovery Plan has been developed that specifies that an archaeological monitor would be present during sediment excavation and berm construction at Carty Lake. Tribes may also choose to have monitors present during cleanup activity. The plan also defines procedures to be followed should human remains or archaeological resources be encountered.

3.4 Environmental Justice

No one group or tribe represented in the community would be disproportionately impacted by construction of the remedial action. Tribes historically used Carty Lake for wapato harvest (USFWS, 2010) and may desire to use the area for this purpose in the future (Mercuri, 2012).

Under Alternative A, no action would take place. The potential for dioxin exposure due to wapato harvest and consumption was not explicitly evaluated, however, future use under current conditions is not expected to result in unacceptable risk to human health. Studies have shown that dioxins are not likely to be incorporated into any substantial fraction of the edible plant material (Paustenbach et al., 2006). In addition, a model developed for restoration workers showed sediment direct contact and incidental ingestion is not expected to result in unacceptable risk (MFA, 2013).

Under Alternative B, impacted sediment would be removed and wapato would be replanted as specified in the planting plan (forthcoming). Wapato would therefore continue to be available in the project area for Tribal members who may choose to harvest and consume wapato. Thus, the Alternatives would not result in any environmental justice issues.

3.5 Cumulative Effects

Cumulative effects result from the incremental impact of an action when added to other "past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR 1508.7). The effects of an action may be insignificant when evaluated individually, but when added to other actions outside the immediate project area, they may contribute cumulatively to measurable environmental change. The scope for analysis of cumulative impacts is therefore larger than the immediate project area to more broadly consider the effects of

other activities occurring within the adjacent landscape. This scope includes consideration of an action in relation to the stated missions for refuge lands.

The mission of the NWRS is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats in the United States for the benefit of present and future generations of Americans. Missions specific to the Refuge include its "use as an inviolate sanctuary, or for any other management purpose, for migratory birds" 16 U.S.C. § 715d (MBCA) and "to provide wintering habitat for dusky Canada goose and other waterfowl" (MBCC Memorandum Number 1, May 18, 1965). In addition, the Refuge has developed a CCP that establishes operational goals and objectives for wildlife, habitat, and public use (see Section 1.1). These missions and goals underline the continued need for habitat quality supportive of fish, wildlife, and plant resources on Refuge lands.

3.5.1 Environmental Consequences

Under Alternative A, impacts to habitat, wildlife, and fish associated with construction would not occur. However, not implementing the remedial action does not address environmental contamination present in sediments and is therefore not consistent with Refuge goals. Species directly associated with site sediments (e.g., benthic invertebrates) would continue to be exposed to chemical concentrations above risk-based levels, potentially resulting in long-term impacts to individuals and populations. Loss of benthos may negatively impact dependent species. Species indirectly associated with site sediments (e.g., predatory fish, birds, and mammals) would continue to ingest prey potentially impacted by chemicals, resulting in chemical bioaccumulation and associated impacts. Chemical concentrations and potential for contaminant transport could impede reasonably foreseeable activities in the project vicinity, including activities that would benefit listed salmonids in nearby waterways (e.g., reestablishing the former connection between Carty Lake and the Columbia River). Structural issues related to the existing treated-wood bulkhead would not be addressed; complete failure in the future could result in release of impacted subsurface soils to the Carty Unit. Non-native species such as reed canary grass would remain established and likely would continue to outcompete and supplant remaining native species.

Alternative B supports both the NWRS's and the Refuge's missions by providing improved habitat quality on Refuge land. The proposed project would improve long-term habitat quality by employing a technique (sediment removal) that permanently reduces contaminants in sediments. Long-term beneficial effects to aquatic-dependent species would be realized by significantly reducing chemicals in sediment that transfer directly or indirectly (via trophic transfer) to organisms utilizing the project area. Provision of clean substrate (sand) is expected to promote natural attenuation of the biologically active surface sediments, increasing benthic invertebrate abundance in the long term and thereby enhancing the prey base for higher-trophic-level species. Clean substrate also would be expected to promote growth and establishment of wetland vegetation in the long term. Native plantings would increase habitat quality and provide erosion control on constructed embankments.

Alternative B would result in some habitat loss and temporary disturbance of wildlife during construction activities. However, based on the environmental enhancement that would result,

implementation of BMPs to minimize construction impacts, and a remedy design that minimizes wetland habitat loss, the proposed construction does not represent a significant adverse impact on the natural environment.

PREPARERS AND REVIEWERS

Name	Position	Degrees	Experience
Phil Wiescher, PhD	Ecologist	PhD Ecology	Two years
Michael Stringer, MS	Ecologist	MS Conservation Biology	Eight years
Benjamin Harrison	USFWS— Deputy Regional Chief		

LIMITATIONS

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

REFERENCES

Bolam, S. G., and H. L. Rees. 2003. Minimizing impacts of maintenance dredged material disposal in the coastal environment: A habitat approach. Environmental Management 3(2):171-188.

Ecology. 2013a. Public participation plan, former Pacific Wood Treating Co. site. Washington State Department of Ecology. July.

Ecology. 2013b. Cleanup action plan, former Pacific Wood Treating Co. site. Washington State Department of Ecology. November 5.

ELS. 2013. Critical areas report for Carty Lake, Ridgefield, Washington. Ecological Land Services, Inc. August 2.

Mercuri, J. 2012. Telephone communication (re Carty Lake exposure scenarios) with M. Novak, Maul Foster & Alongi, Inc. February 3.

MFA. 2013. Former PWT site remedial investigation and feasibility study. Prepared for the Port of Ridgefield. Maul Foster & Alongi, Inc., Vancouver, Washington. July 1.

Paustenbach, D. J., K. Fehling, P. Scott, M. Harris, and B. Kerger. 2006. Identifying soil cleanup criteria for dioxins in urban residential soils: how have 20 years of research and risk assessment experience affected the analysis? Journal of Toxicology and Environmental Health, Part B 9:87–145.

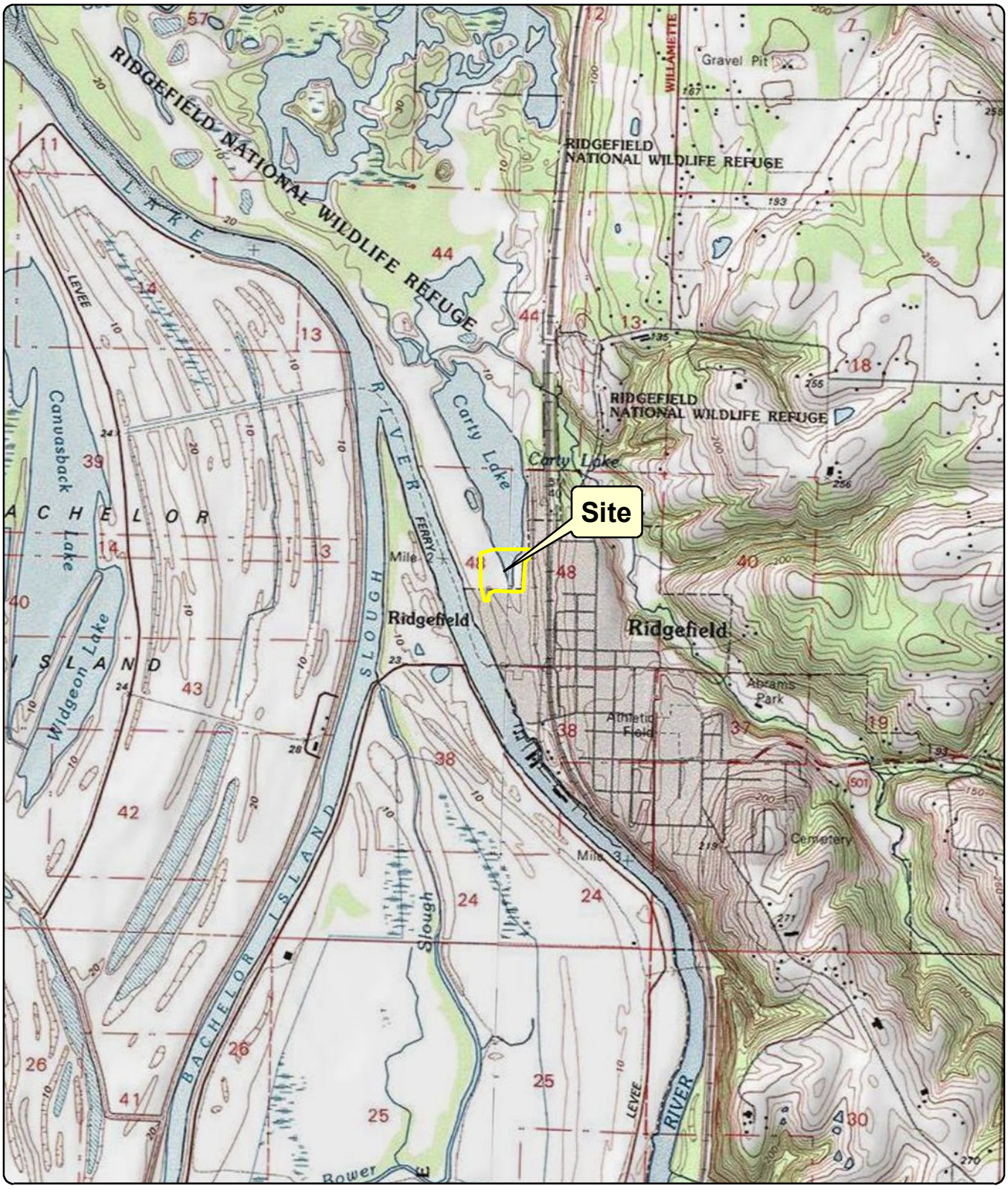
USFWS. 2009. Wildlife checklist, Ridgefield National Wildlife Refuge, Washington.

USFWS. 2010. Ridgefield National Wildlife Refuge comprehensive conservation plan. U.S. Fish and Wildlife Service. September.

USFWS. 2012. USFWS proposes emergency move of Columbian white-tailed deer. U.S. Fish and Wildlife Service, Lacey, Washington. December 3.

WillametteCRA. 2013. Cultural resources survey report for the proposed Carty Lake remedial action, Clark County, Washington. Prepared for the Port of Ridgefield and the U.S. Fish and Wildlife Service. Willamette Cultural Resources Associates, Ltd. November 8.

FIGURES



Source: Topographic Quadrangle obtained from ArcGIS Online Services/NGS-USGS TOPO! US Geological Survey (1999)
7.5-minute topographic quadrangle: Ridgefield
Address: Lake River Industrial Site
111 W. Division Street, Ridgefield, WA 98642
Section: 24 Township: 4N Range: 1W Of Willamette Meridian

Figure 1-1
Site Location

Carty Lake
Ridgefield, Washington

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0 1,000 2,000
Feet

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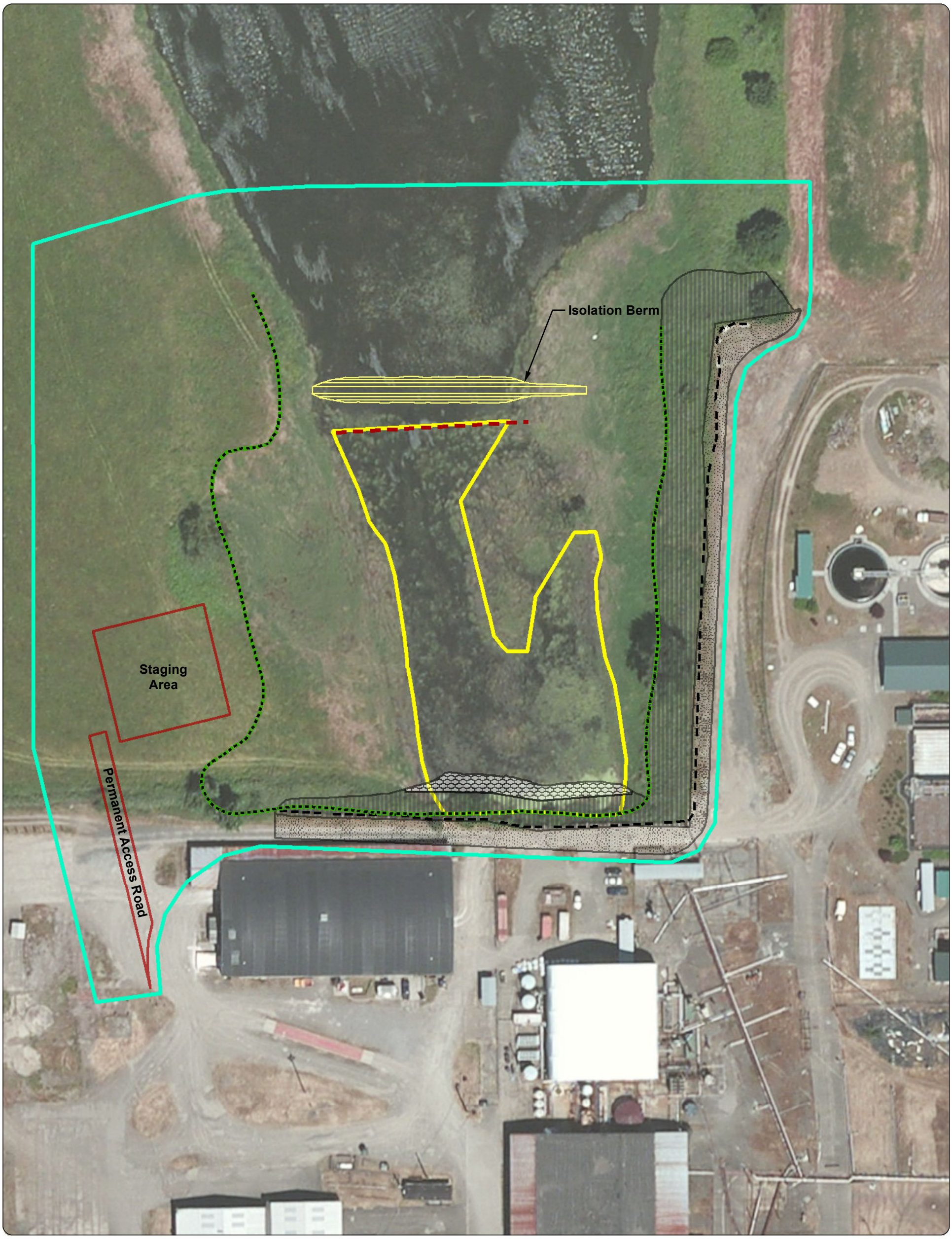
Print Date: 11/14/2013
Approved By: J. King
Produced By: jschane
Project: 9003.01.20



Source: Aerial photograph obtained from ESRI, Inc. ArcGIS Online (2010).

