April 23, 2024

RE: ACU-23-074 & FP-23-012 Beaver Slough Drainage District

Chair Taylor, Commissioners Main and Sweet, and Coos County Planning:

We owned the Detlefsen property on North Bank Lane for 45 years and purchased three additional properties in the BSDD and Coaledo DD over those years. Charlie and I worked those properties, improved their infra-structure, made hay and raised livestock. After all those years, we have no recollection of mosquitos ever being a problem at any time.

Having attended both hearings and listening to the people, I would like to provide some clarification to several issues as well as a resolution to the primary concern, **mosquitos**.

In my opinion, this is a restoration project and irrigation and drainage are not a priority. Attached are documents talking about the goal being "restoration". The other issue is that the project places 200 pieces of "large wood" (see attachments for placements) in the channels which again is restoration. If a rancher's priority is to move water in and out for irrigation and drainage, in my opinion he would not be placing large wood in the channels or drainage ditches. I already submitted my opinion on the hydraulogic bulbs as potential mosquito habitat. Attached are highlighted documents from the "Department of State Land's Joint Permit#APP0064526; Applicant: Beaver Slough Drainage District; **Activity Types: Culvert, Fish Habitat Enhancement, Removal-Fill"** to clarify my points.

That being said I appreciate Jill Rolfe's comments concerning how to handle the mosquito issue which appears to be the primary concern with this Conditional Use application. We own property and a house next from the project area. Your decision on this issue will determine if we feel forced to once again put our property up for sale due to these Winter Lake projects. We felt forced to sell our ranch properties (currently Bridges Foundation property) because of these Winter Lake Projects. What I see is a total lack of respect for private property rights and there is a lack of consideration for the community who is suffering due to the mosquitos.

The Coos County Planning has already approved Winter Lake Phase 1 and Phase 2. I believe the County Board of Commissioners need to put Phase 3 on hold and hire a team of professionals to complete a full assessment of the project area for mosquito habitat as well as the areas where fingers were being pointed at by various speakers as the cause as noted in the hearing (Johnson Creek Pond and Roseburg Forest Products' Log pond). The goal is to determine a direction after identifying the sources on how to resolve the mosquito problem for the health, safety, and wellbeing of the community now and for the future. The project partners should be paying for the investigation because they provided up front assurances that they would control the mosquitos to the landowners and community prior to the start date of these projects. The Wild Rivers Coast Alliance, The Nature Conservancy, Beaver Slough Drainage District, Oregon Watershed Enhancement Board, Coquille Tribe, NOAA and Oregon Department of Fish and Wildlife should all be contributing funds to a restricted Coos County account to fund this endeavor. All landowners in the project area should be required to provide public access to these properties for the assessment. Reinstate the Vector Control Committee again with impacted landowners to assist with this process. The tools in ODFW's Coquille Valley Management Plan and Vector Control plan should be utilized. **Resolve this mosquito issue first before Winter Lake 3 Restoration Project is approved.**

Thank you.

Sharon Waterman

Winter Lake Phase III
Tidal Restoration Project

Tidal Area Restoration Programmatic
(TARP)
Project Design Criteria - General Construction Measures Assessment

Christopher W. Claire; Oregon Dept. of Fish and Wildlife
and
Caley Sowers; Coos SWCD
02/03/23

Project Summary

The Winter Lake Phase III Tidal Restoration project developed by the Coos Soil and Water District has been specifically designed tomaximize ecological uplift while retaining early summer/summer/fall pasture grass farming operations. The site located at RM 20.5 in the Coquille River estuary. The project area is upstream of the C3P tidegates and C3P provides the overarching water control under the Beaver Slough Drainage District (BSDD) NMFS/ODFW water management plan. The land area, 1,290 acres below elevation 8.0ft and two pastures comprising 99 acres) within the Coaledo Drainage District (CDD) were historically a tidal forested freshwater complex with elevations that were predominantly below elevation 8.0ft. The project area has complex hydrology dominated by tidal amplitudes in dryer months, however, heavily influenced by rising river levels and floodwater in winter. The site plant species historically included red alder (Alnus rubra), however, predominantly Oregon ash (Fraxinus latifolia) and willow (Salix spp.). Vegetative species typified by slough sedge (Carex obnupta), small fruited bullrush (Scirpus microcarpus), and bur reed (Sparganium Americanum). This vegetative community would have in turn provided a strong detrital macroinvertebrate energy source. The site conditions as examined by LiDAR imagery indicate that there were substantial tidal channels penetrating the project area from the mainstem Coquille Riverprior to human alteration. These channels would have provided the rearing habitat for native salmonid and estuarine fish to feed within the marsh plain on the heavy loading of macroinvertebrate food items that were produced. In 1907-1908 pathways were cleared through the wetland forest, a new exit location was excavated through the Coquille River natural levee, tidegates were installed, the land area was drained during dry months and burned to create grazing land pastures.

