

THE CONFEDERATED TRIBES OF THE WARM SPRINGS RESERVATION OF OREGON

FISH AND WILDLIFE DEPARTMENT
P.O. Box C, Warm Springs, Oregon 97761
Phone (541) 553-2001
Fax (541) 553-1994

MEMO

To: Bobby Brunoe
From: Doug Calvin, Wildlife, Parks & Enforcement Manager
Subject: Metolius deer and elk telemetry

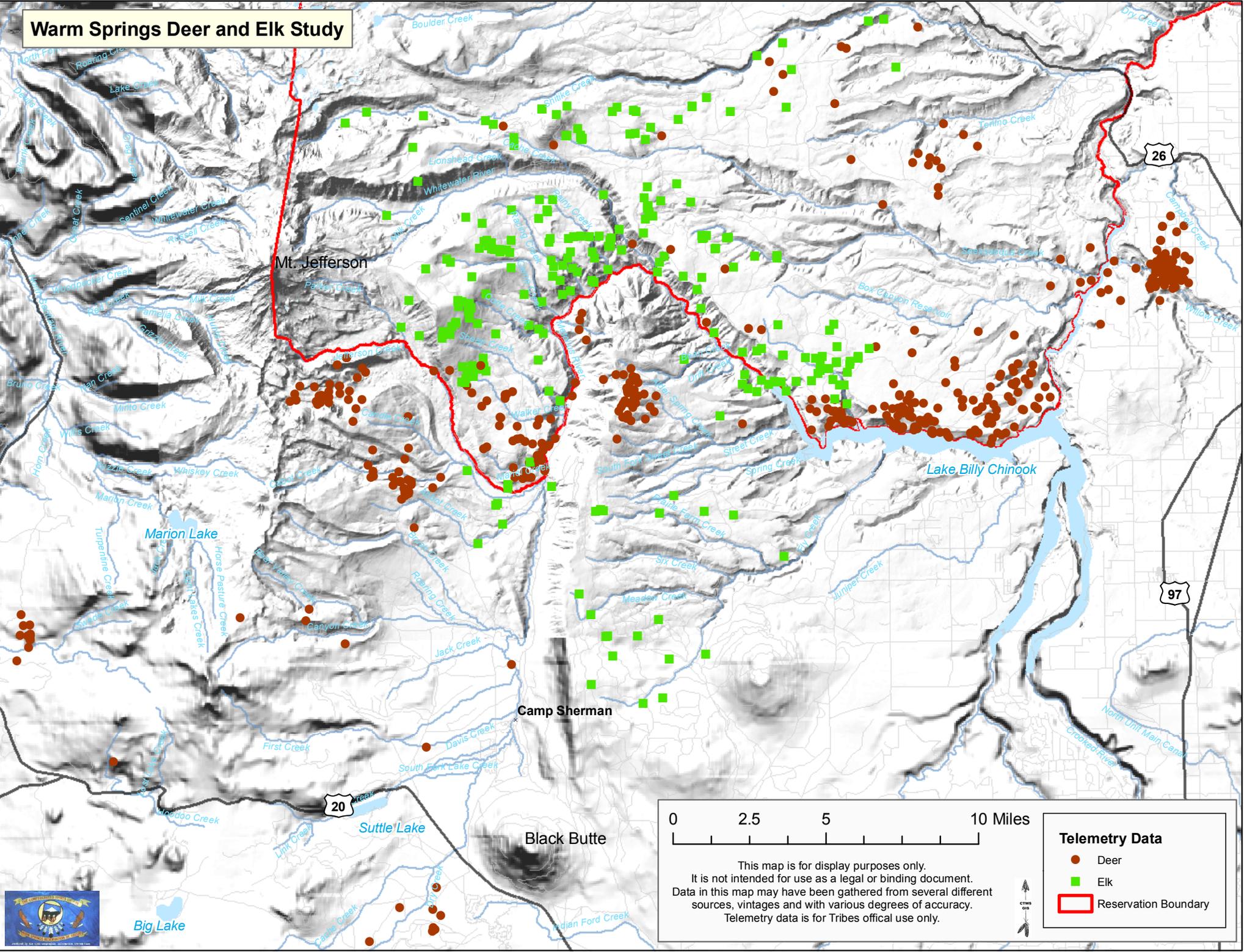
Population trends and telemetry research have been conducted for the reservation herds over the past twenty five years. The population estimates of 2300, 7000, and 1200 represent the deer here on the reservation during 1988, 1998, and 2008 respectively. The surveys were conducted in the spring when deer are more concentrated. The population trends have shown a dramatic decrease since about 2000.

The Tribes wildlife department over the last three decades have also conducted reservation wide big game telemetry studies. We have learned much about the seasonal movement patterns of deer and elk from these cooperative studies which validates the importance of holistic management when dealing with a mobile resource such as deer and elk. Wild free ranging ungulates do not recognize land ownership or jurisdictional boundaries (see map attached)! For example the eight deer we radio collared in the mid- nineties near Lake Billy Chinook showed considerable movement between their summer and winter range localities. These deer are a relatively small sample size of the larger Metolius herd which moved in all directions to higher elevation habitat for summer forage, security, and nurturing of fawns. In fact half of the eight deer moved to summer locations off reservation. This telemetry study was conducted not only for our own management understanding of the deer herds, but was intended to supplement a much larger research project on the rest of the Metolius Winter Range deer population located off reservation pursuant to the Metolius Mule Deer Winter Range-Habitat Management Plan.

Included with this deer telemetry on the map I have included an elk study (1 bull, 4 cows) were radio collared in the late eighties and monitored seasonally until the mid nineties. The elk too showed considerable movement across ownership and jurisdictional boundaries. Not only have I worked professionally for both the Tribes and ODFW on deer & elk in this area for approximately 20 years, but reside and recreate as well in the area.

Respectfully submitted,
Doug Calvin
Wildlife, Parks & Enforcement Manager.

Warm Springs Deer and Elk Study



0 2.5 5 10 Miles

Telemetry Data

- Deer
- Elk
- Reservation Boundary

This map is for display purposes only. It is not intended for use as a legal or binding document. Data in this map may have been gathered from several different sources, vintages and with various degrees of accuracy. Telemetry data is for Tribes official use only.



Big Lake



KARNOPP PETERSEN LLP
ATTORNEYS AT LAW

February 18, 2009

Land Conservation and Development Commission
635 Capitol Street NE, Suite 150
Salem, Oregon 97301-2540

Re: Metolius Basin Area of Critical State Concern Management Plan

Dear Commissioners:

This office represents the Confederated Tribes of the Warm Springs Reservation of Oregon (“CTWS” or “Tribe”). The purpose of this letter is to comment on behalf of the Tribe on the discussion draft of the Metolius Basin Area of Critical State Concern (“MBACSC”) Management Plan. The MBACSC Management Plan proposes to regulate the development of large scale developments within the Metolius Basin, including a buffer area (“the planning area” or “Metolius basin planning area”). It would directly impact two proposed large scale development proposals in Jefferson County—two destination resort mapped properties (the Metolian (“Metolian”) and the Ponderosa Land and Cattle Co. (“Ponderosa”). Additionally, the purpose of this letter is to describe the Tribe’s interests in the planning area, identify potential impacts to those interests from large scale development, and provide suggestions on a management approach that could balance economic development interests with adequate resource protection. The Tribe appreciates the opportunity to review and comment on the draft Management Plan and hopes that the following comments and concerns are helpful to the Land Conservation and Development Commission (“LCDC”) as it moves forward with considering the development of an appropriate management plan.

A. Introduction of Tribal Interests

The Confederated Tribes of the Warm Springs Reservation of Oregon is a federally recognized tribe comprised of three tribes—the Warm Springs, Wasco, and Paiute Tribes—occupying the Warm Springs Indian Reservation (“reservation”) in north Central Oregon. The Tribe is a unique sovereign governmental and corporate entity and is the legal and political successor in interest to the seven tribes and bands that were signatories to the Treaty with the Tribes of Middle Oregon of June 25, 1855, 12 Stat. 963 (“Treaty of 1855”). (See Exhibit 1.) The Treaty of 1855 reserved the reservation—a beautiful and remote expanse of approximately 644,000 acres located in Wasco and Jefferson Counties—for the Tribe’s exclusive use.

Significantly, the Treaty of 1855 also reserved important off-reservation rights, including the right to hunt, pasture livestock, and gather roots and berries on unclaimed federal lands, and the

W736.09(a)\337999_2.doc

right to fish at usual and accustomed stations. In exchange for those reserved rights, the signers of the Treaty of 1855 ceded title to approximately 10 million acres of land (“ceded lands”), which included territory in present-day Jefferson County and the Metolius Basin. (See Ceded Lands map submitted into the record by the Tribe at the February 12, 2009 Madras hearing.) The Tribe’s treaty rights (on and off the reservation) and the preservation of its cultural sites are paramount to the Tribe in the sustenance of its people and culture.

In addition to federally protected off-reservation treaty rights and cultural resources, the Tribe’s interests in the Metolius and Deschutes basins are significant and varied. The Tribe’s potable water source is from the Deschutes River. Relatedly, the Tribe has adopted water quality standards under the Clean Water Act and administers Section 401 water quality certification on the reservation portion of the Deschutes and Metolius rivers and on rivers wholly within the reservation. The Tribe has also reserved important instream water rights in both the Deschutes and Metolius rivers under a 1997 Settlement Agreement with the State of Oregon and the United States Government. (See Exhibit 2 (CTWS Water Rights Settlement Agreement).) A purpose of the Settlement Agreement is for the protection of instream flows necessary to support the aquatic ecosystem for the benefit of fish and wildlife and the Settlement Agreement expressly recognizes the importance of tributaries off the reservation to Deschutes river basin fisheries.

The Tribe is a co-manager with the State of Oregon of fishery and wildlife resources in the Deschutes and Metolius basin which provides habitat for bull trout, a species listed as threatened under the Endangered Species Act (“ESA”) and habitat for the reintroduction of threatened summer steelhead, Spring Chinook, and sockeye populations. (See Exhibit 3 (Executive Order 96-30 signed by Governor Kitzhaber recognizing importance of government-to-government relationship with Tribes).) An important element of the Tribe’s management efforts is the establishment of harvestable sustainable populations of culturally significant fish and wildlife species. The Metolius River also is designated as a federal, state, and tribal scenic waterway under applicable authorities.

The Tribe is a one-third owner of the Pelton-Round Butte Hydroelectric Facilities and a one hundred percent owner of the Pelton Re-regulating dam generating facilities (“Pelton Project,” FERC P-2030), and is a joint licensee under a new 50 year license with Portland General Electric. (See Exhibit 4 (order approving settlement and issuing new FERC license).) While 30 year renewal license terms are typical, in 2005, FERC agreed to a 50 year term for the Pelton Project renewed license, partly because of the scope and scale of fishery mitigation measures agreed to by the joint licensees under a 2004 multi-party relicensing settlement agreement. The parties to this agreement include Deschutes and Jefferson Counties and other local governments, nongovernmental organizations, numerous state agencies such as Oregon Water Resources Department (“OWRD”) and Oregon Department of Fish and Wildlife (“ODFW”), as well as numerous federal agencies, including the National Marine Fisheries Service (“NMFS”) and the US Department of Interior Fish and Wildlife Service (“USFWS”), among others. Pursuant to the terms of the relicensing settlement agreement, the FERC license requires implementation of a

Fish Passage plan which includes reintroduction of threatened steelhead, Spring Chinook, and sockeye runs above the Round Butte dam. (See Exhibit 5 (Fish Passage Plan – Exhibit D to Relicensing Settlement Agreement).) Investment of over one hundred million dollars has been required to date in these reintroduction efforts which has included the construction of a selective water withdrawal tower, habitat and stream restoration efforts, hatchery operations and associated studies.

Accordingly, the Tribe takes an active interest in the planning and management of the Metolius Basin and surrounding counties. Localized management of land and water not only impacts the quality of natural resources in the individual locale, but can impact resources on nearby federal lands and on the reservation. On a related topic, as development in the Metolius Basin and surrounding areas increases, there is an increased potential for wildland fires, which not only have devastating effects on wildlife and wildlife habitat, but also pose threats to tribal trust assets on the reservation and to public safety. For example, a wildland fire in the Metolius Basin could present emergency egress issues that the current infrastructure cannot accommodate. Moreover, as wildland fires do not respect jurisdictional borders, the Tribe historically has devoted resources and personnel to assist state and local agencies in fighting nearby fires.

Deschutes and Jefferson County land use decisions have the potential to directly impact the health and welfare of CTWS members to the extent they impair Deschutes water quality, impact the Tribe's reserved instream water rights, impact Deschutes and Metolius river scenic values, impact the Tribe's fishery and wildlife management objectives, impact the Tribe's ability to meet FERC imposed mitigation conditions for operation of the Pelton Project, and impact important fishing resources for the Tribe on and off the reservation. Additionally, game herd migration patterns (*e.g.*, antelope, elk, or deer) extend across jurisdictional boundaries. Indeed, almost the entire southern boundary of the reservation is designated as a wildlife management zone, and tribal and ODFW telemetry data confirms that tribally-collared animals cross over into Jefferson County and that herds utilize the destination resort mapped properties. (See Wildlife Management zone map submitted into record by Tribe at February 12, 2009 Madras hearing). Many of the Tribe's cultural resources, including artifacts, cemeteries, and archaeological sites, are located in and around the Metolius Basin.

The Tribe is a principled defender of the rights and interests just described, but that does not mean that it is against economic development in Jefferson County, or that it is against destination resorts in general. The Tribe fully understands the need of a rural and largely resource-based economy to develop some diversity to fund essential governmental services because it faces that very challenge itself. However, in the Tribe's economic development activities both on and off the reservation, the Tribe seeks to balance economic development with resource protection through an integrated, resources-based management plan that properly considers a proposed project's on and offsite impacts as well as the long-term interests of current and future generations.

The Tribe believes that the existing tools within the compartmentalized agencies having approval authority over a particular proposal are insufficient to identify, assess, or mitigate such impacts. For example, the Jefferson County Destination Resort mapping effort was based on a Goal 5 inventory of big game wildlife habitat that is over 20 years old, out of date, and does not reflect the current migration and forage habits of the existing herds or provide management tools to address the weakening condition of the herds. Goal 5 also does not require comprehensive identification or assessment of the full range of cultural resources important to the Tribe. Additionally, Goal 5 does little to protect offsite impacts. Further, water mitigation requirements for certain groundwater withdrawals may not require mitigation at the locale of impact.

Accordingly, the Tribe believes that the only appropriate and fair method to evaluate the impacts of large scale development in the Metolius basin planning area is through a management plan that not only considers the impacts to the developed property, but also the potentially very significant and direct offsite impacts that can affect state, federal, and tribal interests as well as the general public's interests. The Tribe imposes such an integrated resources impact analysis on itself whenever it undertakes to economically develop property both on and off the reservation. That approach is not unique in Oregon state government. Indeed, most significant energy facilities that seek to site and operate in Oregon must obtain a site certificate from a State Energy Facility Siting Council which considers a full range of resource impacts in a NEPA-like review.¹ Given the nature of destination resort impacts and the sensitivity of the Metolius basin and surroundings, a similar approach is needed to balance the multiple federal, state, tribal, local, and public and private interests in the Metolius basin planning area.

As noted above, the Warm Springs Reservation is a remote expanse of approximately 644,000 acres in north Central Oregon. Given the reservation's size and natural resources, in 1986 the Warm Springs Tribal Council adopted Resolution 7410, which mandated the use of an integrated approach to plan and manage the reservation's land-based resources. To that end, in early 1992, Tribal Council passed Ordinance 74, approving an Integrated Resources Management Plan ("IRMP") for the Forested Area of the reservation. In passing Ordinance 74, Tribal Council advanced the concept of sustainable resource management for the entire reservation and acknowledged the necessity for compatibility between a thriving, self-sufficient community and economic development. Ultimately, two IRMPs have been developed that identify and analyze natural resource management and community development issues on the reservation. IRMP I focuses on the forested area of the reservation and IRMP II focuses on the non-forested and rural areas of the reservation. A third IRMP (IRMP III), which focuses on the community, commercial, and industrial areas of the reservation, is currently being developed and is near completion.

¹ The National Environmental Policy Act ("NEPA") is a federal environmental law that sets forth procedural requirements to review the environmental effects of proposed federal agency actions. The level of review required under NEPA varies with the intensity of the expected impact of the proposed action. *See* 42 U.S.C. § 4332 *et seq.*

Integrated resources management planning addresses the interrelationships between natural resources and provides guidelines for the stewardship of those resources and for making management decisions on the reservation that will ensure present and future generations have the same range of management options available as today. Additionally, IRMPs serve as a mechanism to fulfill tribal objectives, one of which is stated in Article I(b) of the Constitution: "It shall be the object of the [Tribe]: * * * (b) To establish and enforce such rules as may be necessary to safeguard Indian property and resources for the use of present and future generations." Integrated resources management planning also allows the Tribe to protect, preserve, and enhance their cultural and environmental values, while still providing for the wise utilization of natural resources.

Given the Tribe's significant interests in and around the Metolius basin, the Tribe supports the LCDC's proposal to designate the entire Metolius basin planning area as an Area of Critical State Concern and to develop a management plan that embraces the sustainability of the particularly unique, sensitive, and interrelated resources of the basin. In the Tribe's view, an appropriately designed plan will provide a valuable tool to manage natural resources in an integrated way that is beneficial to the multiple stakeholders' interests, including the Tribe's interests in protecting its ability to exercise its treaty rights on and off the reservation.

B. The Tribe's Interests

1. Wildlife

As explained above, the Tribe has reserved important off-reservation rights, particularly, the right to hunt off the reservation on public lands. With respect to those rights and interests, the proposed management plan should include the assessment of potential impacts to the Tribe from uses that conflict with any wildlife resource. Hunting big game, in particular elk and deer, both on and off the reservation is an important subsistence activity for tribal members. Conflicting uses that would result in an abridgment of that activity through degradation of range area critical for the health of the herds will have significant environmental, economic, and social impacts to the Tribe. Consequently, the Tribe opposes development that would impact the ability of CTWS members to exercise their off-reservation rights.

Thousands of mule deer utilize the designated winter range in the Metolius area, and there is ample evidence that the winter range is an especially sensitive big game habitat area. Although the winter range is highly utilized habitat for much of Central Oregon's deer, the deer population in that area is far below management objectives. CTWS members have relied on the herds for sustenance and cultural and religious uses since time immemorial. During the 1990s, the Tribe conducted deer radio telemetry studies that documented the use patterns and importance of this winter range. The Tribe's studies indicate that deer migrate to and winter on the reservation, often using routes that cross the designated winter range. Thus, impacts affecting deer populations on private and public lands also affect tribal resources. The herds do not recognize land ownership boundaries, they respond to genetic imprinting programmed in them for

generations and attempt to survive and prosper in the face of many challenges, including human encroachment.

Among several concerns, the Tribe is particularly concerned about the significant and steady decline of mule deer herds in Central Oregon. In a December 20, 2006 comment letter on Jefferson County's proposed destination resort amendments, ODFW explained that between 1995 and 2006 deer population in the Metolius Wildlife Management Unit declined to less than 40% of the population objective. (Exhibit 6 at 1.) Some of the factors contributing to that decline include factors related to residential and commercial development such as the reduction of forage and travel corridors, and an increase in barriers such as fences, roads, and traffic:

“ODFW conducts annual inventories of mule deer population trends on winter ranges, including the Metolius winter range in Jefferson County. Deer populations in the Metolius WMU remained near ODFW's population objective level during the period 1985-1995. However, between 1995 and the present the deer population trend has steadily declined to less than 40% of the population objective. There are likely several factors contributing to this decline, including factors related to residential and commercial developments on deer winter range. Reduction of deer forage, hiding and thermal cover, travel corridors, barriers such as fences, roads, and traffic, and disturbance from increased human and domestic animal activity all pose additional risks to deer populations on winter range. ODFW has observed substantial mortality of deer to diseases such as adenovirus hemorrhagic disease (ADH) in recent years. ADH in deer appears to occur in higher levels in and adjacent to residential developments, likely due to additional stresses and risks posed for deer by such developments.”

(*Id.*) In a subsequent comment letter dated December 29, 2008, ODFW explained that the winter range in Jefferson County is critical to maintain big game management objectives:

“Big game winter range in the county's wildlife overlay zone is critical for maintaining the Department's big game management objectives. Deer and elk winter range boundaries have been adopted by Jefferson County in the Metolius Wildlife Management Unit where the proposed destination resorts are being considered for siting. Big game management objectives were established by the Oregon Fish and Wildlife Commission following public review, with the purpose of sustaining adequate big game to support associated economic, cultural, social, and biological values for present and future citizens of Oregon.

“Factors that can impact big game population levels and habitat use include residential and commercial developments; reduction in forage and cover either through direct loss or loss of use through disturbance, barriers such as fences, motorized and non-motorized recreation, poaching, predation, disease, and weather.”

(Exhibit 7 at 1.) ODFW further explains that multiple studies have shown that human disturbance can significantly impact big game habitat over one mile away. (*Id.*)

As a co-manager of the Metolius winter range, the Tribe has experienced those same issues and concerns with respect to deer population on the reservation as off of the reservation. For example, the Tribe has seen a serious decline in deer herds on the south end of the reservation. In short, the deer population is a stressed and vulnerable wildlife resource under existing conditions that is especially sensitive to increased human activity within or near the winter range. The existing winter range is essential for those populations, and large scale development, such as a destination resort, is the type of development that could adversely and directly impact the deer population and habitat in the Metolius area.

Moreover, the County has acknowledged that its current Goal 5 mapping of wildlife range is out of date and likely does not reflect the current migration and forage habits of the existing herds. Increased development and activity in Jefferson County has likely displaced or shifted activity within Jefferson County and has increased reliance on reservation range. If population management goals cannot be met, increased reliance on the reservation may have adverse consequences because some of the range on the reservation is currently degraded in certain locations. Adding additional conflicting uses within the Jefferson County wildlife range could further the herd's reliance on reservation range and further contribute to degraded environmental conditions on the reservation. (*See Exhibit 8 (Tribe's comment letter on Jefferson County's amendments to its comprehensive plan and zoning ordinances).*)

Additionally, traffic and road impacts associated with large scale development can have direct offsite impacts to big game habitat in two main ways: (1) direct mortality influenced by vehicle speeds, road design, and increased road density; and (2) adverse health and other effects from increased human activity and habitat fragmentation. Certain mitigation factors such as vehicle speed, road design, and signage may be helpful in reducing the likelihood of direct mortality from vehicle strikes; however, other potential mitigation measures may increase habitat fragmentation, for example, the use of fencing or development of new roads. The placement of wildlife fences to limit crossing locations increases habitat fragmentation. (*See Exhibit 8 at 7.*) Thus, it is the Tribe's view that any mitigation measure that would result in the fragmentation of big game habitat should be prohibited by the MBACSC Management Plan.

Finally, it has also been amply documented that increased stress on the herds from conflicting human activity has significantly lowered the health of the herds. That in turn lowers the numbers and size of game which adversely impacts subsistence and cultural hunting activities on and off the reservation. Indeed, current population levels make it difficult for tribal members to meet their needs. That has both economic and social impacts to the Tribe. Hunting activities are important economically as a food source and for their hides. They are also important for health reasons. Tribal members suffer disproportionately from health conditions such as diabetes and heart conditions due in large part to a non-traditional diet. Those health conditions result in younger mortality and lower and lost economic opportunity. It has been documented that a

traditional diet for tribal members would provide health benefits that could drastically reduce and nearly eliminate those health conditions. Emphasizing locally and regionally available edible plants, berries and roots, salmon, and game allow for such a diet. Hunting activities and the products generated from that activity also have high cultural importance to the Tribe. Indeed, the Tribe appoints traditional tribal hunters, and tanned hides are staples in traditional tribal art and clothing. In short, a continuing decline in deer populations caused by a continuing increase of human activity in their winter range will make it more difficult for the Tribe to exercise off-reservation hunting rights.

Thus, a management plan for the Metolius basin planning area must acknowledge the vulnerability of the deer herds, which is caused primarily by increased human contact encroaching on the winter range, and adequately assess potential impacts to the winter range and impose appropriate localized mitigation measures to protect the wildlife resource. As explained above, through an integrated resources management approach, the Tribe manages its on-reservation natural resources in a sophisticated, sustainable manner that maintains balance between resource protection and the need for economic development. For example, the Tribe's IRMP I provides goals, objectives, standards, and best management practices for how to manage wildlife and wildlife habitat. (See Exhibit 9 at 3-4 (excerpt of IRMP I).) Specifically, the goals the Tribe imposes on itself for the management of wildlife and wildlife habitat are twofold: (1) maintain or enhance wildlife populations, habitats and species diversity that will sustain the cultural and subsistence needs of tribal members in perpetuity; and (2) maintain or enhance the environmental and ecological components that ensure wildlife species viability and genetic vigor. (*Id.*) In light of those goals, the IRMP considers direct and indirect impacts of a proposed project as well as the long term interests of present and future generations. The objectives of the MBACSC Management Plan with respect to wildlife should endeavor to do the same.

In the Tribe's view, the MBACSC Management Plan must begin with an updated inventory of the Metolius Basin's natural resources so that the mechanisms put in to place to manage those resources start from an accurate, up-to-date baseline. That inventory analysis should be conducted by the appropriate state agencies, largely because smaller counties like Jefferson County appear to lack sufficient funds to perform such analyses, but also because state agencies like ODFW possess the requisite knowledge and experience to perform such functions. Once an accurate inventory of wildlife resources is obtained, the management plan should, as a general matter, manage that inventory by requiring an impacts analysis that adequately assesses direct, indirect, and cumulative impacts to both the proposed development's immediate footprint and any offsite locations that potentially could be affected. In that way, *local* impacts to a particular resource properly can be evaluated, in addition to overall impacts to the resource as a whole, and localized mitigation can be implemented if necessary.

With respect to the winter range, impacts to the actual segment of the herd population using the area should be assessed, because depriving access or reducing quality of winter range on a seemingly small area may in fact be very detrimental to the component of the population that

uses that area. (*See* Exhibit 10 at 2 (report by Wildlife Biologist Bret Michalski).) A disproportionately larger number of deer may use the impacted area than its representative proportion on the landscape. (*Id.*) For example, a proposed development may only impact .25% of the winter range, but that quarter percent may in fact represent 5% of the winter range available to and used by the Metolius deer herd and may receive use by 15% of the population over the course of the winter use period. (*Id.* at 3.) Without a mechanism for requiring an applicant to apply mitigation in the local zone of impact at the appropriate ratio, the MBACSC Management Plan will not adequately protect the especially sensitive and unique natural resources of the Metolius basin planning area. Moreover, the intensity of any proposed development should have a rational and proportional nexus to the anticipated impacts of the development. Allowed uses with arbitrary components may not adequately mitigate potential impacts to offsite areas. Finally, as noted above, the scientific literature supports the fact that human disturbance can significantly impact big game habitat over one mile away. (*See* Exhibit 7 at 1.) Consequently, some sort of buffer zone surrounding the Metolius Basin may be appropriate.

2. Water and Fish

Similarly to the wildlife resource discussed above, the Tribe has significant interests in maintaining sustainable fisheries for cultural and subsistence reasons. Accordingly, the Tribe maintains sustainable harvests of this precious resource. To that end, IRMP I provides the following two goals for the management of fish and aquatic resources: (1) maintain or enhance populations of resident and anadromous fish that meet the cultural, subsistence, and recreational needs of tribal members; and (2) manage watershed processes to maintain or improve functional aquatic habitats for fish and other water-dependent resources. (Exhibit 9 at 1). Additionally, the State of Oregon has recognized the Tribe as a co-manager of fishery resources in the Metolius and Deschutes subbasins off the reservation. Further, the 1997 Water Rights Settlement Agreement with the State of Oregon and the U.S. Government expressly recognized not only the scope and priority of the Tribe's instream water rights in those rivers, but recognized the importance of tributaries for fisheries management. Last, as noted above, the Tribe's potable water supply is from the Deschutes river (in Warm Springs) which all upstream management decisions, including water right approvals, land use decisions, riparian management, fisheries management, and water quality certification, among others, have the potential to impact.

As an example of potential impacts from large scale development in the planning area, both of the destination resort mapped properties have applied to the Oregon Water Resources Department ("OWRD") for a groundwater withdrawal permit. Given the known hydrology of the Deschutes basin, namely the interconnection of the surface and groundwater flows, and given significant modeling development work commissioned by the Tribe, in coordination with USGS, OWRD, and the Bureau of Reclamation, the Tribe was concerned about the impact of groundwater withdrawals on surface water resources. These impacts could involve impacts to the Tribe's reserved instream water right, scenic values, and fishery habitat. Accordingly, the

Tribe requested that its hydrologists, Natural Resources Consulting Engineers (“NRCE”), run a modeled impact of the requested withdrawals of both properties. NRCE’s analysis and conclusion identified that, while data inputs can be refined to address specific withdrawal requests, timing, and overall limitations, there is a direct impact to Metolius flows and tributaries and there is the potential for cumulative impacts. This is particularly important considering the obvious unknown regarding developer water needs now and in the future.

In December, OWRD issued a proposed final order (“PFO”) for Water Right Application G-16674, related to the Ponderosa mapped destination resort. The PFO does not contain mitigation requirements for impacts to surface water in the Metolius subzone nor did it undertake a full fishery impact analysis under Division 33 of OWRD’s rules. Because the Tribe was concerned about the potential of the PFO to adversely affect its interests in the basin, the Tribe filed a protest to the PFO. (*See* Exhibit 11.) The Tribe is highly concerned about fishery impacts, particularly in tributaries, such as Lake Creek, to the Metolius. The Tribe has offered to work with OWRD and the applicant to address the Tribe’s concerns if possible.

The potential seriousness of at least the Ponderosa water withdrawal impacts is detailed in a January 27, 2009 letter from Brett Hodgson with ODFW to E. Timothy Wall with OWRD. (*See* Exhibit 12.) That letter details ODFW mandated conservation and recreational goals under several authorities in particular with respect to Fly Creek, Whychus Creek, and the Metolius River. Further, ODFW has expressed the opinion that the withdrawals have the potential to jeopardize federally and state listed and/or sensitive species, such as bull trout, summer steelhead, Spring Chinook, and redband trout and to impair their recovery.

It appears that the Water Right application for the Metolian is not facing any immediate decision by OWRD. This may be because it may be very difficult to identify sources of Metolius subbasin mitigation water and/or because the Metolian has proposed capturing surface water before it enters any surface water tributaries or the groundwater system. Given that the entire system is largely sourced from snowmelt runoff, the effects of this capture and storage proposal are not yet known and need to be closely evaluated. However, it is unclear to the Tribe what regulatory jurisdiction exists to evaluate this proposal.

Another potential offsite impact that the Tribe is concerned about is the effect of additional visitors to the banks of the Metolius and its tributaries. As explained in his February 10, 2009 testimony, Rod Bonaker with the U.S. Forest Service (“USFS”), Sisters Ranger District, stated that adding significant numbers of new visitors to the Metolius could harm its Outstandingly Remarkable Values. That is because it has been recognized in planning documents that the Metolius basin is largely at maximum capacity for recreational use. This recreational use includes hunting, fishing, hiking, and camping, among others. As a result, the USFS management direction has been to *limit* development of new commercial and residential uses. This management direction is in stark contrast to the thousands of new residences and people who would come to the two mapped destination resorts to recreate in the basin. For example, while the current Metolian concept includes a concerted effort to minimize some resource

impacts, the Tribe is concerned about the Metolian's express design to attract an "REI crowd." In other words, the Metolian appears designed to a clientele who will in fact venture off of the property to enjoy nearby fishing, boating, hunting, and hiking opportunities. Similarly, the Tribe is concerned that the sheer scale of the Ponderosa proposal will create significant new numbers of visitors recreating in an area where the capacity to absorb existing numbers is exhausted. Overuse of the banks of the Metolius and surrounding streams can adversely impact riparian communities, water quality, and aquatic habitat for fish and wildlife values.

In summary, based on the weight of the evidence provided by the Tribe and other interested parties, it cannot be disputed that a groundwater withdrawal at either of the two mapped destination resorts will have direct offsite impacts to surface flows in the Metolius river subbasin and Deschutes basin general zone. Those offsite impacts either singly or cumulatively could have serious implications for flows in the Metolius and/or smaller tributaries to the Metolius and the Deschutes, such as Fly Creek, Whychus Creek, and Lake Creek. These impacts have the potential to worsen existing water quality problems where they exist and to impair fish habitat and the health and recovery of important fisheries, among other impacts. It appears that there is a high risk that Deschutes basin groundwater mitigation rules, while providing a sensible program for many parts of the Deschutes basin, as they have been applied in the Ponderosa application have not been sufficient to protect these important values and resources. Further, it is unclear what impact review would be made of the current Metolian surface water capture and storage proposal. Last, the Tribe is also highly concerned about the impact of significant numbers of new visitors to the banks of the Metolius and surrounding streams to riparian, water quality, and habitat values.

The Tribe remains willing to evaluate and refine further the impacts and potential mitigation if possible to ensure that the interests above are adequately protected. However, it should be noted that until an express management directive is included in a statewide management plan, future activities and requests may not be evaluated to balance multiple interests. Indeed, neither destination resort is developed nor is it clear whether existing development concepts will remain viable now and into the future, particularly in light of the very volatile real estate market nationwide and in Central Oregon.

3. Cultural Resources

The Metolius subbasin and surroundings are part of the Tribe's ceded lands and tribal members have utilized this area for many centuries to hunt, fish, gather, conduct ceremonies, and travel and camp, among many other activities. The Tribe's conception of "cultural resources" goes far beyond the typical resources included within a local Goal 5 program—which usually focuses on historic buildings and archeological resources. The Tribe, however, conceives cultural resources very broadly to include the very resources that give rise to these activities—water, deer and elk herds, fishery resources—as well as the surroundings that hosted these activities—camping and gathering locations, among others. No cultural resources survey was required to be conducted for the mapped destination resorts; accordingly, it is not known whether there is a high, medium,

or low probability of impact to traditional cultural properties, archeological sites, or other cultural resources of importance either onsite or offsite. A full literature review and oral history would be required to identify the likelihood of impacts to these resources; however, no Goal 5 program would require any such evaluation.

With respect to addressing cultural resources, the Tribe's recommendation is as follows. The first and foremost task is to complete an *Identification Study of the Area of Potential Effect (APE)*. The intent of the study is to: (1) identify all known historic properties and sites that may directly or indirectly be affected; and (2) provide information to guide future planning by identifying high probability areas and locations of cultural sites. Based on State Historic Preservation Office standards, an archaeological literature review should also include a one-mile buffer area around the proposed study area. Refinement of the APE would then be accomplished through the following five steps:

1. Conduct thorough background research of the history of land use activities, including literature review of all pertinent archaeological and ethnographic data of the APE.²
2. Conduct oral history study of the APE by working with the Tribe to determine what ethnographic data of the area the Tribe may have.³
3. An archaeologist should prepare a map that indicates known historic properties and traditional cultural properties, including the identification of high and moderate probability areas that should be considered for additional evaluations.
4. Conduct a sample survey of the high probability areas, which may include subsurface testing (probes) in areas of low visibility to determine the extent of the identified historic properties and each site's significance.
5. Develop a Cultural Resource Management Plan (CRMP) for those lands affected.

The next task would be to develop a Programmatic Agreement on the treatment and management of cultural resources between the Tribe and the State.

C. The Tribe's Comments on Proper Management of the MBACSC

The Tribe appreciates the opportunity to provide its input on a potential management plan for the Metolius basin planning area. As noted above, the Tribe strongly supports a statewide management plan for the entire planning area for large scale development because there is a documented potential for offsite impacts and under-evaluated onsite impacts to resources of significant importance to federal, state, and tribal managers and to public interest groups. A

² This work should be conducted by a professional archaeologist meeting Secretary of Interior Standards.

³ Generally, this information is missing from published literature and thus, is overlooked by a general study. Such data may not be compiled into an easily identifying format, and a contract with the Tribes may be warranted.

statewide management plan is warranted because existing regulatory tools are inadequate to effectively balance these multiple interests in a coordinated fashion in the basin.

Because the Tribe is primarily concerned with the potential resource impacts that it feels are significant, it is difficult for the Tribe to weigh in on specific numerical limits for any such developments. That is because, given the lack of thorough and integrated resource impact evaluation, it is difficult if not impossible to state with any degree of confidence that any specific limit would sufficiently protect various resource values. For example, limiting the number of residences on the Ponderosa property might reduce the water needs of the resort and lower the numbers of visitors within the sensitive wildlife habitat area and Metolius recreational resource areas. However, it would not address the potential need to ensure localized impact mitigation to avoid harm to fishery resources. Similarly, without further evaluation, it is unclear at this time what level of impact the current wildlife populations can tolerate. In summary, a numbers based approach, standing alone, may either reduce the flexibility of the developer if resource impacts can be adequately mitigated or inadequately protect critical resources.

Given the sensitivity of the area's resources, its current carrying capacity, the jurisdiction of local, state, tribal, and federal authorities, and the interrelated and interconnected resources, it seems most desirable to ensure that a full integrated resource evaluation be conducted for any large scale development in the proposed planning area. This planning effort should be NEPA-like, meaning it should evaluate a full range of values and should be conducted by a third party independent contractor at a developer's cost. This planning effort should be coupled with substantive resource impact criteria, and the ultimate land use decision should be vested in a state agency or commission, such as LCDC that would coordinate—not divest—existing agency management authority.

Examples of additional planning concepts could include an affirmative finding that the proposal will benefit Jefferson County and an affirmative finding that it will not have detrimental impacts to the surrounding community. Rulemaking is likely desirable to fully identify the considerations under these criteria and would provide more time to review important data, authorities, and details. For example, a benefits analysis could include an evaluation of job creation, tax revenue, and the economic impacts of the proposed development on local economies and public services, including an analysis of the anticipated benefits of the development to the community. An impacts analysis should expressly recognize the Tribe's co-management status and include, at a minimum, the following:⁴

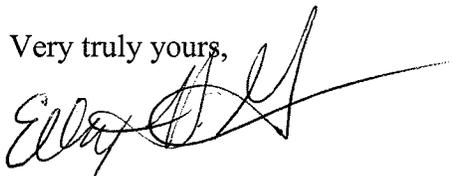
- Land use approval contingent on water right approval and/or water source review and approval by OWRD and Oregon Department of Environmental Quality ("ODEQ") based upon OWRD surface water/groundwater impact modeling of all potentially affected rivers and streams from groundwater withdrawal or surface water capture and storage.

⁴ The Tribe does not undertake to identify potential criteria that could be appropriate, for example, in the areas of socioeconomic impacts and local services.

- OWRD approval contingent on evaluation of water quality and aquatic habitat impacts by ODEQ and fishery and wildlife managers, including tribal co-managers, and criteria requiring local impact mitigation sufficient to meet applicable management directives and plans and regulatory requirements of jurisdictional agencies and to prevent impairment of recovery of sensitive species and to prevent impairment of aquatic habitat restoration efforts required under federal license requirements.
- OWRD approval contingent on affirmative conclusion of no adverse impact to tribal or state instream water rights and scenic waterway flows.
- Land use approval contingent on adoption of a cultural resources management plan approved by the State Historic Preservation Officer, which is based on a cultural resources literature and oral history investigation.
- Land use approval contingent on completion of a revised wildlife resources inventory that includes winter range, migration corridors, and current habits and health of big game resources. Mitigation required to ensure that the impact will not be inconsistent with existing wildlife and land use management plans or regulatory authorities of state, federal, and tribal agencies.
- Land use approval contingent on an assessment of offsite recreational use and impacts. Mitigation required to ensure that the impact will not be inconsistent with existing land use, fishery, and wildlife management plans or regulatory authorities of state, federal, and tribal agencies.

While the Tribe walks in similar shoes as Jefferson County in terms of needing economic development, the Tribe would apply *all* of the above requirements to a development of its own either on the reservation or off the reservation. Accordingly, the Tribe believes that it is appropriate to suggest a more coordinated and comprehensive resource-focused approach to development within this very special and sensitive area and we look forward to continuing to collaborate with the Commission on the development of a management plan.

Very truly yours,



ELLEN H. GROVER

The Office of the President of the United States

(TREATY)

*1 TREATY WITH THE TRIBES OF MIDDLE OREGON, 1855.

June 25, 1855.

Articles of agreement and convention made and concluded at Wasco, near the Dalles of the Columbia River, in Oregon Territory, by Joel Palmer, superintendent of Indian affairs, on the part of the United States, and the following-named chiefs and head-men of the confederated tribes and bands of Indians, residing in Middle Oregon, they being duly authorized thereto by their respective bands, to wit: Symtustus, Locks-quis-sa, Shick-a-me, and Kuck-up, chiefs of the Taih or Upper De Chutes band of Walla-Wallas; Stocket-ly and Iso, chiefs of the Wyam or Lower De Chutes band of Walla-Wallas; Alexis and Talkish, chiefs of the Tenino band of Walla-Wallas; Yise, chief of the Dock-Spus or John Day's River band of Walla-Wallas; Mark, William Chenook, and Cush-Kella, chiefs of the Dalles band of the Wascoes; Toh-simph, chief of the Ki-gal-twal-la band of Wascoes; and Wal-la-chin, chief of the Dog River band of Wascoes. [FNA] [FNB]

ARTICLE 1

The above-named confederated bands of Indians cede to the United States all their right, title, and claim to all and every part of the country claimed by them, included in the following boundaries, to wit: [FNC]

Commencing in the middle of the Columbia River, at the Cascade Falls, and running thence southerly to the summit of the Cascade Mountains; thence along said summit to the forty-fourth parallel of north latitude; thence east on that parallel to the summit of the Blue Mountains, or the western boundary of the Sho-sho-ne or Snake country; thence northerly along that summit to a point due east from the head-waters of Willow Creek; thence west to the head-waters of said creek; thence down said stream to its junction with the Columbia River; and thence down the channel of the Columbia River to the place of beginning. Provided, however, that so much of the country described above as is contained in the following boundaries, shall, until otherwise directed by the President of the United States, be set apart as a residence for said Indians, which tract for the purposes contemplated shall be held and regarded as an Indian reservation, to wit: [FND] [FNE]

Commencing in the middle of the channel of the De Chutes River opposite the eastern termination of a range of high lands usually known as the Mutton Mountains; thence westerly to the summit of said range, along the divide to its connection with the Cascade Mountains; [FNF] thence to the summit of said mountains; thence southerly to Mount Jefferson; thence down the main branch of De Chutes River; heading in this peak, to its junction with De Chutes River; and thence down the middle of the channel of said river to the place of beginning. All of which tract shall be set apart, and, so far as necessary, surveyed and marked out for their exclusive use; nor shall any white person be permitted to reside upon the same without the concurrent permission of the agent and superintendent. [FNG]

*2 The said bands and tribes agree to remove to and settle upon the same within one year after the ratification of this treaty, without any additional expense to the United States other than is provided for by this treaty; and, until the expiration of the time specified, the said bands shall be permitted to occupy and reside upon the tracts now

possessed by them, guaranteeing to all white citizens the right to enter upon and occupy as settlers any lands not included in said reservation, and not actually inclosed by said Indians. Provided, however, That prior to the removal of said Indians to said reservation, and before any improvements contemplated by this treaty shall have been commenced, that if the three principal bands, to wit: the Wascopum, Tiah, or Upper De Chutes, and the Lower De Chutes bands of Walla-Wallas shall express in council, a desire that some other reservation may be selected for them, that the three bands named may select each three persons of their respective bands, who with the superintendent of Indian affairs or agent, as may by him be directed, shall proceed to examine, and if another location can be selected, better suited to the condition and wants of said Indians, that is unoccupied by the whites, and upon which the board of commissioners thus selected may agree, the same shall be declared a reservation for said Indians, instead of the tract named in this treaty. Provided, also, That the exclusive right of taking fish in the streams running through and bordering said reservation is hereby secured to said Indians; and at all other usual and accustomed stations, in common with citizens of the United States, and of erecting suitable houses for curing the same; also the privilege of hunting, gathering roots and berries, and pasturing their stock on unclaimed lands, in common with citizens, is secured to them. And provided, also, That if any band or bands of Indians, residing in and claiming any portion or portions of the country in this article, shall not accede to the terms of this treaty, then the bands becoming parties hereunto agree to receive such parr of the several and other payments herein named as a consideration for the entire country described as aforesaid as shall be in the proportion that their aggregate number may have to the whole number of Indians residing in and claiming the entire country aforesaid, as consideration and payment in full for the tracts in said country claimed by them. And provided, also, That where substantial improvements have been made by any members of the bands being parties to this treaty, who are compelled to abandon them in consequence of said treaty, the same shall be valued, under the direction of the President of the United States, and payment made therefor; or, in lieu of said payment, improvements of equal extent and value at their option shall be made for them on the tracts assigned to each respectively. [FNH] [FNI] [FNJ] [FNK] [FNL] [FNM]

ARTICLE 2

In consideration of, and payment for, the country hereby ceded, the United States agree to pay the bands and tribes of Indians claiming territory and residing in said country, the several sums of money following, to wit: [FNN]

*3 Eight thousand dollars per annum for the first five years, commencing on the first day of September, 1856, or as soon thereafter as practicable.

Six thousand dollars per annum for the term of five years next succeeding the first five.

Four thousand dollars per annum for the term of five years next succeeding the second five; and

Two thousand dollars per annum for the term of five years next succeeding the third five.

All of which several sums of money shall be expended for the use and benefit of the confederated bands, under the direction of the President of the United States, who may from time to time, at his discretion determine what proportion thereof shall be expended for such objects as in his judgment will promote their well-being and advance them in

civilization; for their moral improvement and education; for building, opening and fencing farms, breaking land, providing teams, stock, agricultural implements, seeds, &c.; for clothing, provisions, and tools; for medical purposes, providing mechanics and farmers, and for arms and ammunition. [FNO]

ARTICLE 3

The United States agree to pay said Indians the additional sum of fifty thousand dollars, a portion whereof shall be applied to the payment for such articles as may be advanced them at the time of signing this treaty, and in providing, after the ratification thereof and prior to their removal, such articles as may be deemed by the President essential to their want; for the erection of buildings on the reservation, fencing and opening farms; for the purchase of teams, farming implements, clothing and provisions, tools, seeds, and for the payment of employees; and for subsisting the Indians the first year after their removal. [FNP]

ARTICLE 4

In addition to the considerations specified the United States agree to erect, at suitable points on the reservation, one sawmill and one flouring-mill; suitable hospital buildings; one school-house; one blacksmith-shop with a tin and a gunsmith-shop thereto attached; one wagon and plough maker shop; and for one sawyer, one miller, one superintendent of farming operations, a farmer, a physician, a school-teacher, a blacksmith, and a wagon and plough maker, a dwelling house and the requisite outbuildings for each; and to purchase and keep in repair for the time specified for furnishing employees all necessary mill-fixtures, mechanics' tools, medicines and hospital stores, books and stationery for schools, and furniture for employees. [FNQ]

The United States further engage to secure and pay for the services and subsistence, for the term of fifteen years, of one farmer, one blacksmith, and one wagon and plough maker; and for the term of twenty years, of one physician, one sawyer, one miller, one superintendent of farming operations, and one school teacher. [FNR]

The United States also engage to erect four dwelling-houses, one for the head chief of the confederated bands, and one each for the Upper and Lower De Chutes bands of Walla-Wallas, and for the Wascopum band of Wascoes, and to fence and plough for each of the said chiefs ten acres of land; also to pay the head chief of the confederated bands a salary of five hundred dollars per annum for twenty years, commencing six months after the three principal bands named in this treaty shall have removed to the reservation, or as soon thereafter as a head chief should be elected: And provided, also, That at any time when by the death, resignation, or removal of the chief selected, there shall be a vacancy and a successor appointed or selected, the salary, the dwelling, and improvements shall be possessed by said successor, so long as he shall occupy the position as head chief; so also with reference to the dwellings and improvements provided for by this treaty for the head chiefs of the three principal bands named. [FNS] [FNT]

ARTICLE 5

*4 The President may, from time to time, at his discretion, cause the whole, or such portion as he may think proper, of the tract that may now or hereafter be set apart as a permanent home for these Indians, to be surveyed into lots and assigned to such Indians of the confederated bands as may wish to enjoy the privilege, and locate [FNU] thereon permanently. To a single person over twenty-one years of age, forty acres; to a family

of two persons, sixty acres; to a family of three and not exceeding five, eighty acres; to a family of six persons, and not exceeding ten, one hundred and twenty acres; and to each family over ten in number, twenty acres for each additional three members. And the President may provide such rules and regulations as will secure to the family in case of the death of the head thereof the possession and enjoyment of such permanent home and the improvement thereon; and he may, at any time, at his discretion, after such person or family has made location on the land assigned as a permanent home, issue a patent to such person or family for such assigned land, conditioned that the tract shall not be aliened or leased for a longer term than two years and shall be exempt from levy, sale, or forfeiture, which condition shall continue in force until a State constitution embracing such lands within its limits shall have been formed, and the legislature of the State shall remove the restrictions. Provided, however, That no State legislature shall remove the restrictions herein provided for without the consent of Congress. And provided, also, That if any person or family shall at any time neglect or refuse to occupy or till a portion of the land assigned and on which they have located, or shall roam from place to place indicating a desire to abandon his home, the President may, if the patent shall have been issued, revoke the same, and if not issued, cancel the assignment, and may also withhold from such person, or family, their portion of the annuities, or other money due them, until they shall have returned to such permanent home and resumed the pursuits of industry, and in default of their return the tract may be declared abandoned, and thereafter assigned to some other person or family of Indians residing on said reservation. [FNV] [FNW] [FNX]

ARTICLE 6

The annuities of the Indians shall not be taken to pay the debts of individuals. [FNY]

ARTICLE 7

The confederated bands acknowledge their dependence on the Government of the United States, and promise to be friendly with all the citizens thereof, and pledge themselves to commit no depredation on the property of said citizens; and should any one or more of the Indians violate this pledge, and the fact be satisfactorily proven before the agent, the property taken shall be returned, or in default thereof, or if injured or destroyed, compensation may be made by the Government out of their annuities; nor will they make war on any other tribe of Indians except in self-defence, but submit all matters of difference between them and other Indians to the Government of the United States, or its agents for decision, and abide thereby; and if any of the said Indians commit any depredations on other Indians, the same rule shall prevail as that prescribed in the case of depredations against citizens; said Indians further engage to submit to and observe all laws, rules, and regulations which may be prescribed by the United States for the government of said Indians. [FNZ] [FNAA] [FNBB]

ARTICLE 8

*5 In order to prevent the evils of intemperance among said Indians, it is hereby provided, that if any one of them shall drink liquor to excess, or procure it for others to drink, his or her proportion of the annuities may be withheld from him or her for such time as the President may determine. [FNCC]

ARTICLE 9

The said confederated bands agree that whensoever, in the opinion of the President of

the United States, the public interest may require it, that all roads, highways, and railroads shall have the right of way through the reservation herein designated, or which may at any time hereafter be set apart as a reservation for said Indians. [FNDD]

This treaty shall be obligatory on the contracting parties as soon as the same shall be ratified by the President and Senate of the United States. [FNEE]

In testimony whereof, the said Joel Palmer, on the part of the United States, and the undersigned, chiefs, headmen, and delegates of the said confederated bands, have hereunto set their hands and seals, this twenty-fifth day of June, eighteen hundred fifty-five.

Joel Palmer, Superintendent of Indian Affairs, O.T. (L.S.)

Wasco:

Mark, his x mark. (L.S.)

William Chenook, his x mark. (L.S.)

Cush Kella, his x mark. (L.S.)

Lower De Chutes:

Stock-etley, his x mark. (L.S.)

Iso, his x mark. (L.S.)

Upper De Chutes:

Simtustus, his x mark. (L.S.)

Locksquissa, his x mark. (L.S.)

Shick-ame, his x mark. (L.S.)

Kuck-up, his x mark. (L.S.)

Tenino:

Alexsee, his x mark. (L.S.)

Talekish, his x mark. (L.S.)

Dog River Wasco:

Walachin, his x mark. (L.S.)

Tah Symph, his x mark. (L.S.)

Ash-na-chat, his x mark. (L.S.)

Che-wot-nleth, his x mark. (L.S.)

Te-cho, his x mark. (L.S.)

Westlaw.

1855 WL 5605 (Trty.)
1855 WL 5605 (Trty.), 12 Stat 963
(Cite as: 1855 WL 5605 (Trty.))

Page 6

Sha-qually, his x mark. (L.S.)
Louis, his x mark. (L.S.)
Yise, his x mark. (L.S.)
Stamite, his x mark. (L.S.)
Ta-cho, his x mark. (L.S.)
Penop-teyot, his x mark. (L.S.)
Elosh-kish-kie, his x mark. (L.S.)
Am. Zelic, his x mark. (L.S.)
Ke-chac, his x mark. (L.S.)
Tanes Salmon, his x mark. (L.S.)
Ta-kos, his x mark. (L.S.)
David, his x mark. (L.S.)
Sowal-we, his x mark. (L.S.)
Postie, his x mark. (L.S.)
Yawan-shewit, his x mark. (L.S.)
Own-aps, his x mark. (L.S.)
Kossa, his x mark. (L.S.)
Pa-wash-ti-mane, his x mark. (L.S.)
Ma-we-nit, his x mark. (L.S.)
Tipso, his x mark. (L.S.)
Jim, his x mark. (L.S.)
Peter, his x mark. (L.S.)
Na-yoct, his x mark. (L.S.)
Wal-tacom, his x mark. (L.S.)
Cho-kalth, his x mark. (L.S.)
Pal-sta, his x mark. (L.S.)
Mission John, his x mark. (L.S.)
Le Ka-ya, his x mark. (L.S.)

Westlaw.

1855 WL 5605 (Trty.)
1855 WL 5605 (Trty.), 12 Stat 963
(Cite as: 1855 WL 5605 (Trty.))

Page 7

La-wit-chin, his x mark. (L.S.)
Low-las, his x mark. (L.S.)
Thomson, his x mark. (L.S.)
Charley, his x mark. (L.S.)
Copefornia, his x mark. (L.S.)
Wa-toi-mettla, his x mark. (L.S.)
Ke-la, his x mark. (L.S.)
Pa-ow-ne, his x mark. (L.S.)
Kuck-up, his x mark. (L.S.)
*6 Poyet, his x mark. (L.S.)
Ya-wa-clax, his x mark. (L.S.)
Tam-cha-wit, his x mark. (L.S.)
Tam-mo-yo-cam, his x mark. (L.S.)
Was-ca-can, his x mark. (L.S.)
Talle Kish, his x mark. (L.S.)
Waleme Toach, his x mark. (L.S.)
Site-we-loch, his x mark. (L.S.)
Ma-ni-nect, his x mark. (L.S.)
Pich-kan, his x mark. (L.S.)
Pouh-que, his x mark. (L.S.)
Eye-eya, his x mark. (L.S.)
Kam-kus, his x mark. (L.S.)
Sim-yo, his x mark. (L.S.)
Kas-la-chin, his x mark. (L.S.)
Pio-sho-she, his x mark. (L.S.)
Mop-pa-man, his x mark. (L.S.)
Sho-es, his x mark. (L.S.)
Ta-mo-lits, his x mark. (L.S.)

Westlaw.

1855 WL 5605 (Trty.)
1855 WL 5605 (Trty.), 12 Stat 963
(Cite as: 1855 WL 5605 (Trty.))

Page 8

Ka-lim, his x mark. (L.S.)
Ta-yes, his x mark. (L.S.)
Was-en-was, his x mark. (L.S.)
E-yath Kloppy, his x mark. (L.S.)
Paddy, his x mark. (L.S.)
Sto-quin, his x mark. (L.S.)
Charley-man, his x mark. (L.S.)
Ile-cho, his x mark. (L.S.)
Pate-cham, his x mark. (L.S.)
Yan-che-woc, his x mark. (L.S.)
Ya-toch-la-le, his x mark. (L.S.)
Alpy, his x mark. (L.S.)
Pich, his x mark. (L.S.)
William, his x mark. (L.S.)
Peter, his x mark. (L.S.)
Ischa Ya, his x mark. (L.S.)
George, his x mark. (L.S.)
Jim, his x mark. (L.S.)
Se-ya-las-ka, his x mark. (L.S.)
Ha-lai-kola, his x mark. (L.S.)
Pierro, his x mark. (L.S.)
Ash-lo-wash, his x mark. (L.S.)
Paya-tilch, his x mark. (L.S.)
Sae-pa-waltcha, his x mark. (L.S.)
Shalquilkey, his x mark. (L.S.)
Wa-qual-lol, his x mark. (L.S.)
Sim-kui-kui, his x mark. (L.S.)
Wacha-chiley, his x mark. (L.S.)

Westlaw.

1855 WL 5605 (Trty.)

Page 9

1855 WL 5605 (Trty.), 12 Stat 963

(Cite as: 1855 WL 5605 (Trty.))

Chi-kal-kin, his x mark. (L.S.)

Squa-yash, his x mark. (L.S.)

Sha Ka, his x mark. (L.S.)

Keau-i-sene, his x mark. (L.S.)

Che-chis, his x mark. (L.S.)

Sche-noway, his x mark. (L.S.)

Scho-ley, his x mark. (L.S.)

We-ya-thley, his x mark. (L.S.)

Pa-leyathley, his x mark. (L.S.)

Keyath, his x mark. (L.S.)

I-poth-pal, his x mark. (L.S.)

S. Kolps, his x mark. (L.S.)

Walimtalín, his x mark. (L.S.)

Tash Wick, his x mark. (L.S.)

Hawatch-can, his x mark. (L.S.)

Ta-wait-cla, his x mark. (L.S.)

Patoch Snort, his x mark. (L.S.)

Tachins, his x mark. (L.S.)

Comochal, his x mark. (L.S.)

Passayei, his x mark. (L.S.)

Watan-cha, his x mark. (L.S.)

Ta-wash, his x mark. (L.S.)

A-nouth-shot, his x mark. (L.S.)

Hanwake, his x mark. (L.S.)

Pata-la-set, his x mark. (L.S.)

Tash-weict, his x mark. (L.S.)

Wescha-matolla, his x mark. (L.S.)

Chle-mochle-mo, his x mark. (L.S.)

Westlaw.

1855 WL 5605 (Trty.)
1855 WL 5605 (Trty.), 12 Stat 963
(Cite as: 1855 WL 5605 (Trty.))

Page 10

Quae-tus, his x mark. (L.S.)
Skuilts, his x mark. (L.S.)
Panospam, his x mark. (L.S.)
Stolameta, his x mark. (L.S.)
Tamayechotote, his x mark. (L.S.)
Qua-losh-kin, his x mark. (L.S.)
Wiska Ka, his x mark. (L.S.)
Che-lo-tha, his x mark. (L.S.)
Wetone-yath, his x mark. (L.S.)
We-ya-lo-cho-wit, his x mark. (L.S.)
Yoka-nolth, his x mark. (L.S.)
Wacha-ka-polle, his x mark. (L.S.)
Kon-ne, his x mark. (L.S.)
*7 Ash-ka-wish, his x mark. (L.S.)
Pasquai, his x mark. (L.S.)
Wasso-kui, his x mark. (L.S.)
Quaino-sath, his x mark. (L.S.)
Cha-ya-tema, his x mark. (L.S.)
Wa-ya-lo-chol-wit, his x mark. (L.S.)
Flitch Kui Kui, his x mark. (L.S.)
Walcha Kas, his x mark. (L.S.)
Watch-tla, his x mark. (L.S.)
Enias, his x mark. (L.S.)
Signed in presence of - -
Wm. C. McKay, secretary of treaty, O.T.
R. R. Thompson, Indian agent.
R. B. Metcalfe, Indian sub-agent.
C. Mespotie.

Westlaw.

1855 WL 5605 (Trty.)

Page 11

1855 WL 5605 (Trty.), 12 Stat 963

(Cite as: 1855 WL 5605 (Trty.))

John Flett, interpreter.

Dominick Jondron, his x mark, interpreter.

Mathew Dofa, his x mark, interpreter.

FNA Ratified Mar. 8, 1859.

FNB Proclaimed Apr. 18, 1859.

FNC Cession of lands to the United States.

FND Boundaries.

FNE Reservation.

FNF Boundaries.

FNG Whites not to reside thereon unless, etc.

FNH Bands to settle thereon within a year.

FNI Another reservation to be selected in lieu of this, if, etc.

FNJ Rights and privileges secured to Indians.

FNK See Art. 1, treaty of Nov. 1, 1865.

FNL Proviso in case any band does not accede to this treaty.

FNM Allowance for improvements if, etc.

FNN Payments by the United States.

FNO How to be expended.

FNP \$50,000 additional to be expended for buildings, etc.

FNQ United States to erect sawmills, school-house, etc.

FNR To furnish farmer, mechanics, physician, etc.

FNS To erect dwelling houses, etc., for head chiefs.

FNT Successor of head chief to take them.

FNU Lands may be allotted to individual Indians for permanent homes.

FNV Patents to issue therefor; conditions thereof.

FNW Restrictions not to be removed without, etc.

FNX Patent may be cancelled.

FNY Annuities of Indians not to pay debt of individuals.

Westlaw.

1855 WL 5605 (Trty.)

Page 12

1855 WL 5605 (Trty.), 12 Stat 963

(Cite as: 1855 WL 5605 (Trty.))

FNZ Bands to preserve friendly relations.

FNAA To pay for depredations.

FNBB Not to make war, except, etc.

FNCC Annuities to be withheld from those drinking liquor to excess.

FNDD Roads, etc., may be made through reservation.

FNEE When treaty to take effect.

END OF DOCUMENT

**CONFEDERATED TRIBES OF THE WARM SPRINGS RESERVATION
WATER RIGHTS SETTLEMENT AGREEMENT**

November 17, 1997

This Water Rights Settlement and Intergovernmental Agreement is entered into by and between **THE CONFEDERATED TRIBES OF THE WARM SPRINGS RESERVATION OF OREGON**, the **STATE OF OREGON** and the **UNITED STATES OF AMERICA**, and shall become effective as set forth hereinafter.

RECITALS

WHEREAS, pursuant to their Treaty with the United States, the Confederated Tribes of the Warm Springs Reservation of Oregon (Tribes) have a federally reserved Indian water right to the water of the Reservation;

WHEREAS, the Parties agree that it is in the best interest of the Parties and the public to define the scope and attributes of the federally reserved Indian water right claims for the Warm Springs Indian Reservation;

WHEREAS, the Parties desire to establish the principles and mechanisms for mutually beneficial government to government good faith negotiations to resolve water issues affecting the Parties, to protect the interests of all Existing State Water Rights holders and to provide the

Indian and non-Indian citizens of the Deschutes Basin with certainty regarding water rights that will allow them to plan their future;

WHEREAS, Chapter 81, Laws of Oregon 1987 authorizes the Director of the Oregon Water Resources Department (Director) to negotiate with representatives of the Tribes and the United States as trustee for the Tribes, to define the scope and attributes of the Tribes' rights to water under the treaty between the United States and the Tribes of Middle Oregon;

WHEREAS, ORS 190.110 authorizes the State to enter into intergovernmental agreements with Indian Tribes in Oregon to establish agreements, compacts or other mutually beneficial arrangements for the administration and/or management of matters of mutual interest to the respective governments;

WHEREAS, by Resolution Numbers 6894 and 8046 the Tribal Council of the Tribes designated an official negotiating task force of the Tribes for the negotiation of their Indian water rights for the Reservation;

WHEREAS, the policy of the federal Executive Branch is to facilitate negotiations among Indian tribes, states and federal agencies to avoid litigation;

WHEREAS, on April 23, 1986 the United States Secretary of the Interior created an official negotiating team to act as the official representative of the Secretary of the Interior for negotiation of the Tribes' reserved water rights and water administration;

WHEREAS, the Parties agree that it is in the best interest of water resource management and protection for the Tribes to manage the water resources of the Reservation;

WHEREAS, in addition to the interest of the Parties in settling the scope and attributes of the Tribes' reserved water rights, the Parties have a mutual interest in assuring the long-term

protection of stream flows necessary to support and sustain the natural ecosystem and fisheries of the Deschutes River Basin, and therefore desire to cooperate in the protection of such Instream Flows;

WHEREAS, the Tribes have a long-standing history of protection of Instream Flows on the Reservation to sustain, preserve, and enhance fisheries and have as their most important objective the maintenance of healthy, viable fish stocks, both resident and anadromous, in the Deschutes Basin;

WHEREAS, the Tribes also desire to provide a viable homeland in perpetuity for the Tribes and its members and to maintain the maximum flexibility possible in the use and administration of all water on the Reservation;

WHEREAS, the Parties recognize that the unique hydrology of the Deschutes River Basin and the favorable pattern of existing water use creates an opportunity for successful negotiations; and,

WHEREAS, because of the area's unique geology, virtually all water arising on the Reservation remains on the Reservation until it joins Reservation boundary streams, and return flows of water diverted in the upper Deschutes River Basin reenters the Deschutes River systems at or above Lake Billy Chinook; and

WHEREAS, there are few non-Indian water rights on the Reservation competing for water arising on the Reservation, and because the unique situation in the Deschutes River Basin made it prudent for the Tribes to offer that future uses of tribal reserved water rights are subordinated to existing state water rights, potential conflict between tribal water uses and established state water use patterns is negligible; and

WHEREAS, the Parties have special obligations under United States v. Oregon (Case No. 68-513MA) to protect the fisheries in the Columbia River and its tributaries; and

WHEREAS, the Parties agreed to commence good faith government-to-government negotiations; and

WHEREAS, this Agreement is the culmination of these negotiations.

NOW THEREFORE, the Parties agree as follows:

ARTICLE I

GENERAL PURPOSES

A. **PURPOSE OF THIS AGREEMENT.** The purpose of this Agreement is to determine fully and forever the scope and attributes of the federally reserved Indian water right of the Tribes, and collectively of all Persons claiming water rights under the Treaty, for lands within the Reservation held in trust by the United States, including tribal members and Allottees, and all claims to such water rights by the United States for the benefit of the Tribes, secured by the Treaty; and to establish the quantities of water reserved by the Treaty. This Agreement is intended to settle disputes and remove causes of future controversy between or among the Tribes, the State, the United States, any other Person, or any of them concerning the use of water as described in this Agreement.

B. PROTECTION OF FISH AND WILDLIFE. The Parties recognize and support the long-standing commitment of the Tribes to the protection of Instream Flows necessary to sustain the Aquatic Ecosystem for the benefit of the fish and wildlife resources of the Reservation and to provide for the equitable management of the water resources on the Reservation without duplication of governmental authority or process. The Parties further recognize the importance of tributary waters in providing long-term protection of the Deschutes River fisheries beyond the Reservation boundaries and their mutual desire to exercise their respective authority in a cooperative manner in order to establish appropriate measures for the long-term protection of the resident and anadromous fisheries of the Deschutes River and its tributaries.

C. COOPERATIVE MANAGEMENT. By entering into this Agreement, the Parties desire to both describe the scope and attributes of the Tribal Reserved Water Right for the Reservation and to establish a mechanism for long-term cooperative management of the waters that affect the interests of the Parties.

ARTICLE II AUTHORITY

A. STATE OF OREGON. The State has authority to execute this Agreement pursuant to ORS 539.300 through .350 to define the scope and attributes of the Tribal Reserved Water Right, and pursuant to ORS 190.110 to enter into an agreement with the Tribes to provide for the joint exercise of their respective authority over the water resources of the Deschutes Basin.

B. TRIBAL COUNCIL. The Chairman and Secretary-Treasurer of the Tribal Council have authority to execute this Agreement on behalf of the Tribes and all tribal members and their successors by Tribal Council Resolution No. 9425, adopted pursuant to Article V, Section 1(a) and (l) of the Tribal Constitution, and attached hereto as Exhibit B; provided, however, that this Agreement shall not be effective until either:

1. No referendum of the tribal members shall have been called pursuant to Article VI of the Tribal Constitution within 30 days after the vote of the Tribal Council approving this Agreement; or
2. A referendum vote of the tribal members shall have been called and held pursuant to Article VI of the Tribal Constitution and the action of the Tribal Council approving this Agreement shall not have been disapproved by the tribal voters.

C. SECRETARY OF THE INTERIOR. The Secretary of the United States Department of the Interior has authority to execute this Agreement on behalf of the United States and in his trust capacity for the Tribes and Allottees pursuant to 25 U.S.C. §§ 2 and 9 and 43 U.S.C. § 1457.

D. ATTORNEY GENERAL OF THE UNITED STATES. The Attorney General of the United States has authority to execute this Agreement on behalf of the United States pursuant to the authority to settle litigation contained in 28 U.S.C. §§ 516-517.

E. **SIGNATORY AUTHORITY.** Each signer for the State, Tribes and United States, by executing this Agreement, represents and states that the signer has actual authority to sign it.

F. **FEDERAL LEGISLATIVE AUTHORITY.** Should it be determined that federal legislative action may be necessary in order to allow transfer of all or any portion of the Tribal Reserved Water Right as described in Paragraph IV B.4 of this Agreement, any Party may seek such legislative action.

ARTICLE III

DEFINITIONS

For purposes of this Agreement, and for no other purposes, the following definitions apply:

- (1) "Agreement" means this water rights settlement agreement, including Exhibits A (Existing Tribal Uses) and B (Tribal Council Resolution).
- (2) "Allottee" means an individual with a beneficial interest in Allotted Lands.
- (3) "Allotted Lands" means lands within the Exterior Boundary of the Reservation, which were allotted to individual Indians in accordance with the Treaty and/or federal statutes, and which are held in trust for the benefit of one or more Indians

- (9) **"Diversion"** means the removal of water from its natural water course or location by means of a ditch, canal, flume, bypass, pipeline, conduit, well, pump, or other structure or device, or the impoundment of water within or without a natural water source.
- (10) **"Existing State Water Rights"** means any water use authorized by the State with a Priority Date prior to September 16, 1996.
- (11) **"Existing Tribal Uses"** means Out-of-Stream Uses of the Tribal Reserved Water Right on the Reservation listed in Exhibit A attached to this agreement.
- (12) **"Exterior Boundary of the Reservation"** means the boundary of the Warm Springs Indian Reservation established by the Treaty.
- (13) **"Indian"** means any Person who holds, or is recognized by the Secretary of the Interior as eligible to hold, trust or restricted property on the Reservation.
- (14) **"Instream Flow"** means a quantity of water remaining in a stream.
- (15) **"Out-of-Stream Use"** means the use of water which requires the diversion of water from its natural source.

and which are presently owned by Indians and subject to federal restrictions against alienation or encumbrance.

- (4) "Aquatic Ecosystem" means the biological community of rivers, streams, lakes and other water bodies together with its physical environment considered as a whole. Attributes of an aquatic ecosystem include, but are not limited to, water quality and quantity, populations of fish and other aquatic life, riparian vegetation and channel morphology.
- (5) "Category I Water" means all surface water within the Exterior Boundary of the Reservation, but not including waters in the Deschutes and Metolius Rivers, Pelton Lakes, and the Willamette River Basin.
- (6) "Category II Water" means of the surface waters arising on the Reservation, waters in the Deschutes or Metolius Rivers, or Pelton Lakes, where those rivers or lakes flow by or through the Reservation.
- (7) "Cubic Foot per Second" or "CFS" means a rate of water flow equivalent to one cubic foot per second in time or approximately 448.8 gallons per minute.
- (8) "Director" means the Director of the Oregon Water Resources Department or any successor agency.

- (16) "Parties" means the Tribes, the State, and the United States.
- (17) "Pelton Lakes" means the lakes formed by the Pelton Hydroelectric Project commonly referred to as Lake Billy Chinook, Lake Simtustus and the Reregulating Dam Pool.
- (18) "Person" means an individual or any other entity, public or private.
- (19) "Place of Use" means the location where water is used, or, where such term is used with respect to an Instream Flow, the designated reach of the natural water course.
- (20) "Point of Diversion" means the location at which water is diverted from a natural water course.
- (21) "Priority Date" means the date assigned to a water right which denotes the relative priority of such right with regard to other rights for the use of water from the same general body of water, whether surface or ground water.
- (22) "Reservation" means the Warm Springs Indian Reservation in Oregon as established by the Treaty.

- (23) "Source" means the natural body of water or man-made reservoir from which water is diverted or withdrawn, or which is identified for purposes of Instream Flow.
- (24) "State" means the State of Oregon and all officers, agents, departments, and political subdivisions thereof.
- (25) "Transfer" means any change in the nature of use, place of use, or point of diversion of a water right.
- (26) "Treaty" means the Treaty dated June 25, 1855, between the United States and the Tribes and Bands of Middle Oregon (12 Stat 963).
- (27) "Tribal Constitution" means the Constitution of the Tribes enacted pursuant to Section 16 of the Indian Reorganization Act of June 18, 1934 (48 Stat. 984), as amended by the Act of June 15, 1935 (49 Stat. 378).
- (28) "Tribal Reserved Water Right" means the right to use water instream or out-of-stream as confirmed by Article IV of this Agreement.
- (29) "Tribes" means The Confederated Tribes of the Warm Springs Reservation of Oregon, a federally recognized Indian tribe organized pursuant to Sections 16 and

17 of the Indian Reorganization Act of 1934, and all officers, agents, departments and business enterprises or subordinate organizations thereof.

(30) "United States" means the United States of America and all officers, agents, and departments thereof.

(31) "Walton Right" means a water right held by a non-Indian successor to an Indian reserved right as described in *Colville Confederated Tribes v. Walton*, 547 F.2d 42 (9th Cir. 1981).

ARTICLE IV

TRIBAL RESERVED WATER RIGHT

A. **BASIS OF TRIBAL RESERVED WATER RIGHT.** The basis of the Tribal Reserved Water Right is the Treaty.

B. **TRIBAL RESERVED WATER RIGHT.** The Tribal Reserved Water Right is held by the United States in trust for the benefit of the Tribes and Allottees. The Tribal Reserved Water Right consists of water in amounts described below to satisfy the Treaty purposes:

1. Existing Tribal Uses on the Reservation as identified in Exhibit A attached hereto, provided, no non-consumptive Existing Tribal Uses may be converted to consumptive uses;

2. Subject to the provisions of Article IV.B.3., Category I Water in the amount of the entire natural flow of the Warm Springs River, the Whitewater River, Jefferson Creek, Mariel Creek, Shitike Creek, Walker Creek, Sheep Creek, Code Creek, Camp Creek, Racing Creek, Rainy Creek, Cache Creek, Box Canyon Creek, Seekseequa Creek, Dry Hollow Creek, Dry Creek, Skookum Creek, Oak Creek, Antoken Creek, Eagle Creek, Nena Creek, Byzantine Gulch, Kelly Gulch and Paquet Gulch, and their tributaries for Instream Flows to sustain or enhance the aquatic ecosystem of the Reservation for the benefit of the fish and wildlife resources of the Deschutes River Basin which shall be protected and preserved for such purposes in perpetuity.

3. Category I Water for Out-Of-Stream Uses in amounts of up to 250 cfs for uses on the Reservation. Such amounts may be used from each of the streams and rivers listed in Article IV.B.2. so long as such use does not result in a net degradation of the fishery, if any, on the individual streams or rivers as measured by the attributes of the Aquatic Ecosystem together with any mitigation, and so long as the total consumptive use from all streams does not exceed 250 cfs.

4. Category II Water in amounts of up to 200 CFS from the Deschutes and Metolius Rivers, and the Pelton Lakes, combined (of which not more than 25 CFS may be diverted from the Metolius River before it enters Lake Billy Chinook). Such water may be used on the Reservation, or off the Reservation as described in Article IV.D.

5. Instream Flows in the Deschutes and Metolius Rivers for the benefit of the Aquatic Ecosystem of the Reservation. The amount of water set out below for each of the rivers is the amount the Parties agree is the flow necessary to support the Tribes' Treaty water rights as exercised on the Reservation.

(a) In the Deschutes River, along the reach of the River from the Madras gauge to the mouth of the Deschutes River at the Columbia River according to the following monthly schedule:

January	3000 cfs
February	3000 cfs
March	3500 cfs
April	3500 cfs
May	3500 cfs
June	3500 cfs
July	3000 cfs
August	3000 cfs
September	3000 cfs
October	3000 cfs
November	3000 cfs
December	3000 cfs

(b) In the Metolius River, according to the following monthly schedule as measured at the Grandview Gauge:

January	1150 cfs
February	1150 cfs
March	1160 cfs
April	1160 cfs
May	1240 cfs
June	1200 cfs
July	1170 cfs
August	1140 cfs
September	1100 cfs
October	1080 cfs
November	1140 cfs
December	1110 cfs

C. **PRIORITY DATES.** The Priority Date of the Tribal Reserved Water Right shall be earlier than any other water right in the Deschutes River Basin, and Existing State Water Rights shall have a Priority Date as recognized under State law; provided, however, notwithstanding a senior Priority Date for the Tribal Reserved Water Right, Existing State Water Rights shall not be curtailed in favor of the Tribal Reserved Water Right.

D. **USE OF TRIBAL RESERVED WATER RIGHT OFF RESERVATION.** Use of the Tribal Reserved Water Right off the Reservation shall be subject to and in accordance with state, federal and tribal law applicable to transfers, distribution and regulation of water and siting, construction and operation of any off-Reservation facilities for the transportation or delivery of water. Off-Reservation use of any water held by the Tribes under the Tribal Reserved Water Right is restricted to the water identified in Article IV.B.4. and shall comply with

Article IV.G.5. Nothing in this Agreement shall be so construed or interpreted to affect any Party's position with regard to whether or not a state, federal or tribal law is valid or applicable.

E. FORFEITURE. The Tribal Reserved Water Right when used on the Reservation shall not be subject to forfeiture except as specified in Article VII.B. Nothing in this Agreement shall be so construed or interpreted to affect any Party's position with regard to whether or not uses of the Tribal Reserved Water Right off the Reservation is subject to forfeiture under State law.

F. USES OF THE TRIBAL RESERVED WATER RIGHT ON THE RESERVATION.

Except for Category I water described in Article IV.B.2., and Category II Water described in Article IV.B.5., the Tribes may authorize use of the Tribal Reserved Water Right on the Reservation for any purpose.

G. PERSONS WHO MAY USE THE TRIBAL RESERVED WATER RIGHT. The Tribal Reserved Water Right may be used by any of the following Persons:

1. The Tribes and any Person authorized by the Tribes, including all tribal members, within the Exterior Boundary of the Reservation.
2. Individual Allottees using water within the Exterior Boundary of the Reservation.

3. Individual Indian fee land holders using water within the Exterior Boundary of the Reservation.
4. Persons holding a *Walton* Right using water within the Exterior Boundary of the Reservation.
5. Any Person authorized by the Tribes to use a portion of the Tribal Reserved Water Right described in Article IV.B.4. outside the Exterior Boundary of the Reservation; provided, however, no portion of the Tribal Reserved Water Right may be used outside the Exterior Boundary of the Reservation except as described in Paragraph IV.D. of this Agreement.

H. ALLOTTEE USE OF THE TRIBAL RESERVED WATER RIGHT. Individual Allottees shall have the right to use the Tribal Reserved Water Right within the Exterior Boundary of the Reservation, subject to the regulatory authority of the Tribes and the authority and obligations of the United States under 25 U.S.C. §381 and other applicable laws.

I. OFFSETS FROM THE TRIBAL RESERVED WATER RIGHT. The water uses of Allottees and individual tribal members are a part of, and shall be satisfied out of, the Tribal Reserved Water Right. Any water right established by an Indian fee holder based on the Treaty and the water right of any person establishing a *Walton* Right shall be taken from the Tribal Reserved Water Right.

ARTICLE V
ADMINISTRATION OF WATER RIGHTS

A. TRIBAL ADMINISTRATION.

1. **Tribal Administration of Tribal Reserved Water Rights on the Reservation.**

The use of the Tribal Reserved Water Right within the Exterior Boundary of the Reservation shall be administered by the Tribes in accordance with this Agreement.

2. **Ground Water.** The Tribal Reserved Water Right described in Article IV.B.

may be exercised in whole or in part from ground water within the Reservation. Except for minor withdrawals which under state law would be exempt uses as that term is defined in ORS 537.545 (which shall not be counted against the sums set forth in Articles IV.B.3 and IV.B.4.), it shall be presumed that ground water withdrawals within the Reservation are hydrologically connected to the rivers and streams running through and bordering the Reservation and shall be counted against the quantities set forth in Article IV.B.3. or IV.B.4. as is appropriate on a gallon for gallon basis, unless it can be established that there is no connection.

3. **Tribal Authority to Allocate the Tribal Reserved Water Right.** Subject to the provisions of this Agreement and the authority and obligations of the Secretary

of the Interior under 25 USC §381 and other applicable law, except for Category I Water described in Article IV.B.2., and Category II Water described in Article IV.B.5., the Tribes have authority to allocate the Tribal Reserved Water Right within the Exterior Boundary of the Reservation.

4. **Tribal Administration of State Water Rights on the Reservation.** Water rights established under State law and *Walton* Rights established pursuant to federal law or the interests of their successors within the Exterior Boundary of the Reservation shall be administered by the Tribes. Administration and enforcement of the state water rights used on the Reservation shall be governed by State law. By separate memorandum of understanding the Tribes and State shall establish a process for designation of a qualified Tribal watermaster as agent for the enforcement of state water rights used on the Reservation and to resolve all disputes between users of a state water right, or disputes between users of a state water right and users of the Tribal Reserved Water Right, within the Exterior Boundary of the Reservation. Any Person diverting or using water pursuant to a state water right within the Exterior Boundary of the Reservation, may appeal a decision of the Tribes to the Director. Appeals to the Director shall be in writing and shall be submitted within 60 days of the Tribes' final decision. The appeal must set out the facts of the matter in question and the circumstances of the Tribal decision. The appeal documents must identify the state water right which is the subject of the appeal by application, permit or certificate number or

decree reference. The appeal must include an affidavit signed by the water right holder that the water right is valid and has not been forfeited or abandoned. The Oregon Administrative Procedures Act will govern any appeal of a decision of the Director.

5. Construction of Off-Reservation Facilities in Connection with Use of the Tribal Reserved Water Right. Development or construction of any off-Reservation facility for the diversion, withdrawal, impoundment and use of the Tribal Reserved Water Right may not be initiated until all local, state, federal and Tribal licenses, permits, certificates, variances and other legal requirements applicable to the siting, construction and operation of such facilities have been secured. Nothing in this Agreement shall be so construed or interpreted to affect any Party's position with regard to whether or not a state, federal or tribal law is valid or applicable.

6. Lands Added to the Reservation. In the event land is added to the Reservation as it is defined in Article III.(22), any water rights appurtenant to those lands shall be administered in accordance with Article V.A. Any such lands shall have such state or federal water rights as shall have been appurtenant to them prior to their addition to the Reservation. Prior notice of any addition of land to the Reservation shall be given to the State. The Parties agree to enter into

negotiations to quantify a reserved water right, if any, which may be appurtenant to such added lands.

B. STATE ADMINISTRATION. Nothing in this agreement shall limit or expand the State's authority to administer all rights to the use of surface water and ground water outside the Exterior Boundary of the Reservation. To the extent allowed by law, the State shall have the final and exclusive jurisdiction to resolve all disputes between users of water rights established under State law where such water is used outside the Exterior Boundary of the Reservation. No transfer of a State water right in the Deschutes Basin shall be made unless the State finds that no injury to the Tribal Reserved Water Right shall result.

C. NOTICES. Except as otherwise provided, for purposes of this Agreement any notices to the Parties shall be sent to the Persons designated below by certified mail, return receipt requested, or to such other Person as may later be designated in writing by any Party:

STATE OF OREGON: Director
Oregon Water Resources Department
158 12th Street NE
Salem, Oregon 97310

TRIBES: Secretary-Treasurer
The Confederated Tribes of the
Warm Springs Reservation of Oregon
P.O. Box 1299
Warm Springs, Oregon 97761

Chairman of the Tribal Council
The Confederated Tribes of the

Warm Springs Reservation of Oregon
P.O. Box 1299
Warm Springs, Oregon 97761

UNITED STATES:

Secretary of the Interior
Office of the Secretary
U.S. Department of the Interior
1849 C Street NW
Washington, D.C. 20240

Area Director
Bureau of Indian Affairs
911 N.E. 11th
Portland, Oregon 97232

Superintendent, Bureau of Indian Affairs
Warm Springs Agency
P.O. Box 1239
Warm Springs, Oregon 97761

Regional Solicitor
U.S. Department of the Interior
500 N.E. Multnomah, Suite 607
Portland, Oregon 97232

D. RECORDS. The Parties shall maintain a copy of the transcript of their formal negotiations proceedings as a public record that may be used in connection with the administration and interpretation of this Agreement.

ARTICLE VI

DISCLAIMERS AND RESERVATION OF RIGHTS

A. GENERAL DISCLAIMERS. Nothing in this Agreement shall be so construed or interpreted:

1. To establish the nature, extent, transferability, or manner of enforcement of water rights of any Indian reservation other than the Warm Springs Indian Reservation;
2. To establish any standard to be used for the quantification of federal reserved water rights or other Indian water claims of any other Indian tribes in any judicial or administrative proceeding;
3. To preclude the acquisition or exercise of an appropriative right to the use of water under State law by the Tribes or any individual Indian within or outside the Reservation by purchase of land, by water right exchange or transfer under state law or by application to the State;
4. To limit in any way the rights of the Parties or any other Person to litigate any issues or questions not resolved by this Agreement;
5. To limit the right of Allottees, Indian fee land holders or *Walton* Right holders to claim or to exercise their legal entitlement to a portion of the Tribal Reserved Water Right or to restrict the right of non-Indian fee land holders within the Exterior Boundary of the Reservation to apply for or maintain a water right under state law to be administered as set forth in Article V.A.4;

6. To authorize the taking of a water right which is vested under Tribal, State or federal law;
7. To create, affect, or deny substantive rights through headings or captions used in this Agreement;
8. Except as specifically provided in this Agreement, to limit the authority of the Parties to carry out their obligations in accordance with applicable Constitutions, Statutes, regulations and procedures;
9. Except as specifically provided in this Agreement, to limit or confer upon the State any jurisdiction or authority over the Reservation or the Tribes.
10. To alter the trust responsibility of the United States;
11. To define the quality standards that water described in this Agreement must meet;
12. To alter, modify, establish, or define the position of any Party with respect to the location of the boundary of the Reservation;
13. To limit the discretion of any federal, state or tribal agency to repeal, amend or promulgate regulations consistent with this Agreement;

14. To obligate funds, or require any Party to expend any sum not appropriated and made available for expenditure;
15. To affect any Party's authority to relinquish, tax, diminish or abandon any part of the Tribal Reserved Water Right;
16. To affect any Party's position with regard to whether or not there is a tribal reserved water right outside the Exterior Boundary of the Reservation or the extent of any such right;
17. To quantify water rights claimed by any Federal agency or appurtenant to other Federal property, nor does it limit in any way the right and power of the United States to reserve or otherwise acquire land or rights to the use of water in the future, subject to applicable law;
18. To affect the rights and obligations of the parties to the agreement between the Tribes and the Juniper Flat District Improvement Company dated June 29, 1971, and recorded July 8, 1971, in the records of Wasco County, Oregon, under microfilm numbered 711138;
19. To affect the allocation of unallocated storage associated with the Prineville Reservoir Project; or

20. To affect any Party's position with respect to the appropriate conditions that may apply to the relicensing of the Pelton Project.

B. **PELTON PROJECT.** The Tribes currently operate a hydroelectric generating facility at the Re-regulating Dam of the Pelton Project, FERC No. OR-2030. The Tribes are a co-licensee with Portland General Electric Company for FERC License No. OR-2030 and joint licensees for the regulating dam portion of State of Oregon License No. 222. State of Oregon License No. 222 specifically recognizes that there is a disagreement between the Tribes and the State as to the legal necessity of the Tribes acquiring a State license, which disagreement does not require resolution for purposes of this Agreement. Notwithstanding any other provision of this Agreement, the Parties agree that this Agreement shall not create, change or alter any legal basis, authorization or priority of tribal water use for hydroelectric generation and the use of water for hydroelectric power purposes shall not be deemed an Existing Tribal Use or otherwise included in the Tribal Reserved Water Right. Nor shall anything in this Agreement alter, expand, or diminish the Secretary of the Interior's exercise of authority pursuant to the Federal Power Act, including, but not limited to, the provisions of §§4(e), 10(j), and 18; provided however, that no action or event in the Pelton-Round Butte Hydroelectric Project relicensing proceeding shall serve to increase or decrease the Tribal Reserved Water Right.

C. **RESERVATION OF RIGHTS.** The Parties expressly reserve all rights except to the extent that such rights are specifically relinquished, foregone, or subordinated pursuant to the terms of this Agreement.

ARTICLE VII
BINDING EFFECT

Upon the effectiveness of this Agreement, its terms will be binding upon:

- A. The State and all Persons claiming or asserting any right under the authority of the State; provided, that for purposes of authorization, the validity of consent, ratification, or authority is to be determined by State law.

- B. The Tribes and all Persons claiming or asserting any right to the use of the Tribal Reserved Water Right, or any right arising under any doctrine of reserved or aboriginal water rights for the Tribes, or any right arising under Tribal law; provided, however, that a *Walton* right may be subject to forfeiture for non-use.

- C. The United States.

ARTICLE VIII
FINALITY AND EFFECTIVENESS OF AGREEMENT

- A. **REQUIRED ACTION.** This Agreement shall be binding upon the signatories when it is signed; provided however, approval by the Tribal Council is subject to the provisions of Article VI of the Tribal Constitution as set forth in Article II.B. of this Agreement. The

Agreement shall not be effective until it is incorporated in a final judgement and decree of the Circuit Court of Oregon for Deschutes County pursuant to ORS 539.320 through 539.340. In the event that this Agreement is not approved by such Court within two years of its execution by the Parties, the Parties shall develop a mutually agreeable course of action to secure final approval of the Agreement.

B. FINAL COURT DECREE. The State and United States shall jointly petition the Circuit Court of Oregon for Deschutes County to have this Agreement incorporated without alteration into a final court decree. This Agreement shall be effective as to all the Parties and all Persons claiming or asserting any right under the laws and/or authority of such Parties upon the issuance of the final court judgment and decree by the Circuit Court of Oregon for Deschutes County pursuant to ORS 539.340(1).

C. MODIFICATION. This Agreement, the decree and the order approving this Agreement, may not be modified in any manner whatsoever except with the joint written consent of the duly authorized representatives of the Parties and the consent of the court approving this Agreement, after providing notice and an opportunity to be heard to all parties who may be affected by such proposed modification. Subject to the consent of the Parties and the Court having jurisdiction over the decree, this Agreement may also be modified, amended or amplified in the event of substantial changes in climatic conditions, significantly affecting physical, hydrologic or other conditions, which justify or require such modification, amendment or amplification.

D. MODIFICATIONS OF SUBSTANTIVE LAW. The Parties recognize that the law dealing with federal reserved Indian water rights is the subject of ongoing litigation and agree that subsequent changes, developments, or interpretations in such law shall not change the enforceability of this Agreement as written.

E. WAIVER. By entering this Agreement, the Tribes waive and release any claims against the United States arising out of the negotiation of this Agreement or the adoption of the specific terms of the Agreement.

ARTICLE IX

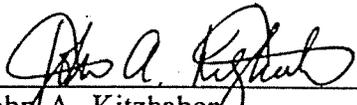
COORDINATION AND COOPERATIVE ADMINISTRATION

A. COOPERATIVE MANAGEMENT. In recognition of the concerns of separate sovereigns as well as the hydrologic and economic inter-relationships of water use within the Deschutes River Basin, the Parties agree to continue cooperative efforts to efficiently manage water, water quality, and other aquatic resources and to fairly resolve disputes arising under this Agreement without resorting to litigation. This Agreement will be implemented through a memorandum of understanding between the Parties, all of which will be consistent with the terms of this Agreement. The Parties agree to meet and describe in the memorandum of understanding the process for determining injury to the Tribal Reserved Water Right.

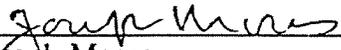
B. INTERGOVERNMENTAL BOARD. There is hereby created a three member Intergovernmental Board composed of a representative appointed by each Party.

C. **INTERGOVERNMENTAL BOARD DUTIES.** The Intergovernmental Board shall operate by consensus and assist in the implementation of this Agreement and may mediate disputes regarding the interpretation of this Agreement, the timing and method of calls to satisfy uses with senior priority dates and other matters relating to, or arising out of, this Agreement.

The Parties have executed this Agreement on the date following their respective signatures.



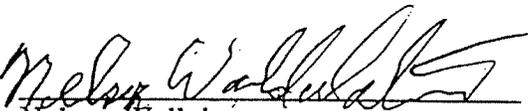
John A. Kitzhaber
Governor, State of Oregon



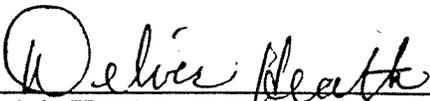
Joseph Moses
Chairman, Tribal Council

November 17, 1997
Date

November 17, 1997
Date



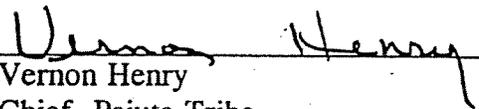
Nelson Wallulatum
Chief, Wasco Tribe



Delvis Heath
Chief, Warm Springs Tribe

November 17, 1997
Date

November 17, 1997
Date



Vernon Henry
Chief, Paiute Tribe



Irene Wells
Vice Chair

November 17, 1997
Date

November 17, 1997
Date

Zane Jackson
Zane Jackson
Tribal Council Representative

Jacob Frank
Jacob Frank
Tribal Council Representative

November 17, 1997
Date

November 17, 1997
Date

Wilson Wewa
Wilson Wewa, Sr.
Tribal Council Representative

Kathleen Heath
Kathleen Heath
Tribal Council Representative

November 17, 1997
Date

November 17, 1997
Date

Raymond F. Calica, Sr.
Raymond F. Calica, Sr.
Secretary-Treasurer and
Tribal Council Representative

Bruce Brunoe Sr.
Bruce Brunoe, Sr.
Tribal Council Representative

November 17, 1997
Date

November 17, 1997
Date

Martha O. Pagel
Martha O. Pagel, Director
Oregon Water Resources Dept.

Bruce Babbitt
Bruce Babbitt
Secretary of the Interior

November 17, 1997
Date

November 17, 1997
Date

Hardy Myers
Hardy Myers
Attorney General
State of Oregon

Lois Schiffer
Lois Schiffer
Assistant Attorney General
United States Dept. of Justice

November 17, 1997
Date

November 17, 1997
Date



EXECUTIVE ORDER NO. EO - 96 - 30

STATE/TRIBAL GOVERNMENT-TO-GOVERNMENT RELATIONS

There are nine federally recognized Indian tribal governments located in the State of Oregon. These Indian tribes were in existence prior to the formation of the United States of America, and thus retain a unique legal status. The importance of recognizing the relationship that exists between the tribes and state government can not be underestimated.

As sovereigns the tribes and the State of Oregon must work together to develop mutual respect for the sovereign interests of both parties. The relationships between our governmental structures can only be built through trust and mutual respect.

The purpose of formalizing the government-to-government relationship that exists between Oregon's Indian tribes and the State is to establish a process which can assist in resolving potential conflicts, maximize key inter-governmental relations and enhance an exchange of ideas and resources for the greater good of all of Oregon's citizens, whether tribal members or not.

IT IS ORDERED AND DIRECTED:

1. That the Governor's Legal Counsel, or such other person as the Governor may from time to time designate, shall be accountable to the Governor for the implementation of this Executive Order and be responsible for convening an annual meeting where representatives of the State and the nine federally recognized Oregon tribal governments will work together to achieve mutual goals.





EXECUTIVE ORDER NO. EO - 96 - 30

Page Two

2. That the head of each Cabinet level department who is either appointed by the Governor or who reports to gubernatorial appointees and is made subject to this Order by the Governor (hereinafter "department") shall be accountable to the Governor's office for adopting a departmental State/Tribal Government statement that:
 - a. Recognizes that Oregon Indian tribal governments are interested in the development of state policy that affects tribal interests (hereinafter "state policy") and recognizes the desirability of dialogue between tribal governments and the state, with regard to those state policies;
 - b. Identifies key personnel of the department as a "key contact[s]" responsible for coordination with tribal governments;
 - c. Establishes a process for the identification of those state policies by designated tribal representatives and key contacts ;
 - d. promotes dialogue between Oregon departments and tribal governments on those state policies ; and
 - e. That advances the government-to-government relationship by notifying staff and employees of this Executive Order.

3. Through the process established under this Executive Order the key contacts and designated tribal representatives shall identify issues of mutual concern arising from state policy. The departments and each tribal government shall make reasonable efforts to design solutions and develop programs to achieve mutual goals in relation to state policy.





EXECUTIVE ORDER NO. EO - 96 - 30

Page Three

4. That each department shall recognize the opportunity to use a number of tools to achieve mutual cooperation including but not limited to use of cooperative agreements with Indian tribal governments as provided for in ORS 190.110 when it is appropriate to do so.
5. That each department shall provide key managers with periodic training which enables them to better recognize Indian issues and to understand and respect the legal status of tribal governments and of American Indians as citizens of Oregon who also have their own unique and distinct culture. It is important as well for the tribes to develop tribal training so its members will better understand the workings and process of state government. It is the hope of the state that these training's will enable the tribes and the state to learn about each other's cultures and improve our mutual ability to communicate our interests more clearly. The key contact and designated tribal representatives shall consult on the scope and content of training as well as the coverage of its cost.
6. That the departments shall work cooperatively to accomplish the goals of this order.

It is the hope of the state and the tribes that this executive order will result in improving the quality of communication between our sovereign governments. The tribes and the state recognize that this order cannot and is not intended to create a forum for resolution of all issues between the tribes and the state. Nor is it meant to replace presently existing lines of communications. Both the tribes and the state recognize that issues that are the subject of litigation or that are likely to become the subject of litigation are inappropriate for discussion in this process.

Nothing in this order shall require the state or any of its agencies to violate or ignore any laws, rules, directives or other legal requirements or obligations imposed by state or federal law including but not limited to state Public Records laws, Public Meetings laws and provisions of the state Administrative Procedures Act.



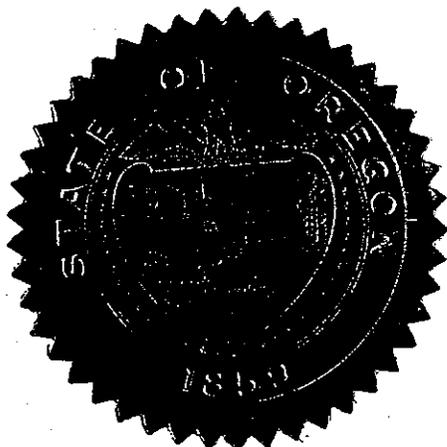


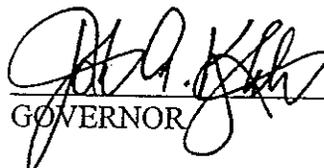
EXECUTIVE ORDER NO. EO - 96 - 30

Page Four

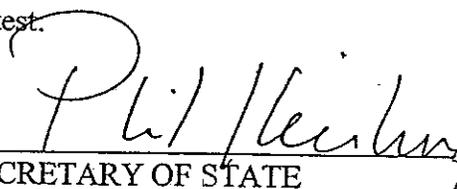
This document has been adopted for the sole purpose of enhancing communication and mutual cooperation between the State of Oregon and the tribal governments and is not intended to, and does not, create any right to administrative or judicial review, or any other right or benefit or responsibility, substantive or procedural, enforceable by a party against the State of Oregon, its agencies or instrumentality's, its officers or employees, its subdivisions or any other persons.

Done at Salem, Oregon this 22 day of May 1996.




GOVERNOR

Attest.


SECRETARY OF STATE



111 FERC ¶ 61,450
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Pat Wood, III, Chairman;
Nora Mead Brownell, Joseph T. Kelliher,
and Suedeen G. Kelly.

