RECLAMATION

Managing Water in the West

Finding of No Significant Impact
Final Environmental Assessment
Proposed Water Service Contract
Palmer Creek Water District Improvement Company
Willamette River Basin Project, Yamhill County, Oregon

U.S. Department of the Interior
Bureau of Reclamation
Pacific Northwest Region
Columbia-Cascades Area Office
Portland, Oregon

April 2009

U.S. Department of the Interior

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian tribes and our commitments to island communities.

Mission of the Bureau of Reclamation

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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Prepared for:

Bureau of Reclamation
Pacific Northwest Region
Columbia-Cascades Area Office
Portland, Oregon

Prepared by:

Craven Consulting Group
Tigard, Oregon

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PN FONSI 09-02

Introduction

The Bureau of Reclamation (Reclamation) prepared this Finding of No Significant Impact (FONSI) to comply with the Council on Environmental Quality's regulations for implementing the procedural provisions of the National Environmental Policy Act (NEPA). This document briefly describes the Proposed Action, the alternatives considered, the scoping process, Reclamation's consultation and coordination activities, and Reclamation's finding. The Final Environmental Assessment (EA) fully documents the analyses.

Background

Reclamation has completed an EA in response to a request for a water service contract. The Palmer Creek Water District (PCWD or District), located in Yamhill County, Oregon, has requested approval to withdraw up to 12,250 acre-feet of agricultural water from the upstream reservoirs operated by the U.S. Army Corps of Engineers (Corps). Although the Corps operates the reservoirs, Reclamation is authorized to administer water service contracts for irrigation. Of the total amount requested for a water service contract, 11,269 acre-feet will be used as a supplemental water supply on 4,522 acres and 981 acre-feet will provide a primary water supply for 421 acres. Because the water will be diverted at PCWD's existing pump and delivery system on the Willamette River, no construction is associated with the proposed water service contract.

The PCWD's request for a water service contract could not be categorically excluded from NEPA because it does not meet the definition of any categorical exclusion available to Reclamation. A similar excluded activity is found at 516 DM 14.5D(4): "approval, execution, and implementation of water service contracts for minor amounts of long-term water use or

temporary or interim water use where the action does not lead to long-term changes and where the impacts are expected to be localized." In practice, in the Willamette River basin a minor amount of water is typically less than 1,000 acre-feet. PCWD's request for 12,250 acre-feet exceeds this threshold by a considerable amount. Therefore, the PCWD's contract application is not categorically excluded from NEPA.

The Departmental Manual (516 DM 14.4) lists actions that normally require Reclamation to prepare an Environmental Impact Statement (EIS). One item on that list is the administration of "proposed repayment contracts and water service contracts or amendments thereof or supplements thereto, for irrigation, municipal, domestic, or industrial water where NEPA compliance has not already been accomplished" (516 DM 14.4(2)). The Willamette Basin Water Marketing Program was evaluated programmatically in a 1980 EIS prepared by the Corps so the requirement to prepare an EIS is removed unless significant impacts are identified. The EA was prepared to consider whether any impacts are significant. An EIS must be prepared if a proposed Federal action will have significant impacts on the human environment.

Purpose and Need

The underlying purpose and need to which Reclamation is responding is the PCWD request for a water service contract. The District is pursuing this contract as an "insurance policy" during dry years and against potential future competition for water resources.

The purpose and need for the project relates to two issues: 1) need for an additional primary water supply for 421 acres (about 5.27 cubic feet per second [cfs]), and 2) need for a supplemental water supply for the remaining 4,522 acres if other more senior water rights are exercised for the water. For the supplemental supply, the main concern is that more senior water rights could be exercised at Willamette Falls. Two pending applications, totaling approximately 11,913 cfs, with priority dates of 1873 and 1889, by Portland General Electric (PGE) for water rights at Willamette Falls are senior to those of PCWD (Kupillas 2007). During normal water years when supplemental water is not needed, the supplemental water would not be used unless other more senior water rights (such as those for PGE) are exercised that result in shortages to PCWD. A supplemental supply of water also would be used during times of low water availability because of low streamflows or more senior water rights that could be exercised either upstream or downstream.

Alternatives Considered

The EA addressed two alternatives: No Action alternative and the Proposed Action. NEPA regulations require the action agency to consider a No Action alternative for comparative analysis purposes.

No Action Alternative

The No Action alternative is a decision by Reclamation to deny the PCWD application for a water service contract. PCWD would continue to use its available water supply including the one existing water service contract, groundwater, and surface flow water rights. No additional water from upstream Federal reservoirs would be utilized by PCWD. The District would continue to operate its pumps on the Willamette River to divert its water right and its existing supply of Project water. It would continue to use groundwater; however, new groundwater supplies are limited in PCWD service area.

Proposed Action

The Proposed Action is the PCWD's requested water service contract. PCWD has asked Reclamation to enter into a contractual agreement allowing the District to withdraw up to 12,250 acre-feet of Willamette River Basin Project water for use as both primary and supplemental water on 4,943 acres of private agricultural land. Reclamation's Willamette Basin Water Marketing Program receives requests from private landowners and irrigation districts in the Willamette Valley for use of water held in the Federal reservoirs of the Willamette River Basin Project. The proposed action is one such request.

Recommended Alternative

Reclamation proposes to select the Proposed Action as the preferred alternative, which is a decision to implement the water service contract requested by PWCD. No construction is associated with the contract and water will be served to existing agricultural land. In September 2007, the District installed a new fish screen at its point of diversion on the Willamette River. The fish screen design was approved by the Oregon Department of Fish and Wildlife (ODFW), the U.S. Fish & Wildlife Service (USFWS), and NOAA Fisheries' National Marine Fisheries Service (NOAA Fisheries).

Consultation and Coordination

Agency Consultation

The following agencies were consulted in the preparation of this EA:

- NOAA Fisheries
- ODFW
- Oregon Natural Heritage Program
- Oregon State Historic Preservation Office (SHPO)
- Oregon Water Resources Department (OWRD)

- USFWS
- Bureau of Indian Affairs (BIA)

Endangered Species Act Section 7(a)(2)

Twelve species listed threatened or endangered under the ESA occur or once occurred in the action area. Because no construction is associated with the Proposed Action and instream flow impacts from diversion of contract water are negligible, Reclamation determined that the Proposed Action will have no effect on threatened or endangered species. When this EA was initially drafted, the fish screen at PCWD's diversion point on the Willamette River had not been upgraded to meet current NOAA Fisheries standards. PCWD obtained approval for the fish screen design from the USFWS, the NOAA Fisheries, and the ODFW. The new fish screen was installed in September 2007 and meet current NOAA Fisheries screening criteria.

National Historic Preservation Act Consultation

In compliance with Section106 of the National Historic Preservation Act of 1966 (as amended in 1992) PCWD, on Reclamation's behalf, consulted with the Oregon SHPO to identify cultural and historic properties in the area of potential effect. In a letter dated July 13, 2006, the Oregon State Archaeologist agreed with the determination that the project will have no adverse affect on any known cultural resources. Because PCWD installed a new fish screen at its Willamette River diversion in September 2007, no construction is now associated with the Proposed Action.

Public Comment Summary and Changes to the Final Environmental Assessment

Reclamation issued an initial EA for public comment in 1996. Comment letters were submitted by the Oregon Department of Environmental Quality (ODEQ) and from WaterWatch. Upon receiving clarification that the contract request is primarily for a supplemental water supply to be used solely when the primary supply is not available, and that no additional natural flow rights were being sought, ODEQ agreed that a FONSI would be appropriate. After numerous information exchanges, WaterWatch submitted another letter in 1999 identifying its concerns. Issues included the need for the water, water quality, additional ESA listings, the range of alternatives, cumulative impacts, and the ongoing Willamette River Basin reservoir system study.

Reclamation reissued another version of the draft EA in March 2007 that described and analyzed the impacts of two alternatives, the No Action alternative and the Proposed Action. Two comments letters were received, one from the BIA and the other from the Confederated Tribes of the Grand Ronde Community of Oregon. In addition to requesting numerous

clarifications, the BIA questioned the adequacy of the discussion of water conservation opportunities, water quality impacts, and Indian trust assets. The Grande Ronde expressed concerns about the project need, failure to adequately address water conservation opportunities, water quality and cumulative impacts, potential impacts to historic and cultural resources, and errors in the Indian Sacred Sites and Indian Trust Assets sections.

Project Need

The purpose and need for action section has been expanded to describe the future uncertainties leading PCWD to conclude that a contract for stored Willamette River basin water is needed. These uncertainties include the potential that more senior water rights could be exercised by PGE, the possibility of changing crop patterns toward nursery crops which require more water than more traditional crops, and the impacts of climate change that would likely result in warmer temperatures and decreased summer water availability.

Water Conservation

The description of the Conservation of Existing Irrigation Water Supply alternative has been expanded to estimate the potential for on-farm conservation through the expanded use of drip irrigation, to explain the inapplicability of drip irrigation to certain crops, and to address the possibility of converting the 3 miles of open ditch from the diversion point on the Willamette River to Palmer Creek to pipe.

Water Quality

Comments focus on the lack of quantitative data in the Water Quality section and the subjectivity of the analysis. Given that the only potential change in water quality arises from the 5.27 cfs of primary water supply sought through the proposed contract, the cost of developing quantitative data seems unjustified. ODEQ, the agency responsible for ensuring compliance with water quality standards, concluded that a FONSI is appropriate because the proposed contract is primarily for a supplemental supply. In addition, PCWD members worked with ODEQ and the Yamhill Water and Soil Conservation District in developing the Yamhill Agricultural Water Quality Management Area Plan to identify best management practices that will limit the potential to violate water quality standards. State processes will be followed to ensure that water quality standards will be met.

Historic and Cultural Resources

Since the Draft EA was issued, PCWD installed a fish screen that meets current NOAA Fisheries criteria. No other ground-disturbing activities would occur as a result of the proposed contract. The EA has been revised to reflect this change.

Indian Sacred Sites and Trust Assets

The Final EA has been revised to eliminate incorrect statements and to describe existing trust assets.

Cumulative Impacts

NOAA Fisheries Willamette Project Biological Opinion (BO) addresses Reclamation's water marketing program. While the BO acknowledges that water withdrawals to serve agricultural water contracts would have a slight impact on Upper Willamette River Chinook and Upper Willamette River steelhead, it also states that contracting for up to a total of 95,000 acre-feet can go forward. If the total contracted amount exceeds 95,000 acre-feet, reconsultation would be required. The proposed contract with PCWD would not cause this limit to be exceeded. All contracts are subject to the availability of water, as determined by the Corps. ESA requirements and other obligations for instream flows must be met before water would be available for irrigation supplies.

Finding

The proposed water service contract requested by the PCWD was analyzed in the Draft EA. The Proposed Action was considered in the context of local watersheds including Palmer Creek, Yamhill River, and the Willamette River. The analysis of potentially impacted resources indicates that the use of stored Willamette River Basin Project water will not have significant impacts. Therefore, the Proposed Action will not significantly affect the human environment or natural resources.

Conclusion

On the basis of a thorough review of the comments received, analysis of the environmental impacts as presented in the Final EA, Section 7 consultation under ESA, Section 106 consultation under NHPA, and coordination with various agencies, Reclamation has concluded that issuing the requested water service contract to PCWD will have no significant impacts on the quality of the human environment or natural resources. Reclamation, therefore, concludes that preparation of an EIS is not required, and that this FONSI satisfies the requirements of NEPA. Reclamation will issue a Final EA reflecting revisions made to address public comments, including changes in existing conditions.

Recommended:

4-8-09

David R. Nelson
Resources Manager

Date

Concur:

4/8/09

Karen Blakney
ESA Program Manager

Date

Approved:

4/13/09

Gerald Kelso
Manager, Columbia-Cascades Area Office

Date

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Acronyms and Abbreviations

AFLHD	Agriculture/Forestry Large Holding District
BPA	Bonneville Power Administration
cfs	cubic feet per second
Corps	U.S. Army Corps of Engineers
EA	Environmental Assessment
EFH	Essential fish habitat
EO	Executive Order
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
FONSI	Finding of No Significant Impact
hp	horsepower
ITA	Indian Trust Assets
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NEPA	National Environmental Policy Act
NOAA Fisheries	National Oceanic and Atmospheric Administration National Marine Fisheries Service
ODEQ	Oregon Department of Environmental Quality
ODFW	Oregon Department of Fish and Wildlife
OWRD	Oregon Water Resources Department
PCWD	Palmer Creek Water District Improvement Company
PGE	Portland General Electric
Reclamation	U.S. Bureau of Reclamation
RM	river mile
SHPO	State Historic Preservation Office
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

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Chapter 1 PURPOSE AND NEED

1.1 Introduction

This Environmental Assessment (EA) analyzes the potential environmental impacts of allowing the Palmer Creek Water District Improvement Company (PCWD or District) to purchase irrigation water from reservoir storage in the Willamette River Basin Project (Project) through a proposed water service contract. The Bureau of Reclamation (Reclamation) is authorized to administer water service contracts for agricultural use of water stored in and released from the Project. This EA has been prepared in accordance with the National Environmental Policy Act (NEPA).

1.2 Purpose and Need for Action

The underlying purpose and need to which Reclamation is responding is the PCWD request for a water service contract. The District is pursuing this contract as an "insurance policy" during dry years and against potential future competition for water resources.

The purpose and need for the project relates to two issues: 1) need for an additional primary water supply for 421 acres (about 5.27 cubic feet per second [cfs]), and 2) need for a supplemental water supply for the remaining 4,522 acres if other more senior water rights are exercised for the water. For the supplemental supply, the main concern is that more senior water rights could be exercised at Willamette Falls. Two pending applications, totaling approximately 11,913 cfs, with priority dates of 1873 and 1889, by Portland General Electric (PGE) for water rights at Willamette Falls are senior to those of PCWD (Kupillas 2007). During normal water years when supplemental water is not needed, the supplemental water would not be used unless other more senior water rights (such as those for PGE) are exercised that result in shortages to PCWD. A supplemental supply of water also would be used during times of low water availability because of low streamflows or more senior water rights that could be exercised either upstream or downstream.

Presently, PCWD members use less than the 2.5 acre-feet per acre duty allowable by the Oregon Water Resources Department (OWRD); however, future needs may require the full amount allowable. The trend toward nursery crops from the more traditional crops in the PCWD likely would require more water than is presently used for irrigation.

Climate change also may impact the amount of water available to PCWD. According to the Oregon Governor's Advisory Group on Global Warming, "Oregon's crops and livestock could be affected by warmer temperatures and decreased summer water availability by global warming" (Oregon Department of Energy [DOE] 2004). Decreased water availability in the summer would place greater reliance on the use of stored water supplies. PCWD is planning for the eventuality of increased water demands from warmer temperatures and decreased summer water availability by securing additional water supplies from a proposed contract with Reclamation.

1.2.1 Water Availability

A water service contract does not guarantee water would be available. Even though Reclamation may offer a contract to PCWD for stored water for primary and supplemental water, there is no guarantee water would be available at all times. In some instances, storage may not be available for a full provision of contract water because of water quality or fisheries concerns in the Willamette River. In the instance of low water availability, PCWD could receive either a lower amount or none at all depending on the severity of the shortage.

1.2.2 Use of Irrigation Water

The Reclamation contract water cannot be used for purposes other than irrigation.

1.3 Background

The U.S. Army Corps of Engineers (Corps) constructed and operates the Willamette River Basin Project consisting of 13 reservoirs with a combined total of 1.6 million acre-feet of water storage. Contracts for Project agricultural water are administered by Reclamation. The PCWD was organized in 1967 as a water improvement district under Oregon State law to manage and distribute water to farmland within its boundaries. Today, PCWD distributes water to irrigate approximately 6,150 acres on 56 farms in Yamhill County, Oregon. The water is supplied from a combination of sources: water rights for Willamette River streamflow, a contract with Reclamation for Project water, and groundwater wells. Water from this combination of sources does not guarantee that PCWD would always have enough water to meet the needs of its members. PCWD is concerned about the potential for a water supply shortage during drought conditions which may be further exacerbated by water users with senior water rights leaving the District with a reduced supply. Other needs in the basin may further reduce the available supply of water. An additional water service contract would decrease future economic risk for PCWD members by increasing its water supply resources and options during times of shortage; however, it does not guarantee that Project water would be provided.

The PCWD made a similar contract request in the mid-1990s, and an EA was prepared and circulated for public comments in 1996. Several comments were received and are provided in Appendix A of this document including comments from WaterWatch, a nonprofit environmental organization that works to restore and protect streamflows in Oregon's rivers. WaterWatch objected to a number of missing details in the original EA including a lack of current water use data. WaterWatch suggested that the water service contract be issued for a temporary period until other studies were completed. Many of their comments were addressed through discussions between Reclamation and WaterWatch. However, in 1999, WaterWatch informed Reclamation of issues that remained unresolved. A Final EA and Finding of No Significant Impact (FONSI) were not completed, and Reclamation did not make a decision to grant or deny the PCWD contract request.

Beginning in 1999, Reclamation, in agreement with the Corps, suspended long-term contracting for Willamette River basin irrigation water pending the completion of on-going Endangered Species Act (ESA) consultations with the fisheries agencies on the impacts of system operations on listed species. Reclamation decided to resume the long-term contracting program after discussions with the Corps and NOAA Fisheries indicated that limiting irrigation contracts to a total of no more than 95,000 acre feet would not affect ESA-listed species or current operations.

Reclamation reissued a draft EA for public comment in March 2007 (2007 Draft EA). Two comment letters were received and are included in Appendix A. The 2009 Final EA includes any additional analyses completed since the 1999 EA and addresses comments received from both the 1999 and 2007 Draft EAs.

1.4 Location

The study area, within which PCWD's service area is located, is shown in Figure 1. The northern boundary is formed by the Yamhill River, the eastern boundary is the Willamette River, the southern boundary is the Yamhill County line, and the western boundary includes Jerusalem Hills and Lafayette Highway. The township and range locations of the general study area are approximately: Township 4 South, Range 3 West, Sections 15-22 and 26-35; Township 5 South, Range 3 West, Sections 3-10, 15-22, and 26-34; and Township 6 South, Range 3 West, Sections 4, 5, and 6 of the Willamette Meridian. Lands that are within the PCWD service area are owned by individual landowners except for approximately 1.5 acres of land owned by PCWD.

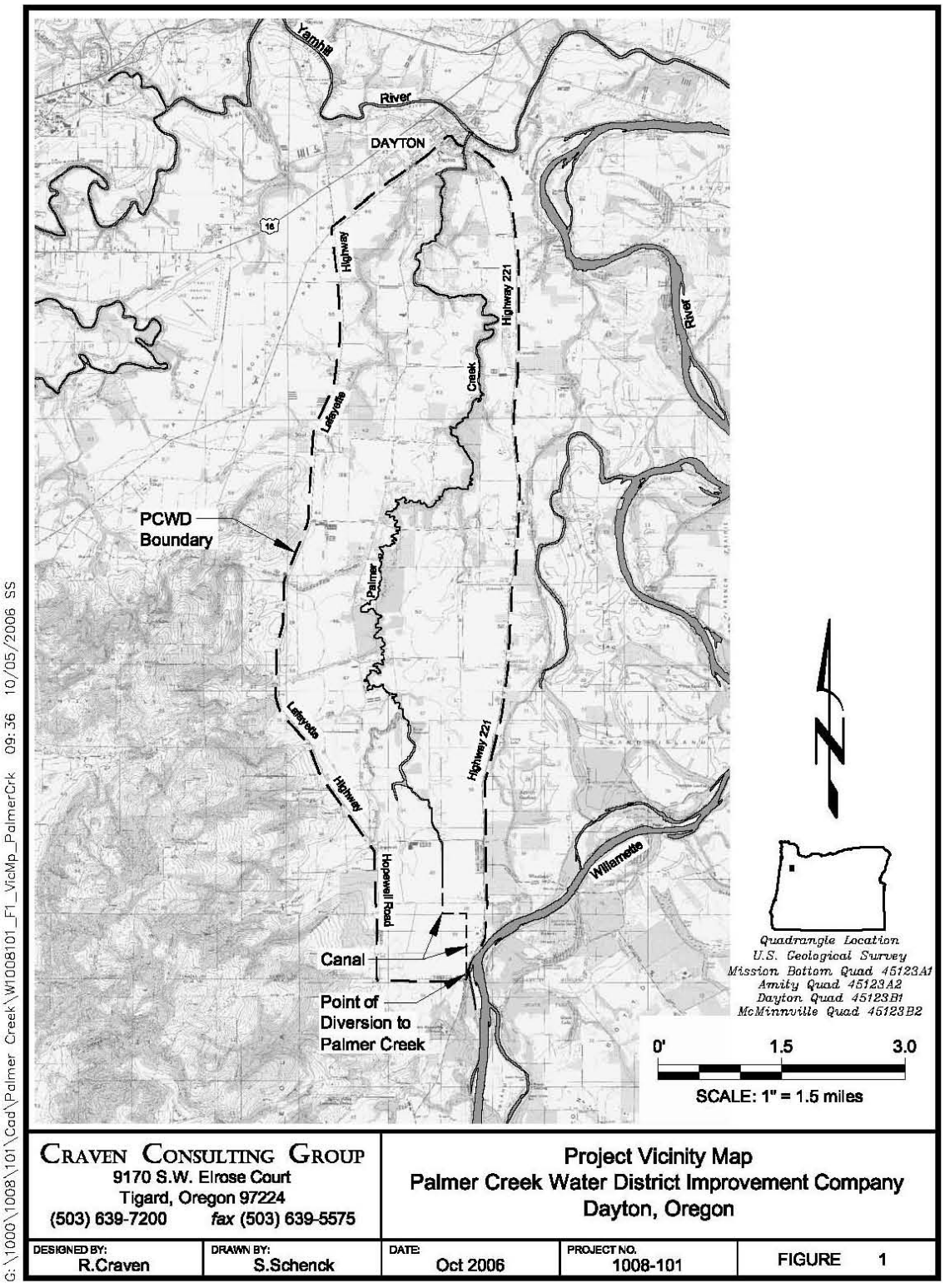

Figure 1. Project vicinity map, PCWD, Dayton, Oregon.

1.5 Project and Facilities Description

The PCWD diverts water from the Willamette River with a combination of three pumps located at its pump house (Photographs 1, 2, and 3) at River Mile (RM) 73.5 at the southern (upstream) end of the District service area. During the irrigation season (April 1 through September 30), the pumps divert a maximum of 45 cfs into a 3-mile-long earthen canal that runs from the pump house to Palmer Creek. The water runs down Palmer Creek (northward) for approximately 15 miles to the town of Dayton, Oregon, where it flows into the Yamhill River at RM 5. PCWD members divert their portion of the water supply from 40 separate locations on the canal, Palmer Creek, or the Yamhill River. The choices that PCWD members make about crops, field rotation, irrigation systems, and other agricultural practices determine the volume of water used and number acres irrigated in any year, provided the place of use and the amount of water is within the amount allowed by OWRD.