The Project Team has proposed installing over 90,000ft of new/reconstructed channel. The project will address 42 aging culverts with fish passage obstructive top-hinged tidegates. These culverts are placed to provide for individual water management precision through interior low elevation berms. Culverts will be upsized to appropriately meet the site hydrology (see Hydrologic Assessment). Tidegates will be replaced with side-hinged aluminum tidegates fitted with devices to allow doors to be held open in the fall/winter/early spring allowing for maximization of fish passage into reconstructed channels. The full network of channels upstream of C3P main tidegates is under the BSDD Water Management Plan. Overall the project is anticipated to have a substantive ability to increase access for juvenile coho production and other native fish compared to the current conditions.

Winter Lake Phase III Restoration Project
Coos SWCD/ODFW

USACE
Request For Additional Information 2
Coos SWCD/ODFW
11/11/23

From: White, Darla J CIV USARMY USACE (USA) <Darla.J.White@usace.army.mil>
Sent: Wednesday, October 11, 2023 7:55:12 PM
To: Coos SWCD <info@coosswcd.org>
Cc: Fred Messerle <bsdd.bos@gmail.com>; CLAIRE Christopher w * ODFW <christopher.w.claire@odfw.oregon.gov>; Krug, Tyler J CIV USARMY CENWP (USA) <Tyler.J.Krug@usace.army.mil>
Subject: Winter Lake Phase III Request for Additional Information (RAI), NWP-2014-92-4

Dear Caley et al.,

I hope this finds you well. As mentioned previously, I am working on the Public Notice draft for Winter Lake Phase III, NWP-2014-92-4. During the review process, some additional details were identified that need to be included, so I have an additional request for information. We are so close, but this may take a little time and I understand that Chris may be on vacation. I've pored over the volumes of materials and if I missed any of these details therein, please point me to its location. Let me know if you have any questions or need clarification about this request.

We are trying to pin this info down for our Public Notice process and to hopefully provide NMFS all of the information they need up front when consult with them under the ESA/MSA. Their fish passage engineer will likely have questions given the complexity of this project and its intersection with fish passage.

Team Response Introduction:
The Winter Lake Phase III Project and location hydrology are highly dynamic. The project will incorporate likely 5-6 funding sources and thus there is a strong need to maintain flexibility in the type of materials for culverts, although all will be the same dimensions as noted in Table 5 in the Design and Engineering. The Ordinary High Water (OHW) and Ordinary High Tide (OHT) level are at ~7.5ft NAVDD88 for the entire 1,383 acre project area on both the Beaver Slough Drainage District and Coaledo Drainage District. Accordingly, all the 38 interior culvert locations would be 2.5ft under water during winter regularly as the maximum berm height for all culvert locations will be designed to be 5.0ft NAVDD88 with final construction. The BSDD Water Management Plan has an October to March goal of 4.5-5.5ft NAVDD88, although water levels are often higher than this elevation and have reached elevation 17.0ft in the past five years on at least one occasion during flood conditions. An example for a typical 5.0ft culvert installation will be at -1.0ft NAVDD88. This will result in the upper extent of the pipe being at elevation 4.0ft NAVDD88 and their will be 12" of fill cover over the top to reach the 5.0ft berm elevation.

water gaps will be needed for this project through the fence. b. i-x. Livestock will be able to move across channel locations outside of fenced reaches. Interior culverts will be installed to facilitate crossings in a manner that reduces environmental impacts to water quality and turbidity. All interior culverts will be sized appropriately to provide for fish passage and water conveyance at the location and pasture area that is upstream of the location. c. i-viii. Nine off-site interior pasture livestock watering locations have been proposed and are noted in the 404 Fill and Removal permit app. The total number may be reduced depending on landowner preference for watering tactics. Water availability has been identified by Oregon Water Resources Proper fish screening for withdrawal from canals in order to provide water for troughs will be incorporated. Tanks will be specifically placed in locations that assist with minimizing livestock effects to channels and active flow. Individual landowners within the BSDD have water rights for irrigation. Oregon Water Law provides that livestock watering does not require a Water Right as relegated to landowners under ORS 537.141; https://oregon.public.law/statutes/ors_537.141.

#38. Piling and other Structure Removal

a-b). Removal of piling is not planned with this project. Short piling associated with tidegates on existing culverts will be removed at the individual culvert installation locations.. No piling are known to be within the project area that have been treated with creosote. It is thought that these poles that have been inserted to support chain networks for top-hinged tidegates have only been inserted to a depth of 5-6ft, thus removal with an excavator should proceed without event.

39. Beaver Habitat Restoration

This project will not incorporate Beaver Habitat Restoration as a project action. That said the development of new/reconstructed tidal channels and planting within fenced areas are anticipated to improve conditions for beaver use of the project area.