Portland General Electric Company and
Confederated Tribes of the Warm Springs
Reservation of Oregon

Project No. 2030-036

ORDER APPROVING SETTLEMENT AND ISSUING NEW LICENSE

(Issued June 21, 2005)

1. On December 16 and 17, 1999, Portland General Electric Company (PGE) and the Confederated Tribes of the Warm Springs Reservation of Oregon (Tribes), respectively, filed competing applications to continue operation and maintenance of the 366.82-megawatt (MW) Pelton Round Butte Hydroelectric Project No. 2030 (Pelton Round Butte Project), located on the Deschutes River¹ in Jefferson County, Oregon. The project occupies 3,503.74 acres of federal and tribal lands administered by the U.S. Forest Service (Forest Service), U.S. Bureau of Land Management (BLM), and U.S. Bureau of Indian Affairs (BIA).²

2. On June 29, 2001, PGE and the Tribes jointly filed an amendment to combine their license applications and become co-applicants for a new license. Subsequently, on July 30, 2004, PGE and the Tribes filed a comprehensive Settlement Agreement signed by PGE, the Tribes, and 20 stakeholders. The Settlement Agreement includes proposed license articles embodying the provisions of the agreement. For the reasons discussed below, this order incorporates most of the Settlement Agreement's proposed license

¹ Parts of the project backwaters extend 7 miles into the Crooked River and 13 miles into the Metolius River.

² Federal Power Act (FPA) section 23(b)(1), 16 U.S.C. 817 (1), requires the project to be licensed because of its location on federal lands.

Project No. 2030-036

2

articles and issues a new license for the Pelton Round Butte Project. Issuing a new license is in the public interest because it would allow the project to continue generating electric energy to serve growing regional demand while protecting and enhancing environmental, recreational, and cultural resources.

BACKGROUND

3. The original license for the Pelton Round Butte Project was issued to PGE on December 21, 1951, with a term expiring on December 31, 2001.³ In 1979, PGE and the Tribes applied to amend the license to permit the Tribes to construct and operate a 15-MW powerhouse at the project's Reregulating Dam. In 1980, the Commission approved the amendment, pursuant to which the Tribes became a joint licensee for the project to the extent of their interests.⁴ On November 21, 2000, the Commission amended the license to designate PGE and the Tribes co-licensees without limitation.⁵ Since expiration of the existing license, PGE and the Tribes have operated the project under annual licenses.⁶

4. On April 20, 2000, PGE, the Tribes, and the U.S. Department of the Interior (Interior) filed a request for approval of a Long-Term Global Settlement and Compensation Agreement (Global Agreement). The Global Agreement resolved long-standing issues between PGE and the Tribes regarding the project's use and occupancy of 2,161.9 acres of Tribal reservation lands. The Global Agreement stipulated, among other things, that PGE and the Tribes would merge their competing relicense applications into one and become co-applicants, thereby eliminating the competition for a new license. The Commission approved the Global Agreement on November 21, 2000, and noted that once the relicense application amendment was filed, the Commission would merge the two proceedings into one.⁷ On July 11, 2001, subsequent to the filing of the joint relicense application amendment, the Commission issued a notice merging both license applications into one docket, P-2030-036.

5. On August 10, 2001, the Commission issued a notice accepting the joint relicense application amendment and setting a deadline of October 10, 2001, for filing protests and motions to intervene. Timely motions to intervene were filed by Jefferson County, Oregon; the U.S. Department of Agriculture; Interior; Trout Unlimited; American Rivers;

³ 10 FPC 450 (1951).

⁴ 10 FERC ¶ 62,142. The Commission no longer approves segregated license interests of this kind.

⁵ 93 FERC ¶ 61,183 (2000).

⁶ See Section 15(a)(1) of the FPA, 16 U.S.C. § 808(a)(1).

⁷ 93 FERC ¶ 61,183.

Native Fish Society; Oregon Trout; WaterWatch of Oregon; and the National Marine Fisheries Service (NOAA Fisheries).⁸ Late motions to intervene were filed by the State of Oregon on October 23, 2001, and jointly by the Cities of Bend, Redmond, and Madras, Oregon, and the Deschutes Valley Water District (Cities and District) on April 25, 2003. The State of Oregon and the Cities and District were granted late intervention on November 21, 2001, and July 1, 2003, respectively. None of the motions to intervene were in opposition to the project. Comments in response to the notice were filed by the Forest Service, BLM, and Interior.

6. On August 29, 2003, the Commission staff issued, for public comment, a draft Environmental Impact Statement (EIS) that evaluated the potential impacts of continued operation of the Pelton Round Butte Project. Comments on the draft EIS were filed by WaterWatch of Oregon, Oregon Water Resources Department on behalf of the Oregon Department of Fish and Wildlife (Oregon DFW), PGE and the Tribes jointly, the Tribes' Natural Resources Departments, Forest Service, Interior, U.S. Environmental Protection Agency, NOAA Fisheries, and Jefferson County.

7. On December 29, 2003, PGE and the Tribes filed a Description of Proposed Preferred Alternative, describing an agreement in principle on environmental measures that the parties were intending to include in a final Settlement Agreement. PGE and the Tribes stated that they were offering the Description of Proposed Preferred Alternative prior to the execution of the final settlement to enable Commission staff to analyze an alternative in the final EIS that corresponded to the intent of many of the parties working to reach final settlement.⁹

8. On June 7, 2004, the Commission staff issued a final EIS that recommended adopting most of the measures included in the Description of Proposed Preferred Alternative, along with additional measures recommended by staff.

9. On July 30, 2004, PGE and the Tribes filed a Settlement Agreement that proposes measures consistent with the Description of Proposed Preferred Alternative and resolves various issues related to the relicensing of the Pelton Round Butte Project. The Settlement Agreement, which was signed by PGE, the Tribes, and all of the other entities

⁸ The motions were timely and unopposed, and therefore, automatically granted pursuant to Rule 214(c)(1) of the Commission's Rules of Practice and Procedure. 18 CFR § 385.214(c)(1) (2004).

⁹ PGE and the Tribes filed an updated Description of Proposed Preferred Alternative on April 27, 2004.

Project No. 2030-036

4

who are parties to the relicensing proceeding, with the exception of the Deschutes Valley Water District,¹⁰ effectively amends the relicense application and constitutes PGE's and the Tribe's proposed action. The Commission issued notice of the Settlement Agreement on August 4, 2004. Oregon DFW, Oregon DEQ, Oregon WRD, Oregon Parks, American Rivers, Oregon Trout, Trout Unlimited, and Native Fish Society all filed comments in support of the Settlement Agreement. No entity opposed the agreement.

10. The motions to intervene and comments received from interested agencies and individuals throughout the proceeding, as well as the provisions of the Settlement Agreement, have been fully considered in determining whether, and under what conditions, to issue this license.

PROJECT DESCRIPTION

A. Project Facilities

11. The 366.82-MW Pelton Round Butte Project consists of three developments located on the Deschutes River, Crooked River, and Metolius River. The powerhouses for all three developments are integral with each of the three project dams. The 247.12-MW Round Butte Development is the uppermost development and includes the 4,000-acre Lake Billy Chinook, the project's largest storage reservoir. Lake Billy Chinook is located on the Deschutes, Metolius, and Crooked Rivers. The dam for the 100.8-MW Pelton Development is located on the Deschutes River about 7 miles downstream from the Round Butte Dam. The 540-acre Pelton reservoir, known as Lake Simtustus, begins at the base of the Round Butte Dam. The 18.9-MW Reregulating Development is the most downstream development; its 190-acre reservoir on the Deschutes River extends from the tailwater of the Pelton Dam 2.5 miles downstream to the Reregulating Dam.

12. The principal features of the Round Butte Development are: (1) a 1,382-foot-long, 440-foot-high compacted, rock-filled embankment dam; (2) a 535,000-acre-foot reservoir (Lake Billy Chinook); (3) a powerhouse containing three 82.35-MW turbine generating units and one 70-kilowatt generating unit with a total installed capacity of 247.12 MW;

¹⁰ The 20 signatories are U.S. Bureau of Indian Affairs (BIA); BLM; U.S. Fish and Wildlife Service (FWS); NOAA Fisheries; Forest Service; Oregon Department of Environmental Quality (Oregon DEQ); Oregon DFW; Oregon Water Resources Department (Oregon WRD); Oregon Parks and Recreation Department (Oregon Parks); Deschutes County, Oregon; Jefferson County, Oregon; City of Bend, Oregon; City of Madras, Oregon; City of Redmond, Oregon; Avion Water Company (Avion); American Rivers; The Native Fish Society; Oregon Trout; Trout Unlimited; and WaterWatch of Oregon.

Project No. 2030-036

5

(4) three 2,800-foot-long, 230-kilovolt (kV) transmission lines extending from the powerhouse to the Round Butte Switchyard; (5) a fish hatchery (Round Butte Hatchery) located adjacent to the dam; and (6) appurtenant facilities.

13. The principal features of the Pelton Development are: (1) a 636-foot-long, 204-foot-high concrete arch dam with a crest elevation of 1,585 feet mean sea level (msl); (2) 7-mile-long, 540-acre reservoir (Lake Simtustus) with a gross storage capacity of 31,000 acre-feet at a normal maximum water surface elevation of 1,580 feet msl; (3) a powerhouse with three turbine generating units with a total installed capacity of 100.8 MW; (4) a 7.9-mile-long, 230-kV transmission line extending from the powerhouse to the Round Butte Switchyard; and (7) other appurtenances.

14. The principal features of the Reregulating Development are: (1) a 1,067-foot-long, 88-foot-high rock-filled embankment dam with a spillway crest elevation of 1,402 feet msl; (2) a 2.5-mile-long, 190-acre reservoir with a gross storage capacity of 3,500-acre-feet and a useable storage capacity of 3,270 acre-feet at a normal maximum water surface elevation of 1,435 feet msl; (3) a non-operating 3-mile-long fishway extending from the tailrace upstream to the forebay of the Pelton Development; (4) a powerhouse containing one 18.9-MW, bulb-type turbine generating unit; (5) a 200-foot-long, 6.9 kV primary transmission line extending from the generator to a step-up transformer located adjacent to the powerhouse; and (7) other appurtenances.

15. A complete description of the Pelton Round Butte project facilities can be found in ordering paragraph (B).

B. Project Operation

16. The Round Butte and Pelton developments are operated as peaking facilities, typically generating between the hours of 6 a.m. and 11 p.m. daily. Lake Billy Chinook provides seasonal storage and is currently drawn down as much as 85 feet, to elevation 1,860 feet msl, in the winter, although typically the lake is only drawn down about 10 feet, to elevation 1,935 feet. The lake is typically refilled during the months of April and May. During the summer, the reservoir is held at the highest practicable level with a relatively stable pool elevation that usually does not fluctuate more than 1.0 feet below the normal maximum pool elevation of 1,945 feet msl. The surface elevation of Lake Simtustus usually fluctuates less than 0.75 feet per day but exceeds 3.5 feet per day about 25 percent of the time due to flow fluctuations produced by Round Butte.

17. The Reregulating Development is operated to attenuate high and low peak flows produced by the upstream developments. Flow releases are controlled to maintain an average daily flow in the Deschutes River downstream of the Reregulating Dam that approximates the average daily inflow to the project. The Reregulating Reservoir surface elevation fluctuates as much as 27 feet (between 1,435 feet msl and 1,408 feet msl) daily;

Project No. 2030-036

6

however, typical fluctuations are about 15 feet daily. The turbine and spillway gates automatically respond to river stage measurements recorded at a United States Geological Survey (USGS) gage (No. 14092500) located at the dam.¹¹

18. Under the original license, flows downstream of the Reregulating Dam are kept at or above a minimum flow of: (1) 3,000 cfs or inflow, if less, from July 1 through February 28; and (2) 3,500 cfs or inflow, if less, from March 1 through June 30.¹² Ramping rates below Reregulating Dam are limited to 0.1 feet per hour and 0.4 feet per day, except from May 15 to October 15, when ramping rates are limited to 0.1 feet per hour and 0.2 feet per day.

SETTLEMENT AGREEMENT

A. Contents

19. The Settlement Agreement establishes measures for the protection, mitigation, and enhancement of resources affected by the project under a new license, and specifies procedures to be used by the parties to ensure the implementation of the license articles contained in the new license, including an adaptive management framework for future collaborative efforts. The Settlement Agreement is divided into eight sections and includes twelve exhibits and six appendices.

20. Sections 1 through 6 establish the general terms and conditions that govern the relationship among the parties and provide for implementation of the Agreement. Section 3 in particular expresses the parties' intent for the Commission to include in the project license proposed articles contained in Exhibit A of the Agreement, and establishes Implementation Committees to work with the licensees in implementing a number of the articles.

¹¹ The project and the USGS have separate sensing tapes and electrical transmitters connected to the gage's measuring apparatus. The project's transmitter provides flow information for the project operator for control of the Reregulating Development while the USGS's transmitter provides stage and flow data for gage reporting purposes (*See* Settlement Agreement, Appendix C, pp. 1-2).

¹² Under certain circumstances when the inflow to the project has been less than the prescribed minimum flow, discharge below Reregulating Dam has been reduced to a flow less than that of inflow to maintain targeted reservoir surface elevations. *See* EIS at 11-12 and Exhibit B of the license application at B-5.

21. The four types of committees specified by Exhibit K are: the Fish Committee, Terrestrial Resources Working Group, Recreation Resources Working Group, and Shoreline Management Working Group. Each of the committees includes representatives from the licensees, Forest Service, BIA, BLM, the Tribes Branch of Natural Resources, and Oregon DFW. The Fish Committee, Recreation Resources Work Group, and Shoreline Management Work Group include additional entities.¹³ The committees are consulted entities in the development and implementation of various study plans, reports, facility designs, and operational plans and are meant to have a pivotal role in the administration of a large variety of post-licensing activities, including changes in protection and enhancement measures on behalf of fish and wildlife, water quality, and recreation.

22. Section 7 establishes a dispute resolution process for purposes of resolving disputed actions and otherwise keeping the Agreement in effect.

23. Section 8 sets forth the general provisions of the Agreement and lists the parties to the Agreement and their primary contacts.

24. The proposed license articles in Exhibit A of the Settlement Agreement, summarized below, specify general license provisions (Proposed Articles 1-7); operating conditions (Proposed Articles 8-16); aquatic resource measures (Proposed Articles 17-41); terrestrial resource measures (Proposed Articles 42-44); recreation, aesthetic, and cultural resource measures (Proposed Articles 45-57); Deschutes River fish habitat studies and enhancement measures (Proposed Articles 58-60); and establishment of a fish and wildlife enhancement fund (Pelton Round Butte Fund) (Proposed Article 61).

25. Proposed Article 1 provides for PGE and the Tribes to establish a Fish Committee, Terrestrial Resources Working Group, Recreation Resources Working Group, Shoreline Management Working Group, and Pelton Round Butte Fund Governing Board, each of which would consist of the licensees and specified agencies and non-governmental organizations. The Fish Committee and Terrestrial Resources, Recreation Resources, and Shoreline Management Working Groups would be responsible for commenting and making recommendations on study plans, reports, facility designs, and operating and implementation plans. The Pelton Round Butte Fund Governing Board would be responsible for making decisions on the use of the Pelton Round Butte Fund.

26. Proposed Article 2 provides the Settlement Agreement parties access to, through, and across the project lands and waters for purposes of inspecting the project facilities and records.

¹³ See Exhibit K of the Agreement for a complete listing of parties comprising each of the four committees.

Project No. 2030-036

8

27. Proposed Article 3 provides for PGE and the Tribes to enter into an agreement with Jefferson County pursuant to which PGE and the Tribes would fund an additional land-based law enforcement officer and two additional part-time marine or law enforcement personnel to patrol project lands and waterways. The unspecified funding amount would be used for salaries, benefits, training, watercraft, vehicles, and associated law enforcement equipment and supplies.
28. Proposed Article 4 provides for PGE and the Tribes to take immediate action to prevent fish, wildlife, and plant species from being killed, harmed, or endangered due to unanticipated or emergency situations associated with project facilities or project operations. The proposed article also provides for PGE and the Tribes to notify fish and wildlife agencies within 6 hours of the onset of situations that affect federally listed, threatened and endangered species and within 48 hours for non-federally listed species.
29. Proposed Article 5 provides for PGE and the Tribes to obtain a special use authorization from the Forest Service or BLM, as appropriate, for the occupancy and use of federal lands added to the project boundary due to any future amendment of the license. The proposed article also provides for PGE and the Tribes to: (1) obtain written approval from the Forest Service and BLM prior to making changes to project facilities located on federal lands; (2) participate with the Forest Service or BLM in resolving any potential conflicts between project activities and any other authorized activities on federal lands; (3) prepare site-specific plans for habitat and ground-disturbing activities on federal lands as required by the license; and (4) conduct or fund any environmental analysis deemed by the Forest Service or BLM, as appropriate, for site-specific activities or plans associated with the license.
30. Proposed Article 6 establishes a procedure for escalating costs associated with the various funding provisions contained in other proposed articles.
31. Proposed Article 7 provides for PGE and the Tribes, when conducting habitat or ground-disturbing activities on tribal reservation lands, to comply with the requirements of the Tribes' Integrated Resources Management Plan.
32. Proposed Article 8 provides for PGE and the Tribes to implement a project operating plan included with the Settlement Agreement as Exhibit C. Proposed Articles 9-14 specify the plan's operational provisions including stage change limits (Proposed Article 9), gaging of project inflow and outflow (Proposed Articles 10 and 11), minimum operating flows (Proposed Article 12), procedures during long-term low flow conditions (Proposed Article 13), and seasonal drawdown and fluctuation limits (Proposed Article 14).

Project No. 2030-036

9

33. Proposed Article 15 provides for PGE and the Tribes to develop and implement an Operations Compliance Plan to monitor compliance with the operational conditions specified in Proposed Articles 9, 12, and 14.
34. Proposed Article 16 provides for PGE and the Tribes to conduct water quality monitoring pursuant to a water quality monitoring and management plan required by the section 401 of the Clean Water Act certifications for the project.
35. Proposed Article 17 provides for PGE and the Tribes to implement a Fish Passage Plan attached as Exhibit D to the Settlement Agreement.
36. Proposed Article 18 establishes fish passage criteria and goals for the upstream and downstream fish passage facilities specified in Proposed Article 17.
37. Proposed Article 19 provides for PGE and the Tribes to design, construct, operate, and monitor the fishways specified in Proposed Article 17 according to an implementation schedule attached to the Settlement Agreement as Exhibit D.
38. Proposed Article 20 provides for a design and schedule for phased construction of selective water withdrawal and downstream fish passage facilities at the Round Butte dam.
39. Proposed Article 21 provides for PGE and the Tribes to submit all downstream fish design investigations, preliminary design plans and specifications, and final design plans and specifications associated with temporary and permanent downstream fishways at Round Butte dam to the Fish Committee for review and to specified fish agencies for approval. The proposed article also provides for PGE and the Tribes to take a number of modeling and design steps prior to constructing the selective water withdrawal and downstream fish passage facilities.
40. Proposed Article 22 establishes screening criteria for the downstream passage facilities.
41. Proposed Article 23 provides for PGE and the Tribes to evaluate the hydraulic performance of a deep exclusion screen specified in Proposed Article 17 and to conduct fish screen impingement studies.
42. Proposed Article 24 specifies that the design of the permanent downstream collection facility specified in Proposed Article 17 include the ability to add pumps in the future for providing attraction flows.

Project No. 2030-036

10

43. Proposed Article 25 provides for PGE and the Tribes to provide upstream passage using a trap-and-haul process until permanent upstream passage would be implemented per Proposed Article 17. Proposed Article 25 also provides for the development and implementation of a monitoring plan for trap-and-haul upstream passage.

44. Proposed Article 26 provides for preliminary and final design and construction plans for an Adult Release Facility at the Round Butte forebay. The proposed article also provides for the development and implementation of operation and evaluation plans for the facility.

45. Proposed Article 27 provides for PGE and the Tribes to, upon installation of permanent downstream passage facilities at Round Butte dam and within 24 months of achieving downstream survival targets specified in the Fish Passage Plan for Lake Billy Chinook, conduct a study of the feasibility of volitional upstream fish passage at the project and provide a report of the results to the Fish Committee. Proposed Article 27 further provides for PGE and the Tribes to develop and submit to the Fish Committee a plan to implement volitional upstream passage at the project, including testing and verification studies, unless the Fish Committee and specified agencies decide that volitional upstream passage should not be installed. The plan for constructing volitional upstream passage at the project would be due within 24 months of a decision by specified fish agencies that volitional upstream passage at the project should be provided by PGE and the Tribes. In the event the fish agencies decide volitional upstream passage should not proceed as contemplated, the proposed article provides for PGE and the Tribes to file a plan with the Commission to continue trap-and-haul operations and conduct a future feasibility investigation. During any such trap-and-haul operations, PGE and the Tribes would monitor survival and take any feasible measures necessary to comply with the survival standards specified in Proposed Article 25.

46. Proposed Article 28 provides for PGE and the Tribes to transport all juvenile salmonids captured at Round Butte dam between February 1 and July 31 to the lower Deschutes River, bypassing Lake Simtustus and the Reregulating Reservoir. During the remainder of the year, the proposed article provides for PGE and the Tribes, upon the request of the Fish Committee, to transport the juvenile salmonids to Lake Simtustus. If the juveniles would be transported to Lake Simtustus, Proposed Article 28 provides for PGE and the Tribes to file a plan with the Commission to upgrade the east-side upstream fish trap at the Round Butte dam and operate it annually for part or all of the period May 1 through September 30 to capture and return maturing adult resident salmonids back into Lake Billy Chinook.

47. Proposed Article 29 provides for PGE and the Tribes to file a schedule for the development of plans for testing and verification studies described in the Fish Passage Plan included in Exhibit D of the Settlement Agreement. Upon Commission approval of the schedule, Proposed Article 29 provides for PGE and the Tribes to develop the testing

and verification study plans, and implement them upon the approval of specified fish agencies and the Commission. Proposed Article 29 further provides for PGE and the Tribes to file plans with the Commission for making any modifications to facilities needed to ensure safe, timely, and effective fish passage.

48. Proposed Article 30 provides for PGE and the Tribes to develop plans for measures or modifications to the downstream facilities needed to achieve the criteria and goals set forth in Proposed Articles 18 and 22.

49. Proposed Article 31 provides for long-term monitoring of downstream collection facilities as described in the Fish Passage Plan in Exhibit D of the Settlement Agreement.

50. Proposed Article 32 provides for the utilization of annual work plans to document actions consistent with the Fish Passage Plan in Exhibit D of the Settlement Agreement. The proposed article also provides for the filing of annual reports with the Commission documenting Fish Passage Plan activities that occurred during the previous year.

51. Proposed Article 33 provides for PGE and the Tribes to maintain the fishways by keeping them clear of debris and other material that could hinder fish passage.

52. Proposed Article 34 provides for PGE and the Tribes to implement a number of steps in the event that the criteria and goals of Proposed Article 18, as related to temporary downstream facilities, have not been achieved. These steps include notifying the Fish Committee and Commission that the criteria and goals have not been achieved, and as directed by the Fish Committee, either develop a plan to continue operation and testing of temporary downstream passage facilities, begin implementing an alternative fish passage plan, or pursue non-passage mitigation. After approval by the specified fish agencies, the selected plan would be filed with the Commission for its approval.

53. Proposed Article 35 is similar to Proposed Article 34, but applies to contingency actions to be taken in the event that permanent downstream passage facilities do not meet the criteria and goals specified in Proposed Article 18.

54. Proposed Article 36 provides for PGE and the Tribes to enter into an agreement with Oregon DFW to develop a plan for a fish health management program at the project. The plan would include funding for fish health services and supplies associated with production of salmon and steelhead eggs and fry at the project's Round Butte Hatchery, diagnosis of disease in mortalities at fish facilities, and monitoring of disease agents in wild fish populations. Proposed Article 36 further provides for PGE and the Tribes to enter into another agreement with Oregon DFW pursuant to which PGE and the Tribes

would fund one full-time Oregon DFW fish health specialist and one seasonal Oregon DFW Experimental Biological Aide for the interim and part of the final fish passage phases. Funding would be applied to salaries, benefits, training, vehicles, travel, supplies, equipment, and overhead to support the Oregon DFW personnel.

55. Proposed Article 37 provides for PGE and the Tribes to enter into an agreement with Oregon DFW to fund hatchery operations at no more than the current production levels of spring Chinook salmon and summer steelhead for the term of the license. Proposed Article 37 further provides for PGE and the Tribes, within 6 months of entering into the hatchery agreement, to file with the Commission a hatchery improvement plan. In addition, PGE and the Tribes are to file, upon the request of the Fish Committee, a plan with the Commission to undertake changes in equipment to support production of sockeye salmon. PGE and the Tribes, in cooperation with Oregon DFW and the Tribes' BNR, would periodically review the hatchery program to determine whether the program is meeting its goals. The reviews would be funded by PGE and the Tribes. Draft and final reviews would be provided to the Fish Committee.

56. Proposed Article 38 provides for PGE and the Tribes to conduct a Pacific lamprey passage evaluation and mitigation plan as described in the Fish Passage Plan.

57. Proposed Article 39 provides for PGE and the Tribes to develop and implement a native fish monitoring plan to evaluate the effects of reintroducing anadromous fish upstream of the project on resident fish populations.

58. Proposed Article 40 provides for PGE and the Tribes to enter into agreements with Oregon DFW to provide funding for one full-time Oregon DFW fisheries biologist and 10 percent of the cost of an Oregon DFW Facilities Engineer. Funding would be provided for salaries, benefits, training, vehicles, travel, supplies, and equipment and overhead to support the employees. The agreements would specify that the funding is to be used to support Oregon DFW's involvement in fisheries and terrestrial projects conducted pursuant to the terms of the license.

59. Proposed Article 41 provides for PGE and the Tribes to file with the Commission a report documenting the status of interim measures related to fish passage and water rights acquisition on a non-project tributary (Squaw Creek) to the Deschutes River.¹⁴

¹⁴ The interim measures are listed in Exhibit B of the Settlement Agreement.

60. Proposed Article 42 provides for the development and implementation of a terrestrial resources management plan that includes provisions stipulated in Exhibit E to the Settlement Agreement. The proposed article also requires annual reports documenting implementation of the management plan, implementation of an adaptive management process, and funding of wildlife staff at the project.

61. Proposed Article 43 provides for the implementation of interim terrestrial resource measures while the terrestrial resources management plan is being developed. The measures would include upland vegetation management; exotic and invasive vegetation management; various bald eagle, golden eagle, osprey, and waterfowl surveys; avian power line electrocution assessments; and Pelton fish ladder wildlife protection.

62. Proposed Article 44 provides for PGE and the Tribes to enter into an agreement with the Forest Service pursuant to which PGE and the Tribes would provide the Forest Service with no more than \$15,000 annually for the purpose of supporting the Forest Service's and BLM's participation in the development of the Terrestrial Resources Management Plan.

63. Proposed Article 45 provides for the development and implementation of a Recreation Resources Implementation Plan that includes recreation measures described in Exhibit G to the Settlement Agreement as well as measures designed to mitigate for project-related recreation authorized or implemented by entities other than PGE and the Tribes.

64. Proposed Article 46 provides for PGE and the Tribes to fund various recreation measures at the project, including entering into an agreement with the Tribes to provide funding for operation and maintenance of the Tribes' Indian Park Campground and Chinook Island Day-Use Area.

65. Proposed Article 47 provides for PGE and the Tribes to conduct an emergency communications coverage study addressing the ability of emergency response personnel at the project to contact each other and external emergency services and file a report of the results. Based on the results of the study, Proposed Article 47 provides for PGE and the Tribes to fund measures necessary to provide for emergency and safety communications at the project.

66. Proposed Article 48 provides for PGE and the Tribes to develop and implement an Integrated Interpretation and Education Plan to inform the public about resource and project features in the project area. The proposed article provides for a cap of no more than \$75,000 for plan development and no more than \$20,000 annually (adjusted for inflation) for plan implementation.

Project No. 2030-036

14

67. Proposed Article 49 provides for PGE and the Tribes to develop and implement a Shoreline Management Plan that includes standards and guidelines for shoreline development, installation of new docks, and modification of existing docks.
68. Proposed Article 50 provides for PGE and the Tribes to develop and implement a Shoreline Erosion Plan to monitor and control stream and reservoir shoreline erosion at the project.
69. Proposed Article 51 provides for PGE and the Tribes to develop and file an Aesthetic Resources Protection Plan that includes measures to improve the existing project fish ladder, Pelton Dam Road, Round Butte Switchyard, Pelton Park, Round Butte Overlook Park, and Round Butte dam and powerhouse area. The plan includes measures to improve non-project, non-licensee-owned facilities.
70. Proposed Article 52 provides for PGE and the Tribes to either negotiate an agreement with the Forest Service that would provide for PGE and the Tribes to collect and retain revenue from and operate and maintain specified Forest Service-owned recreation facilities at the project, or to develop a mechanism that would provide for PGE and the Tribes to pay the Forest Service specified percentages of the operation and maintenance costs of the facilities that would exceed revenue produced at the facilities.
71. Proposed Article 53 provides for PGE and the Tribes to enter into an agreement with the Forest Service to provide both annual and one-time funding for upgrades to and maintenance of specified Forest Service roads that lead to the project.
72. Proposed Article 54 provides for PGE and the Tribes to enter into an agreement with the Forest Service to make three payments to the Forest Service for infrastructure maintenance or improvements to the non-project Haystack Reservoir.
73. Proposed Article 55 provides for PGE and the Tribes to enter into an agreement with the BLM to implement measures at and provide funding for various BLM-managed recreation sites located downstream of the project.
74. Proposed Article 56 provides for PGE and the Tribes to enter into an agreement with Jefferson County, Oregon, pursuant to which PGE and the Tribes would fund road maintenance activities on Jefferson County roads affected by the project.
75. Proposed Article 57 provides for implementation of a Programmatic Agreement (PA), including a Cultural Resources Management Plan.

76. Proposed Article 58 provides for PGE and the Tribes to develop and implement a Lower River Gravel Study Plan that includes provisions to study gravel transport downstream of the project and augment gravel where necessary to enhance spawning habitat.

77. Proposed Article 59 provides for PGE and the Tribes to develop and implement a Large Wood Management Plan for the collection, transport, and placement of large wood entering Lake Billy Chinook. Placement of large wood would occur along the reservoir shorelines or in the Deschutes River downstream of the project.

78. Proposed Article 60 provides for PGE and the Tribes to develop and implement a plan for habitat improvements in the Trout Creek watershed located downstream of the project.

79. Proposed Article 61 provides for PGE and the Tribes to establish the Pelton Round Butte Fund with an initial amount of \$3.5 million (2003 dollars) and four additional payments in 2007, 2011, 2013, and 2020 totaling \$21,500,000 (2003 dollars) subject to adjustment for escalation at specified percentages. The funds would be used for acquisition of water rights and for aquatic, riparian, and wetland habitat protection and enhancements in the basin both upstream and downstream of the project. Distribution and use of funds would be decided by a Governing Board made up of PGE and the Tribes and various specified federal and state fish and wildlife agencies and non-governmental organizations.

80. On October 19, 2004, Commission staff held a technical conference with most of the Settlement Agreement parties to discuss the Settlement Agreement and proposed articles.¹⁵

B. Discussion

81. The Settlement Agreement addresses the signatories' various environmental concerns while preserving power production at the project. Overall, the terms of the Settlement Agreement achieve an appropriate balance between continued project generation and environmental measures. We commend the parties for their successful efforts to reach consensus on the broad range of issues involved in the operation of this project and the development of a sound framework for a continuing collaborative approach to the management of the project and its resources.

¹⁵ Staff noticed the meeting on September 30, 2004, and invited all interested parties to participate.

82. The new license order we issue today includes the substance of most of the license articles proposed by the Settlement Agreement, with certain modifications as described next.¹⁶ We also discuss those proposed license articles that we do not adopt and the reasons for not doing so.

83. The Settlement Agreement's Proposed Article 1 provides for the establishment of various implementation committees consisting of the licensees and specified agencies and non-governmental organizations. The committees would be responsible for consulting on the development of various plans, reports, and designs specified in the Settlement Agreement, reviewing reports, and making decisions with regard to the distribution of monies from the Pelton Round Butte Fund. Although the license includes the substance of the proposal as Article 402 of the license, we remind the Settlement Agreement parties that the Commission only has jurisdiction over the licensees, and therefore, can only require the licensees' participation on the committees.

84. The Settlement Agreement's Proposed Article 1 also provides that, in the event that consensus among members of the implementation committees with regard to studies, plans, designs, and reports cannot be reached, PGE and the Tribes will delay filing the disputed study, plan, design, or report until the completion of a dispute resolution process specified in section 7.5 of the Settlement Agreement. Although we are including the Proposed Article 1 provisions, including the dispute resolution process, in Article 402 of the license, we are also including a requirement in Article 402 for PGE and the Tribes to file the disputed material prior to the completion of the dispute resolution process if the Commission directs the licensees to do so. We envision the Commission needing to invoke this reservation as a very rare occurrence; however, we are including this requirement to ensure that the Commission's responsibility to administer the terms of the license and ensure accomplishment of project purposes in a timely fashion is not frustrated by an extraordinarily lengthy dispute resolution process.

85. The Settlement Agreement provides for possible modifications to project structures and operations during the license term. For example, certain of the proposed articles contain provisions to implement additional mitigation measures and update plans. While such adaptive management provisions are not uncommon in licenses issued in recent years, some of the proposed articles would put project modifications under the direction of entities comprising the implementation committees. It is, however, the

¹⁶ The specific conditions of the license that incorporate the substance of most of the Settlement Agreement's proposed license articles include ordering paragraphs (H) and (I) and Articles 401 through 436.

licensees' responsibility to obtain the Commission's approval, through appropriate license amendments, for all material amendments to the project and license.¹⁷ The Commission is charged with determining whether amendments will meet the comprehensive development/public interest standards of Federal Power Act (FPA) section 10(a)(1), which continues to govern regulation of a project throughout the term of its license.¹⁸ For this reason, the articles of this license provide for Commission review and approval of any material changes to the project.¹⁹

86. The Settlement Agreement's Proposed Article 7 provides for PGE and the Tribes, prior to commencing habitat- or ground-disturbing activities on tribal reservation lands, to comply with the Tribes' Integrated Resources Management Plan. The Integrated Resources Management Plan was filed with the Commission by the Tribes on June 13, 2005. Article 408 requires PGE and the Tribes to file an explanation of the relevance of the plan with regard to project-related habitat- or ground-disturbing activities on tribal reservation lands, and reserves the Commission's authority to require them to comply with the plan.

87. The Settlement Agreement's Proposed Article 8 provides for implementation of a Project Operation Plan found in Exhibit C of the Settlement Agreement and as set forth in Proposed Articles 9 through 14 of the Settlement Agreement. We are including the substance of Proposed Articles 9-14 as Articles 409-414 of the license, but we are not including Proposed Article 8, because we find the proposed article to be redundant with the individual operational requirements stipulated in the license.

88. The Settlement Agreement includes provisions for plans to be approved by various Settlement Agreement parties before the plans are filed with the Commission. The Commission has held that the requirement for an entity's prior approval of plans submitted to the Commission is substantially satisfied by a license requirement to consult

¹⁷ See, e.g., Standard Articles 2 and 3 of the license, Form L-5, which is published at 54 FPC 1799, 1799-1800 (1975) and incorporated by reference in ordering paragraph (K) below.

¹⁸ See, e.g., *S.D. Warren Co.*, 68 FERC ¶ 61,213 at 62,022 (1994).

¹⁹ See, e.g., *PacifiCorp*, 105 FERC ¶ 62,207 at 64,460 (2003). A license article cannot provide for the automatic amendment of the license based upon future occurrences. Rather, the licensee is free to file with the Commission an application for amendment of its license, if future conditions warrant.

with various entities prior to plan submission to the Commission for approval and a requirement to explain how it has accommodated the concerns of the consulted entity.²⁰ Therefore, in those articles requiring the licensees to file a plan with the Commission for approval, we are including our consultation requirement rather than a requirement to obtain prior approval of the plan.

89. The Settlement Agreement's Proposed Articles 34 and 35 provide for PGE and the Tribes to implement alternative mitigation in the event that fish passage for some or all species would ultimately be found to be infeasible at the Round Butte development. The alternative mitigation would be "consistent with the fish passage objective of providing ecosystem integrity and self-sustaining harvestable populations of fish," and would be implemented in place of constructing, operating, and maintaining, or if already constructed, continuing to operate and maintain the permanent downstream fish passage facilities. The amount of mitigation would be equivalent to the remaining net present value of the costs for constructing, operating, and maintaining the permanent downstream passage facilities that would otherwise have been incurred by PGE and the Tribes.

90. We are unable to make a public interest determination with regard to the proposed alternative mitigation measures, because the measures have yet to be identified, and there is uncertainty with regard to the need for the measures. Further, such a license provision would presume a cost for as yet unidentified measures. Therefore, we are not including the alternative mitigation provisions of Proposed Articles 34 and 35 in the license. As discussed below, we are including an article in the license that reserves the Commission's authority to require fishways that may be prescribed by NOAA Fisheries or Interior for the Pelton Round Butte Project. Future fish passage needs could be addressed via this fishway reservation article. Further, the license includes by reference in ordering paragraph (K), Standard Article 15 of Form L-5, which allows fish and wildlife agencies to petition the Commission to reopen the license to include additional measures for fish and wildlife.

²⁰ See *P.U.D. No. 1 of Okanogan County, WA*, 88 FERC ¶ 61,040 (1999), *order on reh'g*, 90 FERC ¶ 61,169 (2000) (Project No. 10536).

91. The Settlement Agreement's Proposed Article 41 provides for PGE and the Tribes to file a report with the Commission documenting the status of interim fish passage and water acquisition measures listed in Appendix B of the Settlement Agreement.²¹

Section 3.3 of the Settlement Agreement states that these measures are to be undertaken prior to issuance of any new license for the project and promptly upon the effective date of the Settlement Agreement. Because PGE and the Tribes have agreed to commence implementation of these measures outside of the license, and therefore, apart from Commission oversight, we see no purpose in requiring PGE and the Tribes to document with the Commission the status of the implementation of the measures.

92. The Settlement Agreement's Proposed Article 42 provides for PGE and the Tribes to file a Terrestrial Resources Implementation Plan (TRMP) for Commission approval to carry out terrestrial resource protection, mitigation, and enhancement measures set forth in Exhibit E of the Settlement Agreement. Management and maintenance activities under the plan would be applied to lands both within and outside of the project boundary, and would include any lands acquired by PGE and the Tribes during the license term.²² The TRMP would be updated every five years as approved by the Commission. We are including the substance of Proposed Article 42 as Article 422 of the license to the extent the measures apply to lands within the project boundary.²³ We are also including a requirement in Article 422 that the TRMP clearly indicate those lands within the project boundary to which the measures apply.

93. The Settlement Agreement's Proposed Article 43 provides for PGE and the Tribes to implement various interim measures for terrestrial resources while the TRMP is being developed. These interim measures include: upland vegetation management; exotic and

²¹ These measures include: (1) constructability/feasibility designs for the selective water withdrawal facility; (2) assistance to Oregon DFW on bull trout spawning surveys in the Metolius River; (3) a determination of the timing and relative numbers of juvenile, non-anadromous sockeye salmon (kokanee) migrating into Lake Billy Chinook; (4) estimation of the spawning escapement of kokanee in the Metolius River and tributaries; (5) radio-tagging of steelhead smolts from the Crooked River basin; and (6) acquiring water rights on Squaw Creek, a tributary to the Deschutes River upstream of the project, to transfer to the state of Oregon to be held as instream water rights.

²² Non-project lands include Forest Service and BLM roads, campgrounds, trails, and adjacent lands.

²³ At this time, PGE and the Tribes have not stated their intent for the non-project lands, much of which are federal lands, to be brought into the project boundary, with the exception of 10,797 acres of jointly held lands for which we approve inclusion in the project boundary in ordering paragraph (C) of the license.

invasive plant control; raptor nesting, winter use, and roost surveys; avian powerline electrocution and collision surveys and mitigation; waterfowl surveys; and installation of small animal crossings over the Pelton Fish Ladder. Plans for the surveys and design drawings for the construction activities at the Pelton Fish Ladder have not been filed with the Commission. We note that we cannot authorize the activities without knowing the specific steps that PGE and the Tribes will take to implement the measures, which include making changes to project facilities; therefore, although we are including the interim measures to the extent they apply to project lands in Article 423 of the license, we are requiring PGE and the Tribes to file a plan for Commission approval describing the activities and including design drawings for the construction of the wildlife crossings prior to implementing the measures.

94. The Settlement Agreement's Proposed Articles 45, 46, 52, 54, and 55 provide for recreation mitigation or enhancement measures at non-project sites. The final EIS recommended the measures at the non-project sites specified in Proposed Articles 45, 46, and 52,²⁴ and we are requiring these measures, which will enhance public recreation in the project area. Given our conclusion that these recreation areas are necessary for the project purpose of recreation, we further require that these areas be included within the project boundary.²⁵

95. The Settlement Agreement's Proposed Article 45 also provides for PGE and the Tribes to fund a study designed to evaluate the technical feasibility of an off-shore boat moorage program and fund the installation of up to 50 moorages in Lake Billy Chinook if unspecified land management agencies agree to develop, implement, and enforce regulations regarding the use of the moorages and enforce the closure of other areas where boats tie-up to the shore. Although we are including in Article 424 a requirement for PGE and the Tribes to evaluate the technical feasibility of implementing an off-shore boat moorage program at Lake Billy Chinook, we cannot require the installation of up to

²⁴ The final EIS did not recommend funding of recreation-related measures at the Forest Service-managed Haystack Reservoir and BLM-managed lower Deschutes Wild and Scenic river sites, as set forth in Proposed Articles 54 and 55. The final EIS concluded these measures would not address project-related effects on recreation resources. See final EIS at 242-244 and 320. Further, sufficient recreation is provided at the project through the other measures required in this license. Accordingly, the license does not include the measures specified in Proposed Articles 54 and 55.

²⁵ See, e.g., *Kennebec Water Power Company*, 102 FERC ¶ 61,259 at 61,798 (2003) ("Lands dedicated to project purposes must be included in the project boundary . . ."). The fact that the lands in question are to be within the project boundary does not, however, mean that PGE and the Tribe must acquire title to them; rather, they must have sufficient interests to carry out project purposes. See *Wisconsin Public Service Corporation*, 104 FERC ¶ 61,295 at n.16.

50 moorages to be contingent upon the actions of other entities. Therefore, we are instead requiring PGE and the Tribes to include with the evaluation of the program, any recommendations for the installation and maintenance of up to 50 offshore moorages in Lake Billy Chinook.

96. The Settlement Agreement's Proposed Article 53 provides for PGE and the Tribes to enter into an agreement with the Forest Service whereby PGE and the Tribes would make one-time payments and annual contributions to upgrade and maintain non-project, Forest Service roads leading to the western, Metolius River arm of Lake Billy Chinook. The EIS concluded that upgrading and maintaining these roads would provide for continued public access to the Metolius River arm of Lake Billy Chinook, would help the Forest Service maintain the roads, and would address some of the effects associated with recreational access to remote areas of Lake Billy Chinook.²⁶ Based on the conclusion that these roads are necessary to support recreation at, and provide access to, the project, in Article 431 we require a plan to provide project-related road upgrades and maintenance, which will address the need for maintenance at project access roads identified by Proposed Article 53. We will not require ongoing actions requiring Commission oversight of non-project lands without those lands being brought into the project boundary. Because we are requiring PGE to take actions with respect to these roads throughout the term of the license, Article 431 requires that they be included within the project boundary.

97. The Settlement Agreement's Proposed Article 54 provides for PGE and the Tribes to enter into an agreement with Jefferson County to upgrade and maintain county-owned roads in the project area. The EIS noted that various of these roads (including Jordan Road, Dizney Lane, and Pelton Dam Road) provide important access to the project area.²⁷ Therefore, as discussed above with respect to the Forest Service roads, we include in license Article 431 provisions providing for project-related upgrades and maintenance of county roads identified in Proposed Article 431, and will require that these roads be included in the project boundary.

98. The Settlement Agreement's Proposed Article 61 provides for the establishment of the Pelton Round Butte Fund for fish and wildlife habitat enhancements and mitigation throughout the basin. Decisions on fund distribution, including selection of mitigation or enhancement projects, would take place at a future date by a Governing Board composed of various Settlement Agreement parties, including PGE and the Tribes. PGE and the Tribes would be under no ongoing obligation to maintain funded projects once they would be completed.

²⁶ See EIS at 254-55.

²⁷ *Id.* at 254.

99. The Commission has stated that it generally does not favor such funds but prefers to require licensees to undertake specific measures to resolve project effects, especially in cases where it is not clear to what extent the funds will be used for activities related to the project.²⁸ In this case, the types of measures that would be funded have been stipulated in section II.B of Exhibit H of the Settlement Agreement and include: land acquisition or lease of riparian lands, wetlands, and uplands; water rights acquisition or lease for instream flows; water conservation; conservation easements, construction of non-project fish passage facilities and removal of non-project barriers to fish migrations; instream habitat improvements; riparian and wetland protection and enhancement; and restoration of fish and wildlife habitats adversely affected by recreation.

100. We note that habitat alteration owing to beaver trapping, agricultural stream diversions, and construction of small hydroelectric dams has been extensive in the Deschutes River basin.²⁹ Implementation of the funded measures would improve habitat conditions upstream and downstream of the project for aquatic species, including federally listed steelhead, and would increase the likelihood that self-sustaining runs of spring Chinook salmon and summer steelhead would be restored in the upper basin,³⁰ both of which are goals of the Fish Passage Plan component of the Settlement Agreement.³¹ Implementation of the funded measures would also enhance riverine, riparian, and wetland habitats for wildlife.³² While as noted, we prefer the implementation of specific measures to the establishment of general funds, the parties here have made clear many of the measures which will be paid for by the fund, and have satisfied us that the fund will be used for environmental measures related to the project, including the protection and enhancement of federally listed species. For these reasons, we are including establishment of the Pelton Round Butte Fund in the license as Article 436.

²⁸ See, e.g., *Alcoa Power Generating, Inc.*, 110 FERC ¶ 61,056 (2005) (P-2169, Tapoco Hydroelectric Project).

²⁹ See final EIS at 100-101.

³⁰ See final EIS at 142-149.

³¹ See Exhibit D of the Settlement Agreement at 4.

³² See final EIS at 186-187. The fund could be used for terrestrial resource enhancements related to wildlife affected by reservoir operations. However, use of the fund for activities upstream and downstream of the project that support anadromous fish reintroduction has a higher priority. See Exhibit H of the Settlement Agreement ("The Pelton Round Butte Fund Implementation Plan") at 5.

101. The Settlement Agreement includes specific dollar limitations (*e.g.*, PGE and the Tribes are to implement an Integrated Interpretation and Education Plan for the project to inform the public about resources and project features in the project area at a total expense to the licensees of no more than \$75,000). The Commission has stated that it is important for all entities involved in settlements to know that the Commission considers it the licensee's obligation to complete the measures required by license articles, in the absence of authorization from the Commission to the contrary, and that dollar figures agreed to by the parties are not absolute limitations.³³ Therefore, we are including Article 438 to reserve the Commission's authority to require the licensees to fulfill the requirements of this license notwithstanding the limitations on expenditures included in this license.

WATER QUALITY CERTIFICATION

102. Under Section 401(a)(1) of the Clean Water Act (CWA),³⁴ the Commission may not issue a license authorizing the construction or operation of a hydroelectric project unless the state water quality certifying agency either has issued water quality certification for the project or has waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed one year. Section 401(d) of the CWA³⁵ provides that the certification shall become a condition of any federal license that authorizes construction or operation of the project.

103. The Pelton Round Butte Project has identifiable discharges in the State of Oregon and on tribal lands within the Warm Springs Reservation of Oregon. Therefore, both the State of Oregon and the Confederated Tribes of Warm Springs Water Control Board (Tribes' Water Board), the tribal entity that has regulatory authority to administer a water quality standards program, are empowered by Section 401(a)(1) of the CWA to issue water quality certification.

104. On June 26, 2001, PGE and the Tribes applied to the Tribes' Water Board and the Oregon Division of Environmental Quality (Oregon DEQ) for certification for the Pelton Round Butte Project, which the Tribes' Water Board and Oregon DEQ received on June 25, 2001, and June 26, 2001, respectively. On June 24, 2002, both the Tribes' Water Board and Oregon DEQ issued certifications for the project. Oregon DEQ's

³³ See *Virginia Electric Power Co.*, 110 FERC ¶ 61, 241 (2005) (P-2009, Roanoke Rapids and Gaston Hydroelectric Project).

³⁴ 33 U.S.C. § 1341(a)(1).

³⁵ 33 U.S.C. § 1341(d).

certification includes 20 conditions and the Water Board's certification includes 16 conditions, which are set forth in Appendix A and B of this order and incorporated into the license (*see* ordering paragraphs (F) and (G)). The certifications include requirements for water quality management and monitoring (water temperature, dissolved oxygen, pH, total dissolved gases, turbidity, toxic substances, bacteria); nuisance phytoplankton growth control; oil and hazard substances spill prevention and control; ramping rates; reservoir operating levels; minimum flows; project operations; gaging; fish passage; large woody debris management; sediment transport studies; fish habitat enhancements upstream of the project area; and compliance and administration. Article 401 requires the licensees to file, for Commission approval, a plan for mitigation of total dissolved gas noncompliance as stipulated by the Oregon DEQ conditions.

SECTION 4(E) FINDINGS AND CONDITIONS

105. Section 4(e) of the FPA,³⁶ states that the Commission may issue a license for a project located within a reservation only if it finds that the license will not interfere or be inconsistent with the purposes for which the reservation was created or acquired. Section 3(2) of the FPA³⁷ defines "reservations" as including national forests, which in some regions encompass grasslands. Portions of the Pelton Round Butte Project occupy lands located within the Deschutes, Mt. Hood, and Willamette National Forests, and the Crooked River National Grassland. These federal lands are under the supervision of the Forest Service.³⁸

³⁶ 16 U.S.C. § 797(e).

³⁷ 16 U.S.C. § 796(2).

³⁸ Portions of the headwaters of the project's largest reservoir, Lake Billy Chinook, are located in the Deschutes National Forest. Other portions of Lake Billy Chinook as well as Lake Simtustus (the next reservoir downstream) and part of the Pelton development transmission line, are located in the Crooked River National Grassland.

Portions of Lake Billy Chinook, Lake Simtustus, and the Reregulating Reservoir, along with parts of Pelton Dam and powerhouse, Round Butte Dam and powerhouse, Pelton fish ladder, and the Round Butte transmission lines are located on lands under the supervision of BLM.

The 100-mile-long transmission line from the Round Butte switchyard to PGE's substation occupies 475.3 acres of lands of the Mt. Hood and Willamette National Forests. By order issued August 28, 2002, the Commission determined that it does not have jurisdiction over this line, because it is not the project's primary transmission line, and amended the license to delete the line from the project description (*See* 100 FERC ¶ 62,147). The order provided, however, that the line will remain within the project boundary until the licensees obtain all necessary permits and approvals from the Forest

106. We have reviewed the Organic Administration Act of 1897,³⁹ which established the purposes for forest reservations, and the presidential proclamations that created the Deschutes,⁴⁰ Mt. Hood,⁴¹ and Willamette National Forests,⁴² and the Crooked River National Grassland⁴³ within which the project is located.⁴⁴ There is no evidence in this proceeding to indicate that relicensing of the Pelton Round Butte Project would interfere

Service and BLM for continued use of the federal lands. Article 201 of this license provides for the licensees' payment of annual charges for the use, occupancy, and enjoyment of 475.3 acres of federal lands for the 100-mile-long transmission line right-of-way until the licensees receive all necessary permits and approvals from the Forest Service and BLM.

³⁹ 16 U.S.C. § 473 *et seq.*

⁴⁰ The Deschutes National Forest was created by executive order issued June 13, 1908 (Executive Order No. 816), as part of the Cascade Range Forest Reserve.

⁴¹ The Mt. Hood National Forest was created in 1908 when the northern portion of the Cascade Range Forest Reserve was merged with the Bull Run Reserve and named the Oregon National Forest. The forest was renamed Mt. Hood by executive order issued January 21, 1924 (Executive Order No. 3944).

⁴² The Santiam National Forest and the Cascade National Forest were combined to form the Willamette National Forest by executive order issued April 6, 1933 (Executive Order No. 6104).

⁴³ By administrative order issued June 20, 1960, the Secretary of Agriculture designated 3,804,000 acres of land as national grasslands within the National Forest System under Section 31, Title III of the Bankhead-Jones Farm Tenant Act, 7 U.S.C. §§ 1011 *et seq.*, which governs the purchase, conservation, and development of farm land that is considered submarginal or not primarily suitable for cultivation and has been retired from production and made available for Indian, park, forest, migratory bird refuge and agricultural adjustment purposes. *See* United States Department of Agriculture, Forest Service, *The Establishment and Modification of National Forest Boundaries and National Grasslands – A Chronological Record: 1891-1996*, Addendum 1-1 and 1-2 (1997). The Crooked River National Grassland is one of the 19 units permanently held for these purposes by the Department of Agriculture under the Bankhead-Jones Farm Tenant Act.

⁴⁴ At the time the forests were created, the Organic Administration Act of 1897, 16 U.S.C. § 475, stipulated that all national forest lands were established and administered only for watershed protection and timber production.

with the purposes of the Deschutes, Mt. Hood, and Willamette National Forests and the Crook River National Grassland. Therefore, we find that this license, as conditioned, will not interfere or be inconsistent with the purposes for which those reservations were created.

107. The Pelton Round Butte Project occupies 2,161.9 acres of tribal lands within the Tribes' Warm Springs Reservation of Oregon,⁴⁵ which is under the supervision of Interior's BIA. The Warm Springs Reservation was established by the Treaty of June 25, 1855, between the Tribes and Bands of Middle Oregon and the United States. The Treaty provides that the primary purpose of the reservation is to reserve to the tribes the exclusive right of taking fish in streams running through and bordering the reservation. No allegations have been made that the project would have any adverse effect upon the reservation. As discussed below, Interior has submitted 4(e) conditions for the protection and utilization of the reservation. The environmental measures required in the license will provide additional environmental benefits. We, therefore, find that the license will not interfere or be inconsistent with the purposes for which the reservation was created.

108. Section 4(e) also requires that the Commission include in licenses for projects located within a federal reservation all conditions that the Secretary of the department under whose supervision the reservation falls shall deem necessary for the adequate protection and utilization of the reservation.⁴⁶

109. On November 12, 2002, the Forest Service, a signatory to the Settlement Agreement, filed 23 preliminary conditions.⁴⁷ The Forest Service included a schedule for filing final conditions within 90 days of the June 10, 2004, *Federal Register* notice for the final EIS, which would have been September 8, 2004.

⁴⁵ The western side of the project boundary along the Deschutes River from just upstream of the Reregulating Dam to Round Butte Dam and continuing along the northern side of Lake Billy Chinook on the Metolius River arm are tribal reservation lands. Project facilities on reservation lands include portions of the Reregulating Reservoir, Lake Simtustus and the Metolius River arm of Lake Billy Chinook, as well as parts of Pelton Dam and powerhouse and Round Butte Dam and powerhouse. The Reregulating Dam and powerhouse are located entirely on lands jointly owned by PGE and the Tribes.

⁴⁶ *Escondido Mutual Water Co. v. LaJolla Band of Mission Indians*, 466 U.S. 765 (1984).

⁴⁷ A summary of the preliminary 4(e) conditions is provided in the final EIS at 24-26.

110. On October 4, 2004, the Forest Service filed correspondence concerning its section 4(e) conditions. The Forest Service indicated that it was not modifying its preliminary section 4(e) conditions, but instead filing three new conditions as final 4(e) conditions. Condition No. 1 requires the licensees to comply fully with all provisions of the Settlement Agreement relating to protection, mitigation, and enhancement measures and commitments that implement activities on or affect forest lands and resources. Condition No. 2 requires the Commission's acceptance and incorporation of the Settlement Agreement and the licensees' immediate and complete implementation of the Settlement Agreement measures in accordance with the schedule set forth in the Settlement Agreement. Condition No. 2 further states that in the event either of the requirements is not met, the Forest Service reserves its right to supplement or modify the final 4(e) conditions at a later time. Condition No. 3 reserves the Forest Service's right to add, delete, or revise conditions in the event the licensees, the Forest Service, or other parties withdraw from the Settlement Agreement prior to issuance of a license for the project.

111. Because the Forest Service submitted the final 4(e) conditions after the September 8, 2004, deadline, they are untimely. Typically, in a case where an agency has previously filed preliminary section 4(e) conditions and a schedule for submitting final section 4(e) conditions, and either files the final 4(e) conditions late or does not file them at all, the Commission recognizes the preliminary 4(e) conditions as final conditions.⁴⁸ In this instance, however, we do not believe that the Forest Service intends for its preliminary conditions to be included as final conditions, because they are substantially different from the Settlement Agreement. Therefore, we have considered the Forest Service's untimely conditions as recommendations under section 10(a)(1), 16 U.S.C. § 803(a)(1).⁴⁹ Conditions 1 and 2 call for the Commission to include in the license the provisions of the Settlement Agreement relating to project lands and facilities located on federal reservations administered by the Forest Service. We are including in the license most of the Proposed License Articles that pertain to project lands and facilities located on federal reservations administered by the Forest Service.

⁴⁸ See, e.g., *City of Springville*, 101 FERC ¶ 62,160 (2002) (In the absence of final section 4(e) conditions, the Forest Service's preliminary 4(e) conditions were adopted as final 4(e) conditions and included in the license).

⁴⁹ Section 10(a)(1) requires that any project for which the Commission issues a license shall be best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce; for the improvement and utilization of waterpower development; for the adequate protection, mitigation, and enhancement of fish and wildlife; and for other beneficial public uses, including irrigation, flood control, water supply, recreation, and other purposes.

112. On November 12, 2002, Interior, also a signatory to the Settlement Agreement, filed on behalf of BIA, BLM, and the U.S. Fish and Wildlife Service (FWS), 31 preliminary conditions for the project pursuant to section 4(e). Interior included a schedule for filing final conditions within 60 days of the December 31, 2003, close of the comment period for the draft EIS, which would have been March 1, 2004. Interior subsequently requested an extension of the schedule to allow time for settlement negotiations, and staff extended the due date for Interior's final conditions to October 1, 2004.

113. Interior timely filed final section 4(e) conditions for the protection and utilization of the Warm Springs Indian Reservation⁵⁰ and for the federal lands managed by Interior through BLM⁵¹ on September 30, 2004. In its filing, Interior also asked that the Commission adopt all of the Proposed License Articles in the Settlement Agreement in lieu of its preliminary section 4(e) conditions and that the Commission adopt the license articles and approve the Settlement Agreement without material modification. Interior's 4(e) conditions are set forth in Articles 441 and 442 of the license. A discussion of the Settlement Agreement Proposed License Articles included in the license can be found earlier in the order in the *Settlement Agreement* section.

SECTION 18 FISHWAY PRESCRIPTIONS

114. Section 18 of the FPA, 16 U.S.C. § 811, provides that the Commission shall require the construction, maintenance, and operation by a licensee of such fishways as may be prescribed by the Secretary of the Interior or the Secretary of Commerce, as appropriate.

115. NOAA Fisheries and Interior each filed preliminary fishway prescriptions for the Pelton Round Butte Project on November 12, 2002, along with a schedule for submitting final fishway prescriptions within 60 days of the close of the comment period on the draft EIS. A draft EIS for the project was issued on August 29, 2003, requesting that all comments be filed by December 31, 2004; therefore, the due date for filing final fishway prescriptions for both NOAA Fisheries and Interior was March 1, 2004.

116. On February 12, 2004, NOAA Fisheries requested a modification of their schedule for filing final section 18 fishway prescriptions to a due date of no later than 60 days after the filing of a settlement agreement for the project. On February 27, 2004, Interior requested that the schedule for filing its fishway prescriptions be extended

⁵⁰ See Attachment B of Interior's filing.

⁵¹ See Attachment C of Interior's filing.

Project No. 2030-036

29

indefinitely to allow Interior time to continue settlement negotiations and arrange with the settlement parties a new deadline for filing the final prescriptions. On April 14, 2004, staff extended the due date to file final fishway prescriptions to November 1, 2004, for NOAA Fisheries and to October 1, 2004, for Interior.

117. Interior timely filed its final section 18 fishway prescriptions on September 30, 2004, and NOAA Fisheries timely filed its final prescriptions on October 27, 2004. Interior's and NOAA Fisheries' final fishway prescriptions, which comprise the Settlement Agreement's fish passage requirements, are set out in Appendices C and D to this order, and are made requirements of the license by ordering paragraphs (H) and (I), respectively.

118. Certain of the NOAA Fisheries' and Interior's fishway prescriptions contemplate unspecified, long-term changes to project operations or facilities for the purpose of facilitating safe passage for anadromous salmonids past the project. Article 401 requires the licensees to receive Commission approval through the filing of an application to amend the license prior to implementation of the measures.

119. With their filing of the final fishway prescriptions, both Interior and NOAA Fisheries requested reservation of authority to prescribe fish passage for the project. Consistent with Commission policy, Article 437 of this license reserves the Commission's authority to require fishways that may be prescribed by NOAA Fisheries or Interior for the Pelton Round Butte Project.

ESSENTIAL FISH HABITAT

120. Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson Stevens Act), 16 U.S.C. § 1855(b)(2), requires federal agencies to consult with the Secretary of Commerce regarding any action or proposed action authorized, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat identified under the Act. Under section 305(b)(4)(A) of the Magnuson Stevens Act, NOAA Fisheries is required to provide Essential Fish Habitat Conservation Recommendations for actions that would adversely affect Essential Fish Habitat. Under Section 305(b)(4)(B) of the Magnuson Stevens Act, an agency must, within 30 days after receiving recommended conservation measures from NOAA Fisheries or a Regional Fishery Management Council, describe the measures proposed by the agency for avoiding, mitigating, or offsetting the effects of the agency's activity on the Essential Fish Habitat.

121. The Pacific Fisheries Management Council (PFMC) has designated Essential Fish Habitat for three species of Pacific salmon: coho, Chinook, and Puget Sound pink salmon.⁵² Essential Fish Habitat includes all those streams, ponds, lakes, wetlands, and other waterbodies currently or historically accessible to coho and Chinook salmon in Oregon, Washington, Idaho, and California, except upstream of impassable barriers identified by the PFMC. Essential Fish Habitat in the project area includes the Deschutes River and tributaries from the confluence with the Columbia River upstream to Round Butte dam (Chinook and coho salmon) and Lake Billy Chinook (Chinook salmon).

122. On June 18, 2004, Commission staff sent NOAA Fisheries a Biological Evaluation addressing project effects on among other things, Essential Fish Habitat, and concluding that the project would not adversely affect Essential Fish Habitat. On February 28, 2005, NOAA Fisheries filed a response concluding that the project, as proposed by the Settlement Agreement, would adversely affect designated Essential Fish Habitat for Chinook and coho salmon. NOAA Fisheries proposed that the following Essential Fish Habitat conservation measures be included as license conditions:⁵³

- (1) The Commission must require the licensees to construct and operate the project facilities identified in the Settlement Agreement; carry out the Fish Passage Plan; adhere to the Fish Passage Schedule; implement the Testing and Verification studies, Long Term Monitoring, Annual Work Plans and Reports, and Native Fish Monitoring Program; implement the Trout Creek Restoration Project, LWD management plan, and gravel augmentation study; and "other measures" identified in the Settlement Agreement.
- (2) The Commission must require the licensees to establish the Fish Committee required by the Settlement Agreement, and to adhere to the consultation and dispute resolution provisions of the Settlement Agreement.
- (3) The Commission must require the licensees to comply with all project construction activity best management practices (Appendix F of the Settlement Agreement), including measures to control erosion and sedimentation, and measures to control pollutants of any kind.

⁵² See Pacific Fishery Management Council. 1999. Amendment 14 to the Pacific salmon plan. Appendix A: Description and identification of essential fish habitat, adverse impacts and recommended conservation measures of salmon. Portland, Oregon.

⁵³ These conservation measures are identical to those required in the Incidental Take Statement included with NOAA Fisheries Biological Opinion filed on February 28, 2005.

123. NOAA Fisheries' conservation recommendations are included in this license as part of the Threatened and Endangered Species Plan required by Article 440.

ENDANGERED SPECIES ACT ISSUES

124. Section 7(a)(2) of the Endangered Species Act of 1973⁵⁴ requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened and endangered species, or result in the destruction or adverse modification of their designated critical habitat.

125. Three federally listed species are known to occur in the project vicinity: bald eagle (threatened); the Columbia River bull trout Distinct Population Segment (DPS) (threatened); and the Middle Columbia River steelhead Evolutionarily Significant Unit (ESU) (threatened). Designated critical habitat for bull trout includes Heising Spring, the confluence of Jack Creek with the Metolius River, and a short reach of the Metolius River just upstream of the confluence with Abbot Creek, all of which are located in the Metolius River subbasin upstream of the project. Designated critical habitat downstream of the project is located on the Deschutes River and includes fragmented reaches from the mouth upstream to the project's Reregulating Dam at river mile 100.

126. On April 27, 2004, PGE and the Tribes filed a Biological Evaluation that concluded that licensing the project as proposed by the Settlement Agreement⁵⁵ is likely to adversely affect Middle Columbia River steelhead ESU and Columbia River bull trout DPS; may affect, but is not likely to adversely modify or destroy, bull trout critical habitat; and may affect, but is not likely to adversely affect, the bald eagle. Staff's findings in the final EIS for the project were consistent with the Biological Evaluation.

⁵⁴ 16 U.S.C. § 1536(a).

⁵⁵ At the time, the Settlement Agreement had not been finalized; however, draft environmental measures anticipated to be included in the final settlement had been crafted by the settlement parties.

127. The Commission initiated formal consultation with NOAA Fisheries and Interior by letters dated June 18, 2004.⁵⁶ On November 2, 2004, Interior filed a biological opinion that concludes that issuing a license for the project, as recommended by Commission staff, is not likely to jeopardize the continued existence of the Columbia River bull trout DPS. In the same filing, Interior concurred with staff that the proposed project may affect, but is not likely to adversely affect, the bald eagle. On February 28, 2005, NOAA Fisheries filed a biological opinion that concludes that issuing a license for the project, as recommended by Commission staff, is not likely to jeopardize the continued existence of the Middle Columbia River steelhead ESU.

128. As part of their biological opinions, both Interior and NOAA Fisheries included incidental take statements with reasonable and prudent measures to minimize incidental take of bull trout and steelhead, along with terms and conditions to implement the measures. These terms and conditions included requirements to: (1) implement the Settlement Agreement measures that “avoid or minimize affects to” bull trout and steelhead;⁵⁷ (2) establish a Fish Committee as set forth by the Settlement Agreement; and (3) implement best management practices, as stipulated by the Settlement Agreement, during construction activities. The terms and conditions are attached to this license as Appendices E and F, and Article 440 of this license requires the licensees to develop a plan, for Commission approval, to comply with the terms and conditions of the incidental take statements.

NATIONAL HISTORIC PRESERVATION ACT ISSUES

129. On December 6, 2004, the Commission, the Advisory Council on Historic Preservation, the Oregon Historic Preservation Officer, and the Tribes’ Tribal Historic Preservation Officer executed a Programmatic Agreement (PA) for managing historic properties that may be affected by the relicensing and continued operation of the Pelton Round Project. Article 432 of the new license requires the licensees to implement the

⁵⁶ Staff initially attempted to initiate formal consultation with Interior and NOAA Fisheries on September 24, 2003; however, both agencies denied staff’s request by letters filed November 6 and November 12, 2003, respectively, because they felt staff did not provide them with sufficient information with regard to project effects on the species and that the time was not yet ripe to initiate consultation in light of settlement negotiations that were occurring at the time.

⁵⁷ NOAA Fisheries and FWS did not specify the exact Settlement Agreement terms that “avoid or minimize affects to” bull trout and steelhead.

agreement, including but not limited to a final Cultural Resources Management Plan (CRMP) for the project. This provides protection for all existing and future cultural sites located within the project boundary, and satisfies the Commission's responsibilities under section 106 of the National Historic Preservation Act.⁵⁸

RECOMMENDATIONS OF FEDERAL AND STATE FISH AND WILDLIFE AGENCIES

130. Section 10(j)(1) of the FPA,⁵⁹ requires the Commission, when issuing a license, to include conditions based on recommendations by federal and state fish and wildlife agencies submitted pursuant to the Fish and Wildlife Coordination Act,⁶⁰ to "adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)" affected by the project.

131. Interior filed its initial fish and wildlife recommendations on November 12, 2002. These consisted of 24 detailed recommendations addressing minimum flows; project operations (ramping and reservoir drawdown limits); operations monitoring; water quality monitoring; fish habitat protection and enhancement; fish passage; fish habitat surveys and monitoring; spread of fish diseases; fish genetics in terms of appropriate stocks to reintroduce upstream of the project; fish predation; large woody debris placement; project effects on sediment transport; project effects on Pacific lamprey; effects of anadromous fish reintroduction on resident fish populations; terrestrial resources management; protection of wildlife at fishways; shoreline management; wildlife habitat connectivity; transmission line effects on birds; and project effects on threatened and endangered species, including bald eagle management and protection. On September 30, 2004, Interior filed modifications to its recommendations to incorporate Proposed Articles 8-16, 34-37, 39, 41-43, 49-50, and 58-61 of Exhibit A of the Settlement Agreement.

132. On November 12, 2002, NOAA Fisheries adopted all of Interior's initial section 10(j) recommendations that include provisions for the protection, mitigation, and enhancement of Chinook salmon, sockeye salmon, and steelhead. NOAA Fisheries filed revised recommendations on December 31, 2003, consistent with measures included in

⁵⁸ 16 U.S.C. § 470s.

⁵⁹ 16 U.S.C. § 803(j)(1).

⁶⁰ 16 U.S.C. §§ 661, *et seq.*

an agreement-in-principle that was reached with the settlement parties. On October 27, 2004, NOAA Fisheries filed modifications to its revised recommendations to incorporate Proposed Articles 1-2, 4, 6, 8-13, 15-16, 34-37, 39, and 58-61 of Exhibit A of the Settlement Agreement.

133. Oregon DFW filed fish and wildlife recommendations on November 12, 2002. These consisted of 33 recommendations addressing minimum flows; project operations (ramping and reservoir drawdown limits); operations monitoring; fish habitat protection and enhancement; fish passage; fish habitat surveys and monitoring; fish health monitoring; fish entrainment monitoring; fish predation; fish hatchery upgrades; large woody debris placement; project effects on sediment transport; effects of anadromous fish reintroduction on resident fish populations; terrestrial resources management; off-site terrestrial habitat acquisition; mule deer winter range studies; protection of wildlife at fishways; effectiveness monitoring of existing wildlife crossings; shoreline management; riparian and wetland habitat restoration and improvements; invasive weed management; project effects on threatened and endangered species, including bald eagle management and protection and bat habitat improvements; funding for Jefferson County personnel to patrol the project area; project removal and site restoration in the event of project decommissioning; license term limits; and reserved authority to file modified recommendations. Oregon DFW filed revised recommendations on December 29, 2003, consistent with measures included in an agreement-in-principle that was reached with the settlement parties. On August 18, 2004, Oregon DFW filed modifications to its revised recommendations to incorporate Proposed Articles 1-4, 6, 8-15, 17-43, 45, 49-50, and 58-61 of Exhibit A of the Settlement Agreement.

134. The Settlement Agreement's proposed articles are generally consistent with the 110 separate recommendations that Commission staff considered in the final EIS.⁶¹ The final EIS found certain recommendations to be outside of the scope of section 10(j), because they are not specific measures to protect fish and wildlife. These include recommendations for the establishment of a shoreline working group; funding of law enforcement officials at the project; funding of Oregon DFW personnel to coordinate Oregon DFW's involvement in the implementation of fisheries and terrestrial license requirements; development and implementation of recreation, shoreline management, and shoreline erosion plans; development and implementation of plans for off-site fish and wildlife habitat; and establishment of funds to be directed toward off-site fish and wildlife habitat enhancements.

⁶¹ Table 35 of the final EIS lists each of the recommendations and the agency or agencies that recommended it. Table 35 also specifies, as to each recommendation, whether it is within the scope of section 10(j) and whether staff recommended its adoption.

135. The recommendations reflect the provisions of the Settlement Agreement, which we adopt as license conditions through ordering paragraphs incorporating mandatory license conditions or through license articles. Those recommendations that do not fall within the scope of section 10(j) are instead considered under section 10(a)(1), 16 U.S.C. § 803(a)(1). The extent to which the license adopts those measures is discussed earlier in this order in the *Settlement Agreement* section.

COLUMBIA RIVER BASIN FISH AND WILDLIFE PROGRAM

136. Under section 4(h) of the Pacific Northwest Power Planning and Conservation Act, 16 U.S.C. § 839(h), the Northwest Power Planning Council (Council) developed the Columbia River Basin Fish and Wildlife Program (Program) to protect, mitigate, and enhance the fish and wildlife resources associated with development and operation of hydroelectric projects within the Columbia River Basin. Section 4(h) states that responsible federal and state agencies should provide equitable treatment for fish and wildlife resources, in addition to other purposes for which hydropower is developed, and that these agencies should take into account, to the fullest extent practicable, the program adopted under the Pacific Northwest Power Planning and Conservation Act. Specific provisions affecting non-federal hydropower projects are outlined in Appendix B of the Program.

137. The license, which among other things, includes reservoir stage change limits (Article 409); minimum flows (Article 412); reservoir drawdown and fluctuation limits (Article 414); fish passage requirements (ordering paragraphs (H) and (I)); native fish monitoring (Article 421); terrestrial resources management (Articles 422 and 423); fish spawning gravel augmentation (Article 433); large river wood management (Article 434), lower Deschutes River habitat enhancements (Article 435); and threatened and endangered species protection (Article 440) is consistent with the applicable provisions of the Program, as discussed in more detail in the final EIS. Article 439 reserves to the Commission the authority to require future alterations in project structures and operations to take into account, to the fullest extent practicable, the applicable provisions of the Program.

WILD AND SCENIC RIVER DESIGNATIONS

138. Section 7(a) of the Wild and Scenic Rivers Act (Rivers Act), 16 U.S.C. § 1278(a), bars the Commission from licensing “the construction of” any dam, water conduit, or other project works “on or directly affecting any river which is designated as a component of the national wild and scenic rivers system” or from licensing any project

works below or above a wild or scenic river that would “invade” or “unreasonably diminish” the scenic, recreational and fish and wildlife values there. Section 7(a) does not bar the issuance of a license for the continued operation of the project, provided no new construction is proposed in the wild and scenic river.⁶²

Lower Deschutes River

139. The Pelton Reregulating Dam is located near a portion of the lower Deschutes River that Congress designated a Wild and Scenic River under the Omnibus Oregon Wild and Scenic Rivers Act of 1988 (Oregon River Act).⁶³ In relationship to the Pelton Round Butte Project, the Wild and Scenic River corridor is immediately upstream and downstream of the project, but no part of the project is located in the corridor.

140. PGE and the Tribes propose replacement of an existing intake tower at the Reregulating Dam with a new intake tower, which will serve as a selective water withdrawal facility and fishway. The entrance to the proposed fishway is at the boundary of the lower Deschutes Wild and Scenic River corridor.

141. BLM and the Forest Service have determined that the proposed project will not invade the lower Deschutes Wild and Scenic River area, because the licensees do not propose construction of any new project works in the corridor. BLM and the Forest Service have also determined that the proposed project should not unreasonably diminish scenic and wildlife values in the area or have a negative effect on the fisheries resources and wildlife habitat. BLM and the Forest Service further find that the adverse effects of the proposed project, *i.e.*, sediment conditions, which existed at the date of the river’s designation, will not unreasonably diminish recreation and fisheries values provided the license articles proposed in the Settlement Agreement are adopted in their entirety.

Middle Deschutes, Lower Crooked, and Metolius Rivers

142. In relationship to the Pelton Round Butte Project, the Wild and Scenic River corridors of the Middle Deschutes, Lower Crooked, and Metolius Rivers are upstream of the project and outside of the project boundary.

143. Pursuant to section 7, BLM and the Forest Service jointly determined for the Middle Deschutes and Lower Crooked Rivers, and the Forest Service determined for the Metolius River, that the proposed project will not invade the designated areas, because the licensees do not propose construction of any project works in the wild and scenic

⁶² See *Northern States Power Company*, 67 FERC ¶ 61,282 (1994).

⁶³ See Omnibus Oregon Wild and Scenic Rivers Act of 1988, Pub. L. No. 100-557.

river corridors and do not plan to raise the height of any dams or other project facilities. BLM and the Forest Service further determined for the respective rivers that the potential adverse effects of the project will not unreasonably diminish the scenic, recreation, wildlife, and fisheries values present in the areas.

TRANSMISSION LINES

144. On January 30, 2002 (supplemented April 19, 2002), PGE and the Tribes filed an amendment application to delete the 100-mile-long, 230-kV Bethel-Round Butte transmission line from the project. The transmission line is partially located on federal lands managed by the Forest Service. By order issued August 28, 2002,⁶⁴ the Chief of the Engineering & Jurisdiction Branch, Division of Hydropower Administration and Compliance, issued an order finding that the transmission line is not required to be licensed. The amendment order removed the transmission line from the project description but, to prevent any gap in federal authorization for the portion of the transmission line on federal lands (475.3 acres), the order kept the line in the project boundary and under Commission jurisdiction until PGE and the Tribes obtained the necessary permits for the use and occupancy of National Forest Lands.

145. To date, PGE and the Tribes have not filed copies of the necessary permits with the Commission; therefore, ordering paragraphs (D) and (E) of the new license require that the facilities and lands deleted from the project by the April 28, 2002, amendment remain within the project boundary and under Commission jurisdiction until PGE and the Tribes file the required permits with the Commission.

146. In a March 29, 2002, letter to the Commission, PGE and the Tribes notified the Commission that Exhibit A of the license application should be corrected to indicate that the only primary transmission lines for the Reregulating development are 6.9-kV leads (about 200 feet in length) from the generator to a 6,900-volt bus at the step-up transformer located adjacent to the powerhouse. The approvals of Exhibits A, F, and G in order paragraph B reflect this change.

STATE AND FEDERAL COMPREHENSIVE PLANS

147. Section 10(a)(2)(A) of the FPA, 16 U.S.C. § 803(a)(2)(A), requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways

⁶⁴ 100 FERC ¶ 62,147.

affected by the project.⁶⁵ Under Section 10(a)(2)(A), federal and state agencies filed 137 comprehensive plans that address various resources in Oregon. Of these, the staff identified and reviewed 65 comprehensive plans that are relevant to this project.⁶⁶ No conflicts were found.

APPLICANTS' PLANS AND CAPABILITIES

148. In accordance with sections 10(a)(2)(c) and 15(a) of the FPA,⁶⁷ staff evaluated PGE's and the Tribes' record as licensees with respect to the following: (A) conservation efforts; (B) compliance history and ability to comply with the new license; (C) safe management, operation, and maintenance of the project; (D) ability to provide efficient and reliable electric service; (E) need for power; (F) transmission service; (G) cost effectiveness of plans; and (H) actions affecting the public. We accept the staff's findings in each of the following areas.

A. Conservation Efforts

149. FPA section 10(a)(2)(C) requires the Commission to consider the extent of electric consumption efficiency programs in the case of license applicants primarily engaged in the generation or sale of electric power. PGE is such an applicant. PGE has engaged in energy efficiency programs since 1970 and continues to offer programs that promote the use of energy efficient lighting and appliances. PGE's integrated resource planning program proposes other demand side energy consumption efficiency measures such as time-of-use metering and direct load control to better manage peak demand by its customers. Through these programs, PGE is making satisfactory efforts to conserve electricity and reduce peak hour demands.

B. Compliance History and Ability to Comply with the New License

150. Based on a review of PGE's and the Tribes' compliance with the terms and conditions of the existing license, staff found that PGE's overall record of making timely filings and of compliance with its license is satisfactory.

⁶⁵ Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19.

⁶⁶ See final EIS at Appendix D for a list of the applicable plans.

⁶⁷ 16 U.S.C. §§ 803(a)(2)(C) and 808(a).

C. Safe Management, Operation, and Maintenance of the Project

151. Staff reviewed PGE's and the Tribes' management, operation, and maintenance of the Pelton Round Butte Project pursuant to the requirements of 18 C.F.R. Part 12 and the Commission's Engineering Guidelines and periodic Independent Consultant's Safety Inspection Reports. The project dam has a high hazard potential classification. Staff concluded that the dam and other project works are safe, and that there is no reason to believe that PGE cannot continue to safely manage, operate, and maintain these facilities under a new license.

D. Ability to Provide Efficient and Reliable Electric Service

152. Staff reviewed PGE's plans and its ability to operate and maintain the project in a manner most likely to provide efficient and reliable electric service. Staff found that PGE has been operating the project in an efficient manner within the constraints of the existing license and is likely to continue to do so under a new license.

E. Need for Power

153. PGE is an integrated electric utility serving nearly 1.4 million people in the Portland, Oregon, metropolitan area. PGE has over 730,000 retail residential, commercial, and industrial customers. Power from the Pelton and Round Butte developments is sold to PGE customers and is transmitted via PGE's transmission and distribution system. The 247.12-MW Round Butte and 100.8-MW Pelton developments provide approximately 20 percent of PGE's 2,022-MW generating capability, which includes hydroelectric, coal, and gas facilities (PGE, 2003). The project, with its large storage reservoir, is typically operated to provide power during daily load peaks. The operational flexibility of the project is used by PGE to maintain the stability and reliability of the PGE system.

154. The Tribes market the power from the 18.9-MW generating facilities at the Reregulating development as a wholesale utility and sell the power to PGE or to others on the open market.

155. PGE is part of the Western Electricity Coordinating Council (WECC), which is composed of generators and suppliers in 12 western states, Canada, and Mexico. PGE and its resources are located within the northwest subregion of the WECC. In its 10-year Coordinated Plan Summary for the period 2004-2013, the WECC estimates that its peak summer demand will increase by an average annual compound rate of 2.2 percent to about 171,000 MW by 2013. For the 10-year period, the region projects

the addition of a net amount of about 23,000 MW of new resources, 96 percent of which is combined cycle combustion turbine capacity. With these additions, WECC projects adequate capacity to meet its estimated summer load, including a 15-percent reserve margin, through 2013.

156. In summary, the electric power provided by the Pelton Round Butte Hydroelectric Project supplies part of the current need for power by PGE's customers and the region, and can continue to contribute to meeting those needs with a clean source of energy, thereby avoiding the use of a like amount of fossil-fueled generation and its associated atmospheric emissions.

F. Transmission Services

157. The project's transmission facilities that are required to be licensed include the three 230-kV lines each extending about 2,800 feet from the Round Butte powerhouse to the Round Butte switchyard; the 230-kV primary transmission line that extends south about 7.9 miles from Pelton Development's powerhouse to the Round Butte Switchyard; and the 6.9-kV leads that extend about 200 feet connecting the generator of the Pelton Re-regulating Development to the 6.9-kV bus at the step-up transformers located adjacent to the powerhouse. PGE proposes no changes that would affect transmission facilities.⁶⁸

G. Cost Effectiveness of Plans

158. The Pelton Round Butte Project develops nearly 100 percent of the hydropower flow potential of the site and, as such, represents a cost-effective level of development. In addition, PGE is proposing and this license requires several modifications to project facilities for more efficient operation, and for the protection and enhancement of fish and other environmental resources. PGE's past record as a licensee indicates it is likely to carry out these measures in a cost-effective manner.

⁶⁸ As noted above, on August 28, 2002, under the previous license, the Commission approved a license amendment deleting the 100-mile-long, 230-kV Bethel to Round Butte transmission line from the project license. The amendment order requires that this transmission line remain under Commission jurisdiction until PGE accepts a special use permit from the appropriate federal land management agencies.

H. Actions Affecting the Public

159. In its license application, PGE and the Tribes cited numerous examples of actions they have taken which benefit natural resources and the economy of the Deschutes River Basin including working cooperatively with fish and wildlife agencies on research and enhancement of fish and wildlife resources, and development of recreation facilities to improve public access to and enjoyment of project lands and waters.

PROJECT ECONOMICS

160. In determining whether to issue a new license for an existing hydroelectric project, the Commission considers a number of public interest factors, including the economic benefits of project power. Under the Commission's approach to evaluating the economics of hydropower projects, as articulated in *Mead Corp.*,⁶⁹ the Commission uses current costs to compare the costs of the project and likely alternative power with no forecasts concerning potential future inflation, escalation, or deflation beyond the license issuance date. The basic purpose of the Commission's economic analysis is to provide a general estimate of the potential power benefits and the costs of a project, and of reasonable alternatives to project power. The estimate helps to support an informed decision concerning what is in the public interest with respect to a proposed license.

161. As licensed herein under the terms of the Settlement Agreement as incorporated into this license, the Pelton Round Butte Hydroelectric Project will generate an average of 1,591,000 megawatt-hours (MWh) of electricity a year at a total annual cost of about \$26.3 million (about \$17/MWh). Based on recent market prices in the northwest region, the annual value of the project power is about \$76.1 million (about \$48/MWh), resulting in a net annual benefit of about \$49.8 million (about \$31/MWh).

162. In analyzing public interest factors, the Commission takes into account that hydroelectric projects offer unique operational benefits to the electric utility system (ancillary benefits). These benefits include their value as almost instantaneous load-following response to dampen voltage and frequency instability on the transmission system, system-power-factor correction through condensing operations, and a source of power available to help in quickly putting fossil-fuel based generating stations back on line following a major utility system or regional blackout.

163. Ancillary services are now mostly priced at rates that recover only the cost of providing the electric service at issue, which do not resemble the prices that would occur in competitive markets. As competitive markets for ancillary services begin to develop, the ability of hydro projects to provide ancillary services to the system will increase the

⁶⁹ 72 FERC ¶ 61,027 (1995).

benefits of the project. The Pelton Round Butte Project, with the large amount of storage available in Lake Billy Chinook, is PGE's primary load following resource for meeting the daily peak demands of its customers. The project will retain these valuable ancillary service benefits under the terms of the Settlement Agreement and this license.

COMPREHENSIVE DEVELOPMENT

164. Sections 4(e) and 10(a)(1) of the FPA,⁷⁰ respectively, require the Commission to give equal consideration to the power development purposes and to the purposes of energy conservation, the protection, mitigation of damage to, and enhancement of fish and wildlife, the protection of recreational opportunities, and the preservation of other aspects of environmental quality. Any license issued shall be such as in the Commission's judgment will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration.

165. The EIS for the Pelton Round Butte Project contains background information, analysis of effects, support for related license articles, and the basis for a finding that the project will not result in any major, long-term adverse environmental effects. The project would be safe if operated and maintained in accordance with the requirements of this license.

166. Based on our independent review and evaluation of the Pelton Round Butte Project, recommendations from the resource agencies and other stakeholders, the Settlement Agreement, and the no-action alternative, as documented in the EIS, we have selected the Settlement Agreement with modifications, as discussed herein, as the preferred alternative, which we conclude is best adapted to a comprehensive plan for developing the Deschutes, Crooked and Metolius Rivers. We selected this alternative because: (1) issuance of a new license would serve to maintain a beneficial, dependable, and an inexpensive source of electric energy; (2) the required environmental measures would protect and enhance fish and wildlife resources, water quality, recreational resources and historic properties; and (3) the 366.82-MW of electric energy generated from renewable resource would continue to offset the use of fossil-fueled, steam-electric generating plants, thereby conserving nonrenewable resources and reducing atmospheric pollution.

⁷⁰ 16 U.S.C. §§ 797(e) and 803(a)(1).

Project No. 2030-036

43

LICENSE TERM

167. Section 15(e) of the FPA,⁷¹ provides that any new license issued shall be for a term that the Commission determines to be in the public interest, but not less than 30 years or more than 50 years. The Commission's general policy is to establish 30-year terms for projects with little or no redevelopment, new construction, new capacity, or environmental mitigation and enhancement measures; 40-year terms for projects with a moderate amount of such activities; and 50-year terms for projects with extensive measures.⁷²

168. This license authorizes an extensive amount of environmental measures, including new construction. As part of the Settlement Agreement, the signatories agree to a new 50-year license term. For the above reasons, and because the term of license was likely an important element in the negotiations that led to the Settlement Agreement, we are issuing this new license for a term of 50 years.

The Commission orders:

(A) This license is issued to PGE and the Tribes (licensees) to operate and maintain the Pelton Round Butte Project for a period of 50 years, effective the first day of the month in which this order is issued. The license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, enclosed by the project boundary shown by Exhibit G included in the application for new license, filed on June 29, 2001, to the Commission Secretary.

<u>Exhibit</u> <u>G-</u>	<u>FERC</u> <u>Drawing</u> <u>No. 2030-</u>	<u>Showing</u>
1	1023	Project Boundary and Location Map - Round Butte Development
2	1024	Project Boundary and Location Map - Round Butte Development
3	1025	Project Boundary and Location Map - Round Butte Development

⁷¹ 16 U.S.C. § 808(e).

⁷² See *Wisconsin Power Company*, 94 FERC ¶ 61,164 (2001).

Project No. 2030-036

44

<u>Exhibit</u> <u>G-</u>	<u>FERC</u> <u>Drawing</u> <u>No. 2030-</u>	<u>Showing</u>
4	1026	Project Boundary and Location Map - Round Butte Development
5	1027	Project Boundary and Location Map - Round Butte Development
6	1028	Project Boundary and Location Map - Round Butte Development
7	1029	Project Boundary and Location Map - Round Butte Development
8	1030	Project Boundary and Location Map - Round Butte Development
9	1031	Project Boundary and Location Map - Round Butte Development
10	1032	Project Boundary and Location Map - Round Butte Development
11	1033	Project Boundary and Location Map - Round Butte Development
12	1034	Project Boundary and Location Map - Round Butte Development
13	1035	Project Boundary and Location Map - Pelton Development
14	1036	Project Boundary and Location Map - Pelton Development
15	1037	Project Boundary and Location Map - Pelton Development
16	1038	Project Boundary and Location Map - Pelton Development
17	1039	Project Boundary and Location Map - Pelton Development
18	1040	Project Boundary and Location Map - Pelton Development
19	1041	Project Boundary and Location Map - Pelton Development
20	1042	Project Boundary and Location Map - Wildlife Mitigation Lands
21	1043	Project Boundary and Location Map - Wildlife Mitigation Lands
22	1044	Project Boundary and Location Map - Wildlife Mitigation Lands
23	1045	Project Transmission Line - Pelton Development
24	1046	Project Transmission Line - Pelton Development
25	1047	Pelton-Round Butte Project Service Road
26	1048	12.5-kV Pelton-Round Butte Service Line
27	1049	12.5-kV Pelton-Round Butte Service Line

Project No. 2030-036

45

The following Exhibit G drawings show the location of the non-project Bethel-Round Butte transmission line which remains under Commission jurisdiction until PGE and the Tribes receive all necessary permits and approvals from the U.S. Forest Service and the U.S. Bureau of Land Management, as appropriate, for the continued use of federal lands.

<u>Exhibit G-</u>	<u>FERC Drawing No. 2030-</u>	<u>Showing</u>
28	1050	Bethel-Round Butte Transmission Line
29	1051	Bethel-Round Butte Transmission Line
30	1052	Bethel-Round Butte Transmission Line
31	1053	Bethel-Round Butte Transmission Line
32	1054	Bethel-Round Butte Transmission Line
33	1055	Bethel-Round Butte Transmission Line
34	1056	Bethel-Round Butte Transmission Line
35	1057	Bethel-Round Butte Transmission Line

(2) Project works consisting of:

The **Round Butte Development** consisting of: (1) a 440-foot-high, 1,382-foot-long rockfill, embankment dam; (2) a 4,000 acre reservoir (Lake Billy Chinook) with a gross storage capacity of 535,000-acre-feet and a maximum useable storage volume of 274,000 acre-feet (limited by this license to 76,000 acre-feet with a maximum drawdown of 20 feet) at a normal pool elevation at 1,945.0 feet mean sea level; (3) a concrete spillway intake structure topped with a 30-foot-high, 36-foot-wide radial gate; (4) an 1,800-foot-long, 21-foot-diameter spillway tunnel; (5) an 85-foot-long, varying in height and width, concrete, powerhouse intake structure; (6) a 1,425-foot-long, 23-foot-diameter power tunnel; (7) a 170-foot-long, 116-foot-wide, concrete powerhouse containing three Francis-type, turbine generating units with a total capacity of 247.050 MW and one 70-kilowatt (kW) turbine generating unit for a total installed capacity of 247.12 MW; (8) a 30-inch-diameter intake pipe and support structure, a 10-foot square platform, and a turbine discharge pipe for the 70-kW turbine; (9) three 2,800-foot-long, 230-kV primary transmission lines that extend from the transformers at the powerhouse to the Round Butte Switchyard; and (10) appurtenant facilities.

The **Pelton Development** consisting of: (1) 636-foot-long, 204-foot-high, concrete arch dam with a crest elevation of 1,585 feet msl; (2) a 7-mile-long, 540 acre reservoir (Lake Simtustus) with a gross storage capacity of 31,000 acre-feet and useable storage volume of 3,700 acre-feet at normal maximum water surface elevation of 1,580 feet mean sea level; (3) a concrete spillway equipped with two, 34-foot-wide, 22-foot-high steel Tainter gates; (4) a turbine intake system built into the upstream face of the dam and consisting of three 16-foot-diameter, approximately 100-foot-long, penstocks, equipped with trash racks and inlet gates at the face of the dam; (5) a 76-foot-long, 168-foot-wide, semi-outdoor type powerhouse containing three, Francis-type turbine generating units with a total installed capacity of 100.8 MW; (6) a 7.9-mile-long, 230-kV primary transmission line from the Pelton powerhouse to the Round Butte Switchyard; and (7) appurtenant facilities.

The **Reregulating Development** consisting of: (1) a 1,067-foot-long, 88-foot-high rockfill dam with a crest elevation of 1,402 feet msl; (2) a 2.5-mile-long, 190 acre reservoir with a gross storage capacity of 3,500 acre-feet and useable storage volume of 3,270 acre-feet at normal maximum water surface elevation of 1,435 feet mean sea level; (3) a concrete spillway equipped with four, 20-foot-wide, 14-foot-high steel gates; (4) a non-operating 3-mile-long fishway extending from the tailrace upstream to the forebay of the Pelton development; (5) a turbine intake on the upstream face of the dam, equipped with a 55-foot-high, 34-foot-wide trash rack; (6) a 159-foot-long, 44-foot-wide concrete powerhouse containing a single, 18.9-MW bulb-type turbine generator; (7) the 6.9-kV leads that extend about 200 feet connecting the generator of the Pelton Re-regulating Development to the 6.9-kV bus at the step-up transformers located adjacent to the powerhouse; and (8) appurtenant facilities.

The project works generally described above are more specifically shown and described by those portions of Exhibits A and F shown below:

Exhibit A:

All of Exhibit A, modified by deleting from the description of project facilities those portions describing the 100-mile-long, 230-kV transmission line from the Round Butte switchyard to Bethel, a 3.2-mile-long, 69-kV transmission line from the Reregulating Development to the Warm Springs Substation, and the 10.5-mile-long, 12.5-kV transmission line from the Round Butte switchyard to the Reregulating Development.

Project No. 2030-036

47

Exhibit F:

<u>Exhibit F-</u>	<u>FERC Drawing No. 2030-</u>	<u>Showing</u>
1	1001	Round Butte - General Plan, Dam and Powerhouse
2	1002	Round Butte - Dam Sections
3	1003	Round Butte - Spillway Diversion and Power Tunnels
4	1004	Round Butte - Spillway and Power Tunnel Intake
5	1005	Round Butte - Powerhouse Plans and Sections
6	1006	Round Butte - Fish Facilities, Upstream Migrant Structure
7	1007	Round Butte - Fish Facilities, Downstream Migrant Structures
8	1008	Round Butte - Fish Facilities, Downstream Migrant Lock Tank
9	1009	Round Butte - Fish Hatchery
10	1010	Round Butte - Single Line Electrical Diagram
11	1011	Round Butte - Single Line Electrical Diagram
12	1012	Round Butte - Switchyard Arrangement
13	1013	Pelton - General Plan and Sections
14	1014	Pelton - Powerhouse Plans
15	1015	Pelton - Powerhouse Cross-Section
16	1016	Pelton - Round Butte - Single Line Electrical Diagram
17	1017	Reregulating - Powerhouse and Fish Facilities
18	1018	Reregulating - Powerhouse Plan
19	1019	Reregulating - Powerhouse Transverse Section
20	1020	Reregulating - Fish Ladder/Rearing Ponds and Waterfowl Pond
21	1021	Reregulating - Single Line Electrical Diagram

(3) All of the structures, fixtures, equipment or facilities used to operate or maintain the project and located within the project boundary, all portable property that may be employed in connection with the project and located within or outside the project boundary, and all riparian or other rights that are necessary or appropriate in the operation or maintenance of the project.

(C) Exhibits A, F, and G, as designated in ordering paragraph (B) above, are approved and made a part of this license. Exhibits F and G shall be filed in the Commission's electronic file format as specified in Article 203. The project boundary in Exhibit G shall include 10,797 acres of lands proposed in Exhibit A, section I.D and approved by this license for inclusion in the project boundary.

(D) Commission jurisdiction over the non-project Bethel-Round Butte transmission line deleted from the project by amendment order 100 FERC ¶ 62,147 (2002), is terminated, effective on the date the licensees receive all necessary permits and approvals from the U.S. Forest Service and Bureau of Land Management, as applicable, for the continued use of federal lands. The licensees shall file copies of all permits and approvals with the Commission within 30 days of receiving the permits or approvals.

(E) Within 60 days of the termination of Commission jurisdiction over the Bethel-Round Butte transmission line as specified in ordering paragraph (D), the licensees shall file for Commission approval, revised exhibits A, F, and G drawings showing and describing the project features, boundaries, and facilities, as well as a statement indicating the revised amount of federal lands occupied by the project so the Commission can amend Article 201 of the license regarding the licensees' payment for the use of federal lands.

(F) This license is subject to the conditions submitted by the Oregon Division of Environmental Quality under section 401 of the Clean Water Act, as those conditions are set forth in Appendix A to this order.

(G) This license is subject to the conditions submitted by the Water Control Board of the Confederated Tribes of the Warm Springs Reservation of Oregon under section 401 of the Clean Water Act, as those conditions are set forth in Appendix B to this order.

(H) This license is subject to the conditions submitted by the Secretary of the U.S. Department of the Interior under section 18 of the FPA, as set forth in Appendix C to this order.

(I) This license is subject to the conditions submitted by the Secretary of the U.S. Department of Commerce under section 18 of the FPA, as set forth in Appendix D to this order.

(J) The following plans filed with the Settlement Agreement on July 30, 2004, as modified by the articles of this license, are approved and made a part of the license: (1) Project Operating Plan (Exhibit C to the Settlement Agreement); (2) Fish Passage Plan (Exhibit D to the Settlement Agreement); (3) Pelton Round Butte Fund Implementation Plan (Exhibit H to the Settlement Agreement); and (4) Cultural Resources Management Plan (Exhibit J to the Settlement Agreement).

(K) This license is subject to the articles set forth in Form L-5, entitled "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters and Lands of the United States," 54 FPC 1792, 1799 (October 1975), and the following additional articles:

Article 201. Administrative Annual Charges. The licensees shall pay the United States the following annual charges, effective as of the first day of the month in which this license is issued, for the purposes of:

(A) Reimbursing the United States for the Commission's administrative costs, pursuant to Part I of the Federal Power Act, a reasonable amount as determined in accordance with the provisions of the Commission's regulations in effect from time to time. The authorized installed capacity for that purpose is 366,820 kilowatts.

(B) Recompensing the United States for the use, occupancy and enjoyment of 3,022.60 acres of its lands, other than for transmission line right-of-way.

(C) Recompensing the United States for the use, occupancy and enjoyment of 481.14 acres of its lands, for transmission line right-of-way. Upon compliance with ordering paragraphs (D) and (E) of this order, the Commission will issue an order revising this article of the license, changing the amount of federal lands for transmission line use from 481.14 to 5.84 acres, or such other acreage as is determined at that time.

(D) All annual charges for the project's use of 2,161.9 acres of tribal reservation lands is deemed satisfied by fulfillment of the applicable terms of the Long-Term Global Settlement and Compensation Agreement, dated April 12, 2000, and approved by the Commission on November 21, 2000 (100 FERC ¶ 62,147).

