

Winter Lake and China Camp Creek Projects

DSL Permit File#: 57054-RF

Responses to Comments received 1/21/15 via email from Robert Lobdell

Comments from Sharon Waterman, sent to DSL on 1/19/15

Comments have been grouped per attached pdf into a number of separate themes to allow for more clarity in the responses:

Comment #1: Impacts to Wetlands Theme. *The project violates OAR 141-085-0565(7)(6) as it involves filling of a wetland more than two acres. This project application does not say if the project includes a wetland conservation plan. If not, where is the mitigation plan? ---- This project results in conversion of farmable/prior converted wetlands zoned EFU to uplands (page 5 and 6 of 17 illustrations of 5-foot fill). -- -- I find it interesting this project which is for wetland restoration is actually FILLING a wetland! As ranchers, we are asked to put ditch spoils either on uplands or spread 3" or less on the wetland areas. This project is defeating the purpose by filling a wetland and that portion should be removed.*

Response to Comment #1: The project has not yet been approved by DSL, but does not involve the conversion of any wetlands to uplands and will not violate the OAR. The entire project area is considered wetland, including existing berms and access roads – the entire site is inundated on an annual basis and the Mean High Water (MHW) elevation of the Coquille River adjacent to the site is 6.9 feet NAVD88 and most of the project area is at elevations ranging from -6 feet in drainage canals to generally +2 to +6 feet (a small area of existing berm is at +17 feet NAVD88 at the existing culvert/tide gate structure in the SW corner of Unit 2, but was not delineated separately as upland in the wetland delineation report as it is a small area and is considered in the total wetland acreage). As part of the wetland delineation, a tidal Hydrogeomorphic (HGM) functional assessment (Adamus 2006) was prepared for the existing vs. the proposed project condition. The tidal HGM allows a comparison of the habitat, water quality, nutrient/sediment cycling, contributions to the aquatic food web, and other characteristics of a wetland relative to other tidal wetlands in Oregon and to help understand how the wetland characteristics and functions could change as a result of a proposed project. Table 1 shows the scores for the existing conditions in Unit 2 compared to the proposed enhanced condition (as compared to the reference wetlands evaluated in developing the HGM assessment manual). As defined in the tidal HGM manual (Adamus 2006), healthy tidal wetlands are inundated at a tidal frequency, duration and extent typical for the site's elevation and location within an estuary and exhibit a resilient assemblage of native plants and animals characteristic of the particular classification of wetland. The scores indicate there will be an overall improvement in several functions from the project, particularly enhancing habitat for anadromous, marine and resident fish and native plant communities. Habitat for ducks, geese, and shorebirds will be maintained and enhanced slightly. The total production of aboveground organic matter may reduce somewhat as a result of providing native shrub and tree cover that provides shading, but the quality of the plant communities will improve substantially by providing substantially more native species cover, where currently there are essentially no native plant species present in Unit 2.

Table 1. Tidal HGM scores and comparison of existing to proposed conditions.

Function Capacity	Existing Condition Function Capacity compared to best reference tidal wetland (0-1 scale)	Proposed Condition Function Capacity compared to best reference tidal wetland (0-1 scale)	Change from Existing to Proposed Function Capacity (compared to best reference)
Produce Aboveground Organic Matter	0.65	0.33	-0.32
Export Aboveground Plant & Animal Production	0.55	0.46	-0.09
Maintain Element Cycling Rates & Pollutant Processing; Stabilize Sediment	0.69	0.70	+0.01
Maintain Habitat for Native Invertebrates	0.30	0.34	+0.04
Maintain Habitat for Anadromous Fish	0.41	0.75	+0.34
Maintain Habitat for Visiting Marine Fish	0.26	0.50	+0.24
Maintain Habitat for Other Visiting & Resident Fish	0.26	0.71	+0.45
Maintain Habitat for Nekton-feeding Wildlife	0.60	0.67	+0.07
Maintain Habitat for Ducks and Geese	0.91	0.97	+0.06
Maintain Habitat for Shorebirds	0.69	0.77	+0.08
Maintain Habitat for Native Landbirds, Small Mammals, & Their Predators	0.30	0.26	-0.04
Maintain Natural Botanical Conditions	0.01	0.25	+0.24

Both excavation and fill in wetlands will take place to restore frequent fish access (particularly overwintering access) into the site and to enhance the existing wetlands. Placement of fill primarily occurs for three primary reasons: 1) to even out perimeter berms¹ around Unit 2 (including a new berm

¹ The perimeter berms around Unit 2 will be raised in some locations and lowered in other locations to a uniform elevation of 6.5 feet NAVD88 (accounting for settlement in first year) in all areas except the small area at the new culvert/tide gate structure where berms currently are higher elevation and will remain higher.

on the C&S Waterman Ranch, LLC property) precisely to prevent unwanted surface water from flowing onto neighboring properties; 2) to fill in existing linear drainage ditches located on ODFW and CCGC property to facilitate flows in more natural channels; and 3) to create topographic diversity on the site and maintain excavated material on-site to dramatically reduce the cost to move excavated material off-site to an upland disposal location.

The placement of the excavated material for the berms and for topographic diversity will be to a maximum elevations of 7.0 feet NAVD88 to allow for anticipated settlement of 6 inches within the first year following construction (to result in an end elevation below MHW); but in most locations the initial fill is well less than the MHW mark to ensure that the entire project site continues to be inundated annually and that the entire site will remain as wetland. The fill placed in existing drainage ditches will be up to an elevation to match existing neighboring ground – typically ranging from 3 to 5 feet NAVD88. In two locations, fill will be first removed and then replaced to higher elevations: 1) at the culvert/tide gate structure where the berms and access route are currently at approximately 17 feet NAVD88; and 2) at a culvert crossing to be installed at the new tidal channel/slough to allow ODFW and the CCGC continued access to all portions of their properties where the top surface of the ground over the culvert will be at 9 feet NAVD88. In both of these locations, the existing ground is already at these elevations, but excavation to install the new culverts is required that will first remove and then replace the soil.

The excavated material will come from two primary sources: 1) an excavated tidal habitat channel/slough system in Unit 2 for fish habitat that will generally follow an historic remnant channel and tidal finger channels on the site; and 2) excavation of a new drainage canal that will go down the east side of the CCGC property to ensure that a berm and a drainage canal are present on the exterior of all sides of Unit 2 (except for the NE corner where high ground is present outside of the ODFW property) as a measure to ensure that surface water will be isolated inside of Unit 2 (except when the entire floodplain is inundated in winter), and the drainage canals will provide a pathway for groundwater to drain from adjacent properties similar to the function of all existing drainage canals in the district. This new North-South canal will convey China Camp Creek which currently is contained in a drainage canal that continues west and then turns south to the culverts/tide gates along the western perimeter of the CCGC property. A new berm will be installed on the east side of the new North-South canal on the C&S Waterman Ranch, LLC property with a drainage ditch to convey interior drainage on their property to the new canal and ensure isolation of surface water and groundwater from Unit 2.

Comment #2: Effects on Adjacent Landowners Theme. *The project did not define measures that will be necessary to minimize effects on surrounding land uses and activities (industrial park and productive agriculture (EFU) lands). There appears to be no definition of the short term and long term impacts from construction and public use to surrounding land uses and activities. ---- The plans for the permit as I can see are incomplete to determine impacts to neighbors, drainage district members, etc. ----*

Response to Comment #2: Throughout the planning and design of this project, the BSDD, TNC, and ODFW have coordinated extensively with adjacent landowners to solicit comments and feedback on potential effects and other issues. Several of the landowners have replied with comments and questions that have helped to shape the design of the project. The BSDD has also requested to discuss project design with the Waterman's and has not received a response to arrange a discussion. Just recently, the BSDD has further requested input from the Waterman's regarding berm and drainage features proposed in the 90% design plans for Unit 2 (see attached letter).