Photograph 1. East view of existing pump house and intake at base of slope.

Photograph 2. East view of existing intake at base of slope.

Photograph 3. West view from intake showing pump house.

1.6 Other Related Actions or Activities

At the time of the 2007 Draft EA, the fish screen located at the PCWD pump intake on the Willamette River did not meet all of the current fish screen standards. The low velocity of the river at the pump intake made designing a viable intake screen that meets State and Federal standards especially difficult and expensive. However, in September 2007, PCWD installed a slant retrievable intake screen sized for up to 50 cfs. This screen meets current NOAA Fisheries fish screening criteria.

The Corps, the Bonneville Power Administration (BPA) and Reclamation consulted with the U.S. Department of Commerce National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) and the U.S. Fish and Wildlife Service (USFWS) as required by Section 7(a)(2) of the ESA since the Project affects threatened and endangered species protected by ESA. Reclamation participated in this consultation because of the water service contracting program in the Willamette River basin.

The biological opinions on the Willamette project have defined reasonable and prudent measures for Reclamation's water marketing program (NOAA Fisheries 2008). Contracts, including PCWD, will be required to meet all ESA requirements prior to receiving a water contract.

Chapter 2 DESCRIPTION OF THE ALTERNATIVES

2.1 Introduction

Alternatives which meet the objectives and the need for PCWD's proposal are described in this chapter. The PCWD considered other potential water supplies in addition to the Proposed Action but these were eliminated as discussed under Section 2.4 – Alternatives Considered but Eliminated from Further Study. The No Action alternative is the most likely future scenario if the Proposed Action is not implemented and is provided for comparison with the Proposed Action.

2.2 No Action Alternative

The No Action alternative is a decision by Reclamation to deny the PCWD application for a water service contract. PCWD would continue to use its available water supply including the one existing water service contract, groundwater, and surface flow water rights. No additional water from upstream Federal reservoirs would be utilized by PCWD. The District would continue to operate its pumps on the Willamette River to divert its water right and its existing supply of Project water. It would continue to use groundwater; however, new groundwater supplies are limited in PCWD service area.

To date, the PCWD has been able to operate with the available combined water resources. In the future, without a secure and dependable supply of water from a variety of sources, the PCWD and its members could face substantial economic risk during years when water demands in the Willamette River basin exceed the available supply. The water supply is constrained by many factors: increasing demand for commercial and domestic water, cycles of drought, water for the river, water quality maintenance, and water for aquatic habitat. The PCWD also is concerned that water users with senior water rights or claims for water rights that predate the 1909 Oregon water code could further restrict its available supply.

2.3 Proposed Action

The Proposed Action is the PCWD request for a water service contract for use of up to 12,250 acre-feet water from Federal reservoirs in the Willamette River basin. Of this amount, 11,269 acre-feet is requested for supplemental water on 4,522 acres. The remaining

981 acre-feet is a primary irrigation water supply for 421 acres. Supplemental water is only available for use after the primary water supply is exhausted or becomes unavailable as determined by the State based on the water right priority date. Because the supplemental water cannot be used prior to or concurrently with the primary water, the supplemental water does not result in an increase in water diverted from the river. The primary irrigation water supply, when used to it fullest extent, increases pumping from the Willamette River by 5.27 cfs which is transported by canal to Palmer Creek. The PCWD is not constructing or expanding its water delivery system to accommodate additional water. Its facilities have the capacity to pump and transport the additional 5.27 cfs as does the channel of Palmer Creek.

2.4 Alternatives Considered but Eliminated from Further Study

2.4.1 Groundwater Studies

Under this alternative, PCWD would continue diverting water in compliance with its existing water rights and a previously obtained Reclamation contract for stored water. PCWD would develop and pump groundwater as necessary for a supplemental water supply.

The groundwater resources in the PCWD area are very limited. PCWD members have attempted to install groundwater wells several times since 1956, and have found that the sand and fine gravels have unsustainable yields. Consultation with OWRD (Miller 2006) indicates that the feasibility of producing the required volume of water from groundwater resources in the Dayton area would be low. Many wells, up to 250 feet deep, likely would be required. In addition, obtaining water use permits for irrigation wells in this area would be difficult due to the potential for interference with nearby surface water.

Therefore, this alternative has not been examined in detail due to prohibitive costs of well development, the number of wells required to obtain the additional water, the lack of an extensive groundwater supply, and the inability of this option to provide even a short-term solution to PCWD's irrigation needs.

2.4.2 New Dams or Other Water Storage Facilities

The confluence of Palmer Creek and the West Fork of Palmer Creek (near the City of Dayton) was previously identified as a potential dam site by Reclamation and OWRD (Sweeney 1993). This option is not a feasible alternative because of the need for a water storage right and construction expenses, including individual conveyance systems to pump the water back up to the irrigable lands. Furthermore, the dam site would be lower in elevation than the majority of the lands in the PCWD service area.

This alternative has not been examined in detail due to the prohibitive costs of the required analyses. Overall, the costs and environmental impacts associated with dam construction would far outweigh the benefits associated with the additional water supply.

2.4.3 New Water Right for Natural Flow from the Willamette River

This alternative would allow additional water diversion from the Willamette River to supplement existing natural flow water rights and storage contracts. This alternative is not a viable option because additional natural flows from the Willamette River generally are not available downstream of Salem, Oregon, during the irrigation season (Miller 2006). Even if an application is submitted and new rights are granted, it would not improve the current situation because the rights would be junior to other water right holders, and it is unlikely that water would be available during a low water year.

2.4.4 Conservation of Existing Irrigation Water Supply

This alternative would involve no new additional water rights or contracts. Existing PCWD water would be conserved in an attempt to meet demands.

The current delivery system consists of a 300-horsepower (hp) pump and two 130-hp pumps that divert water from the Willamette River at RM 73.5. The water is pumped into a 3-mile-long dirt canal which conveys it to Palmer Creek. The water is diverted from the canal by individual users and is applied primarily through sprinkler irrigation. Management practices employed by PCWD members are within agriculture industry standards for scheduling, operation, and maintenance of this irrigation equipment. PCWD members are motivated to operate their systems at high efficiency because of the costs associated with pumping, nutrient loss, and erosion.

On-farm application rates are based on gypsum block studies of soil moisture content performed in this area in the 1960s. Nearly all irrigation in PCWD is by sprinklers and drip irrigation. In some cases, individual farms have built and operated irrigation water recycling systems (Sweeney 2006).

PCWD collects data by totaling measurements at watermeters at each farm diversion every year. Annual member surveys, which are voluntary, provide enough data to gauge efficiencies for many farms within PCWD's service area and to extrapolate district-wide efficiencies. On-farm efficiency is typically between 50 to70 percent, which also is within agriculture industry standards for sprinkler systems. Drip systems achieve from 75 to 95 percent efficiency (Sweeney 2006).

Increasing on-farm efficiencies (other than conversion to extensive upgrades) to minimize water use would conserve only a minimal amount of water. Based on discussions with PCWD, additional on-farm modifications in application of water would result in less than a 5 percent increase in efficiency (Bartch 2007). Some incremental improvements could be realized by relatively low-cost, labor-intensive actions such as rejetting sprinklers, pan studies to fine tune application rates, and more soil moisture monitoring. These actions could result in a few percentage points of on-farm efficiency. Assuming a 5 percent increase in efficiency on the maximum rate of 107.36 cfs from natural flows (Table 1, Chapter 2), an increase of approximately 5.3 cfs could be expected. This is approximately 8 percent of the amount (66.49 cfs) in the proposed contract with Reclamation.

The cost associated with extensive upgrades in the conveyance and sprinkler equipment to improve system operating efficiency is expected to be prohibitive. Conversion to more efficient drip systems would improve on-farm efficiency to more than 80 percent, but at an initial cost of approximately $400 per acre and an annual cost of more than $250 per acre for row crops (Sweeney 2006). Many operations in PCWD are already using drip systems; however, drip systems are not suitable for some crops. Even if the system were to operate at nearly 100 percent efficiency, the amount of additional water obtained in this manner would be inadequate to meet PCWD needs because the incremental increase in supply would not meet irrigation demand in a worst case scenario—severe drought or a call by senior rights.

Total conversion to drip irrigation may be counterproductive to long-term land use practices. Drip irrigation is not suitable for some crops that are presently grown in PCWD, such as clover, fescues, corn, alfalfa, grass seed, and various other grain crops because of the coverage such crops require. Any shifts in irrigation practices would depend on the crop trends based on market conditions and water availability.

Conveyance system efficiency is approximately 55 percent (Bartch 2006). More water is diverted at the Willamette pumping station than is used within the District because of the configuration of the main canal and the use of Palmer Creek as a conveyance system (Sweeney 2006). Water lost in this system flows as surface water in Palmer Creek to the Yamhill River, is consumed by riparian vegetation, lost to evaporation, and to a limited extent, infiltrates to the local aquifer.

Conversion of the 3-miles of ditch to a water conveyance pipeline as an alternative to PCWD's purchase of contract water from Reclamation was not pursued for several reasons:

- The water conserved by conversion of ditch to pipeline would not meet PCWD's estimated demand;
- The conversion would not resolve the issue of senior water rights that predate PCWD water rights;
- The cost for the conversion is beyond the financial means of PCWD; and

- The conservation of water would likely be minimal in the 3-mile ditch.

The capital costs for providing a pipeline are approximately $3,000,000 to $5,000,000. These costs presently exceed the PCWD's ability to fund this improvement. PWCD would continue to evaluate funding sources for improvements that would decrease the amount of water required as well as decrease pumping costs for the PWCD. In September 2007, PCWD made capital improvements at the existing intake structure by installing a state-of-the-art fish screen approved by ODFW, USFWS, and NOAA Fisheries. The BPA was contacted to discuss possible participation in partial funding for the pipeline; however, funding is not presently available for this project. The funding cycle for fish and wildlife programs is on a 3-year cycle and no new proposals will be solicited for approximately 2 years.

PCWD is concerned about the potential for an irrigation water supply shortage. In a severe drought situation, or in the event of a far-reaching early priority call, PCWD would be enjoined from diverting any natural flow from the Willamette River. Technological water conservation measures would do little to increase the water available to irrigators if the water is simply not available for diversion. In a less severe drought, PCWD's water supply would be interrupted incrementally according to priority date. Conservation could buffer the effects of this reduction, but not in a cost-effective manner. Fallowing or resort to dry-land farming likely would be the outcome.

2.4.5 Purchase Water Rights

The PCWD considered the purchase of senior water rights from other water users rather than contract for water from Reclamation. PCWD is not aware of the availability of senior water rights for purchase; therefore, PCWD is pursuing a contract for water from Reclamation.

Chapter 3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Introduction

Environmental resources potentially impacted by the Proposed Action and other issues of concern are described in this chapter. Following each resource is a discussion of the potential impacts of the Proposed Action and the No Action alternative. The impacts include identifying and describing any direct, indirect, or cumulative effects. If mitigation is appropriate to reduce the impact on a resource, it is also described. The following resources are not discussed in this chapter: climate, air quality, soils, geology, noise, mineral resources, topography, energy, or hazardous waste. Impacts to these resources were considered but not analyzed in detail because they are not affected by the project.

3.2 Land Use

3.2.1 Affected Environment

The northwestern and southwestern regions of Yamhill County are dominated by the Commercial Forestry District and the majority of the remaining areas in the eastern portions of the county are designated as Agriculture/Forestry Large Holding District (AFLHD) on the Yamhill County Comprehensive Plan map. The properties located in the PCWD service area are within the AFLHD, but most of the area is classified as Exclusive Farm Use.

The majority of the area within PCWD is used for agricultural activities, including nursery stock production and row crop production, such as corn, beans, beets, broccoli, and other crops. There is a small fraction of land in this area that is designated as very low density residential, and other plan designations are on the comprehensive plan map. The land use code limits or prohibits the latter type of development in the exclusive farm district in an effort to maximize the potential agricultural productivity.

3.2.2 Environmental Consequences

Land-use designations would not change as a result of the proposed project since the proposed supplemental water supply to 4,522.45 acres would be used on previously farmed

lands, and the proposed primary water supply to 421.17 acres would be used on lands which were previously dryland farmed or received water from other sources. The additional irrigation water supply would provide a source of water during low water years when Palmer Creek is typically drawn dry. This water availability would allow the production of agricultural commodities to continue, as has been the practice since the mid-1800s. No impact on undeveloped land within the PCWD service area would occur as the result of the Proposed Action.

3.3 Hydrology

3.3.1 Affected Environment

The Project is operated as a system of dams and reservoirs by the Corps. Reclamation has no authority to make operational decisions. The Corps coordinates releases from 13 reservoirs to meet streamflow targets measured at gages on the mainstem Willamette River at Albany and Salem during the irrigation season. Project water that any current or future contractor may withdraw is not specifically released for irrigation contractors. Due to PCWD's point of diversion on the mainstem Willamette, water from any combination of the upstream reservoirs may contribute to the withdrawn water.

Each year the Corps makes operating decisions according to water availability, hydrologic forecasts, and other factors. The United States reserves the right in its contracts to reduce or deny water supply when it is not available. It is possible and probable that any low-water year in which the Corps is unable to meet flow targets, the available water supply would be apportioned according to the priority dates of the diversion rights issued by the State of Oregon. Economic and other hardships to water users in drought years would occur. This is not unique to water users with Reclamation water service contracts; other water users such as municipal and industrial users would face water supply shortages in the Willamette Valley during these periods.

The Willamette River in the main channel generally flows within a range of 10,000 to 20,000 cfs during the irrigation season near PCWD. The OWRD estimates the Yamhill River has an annual range of 100 cfs to 4,000 cfs, and Palmer Creek has an annual range of 0 to 140 cfs. The District pumps 45 cfs from the Willamette River. Annual rainfall strongly influences how early in the irrigation season PCWD starts using water from its contract supply.

3.3.2 Environmental Consequences

Impacts on water resources in the Project reservoirs, the Willamette River, Palmer Creek, and the Yamhill River were considered by evaluating potential changes in water levels and the effect on prior water rights (Table 1). The change to the water surface elevation of the reservoirs in the Project would be insignificant because the irrigated land lies downstream of the reservoirs in the Project, and stored water could come from any one or several of the upstream reservoirs. As a result of the proposed contract, up to a total of 12,250 acre-feet would be removed from the reservoirs between April 1 and September 30, which equates to a maximum of 2,041 acre-feet per month. The 2,041 acre-feet is separated into a request for primary water supply for 421.17 acres (981.25 acre-feet, 5.27 cfs) and a secondary water supply for 4522.45 acres (11,269 acre-feet, 61.22 cfs). For comparison purposes, the Willamette River average monthly flow in cfs in calendar year 2005 ranged from a low of 7,136 cfs in August to 38,460 cfs in December.

There would be no discernible change in reservoir water surface elevation as a result of these releases. The normal reservoir fluctuation and seasonal drawdown for flood control far exceed the changes caused by the Proposed Action. The Corps prepares for flood control operations by releasing stored water by autumn.

An increase in flow in the Willamette River would occur between the reservoirs providing the stored water and the PCWD diversion during the irrigation season. The increase in waterflow (up to 66.49 cfs if the total proposed water right is exercised) in the Willamette River would not significantly increase water surface elevations or velocities because of the relatively large normal flows during irrigation season.

The contracted water would be diverted from the Willamette River using the existing PCWD diversion and would be transported via the PCWD canal to Palmer Creek where flows would be incrementally diverted by irrigation pump. According to PCWD, the system is adequate to handle the increased flow of 5.27 cfs for the additional primary water right, and no alterations to the pumps or the canal would be required in response to the proposed water service contract.

Flow levels in the irrigation canal that transports water to Palmer Creek would increase by up to the 5.27 cfs under the proposed contract. In the event of a drought year, the new contract would provide for irrigation water in the PCWD canal and Palmer Creek during what might otherwise be a dry period. This would decrease the chances that Palmer Creek would be drawn dry by water users in drought years.

Table 1. Present water rights for existing natural flow, contract flow, and proposed contract flows for PCWD.

Source	Permit No.	Priority	Acres	Acre-Feet	Rate (cfs)
1.0 Natural Flow from Willamette River	32243	1967	3,265.20	8,163.00	40.82
	34436	1969	288.70	721.75	3.61
	36216	1971	53.60	134.00	0.67
	39385	1975	219.60	549.00	2.75
	41499	1977	103.30	258.25	1.29
	42316	1977	60.00	150.00	0.75
	43380	1978	234.20	585.50	2.92
	44954	1980	294.90	737.25	3.69
	47405	1981	262.39	655.98	16.87
	50945	1987	397.20	993.00	4.97
	51959	1990	439.60	1,099.00	5.50
	A-70109	1989	6.10	NR	0.06
	A-70110	1989	431.70	NR	21.10
	A-72668	1992	94.20	NR	2.36
	TOTAL		6,150.69	14,046.73	107.36

Source	Permit No.	Priority	Acres	Acre-Feet	Rate (cfs)
2.0 Existing Storage Contract With Reclamation for Supplemental Water Supply	43379	1984	806.4	927.36	NR

Source		Application	Priority	Use	Acres	Acre-Feet	Rate (cfs)	Total cfs
3.0 Proposed Contact with Reclamation	Supplemental Irrigation	A-70109	1989	Irrigation	6.10	15.25	0.0250	0.15
		A-70110	1989	Irrigation	274.20	679.00	0.0250	6.86
		A-71731	1991	Irrigation	43.95	109.75	0.0125	0.55
		A-72668	1992	Irrigation	94.20	205.00	0.0250	2.36
		A-76860	1995	Irrigation	4,104.00	10,260.00	0.0125	51.3
		Supplemental Totals			4,522.45	11,269.00		61.22
	Primary Irrigation	A-71731	1991	Irrigation	56.50	141.25	0.0125	0.71
		A-72555	1992	Irrigation	48.00	48.00	0.0125	0.60
		A-76860	1995	Irrigation	316.67	792.00	0.0125	3.96
		Primary Totals			421.17	981.25		5.27
		TOTAL PRIMARY & SUPPLEMENTAL			4,943.62	12,250.25		66.49

NR = Not Reported in water right

Return flows to the Yamhill River are inferred from observation of spill at the diversion dam 1 mile upstream from the Yamhill River confluence. PCWD personnel have observed fluctuations that correspond to irrigation applications that infer return flows ranging from 1 to 2 cfs during the irrigation season. The season average is approximately 1 cfs. The West Fork of Palmer Creek likely yields similar return flows, so the cumulative total return flow is approximately 2 cfs (Sweeney 2006). Return flows to Palmer Creek are used and reused by subsequent downstream diverters, which reduces their volume. The primary supply increase of 5.27 cfs to 421 acres, diverted and applied to crops, would result in an estimated 0.5 cfs increase to the return flow to Palmer Creek. Implementation of conservation measures could reduce return flows to the Palmer Creek watershed, offsetting the small increases from the proposed water supply contract. The proposed supplemental water supplies would not increase return flows to Palmer Creek because they would only be used to incrementally replace shortages of natural flow rights.

3.4 Water Quality

3.4.1 Affected Environment

The Willamette and Yamhill rivers are Water Quality Limited (WQL) streams. The 2002 Oregon Department of Environmental Quality (ODEQ) 303(d) lists six water quality limited stream parameters for this area of the Willamette River: fecal coliforms, water temperature, iron, dissolved oxygen, mercury, and biological criteria. The Yamhill River (RM 0 to 11.2) has four parameters that appear on the 2002 303(d) list: water temperature, fecal coliforms, iron, and manganese.

Palmer Creek is not on the DEQ 303(d) list. A review of the DEQ Water Quality Assessment Database does not list any of the parameters considered on the 303(d) list. The parameters listed and their status include Aquatic Weeks or Algae (Insufficient data), Arsenic (Potential Concern), Atrazine (Attaining), Dibutylphthalate (Attaining), Dissolved Oxygen (Insufficient Data), Fecal Coliform (Insufficient Data), Iron (Potential Concern), Lead (Attaining), Manganese (Potential Concern), Sedimentation (Insufficient Data), Nutrients (Insufficient Data), Temperature (Insufficient Data), and Zinc (Attaining). “Attaining” refers to some of the pollutant standard are met. “Insufficient Data” refers to not enough data available to determine if standard is met. “Potential Concern” means some data indicate non-attainment of a criterion, but data are insufficient to assign another category.

Chlorpyrifos compounds are not listed in Palmer Creek in DEQ’s Water Quality Database; however, the West Fork of Palmer Creek is listed on the 303(d) list. Chlorpyrifos also are present in the Yamhill River; however, this parameter is “Attaining” for this water body. The West Fork of Palmer Creek enters lower Palmer Creek near the confluence of the Yamhill River.

PCWD members worked with the ODEQ and the Yamhill Water and Soil Conservation District regarding the Yamhill Agricultural Water Quality Management Area Plan (Plan) finalized in 2003 as part of the process under Senate Bill 1010. The Plan relies on the voluntary efforts of landowners to provide Best Management Practices to reduce pollution. If landowners refuse to meet the minimum standards, the Oregon Department of Agriculture would then use these rules to reduce non-point source pollution contributions to the Yamhill and Willamette rivers.

Existing water quality conditions on the Willamette River are generally fair or good near the diversion point at RM 73.5 (ODEQ 2004). The Willamette River typically has fast-moving currents in this area. The diversion, located in a backwater area off the main channel of the Willamette River, has a slow water current. The main channel substrate is composed of cobble and gravel. Substrate around the diversion consists of decayed organic matter, silt, and some sand.

3.4.2 Environmental Consequences

There is a strong potential for positive impacts on Palmer Creek from the supplemental water in this contract. Low to nonexistent flows in Palmer Creek degrade water quality in Palmer Creek and the Yamhill River. The 981.25 acre-feet of proposed primary water supply would add up to 5.27 cfs to the base flow of Palmer Creek, an increase that would occur during low summer and fall flows. This seasonal addition would help maintain lower stream temperatures. The agricultural return flows would add an unknown amount of nutrients into Palmer Creek; however, the increase in return flows is expected to be only approximately 0.5 cfs and nutrient input is anticipated to be low. The impacts expected for the Yamhill River are limited primarily to maintenance of flow levels. Since PCWD would use the proposed water contract only when natural flow is unavailable, the increased flow would most often occur during drought years and would maintain Palmer Creek flows in an otherwise extremely low flow period.