Legend

- Earth Embankment
- Clean Fill
- Fish Mix Placement
- Retaining Wall
- Delineated Wetland Boundary
- Excavation Boundary
- Site Boundary

i.e., greatest extent that may be impacted by remedial action activities including remedial construction, staging, and access.

Figure 1-2
Alternative B
Project Components

Carty Lake
Ridgefield, Washington

0 50 100
Feet

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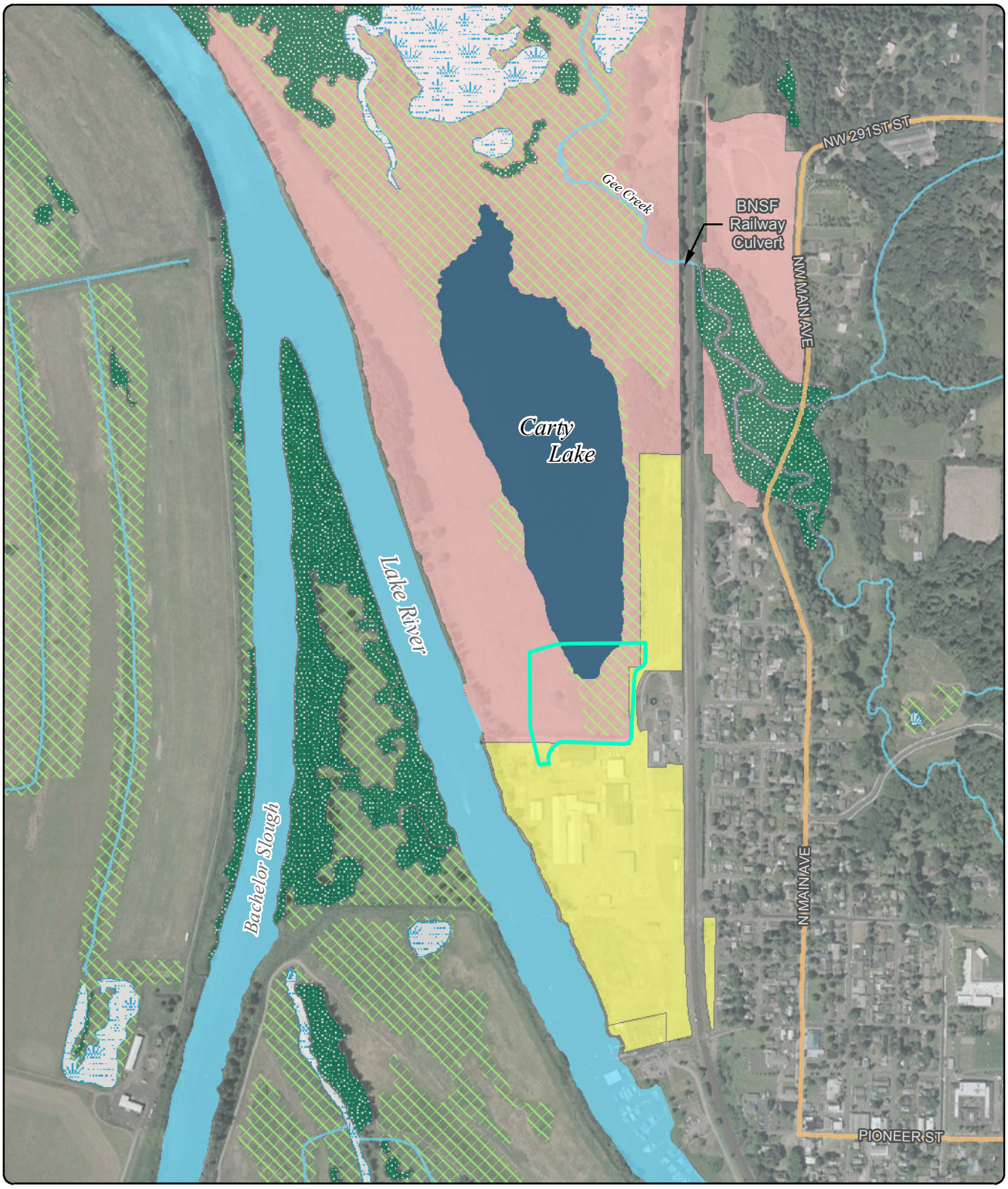
Project: 9003.01.40 Produced By: jschane Approved By: P. Wiescher Print Date: 11/18/2013



Source: Aerial photograph and shaded relief obtained from ESRI, Inc. ArcGIS Online.

Notes:
1. Wetlands Delineation obtained from the U.S. Fish and Wildlife Service, National Wetlands Inventory.

Legend

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine
- Port-Owned Property
- RNWR-Carty Unit
- Site Boundary

Figure 3-1
Carty Lake Setting

Carty Lake
Ridgefield, Washington

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Print Date: 11/15/2013
Approved By: P.Wescher
Produced By: jschane
Project: 9003.01.40

ATTACHMENT A

Department of Ecology
SEPA DETERMINATION FOR CARTY LAKE REMEDIAL ACTION
PACIFIC WOOD TREATING SITE

SUBSTANTIVE REQUIREMENTS OF LOCAL AND STATE PERMITS
City of Ridgefield permits
Washington Department of Fish and Wildlife Hydraulic Project Approval

City of Ridgefield
Shoreline Master Program

CHAPTER 2
APPLICABILITY, SHORELINE PERMITS AND EXEMPTIONS

2.1 Applicability

Response: The Applicant understands that the proposed project area in Carty Lake is not currently identified in the adopted city of Ridgefield Shoreline Master Plan (SMP). However, the following materials have been prepared to provide a response to the substantive requirements of the SMP in order to demonstrate compliance with those requirements. The Applicant understands that in cases where a shoreland area is not designated but should be within the jurisdiction of the SMP, the default designation is Urban Conservancy, and therefore the following narrative addresses the substantive criteria of the SMP.

2.2 Shoreline Substantial Development Permit Required

Response: As indicated below, substantial compliance is met, pursuant to Revised Code of Washington (RCW), given that remedial actions conducted under a consent decree are exempt from the procedural requirements of applicable state and all local permits (RCW 70.105D.090).

CHAPTER 3
SHORELINE MASTER PROGRAM GOALS AND POLICIES

3.7 Public Access and Recreation

3.7.2 Policies

1. **Provide, protect, and enhance a public access system that is both physical and visual; utilizes both private and public lands; increases the amount and diversity of public access to the State's shorelines and adjacent areas; and is consistent with the shoreline character and functions, private rights, and public safety.**
2. **Increase and diversify recreational opportunities by promoting the continued public acquisition of appropriate shoreline areas for public use, and develop recreation facilities so that they are distributed throughout the community to foster convenient access.**

3. **Locate public access and recreational facilities in a manner that encourages variety, accessibility, and connectivity in a manner that will preserve the natural characteristics and functions of the shoreline.**

4. **Encourage public access provisions consistent with adopted City and County trails plans.**

5. **Encourage public access as part of each development project by a public entity, and for all private development (except residential development of less than four parcels), unless such access is shown to be incompatible due to reasons of safety, security, or impact to the shoreline environment.**

6. **Discourage shoreline uses that curtail or reduce public access unless such restriction is in the interest of the environment, public health, and safety, or is necessary to a proposed beneficial use.**

7. **Consider private rights, public safety, and protection of shoreline ecological functions and processes when providing public access and recreational opportunities.**

Response: The proposed work is in the shoreline area of Carty Lake, which is located entirely within the Ridgefield National Wildlife Refuge (RNWR). Therefore, the Applicant does not control access to the RNWR or to a large portion of the shoreline area. The portion of the shoreline area that lies outside the RNWR is owned by the Applicant. The proposed work does not include development. Public access to the shoreline area owned by the Applicant will be increased by completion of a public-access, multipurpose trail area within the shoreline area (see Sheet C5); a portion of the proposed trail will connect to an existing trail to the south, in the Lake River shoreline area, and an existing trail to the north, along the RNWR. The Applicant has designed the landscaping plan for the proposed work to retain existing view corridors to Carty Lake and the RNWR (see Sheets L0 through L4). The proposed action meets the standard.

3.8 Restoration

3.8.2 Policies

1. **Shorelines that are biologically degraded should be reclaimed and restored to the greatest extent feasible. Implementation of restoration projects identified in the Shoreline Restoration Plan that are focused on restoring degraded habitat in shoreline jurisdiction take precedence over other restoration projects. Implementation of restoration projects on shorelines of statewide significance take precedence over implementation of restoration projects on other shorelines of the state.**

Response: The Applicant proposes to rehabilitate degraded habitat through sediment excavation, bank stabilization, and revegetation with native species to the maximum extent feasible, improving ecosystem functions; the remediation is required by the state. The proposed action meets the standard.

2. **Restoration strategies should be developed and implemented such that ecosystem processes are sustainable in the long-term.**

Response: The Applicant proposes to permanently remove contaminated sediment and to stabilize a failing bulkhead that retains upland soils, providing long-term ecosystem functioning improvement. The work area will be revegetated with native plants; plantings will be monitored and maintained for five years. The proposed action meets the standard.

3. Restoration of shoreline ecological functions should be encouraged during redevelopment.

Response: This standard is not applicable. The Applicant proposes a remedial action to restore ecological functions in a wetland. The proposed work does not include development and is in the shoreline area of Carty Lake, which is located entirely within the RNWR; future development is therefore not expected. The proposed action meets the standard.

4. Restoration efforts should include retrofitting existing stormwater control facilities to improve water quality.

Response: This standard is not applicable. No stormwater control facilities, either existing or proposed, are located in the project area.

5. Restoration efforts should consider a focus on floodplain and channel migration zone reconnection where rivers are confined by levees.

Response: This standard is not applicable. The Applicant proposes to conduct a state-required remedial action in a wetland.

6. Restoration projects should have adaptive management techniques including adjusting the project design, correcting problems (barriers to success), and implementing contingency measures.

Response: The Applicant has included contingency measures, best management practices (BMPs), and adaptive management techniques in its planting plans. The proposed action meets the standard.

7. Eradication of invasive species, including noxious weeds and non-native species, should be undertaken as needed.

Response: The Applicant proposes to remove noxious weeds and non-native species before planting native vegetation (see Sheets L0 through L4). A monitoring and maintenance plan has been developed to limit non-native species encroachment (*Draft Carty Lake Mitigation Plan Addendum to the Joint Aquatic Resources Permit Application NO. NWS-2013-1209*, MFA, 2014). The proposed action meets the standard.

8. Planting of vegetation that enhances shoreline ecological function should be encouraged.

Response: The Applicant proposes to plant native vegetation suited to the postconstruction grade and habitat type to maximize ecological function. The proposed action meets the standard.

9. **Education programs should be developed for:**

   a. **Property owners about proper vegetation/landscape maintenance and the impacts of shore armoring and over-water structures; and**

   b. **Boaters about proper waste disposal methods, anchoring techniques, best boating practices, and the State's invasive species inspection program pursuant to RCW 77.15.290.**

Response: The Applicant has coordinated the remedial design and associated maintenance and monitoring measures with the property owner (the U.S. Fish and Wildlife Service [USFWS]). Boating is not allowed on Carty Lake. The proposed action meets the standard.

10. **Cooperative restoration actions involving local, state, and federal agencies, Native American tribes, non-government organizations, and landowners should be encouraged.**

Response: The Applicant has coordinated the remedial action design with multiple local, state, and federal agencies through the Section 106 permitting process. Native American tribes have been consulted throughout project development. The proposed action meets the standard.

3.9 Shoreline Modification and Stabilization

3.9.2 Policies

1. **New developments should be located in such a manner as to not require shoreline stabilization measures.**

Response: This standard is not applicable. No development is proposed.