The design includes specific features intended to ensure that the project does not have adverse effects on adjacent landowners, including the perimeter berms around Unit 2 and adding the new North-South canal on the east side of the CCGC property – all sides of Unit 2 will have a berm and a drainage canal that will prevent the potential for increased surface water and to facilitate the drainage of both surface and groundwater into the canals and out to the Coquille River during the twice daily low tides. The new culvert and tide gate structure will have increased capacity for spring drain down and also increase the twice daily low tide drainage capability. As the proposed new tide gates will have adjustable open/closing set points based on water elevations, the closure points can be adjusted to accommodate landowner requests in various seasons. The BSDD and ODFW have developed a draft Water Management Plan available at www.coquilleworkinglandscapes.com that outlines the tide gate set points for different seasons.

In summer and fall, when many landowners have livestock grazing, the groundwater elevations are typically at around 1 foot NAVD88, which is typically 1-4 feet below field level (see Figure 1 and 2, below, reproduced from previous design memoranda, Tetra Tech 2014a and 2014b), as measured in piezometers installed by the BSDD in March 2011; the data set evaluated by Tetra Tech was from November 2011 through November 2013. The drainage canals serve to lower the groundwater table and the berms serve to prevent surface water flow from one site to another at water surface elevations less than the winter inundation level.

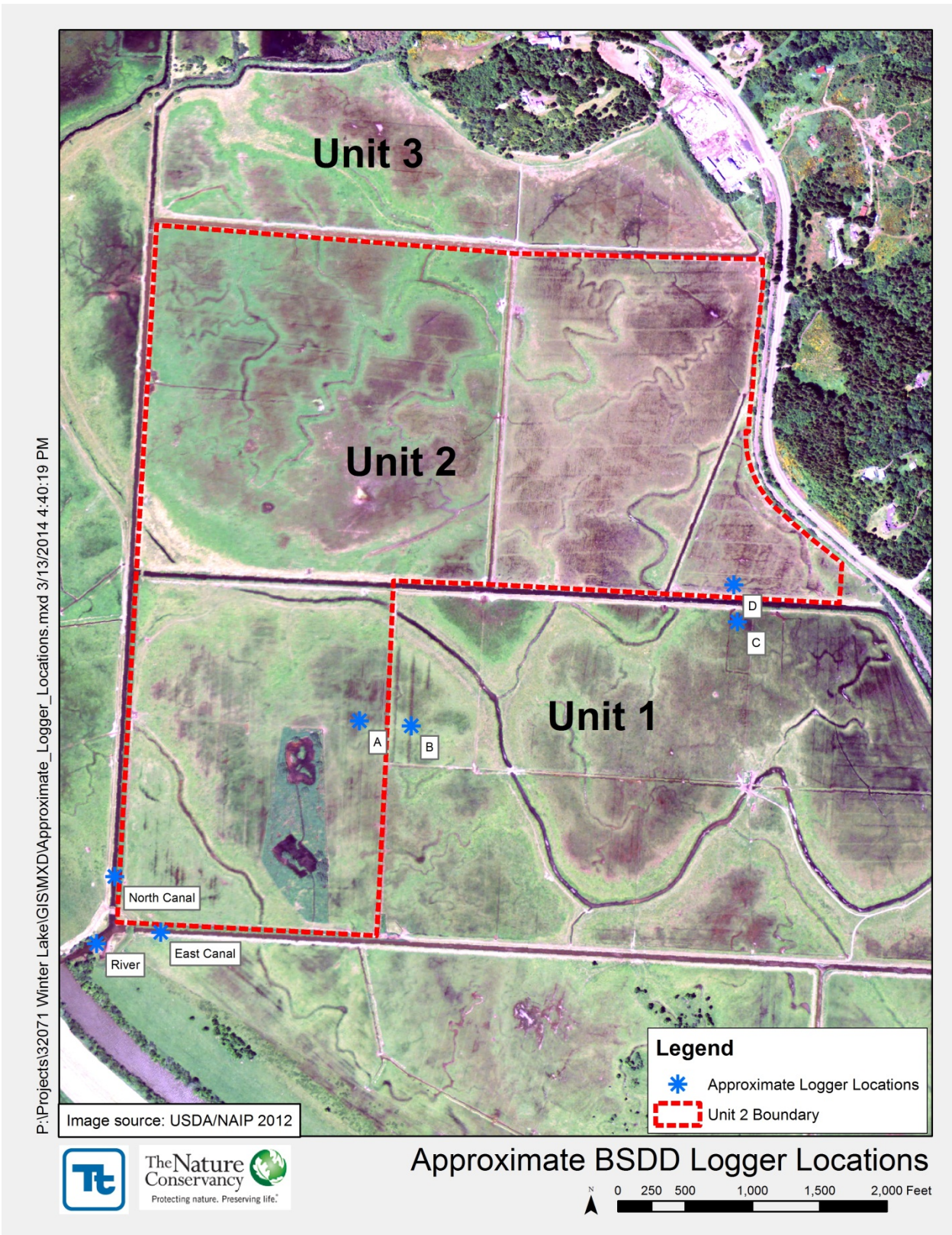


Figure 1. Location of BSDD surface and groundwater data loggers.

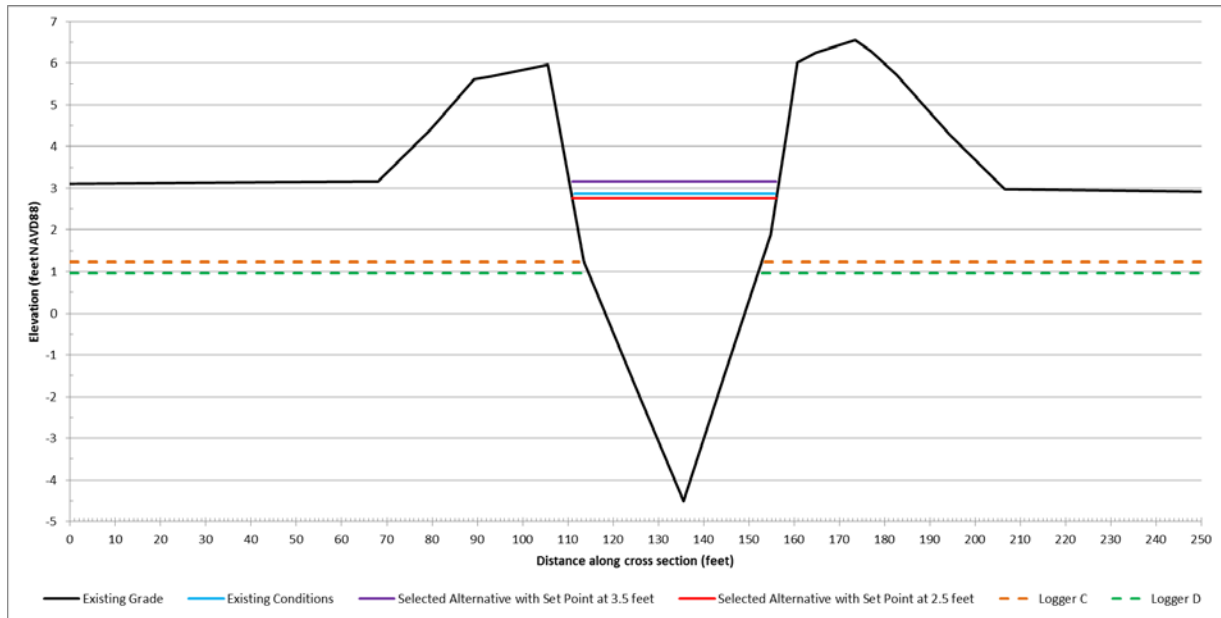


Figure 2. Average surface and groundwater elevations during the summer.