Return flows to the Willamette River below the confluence with the Yamhill River are expected to increase the flow of the Willamette River by approximately 1 to 2 cfs and are anticipated to be similar in quality to the original diversion. There is minimal potential for negative impacts on Willamette River water quality. Impacts on Palmer Creek water quality are expected to be insignificant since the contracted water would be used in place of natural flows during years when natural flows are not available. The most anticipated change to current conditions is that contracted water would keep Palmer Creek wet when it might otherwise dry up.

3.5 Flood Plains and Wetlands

3.5.1 Affected Environment

The Project reservoir system is operated by the Corps according to release and refill schedules which support extensive wetland areas along the fringes of the reservoirs. The control of the water supply from the reservoirs for multiple needs minimizes large fluctuations along the flood plains downstream from the reservoirs. Annual spring and early summer high waters are generally predictable. The presence of wetlands along the 15 miles of Palmer Creek is varied. There are riparian wetlands directly adjacent to Palmer Creek, but wetlands do not occur next to the 3 miles of canal which carries diversion water to Palmer Creek.

3.5.2 Environmental Consequences

Negative impacts of the Proposed Action on flood plains and wetlands are not anticipated. The removal of water from the Project would be minimal and would not lessen the acreage of flood plains or wetlands surrounding the reservoirs. The reservoirs' water surface levels cycle seasonally with average capacity reached in mid-June and drawdown levels reached in mid-January. The dramatic water surface level fluctuations caused by hydropower and fisheries enhancement would mask the loss of water delivered to PCWD. The contracted water constitutes an imperceptible amount compared to average and drawdown reservoir levels.

The maximum anticipated contract amount of 66.49 cfs released from storage to the Willamette River would be unnoticeable as far as the water surface level and velocity are concerned. The addition of the contract maximum for the primary water right (5.27 cfs) to the Willamette River would not have a beneficial or adverse impact on flood plains or wetlands. The increase of the water for the supplemental water right would only occur as needed when natural flows or other Reclamation contract flows are not available.

Increased flow in Palmer Creek would cause no change to flood plain or wetlands status. The increased flows for both the primary and supplemental water rights are below the existing natural flow conditions. The typically incised streambanks and riparian area would keep any increased flows in the stream channel. No wetlands would be drained. Presence of flow during low water years when flows would not occur or be very low in Palmer Creek may enhance existing riparian conditions.

Return flows to the Yamhill River are not measured. Since irrigation flows are efficiently used, the amount of additional water reaching the Yamhill River (estimated at 1 to 2 cfs) would not adversely affect flood plains or wetlands there or below the confluence with the Willamette River.

3.6 Vegetation

3.6.1 Affected Environment

A review of plant communities within the Project area and Palmer Creek drainage reveals a diverse variety of vegetative resources ranging from heavily forested areas around the reservoirs to sparsely vegetated areas in the cropland areas. Forested areas include such dominant species as western hemlock (*Tsuga heterophylla*), Douglas fir (*Pseudotsuga menziesii*), and western red cedar (*Thuja plicata*). Riparian vegetation typically consists of these species as well as Oregon ash (*Fraxinus latifolia*), cascara (*Rhamnus spp*.), red alder (*Alnus rubra*), and white dogwood (*Cornus nuttallii*).

Shrub cover is common along the riparian areas including Palmer Creek. It consists of red elderberry (*Sambucus arbosescens*), blackberry (*Rubus spp.*), salmonberry (*Rubus spectabilis*), and Scotch broom (*Cytisus scoparius*). Various sedges *(Carex spp.*), sword fern (*Pteridium spp*.), orchard grass (*Dactylis glomerata*), reed canary grass (*Phalaris arundinacea*), foxtail (*Setaria spp*.), nettle (*Urtica spp*.), thistle (*Circium spp*.), and assorted composite flowers also are present.

Cropland adjacent to the irrigation canal and Palmer Creek is dominated during the irrigation season by annual monocultures of corn, beans, beets, broccoli, and other crops.

3.6.2 Environmental Consequences

The release of water from the Project would not affect the forested areas in the PCWD lands. Water levels would not be affected because of the small quantity of water (less than 1 percent of the 1,592,800 acre-feet of usable conservation space available for joint use) removed from multiple reservoirs in response to the contract.

The Proposed Action would provide continued agricultural production for cropland areas within the PCWD service area. No adverse impacts on nonagricultural vegetation along the PCWD canal, Palmer Creek, or the Yamhill River are anticipated as a result of the Proposed Action. The proposed contract likely would result in a beneficial impact on existing riparian habitat.

3.7 Fisheries

3.7.1 Affected Environment

The majority of the fish species found in the Willamette River near the PCWD diversion are resident species with the exception of fall and spring Chinook (*Oncorhynchus tshawytscha*) and winter and summer steelhead (*Oncorhynchus mykiss*), which are migratory species. Resident species include cutthroat trout (*Oncorhynchus clarki*), white sturgeon (*Acipenser transmontana*), yellow bullhead (*Ictalurus natalis*), brown bullhead (*Ictalurus nebulosus*), yellow perch (*Perca flavescens*), largemouth bass (*Micropterus salmoides*), pumpkinseed (*Lepomis gibbosus*), bluegill (*Lepomis macrochirus*), white crappie (*Pomoxis annularis*), black crappie (*Pomoxis nigromaculatus*), largescale sucker (*Catostomus macrocheilus*), common carp (*Cyprinus carpio*), chiselmouth (*Acrocheilus alutaceus*), northern pikeminnow (*Ptychocheilus oregonensis*), and redside shiner (*Richardsonius balteatus*) (Corps 1981; ODFW 1992). Pacific lamprey (*Lampetra tridentata*) also are found in the Willamette River. Fish presence in the backwater area near the intake has not been documented. During irrigation season, it is likely that fish presence is low because of shallow water conditions, silt substrate, minimal to no large woody debris, and warm water temperatures.

Fish species present in the lower Yamhill River include winter steelhead, coho salmon (*Oncorhynchus kisutch*), Pacific lamprey , cutthroat trout, largescale sucker, northern pikeminnow, largemouth bass, speckled dace (*Rhinichthys osculus*), riffle sculpin (*Cottus gulosus*), and American shad (*Alosa sapidissima*) (Corps 1981).

Palmer Creek is a low gradient, meandering stream that experiences low flows and warm water temperatures during most of the year. Riparian conditions along the stream corridor are generally considered good. No sampling has been done in the Palmer Creek drainage to determine species composition or distribution. Species which may be present in the Palmer Creek area include: coho salmon, cutthroat trout, largemouth bass, crappie, sculpins (*Cottus spp*.), dace (*Rhinichthys spp*.), red side shiners, common carp, northern pikeminnow, and chiselmouth (Mamoyac and Alsbury 2006). Cutthroat trout also may occur in some of the local streams which flow into Palmer Creek. However, low flow conditions, warm water temperatures, and the presence of low head irrigation dams and flash board diversions which hinder upstream migrations make the use of Palmer Creek by cutthroat trout and coho salmon unlikely.

3.7.2 Environmental Consequences

Fisheries resources in the area would not be adversely affected as a result of the Proposed Action. No alteration would occur to water quality, native vegetation, stream habitat types, or fish. The irrigation water intake located at the diversion point on the Willamette River has

been screened to meet ODFW and NOAA Fisheries criteria for fish protection. The ODFW, NOAA Fisheries, and USFWS evaluated and approved the proposed fish protection screen prior to its installation (Appendix B). Fish protection screens have been installed at diversion points along the PCWD canal and Palmer Creek.

The Pacific lamprey is not afforded protection under the ESA; however, the lamprey is a "species of concern" for Indian Tribes because it is a food source and has cultural and spiritual values. The project should not adversely impact this species because the primary water right for 981 acre-feet of irrigation water on 421 acres is approximately 5.27 cfs. For comparison purposes, the Willamette River average monthly flow in cfs in calendar year 2005 ranged from a low of 7,136 cfs in August to 38,460 cfs in December. In addition, PCWD installed new fish screens on the intake of the pump station on the Willamette River intake which should benefit lamprey.

The Proposed Action would provide an additional 5.27 cfs to Palmer Creek and up to 66.49 cfs during drought years, thus potentially improving habitat for fish populations and increasing fishing opportunities. The increased Palmer Creek flows during drought years would potentially improve water quality conditions which would increase the amount of habitat (rearing and forage) available to the fisheries resource and provide more suitable conditions for aquatic invertebrate production.

3.8 Wildlife

3.8.1 Affected Environment

This section discusses the wildlife resources and habitat in the Palmer Creek watershed, which consists of upland, riparian, and aquatic habitats supporting diverse wildlife populations. Wildlife species can be separated into non-game, upland, and waterfowl species.

The following nongame species are known to occur in the Palmer Creek drainage: beaver (*Castor canadensis*), river otter (*Lutra canadensis*), raccoon (*Procyon later*), red fox (*Vulpes vulpes*), stripped skunk (*Mephitis mephitis*), spotted skunk (*Spilogale putorisis*), silver gray squirrel (*Sciurus carolinensis*), red-tailed hawk (*Buteo jamaicensis*), turkey vultures (*Cathartes aura*), northern harrier (*Circus cyaneus*), American kestrel (*Falco sparverius*), and a variety of songbirds. These species are generally associated with aquatic and riparian habitats adjacent to fields.

Upland game species which are known to occur in the drainage include ring-necked pheasant (*Phasianus colchicus*), California quail (*Callipepla californica*), mourning dove (*Zenaida macroura*), and band-tailed pigeon (*Columba fasciata*). These species are generally found in

fields adjacent to riparian areas or heavily vegetated fence lines and ditches. These habitats provide nesting and escape cover; however, the lands associated with PCWD typically do not have riparian areas or heavily vegetated fence lines and ditches; therefore, the use of these lands by upland game species is minimal.

Important breeding populations of mallard (*Anas platyrhynchos*) and wood ducks (*Aix sponsa*) are found in the middle Willamette River basin, of which the Palmer Creek drainage is a part. Wintering season waterfowl populations are predominantly mallard, wood duck, pintail (*Anas acuta*), American widgeon (*Anas americana*), and western Canada geese (*Branta canadensis*). Smaller numbers of gadwall (*Anas strepta*), northern shoveler (*Anas clypeata*), green-winged teal (*Anas creeca*), and ruddy ducks (*Oxyura jamaicensis*) also can be found. These species are generally found in aquatic and riparian habitats which provide nesting, escape cover, and forage areas.

3.8.2 Environmental Consequences

The Proposed Action would not adversely affect wildlife resources in the area. No alteration to native vegetation and habitat types would occur on the PCWD. As a result of the Proposed Action, PCWD members would be able to continue agricultural production of row crops during drought years, which would maintain existing forage opportunities for wildlife. Significant shifts in cropping practices, for example, conversion of pasture lands to row crops, are not anticipated at this time. An increase in Palmer Creek flow levels during drought years may improve water quality conditions, which in turn would improve forage conditions for waterfowl and non-game species.

3.9 Threatened and Endangered Species

On July 17, 2006, PCWD requested a list of threatened, endangered, and candidate species occurring in Yamhill County. The USFWS provided its response including fish, wildlife, plants, and invertebrate species (Appendix B). Table B1 in Appendix B lists the species, additional habitat information, and conclusions about possible impacts and the likely presence of each species in the project area. Table 2 summarizes anticipated effects of the Proposed Action.

3.9.1 Affected Environment

The USFWS identified six species of plants that are protected as either threatened or endangered under the ESA (Appendix B). Surveys have not been conducted for these species because no ground-disturbing activities would occur on the PCWD agricultural lands that are currently or proposed for a supply of irrigation water. All lands are currently farmed

with either supplemental or primary water rights, or are farmed without water rights. No new ground-disturbing activities would occur on the farm lands.

Upper Willamette River Chinook (*Oncorhynchus tshawytscha*) and Upper Willamette River steelhead (*Oncorhynchus mykiss*) are listed as threatened Evolutionary Significant Units (ESUs) and migrate past PCWD's diversion on the Willamette River. Critical habitat has been designated for both species. In addition, the Magnuson-Stevens Fishery Conservation and Management Act (MSA) designated Essential Fish Habitat (EFH) for Chinook and coho salmon. Coho salmon are not considered native species in the upper Willamette River basin and are not protected under ESA in this area. Some coho salmon do inhabit the Willamette River, and although not protected under ESA they are protected under MSA (See Addendum to this EA).

Table 2. Summary Table – Effects of the Proposed Action on ESA-listed species for PCWD.

Common Name	Scientific Name	Federal Status	Effect Determination
Bradshaw's Lomatium	*Lomatium bradshawii*	Endangered	No Effect
Howellia	*Howellia aquatili*	Threatened	No Effect
Nelson's Checker-Mallow	*Sidalcea nelsoniana*	Threatened	No Effect
Golden Indian Paintbrush	*Castilleja levisecta*	Threatened	No Effect
Willamette Daisy	*Erigeron decumbens* var *decumbens*	Endangered	No Effect
Kincaid's Lupine	*Kincaidii sulphureus* var *kincaidii*	Threatened	No Effect
Chinook Salmon	*Oncorhynchus tshawytscha*	Threatened	No Effect
Steelhead	*Oncorhynchus mykiss*	Threatened	No Effect
Northern Spotted Owl	*Strix occidentalis caurina*	Threatened	No Effect
Marbled Murrelet	*Brachyramphus marmoratus*	Threatened	No Effect
Fenders Blue Butterfly	*Icaricia icarioides fenderi*	Endangered	No Effect
Oregon Silverspot Butterfly	*Speyeria zerene hippolyta*	Threatened	No Effect

As mentioned previously, Palmer Creek was drawn dry during the irrigation season prior to the formation of PCWD. This practice eliminated fish species residing in the stream. Since the formation of PCWD, water has been present in the stream on a year-round basis.

Incremental increases in flow above the PCWD point of diversion on the Willamette River as a result of the Proposed Action would have no effect on the listed species.

USFWS has identified the marbled murrelet (*Brachyramphus marmoratus*) and northern spotted owl (*Strix occidentalis caurina*) as federally-listed threatened species, potentially occurring in the vicinity of the project. The habitat for marbled murrelet consists of large trees in older forests usually within 50 miles of the coast, and it forages in the marine environment (Csuti et al. 2001). The location of the intake is approximately 45 miles from the coast adjacent to agricultural area that does not have old growth forest. It is unlikely that marbled murrelet is present in the vicinity (Simmons 2006).

Northern spotted owl prefers larger forest stands with multiple layers and a closed canopy with its breeding season in late March (Csuti et al. 2001). According to Csuti et al. (2001), northern spotted owl has been displaced from lower elevation forests through timber harvest. According to ODFW (Simmons 2006), northern spotted owl would not be expected to be present in the project area; however, if northern spotted owl was observed it would be a juvenile acting on a dispersal behavior pattern.

Fender's blue butterfly appears to be confined to the Willamette Valley, including sites in Yamhill, Benton, Polk, and Lane counties in Oregon. The primary habitat for the butterfly is native wetland prairie (65 FR 3875). Kincaid's lupine or other lupines appear to be the host plant for Fender's blue butterfly. Its primary larval food plant, Kincaid's lupine (listed as Threatened), occurs on a few small prairie remnants in the Willamette Valley. Fender's blue butterfly is endangered because native prairie habitat has been converted to agriculture, subject to fire suppression, invaded by non-native plants, or otherwise developed. Refugia from these forces of change are mostly limited to fence rows and intervening strips of land along agricultural fields and roadsides. No construction activities are proposed.

The Oregon silverspot butterfly is found only in the salt spray meadows along areas of the Pacific Coast (43 FR 28938). This species is not expected to be present in the vicinity of the proposed project. The project area is approximately 45 direct miles from the coast area and on the east side of the coast mountain range. Critical habitat has been designated to include a portion of Lane County near the Pacific Coast (45 FR 44935). The area for designation of critical habitat does not include the project area.

3.9.2 Environmental Consequences

The Proposed Action would have no effect on plant species protected under the ESA because the land is already farmed for commercial agriculture and no construction activities are proposed. The Proposed Action would not result in changes in land use or agricultural practices.

As previously discussed, the Willamette River near the PCWD diversion is used by two threatened fish species: the Upper Willamette River Chinook and the Upper Willamette River steelhead. Their use is seasonal during up-river migration of adults and down-river passage by juveniles. Both species reside as juveniles during rearing in pools with consistent flow, aeration, refugia, and cool temperatures. The habitat at the PCWD point of diversion is a backwater and therefore, an unlikely place for juvenile salmonids, especially in the pumping season when temperatures are inhospitable to these species. The presence of juveniles of either listed species has not been established in Palmer Creek or the Willamette River near the PCWD diversion; however, these species are likely present at least at the intake. PCWD has installed a new fish screen which was approved by ODFW, USFWS, and NOAA Fisheries (Appendix B). Installation of the new fish screen would minimize entrainment in the intake flows; thereby, reducing present loss of fish.

No impacts on the marbled murrelet or northern spotted owl are expected to occur because habitat for these species is not present in the project vicinity.

No impacts are expected to occur on Fender's blue butterfly because no ground-disturbing activities are planned.

No impacts are expected to occur to Oregon silverspot butterfly as a result of the proposed project. The silverspot butterfly is not present in the project area and the project area is not designated as critical habitat.

3.10 Visual Resources

3.10.1 Affected Environment

The existing intake structure is on a backwater area of the Willamette River. The Palmer Creek riparian zone is still largely intact and provides scenic opportunities and wildlife observation opportunities for local residents.

3.10.2 Environmental Consequences

The only portion of the system expected to experience aesthetic impacts as a result of the Proposed Action is Palmer Creek. Visual resources along Palmer Creek could potentially be improved during drought years by the maintenance of water flow in the creek.

3.11 Recreation

3.11.1 Affected Environment

Recreational opportunities along the Willamette River, Palmer Creek, and the Yamhill River include both passive (i.e., wildlife observation) and active (i.e., hiking, fishing) opportunities; however, there are few public access locations within PCWD. Palmer Creek currently supports a localized sport fishery for largemouth bass and crappie between the Carlton Nursery Dam and the confluence of Palmer Creek and the Yamhill River. Prior to the establishment of PCWD, Palmer Creek was drawn dry during the irrigation season, a practice which eliminated spring and summer sport fishery opportunities. Since the formation of PCWD, flow has been maintained in the stream on a year-round basis.

3.11.2 Environmental Consequences

The only portion of the described system where impacts on recreation are anticipated is in the Palmer Creek area. Impacts on the Willamette River are not anticipated as the proposed contract constitutes less than 1 percent of the mean monthly flow of the Willamette River during the irrigation season; subsequently, the increased flows would not be noticeable.

The potential exists for increased flows and recreational opportunities in Palmer Creek as a result of the Proposed Action, especially during drought years. Impacts on the Yamhill River would depend upon the return flows from Palmer Creek; however, since the contracted water would be used primarily during drought years, no change is anticipated in recreational opportunities for the Yamhill River.

3.12 Historic and Cultural Resources

3.12.1 Affected Environment

No ground-disturbing activities would occur. The intake area was extensively disturbed and backfilled with soil and riprap in the mid-1960s when the intake structure and pump house were constructed on an approximately 45-degree slope that extends to the backwater area of the Willamette River.

3.12.2 Environmental Consequences

The Proposed Action would have no effect on cultural and historic resources, since no alterations would be made to the existing conveyance system and no new lands (the 421.17

acres of lands proposed for a primary water right are already farmed) would be brought into production as a result of this proposal. The Oregon State Historic Preservation Office (SHPO) was contacted about the potential impacts on archaeological and cultural sites at the previously disturbed area at the intake to determine if additional analysis should be conducted prior to installation of the new fish screen. SHPO concurred that installation of the fish screen would not require further review (Appendix C).

3.13 Indian Sacred Sites

3.13.1 Affected Environment

Executive Order (EO) 13007 defines an Indian sacred site as "any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion." None of the lands affected by the Proposed Action are Federal fee lands or lands where Federal easements or other realty interests pertain. Reclamation also consulted with SHPO during the preparation of the EA and recognizes that there are State of Oregon protections for Indian Sacred Sites; however, no Indian Sacred Sites have been identified in the project area.

3.13.2 Environmental Consequences

No impacts would occur under EO 13007 because that authority does not extend to non-Federal lands, and no impacts have been identified to resources protected under the State of Oregon statutes.

3.14 Indian Trust Assets

3.14.1 Affected Environment

Reclamation has an established policy to protect Indian Trust Assets (ITA's) from adverse impacts of its programs and activities and to enable the Secretary of the Interior to fulfill responsibilities to Indian tribes. ITA's are legal interests in property held in trust by the United States for Indian tribes or individuals. Examples of ITA's include lands, minerals, hunting and fishing rights, and water rights. ITA's can be found both on-reservation and off-reservation. The United States has an Indian trust responsibility to protect and maintain rights reserved by or granted to Indian tribes or individuals by treaties, statutes and executive orders.

The tribes that comprise the modern Confederated Tribes of the Grand Ronde Community of Oregon (Grand Ronde Tribes) and Confederated Tribes of Siletz Indians (Siletz Tribes) lived throughout western Oregon. Historically, these tribes and their ancestors have hunted, fished, and gathered along the rivers and wetlands of the Willamette River basin. PCWD lands lie within a hunting and fishing area set forth in a 1986 consent decree between the Grand Ronde Tribes, the State of Oregon and the United States ("Agreement among the State of Oregon, the United States of America and the Confederated Tribes of the Grand Ronde Community of Oregon to Permanently Define Tribal Hunting, Fishing, Trapping, and Animal Gathering Rights of the Confederated Tribes of Grand Ronde"). The Confederated Tribes of the Warm Springs Reservation (Warm Springs Tribes) reserved the right to fish, hunt, and gather roots and berries at all usual and accustomed places through the June 25, 1855, Treaty with the Tribes of Middle Oregon. These usual and accustomed places include the lower Willamette River valley.

Pacific lamprey are of great importance to Columbia River tribes for cultural, subsistence, medicinal, ceremonial, and spiritual needs. The last viable harvesting place for lamprey in the Columbia River Basin is at Willamette Falls, located on the lower Willamette River below the confluence of the Tualatin and Willamette rivers. Besides the Warm Springs, Siletz and Grand Ronde Tribes, the Confederated Tribes and Bands of the Yakama Nation, the Confederated Tribes of the Umatilla Indian Reservation, and the Nez Perce Tribe traditionally harvest lamprey at Willamette Falls. The Yakama, Umatilla, and Nez Perce tribes all entered into treaties with the United States in 1855. In these treaties, the tribes reserved the right to take fish in all usual and accustomed areas.

3.14.2 Environmental Consequences

The Proposed Action would not diminish the hunting, fishing, trapping, and gathering rights set forth in the consent decree with the Grand Ronde Tribes or the treaty rights of the Warm Springs, Umatilla, Yakama, and Nez Perce tribes to hunt, fish, and gather at usual and accustomed places in common with other citizens of the United States.