(E) If modifications are made to the project boundary that involve federal lands during the license term, the Commission will adjust the annual charges accordingly.

Article 202. Amortization Reserves. Pursuant to section 10(d) of the Federal Power Act, a specified reasonable rate of return upon the net investment in the project shall be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. The licensees shall set aside in a project amortization reserve account at the end of each fiscal year one half of the project surplus

Project No. 2030-036

50

earnings, if any, in excess of the specified rate of return per annum on the net investment. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year, the licensees shall deduct the amount of that deficiency from the amount of any surplus earnings subsequently accumulated, until absorbed. The licensees shall set aside one-half of the remaining surplus earnings, if any, cumulatively computed, in the project amortization reserve account. The licensees shall maintain the amounts established in the project amortization reserve account until further order of the Commission.

The specified reasonable rate of return used in computing amortization reserves shall be calculated annually based on current capital ratios developed from an average of 13 monthly balances of amounts properly included in the licensees' long-term debt and proprietary capital accounts as listed in the Commission's Uniform System of Accounts. The cost rate for such ratios shall be the weighted average cost of long-term debt and preferred stock for the year, and the cost of common equity shall be the interest rate on 10-year government bonds (reported as the Treasury Department's 10-year constant maturity series) computed on the monthly average for the year in question plus four percentage points (400 basis points).

Article 203. Exhibit Drawings. Within 45 days of the date of issuance of the license, the licensees shall file the approved exhibit drawings in aperture card and electronic file formats.

(a) Four sets of the approved exhibit drawings shall be reproduced on silver or gelatin 35mm microfilm. All microfilm shall be mounted on type D (3-1/4" X 7-3/8") aperture cards. Prior to microfilming, the FERC Drawing Number (i.e., P-1234-1001 through P-1234-###) shall be shown in the margin below the title block of the approved drawing. After mounting, the FERC Drawing Number shall be typed on the upper right corner of each aperture card. Additionally, the Project Number, FERC Exhibit (i.e., F-1, G-1, etc.), Drawing Title, and date of this license shall be typed on the upper left corner of each aperture card.

Two of the sets of aperture cards along with form FERC-587 shall be filed with the Secretary of the Commission, ATTN: OEP/DHAC. The third set shall be filed with the Commission's Division of Dam Safety and Inspections Portland Regional Office. The remaining set of aperture cards and a copy of Form FERC-587 shall be filed with the Bureau of Land Management office at the following address:

State Director
Bureau of Land Management
PO Box 2965
Portland, OR 97208-2965

(b) The licensees shall file two separate sets of exhibit drawings in electronic raster format with the Secretary of the Commission, ATTN: OEP/DHAC. A third set shall be filed with the Commission's Division of Dam Safety and Inspections Portland Regional Office. Exhibit F drawings must be identified as (CEII) material under 18 CFR §388.113(c). Exhibit G drawings must be identified as (NIP) material under 18 CFR §388.112. Each drawing must be a separate electronic file, and the file name shall include: FERC Project-Drawing Number, FERC Exhibit, Drawing Title, date of this license, and file extension in the following format [P-1234-####, G-1, Project Boundary, MM-DD-YYYY.TIF]. Electronic drawings shall meet the following format specification:

IMAGERY - black & white raster file
 FILE TYPE – Tagged Image File Format, (TIFF) CCITT Group 4
 RESOLUTION – 300 dpi desired, (200 dpi min)
 DRAWING SIZE FORMAT – 24” X 36” (min), 28” X 40” (max)
 FILE SIZE – less than 1 MB desired

Each Exhibit G drawing that includes the project boundary must contain a minimum of three known reference points, arranged in a triangular format for GIS georeferencing to vector data. The latitude and longitude coordinates, or state plane coordinates, of each reference point must be shown and identified on the drawing. In addition, each project boundary drawing must be stamped by a registered land surveyor.

- (c) The licensees shall file three separate sets of the project boundary data in a geo-referenced vector electronic file format (such as ArcView shape files, GeoMedia files, MapInfo files, or any similar GIS format) with the Secretary of the Commission, ATTN: OEP/DHAC. The file name shall include: FERC Project Number, data description, date of this license, and file extension in the following format [P-1234, boundary vector data, MM-DD-YYYY.SHP]. The geo-referenced electronic boundary data file must be positionally accurate to ± 40 feet in order to comply with National Map Accuracy Standards for maps at a 1:24,000 scale. A single electronic boundary data file is preferred and must contain all reference points shown on the individual project boundary drawings. The latitude and longitude coordinates, or state plane coordinates, of each reference point must be shown. The data must be accompanied by a separate text file describing the map projection used (i.e., UTM, State Plane, Decimal Degrees, etc), the map datum (i.e., North American 27, North American 83, etc.), and the units of measurement (i.e., feet, meters, miles, etc.). The text file name shall include: FERC Project Number, data description, date of this license, and file extension in the following format [P-1234, project boundary metadata, MM-DD-YYYY.TXT].

Article 204. Headwater Benefits. If the licensees' project was directly benefited by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement during the term of the original license (including extensions of that term by annual licenses), and if those headwater benefits were not previously assessed and reimbursed to the owner of the headwater improvement, the licensees shall reimburse the owner of the headwater improvement for those benefits, at such time as they are assessed, in the same manner as for benefits received during the term of this new license. The benefits will be assessed in accordance with Part 11, Subpart B, of the Commission's regulations.

Article 301. Revised Exhibits. Within 90 days of the completion of any construction of facilities, modification of project boundaries, or any other action required by this license that results in changes to Exhibits A, F and G, the licensees shall file for Commission approval revised Exhibits A, F, and G, as appropriate, to show those project facilities and lands as built or modified. The exhibits shall have sufficient detail to adequately delineate the relative location of project features. The licensees shall submit six copies to the Commission, one copy to the Commission's Portland Regional Engineer, and one to the Director, Division of Hydropower Administration and Compliance.

Article 302. Review and Approval of Final Plans and Specifications. At least 60 days before starting any license-related construction activities, the licensees shall submit one copy to the Division of Dam Safety and Inspections, Portland Regional Engineer and two copies to the Commission (one of these shall be a courtesy copy to the Director, Division of Dam Safety and Inspections), of a supporting design report and final contract plans and specifications. The Commission may require changes to the plans and specifications to assure the work is completed in a safe and environmentally sound manner. Construction may not commence until authorized by the Regional Engineer.

Article 303. Quality Control and Inspection Program. At least 60 days before starting any license-related construction activities, the licensees shall submit one copy to the Division of Dam Safety and Inspections, Portland Regional Engineer and two copies to the Commission (one of these shall be a courtesy copy to the Director, Division of Dam Safety and Inspections), of the Quality Control and Inspection Program (QCIP) for the Commission's review and approval. The QCIP shall include a sediment and erosion control plan.

Article 304. Cofferdam Construction Drawings. Before starting construction, the licensees shall review and approve the design of contractor designed cofferdams and deep excavations. At least 30 days before starting construction of the cofferdams, the licensees shall submit one copy to the Division of Dam Safety and Inspections, Portland Regional Engineer and two copies to the Commission (one of these copies shall be a courtesy copy to the Director, Division of Dam Safety and Inspections), of the approved cofferdam construction drawings and specifications and the letters of approval.

Article 305. Temporary Emergency Action Plan. At least 60 days before starting construction, the licensees shall submit one copy to the Division of Dam Safety and Inspections, Portland Regional Engineer and two copies to the Commission (one of these shall be a courtesy copy to the Director, Division of Dam Safety and Inspections), of the Temporary Emergency Action Plan (TEAP) for the Commission's review and approval. The TEAP shall describe emergency procedures in case failure of a cofferdam, large sediment control structure, or any other water retaining structure could endanger construction workers or the public. The TEAP shall include a notification list of emergency response agencies, a plan drawing of the proposed cofferdam arrangement, the location of safety devices and escape routes, and a brief description of testing procedures.

Article 401. Supplemental Requirements to Mandatory Conditions.

(a) Requirement to File Plan for Commission Approval.

Condition H.2 of Appendix A requires the licensees to prepare a Total Dissolved Gas Noncompliance Mitigation Plan within 60 days of identifying excessive total dissolved gas concentrations. The plan shall also be submitted to the Commission for approval and must be approved by the Commission before being implemented by the licensees.

The licensees shall submit to the Commission documentation of its consultation, copies of comments and recommendations made in connection with the plan, and a description of how the plan accommodates the comments and recommendations. If the licensees do not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information. The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the plan becomes a requirement of the license, and the licensees shall implement the plan, including any changes required by the Commission.

Project No. 2030-036

54

(b) Requirement to File Documentation of Completion

The licensees shall file with the Commission documentation of completion of the following activities.

Appendix	Condition No.	Facility or Activity	Due Date
A and B	G.12 (App. A) and 1.A (App. B)	Funding of a minimum of \$1.475 million for upper basin habitat enhancement measures	Within 5 years of license issuance
A	L	Request and file National Pollutant Discharge Elimination System permit applications with Oregon DEQ.	Within 30 days of license issuance
A and B	T (App. A) and 13 (App. B)	Oregon DEQ and Tribal oversight fees for § 401 certification	By July 1 of years 1 through 10 (App. A and B) and by July 1 of each year thereafter for the term of license (App. B)
B	5	Survey of users of the project reservoirs	Within 30 days of a finding of nuisance phytoplankton growth

(c) Requirement to File Amendment Applications

Certain conditions in Appendices A, B, C, and D contemplate unspecified, long-term changes to project operations or facilities for the purpose of mitigating environmental effects. These changes may not be implemented without prior Commission authorization granted after the filing of an application to amend the license. The conditions are listed below.

Appendix	Condition	Modification
A	C.4, E.4, F.4, H.2, and N	Additional measures to reduce the project's contribution to exceedances of state water quality

Project No. 2030-036

55

		criteria
A	G.9	Modifications of fish passage facilities
A	G.11	Additional mitigation measures to improve fish habitat quality or quantity
B	1.D.5	Additional mitigation measures to improve fish habitat
B	1.F	Additional or modified fish passage measures
B	3, 4, and 10	Additional measures to protect water quality and beneficial uses
C and D	7(a)	Modification of deep exclusion screen to meet smolt criteria
C and D	7(d)	Measures to reduce impingement on the deep exclusion screen
C and D	9(c) and 11(c)	Measures or modifications to meet smolt survival standards

(d) Agency Coordination

In conjunction with the Fish Passage Plan required by Ordering Paragraphs (H) and (I), the licensees shall include agency coordination provisions specified by Proposed Article 40 of the Settlement Agreement filed on July 30, 2004.

Article 402. Implementation Committees.

(a) The licensees shall establish a Fish Committee as provided in the Settlement Agreement filed on July 30, 2004. The Fish Committee shall consist of the licensees; and to the extent of their interests in participating, the National Marine Fisheries Service (NOAA Fisheries); U.S. Fish and Wildlife Service (USFWS); U.S. Forest Service (USFS); Bureau of Indian Affairs (BIA); Bureau of Land Management (BLM); Confederated Tribes of the Warm Springs Reservation Branch of Natural Resources (CTWS BNR); Confederated Tribes of the Warm Springs Reservation Water Control Board (CTWS WCB); Oregon Department of Fish and Wildlife (ODFW); Oregon Department of Environmental Quality (ODEQ), and a representative of the following non-governmental organizations: Trout Unlimited, American Rivers, Oregon Trout, and

the Native Fish Society. The licensees' development and implementation of study plans, reports, facility designs, and operating and implementation plans submitted to the Fish Committee pursuant to the terms of this license shall comply with the requirements of the Settlement Agreement, to the extent such requirements are approved by this license. The licensees' implementation of measures pursuant to this license shall be reported to the Fish Committee as provided in the Settlement Agreement and any applicable implementation plan. Copies of all filings with the Commission following consultation with the Fish Committee shall be provided to each member of the Fish Committee.

(1) Unless a different time period is specifically established pursuant to another provision of this license, the licensees shall, where consultation with the Fish Committee is required, allow a minimum of 30 days for the Fish Committee members to comment, work to achieve consensus, and to make recommendations before filing any study, operating or implementation plan, report, or facility design with the Commission. If after consideration by the Fish Committee of all comments or recommendations, consensus is not achieved regarding the study, operating or implementation plan, report, or facility design, and any member of the Fish Committee invokes dispute resolution pursuant to section 7.5 of the Settlement Agreement, the licensees shall not file any study, operating or implementation plan, report, or facility design with the Commission until the dispute resolution process has been completed, unless otherwise directed by the Commission. The licensees shall notify the Commission of the dispute prior to the commencement of the dispute resolution process. The licensees shall include with the study, operating or implementation plan, report, or facility design: documentation of consultation with the Fish Committee, copies of committee member comments and recommendations on the study, operating or implementation plan, report, or facility design after it has been prepared and provided to the Fish Committee, and specific descriptions of how the comments are accommodated by the study, operating or implementation plan, report, or facility design.

(2) NOAA Fisheries, USFWS, ODFW, and CTWS BNR are collectively referred to as the Fish Agencies. Each Fish Agency has separate and distinct statutory authorities and no agency is deemed, by virtue of concurrent approvals, to be sharing its statutory authority with any other agency or to be conceding that the approval of any other agency is required for exercise of that agency's authority. Where consultation with the Fish Committee and approval by the appropriate Fish Agencies pursuant to their respective statutory authorities is required, the licensees shall allow the Fish Agencies a minimum of 30 days to provide such approval prior to submitting the final study, operating or implementation plan, report, or facility design with the Commission. If a Fish Agency disapproves a study, operating or implementation plan, report, or facility design, the licensees shall not file the disapproved study, operating or implementation plan, report, or design with the Commission until the dispute resolution process specified in section 7.5 of the Settlement Agreement has been completed, unless otherwise directed by the Commission or the matter in dispute was addressed pursuant to section 4.3.2 of the

Project No. 2030-036

57

Settlement Agreement, in which case no further dispute resolution shall be required before such study, operating or implementation plan, report, or design is filed with the Commission.

(b) The licensees shall establish a Terrestrial Resources Working Group as provided in the Settlement Agreement. The Terrestrial Resources Working Group shall consist of the licensees; and to the extent of their interest in participating, USFWS; USFS; BIA; BLM; CTWS BNR; and ODFW. The licensees' development and implementation of study plans, reports, facility designs, and operating and implementation plans submitted to the Terrestrial Resources Working Group pursuant to the terms of this license shall comply with the requirements of the Settlement Agreement and the applicable License Implementation Plan, to the extent such requirements are approved by this license. Unless a different time period is specifically established pursuant to another provision of this License, the licensees shall, where consultation with the Terrestrial Resources Working Group is required, allow a minimum of 30 days for the Terrestrial Resources Working Group members to comment, work to achieve consensus, and to make recommendations before filing any study, operating or implementation plan, report, or facility design with the Commission. If after consideration by the Terrestrial Resources Working Group of all comments or recommendations, consensus is not achieved regarding the study, operating or implementation plan, report, or facility design, and any member of the Terrestrial Resources Working Group invokes dispute resolution pursuant to section 7.5 of the Settlement Agreement, the licensees shall not file any study, operating or implementation plan, report, or facility design with the Commission until the dispute resolution process has been completed, unless otherwise directed by the Commission. The licensees shall include with the study, operating or implementation plan, report, or facility design: documentation of consultation with the working group, copies of comments and recommendations by working group members, and specific descriptions of how the comments and recommendations are accommodated by the study, operating or implementation plan, report, or facility design.

(c) The licensees shall establish a Recreation Resources Working Group as provided in the Settlement Agreement. The Recreation Resources Working Group shall consist of the licensees; and to the extent of their interest in participating, USFS; BIA; BLM; CTWS BNR; ODFW; and Oregon Parks and Recreation Department (OPRD). The licensees' development and implementation of study plans, reports, facility designs, and operating and implementation plans submitted to the Recreation Resources Working Group pursuant to the terms of this license shall comply with the requirements of the Settlement Agreement and the applicable License Implementation Plan, to the extent such requirements are approved by this license. Unless a different time period is specifically established pursuant to another provision of this License, the licensees shall, where consultation with the Recreation Resources Working Group is required, allow a minimum of 30 days for the Recreation Resources Working Group members to comment, work to achieve consensus, and to make recommendations before filing any study, operating or

implementation plan, report, or facility design with the Commission. If after consideration by the Recreation Resources Working Group of all comments or recommendations, consensus is not achieved regarding the study, operating or implementation plan, report, or facility design, and any member of the Recreation Resources Working Group invokes dispute resolution pursuant to section 7.5 of the Settlement Agreement, the licensees shall not file any study, operating or implementation plan, report, or facility design with the Commission until the dispute resolution process has been completed, unless otherwise directed by the Commission. The licensees shall include with the study, operating or implementation plan, report, or facility design: documentation of consultation with the working group, copies of comments and recommendations by working group members, and specific descriptions of how the comments and recommendations are accommodated by the study, operating or implementation plan, report, or facility design.

(d) The licensees shall establish a Shoreline Management Working Group as provided in the Settlement Agreement. The Shoreline Management Working Group shall consist of the licensees, and to the extent of their interest in participating, USFS; BIA; BLM; CTWS BNR; ODFW; OPRD; and Jefferson County. Licensees' development and implementation of study plans, reports, facility designs, and operating and implementation plans submitted to the Shoreline Management Working Group pursuant to the terms of this license shall comply with the requirements of the Settlement Agreement and the applicable License Implementation Plan, to the extent such requirements are approved by the license. Unless a different time period is specifically established pursuant to another provision of this license, the licensees shall, where consultation with the Shoreline Management Working Group is required, allow a minimum of 30 days for the Shoreline Management Working Group members to comment, work to achieve consensus, and to make recommendations before filing any study, operating or implementation plan, report, or facility design with the Commission. If after consideration by the Shoreline Management Working Group of all comments or recommendations, consensus is not achieved regarding the study, operating or implementation plan, report, or facility design, and any member of the Shoreline Management Working Group invokes dispute resolution pursuant to section 7.5 of the Settlement Agreement, the licensees shall not file any study, operating or implementation plan, report, or facility design with the Commission until the dispute resolution process has been completed, unless otherwise directed by the Commission. The licensees shall include with the study, operating or implementation plan, report, or facility design: documentation of consultation with the working group, copies of comments and recommendations of working group members on the completed study, operating or implementation plan, report, or facility design after it has been prepared and provided to the working group, and specific descriptions of how the comments of the Shoreline Management Working Group members are accommodated by the study, operating or implementation plan, report, or facility design.

Project No. 2030-036

59

(e) The licensees shall establish the Pelton Round Butte Fund Governing Board as provided in the Pelton Round Butte Fund Implementation Plan, Exhibit H to the Settlement Agreement, to the extent of the interest of the members in participating. As such, the Pelton Round Butte Fund Governing Board shall be comprised of eleven signatories of the Settlement Agreement, including one representative or designee from the following agencies or organizations: Licensees (one representative collectively); CTWS BNR; CTWS WCB; USFWS; NOAA Fisheries; BIA; USFWS/BLM (one representative collectively); ODFW; ODEQ; OWRD; and non-governmental organizations (American Rivers, Oregon Trout, Trout Unlimited, Native Fish Society, WaterWatch of Oregon (one representative collectively)). If during the term of the license any party specified by this article decides it does not wish to participate or continue participating on the Governing Board, the Governing Board shall consist of those remaining signatory representatives or designees that wish to continue participating, and the licensees shall provide written notification to the Commission identifying the party that has decided it no longer wishes to have a representative or designee on the Governing Board and their reasons, if known.

Article 403. Project Inspections. The licensees shall allow parties to the Settlement Agreement filed on July 30, 2004, access to, through, and across Pelton Round Butte Hydroelectric Project lands and works for the purpose of inspecting facilities and records, including monitoring data, to monitor compliance with the license. The licensees shall allow such inspections only after the entity requesting the inspection provides the licensees reasonable notice of such inspections and agrees to follow the licensees' standard safety and security procedures when engaged in such inspections.

Article 404. Enforcement Plan. Within one year of license issuance, the licensees shall file for Commission approval, an Enforcement Plan which shall include how the licensees will ensure enforcement with relevant provisions of the Terrestrial Resources Management Plan required by Article 422, including, but not limited to, seasonal and permanent road closures, all-terrain vehicle use, eagle nest sites and winter range area protection, dispersed camping, shooting ordinances, wildlife harassment, and coordination with Oregon State Police and Coordinated Enforcement Programs. Enforcement may be accomplished through an agreement with Jefferson County. The plan shall include an implementation schedule.

The licensees shall prepare the plan after consultation with Jefferson County. The licensees shall include with the plan, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the county, and specific descriptions of how the county's comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the county to comment and to make recommendations before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensees' reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensees shall implement the plan, including any changes required by the Commission.

Article 405. *Emergency or Special Conditions.*

(a) If at any time, unanticipated circumstances or emergency situations arise in which Endangered Species Act (ESA) listed fish or wildlife are being killed, harmed or endangered by any of the project facilities or as a result of project operation, the licensees shall immediately take appropriate action to prevent further loss in a manner that does not pose a risk to human life, limb, or property. The licensees shall, within 6 hours, notify the nearest office of the Oregon Department of Fish and Wildlife (ODFW), National Marine Fisheries Service (NOAA Fisheries), U.S. Fish and Wildlife Service (USFWS), Confederated Tribes of the Warm Springs Reservation Branch of Natural Resources (CTWS BNR), Confederated Tribes of the Warm Springs Reservation Water Control Board (CTWS WCB), Oregon Department of Environmental Quality (ODEQ), and Oregon Water Resources Department (OWRD), as appropriate, and comply with any restorative measures required by the resource agencies to the extent such measures do not conflict with the conditions of this license. The licensees shall notify the Commission as soon as possible but no later than 10 days after each occurrence and inform the Commission as to the nature of the occurrence and restorative measures taken.

(b) If at any time, unanticipated circumstances or emergency situations arise in which non-ESA listed fish or wildlife are being killed, harmed or endangered by any of the project facilities or as a result of project operation, the licensees shall immediately take appropriate action to prevent further loss in a manner that does not pose a risk to human life, limb, or property. The licensees shall, within 48 hours, notify the nearest office of the ODFW, NOAA Fisheries, USFWS, CTWS BNR, CTWS WCB, ODEQ, and OWRD, as appropriate, and comply with any restorative measures required by the resource agencies to the extent such measures do not conflict with the conditions of this license. The licensees shall notify the Commission as soon as possible but no later than 10 days after each occurrence and inform the Commission as to the nature of the occurrence and restorative measures taken.

Article 406. *Activities on Forest Service or Bureau of Land Management Lands.*

(a) Additional lands of the US Forest Service (USFS) or Bureau of Land Management (BLM) that are authorized for use by the licensees in a license amendment shall be subject to laws, rules, and regulations applicable to the USFS or BLM, as appropriate. Within six months of such a license amendment, the licensees shall obtain a special use

Project No. 2030-036

61

authorization from the USFS or BLM, as applicable, for occupancy and use of any lands added to the project boundary by the license amendment and file it with the Commission. The special use authorization also shall be subject to applicable enforcement procedures of the Commission at the request of the USFS or BLM.

(b) The licensees shall not make changes in the location of any constructed Project features or facilities located on National Forest System (NFS) or BLM lands, or make any departure from the requirements of any approved exhibits authorizing use or occupancy of NFS or BLM lands filed with the Commission and authorized by the new license as issued and amended before receiving comments from the USFS or BLM and approval from the Commission. Following receipt of such comments from the agency, and at least 60 days prior to initiating any such changes or departure, the licensees shall file a report with the Commission and with USFS or BLM as appropriate, describing the changes, the reasons for the changes, and showing the comments of the agency for such changes.

(c) After consultation with the USFS or BLM and before starting any activity on NFS or BLM land that USFS or BLM, as appropriate, determines may affect another federally authorized activity on those lands, the licensees shall participate with USFS or BLM in attempting to resolve any potential conflicts with representatives of those permitted uses.

(d) The licensees shall prepare site-specific plans for comment by USFS or BLM and Commission approval for habitat-disturbing and ground-disturbing activities on NFS or BLM lands required by the license, including activities contained within resource management plans required by the license that shall be prepared subsequent to license issuance. The licensees shall prepare such site-specific plans as defined in this license. The licensees shall include in such site-specific plans the following:

- (1) a map depicting the location of the proposed activity;
- (2) a description of the land management area designation for the location of the proposed activity and applicable standards and guidelines;
- (3) a description of alternative locations, designs, mitigation measures considered, and implementation and effectiveness monitoring designed to meet applicable standards and guidelines; and
- (4) data collected from surveys, biological evaluations or consultation as required by regulations applicable to ground or habitat disturbing activities on National Forest System or BLM lands in existence at the time the plan is prepared and

Project No. 2030-036

62

(i) When surveys indicate the activity may affect a species proposed for listing or listed under the federal Endangered Species Act, or that may affect that species' critical habitat, the licensees shall prepare a Biological Assessment evaluating the potential impact of the action on the species or its critical habitat and submit it to the USFS or BLM, as appropriate, for review prior to submission to the Commission.

(ii) When surveys indicate the activity may affect a USFS Regional Forester sensitive species, or a BLM Special Status species, or their habitat, the licensees shall prepare a Biological Evaluation evaluating the potential impact of the action on the species or its habitat and submit it to the USFS or BLM, as appropriate, for approval. In consultation with the Commission, the USFS or BLM may require mitigation measures for the protection of the sensitive species; however, measures which constitute long-term changes to project operations and facilities may not be implemented without prior Commission authorization granted after the filing of an application to amend the license.

Article 407. Escalation of Costs. Unless otherwise indicated, all costs or payment amounts specified in dollars in the license shall be deemed to be stated as of the year 2004, and the licensees shall escalate such sums as of January 1 of each following year (starting in January 2005) according to the following formula:

$$AD = D \times (NGDP)/(IGDP)$$

Where:

AD	=	Adjusted dollar amount as of January 1 of the year in which the adjustment is made.
D	=	Dollar amount prior to adjustment.
IGDP	=	"GDP-IPD" for the third quarter of the year before the previous adjustment date (or, in the case of the first adjustment, the third quarter of the year before the Effective Date).
NGDP	=	"GDP-IPD" for the third quarter of the year before the adjustment date.

"GDP-IPD" is the value published for the Gross Domestic Product Implicit Price Deflator by the U.S. Department of Commerce, Bureau of Economic Analysis in the publication *Survey of Current Business*, Table 7.1 (being on the basis of the year 2000 = 100), in the third month following the end of the applicable quarter. If that index ceases to be published, any reasonably equivalent index published by the Bureau of Economic Analysis may be substituted upon approval by the Commission. If the base year for "GDP-IPD" is changed or if publication of the index is discontinued, the licensees shall

notify the Commission as soon as possible and recommend, after consultation with the Settlement Agreement parties, adjustments or an alternative index that achieves the same economic effect.

Article 408. Tribal Integrated Resources Management. Within 90 days of license issuance, the licensees shall file a written explanation of those portions of the Confederated Tribes of the Warm Springs Reservation of Oregon's "Integrated Resources Management Plan" that apply to the project.

The Commission reserves the right, upon review of the licensees' filing, to require the licensees to comply with applicable portions of the plan.

Article 409. Stage Change Limits.

(a) The licensees shall operate the project with the following limits for stage changes below the Reregulating development: 0.1 foot/hour and 0.4 foot/day from October 16 to May 14, and 0.05 foot/hour and 0.2 foot/day from May 15 to October 15, except during certain extraordinary conditions, including: (1) flood events; (2) any event that triggers the Project Emergency Action Plan; (3) rapid changes in project inflows, when the rate of inflow change exceeds the proposed stage change limits; and (4) equipment failures or emergencies at the project facilities. During such extraordinary conditions, the licensees may deviate from these stage change limits. If the stage change limits are so modified, the licensees shall notify the Commission as soon as possible, but no later than 10 days after each such incident.

(b) To monitor compliance with this requirement, the licensees shall record the time and control signal value for all stage change instructions at the Reregulating development and shall report any stage change control signals that are greater than the stage change limitations identified above to the National Marine Fisheries Service, U.S. Fish and Wildlife Service, Bureau of Indian Affairs, Bureau of Land Management, Oregon Department of Fish and Wildlife, and Oregon Department of Environmental Quality (collectively, "agencies"); the Confederated Tribes of the Warm Springs Reservation (CTWS) Water Control Board (WCB); CTWS Branch of Natural Resources (BNR); and the Commission. In addition, the licensees shall provide written documentation to the agencies, CTWS WCB, CTWS BNR, and the Commission of all measured stage changes at the U.S. Geological Survey Madras gage that deviate more than 0.15 ft from the control set-point value.

Article 410. *Measurement of Flows at the U.S. Geological Survey Madras Gage.*

For determining compliance with the minimum flow requirements in the license, the licensees shall implement a protocol for measuring flows at the U.S. Geological Survey (USGS) gage at Madras, Oregon (gage no. 14092500), that includes the following elements:

(a) ***Measured Madras Flow:*** The real-time flow release at the USGS Madras gage shall be the most recent 15-minute interval USGS gage reading, converted to flow using the USGS level vs. flow rating table. The real time flow setpoint for the USGS Madras gage shall be the most recent 15-minute interval water level setpoint in the Reregulating development control system, converted to flow using the USGS level versus flow rating table. The daily outflow of the project is defined as the average flow measured at the USGS Madras gage each calendar day. This daily outflow shall be calculated from the average of the day's 96 quarter-hour (15-minute interval) flow release readings.

(b) ***Determination of Allowed Minimum Flow:*** The daily allowed minimum flow shall be determined each day by the licensees, based on the provisions of the Project Operating Plan, Exhibit C to the Settlement Agreement, including monthly minimum flows, refill allowances, the plus or minus (\pm) 10-percent rule, measured inflows and other constraints. The allowed minimum flow shall be the calculated flow in cubic feet per second (cfs) adjusted up or down to match the nearest 0.01-foot measurement increment of the USGS level vs. flow rating table. The allowed minimum flow shall be calculated and recorded by the licensees before 6 a.m. of each day. Adjustment of the flow setpoint for each day shall be completed by 9 a.m. of each day.

(c) ***License Compliance for Minimum Flows:*** The project shall be deemed to be in compliance with the minimum flow requirements whenever the flow setpoint equals or exceeds the allowed minimum flow. In order to accommodate flow measurement inaccuracies, control-system variations, and the inability of the turbine and spillway gates to exactly produce the flow setpoint, non-compliance with this minimum flow requirement is deemed to be any event where the 15-minute measured flow release falls more than 0.10 foot (approximately 260 cfs) below the allowed minimum flow for more than 30 minutes.

Article 411. *Measurement of Project Inflows.* The licensees shall improve the accuracy of project inflow monitoring through a combination of upstream U.S. Geological Survey (USGS) gage improvements and the installation of additional lake level monitoring stations in Lake Billy Chinook. Estimates of inflow shall be made using a combination of the "Storage Change" and "Average Ungaged" estimating methods as defined in the Project Operating Plan, Exhibit C to the Settlement Agreement.

(a) *System Modifications and Improvements:* Within six months of license issuance, the licensees shall file a plan for Commission approval to: (1) fund work by the USGS as needed at the three upstream tributary gages (Crooked River – gage no. 14087400, Deschutes River – gage no. 14076500, and Metolius River – gage no. 14091500) to allow real-time telemetry of hourly inflow data from these gages to the licensees' project control facility; and (2) install two or more new lake level monitoring stations in Lake Billy Chinook at locations selected to reduce level measurement errors. The plan shall include an implementation schedule and provisions to install data acquisition equipment, recording hardware and software as needed to calculate inflows on a timely basis and to document the inflow record.

The licensees shall prepare the plan after consultation with the USGS and the Fish Committee established by Article 402. The licensees shall include with the plan, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the USGS and Fish Committee, and specific descriptions of how the USGS' and Fish Committee's comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the USGS and Fish Committee to comment and to make recommendations before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensees' reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensees shall implement the plan, including any changes required by the Commission.

(b) *Inflow Estimating Method:* The licensees shall estimate total project inflow every 6 hours using the "Storage Change" method. This method shall calculate inflow from measured water levels in the three project reservoirs, reservoir storage versus elevation tables, and the USGS Madras gage hourly flow record. The Lake Billy Chinook water level used in this calculation shall be the average of the level monitors in Lake Billy Chinook. The Lake Simtustus and Reregulating Reservoir water levels shall be the level recorded by the existing lake level monitors in these two impoundments.

The inflow from the three upstream USGS gages on the Crooked, Deschutes, and Metolius Rivers shall be summed every 6 hours, and this sum shall then be subtracted from the 6-hour total inflow estimate to provide an estimate of the unaged inflow to Lake Billy Chinook. The single 6-hour estimate of unaged inflow shall be combined with prior 6-hour estimates of the unaged inflow (using a rolling average) to estimate the "Average Unaged" project inflow. The net estimated hourly inflow to the project shall then be calculated by the sum of the average unaged inflow and the hourly flows measured at the three upstream USGS gages. In the event the upstream USGS gages or communication systems fail, the licensees shall use the 6-hour total project inflow

Project No. 2030-036

66

calculation to substitute for the hourly inflow estimate, until the real-time gage monitoring can be restored. The estimated daily inflow shall be the average of the day's 24 estimated hourly inflow values.

(c) *Schedule:* The inflow monitoring system, including all system modifications and improvements shall be installed and operational within two years of license issuance, unless otherwise directed by the Commission.

(d) *Modifications of Inflow Estimating Method:* At any time, the licensees may propose modifications regarding the inflow estimating method to improve the accuracy of the system, or to simplify the system if such simplification will not result in less accuracy. If the licensees would like to modify the estimating method or simplify the system, the licensees shall develop a plan in consultation with the Fish Committee for such modifications for Commission approval. The licensees shall include with the plan, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the Fish Committee, and specific descriptions of how the Fish Committee's comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the Fish Committee to comment and to make recommendations before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensees' reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensees shall implement the plan, including any changes required by the Commission.

Article 412. Required Minimum Flows Below the Reregulating Development.

(a) The licensees shall operate the project to provide flow releases below the Reregulating development that equal or exceed the following minimum flows:

(1) *Target Flows:* The following table shows the target flows below the Reregulating development for each calendar month. The allowed minimum flow shall equal the target flow when project inflows exceed the target flows and the "Refill Allowance" provision is not in effect. When the "Or Inflow" or "Refill Allowance" provisions are in effect, the allowed minimum flow shall be determined pursuant to subsections (2) and (3) below.

Target flow in cubic feet per second, measured at the USGS Madras Gage No. 14092500.

	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
Target Flow	4,500	4,500	4,571	4,170	4,000	4,000	4,000	3,500	3,800	3,800	4,049	4,500

(2) ***“Or Inflow” Provision:*** In order to prevent drawdown of Lake Billy Chinook, the allowed minimum flow shall be reduced below the target flow when project inflows are less than the target flow. The allowed minimum flow shall be reduced in this case, according to the following protocol: when the lowest daily inflow during the previous 7 days is below the target flow, the allowed minimum flow shall be equal to the lowest daily inflow recorded over the past 7 days. The allowed minimum flow shall be calculated each day when the “Or Inflow” provision is in effect and the allowed minimum flow shall be changed daily, as defined by the inflow estimate.

(3) ***“Refill Allowance” Provision:*** The project shall be allowed a “refill allowance” between November 15 and June 15 (the reservoir refill season) to store water in Lake Billy Chinook to ensure that Lake Billy Chinook is filled to its summer operating level (minimum elevation 1,944.0 feet above mean sea level) by May 15. The “refill allowance” shall be 150 cubic feet per second (cfs) less than the lowest daily inflow recorded over the past 7 days, except under the following conditions: (i) from November through February, if daily inflows are less than 3,150 cfs and greater than 3,000 cfs, the refill allowance shall be the difference between the daily inflow and 3,000 cfs; however, in instances where the daily inflows are 3,000 cfs or less, the refill allowance shall be 0; and (ii) from March through June, if daily inflows are less than 3,650 cfs and greater than 3,500 cfs, the refill allowance shall be the difference between the daily inflow and 3,500 cfs; however, in instances where the daily inflows are 3,500 cfs or less, the refill allowance shall be 0.

(4) ***Extension of Refill Allowance Provision:*** If the refill allowance is less than 150 cfs during the reservoir refill season, the Refill Allowance Provision shall be extended from May 15 to June 15. During this additional month the refill allowance shall be determined based on the provisions in (a)(3) above. If the refill allowance is extended, the licensees shall notify the Commission by May 15 of the year in which the extension is made.

(b) ***Fall Flow Augmentation in Lower River for Fall Chinook:*** If project inflows fall below 3,000 cfs between September 16 and November 15, the licensees shall release up to 200 cfs from storage in Lake Billy Chinook to maintain a daily release of 3,000 cfs. This augmentation flow is limited to a drawdown of 4 feet measured from the average Lake Billy Chinook water surface elevation recorded on September 15. The licensees shall consult with the Fish Committee established by Article 402 regarding the amount of available water, rate of water release, and timing and duration of augmentation flows.

(c) ***Run of River Operation for Lower River Flows (+/- 10-percent Rule):*** The licensees shall hold river flows below the Reregulating development to within plus or minus (\pm) 10 percent of the measured project inflow, except under the following conditions: (1) days with measured inflow in excess of 6,000 cfs; (2) any event that triggers the Project Emergency Action Plan; (3) power emergencies, as defined in the

Western States Coordinating Council Minimum Operating Reliability Criteria (March 8, 1999), as such criteria may be amended during the license term; (4) equipment failures or emergencies at one of the project dams or power plants; or (5) reservoir drawdowns are needed for safe passage of anticipated flood flows to minimize damage to life and property.

If the Operating Reliability Criteria referenced above are amended during the license term, the licensee shall file the amended criteria with the Commission within 30 days of the licensees becoming aware of the amendment.

(d) ***Fish Emergency Clause:*** In years in which project inflow is expected to be below 3,000 cfs or flow may result in in-river conditions that the Fish Committee believes to be unacceptably poor, the licensees shall consult with the Fish Committee to determine if a deviation from the "Or Inflow" provisions above or a deviation from the flow blending scheme required by the water quality certificates issued by the Oregon Department of Environmental Quality (ODEQ) and the Confederated Tribes of the Warm Springs Reservation Water Control Board (CTWS WCB) would be likely to help avoid serious harm to native species. If the Fish Committee members agree, after consultation with ODEQ and the CTWS WCB, that a deviation is likely to help avoid such harm, and to be consistent with upstream and downstream beneficial uses, the licensees shall file for Commission approval a plan, prepared after consultation with the Fish Committee, to implement the deviation deemed necessary by the Fish Committee. The licensees shall include with the plan an implementation schedule, documentation of consultation, copies of Fish Committee comments and recommendations on the plan, and specific descriptions of how the Committee's comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the Committee to comment and make recommendations before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. The plan shall not be implemented until the plan is approved by the Commission. Upon Commission approval, the licensees shall implement the plan, including any changes required by the Commission.

Article 413. Long-Term Flow Conditions. Within one year of license issuance, the licensees shall file for Commission approval a plan to track indicators of predicted long-term low flow (LTLF) conditions in the lower Deschutes River throughout the license term. The plan shall provide that: (1) an LTLF trigger or multiple LTLF triggers will be established, using the indicators, that signal predicted onset or realized onset of LTLF conditions in the river that are lower than historically observed at the U.S. Geological Service Madras gage; (2) certain remedial actions will be initiated if an LTLF trigger is reached; (3) these LTLF triggers will not be developed or implemented to

address low flows of a non-long-term nature that may otherwise be addressed by the Fish Emergency Clause in Article 412 subsection (d) above; and (4) the LTLF trigger(s) will be reviewed and, if necessary, modified after Commission approval, at least every ten years considering new information and changes in predictive capabilities. The licensees shall develop the plan after consultation with the Fish Committee established by Article 402. The licensees shall include with the plan, an implementation schedule, documentation of consultation, copies of Fish Committee comments and recommendations on the plan, and specific descriptions of how the Committee's comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the Committee to comment and make recommendations before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. The plan shall not be implemented until the plan is approved by the Commission. Upon Commission approval, the licensees shall implement the plan, including any changes required by the Commission.

If the LTLF trigger is reached, the licensees shall consult with the Fish Committee, Oregon Department of Environmental Quality (Oregon DEQ), and the Confederated Tribes of the Warm Springs Reservation Water Control Board (CTWS WCB) to identify any negative effects to aquatic resources and federal wild & scenic river outstandingly remarkable values (ORV's) resulting from the lower river flows, to identify potential mitigation measures in the lower Deschutes River basin, and to determine if changes in project operations should be implemented to ameliorate such effects. The licensees shall also consult with the Oregon Parks and Recreation Department (OPRD) and, as appropriate, the Terrestrial, Recreation, and Shoreline Management Working Groups established by Article 402 regarding potential impacts to ORV's, scenic waterway values, lake recreation, cultural/archaeological resources, shoreline erosion and riparian habitat that may result from potential changes in project operations.

If changes in project operations are identified to mitigate any negative effects to aquatic resources and ORV's, the licensees shall, in consultation with the Fish Committee, Oregon DEQ, and CTWS WCB, prepare and file with the Commission a plan to implement such changes. The licensees shall include with the plan, an implementation schedule, documentation of consultation, copies of consulted entities' comments and recommendations on the plan, and specific descriptions of how the consulted entities' comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the consulted entities to comment and make recommendations before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

Project No. 2030-036

70

The Commission reserves the right to require changes to the plan. The plan shall not be implemented until the plan is approved by the Commission. Upon Commission approval, the licensees shall implement the plan, including any changes required by the Commission.

Article 414. Seasonal Drawdowns.

(a) *Drawdown and Fluctuation Limits:* The licensees shall begin the seasonal drawdown of Lake Billy Chinook in the fall of each year followed by refill during the late fall, winter, and spring. The reservoir shall be refilled as follows:

- (1) by May 1 when inflows exceed the target flows specified by Article 412;
- (2) by May 15 when inflows are below the target flows; and
- (3) by June 15 in years when the refill allowance is less than 150 cubic feet per second (cfs) as provided in Article 412, subsection (a)(3).

Drawdown and fluctuation limits for Lake Billy Chinook, Lake Simtustus, and the Reregulating Reservoir shall be as shown in the following table.

Seasonal drawdown and fluctuation limits for project reservoirs.		
Reservoir	Operating Water Surface Elevation (feet)	
	Minimum Summer	Winter
Lake Billy Chinook	1,944 (May 15* to Sept 15)	1,925 (Sept 16 to May 14)
Lake Simtustus	1,576 (June 1 to Aug 31)	1,573 (Sept 1 to May 31)
Reregulating Reservoir	1,414 (year round)	1,414 (year round)

*As provided in Article 412, in years when the refill allowance is less than 150 cfs, the refill date is June 15.

(b) During certain extraordinary situations, the licensees may exceed the normal seasonal drawdown limits for the project reservoirs. Such extraordinary situations include: (1) drawdown needed for safe passage of anticipated flood flows to minimize damage to life and property; (2) drawdown required to complete repairs on project facilities (including spillway gates, the intake structures, or other dam structures); and (3) power emergencies, as defined in the Western States Coordinating Council Minimum Operating Reliability Criteria (March 8, 1999), as such criteria may be amended during the license term. If the normal seasonal drawdown limits are exceeded, the licensees shall notify the Commission as soon as possible, but no later than 10 days after each such incident. If the Operating Reliability Criteria specified in item (3) are amended during the license term, the licensees shall file the amended criteria with the Commission within 30 days of the licensees' becoming aware of the amendment.

Article 415. Operations Compliance Plan. Within six months of license issuance, the licensees shall file with the Commission, for approval, an Operations Compliance Plan that describes how the licensees will comply with the operational requirements of this license. The plan shall include, but not be limited to:

- (a) a provision to monitor compliance with the stage change limit requirements specified in Article 409, gaging requirements specified in Article 410, inflow estimation requirements specified by Article 411; minimum flow and reservoir refill requirements specified in Article 412, implementation of long-term flow triggers specified in Article 413, and lake level requirements specified in Article 414.
- (b) a description of the exact location of all gages and/or measuring devices that would be used to monitor compliance, the method of calibration for each gage and/or measuring device, the frequency of recording for each gage and/or measuring device, and a monitoring schedule;
- (c) provisions to notify the National Marine Fisheries Service (NOAA Fisheries), U.S. Fish and Wildlife Service (USFWS), U.S. Bureau of Indian Affairs (BIA), U.S. Bureau of Land Management (BLM), Oregon Department of Fish and Wildlife (Oregon DFW), Oregon Department of Environmental Quality (Oregon DEQ), Confederated Tribes of the Warm Springs Reservation Water Control Board (CTWS WCB), Confederated Tribes of the Warm Springs Reservation Branch of Natural Resources (CTWS BNR) and the Commission no later than 48 hours after the licensees become aware of any deviation from the requirements specified in part (a);
- (d) a provision to maintain a log of project operation;
- (e) provisions for issuance of an Annual Project Operations Report and incident reports documenting any events where the operation of the project deviated from the operational requirements of this license. The Annual Project Operations Report shall include hourly and daily inflow records for the reporting period. Incident reports shall include hourly and daily inflow records as appropriate to document compliance with the relevant project operating constraints. Copies of all reports shall be filed with the Commission and submitted to the Coordinating Committee established pursuant to the Settlement Agreement at the times specified in Exhibit C of the Settlement Agreement;
- (f) a provision for an annual project review meeting with the Coordinating Committee defined in section 4.2 of the Settlement Agreement; and

(g) identification of a staff member of the licensees to serve as an operations compliance monitor with the responsibility for coordinating and ensuring the implementation of the Operations Compliance Plan and serving as a point of contact for compliance inquiry purposes, including a provision for notifying the Commission and the consulted agencies within 30 days if and when the compliance monitor designee changes.

The licensees shall prepare the plan after consultation with the Fish Committee established by Article 402, and the U.S. Geological Survey (USGS). The licensees shall include with the plan, an implementation schedule, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the Fish Committee and USGS, and specific descriptions of how the comments of Fish Committee members and USGS are accommodated by the plan. The licensees shall allow a minimum of 30 days for the Fish Committee members and the USGS to comment and to make recommendations before filing the plan with the Commission. If after consideration by the Fish Committee and USGS of all comments or recommendations, consensus is not achieved regarding the plan, and any member of the Fish Committee invokes dispute resolution pursuant to section 7.5 of the Settlement Agreement, the licensees shall not file the plan with the Commission until the dispute resolution process has been completed unless otherwise directed by the Commission. The licensees shall include with the plan, an implementation schedule, documentation of consultation with the Fish Committee and USGS, copies of committee member comments and recommendations on the plan after it has been prepared and provided to the Fish Committee and USGS, and specific descriptions of how the comments are accommodated by the plan.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensees shall implement the plan, including any changes required by the Commission.

Article 416. Water Quality Monitoring. The licensees shall conduct water quality monitoring pursuant to the Water Quality Management and Monitoring Plan (WQMMP) approved by the Oregon Department of Environmental Quality (Oregon DEQ) and the Confederated Tribes of the Warm Springs Reservation Water Control Board (CTWS WCB) as part of the water quality certifications issued by those agencies and attached to this license as Appendices A and B, respectively. Any subsequent amendments to the WQMMP approved by ODEQ and CTWS WCB shall also be approved by the Commission prior to implementation. Copies of the annual reports submitted to ODEQ and CTWS WCB shall be filed with the Fish Committee established by Article 402 and the Commission within 30 days of their filing with Oregon DEQ and CTWS WCB.

Article 417. Infeasibility of Temporary Downstream Facilities. In the event that all steps identified in the Fish Passage Plan (Condition 1 of Appendices C and D) to improve collection efficiency of the temporary downstream facilities and reservoir passage or survival have been implemented, and the criteria and goals for downstream passage stated in Condition 2 of Appendices C and D have not been achieved, the licensees shall implement the following processes:

(a) **Notification.** The licensees shall timely notify the Commission and the Fish Committee established by Article 402 that the temporary downstream passage facilities have not achieved the standards set out in the criteria and goals for downstream passage stated in Condition 2 of Appendices C and D and that all steps identified in the Fish Passage Plan designed to improve collection efficiency and reservoir passage or survival have been taken as prescribed in the Fish Passage Plan.

(b) **Meeting.** The licensees shall notice a meeting of the Fish Committee within 60 days of the notice in (a) to the Commission.

(c) **Information and Analyses from Testing and Verification Studies.** Not less than 45 days before the meeting, the licensees shall provide the Fish Committee and file with the Commission a report, including analysis of the information gathered during the operation of the temporary downstream passage facilities pursuant to the Testing and Verification provisions of the Fish Passage Plan, to inform an analysis by the Fish Committee and the Commission of whether (1) testing and/or modification of the temporary downstream passage facilities should continue, (2) an alternative fish passage methodology should be implemented, or (3) fish passage is currently scientifically and technologically infeasible.

(d) **Plan with Passage Option.** If requested to do so by the Fish Committee or the Commission, the licensees shall develop a plan to implement the passage option selected under this paragraph according to the following procedures:

(1) **Temporary Collection Facilities:** If the Fish Committee believes or the Commission finds that the information provided pursuant to paragraph (c) shows demonstrable progress related to reservoir passage and survival, the licensees shall, within 60 days following the meeting, develop a plan for the continued operation, any needed modification, and testing of the temporary downstream passage facilities. The licensees shall prepare the plan in consultation with the Fish Committee established by Article 402 and the Fish Agencies (National Marine Fisheries Service, U.S. Fish and Wildlife Service, Oregon Department of Fish and Wildlife, and Warm Springs Reservation Branch of Natural Resources). The licensees shall include with the plan, an implementation schedule, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the Fish Committee and Fish Agencies, and specific descriptions of how the Committee's

and Agencies' comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the Fish Committee and Fish Agencies to comment and to make recommendations before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensees' reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensees shall implement the plan, including any changes required by the Commission.

(2) ***Alternative Fish Passage Plan:*** If the Fish Committee believes or the Commission finds that the information provided pursuant to paragraph (c) supports selection of an alternative fish passage plan, including but not limited to tributary trapping, substantially new proposals based on the selective water withdrawal system, or any other scientifically supported fish passage methodology, the licensees shall, within 12 months of the meeting, develop an alternative fish passage plan. Any alternative fish passage plan shall be consistent with maintaining relevant water quality standards, including, but not limited to, continued operation of the selective water withdrawal facility, if the selective water withdrawal facility is necessary to achieve water quality standards. The licensees shall prepare the plan in consultation with the Fish Committee and the Fish Agencies. The licensees shall include with the plan, an implementation schedule, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the Fish Committee and Fish Agencies, and specific descriptions of how the Committee's and Agencies' comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the Fish Committee and Fish Agencies to comment and to make recommendations before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensees' reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensees shall implement the plan, including any changes required by the Commission.

(e) ***Feasibility.*** The licensees shall implement any plans developed under paragraph (d) of this article according to the schedule and procedures set out in those plans as approved by the Commission. If a plan to continue operation and testing of the temporary downstream passage facilities or an alternative fish passage plan is determined to be infeasible according to the schedule and procedures set out in any plan developed under paragraph (d) of this article, then the licensees shall utilize the procedures beginning with paragraph (a) of this article to initiate further proposals.

(f) ***New Information Regarding Fish Passage.*** If new information demonstrates that downstream fish passage may be feasible, the licensees shall, within 60 days of receiving such information, notice a meeting of the Fish Committee to determine whether downstream fish passage should be reinitiated. If the Fish Committee believes or the Commission finds that downstream fish passage should be reinitiated, the licensees shall develop a fish passage plan based on the new information then available. Such a plan shall be developed in consultation with the Fish Committee and Fish Agencies. The licensees shall include with the plan, an implementation schedule, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the Fish Committee and Fish Agencies, and specific descriptions of how the Committee's and Agencies' comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the Fish Committee and Fish Agencies to comment and to make recommendations before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensees' reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensees shall implement the plan, including any changes required by the Commission.

Article 418. Infeasibility of Permanent Downstream Facilities. In the event that all steps identified in the Fish Passage Plan (Appendix C, Condition 1 and Appendix D, Condition 1) to improve collection efficiency of the permanent downstream facilities and reservoir passage or survival have been implemented, and the criteria and goals for downstream passage stated in Condition 2 of Appendices C and D have not been achieved, the licensees shall implement the following process:

(a) ***Notification.*** The licensees shall timely notify the Commission and the Fish Committee established by Article 402 that the permanent downstream passage facilities have not achieved the standards set out in the criteria and goals for downstream passage stated in Condition 2 of Appendices C and D and that all steps identified in the Fish Passage Plan designed to improve collection efficacy and reservoir passage or survival have been taken as prescribed in the Fish Passage Plan.

(b) ***Meeting.*** The licensees shall notice a meeting of the Fish Committee within 60 days of the notice to the Commission.

(c) ***Information and Analyses from Testing and Verification Studies.*** Not less than 45 days before the meeting, the licensees shall provide the Fish Committee and file with the Commission a report, including analysis of the information gathered during the operation of the permanent downstream passage facilities pursuant to the Testing and

Verification provisions of the Fish Passage Plan, to inform an analysis by the Fish Committee and the Commission whether (i) testing and/or modification of the permanent downstream passage facilities should continue, or (ii) fish passage is currently scientifically and technologically infeasible for some or all species.

(d) ***Plan with Passage Options.*** If requested to do so by the Fish Committee or the Commission, the licensees shall develop a plan to implement the passage option selected under this paragraph according to the following procedures:

(1) ***Permanent Collection Facilities:*** If the Fish Committee believes or the Commission determines that the information provided pursuant to paragraph (c) shows demonstrable progress related to reservoir passage and survival, the licensees shall, within 60 days following the meeting, develop a plan for the continued operation, any needed modification, and testing of the permanent downstream passage facilities. The licensees shall prepare the plan in consultation with the Fish Committee established by Article 402 and the Fish Agencies (National Marine Fisheries Service, U.S. Fish and Wildlife Service, Oregon Department of Fish and Wildlife, and Warm Springs Branch of Natural Resources). The licensees shall include with the plan, an implementation schedule, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the Fish Committee and Fish Agencies, and specific descriptions of how the Committee's and Agencies' comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the Fish Committee and Fish Agencies to comment and to make recommendations before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensees' reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensees shall implement the plan, including any changes required by the Commission.

(e) ***Feasibility.*** The licensees shall implement any plan developed under paragraph (d)(1) of this article according to the schedule and procedures set out in that plan. If continued operation and testing of the permanent downstream passage facilities is determined to be infeasible according to the schedule and procedures set out in any plan developed under paragraph (d) of this article, then the licensees shall utilize the procedures beginning with paragraph (a) of this article to initiate further proposals.

(f) ***New Information Regarding Fish Passage.*** If new information demonstrates that downstream fish passage may be feasible, the licensees shall, within 60 days of receiving such information, notice a meeting of the Fish Committee to determine whether downstream fish passage should be reinitiated. If the Fish Committee believes or the

Commission determines that downstream fish passage should be reinitiated, the licensees shall develop a fish passage plan based on the new information then available. Such plan shall be developed in consultation with the Fish Committee and Fish Agencies. The licensees shall include with the plan, an implementation schedule, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the Fish Committee and Fish Agencies, and specific descriptions of how the Committee's and Agencies' comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the Fish Committee and Fish Agencies to comment and to make recommendations before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensees' reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensees shall implement the plan, including any changes required by the Commission.

Article 419. Fish Health Management Program. Within 18 months of license issuance, the licensees shall file for Commission approval a plan for a fish health management program at the project to support the fish passage effort, and to monitor disease incidence in Deschutes River fish populations and potential changes in the distribution of fish disease agents. The plan shall include provisions for fish health services and supplies associated with production of salmon and steelhead eggs and fry at Round Butte Hatchery as part of the Reintroduction Plan, diagnosis of disease in mortalities at fish facilities, and monitoring of disease agents in wild fish populations. The plan shall also include provisions for fish pathogen procedures developed in consultation with the Oregon Department of Fish and Wildlife Fish Health Services staff (ODFW) for trap-and-haul and volitional passage programs. The licensees shall include with the plan an implementation schedule that provides for implementation of the plan throughout the Interim Passage Phase and the first five years of the Final Passage Phase (or for the first 15 years of the Interim Passage Phase if transition to the Final Passage Phase does not occur).

The program shall provide for the evaluation of disease as a mortality factor in downstream and upstream migrating anadromous salmonids, to reduce the risk of transmitting new serious disease pathogens upstream, and other fish health management activities associated with the fish passage program. This requirement may be accomplished through an agreement with ODFW.

The licensees shall prepare the plan in consultation with the Fish Committee established by Article 402 and the Fish Agencies (National Marine Fisheries Service, U.S. Fish and Wildlife Service, ODFW, and Warm Springs Branch of Natural Resources). The licensees shall include with the plan documentation of consultation,

copies of comments and recommendations on the completed plan after it has been prepared and provided to the Fish Committee and Fish Agencies, and specific descriptions of how the Committee's and Agencies' comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the Fish Committee and Fish Agencies to comment and to make recommendations before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensees' reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensees shall implement the plan, including any changes required by the Commission.

Article 420. Round Butte Hatchery.

(a) ***Hatchery Agreement:*** Within six months of license issuance, the licensees shall enter into with Oregon Department of Fish and Wildlife (ODFW) and file with the Commission, for approval, the "Agreement Related To The Operation Of The Round Butte Hatchery And Related Facilities" (the "Hatchery Agreement"), substantially consistent with the draft agreement included in Appendix B to the Settlement Agreement.

(b) ***Hatchery Operations:*** Within one year of license issuance, the licensees shall file for Commission approval a plan for hatchery operations at Round Butte Hatchery at no more than current production levels of spring Chinook and summer steelhead, as specified in section 8 of Appendix B of the Settlement Agreement, during the term of the license, which hatchery operations shall be consistent with: (1) the annual work plan developed under Condition 16 of Appendices C and D; (2) then-in-existence fish management policies and directives of ODFW and the Confederated Tribes of the Warm Springs Reservation Branch of Natural Resources (CTWS BNR); (3) any Hatchery Genetics Management Plan or other directive developed between ODFW and the National Marine Fisheries Service (NOAA Fisheries) pursuant to the Endangered Species Act (ESA); and (4) the priority objective of restoring and recovering wild stocks in the Deschutes River basin. To ensure consistency with the Fish Passage Plan, the licensees shall consult with the Fish Committee established by Article 402 regarding hatchery operations. The licensees shall include with the plan, an implementation schedule, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the Fish Committee, and specific descriptions of how the Committee's comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the Fish Committee to comment and to make recommendations before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensees' reasons, based on project-specific information.

Project No. 2030-036

79

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensees shall implement the plan, including any changes required by the Commission.

(c) **Hatchery Improvements:** Within six months of entering into the Hatchery Agreement with ODFW or one year of license issuance if agreement is not reached, the licensees shall, after consultation with the Fish Committee, file for Commission approval a hatchery improvement plan to implement the hatchery improvements identified in the Hatchery Agreement if such an agreement is reached or the draft agreement included in Appendix B to the Settlement Agreement if agreement is not reached. The licensees shall include with the plan, an implementation schedule, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the Fish Committee, and specific descriptions of how the Committee's comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the Fish Committee to comment and to make recommendations before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensees' reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensees shall implement the plan, including any changes required by the Commission.

(d) **Sockeye:** If the Fish Committee believes that hatchery supplementation is necessary in order to reestablish an anadromous population of sockeye above Round Butte dam, the licensees shall file a plan with the Commission, for approval, to undertake the necessary changes in equipment to support hatchery capacity at the Round Butte Hatchery or provide funding to ODFW to undertake such changes for the production of sockeye. The licensees shall include with the plan, an implementation schedule, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the Fish Committee, and specific descriptions of how the Committee's comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the Fish Committee to comment and to make recommendations before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensees' reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensees shall implement the plan, including any changes required by the Commission.

If the Fish Committee determines that hatchery supplementation is not necessary in order to reestablish an anadromous population of sockeye above Round Butte dam, the licensee shall file for Commission approval written notification of and justification for the Committee's decision.

(e) **Periodic Review:** Every five years after issuance of the license, the licensees, in cooperation with ODFW and CTWS BNR to the extent of their interests in participating, shall conduct a periodic review, to be funded by the licensees, of the hatchery program to determine whether it is meeting its goals. The review shall consider federal, ODFW and CTWS BNR fish management policies and directives, any Hatchery Genetics Management Plan or other directive developed between ODFW and NOAA Fisheries pursuant to the ESA, relevant best practices, and existing information regarding recent scientific advances, and shall include recommendations for ongoing management of the hatchery program for the next five years. The licensees shall make the draft hatchery review available to the Fish Committee for review and comment. The licensees also shall make the draft hatchery review available for public review and comment through an annual workshop or other appropriate forum. The licensees shall provide notice of the annual workshop to all Settlement Agreement parties and the Commission. The licensees shall allow a minimum of 30 days for the consulted parties to comment prior to finalizing the hatchery review and filing it with the Commission. The licensees shall specify in the final review how any comments and recommendations were addressed.

If the licensees, ODFW, and CTWS BNR believe in the final review that the hatchery program is not supporting the goals of the Fish Passage Plan or supporting the goals of self-sustaining harvestable fisheries in the lower Deschutes River, the licensees shall consult with ODFW and CTWS BNR regarding changes that may be made to hatchery operations. If ODFW and CTWS BNR believe that changes to hatchery operations are necessary, the licensees shall file a plan with the Commission, for approval, to undertake the necessary changes or provide funding to ODFW to undertake such changes for the purposes of supporting the goals of the Fish Passage Plan or self-sustaining harvestable fisheries in the lower Deschutes River. The licensees shall include with the plan, an implementation schedule, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agency and Tribe, and specific descriptions of how the agency's and Tribes' comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the agency and the Tribe to comment and to make recommendations before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensees' reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensees shall implement the plan, including any changes required by the Commission.

(f) If the agreement specified in item (a) is not reached, the licensees shall file for Commission approval written explanation of the dispute, including the positions taken, in lieu of filing the agreement. In the event agreement is not reached, the licensees shall remain responsible for completing items (b) through (f) of this article. The Commission reserves the right to require additional measures consistent with the terms of this article or modifications to this article in the event the agreement in item (a) is not reached.

Article 421. Native Fish Monitoring Program. The licensees shall, within one year of license issuance, file for Commission approval, after consultation with the Fish Committee established by Article 402, a native fish monitoring plan to evaluate effects of reintroducing anadromous fish on resident fish populations. The plan shall include the following biological and habitat components:

(a) Biological Components:

(1) Sockeye, steelhead, and spring Chinook spawning surveys, at locations and times determined by the Fish Committee, to assess spawning escapement, distribution, and timing for fish passed above the dams; redd counts in tributaries to Lake Billy Chinook, including the Metolius River system and Squaw Creek; and annual salmon and steelhead spawning surveys and redd counts beginning the first year that returning adult anadromous fish are passed upstream of the project and continuing after initiation of downstream passage for the length of time (about 12 years) required for three generations of adults to return. This salmon/steelhead spawning monitoring shall continue on an annual basis until the ratio of recruits to spawners (R/S ratio) is ≥ 1 , whereupon the licensees shall notify the Commission that an R/S ratio of ≥ 1 has been reached. Thereafter, as long as the R/S ratio remains ≥ 1 , the licensees are under no obligation to continue the spawning monitoring unless recommended by the Fish Committee and approved by the Commission. In the event that the R/S ratio decreases to < 1 , the licensees shall notify the Commission, and annual spawning monitoring shall be resumed until the R/S ratio is again ≥ 1 .

(2) Monitoring of competition among anadromous and resident fish species in the Metolius and middle Deschutes River systems and McKay Creek following reintroduction of steelhead and salmon upstream of the project, using a combination of population monitoring and redd counts, including the following:

(i) Annual population surveys of the resident redband trout population in Squaw Creek and McKay Creek beginning in the first year of the license; following reintroduction of anadromous fish above the project, redband trout monitoring surveys in five of the first ten years after reintroduction.

(ii) Counts of redband trout redds annually in Squaw Creek and the Metolius River basin, at locations and times determined by the Fish Committee, beginning in the first year of the license and continuing until initiation of upstream passage of returning anadromous adults; following the initiation of upstream passage, redband trout redd counts in five of the first ten years after the initiation of upstream passage.

(iii) Determination of the proportion of redband trout and steelhead in Squaw Creek and McKay Creek at years 5 and 10 after reintroduction of steelhead.

(iv) Annual (unless bull trout are delisted under the Endangered Species Act) evaluation of the bull trout population using Oregon Department of Fish and Wildlife's (Oregon DFW's) annual bull trout redd counts on Metolius River tributaries, annual reservoir angler surveys during the targeted March–April bull trout fishery at Lake Billy Chinook, and monitoring of bull trout at project fish passage facilities.

(v) Monitoring of sockeye and bull trout spawning interactions through redd counts and observations for spawning site overlap during five of the first ten years after the initiation of upstream passage of returning anadromous adults; if interactions are found, more intensive redd surveys and spawning observations assessing the effects of sockeye redd superimposition on bull trout redds.

(b) **Habitat Components:**

(1) Monitoring of the quantity of habitat available upstream of the project by surveying approximately 20 miles of accessible stream above the project each year. Milestones for habitat availability monitoring shall be (i) before upstream passage (as baseline), (ii) immediately after initiation of upstream passage, and (iii) whenever changes in the quantity of accessible habitat occur (e.g., in the event passage is initiated at upstream non-project facilities), or as otherwise approved by the Commission.

(2) Monitoring of habitat effectiveness and riparian conditions above the project, using commonly-accepted protocols and by surveying about 20 miles of accessible stream above the project each year at locations and times determined by the Fish Committee. Habitat effectiveness shall be monitored during the term of the new license through fish habitat surveys and production capacity estimates. Use of a

geographic information system (GIS) database to incorporate the information and to develop, prioritize, and implement fish habitat mitigation projects and evaluate success for passage efforts.

(3) Production capacity estimates for spring Chinook, summer steelhead, and sockeye habitat within two years of license issuance. Annual reevaluation for the first ten years of the new license, and every five years thereafter, incorporation of the estimates of production capacity into life cycle modeling, and evaluation of passage success for the reintroduction of anadromous fish species above the project.

(4) Monitoring of the condition of habitat for any riparian habitat restoration project undertaken by the licensees. Monitoring programs shall be consistent with the strategies detailed in the Terrestrial Resources Management Plan required by Article 423, and shall include the following parameters: vegetation species composition; bank stability; herbaceous cover; tree/juniper/shrub cover; height and diameter of trees; canopy cover; growth and physical condition of vegetation; and distribution of vegetation.

The plan shall also include a provision for the licensees to file for Commission approval an annual report describing the prior year's monitoring activities and indicating the monitoring activities that will be undertaken in the then current year. The annual report shall be filed by February 1 commencing the year following the first year of monitoring and continuing until the year following the last year of monitoring activities under this article. The licensees shall allow a minimum of 30 days for the Fish Committee to comment on a draft of the annual report and to make recommendations before filing the final annual report with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensees' reasons, based on project-specific information.

The licensees shall include with the plan, an implementation schedule, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the Fish Committee and specific descriptions of how the Committee's comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the Committee to comment and to make recommendations before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 422. Terrestrial Resources Management Plan.

(a) Within one year of license issuance, the licensees shall file with the Commission for approval a Terrestrial Resources Management Plan (TRMP) to implement terrestrial resource protection, mitigation, and enhancement (PME) measures as specifically set out and described in the TRMP Outline, Exhibit E to the Settlement Agreement to the extent such measures apply to lands within the project boundary. The TRMP shall clearly indicate those lands within the project boundary to which the measures apply. The TRMP shall be coordinated with the Recreation Resources Implementation Plan (Article 424), the Shoreline Management Plan (Article 428), and with existing laws and plans to ensure consistency among the plans' objectives. The TRMP shall be prepared after consultation with the Terrestrial Resources Working Group established by Article 402.

(b) The TRMP shall be the principal instrument for management of, implementation, monitoring and adaptation of PME measures for terrestrial resources affected by or related to the project. The TRMP shall include specific goals for terrestrial resources, as well as clearly defined objectives for achieving the goals. The licensees shall include in the TRMP the following resource management strategies for implementing specific PMEs:

- (1) Riparian and wetland restoration and protection strategy;
- (2) Vegetation management strategy;
- (3) Exotic and invasive vegetation management strategy;
- (4) Comprehensive bald eagle management strategy;
- (5) Raptor protection strategy;
- (6) Threatened, endangered, and sensitive (TES) species and habitats of special concern protection strategy;
- (7) Wildlife control strategy;
- (8) Travel and access management strategy;
- (9) Public access strategy;
- (10) Pelton Fish Ladder wildlife protection strategy; and
- (11) Wildlife monitoring strategy

(c) The licensees shall, after consultation with the Terrestrial Resources Working Group, file with the Commission by June 1 of each year after Commission approval of the TRMP, an annual report documenting the implementation of the TRMP. The annual TRMP report shall:

(1) Document the implementation of PME measures as scheduled in the TRMP.

(2) Describe the coming year's proposals for implementing scheduled management actions pursuant to the TRMP.

(3) Document consultation activities related to the TRMP.

(4) Document the results of monitoring of completed actions (to the extent monitoring is required for any particular action) to ensure proper implementation and effectiveness.

(d) The licensees, as part of the TRMP, shall develop and implement an adaptive management process to monitor implementation and effectiveness of terrestrial resource PME measures, and adapt implementation measures as needed to meet resource specific goals and objectives. The licensees, in consultation with the Terrestrial Resources Working Group, shall develop adaptive management proposals, including protocols and schedules, in consultation and coordination with the Terrestrial Resources Working Group. The TRMP shall be updated every 5 years during the license term in consultation with the Terrestrial Resources Working Group as part of the adaptive management process. As appropriate, the licensees shall incorporate peer review into the adaptive management process to evaluate adaptive management actions and assess technical evaluations. The TRMP updates shall be filed with the Commission for approval. Upon Commission approval, the licensees shall implement the updated plan.

(e) The licensees shall include with the TRMP and any TRMP updates stipulated in item (d) above documentation of consultation, copies of comments and recommendations on the completed plan and plan updates after they have been prepared and provided to the Working Group, and specific descriptions of how the Working Group's comments are accommodated by the plan and plan updates. The licensees shall allow a minimum of 30 days for the Working Group to comment and to make recommendations before filing the plan and plan updates with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensees' reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan and plan updates. Implementation of the plan and plan updates shall not begin until the plan and plan updates are approved by the Commission. Upon Commission approval, the licensees shall implement the plan and plan updates, including any changes required by the Commission.

Article 423. Terrestrial Resource Interim Measures. Within six months of license issuance, the licensees shall file for Commission approval a plan to implement the following measures within one year of license issuance while the Terrestrial Resources Management Plan (TRMP) is being developed as provided in Article 422 and to the extent such measures apply to lands within the project boundary:

- (a) **Upland Vegetation Management.** The licensees shall implement upland vegetation management measures to improve, protect, and maintain terrestrial plant and wildlife habitat diversity on lands within the project boundary. The measures shall anticipate, and to the extent possible be consistent with, the TRMP Vegetation Management Strategy specified in Exhibit E of the Settlement Agreement.
- (b) **Exotic and Invasive Vegetation Management.** The licensees shall inventory and map noxious weed presence, distribution and density, and control, suppress, or eradicate existing infestations at sites identified in the TRMP Outline, Exhibit E of the Settlement Agreement. The weed management measures shall anticipate, and to the extent possible be consistent with, the TRMP Exotic and Invasive Vegetation Management Strategy.
- (c) **Bald Eagle Nesting Productivity Surveys.** The licensees shall conduct bald eagle nesting surveys to monitor trends in nesting productivity and success, and the status of bald eagle nesting pairs that use the project reservoirs. The nesting surveys shall be conducted using the protocol described in the TRMP Outline, Exhibit E of the Settlement Agreement.
- (d) **Bald Eagle Communal Roost Surveys.** The licensees shall conduct fall and winter communal roost surveys at known bald eagle communal roosts associated with the project reservoirs. The surveys shall be conducted using the protocols described in the TRMP Outline, Exhibit E of the Settlement Agreement.
- (e) **Bald Eagle Winter Use Surveys.** The licensees shall conduct winter use surveys to monitor bald eagle winter use of the project reservoirs. The surveys shall be conducted using the protocol described in the TRMP Outline, Exhibit E of the Settlement Agreement.

(f) **Golden Eagle Nesting Productivity Surveys.** The licensees shall conduct golden eagle nesting surveys to monitor trends in nesting productivity and success, and the status of golden eagle nesting pairs associated with the project reservoirs. The surveys shall be conducted using the protocols described in the TRMP Outline, Exhibit E of the Settlement Agreement.

(g) **Osprey Nesting Productivity Surveys.** The licensees shall conduct osprey nesting surveys to monitor trends in the nesting productivity of ospreys that nest in association with the project reservoirs. The licensees shall conduct the surveys using the protocol described in the TRMP Outline, Exhibit E of the Settlement Agreement.

(h) **Avian Power Line Electrocutation and Collision.** The licensees shall survey project-related distribution lines to identify the potential for avian electrocution. These lines include the following: (1) 12.5-kilovolt (kV) line to Round Butte powerhouse (station service feeder); (2) 12.5-kV line to Round Butte dam, spillway, and auxiliary station feeder; and (3) 12.5-kV line to the Reregulating dam. To the extent practicable and following guidelines in the publication "Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996" (APLIC 1996) (or the most current Avian Power Line Interaction Committee [APLIC] publication for avian protection), the licensees shall rebuild or retrofit any line or power pole involved in a bird fatality or injury or identified as a high risk for avian electrocution to render the facility raptor-safe. The plan shall include a provision for the licensees to notify the Commission prior to rebuilding or retrofitting the line or power pole.

(i) **Waterfowl Surveys.** The licensees shall conduct waterfowl nesting productivity and winter use surveys to monitor trends in waterfowl production and use associated with the project reservoirs. The surveys shall be conducted using the protocols described in the TRMP.

(j) **Pelton Fish Ladder Wildlife Protection.** The licensees shall install five small animal crossings over the Pelton Fish Ladder, remove the shotgun style outlets from six culverts that pass under the fish ladder, and install a wildlife diversion device in the dirt canal section of the fish ladder to improve crossing opportunities for small mammals, reptiles, and amphibians, and reduce the potential for animal entrapment. The plan shall include detailed design drawings for these activities.

(k) **Agency Coordination.** The licensees shall provide for agency coordination as specified in Proposed Article 44 of the Settlement Agreement file on July 30, 2004.

(l) **Implementation Schedule.** The licensees shall include an implementation schedule with the plan.

The licensees shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the Terrestrial Resources Working Group established by Article 402 and specific descriptions of how the Committee's comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the Working Group to comment and to make recommendations before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 424. Recreation Resources Implementation Plan. (a) Within one year of license issuance, the licensees shall file with the Commission, for approval, a Recreation Resources Implementation Plan (RRIP) to enhance recreation resources at the Pelton Round Butte Project. The licensees shall prepare the plan after consultation with the Recreation Resources Working Group established pursuant to Article 402 and in conjunction with the Terrestrial Resources Management Plan required by Article 422. The RRIP shall include the measures identified in the Exhibit G to the Settlement Agreement except that in lieu of funding the Lake Billy Chinook offshore boat mooring study, the RRIP shall include a provision for the licensees to file, after consultation with the Recreation Resources Working Group, an evaluation of the technical feasibility of implementing an off-shore boat moorage program at Lake Billy Chinook along with any recommendations for the installation and maintenance of up to 50 offshore moorages in Lake Billy Chinook.

In addition, operation and maintenance of Perry South Campground, Monty Campground, and Street Creek shall be provided for as stipulated in Proposed Article 52 of the Settlement Agreement filed on July 30, 2004.

- (b) The RRIP shall include the following objectives:
- (i) provide adequate and safe public access to the project lands and waters;
 - (ii) avoid or minimize recreation related impacts on sensitive resources; and
 - (iii) provide a range of feasible and desirable recreation opportunities based on information collected and filed pursuant to the reporting requirements for FERC Form 80 – Recreation Report, section 8 of the Commission's regulations (18 C.F.R. 8.11), and applicable existing management plans.

(c) In addition to the measures specifically identified in the "List of Measures to be included in the Recreation Resources Implementation Plan," (Exhibit G to the Settlement Agreement) with the exception noted in item (a) above, the licensees shall implement measures designed to mitigate for project-related recreation authorized or implemented by entities other than the licensees, provided however, that the actions taken by those entities are consistent with the applicable existing management plans. Such additional measures shall be developed as needed in consultation with the Recreation Resources Working Group.

(d) Every 10 years beginning in the tenth year following license issuance, the licensees shall convene a meeting of the Recreation Resources Working Group to discuss unforeseen impacts of recreation patterns in the project area (if any) and to agree upon appropriate management actions or mitigation measures.

(e) The licensees shall file with the Commission, after consultation with the Recreation Resources Working Group, an annual report documenting the implementation of the RRIP. The annual RRIP report shall:

(i) Identify the measures implemented as scheduled in the RRIP.

(ii) Identify next year's proposals for implementing scheduled recreation management actions.

(iii) Reconcile and document differences between each year's proposals and any replacement or additional measures agreed upon by the licensees and the affected agencies.

(iv) Document consultation related to the RRIP.

(v) Document the results of monitoring of completed actions (to the extent monitoring is necessary for any particular action) to ensure proper implementation and effectiveness.

The licensees shall include with the plan, an implementation schedule, documentation consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the Recreation Resources Working Group, and specific descriptions of how the Working Group's comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the Working Group to comment before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensees shall implement the plan, including any changes required by the Commission.

Some of the measures specified in the RRIP apply to lands that are located outside of the project boundary. These measures include: (1) funding improvements and annual maintenance of dispersed campsites at BLM Beach, the cove area downstream from Cove Marina, west shore area of the Crooked River arm downstream from the bridge, and west shore of the Deschutes River arm downstream from the bridge; (2) making improvements to and funding NEPA compliance for Monty Campground; and (3) making improvements to and funding activities at Cove Palisades State Park. These lands in which the activities will take place shall be brought into the project boundary and the exhibit G drawings shall be revised and filed pursuant to Article 301. The 90-day deadline for filing the revised exhibits stipulated in Article 301 shall be referenced to the completion date of the specified improvements (e.g., construction, modification, etc.). All structures or facilities constructed or installed in accordance with this plan shall be shown on the exhibit drawings filed pursuant to Article 301.

Article 425. Recreation Funding Measures. Within one year of license issuance, the licensees shall, for the enhancement of recreation resources at the Pelton Round Butte Project:

- (a) Enter into an agreement with the Confederated Tribes of the Warm Springs to provide annual funding for maintenance and operation of Indian Park Campground and Chinook Island Day-Use Area;
- (b) Provide annual funding for operation and maintenance (O&M) of Pelton and Round Butte Overlook parks, and Pelton Wildlife Overlook;
- (c) Fund a project staff person to coordinate implementation of the Recreation Resources Implementation Plan required by Article 424 and to provide for necessary resource coordination pursuant to the terms of this license;
- (d) Fund seasonal O&M costs for one new, self-contained floating restroom for use by boaters on the Metolius River arm of Lake Billy Chinook near the Bureau of Land Management beach east of Three Rivers Recreation Area; and
- (e) Close and rehabilitate the road leading into the Balancing Rocks area, develop a trail, and provide a small roadside parking area. The trail and small roadside parking area shall be brought into the project boundary and shown on the exhibit drawings filed

pursuant to Article 301. The 90-day deadline for filing the revised exhibits stipulated in Article 301 shall be referenced to the completion date of the specified improvements (e.g., construction, modification, etc.).

Within one year of license issuance, the licensees shall file with the Commission for approval a copy of the agreement specified in item (a) and documentation that the requirements of items (b) through (e) have been completed. If the agreement specified in item (a) is not reached, the licensees shall provide written explanation of the dispute, including the positions taken, in lieu of the agreement. The Commission reserves the right to require additional measures consistent with the terms of this article in the event an agreement is not reached.

Article 426. *Emergency Communications.* Within six months of license issuance, the licensees shall:

(a) file with the Commission, for approval, a report detailing the results of a communications coverage study designed to address the following objectives:

(i) Emergency/Safety (ability for emergency response personnel to contact each other and to contact external emergency services);

(ii) Day-to-day management; and

(iii) General public communication outside of the immediate Pelton Round Butte Project reservoir areas.

The report shall be prepared after consultation with the Recreation Resources Working Group established by Article 402. The licensees shall include with the report documentation of consultation, copies of comments and recommendations on the completed report after it has been prepared and provided to the Working Group, and specific descriptions of how the Working Group's comments are accommodated by the report. The licensees shall allow a minimum of 30 days for the Working Group to comment before filing the report with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensees' reasons, based on project-specific information.

The Commission reserves the right to require changes to the report. Implementation of measures specified in the report shall not begin until the report is approved by the Commission. Upon Commission approval, the licensees shall implement measures specified by the report, including any changes required by the Commission, and as provided in paragraph (b) of this article.

Project No. 2030-036

92

(b) Within one year of license issuance, fund measures identified in the communications coverage study as necessary for emergency/safety communications, including measures to provide coverage of existing "dead areas" on project reservoirs using two-toned radio frequencies.

Article 427. Programs for Interpretation and Education. Within five years of license issuance, the licensees shall file for Commission approval an Integrated Interpretation and Education Plan (I & E Plan) for the Pelton Round Butte Project to inform the public about resource and project features in the project area at a total expense to the licensees of no more than \$75,000 in then-current dollars (unless otherwise directed by the Commission under Article 438). The I & E Plan shall be developed in consultation with the Recreation Resources Working Group established pursuant to Article 402 and the Oregon State Historic Preservation Officer.

The I&E Plan shall address resources in the project area, including but not limited to fishery and aquatic resources, terrestrial and wildlife resources, cultural resources, tribal culture and history, project history, and energy production. Themes related to terrestrial and wildlife resources may include resource stewardship; threatened, endangered and sensitive species biology and protection; protection of sensitive plant communities; riparian habitat restoration; winter range protection; mule deer biology and habitat requirements; and causes and effects of human disturbance. Implementation elements may include signs and signboards at designated campgrounds and at other recreation facilities within the project area. Annually, for the term of the license, the licensees shall implement agreed-upon elements of the I & E plan at an annual cost of not more than \$20,000 (unless otherwise directed by the Commission under Article 438), which amount shall be escalated as provided in Article 407.

The licensees shall include with the plan, an implementation schedule, documentation of agency and tribe consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies and tribe, and specific descriptions of how the agencies' and tribe's comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the agencies and tribe to comment before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensees' reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensees shall implement the plan, including any changes required by the Commission.

Article 428. Shoreline Management Plan. Within one year of license issuance, the licensees shall, after consultation with the Shoreline Management Working Group established pursuant to Article 402, file for Commission approval a Shoreline Management Plan (SMP) for the Pelton Round Butte Project. The SMP shall include standards and guidelines for new shoreline development, installation of new docks, and modification of existing docks.

The licensees shall include with the SMP, an implementation schedule, documentation of consultation, copies of comments and recommendations on the completed SMP after it has been prepared and provided to the Shoreline Management Working Group, and specific descriptions of how the Working Group's comments are accommodated by the SMP. The licensees shall allow a minimum of 30 days for the Working Group to comment before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensees' reasons, based on project-specific information.

The Commission reserves the right to require changes to the SMP. Implementation of the SMP shall not begin until the SMP is approved by the Commission. Upon Commission approval, the licensees shall implement the SMP, including any changes required by the Commission.

Article 429. Shoreline Erosion Plan. Within one year of license issuance, the licensees shall, in consultation with the Shoreline Management Working Group established pursuant to Article 402, file for Commission approval, a Shoreline Erosion Plan to monitor and control stream and impoundment shoreline erosion at the Pelton Round Butte Project. The plan, at a minimum, shall include the following objectives and measures listed below.

- (1) The following objectives of the plan shall be to:
 - (a) Discuss the conditions and probable causes of, as well as potential measures for, shoreline erosion;
 - (b) Describe agreed upon actions, including, but not limited to the measures described herein; and
 - (c) Provide that all actions conducted under the shoreline erosion plan shall be developed and implemented in consultation with the Shoreline Management Working Group established pursuant to Article 402.

The licensees shall develop the plan using the annotated outline in Section E-V11 – Land Management and Use of the Final Joint Application Amendment, and any other applicable information, in consultation with the Shoreline Management Working Group.

Project No. 2030-036

94

(2) Within three years of license issuance, the licensees shall commence rehabilitation at, but not limited to, the following existing erosion sites:

- (a) Chinook Island;
- (b) Indian Park Campground;
- (c) Juniper Canyon;
- (d) Big Canyon;
- (e) Dispersed sites on the east bank just south of Round Butte dam;
- (f) Shoreline of the cove at Perry South Campground and along Spring Creek;
- (g) Shoreline upstream of the Upper Deschutes Day-Use Area;
- (h) Pelton Park;
- (i) Bureau of Land Management Beach east of the Three Rivers Marina; and
- (j) shoreline and access road at Monty Campground.

(3) The licensees shall conduct, or provide for an entity to conduct, a baseline survey of the project area to identify, map, and assess existing erosion sites that are project-related and are significantly affecting terrestrial habitats, fish habitats or water quality; or that, if the site is located on the Confederated Tribes of the Warm Springs Reservation, is causing or is likely to cause significant loss of shoreline. For each erosion site identified, the licensees shall include a re-locatable topographic survey transect, notes on sediment types, vegetative condition or fish or wildlife habitat existing on the site, photographic documentation, and an analysis of the probable causes of the erosion.

(4) Beginning in the first year following license issuance, and after consultation with the Shoreline Management Working Group, the licensees shall conduct annual monitoring of the project area to monitor existing erosion sites and identify and map any new project-related erosion sites. This annual monitoring shall follow the pattern and standards established by the baseline survey performed above and shall include the opportunity for the Shoreline Management Working Group to accompany the licensees' survey crew in the field. Information that is unchanged from any prior year's survey shall be noted, but need not be repeated. Annual monitoring of sites shall occur until

documentation of stable or improved conditions, after which additional monitoring can be changed based on consultation with the Shoreline Management Working Group and Commission approval. Annual monitoring shall also include an assessment of ongoing mitigation activities.

(5) No later than March 31 of each year after Commission approval of the Shoreline Erosion Plan, the licensees shall file with the Commission an annual report, prepared after consultation with the Shoreline Management Working Group, which identifies soil erosion control measures; describes annual maintenance of erosion control sites; identifies any other soil erosion control measures including those undertaken during emergency situations; describes coordination with other resource management plans, such as the Cultural Resources Management Plan required by Article 429 of this license; and documents consultation. Any proposed changes in the treatment or monitoring status of the erosion control site shall include the rationale for such changes.

(6) Further, the licensees shall monitor identified erosion sites following (i) any event at the Round Butte development where the outflow exceeds inflow by more than the maximum turbine flow, (ii) any drawdown of Lake Simtustus resulting in 7 or more feet of reservoir elevation change in a 24-hour period, or (iii) other events that could rapidly change the shoreline condition.

(7) The licensees shall develop site-specific measures for the erosion sites listed in (2) above, and for any project-related erosion sites identified during the baseline survey or subsequent annual monitoring. The licensees shall give preference to "soft" erosion control techniques including, bioengineering, planting and seeding of appropriate native riparian species, sediment replenishment, or anchored woody debris, but may, when necessary, utilize "hard" erosion control, including use of geotextiles, rock armoring, or other hard surfaces. The licensees shall develop the site-specific measures after consultation with the Shoreline Management Working Group.

The licensees shall include with the plan, an implementation schedule, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the Shoreline Management Working Group, and specific descriptions of how the Working Group's comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the Working Group to comment before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensees' reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensees shall implement the plan, including any changes required by the Commission.

Article 430. *Aesthetic Resources Protection Plan.* Within one year of license issuance, the licensees shall, after consultation with the Recreation Resources Working Group established pursuant to Article 402, file with for Commission approval, an Aesthetic Resources Protection Plan (ARPP) to protect and enhance aesthetic resources at the Pelton Round Butte Project.

The ARPP shall include, but not necessarily be limited to, provisions for the following:

- (1) Fish Ladder: Coat the outside surface that is visible from the wildlife viewing platform (approximately 0.25 mile) with Permeon.
- (2) Pelton Dam Road: (a) Investigate, in the 10th year following license issuance, whether feasible and economic solutions exist to reduce the color contrast associated with the road cuts; and (b) within 10 years of license issuance, replace existing guardrail material with "rusted rail" guardrail material.
- (3) Round Butte Switchyard: When transformers are being replaced for regular maintenance and replacement, replace them with grey transformers, whenever available.
- (4) Pelton Park and Round Butte Overlook Park: (a) Apply compatible paint color on Pelton Park store and apartment building; (b) treat interior of Overlook building with compatible colors; and (c) when replacement is otherwise required, phase out existing fencing to non-galvanized, vinyl-coated fencing adjacent to the licensees' recreation sites or project maintained public access roads to the parks.
- (5) Round Butte Dam and the Round Butte Powerhouse Area: (a) Paint the Jefferson County Sheriff's boat house with a color agreed upon with the U.S. Forest Service; and (b) consult with the Recreation Resources Working Group regarding (i) appropriate colors for any fish facilities constructed pursuant to the Fish Passage Plan (Condition 1 of Appendices C and D), and (ii) appropriate treatments for any existing fish facilities on the top of Round Butte dam or in the forebay that remain as long-term components of the fish passage program.

The licensees shall prepare the plan after consultation with the Recreation Resources Working Group. The licensees shall include with the plan, an implementation schedule, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies and tribe, and specific descriptions of how the Working Group's comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the Working Group to comment before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensees' reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensees shall implement the plan, including any changes required by the Commission.

Article 431. *Project-related Road Maintenance.* Within one year of license issuance, the licensees shall file for Commission approval a plan to provide for upgrades and maintenance of roads necessary for project purposes, which may include, but are not limited to, relevant portions of U.S. Forest Service (Forest Service) roads FS 11 and FS 1170, Dizney Lane, Pelton Dam Road, Jordan Road, and other roads adjacent to the project contemplated by Appendix D of the Settlement Agreement filed on July 20, 2004, that are required for access to project lands, waters, and facilities. The plan shall include provisions to bring into the project boundary any roads on which ongoing maintenance is to be provided under the license; such roads shall be shown on the exhibit drawings filed pursuant to Article 301. For each road, the 90-day deadline stipulated in Article 301 for filing the revised exhibits shall be referenced to the completion date of the initial maintenance activity.

The licensees shall prepare the plan after consultation with the Forest Service and Jefferson County. The licensees shall include with the plan, an implementation schedule, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the Forest Service and the county, and specific descriptions of how the entities' comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the entities to comment before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensees' reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensees shall implement the plan, including any changes required by the Commission.

Article 432. *Historic Properties.* The licensees shall implement the "Programmatic Agreement (PA) among the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, the State of Oregon, State Historic Preservation Officer, and the Confederated Tribes of the Warm Springs Reservation, Tribal Historic Preservation Officer for Managing Historic Properties That May be Affected By A License Issuing to Portland General Electric Company and the Confederated Tribes of the Warm Springs Reservation of Oregon for the Continued Operation of the Pelton Round Butte Hydropower Project in Jefferson County Oregon", executed on December 6, 2004, including but not limited to the final Cultural Resources Management Plan (CRMP) for the Project (Exhibit J of the Settlement Agreement filed on July 30, 2004). In the event that the Programmatic Agreement is terminated, the

licensees shall implement the provisions of the final CRMP. The Commission reserves the authority to require changes to the CRMP at any time during the term of the license. If the Programmatic Agreement is terminated prior to Commission approval of the CRMP, the licensees shall obtain approval before engaging in any ground-disturbing activities or taking any other action that may affect any historic properties within the Project's area of potential effect.

Article 433. Lower River Gravel Study.

(a) Within one year of license issuance, the licensees shall file for Commission approval a detailed Lower River Gravel Study Plan, as described in the Lower River Gravel Study Design, Exhibit I to the Settlement Agreement. The plan shall evaluate gravel mobility, supply, and use by spawning salmonids in the lower Deschutes River from the Reregulating Dam (RM 100) to the Trout Creek confluence (RM 87.3) and shall be developed in consultation with the Fish Committee established pursuant to Article 402.

(b) As provided in the Lower River Gravel Study Design, Exhibit I to the Settlement Agreement, the study plan shall include a geomorphic component and a biological monitoring component.

(1) The geomorphic component of the study shall assess the impacts of the project on downstream gravel availability and channel morphology and to test the dynamics and quality of augmented gravels and shall include the following elements:

(i) Sediment transport monitoring.

(a) Placement of radio-tagged and colored tracer rocks (or rocks with exotic lithologies) at six to seven cross sections between the Reregulating dam and Trout Creek.

(b) Establishment of survey cross sections at the tracer gravel sites to monitor whether tracer particles had been displaced by that year's flow, or by flows greater than 6,500 cubic feet per second (cfs).

(c) Measurement of bedload transport at the Warm Springs Bridge (U.S. Highway 26) on rising and falling limbs of flows exceeding 5,500 cfs.

(d) Placement of columns of painted rocks or scour chains at each cross section to determine depth of scour and any subsequent filling.

(e) If annual monitoring described in paragraphs (a) – (d) show that sediment transport is occurring, a provision for the licensees to develop a plan for Commission approval and in consultation with the Fish Committee and Fish Agencies referenced in Article 402 to resample bed material size at the sample sites previously studied by the licensees.

(ii) Experimental Gravel Augmentation Program.

(a) The experimental gravel augmentation program shall provide for the addition, starting one year prior to the initiation of selective water withdrawal, of a total of 300 cubic yards of gravel distributed amongst at least three sites between the Reregulating dam and Shitike Creek. Sites shall be chosen in consultation with the Fish Committee to minimize potential adverse effects of the augmented gravel, including disturbance to existing spawning habitat.

(b) The licensees shall obtain all necessary tribal, federal and state permits or approvals, including but not limited to Wild and Scenic River Act Section 7 consistency determinations and Clean Water Act Section 404 (dredge/fill) permits, prior to any test gravel placement.

(2) The biological monitoring component shall monitor the quality of the augmented gravels to determine if the addition of new gravel between the Reregulating dam (RM 100) and the mouth of Shitike Creek (RM 97) would be necessary and beneficial to salmonid populations and shall include the following elements:

- (i) Determination of relative use of spawning sites above and below Shitike Creek to determine if relative spawner use is shifting downstream as spawning habitat quality and quantity changes upstream.
- (ii) Measurement of steelhead and rainbow spawning habitat area above and below Shitike Creek.
- (iii) Measurement of spawner use of experimental gravel augmentation sites compared to use of other spawning areas upstream of Shitike Creek.
- (iv) Measurement of spawning gravel quality parameters including permeability, and inter-gravel dissolved oxygen (IGDO).

Project No. 2030-036

100

(v) Comparison of the survival of rainbow trout embryos within redds at the three study sites above Shitike Creek and the three study sites below Shitike Creek.

(vi) Comparison of invertebrate populations at the gravel augmentation sites and non-augmented control sites.

(c) After five years of study, the licensees shall submit annual monitoring results of the gravel study to the Commission and a three-member expert review panel consisting of experts in geomorphology and fisheries selected by the licensees, in consultation with the Fish Committee.

(d) The licensees shall request that the expert review panel believes: (1) the gravel study should be continued; (2) the licensees should implement a long-term gravel augmentation program, or (3) no further study or augmentation is needed. If the expert panel believes that (1) the project is causing impacts that could be mitigated by gravel augmentation, including examination of whether the project may be having deleterious effects on channel bedforms and spawning gravel quantity and quality, (2) that the augmentation test did not adversely affect downstream bank stability or cause downstream pool filling, and (3) that augmentation would be beneficial to fish habitat and fish populations, the licensees shall request that the expert review panel notify the Fish Committee of its conclusion that a long-term gravel augmentation action plan should be implemented or that the current study program should be extended. If, after consideration of the report of the expert panel, the Fish Committee believes that a long-term gravel augmentation program is required or that an extended study program is required, the licensees shall, after consultation with the Fish Committee develop and file a plan for Commission approval to implement such program.

(e) The licensees shall include with the plan, an implementation schedule, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the Fish Committee and specific descriptions of how the Committee's comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the Committee to comment and to make recommendations before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 434. Lower River Wood Management. Within one year of license issuance, the licensees shall file for Commission approval a Large Wood Management Plan (LWMP), developed in consultation with the Fish Committee established pursuant to Article 402. The purpose of the LWMP is to provide for (i) the management of floating wood greater than 8 inches in diameter (at the small end) by 10 feet long that enters Lake Billy Chinook and (ii) the placement of large wood along the project reservoir shorelines for the protection of riparian plantings. The LWMP shall include a monitoring plan to be conducted through the term of the license, for the evaluation of the effectiveness of placed wood, including river transport (for wood moved below the project), use by wildlife and fish, and as appropriate, erosion control for the establishment of shoreline riparian vegetation. The LWMP shall provide that the management of large wood be adapted to reflect improvements identified through monitoring to improve the erosion control function of shoreline wood and the habitat value of all wood placements for riparian vegetation, fish and wildlife. At a minimum, the plan shall include:

- (a) Description of methods to be used for collection, transport and placement of large wood entering Lake Billy Chinook (minimum size of 8 inches in diameter (at the small end) by 10 feet long);
- (b) Guidelines for placement of large wood in the Lower Deschutes River or Lake Billy Chinook;
- (c) Notification and reporting requirements, for when wood is collected, transferred and placed;
- (d) Guidelines to transfer large wood entering Lake Billy Chinook. At a minimum these guidelines shall include:
 - (1) Transfer of floating wood collected east of Rattlesnake Point in the Metolius Arm, and the Deschutes and Crooked River Arms of Lake Billy Chinook to the Lower Deschutes River for fish habitat improvement;
 - (2) Anchoring wood found floating west of Rattlesnake Point in the Metolius Arm of Lake Billy Chinook for shoreline wildlife loafing sites, riparian vegetation plantings, erosion control, or shallow water juvenile salmonid cover;
 - (3) Replacement of an equal volume, type and sizes of wood that is retained in the Metolius Arm of Lake Billy Chinook; and
 - (4) Logs found in Lake Billy Chinook that were found to have been illegally cut from the Metolius River will be replaced in the Metolius River, if feasible.

Project No. 2030-036

102

- (e) Integration with the assessment of the Terrestrial Resources Work Group established pursuant to Article 402 of available sites for riparian vegetation establishment; and
- (f) Monitoring plan for the evaluation of the effectiveness of placed wood, including river transport (for wood moved below the project), use by wildlife and fish, and as appropriate, erosion control for the establishment of shoreline riparian vegetation. If improvements are identified through monitoring, then the management of wood shall be adapted to improve the erosion control function of shoreline wood and habitat value of all wood placements for riparian vegetation, fish, and wildlife, after Commission approval.

The plan shall be developed in consultation with the Fish Committee. The licensees shall include with the plan, an implementation schedule, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the Fish Committee and specific descriptions of how the Committee's comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the Committee to comment and to make recommendations before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 435. Lower River Fish Habitat Enhancement. Within one year of license issuance, the licensees shall file for Commission approval a plan to implement the Trout Creek habitat enhancement project described in the Exhibit F to the Settlement Agreement. The plan shall be consistent with the requirements of Article 406 for those portions of the project on U.S. Forest Service or Bureau of Land Management lands. The plan shall be developed in consultation with the Fish Committee established pursuant to Article 402 and Fish Agencies referenced in Article 402.

The licensees shall include with the plan, an implementation schedule, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the Fish Committee and Fish Agencies and specific descriptions of how the Committee's and Agencies' comments are accommodated by the plan. The licensees shall allow a minimum of 30 days for the Committee and Agencies to comment and to make recommendations before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 436 . Pelton Round Butte Fund.

(a) Within 6 months of license issuance, the licensees shall establish the Pelton Round Butte Fund (the "Fund") in the initial amount of a \$3.5 million credit (2003 dollars) to fund enhancement projects for fish and wildlife resources and habitats in the Deschutes River Basin. The Fund shall be a tracking account held by licensees with all accrued interest being credited to the Fund. The Fund shall be dedicated to the funding of enhancement projects in accordance with this license article. Following this initial credit, the licensees shall make periodic credits as specified in the Pelton Round Butte Fund Implementation Plan, Exhibit H to the Settlement Agreement. Amounts credited to the Fund shall be escalated as provided in the Pelton Round Butte Fund Implementation Plan.