2. **When necessary, natural, non-structural shoreline stabilization measures are preferred over structural stabilization measures. Alternatives for shoreline stabilization should be based on the following hierarchy of preference:**

   a. **No action;**

   b. **Flexible stabilization works constructed of natural materials, including soft shore protection, bioengineering, beach nourishment, protective berms, or vegetative stabilization;**

   c. **Rigid works constructed of structural materials such as riprap or concrete.**

Response: The proposed work includes stabilization of an existing, failing wooden bulkhead. This stabilization is required to prevent further bulkhead failure, and subsequent erosion, and to maintain the integrity of the clean environmental cap on the port property. The applicant proposes to construct a protective berm with vegetated turf reinforcement mat and rounded rock fish mix surfacing to provide stabilization (see Sheets C5 through C7). The proposed action meets the standard.

3. **Allow new or expanded structural shore stabilization, including bulkheads, only where it is demonstrated to be necessary to protect an existing primary structure that is in danger of loss or substantial damage, and where such**

structures and structural stabilization would not cause a net loss of shoreline ecological functions and processes.

Response: This standard is not applicable. No new or expanded structural shore stabilization is proposed. The proposed work includes permanent stabilization of an existing primary structure by installation of a bioengineered protective berm (see Sheets C5 through C7).

4. **Shoreline stabilization should be located and designed to accommodate the physical character and hydraulic energy potential of a specific shoreline reach, which may differ substantially from adjacent reaches.**

Response: The proposed shoreline stabilization has been designed in accordance with the U.S. Army Corps of Engineers (COE) Coastal Engineering Manual to accommodate the physical character and hydraulic energy potential of the shoreline reach. The proposed action meets the standard.

5. **Provisions for multiple use, restoration, and/or public shore access should be incorporated into the location, design and maintenance of shore stabilization for public or quasi-public developments whenever safely compatible with the primary purpose. Shoreline stabilization on publicly owned shorelines should not be allowed to decrease long-term public use of the shoreline.**

Response: No development is proposed. The area of the proposed shoreline stabilization is located entirely within the RNWR; public access to the area is currently by permit only. Should the unit be opened to public access in the future, the proposed shoreline stabilization measures will not inhibit or deter public access. The proposed action meets the standard.

6. **Shoreline stabilization projects should be developed in a coordinated manner among affected property owners and public agencies within a reach where feasible, particularly those that cross jurisdictional boundaries, to address ecological and geo-hydraulic processes and sediment conveyance.**

Response: The Applicant has included the Corps, the USFWS, the Washington State Department of Fish and Wildlife (WDFW), and the Washington State Department of Ecology (Ecology) in the planning of the proposed work. The agencies are in agreement with the proposed shoreline stabilization measures. The proposed action meets the standard.

7. **Failing, harmful, unnecessary, or ineffective shoreline stabilization structures should be removed or replaced to restore shoreline ecological functions and processes.**

Response: The proposed shoreline stabilization measures are intended solely to prevent further failure of the existing wooden bulkhead and to maintain the integrity of the existing clean soil environmental cap on the Lake River Industrial Site (LRIS). The proposed shoreline stabilization measures have been designed to restore shoreline ecological functions and processes. The proposed action meets the standard.

8. **Larger works such as jetties, breakwaters, weirs, or groin systems should be permitted only for water-dependent uses and where mitigated to provide no net loss of shoreline ecological functions and processes.**

Response: This standard is not applicable. No larger works are proposed.

9. **Lower impact structures, including floating, portable or submerged breakwater structures, or several smaller discontinuous structures, are preferred over higher impact structures.**

Response: This standard is not applicable. Stabilization of the failing, existing wooden bulkhead will extend to the top of the existing structure (see Sheet C7).

10. **Encourage and facilitate levee setback (including but not limited to, pulling back an existing levee to allow for a larger floodplain area contiguous to a water body), levee removal, and other shoreline enhancement projects.**

Response: This standard is not applicable. There are no existing levees in the project area.

11. **Materials used for construction of shoreline stabilization should be selected for durability, ease of maintenance, and compatibility with local shoreline features.**

Response: The proposed shoreline stabilization measures were selected for durability, ease of maintenance, and compatibility with local shoreline features. The proposed shoreline stabilization measures include turf reinforcement mat with native vegetation; a small amount of durable, rounded-rock fish mix will also be placed at the toe of the proposed berm (see Section 2, Sheet C7) designed in accordance with the Corps Coastal Engineering Manual (see 3.9.2 Response 4, above). The proposed action meets the standard.

12. **Development and shoreline modifications that would result in interference with the process of channel migration that may cause significant adverse impacts to property or public improvements and/or result in a net loss of shoreline ecological functions within the rivers and streams should be limited.**

Response: This standard is not applicable. The proposed work is in the shoreline area of Carty Lake, which is hydraulically connected to any other waterbody only under occasional high-water conditions. The proposed work will not cause significant adverse impacts to property or public improvements or result in a net loss of shoreline ecological function.

3.13 Water Quality and Quantity

3.13.2 Policies

1. **Encourage the location, construction, operation, and maintenance of shoreline uses, developments, and activities to be focused on maintaining or improving the quality and quantity of surface and ground water over the long term.**

Response: The proposed action will not result in the location, construction, operation, or maintenance of new shoreline uses. Rather, the proposal is intended to remove contaminated materials and not only to restore the shoreline but to improve it to a state that will have positive impacts on the long-term quality of surface water.

2. **Minimize, through effective education, site planning, and best management practices, the inadvertent release of chemicals, activities that cause erosion, stormwater runoff, and faulty on-site sewage systems that could contaminate or cause adverse effects on water quality.**

Response: The Applicant will implement BMPs to eliminate or reduce water quality impacts to the maximum extent practicable. Construction will be conducted "in the dry" to minimize water quality impacts. The proposed remedial action includes additional components designed to minimize erosion, runoff, and chemical release (i.e., placement of a clean sand layer in the sediment excavation area to minimize chemical residuals, slope stabilization and native plantings to minimize erosion and runoff). The proposed action meets the standard.

3. **Encourage the maintenance and restoration of appropriate vegetative buffers along surface waters to improve water temperature and reduce the adverse effects of erosion and runoff.**

Response: The Applicant proposes to plant native vegetation in the wetland and surrounding areas suited to the postconstruction grade and habitat type in order to reduce erosion and runoff (see Sheets L0 through L4). A plant monitoring and maintenance plan has been developed to maintain native vegetation and associated functions. The proposed action meets the standard.

CHAPTER 4
SHORELINE DESIGNATIONS

4.3.3 Urban Conservancy Shoreline Designation

4.3.3.1 Purpose

The purpose of the "Urban Conservancy" shoreline designation is to protect and restore shoreline ecological functions of open space, floodplains, and other sensitive lands, where they exist in urban and developed settings, while allowing a variety of compatible uses.

4.3.3.2 Designation Criteria

Response: The Applicant understands that the project area currently has no designation in the SMP, and in such situations, the default designation shall be Urban Conservancy. Therefore, the application addresses the substantive requirements of this section.

4.3.3.3 Areas Designated

The Urban Conservancy shoreline designation applies to areas as shown on a copy of the Official Shoreline Designation Map, City of Ridgefield, Washington (Section 4.4) and on a copy of the unofficial map in Appendix A.

Response: The Applicant understands that the project area currently has no designation in the SMP, and in such situations, the default designation shall be Urban Conservancy. Therefore, the application addresses the substantive requirements of this section.

4.3.3.4 Management Policies

In addition to the other applicable policies and standards of this Program the following management policies shall apply:

1. **Uses that preserve the natural character of the area or promote preservation of open space or critical areas either directly or over the long term should be the primary allowed uses. Uses that result in restoration of shoreline ecological functions should be allowed if the use is otherwise compatible with the purpose of the Urban Conservancy shoreline designation and the setting.**

Response: The proposed remedial action will not result in permanent uses on the subject property area. The remediation will result in an improved shoreline through the restoration of the bank, removal of invasive species, and placement of native plant species. The standard has been satisfied.

4. **Public access and public recreation objectives should be implemented whenever feasible and when significant ecological impacts can be mitigated.**

Response: Public access is not available from the shoreline of Carty Lake in the project area. The standard is not applicable.

5. **Thinning or removal of vegetation should be limited to that necessary to**
   a. **Remove noxious vegetation and invasive species;**
   b. **Provide physical or visual access to the shoreline; or**
   c. **Maintain or enhance an existing use consistent with critical areas protection and maintenance or enhancement of shoreline ecological functions.**

Response: The proposed remedial action will remove existing vegetation in the work area, and native vegetation will be planted. The native vegetation will be maintained and monitored for five years. The standard has been satisfied.

6. **Public access and public recreation facilities are a preferred use if they will not cause substantial ecological impacts and when restoration of ecological functions is incorporated.**

Response: Public access is not available from the shoreline of Carty Lake in the project area. The standard is not applicable.

7. **Low intensity water-oriented commercial uses may be permitted if compatible with surrounding uses.**

Response: The proposed remedial action will not result in permanent uses on the subject property area. The remediation will result in an improved shoreline through the restoration of the bank, removal of invasive species, and placement of native plant species. The standard has been satisfied.

4.4 Official Shoreline Map

4.4.1 Map Established

1. **The location and extent of areas under the jurisdiction of this Program, and the boundaries of various shoreline designations affecting the lands and waters of the City shall be as shown on the map entitled, "Official Shoreline Designation Map, City of Ridgefield, Washington." All the notations, references, amendments, and other information shown on the "Official Shoreline Designation Map" are hereby made a part of this Program, as if such information set forth on the map were fully described herein.**

Response: The Applicant understands that the proposed project area in Carty Lake is not currently identified in the adopted city of Ridgefield SMP. However, the following materials have been prepared to provide a response to the substantive requirements of the SMP in order to demonstrate compliance with those requirements. The Applicant understands that in cases where a shoreland area is not designated but should be within the jurisdiction of the SMP, the default designation is Urban Conservancy, and therefore the following narrative addresses the SMP criteria.

CHAPTER 5
GENERAL SHORELINE USE AND DEVELOPMENT REGULATIONS

All uses and development activities in shoreline jurisdiction shall be subject to the following general standards and those in Chapter 5A in addition to the applicable use-specific standards in Chapter 6.

5.1 General Shoreline Use and Development Regulations

1. **Shoreline uses and developments that are water-dependent shall be given priority.**

Response: The Applicant proposes a remedial action to rehabilitate aquatic habitat in the wetland fringe of Carty Lake in the RNWR. The proposed action supports the shoreline uses of the lake, including provision of suitable habitat for aquatic-dependent wildlife.

2. **The applicant shall demonstrate all reasonable efforts have been taken to avoid and where unavoidable, minimize and mitigate impacts such that no net loss of critical area and shoreline ecological function is achieved. Mitigation shall occur in the following order of priority:**

    a. **Avoiding the impact altogether by not taking a certain action or parts of an action. This may necessitate a redesign of the proposal.**

    b. **Minimizing unavoidable impacts by limiting the degree or magnitude of the action and its implementation by using appropriate technology or by taking affirmative steps to avoid or reduce impacts. The applicant shall seek to minimize fragmentation of the resource to the greatest extent possible.**

c. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;

d. Reducing or eliminating the impact over time by preservation and maintenance operations;

e. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments. The compensatory mitigation shall be designed to achieve the functions as soon as practicable.

f. Monitoring the impact and the compensation projects and taking appropriate corrective measures.

Response: The Applicant has incorporated mitigation sequencing (avoiding, minimizing, and mitigating impacts) throughout the project design, which has been overseen by Ecology and coordinated with the USFWS. The project is self-mitigating,[1] and compensatory mitigation is not required.[2] The USFWS concurs with this determination. The proposed action meets the standards.

Avoidance approaches include the following:

- The in-water remedial investigation used a sample-intensive methodology to ensure that only areas exceeding cleanup levels would be excavated. Other areas are therefore avoided and are not disturbed unnecessarily.
- Bank stabilization along the eastern side of the wetland was redesigned from a 3:1 soil slope to a 2.5:1 (minimum) slope to avoid wetland encroachment (see Section 1, Sheet C7).
- A spill prevention and pollution control plan will be implemented during construction, along with erosion- and sediment-control BMPs, to avoid potential impacts to water quality.

Minimization measures include the following:

- Bank stabilization on the southern side of the wetland is designed at a 2:1 slope (see Section 2, Sheet C7). This slope was selected as the preferred

[1] If the typical practice of calculating wetland mitigation and impact areas were applied to this project, then the area of in-water rehabilitation (approximately 1 acre, not including contingency) would be compared to the area of wetland filled (approximately 0.17 acre, not including contingency). This yields a 6:1 ratio. As described in the January 21, 2014, letter to Mr. Eric Eisemann, the mitigation ratio for rehabilitation in Category 2 wetlands is listed as 8:1 (Table 18.280-7). As stated in the Ridgefield Municipal Code (RMC), the compensatory mitigation ratios listed shall be consistent with the 2004 Ecology Guidance on Wetland Mitigation in Washington State, Part 1: Laws, Rules, Policies, and Guidance Related to Wetland Mitigation (Ecology publication No. 04-06-013a), or as revised by Ecology. The Ecology (2004) draft guidance document is obsolete and has been revised and replaced with the 2006 Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance (Ecology publication No. 06-06-011a). The updated document specifies a 6:1 mitigation ratio for rehabilitation in Category 2 wetlands (Table 1a in Ecology publication No. 06-06-011a). The 6:1 mitigation ratio is therefore consistent with RMC and is appropriate for evaluating Carty Lake remedial action project impacts.