A comparison of surface water fluctuations in the China Camp Creek canal approximately 500 feet east of the new North-South Canal location and groundwater fluctuations was conducted (see Table 2, below, from Tetra Tech 2014b) showing fluctuations that currently occur (existing conditions) versus proposed conditions with a tide gate set closure point at both 2.5 feet NAVD88 and 3.5 feet NAVD88.

Table 2. Comparison of Existing and Proposed Canal Elevations during August 15, 2012 Tidal Cycles, with Reference to Groundwater Elevations.

	China Camp Creek Canal Water Surface Elevations (FT NAVD88)			Groundwater Elevations (FT NAVD88)			
	Existing Conditions	Selected Alternative Set Point 3.5	Selected Alternative Set Point 2.5	Logger A	Logger B	Logger C	Logger D
Average	2.86	3.17	2.76	0.81	0.63	1.23	0.96
Maximum	3.12	4.01	3.62	0.85	0.67	1.59	1.04
Minimum	1.52	1.21	1.21	0.77	0.59	1.05	0.89
Daily Range	1.60	2.80	2.41	0.08	0.08	0.55	0.14

This comparison indicates that the proposed condition results in an increase in the daily range of the tidal fluctuation for both set point elevations, lowering the minimum daily elevation and increasing the maximum daily elevation (i.e. more normal tidal fluctuations). The average water surface elevation increases by 0.31 feet, or 11%, with the gate closure set point elevation of 3.5 feet and decreases by 0.10 feet, or 3%, with the gate closure set point elevation of 2.5 feet, when compared to the existing conditions. Applying the surface water elevation increase of 11% for the selected alternative with the set point elevation of 3.5 feet provides a conservatively high estimate of increase in the average groundwater elevations of approximately 0.1 feet. The predominant soil type mapped for the BSDD by

the Natural Resources Conservation Service for Coos County (NRCS 1989), are Langlois silty clay loam and Langlois peaty silty clay loam. The geotechnical study confirmed the presence of similar silty clay soils. The estimated hydraulic conductivity for these soils is low, at 0.0004 feet/minute (NRCS 1989), indicating the likelihood of a very slow response of groundwater to surface water fluctuations. Nonetheless, the partners will plan to continue monitoring ground and surface water loggers after construction as observation of actual water level changes can help guide operation and management of the tide gate set point elevations.

The BSDD currently can open the existing tide gates to allow more flow into the canals during summer/fall low flows to allow landowners to pump for stock watering and to stimulate additional forage/grass growth when groundwater levels are lower than desired. The gate closure set point can be adaptively managed to further support landowners' needs for water.

Comment #3: Mosquitoes Theme. *There is potential for public health and safety concerns should this wetland restoration result in the invasion of salt marsh or other mosquitoes such as happened in the Niles'tun/Bandon Marsh expansion.*

Response to Comment #3: TNC and the BSDD requested that Tetra Tech contact two mosquito experts that have been involved with mosquito issues in the county and at Bandon Marsh – James Lunders, Jefferson County Vector Control and Dan Markowski, Vector Disease Control International. Merri Martz, Tetra Tech, spoke with both James and Dan in February and March of 2014 and obtained several suggestions on ways to design the project to minimize mosquito concerns, including:

1. Grade to eliminate any spots below 2 feet in elevation to ensure all parts of the site have active outflow during low tides.
2. Provide pathways for drainage throughout the site to eliminate isolated pools.
3. Provide a tree and shrub buffer to provide shading of wetlands and reduce warming of the water (warmer, stagnant water is preferred by permanent water mosquitoes).
4. Install bat boxes to encourage bat use of the area.
5. Plan for adaptive management of the tide gate structure to manipulate water levels if necessary.
6. Develop a mosquito management plan.
7. Conduct at least one summer and fall pre-construction monitoring of mosquito populations on site to develop baseline for comparison to post-construction conditions. Identify key species and potential “thresholds” that would be considered a problem.
8. Conduct monitoring post-construction of mosquito populations for at least two years to compare to pre-construction conditions and determine if any problems occur.
9. If monitoring detects mosquito populations reaching “thresholds” after construction, follow mosquito management plan, such as application of larvicides to provide temporary control of mosquitoes early in the season (use *Bacillus thuringensis* or *B. sphaericus*). Commercial products are widely available in “dunks” (solid rings) or granular format.

Items #1 and 2, above, have been incorporated into the design specifically for Unit 2. ODFW and TNC will be conducting revegetation of the site per item #3 and installing bat boxes per item #4, but outside of the plans that will be let to a contractor. The draft water management plan (available at www.coquilleworkinglandscapes.com) intends for adaptive management of the tide gate structure. ODFW has conducted pre-construction monitoring of mosquitoes (in 2014) and is developing a mosquito management plan with post-construction monitoring. Draft design plans for the proposed project have been provided for additional review/comment to James Lunders and Dr. Markowski, and no additional recommendations have been identified.

Comment #4: Agreements with Landowners Theme. *Agreements are not in place with adjacent landowners to address concerns and no adverse impact to their lands and operation. ---- As a landowner, I should be signing off on the permit or at least have a written agreement with the drainage district as to what they intend to do on our property. ----*

Response to Comment #4: The Drainage District has never been operated in a manner that would require any individual landowner to obtain an agreement from neighboring landowners before using their lands in a lawful manner that complies with local, state, and Federal requirements. The BSDD has and will continue to work with all of its landowners within the parameters of the issued permits, applicable statutes, rules, and regulations, as well as District approved operating guidelines.

Comment #5: Water Management Plan Theme. *The water management plan is not approved and there is no agreement that I know of in which ODFW and BSDD are in agreement with the water management plan. All these things we have asked for before the permitting moved forward. Hydrology and Geo-Tech reports have been done and I have included some information in the attachments as well as past comment concerning this project.*

Response to Comment #5: A draft water management plan is available at www.coquilleworkinglandscapes.com and was also sent to all landowners by the BSDD board. Part of the permitting process is to review and, if needed, request changes to specific elements of a project to ensure compliance with applicable laws and regulations. Thus, the water management plan has been considered a draft and will not be finalized until the relevant permitting agencies and funding agencies review and approve the plan (with any revisions necessary for approval). Landowners and other stakeholders are encouraged to provide input into the review and finalization of the plan. Other design reports have also been posted for landowners to view and comment upon.

Comment #6: Purpose of Drainage District Theme: *“The Board of Supervisors is obligated by State Law and Policy to operate the District for the benefit of all landowners.” The reality is the BSDD petition submitted and approved in 1906 was “to adopt measure to drain” the lands stated under “1”. (County Courts, Book 8, p.494). Further documents state the District has been organized under the laws that govern incorporation of District that have for their objective the reclamation of valuable low lands for agriculture use on an extensive and economical basis. The original mapping of the District was 1740.37 acres of Exclusive Farm Use land and classified farmed or prior converted wetlands. However, over the years certain acreages have been removed or reduced to the current level.*

The District has constructed and maintained the tide gate structure, major channels and the original three levees (river bank and north dike). There is nothing in the historical documents about the berms on individual landowner’s property adjacent to the channels nor has the past history of the District work included anything to do with the shaping of the berms, spreading of spoils, or internal drainage work on individual landowners’ parcels. The District has not replaced the culverts in the landowner’s berms, shaped the berms, nor spread the spoils from channel cleaning on individual landowners’ property or berms.