(b) Amounts credited to the Fund shall not be used to defray the cost of administrative, legal, and overhead costs associated with the management of the Fund, which shall be borne by the licensees. Any funds remaining unexpended at the end of the license term, including any annual licenses, shall be returned to the licensees.

(c) The licensees shall utilize the Fund in accordance with the provisions of the Pelton Round Butte Fund Implementation Plan, Exhibit H of the Settlement Agreement. Any revisions to the criteria and evaluation system as contemplated by section II.D.4 of Exhibit H shall only be implemented after Commission approval.

(d) By March 31 of each year during the license term, licensees shall provide the Commission for approval and the parties to the Settlement Agreement with an annual written report setting forth and describing all Fund activity during the previous calendar year. In addition to any other Fund activity, this report shall list withdrawals from the Fund for mitigation and enhancement projects and itemize costs associated with each project. The licensees shall prepare the report in accordance with the Pelton Round Butte Fund Implementation Plan, Exhibit H to the Settlement Agreement, after consultation with the Governing Board provided for in Exhibit H of the Settlement Agreement, or, if the Settlement Agreement has become void, in consultation with Bureau of Indian Affairs, U.S. Fish and Wildlife Service, National Marine Fisheries Service, Oregon Department of Fish and Wildlife, Oregon Water Resources Department, Oregon Department of Environmental Quality, U.S. Forest Service, and Branch of Natural Resources and Water Control Board of the Confederated Tribes of the Warm Springs Reservation of Oregon, and any non-governmental organizations previously represented on the Governing Board (the Successor Agencies). When a draft report has been prepared, it shall be provided to the Governing Board or the Successor Agencies, as

Project No. 2030-036

104

applicable, for 30-day review and comment. The licensees shall include with the final report documentation of consultation and copies of comments and recommendations, and specific descriptions of how the final report accommodates all comments and recommendations. If the licensees do not adopt a recommendation, the filing shall include the licensees' reasons, based on project-specific information.

Article 437. Reservation of Authority-Fishways. Pursuant to section 18 of the Federal Power Act, authority is reserved to the Commission to require the licensees to construct, operate, and maintain, or provide for the construction, operation, and maintenance of such fishways as may be prescribed by either the Secretary of the Interior or the Secretary of Commerce.

Article 438. Expenditures. Notwithstanding the limitation on expenditures included in this license, the Commission reserves the right to require the licensees to undertake such measures as may be appropriate and reasonable to implement approved plans and other requirements in this license.

Article 439. Columbia River Basin Fish and Wildlife Program. The Commission reserves the authority to order, upon its own motion or upon the recommendation of federal and state fish and wildlife agencies, affected Indian Tribes, and the Northwest Power Planning Council, alterations of project structures and operations to take into account to the fullest extent practicable the regional fish and wildlife program developed and amended pursuant to the Pacific Northwest Electric Power Planning and Conservation Act.

Article 440. Threatened and Endangered Species Protection Plan. Within six months of license issuance, the licensees shall file for Commission approval a Threatened and Endangered Species Protection Plan. The plan shall include:
(1) provisions for all measures stipulated in the terms and conditions implementing the reasonable and prudent measures filed by the U.S. Fish and Wildlife Service and National Marine Fisheries Service on November 3, 2004, and February 28, 2005, respectively and
(2) an implementation schedule. The reasonable and prudent measures and terms and conditions are attached to this license as Appendices E and F for reference.

As part of the plan, the licensees may reference measures implemented under other articles and ordering paragraphs of this license, as applicable, in lieu of including the measures as provisions of the plan.

The licensees shall prepare the plan after consultation with the Fish Committee and Terrestrial Resources Working Group. The licensees shall include with the plan, an implementation schedule, documentation of consultation, copies of comments and recommendations of the plan after it has been prepared and provided to the consulted entities, and specific descriptions of how the consulted entities' comments are

accommodated by the plan. The licensees shall allow a minimum of 30 days for the consulted entities to comment and to make recommendations before filing the plan with the Commission. If the licensees do not adopt a recommendation, the filing shall include the licensees' reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the plan is approved by the Commission. Upon Commission approval, the licensees shall implement the plan, including any changes required by the Commission.

Article 441. Reservation of Authority-Land Reservations. The licensees shall implement, upon order of the Commission, such additional measures as may be identified by the Secretary of the Interior pursuant to the authority provided in section 4(e) of the Federal Power Act, as necessary to ensure the adequate protection and utilization of the public land reservations under the authority of the Department of the Interior, Bureau of Land Management.

Article 442. Reservation of Authority-Indian Reservation. The licensees shall implement, upon order of the Commission, such measures as may be identified by the Secretary of the Interior, pursuant to section 4(e) of the Federal Power Act, 16 U.S.C. § 797(e), as necessary for the protection and utilization of the Warm Springs Indian Reservation.

Article 443. Use and Occupancy. (a) In accordance with the provisions of this article, the licensees shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain types of use and occupancy, without prior Commission approval. The licensees may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensees shall also have continuing responsibility to supervise and control the use and occupancies, for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the licensees for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensees shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, canceling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

Project No. 2030-036

106

(b) The type of use and occupancy of project lands and waters for which the licensees may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 watercraft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement.

To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensees shall require multiple use and occupancy of facilities for access to project lands or waters. The licensees shall also ensure, to the satisfaction of the Commission's authorized representative, that the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensees shall: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the reservoir shoreline. To implement this paragraph (b), the licensees may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the licensees' costs of administering the permit program. The Commission reserves the right to require the licensees to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

(c) The licensees may convey easements or rights-of-way across, or leases of, project lands for: (1) replacement, expansion, realignment, or maintenance of bridges or roads where all necessary state and Federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kV or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project reservoir.

No later than January 31 of each year, the Licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

(d) The licensees may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and Federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary Federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary Federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 watercraft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina; (6) recreational development consistent with an approved Exhibit R or approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is 5 acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from project waters at normal surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year.

At least 60 days before conveying any interest in project lands under this paragraph (d), the licensees must submit a letter to the Director, Office of Energy Projects, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked Exhibit G or K map may be used), the nature of the proposed use, the identity of any Federal or state agency official consulted, and any Federal or state approvals required for the proposed use. Unless the Director, within 45 days from the filing date, requires the licensees to file an application for prior approval, the licensees may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraph (c) or (d) of this article:

(1) Before conveying the interest, the licensees shall consult with Federal and state fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.

(2) Before conveying the interest, the licensees shall determine that the proposed use of the lands to be conveyed is not inconsistent with any approved Exhibit R or approved report on recreational resources of an Exhibit E; or, if the project does not have an approved Exhibit R or approved report on recreational resources, that the lands to be conveyed do not have recreational value.

(3) The instrument of conveyance must include the following covenants running with the land: (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; (ii) the grantee shall take all reasonable precautions to ensure that the construction, operation,

Project No. 2030-036

108

and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project; and (iii) the grantee shall not unduly restrict public access to project waters.

(4) The Commission reserves the right to require the licensees to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundary. The project boundary may be changed to exclude land conveyed under this article only upon approval of revised Exhibit G or K drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded from the project only upon a determination that the lands are not necessary for project purposes, such as operation and maintenance, flowage, recreation, public access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project shall be consolidated for consideration when revised Exhibit G or K drawings would be filed for approval for other purposes.

(g) The authority granted to the licensees under this article shall not apply to any part of the public lands and reservations of the United States included within the project boundary.

(L) The licensees shall serve copies of any Commission filing required by this order on any entity specified in the order to be consulted on matters relating to that filing. Proof of service on these entities must accompany the filing with the Commission.

(M) This order is final unless a request for rehearing is filed within 30 days from the date of its issuance, as provided in section 313(a) of the FPA. The filing of a request for rehearing does not operate as a stay of the effective date of this license or of any other date specified in this order, except as specifically ordered by the Commission. The licensees' failure to file a request for rehearing shall constitute acceptance of this order.

By the Commission. Commissioner Kelliher concurring with a separate statement attached.

(S E A L)

Magalie R. Salas,
Secretary.

APPENDIX A

Oregon Division of Environmental Quality
Section 401 of the Clean Water Act
Terms and Conditions

A. Water Quality Management and Monitoring Plan

Within 90 days of issuance of the §401 certification, the Joint Applicants, in consultation with ODEQ, shall revise the Water Quality Management and Monitoring Plan attached to these certification conditions as Exhibit A and submit the revised plan to ODEQ for approval.⁷³ The plan as approved by ODEQ is hereafter referred to in these certification conditions as the "WQMMP." Upon ODEQ approval, the WQMMP becomes a part of the §401 certification for the Project for purposes of any federal license or permit thereafter issued.

B. Selective Water Withdrawal Facility Construction and Operation

By no later than five years from the date of receiving a new FERC license for the Project, the Joint Applicants shall construct, test, and commence operation of the Selective Water Withdrawal (SWW) facility described in the Joint Applicants' §401 application.

C. Temperature

1. The SWW facility shall be operated in accordance with the Temperature Management Plan (TMP) contained in the WQMMP. The TMP shall identify those measures that the Joint Applicants will undertake to reduce the Project's contribution to exceedances of water quality standard criteria for temperature.

2. Upon issuance of a new FERC license for the Project, the Joint Applicants shall implement the Water Quality Monitoring Plan (WQMP) contained in the WQMMP. The WQMP shall specify the temperature monitoring reasonably needed to determine (a) whether the temperature criteria continue to be exceeded in waters affected by the Project, (b) the success of the TMP in reducing the Project's contribution to any continued exceedances of the criteria, and (c) any additional measures that may be needed to reduce the Project's contribution to exceedances of the criteria.

⁷³ The revised Water Quality Management and Monitoring Plan (WQMMP) has been completed by the licensees and can be found in Appendix C of this license.

3. Upon the U.S. Environmental Protection Agency's final approval or adoption of a Total Maximum Daily Load (TMDL) for temperature in the portion of the Deschutes River affected by the Project, ODEQ may reevaluate the Joint Applicants' TMP in light of information acquired since the certification of the Project. If additional temperature reduction measures are feasible and necessary to meet a Load Allocation (LA) for the Project under the TMDL (either as a component of the initial TMDL or any subsequent modification of the TMDL), ODEQ may require submittal of a revised TMP that ensures attainment of the LA, subject to the limits set forth in Chapter 1.0 of the attached Exhibit A and incorporated into the WQMMP. If the TMDL does not include a specific LA for the Project, references to the "LA for the Project" shall refer to the LA that encompasses Project-related thermal contributions to waters affected by the Project.

4. At the end of the period determined by ODEQ to be necessary to implement the TMDL for temperature in waters affected by the Project, ODEQ may:
- (a) Determine whether the LA for the Project has been achieved.
 - (b) If the LA for the Project has been achieved, the Joint Applicants shall continue to implement the TMP unless, at the Joint Applicants' request, ODEQ approves a modification or termination of the TMP.
 - (c) If the LA for the Project has not been achieved, ODEQ may reevaluate the TMP to determine whether additional measures to reduce the Project's contribution to exceedances of the temperature criteria are necessary and feasible. If additional measures are necessary and feasible, ODEQ may require submittal of a revised TMP that ensures attainment of the LA, subject to the limits set forth in Chapter 1.0 of Exhibit A and incorporated into the WQMMP. Any modification of the TMP that would require the Project to reduce water temperatures beyond what would be required by the LA for the Project shall be effective only upon modification of the LA to reflect the reduced load allocation.
 - (d) If (i) additional measures to reduce the Project's contribution to exceedances of the temperature criteria are necessary to achieve the LA but the measures are not feasible, and (ii) the water quality standard has not been achieved for waters affected by the Project, ODEQ shall verify whether all feasible measures have been undertaken by all required parties within the Deschutes River Basin to achieve the TMDL for waters affected by the Project. If all feasible measures have not been undertaken, ODEQ, in conjunction with designated management agencies, shall take steps to ensure that

all feasible measures are undertaken. If all feasible measures have been undertaken, ODEQ shall determine whether designated beneficial uses of waters affected by the Project are adversely affected by the failure to achieve the TMDL. If the designated beneficial uses are not adversely affected by the failure to achieve the TMDL, the Joint Applicants shall continue to implement the TMP unless, at the Joint Applicants' request, ODEQ approves modification or termination of the TMP. If the designated beneficial uses are adversely affected by the failure to achieve the TMDL, ODEQ may modify the TMP to require additional temperature measures, subject to the limits set forth in Chapter 1.0 of Exhibit A and incorporated into the WQMMP. Any modification of the TMP that would require the Project to reduce water temperatures beyond what would be required by the LA for the Project shall be effective only upon modification of the TMDL to reflect the reduced load allocation.

5. Any Project-related instream temperature increase of 0.25°F or less above the relevant criterion shall not be deemed to contribute to an exceedance of the temperature criterion or to a violation of the temperature water quality standard.

6. ODEQ may make or require reasonable modifications to the WQMP that it considers to be reasonable and feasible if:

- (a) The WQMP proves inadequate to provide the data needed to make the determinations described in certification condition 2, above; or,
- (b) Modifications to the TMP require or indicate a need for modification to the WQMP.

7. With the approval of ODEQ, the Joint Applicants may cease implementing the TMP and WQMP or may implement a modified TMP and WQMP. ODEQ may approve termination or modification if ODEQ determines that it will not impair the achievement of any LA for the Project for temperature and will not contribute to the exceedance of the relevant temperature criterion in waters affected by the Project.

8. The Joint Applicants shall implement modifications requested by ODEQ in accordance with these certification conditions and the WQMMP.

Project No. 2030-036

112

D. Dissolved Oxygen

1. The SWW facility shall be operated in accordance with the Dissolved Oxygen Management Plan (DOMP) contained in the WQMMP. The DOMP shall identify those measures that the Joint Applicants will undertake to reduce the Project's contribution to violations of water quality standard criteria for dissolved oxygen.

2. Upon issuance of a new FERC license for the Project, the Joint Applicants shall implement the Water Quality Monitoring Plan (WQMP) contained in the WQMMP. The WQMP shall specify the dissolved oxygen monitoring reasonably needed to determine (a) whether the dissolved oxygen criteria continue to be violated in waters affected by the Project, (b) the success of the DOMP in reducing the Project's contribution to any continued violations of the criteria, and (c) any additional measures that may be needed to reduce the Project's contribution to violations of the criteria.

3. Upon the U.S. Environmental Protection Agency's final approval or adoption of a Total Maximum Daily Load (TMDL) for dissolved oxygen in the portion of the Deschutes River affected by the Project, ODEQ may reevaluate the DOMP in light of information acquired since the certification of the Project. If additional dissolved oxygen improvement measures are feasible and necessary to meet a Load Allocation (LA) for the Project under the TMDL (either as a component of the initial TMDL or any subsequent modification of the TMDL), ODEQ may require submittal of a revised DOMP that ensures attainment of the LA, subject to the limits set forth in Chapter 1.0 of Exhibit A and incorporated into the WQMMP. If the TMDL does not include a specific LA for the Project, references to the "LA for the Project" shall refer to the LA that encompasses Project-related impacts on dissolved oxygen concentrations in waters affected by the Project.

4. At the end of the period determined by ODEQ to be necessary to implement the TMDL for dissolved oxygen in waters affected by the Project, ODEQ may:

- (a) Determine whether the LA for the Project has been achieved.
- (b) If the LA for the Project has been achieved, the Joint Applicants shall continue to implement the DOMP unless, at the Joint Applicants' request, ODEQ approves a modification or termination of the DOMP.
- (c) If the LA for the Project has not been achieved, ODEQ may reevaluate the DOMP to determine whether additional measures to reduce the Project's contribution to exceedances of the dissolved oxygen criteria are necessary and feasible. If additional measures

are necessary and feasible, ODEQ may require submittal of a revised DOMP that ensures attainment of the LA, subject to the limits set forth in Chapter 1.0 of Exhibit A and incorporated into the WQMMP. Any modification of the DOMP that would require the Project to increase dissolved oxygen concentrations beyond what would be required by the LA for the Project shall be effective only upon modification of the LA to reflect the reduced load allocation.

- (d) If (i) additional measures to reduce the Project's contribution to violations of the dissolved oxygen criteria are necessary to achieve the LA but the measures are not feasible, and (ii) the water quality standard for dissolved oxygen has not been achieved for waters affected by the Project, ODEQ shall verify whether all feasible measures have been undertaken within the Deschutes River Basin to achieve the LA for waters affected by the Project. If all feasible measures have not been undertaken by all required parties, ODEQ, in conjunction with designated management agencies, shall take steps to ensure that all feasible measures are undertaken. If all feasible measures have been undertaken, ODEQ shall determine whether designated beneficial uses of waters affected by the Project are adversely affected by the failure to achieve the TMDL. If the designated beneficial uses are not adversely affected by the failure to achieve the TMDL, the Joint Applicants shall continue to implement the DOMP unless, at the Joint Applicants' request, ODEQ approves modification or termination of the DOMP. If the designated beneficial uses are adversely affected by the failure to achieve the TMDL, ODEQ may modify the DOMP to require additional dissolved oxygen measures, subject to the limits set forth in Chapter 1.0 of Exhibit A and incorporated into the WQMMP. Any modification of the DOMP that would require the Project to increase dissolved oxygen concentrations beyond what would be required by the LA for the Project shall be effective only upon modification of the TMDL to reflect the reduced load allocation.

5. ODEQ may make or require reasonable modifications to the WQMP that it considers to be reasonable and feasible if:

- (a) The WQMP proves inadequate to provide the data needed to make the determinations described in certification condition 2, above; or,
- (b) Modifications to the DOMP require or indicate a need for modification to the WQMP.

6. With the approval of ODEQ, the Joint Applicants may cease implementing the DOMP and WQMP or may implement a modified DOMP and WQMP. ODEQ may approve termination or modification if ODEQ determines that it will not impair the achievement of any LA for the Project for dissolved oxygen and will not contribute to violation of dissolved oxygen criteria in waters affected by the Project.

7. The Joint Applicants shall implement modifications requested by ODEQ in accordance with these certification conditions and the WQMMP.

E. Hydrogen Ion Concentration (pH)

1. The SWW facility shall be operated in accordance with the pH Management Plan (PHMP) contained in the WQMMP. In accordance with Oregon Administrative Rule (OAR) 340-041-0565(2Xd), the PHMP shall identify those measures (including "all practicable measures" in impoundments) that the Joint Applicants will undertake to reduce the Project's contribution to exceedances of the water quality criterion for pH.

2. Upon issuance of a new FERC license for the Project, the Joint Applicants shall implement the Water Quality Monitoring Plan (WQMP) contained in the WQMMP. The WQMP shall specify the pH monitoring reasonably needed to determine (a) whether the pH criterion continue to be exceeded in waters affected by the Project, (b) the success of the PHMP in reducing the Project's contribution to any continued exceedances of the criterion, and (c) any additional measures that may be needed to reduce the Project's contribution to exceedances of the criterion.

3. Upon the U.S. Environmental Protection Agency's final approval or adoption of a Total Maximum Daily Load (TMDL) for pH in waters affected by the Project, ODEQ may reevaluate the PHMP in light of information acquired since the certification of the Project. If additional pH measures are feasible and necessary to meet a Load Allocation (LA) for the Project under the TMDL (either as a component of the initial TMDL or any subsequent modification of the TMDL), ODEQ may require submittal of a revised PHMP that ensures attainment of the LA, subject to the limits set forth in Chapter 1.0 of Exhibit A and incorporated into the WQMMP. If the TMDL does not include a specific LA for the Project, references to the "LA for the Project" shall refer to the LA that encompasses Project-related pH contributions to waters affected by the Project.

Project No. 2030-036

115

4. At the end of the period determined by ODEQ to be necessary to implement the TMDL for pH in waters affected by the Project, ODEQ may:
- (a) Determine whether the LA for the Project has been achieved.
 - (b) If the LA for the Project has been achieved, the Joint Applicants shall continue to implement the PHMP unless, at the Joint Applicants' request, ODEQ approves a modification or termination of the PHMP.
 - (c) If the LA for the Project has not been achieved, ODEQ may reevaluate the PHMP to determine whether additional measures to reduce the Project's contribution to exceedances of the pH criterion are necessary and feasible. If additional measures are necessary and feasible, ODEQ may require submittal of a revised PHMP that ensures attainment of the LA, subject to the limits set forth in Chapter 1.0 of Exhibit A and incorporated into the WQMMP. Any modification of the PHMP that would require the Project to reduce pH beyond what would be required by the LA for the Project shall be effective only upon modification of the LA to reflect the reduced load allocation.
 - (d) If (i) additional measures to reduce the Project's contribution to exceedances of the pH criterion are necessary to achieve the LA but the measures are not feasible, and (ii) the pH water quality standard has not been achieved for waters affected by the Project, ODEQ shall verify whether all feasible measures have been undertaken by all required parties within the Deschutes River Basin to achieve the TMDL for waters affected by the Project. If all feasible measures have not been undertaken, ODEQ, in conjunction with designated management agencies, shall take steps to ensure that all feasible measures are undertaken. If all feasible measures have been undertaken, ODEQ shall determine whether designated beneficial uses of waters affected by the Project are adversely affected by the failure to achieve the TMDL. If the designated beneficial uses are not adversely affected by the failure to achieve the TMDL, the Joint Applicants shall continue to implement the PHMP unless, at the Joint Applicants' request, ODEQ approves modification or termination of the PHMP. If the designated beneficial uses are adversely affected by the failure to achieve the TMDL, ODEQ may modify the PHMP to require additional pH measures, subject to the

limits set forth in Chapter 1.0 of Exhibit A and incorporated into the WQMMP. Any modification of the PHMP that would require the Project to reduce pH beyond what would be required by the LA for the Project shall be effective only upon modification of the TMDL to reflect the reduced load allocation.

5. ODEQ may make or require reasonable modifications to the WQMP that it considers to be reasonable and feasible if:

- (a) The WQMP proves inadequate to provide the data needed to make the determinations described in certification condition 2, above; or,
- (b) Modifications to the PHMP require or indicate a need for modification to the WQMP.

6. With the approval of ODEQ, the Joint Applicants may cease implementing the PHMP and WQMP or may implement a modified PHMP and WQMP. ODEQ may approve termination or modification if ODEQ determines that it will not impair the achievement of any LA for the Project for pH and will not contribute to the exceedance of the relevant pH criterion in waters affected by the Project.

7. The Joint Applicants shall implement modifications requested by ODEQ in accordance with these certification conditions and the WQMMP.

F. Nuisance Phytoplankton Growth and Aesthetic Conditions

1. The SWW facility shall be operated in accordance with the Nuisance Phytoplankton Growth Management Plan (NPGMP) contained in the WQMMP. The NPGMP shall identify those measures that the Joint Applicants will undertake to reduce the Project's contribution to exceedances of the nuisance phytoplankton growth standard criteria in the event nuisance conditions develop.

2. Upon issuance of a new FERC license for the Project, the Joint Applicants shall implement the Water Quality Monitoring Plan (WQMP) contained in the WQMMP. The WQMP shall specify the nuisance phytoplankton growth monitoring reasonably needed to determine (a) whether the nuisance phytoplankton trigger criterion is exceeded in the Project reservoirs, (b) the success of the NPGMP in reducing the Project's contribution to excessive phytoplankton levels that might lead to nuisance conditions within the Project reservoirs, and (c) any additional measures that may be needed to reduce the Project's contribution to nuisance phytoplankton conditions.

3. Upon the U.S. Environmental Protection Agency's final approval or adoption of a Total Maximum Daily Load (TMDL) for nuisance phytoplankton growth in the portion of the Deschutes River affected by the Project, ODEQ may reevaluate the NPGMP in light of information acquired since the certification of the Project. If additional nuisance phytoplankton growth reduction measures are technically and economically practicable and necessary to meet a Load Allocation (LA) for the Project under the TMDL (either as a component of the initial TMDL or any subsequent modification of the TMDL), ODEQ may require submittal of a revised NPGMP that ensures attainment of the LA, subject to the limits set forth in Chapter 1.0 of Exhibit A and incorporated into the WQMMP. If the TMDL does not include a specific LA for the Project, references to the "LA for the Project" shall refer to the LA that encompasses Project-related impacts to nuisance phytoplankton growth within the Project reservoirs.

4. At the end of the period determined by ODEQ to be necessary to implement the TMDL for nuisance phytoplankton growth in the portion of the Deschutes River affected by the Project, ODEQ may:

- (a) Determine whether the LA for the Project has been achieved.
- (b) If the LA for the Project has been achieved, the Joint Applicants shall continue to implement the NPGMP unless, at the Joint Applicants' request, ODEQ approves a modification or termination of the NPGMP.
- (c) If the LA for the Project has not been achieved, ODEQ may reevaluate the NPGMP to determine whether additional measures to reduce the Project's contribution to exceedances of the nuisance phytoplankton growth criteria are technically and economically practicable and necessary. If additional measures are technically and economically practicable and necessary, ODEQ may require submittal of a revised NPGMP that ensures attainment of the LA, subject to the limits set forth in Chapter 1.0 of Exhibit A and incorporated into the WQMMP. Any modification of the NPGMP that would require the Project to reduce nuisance phytoplankton growth beyond what would be required by the LA for the Project shall be effective only upon modification of the LA to reflect the reduced load allocation.

Project No. 2030-036

118

5. ODEQ may make or require reasonable modifications to the WQMP that it considers to be reasonable and feasible if:

- (a) The WQMP proves inadequate to provide the data needed to make the determinations described in certification condition 2, above; or,
- (b) Modifications to the NPGMP require or indicate a need for modification to the WQMP.

6. With the approval of ODEQ, the Joint Applicants may cease implementing the NPGMP and WQMP or may implement a modified NPGMP and WQMP. ODEQ may approve termination or modification if ODEQ determines that it will not impair the achievement of any LA for the Project for nuisance phytoplankton growth and will not contribute to the exceedance of the relevant nuisance phytoplankton growth criteria in the Project reservoirs.

7. The Joint Applicants shall implement modifications requested by ODEQ in accordance with these certification conditions and the WQMMP.

G. Biological Criteria, Deleterious Conditions, and Protection of Designated Beneficial Uses of Salmonid Spawning, Salmonid Rearing, Resident Fish, Aquatic Life, and Wildlife, and other water quality-related state laws for the protection of fish, aquatic life and wildlife:

1. **SWW Facility:** The Joint Applicants shall operate the Selective Water Withdrawal (SWW) facility in accordance with conditions C, D, and E of this certification.

2. **Monitoring:** Upon issuance of a new FERC license for the Project, the Joint Applicants shall conduct all monitoring, record keeping, and reporting of all parameters in accordance with the WQMP contained in the WQMMP. The WQMP shall specify monitoring sufficient to determine compliance with § 401 certification requirements for water quality, Project operations, streamflow, ramping rates, and reservoir levels.

3. **Spill Management:** The Joint Applicants shall maintain and implement current Spill Prevention, Control, and Countermeasure (SPCC) plans for oil and hazardous materials prepared in accordance with the Clean Water Act requirements of 40 CFR 112. These plans shall address all locations at the Project where Project operations may potentially result in a spill of these materials to the reservoirs or the lower

Deschutes River. In the event of a spill or release or threatened spill or release to Project reservoirs or the lower Deschutes River, the Joint Applicants shall immediately implement the site's SPCC plans and notify the Oregon Emergency Response System (OERS) at 1-800-452-0311.

4. **Ramping Rates in the lower Deschutes River:** The Joint Applicants shall operate the project with the following criteria for ramping rates: 0.1 foot/hour and 0.4 foot/day from October 16 to May 14, and 0.05 foot/hour and 0.2 foot/day from May 15 to October 15, except during certain extraordinary conditions. These extraordinary conditions are: (1) flood events; (2) any event that triggers the Project Emergency Action Plan; (3) rapid changes in Project inflows, when the rate of inflow change exceeds the proposed stage change limits; and (4) equipment failures or emergencies at the Reregulating Development. To monitor compliance with this requirement, the Joint Applicants shall record the time and control signal value for all state change instructions at the Reregulating Development and shall report any control signal changes that are greater than the ramping limitations identified above.

5. **Reservoir Levels:** The Joint Applicants shall operate Lake Billy Chinook to maintain a stable pool level between 1,944 ft. mean sea level (MSL) and 1,945 ft. MSL during the period June 15 to September 15 of each year. If it is forecasted that Lake Billy Chinook will not fill by June 15 of any year, then the Joint Applicants shall immediately notify the state Hydroelectric Application Review Team (HART) and advise of the expected refill date. If the reservoir has not been filled to normal operating pool level by June 15 of any year, this provision shall not prevent filling if water is available for storage while maintaining the minimum flow. Except during certain extraordinary circumstances described below, the Joint Applicants shall restrict the drawdown of Lake Billy Chinook to a maximum of 20 ft (elevation 1,925 ft MSL) with a target of 10 feet drawdown during normal winter operations; Lake Simtustus to a maximum drawdown limit of elevation of 1,576 ft MSL between June 1 and August 31, and elevation 1,573 ft MSL between September 1 and May 31; and the Reregulating Reservoir to 1,414 ft MSL year-round. Extraordinary circumstances allowing deviation from maximum allowable drawdowns are: (a) flood events in which drawdown is needed for safe passage of flood flows to minimize damage to life and property; (b) unforeseen occurrences in which drawdown is required to complete emergency repairs on Project facilities; (c) periodic scheduled maintenance activities that require drawdown to complete normal repairs on Project facilities (including spillway gates, the intake structure, or other dam structures); and (d) regional power system emergencies. In instances where the Joint Applicants exceed maximum drawdowns, the Joint Applicants shall provide immediate written justification to FERC and notification to HART describing cause and need for the deviation, extent of deviation, and expected timeline for bringing the reservoir(s) back to minimum allowable pool levels. If the pool level of Lake Billy Chinook is projected to be below the summer operating level (minimum elevation 1,944.0 ft MSL) between June 15 and September 15, the Joint Applicants may reduce the flow release to ensure the

Project No. 2030-036

120

reservoir reaches the minimum pool elevation of 1944.0 ft MSL. When inflows to the Project under this condition are less than target flows plus 150 cfs, then the flow release at the USGS Madras Gage No.14092500 shall be defined as the daily inflow less 150 cfs. The referenced target flows are defined in the next condition.

6. **Minimum Streamflows:** The Joint Applicants shall maintain minimum flows on a weekly basis equal to specified target flows or inflows, whichever is less. The target flows, as measured at the USGS Madras Gage No.14092500, are as follows: January 4,500 cfs, February 4,500 cfs, March 4,500 cfs, April 4,000 cfs, May 4,000 cfs, June 4,000 cfs, July 4,000 cfs, August 3,500 cfs, September 3,800 cfs, October 3,800 cfs, November 3,800 cfs, and December 4,500 cfs. During the period September 16 through November 15, the Joint Applicants shall supplement inflows as necessary to ensure a minimum flow release to the lower river of at least 3,000 cfs, subject to a maximum required supplementation of 200 cfs and cap on required drawdown of Lake Billy Chinook to achieve such supplementation equal to four feet.

7. **Run-of-River Operations:** The Joint Applicants shall hold river flows below the Reregulating Development to within ± 10 percent of the measured Project inflow under most conditions. Conditions or events where these criteria may not be followed include days with measured inflow in excess of 6,000 cfs when at least one of the following conditions exists: (1) any event that triggers the Project Emergency Action Plan; (2) power emergencies, as defined in the WSCC Minimum Operating Reliability Criteria (March 8, 1999); (3) equipment failures or emergencies at one of the Project dams or powerplants; or (4) reservoir drawdowns are needed for safe passage of anticipated flood flows to minimize damage to life and property. At times when flows are in excess of 6,000 cfs and one or more of the above exception conditions apply, the Joint Applicants shall minimize the variation beyond the $\pm 10\%$ criterion as can be done safely.

8. **Stream Gaging:** By no later than one year from the date of receiving a new FERC license for the Project, the Joint Applicants shall fund improvements at the existing USGS gaging stations on the Crooked (Gage No.14087400), Deschutes (Gage No.14076500) and Metolius (Gage No.14091500) rivers upstream of the Project. These improvements shall include radio, telephone, or other telemetry systems to provide recording and transmission of hourly stream temperature and streamflow data to the Pelton control room.

9. **Fish Passage:** The Joint Applicants shall construct, maintain and operate, or shall arrange for the construction, maintenance and operation of such facilities and equipment for fish migration, propagation or conservation consistent with the proposed Fish Passage Plan and amendments thereto. In the event any modifications in the fish

facilities are deemed necessary, the Joint Applicants shall cooperate with Oregon Department of Fish and Wildlife (ODFW) in the design of such modifications or operation of the facilities.

10. **Large Wood:** All large wood (greater than 20 cm by 3 m) entering Lake Billy Chinook shall be removed by the Joint Applicants and placed into the lower Deschutes River below the Reregulating Dam. Following a flow event that results in the transport of significant amounts of large wood into Lake Billy Chinook, the Joint Applicants shall consult with ODFW and the Confederated Tribes of the Warm Springs Reservation of Oregon (CTWS) Natural Resources Department to obtain specific guidance pertaining to the placement and monitoring of that large wood in the lower Deschutes River below the Project's Reregulating Dam. The Joint Applicants shall obtain all necessary regulatory licenses, permits, or approvals from tribal, federal, state and local authorities prior to large wood placement.

11. **Sediment Transport/Spawning Gravel:** The Joint Applicants shall perform the following studies with regard to sediment transport and spawning gravel:

- Verify the sediment transport model developed by Fassnacht (1998) by placing radio-tagged and/or colored rocks on selected bars in the Deschutes River below the Reregulating Dam. Determine at which flow levels these rocks are mobilized by checking their positions after each flow event greater than 7,000 cfs. The Joint Applicants may submit to ODEQ for approval a proposal for an alternate flow value for commencement of this monitoring pending the results of the AIR process. Buried columns of colored rocks will be utilized to determine the depth of scour at different flow levels.
- Resurvey channel cross sections at five locations utilized by Fassnacht (1998). Resurvey these annually for 5 years to determine if there is any active channel change associated with years having high flow events. If no change is detected after 5 years, resurvey them every 10 years, or after events greater than 15,000 cfs.
- If monitoring sediment transport and channel change shows significant transport or change at flows lower than predicted by Fassnacht (1998), initiate a program to measure actual bedload transport at different flow levels at the Warm Springs Bridge (US Highway 26).

- If monitoring of channel change and measuring bedload shows significant transport at levels significantly below those predicted by the geomorphology study, revisit the sites used by McClure (1998) for particle size measurements and replicate these particle surveys.
- Coordinate and lead a study of historical fish counts and spawning data directed toward determination of the cause of anadromous spawning reduction in the Lower Deschutes River from below the Reregulation Dam downstream to the mouth of Shitike Creek. In addition, the Joint Applicants shall conduct a study to determine the quality of gravel habitat for anadromous fish in this river reach. The results of this study shall be used by the Joint Applicants to determine if additional mitigation measures are necessary to improve habitat quality or quantity.

12. **Upper Basin Habitat Enhancement and Restoration:** The Joint Applicants shall work with private and governmental entities in the Deschutes River Basin to implement cost-effective habitat enhancement and restoration measures to improve the quality of water flowing into the Project. These upper basin measures shall include, but not be limited to, the creation of riparian refugia, as well as improvements such as livestock exclusion, placement of large woody debris, planting of grass, shrubs, trees, and the maintenance and creation of wetlands.

The Joint Applicants shall expend a minimum of \$1.475 million for these upper basin measures over the first 5 years of the new license in accordance with the following table.

Required Mitigation Measure	Minimum Required Expenditure
Improved Riparian Corridor Management	\$750,000
Community Habitat Education Activities	\$25,000
Establishment of Reserves and Refugia	\$700,000
Total	\$1,475,000

H. Total Dissolved Gas

1. The Joint Applicants shall monitor total dissolved gas at the Reregulating Dam tailrace in accordance with the WQMP contained in the WQMMP.

2. If monitoring of total dissolved gas at the Reregulating Dam tailrace at times of spill indicates noncompliance with the total dissolved gas standard, then the Joint Applicants shall immediately develop a plan and schedule for assessing the problem and developing a remedy. Such plan and schedule shall be submitted to ODEQ for

Project No. 2030-036

123

approval within 60 days of identifying the excessive total dissolved gas concentrations via monitoring. Upon approval of the remedial plan by ODEQ, the Joint Applicants shall implement the plan in accordance with the approved schedule.

I. Turbidity

1. The Joint Applicants shall implement the erosion control measures for erosionally-sensitive shoreline areas of the Project reservoirs as proposed in the Final Joint Application Amendment, Exhibit E-VII-13.

2. The Joint Applicants shall continue the Shoreline Planting Program at all three Project reservoirs to enhance on-site riparian habitat, as proposed in the Final Joint Application Amendment, Exhibit E-IV-41.

3. The Joint Applicants shall monitor turbidity in accordance with the WQMP contained in the WQMMP.

J. Toxic Substances; Discoloration, Scum, Oily Sleek; Aesthetic Conditions; Deleterious Conditions

The Joint Applicants shall maintain and implement current Spill Prevention, Control, and Countermeasure (SPCC) plans for oil, hazardous materials, and non-hazardous materials prepared in accordance with the Clean Water Act requirements of 40 CFR 112. These plans shall address all locations at the Project where Project operations may potentially result in a spill of these materials to the reservoirs or the lower Deschutes River. In the event of a spill or release or threatened spill or release to Project reservoirs or the lower Deschutes River, the Joint Applicants shall immediately implement the site's SPCC plan and notify the Oregon Emergency Response System (OERS) at 1-800-452-0311.

K. Bacteria

The Joint Applicants shall monitor for E. coli bacteria in accordance with the WQMP contained in the WQMMP.

L. Cooling Water Discharge Permits

Upon issuance of a new FERC license for the Project, the Joint Applicants shall within 30 days request and file National Pollutant Discharge Elimination System (NPDES) permit applications with ODEQ for cooling water discharges at each of the three powerhouses. This condition will be considered null and void if the Joint Applicants, prior to FERC license issuance, have applied to ODEQ for these NPDES permits.

M. § 401 Certification Compliance Schedules

If any event occurs that is beyond the Joint Applicants' reasonable control and that causes or may cause a delay or deviation in compliance with schedules contained in this § 401 Certification, the Joint Applicants shall immediately notify ODEQ in writing of the cause of delay or deviation and its anticipated duration; the measures that have been or will be taken to prevent or minimize the delay or deviation; and the timetable by which the Joint Applicants propose to carry out such measures. It is the Joint Applicants' responsibility in the written notification to demonstrate to ODEQ's satisfaction that the delay or deviation has been or will be caused by circumstances beyond the control and despite due diligence of the Joint Applicants. If the Joint Applicants so demonstrates, ODEQ shall extend times of performance of related activities under this condition, as appropriate. Circumstances or events beyond the Joint Applicants' control include, but are not limited to, acts of nature, unforeseen strikes, work stoppages, fires, explosion, riot, sabotage, or war. ODEQ may also consider other circumstances or events as beyond the Joint Applicants' control. These other circumstances or events may include, but not be limited to, changes in state statutes; delays in the receipt of necessary approvals for construction design or permits; or delays that ODEQ agrees the Joint Applicants would not have been expected to anticipate. These other circumstances or events will only be considered if they are not due to the actions or inactions of the Joint Applicant. Increased cost of performance or consultant's failure to provide timely reports may not be considered circumstances beyond the Joint Applicants' control.

N. § 401 Certification Modification

ODEQ, in accordance with OAR Chapter 340, Division 48, and, as applicable, 33 USC 1341, may modify this Certification to add, delete, or alter Certification conditions as necessary and feasible to address:

- (a) adverse or potentially adverse Project effects on water quality or designated beneficial uses that did not exist or were not reasonably apparent when this Certification was issued;
- (b) TMDLs (not specifically addressed above in these Certification Conditions);
- (c) changes in water quality standards;
- (d) any failure of Certification conditions to protect water quality or designated beneficial uses as expected when the Certification was issued; or
- (e) any change in the Project or its operations that was not contemplated by this Certification that might adversely affect water quality or designated beneficial uses.

Project No. 2030-036

125

O. Project Changes

The Joint Applicants shall obtain ODEQ review and approval before undertaking any change to the Project that might significantly affect water quality (other than project changes required by or considered in this Certification), including changes to Project structures, operations, and flows.

P. Project Repair or Maintenance

The Joint Applicants shall obtain ODEQ review and approval before undertaking Project repair or maintenance activities that might significantly affect water quality (other than repair or maintenance activities required by or considered in this Certification). ODEQ may, at the Joint Applicants' request, approve specified repair and maintenance activities on a periodic or ongoing basis.

Q. Project Inspection

The Joint Applicants shall allow ODEQ such access as necessary to inspect the Project area and Project records required by this Certification at reasonable times as necessary to monitor compliance with § 401-certification conditions.

R. Posting of § 401 Certification

The Joint Applicants shall post a copy of these certification conditions in a prominent location at the Pelton Powerhouse Control Center.

S. Water Quality Standards Compliance

Notwithstanding the conditions of this certification, no wastes shall be discharged and no activities shall be conducted which will violate state water quality standards.

T. Project Specific Fees

In accordance with Oregon Revised Statutes (ORS) 543.080, the Joint Applicants shall pay a project-specific fee for ODEQ's costs of overseeing implementation of adaptive management provisions of this § 401 certification. The fee shall be \$25,000 (2002 dollars) annually, made payable to "State of Oregon, Department of Environmental Quality", and due on July 1 of each year after issuance of the new FERC license. This fee will not pay ODEQ's costs of participation, before or after issuance of the new FERC license, on the Fisheries Technical Subcommittee established by the Joint Applicants for the Project; such costs shall be paid by Joint Applicants by arrangement separate from this Certification condition. ODEQ shall credit against the fee amounts required under this Certification condition any fee or other compensation paid or payable

Project No. 2030-036

126

to ODEQ, directly or through other agencies of the State of Oregon, during the preceding year (July 1 to June 30) for ODEQ's cost of oversight of adaptive management. The fee shall expire 10 years after the first July 1 following issuance of this certification, unless terminated earlier by ODEQ because oversight of adaptive management is no longer necessary. One year before the tenth-anniversary expiration of the fee, or earlier if mutually agreed, ODEQ and the Joint Applicants shall review the need, if any, to modify, extend, or terminate the fee, in accordance with ORS 543.080. The Joint Applicants shall continue to pay any project-specific fee required after such review.

APPENDIX B

The Water Control Board
 Confederated Tribes of the Warm
 Springs Reservation of Oregon

Section 401 of the Clean Water Act
 Terms and Conditions

1. Protection of beneficial uses of anadromous fish passage, salmonid spawning, salmonid rearing, and resident fish and aquatic life

Upon FERC's issuance of a new license for the Project, the Joint Applicants shall comply with the following provisions related the Biological Criteria water quality standard and other appropriate requirements of Tribal law:

A. Habitat Improvement Projects

The Joint Applicants will work with private and governmental entities in the Deschutes River Basin to implement cost-effective habitat enhancement and restoration measures to improve the quality of water flowing into, through or below the Project. These measures will include, but not be limited to, the creation of riparian refugia, as well as improvements such as livestock exclusion, placement of large woody debris, planting of grass, shrubs, trees, and the maintenance and creation of wetlands. The Joint Applicants will expend a minimum of \$1.415 million for these measures over the first 5 years of the new license.

Proposed Mitigation Measure	Proposed Expenditure
Improved Riparian Corridor Management	\$750,000
Community Habitat Education Activities	\$25,000
Establishment of Reserves and Refugia	\$700,000
Total	\$1,475,000

B. Long-Term Water Quality Monitoring and Adaptive Management

The selective water withdrawal facility, to be built as a means to address water quality and fish passage issues, may adversely affect specific water quality parameters such as turbidity and pH. Therefore, the WCB requires a comprehensive water quality monitoring and management plan be implemented to monitor physical, chemical, and biological parameters. Implementation of this plan along with adaptive management will allow rigorous evaluation of progress towards achieving defined measures of success; and utilization of gained knowledge to make necessary modifications through time.

Project No. 2030-036

128

Knowledge gained from the water quality monitoring and management plan will receive broad review from resource managers and the public leading to informed decisions by an Implementation Oversight Committee representing the WCB, DEQ, and the Joint Applicants. The Implementation Oversight Committee will be involved in the administration of the Water Quality Management and Monitoring Plan attached hereto as Appendix A⁷⁴ and the adaptive management provisions of this Certification.

The Tribal Council of the Confederated Tribes of Warm Springs has delegated the responsibility and accountability to implement the Policy Statements listed in Tribal Ordinance 80 and 81 to the Water Control Board. Therefore the WCB will be responsible for all decisions requiring the exercise of delegated authority from the Federal Environmental Protection Agency under the Federal Clean Water Act and for implementing Tribal Ordinances 45, 80 and 81.

In the WCB's view the biological criteria also includes consideration of the Project's ongoing impacts on the lower Deschutes River in terms of increased recreational use of the reservoirs, increased development along reservoir shorelines, interception of large woody materials, interception of gravel and finer materials, flow modification (instream flows, ramping rates, and attenuation of flood peaks), disconnection of populations for resident fish species, and prevention of anadromy. This document addresses each of these factors insofar as they affect the support of designated beneficial uses as specified by the Tribes in the Reservoirs and the lower Deschutes River. Designated beneficial uses most sensitive to the above-listed impacts include anadromous fish passage, salmonid rearing, salmonid spawning, and resident fish and aquatic life.

The WCB therefore requires the Joint Applicants to implement a long-term monitoring program to address water quality, water quantity, biological parameters and environmental factors related to resource management objectives in the tribal waters affected by the Project. This monitoring program will provide the data necessary to assess whether the Project attains and maintains compliance with the appropriate water quality standards. The information gathered in this program will also be used in the adaptive management of project operations to meet Tribal water quality standards.

The Draft Water Quality Monitoring and Management Plan (Appendix A) will be finalized (including a Quality Assurance and Quality Control Plan) within one year of the date of this Certificate being signed. The Joint Applicants may ask for an extension to this timeframe if this plan cannot be completed due to circumstances beyond their control.

⁷⁴ The revised Water Quality Management and Monitoring Plan (WQMMP) has been completed by the licensees and can be found in Appendix C of this license.

Project No. 2030-036

129

C. Large Wood

The WCB requires all large wood naturally entering the Reservoirs of the Project to be collected and reintroduced below the Project. Mitigation projects to reintroduce large wood back into the lower Deschutes River will be coordinated with all appropriate agencies and approved by the Implementation Oversight Committee. Projects to replace large wood in the lower river will include addition of large wood to the waters in the way of installed structures along the banks to provide for habitat diversity, streambank stability and enhancement of the environment. In addition, some large wood reintroduction projects could be coordinated with normal high flow events to allow the large wood to find its' own "home" in the lower river.

Based on the fact that there is a lack of the "ideal quality" of large wood naturally entering the Project due to riparian management activities in the upper watershed, the WCB recommends use of proposed habitat improvement mitigation funds to supplement the large wood naturally entering the reservoirs. Typically this material would be anchored or placed along shorelines or riverbanks to add stability and habitat quality. All applicable licenses, permits and clearances for mitigation or monitoring projects will be obtained prior to any activity taking place in Tribal Waters.

D. Gravel

The reservoirs act as a settling basin not only for gravel-sized sediment but also for finer sand and silt. This may have some adverse effects to the fisheries habitat in the lower river from the Reregulating Dam to the mouth of Shitike Creek. The level of anadromous fish spawning in this area has been documented as being lower over the last 20 years.

As a result, the Joint Applicants will take the following measures with regard to sediment transport and spawning gravel in the Deschutes River downstream of the Project:

1. Verify the sediment transport model developed by Fassnacht (1998) by placing radio-tagged and/or colored rocks on selected bars in the Deschutes River below the Reregulating Dam. Determine at which flow levels these rocks are mobilized by checking their positions after each major flow event. Initiate study at flows greater than 6,500 cfs. As data is collected at this flow level, adjustments can be made to the flow level event that would trigger future data collection needs. Buried columns of colored rocks may be utilized to determine the depth of scour at different flow levels.

2. Resurvey channel cross sections at five locations utilized by Fassnacht (1998). Resurvey these annually for 5 years to determine if there is any active channel change associated with years having high flow events. If no change is detected after 5 years, re-survey them every 5 years, or after events greater than 15,000 cfs.

3. If monitoring sediment transport and channel change shows significant transport and/or changes at flows lower than predicted by Fassnacht (1998), initiate a program to measure actual bed load transport at different flow levels at the Warm Springs bridge.

4. If monitoring of channel change and measuring bedload shows significant transport at low levels significantly below those predicted by the geomorphology study, revisit the sites used by McClure (1998) for particle size measurements and replicate these particle surveys.

5. Coordinate and lead a study of historical fish counts and spawning data to determine the cause of anadromous spawning reduction in the Lower Deschutes River from below the Reregulating Dam down to the mouth of Shitike Creek. In addition, the Applicants will conduct a study to determine anadromous gravel habitat quality in the Lower Deschutes River from below the Reregulating Dam down to the mouth of Shitike Creek.

The results of these studies and other appropriate information generated in the FERC re-licensing process will be used to determine if additional mitigation measures (such as gravel augmentation) are necessary to improve habitat quality. The Joint Applicants will consult with the appropriate regulatory authorities as to the results and findings of these studies.

E. Flow Modification

The WCB requires that the Reregulating Reservoir be used to redistribute upstream peaking flows and maintain nearly steady discharge into the Deschutes River, approximately equal to the daily average inflow to Lake Billy Chinook. Project operations will closely mimic inflows (surface and groundwater) so that the project functions as a "run of the river" system under most operational conditions. There will be no more than a 10% variation between Project inflow and Project outflow under most conditions.

Project No. 2030-036

131

SAFETY

Project inflows above 6,000 cfs will be used as a trigger value whereby the project operators will:

1. Evaluate if the Project Emergency Action Plan needs to be implemented.
2. Determine if a power emergency exists (as defined in the Western Systems Coordinating Council Minimum Operating Reliability Criteria (WSSC 1999)).
3. Determine if equipment failures or emergencies exist at one of the Project dams or power plants.
4. Determine reservoir drawdown needs for safe passage of anticipated floods to minimize damage to life and property.

If any of these steps warrant a change to the outflow policy of being within plus or minus 10% of inflow, the Joint Applicants may take whatever steps are necessary to minimize impacts to the Project while protecting public health and safety. Overall direction is to minimize changes to inflow so as to provide the lower river a more normal flow regime.

NORMAL OPERATIONS

These operational requirements will allow for higher peak flows to occur in the Lower River allowing for more natural channel maintenance processes. The Joint Applicants will implement the following:

1. Institute real time flow monitoring at each of the inflows to provide hourly records of flow. This will be required to ensure compliance with the "run of the river" mandate.
2. Institute real time flow monitoring at the Madras Gauge that will offer better control of flows and a significant enhancement in accurate monitoring of actual stream flows in the lower Deschutes River. This system will enable the Project to operate as "run of the river" and comply with other operational guidelines.
3. Project operations will closely mimic inflows (surface and groundwater) so that the Project functions as a "run of the river" system under most operational conditions. There will be no more than a 10% variation between Project inflow and Project outflow under most conditions. These changes will allow for higher peak flows to occur in the Lower River allowing for more natural channel maintenance processes.

4. The WCB requires that the Q80 flows for the full period of record for the Madras Gauge (1925-1999) be used as the target "minimum flow" to be released from the project to the Lower Deschutes River. In the event inflows to the Project are lower than the target "minimum flow" then inflow volumes must be released to the Lower Deschutes River. The required "minimum flow" may be reduced up to 150 cfs to ensure the refilling of Lake Billy Chinook to reach its normal minimum summer operational level of 1944 feet. The recommended target Q80 "minimum flows" are summarized below by month.

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1924-1999 Q80	3512	4049	4225	4263	4267	4571	4170	3721	3686	3540	3446	3431

5. Seasonal operation of Lake Billy Chinook to allow for no more than a 10 foot draw down during normal winter months with an absolute maximum drawdown of 20 feet. Lake Billy Chinook should be filled and at normal operation level of 1944 feet by 1st of April. However, if this is not possible, the reservoir must be at normal operation level of 1944 feet by June 15. The "minimum" level required to be maintained at 1944 feet from June 15 to September 15, for Lake Billy Chinook. During the fall months Lake Billy Chinook should be maintained at the 1944 feet operation level so as to provide continued protection of riparian vegetation and cultural resources.

6. Seasonal operation of Lake Simtustus to allow for a minimum elevation of 1,576 feet from June 1 to August 31 and 1,573 feet elevation from September 1 to May 31.

7. Seasonal operation of the Reregulating Reservoir to allow for a minimum elevation of 1,414 feet year round.

8. Limits on river stage changes below the Reregulating Development will be as follows:

- a. From May 15 to October 15, hourly stage control limit will be 0.05 feet with a daily stage change control limit of 0.2 feet.
- b. From October 16 to May 14, hourly stage control limit will be 0.1 feet with a daily stage change control limit of 0.4 feet. Only during extraordinary or emergency situations can the Joint Applicants deviate from these stage change limits.

Project No. 2030-036

133

F. Fish Passage

The WCB requires the Joint Applicants implement mitigation measures that will effectively enable fish passage and allow for re-connection of harvestable fish populations and anadromy. The WCB requires that these measures do not adversely impact the thriving populations of resident fish species in the Project Reservoirs and the healthy populations of anadromous and resident fish species in the lower Deschutes River.

The Joint Applicants are proposing the construction of a selective water withdrawal facility at Round Butte Dam to address the effects of the Project on water quality and also as a means to enable fish passage. The Joint Applicants have modeled the facility's impacts on water quality and have provided enough information to show that the water quality effects of the project can be mitigated. Fish passage issues are being studied and results may not be known for many years. If the selective water withdrawal facility on Round Butte Dam will not adequately address fish passage, the Joint Applicants still have the responsibility to implement mitigation measures that will effectively enable fish passage and allow for re-connection of fish populations and anadromy within a reasonable period of time not to exceed 10 years from issuance of FERC license. If current modeling of volitional passage has not been successfully completed after 10 years, alternative methods of re-connecting the fish populations will be developed and approved by the managing agencies having regulatory authority for fisheries in the Deschutes River and the Joint Applicants, and implemented by year 15 of the new license. The Joint Applicants may request that these time frames be adjusted by the WCB after due consultation with appropriate agencies.

The Joint Applicants will continue existing fisheries mitigation programs and evaluation of fish passage projects until the fish passage issue has been resolved.

The WCB is reasonably assured that the discussed biological criteria standard as applied to fish passage will be met with implementation of mitigation measures outlined above and with the implementation of the Water Quality Monitoring Plan and Management Plan. The Draft Water Quality Monitoring and Management Plan (Appendix A) will be finalized (including a Quality Assurance and Quality Control Plan) within one year of the date of this Certificate being signed. The Joint Applicants may ask for an extension to this timeframe if this plan cannot be completed due to circumstances beyond their control.

Project No. 2030-036

134

2. Dissolved Oxygen Conditions

The Joint Applicants shall comply with the following provisions related to dissolved oxygen levels in the lower Deschutes River.

The WCB requires additional data be collected at appropriate locations to determine the correlation of the Intergravel Dissolved Oxygen (IGDO) and ambient Dissolved Oxygen (DO) for a period of 3 years following issuance of this Certificate. Until the correlation between IGDO and DO has been established and it supports a change in the applicable DO Standard, the WCB will use of the ambient DO levels (11 mg/l) as the appropriate standard. The methodology to be used in monitoring IGDO will be approved by the WCB prior to any activity taking place.

The Joint Applicants will begin construction of selective water withdrawal facilities at the Round Butte Dam within 3 years of FERC license being issued and operational to meet water quality standards by end of year five. The Joint Applicants may petition the WCB to adjust these timeframes as appropriate.

Joint Applicants will implement a combination of selective water withdrawal and operational changes to keep the river immediately below the Project within range of the relevant water quality criteria for dissolved oxygen.

The WCB is reasonably assured that the discussed dissolved oxygen criteria will be met with implementation of mitigation measures outlined above and with the implementation of a Water Quality Monitoring and Management Plan. The Draft Water Quality Monitoring and Management Plan (Appendix A) will be finalized (including a Quality Assurance and Quality Control Plan) within one year of the date of this Certificate being signed. The Joint Applicants may ask for an extension to this timeframe if this plan cannot be completed due to circumstances beyond their control.

3. Temperature Management Conditions

Upon FERC's issuance of a new license for the Project, the Joint Applicants shall comply with the following provisions related to water temperatures in the Deschutes River Basin:

- Joint Applicants will begin construction of selective water withdrawal facilities at the Round Butte Dam within 3 years of FERC license being issued and operational to meet water quality standards by end of year five. The Joint Applicants may petition the WCB to adjust these timeframes as appropriate.

- Implementation of the Water Quality Monitoring and Management Plan and the Implementation Management Plan will continue to help ensure that project operations do not violate the temperature criteria.
1. Upon the U.S. Environmental Protection Agency's (EPA's) final approval or adoption of a Total Maximum Daily Load (TMDL) for temperature in the portion of the Tribal waters affected by the Project, the WCB :
 - (a) Will seek, in conjunction with designated management agencies and in accordance with applicable law, other anthropogenic sources within the Deschutes River Basin to implement measures to reduce their contribution to exceedances of the temperature criteria; and
 - (b) May reevaluate the Water Quality Monitoring and Management Plan in light of information acquired since the certification of the Project and in light of the temperature modification measures sought to be implemented by other sources in the basin, whether or not such implementation is underway or completed for all other sources. If additional temperature improvement measures are feasible and necessary to meet a load allocation (LA) for the Project under the TMDL (either as a component of the initial TMDL or any subsequent modification of the TMDL), the WCB may require submittal of a revised temperature management plan that insures attainment of the LA, subject to limits set forth in the Water Quality Monitoring and Management Plan. The Draft Water Quality Monitoring and Management Plan (Appendix A) will be finalized (including a Quality Assurance and Quality Control Plan) within one year of the date of this Certificate being signed. The Joint Applicants may ask for an extension to this timeframe if this plan cannot be completed due to circumstances beyond their control.
 2. At the end of the period determined by WCB to be necessary to implement the TMDL for temperature in the portion of the Tribal waters affected by the Project, the WCB may:
 - (a) Determine whether the TMDL and LA for the Project have been achieved.

- (b) If the TMDL and LA for the Project have been achieved, the Joint Applicants shall continue to implement the Temperature Management Plan (TMP) unless, at the Joint Applicant's request, the WCB approves a modification of the Water Quality Monitoring and Management Plan.
 - (c) If the TMDL or LA for the Project has not been achieved, the WCB may require submittal of a revised temperature management plan that insures attainment of the LA, subject to limits set forth in the Water Quality Monitoring and Management Plan. The Draft Water Quality Monitoring and Management Plan (Appendix A) will be finalized (including a Quality Assurance and Quality Control Plan) within one year of the date of this Certificate being signed. The Joint Applicants may ask for an extension to this timeframe if this plan cannot be completed due to circumstances beyond their control.
3. Any Project-related in stream temperature increase of 0.25 °F, or less above the relevant criterion shall not be deemed to contribute to an exceedance of the temperature criterion or to a violation of the temperature water quality standard.

4. pH (hydrogen ion concentration)

Upon FERC's issuance of a new license for the Project, the Joint Applicants shall comply with the following provisions related to pH in the Deschutes River:

The Joint Applicants will implement the construction and operation of the selective water withdrawal facilities. Modeling results have indicated that discharges from the Reregulating Dam will continue to meet the pH criterion, with the possible exception of minor, brief, and isolated instances during the summer months. The exceedances that are predicted are within the error of the model, and the model predictions themselves are conservative in that they are at the upper end of the error range.

Conditions in Lake Billy Chinook will improve and will meet the relevant pH criterion where the associated beneficial uses occur or are expected to occur. Any increases that occur within Lake Simtustus will be minor and will not cause a failure to comply with water quality standards in that reservoir. Moreover, Lake Billy Chinook and Lake Simtustus will continue to fall within the exemption from the pH standard. Specifically, the reservoirs existed as of January 1, 1996, and the exceedance of the pH standard occurs as a result of the impoundment in response to primary productivity

Project No. 2030-036

137

supported by nutrients that arise from sources not associated with the impoundment. With the implementation of selective water withdrawal, the Joint Applicants will have taken all practicable measures to bring pH in the impounded waters into compliance with the criterion.

The WCB is reasonably assured that the discussed pH criteria will be met with implementation of mitigation measures outlined above and with the implementation of the Water Quality Monitoring and Management Plan. The Draft Water Quality Monitoring and Management Plan (Appendix A) will be finalized (including a Quality Assurance and Quality Control Plan) within one year of the date of this Certificate being signed. The Joint Applicants may ask for an extension to this timeframe if this plan cannot be completed due to circumstances beyond their control.

(a) Upon EPA's final approval or adoption of a TMDL for pH in the Deschutes River, the WCB will determine whether the Project needs to provide additional measures to achieve an LA for the Project under the TMDL (either as a component of the initial TMDL or any subsequent modification of the TMDL). If the TMDL does not include a specific LA for the Project, references to the "LA for the Project" shall refer to the LA that encompasses Project contributions to pH exceedances in the Deschutes River below the Project or within the Projects' reservoirs. The determination shall be based on data provided through the Water Quality Monitoring Plan and other relevant information and on an analysis of the extent to which measures employed by or required of other sources within the Deschutes River Basin will result in achievement of the TMDL.

(b) If the TMDL or LA for pH has not been achieved, the WCB may require submittal of a revised pH management plan that insures attainment of the LA, subject to limits set forth in the Water Quality Monitoring and Management Plan attached to this § 401 Certification as Exhibit A.

(c) The WCB may approve cessation or modification of components of the Water Quality Monitoring Plan if the WCB determines that it will not impair the achievement of any pH TMDL or LA for the Project and will not contribute to the exceedance of the pH criterion in waters affected by the Project. Among other circumstances, the WCB may approve a request for termination of pH monitoring if the Deschutes River does not show pH exceedances for at least three consecutive years.

5. Nuisance Phytoplankton Growth

Although the nuisance phytoplankton standard is exceeded in the surface waters of Lake Billy Chinook and Lake Simtustus, the WCB believes that this condition is not adversely affecting any beneficial use of either impoundment, and that the condition is due to elevated inputs of nutrients from tributaries.

There are no technically and economically practicable strategies to control this condition in the Project itself, although the implementation of selective water withdrawal may tend to reduce measured chlorophyll *a* levels. However, due to unknown effects of the selective withdrawal facility on the chlorophyll *a* levels, the WCB recommends that a reference value for current conditions be established (average chlorophyll *a* levels taken for a period of 5 years). This value will be compared against annual measurements of chlorophyll *a*. If the reference value is exceeded by more than 10% in any given sample, a replication or verification sample will be collected and analyzed within 30 days. If this verification sample also exceeds the reference value by 10%, a survey of water users will be conducted to determine the level of nuisance within the next 30 days.

The WCB is reasonably assured that the discussed nuisance phytoplankton criteria will be met with implementation of mitigation measures outlined above and with the implementation of the Water Quality Monitoring and Management Plan described in Exhibit A. The WCB however does require the Joint Applicants to conduct a survey of users of Project Reservoirs based on criteria listed above to ensure that beneficial uses are not being adversely impacted by nuisance phytoplankton.

6. Total Dissolved Gas

The WCB is reasonably assured that the total dissolved gas standard will be met without special requirements. The WCB will require implementation of the Water Quality Monitoring and Management Plan for DO and Total Dissolved Gas to ensure compliance with this standard.

7. Antidegradation Policy

With the implementation of the mitigation measures listed above, the WCB believes that overall water quality in and below the Project will be improved. As noted earlier, the modeled shift in temperature back toward pre-Project conditions will cause an increase over existing conditions during the first half of the year; but as this represents a reversal of a Project impact, this does not constitute a violation of the antidegradation policy. Current modeling results indicate that DO levels will improve throughout the year. The pH levels in the lower Deschutes River may increase slightly for brief periods of time, but these increases, if they occur, are not predicted to have any adverse impact on water quality or on compliance with other standards, particularly the biological criteria standard. As shown by the recently completed modeling of the lower river, the overall impact on water quality will be beneficial. Accordingly, the WCB believes that there will be a reasonable assurance that Project operations, coupled with the mitigation measures listed above, will comply with the Tribal antidegradation policies. The WCB will require implementation of the Water Quality Monitoring and Management Plan to ensure compliance with the antidegradation policy.

8. Naturally-Occurring Conditions

There are a number of issues related to natural conditions that need to be understood and recognized.

(a) Water temperatures are in excess of the current bull trout standard upstream of Lake Billy Chinook in the upper Deschutes River, Crooked River, and Metolius River sub-basins. It is evident that temperatures in the streams of the Deschutes River Basin naturally exceed the temperature standard set for bull trout. Groundwater entering the Crooked River at Opal Springs runs at an average temperature of 53°F (11.67°C) year round according to the Tribal Water Quality Monitoring Program. In the late summer and fall months, groundwater provides the majority of the surface flows entering Lake Billy Chinook from the Crooked River and Deschutes River arms. Therefore, surface water temperatures are naturally above the standard temperature for bull trout.

The spring fed Metolius River temperatures are also in excess of the current bull trout standard during this period. The water entering Lake Billy Chinook has a hydraulic residence time of approximately 2 months, and since the tributary streams exceed 10°C for nearly this long during the summer, it is unlikely that the temperature in the reservoir could remain below 10°C. Lake Simtustus receives nearly all of its inflow from Lake Billy Chinook, so it, too, is unlikely to remain below 10°C. Therefore, stream temperatures in the lower Deschutes River are unlikely to remain below 10 °C.

(b) Dissolved oxygen concentration in the hypolimnion of Lake Billy Chinook and Lake Simtustus follows a pattern that is typical of highly productive lakes. Biological oxidation of organic matter in the hypolimnion during the period of stratification results in depletion of oxygen. In many productive lakes, DO concentration in the hypolimnion can approach zero. In Lake Billy Chinook, however, this extreme condition is avoided because oxygen-containing water from the tributaries flows into the hypolimnion and provides a source of oxygen. In Lake Simtustus, the flow into the hypolimnion comes from the relatively well-aerated mid-depths of Lake Billy Chinook.

(c) The pattern of pH seen in the Project reservoirs and in the Deschutes River below the Project is, like the DO pattern in the reservoirs, a function of the high productivity of the water bodies. Intense photosynthetic activity results in elevated pH levels in the water. This occurs in the reservoirs, in the lower Deschutes River, and in the Deschutes and Crooked rivers above the Project. It is a consequence of the relatively high nutrient concentration in the waters of the Project, which acts to increase biological activity resulting in an increase in pH.

(d) As stated earlier, the Metolius River may be representative of the "natural" nutrient conditions of the streams flowing into the Project reservoirs. The Meltolius River is low in nitrogen and relatively high in phosphorus. The Deschutes and Crooked rivers have similar phosphorus concentrations but higher nitrogen concentrations, suggesting that they are being artificially enriched in nitrogen. The resulting high nutrient concentrations support the profuse algal production, which results in the patterns of DO and pH seen in the Project reservoirs and in the lower Deschutes River. Dense algal blooms would occur even in the absence of nitrogen enrichment because species of cyanobacteria (blue-green algae) present in Lake Billy Chinook are capable of meeting their nitrogen needs from the atmosphere in the presence of sufficient phosphorus. It is unlikely that phosphorus input could be reduced sufficiently to limit the growth of phytoplankton because of the naturally high concentration in inflowing streams.

(e) The current conditions regarding stream flow entering the Project Area may be deemed to be naturally occurring in that the Project does not regulate legal water rights obtained under State Law nor does the Project generate or create additional water above what nature delivers within the context of the entire Deschutes Basin. Given the current appropriations and their individual supporting water right certificate with corresponding priority date, the WCB is convinced that the most effective, equitable and efficient way to increase stream flow below the project is to work within the legal framework to increase flows entering the Project area. This could include use of market based incentives, land acquisitions, water right transfers and other legal methods to secure more water.

(f) Increases in surface stream flow entering the Project due to mitigation measures in the upper basin may increase temperature regimes in the reservoirs and ultimately the Lower Deschutes.

(g) The stability of the Lower Deschutes River is attributable to significant ground water sources within and immediately above the Project area. The lower Deschutes River flows are dominated by groundwater contributions in the late summer and fall months. Diurnal fluctuations are small immediately below the Project mainly due to constant groundwater contributions and present Project Operations. Although both the Deschutes and Crooked Rivers are highly managed in the upper basin, water quality within the Project is moderated to a great extent by the excellent quality and quantity of groundwater entering within the vicinity of the Project.

The WCB believes that naturally-occurring temperatures and nutrient levels may be adversely and indirectly affecting water quality within and downstream of the Project. The WCB has taken these facts into account in making their findings.

9. Spill and Waste Management

The Joint Applicants shall implement its Project-specific Oil Spill Prevention, Control and Countermeasure (SPCC) Plan and Waste Management Guidelines. The SPCC Plan and Waste Management Guidelines shall be kept current. In the event of a spill or release or threatened spill or release to Tribal waters, Joint Applicants shall immediately implement the site's SPCC plan, modified SPCC plan or other applicable contingency plan and notify the Oregon Emergency Response System (OERS) at 1-800-452-0311, Tribal Fire & Safety Office at (541) 553-1634, and the Natural Resources Department at (541) 553-2001.

10. § 401 Certification Modification

Subject to the provisions of Ordinance 80 and 81, the WCB may reconsider and add or alter conditions to the §401 Certification as necessary to address changes in conditions or knowledge or to address any failure of conditions herein to protect water quality and beneficial uses. In accordance with the Clean Water Act §401, any added or altered condition shall, so long as it is in effect, become a condition of any federal license or permit that is thereafter issued for the Project. Ordinance 81 provides a mechanism for appropriate changes to the conditions established in this §401 Certificate. With respect to an existing federal license or permit for the Project, the WCB may petition the federal agency to incorporate the added or altered condition in the federal license or permit.

11. Project Changes

The Joint Applicants must obtain the WCB review and approval before undertaking any change to the Project that might significantly affect water quality, including changes to Project operation and flows.

12. Project Repair or Maintenance

The Joint Applicants must obtain the WCB review and approval before undertaking Project repair or maintenance activities that might significantly affect water quality. The WCB may, at Joint Applicants' request, provide prior approval of such repair and maintenance activities on a periodic or ongoing basis.

13. Costs for TEO and WCB Oversight

In accordance with Tribal Ordinances 80 and 81, Joint Applicants shall pay a project-specific fee for the WCB and the TEO's costs of overseeing implementation of this §401 Certification. The fee shall be \$24,000 annually (2002 dollars indexed to the Federal Inflation Rate) made payable to "Tribal Environmental Office, Natural Resource Department" and due on July 1 of each year after issuance of this Certificate. If this fee

Project No. 2030-036

142

amount is found to be in excess of needs or inadequate to cover costs incurred, the Water Control Board may change the annual fee charged after consultation with the Joint Applicants.

14. Project Inspection

The Joint Applicants shall allow the WCB and TEO or other designated representative such access as necessary to inspect the Project area at reasonable times to monitor compliance with certification conditions.

15. Notification

The Joint Applicants will notify the WCB and the TEO of any future changes in the project or operation of the project.

16. Posting of Certification

A copy of this certification shall be prominently posted within the project powerhouse.

The Joint Applicants have provided reasonable assurances that the Project will be managed and operated in a manner that will not violate applicable tribal water quality standards. The Water Control Board as the delegated authority of Tribal Council of the Confederated Tribes of the Warm Springs Reservation of Oregon is reasonably assured that compliance with the certification conditions contained herein will maintain the Project consistent with applicable provisions of Sections 301, 302, 303, 306, and 307 of the Federal Clean Water Act, Tribal water quality standards, and other appropriate requirements of Tribal law related to water quality. No additional special requirements, aside from those already listed above, are needed to meet the requirements of the Tribal Water Code.

APPENDIX C

U.S. Fish and Wildlife Service Section 18 Fishway Prescriptions

The fishway prescriptions are identical to Proposed Articles 17-33 and 38 of Exhibit A of the Settlement Agreement. For ease of reference, we include the numbering system used in the Settlement Agreement.

1. Fish Passage Plan (Proposed Article 17)

The Licensees shall implement the Fish Passage Plan, Exhibit D to the Settlement Agreement, approved in Ordering Paragraph [B(2)], including but not limited to the measures described in paragraphs (a) through (d) of this article.

(a) The Licensees shall implement the Fish Passage Plan to establish self-sustaining harvestable anadromous fish runs of Chinook, steelhead and sockeye above the Project. The anadromous fish that are reintroduced shall pose acceptable minimal risks of fish disease agent introduction. The target population sizes to be used for self-sustaining harvestable runs of each species will be those developed by the Oregon Department of Fish and Wildlife (ODFW) and Confederated Tribes of the Warm Springs Reservation Branch of Natural Resources (CTWS BNR), in conjunction with the Licensees and the Fish Committee, based on historic information, modeling, habitat production capacity estimates, and research results.

(b) The Licensees shall provide for safe, timely and effective upstream and downstream fish passage of adult and juvenile life stages of spring and fall Chinook, summer steelhead, sockeye salmon, bull trout, rainbow trout, and mountain whitefish.

(c) The Licensees shall implement a three-phase fish passage program, including sequential step-by-step implementation with clearly stated targets, accomplishments, consultation, and prerequisite requirements for each phase. The three phases are Experimental, Interim, and Final.

(i) The Experimental Passage Phase is the current stage of fish passage at the Project and includes but is not limited to modeling of currents in and water withdrawal from Lake Billy Chinook, conceptual designs for downstream passage facilities at Round Butte Dam, Pelton Fish Trap improvements, juvenile migration studies in Lake Billy Chinook, fish health monitoring, approval of the Fish Health Management program and stock selection of species.

Project No. 2030-036

144

(ii) The Interim Passage Phase shall include investigations of fish passage methods and construction of selective water withdrawal (SWW) facilities and temporary and permanent downstream passage facilities at Round Butte Dam. Actions and adaptive management studies for this phase shall include but are not limited to:

- (1) Evaluation of the Round Butte Dam SWW system;
- (2) Hydraulic and biological evaluation of the Round Butte Dam temporary and permanent downstream collection and fish handling facilities;
- (3) Biological evaluation of the adult fish release facility;
- (4) Modification and reactivation of the Pelton Dam historical downstream migrant facility;
- (5) Conducting predation studies in Lake Billy Chinook; and
- (6) Conducting fish health monitoring and evaluation.

(iii) The Final Passage Phase shall include actions and adaptive management studies for feasibility determination, development and construction of permanent upstream fish passage facilities, contingent on the achievement of successful downstream passage at the Project. These actions and studies shall include:

- (1) Reactivation and evaluation of the Pelton Fish Ladder for volitional upstream fish passage;
- (2) Construction of new ponds or facilities to rear juvenile spring Chinook or construction of a new ladder to retain or replace existing spring Chinook rearing capacity;
- (3) Construction of a new fish ladder, or other volitional upstream fish passage facility, at Round Butte Dam; and
- (4) Continued monitoring of the success, and improvement if necessary, of fish passage for all species.

(d) The Licensees shall conduct effectiveness monitoring, annual work plans, and a phased approach that includes:

(i) A specific schedule of timelines, including Testing and Verification studies, study results, and decisions;

- (ii) Analysis of self-sustaining harvestable anadromous fish runs with the use of life cycle models and evaluation of passage efficiencies and survival estimates for the different life history stages of each species;
- (iii) Establishment of performance measures and monitoring success towards achieving performance measures;
- (iv) Evaluation of spawning and rearing and movement of re-introduced fish species;
- (v) Evaluation of movement of native resident fish species upstream and downstream through Project facilities and reservoirs;
- (vi) Trap and haul of adult fish subject to the long-term goal of volitional upstream fish passage, which will eventually require construction, evaluation, and monitoring of upstream collection facilities, if determined to be feasible;
- (vii) During initial implementation, capturing and marking out migrating smolts from above the Project so that they may be differentiated from other returning adults in subsequent years;
- (viii) Continued reservoir and drogue studies to refine operations and implementation of structural changes that will assist juvenile migration through Lake Billy Chinook;
- (ix) Annual evaluation of stock performance success via outmigrant escapement and adult returns, including periodic evaluation and validation of the model results to determine the efficacy of the passage program;
- (x) Preparation of design specifications for fish passage facilities in consultation with the Fish Committee and with approval by the appropriate Fish Agencies pursuant to their respective statutory authorities; and
- (xi) Fish passage standards and monitoring, evaluation and reporting requirements.

2. Fish Passage Criteria and Goals (Proposed Article 18)

- (a) The Licensees shall provide that upstream and downstream passage facilities will be functional during all months of the year to provide safe, timely and effective passage for resident and anadromous fish.

Project No. 2030-036

146

(b) The following table summarizes the criteria and goals for safe, timely and effective downstream and upstream passage for fish.

Criteria And Goals For Safe, Timely And Effective Downstream And Upstream Passage	
Item	Criteria and Goals
1. Screen Hydraulic Criteria	NOAA Fisheries smolt criteria (as provided in Article 22)
2. Downstream Passage Facility Survival (from Round Butte collection to lower Deschutes River release point)	93 percent smolt survival for temporary facility during first five years of operations. 96 percent smolt survival for permanent facility.
3. Upstream Passage Facility Survival (from lower Deschutes River collection point through Adult Release Facility)	95 percent during first five years of operations. 98 percent after five years.
4. Round Butte Reservoir Downstream Passage Associated with Temporary Passage Facilities	>50 percent of a statistically significant sample of tagged steelhead or spring Chinook outmigrants from any Project tributary averaged over four years of study.
5. Round Butte Reservoir Downstream Passage Associated with Permanent Collection Facilities	>75 percent survival of PIT-tagged smolts calculated as a rolling 4-year average during the first 12 years.

3. Fish Passage Schedule (Proposed Article 19)

The Licensees shall implement the comprehensive schedule for design, construction, operations and monitoring of upstream and downstream passage facilities included in the Fish Passage Plan, Exhibit D to the Settlement Agreement, approved in Ordering Paragraph [B(2)].

4. Phased Construction of Selective Water Withdrawal and Downstream Fish Passage Facilities (Proposed Article 20)

(a) The Licensees shall prepare, in consultation with the Fish Committee and with approval by the appropriate Fish Agencies pursuant to their respective statutory authorities, and file with the Commission a design and schedule to construct the selective water withdrawal and downstream passage facilities in the following two phases in accordance with the approved schedule: (1) construction of the selective water withdrawal structure, which shall include a temporary downstream passage facility and (2) construction of the permanent downstream passage facility. The temporary and permanent facilities shall both include a sampling area to support biological evaluation of the fish screens and fish bypass facilities, and a mechanical screen cleaner or some other suitable device to prevent the accumulation of sediment and debris that might otherwise impair screen function and cause the delay, injury, or mortality of downstream migrating fish at Round Butte Dam. Upon Commission approval, the Licensees shall construct the selective water withdrawal ("SWW") and downstream passage facilities.

(b) The Licensees shall install and operate a permanent downstream fishway that meets National Marine Fisheries Service smolt criteria within the forebay at the Round Butte Dam, including fish screens, guidance devices, and fish bypass facilities as described in the Fish Passage Plan. The Licensees shall construct permanent downstream passage facilities after determining, in consultation with the Fish Committee, Oregon Department of Environmental Quality, and CTWS Water Control Board, that the blend of surface/deep water withdrawal through the selective water withdrawal facility will:

(a) satisfy the criteria for safe, timely and effective downstream passage associated with temporary passage facilities set forth in Article 18; and (b) currently meet water quality criteria set forth in the 401 certificates, or likely meet the water quality criteria within a reasonable time through continued iterative adjustments of the SWW system as constructed with permanent downstream passage facilities and/or through implementation of other water quality management strategies. The Licensees shall evaluate downstream movement as described in the Fish Passage Plan.

(c) The Licensees shall notify the Fish Committee in writing when the downstream fishways are fully operational. Operation, maintenance, and monitoring of downstream fishways shall be conducted in accordance with the Downstream Fishway Operation and Maintenance Plan and Downstream Fishway Monitoring Plan, which the Licensees shall file with the Commission after consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities. Upon Commission approval and coincident with the initiation of downstream fishway operations, the Licensees shall begin implementation of the plans.

5. Downstream Passage Facilities At Round Butte Dam (Proposed Article 21)

The Licensees shall submit for the review by the Fish Committee, and for approval by the appropriate Fish Agencies pursuant to their respective statutory authorities, the results of all downstream fishway design investigations, preliminary design plans and specifications, and final design plans and specifications for the construction and operation of temporary and permanent downstream fishways at Round Butte Dam to meet National Marine Fisheries Service smolt criteria. To the extent not otherwise completed as Interim Measures as described in Exhibit B to the Settlement Agreement and reported to the Commission pursuant to Article 41, the Licensees shall complete the following modeling and design steps prior to the construction of the selective water withdrawal (SWW) facilities and the downstream fish passage facilities:

(a) ***Constructability and Feasibility:*** Constructability/feasibility design is the first step needed to select a design option and facility location.

Project No. 2030-036

148

(b) **Design Consultation:** After the constructability/feasibility design is complete and a preferred option is selected, the Licensees shall consult with the Fish Committee, Oregon Department of Environmental Quality, and the Confederated Tribes of the Warm Springs Water Control Board prior to starting detailed design.

(c) **Modeling:** If the constructability/feasibility studies do not result in a clear cut recommended design selection, then computational fluid dynamics (CFD) modeling may be used to provide additional input into the selection.

(d) **Design selection:** If the CFD modeling is not required to make the design selection, CFD modeling and the progression to the 25% design stage will be conducted concurrently. The CFD modeling results will be used to optimize facility geometry and to review design features to provide the best attraction currents in the forebay and around the facility.

(e) **Physical Model:** After the 25% design stage and the CFD modeling have been completed, the results will be used to construct a physical model of the structure. The primary purpose of the physical modeling is to investigate the internal hydraulics of the structure and to evaluate entrance hydraulic conditions. Concurrently, the design will progress to the 50% stage.

(f) **Design Consultation and Review:** After the physical modeling is complete and the design has progressed to 50%, consultation with the Fish Committee (and with the Commission for dam safety purposes) will be undertaken prior to proceeding with further design.

(g) **Final Consultation:** After consultation is complete, the design will progress to 90%, and then to final status. The Licensees shall file the final design with the Commission after consultation with the Fish Committee and with approval by the appropriate Fish Agencies pursuant to their respective statutory authorities. Upon Commission approval, the Licensees shall construct the SWW and temporary downstream passage facilities.

6. Criteria for Downstream Passage Screen Design (Proposed Article 22)

(a) The downstream passage facilities at Round Butte Dam shall meet the National Marine Fisheries Service (NOAA Fisheries) smolt criteria; however, the facilities' exclusion plates do not have to meet the NOAA Fisheries criteria for sweeping velocity and contact time.

(b) The smolt criteria include, but are not limited to, a maximum approach velocity perpendicular to the screens and exclusion plate of 0.80 feet per second (fps), screen openings no larger than 0.25 inches, a screen sweeping velocity component no less than 0.80 fps, and a screen contact time no greater than 60 seconds. Due to the size of the structure and the experimental nature of safely attracting and capturing juvenile migrants from Lake Billy Chinook, some components of the fish screen and bypass system may require flexibility to design and construct to NOAA Fisheries smolt criteria, and the Licensees shall design the fish screening and collection facilities in consultation with the Fish Committee based on the best available scientific information.

(c) The Licensees shall design screening facilities to screen less than 14,000 cfs only if water quality modeling verifies that flows above 9,000 cfs can be routed through the deep intake without impact to the Project's ability to meet water quality standards and without detrimental impact to the flow pattern and fish attraction in Lake Billy Chinook.

7. Round Butte Deep Exclusion Screen (Proposed Article 23)

(a) The Licensees shall design the Round Butte deep exclusion screen to meet National Marine Fisheries Service (NOAA Fisheries) smolt criteria except for the criteria for sweeping velocity and contact time. In addition, outmigrant collection facilities will not be required at the deep exclusion screen. The Licensees shall evaluate hydraulic performance as soon as possible after the deep exclusion screen has been installed. If the screen does not meet applicable NOAA Fisheries smolt criteria at full hydraulic capacity, the Licensees shall take any necessary measures to meet applicable NOAA Fisheries smolt criteria. The Licensees shall continuously monitor differential pressure through the deep exclusion screen while the lower withdrawal system is in operation.

(b) The Licensees shall conduct studies of fish impingement at the Round Butte deep exclusion screen. Monitoring will be conducted during the first year after installation of the deep exclusion screen when deepwater withdrawal has been initiated, and when deepwater withdrawal is maximized. The duration of monitoring will depend on the monitoring method selected, but must be for a period sufficient for evaluating the possibility of impingement.

(c) The Licensees shall monitor the hydrodynamic and biological effects of Project operations during the first season after installation of permanent screens for the Round Butte downstream fish passage facility, and at least once every five years thereafter. The Licensees shall, in consultation with the Fish Committee, evaluate the need for additional monitoring based on the previous monitoring data.

(d) If the monitoring indicates that there is impingement of fish at the Round Butte deep exclusion screen, the Licensees shall consult with the Fish Committee to determine if impingement is significant because it impedes the Licensees' ability to achieve the objectives for Interim and Permanent Downstream Passage. If the Fish Committee determines that the effects are significant, the Licensees shall, in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective authorities, take any feasible measures or implement modifications within their control that are necessary to reduce impingement below the level of significance. These measures include but are not limited to operations modifications, cleaning system modifications, louver adjustments, and deterrent systems such as strobe lights or sound to keep fish away from the exclusion screening. The Licensees shall re-evaluate the facility the next time deepwater withdrawal has been initiated or maximized. If there are no feasible structural or operational measures within the Licensees' control that will reduce impingement below significant levels, the Licensees shall, in consultation with the Fish Committee, investigate and implement alternative mitigation measures.

8. Downstream Passage Facility Pumped Attraction (Proposed Article 24)

The Licensees shall design the permanent downstream collection facility at Round Butte Dam to include the ability to add pumps with a total capacity of 3,000 cfs and all appurtenant devices. The Licensees shall, before construction of the permanent downstream collection facility, prepare and provide the Fish Committee a report on the need to add pumped attraction flow. The report shall be based on information gathered during the Testing and Verification studies pursuant to Article 29 and prepared in consultation with the Fish Committee. If the Fish Agencies conclude that it is necessary to add pumped attraction flow, the Licensees shall, in consultation with the Fish Committee and with approval by the appropriate Fish Agencies pursuant to their respective statutory authorities, develop a plan to design, construct, and operate pumps to provide appropriate attraction flow to the permanent downstream collection facilities. Upon approval by the appropriate Fish Agencies pursuant to their respective statutory authorities, the Licensees shall submit the plan to the Commission for approval. Upon Commission approval, the Licensees shall implement the plan.

9. Trap and Haul Facilities (Proposed Article 25)

(a) The Licensees shall provide upstream passage using trap and haul until volitional upstream passage is implemented pursuant to provisions of the Fish Passage Plan.

(b) The Licensees shall, in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, file with the Commission a final monitoring plan for the operation and maintenance of trap-and-haul fishways at the Pelton Round Butte Project. The plan shall

Project No. 2030-036

151

provide for the submission of an annual monitoring report to the Fish Committee for the duration of the operation of the interim trap-and-haul fishways. Upon Commission approval, the Licensees shall implement the plan.

(c) The Licensees shall, in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, file with the Commission a plan for conducting tests of upstream passage facility survival using standard methodology for evaluation of direct injury and mortality, and other factors. The plan shall provide that, in consultation with the Fish Committee the Licensees shall take any feasible measures or implement modifications within their control that are necessary to meet the 95 percent survival standard during the first five years of operations, and the 98 percent survival standard after five years. This survival standard applies to collection at the Pelton Trap, transportation to the adult release facility, and release through the adult release facility. After correcting any deficiencies, the Licensees shall re-test the facilities to ensure compliance with the applicable upstream passage facility survival standard. After compliance with the upstream passage facility survival standard is verified, additional re-testing will only be required if deficiencies are observed. The plan will identify the methods of observation used to detect deficiencies through long-term monitoring. Upon Commission approval, the Licensees shall implement the plan.

10. Adult Release Facility (Proposed Article 26)

(a) ***Design and Construction of Adult Release Facility.*** The Licensees shall, in consultation with the Fish Committee and with approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, develop and file with the Commission preliminary design, final design, and construction plans for an Adult Release Facility at the Round Butte forebay. Upon Commission approval, the Licensees shall implement the plans.

(b) ***Operation of Adult Release Facility.*** The Licensees shall, in consultation with the Fish Committee and with approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, develop and file with the Commission an operation and maintenance plan for the Adult Release Facility for the safe, timely and effective upstream passage of anadromous fish when Lake Billy Chinook is thermally stratified. Upon Commission approval, the Licensees shall implement the plan.

(c) ***Monitoring and Evaluation of Adult Release Facility.*** The Licensees shall, in consultation with the Fish Committee and with approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, develop and file with the Commission a monitoring and evaluation plan for the Adult Release Facility. Upon Commission approval, the Licensees shall implement the plan.

(d) ***Modifications to Adult Release Facility.*** The Licensees shall prepare and provide the Fish Committee reports in accordance with the monitoring and evaluation plan for the Adult Release Facility. The reports shall be based on monitoring of the Adult Release Facility, shall describe any possible need to modify the Adult Release Facility, and shall be prepared in consultation with the Fish Committee. If the Fish Agencies conclude that the Adult Release Facility must be modified to ensure safe, timely, and effective upstream passage, the Licensees shall, in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, develop a plan to modify the Adult Release Facility to ensure safe, timely, and effective upstream passage, which plan may include, but need not be limited to, measures or modifications required to meet the survival standard applicable to collection at the Pelton Fish Trap, transportation to the Adult Release Facility, and release through this facility into Lake Billy Chinook. Upon approval by the appropriate Fish Agencies pursuant to their respective statutory authorities, the Licensees shall submit the plan to the Commission for approval. Upon Commission approval, the Licensees shall implement the plan.

11. Volitional Upstream Passage (Proposed Article 27)

(a) Following the installation of the permanent downstream passage facilities at Round Butte Dam and within 24 months of when the downstream survival targets in the Fish Passage Plan for Lake Billy Chinook have been achieved, the Licensees shall conduct a study and provide the Fish Committee a report on the feasibility of volitional upstream passage. The scope of the feasibility study shall be determined in consultation with the Fish Committee. Factors to be addressed in the study, shall include, but not be limited to:

- (i) Engineering feasibility;
- (ii) Biological effectiveness, including but not limited to risk of disease transfer and stray rate for out-of-basin fish;
- (iii) Cost;
- (iv) Performance, including efficiency, of the existing trap-and-haul operation.

(b) Following submission of this report to the Fish Committee, the Licensees shall prepare a plan to implement volitional upstream passage at the Project, which plan shall include appropriate testing and verification studies, unless the appropriate Fish Agencies determine pursuant to their respective statutory authorities that volitional upstream passage facilities should not be installed because:

Project No. 2030-036

153

(i) Oregon Department of Fish and Wildlife (ODFW) and Confederated Tribes of the Warm Springs Reservation Branch of Natural Resources (CTWS BNR) have determined that the risk of disease transfer is too great,

(ii) The stray rate for out of basin fish is not acceptable,

(iii) Volitional upstream passage is infeasible, as determined utilizing the results of the feasibility study, or

(iv) It is preferable, due to concerns with the state of the art for volitional upstream passage facilities combined with high efficacy of trap and haul operations, to continue the trap-and-haul operation for some additional specified period of time.

The plan shall be completed within 24 months of the Fish Agencies' determination that volitional upstream passage should proceed, and shall be prepared in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities. Upon approval by the Fish Agencies, the Licensees shall file the plan with the Commission. Upon Commission approval, the Licensees shall implement the plan.

(c) Upon any determination pursuant to paragraph (b) that volitional upstream passage should not be installed for the reasons specified in paragraph (b), the Licensees shall, within six months of such determination, and in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, file with the Commission a plan to continue trap-and-haul operations for a specified number of years and to conduct a future feasibility investigation as provided in paragraph (a). During any such continued trap-and-haul operation, the Licensees shall continue to monitor survival as required by Article 25 and shall take any feasible measures or implement modifications within their control to the trap-and-haul facilities that are necessary to comply with the survival standard in Article 25. Upon Commission approval, the Licensees shall implement the plan.

12. Passage at Pelton Dam (Proposed Article 28)

(a) The Licensees shall transport all juvenile salmonids captured at the Round Butte downstream passage facility during the primary emigration period (February 1 through July 31) to the lower Deschutes River, bypassing Lake Simtustus and the Reregulating Reservoir. During the remainder of the year (August 1 through January 31), the Licensees shall, at the request of the Fish Committee, transport downstream-migrating salmonids into Lake Simtustus to utilize the lentic habitat it provides.

(b) If downstream-migrating salmonids are transported into Lake Simtustus, the Licensees shall, in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, file with the Commission a plan to upgrade the Round Butte Dam east side upstream fish trap at the head of Lake Simtustus, and operate it annually for part or all of the period May 1 through September 30 to capture and transport maturing adult resident salmonids upstream for release into Lake Billy Chinook. Upon Commission approval, the Licensees shall implement the plan.

(c) If downstream-migrating salmonids are transported into Lake Simtustus, the Licensees shall, in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, file with the Commission a plan to install a guidance net system at the Pelton Dam and shall operate the Pelton downstream passage facility (Pelton Skimmer) during part or all of the primary migration season (February 1 through July 31) to transport downstream migrants to the lower Deschutes River. Upon Commission approval, the Licensees shall implement the plan.

13. Testing and Verification Studies (Proposed Article 29)

(a) The Licensees shall, within one year of license issuance, file with the Commission a schedule for the development of plans for Testing and Verification studies as described in this Article and in Appendix III of the Fish Passage Plan, Exhibit D to the Settlement Agreement, approved in Ordering Paragraph [B(2)]. The Licensees shall develop the schedule in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities.

(b) Upon Commission approval of the schedule, the Licensees shall develop the Testing and Verification study plans in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities. The study plans shall provide that the Licensees shall conduct these studies with continued involvement of the Fish Committee through the annual work planning and reporting process. Each study plan will include objectives, tasks and evaluation/decision criteria. Where appropriate, study plans will be designed to evaluate the effectiveness of individual fish passage facilities in achieving the criteria and goals set forth in Articles 18 and 22. Such effectiveness evaluations shall include, at a minimum, the number of fish, by species and life stage, captured and released by the facility and a record of observations on the physical condition of the fish using the facility fishways. The Licensees shall develop Test and Verification study plans for the following study areas:

- (i) Facility Evaluation;
- (ii) Physical Reservoir Changes with Selective Water Withdrawal;

Project No. 2030-036

155

- (iii) Juvenile Salmonid Studies – Reintroduction of Anadromous Stocks Upstream of the Project;
- (iv) Juvenile Salmonid Studies – Rearing, Juvenile Densities, Habitat;
- (v) Juvenile Salmonid Studies – Juvenile Migration;
- (vi) Juvenile Salmonid Studies – Reservoir Survival/Predation, Fishery, Disease;
- (vii) Juvenile Salmonid Studies – Round Butte Dam Juvenile Collection, Downstream Transportation and Release;
- (viii) Adult Salmonid Studies – Adult Upstream Trap-and-Haul and Adult Release Facility; and
- (ix) Adult Salmonid Studies – Adult Migration/Survival/Spawning.

Study plans for multi-year studies shall provide that the Licensees may implement minor modifications to the study methodology in consultation with the Fish Committee. The need for any such minor modifications to the study methodology will be described in the annual progress report and will be based on the results of the study to date. Following approval by the appropriate Fish Agencies pursuant to their respective statutory authorities, the Licensees shall file the study plans with the Commission. Upon Commission approval, the Licensees shall implement the plans.

(c) Based on results of the individual Testing and Verification studies, the Licensees shall, after consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, file plans with the Commission for making any modifications to the facilities needed to ensure safe, timely and effective fish passage. Upon Commission approval, the Licensees shall implement the plans.

14. Modification of Downstream Facilities (Proposed Article 30)

The Licensees shall, in consultation with the Fish Committee and with approval by the appropriate Fish Agencies pursuant to their respective statutory authorities, develop plans for measures or modifications to the existing facilities needed to achieve the criteria and goals for safe, timely and effective fish passage set forth in Articles 18 and 22. The Licensees shall file such plans with the Commission and upon approval implement the measures or modifications.

15. Long-Term Monitoring of Downstream Collection Facilities (Proposed Article 31)

Within one year after activating the permanent downstream collection facilities at Round Butte Dam, the Licensees shall file with the Commission, after consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, a plan for a long-term program to monitor downstream fish passage performance, as described in Appendix IV of the approved Fish Passage Plan, Exhibit D to the Settlement Agreement, approved in Ordering Paragraph [B(2)]. The plan shall provide that the Licensees shall begin the long-term monitoring of the downstream passage facilities as soon as practicable after the Testing and Verification studies have demonstrated that the permanent downstream collection facilities are meeting the survival criteria and goals set forth in Article 18. Upon Commission approval, the Licensees shall implement the plan.

16. Annual Work Plans and Reports (Proposed Article 32)

(a) The Licensees shall utilize annual work plans to document actions to be implemented, develop monitoring and evaluation studies, and propose management, monitoring and evaluation strategies for the coming year consistent with the Fish Passage Plan. The annual work plans shall include separate study plans for each Testing and Verification study being conducted. The Licensees shall issue a draft annual work plan to the Fish Committee for review by no later than January 1, and based on consultation with the Fish Committee shall issue to the Fish Committee a final annual work plan by April 1.

(b) The Licensees shall also file an annual report with the Commission before June 1 of each year, documenting the activities of the previous year. The annual report will follow the format of the previously approved annual work plan. The annual report will include, but not be limited to:

- (i) Numbers of fish by species moved upstream and downstream.
- (ii) Upstream and downstream passage survival rates.
- (iii) Estimates of fish mortality by species associated with the fish passage facilities.
- (iv) A description and evaluation of any supplementation programs.
- (v) Any changes in the work plan from adaptive management recommendations to the fish passage program that might resolve problems that have been identified.

Project No. 2030-036

157

17. Fishway Maintenance (Proposed Article 33)

The Licensees shall keep all fishways in proper order and shall keep all fishway areas clear of trash, sediment, logs, debris, and other material that would hinder passage. The Licensees shall perform maintenance in sufficient time before a migratory period such that fishways can be tested and inspected and will operate effectively prior to and during the migratory periods.

18. Pacific Lamprey (Proposed Article 38)

The Licensees shall, within one year of license issuance, file with the Commission, after consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, a Pacific lamprey passage evaluation and mitigation plan as described in the approved Fish Passage Plan, Exhibit D to the Settlement Agreement, approved in Ordering Paragraph [B(2)]. Upon Commission approval, the Licensees shall implement the plan.

APPENDIX D

National Marine Fisheries Service Section 18 Fishway Prescriptions

The fishway prescriptions are identical to Proposed Articles 17-33 of Exhibit A of the Settlement Agreement. For ease of reference, we include the numbering system used in the Settlement Agreement.

1. Fish Passage Plan (Article 17)

The Licensees shall implement the Fish Passage Plan, Exhibit D to the Settlement Agreement, approved in Ordering Paragraph [B(2)], including but not limited to the measures described in paragraphs (a) through (d) of this article.

(a) The Licensees shall implement the Fish Passage Plan to establish self-sustaining harvestable anadromous fish runs of Chinook, steelhead and sockeye above the Project. The anadromous fish that are reintroduced shall pose acceptable minimal risks of fish disease agent introduction. The target population sizes to be used for self-sustaining harvestable runs of each species will be those developed by the Oregon Department of Fish and Wildlife (ODFW) and Confederated Tribes of the Warm Springs Reservation Branch of Natural Resources (CTWS BNR), in conjunction with the Licensees and the Fish Committee, based on historic information, modeling, habitat production capacity estimates, and research results.

(b) The Licensees shall provide for safe, timely and effective upstream and downstream fish passage of adult and juvenile life stages of spring and fall Chinook, summer steelhead, sockeye salmon, bull trout, rainbow trout, and mountain whitefish.

(c) The Licensees shall implement a three-phase fish passage program, including sequential step-by-step implementation with clearly stated targets, accomplishments, consultation, and prerequisite requirements for each phase. The three phases are Experimental, Interim, and Final.