[2] Note that the Corps Section 404 permitting for the remedial action is under way and that the Corps mitigation evaluation operates under a different framework. The Corps is requiring purchase of wetland credits through a Columbia River mitigation bank. The port is in the process of accommodating this request. The Corps requirements are offered for information purposes only.

alternative because it minimizes encroachment into the wetland. Other evaluated stabilization designs (e.g., 3:1 slope, ecology blocks) would result in greater encroachment or were infeasible.

- The sediment area will be dewatered before excavation. Construction in the dry allows the use of conventional excavation equipment and minimizes the disturbance of adjacent sediments and wetlands.
- Native vegetation will be preserved where possible.
- The sediment excavation area will be functionally isolated (using sandbags or placement of a temporary isolation berm) from wetland habitat to the north (see Sheet C5), thereby minimizing impacts outside the work area.

The following measures will mitigate construction impacts:

- **Sediment rehabilitation.** Contaminated sediments will be removed.
- **Invasive-species control.** At the request of the USFWS, the final depth of Carty Lake in the excavation area will be at least 6 inches deeper than the current condition to inhibit the growth of reed canary grass.
- **Bank enhancement.** The proposed bank stabilization elements include remediate an existing wall condition (an abrupt, approximately 15-foot change in grade from the higher-elevation Miller's Landing to the lower-elevation wetlands of the Carty Unit), with more gradual slopes planted with a diverse palette of native plants. This will increase both the area and the quality of transition habitat between the wetland and the surrounding uplands.
- **Native wetland plantings.** The excavation area and surrounding areas where work will take place will be planted with native species suited to the post-remedy elevations, enhancing habitat quality.
- Maintenance and monitoring. A monitoring approach and adaptive management and maintenance techniques were developed to ensure that plantings are effective.

The standard has been satisfied.

3. In addition to compensatory mitigation, unavoidable adverse impacts may be further addressed through voluntary restoration efforts.

Response: The remediation does not propose any additional restoration efforts.

4. Shoreline uses and developments shall not cause impacts that require remedial action or loss of shoreline ecological functions on other properties.

Response: This standard is not applicable. The Applicant proposes a remedial action designed specifically to increase ecological functions.

5. Shoreline uses and developments shall be located and designed in a manner such that shoreline stabilization is not necessary at the time of development and will not be necessary in the future for the subject property or other nearby shoreline properties unless it can be demonstrated that stabilization is the

only alternative that allows a reasonable and appropriate water-dependent use to become established or expand or protects public safety and existing primary structures.

Response: No development is proposed. The Applicant proposes to construct shoreline stabilization measures solely to prevent further failure of the existing wooden bulkhead and to maintain the integrity of the existing clean soil environmental cap on the LRIS. Further failure of this bulkhead presents a risk to both public safety and the environment. The proposed shoreline stabilization measures have been designed to restore shoreline ecological functions and processes.

6. **Land shall not be cleared, graded, filled, excavated or otherwise altered prior to issuance of the necessary permits and approvals including a Shoreline Statement of Exemption for a proposed shoreline use or development to determine if environmental impacts have been avoided, minimized and mitigated to result in no net loss of ecological functions.**

Response: The Applicant is pursuing approval through the state Joint Aquatic Resources Permit Application program, which includes applications for federal, state, and local permits. Pursuant to RCW 70.105D.090, remedial actions conducted under a consent decree are exempt from the procedural requirements of applicable state permits and all local permits. However, Ecology shall ensure compliance with the substantive provisions of these permits. The Applicant has provided these narrative responses to demonstrate compliance with the substantive provisions identified by the city.

7. **Non-water-oriented uses shall not adversely impact or displace water-oriented shoreline uses.**

Response: No non-water-oriented uses are currently proposed. The standard is not applicable.

8. **Single family residential uses shall be allowed on all shorelands not subject to a preference for commercial or industrial water-dependent uses, and shall be located, designed and used in accordance with applicable policies and standards of this Program. However, single family residences are prohibited in the Natural shoreline designation, and new floating homes are prohibited in the Aquatic shoreline designation.**

Response: Single-family residential uses are not proposed. The standard is not applicable.

9. **On navigable waters or their beds, all uses and developments should be located and designed to:**

   a. Minimize interference with surface navigation;

   b. Consider impacts to public views; and

   c. Allow for the safe, unobstructed passage of fish and wildlife, particularly species dependent on migration.

Response: The proposed remedial action will not interfere with surface navigation, likely will improve public views through the removal of noxious invasive species, and will improve habitat for fish and wildlife through the removal of toxic materials and placement of native plant species. The standard has been satisfied.

10. **Hazardous materials shall be disposed of and other steps be taken to protect the ecological integrity of the shoreline area in accordance with the other policies and regulations of this Program as amended and all other applicable federal, state, and local statutes, codes, and ordinances. Environmental remediation actions pursuant to a consent decree, order, or agreed order issued under RCW 70.105(D) are exempt from the requirement to obtain an SSDP, SCUP, or SVAR under this Program but must comply with the substantive requirements of the Act and this Program. Any development or redevelopment on a remediated site must occur consistent with any covenants running with the land, the Act and this Program. (See Sections 1.7(6), 2.3.2(19), and 6.1(3).)**

Response: The proposed work will not include the generation, handling, or disposal of hazardous materials. The remedial and shoreline-stabilization designs are both intended to protect the ecological integrity of the shoreline area. The proposed work is pursuant to a Consent Decree with the State of Washington; the proposed work will comply with the substantive requirements of the Act and this program. No development or redevelopment is proposed.

11. **In-water work shall be scheduled to protect biological productivity (including but not limited to fish runs, spawning, and benthic productivity). In-water work shall not occur in areas used for commercial fishing during a fishing season unless specifically addressed and mitigated for in the permit.**

Response: The Applicant proposes to conduct work during the low-water season to minimize ecological disturbance, consistent with a USFWS request. The project area is not a commercial fishing area. The standard has been satisfied.

12. **The effect of proposed in-stream structures on bank margin habitat, channel migration, and floodplain processes should be evaluated during permit review.**

Response: The standard is not applicable. The Applicant does not propose to construct in-stream structures.

13. **Previous approvals of master plans for projects in shoreline jurisdiction should be accepted. New phases of projects for which no master plan has yet been approved, or for which major changes are being proposed, or new projects for which master plans are being submitted shall be subject to the policies and regulations of this Program.**

Response: The Applicant understands the provision. An existing master plan exists for upland port-owned property, but the currently proposed action is outside the master plan area.

14. **Within urban growth areas (RCW 36.70A.110), the Department of Ecology may grant relief from use and development regulations of this program when:**

Response: The Applicant does not request relief from use and development regulations of the SMP program.

5.3 Critical Areas Protection

5.3.1 General Provisions

1. **In addition to the provisions of this section, critical areas (fish and wildlife habitat conservation areas, frequently flooded areas, geologic hazard areas, critical aquifer recharge areas, and wetlands) located within shoreline jurisdiction and their buffers are regulated and protected by Chapter 5A, RMC 18.280, Critical Areas Protection and RMC 18.750, Flood Control as modified for consistency with the Act and this Program.**

2. **Unless otherwise stated, no development shall be constructed, located, extended, modified, converted, or altered or land divided without full compliance with this Program whether or not a shoreline permit or written Shoreline Statement of Exemption is required.**

3. **Any allowed use, development, or activity affecting a critical area proposed on a parcel located in the shoreline jurisdiction, whether or not exempt from obtaining a Shoreline Substantial Development Permit, Shoreline Conditional Use Permit, or Shoreline Variance, shall be regulated under the provisions of this Program.**

4. **Shoreline uses and developments and their associated structures and equipment shall be located, designed and operated using best management practices to protect critical areas.**

Response: The Applicant understands these provisions. The proposed remedial action is located within the shoreline jurisdiction and is therefore subject to the provisions of this chapter. The Applicant is requesting review of the substantive requirements of this section and all others pertaining to the critical areas review, pursuant to the review directed by RCW 105.70.090D.

5.4 Public Access

1. **Provisions for adequate public access shall be incorporated into all shoreline development proposals that involve public funding unless the applicant demonstrates public access is not feasible due to one or more of the provisions of Section 5.4.2 (a-e). Where feasible, such projects shall incorporate ecological restoration.**

Response: The proposed work is in the shoreline area of Carty Lake; Carty Lake is located entirely within the RNWR. Therefore, the Applicant does not control access to the RNWR or to a large portion of the shoreline area. The portion of the shoreline area that lies outside the RNWR is owned by the Applicant. The proposed work does not include development. Public access to the shorelines area owned by the Applicant will be increased by completion of a public-access, multi-purpose trail area within the shoreline area; a portion of the proposed trail will connect to an existing trail to the south, within the Lake River shoreline area, and an existing trail to the north, along the RNWR. The Applicant has designed the landscaping plan for the project area to retain existing view corridors to Carty Lake and the RNWR (see Sheets L0 through

L4). The proposed work is intended to protect the ecological integrity of the shoreline area.

2. **Consistent with constitutional limitations, provisions for adequate public access shall be incorporated into all land divisions and other shoreline development proposals (except residential development of less than five (5) parcels), unless this requirement is clearly inappropriate to the total proposal.**

Response: No land division or shoreline development is proposed as part of this remedial action. The standard is not applicable.

3. **Public access sites shall be connected to barrier free route of travel and shall include facilities based on criteria within the Americans with Disabilities Act Accessibility guidelines.**

Response: The design of the proposed multi-use trail complies with the Americans with Disabilities Act accessibility guidelines. The standard has been satisfied.

4. **Public access shall include provisions for protecting adjacent properties from trespass and other possible adverse impacts to neighboring properties.**

Response: The Applicant proposes to construct a fence to limit trespass onto the RNWR (see Sheets L2 through L4). The standard has been satisfied.

5. **Signs indicating the public right of access to shoreline areas shall be installed and maintained in conspicuous locations.**

Response: The proposed work is in the shoreline area of Carty Lake; Carty Lake is located entirely within the RNWR. Therefore, the Applicant does not control access to the RNWR or to a large portion of the shoreline area. The public is encouraged to visit the trail in the Applicant-owned portion of the shoreline area. The standard has been satisfied.

6. **Required public access shall be fully developed and available for public use at the time of occupancy of the use or activity.**

Response: No use or activity is proposed; however, public access to the Applicant-owned portions of the shoreline area will be fully developed and available for use at the completion of the proposed work. The standard has been satisfied.

7. **Public access shall consist of a dedication of land or a physical improvement in the form of a walkway, trail, bikeway, corridor, viewpoint, park, deck, observation tower, pier, boat launching ramp, dock or pier area, or other area serving as a means of view and/or physical approach to public waters and may include interpretive centers and displays.**

Response: Public access will consist of construction of a multi-use trail on the Applicant-owned portions of the shoreline area and preservation of view corridors to the RNWR. The standard has been satisfied.

8. **Public access easements and permit conditions shall be recorded on the deed of title and/or on the face of a plat or short plat as a condition running contemporaneous with the authorized land use, as a minimum. Said recording with the County Auditor's Office shall occur at the time of permit approval.**

Response: Public access easements and permit conditions are not anticipated. The standard does not apply.

9. **Future actions by the applicant, successors in interest, or other parties shall not diminish the usefulness or value of the public access provided.**

Response: The Applicant understands this provision.

10. **Maintenance of the public access facility shall be the responsibility of the owner unless otherwise accepted by a public or non-profit agency through a formal agreement approved by the Shoreline Administrator and recorded with the County Auditor's Office.**

Response: The Applicant intends to maintain the multi-use trail.

5.5 Restoration

1. **Restoration of shoreline ecological functions and processes shall be encouraged and allowed on all shorelines and shall be located, designed and implemented in accordance with applicable policies and regulations of this Program and consistent with other City programs (see Section 6.4.4). Implementation of restoration projects on shorelines of statewide significance take precedence over implementation of restoration projects on other shorelines of the state.**

Response: The Applicant proposes to rehabilitate degraded habitat through removal of contaminated sediment, bank stabilization, and revegetation to the maximum extent feasible, improving ecosystem functions; Ecology requires this remediation. The proposed action will be implemented consistent with applicable policies and standards of this program and consistent with other city programs. The proposed action meets the standard.

2. **Impacts to shoreline ecological functions shall be fully mitigated. Such mitigation may include elements from the Shoreline Restoration Plan, where appropriate.**

Response: The Applicant has incorporated mitigation sequencing (avoiding, minimizing, and mitigating impacts) throughout the project design, which has been overseen by Ecology and coordinated with the USFWS. The project is self-mitigating,[3] and

[3] If the typical practice of calculating wetland mitigation and impact areas were applied to this project, then the area of in-water rehabilitation (approximately 1 acre, not including contingency) would be compared to the area of wetland filled (approximately 0.17 acre, not including contingency). This yields a 6:1 ratio. As described in the January 21, 2014, letter to Mr. Eric Eisemann, the mitigation ratio for rehabilitation in Category 2 wetlands is listed as 8:1 (Table 18.280-7). As stated in the Ridgefield Municipal Code (RMC), the compensatory mitigation ratios listed shall be consistent with the 2004 Ecology Guidance on Wetland Mitigation in Washington State, Part 1: Laws, Rules, Policies, and Guidance Related to Wetland Mitigation (Ecology publication No. 04-06-013a), or as revised by Ecology. The Ecology (2004) draft guidance document is obsolete and has been revised and replaced with the 2006 Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance (Ecology publication No. 06-06-011a). The updated document specifies a 6:1 mitigation ratio for rehabilitation in Category 2 wetlands (Table 1a in Ecology publication No. 06-06-011a). The 6:1 mitigation ratio is therefore consistent with RMC and is appropriate for evaluating Carty Lake remedial action project impacts.

compensatory mitigation is not required.[4] The USFWS concurs with this determination. Construction impacts to shoreline ecological functions will be mitigated by the following project components:

- **Sediment rehabilitation.** Contaminated sediments will be removed.
- **Invasive species control.** At the request of the USFWS, the final depth of Carty Lake in the excavation area will be at least 6 inches deeper than the current condition to inhibit the growth of reed canary grass.
- **Native wetland plantings.** The excavation area and surrounding areas where work will take place will be planted with native species suited to the post-remedy elevations, enhancing habitat quality (see Sheets L0 through L4).
- **Maintenance and monitoring.** A monitoring approach and adaptive management and maintenance techniques were developed to ensure that plantings are effective.
- **Bank enhancement.** The proposed bank stabilization elements include remediate an existing wall condition (an abrupt, approximately 15-foot change in grade from the higher-elevation Miller's Landing to the lower-elevation wetlands of the Carty Unit) with more gradual slopes planted with a diverse palette of native plants. This will increase both the area and the quality of transition habitat between the wetland and the surrounding uplands.