Response to Comment #6: The petition in 1906 was for the purpose of drainage, but allows dikes, canals, gates and other “infrastructure”; features that in general would protect lands from high tides and allow drainage. The Oregon Revised Statute section 547 that authorizes drainage and reclamation also allows irrigation. BSDD must have the ability to have access to, maintain, and operate its infrastructure to enable individual landowners to use their own property in the manner they choose, within constraints of other governing county, state, and Federal laws and regulations.

The BSDD has built additional berms (beyond the original berms cited in the comment), and believes that all major canals and berms alongside those canals are the BSDD’s responsibility to operate and manage as part of the overall “infrastructure” of the drainage district.

Within the Exclusive Farm Use regulations for Coos County, mitigation is a conditional use subject to Policies 14, 18, 19, 22, 23, and 27 (if applicable). Voluntary restoration is an exception that may be allowed.

Comment #7, Grazing Use Theme. *“Continued disturbance is on-going from grazing.” Then why are the “partners” filling lands for grazing to the extent of some 60 acres? This statement needs further clarification. Our forefathers worked extremely hard to develop this land for agriculture purposes as per 1906 District formation and reclamation purposes. As a current landowner who grazes property, we have done many project on our own or in cooperation with some agencies to improve our operation and water quality. Livestock are not on the land during the winter season from late November through March/early April depending on the year. Removal of almost 400 acres of agriculture land from this section of the Coquille Valley has the potential to adversely impact the migratory bird populations and feed source. It is evident when comparing ranchers fields to restored wetlands in the area, these migratory birds love the short green grasses and water inundation now created by area ranchers.*

Response to Comment #7: The statement that continued disturbance is on-going from grazing was in reference to the fact that the project site has been altered from its original condition – which is recognized as a lawful and legal activity, but nonetheless has changed the project site. No reference has been made to adjacent landowners and their grazing practices, nor does this project intend in any way to infringe upon adjacent landowners lawful and legal activities.

The purpose of placing excavated material as fill on the site will not convert wetlands to uplands, but will allow for a range of elevations on the project site and allow for continued grazing on a portion of the site, primarily on the CCGC property (approximately 30 acres), and allow for native tree/shrub plantings on the ODFW property.

The CCGC property is owned primarily for waterfowl hunting purposes, although grazed for revenue purposes, and no native shrub/tree plantings are proposed on their property, it will be maintained in herbaceous cover. This project will benefit waterfowl and the waterfowl hunting purposes of this property. The ODFW property will include native woody plantings, but it is anticipated that due to the low elevations of large portions of the site, that much of the site will remain in herbaceous cover. We are not aware of any specific studies/reports that have documented that ranched land is preferred by waterfowl over natural wetlands and would like to see any reports that could be provided.

Comment #8: Fish Access and Habitat Theme. *There is some question as to the benefits of “overwintering” habitat since much of the current 1700+ acres is underwater (Winter Lake) from approximately Dec. 1 through March depending on precipitation.*

Page 3, #4A, “Oregon Coastal Coho can access the floodplain only during winter inundation and then are subject to stranding.” This is simply not true. All species of fish can enter the man-made channels when the tide lids are open. Stranding is not an issue as landowners internal drainage is such that there is very limited if any stranding on the agriculture lands.

Page 4 & 5: This project is primarily about fish. One must consider the restoration with four 8’x10’ culverts allowing water to enter the restoration area. Have you considered the volume of water flushing in and out of the 400 acres of wetland restoration? If the restoration was designed to fill the ditches only, why does it need one 8’x10’ culvert box per 100 acres? Now, this project also purports to be about drainage. Then why are there only three 8’x10’ culvert/boxes for the remainder of the 1300 acres of agriculture lands in this drainage district. That calculates to approximate one 8’x10’ culvert/box per 400 acres of agriculture lands and four 8’x10’ per 400 acres of wetland restoration. Now, if there is an approved water management plan that allows the four 8’x10’ to assist with the spring drain out, then that will be beneficial to the agriculture lands within the District. However, will such a force from seven 8’x10’ culverts/boxes cause impacts to the adjacent landowners across the Coquille River upstream or downstream since current drain out of the BSDD is much less volume and force.

Response to Comment #8: Slow-water refugia (i.e. overwintering habitat) has been identified as a key limiting factor to Oregon Coastal Coho in the Coquille watershed (Coquille Indian Tribe 2007). Juvenile coho find slow-water refugia by following along river banks and entering off-channel sloughs, oxbows, tidal channels, and inundated floodplains as the river rises and connects with these types of habitat. The project area, under existing conditions, has tide gates that close whenever the river is rising, thus preventing fish access until the entire floodplain begins to inundate. It is likely that coho and other fish species follow the floodplain inundation when it overtops the banks (fish may enter into the site from Beaver Slough or from the mainstem Coquille River when water elevations exceed the bank elevation). The fish are then present on the floodplain until drawdown occurs in spring, and then can enter the drainage canals and can be flushed out of the system. There are multiple disconnected remnant swales on the ODFW property where fish could become stranded (these swales do not connect to existing drainage canals). The number of fish that could be stranded has not been quantified. Herons and other birds prey upon small fish, frogs, and invertebrates on the site, particularly in shallow water, but there has been no surveys to document fish presence during drawdown before any predation might occur. The proposed deeper tidal channels will have much improved connectivity to allow fish to swim out during the spring drain out and also provide additional cover (from depth of water) that may reduce predation.

However, the purpose of the project is to allow fish to access Unit 2 both prior to and after the entire floodplain becomes inundated – to improve the amount of time that fish can enter or exit the tide gate structure. The proposed new culverts and tide gates would provide more opportunities for fish to enter Unit 2 when the river is rising, either for a high tide or as flows rise, up until the tide gate set closure

point. The gates will not be open all of the time under the proposed condition, but will be open from 33-55% of the time. Oregon fish passage rules (OAR Division 412) require that for any cumulative replacement of over 50 percent of an existing tidal structure that fish passage rules must be met, or a waiver or exception must be approved.

The purpose of the two elements of the project are twofold: 1) the existing culvert/tide gate structure must be replaced due to its age and damaged condition; and 2) the Winter Lake (Unit 2) habitat restoration is designed to restore and enhance overwintering habitat and improve access for salmonids and to improve the wetland conditions for a variety of species including waterfowl and other migratory birds.

As part of the culvert/tide gate design, the BSDD and its contractors have consulted extensively with the ODFW fish passage program to design a system that will meet, or come as close as feasible to meeting (to achieve an exception), fish passage rules. Providing culverts/tide gates that specifically are tied to each of the Units 1, 2, and 3, will allow for separate operation of each Unit to benefit the landowners within the unit, and the four culverts/tide gates proposed for Unit 2 are to achieve as wide a width as feasible for tidal inflows to reduce velocities through the culverts to both provide fish passage and to reduce velocities and scour either upstream or downstream of the culverts. The design includes placement of rock in the immediate vicinity upstream and downstream of the culverts/tide gates on all units to prevent scour. Velocities dissipate beyond approximately 50-100 feet upstream or downstream of the culverts/tide gates and will not affect the Coquille River or properties across the river. The volume of exchange of tidal flows during the summer/fall low flow period will be greater than under existing conditions, particularly in Unit 2, by design, to attract fish into and out of the unit. Also, this will help to minimize mosquito populations by allowing substantial flow in and out each day to prevent stagnant water conditions.

Hydraulic modeling of the spring drain out period indicates that with the proposed new and larger culverts/tide gates that drain out can happen faster than currently occurs on all units, which should be a benefit to the other landowners as was mentioned in the comment. Table 3, below shows a comparison of the capacity of the existing vs. proposed culverts. Additionally, as the spring drain out occurs when flows in the Coquille River are relatively high, the actual volume drained from the Drainage District is small in comparison to river flows and does not have any substantial effect on river flows or currents.