Adverse impacts to Pacific lamprey and other species should not occur as there is no significant reduction in Willamette River flows and no in-water construction. In addition, the installation of the state-of-the-art fish screen approved by NOAA Fisheries, ODFW, and USFWS should afford protection for Pacific lamprey as well as other species protected under the ESA and MSA.

3.15 Economics

3.15.1 Affected Environment

Yamhill County has a population of approximately 85,000. The principal industry in the county is agriculture. The City of Dayton, which is the closest city to the PCWD service area, has a population of approximately 2,100. The Dayton-area economy is primarily driven by agriculture. Within the PCWD's service area, nurseries, fruit orchards, vineyards, and other row crop farms rely heavily upon irrigation water to support agricultural production.

3.15.2 Environmental Consequences

The proposed project would ensure continued and increased agricultural production in the PCWD service area by providing a supplemental water supply to 4,522 acres of land and a primary water supply to 421 acres of land. Presently, PCWD provides water to approximately 6,150 acres of irrigable land. Economic benefits to the community resulting from the proposed water service contract include helping to ensure future viability in the farming profession and future economic vitality in the region. In the event of a water-short year, the proposed contract would make available a supplemental water supply to irrigators, thereby reducing the potential for economic losses to farmers during dry years.

An increase in the gross personal income of some PCWD members may occur from application of the proposed water service contract to the 421 acres of agricultural land that is not presently irrigated. In addition, the availability of supplemental water during low-water years also could increase personal income by an unknown amount. The potential increase in gross personal income would occur without adverse impacts on the infrastructure of the community. The increase in farm production would not result in increases in services for schools, domestic water or sewage, fire protection, road improvement, or other community support programs because only minimal increases in employment opportunities would occur

3.16 Environmental Justice

3.16.1 Affected Environment

The Presidential EO 12898, "Federal Actions to Address Environmental Justice in Minority Populations" (February 11, 1994) requires agencies to identify disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations, as well as the equity of the distribution of the benefits and risks of their decisions. The EO is intended to protect minority and low-income communities from discriminatory projects or practices that can result in a more hazardous or

degraded environment cause by a Federal action. Federal agencies are directed to analyze the effects of Federal actions on minority and low-income communities and to avoid those impacts to the extent that is practicable.

3.16.2 Environmental Consequences

Reclamation did not identify any minority and low-income populations as being affected by this proposal. There would not be any modifications to present land use practices or removal of any housing projects. No impacts have been identified by the decision to implement either the No Action alternative or the Proposed Action.

3.17 Cumulative Impacts

Cumulative impacts were evaluated by determining if there are other proposed or ongoing activities that could result in incremental impacts on various resources that could be affected by the Proposed Action. The potential for impacts has been considered by evaluating changes in reservoir operating schedules by the Corps, the water marketing program of Reclamation, and water rights applications OWRD has received.

- Flow Releases from the Willamette River Reservoir System by the Corps – The project releases are normally operated from a rule curve which determines how much space must be maintained to capture floodwater. The Corps does not anticipate changes in flow releases other than the month-to-month or year-to-year fluctuations that occur because of a difference of inflows to the reservoirs or to meet target flows. Flood abatement acts as a ceiling to Corps releases.

  It is possible that reauthorization of the projects or demands for endangered species could change Corps operations. It is extremely unlikely that the proposed contract, taken alone or in concert with other pending water supply contracts, could interfere with the Corps's primary commitments. This is primarily because the volume of water contracted for agriculture is relatively small, and releases would occur at times beneficial to water quality improvement. Furthermore, water supply service contracts would defer in times of shortage to overriding Federal interests.

- Water Marketing Program of Reclamation – Currently there are approximately 1,592,800 acre-feet of conservation storage space available for multiple uses, which includes irrigation contracting in the Project system. Of this use, approximately 50,230 acre-feet of water has already been contracted, and there are 61 other pending applications for the use of up to a total additional 30,197 acre-feet of water.

  NOAA Fisheries' Willamette Project Biological Opinion (BO) (NOAA Fisheries 2008) addresses Reclamation's water marketing program. While the BO

acknowledges that water withdrawals to serve agricultural water contracts would have a slight impact on Upper Willamette River Chinook and Upper Willamette River steelhead, it also states that contracting for up to a total of 95,000 acre-feet can go forward. If the total contracted amount exceeds 95,000 acre-feet, reconsultation would be required. The proposed contract with PCWD would not cause this limit to be exceeded. All contracts are subject to the availability of water, as determined by the Corps. ESA requirements and other obligations for instream flows must be met before water would be available for irrigation supplies.

- OWRD Applications – OWRD was contacted to ascertain the status of new applications for diversion and storage of water from the Willamette River and tributaries. Additional water downstream of Salem, Oregon, generally is not available during irrigation season due to previous over-appropriations of water. OWRD's current practice is to refer potential applicants for Willamette River natural flow to Reclamation for water service supply contracts from the Project.

No significant cumulative impacts have been identified because the volume of water that may be contracted if all the pending applications to Reclamation are permitted represents less than 2 percent of the reservoir storage space available for joint use. Furthermore, the applications at OWRD are for natural flow from the Willamette River or tributaries rather than for reservoir system storage. The OWRD may or may not approve additional applications for natural flow at its discretion based on available water. No other private projects have been identified that may, in combination with the Proposed Action, result in incremental impacts on any resources resulting in a significant cumulative impact.

Chapter 4 CONSULTATION AND COORDINATION

4.1 Agency Consultation

The following agencies were consulted in the preparation of this EA:

- NOAA Fisheries
- ODFW
- Oregon Natural Heritage Program
- Oregon SHPO
- OWRD
- USFWS
- Bureau of Indian Affairs

4.1.1 Endangered Species Act Section 7(a)(2)

The ESA requires all Federal agencies to ensure that their actions do not jeopardize the continued existence of listed species or destroy or adversely modify their critical habitat.

Pursuant to Section 7 of the ESA, PCWD requested relevant species lists from the USFWS. Appendix B contains relevant correspondence between PCWD and the Services.

Twelve species listed threatened or endangered under the ESA occur or once occurred in the action area. Because no construction is associated with the Proposed Action and instream flow impacts from diversion of contract water are negligible, Reclamation determined that the Proposed Action will have no effect on threatened or endangered species. At the time of the 2007 Draft EA, the fish screen at PCWD's diversion point on the Willamette River had not been upgraded to meet current NOAA Fisheries fish screening criteria. PCWD obtained approval for the fish screen design from the USFWS, the NOAA Fisheries, and the ODFW. The new fish screen was installed in September 2007 and meets current NOAA Fisheries screening criteria.

NOAA Fisheries completed a consultation with the Corps, BPA, and Reclamation on July 11, 2008. The BO (NOAA Fisheries 2008) defined reasonable and prudent measures for Reclamation's water marketing program. Contracts, including PCWD, will be required to meet all ESA requirements prior to receiving a water contract.

4.1.2 National Historic Preservation Act

In compliance with Section 106 of the National Historic Preservation Act of 1966 (as amended in 1992) PWCD, on Reclamation's behalf, consulted with the Oregon SHPO to identify cultural and historic properties in the area of potential effect. In a letter dated July 13, 2006, the Oregon State Archaeologist agreed with the determination that the project will have no adverse affect on any known cultural resources. Since the installation of a new fish screen at the Willamette River diversion in September 2007, no construction is now associated with the Proposed Action.

4.2 Public Involvement

Reclamation issued an initial EA for public comment in 1996. Several comments received indicated issues that remained to be addressed (Appendix A). A Final EA and FONSI were not completed, and Reclamation did not make a decision at that time to grant or deny the PCWD contract request.

Reclamation reissued another version of the draft EA in March 2007 that described and analyzed the impacts of two alternatives, the No Action alternative and the Proposed Action alternative. The 2007 Draft EA was distributed to local, State, and Federal agencies, Tribes, land owners, and interested parties for public comment (Appendix D). Two comment letters were received and are included in Appendix A. The main issues raised, each of which is addressed in this EA, were:

- Adequacy of the discussion of water conservation opportunities, water quality and cumulative impacts
- Concerns about the project need
- Potential impacts to historic and cultural resources and inaccuracies in Section 3.13 – Indian Sacred Sites and Section 3.14 – Indian Trust Assets.

This Final EA includes any additional analyses completed since the 1999 initial EA and addresses comments received from the 1999 EA and the 2007 Draft EA.

Appendix D contains the distribution list for the 2007 Draft EA and the Final EA.

Chapter 5 LITERATURE CITED

Parenthetical Reference	Bibliographic Citation
43 FR 28938	Federal Register. 1978. Department of the Interior. Fish and Wildlife Service: Endangered and Threatened Wildlife and Plants; Proposed Endangered or Threatened Status with Critical Habitat for Ten Butterflies or Moths. July 3, 1978. Vol. 43, No. 128, pp. 28938-28945.
45 FR 44935	Federal Register. 1980. Department of the Interior. Fish and Wildlife Service: Endangered and Threatened Wildlife and Plants; Reproposal of Critical Habitat for One Species of Butterfly. July 2, 1980. Vol. 45, No. 129, pp. 44935-44939.
65 FR 3875	Federal Register. 2000. Department of the Interior. Fish and Wildlife Service Final Rule: Endangered and Threatened Wildlife and Plants; Endangered Status for "Erigeron decumbens" var. "decumbens" (Willamette Daisy) and Fender's Blue Butterfly ("Icaricia icarioides fenderi") and Threatened Status for "Lupinus sulphureus" ssp. "kincaidii" (Kincaid's Lupine). January 25, 2000. Vol. 65, No. 16, pp. 3875-3890.
Bartch 2006	Bartch, Jon. 2006. Secretary. Palmer Creek Water District Improvement Company. Dayton, Oregon. Personal communication. September 29.
Bartch 2007	Bartch, Jon. 2007. Secretary. Palmer Creek Water District Improvement Company. Dayton, Oregon. Personal communication. September 25.
Corps 1981	U.S. Army Corps of Engineers. 1981. Willamette River Projects. Hydrologic and Temperature Effects, Preliminary Literature Review and Data Analysis. Portland District, Portland, Oregon.
Csuti et al. 2001	Csuti, B, T.A. O'Neil, M.M. Shaughnessy, E.P. Gaines, and J.C. Hak. 2001. *Atlas of Oregon Wildlife. Distribution, Habitat, and Natural History*. Oregon State University Press, Corvallis, Oregon.
Kupillas 2007	Kupillas, Malia. 2007. Water Rights Examiner. Pacific Hydro-Geology, Inc. Mulino, Oregon. Personal communication. October 11.
Mamoyac and Alsbury 2006	Mamoyac, Steve, and Todd Alsbury. 2006. District Fish Biologists. Oregon Department of Fish and Wildlife. Personal communication. July 20.

Parenthetical Reference	Bibliographic Citation
Miller 2006	Miller, Donn. 2006. Hydrogeologist. Oregon Water Resources Department. Salem, Oregon. Personal communication. July 17.
NOAA Fisheries 2008	National Marine Fisheries Service. 2008. *Endangered Species Action Section 8(a)(2) Consultation Biological Opinion & Magnuson-Stevens Fishery Conservation & Management Act Essential Fish Habitat Consultation – Willamette River Basin Flood Control Project.* NMFS No. 2000/02117, Northwest Region, Portland, Oregon. July 11.
ODEQ 2004	Oregon Department of Environmental Quality. 2004. "Willamette River Initiative: Action Assessment and identification of Opportunities for Action." Memorandum from Stephanie Hallock, Director, DEQ, to Jim Brown, Governor's Natural Resources Director. June 1, 2004.
ODFW 1992	Oregon Department of Fish and Wildlife. 1992. *Coast Range Subbasin Fish Management Plan*. Portland, Oregon.
Oregon DOE 2004	Oregon Department of Energy. 2004. Oregon Strategy for Greenhouse Gas Reductions, Governor's Advisory Group on Global Warning. December. Available online at http://www.oregon.gov/ENERGY
Simmons 2006	Simmons, Devin. 2006. Habitat Biologist. Oregon Department of Fish and Wildlife. Personal communication. July 21.
Sweeney 1993	Sweeney, Sam. Former Secretary. Palmer Creek Water District Improvement Company. Dayton, Oregon. Personal communication. November 24.
Sweeney 2006	Sweeney, Sam. Board Member Palmer Creek Water District Improvement Company. Dayton, Oregon. Personal communication. July 18.

Appendix A

Public Comment Letters

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Northwest Regional Office
911 N.E. 11th Avenue
Portland, Oregon 97232

IN REPLY REFER TO:
Environmental Compliance

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Mr. Ronald J. Eggers
Area Manager
Bureau of Reclamation
Lower Columbia Area Office
1201 NE Lloyd Boulevard, Suite 750
Portland, Oregon 97232

Dear Mr. Eggers:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment (DEA) for the proposed Water Service Contract - Palmer Creek Water District Improvement Company (PCWD).

On April 23, 2007, this office contacted Ms. Tanya Sommer, Natural Resource Specialist, Lower Columbia Area Office (LCAO) to request the comment period be extended to May 4, 2007. The request was granted on April 23, 2007. We appreciate Ms. Sommer's collaborative efforts to develop the best work product possible.

Eight tribal governments and the Columbia River Inter Tribal Fish Commission (CRITFC) were contacted concerning the proposed project. These entities will be providing comments by May 4, 2007. Please accept our comments as proactive communication.

Page 1: 1.1 Introduction: For clarification purposes, there should be some indication that the PCWD currently has an existing storage contract with Reclamation for a supplemental water supply, Permit No. 43379. (See Page 13, Table 1). The terms and conditions of the proposed contract were not identified. The DEA does not appear to specifically address the issues raised in Appendix A, *"Comments from the Original EA."* The DEA does not always cite the laws it relies on.

Page 1: 1.3 Background – states that *"... a water service contract does not guarantee Project water will be available."* Does this mean that the 421.17 acres of new irrigation lands will not receive senior water in times of short supply?

Will any of the water be for non-irrigation purposes? Under the proposed water service contract with Reclamation, can the irrigation water be converted to a different use, such as municipal and industrial (M&I) use which would reduce return flow to the river?

Page 1: 1.1 Introduction: Clarification is needed. Please explain what type of water rights the District holds, e.g., junior water rights, and why they would not be entitled to a full share of water as a junior water user. You may want to cite Oregon State law.

Using both the *"PCWD or District"* in the document to mean the Palmer Creek Water District Improvement Company is confusing. For consistency and clarification, maybe you should consider using one or the other.

Page 1: 1.2 Purpose and Need for Action: The second sentence could be clarified by adding the words, **Because the District is a junior water user, it** *"is pursuing this contract as an ...."*

Page 2: 1.3 Background: Clarification is needed, what is meant by the word "leave?" The sentence reads in part, *"... when senior water users with senior rights leave the District with a reduced water supply."*

Is the answer - because the PCWD holds junior water rights they are not entitled to a full share of water in times of drought or water short years?

Page 1: 1.3 Background: An explanation is needed to explain why PCWD is not entitled to full share of water from the *"combination of sources."*

Page 3: Map Unreadable – poor quality.

Page 4: Pictures are dark and not useful.

Page 4: 1.6 Other Related Actions or Activities – No discussion about consultation with any tribal governments, including the eight (8) listed below. No discussion of other "species of concern," e.g., lamprey.

Page 7: Proposed Action: No discussion of the 981 acre-feet of water which will be *"... a primary irrigation water supply for 421 acres."*

Page 8: 2.4 Alternatives Considered but Eliminated from Further Consideration – Should potential Reclamation conservation programs (grant and low interest loans) available to the water users like PCWD be discussed as alternative actions? An Alternative could include piping the three miles of ditch connecting to Palmer Creek

Page 9: 2.4.4 Conservation of Existing Irrigation Water Supply - Second paragraph, Are "... *nutrient loss, and erosion*" the same thing? Or, is "nutrient loss" the same thing as fertilizer? Are the "storage contracts" identified in the paragraph the same as those listed on Table 1?

Page 10: 2.4.4 Conservation of Existing Irrigation Water Supply - Discussion is not clear whether it is centered around industry standards or PCWD's actual water usage. Why is there no discussion of potential Reclamation conservation programs available to the water user (PCWD), e.g., potential Reclamation grant programs that could help pay all or part of upgrading sprinkler systems or piping PCWD's three miles of earthen canal that runs from the pump house to Palmer Creek? Was any consideration given to PCWD purchasing senior water rights?

Was the following considered as an alternative - A three mile pipeline from the Willamette River intake structure to Palmer creek. The pipeline would conserve carriage water and reduce the amount of water needed under the proposed action. The saved water could be left in the river for fish life or left in Palmer Creek for fish life.

Since the PCWD's conveyance system efficiency is approximately 55%, why is there no discussion of Reclamation programs available to improve carriage water loss?

Has there been any discussion with power providers, e.g., BPA and PUD, to see if they have any programs, including grants or low interest loans, that could help pay for upgrading the efficiency of the pump motors?

Has there been any discussion with Reclamation to help increase efficiency of the pumps?

Page 11: 3.1 Introduction – Because of stated erosion problems and issues with *"agricultural return flows,"* it would seem "soils" should have been addressed to some extent.

Page 12: 3.3 Hydrology – 3.3.1 Affected Environment – It is not clear how *"streamflow targets"* and withdrawals for specific contracts are tied and monitored/calculated.

This section does not include water for the survival of fish and other species, like lamprey. Addressing "other factors" in the second paragraph could clarify this point.

The second sentence in the second paragraph talks about the United States reserving the right in its contracts to reduce or deny water supply when *"it"* is not available. It would be appropriate to make a statement about how flows critical to fish life may cause a necessary reduction in the extraction of water from the river and when removal of such water would be considered detrimental to fish life, the water shall be held in abeyance until such time as flows improve. A discussion about how water diversion would cease until rivers flows increased to meet *"streamflow targets"* would appear a necessary issue to address. Additionally, some discussion is needed concerning the limitation of extractions for irrigation purposes and water needed for fish life, i.e., how fish life has prior rights to water. The water needed for fish life survival

should be acknowledge and addressed up front. Identify who is responsible for the determination of water for fish life.

Page 13: 3.3.2 Environmental Consequences, Table 1 – There should be some discussion of the amount of water needed for fish life survival and stream flow targets. Also, needs discussion of contracted for and uncontracted (available) water supply.

Page 14, top of page – it is not clear why the water surface elevation is being identified as "insignificant" just because the irrigated lands are down stream of the reservoir.

Page 14: First paragraph - Please compare the 2,041 acre-feet per month to the target flows of the Willamette River. Please explain *"... far exceed..."* and how this determination was reached.

Fifth paragraph: Please identify the specific "conservation measures" proposed.

Page 9, 2.4.4 Conservation of Existing Irrigation Water Supply does not address any proposed "conservation measures."

Page 15: 3.4.2 Environmental Consequences – Please explain and clarify how *"[l]ow to nonexistent flows in Palmer Creek degrade water quality in Palmer Creek and the Yamhill River."* It is not clear whether the *"agricultural return flows"* are considered nonpoint source pollution. It is not clear whether the consequences of adding agricultural return flows to Palmer Creek will increase the already high levels of chlorpyrifos, a widely used organophosphate insecticide. For clarification purposes, you could address both the DEQ 303(d) standards and the potential effects listed on Palmer Creek and the Yamhill River – "increased salinity, increased dissolved oxygen concentrations. Is Palmer Creek a Water Quality Limited (WQL) stream? Because of the *"unknown amount of nutrients"* contained in the *"agricultural return flows,"* will there be additional monitoring of water quality?

Page 16: 3.4.2 Environmental Consequences (last paragraph) – If *"[l]ow to nonexistent flows in Palmer Creek degrade water quality in Palmer Creek and the Yamhill River" and* there will be *"unknown amount of nutrients"* contained in the *"agricultural return flows"* to Palmer Creek, how can you say that the return flows will be similar in quality to the original diversion? We need some clarification on the impact concerning the sentence: *"The most significant anticipated change to current conditions is that contracted water would keep Palmer Creek wet when it might otherwise dry up."* Please clarify how keeping Palmer Creek wet when it might otherwise dry up, get water to PCWD? Clarification on whether PCWD expects to utilize some amount of carriage water in addition to the contracted amount?

Page 16: 3.5.1 Affected Environment (last sentence) – What is meant by "new irrigation development?"

Page 16: 3.5.2 Environmental Consequences - (First Paragraph) – Because PCWD has more than one water service contract which removes *"water from the Project,"* (Permit No. 43379) clarification is needed. (See Page 13, Table 1).

(Second Paragraph) – Why is the additional water included in the *"primary water right"* not beneficial to the wetlands?

Page 18: 3.6.2 Environmental Consequences – Clarification is needed. The statement appears incomplete, it should include other water received from *"the Project"* including water taken under authority of Permit No. 43379. (See Page 13, Table 1).

Page 18: 3.7.1 Affected Environment – (Last Paragraph) - Clarification is needed on whether the contract water is screened before it enters PCWD's irrigation facilities at Palmer Creek.

Page 19: 3.7.2 Environmental Consequences – Clarification is needed. How did you determine that there would be "[n]o alternation … to water quality, native vegetation, stream habitat types, or fish" when in Section 3.4.2 you state that *"[l]ow to nonexistent flows in Palmer Creek degrade water quality in Palmer Creek and the Yamhill River" and* there will be *"unknown amount of nutrients"* contained in the *"agricultural return flows."*

Please clarify whether the *"agricultural return flows"* are considered nonpoint source pollution bad for the water quality, native vegetation, stream habitat types, and fish life.

It is not clear whether the consequences of adding *"agricultural return flows"* to Palmer Creek will increase the already high levels of chlorpyrifos, a widely used organophosphate insecticide. Is your document stating that the increase flow from the proposed project would adversely impact Palmer Creek and the Yamhill River through increasing salinity and increasing dissolved oxygen concentrations? Further, because of the *"unknown amount of nutrients"* contained in the *"agricultural return flows,"* will there be additional monitoring of water quality to protect fish life?

As stated above, it is not clear whether the consequences of adding agricultural return flows to Palmer Creek will increase the already high levels of chlorpyrifos, a widely used organophosphate insecticide. Is Palmer Creek a Water Quality Limited (WQL) stream?

Page 19: 3.7.2 Environmental Consequences – Clarification is needed concerning location of the stated *"fish protection screens"* along Palmer Creek. Clarification is needed as to whether any ESA species, i.e., those addressed on page 24: 3.9.2 Environmental Consequences, may be present in the Palmer Creek drainage.

Page 24: 3.9.2 Environmental Consequences (continued) – Second Paragraph –
What are the two threatened fish species mentioned in the first sentence?

What is the authority for the determination that the presence of juveniles of either listed species have not been established in Palmer Creek or the Willamette River near the PCWD diversion? What authorities were consulted?