The proposed project meets the standard.

3. Elements of the Shoreline Restoration Plan may also be implemented in any shoreline designation to improve shoreline ecological function.

Response: The Applicant understands the standard.

4. Implementation of restoration projects identified in the Shoreline Restoration Plan that are focused on restoring degraded habitat in shoreline jurisdiction take precedence over other restoration projects.

Response: The Applicant proposes to rehabilitate degraded habitat through sediment excavation, bank stabilization, and revegetation to the maximum extent feasible, improving ecosystem functions; the remediation is required by the state.

5. Restoration efforts shall be developed by a qualified professional, shall be based on federal, state, and local guidance and shall consider the following:

a. Riparian soil conditions;

b. In-stream fish habitats; and

c. Healthy aquatic and terrestrial food webs.

[4] Note that the Corps Section 404 permitting for the remedial action is under way and that the Corps mitigation evaluation operates under a different framework. The Corps is requiring purchase of wetland credits through a Columbia River mitigation bank. The port is in the process of accommodating this request. The Corps requirements are offered for information purposes only.

Response: The Applicant has retained qualified professionals to design the remedial action. Consistent with federal, state, and local guidance, a wetland delineation identifying soil conditions and habitats has been completed; fish data have been reviewed to identify species and habitat present; and food web modeling has been completed to guide remedy area selection. The proposed action meets the standard.

5.6.2 Clearing, Grading, Fill and Excavation

1. **Land disturbing activities such as clearing, grading, fill, and excavation shall be conducted in such a way as to minimize impacts to soils and native vegetation, and shall comply with RMC 18.755, Erosion Control; 13.30, Stormwater Utility; and RMC Chapter 14.03, Construction Administrative Code.**

Response: The proposed work is designed to minimize impacts to non-contaminated soils and native vegetation. The Applicant proposes to remove existing non-native vegetation and replant disturbed areas with native vegetation. The Applicant will comply with RMC 18.755, Erosion Control; 13.30, Stormwater Utility; and RMC Chapter 14.03, Construction Administrative Code, as applicable. The proposed action meets the standard.

2. **Clearing, grading, fill, and excavation activities shall be scheduled to minimize adverse impacts, including but not limited to, damage to water quality and aquatic life.**

Response: The Applicant proposes to conduct work during seasonal low water, as requested by the USFWS, to minimize disturbance to aquatic life. During seasonal low water, the work area is typically dry. In order to minimize adverse impacts to water quality and aquatic life, the Applicant proposes to construct a temporary berm to hydraulically isolate the work area from Carty Lake (see Sheet C5). When the work is complete, this berm will be removed and the work area will be reconnected to Carty Lake. The proposed action meets the standard.

3. **Clearing and grading shall not result in changes to surface water drainage patterns that adversely impact adjacent properties.**

Response: The proposed work will not result in changes to surface water drainage patterns. The proposed action meets the standard.

4. **Developments shall comply with the RMC 18.755, Erosion Control during construction and shall ensure preservation of native vegetation for bank stability. Disturbed areas shall be stabilized immediately and revegetated with native vegetation.**

Response: No development is proposed. As noted above, the Applicant will comply with RMC 18.755. Native vegetation will be preserved where possible (see Sheets L0 through L4). The Applicant proposes to construct a temporary berm to hydraulically isolate the work area from Carty Lake (see Sheet C5). Disturbed areas will be stabilized and revegetated with native vegetation before the work area is reconnected to Carty Lake. The proposed action meets the standard.

5. **Habitat that cannot be replaced or restored within twenty (20) years shall be preserved. Peat bogs and stands of mature trees are examples of such habitat.**

Response: Neither peat bogs nor stands of mature trees are located in the proposed work area. The Applicant proposes to remove eight isolated trees, which are located immediately below the existing, failing wooden bulkhead (see Sheet C3). The Applicant proposes to preserve all other trees and plant approximately 50 trees in nearby areas. The proposed action meets the standard.

6. **Fills shall be permitted only in conjunction with a permitted use, and shall be of the minimum size necessary to support that use. Speculative fills are prohibited.**

Response: The Applicant proposes a minimum volume of fill to complete the remedial action and to stabilize the existing, failing wooden bulkhead. No speculative fills are proposed. The proposed action meets the standard.

7. **Any fill activity shall comply with the fill provisions of RMC Chapter 14.03. Fill shall consist only of clean materials.**

Response: The Applicant proposes to excavate and dispose of contaminated sediments and to place clean sand, rock, and soil fill. Sand and soil fill will be sampled and analyzed to confirm that it is clean. The proposed action meets the standard.

8. **Soil, gravel or other substrate transported to the site for fill shall be screened and documented that it is uncontaminated. Use of any contaminated materials as fill is prohibited unless done in conjunction with or as part of an environmental remediation project authorized under RCW 70.105D.**

Response: The Applicant will screen soil, gravel, or other substrate transported to the site for fill and will document that it is uncontaminated. No use of contaminated materials as fill is proposed. The proposed action meets the standard.

9. **Fills shall be designed and placed to allow surface water penetration into groundwater supplies where such conditions existed prior to filling unless contrary to the purposes of an environmental remediation project authorized under RCW 70.105D.**

Response: The proposed work will not impede surface water penetration into groundwater supplies. The proposed action meets the standard.

10. **Fills must protect shoreline ecological functions, including channel migration processes.**

Response: The proposed work is designed to enhance shoreline ecological functions by covering an existing, failing wooden bulkhead with a protective berm providing transitional habitat vegetated with native plants. There is no active channel in or near Carty Lake; the proposed work will not impede channel migration processes. The proposed action meets the standard.

11. **Fill waterward of OHWM shall only be allowed as a conditional use, and then only when it is necessary:**

    a. **To support a water-dependent or public access use;**

b. For habitat creation or restoration projects;

c. For remediation of contaminated sediments as part of an interagency environmental clean-up plan;

d. For disposal of dredged material considered suitable under, and conducted in accordance with the dredged material management program of the Washington Department of Natural Resources;

e. For expansion or alteration of transportation facilities of statewide significance currently located on the shoreline and then only upon a demonstration that alternatives to fill are not feasible;

f. For a mitigation action;

g. For environmental restoration; or

h. For a beach nourishment or enhancement project.

Response: The Applicant proposes to place clean fill for the remediation of contaminated sediments under a Consent Decree with the State of Washington. Additional clean fill is proposed waterward of the ordinary high-water mark (OHWM) to stabilize the existing, failing wooden bulkhead. This stabilization berm has been designed to minimize the amount of fill waterward of the OHWM (see Sheets C5 and C7). The proposed action meets the standard.

12. Excavation below the OHWM is considered dredging and subject to provisions under that section in Chapter 6.

Response: The Applicant will comply with the applicable dredging provisions of Section.

13. Upon completion of construction, remaining cleared areas shall be replanted with native species on the City's Native Plant List (RMC 18.830). Replanted areas shall be maintained such that within three (3) years' time the vegetation is fully re-established.

Response: The Applicant has proposed a planting and monitoring plan for the remedial action. Plants suited to the postconstruction grade and wetland and riparian habitat are selected. All plants selected are native species on the City's Native Plant List (RMC 18.830). It is anticipated that the vegetation will be established within three years. Replanted areas will be monitored and maintained for five years. The standard is met.

5.9 Water Quality and Quantity

1. The location, design, construction, and management of all shoreline uses and activities shall protect the quality and quantity of surface and ground water adjacent to the site.

Response: The proposed work will not affect the quality and quantity of surface water and groundwater adjacent to the site. The Applicant plans to conduct the proposed work in the dry by hydraulically isolating the work area from Carty Lake (see Sheet C5). No work that will impact the quality of groundwater is proposed. The proposed action meets the standard.

2. **All shoreline development shall comply with the applicable requirements of the RMC Chapter 18.755, Erosion Control and 13.30, Stormwater Utility.**

Response: The Applicant will comply with the applicable requirements of RMC Chapter 18.755, Erosion Control, and 13.30, Stormwater Utility. The proposed action meets the standard.

3. **Best management practices (BMPs) for control of erosion and sedimentation shall be implemented for all shoreline development.**

Response: In order to control erosion and sedimentation, the Applicant proposes to construct a temporary berm (i.e., sandbags) to hydraulically isolate the work area from Carty Lake (see Sheet C5). When the work is complete, this berm will be removed and the work area will be reconnected to Carty Lake. Disturbed surfaces will be revegetated with native vegetation and bioengineered erosion-control measures (see Sheets L0 through L4). The proposed action meets the standard.

4. **Potentially harmful materials, including but not limited to oil, chemicals, tires, or hazardous materials, shall not be allowed to enter any body of water or wetland, or to be discharged onto the land except in accordance with RMC 13.30, Stormwater Utility. Potentially harmful materials shall be maintained in safe and leak-proof containers.**

Response: The Applicant understands this standard; the proposed work will be conducted in accordance with applicable federal, state, and local standards. The proposed action meets the standard.

5. **Herbicides, fungicides, fertilizers, and pesticides shall not be applied within twenty-five (25) feet of a waterbody, except by a qualified professional in accordance with state and federal laws. Further, pesticides subject to the final ruling in Washington Toxics Coalition, et al., v. EPA shall not be applied within sixty (60) feet for ground applications or within three hundred (300) feet for aerial applications of the subject water bodies and shall be applied by a qualified professional in accordance with state and federal law.**

Response: The Applicant does not propose the use of herbicides, fungicides, fertilizers, or pesticides at this time. If necessary, adaptive management could include use of pesticides, herbicides, or fungicides that would be applied consistent with the standard. The standard is met.

6. **Any structure or feature in the Aquatic shoreline designation shall be constructed and/or maintained with materials that will not adversely affect water quality or aquatic plants or animals. Materials used for decking or other structural components shall be approved by applicable state agencies for contact with water to avoid discharge of pollutants.**

Response: The standard is not applicable. No structures or features are proposed.

7. **Septic systems should be located as far landward of the shoreline and floodway as possible. Where permitted, new on-site septic systems shall be located, designed, operated, and maintained to meet all applicable water quality, utility, and health standards.**

Response: The standard is not applicable. No septic systems are proposed.

CHAPTER 5A
GENERAL SHORELINE USE AND DEVELOPMENT REGULATIONS CONTINUED: CRITICAL AREAS REGULATIONS

18.280.030—Applicability and exemptions

A. Applicability.

Response: The Applicant understands that the critical area standards apply to the current application. Findings demonstrating substantive compliance with the applicable requirements are provided herein.

18.280.060—Approval criteria

Any activity subject to this chapter, unless otherwise provided for in this chapter, shall be reviewed and approved, approved with conditions, or denied based on the proposal's ability to comply with all of the following criteria. The city may condition the proposed activity as necessary to mitigate impacts to critical areas and their buffers and to conform to the standards required by this chapter. Activities shall protect the functions of the critical areas and buffers on the site.

A. Avoid Impacts. The applicant shall first avoid all impacts that degrade the functions and values of (a) critical area(s) by not taking a certain action or parts of an action. This may necessitate a redesign of the proposal.

Response: The Applicant has implemented mitigation sequencing (avoiding, minimizing, and mitigating impacts) throughout the project design. The proposed action meets the standard. Avoidance approaches include the following:

- The in-water remedial investigation used a sample-intensive methodology to ensure that only areas exceeding cleanup levels would be excavated. Other areas are therefore avoided and are not disturbed unnecessarily.
- Bank stabilization along the eastern side of the wetland was redesigned from a 3:1 soil slope to a 2.5:1 (minimum) slope to avoid wetland encroachment.
- A spill prevention and pollution control plan will be implemented during construction, along with erosion- and sediment-control BMPs, to avoid potential impacts to water quality.

B. Minimize Impacts. The applicant shall minimize the impact of the activity by limiting the degree or magnitude of the action and its implementation by using appropriate technology or by taking affirmative steps to avoid or reduce impacts. The applicant shall seek to minimize the fragmentation of the resource to the greatest extent possible.