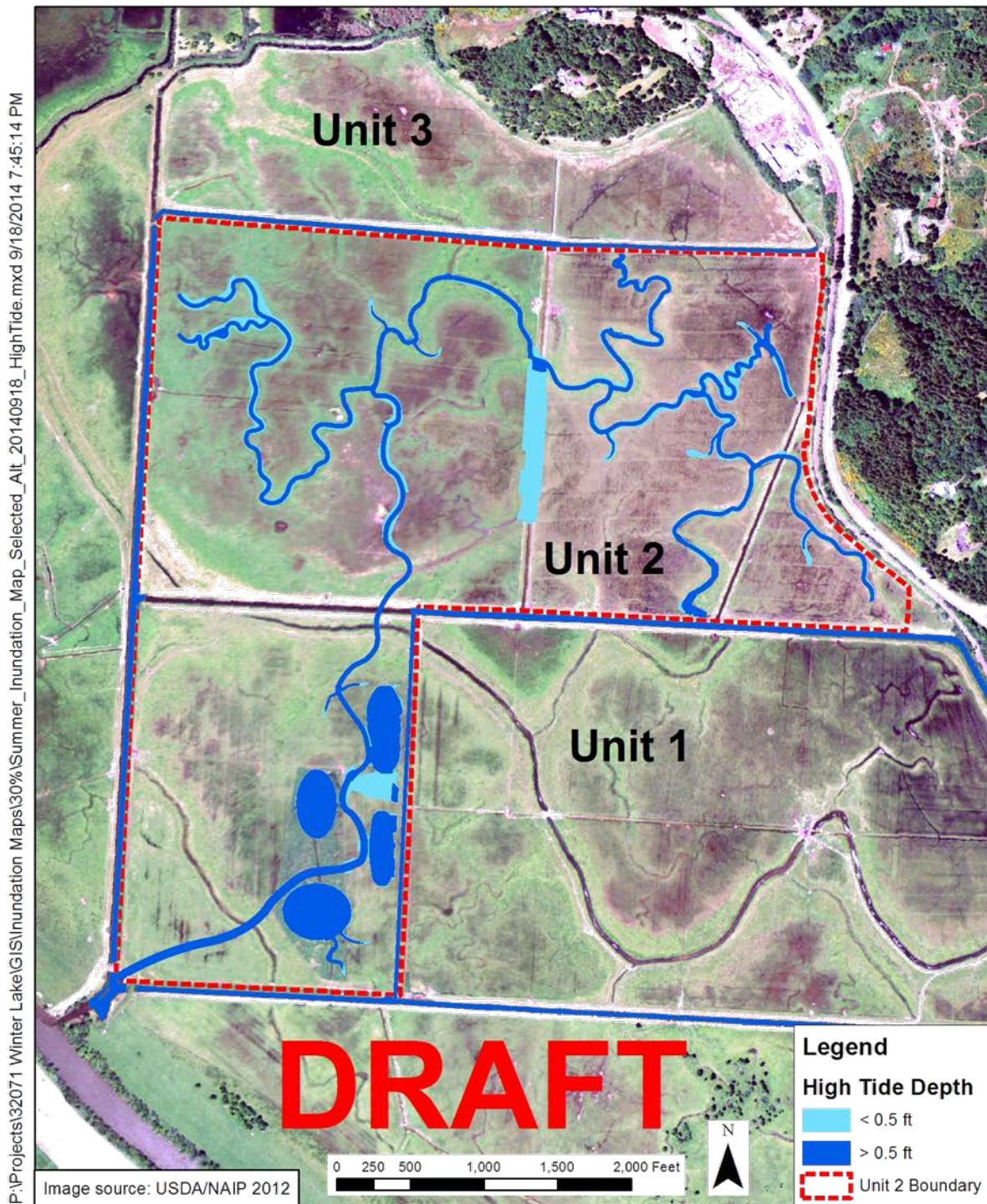
Table 3. Culvert Area Available for Flow at Water Surface Elevations from -4.0 to +6.0 feet NAVD88.

Water Surface Elevation	Culvert Area (square feet)					
	8-ft CMP (invert at -4 feet)	10-ft x 8-ft Rectangle (invert at -2 feet)	Difference in Area from Existing to Proposed	Four 8-ft CMPs (invert at -4 feet)	Seven 10-ft x 8-ft Rectangles (invert at -2 feet)	Difference in Area from Existing to Proposed
6.0		80	+80		560	+560
5.0		70	+70		490	+490
4.0	50.2	60	+9.8	201	420	+219
3.0	46.8	50	+3.2	187.1	350	+162.9
2.0	40.4	40	-0.4	161.7	280	+118.3
1.0	33.0	30	-3	131.9	210	+78.1
0.0	25.1	20	-5.1	100.5	140	+39.5
-1.0	17.3	10	-7.3	69.1	70	+0.9
-2.0	9.8	0	-9.8	39.3	0	-39.3
-3.0	3.5	0	-3.5	13.9	0	-13.9
-4.0	0	0	0	0	0	0
Maximum Flow Volume (cfs) Conveyed by Culvert	351	640	+289 (+82%)	1,407	4,480	+3,073 (+218%)

Comment #9, Water Quality Theme. *One must consider the water quality issues of this project. Depending on the Water Management Plan, should water be placed in the shallow ditches over the wetland, will it come out warmer and contribute to the temperature increases in the Coquille River during the summer months. When one considers the wetland has four 8'x10' tide gates to flush water in and out of the wetland, I would doubt if the amount will stay in the small stream system this project is creating. During the summer hot weather, it is common sense that the water returning will be warmer since the land temperature is warmer as well as the air temperatures. Currently, under this drainage system, the cooler ground water drains into the Coquille River during the summer months. This project will add warmer waters from the wetland into the Coquille River creating increase in Coquille River temperature.*

Response to Comment #9: The primary habitat channel system and connections to existing remnant swales on the ODFW property will not be a small and shallow system. The channel at the culvert/tide gate end (downstream end) will be at elevation -3 feet and have a 50-foot bottom width. The channel decreases in width to about a 25-foot bottom width all the way at the upstream end of the channel and a bottom elevation of 0 feet NAVD88. This means that the channel will have at least 3 feet of water depth at the lower end at all time (even during low tides) and at least 1 foot of water at the upstream end during low tides. During high tides, the water depths will be on the order of 3-6 feet. The water will also generally be flowing in or out, with only a short amount of time (approximately 30 minutes at the upper NE corner of the ODFW site) at the turn of the tides where there is little to no flow. This will substantially reduce any potential for solar heating of the water as it will flow in and out regularly, and also capture stream flow at the upstream end of the channel. Further, ODFW and TNC will be planting over 100,000 trees and shrubs for shading that will result in much less potential for solar heating.