(i) The Experimental Passage Phase is the current stage of fish passage at the Project and includes but is not limited to modeling of currents in and water withdrawal from Lake Billy Chinook, conceptual designs for downstream passage facilities at Round Butte Dam, Pelton Fish Trap improvements, juvenile migration studies in Lake Billy Chinook, fish health monitoring, approval of the Fish Health Management program and stock selection of species.

Project No. 2030-036

159

(ii) The Interim Passage Phase shall include investigations of fish passage methods and construction of selective water withdrawal (SWW) facilities and temporary and permanent downstream passage facilities at Round Butte Dam. Actions and adaptive management studies for this phase shall include but are not limited to:

- (1) Evaluation of the Round Butte Dam SWW system;
- (2) Hydraulic and biological evaluation of the Round Butte Dam temporary and permanent downstream collection and fish handling facilities;
- (3) Biological evaluation of the adult fish release facility;
- (4) Modification and reactivation of the Pelton Dam historical downstream migrant facility;
- (5) Conducting predation studies in Lake Billy Chinook; and
- (6) Conducting fish health monitoring and evaluation.

(iii) The Final Passage Phase shall include actions and adaptive management studies for feasibility determination, development and construction of permanent upstream fish passage facilities, contingent on the achievement of successful downstream passage at the Project. These actions and studies shall include:

- (1) Reactivation and evaluation of the Pelton Fish Ladder for volitional upstream fish passage;
- (2) Construction of new ponds or facilities to rear juvenile spring Chinook or construction of a new ladder to retain or replace existing spring Chinook rearing capacity;
- (3) Construction of a new fish ladder, or other volitional upstream fish passage facility, at Round Butte Dam; and
- (4) Continued monitoring of the success, and improvement if necessary, of fish passage for all species.

(d) The Licensees shall conduct effectiveness monitoring, annual work plans, and a phased approach that includes:

(i) A specific schedule of timelines, including Testing and Verification studies, study results, and decisions;

Project No. 2030-036

160

(ii) Analysis of self-sustaining harvestable anadromous fish runs with the use of life cycle models and evaluation of passage efficiencies and survival estimates for the different life history stages of each species;

(iii) Establishment of performance measures and monitoring success towards achieving performance measures;

(iv) Evaluation of spawning and rearing and movement of re-introduced fish species;

(v) Evaluation of movement of native resident fish species upstream and downstream through Project facilities and reservoirs;

(vi) Trap and haul of adult fish subject to the long-term goal of volitional upstream fish passage, which will eventually require construction, evaluation, and monitoring of upstream collection facilities, if determined to be feasible;

(vii) During initial implementation, capturing and marking out migrating smolts from above the Project so that they may be differentiated from other returning adults in subsequent years;

(viii) Continued reservoir and drogue studies to refine operations and implementation of structural changes that will assist juvenile migration through Lake Billy Chinook;

(ix) Annual evaluation of stock performance success via outmigrant escapement and adult returns, including periodic evaluation and validation of the model results to determine the efficacy of the passage program;

(x) Preparation of design specifications for fish passage facilities in consultation with the Fish Committee and with approval by the appropriate Fish Agencies pursuant to their respective statutory authorities; and

(xi) Fish passage standards and monitoring, evaluation and reporting requirements.

2. Fish Passage Criteria and Goals (Article 18)

(a) The Licensees shall provide that upstream and downstream passage facilities will be functional during all months of the year to provide safe, timely and effective passage for resident and anadromous fish.

Project No. 2030-036

161

(b) The following table summarizes the criteria and goals for safe, timely and effective downstream and upstream passage for fish.

Criteria And Goals For Safe, Timely And Effective Downstream And Upstream Passage	
Item	Criteria and Goals
1. Screen Hydraulic Criteria	NOAA Fisheries smolt criteria (as provided in Article 22)
2. Downstream Passage Facility Survival (from Round Butte collection to lower Deschutes River release point)	93 percent smolt survival for temporary facility during first five years of operations. 96 percent smolt survival for permanent facility.
3. Upstream Passage Facility Survival (from lower Deschutes River collection point through Adult Release Facility)	95 percent during first five years of operations. 98 percent after five years.
4. Round Butte Reservoir Downstream Passage Associated with Temporary Passage Facilities	>50 percent of a statistically significant sample of tagged steelhead or spring Chinook outmigrants from any Project tributary averaged over four years of study.
5. Round Butte Reservoir Downstream Passage Associated with Permanent Collection Facilities	>75 percent survival of PIT-tagged smolts calculated as a rolling 4-year average during the first 12 years.

3. Fish Passage Schedule (Proposed Article 19)

The Licensees shall implement the comprehensive schedule for design, construction, operations and monitoring of upstream and downstream passage facilities included in the Fish Passage Plan, Exhibit D to the Settlement Agreement, approved in Ordering Paragraph [B(2)].

4. Phased Construction of Selective Water Withdrawal and Downstream Fish Passage Facilities (Proposed Article 20)

(a) The Licensees shall prepare, in consultation with the Fish Committee and with approval by the appropriate Fish Agencies pursuant to their respective statutory authorities, and file with the Commission a design and schedule to construct the selective water withdrawal and downstream passage facilities in the following two phases in accordance with the approved schedule: (1) construction of the selective water withdrawal structure, which shall include a temporary downstream passage facility and (2) construction of the permanent downstream passage facility. The temporary and permanent facilities shall both include a sampling area to support biological evaluation of the fish screens and fish bypass facilities, and a mechanical screen cleaner or some other suitable device to prevent the accumulation of sediment and debris that might otherwise impair screen function and cause the delay, injury, or mortality of downstream migrating fish at Round Butte Dam. Upon Commission approval, the Licensees shall construct the selective water withdrawal ("SWW") and downstream passage facilities.

(b) The Licensees shall install and operate a permanent downstream fishway that meets National Marine Fisheries Service smolt criteria within the forebay at the Round Butte Dam, including fish screens, guidance devices, and fish bypass facilities as described in the Fish Passage Plan. The Licensees shall construct permanent downstream passage facilities after determining, in consultation with the Fish Committee, Oregon Department of Environmental Quality, and CTWS Water Control Board, that the blend of surface/deep water withdrawal through the selective water withdrawal facility will:

(a) satisfy the criteria for safe, timely and effective downstream passage associated with temporary passage facilities set forth in Article 18; and (b) currently meet water quality criteria set forth in the 401 certificates, or likely meet the water quality criteria within a reasonable time through continued iterative adjustments of the SWW system as constructed with permanent downstream passage facilities and/or through implementation of other water quality management strategies. The Licensees shall evaluate downstream movement as described in the Fish Passage Plan.

(c) The Licensees shall notify the Fish Committee in writing when the downstream fishways are fully operational. Operation, maintenance, and monitoring of downstream fishways shall be conducted in accordance with the Downstream Fishway Operation and Maintenance Plan and Downstream Fishway Monitoring Plan, which the Licensees shall file with the Commission after consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities. Upon Commission approval and coincident with the initiation of downstream fishway operations, the Licensees shall begin implementation of the plans.

5. Downstream Passage Facilities At Round Butte Dam (Proposed Article 21)

The Licensees shall submit for the review by the Fish Committee, and for approval by the appropriate Fish Agencies pursuant to their respective statutory authorities, the results of all downstream fishway design investigations, preliminary design plans and specifications, and final design plans and specifications for the construction and operation of temporary and permanent downstream fishways at Round Butte Dam to meet National Marine Fisheries Service smolt criteria. To the extent not otherwise completed as Interim Measures as described in Exhibit B to the Settlement Agreement and reported to the Commission pursuant to Article 41, the Licensees shall complete the following modeling and design steps prior to the construction of the selective water withdrawal (SWW) facilities and the downstream fish passage facilities:

(a) ***Constructability and Feasibility:*** Constructability/feasibility design is the first step needed to select a design option and facility location.

(b) **Design Consultation:** After the constructability/feasibility design is complete and a preferred option is selected, the Licensees shall consult with the Fish Committee, Oregon Department of Environmental Quality, and the Confederated Tribes of the Warm Springs Water Control Board prior to starting detailed design.

(c) **Modeling:** If the constructability/feasibility studies do not result in a clear cut recommended design selection, then computational fluid dynamics (CFD) modeling may be used to provide additional input into the selection.

(d) **Design selection:** If the CFD modeling is not required to make the design selection, CFD modeling and the progression to the 25% design stage will be conducted concurrently. The CFD modeling results will be used to optimize facility geometry and to review design features to provide the best attraction currents in the forebay and around the facility.

(e) **Physical Model:** After the 25% design stage and the CFD modeling have been completed, the results will be used to construct a physical model of the structure. The primary purpose of the physical modeling is to investigate the internal hydraulics of the structure and to evaluate entrance hydraulic conditions. Concurrently, the design will progress to the 50% stage.

(f) **Design Consultation and Review:** After the physical modeling is complete and the design has progressed to 50%, consultation with the Fish Committee (and with the Commission for dam safety purposes) will be undertaken prior to proceeding with further design.

(g) **Final Consultation:** After consultation is complete, the design will progress to 90%, and then to final status. The Licensees shall file the final design with the Commission after consultation with the Fish Committee and with approval by the appropriate Fish Agencies pursuant to their respective statutory authorities. Upon Commission approval, the Licensees shall construct the SWW and temporary downstream passage facilities.

6. **Criteria for Downstream Passage Screen Design (Proposed Article 22)**

(a) The downstream passage facilities at Round Butte Dam shall meet the National Marine Fisheries Service (NOAA Fisheries) smolt criteria; however, the facilities' exclusion plates do not have to meet the NOAA Fisheries criteria for sweeping velocity and contact time.

(b) The smolt criteria include, but are not limited to, a maximum approach velocity perpendicular to the screens and exclusion plate of 0.80 feet per second (fps), screen openings no larger than 0.25 inches, a screen sweeping velocity component no less than

Project No. 2030-036

164

0.80 fps, and a screen contact time no greater than 60 seconds. Due to the size of the structure and the experimental nature of safely attracting and capturing juvenile migrants from Lake Billy Chinook, some components of the fish screen and bypass system may require flexibility to design and construct to NOAA Fisheries smolt criteria, and the Licensees shall design the fish screening and collection facilities in consultation with the Fish Committee based on the best available scientific information.

(c) The Licensees shall design screening facilities to screen less than 14,000 cfs only if water quality modeling verifies that flows above 9,000 cfs can be routed through the deep intake without impact to the Project's ability to meet water quality standards and without detrimental impact to the flow pattern and fish attraction in Lake Billy Chinook.

7. Round Butte Deep Exclusion Screen (Proposed Article 23)

(a) The Licensees shall design the Round Butte deep exclusion screen to meet National Marine Fisheries Service (NOAA Fisheries) smolt criteria except for the criteria for sweeping velocity and contact time. In addition, outmigrant collection facilities will not be required at the deep exclusion screen. The Licensees shall evaluate hydraulic performance as soon as possible after the deep exclusion screen has been installed. If the screen does not meet applicable NOAA Fisheries smolt criteria at full hydraulic capacity, the Licensees shall take any necessary measures to meet applicable NOAA Fisheries smolt criteria. The Licensees shall continuously monitor differential pressure through the deep exclusion screen while the lower withdrawal system is in operation.

(b) The Licensees shall conduct studies of fish impingement at the Round Butte deep exclusion screen. Monitoring will be conducted during the first year after installation of the deep exclusion screen when deepwater withdrawal has been initiated, and when deepwater withdrawal is maximized. The duration of monitoring will depend on the monitoring method selected, but must be for a period sufficient for evaluating the possibility of impingement.

(c) The Licensees shall monitor the hydrodynamic and biological effects of Project operations during the first season after installation of permanent screens for the Round Butte downstream fish passage facility, and at least once every five years thereafter. The Licensees shall, in consultation with the Fish Committee, evaluate the need for additional monitoring based on the previous monitoring data.

(d) If the monitoring indicates that there is impingement of fish at the Round Butte deep exclusion screen, the Licensees shall consult with the Fish Committee to determine if impingement is significant because it impedes the Licensees' ability to achieve the objectives for Interim and Permanent Downstream Passage. If the Fish Committee determines that the effects are significant, the Licensees shall, in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their

respective authorities, take any feasible measures or implement modifications within their control that are necessary to reduce impingement below the level of significance. These measures include but are not limited to operations modifications, cleaning system modifications, louver adjustments, and deterrent systems such as strobe lights or sound to keep fish away from the exclusion screening. The Licensees shall re-evaluate the facility the next time deepwater withdrawal has been initiated or maximized. If there are no feasible structural or operational measures within the Licensees' control that will reduce impingement below significant levels, the Licensees shall, in consultation with the Fish Committee, investigate and implement alternative mitigation measures.

8. Downstream Passage Facility Pumped Attraction (Proposed Article 24)

The Licensees shall design the permanent downstream collection facility at Round Butte Dam to include the ability to add pumps with a total capacity of 3,000 cfs and all appurtenant devices. The Licensees shall, before construction of the permanent downstream collection facility, prepare and provide the Fish Committee a report on the need to add pumped attraction flow. The report shall be based on information gathered during the Testing and Verification studies pursuant to Article 29 and prepared in consultation with the Fish Committee. If the Fish Agencies conclude that it is necessary to add pumped attraction flow, the Licensees shall, in consultation with the Fish Committee and with approval by the appropriate Fish Agencies pursuant to their respective statutory authorities, develop a plan to design, construct, and operate pumps to provide appropriate attraction flow to the permanent downstream collection facilities. Upon approval by the appropriate Fish Agencies pursuant to their respective statutory authorities, the Licensees shall submit the plan to the Commission for approval. Upon Commission approval, the Licensees shall implement the plan.

9. Trap and Haul Facilities (Proposed Article 25)

(a) The Licensees shall provide upstream passage using trap and haul until volitional upstream passage is implemented pursuant to provisions of the Fish Passage Plan.

(b) The Licensees shall, in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, file with the Commission a final monitoring plan for the operation and maintenance of trap-and-haul fishways at the Pelton Round Butte Project. The plan shall provide for the submission of an annual monitoring report to the Fish Committee for the duration of the operation of the interim trap-and-haul fishways. Upon Commission approval, the Licensees shall implement the plan.

(c) The Licensees shall, in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, file with the Commission a plan for conducting tests of upstream passage facility survival using standard methodology for evaluation of direct injury and mortality, and other factors. The plan shall provide that, in consultation with the Fish Committee the Licensees shall take any feasible measures or implement modifications within their control that are necessary to meet the 95 percent survival standard during the first five years of operations, and the 98 percent survival standard after five years. This survival standard applies to collection at the Pelton Trap, transportation to the adult release facility, and release through the adult release facility. After correcting any deficiencies, the Licensees shall re-test the facilities to ensure compliance with the applicable upstream passage facility survival standard. After compliance with the upstream passage facility survival standard is verified, additional re-testing will only be required if deficiencies are observed. The plan will identify the methods of observation used to detect deficiencies through long-term monitoring. Upon Commission approval, the Licensees shall implement the plan.

10. Adult Release Facility (Proposed Article 26)

(a) *Design and Construction of Adult Release Facility.* The Licensees shall, in consultation with the Fish Committee and with approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, develop and file with the Commission preliminary design, final design, and construction plans for an Adult Release Facility at the Round Butte forebay. Upon Commission approval, the Licensees shall implement the plans.

(b) *Operation of Adult Release Facility.* The Licensees shall, in consultation with the Fish Committee and with approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, develop and file with the Commission an operation and maintenance plan for the Adult Release Facility for the safe, timely and effective upstream passage of anadromous fish when Lake Billy Chinook is thermally stratified. Upon Commission approval, the Licensees shall implement the plan.

(c) *Monitoring and Evaluation of Adult Release Facility.* The Licensees shall, in consultation with the Fish Committee and with approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, develop and file with the Commission a monitoring and evaluation plan for the Adult Release Facility. Upon Commission approval, the Licensees shall implement the plan.

(d) *Modifications to Adult Release Facility.* The Licensees shall prepare and provide the Fish Committee reports in accordance with the monitoring and evaluation plan for the Adult Release Facility. The reports shall be based on monitoring of the Adult Release Facility, shall describe any possible need to modify the Adult Release Facility, and shall

be prepared in consultation with the Fish Committee. If the Fish Agencies conclude that the Adult Release Facility must be modified to ensure safe, timely, and effective upstream passage, the Licensees shall, in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, develop a plan to modify the Adult Release Facility to ensure safe, timely, and effective upstream passage, which plan may include, but need not be limited to, measures or modifications required to meet the survival standard applicable to collection at the Pelton Fish Trap, transportation to the Adult Release Facility, and release through this facility into Lake Billy Chinook. Upon approval by the appropriate Fish Agencies pursuant to their respective statutory authorities, the Licensees shall submit the plan to the Commission for approval. Upon Commission approval, the Licensees shall implement the plan.

11. Volitional Upstream Passage (Proposed Article 27)

(a) Following the installation of the permanent downstream passage facilities at Round Butte Dam and within 24 months of when the downstream survival targets in the Fish Passage Plan for Lake Billy Chinook have been achieved, the Licensees shall conduct a study and provide the Fish Committee a report on the feasibility of volitional upstream passage. The scope of the feasibility study shall be determined in consultation with the Fish Committee. Factors to be addressed in the study, shall include, but not be limited to:

- (i) Engineering feasibility;
- (ii) Biological effectiveness, including but not limited to risk of disease transfer and stray rate for out-of-basin fish;
- (iii) Cost;
- (iv) Performance, including efficiency, of the existing trap-and-haul operation.

(b) Following submission of this report to the Fish Committee, the Licensees shall prepare a plan to implement volitional upstream passage at the Project, which plan shall include appropriate testing and verification studies, unless the appropriate Fish Agencies determine pursuant to their respective statutory authorities that volitional upstream passage facilities should not be installed because:

- (i) Oregon Department of Fish and Wildlife (ODFW) and Confederated Tribes of the Warm Springs Reservation Branch of Natural Resources (CTWS BNR) have determined that the risk of disease transfer is too great,

Project No. 2030-036

168

- (ii) The stray rate for out of basin fish is not acceptable,
- (iii) Volitional upstream passage is infeasible, as determined utilizing the results of the feasibility study, or
- (iv) It is preferable, due to concerns with the state of the art for volitional upstream passage facilities combined with high efficacy of trap and haul operations, to continue the trap-and-haul operation for some additional specified period of time.

The plan shall be completed within 24 months of the Fish Agencies' determination that volitional upstream passage should proceed, and shall be prepared in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities. Upon approval by the Fish Agencies, the Licensees shall file the plan with the Commission. Upon Commission approval, the Licensees shall implement the plan.

- (c) Upon any determination pursuant to paragraph (b) that volitional upstream passage should not be installed for the reasons specified in paragraph (b), the Licensees shall, within six months of such determination, and in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, file with the Commission a plan to continue trap-and-haul operations for a specified number of years and to conduct a future feasibility investigation as provided in paragraph (a). During any such continued trap-and-haul operation, the Licensees shall continue to monitor survival as required by Article 25 and shall take any feasible measures or implement modifications within their control to the trap-and-haul facilities that are necessary to comply with the survival standard in Article 25. Upon Commission approval, the Licensees shall implement the plan.

12. Passage at Pelton Dam (Proposed Article 28)

- (a) The Licensees shall transport all juvenile salmonids captured at the Round Butte downstream passage facility during the primary emigration period (February 1 through July 31) to the lower Deschutes River, bypassing Lake Simtustus and the Reregulating Reservoir. During the remainder of the year (August 1 through January 31), the Licensees shall, at the request of the Fish Committee, transport downstream-migrating salmonids into Lake Simtustus to utilize the lentic habitat it provides.
- (b) If downstream-migrating salmonids are transported into Lake Simtustus, the Licensees shall, in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, file with the Commission a plan to upgrade the Round Butte Dam east side upstream fish trap at the

Project No. 2030-036

169

head of Lake Simtustus, and operate it annually for part or all of the period May 1 through September 30 to capture and transport maturing adult resident salmonids upstream for release into Lake Billy Chinook. Upon Commission approval, the Licensees shall implement the plan.

(c) If downstream-migrating salmonids are transported into Lake Simtustus, the Licensees shall, in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, file with the Commission a plan to install a guidance net system at the Pelton Dam and shall operate the Pelton downstream passage facility (Pelton Skimmer) during part or all of the primary migration season (February 1 through July 31) to transport downstream migrants to the lower Deschutes River. Upon Commission approval, the Licensees shall implement the plan.

13. Testing and Verification Studies (Proposed Article 29)

(a) The Licensees shall, within one year of license issuance, file with the Commission a schedule for the development of plans for Testing and Verification studies as described in this Article and in Appendix III of the Fish Passage Plan, Exhibit D to the Settlement Agreement, approved in Ordering Paragraph [B(2)]. The Licensees shall develop the schedule in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities.

(b) Upon Commission approval of the schedule, the Licensees shall develop the Testing and Verification study plans in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities. The study plans shall provide that the Licensees shall conduct these studies with continued involvement of the Fish Committee through the annual work planning and reporting process. Each study plan will include objectives, tasks and evaluation/decision criteria. Where appropriate, study plans will be designed to evaluate the effectiveness of individual fish passage facilities in achieving the criteria and goals set forth in Articles 18 and 22. Such effectiveness evaluations shall include, at a minimum, the number of fish, by species and life stage, captured and released by the facility and a record of observations on the physical condition of the fish using the facility fishways. The Licensees shall develop Test and Verification study plans for the following study areas:

- (i) Facility Evaluation;
- (ii) Physical Reservoir Changes with Selective Water Withdrawal;
- (iii) Juvenile Salmonid Studies – Reintroduction of Anadromous Stocks Upstream of the Project;

Project No. 2030-036

170

- (iv) Juvenile Salmonid Studies – Rearing, Juvenile Densities, Habitat;
- (v) Juvenile Salmonid Studies – Juvenile Migration;
- (vi) Juvenile Salmonid Studies – Reservoir Survival/Predation, Fishery, Disease;
- (vii) Juvenile Salmonid Studies – Round Butte Dam Juvenile Collection, Downstream Transportation and Release;
- (viii) Adult Salmonid Studies – Adult Upstream Trap-and-Haul and Adult Release Facility; and
- (ix) Adult Salmonid Studies – Adult Migration/Survival/Spawning.

Study plans for multi-year studies shall provide that the Licensees may implement minor modifications to the study methodology in consultation with the Fish Committee. The need for any such minor modifications to the study methodology will be described in the annual progress report and will be based on the results of the study to date. Following approval by the appropriate Fish Agencies pursuant to their respective statutory authorities, the Licensees shall file the study plans with the Commission. Upon Commission approval, the Licensees shall implement the plans.

(c) Based on results of the individual Testing and Verification studies, the Licensees shall, after consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, file plans with the Commission for making any modifications to the facilities needed to ensure safe, timely and effective fish passage. Upon Commission approval, the Licensees shall implement the plans.

14. Modification of Downstream Facilities (Proposed Article 30)

The Licensees shall, in consultation with the Fish Committee and with approval by the appropriate Fish Agencies pursuant to their respective statutory authorities, develop plans for measures or modifications to the existing facilities needed to achieve the criteria and goals for safe, timely and effective fish passage set forth in Articles 18 and 22. The Licensees shall file such plans with the Commission and upon approval implement the measures or modifications.

Project No. 2030-036

171

15. Long-Term Monitoring of Downstream Collection Facilities (Proposed Article 31)

Within one year after activating the permanent downstream collection facilities at Round Butte Dam, the Licensees shall file with the Commission, after consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, a plan for a long-term program to monitor downstream fish passage performance, as described in Appendix IV of the approved Fish Passage Plan, Exhibit D to the Settlement Agreement, approved in Ordering Paragraph [B(2)]. The plan shall provide that the Licensees shall begin the long-term monitoring of the downstream passage facilities as soon as practicable after the Testing and Verification studies have demonstrated that the permanent downstream collection facilities are meeting the survival criteria and goals set forth in Article 18. Upon Commission approval, the Licensees shall implement the plan.

16. Annual Work Plans and Reports (Proposed Article 32)

(a) The Licensees shall utilize annual work plans to document actions to be implemented, develop monitoring and evaluation studies, and propose management, monitoring and evaluation strategies for the coming year consistent with the Fish Passage Plan. The annual work plans shall include separate study plans for each Testing and Verification study being conducted. The Licensees shall issue a draft annual work plan to the Fish Committee for review by no later than January 1, and based on consultation with the Fish Committee shall issue to the Fish Committee a final annual work plan by April 1.

(b) The Licensees shall also file an annual report with the Commission before June 1 of each year, documenting the activities of the previous year. The annual report will follow the format of the previously approved annual work plan. The annual report will include, but not be limited to:

- (i) Numbers of fish by species moved upstream and downstream.
- (ii) Upstream and downstream passage survival rates.
- (iii) Estimates of fish mortality by species associated with the fish passage facilities.
- (iv) A description and evaluation of any supplementation programs.
- (v) Any changes in the work plan from adaptive management recommendations to the fish passage program that might resolve problems that have been identified.

Project No. 2030-036

172

17. Fishway Maintenance (Proposed Article 33)

The Licensees shall keep all fishways in proper order and shall keep all fishway areas clear of trash, sediment, logs, debris, and other material that would hinder passage. The Licensees shall perform maintenance in sufficient time before a migratory period such that fishways can be tested and inspected and will operate effectively prior to and during the migratory periods.

Project No. 2030-036

173

APPENDIX E

National Marine Fisheries Service
Endangered Species Act
Reasonable and Prudent Measures and Terms and Conditions

Filed February 28, 2005

Reasonable and Prudent Measures (Section 9.3 of the Biological Opinion)

- (1) Carry out all protection, mitigation, and enhancement measures identified in the July 13, 2004, Settlement Agreement and its attachments which avoid or minimize effects to MCR steelhead.
- (2) Use the best available science to adaptively manage Project operation, maintenance, and construction activities to avoid or minimize effects to MCR steelhead during the period of the new Project license.

Terms and Conditions (Section 9.3.1 of the Biological Opinion)

- (1) FERC must require the Joint Applicants to construct and operate the Project facilities identified in the July 13, 2004, Settlement Agreement; carry out the Fish Passage Plan; adhere to the Fish Passage Schedule; implement the Testing and Verification studies, Long Term Monitoring, Annual Work Plans and Reports, and Native Fish Monitoring Program; implement the Trout Creek restoration Project, LWD management plan, and gravel augmentation study; and other measures identified in the July 13, 2004, Settlement Agreement.
- (2) FERC must require the Joint Applicants to establish the Fish Committee required by the July 13, 2004, Settlement Agreement, and to adhere to the consultation and dispute resolution provisions of the Settlement Agreement.
- (3) FERC must require the Joint Applicants to comply with all Project construction activity best management practices (App. F, Joint Applicants 2004), including measures to prevent concrete products from entering Project waters, measures to control erosion and sedimentation, and measures to control pollutants of any kind.

APPENDIX F

U.S. Fish and Wildlife Service
Endangered Species Act
Reasonable and Prudent Measures and Terms and Conditions

Filed November 3, 2004

Reasonable and Prudent Measures (Section 7.3 of the Biological Opinion)

- (1) Implement all protection, mitigation, and enhancement measures identified in the July 13, 2004, Settlement Agreement and its attachments which avoid or minimize effects to bull trout.
- (2) Use the best available science to adaptively manage Project operation, maintenance, and construction activities to avoid or minimize effects to the bull trout during the period of the new Project license.

Terms and Conditions (Section 7.4 of the Biological Opinion)

1. To implement reasonable and prudent measure 1:
 - 1.1 The Commission must require the JA's to construct and operate the Project facilities identified in the July 13, 2004, Settlement Agreement, implement the Fish Passage Plan, adhere to the Fish Passage Schedule, implement the Testing and Verification studies, Long-Term Monitoring, Annual Work Plans and Reports, Native Fish Monitoring Program, and other measures identified in the July 13, 2004, Settlement Agreement.
2. To implement reasonable and prudent measure 2:
 - 2.2 The Commission must require the JA's to establish the Fish Committee required by the July 13, 2004, Settlement Agreement, and to adhere to the consultation and dispute resolution provisions of the Settlement Agreement.
 - 2.3 To implement reasonable and prudent measure 2, the Commission must require the JA's to comply with all Project construction activity best management practices, including measures to prevent concrete products from entering Project waters, measures to control erosion and sedimentation, and measures to control pollutants of any kind.

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Portland General Electric Company and
Confederated Tribes of the Warm Springs
Reservation of Oregon

Project No. 2030-036

(Issued June 21, 2005)

KELLIHER, Commissioner, *concurring*:

This order approves a comprehensive Settlement Agreement signed by Portland General Electric Company, the Confederated Tribes of the Warm Springs Reservation of Oregon, and 20 stakeholders in the relicensing process for the Pelton Round Butte Hydroelectric Project. The Settlement Agreement includes proposed license articles embodying the provisions of the Agreement. This order incorporates most of the Settlement Agreement's proposed license articles in the new license issued for the Pelton Round Butte Project.

I join my colleagues in approving the Settlement Agreement and the issuance of a new license for the project. I am writing separately, however, to express concern about the process for deciding whether certain proposed license articles should be incorporated in the license. In some instances, this decision appears to have been based on little more than whether the final environmental impact statement (EIS) found the underlying action to be acceptable.

An EIS is a document reflecting staff's analysis of environmental issues. It is not intended to assess whether a proposed license article should be incorporated into a license issued by the Commission. That decision should be made utilizing jurisprudential standards established by the Commission. The analysis of environmental issues in an EIS does not provide such standards or otherwise utilize them.

The issue of what provisions of settlements may be incorporated into license articles has bedeviled the Commission and the broader hydroelectric community for some time. Accordingly, I want to stress my belief that it is important that the Commission act promptly to provide guidance to parties on this important issue.

Joseph T. Kelliher

Project No. 2030-036

2

EXHIBIT D

PELTON ROUND BUTTE PROJECT

FISH PASSAGE PLAN

PORTLAND GENERAL ELECTRIC COMPANY

and

**THE CONFEDERATED TRIBES OF THE
WARM SPRINGS RESERVATION OF OREGON**

*in conjunction with the
Pelton Round Butte Settlement Working Group*

July 2004

TABLE OF CONTENTS

I.	Introduction.....	1
A.	Overview of the Fish Passage Program	1
B.	Progress to Date	2
II.	Program Goals and Objectives.....	4
A.	Spring-Run Chinook Salmon, Summer-Run Steelhead, and Sockeye Salmon	5
B.	Summer-Run / Fall-Run Chinook Salmon, Pacific Lamprey, Bull Trout, and Rainbow (Redband) Trout.....	5
C.	Additional Objectives — Fish Habitat and Life-History Diversity	6
III.	Background / Framework	6
A.	Context for Reestablishing Fish Passage at the Pelton Round Butte Project	6
1.	Historic Anadromous and Resident Fish Populations above the Project Site	7
2.	Project Construction and Historic Fish Passage Facilities.....	8
3.	Fish Facility Evaluation	10
B.	Relevant Fisheries and Habitat Management Plans.....	11
1.	ODFW Fisheries Management Plans.....	11
2.	CTWS Fisheries and Land Management Plans	11
3.	Federal Forest and Land Management Plans	12
4.	National Wild and Scenic River Plans.....	12
5.	ESA Recovery Plans	13
a.	Bull Trout and Steelhead	13
b.	Salmon: Magnuson-Stevens Fishery Conservation and Management Act (Essential Fish Habitat Provisions).....	14
C.	Conceptual Foundation and EDT Assessment.....	15
D.	Structured Decision Making	15
E.	Relevant Studies to Reduce Uncertainties	16
1.	Disease Agent Transfer.....	16
2.	Downstream Smolt Collection Efficacy	17
3.	Habitat Quality and Quantity	18
4.	Predation	19
5.	Upstream Passage	19
F.	Reservoir and Lower Deschutes River Water Temperature	20
IV.	Program Components.....	22
A.	Adaptive Management and Decision Process.....	23
1.	Overview.....	23
2.	Application of Adaptive Management to the Pelton Round Butte Fish Passage Program	24
a.	Problem Assessment	24
b.	Designing the Fish Passage Plan.....	25
B.	Implementation Schedule / Decision Points	27
1.	Baseline Passage Phase.....	28
a.	Prerequisite Knowledge/Agreements.....	28

b.	Key Program Elements	28
c.	Schedule	29
2.	Experimental Passage Phase	30
a.	Prerequisite Knowledge/Agreements.....	30
b.	Key Program Elements	30
c.	Schedule	31
3.	Interim Passage Phase.....	34
a.	Prerequisite Knowledge/Agreements.....	34
b.	Key Program Elements	35
c.	Schedule	36
d.	Implementation of Selective Water Withdrawal and Fish Passage at Round Butte Dam – Overall Sequencing, Facility Design Criteria, and Review / Approval Requirements	39
(1)	Design	40
(2)	Construction.....	41
(3)	Facility Design Criteria and Considerations.....	44
(4)	Consultation, Review and Approval.....	45
e.	Description of Major Activities	46
(1)	Constructability/Feasibility Evaluation and Preliminary Design of Round Butte Selective Water Withdrawal (SWW) and Downstream Fish Passage Facilities.....	46
(2)	Reintroduction Plan	47
(3)	Numerical and Physical Modeling for Selected SWW / Downstream Fish Passage System.....	47
(4)	Geotechnical Field Work and Final Design Recommendation.....	47
(5)	SWW / Fish Passage System Design, Consultation and Permitting.....	48
(6)	SWW / Fish Passage System Construction.....	48
(7)	Round Butte Adult Release Facility Design and Construction.....	49
(8)	Upgrade and Reactivation of Existing Fish Passage Facilities in Lake Simtustus.....	49
(9)	Testing and Verification of SWW and Temporary Round Butte Dam Downstream Fish Passage Facilities.....	51
(10)	Operation, Monitoring, and Evaluation of Upstream Passage Facilities	59
(11)	Permanent Round Butte Downstream Passage Facilities Design and Construction.....	61
(12)	Testing and Evaluation of Permanent Round Butte Fish Passage Facilities	61
(13)	Modification of Downstream Facilities	62
(14)	Evaluation of Adult Fish Returning to the Pelton Fish Trap, Adult Migration and Spawning Success	63
(15)	Evaluate Feasibility of Volitional Upstream Passage Facilities ...	63
4.	Final Passage Phase	64
a.	Prerequisite Knowledge/Agreements.....	64
b.	Key Program Elements	64
c.	Schedule	65

C.	Measures of Success	66
1.	Interim Passage Phase Measures of Success	66
a.	Downstream Passage Efficiency for Round Butte Dam Facilities and Lake Billy Chinook.....	66
(1)	Screen Hydraulic Standards for Temporary and Permanent Facilities	68
(2)	Downstream Passage Survival for Temporary and Permanent Facilities	68
(3)	Reservoir Downstream Passage Survival Associated with Temporary Facilities.....	68
(4)	Reservoir Downstream Passage Survival Associated with Permanent Passage Facilities	70
b.	Upstream Passage Efficiency (Trap-and-Haul Approach)	72
c.	Decision-Making Criteria for Moving to Volitional Upstream Passage ..	73
2.	Final Passage Phase — Measures of Success for Volitional Upstream Passage	75
3.	Failure to Achieve Measures of Success with Temporary Fish Passage Facilities	75
4.	Failure to Achieve Measures of Success with Permanent Fish Passage Facilities	78
D.	Stock Selection.....	80
1.	Chinook Salmon.....	80
a.	Background	80
b.	Preferred Chinook Salmon Stocks for Reintroduction Upstream of the Project	81
(1)	Spring Chinook Salmon.....	81
(2)	Fall Chinook Salmon	81
2.	Steelhead.....	82
a.	Background	82
b.	Preferred Steelhead Stock for Reintroduction Upstream of the Project ...	82
3.	Sockeye Salmon.....	83
a.	Background	83
b.	Preferred Sockeye Stock for Enhancement Upstream of the Project	83
4.	Pacific Lamprey	83
a.	Background	83
b.	Preferred Pacific Lamprey Stock for Enhancement Upstream of the Project	84
E.	Pacific Lamprey Passage Evaluation and Mitigation	84
F.	Fish Health Management	85
G.	Long-Term Monitoring.....	87
1.	Components of Long-Term Monitoring	87
2.	Fish Passage	88
3.	Ecosystem Integrity	88
4.	Lower Deschutes River Water Quality	89
H.	Relationship between Round Butte Hatchery and the Passage Program.....	89
V.	Plan Implementation and Decision Making.....	91
A.	Subcommittee Structure and Responsibilities for Fish Passage Plan Implementation	91

1. Licensees' Responsibilities.....	92
2. Responsibility of Other Parties	92
B. Decision Making.....	93
C. Consultation	94
D. Dispute Resolution.....	94
E. Funding and Administrative Support.....	95
F. Annual Work Plans and Reports.....	95
VI. References.....	96

Appendices

Appendix I.	Supporting documentation (list and compact disc)
Appendix II.	Draft Fish Health Management Plan
Appendix III.	Testing and Verification Program Study Plan Outlines
Appendix IV.	Description of Long-Term Monitoring Program for Pelton Round Butte Fish Passage Program
Appendix V.	Components of the Four Phases of the Fish Passage Program by Major Group
Appendix VI.	Detailed Fish Passage Plan Schedule

LIST OF TABLES

Table 1. Number of anadromous adult salmonids passed upstream of the Pelton Project during the first 10 years that runs were enumerated (1957–1966).	7
Table 2. Summary schedule for the major activities in the Interim Passage Phase.....	37
Table 3. Measures of success for evaluation of downstream passage with operation of downstream passage facilities at Round Butte Dam.	67
Table 4. Measures of success for evaluation of upstream passage facilities, from collection in the lower Deschutes River at the Reregulating Dam to release in Lake Billy Chinook.	72

LIST OF FIGURES

Figure 1. Location of the Pelton Round Butte Project hydroelectric dams and reservoirs on the Deschutes River in Central Oregon.	9
Figure 2. Predicted water temperatures in the lower Deschutes River under Blend 16.	21
Figure 3. Schedule for the Baseline Passage Phase of the Fish Passage Plan.	29
Figure 4. Schedule for the Experimental Passage Phase of the Fish Passage Plan.	32
Figure 5. Conceptual design for SWW and temporary downstream-migrant fish collection facility (Option 1).....	43
Figure 6. Schedule of implementation of the Final Passage Phase.....	65

PELTON ROUND BUTTE PROJECT FISH PASSAGE PLAN

I. INTRODUCTION

This document contains the plan by Portland General Electric Company ("PGE") and the Confederated Tribes of the Warm Springs Reservation of Oregon ("Tribes")¹ for evaluating the feasibility of, and implementing, a program to reestablish passage for anadromous and resident fish species through the Pelton Round Butte Project ("Project"). PGE and the Tribes are joint licensees ("Licensees") of the Project. The fish passage program has been developed in conjunction with relicensing of the Project with the Federal Energy Regulatory Commission ("FERC"). This program is intended to accomplish specific goals and objectives consistent with those initially developed by the Interagency Fisheries Technical Subcommittee ("Technical Subcommittee"²) and in furtherance of policy statements included in fisheries and habitat management plans relevant to the Project.³ This Fish Passage Plan was further developed in settlement negotiations for the licensing of the Project, and implements fish passage requirements issued under Sections 4(e), 10(j), and 18 of the Federal Power Act ("FPA") and state law, and is consistent with the federal government's tribal trust responsibilities.

A. Overview of the Fish Passage Program

This document sets forth a detailed and rigorous implementation plan for pursuing fish passage for anadromous and resident species at the Project. The basic framework for the fish passage program reflected in this Fish Passage Plan was initially developed in concert with the Technical Subcommittee utilizing a structured decision-making process to identify important uncertainties related to achieving successful fish passage. The fish passage program is designed as a four-phase effort based on an appropriate timing and sequencing of continuing research and evaluation efforts aimed at addressing these important uncertainties, reducing risks associated with fish passage to an acceptable level, and implementing components of the program in a logical sequence. Critical uncertainties addressed through this program include risk of disease,

¹ The Tribes as a Licensee are acting through Warm Springs Power Enterprises ("WSPE"). The Tribes in their governmental capacity, the Branch of Natural Resources ("BNR"), and the Water Control Board ("WCB"), but excluding WSPE, are referred to in this document as the "CTWS."

² The Technical Subcommittee was established in 1997 to identify and address questions regarding the feasibility of potential fish passage at the Project. The Technical Subcommittee was composed of fisheries biologists and others with experience in aquatic ecosystems representing the following entities: PGE, CTWS, U.S. Fish and Wildlife Service, National Marine Fisheries Service, U.S. Forest Service, U.S. Bureau of Land Management, Oregon Department of Fish and Wildlife, Oregon Department of Environmental Quality, and a coalition of non-governmental organizations.

³ Technical Subcommittee meeting summaries (Aug. 7-8, 1997, Sept. 24-25, 1997, Jan. 20-21, 1998) and Final Charge Statement and Ground Rules (Feb. 15, 1998).

implications for reservoir and downstream water quality, and efficacy of downstream passage through Lake Billy Chinook. Key components of the fish passage program include design and construction of downstream passage facilities, testing and verification of the performance of those facilities, and evaluation and implementation of volitional upstream passage at the Project (if volitional passage is determined to be feasible and appropriate). Throughout implementation of the Fish Passage Plan, the Licensees will consult with (and where specified, seek approval from) an interagency fisheries committee, the Pelton Round Butte Fisheries Committee (“Fish Committee”).⁴

Implementation of the Fish Passage Plan will be conducted according to the precepts of adaptive management as incorporated into license terms. The essence of adaptive management is to view management actions as having an experimental component designed to both protect the resource as well as produce critical information about the resource being managed, and to make changes in future management actions that reflect the knowledge gained through these measures. Thus, adaptive management includes three main components: 1) the implementation of specific protection, mitigation and enhancement measures designed to avoid or minimize the impact of a project on specific resources; 2) monitoring and evaluation of the measures to evaluate their performance towards the agreed-upon criteria, resource goals, objectives and expectations; and 3) implementing alterations and management changes that improve future performance if criteria, resource goals, objectives and expectations are not met. This approach helps to reduce uncertainty and, more importantly, provides a broader base of knowledge and experience that helps managers to manage more effectively in the face of continued uncertainty and ever-changing conditions.

In addition to fish passage, the existing Round Butte Hatchery supplementation program will continue through the term of the New License, subject to future periodic review of the hatchery program in light of the progress on the reintroduction program. The hatchery program will serve to support the objective of self-sustaining and harvestable fisheries below the Project and the goals of the Fish Passage Plan.

B. Progress to Date

Over the past several years, the analysis of the feasibility of fish passage at the Project has included:

- Review of relevant fisheries and habitat management plans
- Consideration of the guidance provided in the “Conceptual Foundation for the Management of Native Salmonids in the Deschutes River” (Lichatowich 1998)

⁴ See section V.A. for a list of entities that will be members of the Fish Committee.

- Establishment of the advisory Fisheries Technical Subcommittee
- Utilization of a formal structured decision-making process (Oosterhout 1998)
- Risk assessment simulation modeling to evaluate the impacts of uncertainties on the feasibility of fish passage (Oosterhout 1999)
- Conducting studies relevant to the major identified uncertainties associated with the reintroduction of anadromous fish above the Project
- Evaluating the feasibility of potential components of the Fish Passage Plan

During this same timeframe, an Ecosystem Diagnosis and Treatment (“EDT”) assessment was completed (Mobrand Biometrics, Inc. 1999). This assessment concluded that “the greatest overall benefit to chinook salmon within the basin would be achieved by providing restoration of passage at the Pelton-Round Butte Project and other dam structures in the basin” (Mobrand Biometrics, Inc. 1999).

A description of the activities related to evaluating fish passage feasibility from the filing of PGE’s and the Tribes’ final license applications at the end of 1999 through the filing of the Joint Application Amendment (“Joint Amendment”) in 2001 is included as Attachment III-3 to the Fish Resources section of Exhibit E of the Joint Amendment. In addition, technical reports and a record of supplemental consultation are included on CDs accompanying the Joint Amendment. Activities since the filing of the Joint Amendment have included continued consultation and technical work related to the fish passage program through the Technical Subcommittee; filing by PGE and the Tribes of responses to FERC Additional Information Requests (July 2002); issuance of water quality certificates (pursuant to § 401 of the Clean Water Act) for the Project by the Oregon Department of Water Quality (“ODEQ”) and the CTWS Water Control Board (“WCB”) (June 2002); preparation by PGE and the Tribes of a Water Quality Management and Monitoring Plan (September 2002); filing of Preliminary Conditions, Prescriptions, and Recommendations by parties to the licensing proceeding (November 2002); and development by PGE and the Tribes of a refined engineering schedule for implementation of fish passage in conjunction with responding to agency preliminary terms and conditions (January 2003).

A comprehensive list of documents that have been developed to support the fish passage feasibility analysis and design of the fish passage program is provided as Appendix I. These documents are provided on the CD included in Appendix I.

II. PROGRAM GOALS AND OBJECTIVES

The Technical Subcommittee developed a formal decision-making structure to evaluate the feasibility of reestablishing fish passage at the Project. The overarching goal of fish passage as defined in that decision-making structure is to maximize ecosystem integrity. Ecosystem integrity was further defined by the Technical Subcommittee to include three primary components: connectivity, biodiversity, and natural production.

The objectives of the Fish Passage Plan are:

- To contribute to recovery efforts for Middle Columbia steelhead;
- Establish self-sustaining, harvestable populations of summer steelhead trout (“steelhead”), spring-run chinook salmon (“spring chinook”), and sockeye salmon (“sockeye”) in the Deschutes River Basin to fully utilize the available habitat and production capability;
- Provide access to and through Project waters for Pacific lamprey, summer-run / fall-run chinook salmon, rainbow (redband) trout, bull trout, and other native fish species;
- Provide access to habitat to support a self-sustaining fishery; and
- Support the contribution of salmon, steelhead, and other native species to a healthy ecosystem.

Progress towards achieving ecosystem integrity following reestablishment of fish passage will be evaluated through a long-term monitoring plan to be developed in consultation with the Fish Committee. The monitoring plan will detail specific data-collection protocols and metrics that will provide quantitative information to assess the degree of connectivity, biodiversity, and natural production in the Project area through the term of the New License.

Overall progress towards achieving the objective of self-sustaining harvestable populations of steelhead, chinook, and sockeye will be evaluated by determining the number of returning adults (recruits) per spawning fish (R/S ratio) for each of the species of interest. The R/S ratio will be determined annually for the life of the New License. While runs are building, each generation will need to produce more spawners than the previous generation ($R/S > 1.0$). A self-sustaining population, by definition, must have a median R/S ratio not less than 1.0.

Other specific metrics representing the objectives of the fish passage program relate to facility performance and survival of upstream migrating adult fish and downstream migrating juvenile fish through the Project.

A. Spring-Run Chinook Salmon, Summer-Run Steelhead, and Sockeye Salmon

In addition to monitoring the status of spring chinook, steelhead, and sockeye runs (in terms of R/S), progress towards establishment of self-sustaining harvestable populations of these “target” species above the Project will be evaluated using metrics representing the following objectives specific to each stage of the fish passage program:⁵

- Major interim objectives, associated with initial (“temporary”) fish passage facilities:
 - Capture in the temporary downstream-migrant collection facility in the Round Butte forebay of >50 percent of marked smolts (released at the heads of each of the tributary arms of Lake Billy Chinook) from any one of the three tributaries.
 - Safe passage of 93 percent of captured smolts to the Deschutes River below the Reregulating Dam.
 - Safe passage of 95 percent of returning naturally produced adults from the Pelton Fish Trap to Lake Billy Chinook.
- Major long-term objectives, associated with permanent fish passage facilities:
 - Capture in permanent downstream-migrant collection facility in the Round Butte forebay of >75 percent of marked smolts (released at the heads of the arms of Lake Billy Chinook) from each tributary.
 - Safe passage of 96 percent of captured smolts to the Deschutes River below the Reregulating Dam.
 - Safe passage of 98 percent of returning naturally produced adults from the Pelton Fish Trap to Lake Billy Chinook.
 - Ultimately, if feasible and if determined to be appropriate by the Fish Committee, provide volitional upstream passage from below the Reregulating Dam to above Round Butte Dam.

B. Summer-Run / Fall-Run Chinook Salmon, Pacific Lamprey, Bull Trout, and Rainbow (Redband) Trout

The objective for summer-run / fall-run chinook salmon, Pacific lamprey, bull trout, rainbow (redband) trout, and other native fish species is to provide access to and through Project waters.

⁵ Fish passage measures of success are described in further detail in section IV.C of this Fish Passage Plan.

Numbers of fish that are passed for each of these non-target species will be monitored, but numerical objectives will not be established or required to define success.

C. Additional Objectives — Fish Habitat and Life-History Diversity

In addition to the interim and long-term objectives specific to fish passage (and their associated metrics, described above in section II.A), the following objectives related to fish habitat and life-history diversity have also been identified to direct the implementation of the fish passage program toward the goal of ecosystem integrity:

- Provide for the maximum utilization of existing and potential fish habitats within and upstream of the Project by providing passage for resident and anadromous fish species with diverse habitat requirements.
- Maintain self-sustaining fish runs and promote species and life-history diversity by:
 - operating facilities during the complete migration times for both upstream and downstream migrating fish.
 - providing connectivity between the diverse habitats of the tributaries to the Project reservoirs and the lower Deschutes River and its tributaries in a manner consistent with managing the risk of spreading fish diseases at a level acceptable to ODFW and the CTWS Branch of Natural Resources (“BNR”).
 - uniquely marking wild steelhead and spring chinook smolts produced upstream of the Project so that they can be identified as returning adults and passed upstream, while stray steelhead and spring chinook can be excluded until straying into the Deschutes River is reduced to acceptable levels as determined by ODFW and the CTWS BNR.
- In designing new facilities, explicitly identify any tradeoffs that are made regarding the efficacy of passing different species. Existing information on passage of Pacific lamprey will be incorporated into passage facility design decisions.

III. BACKGROUND / FRAMEWORK

A. Context for Reestablishing Fish Passage at the Pelton Round Butte Project

The ongoing effort to develop a plan for reestablishing fish passage through the Project has been influenced by an understanding of anadromous and resident fish populations that existed above the Project site prior to construction of the Project, the initial efforts at fish passage associated with Project construction, and the evaluation of those initial passage efforts. This historical framework is briefly summarized below. For a thorough historical perspective of fish passage at

the Project, please refer to “Fisheries Program at the Pelton Round Butte Hydroelectric Project (Oregon) 1956–1995” (Ratliff and Schulz 1999a; included on the CD accompanying Appendix I to this Fish Passage Plan).

1. Historic Anadromous and Resident Fish Populations above the Project Site

At the time of Project construction in the 1950s and 1960s, spring chinook salmon spawned mainly in the Metolius River system. Some chinook also spawned in lower Squaw Creek and the Deschutes River up to Steelhead Falls (Nehlsen 1995). Steelhead spawned in the middle Deschutes River and its tributary Squaw Creek, and also in the Crooked River system. Sockeye had essentially been eliminated from the system prior to Project construction, but historically had spawned in Link Creek above Suttle Lake and used Suttle Lake as juvenile rearing habitat (Nehlsen 1995). Runs of these species appeared to be quite depressed at the time of Project construction. Peak counts the first few years of fish passage were 547 spring chinook, 1,618 steelhead, and 57 unmarked sockeye (Table 1).

Table 1. Number of anadromous adult salmonids passed upstream of the Pelton Project during the first 10 years that runs were enumerated (1957–1966). (Source: PGE Fish Facilities Database)

Year	Spring Chinook ¹	Summer Steelhead ²	Wild Sockeye
1957	259	335	29
1958	366	1,618	57
1959	358	1,017	0
1960	547	520	0
1961	511	480	0
1962	387	355	0
1963	210	377	0
1964	318	274	0
1965	165	431	0
1966	298	434	0
Average	341.9	584.1	8.6

Notes:

1. Includes jacks.
2. Steelhead year starts in June of the year before and ends in May of the year shown.

Pacific lamprey were found in the mainstem of the Deschutes River, the Crooked River, the Warm Springs River, and Shitike Creek. It is assumed they had the same historic distribution as salmon and summer steelhead throughout the Columbia Basin. It is known that historically they

spawned above the Project site, but numbers and spawning locations were not documented. Pacific lamprey have not been observed at the Pelton Fish Trap since the early 1970s.

The extent of historical fall chinook migration past the Project is not certain. Prior to construction of Pelton Dam in the early 1950s, fall migrants were found spawning above Sherars Falls and below the Pelton Dam site. However, although fall chinook spawning surveys were conducted prior to construction, few were found above the Pelton Dam site (Nehlsen 1995).

Up to several hundred maturing adult bull trout were annually passed upstream through the Project during the first few years of its operation (Ratliff et al. 1996). It is thought that all of these adult bull trout were returning to the Metolius River tributaries where bull trout spawning is currently concentrated. By the late 1950s, bull trout populations in the upper Deschutes River above Big Falls had been extirpated (Ratliff and Howell 1992; Buchanan et al. 1997).

2. Project Construction and Historic Fish Passage Facilities

Construction of the Pelton and Reregulating dams on the Deschutes River began in August 1956 at river miles 103 and 100, respectively. A 2.84-mile-long fish ladder was originally constructed between the Reregulating Dam and Pelton Dam to provide upstream fish passage (Figure 1). When constructed in 1957, the Pelton Fish Ladder was the longest in the world with the second highest lift. The ladder is 10-ft wide, 6-ft deep, and originally had a maximum flow capacity of 43 cfs (Gunsolus and Eicher 1962).

For downstream passage from Lake Simtustus (Pelton Reservoir), a horizontal, inclined-plane artificial outlet, referred to as the "Pelton skimmer," was constructed on the right (east) abutment of Pelton Dam. This skimmer used pumps to pull 200 cfs of water through a 15-ft-wide perforated plate. The perforated plate was inclined to allow about 6 cfs of water and downstream-migrating fish to move over the end, through a bypass pipe, and into the fish ladder junction box. The smolts then traveled down the fish ladder to the Deschutes River below the Reregulating Dam.

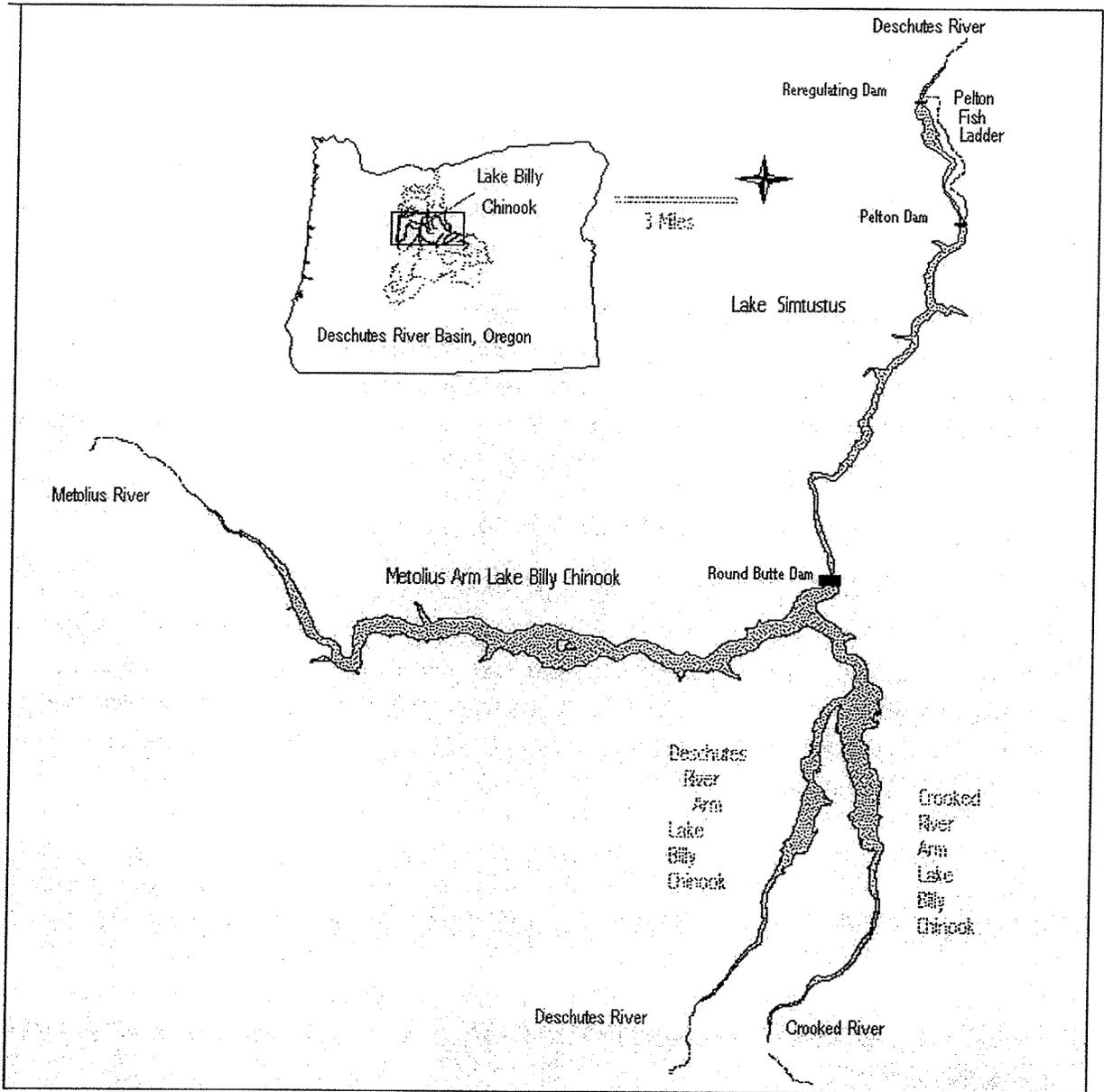


Figure 1. Location of the Pelton Round Butte Project hydroelectric dams and reservoirs on the Deschutes River in Central Oregon.

Construction of Round Butte Dam at the head of Lake Simtustus was completed in 1964, and Lake Billy Chinook was filled during late 1964. The bottom of the power intake in the forebay is 271 ft below full pool. Lake Billy Chinook (Round Butte Reservoir) extends 9 miles up the Deschutes River canyon, 7 miles up the Crooked River, and 13 miles up the Metolius River (Figure 1). Because of the hypolimnic outlet, the temperatures of water flowing out of Lake Billy Chinook vary from approximately 40°F in late winter to 56°F in late summer and early fall.

Because the canyon in the area of Round Butte Dam was too steep for a fish ladder, and to accommodate the 85-ft drawdown of the reservoir allowed by the first license, a tramway system was designed to provide upstream passage. When activated, a vertical winch lifted the tramway bucket up the dam face. After reaching the appropriate height, the vertical winch stopped, and a haul winch moved the 170-cubic-ft capacity bucket over the dam. Once over the forebay, the haul winch was deactivated, and the vertical winch lowered the bucket to about 15 ft below the surface. A Styrofoam float opened the trap door in the bottom of the bucket, allowing the fish to escape.

The original downstream-migrant collection facility for Lake Billy Chinook was located at the east end of Round Butte Dam. To accommodate the majority of the potential 85-ft drawdown, the Round Butte artificial outlet, or "skimmer," was built with a vertical-axis screen instead of a horizontal screen as at Pelton Dam. Four 100-cfs pumps pulled water through the two traveling screens with about 5 cfs of water and smolts passing by the screens, over a weir, and through a pipe to a locking tank. Once collected in the locking tank, smolts could either be loaded into a truck and hauled below the Reregulating Dam to the Deschutes River or shunted into the downstream-migrant pipe and into Lake Simtustus. The downstream-migrant pipe was filled completely with water. Fish were then added to the top of the water column so they rode the water down as the pipe emptied into the Round Butte Dam tailrace (Eicher 1964).

3. Fish Facility Evaluation

Evaluation of the passage facilities was conducted by the Fish Commission of Oregon under the supervision of a multi-agency steering committee. The fish facilities at Pelton Dam were evaluated during the late 1950s and early 1960s (Gunsolus and Eicher 1962). The Round Butte Passage Evaluation measured the capture efficiency at the Round Butte Dam forebay of tagged or marked smolts released into the upper arms of the reservoir (Korn et al. 1967).

The steering committee concluded that downstream fish passage through Lake Billy Chinook was not successful and in 1966 began to discuss hatchery alternatives to maintain anadromous fisheries resources. For a more comprehensive discussion of the historic fish facilities and their evaluation see Ratliff and Schulz (1999a).

B. Relevant Fisheries and Habitat Management Plans

1. ODFW Fisheries Management Plans

ODFW Fisheries Management Plans adopted by the Oregon Fish and Wildlife Commission for the management of the Metolius River (Fies et al. 1996), Upper Deschutes River (Dale et al. 1996), and Crooked River (Stuart et al. 1996), including Lake Billy Chinook, all include policy statements such as the following from the Crooked River Subbasin Plan: "Restore anadromous and migratory resident fish to their historic range in the Crooked River basin by improving upstream and downstream passage over artificial barriers." OAR 635-500-1850.

These subbasin management plans also include policy statements to protect, restore, and enhance fish habitat in the Deschutes basin and tributaries. For example, the Crooked River Subbasin Plan has objectives to protect, restore and enhance fish habitat, maintain or improve instream flow, improve water quality, and reconnect isolated and fragmented populations by restoring and improving passage over manmade barriers. OAR 635-500-1850.

On December 12, 2003, the Oregon Fish and Wildlife Commission adopted amendments to fish management plans to provide management direction for anadromous fish species in the Upper Deschutes, Crooked, and Metolius River subbasins, including areas upstream of the Project.

2. CTWS Fisheries and Land Management Plans

The Deschutes River Subbasin Salmon and Steelhead Production Plan (ODFW and CTWS 1990) was developed in accordance with the Northwest Power Planning and Conservation Council's ("NWPPCC") Columbia River Basin Fish and Wildlife Plan. Its purpose is to guide the NWPPCC's adoption of future salmon and steelhead enhancement projects in the Deschutes River system. The plan also summarizes agency and Tribal management goals and objectives, documents current management efforts, identifies problems and opportunities associated with increasing salmon and steelhead numbers, and presents preferred and alternative management strategies.

The Integrated Resources Management Plan ("IRMP I") for the Forested Area (CTWS and BIA 1992) was developed to guide the development and use of the forested sections of the Reservation. One goal of the plan, the riparian resource management goal, identifies the need to "manage watersheds to protect the unique and valuable characteristics of riparian areas and improve water quality, aquatic habitat, and other water-dependent resources." Several other resource goals in the plan are intended to guide the management of fish and aquatic resources on forested lands of the Reservation to protect specific resource components, including: biological diversity; Threatened, Endangered, and Sensitive species; and Wild and Scenic Rivers. The Integrated Resources Management Plan ("IRMP II") for the Non-forested Areas (CTWS and

BIA 1999) also identifies specific goals for the protection and management of water quality, riparian areas, and resident and anadromous fish. The IRMP II contains elements intended to provide for the protection and enhancement of threatened and endangered fish and aquatic species.

The CTWS have also developed the Warm Springs National Fish Hatchery Operation Plan (CTWS and USFWS 2002). The goals of this operation plan are to cooperatively operate the Warm Springs National Fish Hatchery to protect remaining wild fish populations and preserve their genetic integrity, maintain the existing physical characteristics of Warm Springs River anadromous fish stocks and their production above the hatchery, and not impact fish populations below the hatchery.

The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs, and Yakima Tribes (CRITFC 1995) provides a framework to restore Columbia River salmon, outlining the cultural, biological, legal, institutional, and economic context within which the region's salmon restoration efforts are taking place. Goals of the tribal salmon restoration plan include: (1) Restoring anadromous fishes to the rivers and streams that support the historical cultural and economic practices of the tribes; (2) emphasizing strategies that rely on natural production and healthy river systems; (3) protecting tribal sovereignty and treaty rights; and (4) reclaiming the anadromous fish resource and the environment on which it depends for future generations.

3. Federal Forest and Land Management Plans

The U.S. Forest Service ("USFS") land and resource management plans for the Deschutes National Forest (USFS 1990) and Ochoco National Forest and Crooked River National Grassland (USFS 1989), and the U.S. Bureau of Land Management ("BLM") Two Rivers resource management plan (BLM 1986) all include standards for fisheries habitat protection. These plans also state support for the reintroduction of native fishes to their historical ranges.

4. National Wild and Scenic River Plans

The Metolius, Deschutes, and Crooked rivers, which are the major tributaries to Lake Billy Chinook, are all classified as National Wild and Scenic Rivers in the reaches just above the reservoir. The management plans for each of these federally managed segments support the goal of reintroduction of anadromous fish (USFS et al. 1996; BLM et al. 1992a, 1992b).

The entire 100-mile length of the lower Deschutes River is a component of the Oregon State Scenic Waterways System, as well as National Wild and Scenic River, Recreation River area. The Lower Deschutes River Wild and Scenic River Management Plan (BLM et al. 1993, 1996) establishes recreation management goals for the lower Deschutes River. The recreation

management goals for all segments of the lower river include management to maintain or enhance recreational fisheries values.

5. ESA Recovery Plans

a. Bull Trout and Steelhead

On June 10, 1998, the U.S. Fish and Wildlife Service (“USFWS”) listed the bull trout (*Salvelinus confluentus*) Columbia River Distinct Population Segment (“DPS”) as a threatened species under the Endangered Species Act (“ESA”) (63 FR 31647). This DPS was also included in the November 1, 1999, listing for bull trout in the coterminous United States (64 FR 58909). Subpopulations in the Deschutes River are included in this listing. In November 2002, the USFWS proposed designation of critical habitat for the Klamath River and Columbia River distinct population segments of bull trout (50 CFR Part 17, RIN 1018-AI52). For the Columbia River DPS, the proposed critical habitat designation totals approximately 29,251 km (18,175 miles) of streams, including 5,460 km (3,391 miles) of streams and 18,077 ha (44,670 ac) of lakes and reservoirs in Oregon. Critical habitat proposed for the Lower Deschutes River subunit (extending from Big Falls on the middle Deschutes River above the Project to the confluence with the Columbia River) includes the lower Deschutes River and tributaries; the Project reservoirs; and the Metolius, Deschutes, and Crooked rivers (and their tributaries) above the Project.

A recovery plan for the Deschutes Recovery Unit has been prepared by the USFWS in conjunction with the Deschutes Recovery Unit Team (USFWS 2002). The goal of the Deschutes bull trout recovery plan is to “ensure the long-term persistence of self-sustaining complex interacting groups of bull trout distributed throughout the species’ native range, so that the species can be delisted.” The recovery plan establishes several objectives toward achieving this goal and identifies specific actions associated with each objective. Among these prescribed actions is restoring fish passage at the Pelton Round Butte Project and implementing a monitoring strategy.

The Middle Columbia River (“MCR”) Evolutionarily Significant Unit (“ESU”) of steelhead (*Oncorhynchus mykiss*) was listed by the National Marine Fisheries Service (“NOAA Fisheries”) as threatened on March 25, 1999 (64 FR 14517). The listing determination was only for naturally spawned, anadromous populations of *O. mykiss* residing below impassable natural barriers. The MCR steelhead occur in the lower Deschutes River below the Project. NOAA Fisheries concluded that the Deschutes River (ODFW stock 66) hatchery stock should be considered part of the ESU but not essential for its recovery.

NOAA Fisheries designated critical habitat for steelhead on February 16, 2000 (65 FR 7764). The lower Deschutes River, up to Pelton Dam (excluding all Tribal lands), was included in the critical habitat designation for MCR steelhead. On April 30, 2002, however, the critical habitat designation for MCR steelhead was withdrawn by NOAA Fisheries (upon approval by the U.S. District Court for the District of Columbia) in response to litigation challenging the process by which NOAA Fisheries established critical habitat. NOAA Fisheries is currently reassessing the MCR steelhead ESU's listing status and critical habitat and plans to re-issue critical habitat designations after that analysis is completed.

b. Salmon: Magnuson-Stevens Fishery Conservation and Management Act (Essential Fish Habitat Provisions)

On October 11, 1996, Congress passed the Sustainable Fisheries Act (Public Law 104-297), which, among other things, amended the Magnuson Act to include provisions related to essential fish habitat ("EFH"). The renamed Magnuson-Stevens Act ("MSA") calls for increased attention to habitat in the conservation of fishery resources, and includes protection of EFH as a necessary component of sustainable fisheries. Toward this end, Congress mandated the identification of habitats essential to managed species and measures to conserve and enhance this habitat. The MSA requires cooperation among NOAA Fisheries, the Fishery Management Councils, and federal action agencies to protect, conserve, and enhance EFH. Congress defined EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity."

Pursuant to the MSA, the Pacific Fisheries Management Council has designated EFH for three species of federally managed Pacific salmon: chinook salmon (*Oncorhynchus tshawytscha*); coho salmon (*O. kisutch*); and Puget Sound pink salmon (*O. gorbuscha*). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently or historically accessible to salmon in Washington, Oregon, Idaho, and California. Salmon EFH excludes areas upstream of longstanding naturally impassible barriers (i.e., natural waterfalls in existence for several hundred years), but includes aquatic areas above all artificial barriers except specifically named impassible dams. Areas upstream of the Pelton Round Butte Project are included in the EFH designation. Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan.

Pursuant to the MSA, federal agencies must consult with NOAA Fisheries on all actions or proposed actions that are authorized, funded, or undertaken by the agency, and that may adversely affect EFH. NOAA Fisheries must provide conservation recommendations for any federal or state action that would adversely affect EFH. The federal action agency must respond to NOAA Fisheries within 30 days of receipt of the EFH conservation recommendations, including a description of the measures the agency will take to avoid or mitigate the impact of

the action on EFH. If the action agency does not include the recommendations, the agency must explain its reasons. EFH consultations are typically completed concurrent with Endangered Species Act consultations.

C. Conceptual Foundation and EDT Assessment

The "Conceptual Foundation for the Management of Native Salmonids in the Deschutes River" (Lichatowich 1998) does not specifically propose the reintroduction of anadromous fish upstream of the Project. However, it recommends that future activities be undertaken with an ecosystem perspective and that connectivity of habitats and life-history diversity be promoted. Successful upstream and downstream passage would support these ecological concepts.

The EDT assessment evaluated the ability of existing conditions of the aquatic environment to support identified goals and values based on the effects of certain environmental attributes on chinook salmon, the EDT's diagnostic species. The EDT report (Mobrand Biometrics, Inc. October 1999) concluded that "the conceptual foundation for the Deschutes developed by Lichatowich is in all major respects consistent with the EDT diagnosis, and should be viewed as a valuable source of additional ideas."

D. Structured Decision Making

The Technical Subcommittee developed a structured decision-making process to evaluate fish passage at the Project (Oosterhout 1998). The reasons for developing this process were (1) to develop common objectives among the interested agencies and organizations, (2) to allow information to be developed under controlled rules that would promote common understanding, and (3) to allow the passage decision to be divided into its decision components for evaluation. Perhaps the most important outcome of using the structured decision-making process was Technical Subcommittee consensus on the major uncertainties surrounding the potential reintroduction of each species under consideration. The Technical Subcommittee utilized the identified uncertainties to direct a rigorous study effort to reduce the level of uncertainty inherent in such a complex undertaking.

A stochastic life cycle model (PasRAS) was developed for sockeye and spring chinook (Oosterhout 1999) to support the decision-making process. In addition, a deterministic steelhead model addressing the complicated life history of steelhead and potential inter-relationships between steelhead and rainbow trout was developed as a tool to help evaluate uncertainties associated with reintroduction scenarios (Cramer and Beamesderfer 2001). These models allowed the relative importance of each uncertainty to be evaluated for these species so that experimental efforts could be further focused.

E. Relevant Studies to Reduce Uncertainties

Major uncertainties designated for the various species during the structured decision-making process included:

- Disease agent transfer
- Downstream smolt collection efficacy
- Habitat quality and quantity
- Predation
- Upstream passage

Studies conducted for each of these areas of uncertainty are briefly discussed below. Efforts are continuing in each of these areas of uncertainty to reduce the risk associated with pursuing implementation of the Fish Passage Plan. Study plans, progress reports, and final reports for past study efforts are included in PGE's and Tribes' respective December 1999 final FERC license applications. In addition, an update of Technical Subcommittee related activities between filing of the final license applications and the Joint Amendment, the 2000 progress report for ongoing Experimental Passage Phase activities, and the study plan for Experimental Passage Phase activities in 2001 are included with the Joint Amendment (Attachments III-3, III-4 and III-5, respectively, to the Fish Resources section of Exhibit E of the Joint Amendment).

1. Disease Agent Transfer

The potential for disease agent and disease transfer with reestablishment of passage — and the associated potential for significant losses in resident populations above the dams and for limited success of anadromous reintroduction — was identified early on as a major uncertainty. PGE contracted with the ODFW Fish Health Section to sample fish populations both upstream and downstream of the Project to determine which fish disease agents not currently found above the Project have the potential to become established there. In addition, juvenile fish from stocks upstream of the Project were tested to determine their relative susceptibility to the fish disease agents that might be transferred upstream if fish passage were reinitiated. The two diseases of most concern are Infectious Hematopoietic Necrosis ("IHN") Type 2 and whirling disease. IHN Type 2 is caused by a virus, and whirling disease is caused by *Myxobolus cerebralis*, a myxosporean parasite.

Recent (2001–2002) work for these studies included: continued sampling to determine which fish diseases currently found only downstream of the Project have the potential to become established upstream if fish are able to pass the Project dams; continued fish disease challenges

to evaluate susceptibility of upstream fish populations to diseases or strains of diseases found downstream of the Project; experiments to determine virus loads in Metolius River water and genetic testing of IHN virus isolated during the surveys; studies to assess the suitability of *Tubifex tubifex* worms found upstream of the Project to serve as the alternate host for whirling disease; and evaluation of potential non-lethal methods for detecting whirling disease.

The fish disease risk study program is substantially completed. Results of the fish disease agent studies are summarized in the interim final reports for these studies (Engelking 1999; Bartholomew 1999), progress reports (Engelking 2001, 2002, and 2003a; Bartholomew 2001, 2002, 2003).

The fish disease risk study program culminated in a draft Fish Health Management Plan (Engelking 2003b) that dictates passage and sampling protocols under the different phases of the Fish Passage Plan. A description of the fish health management program is provided later in this Fish Passage Plan (section IV.F), and the draft Fish Health Management Plan is provided as Appendix II.

2. Downstream Smolt Collection Efficacy

Poor downstream collection efficacy from Lake Billy Chinook (due to lack of consistent downstream surface currents toward Round Butte Dam) was identified as one of the major reasons fish passage failed during the 1960s (Korn et al. 1967). To define potential methods for renewing fish passage at the Project, the Technical Subcommittee evaluated different alternatives for downstream passage, their chances for success, and the potential implications for other resources associated with each alternative (Ratliff et al. 1999; included on the CD with Appendix I to this Fish Passage Plan).

The Technical Subcommittee utilized two numerical models, (1) a two-dimensional temperature and water quality model, and (2) a three-dimensional hydrodynamic model of Lake Billy Chinook, to simulate and evaluate the potential consequences of different water withdrawal alternatives on surface currents. These calibrated and verified numerical models are capable of describing the temperature and velocity distributions in the reservoir. Production runs of these models were used to determine what changes in facilities and reservoir operations might alter flow fields and encourage surface currents to move toward the forebay from the three tributary arms (Khangaonkar 1999; Yang et al. 2000). In addition, information concerning downstream migration of smolts of the different species through lakes and reservoirs was studied and summarized (Zabel et al. 1999).

The Technical Subcommittee examined several alternatives for modifying surface currents, including a reservoir curtain and modified reservoir outlet structures. This effort included

computer simulations of reservoir currents and water quality combined with field collection of reservoir current and water quality data. Concurrent with these reservoir studies was the identification of the potential benefits to downstream water quality that might be achieved with a selective water withdrawal ("SWW") system in Lake Billy Chinook, primarily through the management of downstream water temperature as described in section III.F., below.

PGE and the Tribes, with support from agency and consulting engineers and fisheries biologists, are continuing the evaluation of potential SWW structures and fish screening/collection alternatives in Lake Billy Chinook that could provide effective collection of downstream migrants while also allowing for management of downstream water temperature and chemistry (ENSR and Duke Engineering & Services 2001). This effort has included evaluating the potential water quality implications of SWW (in Lake Billy Chinook) on Lake Simtustus and lower Deschutes River water quality through water quality models developed for this purpose (Yang et al. 2001; Breithaupt et al. 2001).

Recent work has included: additional hydrodynamic modeling to refine SWW formulas to maximize fish passage opportunity and retain water quality benefits (Tribes and PGE 2002); engineering and biological evaluation of selected downstream passage facility alternatives, including determination of screening criteria (Ratliff 2001a; 2001b), hydraulic analysis, and evaluation of screen face velocities and structural limitations (PGE et al. 2003); and additional consultation with agency fish passage engineers to identify potential additions or modifications to facility alternatives under active consideration.

3. Habitat Quality and Quantity

To reduce the uncertainty surrounding the quality and quantity of habitats upstream of the Project, stream habitats not previously quantified were surveyed during 1997 and 1998. A database spreadsheet model (HABRATE) was developed using literature values to determine ranges of potential smolt production from different reaches of habitats depending upon the condition of these habitats (Riehle 1998). This information has been entered into a digital geographical information system (GIS). A description of HABRATE and preliminary maps showing the quantity of spawning and rearing habitats (rated for quality) for chinook, steelhead and sockeye (Riehle 1999) are included in the CD provided with Appendix I.

During 2000, the Technical Subcommittee evaluated limiting factors for chinook, steelhead, and sockeye habitat quality using HABRATE (Riehle 2001; also see limiting factors maps included on the CD accompanying Appendix I). This limiting factors analysis will assist managers in assessing the potential for fish production in habitats that would become available upon the successful establishment of fish passage.

Analysis of this GIS database can be used to estimate total potential fish production and to graphically represent river reaches according to their relative production potential for different species and age classes. Analysis of the GIS data can also be used to determine reaches where habitats might be enhanced to increase potential production. HABRATE data have also been used in the PasRAS life-cycle models for spring chinook and sockeye (Oosterhout 1999) and in the deterministic model for simulation of steelhead life cycle (Beamesderfer and Cramer 2001). The HABRATE model is currently being updated to incorporate recently developed information on potential juvenile spring chinook habitat use in the Metolius River system (Lovtang et al. 2003). The updated HABRATE information will continue to be used in conjunction with PasRAS and the deterministic steelhead life cycle model to refine predictions of habitat requirements and population objectives for successful fish passage.

4. Predation

Predation was studied in two systematic efforts. A study of bull trout food habits was conducted to better define the relationship between this predator species and its prey species, especially kokanee (Schulz et al. 1997; Beauchamp and Van Tassell 2001). The food habits of littoral fish species (northern pikeminnow, smallmouth bass, brown trout, and rainbow trout) have also been studied (Lewis 1999). Additional predator studies are planned as part of the Testing and Verification efforts to be conducted during the Interim phase of the fish passage program, when sufficient numbers of smolts will be available to allow evaluation of predation in Lake Billy Chinook. Planned components and timing of the predation studies are discussed under the Interim Passage Phase, section IV.B.3 of this Fish Passage Plan.

5. Upstream Passage

The Technical Subcommittee completed a preliminary evaluation of alternatives for upstream passage, their chances for success, and the potential implications for other resources associated with each alternative (Ratliff et al. 1999). Two engineering efforts were conducted to refine upstream passage alternatives. Existing fish facilities at the Project were investigated to determine if they could be reactivated in either an experimental or long-term program, and concepts for potential new facilities were developed (Duke Engineering & Services 1999a). In addition, existing trap-and-haul and ladder facilities at other dams in the Northwest were surveyed to determine common features of successful and unsuccessful programs (Duke Engineering & Services 1999b).

Some improvements to existing upstream passage facilities have already been implemented. An accumulation pool was constructed at the Pelton Fish Trap in 2000. Initially this pool will allow more frequent processing of fish for transfer to the Round Butte Hatchery and the timely return of wild adults to the Deschutes River. Ultimately this pool will allow for the efficient sorting of

adult fish destined for passage upstream of the Project from those to be transferred to the hatchery. In addition, a finger weir was added to the pool on the east bank of the river below the Round Butte powerhouse to prevent larger fish from leaving the pool after they enter, which allows for more accurate counting of adult bull trout attempting to migrate upstream from Lake Simtustus. The weir has been in place and the pool has been monitored to determine numbers of unmarked bull trout, previous years' tagged bull trout, and the current year's tagged bull trout. The bull trout population in Lake Simtustus is estimated from these counts.

F. Reservoir and Lower Deschutes River Water Temperature

Hydrodynamic and water quality modeling studies conducted in conjunction with the fish passage feasibility evaluation have indicated that selective water withdrawal in Lake Billy Chinook could be used not only to modify water currents in Lake Billy Chinook, but also to move the annual temperature patterns of the water released from the Project's Reregulating Dam towards pre-Project patterns. This would improve water quality in the Project's reservoirs and in the lower Deschutes River (Yang et al. 2000, 2001; Breithaupt et al. 2001). Through multiple model run sequences, an optimum "blend" of surface and deep withdrawal through the year has been identified that appears to have the potential for creating favorable current conditions and year-round surface-collection in Lake Billy Chinook to help downstream migrating smolts, while also achieving lower river water quality standards.⁶ Figure 2 shows how "Blend 16" is predicted to shift the water temperature profile for Project outflow to the lower river to allow the Project to be in compliance with the bull trout temperature standard.

Based on the modeling results, the Technical Subcommittee has focused on the use of SWW as the most promising approach for the Project to meet water quality objectives, and SWW has been prescribed by the two § 401 certificates for the FERC licensing of the Project (ODEQ 2002; CTWS WCB 2002).

⁶ The Oregon Environmental Quality Commission and the Tribes' WCB have adopted temperature standards consistent with the federal Clean Water Act. These standards do not allow a hydro facility to warm ambient temperatures more than 0.25°F over what they would be if the facility were not present, if the temperature is above the applicable standard for those waters. Because of the presence of bull trout rearing, the standard for the lower Deschutes River is 50°F, or inflow temperatures plus natural warming, during the period in question.

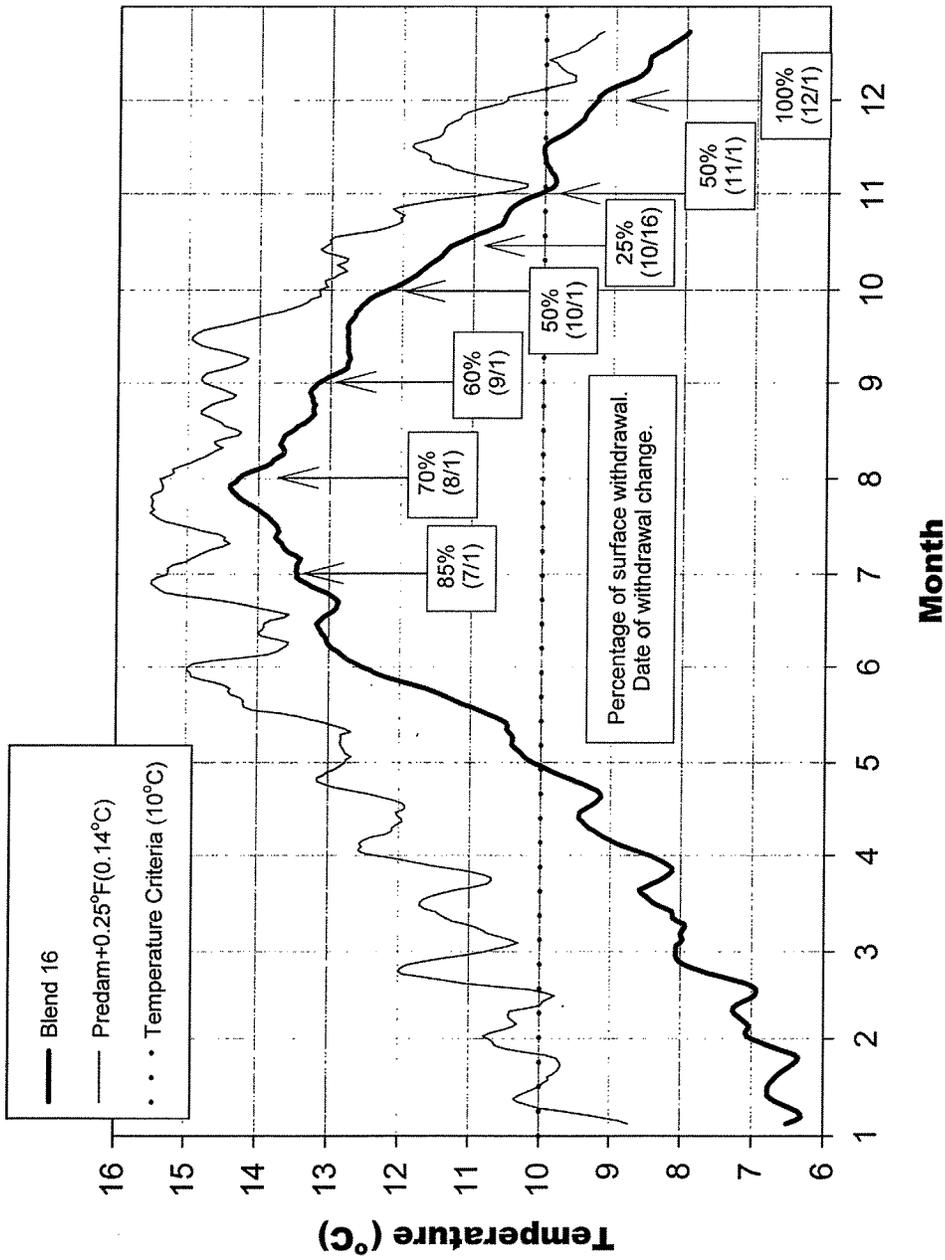


Figure 2. Predicted water temperatures (7-day average daily maximum) in the lower Deschutes River under Blend 16.

IV. PROGRAM COMPONENTS

A number of important program components have been identified for the fish passage effort. These components, which are outlined in detail in this Fish Passage Plan, include:

- Stock selection
- Fish health management
- Lower Deschutes River temperature and water quality management
- Selection, design, approval, construction, and evaluation of facilities
- Evaluating passage program success
- Managing the relationship between the fish passage program and the Round Butte Hatchery program

The activities associated with these components have been organized into four program phases:

1. Baseline
2. Experimental
3. Interim
4. Final

The Baseline Passage Phase was completed by the Technical Subcommittee in 1999, and the Experimental Passage Phase was initiated in early 2000. As currently envisioned, upon successful completion of all activities in the Experimental Passage Phase, the Licensees will initiate the implementation of the Interim Passage Phase, which will include the construction of a preferred alternative for collecting downstream migrant fish in Lake Billy Chinook. Currently, the most likely downstream fish collection facility alternative is a screening facility to be located in the forebay of Round Butte Dam and operated in conjunction with a SWW structure that is to be constructed to meet the water quality requirements of the State and Tribal § 401 certificates. If it is determined pursuant to the decision-making process detailed in this Fish Passage Plan that construction and/or function of the preferred option is not feasible, the Licensees will pursue alternative fish passage measures under the direction of the Fish Committee. (Decision making and measures of success for the fish passage program are detailed in section V.B. of this Fish Passage Plan.)

A. Adaptive Management and Decision Process

1. Overview

This Fish Passage Plan will be implemented according to the principles of adaptive management. Adaptive management involves synthesizing existing knowledge, exploring alternative actions, and making explicit forecasts about their outcomes. Carefully designed management actions and monitoring programs are utilized to generate reliable feedback and clarify the reasons underlying outcomes. Actions and objectives are then adjusted based on this feedback and improved understanding. In addition, decisions, actions, and outcomes are carefully documented and communicated to others, so that knowledge gained through experience is passed on, rather than being lost when individuals move or leave the effort (Nyberg 1999).

The first essential characteristic of adaptive management is that a direct feedback loop exists between science and management. This allows for management and policy decisions to be modified in light of new scientific information. The second essential characteristic of adaptive management is that management includes an experimental component. It is the combination of these two characteristics that distinguishes adaptive management from either traditional science or incremental “learning as you go” (Halbert 1993).

In traditional management, research is ordinarily separated from actual resource management. Rarely is there an explicit procedure governing how the emerging science will be utilized to influence management. Providing a link between science and management requires an inventory, monitoring, and evaluation program. Monitoring is the collection of data used to evaluate progress toward meeting objectives, which in turn can be used to adjust management policies. It is the feedback part of monitoring that distinguishes it from inventory (Salwasser et al. 1983). Monitoring can be considered as both an activity (measuring) and a process (evaluation and refinement). Evaluation is highly dependent on proper conceptual design. It requires clearly defined objectives so proper measurements can be made that evaluate progress toward meeting the stated objectives. The implicit assumption is that the information gained from experimentation will be used to meet management objectives. Only in this manner can science be linked with management (Halbert 1993).

Adaptive management requires the definition of clear objectives and the development of specific decision criteria in order to evaluate different policy options. Development of decision criteria is essential because tradeoffs need often to be made. It is rarely possible to simultaneously maximize multiple objectives. The development of decision criteria can be used not only to measure whether objectives are being met, but also whether identified goals are truly compatible. The compatibility of goals becomes particularly important in management regimes that purport to manage simultaneously for multiple resources (Halbert 1993).

2. Application of Adaptive Management to the Pelton Round Butte Fish Passage Program

There are six main steps of adaptive management as it has been and will continue to be applied to the Pelton Round Butte fish passage program:

1. *Problem assessment* — explicitly recognizing that there are uncertainties regarding the outcome of fish protection/management measures and identifying those uncertainties that are critical to success.
2. *Plan design* — deliberately designing a plan to increase understanding about the system and reveal the best way to reduce the level of uncertainty and meet explicitly stated objectives.
3. *Implementation* — carefully implementing the plan.
4. *Monitoring* — developing and implementing a monitoring program of key indicators of success against which progress toward achieving the objectives of the fish protection/management measures can be measured.
5. *Evaluation* — analyzing data from the monitoring program and assessing results, giving consideration to the objectives and predictions.
6. *Adjustment* — incorporating results into future decisions and actions as needed to modify the fish protection/management measures.

These steps are consistent with the implementation steps recommended by the EDT process (Mobrand Biometrics, Inc. October 1999).

Because of the early efforts by PGE and the Tribes to engage resource agencies and other stakeholders in investigating the feasibility of fish passage at the Pelton Round Butte Project, significant progress has already been made in several of these steps. This progress and the remaining effort to fully develop the adaptive management process are described below.

a. *Problem Assessment*

In adaptive management, problem assessment involves developing a clear definition of the problem in terms of ecosystem function, rather than in terms of preconceived management solutions. Problem assessment for the feasibility of fish passage at the Project was accomplished in parallel by the EDT process and by the Technical Subcommittee utilizing a structured decision-making process called “multiple attribute utility decision analysis” (Oosterhout 1998).

The problem statement developed by the Technical Subcommittee for fish passage feasibility included the fundamental goal of maximizing ecosystem integrity. (Other fundamental objectives defined [but not analyzed] were: maximizing net economics, maximizing social/personal values, and fulfilling legal obligations.) In addition, uncertainties related to the feasibility assessment have provided the framework for completed and ongoing research efforts.

As discussed above, a number of analytical tools are being utilized to assist in the feasibility evaluation. These tools include the following:

- Three-dimensional hydrodynamic model (Khangaonkar 1999, Yang et al. 2000) to assist in the prediction of juvenile collection efficacy at Lake Billy Chinook.
- Water quality models to evaluate the potential effects of selective water withdrawal on reservoir and downstream water quality (Yang et al. 2001; Breithaupt et al. 2001).
- GIS database (HABRATE) to assist in the evaluation of upstream habitat quality and quantity (Riehle 1998; 1999; 2001).
- Passage Risk Assessment Simulation (PasRAS), a stochastic risk assessment simulation model to assist in the evaluation of the relative impacts of major uncertainties on all life stages of sockeye and spring chinook (Oosterhout 1999).
- Life history simulation model for steelhead to similarly assist in the evaluation of the relative impacts of major uncertainties on all life stages of steelhead (Cramer and Beamesderfer 2001).
- Fish Disease Risk Matrix to assist PGE, the Tribes and the managing agencies in identifying and answering important disease risk questions (Engelking 1998).

b. Designing the Fish Passage Plan

Based on the results of its problem assessment efforts, the Technical Subcommittee concluded in 1999 that sufficient information had been developed regarding management objectives, important uncertainties, and potential alternative management actions to initiate an ongoing program to evaluate the feasibility of fish passage at the Project. The result was the four-phase effort outlined in this Fish Passage Plan. This plan represents the Technical Subcommittee's assessment as to the most appropriate general sequencing of efforts to address critical uncertainties and implement the fish passage program at the Project, and is consistent with the specific recommendations of the EDT process to "begin feasibility studies to address adult and juvenile fish passage at the Project" (Mobrand Biometrics, Inc. October 1999). This Fish Passage Plan also reflects agreement among the Parties to the Pelton Round Butte Settlement

Agreement (“Parties”; “Settlement Agreement”) regarding the schedule and sequencing of efforts, measures of success, and decision-making processes that will guide the fish passage program through the term of the New License.

Key aspects of the Fish Passage Plan are monitoring, evaluation, and feedback to management. A substantial part of this adaptive management approach will be accomplished through a program of Testing and Verification evaluations to be conducted primarily within the Interim Passage Phase. The Testing and Verification program is designed as a series of studies to evaluate the effectiveness of temporary and permanent fish passage facilities and to provide information for decision making on near-term and long-term aspects of the fish passage program. For additional details, refer to the Testing and Verification program description provided in section IV.B.3.e.(9) and Appendix III of this Fish Passage Plan.

Beyond the Testing and Verification studies, fish passage performance will be evaluated through a program of long-term monitoring that will extend through the term of the New License. The Technical Subcommittee initially developed a long-term monitoring concept for the passage program intended to provide feedback on the progress of the feasibility evaluation (PGE 1999, Table IV.G-9). This monitoring concept identified key indicators, responsible parties for conducting monitoring activities, the geographic extent of the monitoring effort, and the appropriate intensity (e.g., frequency, timing, duration) of monitoring. The concept for the long-term monitoring plan has since been refined in conjunction with development of this Fish Passage Plan. The long-term monitoring program as currently envisioned is described in section IV.G. and outlined in Appendix IV of this Fish Passage Plan. This framework will be expanded into a Long-Term Monitoring Plan that will set forth all specific monitoring components, locations, measurables, and schedule.

Water quality parameters will also be monitored through the term of the New License to evaluate the effects of SWW. All water quality monitoring during the term of the New License will be performed in accordance with the Water Quality Monitoring and Management Plan (“WQMMP”; Tribes and PGE 2002) required by the State and Tribal § 401 certificates. Throughout this Fish Passage Plan, reference has been made to the WQMMP when water quality decisions will affect fish passage planning.

Further development of the Testing and Verification study plans and Long-Term Monitoring Plan will be accomplished by the Licensees in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies⁷ pursuant to their respective statutory authorities. The final plans will specify details such as monitoring protocols, data management, and data interpretation methods. The final plans will also ensure linkages to appropriate resource

⁷ Fish Agencies” as used in this document refers to NOAA Fisheries, USFWS, ODFW, and CTWS BNR.

managers, and will define degree of response in specific indicators relative to agreed-upon criteria or other measures of success that will trigger a recommendation to make a change in management actions or objectives.

B. Implementation Schedule / Decision Points

This Fish Passage Plan is being implemented in four distinct phases. The activities within each phase of the fish passage program are described below and presented in a detailed summary table in Appendix V. The following information for each phase of the Fish Passage Plan is included below:

- Prerequisite knowledge/agreements for the initiation of the phase
- Key program elements of the phase
- Expected timing and duration of each study and facility design, construction, and evaluation effort

Any decisions to be made regarding specific activities will be made by the Licensees, in consultation with the Fish Committee and, where specified, with the approval of the appropriate Fish Agencies pursuant to their respective authorities, using the adaptive management approach described above. All reporting requirements of the New License regarding progress on fish passage implementation will be met by the Licensees in conjunction with ongoing Fish Committee activities. Nothing in this Fish Passage Plan expands or diminishes any existing authority or confers approval authority or regulatory jurisdiction that does not already exist under applicable federal, state, or Tribal law. The Parties recognize that each Fish Agency has separate and distinct statutory authorities and that no agency is deemed, by virtue of concurrent approvals, to be sharing its statutory authority with any other agency or to be conceding that the approval of any other agency is required for exercise of that agency's authority.

As presented in this Fish Passage Plan, the Baseline Passage Phase is complete and the Experimental Passage Phase is substantially complete. Activities associated with the Interim Passage Phase are expected to begin in 2004 with the issuance by FERC of the New License for the Project, and to continue being implemented over the next 14 years or more. Therefore, the detailed planning set forth and discussed in this Fish Passage Plan focuses largely on the Interim Passage Phase, which will comprise most of the remaining implementation, testing/verification, and decision-making activity in the fish passage program. The dates specified for various activities within the Interim Passage Phase assume timely decision making; if actual progress is delayed due to longer decision making timeframes, the schedule will be adjusted as needed. Description of the major components of the Final Passage Phase is also provided in this section but in less detail than for the Interim Passage Phase. Details regarding specific elements and

timing for the Final Passage Phase will be further developed with time based on results of Testing and Verification studies and adaptive-management-directed decision making during the Interim Passage Phase.

1. Baseline Passage Phase

a. *Prerequisite Knowledge/Agreements*

- Reestablishment of anadromous fish upstream of the Project is described as a desired future condition in ODFW Fish Management Plans, Tribal management plans, and Federal Wild and Scenic River Management Plans.
- Reestablishment of anadromous fish upstream of the Project is identified as a high priority by agencies in comments on PGE's and the Tribes' initial consultation documents and draft license applications for the FERC relicensing of the Project.

b. *Key Program Elements*

- Technical Subcommittee established and supported.
- Structured decision-making process developed and applied.
- Major uncertainties for each species identified.
- Studies initiated and/or focused on major uncertainties.
- Alternatives for renewing fish passage identified, evaluated and documented.
- Historic fish passage facilities surveyed for their potential application in a future fish passage program.

c. *Schedule*

The schedule for the Baseline Passage Phase is presented in Figure 3. This phase was completed in 1999.

Figure 3. Schedule for the Baseline Passage Phase of the Fish Passage Plan.

Program Element	1996	1997	1998	1999
Technical Subcommittee established and supported	[Shaded]			
Initial structured decision-making process developed and applied	[Shaded]			
Life histories evaluated	[Shaded]			
Major uncertainties by species identified	[Shaded]			
Studies initiated and/or focused on uncertainties:		[Shaded]		
• Fish disease transfer risk		[Shaded]		
• Collection efficacy:				
-- Reservoir current studies	[Shaded]			
-- Hydrodynamic modeling			[Shaded]	
• Habitat capacity			[Shaded]	
• Predation			[Shaded]	
• Water quality/temperature	[Shaded]	[Shaded]	[Shaded]	
Alternatives for renewing fish passage evaluated and documented		[Shaded]	[Shaded]	
Historic facilities surveyed for operability / use in Experimental phase		[Shaded]	[Shaded]	

The Baseline Passage Phase involved the initial planning, information gathering, and studies to make an initial determination of the feasibility of reestablishing fish passage. Much of this effort involved separating the decision regarding reestablishing fish passage into its component questions and uncertainties (Oosterhout 1998). Most studies conducted during this phase were designed to identify and begin to reduce the risk associated with major uncertainties identified by the Technical Subcommittee for each species to be passed (Oosterhout 1998).

2. Experimental Passage Phase

a. *Prerequisite Knowledge/Agreements*

- Based on the results of the reservoir hydrodynamic model, it appears possible to create conditions that would be more conducive to successful downstream passage from Lake Billy Chinook.
- The ability to manage the risk of fish disease transfer appears to be feasible.
- Modifying lower Deschutes River temperatures to more closely reflect pre-Project conditions appears to be feasible with some surface withdrawal from Lake Billy Chinook during smolt emigration periods.
- Eyed eggs / fry / smolts from disease-agent-free parents are approved for introduction upstream of Round Butte Dam for study purposes.
- The historic downstream-migrant fish facility at Round Butte Dam (Round Butte skimmer) can be modified to operate in an experimental capacity.
- Notification to, and confirmation from, FERC that temporary facilities associated with this Experimental Passage Phase do not require specific FERC approval.

b. *Key Program Elements*

- Round Butte skimmer is reactivated and operated for experimental purposes.
- Smolt handling, marking, and trucking facilities are constructed below the Round Butte skimmer.
- Yearling kokanee smolts are captured at the historic Round Butte skimmer, marked, and safely trucked to the lower Deschutes River to determine return frequency as sockeye.
- Spring chinook eyed eggs, marked sockeye fry, and hatchery steelhead smolts are transferred above Lake Billy Chinook for survival and migration study purposes.
- Smolt migration studies are conducted in Lake Billy Chinook.
- Temporary upstream adult bull trout trap is constructed at the base of Round Butte Dam.