Response: The Applicant has implemented mitigation sequencing (avoiding, minimizing, and mitigating impacts) throughout the project design. The proposed action meets the standard. Minimization measures include the following:

- Bank stabilization on the southern side of the wetland is designed at a 2:1 slope. This slope was selected as the preferred alternative because it minimizes encroachment into the wetland. Other evaluated stabilization designs (e.g., 3:1 slope, ecology blocks) would result in greater encroachment or were infeasible.
- The sediment area will be dewatered before excavation. Construction in the dry allows the use of conventional excavation equipment and minimizes the disturbance of adjacent sediments and wetlands.
- Native vegetation will be preserved where possible.
- The sediment excavation area will be functionally isolated (using sandbags or placement of a temporary isolation berm) from wetland habitat to the north, thereby minimizing impacts outside the work area.

C. Rectify Impacts. The applicant shall rectify the impacts by repairing, rehabilitating, or restoring the affected environment.

Response: The Applicant proposes a remedial action designed specifically to rehabilitate the Carty Lake wetland. The work area will be planted with native vegetation following excavation and clearing activities (see Sheets L0 through L4). Plantings will be monitored and maintained for five years. The proposed action meets the standard.

D. Reduce Impacts. The applicant shall reduce or eliminate the impacts over time by preservation and maintenance operations.

Response: The Applicant proposes a remedial action that provides long-term environmental benefit. Short-term construction impacts will be reduced through use of BMPs, including spill prevention and pollution-, erosion-, and sediment-control measures. The proposed action meets the standard.

E. Compensatory Mitigation. The applicant shall compensate for the impacts by replacing, enhancing, or providing substitute resources or environments. The compensatory mitigation shall be designed to achieve the functions as soon as practicable.

Response: The project is self-mitigating,[5] and compensatory mitigation is not required.[6] The USFWS concurs with this determination. Construction impacts to shoreline ecological functions will be mitigated by the following project components:

[5] If the typical practice of calculating wetland mitigation and impact areas were applied to this project, then the area of in-water rehabilitation (approximately 1 acre, not including contingency) would be compared to the area of wetland filled (approximately 0.17 acre, not including contingency). This yields a 6:1 ratio. As described in the January 21, 2014, letter to Mr. Eric Eisemann, the mitigation ratio for rehabilitation in Category 2 wetlands is listed as 8:1 (Table 18.280-7). As stated in the RMC, the compensatory mitigation ratios listed shall be consistent with the 2004 Ecology Guidance on Wetland Mitigation in Washington State, Part 1: Laws, Rules, Policies, and Guidance Related to Wetland Mitigation (Ecology publication No. 04-06-013a), or as revised by Ecology. The Ecology (2004) draft guidance document is obsolete and has been revised and replaced with the 2006 Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance (Ecology publication No. 06-06-011a). The updated document specifies a 6:1 mitigation ratio for rehabilitation in Category 2 wetlands (Table 1a in Ecology publication #06-06-011a). The 6:1 mitigation ratio is therefore consistent with RMC and is appropriate for evaluating Carty Lake remedial action project impacts.

- **Sediment rehabilitation.** Contaminated sediments will be removed.
- **Invasive species control.** At the request of the USFWS, the final depth of Carty Lake in the excavation area will be at least 6 inches deeper than the current condition to inhibit the growth of reed canary grass.
- **Native wetland plantings.** The excavation area and surrounding areas where work will take place will be planted with native species suited to the post-remedy elevations, enhancing habitat quality (see Sheets L0 through L4).
- **Maintenance and monitoring.** A monitoring approach and adaptive management and maintenance techniques were developed to ensure that plantings are effective.
- **Bank enhancement.** The proposed bank stabilization elements include remediating an existing wall condition (an abrupt, approximately 15-foot change in grade from the higher-elevation Miller's Landing to the lower-elevation wetlands of the Carty Unit) with more gradual slopes planted with a diverse palette of native plants. This will increase both the area and the quality of transition habitat between the wetland and the surrounding uplands.

The proposed project meets the standard.

F. Monitor Impacts and Mitigation. The applicant shall monitor the impacts and the compensation projects and take appropriate corrective measures.

Response: The Applicant has developed a planting maintenance and monitoring plan. A monitoring approach and adaptive management and maintenance techniques were developed to ensure that plantings establish successfully. Plantings will be maintained and monitored for five years. The proposed action meets the standard.

G. Type and Location of Mitigation. Compensatory mitigation shall be in-kind and on-site when feasible, and sufficient to maintain the functions of the critical area consistent with the mitigation provisions of this ordinance, and to prevent risk from a hazard posed by a critical area to a development or by a development to a critical area. Wetland mitigation bank credits shall only be utilized when consistent with the provisions of this ordinance.

Response: The standard is not applicable. See response to Section E above.

H. In addition to mitigation, unavoidable adverse impacts may be addressed through restoration efforts.

Response: The standard is not applicable. The Applicant proposes a remedial action designed specifically to rehabilitate the Carty Lake wetland.

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[6] Note that the Corps Section 404 permitting for the remedial action is under way and that the Corps mitigation evaluation operates under a different framework. The Corps is requiring purchase of wetland credits through a Columbia River mitigation bank. The port is in the process of accommodating this request. The Corps requirements are offered for information purposes only.

I. No Net Loss. The proposal protects the critical area functions and values and results in no net loss of critical area functions and values.

Response: The Applicant proposes a remedial action designed specifically to provide environmental benefit to the Carty Lake wetland. The remedial action required by Ecology addresses unacceptable risks to ecological receptors and includes excavating contaminated sediment; placing clean sand to contain residual contamination; stabilizing a failing, treated-wood retaining wall; and vegetating the wetland and upland banks with native plants. Therefore, the project will result in a net increase in critical area functions and values. The proposed action meets the standard.

J. Consistency with General Purposes. The proposal is consistent with the general purposes of this chapter and does not pose a significant threat to the public health, safety, or welfare on or off the development proposal site; (Ord. 903 § 2(part), 2006).

Response: The Applicant proposes a remedial action that is designed with oversight from Ecology and the USFWS, is consistent with the general purposes of this chapter, and is designed to protect human health and the environment. There will be no significant adverse effects to public health, safety, or welfare. The proposed action meets the standard.

18.280.110—Fish and wildlife habitat conservation areas.

A. Designation.

1. There are established in the city the following identified fish and wildlife habitat conservation areas:

a. Habitat for any life stage of state or federally designated endangered, threatened, and sensitive fish or wildlife species. A current list of federally and state identified species is available from the shoreline administrator.

b. Priority Habitats and areas associated with Priority Species. Current lists of priority habitats and species and applicable management recommendations promulgated by the Washington Department of Fish and Wildlife are available from the shoreline administrator.

c. Water bodies including lakes, streams, rivers and naturally occurring ponds.

Response: The Applicant understands these designations. The project area does not include habitat for any life stage of state or federally designated endangered, threatened, or sensitive fish or wildlife species. Priority Species Maps depict waterfowl concentrations across the site. The proposed action will be conducted in a Category 2 wetland.

2. Habitat Location Information. Information on the approximate location and extent of habitat conservation areas is available from the shoreline administrator.

Response: The Applicant understands that the project site is located in a Riparian Habitat Conservation area and that Carty Lake is a shoreline of the state. Priority Habitat and Species Maps depict waterfowl concentrations across the site (see Figure 1). Salmonid distribution maps and the USFWS indicate that salmonids are not known to be or expected to be present in the project area.

B. Fish and Wildlife Habitat Conservation Areas and Riparian Buffers. Fish and wildlife habitat conservation areas within the city shall be established pursuant to the Washington State Department of Natural Resources Stream Typing System, as amended. Fish and wildlife habitat conservation areas shall be established by a qualified professional and shall be measured to include the land in each direction from the OHWM of the designated stream type.

1. **The minimum riparian buffer widths for stream types designated in accordance with the Washington State Department of Natural Resources (DNR) Stream Typing System shall be as described in Table 18.280.110-1.**

Response: The Applicant notes that the project area is located at the southern end of Carty Lake. Carty Lake is, in total, larger than 20 acres and is considered a shoreline of the state, but is not large enough (>1,000 acres) to be considered a lake of statewide significance. A minimum 150-foot riparian buffer is designated for shorelines of the state. However, the existing wooden bulkhead along the Port of Ridgefield property, located directly adjacent to the southern and eastern boundaries of Carty Lake, does not provide habitat functions to protect the wetland. The unvegetated and historically impervious buffer on the port property is isolated from the functioning and vegetated buffer along Carty Lake. Therefore, the required buffer extends from the wetland boundary to the functionally isolated boundary/retaining wall associated with the port property.

2. **Fish and wildlife habitat conservation areas and associated buffers shall be identified on the face of plat maps site plans or other development plans, and shall be protected in perpetuity with conservation covenants, deed restrictions or other legally binding mechanisms.**

Response: The Clark County Sensitive and Habitat Areas Map depicts Carty Lake and the project area as a Riparian Habitat Conservation Area (see Figure 1). The Applicant notes that the proposed project is located in the RNWR. The RNWR is managed for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats and is protected by legally binding mechanisms.

3. **If impervious surfaces from previous development completely functionally isolate the designated stream type and associated buffer the regulated fish and wildlife habitat conservation shall extend from the ordinary high water mark to the impervious surfaces. An example would be an existing industrial paved area and warehouses in the riparian buffer.**

Response: Functionally isolated areas are generally defined as areas that do not provide vegetation or habitat functions to the adjacent critical areas. The existing retaining walls along the Port of Ridgefield property located directly adjacent to the southern and eastern boundaries of Carty Lake do not provide habitat functions to protect the

wetland. The unvegetated and historically impervious buffer on the port property is therefore considered isolated from the functioning and vegetated buffer along Carty Lake. Therefore, the required buffer extends from the wetland boundary to the functionally isolated boundary/retaining wall associated with the port property.

D. Performance Standards.

1. General.

a. Development or clearing activities shall protect the functions of the fish and wildlife habitat conservation areas on the site. The activity shall result in no net loss of functions. Protection can be provided by avoiding (the preferred protection) or minimizing and mitigating. Functions include:

i. Providing habitat for breeding, rearing, foraging, protection and escape, migration, and over-wintering.

ii. Providing complexity of physical structure, supporting biological diversity, regulating stormwater runoff and infiltration, removing pollutants from water, and maintaining appropriate temperatures.

Response: The Applicant proposes a remedial action designed for environmental benefit. Carty Lake sediments are contaminated at levels that present unacceptable risk to ecological receptors. The proposed action provides a net gain of ecological function, primarily by removal of contaminants to improve habitat, increase in native plant abundance and structure, and measures (slope stabilization and native plantings) to reduce erosion and runoff. The proposed action meets the standard.

b. An applicant shall replace any lost functions by enhancement to other functions, so long as the applicant demonstrates that enhancement of the other functions provides no net loss in overall functions and maintains habitat connectivity. An example of unavoidable loss of function would be interruption of a travel corridor in a fish and wildlife habitat conservation area and its associated buffer. To the maximum extent feasible, enhancement shall be undertaken on-site.

Response: Habitat is currently severely degraded, as sediment conditions are not protective of benthic and wetland species that rely on benthos (e.g., wetland biota may bioaccumulate contaminants). A small area in the southernmost part of the wetland will be filled because the proposed bank stabilization to contain contaminants behind the failing bulkhead cannot be designed to avoid the wetland effectively. This small area (approximately 0.17 acre, not including contingency) will lose all function; however, contaminant removal, native plantings, and slope stabilization will improve overall wetland functioning. The USFWS concurs with this determination. The wetland will remain hydraulically connected with Carty Lake. The proposed action meets the standard.

c. If development or clearing activity is within a priority habitat and species area the applicant shall follow Washington Department of Fish

and Wildlife Management Guidelines or other standards approved by the Washington Department of Fish and Wildlife.

Response: The Applicant notes that the project is exempt from a WDFW Hydraulic Project Approval. However, substantive requirements developed for the project by WDFW will be met. The proposed action meets the standard.

d. Signs for Fish and Wildlife Conservation Areas

Response: The Applicant notes that the project will be conducted in the RNWR, which is managed by the USFWS to conserve habitat. Signage and markers identifying the conservation areas are already in place. The proposed action meets the standard.

2. Fish and Wildlife Habitat Conservation Areas and Riparian Buffers.

a. Fish and Wildlife Habitat Conservation Areas. Development or clearing activity may occur in Fish and Wildlife Habitat Conservation Areas for the following:

i. A water-dependent, water-related or water-enjoyment activity where there are no feasible alternatives that would have a less adverse impact on the fish and wildlife habitat conservation area or riparian buffer. The applicant shall minimize the impact and mitigate for any unavoidable impact to functions;

Response: The Applicant proposes a project required by the state for environmental benefit that has been designed to avoid, minimize, and mitigate impacts. Other alternatives were evaluated but not selected, as detailed in the Ecology-issued cleanup action plan. The proposed action meets the standard 2(a)(i).

b. Riparian Buffer. Development or clearing activity may occur in the riparian buffer, provided that mitigation is conducted that results in no net loss of riparian habitat functions on the site, and further, that functionally significant habitat, defined as habitat that cannot be replaced or restored within twenty years, shall be preserved unless the clearing or development activity cannot feasibly be located on the site outside of the riparian buffer. An example of habitat that cannot be replaced within twenty years would be a stand of mature trees or a peat bog.