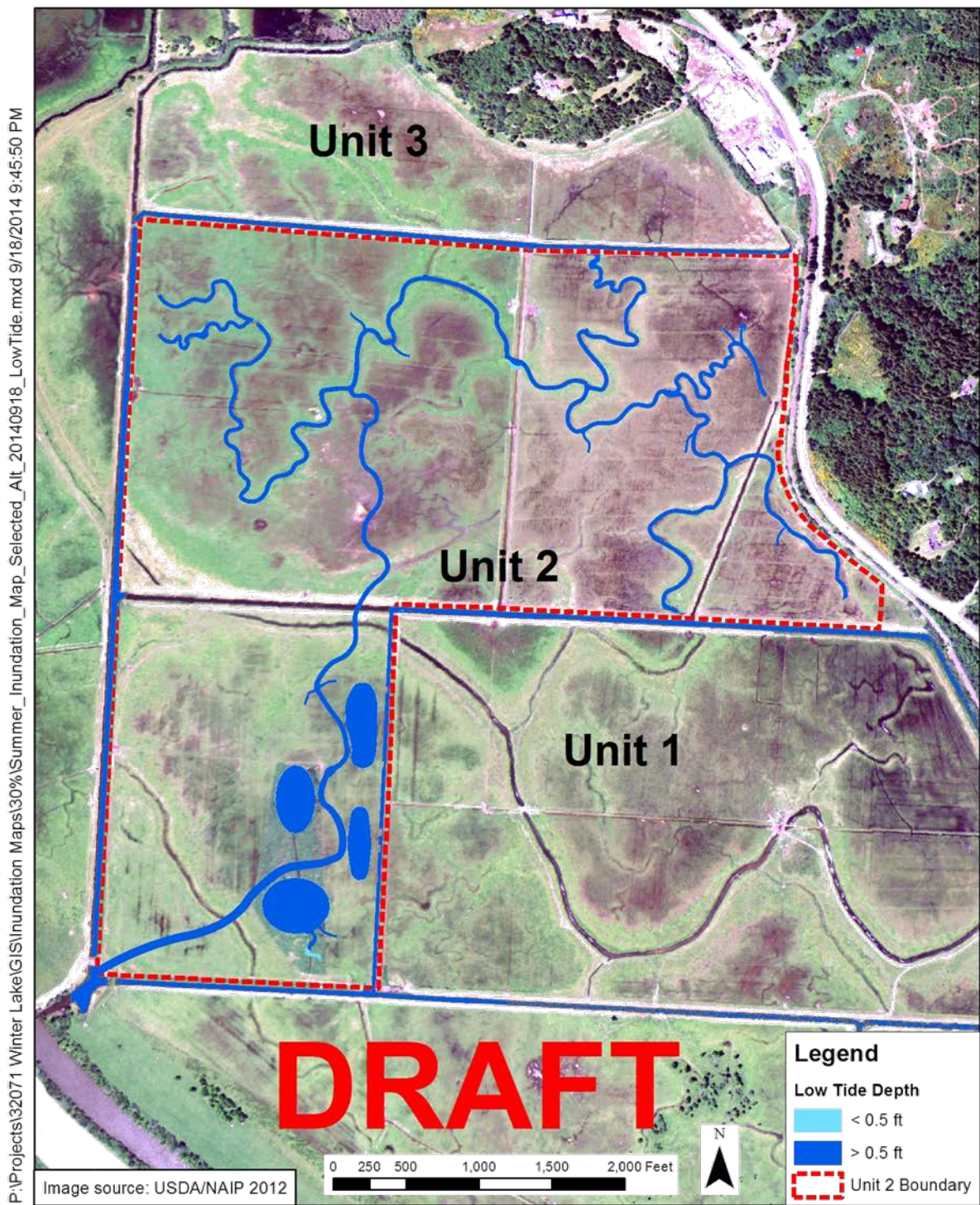
Hydraulic modeling of the propose project indicates that during summer/fall low flows, the four 8'x10' culverts and proposed channel dimensions are needed to ensure that tides flow all the way up to the upstream end of the channel during high tide, and to allow drainage down from the upstream end on each tidal cycle. This is a primary feature to minimize mosquito populations and also allow fish to access the entire system and not be stranded. As the tide gates close at a predetermined set point (such as 3.5 feet or 2.5 feet NAVD88), the upper end of the high tides are muted and the entire flow volume stays within the channel system (see Figures 3 and 4 below, reproduced from Tetra Tech 2014a).



**Selected Alternative
Summer Inundation Depth at High Tide**



Figure 3. Model predicted inundated areas within the canals and Unit 2 for the highest simulated tide and the proposed project.



**Selected Alternative
Summer Inundation Depth at Low Tide**



Figure 4. Model predicted inundated areas within the canals and Unit 2 for the lowest simulated tide for the proposed project.

Comment #10, Life of the Structure Theme. *There is concern about the life of the structure. This is not the first concrete structure used by the District. If it fails in 25 years or less, how will the next generation of ranchers be able to replace such a gigantic three plus million dollar structure? LCDRC Goal Three is to preserve and protect agriculture lands for future generations of farmer and ranchers. How can our future ranchers replace such a structure? Who is going to pay for replacement if the structure's life is short like the two failed structures in the 1990's or the current structure.*

Response to Comment #10: BSDD is not aware of installing any previous concrete structures. Please provide documentation as to which structure was installed and when. The current culverts/tide gates are steel and have failed as indicated in the comment. If this structure is not replaced, then much of the Drainage District will revert to wetland as it will no longer be protected from high tides. In order to replace the structure, it is state law that the structure must comply with fish passage rules (ORS 509.508 and OAR 635-412). The BSDD has coordinated with ODFW to determine what kind of replacement structure will comply with fish passage rules, which had led to the current design. The contractor hired by the BSDD to design the structure has estimated the new structure will have a 50-year lifetime which is in line with most other engineered structures (i.e. bridges). The BSDD would be interested in learning if the commenter has an alternate culvert/tide gate design that would also meet fish passage rules, but to date no alternate design has been offered.

Comment #11, China Camp Creek/Hwy 42 Theme. *Early in the project, the USFWS National Coastal Wetlands Grant 2010, talked about restoring historic China Camp Creek. That isn't possible since part of the historic creek bed is shown on our property. The project is now focused of building a new channel and connecting remnant channels. Nothing is being done to improve habitat or drainage on historic China Camp Creek east of Highway 42.*

Response to Comment #11: In the original grant application, there was mention of the possibility of routing China Camp Creek through the Unit 2 properties, not on the Waterman's property. From coordination with other landowners within the Drainage District, several concerns were expressed about diverting China Camp Creek and possible effects to landowners upstream of Highway 42. From these comments and through further analysis of alternatives, the partners determined that rerouting China Camp Creek through Unit 2 would likely not achieve substantial fish benefit and that leaving China Camp Creek in the drainage canal system would also ensure that there would be no effects upstream of Highway 42. The new North-South canal would convey China Camp Creek down the east side of the CCGC property and into the East Canal and out the culvert/tide gate that drains Unit 1 rather than flowing directly into the West Canal and the culverts/tide gates that drain Unit 3. Hydraulic modeling of this reroute indicates there will be no effects to landowners upstream of Highway 42 and negligible effects on surface and groundwater levels in Units 1 or 3 from the proposed reroute.

BSDD's purpose is to protect the area from daily high tides and facilitate drainage. Historically, BSDD has maintained the major canals and berms only, and not culverts, tide gates, ditches, etc. associated with individual parcels. The District has never maintained drainage facilities East of Highway 42N. When the property East of Highway 42N was subdivided, no provision was made for the maintenance of China Camp Creek. Drainage and habitat improvements in this area are the responsibility of the individual landowners involved.

Comment #12, New Canal Theme. *The filling of the East/West canal between China Camp Gun Club and ODFW is a change in existing drainage. Are the specs for the new channel adequate to handle the flow and willing changing this drainage to another channel have adverse impact to the adjacent landowners in that section of the drainage district? Is there adequate drainage from the tide control structure on that side to handle this additional flow?*

Response to Comment #12: The new North-South canal will be designed to the same widths and depths as the existing canals within the system and the depth and width will match at the China Camp Creek canal upstream end and at the East Canal on the downstream end (bottom elevation of -6 feet and bottom width of 25 feet). The distance that China Creek travels to the culvert/tide gate structure and the Coquille River remains the same. Additionally, the new canal will be entirely open and there will be no culvert restriction of China Camp Creek such as currently exists where the existing China Camp Creek canal joins the North Canal. Hydraulic modeling of the various seasons of operations, including spring drain out, indicate that the proposed new channel and culverts/tide gates will increase the rate of spring drain out and not adversely affect landowners within Units 1 or 3.