- If disease clearance is gained, adult bull trout captured from Lake Simtustus are trucked upstream to Lake Billy Chinook or to the Metolius River for release at Monty Campground.
- If adult bull trout are moved upstream from Lake Simtustus, then juvenile bull trout captured in the Round Butte skimmer are moved downstream into Lake Simtustus to increase their rearing area.
- If disease clearance is obtained, juvenile bull trout are marked and transported to the lower Deschutes River. Return frequency of marked fish is monitored at the Pelton Fish Trap. Straying of bull trout released into the lower river is documented by monitoring upstream migration into the Warm Springs River and Shitike Creek, in consultation with the CTWS BNR.
- The study of feasibility and preliminary design of Round Butte Dam SWW and downstream-migrant collection and handling facilities is initiated with the development of design concepts in consultation with agency engineers and the Technical Subcommittee.

c. *Schedule*

The schedule for the Experimental Passage Phase is presented in Figure 4. This phase was initiated in late 1999, is substantially complete, and will continue until the prerequisites for the Interim Passage Phase are achieved. Some activities may carry forward into the Interim Passage Phase.

Figure 4. Schedule for the Experimental Passage Phase of the Fish Passage Plan.

Program Element	1999	2000	2001	2002	2003
Round Butte skimmer reactivated and operated			Note ¹		
Smolt facilities below skimmer designed and constructed					
Yearling kokanee captured, marked, and passed downstream			Note ²		
Spring chinook eyed eggs moved upstream					
Unfed spring-chinook fry moved upstream					
Marked sockeye eyed eggs moved upstream					
Radio-tagged steelhead smolts moved upstream and tracked					
Modeling analysis of Lake Billy Chinook water quality and lower river water quality continues					
Fish disease agent work continues					
Smolt migration studies in Lake Billy Chinook conducted					
Temporary upstream adult bull trout trap designed and constructed					
Adult bull trout trucked from Simtustus to lower Metolius (if disease clearance is attained)			Note ³		
Juvenile bull trout captured at Round Butte skimmer and moved to Lake Simtustus and/or lower Deschutes River					
Round Butte SWW and downstream collection facility concepts developed and evaluated					

Notes:

- 1 Operation of the Round Butte skimmer was determined in 2001 to be unsuccessful for capturing large numbers of downstream migrants and was not continued in 2002.
- 2 No yearling kokanee were captured in the skimmer during its 2000–2001 operation; this program component was therefore eliminated.
- 3 Required disease clearance from ODFW and CTWS BNR was not obtained during the Experimental Passage Phase.
- 4 Because only small numbers of bull trout were captured in the Round Butte skimmer in 2000–2001, all captured bull trout were moved to Lake Simtustus; none were moved to the lower Deschutes River, as had been planned. Experimental use of the skimmer was discontinued after 2001.

The Experimental Passage Phase has encompassed studies and experiments to further evaluate the feasibility of fish passage. In this phase, experiments were completed as part of the fish

disease risk analysis to support development of a Fish Health Management Plan. Eyed eggs from hatchery spring chinook, as well as marked sockeye fry and steelhead smolts, were moved upstream of Round Butte Dam to allow studies of smolt emigration and the testing of experimental facilities. (Hatchery summer-run steelhead smolts have been used for migration studies because wild steelhead in the Deschutes are federally listed as “Threatened” and have not been available for experimental purposes.) The historic downstream-migrant fish facility (skimmer) at Round Butte Dam was operated in an experimental capacity. Bull trout captured in the reactivated Round Butte skimmer were moved to Lake Simtustus; however because of the poor performance of the skimmer, kokanee (sockeye), steelhead, and spring chinook were not collected and moved to the lower Deschutes River as planned.

Adult anadromous salmonids from the lower Deschutes River have not been passed upstream during the Experimental Passage Phase, effectively managing the threat of accidentally passing *Myxobolus cerebralis*, the causative agent for whirling disease, upstream. Research by the ODFW Fish Health Section and Oregon State University (“OSU”) Microbiology Department was completed to support development of a Fish Health Management Plan that will be implemented during each remaining phase of the program. A draft of the Fish Health Management Plan (Appendix II to this Fish Passage Plan) has been completed and is attached as Appendix II to this Fish Passage Plan.

During this phase, engineering and biological studies have continued to evaluate options for (a) redirecting surface currents in Lake Billy Chinook to improve smolt migration to the forebay, (b) managing lower Deschutes River temperature and other water quality parameters, and (c) designing facilities to collect anadromous smolts migrating downstream through Lake Billy Chinook, as summarized in section III.E, above. Several engineering concepts were under consideration that could redirect currents in Lake Billy Chinook, attract and collect downstream migrants, and manage downstream water quality and water temperature. Alternatives under consideration for the new downstream passage system would allow generation water to be pulled from the surface of the reservoir as well as from the existing deep intake, while excluding fish from the deep intake and screening/collecting downstream migrants from the surface intake. Conceptual designs for the various alternatives for the SWW structure and downstream-migrant collection facility have been completed. PGE and the Tribes, along with agency and consulting engineers, are continuing to refine the design of the facilities.

Planning for the lower Deschutes River temperature and water quality management program was completed during the Experimental Passage Phase, in conjunction with evaluation of SWW for fish passage. The SWW proposal in the Joint Amendment was adopted as a requirement in the State and Tribal § 401 certificates (ODEQ 2002; CTWS WCB 2002). The Pelton Round Butte Project Water Quality Management and Monitoring Plan (WQMMP; Tribes and PGE 2002), as required by the § 401 certificates, describes the facilities, management approach, monitoring

programs, adaptive management strategies, and reporting of monitoring results and management operations required to comply with the § 401 certificates.

As noted above, the Experimental Passage Phase is substantially complete and will continue until all prerequisites for moving to the next (Interim Passage) phase of the program are achieved. For additional details regarding activities conducted in the Experimental Passage Phase, please refer to the documents referenced in Appendix I and included on the accompanying CD.

3. Interim Passage Phase

a. Prerequisite Knowledge/Agreements

- New License for the Project is issued (final, no longer subject to judicial review), including approval to continue the fish passage program detailed in this Fish Passage Plan.
- Amendments to basin management plans are adopted by the Oregon Fish and Wildlife Commission (adopted December 12, 2003).
- Modeling predicts the ability to reorient surface currents in Lake Billy Chinook to facilitate movement of outmigrants to the Round Butte Dam forebay and to meet water quality requirements in waters affected by the Project.
- Conceptual design and evaluation of potential facility alternatives for the Round Butte SWW structure and downstream-migrant fish collection facility is completed, and preferred facility alternatives are selected.
- Fish Health Management Plan is finalized and approved by the Oregon Department of Fish and Wildlife and the CTWS BNR.
- The portion of the stock selection/supplementation plan (Stock Selection Guidelines) related to the Interim Passage Phase is approved by the CTWS BNR and ODFW. If wild steelhead are utilized for reintroduction, NOAA Fisheries will need to approve this portion of the plan.
- Water temperature and water quality management program (as described in the WQMMP) required by the two § 401 certificates is approved by ODEQ and the CTWS WCB.
- Design for temporary downstream fish passage facilities at Round Butte Dam is finalized and approved.

- Testing and Verification phase study plan outline is developed and approved.

b. Key Program Elements

- Round Butte SWW and downstream-migrant collection and handling facilities are designed, constructed and evaluated, in a two-phased approach, involving construction and evaluation of the temporary downstream-migrant fish collection facility at Round Butte Dam before installation of the permanent downstream-migrant collection facility. The Round Butte downstream-migrant collection facility will be operated in accordance with an approved operations plan.⁸
- Downstream reservoir passage of smolts through Lake Billy Chinook is evaluated. Predation studies and other studies of survival factors in Lake Billy Chinook will be included in this evaluation.
- Eyed eggs /fry / smolts raised at Round Butte Hatchery are released above the Project during testing/verification of the temporary downstream-migrant fish collection facility.
- Water quality and temperature of Project discharges are evaluated to determine if water quality requirements of the § 401 certificates are being met through SWW.
- Round Butte Adult Release Facility is designed, constructed, and evaluated.
- Steelhead and spring chinook smolts are marked so adult returns can be identified for passage upstream.
- Upon a decision to move to permanent screens, selected adult spring chinook, steelhead, and sockeye are released above Round Butte Dam from smolts originating above the Project.
- Summer-run / fall-run chinook are released above the Project at the direction of the Fish Committee. Clearance for fish health concerns must be secured from the Oregon Department of Fish and Wildlife and the CTWS BNR because these two stocks are unmarked and cannot be differentiated from unmarked strays.
- Adult migration and spawning studies are conducted on selected adults above Round Butte Dam.

⁸ Operations plans for the fish passage facilities will be developed following completion of final facility designs.

- All juvenile salmonids captured at the Round Butte downstream-migrant collection facility during the primary emigration period (February 1 through July 31) are transported to the lower Deschutes River, bypassing Lake Simtustus and the Reregulating Reservoir.
- If downstream-migrating salmonids are transported into Lake Simtustus, a guidance net system will be installed at Pelton Dam, and the Pelton Dam historical downstream-migrant fish facility (Pelton skimmer) is reactivated and operated during the primary downstream migration season (February 1 through July 31).
- If downstream-migrating salmonids are transported into Lake Simtustus, the Round Butte Dam eastside upstream fish trap at the head of Lake Simtustus will be upgraded and operated annually for part or all of the period May 1 through September 30 to capture and transport maturing adult resident salmonids upstream for release into Lake Billy Chinook.
- Disease agent and disease monitoring efforts continue in adults, downstream migrating smolts, and resident fish species to determine if diseases from below the Project have become established upstream.
- The distribution and spawning success of passed adults is studied, as are the life history, distribution, survival, and downstream passage efficacy of their progeny.
- Potential volitional upstream passage facility concepts are evaluated.

c. Schedule

Preliminary activities for the Interim Passage Phase are currently underway. This phase begins in full with the issuance of the New License and accomplishment of other prerequisites for initiating this phase. A summary schedule for the major activities in the Interim Passage Phase is presented in Table 2. A detailed schedule for this phase is presented in Appendix VI.

Table 2. Summary schedule for the major activities in the Interim Passage Phase.

Activity ID ¹	Activity Description	Early Start	Early Finish
CN 100 000	Feasibility/Constructability of System	10/01/02	1/30/04
MS 900 100	Tribal Council and ODFW Clearance		11/03/03
MS 900 200	Reintroduction Plan Complete		11/03/03
MS 900 400	Receive New License		05/03/04
PF 100 100	Trucking and Adult Release Facility Design	05/03/04	04/29/05
MS 900 300	SWW/Collection System Selection		05/03/04
MD 100 110	Near Field CFD Model	05/03/04	08/31/04
GT 200 100	Field Investigation (June-September)	06/01/04	08/23/04
TD 100 000	SWW Design, Consultation and Permitting	05/04/04	01/05/06
MD 100 120	Physical Model of SWW and Screening	08/24/04	03/01/05
TF 100 100	Temporary Screening/Collection Facility Design	01/03/05	12/30/05
TF 100 110	Temporary Handling/Marking Facility Design	01/03/05	12/30/05
PF 100 110	Trucking and Adult Release Facility Construction	05/26/05	07/31/06
SC 100 000	Evaluate Surface Currents	03/01/06	11/01/10
WQ 100 000	Evaluate Water Temperature/Quality	04/03/06	12/31/10
FP 100 000	Reintroduction of Salmon and Steelhead	10/02/06	03/29/11
TC 200 000	SWW Construction	05/26/06	09/13/07
TF 100 130	Temporary Screening/Collection Facility Construction	05/26/06	09/13/07
TF 100 140	Temporary Handling/Marking Facility Construction	05/26/06	09/13/07

Table 2, continued...

Activity ID ¹	Activity Description	Early Start	Early Finish
TV 300 100	Evaluation Trucking and Adult Release Facility (March-June)	03/01/07	06/28/11
FP 400 100	Adult Returns Evaluated	07/02/07	05/31/13
PF 100 120	Pelton Fish Trap Modifications Design	06/01/08	12/29/08
FP 200 100	Downstream Juvenile Migration Studies	02/01/08	06/28/11
TV 100 100	Evaluate Temporary Screen/Collection Facilities (March-June)	03/03/08	06/28/11
TV 200 100	Evaluate Temporary Handling/Marking Facilities (March-June)	03/03/08	06/28/11
PF 100 130	Pelton Fish Trap Modifications Construction	01/01/09	12/31/09
TV 900 900	T&V Phase Complete — Decision Point		06/28/11
PF 300 000	Permanent Fish Screening/Collection Design	06/29/11	09/12/12
PF 400 000	Permanent Fish Screening/Collection Construction	09/13/12	08/28/13
TV 100 225	Evaluate Permanent Screening/Collect Facilities (March-June)	03/03/14	06/27/16
TV 100 255	Evaluate Permanent Handling/Marking Facilities (March-June)	03/03/14	06/30/15

Note:

¹ Activity ID numbers correspond to activities shown in Appendix VI (Detailed Fish Passage Plan Schedule).

The schedule shown in Appendix VI represents agreement among the Parties regarding the appropriate schedule for the design, construction, and testing of downstream fish passage at the Project. The Parties agree that the Round Butte Dam SWW structure, with temporary downstream fish passage facilities, should be operational in the spring of 2008.

A planning and construction schedule with temporary downstream passage facilities will be implemented with a 2008 startup target for downstream passage. A period of hydraulic testing, verification of surface currents, and downstream passage efficacy testing is scheduled to begin immediately following the 2008 startup. If objectives are achieved, implementation of the permanent downstream fish passage facilities would then commence, with a final completion target date for all downstream facilities in 2013.

The information in the schedule presented in Appendix VI provides the detail and scope of the work and studies necessary to implement fish passage through the Project. The scope of the work depicted in Appendix VI and described in this section, along with logical progression for the design, construction, and testing of the facilities (including evaluating the biological effectiveness) justify the need for the established timeline.

Testing and Verification evaluations of the various components of fish passage encompass a significant portion of the activities outlined in Appendix VI. Testing and Verification phase activities will focus initially on the temporary facilities at Round Butte Dam and downstream movement through Lake Billy Chinook. When initial reservoir passage criteria are achieved, permanent collection and handling facilities will be constructed and evaluated.

The schedule for the Interim Passage Phase has been developed on an "if/then" basis; in other words, if prerequisites for future steps are accomplished as outlined in the schedule, then the elements of the Interim Phase will continue as described. However, if there is a delay in accomplishing any of the required steps, then the schedule of future activities will be revised to the extent necessary, in consultation with and subject to approval by the Fish Committee.

d. Implementation of Selective Water Withdrawal and Fish Passage at Round Butte Dam – Overall Sequencing, Facility Design Criteria, and Review / Approval Requirements

Implementation of SWW and development of effective downstream fish passage facilities at Round Butte Dam are the focus of activities during the initial years of the Interim Passage Phase. As such, planning, construction, and testing of the SWW structure and downstream-migrant collection facility will follow a carefully laid-out sequence of steps, comprising two major phases — construction, operation, and testing of SWW and temporary fish passage facilities in the first phase, followed by construction, operation, and testing of permanent fish passage

facilities in the second phase — to ensure that the facilities are best suited to the site and meet agreed-upon criteria. Consultation during the implementation of SWW / fish passage at Round Butte Dam will include several designated cycles of agency review and approval. The sequence of steps and consultation involved in the implementation of SWW and downstream fish passage at Round Butte Dam are described in this section.

(1) *Design*

Construction of the Round Butte SWW / downstream passage facilities will be preceded by final modeling and design. The Licensees shall complete the following modeling and design steps prior to the construction of the SWW facilities and the downstream fish passage facilities:

- *Constructability and Feasibility:* Constructability/feasibility design is the first step needed to select a design option and facility location.
- *Design Consultation:* After the constructability/feasibility design is complete and a preferred option is identified, the Licensees will consult with the Fish Committee, ODEQ, and the CTWS WCB prior to starting detailed design.
- *Modeling:* If the constructability/feasibility studies do not result in a clear-cut recommended design selection, then computational fluid dynamics (“CFD”) modeling may be used to provide additional input into the selection.
- *Design Selection:* If the CFD modeling is not required to make the design selection, CFD modeling and the progression to the 25 percent design stage will be conducted concurrently. The CFD modeling results will be used to optimize facility geometry and to review design features to provide the best attraction currents in the forebay and around the facility.
- *Physical Model:* After the 25 percent design stage and the CFD modeling has been completed, the results will be used to construct a physical model of the structure. The primary purpose of the physical modeling is to investigate the internal hydraulics of the structure and to evaluate entrance hydraulic conditions. Concurrently the design will progress to the 50 percent stage.
- *Design Consultation and Review:* After the physical modeling is complete and the design has progressed to the 50 percent design stage, consultation with the Fish Committee (and with FERC for dam safety purposes) will be undertaken prior to proceeding with further design.

- *Final Consultation:* After consultation is complete, the design will progress to the 90 percent stage, and then to final status. The Licensees shall file the final design with FERC after consultation with the Fish Committee and with approval by the appropriate Fish Agencies pursuant to their respective statutory authorities. Upon FERC approval, the Licensees shall construct the SWW structure and temporary downstream passage facilities.

These steps will maintain flexibility in the design process, capture the necessary design tools to ensure an adequate design of the SWW and temporary passage facilities, and allow for agency review and input. Design work for the permanent fish passage facilities is described in section IV.B.3.e.(11), and would occur through the consultation, review, and approval protocol described in section IV.B.3.d.(4), below.

(2) Construction

As noted above, the Interim Passage Phase schedule is premised on the construction of the Round Butte SWW structure and downstream passage facilities in two phases. The Licensees shall prepare, in consultation with the Fish Committee and with approval by the appropriate Fish Agencies pursuant to their respective statutory authorities, and file with FERC a design and schedule to construct the SWW and downstream passage facilities in the following two phases in accordance with the approved schedule: (1) construction of the SWW structure, which shall include a temporary downstream passage facility, and (2) construction of the permanent downstream passage facility. The temporary and permanent facilities shall both include a sampling area to support biological evaluation of the fish screens and fish bypass facilities, and a mechanical screen cleaner or some other suitable device to prevent the accumulation of sediment and debris that might otherwise impair screen function and cause the delay, injury, or mortality of downstream migrating fish at Round Butte Dam. Upon FERC approval, the Licensees shall construct the SWW and downstream passage facilities.

The two-phased approach to the construction of the SWW structure and downstream passage facilities is described in further detail as follows:

First Phase:

- The surface and bottom withdrawal portions of the SWW structure will be constructed with exclusion plating (perforated plate).
- A temporary smolt handling facility will be constructed.
- A temporary smolt pipe will transfer fish from the temporary downstream-migrant collection facility to the temporary handling facility.

- The SWW will be constructed in front of the existing intake tower. The surface withdrawal section of the SWW will be constructed with a V-shaped screening configuration for fish collection. The screening will be made of perforated plate in lieu of wedge wire screening for this phase. This method will allow the orientation of the collector entrance to be adjusted during Testing and Verification to optimize collection. A conceptual design for this option is shown in Figure 5.

Second Phase:

- Depending on the results of the Testing and Verification evaluations (see section IV.B.3.e.(9), below), the Licensees shall install and operate a permanent downstream fishway that meets NOAA Fisheries' smolt criteria (see subsection (3), following) within the forebay at the Round Butte Dam, including fish screens, guidance devices, and fish bypass facilities as described below. Construction of the permanent facilities will include the following:
 - The perforated plate screening on the *downstream-migrant collection facility* will be replaced with wedge-wire screening to upgrade to a permanent facility. The design for the permanent facility may be modified based on results of the Testing and Verification evaluations of the temporary downstream-migrant collection facility.
 - The temporary *downstream-migrant handling facility* will be upgraded to a permanent facility. The permanent facility will be designed to best suit the requirements of the overall system.
 - The temporary *smolt conveyance system* will be upgraded to a permanent facility. This facility will deliver fish from the collection facility to the final handling facility.
- The Licensees shall construct the permanent downstream passage facilities after determining, in consultation with the Fish Committee, ODEQ, and CTWS WCB, that the blend of surface/deep water withdrawal through the SWW facility will (a) satisfy the criteria for safe, timely, and effective downstream passage associated with the temporary passage facilities (see section IV.C.1.a, below), and (b) currently meet water quality criteria set forth in the § 401 certificates, or likely meet the water quality criteria within a reasonable time through continued iterative adjustments of the SWW system as constructed with permanent downstream passage facilities and/or through implementation of other water quality management strategies.

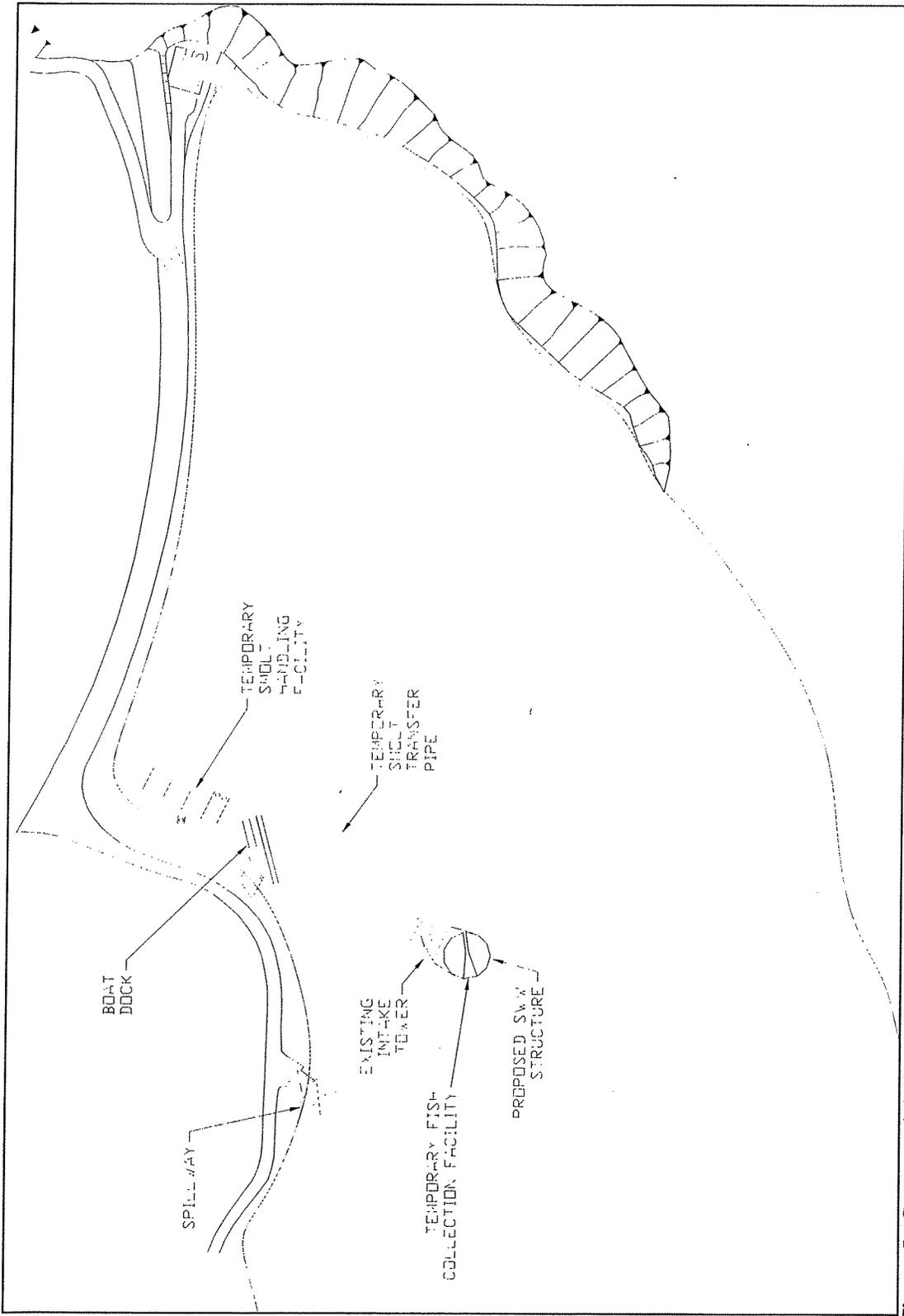


Figure 5. Conceptual design for SWW and temporary downstream-migrant fish collection facility (Option 1).

(3) Facility Design Criteria and Considerations

Fish screening/collection, transfer, and handling facilities will be designed in consultation with the Fish Committee. The temporary and permanent downstream-migrant collection facilities at Round Butte Dam shall meet NOAA Fisheries' juvenile screen criteria for fingerling-sized (≥ 60 mm) salmonids ("smolt criteria"); however, the facilities' exclusion plates do not have to meet the NOAA Fisheries criteria for sweeping velocity and contact time. The smolt criteria include, but are not limited to, a maximum approach velocity perpendicular to the screens and exclusion plate of 0.80 feet per second ("fps"), screen openings no larger than 0.25 inches, a screen sweeping velocity component no less than 0.80 fps, and a screen contact time no greater than 60 seconds. (See NOAA Fisheries criteria, available online at: www.nwr.noaa.gov/1hydrop/hydroweb/ferc.htm)

Due to the size of the structure and the experimental nature of safely attracting and capturing juvenile migrants from Lake Billy Chinook, some components of a fish screening and passage system may be difficult to design and construct to NOAA Fisheries' smolt criteria, and the Licensees shall design the fish screening and collection facilities in consultation with the Fish Committee based on the best available scientific information. For instance, the leading conceptual design at this time is a surface withdrawal structure that is circular in shape and consists of exclusion screens and one bypass entrance. The surface exclusion screen could be designed to meet the 0.80 fps criterion at maximum powerhouse hydraulic capacity and the 0.25-inch opening criterion, but likely would not have a sweeping velocity component of any significance and may induce a screen exposure time of greater than 60 seconds. NOAA Fisheries typically recommends that multiple bypass entrances be used when fish cannot be passively transported by the sweeping velocity component to the bypass within 60 seconds. The 60-second criterion was established to prevent healthy fish from becoming impinged on screens due to fatigue. Because the exclusion plate would meet NOAA Fisheries' smolt criteria at maximum powerhouse capacity (except, as noted, for sweeping velocity and contact time) and would expose fish to velocity components normal to the exclusion plate of greater than 30 percent of the 0.80 fps criterion level less than 10 percent of the time, it is not expected that healthy smolts would become impinged on the exclusion plate. The concern then becomes whether fish will be guided efficiently to the single bypass entrance.

During the design activities, site-specific decisions will be based on the best available scientific information and rationale. For instance, if a single entrance is proposed, CFD modeling, including, if appropriate, the use of the "numerical fish surrogate" technology, will be used to predict whether fish will be effectively guided to a single entrance. Modeling will allow orientation of the bypass entrance to make optimum use of the circulation patterns in the Round Butte forebay for fish collection. Modeling would also be used to predict whether guidance might be improved by use of a guidance curtain or net.

The Licensees shall design screening facilities to screen less than 14,000 cfs only if water quality modeling verifies that flows above 9,000 cfs can be routed through the deep intake without impact to the Project's ability to meet water quality standards and without detrimental impact to the flow pattern and fish attraction in Lake Billy Chinook.

The Licensees shall design the permanent downstream collection facility at Round Butte Dam to include the ability to add pumps with a total capacity of 3,000 cfs and all appurtenant devices. The Licensees shall, before construction of the permanent downstream collection facility, prepare and provide the Fish Committee a report on the need to add pumped attraction flow. The report shall be based on information gathered during the Testing and Verification studies and prepared in consultation with the Fish Committee. If the Fish Agencies conclude that it is necessary to add pumped attraction flow, the Licensees shall, in consultation with the Fish Committee and with approval by the appropriate Fish Agencies pursuant to their respective statutory authorities, develop a plan to design, construct, and operate pumps to provide appropriate attraction flow to the permanent downstream collection facilities. Upon approval by the appropriate Fish Agencies pursuant to their respective statutory authorities, the Licensees shall submit the plan to FERC for approval. Upon FERC approval, the Licensees shall implement the plan.

In addition to meeting the criteria outlined above, the temporary and permanent facilities shall include a sampling area to support biological evaluation of the fish screens downstream-migrant collection facility, and a mechanical screen cleaner or some other suitable device to prevent the accumulation of sediment and debris that might otherwise impair screen function and cause the delay, injury, or mortality of downstream migrating fish at Round Butte Dam.

The SWW structure and the temporary and permanent downstream-migrant collection facilities shall be installed and operated in consultation with the Fish Committee, ODEQ, and the CTWS WCB. In addition, the facilities shall be operated year-round to protect resident and anadromous fish species.

(4) Consultation, Review and Approval

Throughout the implementation of SWW and fish passage at Round Butte Dam, and in accordance with the schedule described above and shown in Appendix VI, the Licensees will consult with the Fish Committee and will submit design drawings and other information for review and approval, as follows:

- *Downstream Fishway Design:* The Licensees shall submit for the review by the Fish Committee, and for approval by the appropriate Fish Agencies pursuant to their respective statutory authorities, the results of all downstream fishway design

investigations, preliminary design plans and specifications, and final design plans and specifications for the construction and operation of temporary and permanent downstream fishways at Round Butte Dam. Facilities will meet NOAA Fisheries' smolt criteria (see subsection (3), above).

- *Operation, Maintenance, and Monitoring Plans:* The Licensees shall notify the Fish Committee in writing when the downstream fishways are fully operational. Operation, maintenance, and monitoring of downstream fishways shall be conducted in accordance with the Downstream Fishway Operation and Maintenance Plan and Downstream Fishway Monitoring Plan, which the Licensees shall file with FERC after consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities. Upon FERC approval and coincident with the initiation of downstream fishway operations, the Licensees shall implement the plans.

e. *Description of Major Activities*

The major activities taking place in the Interim Passage Phase are described below. These activities are shown on the Interim Passage Phase schedule (Figure 4 and Appendix VI).

(1) *Constructability/Feasibility Evaluation and Preliminary Design of Round Butte Selective Water Withdrawal (SWW) and Downstream Fish Passage Facilities*

The constructability/feasibility evaluation and design of the SWW and temporary downstream fish passage facilities at Round Butte Dam began in fall 2002. Several promising SWW / fish collection alternatives that were under consideration by the Technical Subcommittee were evaluated for engineering feasibility and constructability, and the results were discussed with the Technical Subcommittee in early 2003. In addition, in May 2003, a final brainstorming session was held among Licensee and agency fish passage engineers and biologists to ensure that no options or important fish collection aspects had been overlooked. Cost estimates will be prepared for one or two system options, and design criteria for the overall system will be developed. In 2004, a feasibility-level design for the preferred SWW facility and temporary downstream-migrant fish collection system will be developed based on structural, hydraulic, construction and economic feasibility, and a final Concept Development Report will be assembled. Specific consultation and review requirements for the constructability/feasibility evaluation and preliminary design are described in section IV.B.3.d., above.

Receipt of the New License, amendments to the Deschutes subbasin fish management plans by the Oregon Fish and Wildlife Commission (adopted December 12, 2003), approval of fish

passage from ODFW and the CTWS BNR,⁹ and completion of the Reintroduction Plan (as described below) are prerequisites to beginning final selection and design for the SWW structure / downstream-migrant collection facility. Once the selection is made, the SWW structure / downstream-migrant collection facility final design process and modeling will begin.

(2) *Reintroduction Plan*

A plan for the reintroduction of anadromous fish species upstream of the dam will guide efforts to establish chinook, steelhead, and sockeye populations. This Reintroduction Plan will include proposed release numbers by location and life stage as well as a strategy to phase out releases as the populations become established. The Reintroduction Plan will be completed in 2004 by ODFW and the CTWS BNR, with assistance from the Licensees.

(3) *Numerical and Physical Modeling for Selected SWW / Downstream Fish Passage System*

A combination of near-field CFD model results and the water quality model results will be used to evaluate the ability of the final SWW structure configuration to adequately meet lower Deschutes River temperature, pH, and dissolved oxygen requirements. As a secondary function, if there are two comparable SWW structure / downstream-migrant collection facility options still under consideration at the end of the Feasibility/Constructability process, then the CFD modeling may be used to predict which system (if any) produces the most desirable near-field fish attraction/collection. The CFD modeling will also be used to investigate potential need for supplemental features (guidance curtains, etc.) in the forebay.

A physical model of the SWW structure / downstream-migrant collection facility will be constructed to facilitate the design of the internal structural members to reduce or eliminate hydraulic disturbances. The physical model must be completed before the SWW structure / downstream-migrant collection facility design can proceed past the 50 percent completion point. The schedule is based on beginning the physical model in late August 2004 and completing the model by March 2005.

(4) *Geotechnical Field Work and Final Design Recommendation*

Any geotechnical field exploration requiring underwater work will be performed during the summer months (June–September) of 2004. After the field exploration is completed, a field

⁹ The CTWS Branch of Natural Resources and ODFW are co-managers of fisheries resources in the Deschutes River Basin, on behalf of CTWS and the State, respectively. Because re-initiation of passage will be a change in fisheries management that will include some risk, the Oregon Fish and Wildlife Commission has amended subbasin management plans to manage for anadromous fish and the CTWS Branch of Natural Resources will need to provide similar clearance, for fish passage to commence.

report will be issued. The final SWW structure foundation design will be completed after the field report is issued.

(5) *SWW / Fish Passage System Design, Consultation and Permitting*

The final SWW structure / downstream fish passage facility design, consultation and permitting activities are scheduled to begin in May 2004 and extend through the end of 2005. Progress of the design work will depend upon the physical modeling and any geotechnical field investigation that may be performed. Sufficient data must be gathered in both of these areas before the design can be completed. Engineering consultation periods will be incorporated in the design schedule to address issues that arise from the modeling, field exploration and construction methodology. Specific consultation and review requirements for the final system design are described in section IV.B.3.d, above.

The temporary downstream-migrant collection facility will be designed as part of the surface water withdrawal component of the SWW structure. The primary difference between the temporary and permanent structures is that the temporary structure will have perforated plate screens instead of the wedge-wire screens required in the permanent structure. Both the temporary and permanent structures will meet NOAA Fisheries smolt criteria (see section IV.B.3.d.(3), above). The facility may be designed to allow rotation/reorientation of the collection opening, if Testing and Verification evaluation results indicate adjustments could improve fish collection. Additionally, the temporary and permanent collection facilities will be designed to allow for 3,000 cfs of attraction-flow pumping, if necessary.

(6) *SWW / Fish Passage System Construction*

Construction of the SWW structure / downstream-migrant collection facility will take place from approximately late May 2006 through mid-September 2007. Caution must be taken with staging the different phases of the construction such that Round Butte Dam maintains its flood storage and flood passage capabilities during the winter months. Some in-water work may be scheduled to occur during nighttime hours to allow normal operation of the Project.

The temporary downstream-migrant collection facility will be constructed as part of (and thus, during the same timeframe as) the overall SWW system. During the SWW mechanical/electrical installation and startup period (see Appendix VI), louver adjustments will be made and "hotspots" (i.e., localized areas exceeding hydraulic criteria) on the screens will be identified and the porosity management louvers behind the screens will be adjusted to correct them.

The temporary handling/marketing facilities will be designed to float in a relatively protected area of the forebay. The design may incorporate fish sorting facility concepts from other hydro facilities such as the Rocky Reach and Baker Lake projects.

(7) *Round Butte Adult Release Facility Design and Construction*

The Round Butte Adult Release Facility will be designed to release upstream summer-migrating adults below the thermocline in the forebay of Round Butte Dam so that they will not experience heat shock due to rapid temperature change. The adults will be trucked from the Pelton Fish Trap to the Adult Release Facility, which will be located on or near Round Butte Dam. The facility will be designed to provide for safe transfer of the fish from the truck to the Adult Release Facility. This facility and reservoir passage of adults will be evaluated using radio-tag studies with details of these studies delineated in annual work plans and reviewed by the Fish Committee.

The Licensees shall, in consultation with the Fish Committee and with approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, develop and file with FERC preliminary design, final design, and construction plans for the Adult Release Facility at the Round Butte forebay. Upon FERC approval, the Licensees shall implement the plans.

Design and construction activities for the Adult Release Facility will extend from May 2005 through July 2006. The Adult Release Facility will be operational for bull trout releases from Lake Simtustus in mid-summer 2006.

(8) *Upgrade and Reactivation of Existing Fish Passage Facilities in Lake Simtustus*

For the term of the New License, the Licensees shall transport all juvenile salmonids captured at the Round Butte downstream-migrant collection facility during the primary emigration period (February 1 through July 31) to the lower Deschutes River, bypassing Lake Simtustus and the Reregulating Reservoir. During the remainder of the year (August 1 through January 31), the Licensees shall, at the request of the Fish Committee, transport downstream-migrating salmonids into Lake Simtustus to utilize the lentic habitat it provides.

If downstream-migrating salmonids are transported into Lake Simtustus, the Licensees shall, in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, file with FERC a plan to upgrade the Round Butte Dam east side upstream fish trap at the head of Lake Simtustus, and operate it annually for part or all of the period May 1 through September 30 to capture and transport maturing adult resident salmonids upstream for release into Lake Billy Chinook. Upon FERC approval, the Licensees shall implement the plan.

If downstream-migrating salmonids are transported into Lake Simtustus, the Licensees shall, in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, file with FERC a plan to install a guidance net

system at Pelton Dam and shall operate the Pelton Dam historical downstream-migrant fish facility (Pelton skimmer)¹⁰ during part or all of the primary migration season (February 1 through July 31) to transport downstream migrants to the lower Deschutes River. Upon FERC approval, the Licensees shall implement the plan.

In the event any Party requires or requests another agency to require the Licensees to take, without the Licensees' agreement, additional measures regarding these facilities, beyond those specified in Section IV(B)(3)(d)(8) (Upgrade and Reactivation of Existing Fish Passage Facilities in Lake Simtustus), including to evaluate or improve passage efficiency at the Pelton skimmer; to construct or retrofit fish protection, guidance or collection facilities at Pelton Dam during the term of the New License; or to evaluate or improve the Round Butte Dam Upstream Fish Trap before volitional passage is established, the costs for such measures or evaluations that the Licensees are required to undertake or implement shall be deducted from the amount remaining unallocated or uncommitted to specific projects or yet to be contributed to, the Pelton Round Butte Fund ("PRB Fund") General Fund, provided for in the Pelton Round Butte Fund Implementation Plan, Exhibit H to the Settlement Agreement. If the total amount remaining unallocated or uncommitted in the General Fund and yet to be contributed to the General Fund is not sufficient to undertake the required measures or evaluations, the remaining cost shall be deducted from the Water Rights Fund. If the total amount remaining unallocated or uncommitted in the PRB Fund and yet to be contributed to the PRB Fund is not sufficient to undertake the required measures or evaluations, the remaining cost shall be an obligation of the Licensees.

Since the Round Butte Dam temporary downstream migrant collection facility is expected to be operational by 2008, anadromous outmigrants will not be moved into Lake Simtustus before 2008. Initially, very few outmigrants are expected to be collected during the August 1 through January 31 period. Most are expected to be subadult and adult bull trout, as well as some kokanee and fall migrating spring chinook. Thus, even after release of these outmigrants into Lake Simtustus begins if requested by the Fish Committee, the vast majority will be resident and not anadromous salmonids. This should minimize the exposure of these fish to any downstream passage risks. Additional Lake Simtustus management measures include the operation of a weir to prevent northern pikeminnow from spawning in Willow Creek and the continuation of the steelhead post smolt hatchery program to enhance the resident sport fishery. Collectively these measures will meet the Fish Passage Plan's resource management needs for Lake Simtustus until the decision is made whether or not to transition to the Plan's final phase, which may include volitional passage. Any request for additional measures regarding these facilities shall consider data from the Fish Passage Plan's program of Testing and Verification studies, including but not

¹⁰ The reactivated Pelton Skimmer is intended to provide for the sorting, counting, and marking of downstream outmigrant juveniles, which will be transported to the base of the Reregulating Dam for release.

limited to those on disease, predation, and outmigrant movement during both Temporary and Permanent Downstream Passage, as well as the Fish Passage Plan's Permanent Downstream Passage recruits per spawner evaluation and any other pertinent information.

(9) *Testing and Verification of SWW and Temporary Round Butte Dam Downstream Fish Passage Facilities*

Testing and verification of the SWW structure and temporary downstream-migrant collection facility at Round Butte Dam will be conducted through a comprehensive program of biological and engineering studies and measurements. The Licensees shall, within one year of license issuance, file with FERC a schedule for the development of plans for Testing and Verification studies as described below and in Appendix III. The Licensees shall develop the schedule in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities.

Upon FERC approval of the schedule, the Licensees shall develop the Testing and Verification study plans in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities. The study plans shall provide that the Licensees shall conduct these studies with continued involvement of the Fish Committee through the annual work planning and reporting process, as discussed in section V.F of this Fish Passage Plan. Each study plan will include objectives, tasks and evaluation/decision criteria. Where appropriate, study plans will be designed to evaluate the effectiveness of individual fish passage facilities in achieving the criteria and goals set forth in section IV.C of this Fish Passage Plan. Such effectiveness evaluations shall include, at a minimum, the number of fish, by species and life stage, captured and released by the facility and a record of observations on the physical condition of the fish using the facility fishways. The Licensees shall develop the Testing and Verification study plans for the following study areas:

- Facility Evaluation
- Physical Reservoir Changes with Selective Water Withdrawal
- Juvenile Salmonid Studies – Reintroduction of Anadromous Stocks Upstream of the Project
- Juvenile Salmonid Studies – Rearing, Juvenile Densities, Habitat
- Juvenile Salmonid Studies – Juvenile Migration
- Juvenile Salmonid Studies – Reservoir Survival/Predation, Fishery, Disease

- Juvenile Salmonid Studies – Round Butte Dam Juvenile Collection, Downstream Transportation and Release
- Adult Salmonid Studies – Adult Upstream Trap-and-Haul, including the Adult Release Facility
- Adult Salmonid Studies – Adult Migration/Survival/Spawning

Study plans for multi-year studies shall provide that the Licensees may implement minor modifications to the study methodology in consultation with the Fish Committee. The need for any such minor modifications to the study methodology will be described in the annual progress report and will be based on the results of the studies to date. Following approval by the appropriate Fish Agencies pursuant to their respective statutory authorities, the Licensees shall file the study plans with FERC. Upon FERC approval, the Licensees shall implement the plans.

Based on results of the individual Testing and Verification studies, the Licensees shall, after consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, file plans with FERC for making any modifications to the facilities needed to ensure safe, timely and effective fish passage. Upon FERC approval, the Licensees shall implement the plans.

A description of the Testing and Verification program evaluations of the temporary Round Butte Dam fish passage facilities is provided below. Study plan outlines for these studies are presented in Appendix III.

(a) Surface Currents

The Licensees will conduct evaluations of the effects of selective water withdrawal on reservoir surface currents, focusing on the direction and velocity of currents in the lower reaches of Lake Billy Chinook's tributary arms and in the Round Butte forebay. Initial current studies conducted in the forebay before construction using acoustic Doppler current profile ("ADCP") instruments to measure currents will help investigators develop and calibrate the detailed CFD model of the forebay. The evaluations of currents (using drogues) following implementation of SWW will seek to establish whether the direction and velocity of the reservoir currents achieve the conditions predicted by hydrodynamic modeling (Khangaonkar 1999; Yang et al. 2000), and whether reservoir currents may be significantly affecting smolt outmigration. Prior to conducting the post-SWW evaluation of surface currents, the Licensees will file a detailed study plan, in consultation with and for approval by the Fish Committee.

The evaluation of surface currents will include the following elements:

1. *Use of the CFD model:*

The CFD model will be used to provide information on current movement immediately adjacent to the SWW structure / temporary downstream-migrant collection facility. If necessary, the CFD model will be used to modify the SWW structure design and/or operations to improve fish collection performance. The primary purpose of the CFD model will be as a design tool for the downstream-migrant collection facility. The CFD model is especially important for verifying the elevation of surface withdrawals from the reservoir to meet water quality. However, it will be available, if needed, for additional studies after the SWW and downstream-migrant collection facilities are in operation. The ADCP and drogue data may be used to verify the CFD model if the model is used after the SWW is in operation.

2. *Current monitoring using drogues:*

Drogue data will consist of a sufficient number of drogue releases in each arm of Lake Billy Chinook (and possibly the Round Butte Dam forebay) to allow the results to be used to confirm the CFD model results for reservoir currents. The length of time for drogue monitoring, number of drogues, and drogue release locations will all be selected to provide a statistically valid verification of the CFD model results for flow conditions in the three reservoir arms during the primary period of smolt outmigration. This will allow correlation of data collected on both water movement and smolt movement. Wind, inflow, outflow, and temperature data will also be collected concurrently with the data collection for the drogue monitoring.

Baseline surface current studies of existing reservoir and forebay conditions will be conducted before the SWW system is constructed. After construction, less intense drogue studies will run for three years (through 2010) to evaluate reservoir and forebay surface currents following implementation of selective water withdrawal. Two different surface withdrawal conditions will be monitored and evaluated during each of the three years: 100 percent surface withdrawal (March through June) and blended surface/deep withdrawal (July through October). This drogue data collection will also be conducted concurrently with studies of radio- and PIT-tagged steelhead and spring chinook outmigrants. This will allow correlation of data collected on both water movement and smolt movement.

(b) **Water Quality**

Reservoir and lower Deschutes River water quality parameters that modeling has predicted will occur with SWW will be verified under actual reservoir operations with selective water withdrawal. Planned evaluations of water quality, as described in detail in the September 2002 WQMMP (Tribes and PGE 2002), include continuous and periodic (monthly to quarterly)

monitoring of a suite of water quality parameters to determine whether the Project is in compliance with ODEQ and WCB water quality standards and the § 401 certificates.

Baseline temperature and water quality data for the existing reservoir and forebay conditions will be collected at established sampling stations for two years prior to SWW system construction. Changes in temperature and water quality will be monitored for three years following installation of the SWW system to verify the system is working properly. Some sampling stations will be permanent to monitor conditions throughout the New License.

If water quality conditions as required under the § 401 certificates are not achieved, adjustments to reservoir surface/deep water withdrawal blending operations will be made, as necessary, to achieve desired reservoir and lower river conditions. During the first several years of operation, it is anticipated that iterative adjustments in the percentage of deep vs. shallow water may be required to fine-tune the relative percentages of water withdrawn to develop the proper mixing criteria to accurately control temperature. However, modeling results indicate that no deep withdrawal will commence until July, after the primary smolt emigration period has passed. Concurrently, the Licensees will also evaluate other potential causes of diminished water quality. If water quality criteria are not met within the SWW pattern deemed necessary for downstream passage, the Licensees will consult with the Fish Committee, ODEQ, and the CTWS WCB to identify and test other water management strategies.

Before the Licensees proceed with construction of permanent downstream passage facilities, the Licensees, Fish Committee, ODEQ, and WCB will consult and determine that the blend of surface/deep water withdrawal through the annual cycle will: (a) meet the criteria for downstream reservoir passage described in section IV.C.1.a.(3) below; and (b) currently meet water quality criteria set forth in the 401 certificates, or likely meet the water quality criteria within a reasonable time through continued iterative adjustments of the SWW system as constructed with permanent downstream passage facilities and/or through implementation of other water quality management strategies.

(c) Temporary Screen Hydraulics

Hydraulic conditions of the temporary fish screening / downstream-migrant collection facility will be measured to ensure they meet NOAA Fisheries smolt criteria. Hydraulic conditions on the screening/collection facility can be adjusted to a certain extent during the Testing and Verification phase to seek the best settings for the facility. Adjustments could include fine-tuning of the effective screen porosity distribution using the louver system and possible rotation/reorientation of the surface collector entrance.

(d) Biological Performance of Temporary Screens, Handling Procedures, and Transport

In addition to the hydraulic testing of the temporary screening / downstream-migrant collection facility, the temporary screens, handling procedures, and transport will also be evaluated to determine if they are causing adverse effects to juvenile fish that are collected and passed downstream. Captured fish will be inspected to be certain that they are not being injured, descaled, or killed within the screening/collection facility. If injured, descaled or dead fish are found (aside from those that are determined to have succumbed to disease), the screens and fish conduits will be inspected and any problems will be corrected.

Because all fish moving downstream will be captured, the temporary handling and marking facility will be evaluated on a continuing basis. Any injured or dead fish will prompt actions to improve facilities or procedures. Large numbers of smolts are expected to be passed through this facility during peak migration periods. The facility will be sized and constructed to allow safe, efficient crowding, handling, marking, and loading of juvenile fish. The temporary handling/marking facility and procedures will be modified as needed to address any problems and improve survival of downstream migrants, with the intent being to exceed the 93 percent safe passage standard proposed (see section IV.C.1, below). Information gained during use of the temporary handling/marking facility will be used to ensure that the final facility is properly sized and designed.

(e) Performance of Deep Exclusion Screens

The Licensees shall design the Round Butte deep exclusion screen to meet NOAA Fisheries smolt criteria except for the criteria for sweeping velocity and contact time. In addition, outmigrant collection facilities will not be required at the deep exclusion screen. The Licensees shall evaluate hydraulic performance as soon as possible after the deep exclusion screen has been installed. If the screen does not meet applicable NOAA Fisheries smolt criteria at full hydraulic capacity, the Licensees shall take any necessary measures to meet applicable NOAA Fisheries smolt criteria. The Licensees shall continuously monitor differential pressure through the deep exclusion screen while the lower withdrawal system is in operation.

The Licensees shall conduct studies of fish impingement at the Round Butte deep exclusion screen using monitoring methods that may include, but are not limited to, sonic or radio-tags, hydroacoustic monitoring, and remote video inspection of the deep exclusion screen. Monitoring will be conducted during the first year after installation of the deep exclusion screen when deepwater withdrawal has been initiated, and when deepwater withdrawal is maximized. The duration of monitoring will depend on the monitoring method selected, but must be for a period

sufficient for evaluating the possibility of impingement. Duration and method of monitoring will be determined in consultation with the Fish Committee.

The Licensees shall monitor the hydrodynamic and biological effects of Project operations during the first season after installation of permanent screens for the Round Butte downstream fish passage facility, and at least once every five years thereafter. The Licensees will also install differential pressure sensors on the lower exclusion screens. Differential pressure through the lower exclusion screening will be monitored continuously by the plant computer control system while the lower withdrawal system is in operation. A high differential pressure setpoint will be established, and the control system will automatically alarm if the setpoint is exceeded. The Licensees shall, in consultation with the Fish Committee, evaluate the need for additional monitoring based on the previous monitoring data.

If biological monitoring indicates that there is impingement of fish at the Round Butte deep exclusion screen, the Licensees shall consult with the Fish Committee to determine if the effects are significant. Impingement is significant if it impedes the Licensees' ability to achieve the objectives for fish passage. If the Fish Committee determines that the effects are significant, the Licensees shall, in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective authorities, take any feasible measures or implement modifications within their control that are necessary to reduce impingement below the level of significance. These measures include but are not limited to operations modifications, cleaning system modifications, louver adjustments, and deterrent systems such as strobe lights or sound to keep fish away from the exclusion screening. After taking any such corrective measures, the Licensees shall re-evaluate the deep exclusion system the next time deepwater withdrawal has been initiated or maximized. If there are no feasible structural or operational measures within the Licensees' control that will reduce impingement below significant levels, the Licensees shall, in consultation with the Fish Committee, investigate and implement alternative mitigation measures.

(f) Downstream Juvenile Fish Migration through Lake Billy Chinook

(i) *Migration Through Lake Billy Chinook*

The Licensees will conduct evaluations of the biological effects of selective water withdrawal. The biological evaluations will focus on the movement of statistically significant samples of tagged steelhead and spring chinook outmigrants from Lake Billy Chinook's tributary arms to the Round Butte forebay. The evaluations will seek to establish the effect of selective water withdrawal on smolt outmigration. The evaluations will be repeated annually during Testing and Verification of the temporary downstream passage facilities for at least four consecutive years, as described in section IV.C.1.a., below.

The timing of reintroduction is scheduled so that naturally reared smolts will be moving downstream by the time the SWW structure and temporary downstream-migrant collection facility are completed at Round Butte Dam. As such, reintroduction is scheduled to commence in 2006 with steelhead, followed by reintroduction of spring chinook salmon early in 2007. Steelhead will be introduced into the middle Deschutes River watershed in Squaw Creek, and into the Crooked River watershed in Ochoco and McKay creeks (and possibly other locations). Spring chinook salmon will be introduced into the upper Metolius River watershed in a number of locations and possibly into lower Squaw Creek and the lower Crooked River. Release locations will be determined by ODFW and the CTWS BNR and delineated in the Reintroduction Plan. Most of these introductions will likely be through releases of unfed fry from adults that have been screened for disease, although some may be introduced as eyed eggs into hatch boxes. All eyed eggs / fry / smolts placed upstream will be from adults screened for disease agents to reduce the probability of disease agent transfer as called for in the Fish Health Management Plan. Sockeye will be reintroduced into the Metolius Basin under a schedule determined by ODFW and CTWS BNR.

Smolts entering Lake Billy Chinook will be captured in traps located on all three major tributaries. A portion of those captured will be fitted with radio transmitter tags. Numbers of fish to be radio-tagged will be delineated in the annual work plans with oversight and approval of the Fish Committee. Tracking these tagged fish will allow evaluation of patterns of migration, responses to current patterns, and possibly identify mortality locations and causes. Radio tracking will also allow an evaluation of the efficiency of the Round Butte downstream-migrant collection facility in capturing smolts that enter the Round Butte forebay. A statistically significant sample of the remaining spring chinook and steelhead smolts and fingerling juvenile bull trout captured in tributary traps will receive passive integrated transponder ("PIT") tags. The recapture of PIT-tagged juveniles at the Round Butte Dam will allow evaluation of reservoir migration and progress toward meeting interim and final smolt passage objectives.

As described above in section IV.B.3.d.(3), if these Testing and Verification evaluations indicate the need for additional attraction flow to improve downstream fish migration, the Licensees, in consultation with the Fish Committee, will add pumping facilities to the permanent downstream-migrant collection facility.

(ii) Predation in Lake Billy Chinook

Attempts will be made to recover all stationary radio tags to determine predation impacts (including identifying the predator species in each case when a radio-tagged smolt has been consumed). Radiotelemetry analysis of predation impacts will be conducted on an annual basis (in conjunction with smolt migration studies) until the respective downstream migration objectives (percentage recovery of smolts released at the heads of Lake Billy Chinook tributary

arms / below Round Butte Dam), as described in the Fish Passage Plan, are achieved. In addition, using methods similar to those employed in the bull trout food habits study (Beauchamp and Van Tassell 2001), the relative frequency of salmonid smolts in the stomach contents of predatory fish in Lake Billy Chinook will be determined. This frequency will be related to the abundance of predatory fish to provide an estimate of the number of smolts that did not survive reservoir passage because of predation. Stomach content analysis of predatory fish in Lake Billy Chinook will be conducted annually for the first three years after smolts are present, or as otherwise determined by the Fish Committee.

(iii) Angler Impacts in Lake Billy Chinook

The impact of the sport fishery in Lake Billy Chinook on downstream migrant salmon and steelhead smolts will be determined by conducting angler surveys the first three years after smolts are present in the reservoir. This angler survey on Lake Billy Chinook will be based upon statistical subsampling in a manner similar to surveys conducted during the Lake Billy Chinook Kokanee Study (Thiede et al. 2002). Results of this survey will provide an estimate of the number of steelhead smolts harvested, and the number of sublegal-size steelhead and spring chinook salmon caught and released. This information will help determine whether angling regulations will need to be modified to protect smolts in Lake Billy Chinook. Evaluation of angling impact may continue to be conducted on a periodic basis (to be determined by the Fish Committee) until the downstream migration objectives (percentage recovery of smolts released at the heads of Lake Billy Chinook tributary arms / below Round Butte Dam), as described in section IV.C.1.a, below, are achieved.

(g) Fish Health Management Implications

The Fish Health Management Program is scheduled to start three to six months prior to the reintroduction of juvenile steelhead and spring chinook salmon upstream of the Project. Brood adults will be sampled for viral diseases, and eggs from adults carrying viral diseases not currently found upstream will be culled. This will reduce the potential disease risks within introduced populations upstream of the Project. It will also allow the Fish Committee to evaluate smolt production and reservoir passage success prior to actual passage of adult fish upstream of the project with its attendant risk of disease transmittal. When smolt passage begins, sampling will be conducted to distinguish any fish that succumb to disease agents within the facilities from those that are injured or killed during capture and handling.

(h) Decision Making Regarding Construction of Permanent Downstream Passage Facilities

The results of the Testing and Verification evaluations of the SWW structure and Round Butte temporary downstream-migrant collection facility described above will be used by the Fish

Committee to identify adjustments that may be needed to the system and as the basis to make the decision as to whether, and when, construction of permanent Round Butte Dam downstream fish collection facilities should proceed. Measures of success to be applied in this decision making are described in section IV.C.1.a, below. Consultation procedures for the decision making are outlined in section V.C.

Based on the results of the Testing and Verification evaluations, if the Fish Committee determines that permanent downstream fish passage facilities at Round Butte Dam should not be constructed, then the Fish Committee will consider alternatives to the passage program, as described below in section IV.C.3.

(10) *Operation, Monitoring, and Evaluation of Upstream Passage Facilities*

(a) *Operation of Trap-and-Haul Facilities*

Upstream passage will initially be provided using trap-and-haul facilities. The Pelton Fish Trap, located at the Reregulating Dam, was evaluated for capture efficiency in the early 1980s when the Reregulating Dam Powerhouse was constructed. The entrance configuration for the Pelton Fish Trap will again be evaluated prior to the return of adults that were passed as downstream migrants to ensure that the trap will provide for efficient upstream passage. Additional modifications will be made as needed. The trap has already been modified, with the addition of an accumulation pool in 1999, to allow the efficient sorting of adults into two containers. Fish put directly into the hopper can be loaded immediately, while fish placed in the accumulation pool can be crowded directly into the hopper using water-to-water loading for transfer to a different destination. This will allow brood stock for the hatchery to be obtained from maturing adults to be passed upstream. Any further modifications needed are scheduled to be completed by the end of the 2009 calendar year, so that the trap will be ready for the spring chinook, steelhead and sockeye returning in 2010, as well as the 2009 fall chinook run. If fish passage is successful and a significant sockeye run is established, the capacity of the brail pool in the Pelton Fish Trap may need to be enlarged in the future (if determined necessary by the Licensees in consultation with the Fish Committee), because large numbers of sockeye may arrive over a relatively short interval during late summer.

The Licensees shall, in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, file with FERC a final monitoring plan for the operation and maintenance of trap-and-haul fishways at the Project. The plan shall provide for the submission of an annual monitoring report to the Fish Committee for the duration of the operation of the interim trap-and-haul fishways. Upon FERC approval, the Licensees shall implement the plan.

(b) Operation of Adult Release Facility

The Licensees shall, in consultation with the Fish Committee and with approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, develop and file with FERC an operation and maintenance plan for the Round Butte Adult Release Facility for the safe, timely and effective upstream passage of anadromous fish when Lake Billy Chinook is thermally stratified. Upon FERC approval, the Licensees shall implement the plan.

(c) Evaluation

Upon the initiation of adult fish transport from the Pelton Fish Trap to release at the Round Butte Adult Release Facility, evaluations will be made of the effectiveness of the upstream passage effort and the condition of released fish. The trucking and release portion of the initial upstream passage facilities will be evaluated in two ways. First, some returning adults will be trucked to Round Butte Hatchery for use as brood stock. Holding these fish will allow evaluation of any delayed injury or mortality associated with trapping and hauling. Second, a portion of the adults released into the Round Butte Adult Release Facility will be radio tagged. Radio tagging will allow the tracking of adults through Lake Billy Chinook to their respective spawning locations and allow an evaluation of any migration delay or mortality associated with the release facility.

These evaluations will also include an assessment of adult fish for signs of disease as well as sampling of fish at Round Butte Hatchery that are held for brood stock, to test for presence of disease agents (some of which are only expressed when the fish mature at spawning). A significant sample of adults spawned at the hatchery and post-spawning adult carcasses observed in the wild will be sampled to allow monitoring of disease-carrier rates in these populations and monitoring of new disease agents upstream of the Project.

The Licensees shall, in consultation with the Fish Committee and with approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, develop and file with FERC a monitoring and evaluation plan for the Round Butte Adult Release Facility. Upon FERC approval, the Licensees shall implement the plan.

(d) Modifications to Adult Release Facility

The Licensees shall prepare and provide the Fish Committee reports in accordance with the monitoring and evaluation plan for the Round Butte Adult Release Facility. The reports shall be based on monitoring of the Adult Release Facility, shall describe any possible need to modify the Adult Release Facility, and shall be prepared in consultation with the Fish Committee. If the Fish Agencies conclude that the Adult Release Facility must be modified to ensure safe, timely, and effective upstream passage, the Licensees shall, in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory

authorities, develop a plan to modify the Adult Release Facility to ensure safe, timely, and effective upstream passage, which plan may include, but need not be limited to, measures or modifications required to meet the survival standard applicable to collection at the Pelton Fish Trap, transportation to the Adult Release Facility, and release through this facility into Lake Billy Chinook. Upon approval by the appropriate Fish Agencies pursuant to their respective statutory authorities, the Licensees shall submit the plan to FERC for approval. Upon FERC approval, the Licensees shall implement the plan.

(11) *Permanent Round Butte Downstream Passage Facilities Design and Construction*

The Round Butte permanent downstream-migrant collection facility will be similar in design to the temporary facility, except that wedge-wire screens will be used. Additionally, any beneficial modifications that may have been made during the Testing and Verification phase will be incorporated into the permanent facility design. The design work for the permanent facility is scheduled to begin in summer 2011 and continue through fall 2012. Construction of the permanent facility will begin following completion of the design work and be completed by late summer 2013, and construction activities will be coordinated to avoid interruption to the downstream migration season.

The permanent handling and marking facility will be designed and constructed during the same timeframe, and the benefit of several years of previous operation and evaluation of the temporary facility will inform the design of the permanent facility. Together, the permanent downstream-migrant screening/collection, transport, and handling/marketing facilities (including trucking to the lower Deschutes River) will be required to perform at a higher level of efficiency and meet stricter safe passage criteria (96 percent for the permanent downstream passage facilities vs. 93 percent for the temporary downstream passage facilities; see section IV.C., below) than the temporary facilities. Evaluation of the permanent downstream passage facilities will entail examination of all collected fish for injury/descaling and mortality.

(12) *Testing and Evaluation of Permanent Round Butte Fish Passage Facilities*

Evaluation of the permanent downstream passage facilities will be similar to the evaluation of the temporary facilities. Hydraulic conditions of the permanent fish screening / downstream-migrant collection facility will be measured and adjusted as needed to ensure that all aspects of the facility meet applicable NOAA Fisheries criteria. Fish captured in the permanent downstream-migrant collection facility will be inspected to be certain that fish are not being injured, descaled, or killed within the facility. If injured, descaled or dead fish are found (aside

from those that are determined to have succumbed to disease), the screens and fish conduits will be inspected and any problems will be corrected.

Other evaluations will also be conducted, similar to the Testing and Verification studies of the temporary downstream-migrant collection facility. Downstream smolt migration studies will continue, including radio-tagging and PIT-tagging evaluations similar to those described in section IV.B.3.e.(9)(f)(i) above for evaluation of downstream migration with the temporary facilities, to determine the percentage recovery of marked smolts. The purpose of these evaluations is to determine the effectiveness of the permanent screening and collection facilities in capturing smolts entering the Round Butte Dam forebay.

As with the Testing and Verification of the temporary downstream passage facilities, effectiveness of the permanent facilities will be determined according to the established measures of success. Any changes will be made as determined necessary based on the facility performance standards described in section IV.C.1.a., below, and in consultation with the Fish Committee.

Also as described above for the temporary downstream passage facilities, studies of predation will be conducted with the permanent facilities in place, if needed to evaluate factors that may be affecting reservoir passage survival (in terms of percentage recovery of smolts released at the heads of Lake Billy Chinook tributary arms, as described in section IV.C.1.a, below).

Evaluations of the permanent facilities will also include an assessment of fish health, as provided under the Fish Health Management Plan. Adult fish will be evaluated for signs of disease, and brood stock held at Round Butte Hatchery will be sampled to test for infection with disease agents. Sampling of adults spawned at the hatchery and post-spawning adult carcasses collected in the wild will allow monitoring of disease carrier rates in these populations, and will also allow monitoring for the presence of new disease agents upstream of the Project.

(13) Modification of Downstream Facilities

The Licensees shall, in consultation with the Fish Committee and with approval by the appropriate Fish Agencies pursuant to their respective statutory authorities, develop plans for measures or modifications to the existing facilities needed to achieve the criteria and goals for safe, timely and effective fish passage set forth in section IV.C.1.a. of this Fish Passage Plan. The Licensees shall file such plans with FERC and upon approval implement the measures or modifications.

(14) *Evaluation of Adult Fish Returning to the Pelton Fish Trap, Adult Migration and Spawning Success*

Under the fish passage schedule described above, the first adult returns back into the Deschutes River from smolts produced upstream of the Project may arrive in 2009. After consultation with the Fish Committee and Fish Agencies, these returning marked adults that originated upstream will be passed back upstream to spawn naturally, consistent with management direction identified in the amended ODFW Deschutes Basin Fisheries Management Plans, unless the initial target for reservoir passage of 50 percent of the PIT tagged smolts surviving through collection has not been achieved. The return frequency will be calculated by determining the percentage of marked smolts of each species passed downstream that return to the Pelton Fish Trap as maturing adults. This will be compared to the return frequency of smolts released from Round Butte Hatchery as a gauge of relative survival. In addition, as described in section IV.C.1.a., the median recruits-per-spawner ratio will be evaluated statistically using a methodology approved by the Fish Committee to monitor ongoing effectiveness of the fish passage program.

(15) *Evaluate Feasibility of Volitional Upstream Passage Facilities*

Unless otherwise directed by the Fish Agencies, the fish passage program will transition to volitional upstream passage after the Interim Passage Phase is complete, downstream passage is determined to be successful, and the risk of introducing diseases from returning adults upstream has been addressed to the satisfaction of ODFW and the CTWS BNR. Amendments to the three upper Deschutes subbasin management plans (Crooked River, Metolius River, and Upper Deschutes River basin plans) by the Oregon Fish and Wildlife Commission will be necessary in the future to implement volitional passage of all adults.

Evaluation to determine whether the requirements for initiating volitional upstream passage have been met will be conducted as part of the Testing and Verification program during the Interim Passage Phase, and will include assessment of disease agent transfer, out-of-basin stray rates, and injury/mortality associated with trap-and-haul methods ("trap-and-haul"). Evaluation and decision-making steps for initiating volitional upstream passage through the Project are described in section V.C.1.c, below.

The Licensees shall provide upstream passage using trap-and-haul until volitional upstream passage is implemented. Upon a determination that construction of volitional upstream fish passage facilities should proceed, the Licensees will take necessary steps, as determined in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, to obtain FERC approval to undertake the proposed action.

4. Final Passage Phase

a. *Prerequisite Knowledge/Agreements*

- Operation of SWW and downstream passage facilities is determined to be compatible with lower Deschutes River water quality and temperature objectives and in compliance with the § 401 certificates.
- Downstream passage of smolts from Lake Billy Chinook is determined to be successful according to established measures of success.
- Risk of introducing disease agents and diseases from returning adults to waters above Round Butte Dam is addressed to the satisfaction of ODFW and the CTWS BNR. Amendments to the three upper Deschutes subbasin management plans (Crooked River, Metolius River, and Upper Deschutes River basin plans) by the Oregon Fish and Wildlife Commission have been approved to implement volitional passage of all adults, rather than selected passage of returning marked adults from upper basin production.
- Upstream passage of adults to Lake Billy Chinook is determined to be successful according to established criteria / measures of success.
- Determination is made as to whether volitional upstream passage is feasible and desirable.

b. *Key Program Elements*

- Long-term monitoring and evaluation of downstream and upstream passage continues.
- Pelton Fish Ladder is enhanced and reactivated for volitional upstream fish passage (assumes decision is made that volitional upstream passage is feasible and appropriate).
- New Round Butte fish ladder or other volitional upstream passage facility is designed and constructed (assumes decision is made that volitional upstream passage is feasible and appropriate).
- Enhanced and new volitional upstream fish passage facilities are evaluated (assumes decision is made that volitional upstream passage is feasible and appropriate).

- Unmarked salmon and steelhead adults are allowed free passage upstream (assumes decision is made that volitional upstream passage is feasible and appropriate).
- Life histories of anadromous populations continue to be studied to document the emergence of new life history variations.

c. *Schedule*

The schedule for the Final Passage Phase is presented in Figure 6. The Final Passage Phase would be implemented after the Interim Passage Phase is complete, downstream passage is determined to be successful, and the risk of introducing diseases from returning adults upstream has been addressed to the satisfaction of ODFW and the CTWS BNR, which could involve a determination that whirling disease will not become established above the Project or a determination that the benefits of passage will outweigh the potential losses if this disease does become established. The Final Passage Phase will focus on developing and implementing volitional upstream passage facilities that will allow for free upstream passage for most anadromous and resident fish species. An exception to free passage might be the sorting out of stray steelhead so the Deschutes steelhead population can continue to adapt to habitats upstream of the Project without the negative input of maladapted genes from other systems.

This phase would continue through the balance of the term of the New License. In the event that volitional upstream passage is determined during the Interim Passage Phase to be infeasible (through the evaluation described in section IV.B.d.(15), above), or if the decision as to whether it is feasible/appropriate is deferred, upstream passage using trap-and-haul facilities will be continued during the Final Passage Phase.

Figure 6. Schedule of implementation of the Final Passage Phase.

Program Element	Year 1	Year 2	Year 3	Year 4
Pelton Ladder enhanced and activated	█			
Pelton Ladder operated and evaluated		█	█	█
Round Butte Ladder or alternative constructed	█	█		
Round Butte Ladder or alternative operated and evaluated			█	█
Unmarked salmon and steelhead adults allowed free passage upstream			█	█
Life histories studied	█	█	█	█

C. Measures of Success

1. Interim Passage Phase Measures of Success

Specific measures of success have been developed to guide the progression of the fish passage program through the Interim Passage Phase. These measures of success correspond to various components of the extensive fish passage Testing and Verification program to be conducted during this phase, as described above in section IV.B.3.e.(9). of this Fish Passage Plan.

The measures of success discussed in this section also constitute the criteria and goals for safe, timely and effective downstream and upstream passage for fish. Toward this end, the Licensees shall:

- Provide that upstream and downstream passage facilities will be functional during all months of the year to provide safe, timely and effective passage for resident and anadromous fish.
- Keep all fishways in proper order and shall keep all fishway areas clear of trash, sediment, logs, debris, and other material that would hinder passage.
- Perform maintenance in sufficient time before a migratory period such that fishways can be tested and inspected and will operate effectively prior to and during the migratory periods.

The subsections below describe the evaluation criteria that will be used to determine progress, direction, and ultimately, success of the fish passage program. Protocol and responsible parties for the decision making that will occur using the results of the evaluations, as judged against the measures of success, are described in section V.B, below.

a. *Downstream Passage Efficiency for Round Butte Dam Facilities and Lake Billy Chinook*

As described above in section IV.B.3.d.(9), downstream fish passage efficiency through Lake Billy Chinook will be determined during the Testing and Verification evaluations by releasing identifiably marked salmon and steelhead smolts in the upstream arms of Lake Billy Chinook and determining the percentage of each species that are successfully and safely captured at the new downstream-migrant collection facility. This percentage will be determined using the PIT-tagged sample.

Radio-tagged salmon and steelhead smolts will be followed to determine individual travel times and routes. An accounting will be made of all radio-tagged salmon and steelhead smolts to attempt to determine other mortality factors, such as predation and angling, which may be

impacting the success of the fish passage effort. Also to be conducted as part of the Testing and Verification phase studies is evaluation of effectiveness of the Round Butte temporary downstream passage facilities (section IV.B.3.d.(9)). The facilities evaluation will be based on hydraulic performance of the temporary fish collection screens and survival of downstream migrant fish from collection at Round Butte Dam to release in the lower Deschutes River.

Results of monitoring during the Testing and Verification evaluations of the temporary downstream passage facilities at Round Butte Dam will be utilized to determine if, and when, the fish passage program should proceed to the design and installation of permanent screens/facilities at Round Butte Dam. The specific evaluation criteria that will be used to make this determination are summarized in Table 3 and are described below.

As described in section IV.B.3.d.(12), if the decision is made to construct permanent downstream migrant screening/passage facilities at Round Butte Dam, Testing and Verification evaluations will also be conducted during the Interim Passage Phase to evaluate downstream passage with the permanent Round Butte Dam facilities. Measures of success for evaluating reservoir survival and effectiveness of these permanent downstream fish passage facilities also are summarized in Table 3 and described below.

Table 3. Measures of success for evaluation of downstream passage with operation of downstream passage facilities at Round Butte Dam. Refer to text below, as referenced, for detailed explanations.

Passage Component	Measure of Success ¹
Screen Hydraulics [(subsection (1), below)]	NOAA Fisheries' smolt criteria
Downstream Passage Facility Survival (from Round Butte collection to lower Deschutes River release point) [(subsection (2), below)]	93 percent smolt survival for temporary downstream passage facility during first five years of operations; 96 percent smolt survival for permanent facility
Round Butte Reservoir Downstream Passage associated with temporary facilities [(subsection (3), below)]	>50 percent of a statistically significant sample of tagged steelhead or spring chinook outmigrants from any Project tributary averaged over 4 years of study
Round Butte Reservoir Downstream Passage associated with permanent facilities [(subsection (4), below)]	>75 percent survival of PIT-tagged smolts calculated as a rolling 4-year average during the first 12 years

Note:

1 These measures of success also represent the criteria and goals for safe, timely and effective downstream passage for fish.

(1) *Screen Hydraulic Standards for Temporary and Permanent Facilities*

The Licensees will develop a plan, in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, for monitoring the temporary and permanent downstream-migrant screening/collection facility for compliance with NOAA Fisheries' Juvenile Fish Screen hydraulic standards for anadromous smolts. The plan will provide for conducting tests as soon as possible after construction, and will use standard methodology. In consultation with the Fish Committee, the Licensees will take any feasible measures or implement modifications within their control that are necessary to correct deficiencies, and then re-test the facility to ensure compliance with the standards for screen hydraulics. After compliance with screen hydraulic standards is verified, additional retesting will only be required if deficiencies are observed. The plan will identify the methods of observation used to detect deficiencies.

(2) *Downstream Passage Survival for Temporary and Permanent Facilities*

The Licensees will conduct tests of survival through temporary and permanent downstream passage facilities as soon as possible after screen hydraulic standards are achieved, and will use standard methodology for assessing direct injury and mortality, delayed mortality, predation, and other factors. The survival standards listed under "downstream passage facility survival" in Table 3 above apply, respectively, to the temporary and permanent downstream-migrant collection facilities, together with the sorting, handling, and trucking elements of downstream passage after outmigrants have passed through the collection facilities. In consultation with the Fish Committee, the Licensees will take any feasible measures or implement modifications within their control that are necessary to meet the 93 percent survival standard for the temporary downstream passage facilities, and the 96 percent survival standard for the permanent facilities. After correcting any deficiencies, the Licensees will re-test the facilities to ensure compliance with the applicable downstream passage facility survival standard. After compliance with the downstream passage facility survival standards is verified, additional retesting will only be required if deficiencies are observed. The plan will identify the methods of observation used to detect deficiencies.

(3) *Reservoir Downstream Passage Survival Associated with Temporary Facilities*

The Licensees will concurrently perform the following studies, in accordance with the Testing and Verification program described in section IV.B.3.e.(9), above:

- A comprehensive evaluation (repeated annually for a minimum of four consecutive years) of downstream juvenile fish migration of steelhead and spring chinook through Lake Billy Chinook with operation of the temporary downstream passage facilities
- A study of predation impacts on steelhead and spring chinook smolts in Lake Billy Chinook
- A study of angling impacts on steelhead and spring chinook smolts in Lake Billy Chinook
- Feasibility analyses of the proposed Permanent Downstream Fish Passage Facility, with particular attention to the likelihood that such a facility would achieve 75% reservoir passage

The results of these Testing and Verification studies will be evaluated according to the measures of success in Table 3, and actions will be taken as appropriate, according the following provisions:

- A. If >50 percent of a statistically significant sample of tagged steelhead or spring chinook outmigrants, averaged over any four consecutive years of study, from any of the three major tributaries to Lake Billy Chinook are captured at the temporary downstream-migrant collection facility, then the Licensees will construct the permanent downstream-migrant collection facility in accordance with the schedule set forth in Appendix VI.
- B. If >50 percent of a statistically significant sample of tagged steelhead or spring chinook outmigrants from any Lake Billy Chinook tributary, averaged over any four consecutive years of study, are not captured with the temporary downstream-migrant collection facility, then the Licensees will further investigate the cause, and, in consultation with Fish Committee, the Licensees will take any feasible measures or implement modifications within their control that are necessary to meet or exceed the >50 percent objective. These actions or modifications will be made as soon as possible after Testing and Verification studies identify that they are necessary to meet or exceed the >50 percent objective. The Licensees will cooperate with other entities to reduce mortality factors that are not within the Licensees' direct control.

Seven years after the construction of the temporary downstream-migrant collection facility, if >50 percent of a statistically significant sample of tagged steelhead or spring chinook outmigrants from any of the three major tributaries, averaged over any four consecutive years of study, are not captured, the Licensees shall provide a comprehensive report, for review and approval by the Fish Committee, discussing the results of studies to

date, the modifications that have been made as a result of those study results and recommendations (if any) for additional modifications.

- C. The Licensees will implement the measures required in item B, above, unless the Fish Committee determines that passage effectiveness and survival are adequate to proceed with construction of permanent facilities.
- D. If, after the completion of at least four years of study, the >50 percent capture objective has not been achieved and all steps to improve collection efficacy and reservoir passage or survival have been taken, as described above, the Licensees will initiate the appropriate consultation actions, as set forth in section IV.C.3, below.

(4) Reservoir Downstream Passage Survival Associated with Permanent Passage Facilities

As described in section IV.B.3.e.(12) above, Testing and Verification studies will continue to be conducted to evaluate downstream passage after construction of the permanent downstream passage facilities at Round Butte Dam. The objective for the capture of smolts through Lake Billy Chinook with permanent downstream passage facilities has been set initially at 75 percent of a statistically significant sample of tagged steelhead and spring chinook outmigrants from each tributary averaged over any four consecutive years. This objective will apply to PIT-tagged steelhead smolts passing from the Deschutes and Crooked rivers, and to PIT-tagged yearling spring chinook smolts passing from the Deschutes, Crooked and Metolius rivers, to the permanent downstream migrant-collection facility at Round Butte Dam. Decision-making criteria to be applied to the results of the Testing and Verification of the permanent downstream-migrant collection facility, and corresponding actions to be taken for potential scenarios, are as follows:

- A. If >75 percent of a statistically significant sample of tagged smolts from a particular tributary averaged over any four consecutive years are captured at the permanent downstream-migrant collection facility, then the Licensees' Testing and Verification studies involving tributary trapping will end for that tributary. The Licensees will continue the tributary trapping and smolt-tagging reservoir passage evaluation program in tributaries where the >75 percent objective has not been reached.

After the >75 percent objective has been met, the Licensees will continue to monitor smolt emigration numbers at the Round Butte permanent downstream passage facilities through the remainder of the license period. Numbers of spring chinook and/or steelhead smolts captured at the permanent downstream-migrant collection facility will be reported to the Fish Committee. If the numbers of spring chinook and/or steelhead smolts

captured at Round Butte Dam trend downward, (which will be determined in consultation with Fish Committee) the Licensees, in consultation with Fish Committee, will investigate the cause(s), including reevaluation of reservoir passage survival, and take any feasible measures or implement modifications within the Licensees' control to increase smolt production, survival, and passage.

If >75 percent of a statistically significant sample of tagged smolts from a particular tributary, averaged over a four-year period, are not captured at the permanent downstream-migrant collection facility, the Licensees will consult with the Fish Committee regarding possible adjustments in study efforts to investigate the cause(s), including the identification of mortality factor(s), and regarding the implementation of any feasible measures or modifications within the Licensees' control necessary to meet or exceed the >75 percent objective. The Licensees will cooperate with other entities to reduce mortality factors that are not within the Licensees' direct control.

- B. For all cases in which the Testing and Verification studies do not indicate that the >75 percent objective for downstream passage with the permanent downstream-migrant collection facility is being achieved, the Licensees, in consultation with the Fish Committee, will take any feasible measures or implement modifications within the Licensees' control that are necessary to improve outmigrant guidance and to reduce mortality. These actions or modifications will be made as soon as possible after the Testing and Verification studies identify that such actions or modifications are necessary. The Licensees will cooperate with other entities to reduce mortality factors that are not within the Licensees' direct control.
- C. In addition to the Testing and Verification studies of the permanent downstream passage facilities, the Licensees will calculate the ratio of recruits per spawner (*R/S*), based on annual counts of adult returns at the Pelton Fish Trap as compared to the number of spawners in the previous generation, for the life of the license. Beginning after three generations (approximately 12 years depending on species and life history), the Licensees will evaluate *R/S* for spring chinook, steelhead and sockeye to determine if runs are building. Median *R/S* needs to be >1.0 while runs are building. The methodology for determining *R/S* will be approved by the Fish Committee. If, at any time during the life of the New License, the median *R/S* is less than 1.0, the Licensees will evaluate the causes using existing Project-specific data and existing information from other sources. The Licensees shall report their findings and recommendations to the Fish Committee. Based on the results of the evaluation, the Licensees shall, in consultation with the Fish Committee, take any feasible measures or implement modifications within their control to help build anadromous runs. If reservoir factors cannot be eliminated as a potential cause of the decline based on existing information, the Licensees may initiate further research

in consultation with the Fish Committee. The Licensees will cooperate with other entities to reduce mortality factors that are not within the Licensees' direct control.

D. The Licensees will implement the measures required in items A and B above, as appropriate, unless the Fish Committee determines that, based on the study results from the Testing and Verification activities and Project data on R/S, passage effectiveness and survival are adequate to support self-sustaining, harvestable populations of anadromous species. Potential modifications to the above measures can include adjustment of the >75 percent downstream reservoir passage objective or changes in the frequency or extent of future reservoir downstream passage survival studies.

b. *Upstream Passage Efficiency (Trap-and-Haul Approach)*

Upstream passage above the Project of adults that originated above the Project returning to the Pelton Fish Trap will be undertaken no sooner than a determination has been made that downstream passage is successful and consistent with management direction in the amended ODFW Deschutes Basin Fisheries Management Plans. Upstream passage efficiency will be determined separately for the Interim Passage Phase, in which a trap-and-haul approach will be used, and the Final Passage Phase, when volitional passage will be used. As described in section IV.B.3.e.(10), testing/verification of upstream passage facilities and methods during the Interim Passage Phase will include evaluation of capture, trucking and release of adults, and will be based primarily on biological evaluation of the captured and released adults. Specific facility survival standards have been established for temporary and permanent upstream passage facilities, as summarized in Table 4 and described below.

Table 4. Measures of success for evaluation of upstream passage facilities, from collection in the lower Deschutes River at the Reregulating Dam to release in Lake Billy Chinook.

Passage Component	Measures of Success ¹
Upstream Passage Survival (from lower Deschutes River collection point through Adult Release Facility)	95 percent during first 5 years of operations. 98 percent after 5 years.

Note:

¹ These measures of success also represent the criteria and goals for safe, timely and effective upstream passage for fish.

The Licensees shall, in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, file with FERC a plan for conducting tests of upstream passage facility survival using standard methodology for evaluation of direct injury and mortality, and other factors, as described in section

IV.B.3.(e)(10), above. The Plan shall provide that, in consultation with the Fish Committee, the Licensees shall take any feasible measures or implement modifications within their control that are necessary to meet the 95 percent survival standard for the upstream passage facilities during the first five years of operations, and the 98 percent survival standard after five years. This survival standard applies to collection at the Pelton Fish Trap, transportation to the Adult Release Facility, and release through this facility into Lake Billy Chinook. After correcting any deficiencies, the Licensees shall re-test the facilities to ensure compliance with the applicable upstream passage facility survival standard. After compliance with the upstream passage facility survival standards is verified, additional retesting will only be required if deficiencies are observed. The plan will identify the methods of observation used to detect deficiencies through long-term monitoring. Upon FERC approval, the Licensees shall implement the plan.

The Licensees will file a plan, for review and approval by the Fish Committee, for evaluation of any volitional upstream passage facilities utilized as part of the Final Passage Phase. At a minimum, the plan will call for evaluation of the facilities during initial operations, and other evaluations necessary to determine whether the standards for upstream passage facilities which will be established in consultation with the Fish Committee are being met, and will identify the methods of observation used to detect deficiencies. In consultation with the Fish Committee, the Licensees will take any feasible measures or implement modifications within their control that are necessary to meet the volitional upstream passage facility standards. After correcting any deficiencies, the Licensees will re-test the facilities to ensure compliance with volitional upstream passage facility survival standards. After compliance with the upstream passage facility survival standards is verified, additional retesting will only be required if deficiencies are observed.

In addition, as described in section IV.B.3.d.(14), the Testing and Verification program for the Interim Passage Phase will also include evaluation of upstream passage success based on monitoring adult migration and spawning success. For the evaluation, a subset of salmon and steelhead adults passed will be radio-tagged and followed after their release to determine the number that reach spawning areas and spawn successfully. Known spawning areas will also be monitored, and redds will be counted to be certain that pre-spawning mortality does not appear excessive. Together with monitoring of adult returns to the Pelton Fish Trap from smolts of above-Project origin, the results of this evaluation will be used to evaluate the fish passage program's overall progress toward achieving sustainable, harvestable populations of salmon and steelhead.

c. Decision-Making Criteria for Moving to Volitional Upstream Passage

Following the installation of the permanent downstream facilities at Round Butte Dam, and within 24 months of when the downstream survival targets for Lake Billy Chinook (as described

above) have been achieved, the Licensees shall conduct a study through the study program described in section IV.B.3.d.(15) and provide the Fish Committee a report on the feasibility of volitional upstream passage. The scope of the feasibility investigation shall be determined in consultation with the Fish Committee. Factors to be addressed in this study shall include, but not be limited to:

- Engineering feasibility
- Biological effectiveness, including but not limited to risk of disease transfer and stray rate for out-of-basin fish
- Cost
- Performance, including efficiency, of the existing trap-and-haul operation

Following submission of this report to the Fish Committee, the Licensees shall prepare a plan to implement volitional upstream passage at the Project, which plan shall include appropriate Testing and Verification studies, unless the appropriate Fish Agencies determine pursuant to their respective statutory authorities that volitional upstream passage facilities should not be installed because:

- ODFW and CTWS BNR have determined that the risk of disease transfer is too great,
- The stray rate for out-of-basin fish is not acceptable,
- Volitional upstream passage is infeasible, as determined utilizing the results of the feasibility study, or
- It is preferable, due to concerns with the state-of-the-art for volitional upstream passage facilities combined with high efficacy of trap-and-haul operations) to continue the trap-and-haul operation for some additional specified period of time.

The plan shall be completed within 24 months of the Fish Agencies' determination that volitional upstream passage should proceed, and shall be prepared in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities. Upon approval by the Fish Agencies, the Licensees shall file the plan with FERC. Upon FERC approval, the Licensees shall implement the plan.

Upon any determination that volitional upstream passage should not be installed for the reasons specified above, the Licensees shall, within six months of such determination, and in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, file with FERC a plan to continue trap-and-haul operations for a specified number of years and to conduct a future feasibility investigation as

provided above. During any such continued trap-and-haul operation, the Licensees shall continue to monitor survival as required under section IV.C.1.b of this Fish Passage Plan and shall take any feasible measures or implement modifications within their control to the trap-and-haul facilities that are necessary to comply with the survival standard in section IV.C.1.b. Upon FERC approval, the Licensees shall implement the plan.

2. Final Passage Phase — Measures of Success for Volitional Upstream Passage

Any volitional upstream passage facilities utilized as part of the Final Passage Phase will be thoroughly evaluated, and upstream passage facility standards will be established in consultation with the Fish Committee. Each volitional passage facility will be evaluated by counting adults entering and leaving, determining individual travel times, and recording mortality frequencies by species and tendencies to hold in or reject the facility. Study plans for evaluation of volitional upstream passage facilities will be developed and reviewed by the Fish Committee concurrent with the development of plans for each facility.

3. Failure to Achieve Measures of Success with Temporary Fish Passage Facilities

The Parties recognize that after a number of years of implementation, there is the potential that, despite all best efforts, the fish passage program as detailed in this Fish Passage Plan is ultimately deemed to be unsuccessful. The provisions set forth in this section are intended to outline the decision-making criteria, consultation steps, prioritization of available alternatives, and planning/implementation procedures in the event that it is determined the fish passage program should be abandoned in favor of alternative mitigation (either an alternative fish passage approach or a non-passage alternative). The consultation and decision-making process¹¹ outlined by these provisions would be initiated before permanent downstream passage facilities are installed at Round Butte Dam but after all agreed-upon measures have been taken to try to make the temporary downstream passage facilities achieve successful performance according to the measures of success described in section IV.C.1.a. of this Fish Passage Plan.

In the event that all steps to improve collection efficacy and reservoir passage or survival have been implemented, as required in section IV.C.1.a., and the criteria and goals for downstream passage stated in section IV.C.1.a. have not been achieved, the Licensees shall implement the following process:

1. *Notification.* The Licensees shall notify FERC and the Fish Committee that the temporary downstream passage facilities have not achieved the standards set out in section IV.C.1.a. and that all steps designed to improve collection efficacy and reservoir

¹¹ This process includes all necessary review and approval of facility drawings, plans, etc., as required by FERC under the terms of the New License.

passage or survival have been taken, as prescribed in that section of this Fish Passage Plan.

2. *Meeting.* The Licensees shall notice a meeting of the Fish Committee within 60 days of the notice to FERC.
3. *Information and Analyses from Testing and Verification Studies.* Not less than 45 days before the meeting, the Licensees shall provide the Fish Committee a report, including analysis of the information gathered during the operation of the temporary downstream passage facilities pursuant to the Testing and Verification provisions outlined in section IV.B.3.e.(9) of this Fish Passage Plan, to inform a determination by the Fish Committee whether (i) testing and/or modification of the temporary downstream passage facilities should continue, (ii) an alternative fish passage methodology should be implemented, or (iii) fish passage is currently scientifically and technologically infeasible.
4. *Plan with Passage Options.* Based on this information, the Fish Committee shall determine whether the Licensees should develop a plan to continue operation and testing of the temporary downstream fish passage facilities, begin implementing an alternative fish passage plan, or to pursue non-passage mitigation. The Licensees shall develop a plan to implement the passage option selected under this paragraph according to the following procedures:
 - a. *Temporary Collection Facilities:* If the Fish Committee determines that the information provided pursuant to paragraph 3 above shows demonstrable progress related to reservoir passage and survival, the Licensees shall, within 60 days following the meeting, develop a plan for the continued operation, any needed modification, and testing of the temporary downstream passage facilities. The Licensees shall prepare the plan in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities. After approval by the appropriate Fish Agencies, the Licensees shall file the plan with FERC. Upon FERC approval, the Licensees shall implement the plan.
 - b. *Alternative Fish Passage Plan:* If the Fish Committee determines that information provided pursuant to paragraph 3 above supports selection of an alternative fish passage plan, including but not limited to tributary trapping, substantially new proposals based on the SWW system, or any other scientifically supported fish passage methodology, the Licensees shall, within 12 months of the meeting provided under paragraph 2 above, develop an alternative fish passage plan. Any alternative fish passage plan shall be consistent with maintaining relevant water quality standards, including, but not limited to, continued operation of the SWW facility, if

the SWW facility is necessary to achieve water quality standards. The Licensees shall prepare the plan in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities. After approval by the appropriate Fish Agencies, the Licensees shall file this plan with FERC. Upon FERC approval, the Licensees shall implement the plan.

- c. Non-Passage Mitigation:* If the Fish Committee determines that information provided pursuant to paragraph 3 above demonstrates that it is currently scientifically and technically infeasible for fish to be collected and passed around the Project, the Licensees shall, within 120 days of the meeting provided under paragraph 2 above, develop a non-passage mitigation plan. Any non-passage mitigation must be consistent with the goals of providing ecosystem integrity and self-sustaining, harvestable populations of fish, and must provide alternative mitigation valued at an amount equivalent to the net present value of the cost that would otherwise have been incurred in the construction of permanent downstream fish passage facilities at Round Butte Dam and the net present value of the operations and maintenance of fish passage facilities that would have otherwise been incurred over the remaining term of the License. The Licensees shall prepare the plan in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities. After approval of the appropriate Fish Agencies, the Licensees shall file the plan with FERC. Upon FERC approval, the Licensees shall implement the plan.
5. *Feasibility.* The Licensees shall implement any plans developed under paragraph 4 above according to the schedule and procedures set out in those plans. If a plan to continue operation and testing of the temporary downstream passage facilities or an alternative fish passage plan is determined to be infeasible according to the schedule and procedures set out in any plan developed under paragraph 4, then the Licensees shall utilize the procedures of this section IV.C.3 to initiate further proposals.
6. *New Information Regarding Fish Passage.* If, after the Licensees have begun implementing non-passage mitigation, new information demonstrates that downstream fish passage may be feasible, the Licensees shall, within 60 days of receiving such information, notice a meeting of the Fish Committee to determine whether fish passage should be reinitiated. If the Fish Committee determines that fish passage should be reinitiated, the Licensees shall develop a fish passage plan based on the new information then available. Such plan shall be developed in consultation with the Fish Committee, and be consistent with least-cost alternatives that meet the goals and objectives of this Fish Passage Plan, and, upon approval by the appropriate Fish Agencies pursuant to their

respective statutory authorities, the Licensees shall file the plan with FERC. Upon FERC approval, the Licensees shall implement the plan.

4. Failure to Achieve Measures of Success with Permanent Fish Passage Facilities

In the event that all steps identified in this Fish Passage Plan to improve collection efficiency of the permanent downstream facilities and reservoir passage or survival have been implemented, and the criteria and goals for downstream passage stated in section IV.C.1.a. have not been achieved, the Licensees shall implement the following process:

1. *Notification.* The Licensees shall notify FERC and the Fish Committee that the permanent downstream passage facilities have not achieved the standards set out in the criteria and goals for downstream passage stated section IV.C.1.a. and that all steps designed to improve collection efficacy and reservoir passage or survival have been taken as prescribed in this Fish Passage Plan.
2. *Meeting.* The Licensees shall notice a meeting of the Fish Committee within 60 days of the notice to FERC.
3. *Information and Analyses from Testing and Verification Studies.* Not less than 45 days before the meeting, the Licensees shall provide the Fish Committee a report, including analysis of the information gathered during the operation of the permanent downstream passage facilities pursuant to the Testing and Verification provisions of this Fish Passage Plan, to inform a determination by the Fish Committee whether (i) testing and/or modification of the permanent downstream passage facilities should continue, or (ii) fish passage is currently scientifically and technologically infeasible for some or all species.
4. *Plan with Passage Options.* Based on the information provided pursuant to paragraph 3., the Fish Committee shall determine whether the Licensees should develop a plan to continue operation and testing of the permanent downstream passage facilities, or pursue non-passage mitigation. The Licensees shall develop a plan to implement the passage option selected under this paragraph according to the following procedures:
 - a. *Permanent Collection Facilities:* If the Fish Committee determines that the information provided pursuant to paragraph 3 above shows demonstrable progress related to reservoir passage and survival, the Licensees shall, within 60 days following the meeting, develop a plan for the continued operation, any needed modification, and testing of the permanent downstream passage facilities. The Licensees shall prepare the plan in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory

authorities. After approval by the appropriate Fish Agencies, the Licensees shall file the plan with FERC. Upon FERC approval, the Licensees shall implement the plan.

- b. Non-passage Mitigation:* If the Fish Committee determines that the information provided pursuant to paragraph 3 above demonstrates that it is currently scientifically and technically infeasible for fish to be collected and passed around the Project, the Licensees shall, within 120 days of the meeting, develop a non-passage mitigation plan. Any non-passage mitigation plan must be consistent with the fish passage objective of providing ecosystem integrity and self-sustaining harvestable populations of fish and must provide alternative mitigation as provided in paragraphs 5 or 6 below, as appropriate. The Licensees shall prepare the plan in consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities. After approval by the appropriate Fish Agencies, the Licensees shall file the plan with FERC. Upon FERC approval, the Licensees shall implement the plan.
5. *Fish Passage Infeasible after Permanent Facility Construction.* If fish passage is determined pursuant to paragraph 4 above to be totally infeasible after permanent downstream fish passage facilities have been constructed at Round Butte, the Licensees shall provide alternative mitigation in an amount equivalent to the net present value of the cost of the operations and maintenance of fish passage facilities that would have otherwise been incurred over the remaining term of the License.
6. *Partial Passage Success after Permanent Facility Construction.* If fish passage is determined pursuant to paragraph 4 above to be infeasible for some but not all species, the Licensees shall provide alternative mitigation related to those species for which passage is infeasible in an amount equivalent to the net present value of the reduction in the cost of operations and maintenance of the fish passage facilities as a result of this determination.
7. *Feasibility.* The Licensees shall implement any plans developed under paragraph 4 above according to the schedule and procedures set out in those plans. If continued operation and testing of the permanent downstream passage facilities is determined to be infeasible according to the schedule and procedures set out in any plan developed under paragraph 4, then the Licensees shall utilize the procedures beginning with 4 to initiate further proposals.
8. *New Information Regarding Fish Passage.* If, after the Licensees have begun implementing non-passage mitigation, new information demonstrates that downstream fish passage may be feasible, the Licensees shall, within 60 days of receiving such

information, notice a meeting of the Fish Committee to determine whether downstream fish passage should be reinitiated. If the Fish Committee determines that downstream fish passage should be reinitiated, the Licensees shall develop a fish passage plan based on the new information then available. Such plan shall be developed in consultation with the Fish Committee and be consistent with least-cost alternatives that meet the goals and objectives of this Fish Passage Plan, and, upon approval by the appropriate Fish Agencies pursuant to their respective statutory authorities, the Licensees shall file the plan with FERC. Upon FERC approval, the Licensees shall implement the plan.

D. Stock Selection

Reintroduction of anadromous fish in the Deschutes River Basin upstream of the Project is scheduled to begin in 2006, with the first smolts passed downstream in the spring of 2008. Proper stock selection will be an important component of the reintroduction. As now planned, the reintroduction will take place using eyed eggs or swim-up fry from adults screened to prevent the passage of diseases of concern. Stock selection for reintroduction is primarily the responsibility of ODFW and the CTWS BNR, the fishery management agencies. However, because of their responsibilities in connection with the federal Endangered Species Act and their fish passage authority under the Federal Power Act, the federal fisheries agencies (USFWS and NOAA Fisheries) also have jurisdiction. This section of the Fish Passage Plan discusses priority stocks of each species to be used for reintroduction; however, stock availability will be determined each year by ODFW and the CTWS BNR, in accordance with their overall management goals and directives. A discussion of stock selection will be included in the Anadromous Fish Reintroduction Plan.

1. Chinook Salmon

a. Background

Prior to the construction of the Project, wild anadromous salmonids moved freely past this location to spawn in middle basin tributaries and the mainstem Deschutes River. Stream-type spring chinook salmon utilized the cooler waters of the Metolius River Basin much as they currently use the upper Warm Springs Basin. These fish for the most part move to the Pacific Ocean as yearling smolts during their second spring of life. The chinook that used the mainstem Deschutes River, lower Squaw Creek, and the Crooked River were more likely "ocean-type" chinook that emigrate as age-0 smolts their first spring or summer. This life history is similar to that of the wild summer/fall chinook that currently spawn in the mainstem lower Deschutes River below the Project.