#40. Wetland Restoration

The overall goals of this project include restoration of tidal wetland function. The site grading plans (see Engineering/Designs) work with the existing landscape topography to create a connective tidal floodplain. The project is designed with "Zero" fill-removal framework where no fill is imported or hauled off-site. No wetland habitats will be converted to new upland that does not already exist. Five wetland mounds will be constructed to provide the ability to plant Sitka spruce (Picea sitkensis), which increase wetland habitat diversity. The maximum elevation of these mounds (8.0ft) will not exceed water elevations where the feature is altered to no longer be wetland habitat.

New and reconstruction of tidal channels will provide tidal network densities that mimic historical condition, while allowing for the landowners to maintain a level of pasture haying or grazing production. The excavation plan will not result in hydrology where fish will become stranded or water will be entrapped, which would produce summer salt marsh (Aedes dorsalis) mosquitoes. Grading will also not create new upland that does not already exist or eliminate habitat types that are currently found on the project area. The project area is currently Freshwater Emergent wetland PEM1Ch and PEM1Ah and Shrub Scrub.

The installation of the new culverts/tidegates will allow for tidal inflow that is controlled through the main downstream C3P tidegates. The Water Management Plan for C3P has been designed to provide for a higher elevation in winter months (see BSDD Water Management Plan) and lower elevations in late spring/summer/early fall. These elevations provide for increased access for native salmonid fishes in the winter months and pasture grazing water management in the summer/early fall. (see Hydraulic Assessment). Improved hydrologic connectivity is anticipated to improve conditions for native wetland vegetative species that historically would have been wetted twice daily by tides followed by dewatering on

- The project actions are directly developed to provide restoration for historically damaged wetlands, while retaining farming capability, with effects that have been tailored to fit under TARP, and for most actions under Nationwide 27 other than some conversion of wetlands to open water. Effects are self-mitigating through benefits for uplift with hydrology, improved water quality, wetland plantings, and fish passage improvements. Further descriptions of project mitigative benefits to habitats is expanded on in the 404 Fill and Removal permit application Section 5 and Section 6 pg. 17 under Hydrology.

Endangered Species Act (ESA) and Magnuson-Stevens Fishery Conservation and Management Act (MSA)

In the project vicinity, a number of fish and wildlife species have been listed as threatened or endangered under the ESA. Under the Corps' federal permit program, permit applications are reviewed for the potential impact on threatened and endangered species pursuant to the ESA. The ESA requires federal agencies, such as the Corps, to take action as necessary to ensure they do not authorize, fund, or carry out actions that are likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of designated critical habitat for such species. To fulfill our obligations required under the ESA, the Corps, through consultation with the National Marine Fisheries Service (NMFS) and/or the U.S. Fish and Wildlife Service (USFWS), must evaluate the potential impact of the proposed work on listed species.

The MSA established procedures designed to identify, conserve, and enhance Essential Fish Habitat (EFH) for those species regulated under a federal fisheries management plan. The MSA requires federal agencies to consult with the NMFS on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH. The project area includes EFH for Pacific salmon and Coastal pelagic species.

Normally an applicant must prepare and submit information to address impacts to all listed or proposed species in the project vicinity and to EFH. The Corps would then use this information to complete an individual consultation with the NMFS and/or the USFWS. However, to streamline the ESA and MSA process the Corps has completed programmatic consultation with the NMFS and the USFWS through standard local operating procedures (SLOPES) for certain categories of work. To qualify for SLOPES the project must meet specific design and construction requirements.

The Corps is coordinating with the NMFS to determine if the project may meet the requirements under the Tidal Area Restoration programmatic (TARP) biological opinion. The Corps recommends you review the TARP opinion in its entirety, which you may obtain online at: https://www.nwp.usace.army.mil/environment/.

- The project is specifically designed as restoration to enhance overwintering habitat for Oregon Coast coho and fall Chinook, which are Magnuson Stevens Act NOAA jurisdictional species. The Project Team prepared and submitted a full review of the TARP PDC's 8-14, 29-22, 24, 27-29, 32, 36, 37 and 40 with the original 404 Fill and Removal permit application.

Based on my initial review, for the project to qualify for TARP you will need to make the following changes to your project and/or provide the following information:

See Section 9.

If yes, provide a copy of the survey and/or documentation of correspondence with this application to the Corps only. Do not describe any resources in this document. Do not provide the survey or documentation to DSL.

Is the project part of a DEQ Cleanup Site? No ☒ Yes ☐ Permit number _____
DEQ contact._____

Will the project result in new impervious surfaces or the redevelopment of existing surfaces? Yes ☐ No ☒
If yes, the applicant must submit a post-construction stormwater management plan as part of this application to DEQ's 401 WQC program for review and approval, see https://www.oregon.gov/deq/FilterDocs/401wqcertPostCon.pdf

Identify any other federal agency that is funding, authorizing or implementing the project.

Agency Name	Contact Name	Phone Number	Most Recent Date of Contact
None			

List other certificates or approvals/denials required or received from other federal, state or local agencies for work described in this application.