Comment #13, Groundwater Elevation Theme. Page 5, #6: *Perimeter berms around the wetland are important for surface water. However, what will be the impact of tidal function in Unit 2 to the overall level of groundwater in the District? I have attached a picture that was taken during the fall dry season. As you can see in the pipe, the ground water without the wetland inundation is only a 1" or more below the surface. This pipe is one that we use to hold a fence and we continue to observe those water levels each year when we ship cattle by pulling the cap, inserting a metal pipe and putting in a temporary fence. Increases in ground water from the wetland area can adversely affect the forage growth of agriculture operations.*

I have attached various documents to explain concerns about additional groundwater from the restoration area. You will notice that normal flushing for the agriculture drainage (?) is as great as 3.5 which is only a small amount short of the wetland flushing of 3.5 to 4.5. Irrigation is equal to 4.0 to 4.5 and we realize the impacts of this to our property. You will also notice the hydrology report shows levels in the wetland area due to certain water level entering the restoration area and also I have provided the elevations. When the agriculture ditches allow water to enter at up to 3.5 on a normal cycle, that is going to increase the level in the ditches and increase ground water levels. You can see by the hydrologist modeling what will happen in the wetland areas. The same thing will happen in these areas to the agriculture lands at these levels. Also you have an elevation map to realize what the elevations of the wetland are in comparison to the agriculture land. It doesn't take much to realize the impact of 3.5 feet in the drainage ditches will have an impact on adjacent landowners.

This new system is a default open system compared to historic systems of default closed. See attachment. Again, that is a total change in drainage concept and what are the adverse impacts of that on agriculture lands.

Response to Comment #13: The photo attached to the comment letter is not identified on the location and exact date. From the piezometers installed by the BSDD and monitored from November 2011 through November 2013, and as described in the response to comment #2, the anticipated maximum effect on groundwater from the Unit 2 operations is 0.1 foot, and this is likely to be an overestimate due to the slow flow rate of ground water through the silty clay loam soils (only 6 hours from high to low tides). No adverse effects to adjacent landowners are indicated.

The information attached to the comment letter is primarily from two source documents, the hydraulic analysis of the preliminary tide gate design prepared by Northwest Hydraulic Consultants (2013) and the geotechnical report prepared by PBS Engineering and Environmental (2013). The current design builds upon the information developed in those two studies and included more detailed analysis of the currently proposed channel system in Unit 2, plus additional information on the culverts/tide gates developed since 2013. The more recent modeling conducted for the Winter Lake project is for the current level of design and indicates a maximum anticipated effect on groundwater from the Unit 2 operations of 0.1 feet as presented above.

The proposed new culvert/tide gate system will be neither a default open or default closed system, but allows the gates to be set at specific opening and closing elevations. This will allow the BSDD to manage

for greater drain down on low tides and better inflow on high tides (up to the closure point). It also allows adaptive management over time, so that additional needs for stock water, irrigation water, etc. can be accommodate versus the default flap gates that can only open when the water level behind the gate is higher than the water level on the river side of the gate. The BSDD Board has provided the draft Water Management Plan to all of the landowners and is soliciting feedback. This is the perfect time to provide comments.

Comment #14, Construction Effects Theme. 6B: *What will the impact of the work schedule, water plugs, etc. have on current adjacent landowners and landowners east of Highway 42? Livestock raised on range lands and are then moved to the Valley are do not respond well with human activity and will not gain weight as normal.*

6C: *How can landowners know if this project will impact our agriculture operations? Where are the specifics as to re-routing the flow? How much flow is there at this time and will it impact the forage growth on adjacent properties?*

All equipment must be washed not only on the surface but the under carriage, tracts, etc. to prevent transporting of noxious weed seeds such as gorse, broom, etc. to the project site. Someone needs to be responsible to ensuring this is done and if transportation of such seed base is done, then that person needs to be responsible for monitoring and treatment in the project site area.

Response to Comment #14: Construction will occur in the summer dry period when China Camp Creek flows are typically around 1 cfs. The permits for the project will require the construction contractor to pass flows downstream around or through the work site and prevent fish from being entrained in the work zone and prevent turbidity from entering the Coquille River. Typical water levels in the other canals will also be maintained. The BSDD and TNC will oversee construction and the contractor(s) to ensure permit conditions are met.

The contractor will be required to install temporary fencing or other measures to ensure cattle are not allowed to enter the work site. The BSDD is not aware that cattle cannot gain weight if human activities are going on adjacent to grazing areas. BSDD Board members include several members that graze cattle and experience indicates that cattle become rapidly adapted to adjacent disturbance (i.e. similar to rapid adjustment to roadway traffic). The majority of the work in Unit 2 and at the culverts/tide gates will not be in immediate proximity to cattle, and work done in proximity to cattle will be of short duration.

The permit requirements, BSDD and TNC will specify best management practices including that construction equipment and trucks must be cleaned to prevent transporting of noxious weeds and will monitor the construction.

Comment #15, Monitoring and Adaptive Management Theme. *Who will be ultimately responsible for the monitoring and adaptive management? Is there a third party over-site committee to ensure this is done with accuracy?*

Response to Comment #15: ODFW and the CCGC will be responsible for monitoring and adaptively managing the water flows on Unit 2 within the parameters of the District Water Management Plan, issued permit conditions and other appropriate Federal, State, and local laws, rules and regulations.

Comment #16, *Has there been contamination analysis on the property?*

Response to Comment #16: ODFW conducted an evaluation of potential contaminant sources and contaminants on the property as due diligence prior to their acquisition of the property. The CCGC property has been maintained for pasture for many years with low levels of waterfowl hunting; there is no potential source of contamination to the property.

Comment #17, *Where is the NEPA as required with federal funding and the economic impact of this project?*

Response to Comment #17: NEPA is typically completed during the permitting process. It will be completed by either the U.S. Army Corps of Engineers as part of their Section 404 permit analysis or by the U.S. Fish and Wildlife Service as the funds they administer through the Oregon Watershed Enhancement Board is one source of funding for the project.

Comment #18, *Do you actually believe all landowners are on-board with this project?*

Response to Comment #18: The BSDD Board has voted to approve the 30% and 60% designs for the Winter Lake component of the project. The voting majority of the BSDD are in favor of the project. No other viable alternatives that meet local, state, and Federal requirements or are feasible according to standard engineering practice have been offered in the 6 years that the replacement of the tide gate structure has been discussed. The partners have met with the Drainage District landowners on multiple occasions and have made changes to address concerns such as mosquitoes, effects upstream of Highway 42, etc.

Comment #19, *Why is the project doing work on property one of my entities own and I have not been asked to sign off on the project?*

Response to Comment #19: The BSDD has asked the Waterman's to provide input on the project elements affecting their properties (see attached letter).

Comment #20, *When will the final designs be provided to all landowners so we can determine the impact of this project on our lands?*

Response to Comment #20: The most appropriate time to comment on designs is before they are finalized so that meaningful changes can be made without causing unnecessary rework and delays. Similarly, the partners submitted permit applications before the designs are finalized so that, if any of the permitting agencies request a change, it can be accommodated. The Winter Lake 30% and 60% designs have been provided to all landowners and the 90% Winter Lake designs will be posted in February 2015.

Comment #21, *There was discussion about another culvert to convert Garden Valley water into the wetland area. We have not seen the drawings of what this will be or how it will function to again be able to determine impact on adjacent lands.*

Response to Comment #21: This element is still being considered (shown on the 90% Winter Lake plans) as a way to improve fish passage out of the drainage district in the spring drain out. It would be operated to ensure no increase in water surface elevation in the adjacent canals or at other landowner's properties.