Response: The Applicant proposes to stabilize the failing retaining wall to the south and east of the wetland such that existing subsurface upland (on port property) soil contamination does not reach the wetland. Stabilization components above the wetland boundary include removal of existing vegetation (primarily non-natives such as Himalayan blackberry and up to eight isolated trees, not considered functionally significant habitat) (see Sheet C3), construction of stabilization slopes with 18 inches of topsoil (see Sheet C7), and planting of native vegetation, including approximately 50 trees throughout the project area (see Sheets L0 through L4). Therefore, stabilization elements cannot feasibly be located outside the riparian buffer, and native plantings and improved control of erosion and runoff will result in no net loss of riparian function. The proposed action meets the standard.

c. Buffer Width Averaging. The shoreline administrator may allow buffer width averaging in accordance with an approved critical area report on a case-by-case basis. Buffer width averaging shall not be used in combination with buffer width reduction on the same buffer segment to reduce the minimum buffer width below that specified in this chapter.

d. Buffer Width Reduction. The shoreline administrator may authorize the reduction of required buffer widths to a lesser width provided that an applicant demonstrates compliance with the following:

e. Buffer width reduction shall not be used in combination with buffer width averaging on the same buffer segment, but can be used in combination with the same wetland resource. Where multiple resources exist on a property or site, the shoreline administrator may authorize the use of buffer width averaging and buffer width reduction on different resources on the property or site provided that any required scientific analysis or reporting addresses and supports the separate use.

Response: The previous standards are not applicable. The required buffer extends from the Carty Lake wetland boundary to the functionally isolated boundary/retaining wall associated with the port property, as determined in the wetland delineation and critical areas report completed by a qualified professional (ELS, August 2013).

f. Buffer Maintenance. Except as otherwise specified or allowed in accordance with this chapter, buffers for fish and wildlife habitat conservation areas shall be maintained according to the approved critical area permit.

Response: The Applicant proposes to regrade slopes to stabilize the failing retaining wall (see Sheets C5 and C7). The slopes will be planted with native vegetation (see Sheets L0 through L4). The proposed action meets the standard.

g. Buffer Uses. The following uses may be permitted within a buffer for a fish and wildlife habitat conservation area in accordance with the review procedures of this chapter; provided, they are not prohibited by any other applicable law or regulation and they are conducted in a manner so as to minimize impacts to the buffer and the wetland:

i. Activities allowed under the same terms and conditions as in the associated fish and wildlife habitat conservation areas.

ii. Enhancement and restoration activities aimed at protecting the soil, water, vegetation or wildlife.

Response: The Applicant proposes a remedial action aimed at protecting ecological receptors and enhancing the plant community. The proposed action meets the standard.

3. Signs and Fencing of Fish and Wildlife Habitat Conservation Areas

Response: The Applicant notes that the project will be conducted in the RNWR, which is managed by the USFWS to conserve habitat. Signage and markers identifying the conservation area are already in place. The proposed action meets the standard.

CHAPTER 5B 18.750
FLOOD CONTROL

18.750.030 General provisions.

A. Lands to Which this Chapter Applies. This chapter shall apply to all areas of special flood hazards within the jurisdiction of the city of Ridgefield.

Response: The Applicant understands that the provisions of this chapter apply to the Carty Lake remedial project pursuant to the applicable Flood Insurance Rate Map (FIRM).

18.750.060—Specific standards.

B. Nonresidential Construction. New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall either have the lowest floor, including basement, elevated one foot or more above the base flood elevation; or, together with attendant utility and sanitary facilities, shall:

Response: The standard is not applicable. The Applicant is not proposing new construction or substantial improvement of any commercial, industrial, or other nonresidential structure.

F. Floodways and Channel Migration Zones. Located within areas of special flood hazard are areas designated as floodways and channel migration zones. Since the floodway is an extremely hazardous area due to the velocity of floodwaters that can carry debris, and increase erosion potential, and channel migration zones are hazardous due to alteration of the location of the watercourse by natural processes, the following provisions apply:

Response: The standard is not applicable. As shown on FEMA FIRM 53011C0184, the frequently flooded areas of the project site are part of the Columbia River flood fringe—in Zone AE but outside the floodway. The proposed action will not be conducted in a floodway.

G. Critical Facility. Construction of new critical facilities shall be, to the extent possible, located outside the limits of the special flood hazard area (SFHA) (one-hundred-year floodplain). Construction of new critical facilities shall be permissible within the SFHA in accordance with Section 18.750.060(F) if no feasible alternative site is available. Critical facilities constructed within the SFHA shall have the lowest floor elevated three feet above BFE or to the height of the five-hundred-year flood, whichever is higher. Access to and from the critical facility should also be protected to the height utilized above. Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters. Access routes elevated to or above the level of the base flood elevation shall be provided to all critical facilities to the extent possible.

Response: The standard is not applicable. No new critical facilities are proposed.

CHAPTER 6
SPECIFIC SHORELINE USE REGULATIONS

6.4.2 Dredging and Dredge Material Disposal

6.4.2.1 General

1. **Dredging and dredge disposal shall be prohibited on or in archaeological sites that are listed on the National Register of Historic Places, the Washington Heritage Register, and/or the Clark County Heritage Register until such time that they have been reviewed and approved by the appropriate agency.**

Response: The site is not listed in the registers identified above. The Applicant has engaged a qualified professional to identify cultural resources at the site, and the USFWS is conducting Section 106 review for cultural resources. Sediment excavation (as currently designed) will take place only if it is determined that no significant archaeological or historical resources would be affected by the proposed action. The proposed action meets the standard.

2. **Dredging and dredge disposal shall be scheduled to protect biological productivity (including but not limited to, fish runs, spawning, and benthic productivity) and to minimize interference with fishing activities. Dredging activities shall not occur in areas used for commercial fishing (including but not limited to, drift netting and crabbing) during a fishing season unless specifically addressed and mitigated for in the permit.**

Response: The Applicant proposes to conduct work during low-water season to protect biological productivity. The project area is not a commercial fishing area. The proposed action meets the standard.

6.4.2.2 Dredging

1. **Dredging shall be avoided where possible. Dredging shall be permitted only where it is demonstrated that the proposed water-dependent or water-related uses will not result in significant or ongoing adverse impacts to water quality, fish and wildlife habitat conservation areas and other critical areas, flood holding capacity, natural drainage and water circulation patterns, significant plant communities, prime agricultural land, and public access to shorelines unless one or more of these impacts cannot be avoided. When such impacts are unavoidable, they shall be minimized and mitigated such that they result in no net loss of shoreline ecological functions.**

Response: No water-dependent or water-related uses are proposed. The proposed action involves the dredging and disposal of contaminated sediments for environmental remediation. The project is designed to improve the shoreline ecological functions. The proposed action meets the standard.

2. Maintenance dredging of established navigation channels and basins shall be restricted to managing previously dredged and/or existing authorized location, depth and width.

Response: The standard is not applicable. No maintenance dredging is proposed.

3. Dredging activity is prohibited in the following locations:

a. Along net positive drift sectors and where geohydraulic-hydraulic processes are active and accretion shore forms would be damaged, altered, or irretrievably lost;

b. In shoreline areas with bottom materials that are prone to significant sloughing and refilling due to currents or tidal activity which result in the need for continual maintenance dredging;

c. In habitats identified as critical to the life cycle of officially designated or protected fish, shellfish, or wildlife.

Response: No known net positive drift sectors, shorelines with bottom materials that are prone to significant sloughing and refilling, or habitats identified as critical to the life cycle of officially designated or protected fish, shellfish, or wildlife are present. The criteria do not apply.

4. Dredging techniques that cause minimum dispersal and broadcast of bottom material shall be used, and only the amount of dredging necessary shall be permitted.

Response: The Applicant proposes to construct a temporary berm to hydraulically isolate the work area from Carty Lake. Dredging will be conducted in the dry, using standard earthwork equipment and techniques (see Sheet C5). When the work is complete, this berm will be removed and the work area will be reconnected to Carty Lake. The proposed action meets the standard.

5. Dredging shall be permitted only:

d. To improve water flow or water quality, provided that all dredged material shall be contained and managed so as to prevent it from reentering the water; or

Response: The proposed dredging is pursuant to a consent decree between Ecology and the Applicant. The dredging is proposed to improve water quality and remedy sediments to protect ecological receptors. The proposed action meets the standard.

6. Dredging for fill is prohibited except where the material is necessary for restoration of shoreline ecological functions. When allowed, the site where the fill is to be placed must be located waterward of the ordinary high-water mark. The project must be either associated with a MTCA or CERCLA habitat restoration project or, if approved through a shoreline Shoreline Conditional Use Permit, any other significant habitat enhancement project (WAC 173-26-231(3)(f)).

Response: The standard is not applicable. No dredging for fill is proposed.

6.4.2.3 Dredge Material Disposal

1. **Dredge material disposal shall be avoided where possible. Dredge disposal shall be permitted only where it is demonstrated that the proposed water-dependent or water-related uses will not result in significant or ongoing adverse impacts to water quality, fish and wildlife habitat conservation areas and other critical areas, flood holding capacity, natural drainage and water circulation patterns, significant plant communities, prime agricultural land, and public access to shorelines. When such impacts are unavoidable, they shall be minimized and mitigated such that they result in no net loss of shoreline ecological functions.**

Response: No on-site disposal of dredge material is proposed. Disposal of the dredge material in a permitted, Subtitle D landfill is proposed. The criteria do not apply.

2. **Near shore or landside disposal of dredge materials shall not be located upon, adversely affect, or diminish:**

   a. **Stream mouths, wetlands, or significant plant communities (approved mitigation plans may justify exceptions);**

   b. **Prime agricultural land except as enhancement;**

   c. **Natural resources including but not limited to sand and gravel deposits, timber, or natural recreational beaches and waters except for enhancement purposes;**

   d. **Designated or officially recognized wildlife habitat and concentration areas;**

   e. **Water quality, quantity, and drainage characteristics; and**

   f. **Public access to shorelines and water bodies.**

Response: The dredge material will be disposed of in a permitted, subtitle D landfill. The criteria do not apply.

3. **Dredge material shall be disposed of on land only at sites reviewed and approved by the USACOE and the Shoreline Administrator.**

Response: Because the dredge material is contaminated, it will be disposed of in a permitted, subtitle D landfill. The criteria do not apply.

4. **The following conditions shall apply to land disposal sites:**

Response: Dredge material will be disposed of elsewhere. The criteria do not apply.

5. **Dredge material shall be disposed of in water only at sites approved by the USACOE and the Shoreline Administrator. Disposal techniques that cause minimum dispersal and broadcast of bottom material shall be used, and only if:**

Response: No in-water disposal is proposed. The criteria do not apply.

6. **The deposition of dredged materials in water or wetlands shall be permitted only in approved, open water disposal sites and:**

Response: No in-water or wetland disposal of dredge material is proposed. The criteria do not apply.

6.4.3.3 In-stream Structures

Response: In-stream structures are not proposed. The current proposal relates only to the shoreline of Carty Lake. The criteria do not apply.

6.4.4 Shoreline Restoration and Enhancement

1. **Shoreline restoration and enhancement activities designed to restore shoreline ecological functions and processes and/or shoreline features should be targeted toward meeting the needs of sensitive and/or regionally important plant, fish, and wildlife species and shall be given priority. Implementation of restoration projects on shorelines of statewide significance take precedence over implementation of restoration projects on other shorelines of the state.**

Response: The Applicant proposes to rehabilitate degraded habitat through removal of contaminated sediment, bank stabilization, and revegetation to the maximum extent feasible, improving ecosystem functions; Ecology requires this remediation. The proposed action meets the standard.

2. **Shoreline restoration, enhancement, and mitigation activities designed to create dynamic and sustainable ecosystems to assist the city in achieving no net loss of shoreline ecological functions are preferred.**

Response: The Applicant proposes to rehabilitate degraded habitat through sediment excavation, bank stabilization, and revegetation to the maximum extent feasible, improving shoreline ecosystem functions. The proposed action meets the standard.

3. **Restoration activities shall be carried out in accordance with an approved shoreline restoration plan, and in accordance with the provisions of this Program.**

Response: The standard does not apply. The Applicant proposes a remedial action required by the state and designed to address unacceptable ecological risk.

4. **To the extent possible, restoration, enhancement, and mitigation activities shall be integrated and coordinated with other parallel natural resource management efforts. Implementation of restoration projects identified in the Shoreline Restoration Plan that are focused on restoring degraded habitat in shoreline jurisdiction take precedence over other restoration projects.**

Response: The standard does not apply. The Applicant proposes a remedial action required by Ecology and designed to address unacceptable ecological risk.

5. **Habitat and beach creation, expansion, restoration, and enhancement projects may be permitted subject to required state or federal permits when the applicant has demonstrated that:**

    a. **The project will not adversely impact spawning, nesting, or breeding fish and wildlife habitat conservation areas;**

b. Upstream or downstream properties or fish and wildlife habitat conservation areas will not be adversely affected;

c. Water quality will not be degraded;

d. Flood storage capacity will not be degraded;

e. Streamflow will not be reduced;

f. Impacts to critical areas and buffers will be avoided and where unavoidable, minimized and mitigated; and

g. The project will not interfere with the normal public use of the navigable waters of the state.

Response: The project is not a habitat or beach creation, expansion, restoration, or enhancement project. The Applicant proposes a remedial action required by Ecology and designed to address unacceptable ecological risk.