Agency	Certificate / approval / denial description	Date Applied
None		

Other DSL and/or Corps Actions Associated with this Site (Check all that apply.)

☐ Work proposed on or over lands owned by or leased from the Corps (may require authorization pursuant to 33 USC 408). These could include the federal navigation channel, structures, levees, real estate, dikes, dams, and other Corps projects.

☐ State owned waterway DSL Waterway Lease #:

☐ Other Corps or DSL Permits Corps # DSL #

☐ Violation for Unauthorized Activity Corps # DSL #

☐ Wetland and Waters Delineation Corps # DSL #

Submit the entire delineation report to the Corps; submit only the concurrence letter (if complete) and approved maps to DSL. If not previously submitted to DSL, send under a separate cover letter

(9) IMPACTS, RESTORATION/REHABILITATION, AND COMPENSATORY MITIGATION

A. Describe unavoidable environmental impacts that are likely to result from the proposed project. Include permanent, temporary, direct, and indirect impacts.

Archeology Note: In March 2016 Tetratech completed and submitted the following document "*Cultural Resources Reconnaissance and Water Control System Recording for the Winter Lake and China Camp Creek Restoration Projects, Coquille, Coos County, Oregon*" This cultural review covers substantive cultural resource information on the project area. This document is on file with Oregon SHPO.

This project is designed to be restorative with actions that improve function for wetlands, tidal regimes, and more ecological uplift. A number of measures will be incorporated to minimize impacts associated with construction. As the project is considered restorative no Compensatory Mitigation is proposed.

1. Installation of New HDPE Culverts
There will be disturbance of earth through the berms when old culverts are excavated and new channels are excavated through pasture berms. All work will be completed during the NMFS and ODFW approved July 1 to September 15th In-Water work window. Excavators will work from top of

APPENDIX A.

Winter Lake Phase III Restoration Project

Assessment of Project Actions and Coos County Planning/Zoning

Prepared by,

Christopher W. Claire
Habitat Protection Biologist
ODFW
Charleston, OR

Caley Sowers
District Manager
Coos Soil and Water Conservation District
Coquille, OR

Table 1. Analysis of Impacts and Benefits for Winter Lake Phase III proposed actions.

Note: *All disturbance actions are considered to be recovered/revegetated from disturbance 3yrs post project. Majority of attributes are designed to produce uplift that result in "Net Benefit" ecologically*

Action	Impact	Impact to Ecology Time of Construction Yes/No	Severity of Impact High/Med/Low	Healed by Year 2 Yes/No	Net Ecologic Benefit by Yr 3 Yes/No	Benefit Power High/Med/Low	Explanation
Installation of new proper sized culverts	Earth Work interior berms	Yes, due to soil disturbance	Low	Yes	Yes, immediate uplift	High	New culverts allow for more natural hydrologic flow of water to interior pasture channels. greatly improved fish passage and wetland function. Net benefit strong much greater than impacts from time zero forward
Channel construction/reconstruction; Excavation	Excavation/ soil disturbance	Yes, soil disturbance	Medium	Yes	Yes, immediate uplift	High	New/reconstructed channels provide for more natural hydrologic flow of water to interior pastures, greatly improved fish passage and wetland function. Net benefit much greater than impacts from time zero forward.
Channel construction/reconstruction; soil Thin-spread	Soil distribution to 3" on wetlands	Yes, plant disturbance, unvegetated soils	Medium	Yes	Neutral by year 3	Neutral by year 3	Soils that are distributed on wetland pastures will be thin-spread on average to 3" in depth; they will be integrated into pasture grasses as wetland plants are fully able to grow through this application fall of year 1 with full healing by year 2.
Channel Reconstruction bank sloping 1:1 and 2:1	Soil disturbance	Yes, soil disturbance	Medium	Yes	Uplift by year 2	Medium	Current pasture drainage channels have vertical banks that lead to bank sloughing and provide little if any edge habitats for fish when winter flows fill channels. Sloping of banks of channels will provide edge for growth of vegetation/fish cover, reduce erosion, and sediments
Construction of Hydrologic Bulbs	Soil disturbance	Yes, soil disturbance	Low	Yes	Yes, immediate uplift	High	Hydrologic bulbs will be installed at upper reaches of channel networks in selected locations. These bulbs will be excavated to an elevation that during winter months they provide long-term wetted habitat for juvenile coho. These also increase hydrologic exchange of water, which results in greater flushing of channels during tidal inflow/outflow. This prevents channels from accumulating sediments and provides long term channel life expectancy with little or no reexcavation to "clean" sediment. These bulbs also allow for greater volume capacity of channel networks duriing inflow/outflow events, which provide for exchange of water in channels and canals improving water quality.
Excavation of China Camp/Unit 1 Canal S.E.	Direct Substrate Disturbanc/ Turbity	Yes, remove substrates, organisms, turbidity	Medium	Yes	Neutral by year 3	Neutral by year 3	Initial excavation will remove substrates that have macroinvertebrates and lamprey present. This action will, however, be carried out where banks of canals are not denuded of established grass cover. Skip Planting will be employed in these reaches on pasture side of berm. Spreading of spoils to 3.0" in adjacent pastures is anticipated provide for stabilization in year 1.
Berm Reconstruction		Yes, soil disturbance	Low	Yes	Neutral by year 2	Neutral by year 2	Locations where berms are reconstructed will be be seeded/mulched. They are expected to be fully revegetated by year by end of growing season year 2.
Fence installation	Some soil disturbance	Minimal	Very Low	Yes	Yes	Medium	Fencing of selected segments of channels provides immediate benefits to water quality and longer term establishment of riparian vegetative and woody plants for fish habitat complexity.
Large Woody Debris Installation large channels	Some soil disturbance	Minimal	Very Low	Yes	Yes	High	Installation of LWD rootwads in first 500ft of larger channels will fully provide uplift through providing complexity for fish and other aquatic organisms.
Planting of Trees on large and selected secondary channels	N/A	N/A	N/A	N/A	N/A	HIgh	Skip planting of trees will be implemented on large and selected medium channels in segments where fence is installed. Additionally, individual caged trees will be planted. Skip planting will be three trees planted in a single 8x8ft plot every 100ft on large channels and selected medium channel reaches (Sheets 24-26). Tree species will be either Oregon Ash, Black Cottonwood, or Spruce.
		Net Estimated Project Overall Ecological Benefit by Year 1				**Medium**	
		Net Estimated Project Overall Ecological Benefit by Year2				**High**	