Page 26: 3.12.2 Environmental Consequences: The sentence, *"[t] he additional irrigation water supply would provide a source of water during low water years when Palmer Creek is typically drawn dry."* is in conflict with Page 25: 2.11.1 Affected Environment – *"Prior to the establishment of PCWD, Palmer Creek was drawn dry during the irrigation season, a practice which eliminated spring and summer sport fisher opportunities. Since the formation of PCWD, flow has been maintained in the stream on a year-round basis."*

Page 27: 3.14.1 Affected Environment – We believe there is a misstatement about Oregon State law. See, Appendix B, Page 11.

Page 27: 3.15 Indian Trust Assets (ITA)– The proper contact concerning the proposed action is the Bureau of Indian Affairs, Northwest Regional Office, Environmental Compliance, 911 NE 11th Avenue, Portland Oregon 97232, Attention – B.J.Howerton (503) 231-6749.

According to 3.15.1 Affected Environment - The Realty Officer at the Siletz Agency was contacted about ITAs and a misstatement was made. The correct answer is – yes, there are known, land, mineral, hunting, fishing, and other Indian rights in the project area. However, the major issues will be cumulative impact of all water service contracts on fish life in the Willamette River and Palmer Creek, including keeping water available in low water years for juvenile lamprey survival and considerations for the out migration of lamprey juveniles.

The following eight tribal governments and the Columbia River Intertribal Fish Commission (CRITFC) have been contacted and they requested an opportunity to comment on the DEA. Comments have been requested to be into the LCAO by May 4, 2007. A contact person and phone number has been provided to facilitate communications:

Yakama Nation
Att: Lee Carlsen
Natural Resource Annex
4690 State Route 2
Toppenish, WA 98948—0632 (509) 865-2255

Warm Springs Natural Resources Dept.
Att: Deepak Sehgal
4223 Holliday St.
Warm Springs, Oregon 97761-1239
(541) 553-1161

Confederated Tribes of the Siletz Reservation
Att: Ms. Kelley Ellis
201 South East Swain Ave
Siletz, Oregon 97380-0549
1-800-922-1399

Cow Creek Band of Umpqua Indian of Oregon
Att: Ms. Amy Amoroso
2371 NE Stephens, Suite 100
Roseburg, Oregon 97470-1338
541-672-9405

Coquille Tribe of Oregon
Att: Jason Robison
3050 Tremon St., P.O. Box 783 (P.O. Box must be included for successful Fedex delivery)
North Bend, Oregon 97459
(541) 756-0904

Confederated Tribes of the Grand Ronde Community of Oregon
Att: Kelly Dirksen
9615 Grand Ronde Road
Grand Ronde, Oregon 97347-0038, (503) 879-5211
Confederated Tribes of Coos, Lower Umpqua, & Siuslaw Indian
Att: Howard Crombie
1245 Fulton Ave.
Coos Bay, Oregon 97420
(541) 888-9577

Confederated Tribes of the Umatilla Indian Reservation
Att: Eric Quaempts
73239 Confederated Way
Pendleton, Or 907801
(541) 276-3165

Columbia River Intertribal Fish Commission
Att: Bob Heinith
729 NE Oregon, Suite 200
Portland, Oregon 97232. (503) 238-0667.

Page 28: 3.15.2 Environmental Consequences – This section is not correct, there are environmental impact to ITAs. The base issue would be the proposed project's impact on water for fish life, including Lamprey juveniles survival/out migration, and wildlife.

Page 28: 3.17 Cumulative Impacts – Because tribal governments have not been contacted and the consultation process accomplished, the issues considered in this section of DEA are incomplete. Section 3.17 does not specifically address issues raised in Appendix A. As pointed out in Appendix A, there are Cumulative Impacts associated with the proposed withdrawal and other existing water withdrawals from the Willamette River.

Again, thank you for the opportunity to comment on the DEA. If you need further assistance, please contact B.J. Howerton, Environmental Compliance Specialist, at (503) 231-6749.

Sincerely,

Northwest Regional Director

The Confederated Tribes of the Grand Ronde Community of Oregon

Natural Resources Department
Phone (503) 879-2424 or (800) 422-0232
Fax (503) 879-5622

47010 SW Hebo RD
Grand Ronde, OR 97347

April 27, 2007

ATTN: Ms. Tanya Sommer
U.S. Department of the Interior
Bureau of Reclamation
Lower Columbia Area Office
1201 NE Lloyd Boulevard, Suite 750
Portland, Oregon 97232

RE: Comment on Draft Environmental Assessment (DEA) for a Proposed Water Service Contract with the Palmer Creek Water District Improvement Company (PCWD) of Yamhill County, Oregon

Dear Ms. Sommer:

Thank you for the extension of time and the opportunity to comment on the DEA. The Confederated Tribes of the Grand Ronde Community of Oregon (Tribe) take great interest in water resource issues of the Willamette River and surrounding areas. The Tribe is made up of over twenty tribes and bands, some of which were the original inhabitants of the PCWD area. The Willamette and its tributaries and surrounding areas continue to be of high importance to the Tribe for fish, water quality, wildlife, vegetation, and cultural purposes.

As Ceded Lands Coordinator for the Tribe, I have reviewed the DEA dated March 16, 2007, and offer the following comments.

Background and Introduction

As noted in Section 1.3 of the DEA, a similar water service contract request was made by PCWD in the mid-1990's, prompting an EA and comments on that EA. Water Watch of Oregon (WW) submitted comments stating essentially that the EA did not address several issues. Some of these issues were later addressed through discussions between Reclamation and WW. In 1999, WW sent another comment letter stating essentially that WW continued to have concerns that had not been adequately addressed. According to the DEA in Section 1.3, "This version of the EA addresses those comments." After reviewing the DEA in full, I cannot agree with that statement. Many of WW's concerns expressed in its 1999 letter remain unaddressed or inadequately addressed in the DEA. In addition, I have concerns about cultural issues that are not shared by WW.

First, the Purpose and Need for Action remains vague and unsubstantiated in the DEA. Second, the range of alternatives fully analyzed is very narrow, and while the alternative titled "Conservation of Existing Irrigation Water Supply" (Conservation Alternative) contains some supporting data (albeit incomplete), there is high potential for bias in both the supporting data and the conclusion of that alternative. Third, the analyses relating to Historic and Cultural Resources, Indian Trust Assets (ITAs)

and Indian Sacred Sites inadequately address the issues and contain factual errors. Fourth, the Cumulative Impacts analysis only takes into account a small portion of foreseeable cumulative impacts and is therefore inadequate. Finally, the Water Quality analysis is incomplete, unsupported, and leaves many questions unanswered and is therefore inadequate. Since water quality directly affects flood plains and wetlands, fisheries, wildlife, and threatened and endangered species, those resources' analyses are also inadequate, but I will confine my comments in this regard to the Water Quality analysis.

Unless and until these concerns are adequately addressed, the No Action Alternative should be chosen. Reclamation should not issue a Finding of No Significant Impact, and Reclamation should deny PCWD's request for a water service contract.

Purpose and Need for Action

The DEA describes the need for this water service contract as the need for "an 'insurance policy' during dry years and against potential future competition for water resources." However, no evidence is offered to prove that such an 'insurance policy' is needed at all. In fact, all the evidence in the DEA points to the contrary. The water use tables in Appendix A for years 1968-1977 and 1988-1998 show nothing to suggest that PCWD has ever been unable to divert the water that it needed. The memo in Appendix A from Richard E. Craven, dated February 3, 1999, states that "[b]ased on the information provided, the District does not divert or use all the flow allowable...". Section 2.2 of the DEA states, "To date, the District has been able to operate with the available combined water resources." This would necessarily include severe drought years since 1967.

If PCWD has been able to divert all the water it needed, even in severe drought years, then the logical conclusion is that PCWD should continue to be able to divert all the water it needs without another water service contract, and the DEA does not rebut this conclusion. No data is offered in the DEA that would show or even suggest that PCWD would need an 'insurance policy' for its water use, even in dry years. There is no data in the DEA demonstrating any likelihood of "potential future competition for water resources." Nothing in the DEA substantiates a need for a water service contract beyond a vague worry that PCWD might someday be unable to divert its currently contracted flows. For this reason, the Purpose and Need for Action is inadequate.

Conservation Alternative

The Conservation Alternative was considered but eliminated from further consideration in the DEA. Reasons are given for the elimination of the Conservation Alternative, but they are either incompletely supported or highly subject to bias.

The data supporting the decision to eliminate the Conservation Alternative is incomplete at best. For example, Section 2.4.4 of the DEA states that "[o]n-farm efficiency is typically between 50 to 70 percent" and that "[d]rip systems achieve from 75 to 95 percent efficiency." From this data it may be logically inferred that the typical farm in the PCWD could increase its water use efficiency by 5 to 45 percent by converting to a drip system. Later in the section the DEA states that such a conversion would involve "an initial cost of approximately $400 per acre and an annual cost of more than $250 per acre for row crops." But no further information is given to show that such a cost would likely

outweigh the benefit of increased efficiency. The reader is left to wonder whether converting to a drip system would be all that detrimental to farmers. I can see how an increased efficiency of only 5 percent would not be worth the cost of converting to a drip system, but on the other hand it is hard for me to imagine that an increase of up to 45 percent would not pay off, even at a high cost. However, this is all speculation on my part because no other conversion information is given in this section, and it is therefore incomplete.

Section 2.4.4 is also guilty of incomplete reasoning and bald assertions. In the last paragraph it states, "Technological water conservation measures would do little to increase the water available to irrigators if the water is simply not available for diversion." While that statement might be true on its face, it ignores the fact that the water *needed by* irrigators would be reduced if water conservation measures were taken, and that therefore a shortage in water availability could be non-detrimental or less detrimental to farm operations under this alternative. The same paragraph also asserts, "Conservation could buffer the effects of this reduction, but not in a cost-effective manner." However, as I pointed out above, the DEA does not disprove the cost-effectiveness of water conservation; it merely provides some cost numbers and leaves the reader to speculate whether the costs outweigh the benefits. Additionally, Section 2.4.4 repeats PCWD's concern from the Purpose and Need section that a severe drought or early priority call will prevent PCWD from diverting the needed water, without offering any proof that such a situation will likely occur.

The most disconcerting pattern of Section 2.4.4, however, is that all its supporting data comes directly from current or former PCWD officials. Since PCWD is the very entity seeking the Action Alternative here, the data offered is highly subject to bias. This is not to say conclusively that PCWD did not provide the best data it had at the time. But it is very plain to see that PCWD's motivations lie in promoting the Action Alternative rather than giving equal weight to potentially feasible alternatives, and PCWD would certainly not be motivated to seek better data here. In the professional world, the prevailing practice is to avoid even the appearance of impropriety so that one's decisions and reasoning cannot be put into question. This practice was not followed here. For all these reasons, the elimination of the Conservation Alternative from further analysis is unwarranted.

Historic and Cultural Resources

As Section 3.13.2 of the DEA explains, the Oregon State Historic Preservation Office (SHPO) was contacted and replied that no known archaeological or cultural sites existed on the fish screen construction area. However, it should be noted that SHPO's information regarding such sites, like most kinds of information, is imperfect and inadvertent discoveries do occur. Moreover, the letter from SHPO in Appendix C clearly advises that all activities should cease immediately and an archaeologist be contacted if cultural material is discovered. Therefore, the statement that the "Proposed Action would have no effect on cultural and historic resources" assumes too much and may well turn out to be untrue.

Section 3.13.2 should contain an inadvertent discovery plan for cultural and archaeological resources. Such a plan helps to mitigate the potential effects to those resources. My understanding is that inadvertent discovery plans typically involve site monitoring as well as contacting appropriate authorities if cultural material is discovered. Since cultural material is very often difficult for the untrained eye to recognize, a trained and certified Site Monitor should be on-site during all

construction and other ground-disturbing activities. In the event that cultural material is discovered, the plan should include 1) immediate cessation of all activity at the site, 2) contacting the Cultural Resources Department at the Confederated Tribes of Grand Ronde, the Commission on Indian Services, the SHPO and all other Tribes that request contact, and 3) resumption of activity only upon written permission from all authorities involved.

Without such a mitigating plan, the analysis of Historic and Cultural Resources is incomplete and inadequate. Additionally, the analysis contains the fatal assumption that the Proposed Action would have no effect on those resources.

Indian Sacred Sites

The last sentence of Section 3.14.1 states, "There is no corollary statute [to Executive Order 13007] in State codes pertaining to Indian sacred sites on non-Federal lands." This statement is simply untrue. There *is* a corollary state statute, and in fact the letter from SHPO in Appendix C refers explicitly to it, stating, "Impacts to Native American graves and cultural items are considered a Class C felony (ORS 97.740-760)." Since Native American graves and cultural items are protected as Indian sacred sites by ORS 97.745, the statute is a corollary to EO 13007 and applies to all lands, including private lands, within the jurisdiction of the State of Oregon.

The analysis of Indian Sacred Sites is based on factual errors and is therefore entirely inadequate.

Indian Trust Assets

According to Section 3.15.1 of the DEA, Mr. Greg Norton at the Bureau of Indian Affairs (BIA), Siletz Agency was contacted and stated that there are no known land, mineral, hunting, fishing, or other Indian rights in the project area. However, according to Mr. B.J. Howerton, Environmental Compliance Specialist at the BIA Northwest Regional Office, "there *are* known, land, mineral, hunting, fishing, and other Indian rights in the project area" (letter, April 27, 2007) (emphasis added). Perhaps Mr. Norton was saying that there were no known ITAs claimed by the Siletz Tribe in the area, or perhaps Mr. Norton did not have access to some information possessed by the BIA Northwest Regional Office. Either way, the Northwest Regional Office is the appropriate authority to contact regarding the Proposed Action, and it was not contacted here.

For this reason, the analysis of Indian Trust Assets is incorrect.

Cumulative Impacts

The Council on Environmental Quality (CEQ) defines "Cumulative impact" as "the impact on the environment which results from the incremental impact of the action when added to other past, present, *and reasonably foreseeable future actions* regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (CEQ Regulation 1508.7) (emphasis added). Section 3.17 of the DEA addresses impacts from present and pending applications for water service contracts. However, it ignores the cumulative impact from reasonably foreseeable future water service contracts. If, as the DEA asserts, there are 61 pending applications for water service contracts

currently, then it is reasonable to foresee that more applications will be made in the future, especially considering that there are 1,592,800 acre-feet available for multiple use.

Section 3.17's analysis assumes that the 61 pending applications will be the last applications ever made, which is a fatal assumption, especially if PCWD's water service contract is granted here. Allowing a water district to have a water service contract as nothing more than an 'insurance policy' would set a precedent and establish a pattern on the Willamette. Irrigators and other water appropriators up and down the Willamette would then demand 'insurance policies' of their own and would likely come forward with little proof to substantiate their need, as PCWD has done here. Taken individually, these actions would probably have a minor impact on resources in the Willamette, but collectively they could be devastating, especially in times of low flows.

To say that the majority of the water service contract here is for "supplemental" or "emergency" use is no defense. If flows on the Willamette become so low that the supplemental contract takes effect, further diversion of water could potentially harm resources in the river that much more. The extent of that potential harm is unknown to me, but it is not for me to say. The burden of proof in an EA rests with the proponent of the action. Here that burden has not been met, and the analysis is incomplete.

Water Quality

Section 3.4 of the DEA consists largely of unsupported assertions which are sometimes contradictory and often leave the reader with many unanswered questions. My comments to this section will address these assertions one at a time.

1. "There is a strong potential for positive impacts on Palmer Creek from the supplemental water in this contract." What is the basis for this statement? How strong a potential? How positive are the impacts; in other words, by how much will the additional flow lower temperatures in Palmer Creek? Do the positive impacts outweigh the negative impacts?
2. "Low to nonexistent flows in Palmer Creek degrade water quality in Palmer Creek and the Yamhill River." How? If the degradation is through increased temperatures, how much is the temperature raised during low flow periods?
3. "The agricultural return flows will add an unknown amount of nutrients into Palmer Creek." Why is this not known? Can it be reasonably estimated or extrapolated from known data? What kinds of nutrients are they? What are the known impacts to aquatic species from the addition of these nutrients?
4. "The potential effects to Palmer Creek and the Yamhill River include: increased salinity, increased inorganic nutrient concentrations, increased water temperature, and decreased dissolved oxygen concentrations." *Increased* water temperature? I thought water temperature was supposed to decrease as a result of the Proposed Action. What is the expected or reasonably estimated degree of these effects? How will they impact aquatic species? This sentence seems to directly contradict both the sentence that follows it and this sentence from Section 3.7.2, Fisheries: "No alteration would occur to water quality…". From the sentence about potential effects to Palmer Creek and the Yamhill River, it certainly appears that water quality *would* be altered, perhaps significantly.
5. "The impacts expected for the Yamhill River are limited primarily to maintenance of flow levels." This sentence is seemingly contradicted by the sentence above.

6. "Return flows to the Willamette River…are expected to be similar in quality to the original diversion." Based on what? How is this known or expected? Wouldn't the effects to Palmer Creek and the Yamhill River be transported down to the Willamette?
7. "There is minimal potential for negative impacts on Willamette River water quality." Again, based on what? How is this known or expected? How minimal is "minimal"?
8. "The most significant anticipated change to current conditions is that contracted water would keep Palmer Creek wet when it might otherwise dry up." Besides sounding extremely unscientific, there are problems with this sentence. What if "keeping Palmer Creek wet" results in more agricultural runoff (i.e. more chemicals) into the Yamhill and Willamette Rivers? Isn't that a significant change? What if Palmer Creek drying up isn't such a negative impact in comparison? Again, how do the positive impacts (e.g. lower temperatures) stack up against the negative effects (e.g. increased inorganic nutrient concentrations, increased salinity, decreased dissolved oxygen concentrations)? There seems to be an assumption here that a decrease in temperature, however slight, would outweigh all other water quality criteria.

Overall, this analysis is so lacking in support, full of assumptions, contradictory and confusing that it could hardly be used as the basis for any sort of rational decision. It is grossly inadequate since its utility in arriving at a decision is very limited.

Since the analyses of Flood Plains and Wetlands, Fisheries, Wildlife, and Threatened and Endangered Species depend highly on the Water Quality analysis, these analyses too are highly flawed and should be revisited at the same time as Water Quality.

Conclusion

The DEA contains unsupported or improperly supported assertions, assumptions, factual errors, contradictions and errors of logic, and is therefore ineffective as an Environmental Assessment. Unless and until the DEA's inadequacies are appropriately remedied, the No Action Alternative should be chosen.

Once again, thank you for the opportunity to comment. Please add me to your mailing list for future comment and consultation. If you have questions, please do not hesitate to contact me.

Sincerely,

Michael Karnosh
Ceded Lands Coordinator
Confederated Tribes of Grand Ronde, Natural Resources Division
P.O. Box 10
Grand Ronde, Oregon 97347
Phone: 503-879-2383
Email: michael.karnosh@grandronde.org

United States Department of the Interior

BUREAU OF RECLAMATION
Lower Columbia Area Office
1503 NE 78th Street, Suite 15
Vancouver, Washington 98665-9667

IN REPLY REFER TO:
PN-6518
ENV-6.00

JAN 11 1996

Subject: Public Comment Sought on Draft Environmental Assessment for Proposed Water Service Contract for the Palmer Creek Water District Improvement Company, Willamette River Basin Project, Oregon

Ladies and Gentlemen:

The Bureau of Reclamation is proposing to enter into a water service contract with Palmer Creek Water District Improvement Company for 12,937 acre-feet of irrigation water to be delivered from the Willamette Basin Reservoir System. The contracted water would be used to provide a primary water supply to 228 acres of irrigable lands and a supplemental water supply to 4,947 acres of land.

Lands proposed to receive water under the water service contract would receive water through an existing distribution system. The water supply would come from water diverted from the Willamette River where it is pumped to a canal which conveys it to Palmer Creek. Palmer Creek flows north for 15 miles to the city of Dayton, Oregon.

There are 11 reservoirs on the Willamette Basin Project which store water for irrigation. The proposed action is authorized under provisions of the Reclamation Act of June 17, 1902 (32 Stat. 388), Section 8 of the Flood Control Act of December 22, 1944 (58 Stat. 887, 891), and acts amendatory. Although the proposed action is statutorily authorized, Reclamation must first analyze the environmental impacts of the proposed action in compliance with the National Environmental Policy Act (NEPA) before a water service contract can be considered. The enclosed draft environmental assessment (EA) describes the proposed water service contract and provides an analysis of the potential environmental effects of the project.

We would appreciate your assistance in reviewing the draft EA and identifying any resource issues and potential environmental effects that could result from issuance of the proposed water service contract. Additional information or suggestions on alternative actions to the project are also solicited and will be considered prior to our final decision.

Your written comments should be submitted to the above address, Attention: PN-6518, by February 13, 1995. If you have questions, please contact Ms. Jill Lawrence at (208) 378-5035. Thank you for your assistance.

Sincerely,

Eric Glover
Acting Area Manager
Lower Columbia Area Office

Enclosure

Oregon
John A. Kitzhaber, M.D., Governor

Department of Environmental Quality
811 SW Sixth Avenue
Portland, OR 97204-1390
(503) 229-5696
TDD (503) 229-6993

December 24, 1998

Mr. Eric Glover
Area Manager
Lower Columbia Area Office
825 N. E. Multnomah Street, Suite 1110
Portland, OR 97232-2135

Re: Draft Environmental Assessment for the Proposed Palmer Creek Water Service Contract

Dear Mr. Glover:

DEQ reviewed your draft environmental assessment, dated January 1996, for the proposed water service contract for Palmer Creek Water District (PCWD). Our comments were provided in my letter to you of February 12, 1996. Since then, I understand that PCWD has revised the draft environmental assessment to clarify the amount of new flow proposed for the contract.

Mr. Richard Craven contacted me on November 25, 1998, to discuss the proposed project, our comments on the draft, and to clarify the nature of, and amount of flows that will be requested from storage. It is my understanding that the environmental assessment has been revised to clarify the contract request and that you wish to prepare a Finding of No Significant Impact at this time.

Based on clarifications received at the meeting with Mr. Craven, I understand the project as follows:

> The PCWD presently has water rights for natural flows from the Willamette River and contracts with the Bureau of Reclamation for stored flows. Table 1from the environmental assessment has been revised to document these water rights.
>
> The PCWD desires to purchase additional water by contract with the Bureau of Reclamation for the purpose of assuring the availability of water to the PCWD during periods when natural flows already under permit may not be available. The permit application numbers and amount of water proposed for purchase are shown in Table 1.

DEQ-1

The environmental assessment addresses impacts from purchase of stored water in a Corps of Engineers reservoir where water is stored and allocated for this purpose.