6.4.5 Shoreline Stabilization—General

1. New shoreline stabilization to protect new residential development is prohibited. For other types of new development new shoreline stabilization is prohibited unless it can be demonstrated through a geotechnical analysis by a qualified professional that:

Response: No new development is proposed. The proposed shoreline stabilization is solely intended to protect an existing primary structure—a failing wooden bulkhead. The criteria do not apply.

2. New or expanded shore stabilization shall:

a. Be designed using best available science and in accordance with applicable Ecology and WDFW guidelines;

b. Not result in a net loss of shoreline ecological functions;

c. Not cause significant erosion or beach starvation;

d. Not be located where valuable geohydraulic, hydraulic, or biological processes are sensitive to interference and critical to shoreline conservation;

e. Document that alternative solutions (including relocation or reconstruction of existing structures) are not feasible or do not provide sufficient protection;

f. Demonstrate that future stabilization measures would not be required on the project site or adjacent properties; and

g. Be certified by a qualified professional.

Response: The Applicant has designed the proposed work using best available science and in accordance with applicable federal, Ecology, and WDFW guidelines. The proposed work is designed to increase shoreline ecological functions and to resist, not cause, erosion. The proposed work is not located where valuable geohydraulic, hydraulic, or

biological processes are sensitive to interference and critical to shoreline conservation. The relocation or reconstruction of the existing structure has been evaluated, discussed with Ecology and the USFWS, and found to be infeasible. Future stabilization measures are neither designed nor anticipated. The proposed work has been designed by a professional civil engineer licensed in the State of Washington. The criteria are met.

3. **New or expanded structural shoreline stabilization for existing primary structures, including roads, railroads, and public facilities is prohibited unless there is conclusive evidence documented by a geotechnical analysis that there is a significant possibility that the structure will be damaged within three years as a result of shoreline erosion caused by stream processor waves, and only when significant adverse impacts are mitigated to ensure no net loss of shoreline ecological functions and/or processes.**

Response: As the existing wooden bulkhead primary structure has already begun to fail, additional analysis to determine whether there is a significant possibility that the structure will be damaged within three years is not necessary. The proposed work has been evaluated by a professional geotechnical engineer licensed in the State of Washington. The criteria are met.

4. **Where a geotechnical analysis confirms a need to prevent potential damage to a primary structure, but the need is not as immediate as three years, the analysis may still be used to justify more immediate authorization for shoreline stabilization using bioengineering approaches.**

Response: The existing, wooden bulkhead primary structure has already begun to fail. The criteria do not apply.

5. **Replacement of an existing shoreline stabilization structure with a similar structure is permitted if there is a demonstrated need to protect existing primary uses, structures or public facilities including roads, bridges, railways, and utility systems from erosion caused by stream undercutting or wave action; provided that, the existing shoreline stabilization structure is removed from the shoreline as part of the replacement activity. Replacement walls or bulkheads shall not encroach waterward of the ordinary high-water mark or existing structure unless the structure is a residence that was occupied prior to January 1, 1992, and there are overriding safety or environmental concerns. New or expanded shore stabilization shall be designed in accordance with applicable Ecology and WDFW guidelines and certified by a qualified professional.**

Response: As noted above, it is proposed that the existing primary structure be stabilized in place by a protective berm planted with native vegetation (see Sheets C5 and C7 and L0 through L4). As the existing, failing wooden bulkhead is immediately adjacent to an existing environmental cap, removal of this structure is not feasible. This has been described to, discussed with, and agreed upon by the USFWS, Ecology, and WDFW. The proposed work has been designed in accordance with applicable Ecology and WDFW guidelines by a professional civil engineer licensed in the State of Washington. The proposed action meets the criteria.

6. **Shoreline stabilization projects that meet the criteria of Section 2.3.2(18) require a Shoreline Statement of Exemption (Section 2.3.3) and if exempt will be regulated under RCW 77.55.181. Stabilization projects that do not meet these criteria will be regulated by this Program.**

Response: The current project is not considered exempt under Section 2.3.2(18).

7. **Small-scale or uncomplicated shoreline stabilization projects (for example, tree planting projects) shall be reviewed by a qualified professional to ensure that the project has been designed using best available science.**

Response: The proposal is not a small-scale or uncomplicated project. The criterion does not apply.

8. **Large-scale or more complex shoreline stabilization projects (for example, projects requiring fill or excavation, placing objects in the water, or hardening the bank) shall be designed by a qualified professional using best available science. The applicant may be required to have a qualified professional oversee construction or construct the project.**

Response: As noted above, the proposed work has been designed by a professional civil engineer licensed in the State of Washington, using the best available science. The proposed work will be overseen by a professional engineer licensed in the State of Washington. The proposed action meets the criteria.

9. **Standards for new stabilization structures when found to be necessary include limiting the size to the minimum necessary to achieve the stabilization objective, using measures to assure no net loss of shoreline ecological functions, using soft approaches, and mitigating for impacts.**

Response: The proposed work has been designed by a professional civil engineer licensed in the State of Washington to minimize the overall stabilization footprint. The proposed work includes soft approaches, such as turf reinforcement mat with native vegetation, and has been designed to improve shoreline ecological functions.

18.280.120 Frequently flooded areas.

Refer to RDC Chapter 18.750, Flood Control, for all requirements and standards regarding frequently flooded areas (shown below).

18.750.030 General provisions.

A. Lands to Which this Chapter Applies. This chapter shall apply to all areas of special flood hazards within the jurisdiction of the city of Ridgefield.

Response: The Applicant understands the applicability of this chapter.

B. Basis for Establishing the Areas of Special Flood Hazard. The areas of special flood hazard identified by the Federal Insurance Administration in a scientific and engineering report titled "The Flood Insurance Study for Clark County, Washington, and Incorporated Areas" dated September 5, 2012, and any revisions thereto, with accompanying Flood Insurance Rate Map (FIRM) dated September 5, 2012, and any revisions thereto, are adopted by reference and declared to be a part of this chapter. The Flood Insurance Study and the FIRM are on file at Ridgefield City Hall, 230 Pioneer Avenue, Ridgefield, Washington. The best available information for flood hazard area identification as outlined in Section 18.750.040(D)(2) shall be the basis for regulation until a new FIRM is issued which incorporates the data utilized under section 18.750.040(D)(2).

Response: The Applicant understands that the above-referenced documents serve as the basis of the City's SFHAs.

C. Penalties for Noncompliance. No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this chapter and other applicable regulations. Violations of the provisions of this chapter by failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with conditions), shall be remedied through the provisions of Chapter 18.395, Enforcement Procedures and Penalties. Nothing herein contained shall prevent the city of Ridgefield from taking such other lawful action as is necessary to prevent or remedy any violation.

Response: The Applicant understands the penalties for noncompliance.

D. Abrogation and Greater Restrictions. This chapter is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this chapter and another ordinance, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

Response: The Applicant understands that the more restrictive provisions of this chapter or any other underlying instrument shall supersede.

E. Interpretation. In the interpretation and application of this chapter, all provisions shall be:

1. **Considered as minimum requirements;**

2. **Liberally construed in favor of the governing body; and**

3. **Deemed neither to limit nor repeal any other powers granted under state statutes.**

Response: The Applicant understands the criterion.

F. Warning and Disclaimer of Liability. The degree of flood protection required by this chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This chapter does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This chapter shall not create liability on the part of the city of Ridgefield, any officer or employee thereof, or the Federal Insurance Administration, for any flood damages that result from reliance on this chapter or any administrative decision lawfully made hereunder.

Response: The Applicant understands and acknowledges this criterion.

18.750.040 Administration.

A. Development Permit Required. A development permit shall be obtained before construction or development begins within any area of special flood hazard established in Section 18.750.020(B). The permit shall be for all structures including manufactured homes, as set forth in the "definitions," and for all development including fill and other activities, also as set forth in the "definitions."

Response: The Applicant understands that in most cases a development permit would be required for the currently proposed project. However, pursuant to RCW 105.70.090D, the project is exempt from obtaining local permits. The Applicant is providing demonstration of compliance with the substantive requirements of the underlying ordinance.

18.750.050 Provisions for flood hazard reduction.

A. Anchoring.

Response: No new structures or substantial improvements are proposed. The provision does not apply.

B. Construction Materials and Methods.

Response: No new structures or substantial improvements are proposed. The proposed clean fill will be stabilized by native vegetation to minimize erosion that may occur during a potential flood event.

C. Utilities.

Response: The provision does not apply.

D. Subdivision Proposals.

Response: The provision does not apply.

18.750.060 Specific standards.

In all areas of special flood hazards where base flood elevation data has been provided as set forth in Sections 18.750.030(B) or 18.750.040(D)(2), the following provisions shall apply.

A. Residential Construction.

B. Nonresidential Construction.

C. Manufactured Homes.

D. Recreational Vehicles.

Response: The current proposed remedial action does not include construction of the abovementioned uses. The criteria do not apply.

E. AE Zone with Base Flood Elevations but No Floodways. In areas with base flood elevations (but a regulatory floodway has not been designated), no new construction, substantial improvements, or other development (including fill) shall be permitted within Zone AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

Response: As shown on FIRM 53011C0184, the frequently flooded areas of the project site are part of the Columbia River flood fringe—within AE Zone. A regulatory floodway has been designated for the Columbia River and is shown on FIRM 53011C0184. The criteria do not apply.

F. Floodways. Located within areas of special flood hazard are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters that can carry debris, and increase erosion potential, the following provisions apply:

Response: As shown on FEMA FIRM 53011C0184, the frequently flooded areas of the project site are part of the Columbia River flood fringe—within Zone AE but outside the floodway. The proposed action is not in a floodway. The criteria do not apply.

G. Critical Facility. Construction of new critical facilities shall be, to the extent possible, located outside the limits of the special flood hazard area (SFHA) (one-hundred-year floodplain). Construction of new critical facilities shall be permissible within the SFHA if no feasible alternative site is available. Critical facilities constructed within the SFHA shall have the lowest floor elevated three feet above BFE or to the height of the five-hundred-year flood, whichever is higher. Access to and from the critical facility should also be protected to the height utilized above. Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters. Access routes elevated to or above the level of the base flood elevation shall be provided to all critical facilities to the extent possible.

Response: No new critical facilities are proposed. The criteria do not apply.

18.830.040 Native plants.

The native plant list in this section identifies native plants historically found in this area. The list divides plants into three groups: trees and arborescent shrubs, shrubs, and ground covers. Arborescent shrubs are indicated with an "AS" superscript. These shrubs may not be used to meet criteria or conditions of approval which require trees. For each group, the list includes the scientific (Latin) name, common name, indicator status and the habitat types where the plant is most likely to be found.

The indicator status refers to the frequency with which a plant occurs in a wetland; the categories are derived from the National List of Plant Species That Occur In Wetlands: 1988 National Summary (USFWS, Biological Report 88(24), 1988). The indicator categories are as follows:

A. Obligate Wetland (OBL): occur almost always (estimated probability greater than ninety-nine percent) under natural conditions in wetlands.

B. Facultative Wetland (FACW): Usually occur in wetlands (estimated probability sixty-seven percent to ninety-nine percent), but occasionally found in non-wetlands.

C. Facultative (FAC): equally likely to occur in wetlands or non-wetlands (estimated probability thirty-four percent to sixty-six percent).

D. Facultative Upland (FACU): usually occur in nonwetlands (estimated probability sixty-seven percent to ninety-nine percent), but occasionally found in wetlands (estimated probability one percent to thirty-three percent).

E. Obligate Upland (UPL): occur in wetlands in another region, but occur almost always (estimated probability greater than ninety-nine percent) under natural conditions in nonwetlands in the Northwest region.

Response: The Applicant has proposed a planting plan for the remedial action (see Sheet L0). Plants suited to the postconstruction grade and wetland and riparian habitat are selected. All plants selected are native species that are identified as historically found in this area. The standard is met.

SUBSTANTIVE REQUIREMENTS OF HYDRAULIC PROJECT APPROVAL:
Pacific Wood Treating Site: Carty Lake Remedial Action

Ecology has solicited the substantive requirements of the Washington Department of Fish and Wildlife Hydraulic Project Approval and has identified the following requirements:

- Dredging equipment shall be well-maintained and in good repair to prevent the loss of lubricants, grease, and any other deleterious materials from entering the lake.

- All containers storing fuel or other deleterious substances shall be secured during dredging operations to prevent incidental spills.

- If at any time, as a result of project activities, fish are observed in distress, a fish kill occurs, or water quality problems develop (including equipment leaks or spills), immediate notification shall be made to the Washington Military Department's Emergency Management Division at 1-800-258-5990, and to Anne Friesz, Assistant Regional Habitat Program Manager at 360-906-6764.

- Every effort shall be taken during all phases of this project to ensure that sediment-laden water is not allowed to enter the lake.

- Extreme care shall be taken to ensure that no petroleum products, hydraulic fluid, fresh cement, sediments, chemicals, or any other toxic or deleterious materials are allowed to enter or leach into the lake.

- Bulkhead stabilization work shall be restricted to work necessary to protect the eroding bank.

- Placement of vegetated earthen material embankments against the bulkhead structure waterward of the ordinary high water line shall be restricted to the minimum amount necessary and per the construction documents to protect the toe of the bank or for installation of mitigation features.

- Fish-mix rock (7-inch median, rounded rock) may be placed at the toe of the southern embankment to resist erosion. Angular rock may be used in the foundation of the embankment but will not be exposed.

- Pile and portions of the existing treated-wood bulkhead shall be disposed of at a municipal solid waste landfill, per WAC 173-351.