Table 1. Beaver Slough Drainage District Water Management Plan (DWMP).

BEAVER SLOUGH DRAINAGE DISTRICT - OPERATING PROTOCOLS

SEASON	UNIT	WATER LEVEL	TARGET ELEVATION RANGE		
WINTER - Oct to Mar:					
	Units 1&3				
		Basic Flush Level until first flood event or cattle are pulled	3.0	to	3.5
		After first flood event transition to Over Winter Habitat Level	4.5	to	5.5
	Unit 2				
		Complete transition to Over Winter Habitat Level	4.5	to	5.5
SPRING DRAIN OUT – Apr to May:					
	Units 1&3				
		Maximum Dry Out – maximum elevation	2.0	to	4.0
		Transition to Basic Flush Level as conditions allow	3.0	to	3.5
	Unit 2				
		Transition back to Basic Flush Level	3.5	to	4.0
SUMMER – Jun to Sep:					
	Units 1&3				
		Complete Transition from Maximum Dry Out to Basic Flush Level	3.0	to	3.5
		Irrigation Level – Every 10 to 14 days as per coordinated request from landowners	4.0	to	4.5
	Unit 2				
		Basic Flush Level	3.5	to	4.0
		Sept to October begin transition to Over Winter Habitat Level	4.5	to	5.5

1. Water Elevation Management:

***NOTE**: there currently are locations where the interior berms in Units 1 and 3 are below elevation 5.5ft NAVDD88 and in need of repair. This section discusses the water management goals with berms reconstructed to the goal height of elevation 5.5ft. The CDD tidegate (Figure 3) on Beaver Creek consists of three 6.0ft CMP's with top-hinged tidegates. There is no MTR capability at that site thus water is managed for Drain-out only. At the BSDD C3P tidegates water is able to be managed for Drain-out and inflow. At C3P VSFTG's are able to be opened to allow for inflow or outflow and secondary side-hinged aluminum tidegates allow for outflow only.*

a) When floodwaters are above elevation 10.5ft NAVDD88 water moves up Beaver Creek and subsequently flows over the low portions of the Beaver Creek levee just downstream of the CDD tidegate then moving across the pastures. At this elevation

Figure 4. Installation process of LWD at an SWCD/ODFW project tidal channel, North Bank Working Landscapes Project, in September 2023. Stem is pushed fully into the soil until rootwad is at ground level. The stem with soil friction provides maintains LWD stable in place.

Figure 5. LWD fully installed North Bank Working Landscapes Project, in September 2023.