When the Round Butte Hatchery program first started in 1968, the stock used was spring chinook that had been destined for the Metolius River. However, in the mid-1970s, the numbers of

spring chinook entering the Pelton Fish Trap that could be used for brood stock were very low. To allow the spring chinook hatchery program to continue, permission was granted from the CTWS BNR to capture brood stock from the fish ladder trap at Sherars Falls. From 60 to 194 adult spring chinook were captured annually from 1977 through 1980 and taken to Round Butte Hatchery to maintain the program. Additional brood stock was also secured one year from Warm Springs National Fish Hatchery when extra eggs were needed for the BPA funded Hood River program. Thus, the direct legacy of Metolius-stock spring chinook could not be maintained in the Deschutes River system.

Warm Springs National Fish Hatchery brood stock guidelines call for the inclusion of at least 10 percent of the brood stock annually from wild fish. Because there is no component of wild spring chinook moving up the Deschutes River into the Pelton Fish Trap, there is no way to incorporate native wild fish into the Round Butte Hatchery Program.

b. Preferred Chinook Salmon Stocks for Reintroduction Upstream of the Project

(1) Spring Chinook Salmon

There are three stocks of spring chinook salmon currently available for reintroduction into the cooler waters of the system: wild Warm Springs River stock, hatchery Warm Springs River stock, and Round Butte Hatchery stock. Because this effort is aimed at developing wild, naturally reproducing chinook in the Metolius River, it is advisable to use the stock that is likely the most adapted to the wild. Therefore, the order of preference of stocks for use in reintroduction of spring chinook is as follows:

1. Warm Springs Wild Spring chinook – if available.
2. Warm Springs Hatchery Spring chinook – if available.
3. Round Butte Hatchery Spring chinook – if the other two stocks are not available.

(2) Fall Chinook Salmon

With the exception of a few years in the mid-1970s, summer/fall chinook salmon have never been reared in Deschutes River Basin hatcheries. The summer/fall run enters the lower Deschutes River from June through December, with most fish spawning from mid-October through November. The early portion of this run moves up over Sherars Falls early in the summer, and some fish enter the Pelton Fish Trap during June and July. These fish may be related to summer/fall chinook that historically spawned in mainstem reaches at and upstream of the Project. If it is decided to reintroduce summer/fall chinook above the Project, these early-run

wild chinook entering the Pelton Fish Trap during June and July should be the priority for brood stock.

2. Steelhead

a. *Background*

Some Deschutes-stock steelhead were collected from Squaw Creek and reared at Wizard Falls Hatchery on the Metolius River in the early 1960s (King 1966). The present hatchery program began in 1967 with the termination of passage at Pelton Dam. Steelhead were reared at State facilities until completion of facilities at Round Butte Hatchery, and then all production shifted to the new facility. Brood was initially taken from wild Deschutes steelhead entering the Pelton Fish Trap. With increasing numbers of out-of-basin strays, including unmarked fish, presently only returning Round Butte Hatchery steelhead are being used for brood stock. Wild steelhead in the lower Deschutes River have been federally listed as a Threatened Species since the mid-1990s, although recent runs have been substantial.

b. *Preferred Steelhead Stock for Reintroduction Upstream of the Project*

If it is possible to distinguish wild Deschutes steelhead from stray unmarked steelhead in the lower Deschutes, and it is not precluded by the outcome of ESA consultation with NOAA Fisheries, it is preferable to take eggs from wild steelhead to establish upstream runs of wild steelhead. Increased wild adaptation is likely represented in the wild stock, and they would be the best stock for reintroduction. It may be possible to capture enough wild steelhead from the trap in the Sherars Falls Fish Ladder for this purpose. However, there are potential challenges to overcome if these fish are to be used as stock for reintroduction: it is not currently feasible to eliminate the uncertainty regarding identity (origin), and large numbers of stray hatchery fish from other basins have spawned in the lower Deschutes River during the past decade. If wild Deschutes steelhead are not available, Round Butte Hatchery steelhead would be the next logical choice.

Therefore, the order of preference of stocks for use in reintroduction of steelhead is as follows:

1. Wild steelhead captured from the Lower Deschutes – if available.
2. Round Butte Hatchery stock steelhead captured in Pelton Fish Trap.

3. Sockeye Salmon

a. Background

Anadromous sockeye salmon historically ascended the Deschutes and Metolius rivers, and then migrated up Lake Creek and through Suttle Lake to spawn in Link Creek (Nehlsen 1995). With the construction of small dams on Lake Creek early in the century, the anadromous portion of this run was lost. However, resident *O. nerka* (kokanee) still populated Suttle Lake. From 1948 through 1961, sockeye were reared at the Oregon Fish Commission Metolius Hatchery on Spring Creek in the upper Metolius Basin. In 1947, the sockeye released into the Metolius River Basin originated from Bonneville Hatchery, and the 1949 brood originated from Winthrop (Washington) Hatchery; all the other releases were of Levenworth Hatchery origin (Wallis 1960). The last significant return of these fish was in 1955 (Nehlsen 1995).

With the construction of Round Butte Dam and creation of Lake Billy Chinook in 1964, kokanee, apparently from Suttle Lake, naturally seeded this large reservoir (Ratliff and Schulz 1999a). In some years large numbers of yearling kokanee leave the reservoir during early spring (Ratliff and Schulz 1999b). A few sockeye adults ascend the Deschutes River and enter the Pelton Fish Trap each year. Using otolith microchemistry it has been shown that a portion of these were the progeny of kokanee, based on the fact that maternal strontium signature was not found in their otolith (Zimmerman and Ratliff 1999).

b. Preferred Sockeye Stock for Enhancement Upstream of the Project

The Technical Subcommittee has determined that it would be preferable to attempt to build a sockeye run from the native wild kokanee population that has colonized Lake Billy Chinook. Some fish do emigrate and return as adult sockeye. However, if the Fish Committee determines that hatchery supplementation is necessary in order to reestablish an anadromous population of sockeye above Round Butte Dam, the Licensees will provide funding for the necessary changes in equipment to convert an agreed-upon amount of the existing capacity at Round Butte Hatchery to the production of sockeye.

4. Pacific Lamprey

a. Background

Pacific lamprey currently ascend the Deschutes River, and are known to spawn in Shitike Creek and the Warm Springs River (Graham and Brun 2003). Some Pacific lamprey historically moved upstream above the Pelton Round Butte Project, but the number is unknown. No lamprey have been captured in the Pelton Fish Trap or observed below the Reregulating Dam since the early 1970s.

b. *Preferred Pacific Lamprey Stock for Enhancement Upstream of the Project*

It is anticipated that the native Deschutes population of Pacific lamprey will be enhanced, and potentially reintroduced upstream of the Project, as part of the fish passage program. However, at this time there are many remaining uncertainties surrounding status and potential passage of this species. Therefore, the first step toward determining potential Pacific lamprey stock for enhancement/reintroduction above the Project will be to build the knowledge base regarding Pacific lamprey in the Deschutes River Basin, through the approach described in the following section.

E. Pacific Lamprey Passage Evaluation and Mitigation

Pacific lamprey are a culturally significant resource for the Tribes and as such, a Pacific lamprey passage component of this Fish Passage Plan has been developed to (1) increase the knowledge base for Deschutes lamprey; (2) study and inventory potential habitat for Pacific lamprey both upstream and downstream of the Project; (3) develop and implement a reintroduction and passage program if results of studies indicated passage of Pacific lamprey could be successful; and (4) trigger alternative mitigation if studies indicated that Pacific lamprey passage would not be successful.

The Licensees shall, within one year of license issuance, file with FERC, after consultation with the Fish Committee and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, a Pacific lamprey passage evaluation and mitigation plan as described below. Upon FERC approval, the Licensees shall implement the plan. The plan shall provide for the following mitigation program for Pacific lamprey:

1. *Assessment of Lamprey Habitat.* The Licensees, in consultation with the Fish Committee, shall either fund and implement an expansion of ongoing Pacific lamprey studies in the Deschutes Basin, or fund and implement a 3-year additional study to (a) further define Pacific lamprey spawning and juvenile rearing habitat in the Deschutes River Basin; and (b) survey stream and reservoirs upstream and downstream of the Project to quantify habitats suitable for production of Pacific lamprey.
2. *Assessment of Lamprey Passage.* Within one year after the completion of the Assessment of Lamprey Habitat, if sufficient habitats are found above the Project, the Licensees shall implement a 3-year Pacific lamprey passage feasibility study. The purpose of this study is to assess the potential for juvenile and adult Pacific lamprey passage through the Project with existing fish passage facilities. The determination to perform an Assessment of Lamprey Passage and the development of the assessment study shall be done in consultation with the Fish Committee.

3. *Experimental Reintroduction of Lamprey.* Within one year after the completion of the Assessment of Lamprey Passage, if passage is determined by the Fish Committee to be feasible with existing facilities, the Licensees shall develop and implement a plan for the experimental reintroduction of Pacific lamprey into identified habitats upstream of the Project. This plan shall be developed to evolve into a permanent plan to maintain populations of Pacific lamprey above the Project. The determination of whether Pacific lamprey passage is feasible and the development and implementation of this plan shall be done in consultation with the Fish Committee. No new construction or retrofit of existing upstream or downstream passage facilities will be required for the experimental Pacific lamprey reintroduction.
4. *Alternative Lamprey Mitigation.* If Pacific lamprey passage is determined by the Fish Committee to be infeasible with existing facilities, the Licensees shall develop and implement an alternative Pacific lamprey mitigation and enhancement plan. This purpose of this plan shall be to enhance Pacific lamprey populations in the Deschutes River system downstream of the Project. The determination that Pacific lamprey passage is infeasible and the development and implementation of this alternative enhancement plan shall be done in consultation with the Fish Committee.
5. *Reinitiation of Passage Efforts.* If alternative Pacific lamprey mitigation is implemented, attempts to pass Pacific lamprey may be reinitiated if substantial new information demonstrates that passage is feasible. The determination whether to reinitiate passage efforts shall be made in consultation with the Fish Committee. As with the experimental reintroduction, any renewed Pacific lamprey passage efforts will not require new construction or retrofit of existing upstream or downstream passage facilities.

F. Fish Health Management

Fish disease questions are complex in the Project area. The potential to spread fish disease agents to important native resident fish resources upstream of the Project was identified as a critical uncertainty early in the discussion of the feasibility of anadromous fish reintroduction. In addition to this concern, other important questions addressed by the Pelton Round Butte Fish Disease Risk Analysis have included whether achieving sustainable natural production above the Project may be constrained by infectious disease and what the potential infectious disease impacts to the lower river and the Round Butte Hatchery program might be from the anadromous fish reintroduction effort. The goal of the fish disease risk analysis study program was to reduce these uncertainties in a systematic manner while minimizing the risk that serious disease agents might be inadvertently introduced, by development of a fish health management program. The fish disease risk analysis was guided by a Fish Disease Risk Matrix developed in 1997 as a

collaborative effort by ODFW and PGE biologists for framing disease agent studies (Engelking 1998). This matrix defined areas where key information was lacking and served to guide decision making for the reintroduction of anadromous fish above the Project relative to disease risk.

The fish disease agents that emerged as the most consequential and having the most significant potential to negatively impact fish stocks are the Type 2 strain of Infectious Hematopoietic Necrosis (“IHN”) virus and *Myxobolus cerebralis* (the causative agent of whirling disease). In addition, bacterial kidney disease, furunculosis and Erythrocytic Inclusion Body Syndrome (“EIBS”) virus represent diseases that could have serious impacts on certain groups of resident and anadromous fish stocks.

The initial purpose of the fish health management program is to minimize the risk that certain significant and virulent fish disease agents might become established upstream of the Project before the success of reintroducing anadromous runs has been determined and a final decision to pass returning adult fish above Round Butte Dam has been made. These risks will be minimized through the disease screening of brood stock and through limiting upstream releases to progeny (eyed eggs / fry / smolts) of these fish until the downstream passage system has achieved the necessary measures of success to warrant upstream passage of returning adults.

The fish health management program as it will be carried out through the remainder of the fish passage program is described in the draft Fish Health Management Plan (Appendix II), developed in conjunction with the ODFW Fish Health Section and Oregon State University (“OSU”) microbiologists with expertise in fish disease agents.

As described in Appendix II, the fish health management program will be responsible for supporting fish health needs during implementation of the Fish Passage Plan. This support will include identifying where fish disease is impacting anadromous and resident adult and juvenile salmonids. It will be especially important for fish health professionals to help researchers determine where poor fish health has predisposed smolts to predation or led to injury or mortality in fish facilities. It is anticipated that the fish health management program will have the following responsibilities:

- Characterizing the health status of fish:
 - Fish health records
 - Monitoring disease and infection
- Identifying and managing risks to fish health:
 - Water quality

- Factors that predispose fish to disease
- Vaccination
- Broodstock health management
- Reducing exposure to, or spread of, disease causing agents:
 - Outbreak investigation and management
 - Management of dead fish
 - Bio-security
 - Release or escape of fish from a culture facility
 - Movement of fish
- Use of drugs and chemicals in fish health management
 - Diagnostic support
 - Drug, chemical and biological use for disease treatment and prevention
 - Use of drugs and chemicals in compliance with FDA Regulations
 - Compliance with ODEQ regulations on the release of chemicals/drugs into waters of the State.

The Licensees shall continue the fish health management program throughout the Interim Passage Phase and the first five years of the Final Passage Phase (or for the first 15 years of the Interim Passage Phase if transition to the Final Passage Phase does not occur). The Licensees shall file the plan with the Commission within 18 months of license issuance. Upon Commission approval, the Licensees shall implement the plan.

G. Long-Term Monitoring

1. Components of Long-Term Monitoring

The success of fish passage at the Project, and the corresponding status of related aspects of the ecological system, will be tracked on a long-term basis (through the term of the New License term) as part of a long-term monitoring program. This program will include monitoring of fish passage and ecosystem integrity. This information will be used by the Fish Committee, agency resource managers, and decision makers to determine whether modifications in management approach may become necessary or desirable to meet established goals and objectives and to ensure compliance with license conditions related to the fish passage program.

The long-term monitoring program will take effect when the measures of success for permanent passage facilities have been achieved, as determined through the Testing and Verification program described in section IV.B.3.e.(9) of this Fish Passage Plan. The long-term monitoring

program is envisioned as a follow-up to Testing and Verification program, and will include many of the same types of studies, but at a lesser intensity.

Within one year after activating the permanent downstream collection facilities at Round Butte Dam, the Licensees shall file with FERC, after consultation with the Fish Committee, and with the approval of the appropriate Fish Agencies pursuant to their respective statutory authorities, a plan for a long-term program to monitor downstream fish passage performance, as described in Appendix IV to this Fish Passage Plan. The plan shall provide that the Licensees shall begin the long-term monitoring of the downstream passage facilities as soon as practicable after the Testing and Verification studies have demonstrated that the permanent downstream collection facilities are meeting the survival criteria and goals set forth in section IV.C.1 of this Fish Passage Plan. Upon FERC approval, the Licensees shall implement the plan.

Water quality monitoring throughout the term of the New License will be conducted under the terms of the September 2002 WQMMP (and future approved amendments thereof), as described in subsection 4, below. Data from this monitoring program will be used to confirm the effects of SWW on water quality in the Project reservoirs and in the lower Deschutes River. This SWW-related water quality information will be used for evaluation and decision making in conjunction with the fish passage Testing/Verification and long-term monitoring programs.

2. Fish Passage

Long-term evaluation of fish passage success involves monitoring of a variety of parameters falling within three main categories: biological, habitat capacity, and passage efficacy. These categories, their components and subcomponents, and their relation to specific measurables are described in Appendix IV. As described in Appendix IV, monitoring the *biological* measures of success will involve monitoring of parameters related to reservoir passage and tributary spawning, smolt production, escapement, harvest, competition, and disease. Monitoring components related to *habitat capacity* include habitat availability, instream habitat, bank stability and riparian vegetation. Finally, monitoring of *passage efficacy* will be accomplished by monitoring parameters related to migration delays, smolt injury/descaling, smolt mortality, and facility efficiency.

3. Ecosystem Integrity

Appendix IV also includes a description of the monitoring components and specific measurables that will be used to define, track, and evaluate ecosystem integrity within the Project area as the fish passage program progresses. Briefly, *connectivity* will be monitored by analyzing the number of links between distinct habitat areas (in terms of native species and life-history types). *Biodiversity* will be monitored by evaluating the number of native fish species per trophic level

and the number of functional feeding groups. The third component of ecosystem integrity, *natural production*, will be monitored by determining the number of life histories per species; the population sizes of wild spawners, juveniles, and smolts for each native fish species; and the number of recruits per spawner for each native salmonid species over time.

4. Lower Deschutes River Water Quality

The temperature of the lower Deschutes River is critical to its function as a salmonid rearing area. To protect fisheries and ecological values in Oregon, the Oregon Environmental Quality Commission and the CTWS WCB have established water temperature and other water quality standards consistent with the federal Clean Water Act. Toward this end, the ODEQ and WCB § 401 certificates prescribe measures at the Project to manage and monitor water quality parameters in Project-affected waters, including the requirement to implement SWW in Lake Billy Chinook to help the Project comply with temperature standards for the lower Deschutes River.

To help ensure compliance with the provisions of the § 401 certificates, ODEQ and the WCB required development of the WQMMP (Tribes and PGE 2002), which encompasses measures to monitor water temperature and other water quality parameters (including dissolved oxygen and pH), on a long-term basis. Among the objectives of the WQMMP is to continue to collect water quality data at sites that have been used to collect baseline data, so that data collected after implementation of SWW and other water quality management measures can be compared with baseline data to identify trends associated with modified Project operations. This monitoring approach will be used to help evaluate the success of SWW in achieving the predicted compliance with water quality standards. If post-construction monitoring indicates compliance is not being achieved, then DEQ or the CTWS WCB may require the Licensees to modify the blend of surface/deep water being discharged from the SWW facility, within a specified range of blends (Tribes and PGE 2002). The Licensees shall consult with the Fish Committee regarding the potential effects of any such request on all water quality and fish passage parameters (Tribes and PGE 2002).

H. Relationship between Round Butte Hatchery and the Passage Program

Round Butte Hatchery is an integral part of the Fish Passage Plan. During the Experimental Passage Phase, adults were held, spawned, and sampled for disease at the hatchery. Eyed spring chinook eggs raised at the hatchery were moved to streamside incubation troughs in the Metolius River basin. During the Interim Passage Phase, eyed eggs and fry will be used to reintroduce salmon and steelhead upstream of the Project, and parr/smolts raised at the hatchery will be used in the Testing and Verification program to evaluate temporary Round Butte downstream fish passage facilities. In addition to activities directly integral to the fish passage program, the

current spring chinook and steelhead smolt program at Round Butte Hatchery will continue through the term of the New License. Agreements and responsibilities for hatchery operations related to the fish passage program are described below.

The Licensees will fund the operation of Round Butte Hatchery, at no more than current production levels, of spring chinook and summer steelhead for the life of the New License. However, ODFW and the CTWS BNR may reduce hatchery production levels if necessary to meet fishery management objectives, including, but not limited to, allowing for natural selection and adaptation of naturally spawning salmonids. In addition, as discussed above in section IV.D.3.b, if the Fish Committee determines that hatchery supplementation is necessary in order to reestablish an anadromous population of sockeye above Round Butte Dam, the Licensees will provide funding for the necessary changes in equipment to convert an agreed-upon amount of the existing capacity at Round Butte Hatchery to the production of sockeye. During the term of the New License, the hatchery will function both to support the goals of the Fish Passage Plan and to support the goals of self-sustaining and harvestable fisheries in the lower Deschutes River. Any decisions to reduce production will consider both functions of the hatchery.

Round Butte Hatchery will be operated by ODFW personnel according to the terms of a Hatchery Agreement among ODFW and the Licensees. The Hatchery Agreement will require ODFW to submit an annual operating plan (AOP) for Round Butte Hatchery. The (AOP) will be:

- developed in consultation with the Fish Committee and will be consistent with the annual work plan developed under the Fish Passage Plan.
- subject to approval by the Licensees.
- in accord with then-in-existence ODFW and Tribal fish management policies and directives and consistent with any Hatchery Genetics Management Plan or other directive developed between ODFW and NOAA Fisheries pursuant to the Endangered Species Act.
- consistent with the priority objective of restoring and recovering wild stocks in the basin.

Every five years after issuance of the New License, the Licensees, in cooperation with ODFW and CTWS BNR, shall conduct a periodic review, to be funded by the Licensees, of the hatchery program to determine whether it is meeting its goals. The review shall consider federal, ODFW and CTWS BNR fish management policies and plans, any Hatchery Genetics Management Plan or other directive developed between ODFW and NOAA Fisheries pursuant to the Endangered Species Act, relevant best practices, and existing information regarding recent scientific

advances, and shall include recommendations for ongoing management of the hatchery program for the next five years. The Licensees shall make the draft hatchery review available to the Fish Committee for review and comment.

The Licensees also shall make the draft hatchery review available for public review and comment through their annual workshop or other appropriate forum. The Licensees shall provide notice of the annual workshop to all Parties to the Settlement Agreement. Taking into account Fish Committee and public comment, the Licensees shall finalize the review document in coordination with ODFW and the CTWS BNR.

If the Licensees, ODFW, and CTWS BNR determine in the final review that the hatchery program is not meeting either or both of its goals — supporting the goals of the Fish Passage Plan and supporting the goals of self-sustaining and harvestable fisheries in the lower Deschutes River — ODFW shall consult with the Licensees and CTWS BNR regarding changes that should be made to the AOP and will negotiate with the Licensees to achieve changes to the AOP pursuant to the hatchery operating agreement. The AOP shall identify those review recommendations that have not been incorporated into the plan with a brief statement explaining why the changes were not made.

V. PLAN IMPLEMENTATION AND DECISION MAKING

A. Subcommittee Structure and Responsibilities for Fish Passage Plan Implementation

This section is intended to capture all of the elements of decision making within the ongoing phases of implementation of the Fish Passage Plan. Ongoing implementation of this Plan during the term of the New License will be carried out under the guidance/direction of the Fish Committee. Membership of this committee will consist of representatives from the following entities:

- U.S. Fish and Wildlife Service
- NOAA Fisheries
- Confederated Tribes of the Warm Springs Reservation of Oregon, Branch of Natural Resources
- U.S. Bureau of Indian Affairs
- U.S. Forest Service
- U.S. Bureau of Land Management
- Oregon Department of Fish and Wildlife
- Oregon Department of Environmental Quality

- Non-governmental Organizations (NGOs) ¹²
- Licensees

Problem identification and analysis will continue to be addressed using structured decision making and adaptive management guidance. In its continuing role in overseeing the implementation of this Fish Passage Plan, the Fish Committee will be responsible for monitoring progress against the activities identified in this plan, reviewing annual work plans, providing expert advice regarding work plan implementation, and evaluating the results of ongoing fish passage efforts. A key role of the Fish Committee will be determining progress towards achieving specific measures of success identified in this Fish Passage Plan.

1. Licensees' Responsibilities

The Fish Passage Plan will be implemented by the Licensees in consultation with the Fish Committee. In the implementation of the Fish Passage Plan, the Licensees are responsible for aspects of fish passage that are directly under their control. In addition, the Licensees will cooperate with other entities to reduce mortality factors that are not within the Licensees' direct control.

The Licensees are also responsible for providing administrative and logistical support for the Fish Committee.

2. Responsibility of Other Parties

The non-Licensee members of the Fish Committee will have broad responsibilities for overseeing the efforts by the Licensees to implement this Fish Passage Plan. Specific involvement by the Fish Committee is described in this Fish Passage Plan and may include:

- Review and approval of facility designs and annual work plans
- Review and approval of Testing and Verification study designs and protocols
- Review of Testing and Verification results against performance standards and other measures of success established in this Fish Passage Plan
- Making final determinations of whether:
 - Testing and Verification results are sufficient to conclude that the applicable performance standards and other measures of success have been met
 - Additional testing and evaluation is required
 - Applicable performance standards and other measures of success cannot be met

¹² The NGO representative will represent the following organizations that are Parties to the Settlement Agreement: Trout Unlimited, American Rivers, Oregon Trout, and the Native Fish Society.

- Modifications should be made to the Testing and Verification protocols
- Modifications to this Fish Passage Plan are appropriate

Regarding the Testing and Verification program, the non-Licensee entities represented on the Fish Committee are responsible for supporting the actions identified as needed based on the Testing and Verification study results or other applicable information. Such actions could include supporting changes in fishing regulations to reduce smolt losses, and reviewing actions affecting ESA-listed species such as bull trout. Regarding adult salmon returns, some of the factors that affect adult returns are outside of the Project boundary and beyond the Licensees' control. The CTWS BNR and the NGOs and agencies represented on the Fish Committee are responsible for addressing factors within their responsibility that affect adult returns.

Non-Licensee members of the Fish Committee will also continue to provide communication links with their respective management-level personnel regarding the progress of the fish passage program. Routine (day-to-day) project management decisions regarding disposition of the fish used in the passage program will be handled by the CTWS BNR and ODFW, with appropriate involvement of NOAA Fisheries and the USFWS for ESA species.

B. Decision Making

Members of the Fish Committee will make best efforts to reach decisions by consensus, which for purposes of this Fish Passage Plan shall mean that any decision reached is acceptable to all representatives of the entities participating in the Fish Committee. It is assumed that members of the Fish Committee have the requisite authority to make the decisions assigned to the Fish Committee, will keep their management informed of the ongoing fish passage efforts, and will use necessary expertise within their respective organizations to support their participation in the Fish Committee. Decisions of the Fish Committee shall not usurp the statutory authority of the individual entities represented on the Fish Committee or of agencies specifically identified in the Settlement Agreement as having approval authority regarding specific measures required by this plan.

Major decision points have been identified, including decisions on design, determining performance during Testing and Verification (e.g., need for more evaluation, vs. moving to next phase of permanent screen design/construction; decisions on testing of alternative routes from Lake Billy Chinook to the lower Deschutes River and what specific route and related actions to take), and decisions on volitional upstream passage evaluation/implementation.

The basic philosophy of this plan is that activity proceeds on an "if/then" basis; that is, if the Fish Committee's review of Testing and Verification data confirms that license-mandated criteria and standards are being achieved, then minor modifications to steps and schedules can be made and

documented. However, given the possibility of reaching an “if not/then” situation of significance (e.g., a need to continue the Testing and Verification activities longer than currently scheduled), each representative on the Fish Committee would undertake the level of review/approval they deem necessary within their own organization for the specific decision at issue.

Decisions made by the Fish Committee regarding the ongoing implementation of the activities included in this Fish Passage Plan will be summarized in an annual report prepared by the Licensees and submitted to the Fish Committee on a schedule established either by the New License or the Fish Committee.

C. Consultation

The Fish Passage Plan will be implemented on an ongoing basis in consultation with the Fish Committee. Opportunities for notice and comment periods in support of Fish Committee decision making will occur through the normal process of setting meeting agendas and distributing information for review prior to meetings of the Fish Committee. Some decisions may require more formal consultation with specific members of the Fish Committee (e.g., review and approval of facility design drawings by the USFWS and NOAA Fisheries, and determining compliance with the Fish Health Management Plan by ODFW and the CTWS BNR). Specific consultation requirements are described in this Fish Passage Plan. For cases in which consultation or review/approval is not specifically required of a particular agency or organization, that entity may opt to not participate in the consultation and decision making. If an entity does not respond to written notice of opportunity for consultation within 30 days of the notice, or to follow-up request for consultation after an additional period of 30 days, it may be assumed that the entity has chosen to opt out of the consultation and decision making.

D. Dispute Resolution

Decision making and consultation in the context of this Fish Passage Plan involves specific review and approval processes, each with several potential points at which resolution of disagreements — through continued consultation and/or use of formal dispute resolution as described above — may become necessary. Except to the extent that FERC or another agency with jurisdiction of a particular issue has a procedure that precludes implementation of dispute resolution, or an agreement related to this plan (e.g., the Round Butte Hatchery Agreement) provides for different dispute resolution, all disputes regarding the implementation of the requirements of this plan shall, at the request of any member of the Fish Committee, be subject to dispute resolution. Specific dispute resolution procedures are contained in the Settlement Agreement. The members of the Fish Committee agree to devote such time, resources, and attention to dispute resolution as are needed and as can be reasonably provided to attempt to resolve the dispute at the earliest time possible; and each member shall cooperate in good faith to

promptly schedule, attend, and participate in the dispute resolution. Each member shall implement promptly all final agreements reached, consistent with its applicable statutory and regulatory responsibilities. Nothing herein is intended or shall be construed to affect or limit the authority of FERC, the governmental members of the Fish Committee, or other agency with jurisdiction over the Project to resolve a dispute brought before it in accord with its own procedure and applicable law.

E. Funding and Administrative Support

The passage program will be funded by the Licensees on an annual budget cycle. Budgets including facilities construction, maintenance, operation, and passage evaluation will be developed approximately 6 months before they take effect (by June for the following year).

To the extent necessary, the Licensees will provide the Fish Committee with administrative assistance.

F. Annual Work Plans and Reports

The Licensees shall utilize annual work plans to document actions to be implemented, develop monitoring and evaluation studies, and propose management, monitoring and evaluation strategies consistent with the Fish Passage Plan. The annual work plans shall include separate study plans for each Testing and Verification study being conducted. The Licensees shall issue a draft annual work plan to the Fish Committee for review by no later than January 1, and based on consultation with the Fish Committee shall issue to the Fish Committee a final annual work plan by April 1.

The Licensees shall also file an annual report with FERC before June 1 of each year, documenting the activities of the previous year. The annual report will follow the format of the previously approved annual work plan. The annual report will include, but not be limited to:

- Numbers of fish by species moved upstream and downstream.
- Upstream and downstream passage survival rates.
- Estimates of fish mortality by species associated with the fish passage facilities.
- A description and evaluation of any supplementation programs.
- Any changes in the work plan from adaptive management recommendations to the fish passage program that might resolve problems that have been identified.

VI. REFERENCES

- Bartholomew, J.L. 1999. Fish Disease Risk study associated with potential anadromous fish passage at the Pelton Round Butte Project, 1999 Summary Report. Portland General Electric Company. Portland, Oregon.
- Bartholomew, J.L. 2001. Fish health risk assessment — Oregon State University 2000 Progress Report. *In* Portland General Electric Pelton Round Butte Fisheries Workshops, Spring 2001. Portland General Electric Company. Portland, Oregon.
- Bartholomew, J.L. 2002. Fish Disease Risk Assessment Study — Whirling Disease and Ceratomyxosis: Summary of 2001 Research Results. *In* Portland General Electric Pelton Round Butte Fisheries Workshops, Spring 2002. Portland General Electric Company. Portland, Oregon.
- Bartholomew, J.L. 2003. Fish Disease Risk Assessment Study — Whirling Disease and Ceratomyxosis: Summary of 2002 Research Results. *In* Portland General Electric Pelton Round Butte Annual Fisheries Workshop, 2003. Portland General Electric Company. Portland, Oregon.
- Beauchamp, D.A., and J.J. Van Tassell. 2001. Modeling seasonal trophic interactions of adfluvial bull trout in Lake Billy Chinook, Oregon. *Transactions of the American Fisheries Society* 130:204-216.
- BLM (U.S. Bureau of Land Management). 1986. Two Rivers resource management plan, Record of Decision, and rangeland program summary. U.S. Department of the Interior, Bureau of Land Management. Prineville, Oregon.
- BLM, USFS, and Oregon Parks and Recreation Department. 1992a. Middle Deschutes / Lower Crooked Wild and Scenic Rivers management plan. U.S. Department of the Interior, Bureau of Land Management. Prineville, Oregon.
- BLM, USFS, and Oregon Parks and Recreation Department. 1992b. Lower Crooked Wild and Scenic River (Chimney Rock segment) management plan. U.S. Department of the Interior, Bureau of Land Management. Prineville, Oregon.
- BLM and nine co-authors. 1993. Lower Deschutes River management plan and environmental impact statement. U.S. Bureau of Land Management. Prineville, Oregon.

- BLM, Bureau of Indian Affairs, Confederated Tribes of the Warm Springs Reservation, and the State of Oregon. 1996. Supplement to the Lower Deschutes River Management Plan. U.S. Bureau of Land Management. Prineville, Oregon.
- Breithaupt, S., T. Khangaonkar, Z. Yang, and C. DeGaspari. 2001. Water quality model of the lower Deschutes River. Foster Wheeler Environmental Corporation. Bothell, Washington.
- Buchanan, D.V., M.L. Hanson, and R.M. Hooton. 1997. Status of Oregon's bull trout. Oregon Department of Fish and Wildlife. Portland, Oregon.
- Columbia River Inter-tribal Fish Commission (CRITFC). 1995. Wy-Kan-Ush-Mi Wa-Kish-Wit, Spirit of the Salmon: The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs and Yakama Tribes, Vol. I and II. CRITFC. Portland, Oregon.
- Cramer, S.P., and R. Beamesderfer, R. 2001. Population Dynamics, Habitat Capacity, and a Life History Simulation Model for Steelhead in the Deschutes River, Oregon. S.P. Cramer & Associates. Gresham, Oregon.
- CTWS (Confederated Tribes of the Warm Springs Reservation of Oregon). 2002. Final Clean Water Act § 401 Certification for the Certification Pursuant to Section 401 of the Federal Clean Water Act Submitted by Portland General Electric and The Confederated Tribes of Warm Springs Reservation of Oregon for the Federal Energy Regulatory Commission's Relicensing of the Pelton Round Butte Hydroelectric Project on the Deschutes River, Jefferson County, Oregon June 25, 2002. Confederated Tribes of the Warm Springs Reservation of Oregon, Water Control Board. Warm Springs, Oregon.
- CTWS and the U.S. Department of the Interior, Bureau of Indian Affairs (BIA), Warm Springs Agency. 1992. Integrated Resource Management Plan (IRMP I) for the Forested Area. Warm Springs, Oregon.
- CTWS and U.S. Fish and Wildlife Service (USFWS). 2002. Warm Springs National Fish Hatchery Operational Plan and Implementation Plan 2002–2006. Confederated Tribes of the Warm Springs Reservation of Oregon. Warm Springs, Oregon.
- CTWS and the U.S. Department of the Interior, Bureau of Indian Affairs (BIA), Warm Springs Agency. 1999. Integrated Resource Management Plan (IRMP II) for the Non-Forested and Rural Areas. Warm Springs, Oregon.

- CTWS and Portland General Electric Company. 2002. Pelton Round Butte Project water quality management and monitoring plan. September 2002.
- Dale, C., J. Fortune, M. Manion, T. Fies, B. Lewis, and S. Marx. 1996. Upper Deschutes River Basin Plan, Upper Deschutes Fish District. Oregon Department of Fish and Wildlife. Portland, Oregon.
- Duke Engineering & Services. 1999a. Pelton Round Butte Hydroelectric Project engineering studies in support of fish passage. Portland General Electric Company. Portland, Oregon.
- Duke Engineering & Services. 1999b. Survey of existing upstream fish passage in the Northwest. Memorandum to the Fisheries Technical Subcommittee. Bothell, Washington.
- Eicher, G.J. 1964. Round Butte Dam fish-handling costs 2.5% of total-project outlay. *Electrical World* 16:87-91.
- Engelking, M. 1998. Pelton Round Butte fish disease risk study, 1998 Draft Study Plan. *In* Portland General Electric Pelton Round Butte Fisheries Workshops, Spring 1998. Portland General Electric Company. Portland, Oregon.
- Engelking, M. 1999. Fish Disease Risk study associated with potential anadromous fish passage at the Pelton Round Butte Project, 1999 Interim Report. Portland General Electric Company. Portland, Oregon.
- Engelking, M. 2001. Summary of Year 2000 activities, Pelton Round Butte fish disease risk studies. *In* Portland General Electric Pelton Round Butte Fisheries Workshops, Spring 2001. Portland General Electric Company. Portland, Oregon.
- Engelking, M. 2002. Summary of Year 2001 activities, Pelton Round Butte fish disease risk studies. *In* Portland General Electric Pelton Round Butte Fisheries Workshops, Spring 2002. Portland General Electric Company. Portland, Oregon.
- Engelking, M. 2003a. Fish Disease Risk Study Associated With Potential Anadromous Fish Passage at the Pelton Round Butte Project: Summary Report 1997–2002. *In* Portland General Electric Pelton Round Butte Annual Fisheries Workshop, 2003. Portland General Electric Company. Portland, Oregon.
- Engelking, H.M. 2003b. Draft Fish Health Management Plan for the Pelton Round Butte Project. Oregon Department of Fish and Wildlife, Fish Pathology Section, Corvallis, OR. *In*: Pelton Round Butte Annual Fisheries Workshop, 2003. Portland General Electric,

Portland, Oregon, and Confederated Tribes of the Warm Springs Reservation, Warm Springs, Oregon.

ENSR Corporation and Duke Engineering & Services. 2001. Concept development for juvenile fish guidance, exclusion, collection, and conveyance at Round Butte Dam. 2nd Draft Report.

Fies, T.T., J. Fortune, B. Lewis, M. Manion, and S. Marx. 1996. Metolius River Basin Plan, Upper Deschutes Fish District. Oregon Department of Fish and Wildlife. Portland, Oregon.

Graham, J. , and C. Brun. 2003. Determining lamprey species composition, larval distribution, and adult abundance in the Deschutes River, Oregon, subbasin. Project No. 2002-01600, 33 electronic pages, (BPA Report DOE/BP 00009553-1).

Gunsolus, R.T., and G.J. Eicher. 1962. Evaluation of the fish passage facilities at the Pelton Project on the Deschutes River in Oregon. Fish Commission of Oregon. Clackamas, Oregon.

Halbert, C. L. 1993. How adaptive is adaptive management? Implementing adaptive management in Washington State and British Columbia. *Reviews in Fisheries Science*, 1:261–283.

Khangaonkar, T., Z. Yang, C. DeGaspari, P. Johnson, and C. Sweeney. 1999. Preliminary temperature and hydrodynamic modeling of Lake Billy Chinook, Pelton Round Butte Hydroelectric Project. ENSR and Portland General Electric Company. Portland, Oregon.

King, D.N. 1966. Central Region Administrative Report No. 66-3: Deschutes River summer steelhead. Oregon State Game Commission (now Oregon Dept. of Fish and Wildlife). Bend, Oregon.

Korn, L., L.H. Hreha, R.G. Montagne, W.G. Mullarkey, and E.J. Wagner. 1967. The effect of small impoundments on the behavior of juvenile anadromous salmonids. Fish Commission of Oregon Research Division. Clackamas, Oregon.

Lewis, S. D. 1999. Abundance, Activity, and Diet of Littoral Fish in Lake Billy Chinook, Lake Simtustus, and Pelton Reregulating Reservoir, Oregon, 1997–1999. Portland General Electric Company. Portland, Oregon.

Lichatowich, J.A. 1998. A conceptual foundation for the management of native salmonids in the Deschutes River basin. Portland General Electric Company. Portland, Oregon.

Mobrand Biometrics, Inc. 1999. Analysis of factors affecting aquatic resources of the Deschutes watershed: With application to relicensing the Pelton Round Butte Project; EDT analysis. October 1999. Prepared for Warm Springs Power Enterprises. Warm Springs, Oregon.

Nehlsen, W. 1995. Historical salmon and steelhead runs of the upper Deschutes River and their environments. Portland General Electric Company. Portland, Oregon.

ODEQ (Oregon Department of Environmental Quality). 2002. Clean Water Act § 401 Certification conditions for the Pelton Round Butte Hydroelectric Project (FERC No. 2030) Deschutes River Basin, Jefferson County, Oregon. Oregon Department of Environmental Quality. Portland, Oregon.

ODFW (Oregon Department of Fish and Wildlife) and Confederated Tribes of the Warm Springs Reservation of Oregon (CTWS). 1990. Columbia Basin System Planning (CBSP) salmon and steelhead Production Plan: Deschutes River Subbasin. CBSP. Portland, Oregon.

Oosterhout, G.R. 1998. Structured decision-making: fish passage at Pelton Round Butte hydroelectric project on the Deschutes River (Oregon). In Draft License Application for the Pelton Round Butte Hydroelectric Project, FERC No. 2030, vol. 4 of 4. Portland General Electric Company. Portland, Oregon.

Oosterhout, G.R. 1999. PasRAS: a stochastic simulation of chinook and sockeye life histories. In Portland General Electric Pelton Round Butte Fisheries Workshops, Spring 1999. Portland General Electric Company. Portland, Oregon.

Portland General Electric Company (PGE). 1999. License application for the Pelton Round Hydroelectric Project; FERC Project No. 2030; December 1999. Portland General Electric Company. Portland, Oregon.

PGE, ENSR, and EES Consulting. 2003. Presentation materials for the January 30, 2003, FTS meeting addressing Selective Withdrawal Design criteria. Portland General Electric Company. Portland, Oregon.

Ratliff, D. 2001a. Screening the future surface intake vs. the deep intake at Round Butte Dam: A discussion paper. Portland General Electric Company. Portland, Oregon.

Ratliff, D. 2001b. Upstream fish facilities 2000 Progress. Portland General Electric Company. Portland, Oregon.

- Ratliff, D.E., and P.J. Howell. 1992. The status of bull trout populations in Oregon. Pages 10-17 in Howell, P.J., and D.V. Buchanan, editors. Proceedings of the Gearhart Mountain bull trout workshop. Oregon Chapter of the American Fisheries Society. Corvallis, Oregon.
- Ratliff, D.E., and E.E. Schulz. 1999a. Fisheries program at the Pelton Round Butte Hydroelectric Project (Oregon), 1956–1995. Portland General Electric Company. Portland, Oregon.
- Ratliff, D.E., and E.E. Schulz. 1999b. Timing and relative numbers of juvenile kokanee passing through Round Butte Dam: 1999 Progress Report. Portland General Electric Company. Portland, Oregon.
- Ratliff, D.E., S.L. Thiesfeld, W. Weber, A.M. Stuart, M. Riehle, and D.V. Buchanan. 1996. Distribution, life history, abundance, harvest, and limiting factors of bull trout in the Metolius River and Lake Billy Chinook, Oregon, 1984–994. Oregon Dept of Fish and Wildlife, Information Report 96-7. Portland, Oregon.
- Ratliff, D., C. Fagan, M. Riehle, M. Powell, S. Carlon, P. Lickwar, A. Stuart, P. DeVito, M. Gauvin, and J. Eisner. 1999. Alternatives for renewing fish passage at Pelton Round Butte hydroelectric project, Madras, Oregon: 3d Public Draft. Interagency Fisheries Technical Subcommittee. Portland General Electric Company. Portland, Oregon.
- Riehle, M. 1998. Fish habitat survey database and geographical information system progress report, November 1998. *In* Portland General Electric Pelton Round Butte Fisheries Workshops, Fall 1998. Portland General Electric Company. Portland, Oregon.
- Riehle, M., 1999. Habitat quality for anadromous fish upstream of the Pelton Round Butte Hydroelectric Project. April 1999. *In* Portland General Electric Pelton Round Butte Fisheries Workshops, Spring 1999. Portland General Electric Company. Portland, Oregon.
- Riehle, M. 2001. Habitat availability and limiting factors for anadromous fish habitat upstream of Pelton Round Butte Project dams, Progress Report. *In* Portland General Electric Pelton Round Butte Fisheries Workshops, Spring 2001. Portland General Electric Company. Portland, Oregon.
- Salwasser, H., C. K. Hamilton, W. B. Krohn, J. F. Lipscomb, and C. H. Thomas. 1983. Monitoring wildlife and fish: mandates and their implications. Transactions, North American Wildlife Natural Resource Conference, 48:297–307.

- Schulz, E. E., and 10 coauthors. 1997. Study plan: food habits of bull trout in Lake Billy Chinook, Oregon, November 3, 1997. *In* Portland General Electric Pelton Round Butte Fisheries Workshops, Fall 1997. Portland General Electric Company. Portland, Oregon.
- Stuart, A.M., S.T. Thiesfeld, T.K. Nelson, and T.M. Schrader. 1996. Crooked River Basin Plan, Ochoco Fish District. Oregon Department of Fish and Wildlife. Portland, Oregon.
- Nyberg, B. 1999. An Introductory Guide to Adaptive Management for Project Leaders and Participants. B.C. Ministry of Forests. Victoria, BC.
- Thiede, G.P., Kern, J.C., Weldon, M.K., Dale, A.R., Thiesfeld, S.L., and Buckman, M.A. 2002. Lake Billy Chinook Sockeye Salmon and Kokanee Research Study 1996–2000, Project Completion Report, Pelton Round Butte Hydroelectric Project, FERC No. 2030. Portland General Electric Company. Portland, Oregon.
- USFS. 1989. Land and resource management plans: Ochoco National Forest and Crooked River National Grassland. U.S. Department of Agriculture, Forest Service, Ochoco National Forest. Prineville, Oregon.
- USFS. 1990. Deschutes National Forest land and resource management plan and final environmental impact statement. U.S. Department of Agriculture, Forest Service, Deschutes National Forest. Bend, Oregon.
- USFS, Jefferson County, Confederated Tribes of the Warm Springs Reservation of Oregon, State of Oregon, and Bureau of Indian Affairs. 1996. Metolius Wild and Scenic River management plan: Final Environmental Impact Statement. U.S. Department of Agriculture, Forest Service, Pacific Northwest Region, Deschutes National Forest. Bend, Oregon.
- U.S. Fish and Wildlife Service (USFWS). 2002. Chapter 7, Deschutes Recovery Unit, Oregon. *In* US Fish and Wildlife Service. Bull Trout (*Salvelinus confluentus*) Draft Recovery Plan. Portland, Oregon.
- Wallis, J. 1960. An evaluation of the Metolius River Hatchery. Oregon Fish Commission Research Laboratory, Clackamas, Oregon. December 1960.
- Yang, Z., T. Khangaonkar, C. DeGaspari, W. Boles, L. Khan, and C. Sweeney. 2000. Calibration and Verification of Hydrodynamic and Temperature Models of Lake Billy Chinook, Final Report. Portland General Electric Company. Portland, Oregon.

Yang, Z., T. Khangaonkar, Z. Yang, C. DeGaspari, and S. Breithaupt. 2001. Water quality model of Lake Simtustus. Foster Wheeler Environmental Corporation. Bothell, Washington.

Zabel, R.W., A. Giorgi, and P.R. Mundy. 1999. Literature review of factors affecting the behavior of anadromous fish emigrating through lakes and reservoirs. *In* Portland General Electric Pelton Round Butte Fisheries Workshops, Spring 1999. Portland General Electric Company. Portland, Oregon.

Zimmerman, C.E., and D.E. Ratliff. 1999. Maternal origin of sockeye salmon (*Oncorhynchus nerka*) returning to the Pelton Fish Trap, Deschutes River, Oregon in 1997. Portland General Electric Co. Portland, Oregon.



Oregon

Theodore R. Kulongoski, Governor

Department of Fish and Wildlife

High Desert Region
61374 Parrell Road
Bend, OR 97702
(541) 388-6363
FAX (541) 388-6281

December 20, 2006

Jefferson County Board of Commissioners
66 SE "D" Street, Suite A
Madras, Oregon 97741

Re: Oregon Department of Fish and Wildlife (ODFW) comments regarding Jefferson County Post Acknowledgement Plan Amendment and Zoning Ordinance Amendment--December 20, 2006 Public Hearing; Case Files O-01-07 and O-02-07.

Dear Chair Ponsford and Commissioners:

This letter is to express Oregon Department of Fish and Wildlife (ODFW) concerns regarding Jefferson County's revised proposal to amend its comprehensive plan and zoning ordinance to permit nonfarm dwellings, lot of record dwellings, and various forest template dwellings in the exclusive farm use, rangeland and forest management zones. Please place this comment letter in the public record for both O-10-07 and O-02-07.

Deer winter range identified in the County's wildlife overlay zone is critical for maintaining ODFW's population objective of 6,200 mule deer in the Metolius Wildlife Management Unit (WMU). This deer population objective was established in Oregon Administrative Rule (OAR) by the Oregon Fish and Wildlife Commission following public review, with the purpose of sustaining adequate deer numbers to support associated economic, cultural, social, and biological values for present and future citizens of Oregon.

ODFW conducts annual inventories of mule deer population trends on winter ranges, including the Metolius winter range in Jefferson County. Deer populations in the Metolius WMU remained near ODFW's population objective level during the period 1985-1995. However, between 1995 and the present the deer population trend has steadily declined to less than 40% of the population objective. There are likely several factors contributing to this decline, including factors related to residential and commercial developments on deer winter range. Reduction of deer forage, hiding and thermal cover, travel corridors, barriers such as fences, roads, and traffic, and disturbance from increased human and domestic animal activity all pose additional risks to deer populations on winter range. ODFW has observed substantial mortality of deer to diseases such as adenovirus hemorrhagic disease (ADH) in recent years. ADH in deer appears to occur at higher levels in and adjacent to residential developments, likely due to additional stresses and risks posed for deer by such developments.

ODFW finds it difficult to assess the potential impact that the County's proposed action may have on deer populations and habitat, lacking specific information on the location of individual sites that may be affected. For instance, some individual residential developments that ensue may be of little consequence to deer, while others may heavily impact critical deer habitat. ODFW is concerned that permitting these new residential uses may result in significant detrimental impacts to deer winter range habitat, and may substantially reduce ability of deer to effectively utilize affected winter range. ODFW therefore recommends that the County conduct a thorough impact analysis consistent with requirements of statewide planning Goal 5. The results of such analysis would allow the County to develop policy that could help protect important wildlife habitats, consistent with the County's comprehensive plan.

Thank you for providing the opportunity for comment, and for your consideration of ODFW's concerns.

Sincerely,

Clair Kunkel, Manager
Deschutes Watershed District



Oregon

Theodore R. Kulongoski, Governor

Department of Fish and Wildlife

High Desert Region

61374 Parrell Road

Bend, OR 97702

(541) 388-6363

FAX (541) 388-6281

December 29, 2008

Jefferson County Board of Commissioners
Community Development Department
85 SE D Street
Madras, Oregon 97741

RE: Ordinance #O-03-07 and #-04-07: Proposed Amendments to the County Comprehensive Plan and Zoning Ordinance in response to the Land Use Board of Appeals' Final Order and Opinion Johnson vs. Jefferson County.

Dear Commissioners,

This letter is to express Oregon Department of Fish and Wildlife's (Department) concerns regarding the analysis and adequacy of the "DRAFT SUPPLEMENTAL ESEE: BIG GAME HABITAT (Supplement) findings the Department received from the county December 8, 2008. The Department believes the Supplement's findings are not correct based on the body of available wildlife research that describes the significant impacts on wildlife and their habitats from human disturbance.

BIG GAME OVERVIEW

Big game winter range in the county's wildlife overlay zone is critical for maintaining the Department's big game management objectives. Deer and elk winter range boundaries have been adopted by Jefferson County in the Metolius Wildlife Management Unit where the proposed destination resorts are being considered for siting. Big game management objectives were established by the Oregon Fish and Wildlife Commission following public review, with the purpose of sustaining adequate big game to support associated economic, cultural, social, and biological values for present and future citizens of Oregon.

Factors that can impact big game population levels and habitat use include residential and commercial developments; reduction in forage and cover either through direct loss or loss of use through disturbance, barriers such as fences, motorized and non-motorized recreation, poaching, predation, disease, and weather.

DRAFT SUPPLEMENTAL ESEE: BIG GAME HABITAT FINDINGS:

The Supplement states:

"With respect to the Big Game Winter Range Goal 5 resource, the Board found: "Big game habitat will not be affected by destination resort development, as the County has elected to exclude all big game habitat areas identified in its Goal 5 inventory from eligibility for destination resort development. (Ordinance No. O-03-07, p. 26.)."

This statement is incorrect. Multiple studies have shown that human disturbance can have significant impacts on habitat use by big game over one mile away as well as impacts on other wildlife (Rowland et al 2005, Gaines et al 2003, Glennon et al 2005, Hansen et al 2005). Recently, the proposed Thornburg Destination Resort in Deschutes County used a human disturbance band analysis on big game and other wildlife to determine resort impacts on wildlife and the appropriate mitigation measures needed to offset those impacts. The Bureau of Land Management Prineville District also incorporated the use of human disturbance bands to assess impacts on wildlife in their 2005 Upper Deschutes Resource Management Plan. Additionally, access routes to the proposed destination resorts in the Metolius Basin will most likely travel through Goal 5 Big Game Winter Range as mapped by Jefferson County.

The Supplement states:

"More generally, in adopting Ordinance No. O-03-07, the Board found that destination resorts that meet the siting approval criteria in JCZO Section 430 by definition cannot conflict with any inventoried Goal 5 resource, because the siting standards require the resource to be preserved by a conservation easement "sufficient to protect the resource values of the resource site." (Section 430.6(N)) (Ordinance No. O-03-07, p. 25)."

A conservation easement “sufficient to protect the resource values of the resource site” would require a one mile buffer from the big game winter range boundary along with no human use of the buffer or the surrounding big game winter range from December 1 through March 31 of each year. Likewise, to avoid significant impacts, access through Goal 5 Big Game Winter Range to the destination resorts would be closed from December 1 through March 31 of each year.

The Supplement states:

“Furthermore, the Board found that the types of uses in a destination resort setting, including residential, recreational, and limited commercial development, are not qualitatively different from the existing uses that the County’s programs to protect Goal 5 resources are implemented to regulate.”

The rationale behind this statement is unclear to the Department given that two small cities are proposed to be built where currently there is low development and low human disturbance. Resources necessary to build and maintain these destination resorts will increase significantly, as will transportation of energy, people, goods and services.

The Supplement states:

“Therefore, the Board found that its existing programs to protect Goal 5 resources in its acknowledged 1981 Plan and Zoning Ordinance will adequately protect any inventoried Goal 5 resources within destination resort eligible sites. In particular, the Board found that the existing Goal 5 protections for the Winter Range—*i.e.*, the Wildlife Overlay Combining Zone—would protect the Big Game Winter Range. *Id.* at 26. Additionally, the Board found that no reasonably available evidence existed to suggest that eligibility for destination resorts, subject to compliance with development criteria, will conflict with specific significant Goal 5 resources within or around the eligible tracts. *Id.*”

The Department disagrees with the Board’s finding given the body of wildlife research that shows how human disturbance, activities and infrastructure, can significantly impact or displace habitat currently used by wildlife. Jefferson County’s destination resort ordinance currently only addresses development on mapped Goal 5 lands. It does not address indirect and cumulative impacts that can significantly impact Goal 5 lands.

Jefferson County Ordinance Section 430 – Destination Resorts 430.6 Standards and Criteria for Approval of Tentative Master Plan standards and criteria N states:

“Any designated Goal 5 resource on the tract where the resort will be sited will be preserved through conservation easements as set forth in ORS 271.715 to 271.795. A conservation easement under this section shall be sufficient to protect the resource values of the Goal 5 site and shall be recorded with the property records of the tract on which the destination resort is sited.”

The Supplement states:

“The “Goal 5 Impact Assessment of Resort Traffic on Deer Winter Range,” prepared by Pacific Habitat Services, Inc., dated November 28, 2008, and “The Effects of Traffic on Mule Deer Winter Range along Access Roads to the Proposed Ponderosa Project Jefferson County, Oregon,” prepared by Mason, Bruce & Girard, Inc., dated _____, 2008, are adopted by the County in support of this supplemental ESEE and incorporated herein by reference.”

The Department did not receive a copy of the Mason, Bruce & Girard, Inc. report from the County; however we did receive the Pacific Habitat Services, Inc. report from the County and after review we emailed the following comments to the Community Development Director December 22, 2008.

- 1) In 2008 ODFW estimated the spring mule deer population in the Metolius Wildlife Management Unit (WMU) to be 4600 mule deer out of a management objective of 6200. We also estimated an elk population of 400. The report states the population estimate was 611 mule deer in 2007 along with 180 elk. 611 mule deer is the total number of deer biologists counted in 2007 that they used in a model to estimate the total over winter mule deer population.
- 2) The 337,076 acres of mule deer winter range in Jefferson County include winter range acres for the Grizzly and Ochoco WMUs in addition to the Metolius. The Metolius winter range portion is considerably less than 337,076 acres.
- 3) Indicating that 800 acres is insignificant relative to the whole Metolius winter range is not taking into consideration cumulative effects and the ripple effect of placing a small city (two in the Metolius Basin) with all its disturbances where none currently exists.
- 4) The greatest big game impact associated with the Metolian is on elk that currently calve, summer, and winter in the area.

If the County chooses to adopt the Pacific Habitat Services, Inc. report, given its inaccuracies, as support for the supplemental ESEE, then the Supplement could be considered inaccurate as well.

The Supplement states:

"PHS explained that the potential impacts of traffic and road improvements within the Winter Range were that increased traffic speeds would cause an increase in deer/auto collisions and that more accessible roads would encourage more human use of the lands surrounding the roads. PHS concluded, however, that the impacts would be minimal, for three primary reasons: (1) the affected land is less than one percent of the Winter Range resource; (2) the roads in question are already well-traveled, suggesting that deer are accustomed to the roads; and (3) collision data for the surrounding area demonstrates a very low incident rate."

As the Department noted above to the Community Development Director 1) the projects will impact more than one percent of the Metolius Wildlife Habitat Unit winter range, particularly from human disturbance; 2) the level of use on the access roads will increase significantly thereby creating a level of use that the deer are not currently accustomed to; and 3) collision data is based on low road use, where project development will result in high road use. Based on this additional information, the Department finds the PHS conclusions to be inaccurate.

The Supplement states:

"According to PHS and MBG, techniques exist to mitigate those conflicts. They include a variety of strategies in three principal categories:

- Designing roads to keep vehicle speeds low;
- Identifying and improving frequent deer-crossing areas; and
- Discouraging increased use of land surrounding the roads."

The Department's techniques to address wildlife impacts are to 1) avoid the impact, 2) minimize the impact, and 3) mitigate for the impact when appropriate. Four crucial mitigation components associated with roads and people are 1) adequate environmental assessment, 2) adequate engineering, 3) adequate education, and 4) adequate enforcement. Without addressing all four of the crucial components, any mitigation proposed will likely fail. None of the crucial mitigation components are sufficiently addressed in the PHS report or the Supplement.

The Supplement states:

"As discussed above, the impact area for the inventoried, acknowledged Big Game Winter Range resource site is identical to the mapped resource site. The County is not required to expand the regulatory boundaries of the acknowledged resource site and impact area in connection with this PAPA. Therefore, the "impact area" within which this ESEE analysis is conducted is limited to the Goal 5 resource site itself."

As discussed previously, the analysis only addresses direct impacts to the Goal 5 big game resource and not indirect and cumulative impacts associated with human use and disturbance of the Goal 5 resource. These two impact categories will cause a much greater impact on the Goal 5 big game resource than will the direct impacts. Only addressing the direct impacts is comparable to telling an established neighborhood, that no impacts will occur to their neighborhood by allowing development of a large retail mall in an adjacent vacant field.

The Supplement states:

"Limiting the conflicting use would have neutral environmental consequences because the mitigation requirements would minimize effects on deer movement across the roadways and on human disturbance of the surrounding habitat. There also could be opportunities for positive environmental consequences created by mitigating measures required through the siting process."

This statement is inaccurate as presented in the Departments discussions previously in this letter and based on the realization that it will be very difficult to adequately mitigate Goal 5 big game resource impacts associated with the siting of two destination resorts in the Metolius Basin.

The Supplement states:

"Allowing the conflicting use would result in disturbance to the Winter Range, increasing deer/auto collisions and human intrusion into deer habitat. However, the environmental effects are fairly limited."

This statement is inaccurate as presented in the Departments discussions previously in this letter and based on the realization that Goal 5 resource effects will be much greater than those assessed and addressed in the Supplement.

The Supplement states:

"By contrast, very large developed areas of the County, including Camp Sherman, the Three Rivers Recreation Area, and parts of Crooked River Ranch are all located within the Big Game Winter Range, as are hundreds of miles of existing roads. The County historically has allowed development in such areas without any constraints placed on access through the Winter Range. Consistency with prior practice suggests that access through the Winter Range should be allowed."

These residential areas and accompanying access routes were established prior to the existing county ordinances. Based on this statement's rationale, the county is essentially saying that uses allowed in the past should also be allowed on other land within Jefferson County today regardless of the changed economic, environmental, and social conditions.

The Supplement states:

"In addition, the conflicting use is not so detrimental to the Goal 5 resource that it should be prohibited entirely under OAR 660-023-0040(5)(a)."

The Department believes this statement is based on a flawed assessment since some of the information the statement is based on is inaccurate and the assessment did not consider indirect or cumulative impacts on the Goal 5 big game resource. Both of these points were discussed previously in this letter.

The Supplement identifies IV. PROGRAM TO ACHIEVE THE GOAL as adequate mitigation to address impacts to the Goal 5 resource. The proposed program does not adequately address impacts to the Goal 5 big game resource associated with access to the proposed destination resorts as we previously discussed. It also does not address the indirect and cumulative impacts from human disturbance, a much greater impact to the Goal 5 resource than impacts from access that we also previously discussed. Based on inaccurate and incomplete information, the Supplement's findings and proposed recommendations do little to protect and conserve the identified Goal 5 big game resources.

The Department appreciates the opportunity to comment on the County's "SUPPLEMENTAL ESEE: BIG GAME HABITAT findings and consideration of our concerns.

Sincerely,

Glen Ardt
Wildlife Habitat Biologist
Deschutes Watershed District
glen.t.ardt@state.or.us

Literature Citations:

Gaines, W.L., P.H. Singleton, R.C. Ross. 2003. Assessing the Cumulative Effects of Linear Recreation Routes on Wildlife Habitats on the Okanogan and Wenatchee National Forests. Gen. Tech. Rep. PNW-GTR-586. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 79 p.

Glennon, Michale, and Heidi Kretser 2005, Impacts of Wildlife from Low Density, Exurban Development; Information and Considerations for the Adirondack Park. Wildlife Conservation Society, Adirondack Communities & Conservation Program, Technical Paper No. 3, October 2005.

Hansen, A.J., R.L. Knight, J.M. Marzluff, S. Powell, K. Brown, P.H. Gude, K. Jones 2005, Effects of Exurban Development on Biodiversity: Patterns, Mechanisms, and Research Needs. Ecological Applications, 15(6), 2005, pp. 1893-1905. Ecological Society of America.

Rowland, M.M., M.J. Wisdom, B.K. Johnson, and M.A. Penninger. 2005. Effects of Roads on Elk: Implications for Management in Forested Ecosystems. Pages 42-52 in Wisdom, M.J., technical editor, The Starkey Project: a synthesis of long-term studies of elk and mule deer. 2004 Transactions of the North American Wildlife and Natural Resources Conference, Alliance Communications Group, Lawrence, Kansas, USA.



December 29, 2008

Jefferson County Board of Commissioners
85 SE D Street, Suite A
Madras, Oregon 97741

Re: Ordinance #O-03-07 and #O-04-07; Amendment of Jefferson County Comprehensive Plan and Zoning Ordinance/Destination Resorts and Wildlife Impacts

Dear Commissioners:

This office represents the Confederated Tribes of the Warm Springs Reservation of Oregon ("CTWS" or "Tribe"). The Tribe appreciates the opportunity to review and comment on the County's preliminary proposed Environmental, Social, Economic and Energy ("ESEE") analysis of a new conflicting use—traffic and road impacts—generated by destination resorts within the County's mapped Goal 5 big game habitat, which has been mapped as the Wildlife Area Overlay Zone ("WA zone"). Importantly, however, given the short amount of time available to review the material, the Tribe has not had an opportunity to fully consider them. The Tribe respectfully requests that the County not take action on December 30 to approve the draft ordinances in order to enable the Tribe and other interested agencies, such as the Oregon Department of Fish and Wildlife, to provide more comprehensive input and analysis.

1. The County's WA zone in the Metolius Wildlife Unit is an especially sensitive big game habitat area.

ORS 197.455(1)(e) prohibits the siting of destination resorts within especially sensitive big game habitat areas. The County's comprehensive plan and zoning code prohibit destination resorts within any portion of its WA zone. The Tribe supports this exclusion, particularly within the Metolius Wildlife Unit, because there is ample evidence that the entirety of the WA zone within this Unit is especially sensitive big game habitat area, and we request that the County make such a finding express.

Enclosed is a report from the Tribe's Branch of Natural Resources, Wildlife Division biologist, Jamie Hurd. Ms. Hurd reviewed the County's materials and identifies several comments about the sufficiency of the impact analysis. She further reports that the winter range in Jefferson County is highly utilized habitat for much of Central Oregon's deer, yet the deer population in the Metolius Wildlife Management Unit is far below management objectives. This is consistent with evidence that the Tribe submitted in 2006. In December 20, 2006 comments on the proposed destination resort amendments, the Oregon Department of Fish & Wildlife explained

W736.1(a)\334666.doc

Exhibit 8
Page 1 of 7

that deer population in the Metolius Wildlife Management Unit have declined to less than 40 percent of the population objective between 1995 and 2006.

“There are likely several factors contributing to this decline, including factors related to residential and commercial developments on deer winter range. Reduction of deer forage, hiding and thermal cover, travel corridors, barriers such as fences, roads, and traffic, and disturbance from increased human and domestic animal activity all pose additional risks to deer populations on winter range. ODFW has observed substantial mortality of deer to diseases such as adenovirus hemorrhagic disease (ADH) in recent years. ADH in deer appears to occur in higher levels in and adjacent to residential developments, likely due to additional stresses and risks posed for deer by such developments.”

In other words, the deer population is a stressed and vulnerable wildlife resource under existing conditions. The existing winter range, therefore, is essential for these populations, and the deer populations are especially sensitive to increased human activity within these areas.

The County’s preliminary supplemental ESEE findings do not acknowledge the vulnerability of the deer herds which is caused primarily by increased human contact encroaching on the winter range resource within the Metolius Wildlife Management Unit. Because the proposed new conflicting uses would further increase human activity within the Metolius Wildlife Management Unit, the County’s ESEE findings are incomplete without a discussion of the condition of the existing herds and the related causes.

2. *Traffic and road improvements are a conflicting use with the big game habitat.*

The Tribe concurs with the County’s conclusion that traffic and road impacts associated with destination resort development are conflicting uses with the big game habitat. This conclusion is based on two main factors: (1) direct mortality influenced by vehicle speeds and road design and (2) increased human activity and habitat fragmentation. The Tribe concurs in both bases for this conclusion.

The County’s materials identify the likelihood of direct mortality from vehicle strikes and recommends certain mitigation factors such as vehicle speed, road design and signage. It is unclear, however, whether mitigation measures may be implemented that would increase habitat fragmentation, for example, with the use of fencing or development of new roads. A December 5, 2008 report by MB&G identifies the placement of wildlife fences to limit crossing locations. This increases habitat fragmentation. Similarly, the MB&G report indicates that its conclusions are based on an assumption that no new roads will be conducted and identifies that a new road of any variety would increase habitat fragmentation. Mitigation measures that would result in the fragmentation of big game habitat should be prohibited.

The County's materials also identify the likelihood of increased human activity as a result of increased traffic and improved access to public lands. As LUBA acknowledged, a destination resort that could be sited on the Ponderosa property would be the size of a small city. Currently, access to this site is via unimproved roads and, hence, winter access is very limited. An improved all-year road would greatly increase traffic levels within the winter range during high deer usage. It also would allow for individuals to access public lands for hunting and recreational activities that would disturb deer populations. The County's findings, however, appear to assume that the impact will be minimal because of Ponderosa's assumptions regarding access. Indeed, the analysis in the technical report prepared by MB&G is expressly premised on an assumption that no new spurs or access roads will be constructed. As described more fully below, because weighing whether to allow the conflicting use is based on an assumed level of increased human activity, the County should similarly impose express limitations on the level of acceptable traffic and road improvement uses in the wildlife range area.

3. *The County's ESEE findings should discuss the impact on tribal resources and interests and on treaty rights.*

The Tribe is the political and legal successor to the tribal signatories of the June 25, 1855 Treaty with the United States, 12 Stat., 963 ("1855 Treaty"). The 1855 Treaty created the Warm Springs Reservation which is located adjacent to Jefferson County. In the 1855 Treaty, the Tribe ceded title to the United States government of lands located within Jefferson County and reserved important off-Reservation rights. As most relevant to the subject of this hearing, the 1855 Treaty "secure[s]" the "privilege of hunting * * * on unclaimed lands, in common with citizens * * *." With respect to these rights and interests, the proposed ESEE findings improperly omit any discussion of potential impacts to the Tribe from additional use conflicts with the wildlife resource.

Hunting big game, in particular elk and deer, both on and off the Reservation is an important subsistence activity for tribal members. Conflicting uses that would result in an abridgment of this activity through degradation of range area critical for the health of these herds will have significant environmental, economic and social impacts to the Tribe.

As an initial matter, the County has acknowledged that its current Goal 5 mapping of wildlife range is out of date and likely does not reflect the current migration and forage habits of the existing herds. Increased development and activity in Jefferson County has likely displaced or shifted activity within Jefferson County and has increased reliance on Reservation range. If population management goals can not be met, increased reliance on the Reservation may have adverse consequences. Some of the range on the Reservation is currently degraded in certain locations. Adding additional conflicting uses within the Jefferson county wildlife range could further herd reliance on Reservation range and further contribute to degraded environmental conditions on the Reservation.

As noted above, it has also been amply documented that increased stress on the herds from conflicting human activity has significantly lowered the health of these herds. This lowers the numbers and size of game which adversely impacts subsistence and cultural hunting activities on and off the Reservation. Indeed, current population levels make it difficult for tribal members to meet their needs. This has both economic and social impacts to the Tribe. Hunting activities are important economically as a food source and for their hides. They are also important for health reasons. Tribal members suffer disproportionately from health conditions such as diabetes and heart conditions due in large part to a non-traditional diet. These health conditions result in younger mortality and lower and lost economic opportunity. It has been documented that a traditional diet for tribal members would provide health benefits that could drastically reduce and nearly eliminate these health conditions. Emphasizing locally and regionally available edible plants, berries and roots, salmon, and game allow for such a diet. Hunting activities and the products generated from that activity also have high cultural importance to the Tribe. Indeed, the Tribe appoints traditional tribal hunters, and tanned hides are staples in traditional tribal art and clothing. Last, a continuing decline in deer populations caused by a continuing increase of human activity in their winter range will make it more difficult for the Tribe to exercise off-reservation treaty hunting rights.

4. *The County should prohibit or expressly limit the scale or level of the new conflicting use.*

For the reasons described above, the Tribe favors disallowing any new conflicting use in this especially sensitive wildlife range area. The proposed new conflicting use will have significant impacts on the wildlife resource and on tribal interests.

However, if the County undertakes a more comprehensive ESEE analysis and after that analysis determines that the ESEE consequences favor allowing but limiting the use, the County should impose stronger limitations on the traffic and road impact conflicting use.

Currently, the County is considering requiring further study of *primary* access roads within the winter range and requires road design to minimize deer-vehicle collisions and to discourage human usage of the winter range. These measures while certainly appropriate are, standing alone, inadequate to protect the wildlife resource.

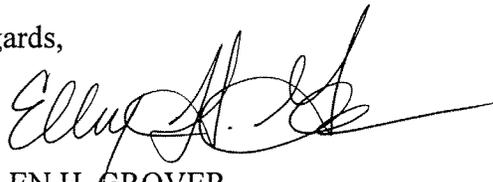
The mitigation measures are also premised on a weighing of the ESEE consequences that assume no new roads will be built to access the Ponderosa property—*viz.*, assumed minimal new conflicting uses within the range (no new roads, improvement of existing roads, and associated traffic/increased human activity with Ponderosa resort). Indeed, the MB&G technical report identifies that *any new* road, regardless of its use as a primary access route, would represent new physical fragmentation and the report further expressly conditions its analysis and conclusions on the assumption that no new roads will be developed.

The Tribe questions the reasonableness and adequacy of crafting mitigation that relies on this assumption rather than conditioning mitigation in a way that ensures that the premise of the assumption is maintained. The reasonableness of the Ponderosa access assumptions are questionable because they do not acknowledge the potential for a different road configuration outcome—*viz.*, it does not represent what the County will require as adequate access when the resort seeks development permits and it does not represent desired spur roads to other service centers such as Camp Sherman. In addition, the adequacy of the mitigation measures are questionable because they do not reflect the scale of this new conflicting use when permits are issued or when a new Goal 5 inventory is completed for the wildlife range resource. The County has acknowledged that the existing Goal 5 wildlife resource mapping is out of date and that it desires to complete a new inventory. This new inventory may identify shifted wildlife range resource areas and drastically increase the potential for this conflicting use.

It is the Tribe's view that the proposed mitigation measures with no associated limitation on minimizing the scale of the new conflicting use is insufficient to mitigate the conflicting use. That is because an important basis for weighing whether to allow the conflicting use is the presumed scale and frequency of the use itself. The Tribe requests that the County expressly prohibit the development of *any new* destination resort access or spur roads within the winter range resource unless a wildlife study or mitigation plan identifies that the proposed new traffic and road impacts do not increase conflicting use levels over the assumed base-case scenario identified by the Ponderosa access assumptions. This limitation will allow some flexibility for resort developers to comply with County access requirements while also protecting the wildlife range from increased activity levels not anticipated in this report (for example, by additional resort development decisions in the future or by a modification in the winter range habitat mapping).

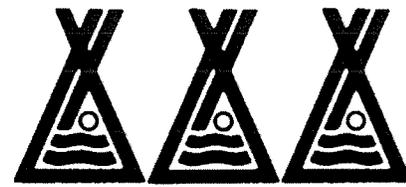
The Tribe appreciates your consideration of these comments.

Regards,

A handwritten signature in black ink, appearing to read "Ellen H. Grover", with a long horizontal flourish extending to the right.

ELLEN H. GROVER

Enclosure



THE CONFEDERATED TRIBES OF THE WARM SPRINGS RESERVATION OF OREGON

Natural Resources Department
P.O. Box C, Warm Springs, Oregon 97761
Phone (541) 553-2044
Fax (541) 553-1994

December 23, 2008

Ponderosa Project Access Roads Effects on Mule Deer:

There are several concerns with the proposed road development in Jefferson County, Oregon on mule deer. Many of these issues are addressed in the draft document by MB&G. State wide mule deer populations are below management objectives. The winter range in Jefferson County is a highly utilized habitat for much of Central Oregon's deer. Currently, ODFW estimated this population below management objectives. The CTWSRO wildlife department has conducted telemetry studies on deer. Those studies have shown deer movement from the reservation to nearby areas surrounding the project location. Accordingly, given the vulnerable status of the deer population and their heavy reliance on Jefferson County winter range, it is appropriate to consider all of this range as especially sensitive.

Deer are a culturally significant species that are used for subsistence purpose and are an essential component in several tribal events. With population numbers at low levels, tribal members are experiencing difficulty meeting their needs. The project raises concern for deer utilizing the winter range surrounding the project area. Winter range has been identified as sensitive habitat. With the proposed road development deer populations will experience several negative impacts and the population could continue to decline.

The movement of animals along roadsides overall is limited and functionally impeded. Further development will only increase those limitations thus creating a more intense road barrier effect. The enhanced road will continue to increase habitat fragmentation and disrupt surrounding habitat.

MB&G did a good job identifying the main concerns with the road development. However, a few issues and concerns were identified with their report on the purposed road development.

1. What is estimated population size and carrying capacity for the area? How many animals are resident or migratory animals? Deer studies have found that not all animals will exhibit avoidance behavior.
2. With increased road access, there will be more human activity in the area. Who will pay for increased law enforcement, education and regulation of mitigation?
3. An upgraded road system will increase the potential for noxious and invasive species. The report addresses current invasive species but not the continued habitat and species loss that increased human activity will bring to the area.

4. The surrounding habitat will also be more prone to fire activity, litter, drying of wetlands due to interrupted water flow, and increased sedimentation in surrounding water systems.
5. If road avoidance is demonstrated by deer, there may be decreased chances for movement and genetic exchange through the landscape.
6. If animal are exhibiting higher levels of stress due to the increase in human activity in the area, deer may be more susceptible to mortality, poor body condition, disease and lower reproductive rates. During winter deer are already exhibiting stressful conditions due to weather, lower amounts of food and cover and higher levels of competition.
7. With increased road traffic and speed, deer will have a lower chance of successful road crossing. Wildlife crossings (over or underpasses) have had limited success in some areas. Forcing animals to concentrate in certain areas makes them more susceptible to disease, predation and human interactions.
8. Why is only the section of road that is proposed for enhancement analyzed? Why isn't the entire projected path of travel for resort guest from major highways examined? Travel will increase and all the above concerns will also increase in those areas as well.
9. If fencing is added to the project area to detour animals around the road, this will continue to further the effects of habitat fragmentation and road avoidance.
10. With enhanced road development there will be easier access to roadless areas. There may be an increase in hunting pressure, ATV activity and recreation.
11. With increased road activity and animal collisions will vegetation along the road be removed or modified? In most cases with road development vegetation is removed to increase human safety. This could disrupt the natural succession of the herbaceous community and continue to alter the surrounding wildlife habitat.
12. Are there resident deer populations using the area? If so, these animals could become habituated to the increased activity and concentrations of habituated animals can lead to transfer of diseases at common feeding and watering stations. These animals may also infect migrating winter animals leading to further disease spread and population losses. Disease is one of the primary factors believed responsible for the significant decrease in the Metolius Unit deer population.

In conclusion, the overall all effects of the proposed development are negative for deer and wildlife that utilize the area. The mitigation suggested to reduce the effects overall will have minimal results and does not serve to help an already struggling population. If the goal is to avoid disturbance to the deer populations a more intensive and detailed management strategy is needed.

Jamie Hurd
Wildlife Biologist
Confederated Tribes of the Warm Springs Reservation of Oregon

TO: Paul Dewey

From: Bret Michalski
Consulting Wildlife Biologist
19325 Kiowa Road
Bend, OR 97702

December 29, 2008

RE: Jefferson County ESEE re: land rezoning for destination resorts

Paul –

I have reviewed Jefferson County's Environmental, Social, Environmental and Energy (ESEE) analysis regarding the land use rezoning for destination resorts, and the two reports on which the county has relied to formulate its decision. These two studies, by Pacific Habitat Services of Wilsonville, Oregon, and Mason, Bruce and Girard of Portland, Oregon, examine in very general terms the potential impacts of destination resort traffic on designated deer winter range, but several areas of concern have emerged.

Mason Bruce and Girard study

The Mason Bruce and Girard (*MBG*) study evaluates the potential habitat impacts from development of the Ponderosa Project, a destination resort on 2,000 to 3,000 acres adjacent to deer winter range for the Metolius mule deer herd. While the general discussion of potential impacts and proposed mitigation measures seem to be accurate in basic principle, I am concerned that several areas within the study do not provide adequate information to make a determination of the true probable impacts to mule deer winter habitat.

Scope of Field Evaluation

Assessment of vegetation and deer usage was limited to within 100' of the roads in question (Forest Service Routes 11, 1126, and 1126-510), while published literature indicates measureable decreases in habitat effectiveness to ½ to 1 mile. No justification for conducting the analysis within 100' of the road is offered.

Additionally, there is no evaluation or discussion of impact of resort development on other roads in the vicinity, which will likely see increased traffic due to the proximity of the resort. To expect that the only roads which will see increased traffic are the three roads which directly access the resort is unreasonable.

Timing of Field Evaluations

Evaluation of potential impacts to winter range was conducted *outside* the winter period when deer use would be expected to be lowest. Evaluations outside the winter use period give no indication of what areas are actually used during the winter period. Additionally, the field evaluations were conducted on the two days immediately following the close of the Metolius Unit deer hunting season. As a biologist I would expect evidence of recent deer use within 100' of the road to be light immediately following a period of concentrated disturbance. In addition, a lack of evidence of deer usage of browse cannot be used as an indication of potential value to

deer, as deer use the current annual growth of bitterbrush twigs, and evaluation before the winter use period would predictably show relatively little use. The Metolius deer population is also depressed (see Additive Effects below), and what habitats appear unimportant today may become much more important at higher population levels.

Additive Effects

Oregon Department of Fish and Wildlife currently estimates the Metolius Management unit deer population to be less than 40% of management objective (MO). This would indicate a population that is under stress, from a variety of sources as indicated in ODFW's letter to the county dated 20 December 2006. When a population is experiencing mortality above its reproductive rate (i.e. is in decline), additional mortality factors are typically *additive*, or more severe than they otherwise might be in a stable or increasing population. In the MBG study, there is no evaluation or mention of what the potential additive impacts of additional traffic and development might be on a population that is already stressed.

Effectiveness of Mitigation Measures

There has been no quantitative assessment of traffic under the current habitat and road use conditions. The estimate of average daily trips (ADT's) after completion of a destination resort range from 2,000 to 5,000 (which seems very low given a developed area of 2,000 to 3,000 acres), yet there is no discussion or evaluation of what the current traffic volume is, and what the expected impacts would be at the new traffic level. Without any knowledge of how the proposed increase would actually affect deer use of the habitat, it is impossible to say what the effectiveness of proposed mitigation measures would be.

Pacific Habitat Services Study

The Pacific Habitat Services (PHS) study is a very general discussion of potential impacts on both the Ponderosa Project property and Metolian property, and overlooks several key issues. In addition, there are assertions regarding the potential effects of increased traffic on the highway serving the two properties in question (Highway 20) that are erroneous, and ignore one of the main sources of potential negative impact to the deer resource in the Metolius Unit.

Area of Impact

Because only FS Routes 11, 1126, and 1126-510 are actually within designated winter range, and effects are only expected to extend .25 miles on either side of the roads, the assertion is that only 0.24% of the winter range within Jefferson County is affected. First, extension of effects to 0.25 miles on either side of the road is not supported by literature, which has reported effects extending from 0.5 miles to 1 mile from traveled roads. It also seems illogical to consider the percentage impacted in relation to the entire winter range within the county, as all deer do not use all of the designated winter range within the county. Impacts to the actual segment of the population using the areas should be assessed. Additionally, deer move through and use winter range differently from year to year. The nature of winter range is very different from that of resident animals within a single home range throughout the year. Depriving access or reducing quality of winter range on what seems like a small area, may in fact be very detrimental to the component of the population that uses that area. It is possible that a disproportionately larger

number deer may use the area in question than its representative proportion on the landscape. In other words, this “0.25% of winter range” may in fact represent 5% of the winter range available to and used by the Metolius Unit deer herd, and may receive use by 15% of the deer over the course of the winter use period. There is no quantitative assessment that would answer such questions.

The study acknowledges that Highway 20 will be the main state highway to reach the proposed resorts, but dismisses the effect of any increase in traffic on this highway. However, only the roads passing directly through the winter range are considered relevant. On page 4 (Discussion, paragraph 3) the report states “All traffic passing through designated deer winter range will occur on existing well traveled roads”. With the exception of Highway 20, there is no documentation of the roads in question being well traveled in winter. Additionally, the report asserts that deer may become habituated to frequent traffic. While such habituation has been documented, and may result in reduced *behavioral* effects, there is no documentation that deer habituated to high-speed traffic will not suffer increased direct mortality. In fact, it is possible that habituation to road traffic might lead to increased road mortality.

The study reports that only two deer/vehicle collisions have occurred between Hoodoo Ski area and Sisters between 2001 and 2007. However my own observations from very frequent travel on this stretch of Highway 20 (approximately 20 – 25 trips per year encompassing all seasons) indicate this road has a much larger number of road mortalities. I have observed no less than 4 to 10 roadside deer carcasses per year in this stretch of road over the last 15 years, and because of the unknown proportion of struck deer which are dying away from the highway, all estimates of road mortality should be considered conservative. Because many of the deer using the winter range must move to it across highway 20, it is unreasonable to assert that the increased traffic to serve 2 new resorts will not be of relevant issue to Goal 5 winter range resources. There is certainly no quantitative measures to support such an assertion.

Extent of Impact to Population

Finally, because impacts are hard to gauge, and full mitigation of all road impacts is unlikely, the study asserts that “increases in deer mortality along a 2.5 mile stretch of road is not likely to be a burden” (Page 5, Section 2.0, Conclusion). The question of whether additional mortality would be a “burden” can only be answered in light of a full understanding of the factors impacting birth, recruitment, and mortality within the population in question. Such data is not provided by the study, and a conclusion of minimal impact is tenuous at best.

Bret L. Michalski
Consulting Wildlife Biologist

BEFORE THE WATER RESOURCES DEPARTMENT
OF THE STATE OF OREGON

In the Matter of Water Rights Application
G-16674, Jefferson County

**PROTEST OF PROPOSED FINAL
ORDER** By The Confederated Tribes of
the Warm Springs Reservation of
Oregon

INTRODUCTION

The Confederated Tribes of the Warm Springs Reservation of Oregon (“Tribe”) protests the Proposed Final Order (“PFO”) issued by the Department on December 2, 2008. The PFO recommends that water right application G-16674 be approved as conditioned in the draft permit attached to the PFO. The Tribe protests the PFO because the Department has failed to determine adequately whether the proposed use will ensure the preservation of the public welfare, safety and health as described in ORS 537.525. ORS 537.621. Specifically, the Department’s water availability analysis is not complete because it fails to assess whether the proposed use will impact the surface waters of the Metolius River and its tributaries. As a result, the Department cannot determine as a matter of fact and law whether the proposed use ensures the preservation of the public welfare, safety and health.

The Department should schedule a contested case hearing to address the significant issues raised in this protest. The scope of the hearing should include, but not be limited to, the receipt and consideration of additional evidence regarding the likely effects of the proposed action on the surface waters of the Metolius River and its tributaries. Upon the conclusion of the hearing, the Department should then issue a final order in accordance with ORS 527.625.

PROTEST

In order to recommend approval of G-16674 in the PFO, the Department must determine whether the proposed use will ensure the preservation of the public welfare, safety and health as described in ORS 537.525. ORS 537.625(1). The Department is entitled to presume that the proposed use ensures the preservation of the public welfare, safety and health if: (1) the proposed use is allowed in the applicable basin program, (2) water is available, (3) the proposed use will not injure other water rights, and (4) the proposed use complies with the rules of the Water Resources Commission. ORS 537.621(2). That presumption may be overcome by a preponderance of evidence that one or more of the foregoing criteria are not satisfied. *Id.*

The Tribe is authorized to submit this written protest, which must contain certain information. ORS 537.621(7); OAR 690-310-0160. The Tribe sets forth that required information below.

I. Name, Address, and Telephone Number of Tribe.

For purposes of this protest, the name, address and telephone number of the Tribe are that of its attorneys, which are as follows:

Josh Newton
Karnopp Petersen LLP
1201 NW Wall Street, Bend, Oregon 97701
Tel: (541) 382-3011
jn@karnopp.com

II. The Tribe's Interest in the PFO.

The Tribe's interest in the PFO is based on three primary grounds:

1. Whether the PFO impairs the Tribe's sovereign rights as a federally recognized Indian tribe and its rights contained, the Treaty With the Tribes and Bands of Middle Oregon of June 25, 1855, 12 Stat. 963 ("1855 Treaty"), which include its federally reserved Indian water rights;
2. Whether the PFO impairs Tribe's rights and obligations contained in the Pelton Round Butte Hydroelectric Project Relicensing Settlement Agreement, dated July 13, 2004 ("Pelton Settlement Agreement"); and
3. Whether the PFO is consistent with the Columbia River Basin Fish and Wildlife Program administered by the Northwest Power Planning Council.

Each ground is described in more detail below.

A. The Tribe's Sovereign and 1855 Treaty Rights.

The Tribe occupies the Warm Springs Indian Reservation, which is primarily located in Jefferson and Wasco Counties. The Metolius River--a federal wild and scenic river, a state scenic waterway, and a Tribal wild and scenic river--is located entirely within the Tribe's aboriginal lands, which were held and occupied by the Tribe from time immemorial. The Tribe ceded those lands to the United States in the 1855 Treaty, reserving for itself the Warm Springs Reservation and certain sovereign rights in its ceded lands. The Metolius River forms most of the southerly boundary of the Reservation.

The scope and attributes of the Tribe's fish and reserved Indian water rights are set forth in the November 17, 1997 Confederated Tribes of the Warm Springs Reservation Water Rights Settlement Agreement, as amended by the First Amendment to the Confederated Tribes of the Warm Springs Reservation Water Rights Settlement Agreement ("Water Settlement Agreement"). The Deschutes County Circuit Court incorporated the Water Settlement Agreement into a final judgment and decree that the Court entered in January 2003. The Water Settlement Agreement vests the Tribe with both consumptive and non-consumptive rights to water in the Metolius River above Lake Billy Chinook. The Tribe may withdraw up to 25 cfs from the Metolius River for consumptive uses. The Tribe has an in-stream right to maintain minimum flows in the Metolius River of between 1,080 cfs (October) and 1,240 cfs (May).

The Water Settlement Agreement expressly recognizes and supports the long-standing commitment of the Tribe to the protection of the aquatic ecosystem of the Deschutes River and its tributaries. The parties to the Water Settlement Agreement, including the state, agreed to continue cooperative efforts to manage the water resources subject to the agreement.

B. The Pelton Settlement Agreement.

The Tribe is concerned about the potential impact that the proposed action in the PFO may have on the Tribe's rights and obligations contained in the Pelton Settlement Agreement. Specifically, the Tribe is concerned about the potential impact to its rights and obligations contained in the Fish Passage Plan, which is attached as Exhibit D to the Pelton Settlement Agreement. The objectives of the Fish Passage Plan include the re-introduction of anadromous fish species above the Pelton Project and the maximum utilization of existing and potential fish habitats within and upstream of the Project.

Existing and potential fish habitats include the Metolius River and its tributaries including Lake Creek. Historically, anadromous sockeye salmon ascended the Deschutes and Metolius rivers, and migrated up Lake Creek and through Suttle Lake to spawn in Link Creek. The Tribe is especially concerned about potential impacts that the proposed action in the PFO may have on the surface waters of Lake Creek and the resulting potential adverse consequences to existing and potential fish habitats.

C. The Columbia River Basin Fish and Wildlife Program.

The Northwest Power Act of 1980 directs the Northwest Power Planning Council ("Council") to develop a program to protect, mitigate and enhance fish and wildlife of the Columbia River Basin that have been impacted by hydropower dams.¹ As part of the Fish and Wildlife Program, the Council adopted the Deschutes Subbasin Plan in 2005.² That Plan identifies the key findings, biological objectives, habitat objectives and management strategies for the Middle Deschutes Assessment Unit. *See* Deschutes Subbasin Plan, Management Plan, 66-73. The Middle Deschutes Assessment Unit includes the Metolius River and its lesser tributaries such as Lake Creek. The Tribe participated extensively in the development of the

¹ An overview of the Fish and Wildlife Program can be found at www.nwcouncil.org/LIBRARY/2000/2000-19/Default.htm.

² A copy of the Deschutes Subbasin Plan can be found at www.nwcouncil.org/fw/subbasinplanning/deschutes/plan/.

Deschutes Subbasin Plan and supports and actively implements its fisheries objectives in a wide variety of activities in the exercise of its sovereign natural resources management authority.

The biological objectives contained in the Deschutes Subbasin Plan include an objective to provide suitable habitat conditions for restored self-sustaining populations of sockeye salmon in the Metolius River/Lake Billy Chinook and Link Creek/Suttle Lake habitat complexes when fish passage is re-established at the Pelton Project. Moreover, the Deschutes Subbasin Plan includes a habitat objective to provide suitable habitat conditions for adult and juvenile redband and bull trout and re-established Pacific lamprey to maintain stable or increasing trends in abundance and adaptiveness in the Metolius River. The Tribe is concerned whether the Department has adequately analyzed whether the proposed action in the PFO is consistent with the Fish and Wildlife Program, including without limitation the foregoing objectives.

III. How the Proposed Action in the PFO Will Impair or be Detrimental to the Tribe's Interest.

The Tribe engaged Natural Resources Consulting Engineers, Inc., ("NRCE") to conduct a hydrologic assessment of the PFO. NRCE conducted the assessment and produced a written report, a copy of which is attached as Exhibit 1. NRCE used a groundwater model of the Deschutes River Basin developed by the United States Geological Survey to simulate ground water response functions for the proposed action in the PFO. Those response functions were then used in conjunction with a model of the Metolius River to calculate the alterations to streamflow as a result of the proposed action. NRCE concludes that the modeling effort reveals *"a direct connection between the groundwater pumping and the surface water of the Metolius basin"* not addressed in the PFO. (Emphasis added.) NRCE also concludes that the modeled scenarios reveal *"significant changes in one Metolius tributary, Lake Creek."* (Emphasis added.)

The action proposed in the PFO impairs or is detrimental to the Tribe's interest because the PFO fails to address the potential impacts of the proposed action on the surface waters of the Metolius River and its tributaries. As a result, and as analyzed more fully below, the Department has not adequately addressed whether (1) the proposed use is allowed in the applicable basin

program, (2) water is available, (3) the proposed use will not injure other water rights, and (4) the proposed use complies with the rules of the Water Resources Commission.

ORS 537.621(2).

A. The Department has not addressed adequately whether the proposed use is allowed by the Deschutes Basin Program.

The Deschutes Basin Program is contained in OAR 690, division 505. The portion of the program applicable to the Metolius River limits proposed new uses of water from the mainstem of the Metolius above mile 13.0 to domestic, livestock, irrigation of lawn or noncommercial garden not to exceed one-half acre in area, power development, recreation, wildlife and fish life. ORS 690-505-0010(1)(a)(B). No out-of-basin diversions of the waters of the mainstem Metolius, above river mile 13.0 are allowed. ORS 690-505-0010(1)(a)(C).

The Public Interest Review for G-16674 shows that the wells are located in the Whychus Creek subbasin of the Deschutes Basin. Given that the NRCE's report shows that there is the potential for substantial interference with the Metolius River and its tributaries, the Tribe is concerned that the proposed use in the PFO may violate the prohibition against out-of-basin diversions from the mainstem of the Metolius.

The Tribe is also concerned whether the type of use contained in the PFO, quasi-municipal, is allowed by the Deschutes Basin Program. The Tribe recognizes that ground water in the Deschutes Basin is generally classified for any beneficial use. *See* 690-505-0400. Nevertheless, new uses of water from the mainstem of the Metolius River above mile 13.0 are limited to domestic, livestock, irrigation of lawn or noncommercial garden not to exceed one-half acre in area, power development, recreation, wildlife and fish life. ORS 690-505-0010(1)(a)(B). Those uses do not include quasi-municipal uses.

Based on the foregoing, the Department has failed to adequately consider whether the PFO complies with the Deschutes Basin Program. If it does not, the Department must either reject G-16674 or modify the PFO as necessary to ensure the preservation of the public welfare, safety and health.

B. The Department has not addressed adequately whether water is available.

Because the PFO fails to address the potential impacts of the proposed action on the surface waters of the Metolius River and its tributaries, the Department has not addressed adequately whether water is available as required by ORS 537.621. The Department must develop additional information quantifying the potential impacts of the proposed actions on the surface waters of the Metolius River and conduct a water availability analysis for that subbasin.

C. The Department has not addressed adequately whether the proposed use will not injure other water rights.

Like Section III B. above, the Department's failure to address the potential impacts of the proposed action on the surface waters of the Metolius River and its tributaries prevents it from addressing adequately whether the proposed use will not injure other water rights. Simply put, how can the Department reach such a conclusion without engaging in a factual investigation of the proposed actions on the Metolius subbasin. Given the hydrologic connection between the proposed action and the surface waters of the Metolius River and its tributaries, the Tribe believes that further analysis is needed to assess whether other water rights may be injured.

D. The Department has not addressed adequately whether the proposed use complies with rule of the Water Resources Commission.

The Department found that the proposed ground water use has the potential for substantial interference with the Deschutes River. (PFO, Findings of Fact ¶ 11.) That finding triggered the public interest review process contained in OAR 690, division 33, which requires the Department to determine whether the proposed use is consistent with the Fish and Wildlife Program. *See* OAR 690-033-0120. The Department must consult with the Tribe in making that determination. *Id.*

Despite those obligations, there is nothing in the PFO showing that the Department followed the public interest review process and determined that the proposed use is consistent with the Fish and Wildlife Program. The Department did not consult with the Tribe despite its obligation to do so. Now that NRCE has determined that there is a "direct connection" between

the proposed action and the surface water of the Metolius basin--including most significantly Lake Creek--the Tribe is seriously concerned about the adverse consequences to fish habitat and consistency with the Fish and Wildlife Program and the Pelton Settlement Agreement.

IV. How the PFO is Deficient and How It May Be Corrected.

The PFO is deficient. The Tribe believes that it may only be corrected by scheduling a contested case hearing, during which additional information should be submitted addressing the potential impacts of the proposed action on the surface waters of the Metolius subbasin, including a water availability analysis and an assessment of whether the proposed use injures existing water rights. The Department should also submit information showing its compliance with OAR 690, division 33. After information is submitted, the Water Resources Director must then make a determination whether the proposed use ensures the preservation of public welfare, safety and health in accordance with ORS 537.525. ORS 537.625. If it does, the Director should issue a final order approving the PFO. If it does not, the Director should modify the PFO as necessary to ensure the preservation of public welfare, safety and health. If no such modification is possible, the Director must deny G-16674.

V. Citation of Legal Authority.

The legal authority supporting this protest is set forth generally throughout this memorandum.

VI. Protest Fee.

The Tribe has submitted together with this protest, the \$350 fee required by ORS 536.050.



CONCLUSION

For the foregoing reasons, the Tribe respectfully requests that the Department schedule a contested case hearing to address the significant issues raised in this protest.

Respectfully submitted.

DATED this 15th day of January, 2009.

KARNOPP PETERSEN LLP



Josh Newton
OSB# 983087
jn@karnopp.com
Reed Marbut
OSB # 872924
rm@karnopp.com
TEL: (541) 382-3011
FAX: (541) 383-3073
Of Attorneys for Protestant The Confederated Tribes
of the Warm Springs Reservation of Oregon

NRCE



**HYDROLOGIC ASSESSMENT
OF PROPOSED FINAL ORDER
ON WATER RIGHTS APPLICATION G-16674**

Prepared for:

Confederated Tribes of the Warm Springs Reservation

Submitted by:

**NATURAL RESOURCES CONSULTING ENGINEERS,
INC.**

131 Lincoln Avenue, Suite 300
Fort Collins, Colorado 80524
(970) 224-1851/FAX (970) 224-1885

3927 Martin Luther King Jr. Way
Oakland, CA 94609
(510) 547-0750/ FAX (510) 547-0793

P.O. Box 5260
Ras Dashen Street, #5
Asmara, Eritrea

January 2009

TABLE OF CONTENTS

1	INTRODUCTION	1-1
2	METHODS	2-1
3	RESULTS	3-1
4	SUMMARY	4-1
5	REFERENCES	5-1

LIST OF FIGURES

Figure 2-1: Location of Proposed Groundwater Extraction Points for Applications G-16674.	2-2
Figure 2-2: Cells Defined as Stream Reaches in Deschutes River MODFLOW Model.	2-4
Figure 2-3: Modeled Drawdown Ponderosa Well.	2-5
Figure 2-4: Temporal responses to unit groundwater pumping from the Ponderosa Wells.	2-6
Figure 3-1: Exceedence Probability for Streamflows in Lake Creek Under Observed and Modeled Conditions.	3-3
Figure 3-2: Exceedence Probability for Streamflows in Whychus Creek Under Observed and Modeled Conditions.	3-3

LIST OF TABLES

Table 2-1: Summary of total response fractions determined from the Deschutes River MODFLOW model.	2-7
Table 2-2: Mean flow for Metolius River gage stations and reaches.	2-8
Table 3-1: Summary of Streamflow Changes due to Proposed Groundwater Pumping.	3-2

1 INTRODUCTION

According to OWRD (2006a), Application G-16674 was filed on May 18, 2006, for 4,685.47 gallons per minute (gpm) (10.44 cfs) for quasi-municipal use in Townships 12 and 13 South, in Range 10 East. The location of the proposed points of appropriation is just north of Fly Creek, which is tributary to Lake Billy Chinook. On June 19, 2008, Application G-16674 was reduced from 10.44 cfs to 8.8 cfs (OWRD, 2008a).