Comment #22, *What is the design of the tide control structure and what will it do to the current dike on Waterman Trust property?*

Response to Comment #22: The 30% design of the culverts/tide gate structure is currently available on www.coquilleworkinglandscapes.com . The BSDD requests input from the Waterman's on the 30% design elements that affect their properties (see attached letter)

Comment #23, *Will the proposed berm on Waterman Ranch, LLC go through our corral, water troughs, remove our fencing, etc. We need to see the exact engineering for this part as it pertains to our property.*

Response to Comment #23: The 90% Winter Lake plans show more details of the east berm on the Waterman's properties. The BSDD has requested input from the Waterman's on the design elements that affect their properties. Currently, the specifications for the berm indicate that the contractor must remove and store and protect any fencing or other items (such as water troughs), install temporary fencing, and replace fencing and items per the direction of the construction manager. Similarly, there is an existing small drainage ditch that is in the footprint of the proposed berm. The 90% design shows installation of a similarly sized ditch at the toe of the new berm to allow drainage both north and south to proposed drainage culverts with gates.

Comment #24, *What impact on agriculture drainage will raising the bottom of the tide gates 2.7 to 3' from the bottom of the existing culverts? How will this impact the flushing of sediment in the channels?*

Response to Comment #24: The proposed new culvert inverts will be at -2 feet NAVD88, which is 2 feet above than the existing invert of the round culverts. The lower foot of the existing culverts has a much smaller area than the center of the culvert (widest point) and is nearly always below the lowest low tide levels in the Coquille River, so water is always standing 3 or more feet in the existing culverts and not providing active drainage of either flows or sediment. Changing the culverts to a rectangular box shape, even while raising the invert by 2 feet, allows much more width and effective flow out of the culverts, including sediment as is shown in Table 3, above.

Comment #25, *The original channels were dug 6' below the ground of the marsh. (historic documents) The graph in this permit shows the new channel at a -5.0 elevation which is not consistent with other ditches that were dug to form this drainage. It is not clear what volume the new ditch will carry or if it is of equal capacity to the main CCC East-West ditch.*

Response to Comment #25: The new North-South drainage canal is shown on page 13 of 17 in the permit drawings, and on Sheets C16, C17, and C18, in the 90% design plans available at www.coquilleworkinglandscapes.com. The canal depth will be -6.0 feet to match the connection point at the north end to the China Camp Creek canal, and to the south end at the East Canal. The bottom width is 25 feet. Other sheets that show other existing drainage canals may show conditions of shallower depths and narrower widths due to sediment deposition and bank slumping. This project is not proposing to change the existing canals. Further, the original drawings and descriptions of the canals are in a different datum (NGVD29) and over 100 years of subsidence has occurred in the floodplain, so current elevations are different than what was described in the historical documents.

Comment #26, *Why was the wetland delineation not attached?*

Response to Comment #26: The wetland delineation was submitted previously to DSL per their rules on submitting permit applications.

Comment #27, *Why was the USFWS not identified under any other federal agency that is funding, authorizing or implementing the project? Existing answer is N/A.*

Response to Comment #27: The project has received a grant from the National Coastal Wetlands Grant program, wherein the U.S. Fish and Wildlife Services provides grants through coastal states (in the case of Oregon, through the Oregon Watershed Enhancement Board) to qualifying projects. This was an error made in the application, as the funds are being received from OWEB, but are technically federal funds. We should have identified these are federal funds administered by OWEB. Subsequent to submitting this permit application, the tide gate structure portion of the project also received a National Coastal Wetlands Grant and we will provide that new information. We apologize for the confusion.

Comment #28, *Why is the CORPS putting this under a Nationwide Permit when it is in a drainage district and the goal is primarily restoration/fish? Most recently I have just found out that the USFW is the primary person to deal with on comments. How can the project meet CORPS requirements for wetlands and be approved on a nationwide permit when wetlands are being filled?*

Response to Comment #28: The U.S. Army Corps of Engineers is the best entity to answer relative to their permitting process as it pertains to their jurisdiction and approval authority. However, the project purpose is two-fold: 1) to modify and replace existing aged infrastructure that protects agricultural lands within the drainage district per current fish passage requirements and other rules; and 2) to restore and enhance fish passage and the quality of habitats in Unit 2.

Under the Corps' program, there are numerous Nationwide Permits available for a variety of actions that do not cause a significant adverse effect to wetlands and other waterbodies under the Corps'

jurisdiction. Nationwide Permit #3 allows maintenance and replacement of existing infrastructure such as levees, tide gates, and other features; Nationwide #41 allow reshaping of existing drainage ditches; Nationwide Permit #26, allows wetland restoration. The project will not convert any wetlands to uplands, but will enhance wetlands and increase fish passage, thus likely qualifying under the wetland restoration Nationwide Permit. The Corps and the USFWS are currently determining how they will complete NEPA.

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Tetra Tech, Inc. 2014a. Draft 30% Design Memo. Prepared for the Nature Conservancy. September 2014.

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Tetra Tech, Inc. 2015. Draft 90% Design Plans. Prepared for the Nature Conservancy. January 2015. Available at: www.coquilleworkinglandscapes.com



B Beaver Slough Drainage District

60196 Old Wagon Road
Coos Bay, OR 97420

February 16, 2015

Charlie & Sharon Waterman
87518 Davis Creek Lane
Bandon, Oregon 97411

Re: China Camp Creek Project - elements that will directly affect Waterman properties

As you are aware the China Camp Creek Project has been in the design and planning stage since 2009. The design and engineering of the China Camp Creek Project (C3P) continues to progress and there are several project elements that will directly affect your properties within the Beaver slough Drainage District (District). (See Attached Map – C3P Waterman 2.10.2015)

In Area A the existing wood bulkhead, piling, CMP culverts, and tide gates would be removed with a minimum of disturbance necessary to the dike on the West side. The canal would be plugged, the dike rebuilt, and rock rip rap placed as necessary to protect the dike. Please refer to the 30% structure design plans available to download on the <http://www.coquilleworkinglandscapes.com/> website in the China Camp Creek Project section.

It is contemplated that a small area for storage of excavated material would be needed at the base of the current dike on the West bank of the north canal. Temporary fencing would be installed as needed during construction with all fencing and gates to be rebuilt or replaced as necessary at project completion. The entire construction site will be protected against erosion during construction and vegetated at project completion. Additionally the project plans call for the removal of existing steel beams, wood piling, and residual concrete from the existing channel to the Coquille River. Some of that work may need to be done from the West side of the channel.

The six foot culvert crossing at Area B needs to be considered and the removal of the culvert evaluated. If you have input on this potential culvert removal, please provide that to us in the next two weeks so we can include such input for consideration in our evaluation.

The new North – South canal, Area C, would have the East side of the canal on the true property line with the East berm, two associated bridge foundations, and a drainage ditch and three 48” HDPE plastic culvert pipes equipped with side hinge tide gates to the East. The true property line is actually East of the current fence line at the North end and West of the current fence/corral on the south end. Please refer to the North – South Canal plan drawing available to download on the <http://www.coquilleworkinglandscapes.com/> website in the China Camp Creek Project section.

The fence would be rebuilt on the West side of the East berm, with the corral and tie in to perpendicular fences incorporated as needed. All disturbed areas would be revegetated. We currently plan to place a rock cap on the East side berm but if you object please let us know.

Obviously, it would not be appropriate to discuss details of access related items until the legal issues are resolved.

We can be more efficient with the process if all points are considered; your input is appreciated in the next two weeks.

Please feel free to ask for further clarification.

Regards,

Beaver Slough Drainage District

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