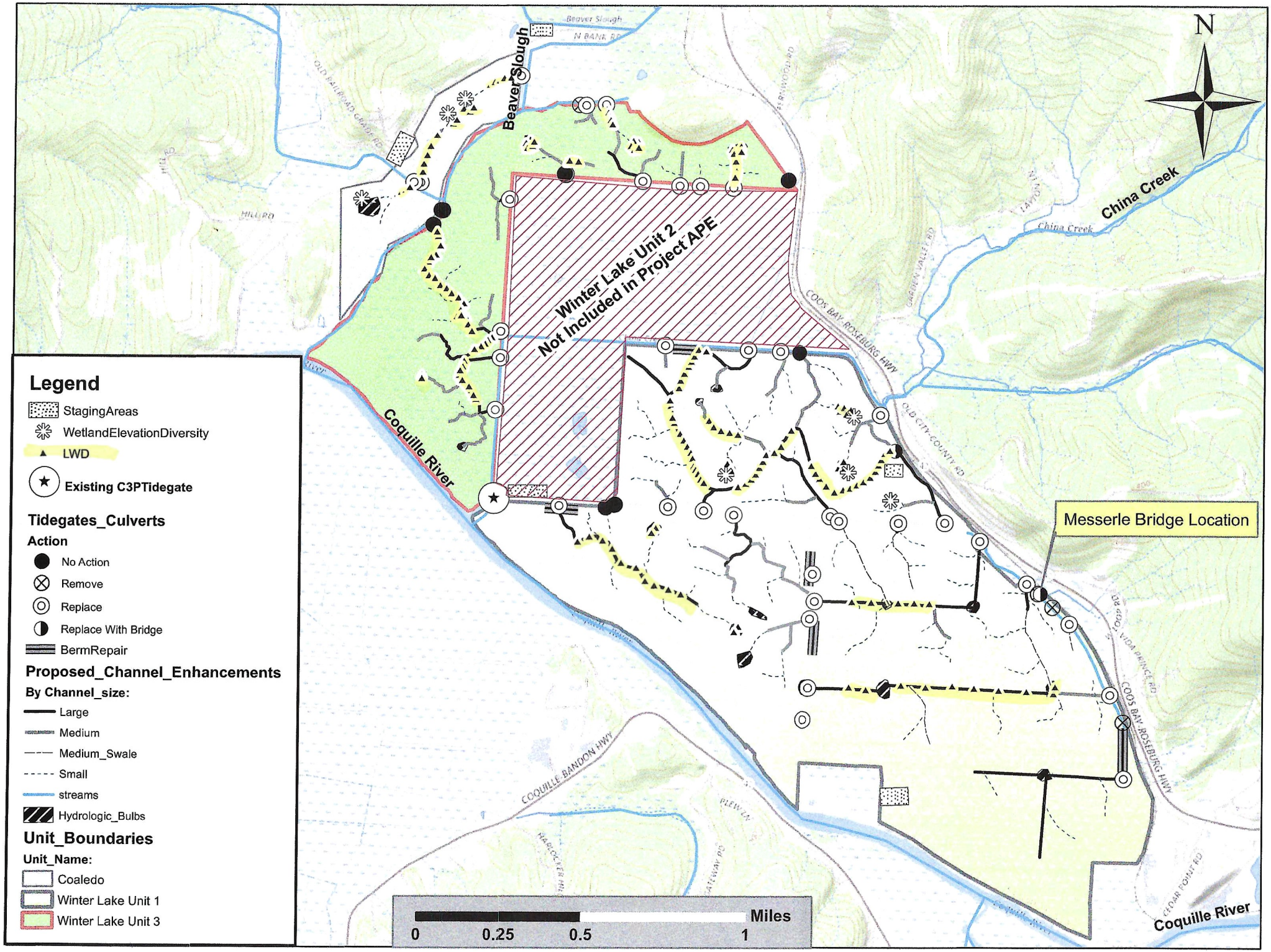


Figure 25. c. Large Woody Debris Map

quality concerns as there is no base rock. These trough base improvements will greatly reduce soil damage, which currently leads to turbidity when the wetland floods and winter breezes stir water over the unprotected deeply hoofed areas. Substantial wetland water quality improvement is anticipated for the new locations following installation. The existing older sites will be seeded and mulched.

c. For adaptive management and maintenance activities, including emergency repairs, provide a list of all anticipated activities and related impacts. A table format is suggested. The activities will need to be evaluated if you are seeking authorization for them.

- Fred Messerle (BSDD Manager) with the Beaver Slough Drainage District has developed proposed long term adaptive maintenance excavation estimations. There are not any foreseen emergency repairs. These proposed long-term maintenance actions are in Appendix A. At the end of this response letter.

d. For the installation of 200 pieces of large woody debris to be placed at strategic locations at the individual owner's discretion, provide the location of these large wood placements, the size and length of the large wood, volume and area of impact to wetlands and/or waters. Clarify if rock fill material would be utilized to hold the large wood in place; if rock fill material is proposed clarify its location, dimensions, and area of impact as described above.

- We have developed Figure 25. C. in Attachment A. Figures and Photos_FINAL_revised9_15_23, denoting the locations for LWD. The total yardage for LWD placement per log of 2.9cy per log with a total CYs of 586.1. Logs with root wad attached will be placed inserted at 45° or lesser angle to a minimum insertion depth of 8.0ft. The insertion depth will result in sufficient skin friction on the stem to maintain LWD stable without dislodging during flooding events. The upright placement also reduces floatation effects as there is not the ability for buoyancy leverage on the log stem. Figure 1. below is a typical insertion depiction as denoted for another SWCD project.