Additional natural stream flows in the Willamette River would not be purchased, nor would they be diverted by the contract.

The contract for stored flows would be up to 64.68 cfs. Of the 64.68 cfs, only 2.5 cfs would be for a primary right; the remaining 62.18 cfs would be for supplemental rights.

The stored flows that would supply 2.5 cfs would be a primary right to irrigate 228.19 acres of land.

The stored flows that would supply up to 62.18 cfs would be a supplemental supply and would not be used in addition to present water rights unless present sources do not supply the presently permitted amounts. In other words, as the presently permitted natural and stored flows decrease, the new contract would allow additional flows to make-up the shortfall to provide irrigation water to land already presently irrigated.

The net change in present flows to the PCWD would be an additional 2.5 cfs for the primary right. The environmental assessment primarily addresses the additional 2.5 cfs. The net change in flow would not measurably adversely impact any water quality conditions.

The supplemental flow of up to 62.18 cfs would be used to offset natural flows that would not be available during dry water years or if more senior water rights had priority. The availability of contracted stored flows during dry water years to provide water in wetlands and riparian areas associated with the irrigation system would be beneficial to natural resources.

I believe that our concerns have been addressed in the clarification discussion and the revised draft environmental assessment. Based on the clarifications and my understanding, please regard this letter as DEQ's final comments on the project. We have no objections to the Bureau preparing a Finding of No Significant Impact for the project.

Sincerely,

Russell Harding, Manager,
Watershed-Basin Section
Water Quality Division

Table 1.--Present Water Rights for Natural, Contract, and Proposed Contract Flows

Source	Permit No.	Priority	Acres	Acre-Feet	Rate (cfs)
1.0 **Natural flow** from ~~Palmer Creek~~ Willamette River	32243	1967	3265.2	8163	40.82
	34436	1969	288.7	721.75	3.61
	36216	1971	53.6	134	0.67
	39385	1975	219.6	549	2.75
	41499	1977	103.3	258.25	1.29
	42316	1977	60	150	0.75
	43380	1978	234.2	585.5	2.92
	44954	1980	294.9	737.25	3.69
	47405	1981	262.39	655.98	16.87
	50945	1987	397.2	993	4.97
	A-70736	1990	439.6	1099	5.5
	A-71731	1991	100.45	251.1	1.26
Total			5719.14	14297.85	85.42
2.0 **Existing Storage** Contract with Reclamation for Supplemental Water Supply	43379	1977	~~591.2~~	591.2	~~7.39~~
3.0 Proposed Contract with Reclamation	*A-70109-10, 70736, 71731 72555, 72668*				
Primary Supply			*228.19*	*570.48*	2.5
			4946.45	*12,366.13*	62.18
Supplemental					*64.68*
TOTAL			*5174.64*	*12,936.6*	

Oregon

DEPARTMENT OF ENVIRONMENTAL QUALITY

February 12, 1996

Eric Glover
Acting Area Manager
Lower Columbia Area Office
Bureau of Reclamation
1503 NE 78th Avenue, Suite 15
Vancouver, Washington 98665-9667

Re: Draft Environmental Assessment for the Proposed Palmer Creek Water Service Contract

Dear Mr Glover:

Thank you for the opportunity to review the Draft Environmental Assessment for the proposed Water Service Contract for the Palmer Creek Water District (PCWD). It is our understanding that the contract would be used to provide a primary water supply to 228 acres of irrigable lands and supplemental water to 4,947 acres. The proposal would divert an additional 12,936 AF of water as an "insurance policy".

Water is currently diverted (591 AF of stored water) from the Willamette River at river mile 73.5 and delivered through an existing 3 mile dirt canal distribution system to Palmer Creek. Palmer Creek flows north for 15 miles were it then flows into the Yamhill River at river mile 5 near Dayton.

Purpose and Need

The DEA states that irrigation water is scarce in the area due to limited surface water and groundwater resources. This statement is not substantiated with any data. The DEA states that due to the number of senior water rights in the area and the need to maintain minimum flows in the Willamette River it is possible that PCWD may be unable to use its existing water right for natural flows during water short years (every fifth year). This appears to be an estimate and is not supported with information. There is no data showing PCWDs irrigated acreage, historic water use, current or anticipated needs. No data is included showing that PCWD actually needs additional water much less 12,936.6 AF.

Other Related Actions and Activities

This section has several serious flaws and omits relevant actions in progress that would be critical to water appropriations of this size.

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To Eric Glover	From Barb Priest
Co.	Co. DEQ WQ SR
Dept.	Phone #
Phone # 206 576 8858	
Fax # 2 AM 571 0174.1	Fax #

811 SW Sixth Avenue
Portland, OR 97204-139
(503) 229-5696
TDD (503) 229-6993
DEQ-1

Federal Clean Water Act

For example the Oregon Department of Environmental Quality (DEQ) under the Clean Water Act is responsible for listing Water Quality Limited Streams (WQL) and establishing Total Maximum Daily Loads (TMDL)

WQL is defined any waterbody that does meet federal water quality standards - even after the best available technology is applied to discharges. In other words, a WQL stream is over it's carrying capacity due to existing cumulative effects from both nonpoint source and point source pollution.

The DEA does not note that both the Willamette and Yamhill basins have existing water quality problems. Out of date water quality data is used. The draft 1996 303D list is for Oregon is attached.

The Willamette River is Water Quality Limited (WQL) under the Federal Clean Water Act for dioxin. The Willamette in the vicinity of Dayton is also on the proposed WQL list (to be adopted in April 1996) for algae, fecal coliform, temperature, biological criteria (skeletal deformities in fish), and toxics (in tissue and the water column - 2,3,7,8-TCDD). The Yamhill basin is listed as Water Quality Limited under the Federal Clean Water Act for algae, fecal coliform, pH, phosphorus, and temperature.

EPA and DEQ are currently under a court order to identify and clean up WQL basins. Once a basin is declared WQL DEQ cannot allow additional permits or actions that would affect WQL streams exacerbating the known problems.

Minimal Stream Conversions in the Willamette Basin

The DEA fails to address or note the conversion of minimal stream flows in the Willamette Basin (mainstem and tributaries) which have not been converted to instream water rights, these pending instream water rights date from the 1960's. Unconverted minimum perennial stream flows exist on the mainstem above and below the proposed point of diversion. The minimum flows are critical to the health of the river - to provide dilution of the existing pollution load from point and nonpoint sources in the tributaries and mainstem. The proposed action would prejudice the conversions of minimum flows and exacerbate the existing water quality problems.

Reauthorization Study

The Bureau of Reclamation is currently issuing contracts based on a 1969 study making allocations until the COE/WRD feasibility study of the Willamette Basin is done.

The DEA notes that in 1989 COE did a Reconnaissance Study of the Willamette Basin looking at alternative operational scenarios to provide increased flows for beneficial uses, earlier filling and later drawdown rates of reservoirs, changing drawdown priorities and associated storage changes. Please note that this resulted in COE, the State of Oregon and numerous Oregon municipalities cooperatively funding a full scale feasibility study. The feasibility study will determine if modifying the operation and storage allocations of the existing COE reservoirs in the Willamette Basin would better serve current and anticipated future water resource needs of all users.

Other Water Right Applications

There are also numerous existing outstanding water right applications pending with the Bureau which are not mentioned except briefly in another section. Irrigators and municipalities are seeking to reserve approximately 550,000 AF in the existing basins. The DEA fails to identify and address these additional contracts which are directly related to the proposed action.

The DEA proposal would limit options being reviewed under the Reauthorization study by committing 12, 936.6 AF of the conservation storage space. DEQ does not believe that the proposed contract or any other contracts should be issued until the Reauthorization study is done. This contract would in essence circumnavigate Bureau of Reclamation's stated goal of managing water for the benefit of the public, which includes all users, not just irrigators.

Alternatives Discussion:

Issuance of any contract at this time, in particular with PCW, would circumnavigate the intent and purpose of the Reauthorization study. At this time the Willamette Basin is the only basin left in the state that does not have minimum flow water rights (priority dates from 1960's) that have been converted by WRD for beneficial uses. It is very likely that to meet the minimum flows for beneficial uses stored water will need to be contracted by the state. Until the Feasibility study and Willamette conversions are done no additional water from the Willamette should be contracted due to water quality impacts.

The water quality impacts from allocation of this water to PCWD are not discussed in light of the lack of minimum flow

conversions or the feasibility study. Removal of additional water will exacerbate the existing poor water quality of both the Willamette and the Yamhill Rivers.

The DEA states that no new diversions or irrigation ditches would be needed and no new land leveling activities because the canal would be capable of conveying the additional water. This is unlikely, higher flows would necessitate changes in diversions and the higher flows would increase erosion, requiring action (new 401 permits and DEQ water quality certifications).

PCWD notes that it would use the technical resources from OWRD and Reclamation to develop and implement a Water Conservation Plan and Schedule as a condition of the proposed contract. Yet under the "Conservation Alternative" this alternative is not actually evaluated or considered.

The DEA states that the PCWD is operating at an efficiency of only 50 to 70% yet no data is offered to validate this. Then the DEA notes that the operating efficiency as being within common industry practices. This is important since the PCWD is located in a WQL basin. What are common industry practices? Next the DEA states that the costs associated with conservation measures are expected to be prohibitive; this again is not documented. What is this based on? How much water could be saved if measures are taken? What would the effect be on water quality? What are the costs?

To address existing water quality concerns a lined canal would at least stop the existing contamination of local groundwater resources by surface water uses (page 2-2 notes that there is potential for interference with surface water). At a minimum conservation must be implemented by all water users as growth occurs in the Willamette Valley over the next decade. This is particularly important in those basins listed as WQL.

In short conservation options need to be fully developed and documented. By presenting only one contract option the DEA ignores the alternatives. An obvious alternative is a short term contract pending until the results of the Reauthorization study.

<u>Affected Environment</u>

The existing conditions "will provide the baseline from which effects of PCWD proposed action on the environment can be measured". Yet in most instances little actual baseline data is presented. The impacts are not evaluated in terms of effects to other users and proposed projects.

Hydrology

No hydrology data is presented other than flow data for surface water being diverted. What about effects to groundwater? Increased flow for the diversion could alter erosion patterns on the main stem impacting other users. What about potential impacts on existing permittee with mixing zones? Increased bed sediment transportation? The DEA states no measurable effect would occur but this is not backed up with any real data (which is the purpose of the Feasibility study and modeling). Please detail the impacts to the Yamhill river which will have "significantly" lower return flows. Might this impact other beneficial uses and water rights holders? No mitigation measures are offered.

Water Quality

The existing conditions fail to note that the Willamette and Yamhill are WQL/TMDL streams. It is noted that return water has elevated nutrient and fecal coliform levels. Please document the differences in the quality of the existing return flow to the Yamhill River. DEQ data is cited from 1987, please use the available data from 1994 and draft 1996 303D list which is much more accurate and applicable to the existing baseline.

Under the Clean Water Act DEQ is required to identify streams that are water quality limited. Once identified as WQL local basin water users are required to develop Water quality management plans (see SB1010). Water quality management plans in Oregon for non point source pollution are to be developed by the Oregon Department of Agriculture in tangent with NRCS. What actions has the PCWD taken to reduce their existing contribution to the non point pollution in the Yamhill basin? No additional discharges are allowed for the parameters listed as long as the river is listed as WQL. All water users in the Yamhill basin are considered to be part of the problem in the basin.

The DEA does not provide DEQ with adequate data (ie. monitoring for listed problems) to prove that no impact will occur from additional discharges by the applicant. The report does not establish what the existing baseline (ie. nutrient delivery) is, therefore the effects are not known. While increased flows might help to dilute the water quality problems, continuing over use without conservation only adds to the problem. Until minimum flows for this subbasin are converted to instream water rights any additional loss of water from the mainstem or to the Yamhill will exacerbate the existing problems to other beneficial uses.

Increased flow alone will not help with water temperature problems, rather it can best be lowered by replacing the riparian habitat buffer, fencing off livestock and planting trees.

The DEA states that it is possible that nutrient loads from return flows to Palmer Creek may increase and negatively impact the Yamhill. What would be the impact be to groundwater and surface water or other users? How would the PCWD mitigate this? PCWD offers to monitor the quality of Palmer Creek water near the confluence with the Yamhill to determine the increased nutrient loading. However, PCWD would be investigating pollution reduction only after impacting other users, leaving PWCD open to lawsuits. It is upon the applicant to first prove that they will have no impact to other users.

It is commendable that water quality would be address further in the water conservation plan, but this has yet to be developed and submitted to DEQ for review and approval. PCWD offers to maintain existing erosion control structures and to apply erosion control to future construction - this is already required as part of their existing permits and would be required for any new state permits. To prevent and control erosion associated with the canal it should be either lined or have a riparian buffer of 25 feet for erosion control. Wetlands could be replaced and enhanced to filter pollutants.

Currently by taking water from the Willamette into the Yamhill PCWD is risking the chance that dioxins and other toxics are being introduced into crops and groundwater (local drinking water) and polluting the Yamhill.

What about changes in types of crops? Wouldn't this change the types of chemicals used and farm practices? Why would the contract water only be used during drought years? Changes in water use might increase nutrient loads and further impair water quality this would be a significant impact that must be addressed. As the Willamette and Yamhill basins do not meet existing standards and it could be worse if the reservoirs do not release water to meet minimum flows.

Flooding and Wetlands

The existing reservoirs are noted to support extensive wetlands. Wetlands are valued as flood catchment areas and as filters for water quality. This is not addressed. What percentage of the original wetlands on Palmer Creek still exist and are functional? What percent are now farmed? Is this related to the decline in the water quality? How would the additional use of the irrigation water affect existing and downstream wetlands? Have the wetlands been delineated following DSL wetland identification? Until this is answered this subject has not been

adequately addressed and is not documented.

The DEA states that no impact to floodplains is anticipated. It further states that floodplains along rivers do not change as dramatically as they do in the reservoirs. This is not accurate, the Willamette floodplain has been extensively manipulated by human activities, which with growth, has acted to raise the flooding level over time. To what elevation did it flood in February 1996? If the PCWD diversion had been breached, allowing flood water to flowing into the canal would the flood levels and impacts have been greater? Include increased economic loss as a factor.

Since the return flows to the Yamhill are not documented the impacts are unknown and must be determined through data collection before stating that they would not be significant.

Vegetation

No data is offered on existing riparian vegetation. Is there a riparian buffer to filter return water from irrigation or is the land current farmed down to the waters edge? Is there tree cover to shade the waterway? How would this effect downstream users and water quality? Please provide more information about the enhancement of riparian areas and the existence of the retention facility on the Stoller property. Document why riparian conditions are considered to be good (page 3-14)? Increased flows would likely increase bank erosion, removing existing vegetation and requiring the use of riprap. This is not noted.

Fisheries

The DEA identifies a variety of local resources (fall and spring) chinook, cutthroat trout, sturgeon, perch, bass, and others in the Willamette. There are winter steelhead, coho, cutthroat trout also in the Yamhill. ODFW information finds that most of these are likely to have been present in Palmer Creek historically.

Palmer Creek currently supports a localized sport fishery of large mouthed bass and crappie. Prior to the establishment of PCWD the creek was dried up during the irrigation season, eliminating the sport fishery. PCWD has maintained the stream's water flow year round. What effects would changes to the water quality and flow have on the various fisheries?

The water intake at the diversion point is screened to avoid fish entrapment as are the 40 other diversions located along the canal and creek. The DEA states that low flow conditions, water temperature, presence of low head irrigation dams and flash board diversions hinder upstream fish migration of coho and cutthroat

so it is unlikely that this use exists now. The data thus presented shows it is likely that the local fishery (beneficial use) has been impacted by human alteration. This is a significant adverse impact.

Increased flow would dilute the existing pollution and potentially improving habitat and fishing opportunities. Yet the increased flow could also erode the habitat which is not identified.

Several of the fish species that are noted to exist in the Yamhill and Willamette are canidates to be listed as threatened and endangered, which needs to be addressed.

Wildlife

Page 3-16 notes that PCWD lands do not have heavily vegetated riparian areas. This is in conflict with statements made earlier. Higher flow would likely flood out and change the nesting areas of the documented upland game species and waterfowl. This impact is not addressed nor are the impacts of changes in water quality on the wildlife. What species are missing due to existing pollution problems? How would this change with more water?

The DEA says no crop changes will occur due to the additional water use. How would a crop shift affect the riparian fringe, water quality, wildlife and fishery?

The DEA documents degradation of the wildlife habitat due to illegal dumping of wastes from bridges and offers to monitor and clean up such actions which is commendable, but could be expensive.

Other Beneficial Uses

The remaining discussions of other beneficial uses are also inadequate and need better documentation. Correlations must be dealt with linking back to changes in flow, water quality and likely impacts. By taking water from the Willamette what impacts will occur to downstream users and other beneficial uses? This is not addressed.

Cumulative Impacts

Only three proposed or ongoing activities are identified. The DEA hardly addresses those listed not to mention those missing as noted in this review. All potential cumulative effects must be addressed and documented before this contract is implemented. The Reauthorization study will be evaluating these issues in detail, and could provide answers to assist in this evaluation.

DEQ cannot support this proposed action due to potential water quality impacts to minimum flows, the reauthorization study and other beneficial uses that must be protected. Thank you for the opportunity to outline our concerns. Attached please find a copy of the proposed 1996 303D list of Water Quality Limited waters for Oregon.

Sincerely,

Russell Harding
Manager, Standards and Assessments
Water Quality Division

BP:burecl.1

cc:
Joni Lowe, LOC
Reed Benson, Waterwatch
Dwight French, WRD

WaterWatch

RIVERS NEED WATER

February 12, 1996

Eric Glover
Acting Area Manager, LCAO
1503 NE 78th Street, Suite 15
Vancouver, WA 98665

VIA TELECOPIER AND REGULAR MAIL

Re: comments on proposed contract for Palmer Creek Water District

Dear Eric:

WaterWatch of Oregon is a nonprofit environmental group that works at the state and federal levels to restore and protect streamflows on rivers throughout Oregon. We have reviewed the Draft Environmental Assessment (DEA) on the proposed water service contract for Palmer Creek Water District Improvement Company (PCWD), and offer the following comments.

The proposed contract

We believe the proposed contract should not be issued at this time. The Corps of Engineers, the State of Oregon and many Northwest Oregon municipalities are currently spending hundreds of thousands of dollars on a study of the Willamette River Basin Project. This study will identify and analyze options for a reauthorization of the project, so that it can better support a full range of public uses in the Willamette Basin. The reauthorization study is extremely important, particularly since it involves several issues which have been front-page news in Oregon over the past several months: flood control, salmon/steelhead survival, and Portland municipal water supply, to name a few.

This contract jumps the gun on the reauthorization study. It narrows the options by committing almost 13,000 AF of the conservation storage space. While the action may be authorized by existing federal laws and state water rights, it is not good public policy. It simply does not fit with Reclamation's stated goal of managing water for the benefit of the public, not simply irrigation.

No contract should be issued until the reauthorization study is completed. *At a minimum, the proposed water service contract should terminate after four years, so that Reclamation can revisit this matter after the reauthorization study is completed.*

The Draft Environmental Assessment

The DEA is seriously inadequate. Crucial data are missing or insufficient. The alternatives considered are far too narrow. The water quality section is badly flawed. And the cumulative impacts discussion omits major factors. A supplemental EA should be issued which corrects these flaws.

Crucial data are missing or insufficient.

The proposed action is based on PCWD's request for up to 12,936.6 AF of stored water. However, the DEA provides no hard facts showing that PCWD actually needs that much water. The only information supporting a need for *any* additional water is a personal communication with Sam Sweeney of PCWD. There are no data showing PCWD's actual irrigated acreage, historic water use, or current or anticipated water demands. There are no data on the adequacy or reliability of existing supply—only an unsupported statement about senior water rights and a guess by Sweeney that the supplemental supply would be needed once every five years. In fact, the DEA can only conclude that "it is feasible that PCWD may be unable to use its existing water rights for natural flows during water-

WaterWatch of Oregon • 213 Southwest Ash, Suite 208 • Portland, OR 97204
Phone: (503) 295-4039 Fax: (503) 295-2791 Email: watrwtch@teleport.com

short years" (pp. 2-1, 2-2). In other words, it isn't at all clear that PCWD really needs water, or if it does, how much it needs.

The same is true regarding irrigation efficiency and the prospects for water conservation. The only information showing PCWD's current water use efficiency is an estimate by Sweeney that it is around 50-70 percent. This appears to be a "ballpark figure," and nothing shows what the broad range of 50-70 percent is based on, but the DEA accepts it uncritically. The DEA then states that PCWD's estimated efficiency is "within common industry practices," but again there are no facts to support that assertion. Finally, the DEA states that the cost associated with water conservation measures "is expected to be prohibitive" (p. 2-4). What is this cost? Who expects it to be prohibitive? Based on what? How much water might be saved if these measures were implemented? The DEA doesn't say.

Finally, the DEA uses outdated water quality information. The Oregon Department of Environmental Quality recently issued a draft 303(d) report, which provides more recent and complete water quality data for the Willamette and Yamhill Rivers.

The alternatives considered are too narrow.

The DEA really considers only two alternatives: no action, and a PCWD water service contract for up to 12,936.6 AF of unspecified but presumably long duration. The DEA lists four other alternatives, including water conservation, as having been considered but eliminated from further consideration.

The conservation option needs further consideration. As stated above, the section on conservation contains no data on PCWD's existing efficiency or on the possible cost or effectiveness of various conservation measures (p. 2-4). The DEA states that even at 100 percent efficiency, the system would still provide too little water to meet PCWD's needs, but there are no facts or analysis on what those needs really are.

By presenting only one contract option, the DEA ignored some obvious alternatives. It should have considered smaller contracts, that is, contracts for lesser amounts of water. If the DEA had data showing PCWD's actual water demands and the prospects for feasible water conservation measures, it might show that the district could get by with a lot less stored water than proposed.

In addition, the DEA should have considered an option for a *short-term* water service contract to last no longer than, say, four years. This option would preserve Reclamation's ability to revisit the contract at the completion of the pending reauthorization study. It also would allow data to be developed on PCWD's actual water needs and on the environmental effects of the proposed use.

The water quality section is badly flawed.

Probably the major environmental impacts of the proposed action relate to water quality. The DEA, however, gives short shrift to these potential impacts in just over two pages of analysis. The data and analysis presented do not support the conclusion that there will be no significant water quality impacts (p. 3-9).

As already mentioned, the DEA uses outdated water quality data.

Many key statements in the DEA are unsupported by data, analysis or environmental commitments, and several of them seem counterintuitive. These statements include:

> "The quality of Palmer Creek water is not expected to change significantly due to the proposed action". This statement appears based on an assumption that irrigation practices within PCWD won't change because of the proposed action. But if district growers suddenly have an additional 13,000 AF of water at their disposal, they probably will do some things differently.