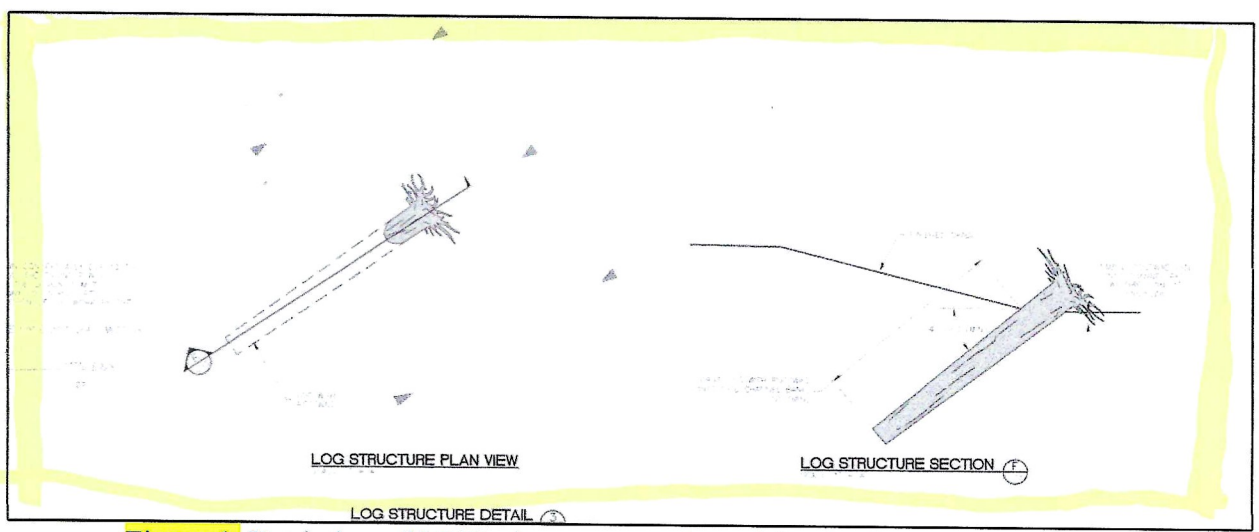


Figure 1. Depiction of LWD placement angle and depth of placement.

higher than this elevation and have reached elevation 17.0ft in the past five years on at least one occasion during flood conditions and commonly reach over up to 8.0ft..

There are five total, segments of main canal that will be excavated on the Winter Lake Phase III project. The drawings and cross-sectional are shown for the China Camp Creek canal. In addition to the China Camp Creek Canal there are four (locations Figure 6 and Sheets 23-25 in Design/Yardages Document and Figure 6 in this document . ***Note****, Figure 6 was edited to show excavation work location in Unit 3 NE canal only shown previously in Sheet 25).*
#1). China Camp Creek main canal, 1,262ft, for a total of 3,675cy (Design/Yardage document Figures 6 and Sheet #23 and Figure 7 in this document).
#2). The second is in the Unit 1 canal SE segment just southeast of where the main Unit 1 canal turns along Hwy 42 (Figure 6 Design/Yardages and noted in Sheet 24, however, no cross-section; labeled as #2 in Figure 6 of this document). One-Hundred twenty feet will be excavated to a depth of -3.0ft NAVDD88. This segment cross-section is shown in Cross-Section Figure 8 of this document. A segment of 120ft will be excavated with total of 667cy will be removed.
#3). The third site (Figure 6 Design/Yardages, no Sheet; labeled #3 site and Figure 6 this document) is at the Bridge site where 456cy will be removed at the bridge site to repair hydrology where a sediment wedge has accumulated upstream and downstream of the currently undersized culvert at that location. Excavation will occur over a 100ft segment, 50ft upstream and 50ft downstream of the bridge site, down to -3.0NAVDD88; (Cross-Section Figure 9).
#4). The remaining segment in Unit 1 is near the end of the southeast Unit 1 canal, where 900ft will be excavated back to original design depth of -2.0ft NAVDD88 (Design/Yardages Figure 6, however, no cross-section; Cross-Section Figure 10 in this document), with a total quantity removed of 1,333cy.
#5). In Unit 3 NE, there will be a total quantity of 1,116cy of material excavated from an 840ft segment of canal down to original constructed depth of -3.0ft NAVDD88 (Design/Yardages document Sheet # 25, however, no cross-section; Cross-Section Figure 11 in this document).

USACE 6). Provide the dimensions of the Large Woody Debris. Fill in the blanks or modify this sentence to communicate a range of sizes:

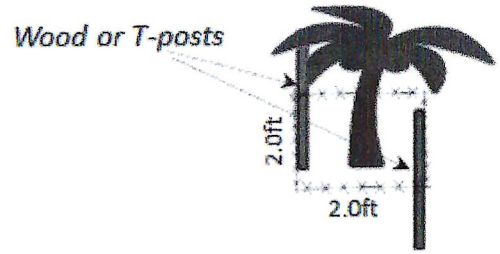
The applicant would add 200 pieces of large woody debris measuring approximately ____ feet long and ____ inches wide at 12 locations to restore fish habitat.

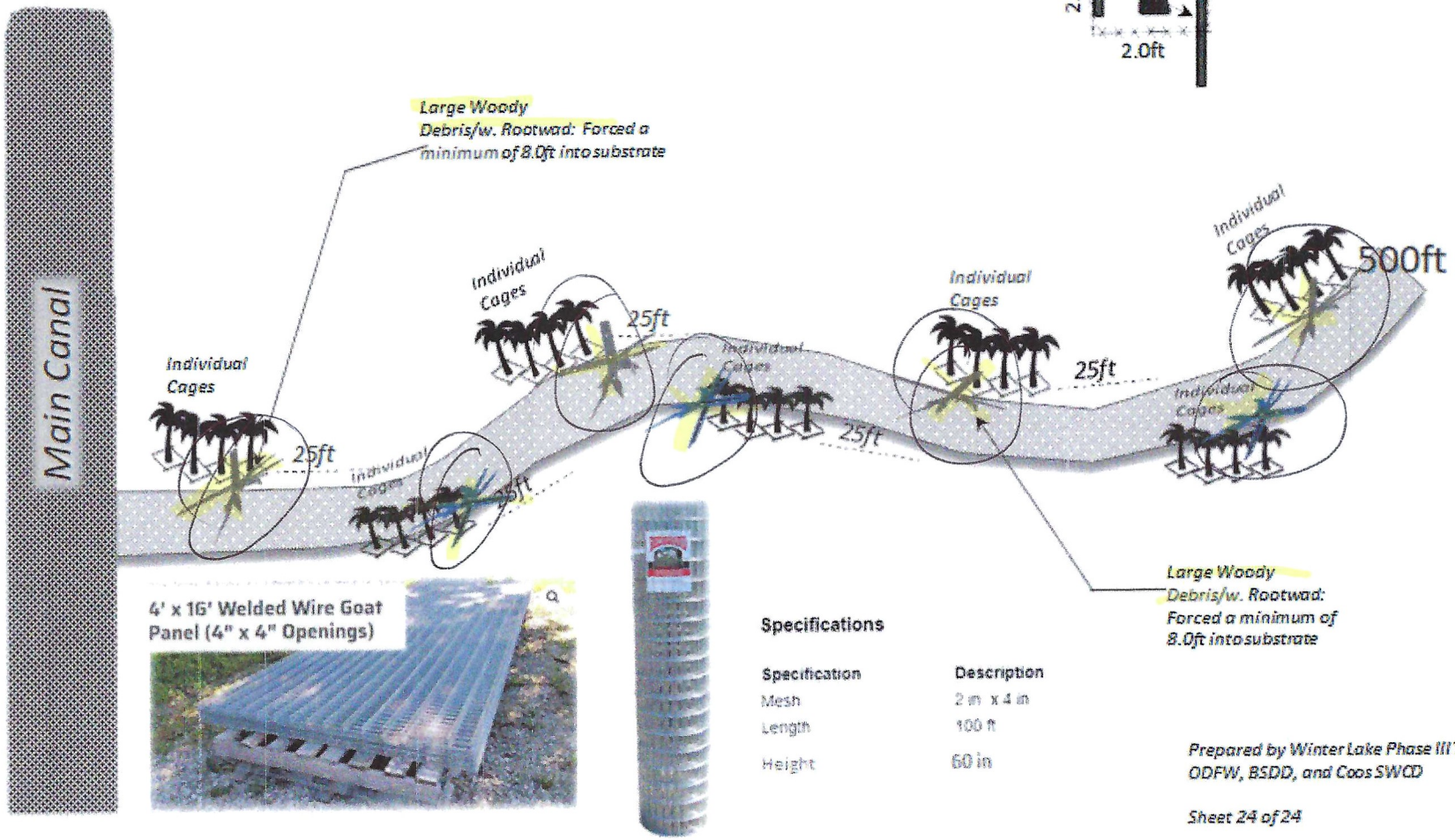
Team Response: The Large Woody Debris will be installed with the stem inserted into the soils to a depth where only the rootwad is exposed (Figures 4 and 5). The stems will average 12ft in length and the average log will be 15" in diameter..

Large/Medium Connecting Channel Skip Planting Concepts Option #3

Planting Plots #2: Welded panels or wire around individual trees planted in groups of 4 trees with 8ft spacing alternating every 25 ft of channel. Trees planted (cottonwood or ash) inside. Plantings on large and medium channels that connect to main canals for first 500ft. ***Note:*** *Welded panels or wire is needed with 4"x4" mesh to protect trees from livestock and beaver.*

Expanded Plot View





Specifications

Specification	Description
Mesh	2 in x 4 in
Length	100 ft
Height	60 in

Prepared by Winter Lake Phase III Team ODFW, BSDD, and Coos SWCD

Sheet 24 of 24