> "The impacts expected for the Yamhill River are limited primarily to maintenance of flow levels". This statement assumes not only that the previous statement is true, but that Palmer Creek flows don't change as a result of the proposed action. But if Palmer Creek flows increase as a result of the contract (which they probably would if PCWD uses the contract as anything more than an emergency drought supply), and if that water is as polluted as other irrigation return flows in the Yamhill Basin, the proposed action could further impair water quality in the Yamhill.

> "The proposed water contract would be used primarily during drought years". This statement appears to be based solely on wishful thinking. The PCWD manager stated only that the district's existing supply was inadequate to meet existing demands in roughly every fifth year; he *did not* say that the district would use the water only in drought years, or that PCWD's cropping patterns would not change if it received the proposed contract. In fact, providing PCWD with a secure source of stored water seems likely to lead to long-term changes in district water use, as water supply no longer constrains growers' planting decisions.

The EA does admit that the proposed contract might cause changes in PCWD's water use, which could increase nutrient loading and further impair water quality in the already-polluted Yamhill. However, the EA makes no effort to assess how likely or serious these effects could be. And the EA fails to explain its conclusion that further irrigation-related water quality problems in the Yamhill are not a significant environmental impact (p. 3-9).

Moreover, the DEA does not even acknowledge a major water quality issue regarding the proposed action. The Willamette River does not meet water quality standards for several parameters, and it would be far worse if the Willamette Basin Project reservoirs did not release water to meet minimum flows in the mainstem. In the future, particularly in drought years, there may be too little water stored in these reservoirs to meet all demands for irrigation, M&I uses, and instream needs for water quality and fish & wildlife habitat. The proposed contract would commit 13,000 AF to irrigation uses, foreclosing the possibility of using it for anything else, including water quality needs. That 13,000 AF could be significant, especially in a drought year when the Willamette Basin reservoirs are well short of filling.

For these reasons, the EA needs far more information and analysis on water quality impacts. Reclamation should consult with the Oregon Department of Environmental Quality, which was apparently not contacted for the DEA (p. 4-1).

The cumulative impacts discussion omits major factors.

The cumulative impacts discussion on pp. 3-31 and 3-32 identified three "proposed or ongoing activities that could result in incremental impacts to various resources that could be affected by the proposed action." These activities were Corps of Engineers flow releases from the Willamette Basin dams, Reclamation's water marketing program, and state water right applications. But the DEA devotes only two sentences to each activity, and in each case it leaves out a major factor.

As for Willamette Basin project releases, the DEA states that the Corps of Engineers does not

anticipate changing its release patterns. It is possible that dam release operations will change significantly, however, based on the results of the pending reauthorization effort. A major focus of the study will be changes in dam releases. The DEA needs to evaluate how reauthorization might affect the proposed action, and vice versa. As stated above, WaterWatch believes Reclamation should not issue the proposed contract until the reauthorization is completed.

In mentioning Reclamation's water marketing program for the Willamette Basin, the DEA notes that there are 60 other pending applications for the use of up to an additional 11,000 AF of water. (Presumably this is the cumulative total for the 60 applications, although the statement as written is ambiguous.) The DEA ignores the prospect of additional contract requests. Given that both irrigation and municipal interests are seeking to reserve at least 550,000 AF of space in the existing Willamette Basin reservoirs (as explained below), such requests are not only foreseeable, but likely. The DEA should consider this probability, rather than focusing only on existing contract requests.

Under the heading of "OWRD Applications," the DEA notes that new water rights cannot be issued on the Willamette below Salem because it is already overappropriated. The DEA ignores requests by the Oregon Department of Agriculture and the Oregon Department of Land Conservation and Development to reserve mammoth quantities of water for irrigation and muncipal & industrial uses, respectively. The irrigation request seeks 1127 cfs of live streamflow, 225,000 AF from future storage, and 550,000 AF from existing federal storage. The M&I request seeks 266,225 AF of live streamflow and 20,992 AF from existing and future storage. By failing to identify these reservation requests, the DEA ignores enormous new claims on Willamette Basin water which are directly related to the proposed action.

Other OWRD Applications which the DEA fails to mention are minimum perennial streamflows in the Willamette Basin which have not yet been converted to instream water rights as required by law. There are unconverted minimum perennial streamflows on the mainstem Willamette both above and below the point of diversion, as well as on the tributaries with Willamette Basin Project reservoirs. One reason the minimum perennial streamflows remain unconverted is the uncertainty regarding the availability of water from federal storage. The proposed action could prejudice the conversions of the minimum perennial streamflows, but the DEA fails even to consider this issue.

Any cumulative impacts analysis of the proposed action should assess all these factors and more, such as water quality and fish needs on the Willamette mainstem and tributaries. All of these issues will be evaluated as part of the reauthorization study. This is another reason why the proposed action should be deferred until reauthorization is completed.

Thank you for the opportunity to comment.

Best regards,

Reed D. Benson
Reclamation Issues Director

xc: US Army Corps of Engineers
Oregon Department of Environmental Quality
Oregon Water Resources Department

Jan-13-99 05:03P

MEMO

To: Reed Benson, Water Watch
From: Richard E. Craven
Subject: Palmer Creek Water District Improvement Company, EA

Palmer Creek has decided to proceed with the completion of the EA for the proposed water service contract with the Bureau of Reclamation. The EA has been revised to reflect comments received from the DEQ relating to the amount of water requested. Palmer Creek is requesting an additional 570.48 acre-feet (2.5 cfs) as a primary right to irrigate 228.19 acres of land not presently irrigated. The remainder of the request (62.18 cfs) will be used to offset declining flows during drought years or when Palmer cannot divert flows because of other senior rights by other entities that predate Palmer's water rights.

I discussed the clarification with DEQ. According to DEQ, their concerns have been addressed. I have attached the DEQ letter for your files as discussed today. If you have any questions about the technical specifics of the letter, I probably can address them. If you have questions of a policy nature that relates to the Bureau of Reclamation (BR), then you probably should contact Eric Glover, although Bob Christensen (BR) in Boise is responsible for completing the EA. Mr. Christensen's phone number is 208-378-5039.

You can contact me at 650-0683. My fax number is 557-7540. My email is edmunds@teleport.com.

Memo

To: Reed Benson
From: Richard E. Craven
Subject: Palmer Creek Water District Improvement Company
Date: January 26, 1999

I appreciate the time for the conversation last Friday night concerning questions that you have about the Palmer Creek project. I called Sam Sweeney of the District that evening to discuss your request for additional information. He has provided additional information that may clarify your question of the historic delivery of water to the District, that is does the District presently divert or use 2.5 acre-feet per acre.

The District started operation in 1968. Since 1968, the District has increased in size from approximately 3500 acres to 5900 acres. Irrigation water is pumped from the Willamette River to the District canal. Water flows down the canal and eventually to Palmer Creek. Water in Palmer Creek is then pumped to provide irrigation flows.

Water use between 1968 and 1977 is shown below. Water pumped to the canal and the acre-feet pumped from the canal and Palmer Creek are shown for comparison.

Year	Acres in District	Water Diverted to the Canal (Acre-feet)	Acre-Feet Used
1968	3462	2366	826
1969	3569	2366	1245
1970	3569	2470	1465
1971	3620	2040	1470
1972	3620	1880	1448
1973	3620	2900	1612
1974	3938	3010	1172
1975	3938	2020	1134
1976	3938	2580	1015
1977	4050	2130	1244

As shown, the amount used is less than the amount diverted. The Water Resources Department measured flows diverted and acre-feet used for irrigation. An average of approximately 55% of the water diverted to the canal was pumped from the canal and Palmer Creek for irrigation. The remainer of the diverted water remained in Palmer Creek. According to Sam Sweeney, the value of 55% is not a canal efficiency (indicating loss of water during conveyance) since the canal is highly impermeable. The difference in water diverted to water used is a result of not pumping it from Palmer Creek.

MEMO

To: Reed Benson
From: Richard E. Craven
Subject: Palmer Creek Water District Improvement Company
Date: February 3, 1999

I appreciate the time for conversation concerning questions that you have about the Palmer Creek project. I called Sam Sweeney of the District to discuss your request for additional explanation. He has provided additional information that may clarify your question of the historic delivery of water to the District, that is does the District presently divert or use up to 2.5 acre-feet per acre.

The District started operation in 1968. Since 1968, the District has increased in size from approximately 3500 acres to 5900 acres. The District's use of water begins by pumping from the Willamette River to the District canal. The amount of water pumped to the canal depends on the amount needed for irrigation or for conveyance of water through the system. Excess water is not pumped because of the electrical pumping costs.

Once in the canal, water flows down the canal and eventually to Palmer Creek. Some water is pumped directly from the canal for irrigation, but the majority of water is pumped from Palmer Creek to provide irrigation flows.

Water use between 1968 and 1977 is shown below. Water pumped to the canal and the acre-feet pumped from the canal and Palmer Creek are shown for comparison.

Year	Acres in District	Water Diverted to the Canal (Acre-feet)	Ac-Ft/Ac	Acre-Feet Used
1968	3462	2366	.68	826
1969	3569	2366	.66	1245
1970	3569	2470	.69	1465
1971	3620	2040	.56	1470
1972	3620	1880	.52	1448
1973	3620	2900	.80	1612
1974	3938	3010	.76	1172
1975	3938	2020	.51	1134
1976	3938	2580	.65	1015
1977	4050	2130	.53	1244

The Water Resources Department measured flows diverted and acre-feet used for irrigation during these years. Based on acres in the District and the water diverted to the canal, the

application of water for irrigation was 0.51 to 0.80 acre-feet/acre.

As shown, the amount used is less than the amount diverted from the canal. An average of approximately 55% of the water diverted to the canal was pumped from the canal and Palmer Creek for irrigation. The remainer of the diverted water was necessary for conveyance, evaporation, seepage, or remained in Palmer Creek. According to Sam Sweeney, the value of 55% is not a canal efficiency (indicating loss of water during conveyance) since the canal is highly impermeable. The primary difference in water diverted to water used is a result of not pumping it from Palmer Creek. The water left in Palmer Creek likely cannot be reduced because conveyance flows are necessary to distribute water to users. Water remaining in Palmer Creek provides a beneficial impact to riparian conditions as well as the creek, and District considers this a cost of doing business.

Additional information also was provided by the District for comparison. The Water Resources Department did not measure water diverted to the canal (efficiency) during the years between 1988 and 1998.

Year	Acres in District	Water Diverted to the Canal	Acre-Feet Used
1988	4781	no data	3085
1989	4880	no data	2719
1990	5321	no data	2530
1991	5421	no data	2813
1992	5469	no data	3390
1993	5661	no data	2501
1994	5661	no data	3292
1995	5850	no data	2775
1996	5851	no data	2673
1997	5870	no data	2987
1998	5870	no data	3013

Measurements of the amount diverted to the canal versus acre-feet used were not made. According to Sam Sweeney, the value of 55% for "efficiency" is probably applicable for these years as well.

Based on the information provided, the District does not divert or use all the flow allowable, therefore the historic delivery to the District is less that the 2.5 acre-feet.

From: Richard Craven <edmunds@teleport.com>
To: Reed Benson <rdbwater@teleport.com>
Cc: Robert Christensen <rchristensen@pn.usbr.gov>; Eric Glover <eglover@pn.usbr.gov>
Date: Wednesday, March 03, 1999 6:45 AM
Subject: Palmer Creek

I talked to Sam Sweeney of Palmer Creek last night concerning the number of acres irrigated each year. He said that in recent years the number of acres irrigated is roughly the same number as the acre feet. If you review the February 3, 1999 memo from me for the years 1988 to 1998, this would be between approximately 2,500 to 3,400 acres, depending on the year (i.e., the right hand column on page 2).

From: "Richard Craven" <edmunds@teleport.com>
To: "Reed Benson" <rdbwater@teleport.com>
Date: 3/9/99 8:38AM
Subject: Re: Palmer Creek

Sorry that I did not get back to you. I have had a minor problem gettting on email from home. You can contact me at the office Monday if you would like to talk or clarify any information. Richard.
-----Original Message-----
From: Reed Benson <rdbwater@teleport.com>
To: Richard Craven <edmunds@teleport.com>
Date: Wednesday, March 03, 1999 7:41 AM
Subject: Re: Palmer Creek

>Richard,
>
>thanks for all your research on this. I got a call from Bob Christiansen
>the other day asking if we were going to send in comments on the proposed
>contract. I need to sit down, probably on Friday, go over this file and
>draft some sort of comment letter. Do we need to talk before then? If so,
>please give me a call some time in the next day or two. If not, I'll send
>you a copy of the letter.
>
> Reed
>
>At 06:45 AM 3/3/99 -0800, you wrote:
>>I talked to Sam Sweeney of Palmer Creek last night concerning the number
of
>acres irrigated each year. He said that in recent years the number of
acres
>irrigated is roughly the same number as the acre feet. If you review the
>February 3, 1999 memo from me for the years 1988 to 1998, this would be
>between approximately 2,500 to 3,400 acres, depending on the year (i.e.,
the
>right hand column on page 2).
>>
>><!DOCTYPE HTML PUBLIC "-//W3C//DTD W3 HTML//EN">
>><HTML>
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>><META content=text/html;charset=iso-8859-1 http-equiv=Content-Type>
>><META content="'MSHTML 4.72.3110.7"' name=GENERATOR>
>></HEAD>
>><BODY bgColor=#ffffff>
>><DIV><FONT color=#000000 size=2>I talked to Sam Sweeney of Palmer Creek
last
>>night concerning the number of acres irrigated each year. He said
>that in
>>recent years the number of acres irrigated is roughly the same number as
the
>>acre feet. If you review the February 3, 1999 memo from me for the
years
>>1988 to 1998, this would be between approximately 2,500 to 3,400 acres,
>>depending on the year (i.e., the right hand column on page
2).</FONT></DIV>

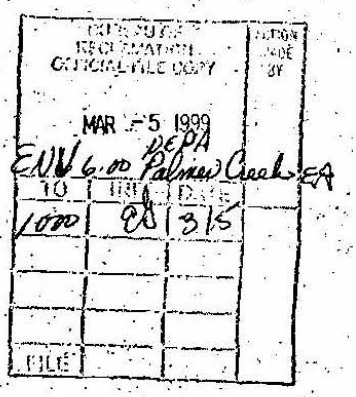
>><DIV> </DIV></BODY></HTML>
>>
>

CC: "Robert Christensen" <rchristensen@pn.usbr.gov>, "Eric Glover" <eglover@pn.usbr.gov>

WaterWatch

RIVERS NEED WATER

March 4, 1999



Eric Glover
Area Manager, LCAO
US Bureau of Reclamation
825 NE Multnomah
Portland, OR 97232

Re: proposed contract, Palmer Creek Water District

Dear Eric:

As you know, I have talked and exchanged several e-mails with Richard Craven regarding the proposed Palmer Creek Water District (PCWD) water service contract and the draft Environmental Assessment (DEA) on that contract. Richard has been very helpful in producing useful information on this issue, answering some of my big questions.

WaterWatch continues to have major concerns regarding the proposed contract and the DEA. Based on Richard's response to my questions, it is not at all clear whether or why PCWD needs the water, or how it will be used. And to my knowledge, none of the other concerns I raised in my comment letter of 2/12/96 (copy attached) have been addressed. In fact, with the imminent Endangered Species Act listings of steelhead and chinook salmon in the upper Willamette Basin, we have greater concerns today than we did three years ago. Thus, WaterWatch still opposes Reclamation's proposal to issue a long-term water service contract to PCWD.

Need for/Use of the Water

In my 1996 comment letter, I criticized the EA for having no data on PCWD's current water use or any analysis of need for the water. Richard has provided some good information on PCWD's water use since 1968, and in my view, it tends to show that the district really doesn't need the water. I base this on three factors: First, PCWD has never used more than 3390 AF in any year, roughly 1 AF/acre. There is no indication of why the district needs a storage contract for nearly 13,000 AF or 2.5 AF/acre. Second, PCWD has never been regulated off by the water master—even in such severe drought years as 1977 and 1992. Thus, it is not clear that the district has any real need for a backup supply in drought years, as their rights remain in priority. Third, the highest diversion year in district history was the severe drought year of 1992--and there is nothing to indicate that the district did not have adequate water in that year. In sum, PCWD seems to need nowhere near 13,000 AF in any year, drought or otherwise, barring a dramatic change in irrigated acreage or cropping patterns. The DEA makes no mention of any such changes--and in fact, the Oregon DEQ letter of 12/24/98 seems to assume that such changes would not occur.

WaterWatch of Oregon • 213 Southwest Ash, Suite 208 • Portland, OR 97204
Phone: (503) 295-4039 Fax: (503) 295-2791 Email: watrwtch@teleport.com

Water Quality

The new information regarding PCWD's current water use reinforces my concerns regarding the potential water quality effects of the proposed contract. In my 1996 letter, I suggested that there could be significant water quality impacts in Palmer Creek and the Yamhill River if PCWD changed its irrigation practices. It now appears that PCWD has no real need for the contract, or certainly for 13,000 AF of water supply, unless it changes its irrigation practices dramatically. The DEA must provide some analysis of possible water quality impacts from such changes--that is, from expanding the irrigated acreage, increasing the volume of water applied per acre, or both.

DEQ's letter of 12/24/98 appears to assume that the proposed contract will only maintain the status quo of irrigation deliveries within the district. Given the size of the proposed contract versus the district's history of water use, I believe that is a highly questionable assumption. At a minimum, there has been no commitment that if PCWD receives the contract, it will not increase irrigated acreage or water deliveries per acre, or even that it will only use the contracted water in a drought year.

Endangered Species Listing

The National Marine Fisheries Service is due to make a decision within days on listing both chinook salmon and steelhead in the Upper Willamette Basin under the Endangered Species Act. Most observers expect these populations to be listed under the ESA. The potential effects of the proposed contract on these imperiled fish populations were not examined in the DEA. The DEA did note, however, that both chinook and steelhead are present in the Willamette River near the PCWD diversion, and steelhead are present in the Yamhill River and possibly even Palmer Creek. Prior to issuing any proposed contract for PCWD, there must be a full analysis of the contract's possible effects on chinook and steelhead, and consultation with NMFS. Anything less would be a dereliction of Reclamation's ESA conservation duties.

Other issues raised in 1996 comments

WaterWatch raised several other issues in its 1996 comments, including the range of alternatives considered in the DEA, the cumulative impacts analysis, and the pending Willamette Reservoir study. None of these issues has been addressed. As for the Willamette Reservoir study, it is finally nearing completion, and therefore we believe even more strongly that no new long-term contract should issue until it is finished. If Reclamation issues any contract at all, it should be limited to a maximum of two years, so that it may be revisited after the completion of the study.

Thank you for the opportunity to comment. Please call me if you have questions or would like to discuss this matter.

Best regards,

Reed D. Benson
Executive Director

enclosures

xc: Russell Harding, ODEQ
Lance Smith, NMFS
Bob Christiansen, USBR
Richard Craven for PCWD

Appendix B

Agency Correspondence

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Oregon Fish and Wildlife Office
2600 SE 98th Avenue, Suite 100
Portland, Oregon 97266
Phone: (503)231-6179 FAX: (503)231-6195

Reply To: 8330.SP07(06)

July 17, 2006

Pete Baki
Craven Consulting Group
647 River Hills Drive
Springfield, OR 97477

Subject: Palmer Creek Water District Improvement Co. Project
USFWS Reference # FD8EECC0485BBEC9882571AE0074D938

Dear Mr. Pete Baki:

This is in response to your request, dated July 17, 2006, requesting information on listed and proposed endangered and threatened species that may be present within the area of the Palmer Creek Water District Improvement Co. Project in Yamhill County(s). The Fish and Wildlife Service (Service) received your correspondence on July 17, 2006.

We have attached a list (Enclosure A) of threatened and endangered species that may occur within the area of the Palmer Creek Water District Improvement Co. Project. The list fulfills the requirement of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). U.S. Bureau of Reclamation requirements under the Act are outlined in Enclosure B.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems on which they depend may be conserved. Under section 7(a)(1) and 7(a)(2) of the Act and pursuant to 50 CFR 402 *et seq.*, the U.S. Bureau of Reclamation is required to utilize their authorities to carry out programs which further species conservation and to determine whether projects may affect threatened and endangered species, and/or critical habitat. A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) which are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (NEPA) (42 U.S.C. 4332 (2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to the Biological Assessment be prepared to determine whether they may affect listed and proposed species. Recommended contents of a Biological Assessment are described in Enclosure B, as well as 50 CFR 402.12.

If the U.S. Bureau of Reclamation determines, based on the Biological Assessment or evaluation, that threatened and endangered species and/or critical habitat may be affected by the project, the U.S. Bureau of Reclamation is required to consult with the Service following the requirements of 50 CFR 402 which implement the Act.

Enclosure A includes a list of candidate species under review for listing. The list reflects changes to the candidate species list published May 11, 2005, in the Federal Register (Vol. 69, No. 86, 24876) and the addition of "species of concern." Candidate species have no protection under the Act but are included for consideration as it is possible candidates could be listed prior

to project completion. Species of concern are those taxa whose conservation status is of concern to the Service (many previously known as Category 2 candidates), but for which further information is still needed.

If a proposed project may affect only candidate species or species of concern, the U.S. Bureau of Reclamation is not required to perform a Biological Assessment or evaluation or consult with the Service. However, the Service recommends minimizing impacts to these species to the extent possible in order to prevent potential future conflicts. Therefore, if early evaluation of the project indicates that it is likely to adversely impact a candidate species or species of concern, the U.S. Bureau of Reclamation may wish to request technical assistance from this office.

Your interest in endangered species is appreciated. The Service encourages the U.S. Bureau of Reclamation to investigate opportunities for incorporating conservation of threatened and endangered species into project planning processes as a means of complying with the Act. If you have questions regarding your responsibilities under the Act, please contact Kevin Maurice at (503) 231-6179. All correspondence should include the above referenced file number. For questions regarding salmon and steelhead trout, please contact NOAA Fisheries Service, 525 NE Oregon Street, Suite 500, Portland, Oregon 97232, (503) 230-5400.

For future species list requests, please visit our website (http://www.fws.gov/pacific/oregonfwo/EndSpp/EndSpp_SpLstReq.html) for instructions on how to make requests.

Enclosures
EnclosureA: Yamhill COUNTY.PDF
EnclosureB: EnclosureB_Federal_Agencies_Responsibilities.PDF

ENCLOSURE B

FEDERAL AGENCIES RESPONSIBILITIES UNDER SECTION 7(a) and (c)
OF THE ENDANGERED SPECIES ACT

SECTION 7(a)-Consultation/Conference

Requires: 1) Federal agencies to utilize their authorities to carry out programs to conserve endangered and threatened species;

2) Consultation with FWS when a Federal action may affect a listed endangered or Threatened species to insure that any action authorized, funded or carried out by a Federal agency is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of Critical Habitat. The process is initiated by the Federal agency after they have determined if their action may affect (adversely or beneficially) a listed species; and

3) Conference with FWS when a Federal action is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed Critical Habitat.

SECTION 7(c)-Biological Assessment for Major Construction Projects[1]

Requires Federal agencies or their designees to prepare a Biological Assessment (BA) for construction projects only. The purpose of the BA is to identify proposed and/or listed species which are/is likely to be affected by a construction project. The process is initiated by a Federal agency in requesting a list of proposed and listed threatened and endangered species (list attached). The BA should be completed within 180 days after its initiation (or within such a time period as is mutually agreeable). If the BA is not initiated within 90 days of receipt of the species list, the accuracy of the species list should be informally verified with our Service. No irreversible commitment of resources is to be made during the BA process which would foreclose reasonable and prudent alternatives to protect endangered species. Planning, design, and administrative actions may be taken; however, no construction may begin.

To complete the BA, your agency or its designee should: (1) conduct an on-site inspection of the area to be affected by the proposal which may include a detailed survey of the area to determine if any species are present and whether suitable habitat exists for either expanding existing populations or for potential reintroduction of species; (2) review literature and scientific data to determine species distribution(s), habitat needs, and other biological requirements; (3) interview experts including those within FWS, National Marine Fisheries Service, State conservation departments, universities, and others who may have data not yet published in scientific literature; (4) review and analyze the effects of the proposal on the species present in terms of effects to individuals and populations, including consideration of cumulative effects to the species and habitat; (5) analyze alternative actions that may provide conservation measures and (6) prepare a report documenting the results, including a discussion of study methods used, any problems encountered, and other relevant information. The BA should conclude whether or not any listed species will be affected. Upon completion, the report should be forwarded to our Portland Office at 2600 SE 98th Ave., Suite 100, Portland, Oregon, 97266.

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[1]A construction project (or other undertaking having similar physical impacts) which is a major Federal action significantly affecting the quality of the human environment as referred to in NEPA (42 U.S.C. 4332. (2)c). On projects other that construction, it is suggested that a biological evaluation similar to the biological assessment be undertaken to conserve species influenced by the Endangered Species Act.

FEDERALLY LISTED THREATENED, ENDANGERED, PROPOSED, CANDIDATE SPECIES AND SPECIES OF CONCERN WHICH MAY OCCUR WITHIN YAMHILL COUNTY, OREGON

LISTED SPECIES[1/]

Birds		
Marbled murrelet[2/]	*Brachyramphus marmoratus*	CH T
Bald eagle[3/]	*Haliaeetus leucocephalus*	T
Northern spotted owl[4/]	*Strix occidentalis caurina*	CH T
Fish		
Steelhead (Upper Willamette River)[5/]	*Oncorhynchus mykiss* ssp.	T*
Chinook salmon (Upper Willamette River)[6/]	*Oncorhynchus tshawytscha*	T*
Invertebrates		
Fender's blue butterfly[7/]	*Icaricia icarioides fenderi*	E
Oregon silverspot butterfly	*Speyeria zerene hippolyta*	T
Plants		
Golden Indian paintbrush[8/]	*Castilleja levisecta*	T
Willamette daisy[9/]	*Erigeron decumbens* var. *decumbens*	E
Howellia	*Howellia aquatilis*	T
Bradshaw's lomatium	*Lomatium bradshawii*	E
Kincaid's lupine[10/]	*Lupinus sulphureus* var. *kincaidii*	T
Nelson's checker-mallow	*Sidalcea nelsoniana*	T

PROPOSED SPECIES

None

CANDIDATE SPECIES[11/]

Mammals	
Pacific fisher[12/]	*Martes pennanti pacifica*
Birds	
Yellow-billed cuckoo	*Coccyzus americanus*
Streaked horned lark	*Eremophila alpestris strigata*
Amphibians and Reptiles	
Oregon spotted frog	*Rana pretiosa*

SPECIES OF CONCERN

Mammals	
White-footed vole	*Arborimus albipes*
Red tree vole	*Arborimus longicaudus*
Pacific western big-eared bat	*Corynorhinus townsendii townsendii*
Silver-haired bat	*Lasionycteris noctivagans*
Long-eared myotis (bat)	*Myotis evotis*
Fringed myotis (bat)	*Myotis thysanodes*
Long-legged myotis (bat)	*Myotis volans*
Yuma myotis (bat)	*Myotis yumanensis*
Camas pocket gopher	*Thomomys bulbivorus*

Birds	
Band-tailed pigeon	*Columba fasciata*
Olive-sided flycatcher	*Contopus cooperi*
Yellow-breasted chat	*Icteria virens*
Acorn woodpecker	*Melanerpes formicivorus*
Lewis' woodpecker	*Melanerpes lewis*
Mountain quail	*Oreortyx pictus*
Oregon vesper sparrow	*Pooecetes gramineus affinis*
Purple martin	*Progne subis*
Amphibians and Reptiles	
Tailed frog	*Ascaphus truei*
Northwestern pond turtle	*Emys marmorata marmorata*
Northern red-legged frog	*Rana aurora aurora*
Southern torrent (seep) salamander	*Rhyacotriton variegatus*
Fishes	
Pacific lamprey	*Lampetra tridentata*
Coastal cutthroat trout (Oregon Coast)	*Oncorhynchus clarki clarki*
Coastal cutthroat trout (Upper Willamette)	*Oncorhynchus clarki clarki*
Steelhead (Oregon Coast)	*Oncorhynchus mykiss* ssp. *
Invertebrates	
American acetropis grass bug	*Acetropis americana*
Oregon giant earthworm	*Megascolides (=Driloleirus) macelfreshi*
Plants	
Bog anemone	*Anemone oregana* var. *felix*
White top aster (Curtus)	*Aster curtus*
Pale larkspur	*Delphinium leucophaeum*
Willamette Valley larkspur	*Delphinium oreganum*
Peacock larkspur	*Delphinium pavonaceum*
Coast Range fawn-lily	*Erythronium elegans*
Queen-of-the-forest	*Filipendula occidentalis*
Henderson's horkelia	*Horkelia hendersonii*
Thin-leaved peavine	*Lathyrus holochlorus*

(E) - Listed Endangered *(T) - Listed Threatened* *(CH) - Critical Habitat has been designated for this species*
(PE) - Proposed Endangered *(PT) - Proposed Threatened* *(PCH) - Critical Habitat has been proposed for this species*

Species of Concern - Taxa whose conservation status is of concern to the Service (many previously known as Category 2 candidates), but for which further information is still needed.

* *Consultation with NOAA's National Marine Fisheries Service may be required.*

[1/] *U.S. Department of Interior, Fish and Wildlife Service, October 31, 2000, Endangered and Threatened Wildlife and Plants, 50 CFR 17.11 and 17.12*
[2/] *Federal Register Vol. 57, No. 45328, October 1, 1992, Final Rule - Marbled Murrelet*
[3/] *Federal Register Vol. 60, No. 133, July 12, 1995, - Final Rule - Bald Eagle*
[4/] *Federal Register Vol. 57, No. 10, January 15, 1992, Final Rule - Critical Habitat for the Northern Spotted Owl*
[5/] *Federal Register Vol. 64, No. 57, March 25, 1999, Final Rule - Middle Columbia and Upper Willamette River Steelhead*
[6/] *Federal Register Vol. 64, No. 56, March 24, 1999, Final Rule - West Coast Chinook Salmon*
[7/] *Federal Register Vol. 65, No. 16, January 25, 2000, Final Rule - Erigeron decumbens var. decumbens, Lupinus sulphureus ssp. kincaidii, and Fender's blue butterfly*

[8/] *Federal Register Vol. 62, No. 112, June 11, 1997, Final Rule - Castilleja levisecta*
[9/] *Federal Register Vol. 65, No. 16, January 25, 2000, Final Rule - Erigeron decumbens var. decumbens, Lupinus sulphureus ssp. kincaidii, and Fender's blue butterfly*
[10/] *Federal Register Vol. 65, No. 16, January 25, 2000, Final Rule - Erigeron decumbens var. decumbens, Lupinus sulphureus ssp. kincaidii, and Fender's blue butterfly*
[11/] *Federal Register Vol. 69, No. 86, May 4, 2004, Notice of Review - Candidate or Proposed Animals and Plants*
[12/] *Federal Register Vol. 69, No. 68, April 8, 2004, 12-Month Finding for a Petition to List the West Coast Distinct Population Segment of the Fisher*

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
PORTLAND OFFICE
1201 NE Lloyd Boulevard, Suite 1100
PORTLAND, OREGON 97232-1274

F/NWR5

December 2, 2005

Richard E. Craven
Craven Consulting Group
9170 SW Elrose Court
Tigard, OR 97224

RE: Palmer Creek Water District Proposal of 9/26/2005

Dear Mr. Craven:

On September 26, 2005, you emailed the National Marine Fisheries Service (NMFS) a proposal for screening the Palmer Creek Water District diversion on the Willamette River at about river mile 140, right bank.

Our understandings, according to your letter and drawings:

- The proposed fish screen and pump station will have a maximum capacity of 50 cfs.
- An ISI[1] submerged mechanically-cleaned drum screen is proposed.
- Each drum cylinder will be 60" diameter x 66" in length, yielding approximately 172 square feet of screen area.
- The screen will be 0.068" wedge-wire.

Our conclusions:

- The proposed fish screen design concept is acceptable. Please contact Ben Meyer, Willamette Basin Habitat Branch Chief (503-230-5425; ben.meyer@noaa.gov) regarding other possible requirements.
- We recommend that an environmentally gentle hydraulic oil such as Chevron Clarity[2] (or one similar) be employed. Hydraulic oil was not specified, except as "food grade". Clarity is superior environmentally and operationally, and is cheaper than food grade vegetable oils.
- The clearance above and below the screen does not meet the usual NMFS' criteria. We are accepting it in this case because we believe that this design is the most appropriate for this site because it has the least riparian impact.

[1] http://www.intakescreen.com/
[2] http://www.chevron.com/products/prodserv/nall/powergeneration/content/prodspecs.shtml#hydraulic

- The dead-end slough will not generate sweeping flows at the pump screen, which we normally desire to help cleanse the screen. Nevertheless, we accept the proposed design in the slough for the following reasons:
    - The US Bureau of Reclamation's (USBR) December 4, 2003, assessment of inlet channel approach velocity was quite informative and useful. The USBR's calculations indicate that average water velocity induced by the pumps into the inlet would be small, approximately 0.21 fps toward the pumps at lowest water levels. The fish should be able to contend with this amount.
    - The nominal average approach velocity at the screen face will be 157 ft^2/50 ft^3/sec = 0.31 fps. This is considerably safer for the fish than NMFS' customary criteria velocity of 0.4 fps, which will make it relatively easier for fish to avoid this screen.
    - Continued employment of a trashboom will keep trash from the screen. (This was not included in the plans, but needs to continue to be employed).

You will be required to demonstrate that the screen meets velocity criteria of less than 0.4 maximum after construction, including documenting the approach velocity of the screen with acoustic velocimeters or similarly accurate devices.

Please continue to keep John Johnson (503-231-2110; john.k.johnson@noaa.gov) of my staff informed regarding the progress of this project.

Sincerely,

Keith Kirkendall

Keith Kirkendall, Chief
FERC & Water Diversions Branch
Hydropower Division

Enclosures

Oregon
Theodore R. Kulongoski, Governor

Department of Fish and Wildlife
Fish Division
3406 Cherry Avenue NE
Salem, OR 97303
(503) 947-6200
Fax (503) 947-6202
TTY (503) 947-6339
www.dfw.state.or.us

9 Dec 2005

Richard E. Craven
Craven Consulting Group
9170 SW Elrose Court
Tigard, OR 97224

Re: Palmer Creek Water District Improvement Company Fish Screen

Dear Richard,

I have reviewed the design for the proposed fish screen at the Dayton Pump Station on Palmer Creek near river mile 73.4 on the Willamette River. This design was submitted to my office via your e-mail on 27 Sep 2005. The proposed fish screen facility is characterized as a slant retrievable intake screen, sized for up to 50 cfs.

The location of the Dayton Pump Station (on a backwater of the Willamette River) presents challenges for a reliable water intake that consistently protects fish. The challenges include widely varying river stages, with consequent changes in channel configurations, and inadequate sweeping velocities to move juvenile fish and water-borne debris away from the screen. Still, after consideration of numerous alternative fish screening concepts for this site, this proposal addresses the issues and constraints well. Screen area and calculated approach velocities are acceptable, and the absence of sweeping velocity may be compensated by regular removal and inspection of the screen by means of the retrieval track and mechanisms. Continued use of a floating trash barrier device will also be beneficial. Consequently, the proposed, retrievable, wedge wire T-Screen is approved for use at the Dayton Pump Station water intake.

Please proceed with detailed designs for this important fish passage facility. Keep me posted as your plans progress

Thank you for your efforts to protect fish.

Michael B Lambert
Lead Fish Passage Engineer
Fish Screening & Passage Program

cc: Steve Mamoyac
Bob Hair
Bernie Kepshire
Jon Bartch
John Johnson

Main Identity

From: <Larry_Rasmussen@fws.gov>
To: "Richard Craven" <richard.craven@verizon.net>
Sent: Wednesday, August 02, 2006 11:35 AM
Attach: DaytonPumps1.TIF; Dayton Pumps.pdf
Subject: Proposed new fish screen at Dayton Pump Station

Richard-

We have reviewed the Palmer Creek Water District's proposed fish screen plans for the Dayton pump station. The Fish and Wildlife Service concurs with the Oregon Department of Fish and Wildlife and the National Marine Service (letters attached) that the proposed design is acceptable. The site presents significant challenges to achieve fish protection and we believe the proposed design with the reduced approach velocity will provide adequate protection.

Larry

(See attached file: DaytonPumps1.TIF)(See attached file: Dayton Pumps.pdf)

><(((('> <')))))><
Larry Rasmussen
U.S. Fish and Wildlife Service
Oregon State Office
2600 S.E. 98th, Suite 100
Portland, OR 97266
(503) 231-6179

Appendix C

State Historic Preservation Office Correspondence

Oregon
Theodore R. Kulongoski, Governor

Parks and Recreation Department
State Historic Preservation Office
725 Summer St. NE, Suite C
Salem, OR 97301-1271
(503) 986-0707
FAX (503) 986-0793
www.hcd.state.or.us

July 13, 2006

Mr. Steven Highland
Craven Consulting Group
3930 NW Witham Hill Dr No 252
Corvallis, OR 97330

RE: SHPO Case No. 06-1642
Palmer Ranch Project
6S 3W 59, Dayton Yamhill County

Dear Steven:

Our office recently received your report about the project referenced above. I have reviewed your report and agree that the project will have no affect on any known cultural resources. No further archaeological research is needed with this project.

Please be aware, however, that if during development activities you or your staff encounters any cultural material (i.e., historic or prehistoric), all activities should cease immediately and an archaeologist should be contacted to evaluate the discovery. Under state law (ORS 358.905-955) it is a Class B misdemeanor to impact an archaeological site on public or private land in Oregon. Impacts to Native American graves and cultural items are considered a Class C felony (ORS 97.740-760). If you have any questions regarding any future discovery or my letter, feel free to contact our office at your convenience.

Dennis Griffin

Dennis Griffin, Ph.D., RPA
State Archaeologist
(503) 986-0674
dennis.griffin@state.or.us

7340(6080)

Appendix D

Final EA Distribution List

FEDERAL AGENCIES

U.S. Department of the Interior
Attn: Mr. Stanley Speaks
Bureau of Indian Affairs
911 NE 11th
Portland OR 97232

Kemper McMaster
U.S. Fish and Wildlife Service
2600 S.E. 98th Avenue, Suite 100
Portland, Oregon 97266

Larry Rasumssen
U.S. Fish and Wildlife Service
2600 SE 98th Avenue, Suite 100
Portland OR 97266

U.S. Department of the Interior
National Park Service
83 S King, Suite 212
Seattle WA 98104

U.S. Department of the Interior
Regional Environmental Officer
500 NE Multnomah, Suite 600
Portland OR 97232-2136

U.S. Department of Agriculture
Forest Service
Pacific NW Region
319 SW Pine
Portland OR 97208

Larry Evans, Chief Regulatory Branch
U.S. Army Corps of Engineers
Portland District
333 SW First Avenue
Portland OR 97204

Mr. Kim Kratz,
Chief, Oregon State Branch
Habitat Conservation Division
National Marine Fisheries Service
1201 NE Lloyd Blvd, Suite 100
Portland OR 97232-1274

L. Michael Bogert, Regional Administrator
Environmental Protection Agency
Region 10
1200 Sixth Avenue
Seattle WA 98101

STATE AGENICES

The Honorable Ted Kulongoski
Governor of Oregon
160 State Capitol
900 Court Street
Salem, Oregon 97301-4047

Karen Quigley, Executive Officer
Oregon Legislative Commission on Indian Services
167 State Capitol
Salem OR 97310-1347

Katy Coba, Director
State of Oregon
Department of Agriculature
635 Capitol St. NE
Salem OR 97301

Stephanie Hallock, Director
Oregon Department of Environmental Quality
811 SW Sixth Avenue
Portland OR 97204-1390

Phil Ward, Director
Oregon Water Resources Department
725 Summer St NE, Suite A
Salem OR 97301

Tom Murtagh, District Fish Biologist
State of Oregon
Department of Fish and Wildlife
17330 SE Evelyn Street
Clackamus OR 97015

Roy Elicker, Director
Oregon Department of Fish and Wildlife
3406 Cherry Avenue NE
Salem OR 97303

Marvin D. Brown, State Forester
Oregon Department of Forestry
2600 State Street
Salem OR 97310

Ann Hanus, Director
Oregon Department of State Lands
775 Summer Street NE
Salem OR 97301-1279

Dr. Dennis Griffin, PhD, State Archaeologist
Oregon Department of Parks and Recreation
State Historic Preservation Office
725 Summer Street NE, Suite C
Salem OR 97301

Vicki McConnell, Director and State Geologist
Oregon Department of Geology and Mineral Industries
800 NE Oregon Street #28
Portland OR 97233

Lane Shetterly
State of Oregon
Land Conservation and Development Dept.
635 Capitol Street NE, Suite 150
Salem, OR 97301-2540

Mike Carrier, Natural Resource Policy Director
Governor Natural Resources Office
255 Capitol Street NE, Room 126
Salem OR 97301

Tim Wood, Director
Oregon Department of Parks and Recreation
725 Summer Street NE, Suite C
Salem OR 97301-1271

Matthew Garrett, Director
Oregon Department of Transportation
355 Capitol Street NE, Room 135
Salem OR 97301

Michael Grainey, Director
State of Oregon
Department of Energy
625 Marion NE
Salem OR 97310

CONGRESSIONAL DELEGATION

Senator Ron Wyden
United States Senate
1220 SW 3rd Avenue, Suite 585
Portland OR 97204

Senator Gordon Smith
United States Senate
One World Trade Center
121 SW Salmon Street, Suite 1250
Portland OR 97204

Representative David Wu
United State House of Representatives
Portland Office
620 SW Main, Suite 606
Portland OR 97205

STATE REPRESENTATIVE/SENATOR

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NEWS MEDIA

News Register
611 East Third
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Addendum

Assessment of Potential Effects to Essential Fish Habitat

Addendum to the Biological Assessment for the
Palmer Creek Water District Improvement Company Water Service Contract

Addendum – ASSESSMENT OF POTENTIAL EFFECTS TO ESSENTIAL FISH HABITAT

1.0 Introduction

Under Section 305 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), Federal agencies that authorize, fund, or undertake any action that may adversely affect any Essential Fish Habitat (EFH) are required to consult with NMFS. EFH has been defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (PFMC, 1999). EFH has been designated for federally-managed groundfish, coastal pelagics, and Pacific salmon fisheries as those waters and substrate necessary to ensure the production needed to support a long-term sustainable fishery (PFMC 1999).

The Bureau of Reclamation (Reclamation) has prepared this assessment to evaluate the impacts of the proposed project on EFH for Chinook salmon (*Oncorhynchus tshawytscha*) and coho salmon (*Onycorhynchus kisutch*) that inhabit the project area. Pink salmon are not found in the project area. Freshwater EFH includes all streams, lakes, ponds, wetlands, and other water bodies currently, or historically, used by salmon, and necessary to provide habitat for spawning, breeding, feeding, or growth to maturity. Fish protected under the MSA present in this vicinity of the Willamette River are coho salmon and Chinook salmon.

2.0 Description of the Proposed Action

Please refer to the analysis in the EA for detailed information on the project description, impacts, and mitigation for the proposed project.

3.0 Effects Evaluation on EFH for Coho and Chinook Salmon

The proposed project effects on EFH necessary for migration, feeding, rearing, and spawning were evaluated in terms of migration of adults, spawning, rearing, and emigration of juvenile fish.

Migration

The project would not impose an impediment to upstream movement of adult coho or Chinook salmon during operation and no construction activities are planned. Operation of the intake structure during irrigation season could potentially attract fish. The approach velocity would be low (less than 0.3 ft/s) compared to the velocites of the Willamette River (greater than 3 ft/s), and entrainement of impingement of fish would not be expected to occur on the fish screen that meets the fish protection criteria by NOAA Fisheries and ODFW.

Spawning

Impacts are not expected to occur because no construction activities are planned. There are no records of spawning activities in the backwater area where the intake is located and substrate material consists of sand-sized sediments.

Rearing and Emigration

Habitat conditions for juvenile fish in the vicinity of the existing intake are relatively minimal. Although the substrate is primarily sand with no undercut banks, side channels, large cobble, or large woody debris, it is likely that juvenile fish use the area during portions of the year when water temperatures are adequate or during downstram movement. The operation of the project would minimize impacts on fish and habitat by maintaining the fish screen on the intake that would have a low approach velocity.

Conclusion

Because of the relatively minimal habitat in the vicinity of the project, minimal to no adverse impacts are expected. Installation of the fish screen approved by NOAA Fisheries and USFWS will have a significant positive impact on coho and Chinook salmon. The positive effects would occur from minimizing or avoiding the entrainment and/or impingement of fish at the irrigation intake.

4.0 References

Parenthetical Reference	Bibliographic Citation
PFMC 1999	Pacific Fishery Management Council. 1999. *Appendix A – Description and Identification of Essential Fish Habitat, Adverse Impacts, and Recommended Conservation Measures for Salmon, Amendment 14 to the Pacific Coast Salmon Plan.* Portland, Oregon.