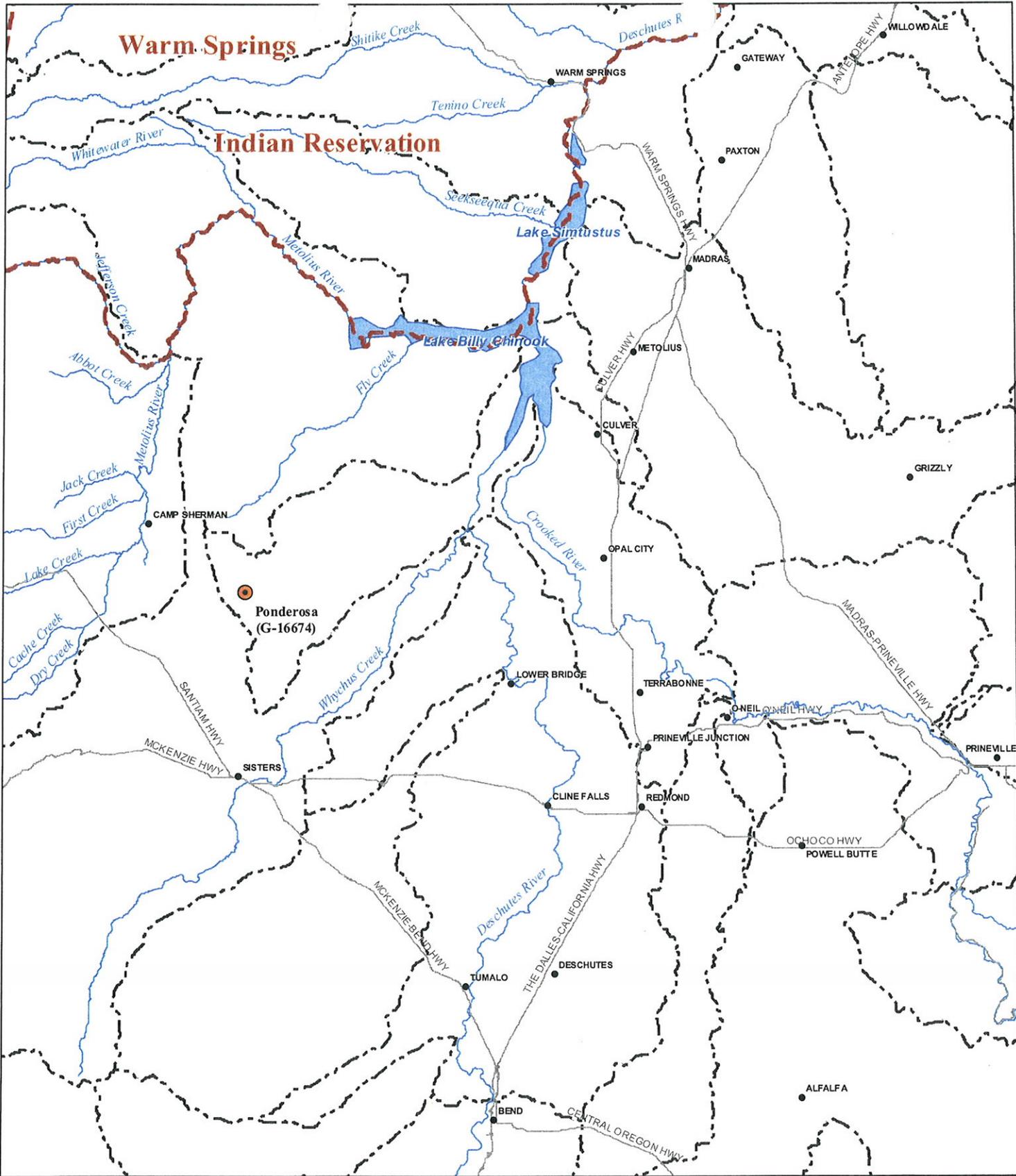
The Oregon Water Resources Department (OWRD) acknowledged the following statement: “the Ground Water Review states that the wells are located in the Metolius subbasin of the Deschutes Basin, that the ground water in this location is not over appropriated, and if the use is properly conditioned, will avoid injury to existing ground water rights.”

Throughout this report, water rights application G-16674 will be referred to by the name of the applicant, Ponderosa Land and Cattle Co., LLC or “Ponderosa.” The proposed point of use is shown in Figure 2-1.

The Tribes are concerned that, should the applications be approved, there will be harm to their water rights in the Metolius River basin and tributaries. The Proposed Final Order (PFO) issued by OWRD (2008b) on December 2, 2008 makes no mention of mitigation of flows in the Metolius River. This report examines potential effects upon the Metolius basin due to the Ponderosa proposed groundwater extraction.

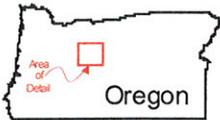
2 METHODS

The groundwater response function approach has been employed to simulate surface water-groundwater interactions in a surface water model. This approach is used to determine the time and space distribution of changes in surface water flows due to changes in groundwater (i.e., due to irrigation return flows, pumping from wells, recharge, etc.). The response function approach assumes that the principle of linear superposition is valid for the conditions being modeled. This means that the total response at a given location, for example a stream reach, may be computed as the sum of independent responses from multiple sources (e.g., canals, irrigated lands, wells, etc.) and that the response at that location in any given month may be computed by adding all these responses from the current month, as well as responses that are presently arriving from previous months (due to the slow movement of water through the ground). The response function approach has been used successfully in other modeling studies, such as the Snake River basin in Idaho, (Cosgrove et al., 2004; Miller et al., 2003).



January 2009

INDEX



LEGEND

- City or Town
- Proposed Source
- Highway
- ~ River or Creek
- Reservoir
- HUC Boundary
- ▭ Reservation Boundary

Map Projection: Lambert Conformal Conic
 Zone: 12
 Datum: NAD 83
 Grid Units: Feet



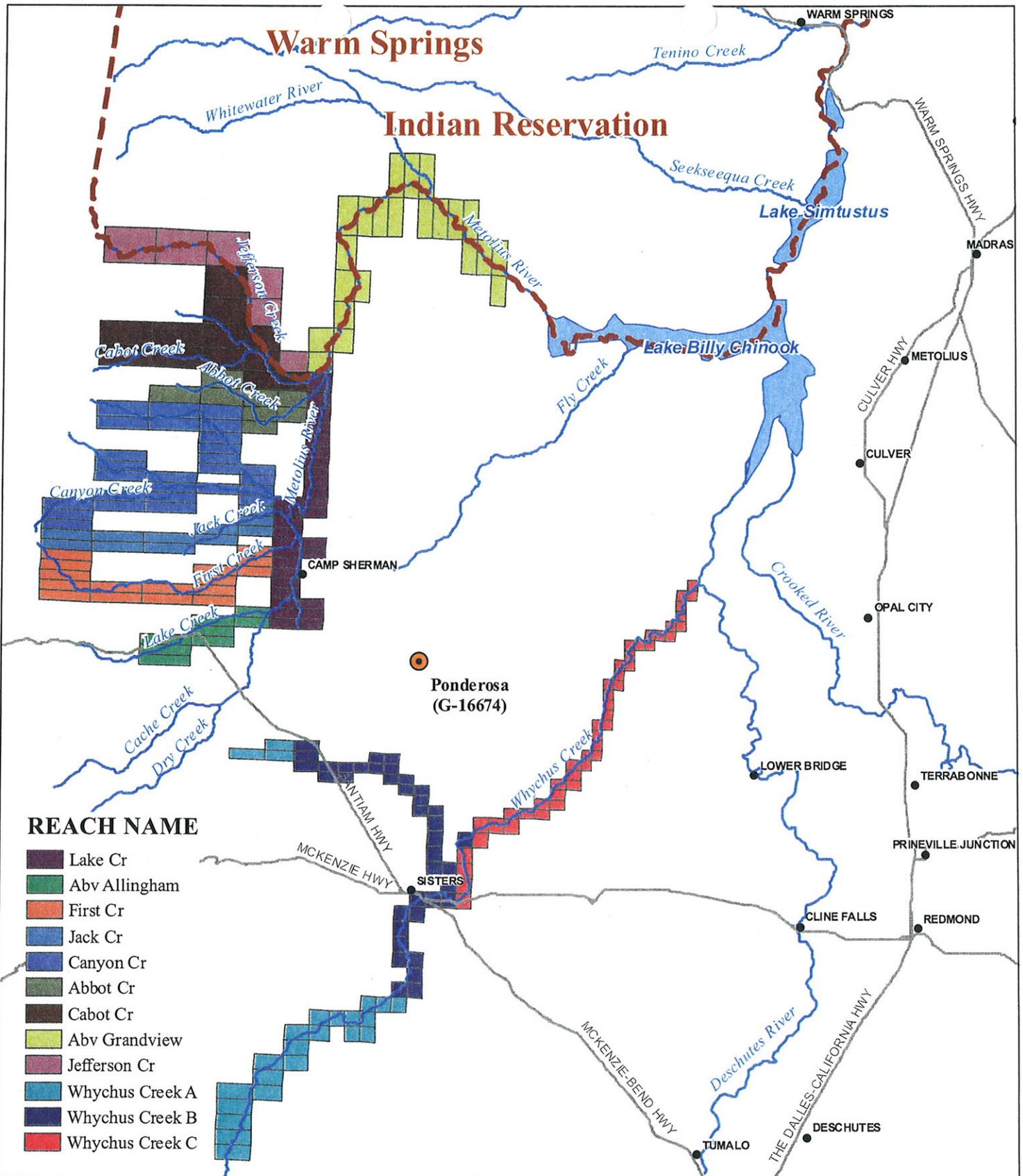
Figure 2-1: Location of Proposed Groundwater Extraction Point for Application G-16674



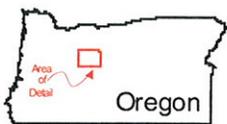
Natural Resources Consulting Engineers, Inc.
 Fort Collins, CO Asmara, Eritrea Oakland, CA

Exhibit 1
 Page 5 of 17

Groundwater response functions for the Deschutes River basin have been developed by the USBR using the USGS MODFLOW model of the Deschutes basin (Gannett and Lite, 2004). These response functions represent the unit response to a groundwater stress at a response area throughout time. That is, if one unit of water is removed from a particular stress area (area of groundwater pumping), the temporal response is calculated at each of a number of defined river reaches. Groundwater drawdowns for unit responses are shown in Figure 2-3, showing which model cells are affected by the pumping. Hence, no scale is applied to the drawdowns; colors show relative drawdown but provide no information as to the actual magnitude.



INDEX



LEGEND

- City or Town
- Proposed Source
- Highway
- ~ River or Creek
- ☪ Reservoir
- ▭ Reservation Boundary

Mp Projection: Lambert Conformal Conic
 Zone:
 Datum: NAD 83
 Grid Units: Feet



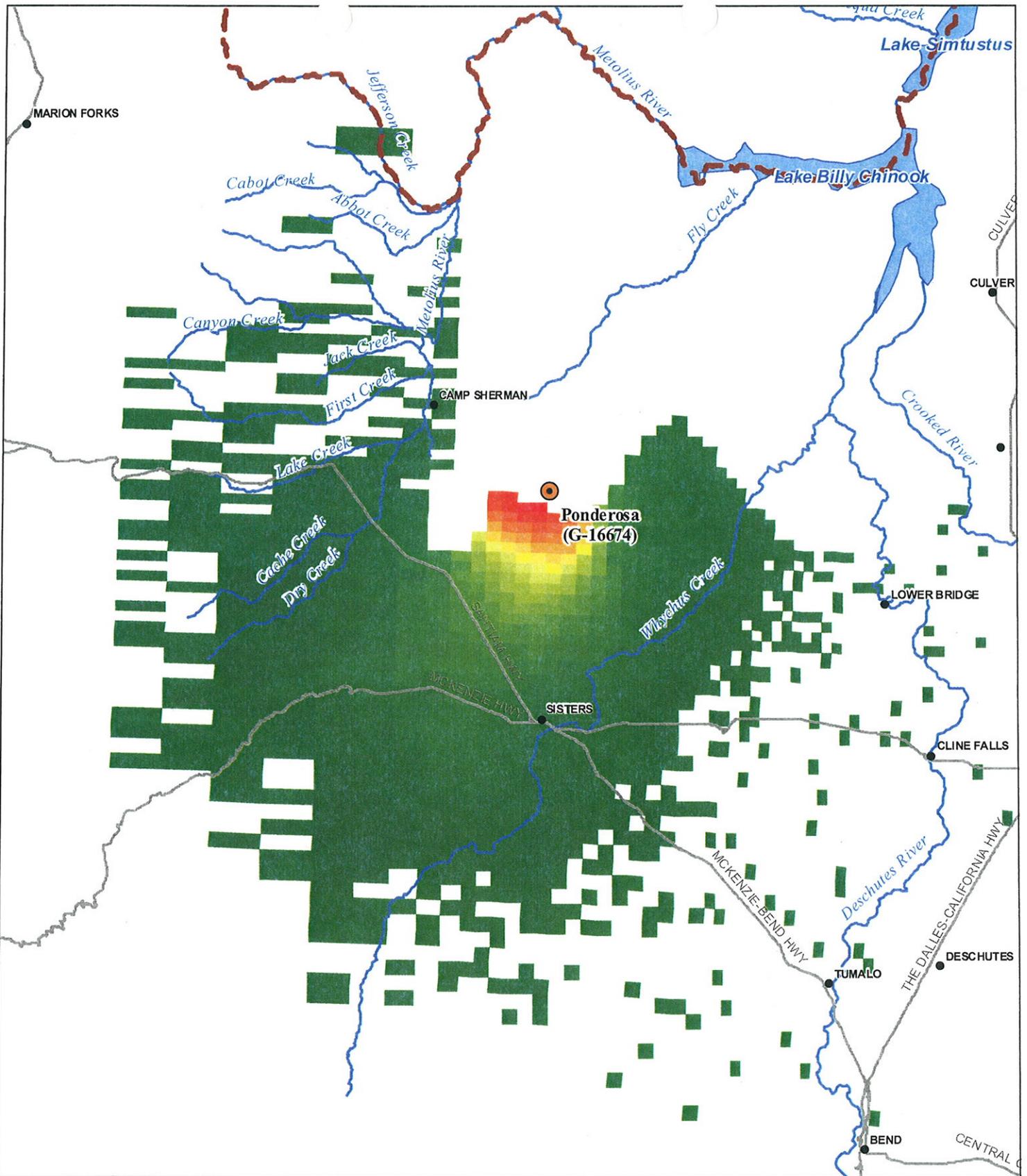
Figure 2-2: Cells Defined as Stream Reaches in Deschutes River MODFLOW Model

January 2009



Natural Resources Consulting Engineers, Inc.
 Fort Collins, CO Asmara, Eritrea Oakland, CA

Exhibit 1
 Page 7 of 17



January 2009

INDEX



LEGEND

- City or Town
- Proposed Source
- Highway
- River or Creek
- Reservoir
- Reservation Boundary



Map Projection: Lambert Conformal Conic
 Zone:
 Datum: NAD 83
 Grid Units: Feet

Figure 2-3: Modeled Drawdown Ponderosa Well



Natural Resources Consulting Engineers, Inc.
 Fort Collins, CO Asmara, Eritrea Oakland, CA

Exhibit d
 Page 8 of 17

Response functions were calculated for a total of 600 months following a unit stress. Response functions for the proposed groundwater pumping are shown in Figure 2-4 below.

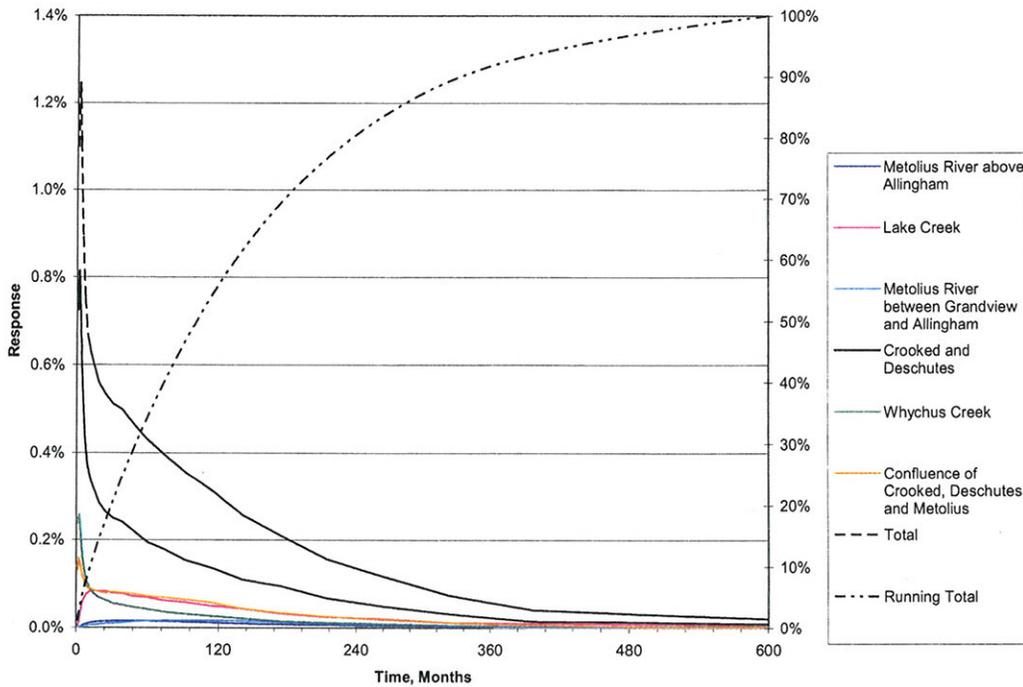


Figure 2-4: Temporal responses to unit groundwater pumping from the Ponderosa Wells.

Table 2-1 shows a summary of groundwater response fractions by reach. As an example, if 100 acre-feet are pumped by the Ponderosa wells, the confluence of the Crooked and Deschutes River will see a reduction of 15.7 acre-feet, 46.5 acre-feet will come from other Crooked and Deschutes River sources, and 15.9 acre-feet will come from Lake Creek. To simplify surface water modeling, only those reaches with greater than 1% of the total returns were included. To maintain a mass balance, the other responses were adjusted accordingly.

Table 2-1: Summary of total response fractions determined from the Deschutes River MODFLOW model.

		Total Unit Response over 600 Months (%)
Return Reach Name	Whychus Creek	9.8%
	Confluence of Crooked, Deschutes, and Metolius	15.7%
	Metolius River above Allingham	3.3%
	Lake Creek	15.9%
	First Creek	1.2%
	Jack Creek	0.9%
	Cabot Creek	0.4%
	Jefferson Creek	1.7%
	Metolius River between Grandview and Allingham	4.3%
	Crooked and Deschutes	46.5%

These response functions were added to a MODSIM model of the Metolius River. The model was used to evaluate the effects on streamflow for the Metolius River and tributaries. Very limited data were available for tributaries of the Metolius River; hence, this data was only used for the reaches. The surface water modeled each of the reaches defined above (with the exception of Canyon Creek and Abbot Creek, as neither had significant pumping response for the wells).

The effects of the proposed pumping were simulated for a 100-year period to ensure the system reached steady-state conditions. The model was run at a monthly timestep, repeating the average of the observed monthly flows for each of the reaches. The streamflows of modeled nodes are shown below in Table 2-2.

Table 2-2: Mean flow for Metolius River gage stations and reaches.

	14088000 Lake Creek Near Sisters	14088500 Metolius R At Allingham Rs Nr Sisters	14089000 First Creek Near Sisters	14090350 Jefferson Creek Near Camp Sherman	14090400 Whitewater River Near Camp Sherman	14091500 Metolius River Near Grandview	Cache And Dry Creeks	Gains Between Allingham And Grandview	1407500 Whychus Creek near Sisters
	cfs	cfs	cfs	cfs	cfs	cfs	cfs	cfs	cfs
January	64	387	15	85	81	1,519	323	951	71
February	64	424	23	87	83	1,570	361	952	70
March	58	389	15	83	78	1,540	331	975	61
April	64	378	19	93	93	1,556	314	973	77
May	78	434	33	117	111	1,608	356	913	143
June	63	419	20	127	122	1,626	356	939	214
July	38	327	5	110	104	1,514	289	967	179
August	32	315	2	93	83	1,418	284	923	114
September	31	315	2	81	63	1,366	284	907	77
October	32	332	3	76	53	1,344	300	881	65
November	40	357	14	82	65	1,392	317	873	76
December	59	369	16	80	73	1,482	310	944	82
Average	52	370	14	93	84	1,495	319	933	102

Two models were created in order to analyze the proposed groundwater pumping. The first model represented baseline conditions, i.e., that of the current situation without any groundwater pumping. This is used as a point to evaluate the changes in the model representing groundwater pumping.

Because no information about timing of groundwater withdrawals was available, the proposed application was represented with a constant rate of 8.8 cfs throughout the year.

3 RESULTS

The steady-state results of the modeling effort showed a constant decrease in streamflows in proportion to the groundwater responses shown in Table 2-1. Because the modeled groundwater demands were inter-annually constant, the resulting effects upon streamflow were also constant throughout the year.

Table 3-1: Summary of Streamflow Changes due to Proposed Groundwater Pumping.

Reach	Change, cfs	Mean flow, cfs	% Change
Metolius at Allingham	1.69	370	0.46%
Cache Creek/Dry Creek	0.29	319	0.09%
Deschutes & Crooked River	5.47		
First Creek	0.11	14	0.75%
Metolius River at Grandview	2.44	1495	0.16%
Jack Creek	0.08		
Jefferson Creeek	0.15	93	0.16%
Lake Creek	1.40	52	2.69%
Whychus Creek	0.86	102	0.84%
Total Change	8.80		

As can be seen from Table 3-1, the most significant effects of the proposed groundwater pumping as a fraction of average streamflow occurs in Lake Creek, where 2.7% of the total mean annual streamflow is consumed due to the proposed wells. In dry years, this fraction is significantly higher. Figure 3-1 shows the exceedence probability of observed and modeled flows on Lake Creek and the fraction of total flow consumed by the proposed wells; Figure 3-2 shows the same for Whychus Creek. At the lower flows that were observed, the proposed pumping would consume upwards of 10% of the total flow of Lake Creek.

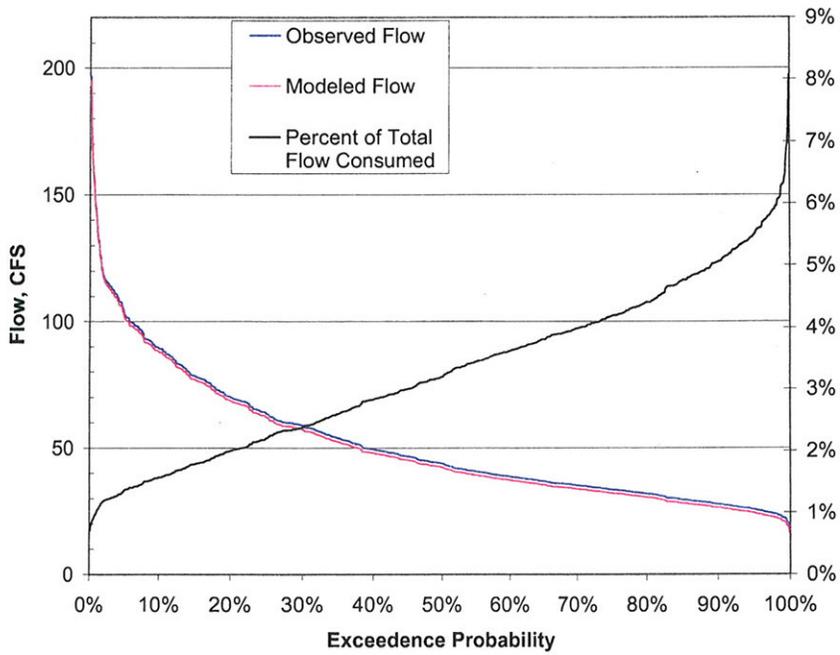


Figure 3-1: Exceedence Probability for Streamflows in Lake Creek Under Observed and Modeled Conditions.

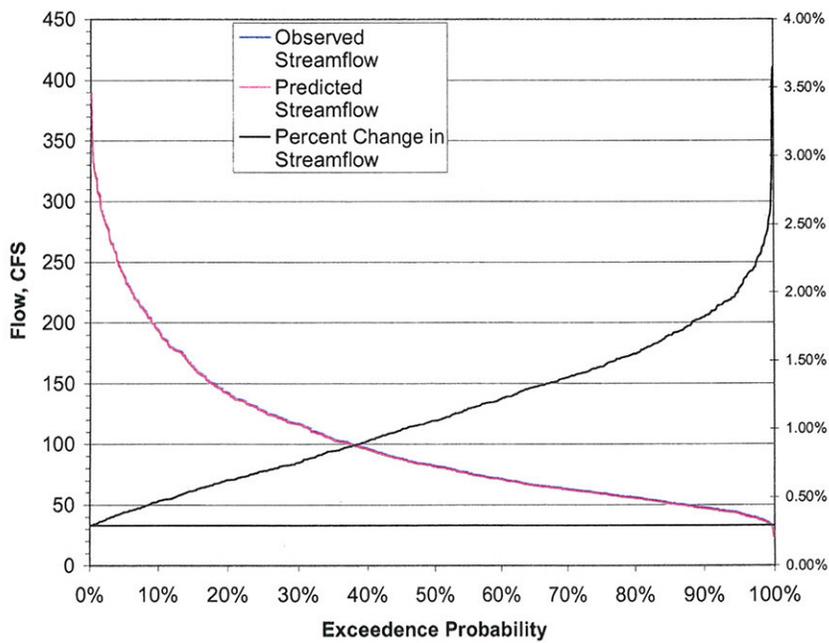


Figure 3-2: Exceedence Probability for Streamflows in Whychus Creek Under Observed and Modeled Conditions.

While the greatest effects observed within the Metolius basin are at Grandview, where the combined effects on upstream tributaries and the mainstem can be seen, it is relatively small in proportion to the overall flow at that point. The alterations to flow comprise only 0.46% of average flow at the gage at Grandview. The minimum instream flows were compared to the observed and modeled streamflows, and there were no additional violations of the instream flows under the modeled scenarios.

4 SUMMARY

A groundwater model of the Deschutes River Basin developed by USGS was used to develop groundwater response functions for proposed groundwater pumping near the Metolius basin. These groundwater response functions determined the fraction and timing, as well as spatial distribution of alterations to surface water flows, for the proposed wells.

These groundwater response functions were used in conjunction with a model of the Metolius River to calculate the steady-state alterations to streamflow due to proposed groundwater withdrawals. This modeling effort reveals a direct connection between the groundwater pumping and surface water in the Metolius basin that was not addressed in either OWRD (2006b) or OWRD (2008b). The modeled scenarios revealed significant changes in one Metolius tributary, Lake Creek.

5 REFERENCES

- Cosgrove, Donna M. and Johnson, Gary S., (2004). Transient Response Functions for Conjunctive Water Management in the Snake River Plain, Idaho, *Journal of the American Water Resources Association*, 40 (6), 1469-1482.
- Gannett, M.W., and Lite, K.E., Jr., (2004), *Simulation of regional ground-water flow in the upper Deschutes Basin*, Oregon: U.S. Geological Survey Water-Resources Investigations Report 03-4195, Portland, Oregon.
- Miller, Scott A., Johnson, Gary S., Cosgrove, Donna M., and Larson, Roger (2003). Regional Scale Modeling of Surface and Ground Water Interaction in the Snake River Basin, *Journal of the American Water Resources Association*, 39 (3), 517-528.
- Oregon Water Resources Department (OWRD), 2006a. *Water Rights Application G-16774: Application, May 18, 2006*. Retrieved from http://apps2.wrd.state.or.us/apps/wr/wrinfo/wr_folder_image.aspx?snp_id=147324, January 12, 2009.
- Oregon Water Resources Department (OWRD), 2006b. *Water Rights Application G-16774: Groundwater Review, September 19, 2006*. Retrieved from http://apps2.wrd.state.or.us/apps/misc/vault/vault.aspx?Type=WRFolder&folder_image_id=19274, January 12, 2009.
- Oregon Water Resources Department (OWRD), 2008a. *Water Rights Application G-16774: Amendment via FAX, June 20, 2008*. Retrieved from http://apps2.wrd.state.or.us/apps/misc/vault/vault.aspx?Type=WRFolder&folder_image_id=19125, January 12, 2009.
- Oregon Water Resources Department (OWRD), 2008b. *Water Rights Application G-16774: Proposed Final Order, December 8, 2008*. Retrieved from http://apps2.wrd.state.or.us/apps/misc/vault/vault.aspx?Type=WRFolder&folder_image_id=19122, January 12, 2009.

CERTIFICATE OF SERVICE AND FILING

I hereby certify that on January 15, 2009, I filed the foregoing Protest and a \$350 check by UPS overnight delivery to the Water Resources Department at the address set forth below.

Water Resources Department
Attention: Patricia McCarty
725 Summer Street N.E., Suite A
Salem, OR 97301-1271

I further certify that I served a copy of the said Protest upon the applicant by mailing said copies to the addresses set forth below, first-class mail, postage pre-paid, in the United States Mail from Bend, Oregon on January 15, 2009.

Bruce Thorn
Ponderosa Land and Cattle Company, LLC
c/o Holiday Retirement Corporation
P.O. Box 14111
Salem, OR 97309-5026

Martha Pagel
Schwabe, Williamson & Wyatt
Equitable Center
530 Center Street, NE Suite 400
Salem, OR 97301

DATED this 15th day of January, 2009.

KARNOPP PETERSEN LLP



Josh Newton
OSB# 983087
jn@karnopp.com
Reed Marbut
OSB # 872924
rm@karnopp.com
TEL: (541) 382-3011
FAX: (541) 383-3073
Of Attorneys for Protestant The Confederated Tribes
of the Warm Springs Reservation of Oregon

CERTIFICATE OF SERVICE AND FILING w1108.16\335991_2.doc



Oregon

Theodore R. Kulongoski, Governor

Department of Fish and Wildlife

High Desert Region

61374 Parrell Road

Bend, OR 97702

(541) 388-6363

FAX (541) 388-6281

January 27, 2009

E. Timothy Wall
Oregon Water Resources Department
725 Summer St. NE, Suite A
Salem, OR 97301-1266

Re: Proposed Final Order for Water Right Application G-16674

The purpose of this letter is to provide Oregon Department of Fish and Wildlife's (department) comments on Oregon Water Resources Department's (OWRD) Proposed Final Order (PFO) for groundwater application G-16674 submitted by Ponderosa Land and Cattle Company, LLC. Department comments focus upon potential impacts to fish populations and habitats resulting from the proposed ground water withdrawals.

Proposed Final Order

The PFO recommends issuance of a groundwater right for quasi municipal use between the Metolius River and Whychus Creek watersheds. The PFO would authorize the use of 10 wells in Jefferson County.

The total volume of groundwater used is 8.8 cubic feet per second (CFS), with a maximum annual volume of 2422 acre feet. OWRD has determined the proposed use is within the Deschutes Ground Water Study Area, and is subject to the Deschutes Ground Water Mitigation Rules (OAR 690-505). OWRD has further determined the proposed use will have the potential for substantial interference with the Deschutes River (OAR 690-09) and consequently, the applicant must mitigate for the proposed use.

OWRD identified the required mitigation obligation as 968.8 acre feet which must be provided in the General Zone of Impact, located anywhere in the Deschutes Basin above the Madras gage.

Issues

The department has identified the following fishery related issues associated with PFO G-16674.

- Existing hydrologic reviews and analysis suggest the proposed well field will diminish surface flows in the Metolius River, Whychus Creek and Fly Creek watersheds. However, the analysis to date has been insufficient to quantify the magnitude of reduced flows and its potential fishery affects.
- Each of the affected streams harbors important fish populations, including federally listed bull trout in the Metolius River and Whychus Creek and Mid-Columbia summer steelhead in Whychus Creek. Redband trout are present in all three watersheds. In addition, there is an exceptionally important recreational fishery in the Metolius River and redband trout in Fly Creek are genetically unique due to their isolated nature and limited distribution.
- Reductions in surface flow will likely adversely impact the productivity and viability of fish populations in each watershed limiting the department's ability to meet its legally mandated conservation and recreational goals under the Metolius River Basin Fish Management Plan (OAR 635-500-1820), the Upper Deschutes River Basin Fish Management Plan (OAR 635-500-3120), the Anadromous Fish and Bull Trout Management Plan in the Upper Deschutes, Crooked and Metolius River Subbasins (OAR 635-500-6000 through 6060) and the Native Fish Conservation Policy (OAR 635-007-0502 through 0509).
- The State holds instream water rights for each stream and Scenic Waterway flows are protected in the Metolius River. Scenic Waterway flows in the Metolius River have been designated to protect indigenous fish as an "Outstandingly Remarkable Resource". The proposed groundwater withdrawal will likely diminish these remarkable resources.

- OWRD's PFO prescribes mitigation only in the general zone of impact (anywhere in the Deschutes Basin above the Madras gage). This fails to adequately mitigate for the loss of cold spring-fed surface water in the Metolius River and Whychus Creek local zones of impact.
- The department recommends OWRD conduct further hydrologic analysis to assess the impact to surface flows in the Metolius River, Whychus Creek and Fly Creek watersheds. Based upon the results of this assessment, the mitigation requirement associated with G-16674 should be modified accordingly to address local impacts and protect fisheries resources. Without this critical information issuance of a Final Order authorizing development of the well field is premature.

Hydrologic Impacts

Zone of Impact/Mitigation

The OWRD's groundwater review of application G-16674 found that there will likely be localized impact on the Metolius River, Whychus and Fly Creeks. Of these streams, Fly Creek is the closest to the proposed well field, and could proportionally be the most affected due to already low base flows.

Despite evidence of hydrologic connection between groundwater extracted from the proposed wells and surface waters in both the Metolius and Whychus *local* zones of impact, application of the current groundwater mitigation rules fails to recognize the impact on local springs and streams by requiring mitigation in the *general* zone of impact only in the PFO for G-16674.

The department recommends additional analysis be conducted to determine estimated volumes of surface water impacted in the Metolius and Whychus local zones. The required mitigation for the applicant should be applied in the *local* zone of impact at the appropriate ratios.

Timing of Mitigation

The current mitigation rules allow for the use of irrigation water as mitigation. This allows a seasonal use to mitigate for year around use which will improve flows in the mainstem Deschutes during the irrigation season but will lead to an eventual reduction in groundwater levels and spring flows in the non irrigation season. Diminishment of spring flows through reduced groundwater levels will have an impact on fish habitat year around. The department recommends the PFO include mitigation requirements that provide year around instream flow proportionally into the streams impacted by G-16674 rather than seasonally during the April 15 – October 31 irrigation season.

Water Quality

Groundwater in the Deschutes Basin resurfaces in the watershed as springs. These springs discharge cold water into the receiving streams. The hydrology of the Deschutes basin is greatly altered by water management and irrigation withdrawals. This results in significantly reduced stream flows in most reaches and water temperatures exceeding the state standard. The Deschutes River and Whychus Creek are both on the State 303d list as water quality limited for temperature. In both of these streams spring recharge serve as important thermal refugia for salmonids. The Metolius River is unique in that natural flows are largely unaltered, with the majority of stream flow originating from groundwater surfacing as springs. The result is stream flows and temperatures that support highly productive salmonid populations.

PFO G-16674 would remove 8.8 cfs of groundwater which in turn has the potential to affect the volume of groundwater available to feed local springs. This would result in an undetermined decrease in the volume of cold spring water contributing to flows in the Metolius River and Whychus and Fly Creeks. The PFO proposes to

mitigate with 964 acre of surface water elsewhere in the basin. The likely mitigation water would be surface water which is warmer than spring water and does not provide equal fisheries or water quality value.

Water Rights

The State of Oregon holds instream water rights for each of the three watersheds that may be hydrologically connected to the proposed well field. These water rights are to provide migration, spawning, egg incubation, fry emergence and juvenile rearing of salmonids (ORS 537.341). The Instream Water Rights Act states instream water rights are granted the same legal standing as all other rights. ORS 537.350. Thus, OWRD needs to ensure in permitting Water Right Application G-16674 that the instream water rights in the affected local streams are not injured by reductions in stream flows from this proposed junior water right. ORS 537.621.

Potentially affected instream water rights include:

- IS 70698 Metolius River from Canyon Creek (River mile 35.6) to Lake Billy Chinook.
- IS 70699 Metolius River from Metolius Springs (River mile 41) to Canyon Creek (River mile 35.6)
- IS 70753 Whychus Creek from Indian Ford Creek (River mile 19.5) to mouth (River mile 0).
- IS 70761 Fly Creek from Meadow Creek to the mouth.

Wild and Scenic Designations

Sections of the Metolius River are designated a “Scenic Waterway” under the Oregon Scenic Waterways Program. In 1991 Scenic Waterway flows were established for both the Deschutes and Metolius Rivers. The program is designed to protect and enhance scenic, aesthetic, natural, recreation, scientific, and fish and wildlife qualities along scenic waterways. New development or changes in existing uses proposed within a scenic waterway are reviewed before they may take place.

The Scenic Waterway Act states that the highest and best uses of water within scenic waterways are recreation, fish and wildlife uses. (ORS 390.835). When a groundwater application has been found to measurably reduce stream flow, mitigation must ensure the maintenance of the free-flowing character of the scenic waterway in quantities necessary for recreation, fish and wildlife.

The Metolius River was added to the national Wild and Scenic Rivers System in 1988. Wild and scenic river designation strengthens protection given under the state scenic waterways program.

Scenic Waterway flows in the Metolius River have been designated to protect indigenous fish as an “Outstandingly Remarkable Resource”. The proposed groundwater withdrawal and prescribed mitigation in the general zone of impact will likely diminish this remarkable resource.

Affected Fish Populations

The proposed removal of 8.8 cfs of groundwater could potentially impact fish species in three watersheds: Metolius River, Whychus Creek and Fly Creek.

Metolius River

The Metolius River subbasin is inhabited by bull trout (*Salvelinus confluentus*) a federally threatened species under the Endangered Species Act. Bull trout have a strong affinity for cold water. The abundant discharge of groundwater surfacing as springs in the Metolius Basin results in favorable water temperatures supporting a

robust bull trout population. This population is one of the healthiest in the state and is critical to meeting conservation and recovery goals of the species.

Redband trout (*Oncorhynchus mykiss*), a state and federal sensitive species are present in the Metolius River and tributaries. The healthy redband trout population supports a very popular catch and release, fly angling only fishery. The Metolius River is nationally renowned as a premier angling destination.

Kokanee salmon (*Oncorhynchus nerka*), a landlocked form of sockeye salmon, migrate between the Metolius River and Lake Billy Chinook to complete their life history. The kokanee salmon population supports a popular recreational fishery in Lake Billy Chinook. The species is also the primary forage base for the threatened bull trout population. Data suggests that kokanee salmon abundance has a direct impact on bull trout abundance.

The Metolius River subbasin was historically inhabited by mid- Columbia spring Chinook salmon (*Oncorhynchus tshawytscha*). This species was extirpated in the mid 1960s following completion of the Pelton-Round Butte Dam complex when early attempts at fish passage failed. As a condition of the Federal Energy Regulatory Commission (FERC) license issued in 2005, the project licensees in collaboration with multiple stakeholders, including the department, are re-introducing spring Chinook salmon into historic habitats, including the Metolius River subbasin. The initial releases of Chinook salmon fry took place in 2008 and will continue annually until self sustaining populations are established. The FERC license and the department Subbasin Fish Management Plans also direct the re-establishment of a sockeye salmon population in the Metolius River subbasin. The existing kokanee salmon population is the preferred founder stock.

Each of these salmonid species thrive in cold, clear water. Diminishment of spring flows would lead to a reduction in valuable cold water habitat for these species leading to less robust populations.

Whychus Creek

Whychus Creek is inhabited by redband trout from the confluence with the Deschutes River upstream to the Three Sisters Irrigation District dam. The population abundance of these trout is significantly reduced as a result of water quantity and quality issues. Whychus Creek is on the 303d list as water quality limited for temperature. The strongest redband trout populations are associated with areas receiving inputs of cold water from springs.

Mid-Columbia summer steelhead trout and spring Chinook salmon were historically present in Whychus Creek. Similar to Chinook salmon in the Metolius subbasin, both species were extirpated as a result of the Pelton-Round Butte Dam complex. Mid-Columbia River steelhead trout are listed as threatened under the federal Endangered Species Act. Both steelhead trout and Chinook salmon are being reintroduced into Whychus Creek, with steelhead trout fry releases initiated in 2007 and the first Chinook salmon releases targeted for 2009. Success of these efforts will largely be dependent upon availability of spawning and rearing habitat for both species.

Fly Creek

Fly Creek is a small watershed which historically was a tributary of the Metolius River before the lower reaches of the Metolius were inundated by Lake Billy Chinook as a result of construction of Round Butte Dam. The creek has intermittent flows with sections being dry most of the year. These dewatered sections have served to effectively isolate the small population of redband trout inhabiting Fly Creek from the remainder of the Metolius River subbasin. Fly Creek has never been stocked with hatchery trout. As a result of these two factors, Fly Creek harbors one of the most genetically pure populations of redband trout in the Deschutes basin. Preserving this unique genetic material is important for the long term viability of the species. Conservation biology principles identify the vulnerability of small, isolated populations to both deterministic and stochastic events. Reductions in stream flows here will have a detrimental effect on this population.

Potential Fisheries Impacts

Potential declines in stream flow resulting from groundwater withdrawal could limit available spawning and rearing habitat for resident redband and bull trout as well as reintroduced steelhead trout, Chinook and sockeye salmon. If reduced streamflows result in elevated water temperatures, reductions in productivity could be exacerbated by reduced survival and ultimately species viability.

Redband Trout

Research conducted by the department from 1991-1993 demonstrated that 86% of redband trout spawning in the Metolius subbasin occurred in the two mile reach from the headwater springs to Camp Sherman. The department and the U.S. Forest Service annually monitor redd counts in this reach of stream.

Surveys from 2001 to 2007 show a direct relationship between the abundance of redband trout redds and streamflow of the Metolius River as measured at Grandview gage (Fig. 1). During drought periods with reduced streamflow the number of redds observed declined by 32% in 2005 from a mean of 906 redds over the seven year period. Chronic reductions in streamflow resulting from groundwater withdrawals and reduced spring discharge would be anticipated to reduce productivity of redband trout in the Metolius River.

Natural low flows in Fly Creek render this genetically important redband trout population particularly vulnerable to activities that would further reduce streamflow. If projections of hydrologic connection are correct, wells authorized in the PFO could permanently reduce flows in Fly Creek. This could constitute injury to the instream water right and adversely impact the redband trout population.

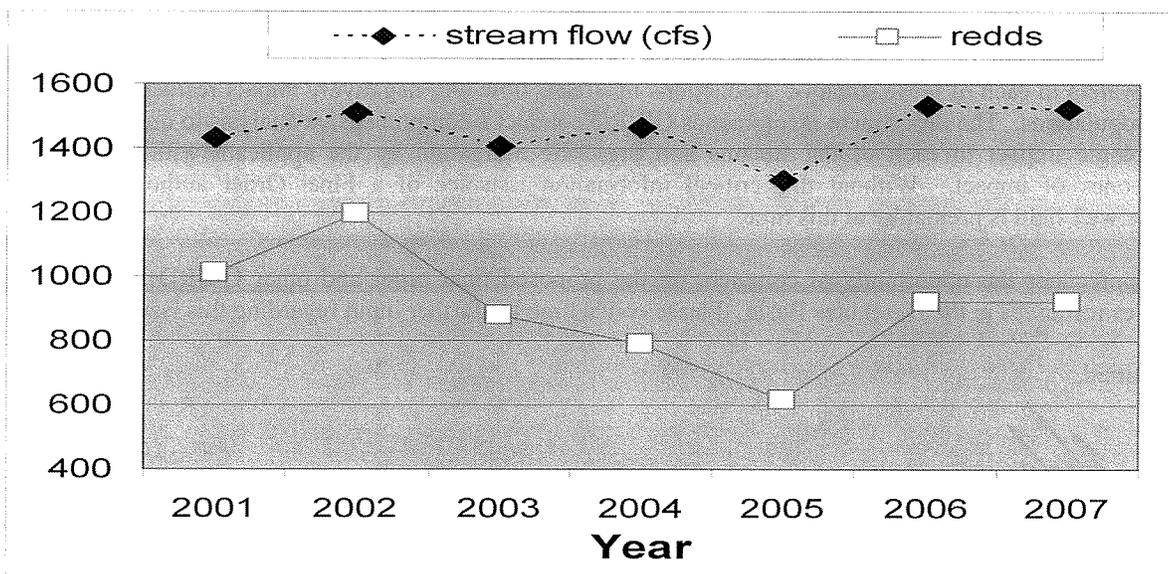


Figure 1. Comparison of redband trout redds observed in the upper Metolius River subbasin and stream flow (cfs) measured at the Grandview gage, 2001-2007.

Bull Trout

Bull trout are unique among native Oregon salmonids in being particularly dependent upon cold water temperatures (10-14 C). Temperatures rising above 14 C will initially result in reduced productivity and growth and ultimately lead to local or regional extirpation. The unique hydrology of the Metolius River basin, dominated by groundwater surfacing as cold springs, is a key factor supporting its robust population of bull trout. Scientists predict this species could be particularly vulnerable to the effects of global climate change. As such, the spring-dominated Metolius River is particularly critical to overall species conservation

Anadromous Fish Re-introduction

As a condition of their FERC license, the co-licensees of the Pelton Round Butte Hydroelectric Project, Portland General Electric and Confederated Tribes of the Warm Springs, in collaboration with multiple stakeholders including the department, USFWS, NMFS, US Forest Service, Deschutes Resource Conservancy, Deschutes Land Trust and area Watershed Councils are reintroducing native anadromous salmonids into their historic habitats in the Upper Deschutes River Basin.

Spring Chinook and sockeye salmon are being reintroduced into the Metolius River while spring Chinook and summer steelhead trout are being reintroduced in to the Metolius River and Whychus Creek. The success of this effort will be largely dependent upon the available adult spawning and juvenile rearing habitat. Activities that result in decreases in streamflow and degraded water quality will adversely impact reintroduction goals and compromise the considerable investment in this effort.

Summary

The department has identified unique and valuable fisheries in the Metolius River and Whychus and Fly Creek watersheds. Hydrologic review of the PFO associated with G-16674 indicates there is a likely, yet unquantified, impact to surface waters in each of these streams. Reductions in stream flow will negatively impact resident and anadromous fish populations. The department recommends OWRD conduct a comprehensive analysis to quantify the relative hydrologic impact to each of the streams and prescribe mitigation by the applicant within the respective *local* zones of impact. Without this critical information issuance of a Final Order authorizing development of the well field is premature at this time.

The department appreciates the opportunity to comment on the proposed final order and other OWRD issues pertinent to fisheries resources in the Deschutes Basin. Please contact me for further input regarding this issue.

Respectfully submitted,



Brett Hodgson
Deschutes District Fish Biologist
Oregon Department of Fish and Wildlife
61374 Parrell Road, Bend, OR 97702
541-388-6363
brett.l.hodgson@state.or.us

Cc:

Nancy Gilbert – U.S. Fish and Wildlife Service

Brad Houslett – Confederated Tribes of the Warm Springs of Oregon, Natural Resources

Scott Carlon – National Marine Fisheries Service

Bill Anthony – U.S. Forest Service

Bruce Thorn – Colson and Colson

Lisa Howard - Suggested Revisions to Draft Metolius ACSC

From: Doug Hancock <hancock.doug@gmail.com>
To: HOWARD Lisa <Lisa.Howard@state.or.us>
Date: 02/17/2009 9:45 AM
Subject: Suggested Revisions to Draft Metolius ACSC
Attachments: Suggested Revisions to Metolius ACSC.doc

Dear Ms. Howard,

Attached for DLCD's staff are some ideas that we would like to offer regarding changes to the Staff Discussion Draft for the Metolius ACSC management plan. We believe that one key issue that seems to have been overlooked is that the Metolius is an area of critical concern **to the entire state**.

Our suggested revisions begin at that point and accordingly focus on (a) protecting this critical area from the sure environmental damage that would follow in the wake of allowing destination resorts in any of the three zones identified by DLCD, and (b) at the same time, offering one possible solution for the county to significantly increase its tax revenue base, and allow the developers to recoup at least some of their speculative investments.

Because we converted the Staff Discussion Draft from a pdf document to a Word document, then redlined the later, the formatting is not as good as we would like. However, you your staff will be able to see the changes easy enough.

Please let us know if you have questions.

Doug and Lorie Hancock
P.O. Box 146
Camp Sherman, Oregon

The Metolius Basin Area of Critical State Concern

Staff Discussion Draft—This draft is a starting point for public discussion of the proposed Metolius Area of Critical State Concern. It includes the elements required by the statute authorizing ACSCs; but whether to adopt the ACSC and (if so) the final content of the ACSC will be up to the Land Conservation and Development Commission (LCDC) and the Oregon legislature to decide. Proposed management areas and corresponding prescriptions are presented only to help focus input and testimony at the LCDC subcommittee hearings on February 11, 12 and 26th. It is expected that if a final ACSC recommendation is made, it likely will differ from this draft. Please see the Discussion Points below for some of the questions the Commission is seeking input on.

LCDC will be seeking public input on the key questions and alternatives, including the following, as part of its deliberations on the proposed ACSC:

(1) Should resorts and other large-scale development be allowed in the Metolius basin?

- What specific areas should be protected, if any, from large-scale development?

- Should development be allowed to proceed under current rules?

- Should large-scale development be prevented in the Upper Metolius basin (what about the portion in Deschutes County)?

- Should large-scale development be prevented throughout the entire Metolius basin?

- Should large-scale development be prevented both inside the entire Metolius basin, and in a buffer area around the basin? If so, what should the size of the buffer area be?

- If large-scale development is not allowed, what is "large-scale?"

- Should only resorts be limited?

- Should resorts and subdivisions be limited?

- Should any development that is not allowed under current law on forest lands and in unincorporated communities (Camp Sherman) be limited?

- Should there be a buffer area around the basin where large-scale development is managed to limit its effects inside the basin? If so:

- How large should the buffer be?

- What use limitations should be included?

- ⊙ Should no use limitations be included?

- ⊙ Should only land uses that involve very low water use be allowed (no golf courses)?

Metolius ACSC Staff Discussion Draft 2-6-09

2

- ⊙ What limitations are appropriate to protect water quantity or quality in the (upper/lower) Metolius?

- ⊙ What limitations are appropriate to protect restoration efforts in Whychus Creek?

- ⊙ What limitations are appropriate to protect deer winter range

and/or elk habitat in or around the Metolius?

⊕ Should there be management tools to address effects of large-scale development on local roads or state highways?

⊕ Are there other adverse effects that should be managed through an ACSC?

(2) Should an ACSC assure that Jefferson County may proceed with some destination resort development? If so, where and in what form?

(3) Should an ACSC provide relief to property owners if they are unable to proceed with resort development as a result of the ACSC?

○ If so, what form should relief take?

○ Is a smaller-scale, outdoor recreation-oriented resort with a small footprint a concept the state should encourage in other locations? If so, where?

TABLE OF CONTENTS

I. Introduction.....4

II. Purposes.....13

III. The Proposed Boundary.....14

IV. Summary of State and Local Programs.....18

V. Land Use Management Plan.....20

Deleted: Metolius ACSC Staff Discussion Draft 2-6-09¶ 3¶

I. INTRODUCTION

The Metolius Basin (the “Basin”) is part of the greater Deschutes River watershed, and includes portions of southwestern Jefferson County and northwestern Deschutes County. The Basin includes the unincorporated community of Camp Sherman, and is recognized for its unique natural resources, scenery, and recreational opportunities.

Deleted: Metolius ACSC Staff Discussion Draft 2-6-09¶ 4¶

[INSERT AREA MAP]

A. Land Management in the Metolius Basin

The majority of the private lands in the Basin are planned and zoned for forest uses under Statewide Planning Goal 4 (*Forestlands*). This Goal, and the corresponding county zoning limit uses to forest operations, recreation, certain conservation-related uses, and very limited forest-related dwellings. The Camp Sherman area is designated as an unincorporated community under OAR Chapter 660, Division 22, which allows for non forest-related residential and commercial activities. The majority of lands in the Basin are managed for the public by the United States Forest Service (USFS). Prominent natural features in the Basin include the Cascade Mountain Range at the Basin's western boundary and Green Ridge, which runs north-south through the middle of the Basin.

[INSERT AREA MAP, WITH ZONING LAYER FOR PRIVATE LANDS, SHOWING FOREST AND UNINC. COMMUNITY]

The Basin is directly south of, and partially included in, the Warm Springs Indian Reservation. The portion of the Basin located beyond the Reservation is included in the ceded territory of the Warm Springs Tribe.

According to the Tribe, the area includes traditional huckleberry gathering areas, village sites and other areas of tribal historical and spiritual significance. The Tribe holds treaty rights entitling members to hunting, fishing and gathering privileges. The importance of hunting to the Tribe causes great value to be placed on the Basin's mule deer herd that drifts between the Reservation lands and public and private lands south of the Reservation. Any conflicts to herd health or numbers, or limitations of the herd's ability to follow traditional migration routes would likely be viewed as a negative consequence by the Warm Springs Indian Tribe.

Deleted: Metolius ACSC Staff Discussion Draft 2-6-09¶
5¶

All of the Deschutes National Forest lands within the Metolius Wild and Scenic River corridor were ceded to the U.S. Government by the Tribes and Bands of Middle Oregon through the Treaty of 1855. The treaty reserves for the Indians exclusive rights of "taking fish in the streams running through and bordering the reservation." Indians also have the right of "hunting, gathering roots and berries, and pasturing their stock on unclaimed lands in common with citizens." The interests of contemporary Native Americans include the protection of Indian burial grounds and other sacred sites and perpetuation of certain traditional activities, specifically root gathering and fishing.

The Confederated Tribes of the Warm Springs Reservation are consulted by Federal, State and local governments as required by the Archaeological Resources Protection Act of 1979, and as recommended by the Historic Preservation Act of 1966. The Forest Service and State also contact and consult with appropriate tribal representatives and resource specialists in the early stages of any project or activity planning on Forest Service or State administered lands that may affect Tribal interests, treaty rights or traditional use areas within ceded tribal lands. "The tribes are concerned with possible impacts to four types of land bases: The Reservation, ceded lands, usual and accustomed lands and ancestral lands. The Tribes have their own Wild and Scenic Code, which includes the Metolius as one of the Rivers to be protected for cultural and other values, and have said that a consistent Tribal goal is to keep the river corridor as primitive as possible." (US. Forest Service Wild and Scenic River Management Plan)

The Basin's current settlement pattern goes back over 100 years to the turn of the 19th century. Today the Metolius River corridor is served by a well developed system of paved roads and nine public campgrounds. The Wizard Falls Fish Hatchery has been in operation by the Oregon Department of Fish

Deleted: -----Page Break-----
¶
Metolius ACSC Staff Discussion
Draft 2-6-09¶
6¶

and Wildlife since the 1940's and continues to be a popular attraction. The Head of the Metolius, the location where the Metolius River begins as a surface water feature is supported by a well-maintained parking lot, restroom facilities and a paved trail to an observation deck overlooking the site. Commercial establishments serving visitors to the Basin are available in Camp Sherman and cabin rentals and other overnight accommodations may be found at many locations in the immediate vicinity. Many paved and nonpaved Forest Service roads provide access to most of the Basin's public lands.

At the time Oregon's statewide land use program was established, in 1973 to the end of 1974, the state considered several areas for designation as Areas of Critical State Concern (ACSC). Jefferson County, faced with several large subdivision proposals, approached the state for assistance in planning to protect deer winter range in the Metolius area, and the Metolius basin was one of four areas seriously considered for such a designation. Ultimately, the Land Conservation and Development Commission (LCDC) decided not to recommend any ACSC designations to the legislature –instead, protecting many of the areas through special state goals. Deer winter range in the Metolius basin was protected to some extent through planning the lands for forest and farm uses, and limiting the amount of residential development that could occur. Winter range also received additional protection under statewide land use planning goal 5 (Natural Resources) and county land use regulations implementing that goal.

In 1988, Congress designated the upper reaches of the Metolius as a federal Wild and Scenic River. In the same year, the Oregon legislature designated the upper portion of the Metolius as a state scenic river. Under the federal designation the river is classified as recreational from near the headwaters to Bridge 99, and scenic from Bridge 99 to Lake Billy Chinook. The lower segment also is managed to provide a primitive recreational experience. The federal management plan for the river identifies a number of outstanding resource values, including the relatively stable year-round flow of extremely clean and cold water, and the fishery supported by the river.

[MAP OF W&S RIVER CORRIDOR AND USES, FROM USFS EIS FOR MANAGEMENT PLAN]

In 1990 the Deschutes National Forest established the Metolius Conservation Area. The plan for the area states "The Metolius is outstanding in the abundance of its resources and the depth of feeling with which they are held by all who visit this special place." The Conservation Area contains ten management (sub)areas within an 86,000-acre designation. Included in the Area are Black Butte, the Metolius Basin between the

Deleted: ¶
----- Page Break -----
¶
Metolius ACSC Staff Discussion
Draft 2-6-09¶
7¶

Deleted: area

wilderness boundary on the west and Green Ridge on the east, and the “Horn of the Metolius.” The ten management areas, many of which are unique, each have a specific goal and theme which describes the direction for management in the foreseeable future. Any project or initiative undertaken in the Metolius Conservation Area must conform in design and application to the appropriate standards and guidelines (Deschutes National Forest)

B. Destination Resorts and the Metolius Basin

In 2006 Jefferson County began a Destination Resort Planning project under the provisions of ORS 197.435 and Statewide Planning Goal 8 (*Recreation*). After much work and many public hearings, the Jefferson County Board of Commissioners adopted a local program that included comprehensive plan provisions, zoning ordinance language and a map identifying two areas as eligible for destination resort development. The approval of the county's resort map is the first stage in siting such uses – in order to proceed the owners next must prepare conceptual master plans for their lands, and have them approved by the county. Once a master plan is approved, resorts typically proceed in phases, with specific plans for each phase being reviewed by the county.

The county's destination resort map identified two areas as eligible to apply for destination resort approval. One property includes about 640-acres and is located entirely in the Basin just north of Suttle Lake. The other property includes several thousand acres of contiguous ownership laying both inside and outside of the Basin.

Jefferson County's destination resort map was appealed to the Oregon Land Use Board of Appeals (LUBA) shortly after it was adopted. On February 11, 2008, LUBA remanded the county's decision, finding that the county had failed to consider certain impacts of the development on deer winter range. That decision by LUBA was appealed to the Oregon Court of Appeals, which affirmed LUBA on July 8, 2008. The parties to the appeal then sought review in the Oregon Supreme Court, which granted review, and where the appeal is still pending now.

In addition to the challenge to the county's decision through an appeal, legislation also was introduced during the 2007 legislative session (Senate Bill 30) that sought to ban any resort development in Jefferson County's portion of the Metolius Basin, as well as within three-miles of the Basin's boundary. The bill passed the Oregon Senate, but was not voted on in the Oregon House of Representatives. On June 22, 2007, Governor Kulongoski wrote a letter to the 2007 Legislature indicating concerns about Senate Bill 30, but also committing to ask three state agencies to evaluate the adequacy of existing laws to protect the resources of the Metolius Basin. The

Deleted: ¶
¶
-----Page Break-----
¶
Metolius ACSC Staff Discussion
Draft 2-6-09¶
8¶

Governor concluded by stating:

"If the agencies advise me that additional laws are necessary or desirable to achieve these objectives [to protect the waters of the Metolius and the fish and wildlife resources in the basin], I will work with the legislature to develop those legislative changes so that we protect the natural treasure of the Metolius basin for generations to come."

The Oregon Department of Environmental Quality (DEQ), the Oregon Water Resources Department (OWRD) and the Oregon Department of Fish and Wildlife (ODFW) evaluated whether destination resort development in or near the Metolius Basin could result in negative consequences on the areas environmental resources. All three agencies had responded to the Governor's request by November, 2007. Their conclusion was that they could not determine that development would not harm the Metolius Basin's water resources and fish and wildlife populations. Important concerns were also raised by the US Forest Service.

In keeping with his commitment to work with the legislature to protect the Metolius in the event existing regulatory programs were not adequate, Governor Kulongoski asked the Land Conservation and Development Commission (LCDC) to consider using the one existing process designed for this type of situation – the Area of Critical State Concern process – to develop a management plan for the basin, and to obtain broad public input into that plan. Before the plan may take effect, it must be approved by the Oregon legislature.

As things currently stand the Jefferson County destination resort map of eligible areas is not yet approved as complying with the statewide land use planning goals (due to the pending appeals). As a result, the county is not yet able to process applications for resort development within the two areas. If the Oregon Supreme Court upholds LUBA decision remanding the mapping for additional analysis, any subsequent decision responding to the remanded items may also be appealed.

Once final approval of the plan is achieved the county may begin review of a conditional use application to consider a specific destination resort development proposal. The county's decision to approve or deny a conditional use application could well ignite another round of appeals. Simply put, Jefferson County's ability to authorize development of a destination resort could be tied up in litigation for many more years. The Metolius Basin Area of Critical State Concern process could resolve destination resort development questions in a more timely fashion, protect the basin from large- scale development and enable Jefferson County and

Deleted: ¶

¶
¶

-----Page Break-----
Metolius ACSC Staff Discussion
Draft 2-6-09¶
9¶

affected property owners to move forward with development more quickly and with far less uncertainty.

C. Resources of the Metolius Basin

The Metolius Basin contains a wide variety of unique environmental resources. It is a highly sensitive natural area that is ecologically and scientifically significant because of its unique hydrogeologic characteristics, wetlands and ground water resources. As noted above, the Metolius River was added to the federal Wild and Scenic River system in the Omnibus Oregon Wild and Scenic Rivers Act of 1988 because the federal government determined the river to be remarkable in all areas of evaluation.

The Basin attracts a large number of visitors as a result of its unique hydrology, natural beauty, and world-class fishing, hunting and other recreational opportunities. According to the U.S. Forest Service, the Basin sees several hundred thousand recreational-related visits every year. The Outstandingly Remarkable Values of the Metolius that serve as the basis for management of the wild and scenic corridor area of the Basin include:

- Geologic Features (the interplay of faults, volcanism, and ground water hydrology)
- Hydrologic Values (extremely high quality of water, and unique drop in water temperature from the headwaters down the river)
- Ecology (transition zone from Cascades to high desert and unique plant species)
- Fisheries (bull trout and historic chinook fisheries)
- Wildlife (northern spotted owl, mule deer and elk)
- Scenic Resources
- Heritage Resources
- Recreation Values

The Metolius River and its tributaries are home to sensitive and threatened species of fish, including Redband Trout and Bull Trout, and the Basin is critical to the restoration of anadromous fish populations, including Spring Chinook, Sockeye and Summer Steelhead. The Basin also contains highly sensitive ranges, including critical migration corridors, for wintering mule deer and elk.

The Metolius Conservation Area plan created and managed by the Deschutes National Forest, identifies a "unique ecosystem" containing a wide range of habitat, wildlife and natural resources which are variably featured in the management plans for its 10 sub areas including: stands of mature Ponderosa Pine, mature and multi-level forest canopy, old growth forest, sugar pine, bald eagles, spotted owls, deer and elk summer and winter habitat, habitat for bear and cougar, diversity of species, scenic views and

Deleted: ¶

¶

¶

-----Page Break-----

Metolius ACSC Staff Discussion

Draft 2-6-09¶

10¶

maintaining naturally occurring ecosystems in unmodified conditions in some areas.

In addition to plans and analyses by the Deschutes National Forest, the reports provided by the Oregon Department of Fish and Wildlife (ODFW), Oregon Water Resources Department (OWRD) and the Oregon Department of Environmental Quality (ODEQ) document the Basin's important environmental features (attachments B-D). Similar findings regarding environmental and ecological significance are included in reports prepared by local, state and federal agencies and by the private sector.

The Basin provides a beautiful natural setting for outdoor recreation supported by a network of camping and low intensity residential and commercial facilities that have been enjoyed for generations.

D. The Economic Development Objectives of Jefferson County

Jefferson County includes 1,791 square miles and has a population of just over 22,000 citizens. These numbers make it the smallest of the three central Oregon counties both in terms of land mass and population. It is also the only central Oregon county with no destination resort development.

Additional employment opportunities are needed in Jefferson County. In 2007 Jefferson County was identified as "severely distressed" by the Oregon Department of Economic and Community development. In November 2008 the county had an unemployment rate of 12.0%, nearly 4% higher than to the statewide level of 8.1 %. With farming and forest products as traditional mainstays of the local economy, Jefferson County has been pushed to diversify and place greater emphasis in other areas such as tourism and less traditional measures like the Deer Ridge Correctional Facility. In addition to needing jobs, Jefferson County has found itself struggling, along with most Oregon counties, to find a replacement for the federal timber revenues that brought funds to the county budget.

The destination resort industry has been identified by Jefferson County as a possible replacement for jobs lost from the timber industry and a substantial potential tax base that could help off-set approximately \$500,000 that is expected to be lost in future reductions or elimination of federal timber

payments. According to figures provided by Economic Development for Central Oregon (EDCO) -- Sunriver, one of central Oregon's oldest resort communities had an assessed value of \$956,938,447 in 2004. This amount compared with an assessed value of \$207,155,344 for the city of Madras, the Jefferson County Seat. The 2008 Oregon Bluebook lists the assessed value for all of Jefferson County as \$1,344,354,858. These figures suggest that successful resort development could dramatically increase, perhaps more than double, the assessed value of Jefferson County. In addition, the areas

Deleted: ¶

¶

¶

-----Page Break-----
Metolius ACSC Staff Discussion
Draft 2-6-09¶

11¶

Deleted: ¶

¶

¶

-----Page Break-----
Metolius ACSC Staff Discussion
Draft 2-6-09¶

12¶

mapped by the county for possible destination resort consideration fall within the Culver School District, which is a small rural school district that would stand to benefit from the tax revenues brought by a destination resort development.

Jefferson County has planned for destination resorts using the process described in state law. The county worked to apply the law correctly and elected to be more restrictive than state law requires in some respects. The county is understandably frustrated that the state is considering adoption of an Area of Critical State Concern, and concerned that its fiscal and economic interests be considered.

Deleted: in good faith

Destination resort development in the Basin could also have both positive and negative effects on the City of Sisters and the Sisters School District. Sisters functions as a service center for a reasonably large area surrounding the city. Although the population of the city is 1,875 (as of July 1,2008), the Sisters School District, according to the city's Chamber of Commerce, draws from a population of about 14,000, which is as large or larger than most of eastern Oregon's biggest cities and is about two-thirds the size of the entire population of Jefferson County. Additional resort development on nearby lands could, possibly, bring additional employment and business development opportunities to the area. Such development also would likely require improvements to area roads and schools, and increase demand for police, fire and other public services.

Deleted: .

Deleted: ¶

Deleted: ¶

Deleted: ¶

Deleted: ¶

Deleted: ¶

Deleted: ¶

While the Metolius Basin is a unique and special resource for the State of Oregon, Jefferson County's efforts to create economic opportunities for its citizens should also be considered. Using the ACSC process, it may be possible to identify opportunities for forms of development that avoid adverse environmental and other effects, while still providing economic benefits to the county and residents of the county. This could mean both limiting development in sensitive areas, and allowing development in other areas where it would not otherwise be possible. For example, Jefferson County could site destination resorts nearer to the hub of the county, the city of Madras, where economic and job development will be derived totally within the county and in the area with the greatest need. Or Jefferson County could modify zoning regulations for the parcels in question for building a very limited number of large high value residences.

Deleted: ¶
¶
¶
-----Page Break-----
Metolius ACSC Staff Discussion
Draft 2-6-09¶
13¶

Deleted: resort

E. Private Property Interests

At least two private property owners could be directly affected by the MBACSC – the owners of the two properties that Jefferson County has mapped as eligible for siting destination resorts. Both owners acquired their properties after the statewide planning goals were adopted and the

Jefferson County Comprehensive Plan was acknowledged, and prior to Jefferson County initiating a destination resort planning program. The current owners are not, nor were they ever, entitled to develop a destination resort or any other type of intensive development in the Basin. Under the zoning in effect when they acquired their property, and still in place today, the properties are zoned for timber management and forest-related uses. Depending on the specific area, new dwellings, if allowed, would be allowed only on parcels of [160 acres] or more.

Deleted: ¶
Deleted: between 240 and 320

Nevertheless, the Department recognizes that both property owners worked with Jefferson County to navigate the destination resort planning requirements in Oregon statute and Statewide Planning Goal 8 (*Recreation*). Both owners have invested significant time and resources to participate in the county planning process and to create their own respective development proposal.

An politically expedient way to make the MBACSC palatable to the developers is to include provisions that provide some relief to these two property owners. The types of relief that could be considered may supplant state and local laws that would otherwise apply. If an outcome different than that offered through the local planning process is created, the affected property owners may have an opportunity to receive some level of nonmonetary consideration. Part of the ACC process and

Deleted: objective of
Deleted: ¶
Deleted: ¶
Deleted: ¶
Deleted: ¶
Deleted: ¶
Formatted: Font: 14 pt

Deleted: ¶
¶
¶
----- Page Break -----
Metolius ACSC Staff Discussion
Draft 2-6-09¶
14¶

public discussion will be to help the Commission decide whether, and to what extent, those affected property owners should be compensated in some manner. Alternative approaches could include land purchases, land exchanges, transfer of development authorizations (approval to site development without a goal exception), or alternative development options that have lesser impacts. For example, Jefferson County could modify zoning regulations for the parcels in question to allow for building of a very limited number of cabins or residences where a significant portion of the property is subject to a conservation easement.

II. PURPOSES

In addition to seeking public input on whether there should be a state plan to protect the Metolius Basin and its related resources and, if so, what elements that plan should contain, LCDC also hopes to use this tool to consider how to achieve two other objectives:

- How to allow Jefferson County to proceed with resort or other large scale development that can provide sorely-needed employment and fiscal benefits to the county; and
- How to give some relief to property owners affected by protections for the Metolius that limit their ability to attain a reasonable return on their investment in their property.

Deleted: large

LCDC is actively soliciting public input on all three of these objectives in order to develop a management plan that is balanced and responsive to the important multiple state and local interests in the basin.

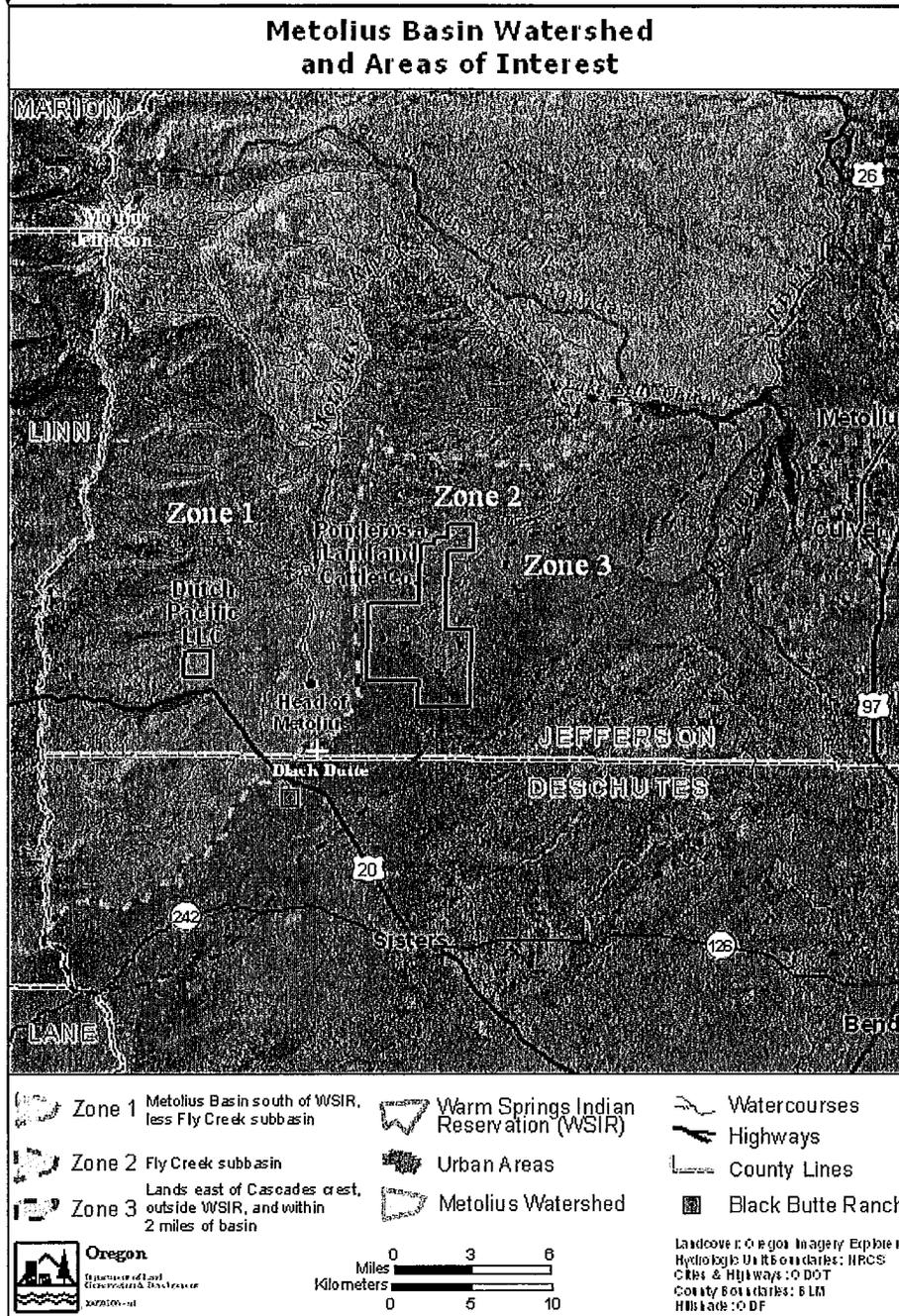
DLCD staff recommend that Metolius Basin Area of Critical State Concern ("MBACSC") be designed to achieve three important objectives.

1. First, the MBACSC should protect the Basin from large-scale development that is inconsistent with the environmental, cultural and scenic values and resources of the Basin. Defining exactly what area, and what type of development should be limited (if any) is one key element of this planning process.
2. Second, the MBACSC should reflect the economic development objectives of Jefferson County and the City of

public discussion will be to help the Commission decide whether, and to what extent, those affected property owners should be compensated in some manner. Alternative approaches could include land purchases, land exchanges, transfer of development authorizations (approval to site development without a goal exception), or alternative development options that have lesser impacts.

Deleted: Metolius ACSC Staff Discussion Draft 2-6-09¶
14¶

Deleted: II. PURPOSES
Formatted: Adjust space between Latin and Asian text, Adjust space between Asian text and numbers



Formatted: Font: 12 pt, Not Bold

Deleted: In addition to seeking public input on whether there should be a state plan to protect the Metolius Basin and its related resources and, if so, what elements that plan should contain, LCDC also hopes to use this tool to consider how to achieve two other objectives:

- How to allow Jefferson County to proceed with resort or other largescale development that can provide sorely-needed employment and fiscal benefits to the county; and
- How to give some relief to property owners affected by protections for the Metolius that limit their ability to attain a reasonable return on their investment in their property.

LCDC is actively soliciting public input on all three of these objectives in order to develop a management plan that is balanced and responsive to the important multiple state and local interests in the basin. DLCD staff recommend that Metolius Basin Area of Critical State Concern ("MBACSC") be designed to achieve three important objectives.

1. First, the MBACSC should protect the Basin from large-scale development that is inconsistent with the environmental, cultural and scenic values and resources of the Basin. Defining exactly what area, and what type of development should be limited (if any) is one key element of this planning process.
2. Second, the MBACSC should reflect the economic development objectives of Jefferson County and the City of

-----Page Break-----

[INSERT MAP SHOWING THREE AREAS, Map above shows the Fly Creek subbasin]

The entire MBACSC consists of about _____ acres in Jefferson County and about _____ acres in Deschutes County for an estimated total of about 240,000 acres (or 448 square miles). Most all of the MBACSC located in Deschutes County is public land. In Jefferson County the split is closer to half public and half private lands.

To respond to the three priorities described in Section __, the proposed MBACSC boundaries include three subareas: 1) The Basin (except for Fly Creek); 2) Lands within the Fly Creek subbasin; and 3) Lands within three miles of the Basin. A draft land use management plan, including use limitations and authorizations for each of the three areas, is described in Section IV. The following is a summary of the proposed management prescriptions.

1. The Metolius Basin

Lands within the Metolius Basin are delineated according to the watershed map provided by the Oregon Water Resources Department. Much of the Basin is located in Jefferson County. A small portion of the Basin is located in northern Deschutes County. Large-scale development, including destination resorts, are proposed to be prohibited within this subarea. Limited recreational cabin construction would be allowed on lands mapped for destination resorts by Jefferson County prior to January 1,2007.

2. Lands in the Fly Creek Subbasin

Lands in the Fly Creek subbasin are entirely within Jefferson County. Large-scale development, including destination resorts, also are proposed to be prohibited in this area.

3. Lands within the Three-Mile Buffer Area

There would be a prohibition on destination resorts or other large-scale uses within this area. Limited recreational cabin construction would be allowed on lands mapped for destination resorts by Jefferson County prior to January 1,2007.

IV. SUMMARY OF STATE AND LOCAL PROGRAMS

Several state programs apply in addition to Oregon's Statewide Planning Program and the Jefferson County Comprehensive Plan.

1. Oregon Water Resources Department.

OWRD is responsible for administering the Deschutes Ground Water Mitigation Program, which was developed to provide for new ground water uses while maintaining scenic waterway and instream water right flows in

Deleted: , except that certain open space and passive recreational uses (possibly associated with a resort) would be allowed

Deleted: ¶
¶
¶
-----Page Break-----
Metolius ACSC Staff Discussion
Draft 2-6-09¶
18¶

Deleted: no

Deleted: However, such uses could not exceed a total

Formatted: Font: 10 pt

Deleted: dwelling/unit number of _____ residential units in Deschutes County [note: need to make sure this includes Black Butte approved units, plus some room] for future development] and _____ residential units in Jefferson County. Large-scale development within this area (including destination resorts) would have to comply with special management standards designed to protect against or avoid the following:
• Adverse effects to quantity or quality of water in the Metolius River;
• Adverse effects to restoration efforts in the Wychus Creek subbasin;
• Adverse effects to deer winter range or elk populations, including conflicts between human development and wildlife;
• Adverse effects to state and local transportation facilities.

¶
¶
¶
-----Page Break-----
Metolius ACSC Staff Discussion
Draft 2-6-09¶
19¶

Deleted: POGRAMS

the Deschutes Basin. The program is authorized under ORS 537.746 and House Bill 3494 (2005 Oregon Law) and implemented in Oregon Administrative Rules (OAR) Chapter 690, Divisions 505 and 521. The goals of the Deschutes Mitigation Program are to:

- Maintain flows for Scenic Waterways and senior water rights, including instream water rights;
- Facilitate restoration of flows in the middle reach of the Deschutes River and related tributaries; and
- Sustain existing water uses and accommodate growth through new ground water development.

Every five years the Water Resources Commission (WRC) is required to evaluate the effectiveness of the mitigation program. The purpose of this evaluation is to ensure that scenic waterway and instream water right flows continue to be met on at least an equivalent or more frequent basis compared to flows within a representative base period.

The first five year evaluation of the Deschutes Mitigation Program has been completed.

2. Oregon Department of Environmental Quality (DEQ).

DEQ is responsible for water quality issues in the state of Oregon, which includes Total Maximum Daily Load (TMDL) and Water Quality Management Plan (WQMP) documents prepared for water bodies in Oregon designated as water quality limited on the 303(d) list. A TMDL is the calculated pollutant amount that a waterbody can receive and still meet Oregon water quality standards. Some streams within the Metolius Basin are water quality limited.

3. Oregon Parks and Recreation Department (OPRD).

OPRD implements programs designed to protect state scenic water ways. Specific rules for the Metolius River Scenic Waterway have been codified at OAR 736-040-0056. The administrative rules pertaining to the Metolius River Scenic Waterway describe segments of the river designated Recreational River Areas and a River Community Area. The rules provide guidance for construction and standards for locating new structures, road and facility placement as well as timber harvesting and other similar uses.

4. Oregon Department of Fish & Wildlife (ODFW).

The mission of the Oregon Department of Fish & Wildlife (ODFW) is to protect and enhance Oregon's fish and wildlife and their habitats for use and enjoyment by present and future generations. ODFW regulates hunting and angling activities, and has a keen interest in activities that can affect fish and wildlife habitat. ODFW also is responsible for managing conflicts between wildlife and humans.

Deleted: ¶
¶
¶
----- Page Break -----
¶
Metolius ACSC Staff Discussion
Draft 2-6-09¶
20¶

Formatted: Font: 12 pt,
Font color: Auto

Formatted: Adjust space
between Latin and Asian
text, Adjust space
between Asian text and
numbers

5. Oregon Department of Forestry (ODF).

ODF's Private Forests Program regulates forest operations on nearly 12 million acres of private nonfederal forestland. They guide forest landowners and operators on how to conduct forest operations and activities so they are in compliance with the Forest Practices Act administrative rules. FPA rules apply to harvesting, reforestation, road construction and repair, slash disposal (treetops, branches, brush and tree limbs left on the ground after a logging operation), chemical use and stream, lake and wetland protection. Sensitive resource sites, such as bird nesting and roosting locations, and threatened and endangered species sites are also protected under the rules.

V. LAND USE MANAGEMENT PLAN

The proposed land use management regulations identified in this Section would apply in addition to, and in some cases instead of, other state and local land use statutes, rules, and regulations governing development in the MBACSC. In the event that any state or local land use law conflicts with the MBACSC management plan, the MBACSC management plan would control. Any amendments to the MBACSC shall be subject to an approval process to be developed by LCDC.

Deleted: Metolius ACSC Staff Discussion Draft 2-6-09¶ 21¶

1. Jefferson County's Destination Resort Map.

Upon the Oregon legislature's approval of the MBACSC, the portion of the county's adopted destination resort map showing areas inside of Subareas 1, 2 and 3 shall have no legal effect, and the map does not authorize the siting of destination resorts in that area.

Deleted: matter of¶ Jefferson County's destination resort mapping project shall be resolved. The¶

Notwithstanding ORS 197.455(2), for the 30 month period following legislative approval of this plan, Jefferson County may amend its destination resort map without waiting 30 months. Any amendments to Jefferson County's map of areas eligible for destination resorts shall comply with all other applicable provisions of law, including any applicable provisions of this MBACSC.

Deleted: lands outside¶ of the Metolius Basin shall be considered acknowledged,

Deleted: be¶ deemed to comply with the statewide land use planning goals and applicable¶ statutory and rule requirements. The area of the map showing lands outside¶ of the Metolius Basin is in

2. MBACSC Land Use Regulations

2.1. Subarea 1: Metolius Basin (except Fly Creek subbasin)

2.1.1. Prohibited Uses and Activities. The following uses and activities are prohibited on all lands in Subarea 1 (Metolius Basin, except Fly Creek):

Deleted: such lands are eligible for the siting of¶ destination resorts. The portion of the county's adopted destination resort¶ map showing areas inside of the Metolius Basin shall have no legal effect,¶ and

Any new destination resort described by Statewide Planning Goal 8 (Recreation) or ORS 197.435 to 197.467.

Deleted: ¶
¶
----- Page Break -----
¶
Metolius ACSC Staff Discussion Draft 2-6-09¶ 22¶

Any new residential, commercial, industrial or other development that would require an exception to Statewide Planning Goals 3, 4, 11, or 14, and that also exceeds the limitations of OAR 660-022-0030 for a rural community.

2.1.2. Special Land Use Provisions. Notwithstanding paragraph 2.1.1. of this section, Jefferson County may allow the following uses within the portion of the Basin within Jefferson County:

Formatted: Adjust space between Latin and Asian text, Adjust space between Asian text and numbers

Formatted: Font: 12 pt

(i) All uses allowed by the county comprehensive plan and land use regulations (when they are finally acknowledged) including, without limitation, those uses currently allowed within the Camp Sherman unincorporated community. [Note: The county repealed its existing comprehensive plan and zoning ordinance and the adopted plan and ordinance is not yet acknowledged because it is still under appeal.]

Deleted: without amending its

Deleted: comprehensive plan or land use regulations:¶

Deleted: current acknowledged

Deleted: ¶

Deleted: ¶

Deleted: ¶

(ii) The development of no more than 6 recreational cabins, each containing no more than 1800 square feet, within the areas mapped as eligible for destination resorts on the Jefferson County map adopted on or before January 1, 2007. The county shall not allow any outdoor watering of lawns or gardens associated with such uses, and shall require that they be sited and clustered in order to minimize conflicts with wildlife, and shall require that the areas surrounding the cluster be subject to a conservation easement in favor of the Deschutes County Land Trust. The county shall confer with the Oregon Department of Fish and Wildlife, and the Oregon Department of Forestry concerning conditions on such uses in order to minimize conflicts with wildlife, and to minimize the need for wildland fire protection. Land uses allowed within subarea 1 shall be located and designed to minimize conflicts with deer and elk populations, based on the recommendations of the Oregon Department of Fish and Wildlife.

Deleted: __
Deleted: __

2.2. Subarea 2: Fly creek Subbasin of the Metolius Basin

2.2.1 Prohibited Uses and Activities. All uses and activities described in section 2.1.1 are prohibited, except that the Land Use Provisions permitted in Section 2.2.2 may be allowed by Jefferson County, if they are designed to avoid conflicts with deer and elk populations, based on the recommendations of the Oregon Department of Fish and Wildlife.

Deleted: .
Deleted: ¶
Deleted: open space and recreational uses allowed¶ under Goal 4 and Goal 8
Deleted: as long as¶ they do not require the use of water for irrigation or for a golf course, and
Deleted: ¶
Deleted: ¶
Formatted: Font: 14 pt

2.1.2. Special Land Use Provisions. Notwithstanding paragraph 2.2.1. of this section, Jefferson County may allow the following uses within the Fly Creek Subbasin:

(i) All uses allowed by the county comprehensive plan and land use regulations (when they are finally acknowledged) including, without limitation, those uses currently allowed within the Three Rivers unincorporated community.

Deleted: ¶
¶
-----Page Break-----
¶
Metolius ACSC Staff Discussion Draft 2-6-09¶
23¶
Formatted: Adjust space between Latin and Asian text, Adjust space between Asian text and numbers
Formatted: Font: 12 pt, Not Bold

2.3. Subarea 3: Metolius Buffer Area (area within three miles of the boundary of the Metolius Basin)

2.3.1. Allowed Uses. All uses and activities described in section 2.1.1 are prohibited, except that the Land Use Provisions permitted in Section 2.3.2 may be allowed by Jefferson County, if they are designed to avoid conflicts with deer and elk populations, based on the recommendations of the Oregon Department of Fish and Wildlife.

Deleted: allowed under Jefferson

2.3.2. Special Land Use Provisions. Notwithstanding paragraph 2.3.1. of this section, Jefferson County may allow the following uses within the without amending its comprehensive plan or land use regulations: The development of no more than [12] recreational cabins, each

Deleted: County's acknowledged comprehensive plan and land use regulations are¶ allowed, subject to the provisions of section 2.3.2. All uses and activities¶ allowed under Deschutes' County's acknowledged comprehensive plan and¶ land use regulations are allowed, subject to the provisions of section
Formatted: Font: Bold
Deleted: ¶
2.3.2.
Deleted: Management
Deleted: In addition to other
Deleted: applicable provisions of state and local law:¶ The total number of residential units allowed within the portion of subarea 3¶ in Deschutes County shall not exceed _____.¶ The total number of residential[. . .] 21

containing no more than 1800 square feet, within the areas mapped as eligible for destination resorts on the Jefferson County map adopted on or before January 1, 2007. The county shall not allow any outdoor watering of lawns or gardens associated with such uses, and shall require that they be sited and clustered in order to minimize conflicts with wildlife and shall require that the areas surrounding the cluster be subject to a conservation easement in favor of the Deschutes County Land Trust. The county shall confer with the Oregon Department of Fish and Wildlife, and the Oregon Department of Forestry concerning conditions on such uses in order to minimize conflicts with wildlife, and to minimize the need for wildland fire protection. Land uses allowed within subarea 1 shall be located and designed to minimize conflicts with deer and elk populations, based on the recommendations of the Oregon Department of Fish and Wildlife.

2.4. Other Provisions for Transfer of Resort Mapping Authorization

Notwithstanding ORS 197.455(2), for the 30 month period following legislative approval of this plan, Jefferson County may amend its destination resort map without waiting 30 months. Any amendments to Jefferson County's map of areas eligible for destination resorts shall comply with all other applicable provisions of law, including any applicable provisions of this MBACSC.

Deleted: 3

Deleted: ¶

Deleted: the recommendations of the Oregon Department of Fish and Wildlife. Any development authorized by Jefferson County or Deschutes County within subarea 3 after the effective date of this plan that meets

Deleted: definition of a destination resort under statewide land use planning Goal 8, or

Deleted: criteria of ORS 197.445, or that is projected to generate more than average daily automobile trips shall be required to mitigate adverse impacts on local and state transportation facilities as a condition of development approval, regardless of whether those impacts will occur in the jurisdiction where the development is located.

¶
¶

----- Page Break -----

¶
¶
Metolius ACSC Staff Discussion Draft 2-6-09
24
Notwithstanding ORS 197.445, the ratio of homesites to units of overnight accommodations that would otherwise be allowed for a destination resort shall be 1.5 to 1 for any new destination resort within subarea 3. Notwithstanding ORS 197.445, a new destination resort within the portion of subarea 3 in Jefferson County is not subject to ORS 197.445(3). Notwithstanding ORS 197.455(2) lands in the portion of subarea 3 in Jefferson County may be map

31

Deleted: Destination resort mapping allows a property owner to seek approval of a resort without having to comply with certain state laws that would otherwise apply. Mapping does not entitle an owner to develop a resort – a

41

In addition to seeking public input on whether there should be a state plan to protect the Metolius Basin and its related resources and, if so, what elements that plan should contain, LCDC also hopes to use this tool to consider how to achieve two other objectives:

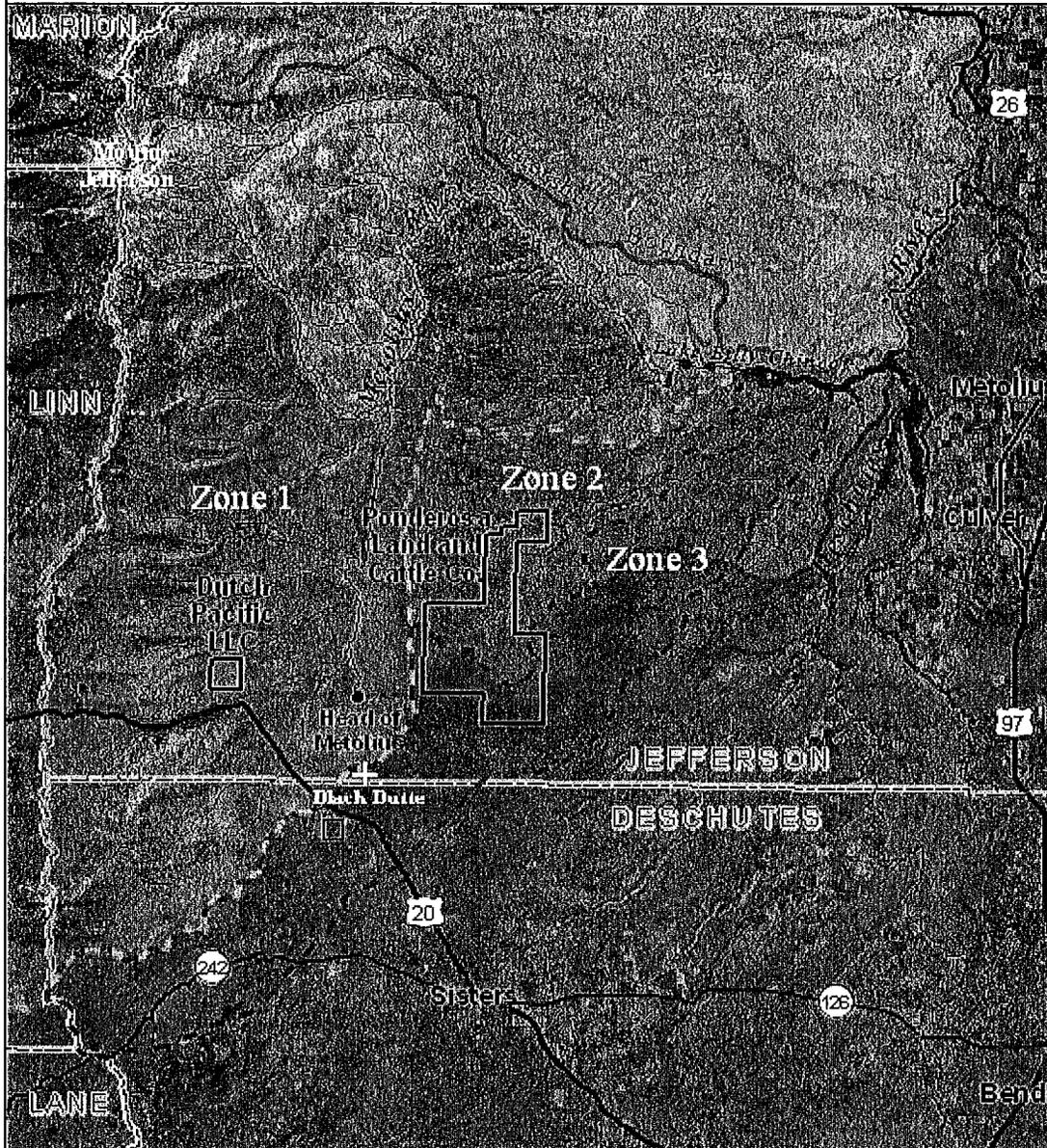
- How to allow Jefferson County to proceed with resort or other largescale development that can provide sorely-needed employment and fiscal benefits to the county; and
- How to give some relief to property owners affected by protections for the Metolius that limit their ability to attain a reasonable return on their investment in their property.

LCDC is actively soliciting public input on all three of these objectives in order to develop a management plan that is balanced and responsive to the important multiple state and local interests in the basin.

DLCD staff recommend that Metolius Basin Area of Critical State Concern (“MBACSC”) be designed to achieve three important objectives.

1. First, the MBACSC should protect the Basin from large-scale development that is inconsistent with the environmental, cultural and scenic values and resources of the Basin. Defining exactly what area, and what type of development should be limited (if any) is one key element of this planning process.
2. Second, the MBACSC should reflect the economic development objectives of Jefferson County and the City of

Metolius Basin Watershed and Areas of Interest



<p> Zone 1 Metolius Basin south of WSIR, less Fly Creek subbasin</p> <p> Zone 2 Fly Creek subbasin</p> <p> Zone 3 Lands east of Cascades crest, outside WSIR, and within 2 miles of basin</p>	<p> Warm Springs Indian Reservation (WSIR)</p> <p> Urban Areas</p> <p> Metolius Watershed</p>	<p> Watercourses</p> <p> Highways</p> <p> County Lines</p> <p> Black Butte Ranch</p>
<p> Oregon Department of Land Conservation & Development 2009/10 - rd</p>	<p>Miles </p> <p>Kilometers </p>	<p>Landcover: Oregon Imagery Explorer Hydrology Unit Boundaries: NRCS Cities & Highways: O DOT County Boundaries: BLM Hills: ODF</p>

applicable provisions of state and local law:

The total number of residential units allowed within the portion of subarea 3 in Deschutes County shall not exceed _____.

The total number of residential units allowed within the portion of subarea 3 in Jefferson County shall not exceed _____.

Land uses allowed within the portion of subarea 3 in Deschutes County after the effective date of this management plan shall be conditioned so that they do not result in a net increase in the average annual consumptive use of water within this area.

Land uses allowed within the portion of subarea 3 in Jefferson County after the effective date of this management plan shall be conditioned so that they do not result in a net increase of more than ___ acre feet in the average annual consumptive use of water within this area.

criteria of ORS 197.445, or that is projected to generate more than ___ average daily automobile trips shall be required to mitigate adverse impacts on local and state transportation facilities as a condition of development approval, regardless of whether those impacts will occur in the jurisdiction where the development is located.

-----Page Break-----

Notwithstanding ORS 197.445, the ratio of homesites to units of overnight accommodations that would otherwise be allowed for a destination resort shall be 1.5 to 1 for any new destination resort within subarea 3.

Notwithstanding ORS 197.445, a new destination resort within the portion of subarea 3 in Jefferson County is not subject to ORS 197.445(3).

Notwithstanding ORS 197.455(2) lands in the portion of subarea 3 in Jefferson County may be mapped as eligible for Destination Resort development without waiting 30-months from the previous Destination Resort mapping process. Mapping conducted, if any, pursuant to this provision must satisfy all other applicable provisions of law and must be accomplished on or before January 1, 2014.

Destination resort mapping allows a property owner to seek approval of a resort without having to comply with certain state laws that would otherwise apply. Mapping does not entitle an owner to develop a resort – a master plan for the resort must still be approved by local government.

Staff would like feedback on the following concept: moving the mapping authorizations within the Metolius Basin to another, more appropriate, location, perhaps with limitations on the size and nature of the development to assure compatibility with surrounding uses and minimize environmental impacts.

Doug and Lorie Hancock
P.O. Box 146
Camp Sherman, Oregon 97730

phone: 541-549-4942
email: Hancock.doug@gmail.com

February 17, 2006

Via email to: lisa.howard@state.or.us
Oregon Department of Land Conservation and Development
635 Capitol Street
Suite 150
Salem, Oregon 97301

Re: Testimony regarding Designating the Metolius Basin as an
Area of Critical State Concern

Dear Ms. Howard,

This letter is being submitted as written testimony in the hearings your commission is conducting regarding designation of the Metolius Basin as an area of critical state concern.

At the outset we want to thank you and your staff for taking the time to listen to the concerns of the public on the important issues regarding the impacts of destination resorts in or near the Metolius Basin. We are attaching copies of signatures of about 150 citizens who attended the hearing in Sisters on the 11th and who oppose siting destination resorts and other large scale developments in or near the Metolius Basin.

Jefferson County Process

We have attended both of the first two hearings in Sisters and Madras. At those hearings, and in the media, there has been a significant amount of comment regarding the perception that Jefferson County is being treated unfairly, that the county followed the rules and that no one objected during the process, and that for the state to act now is unfair. We would like to address that point because the perception of unfairness is incorrect.

We live in Jefferson County. When the county first decided to rewrite the comprehensive plan and zoning ordinances, they hand picked a committee of "representatives" from throughout the county. It came as a complete surprise to the members of the Camp Sherman community, that the "representative" appointed by the county from Camp Sherman was the owner of Lake Creek Lodge, who is not a resident of Camp Sherman, and who had a strong interest in changing zoning laws in order to allow significant changes to the zoning that pertained to Lake Creek Lodge. This representative had lost numerous challenges under the old zoning ordinance.

When the county presented its rewritten comprehensive plan and zoning ordinances, they were presented to the public with no summary of the changes, no reference to prior plans and ordinances, and no comparisons to the previous plan or

ordinance. They also provided no copies. If you wanted to understand what was going on, you had to print hundreds of pages of documents and laboriously compare the old with the new, to discover the changes. When the county presented the proposed plan and ordinance, they also said that they'd had input from the Camp Sherman community. However, the only input they received was from a non-resident business owner who had an objective to change the plan to allow development.

We printed the existing and proposed documents and spent countless weekends and weeknights reviewing and comparing these documents in order to offer thoughtful comments. We quickly discovered that the new comprehensive plan deleted in its entirety an Appendix that was dedicated to Camp Sherman and which addressed zoning and development goals for this special area of the county. The public and the county had previously developed the Appendix as a result of a collaborative effort in the early 1990s. We have attached a copy of the Camp Sherman Appendix.

We attended many public hearings on the comprehensive plan and zoning ordinances and provided both written and oral testimony. Our testimony was primarily directed to the drastic changes that the county had decided to incorporate in the new plans, and to the proposed destination resorts. To give you a couple of examples, the county has not updated some of its inventories, such as wildlife, for some 25 or more years. We objected to this, pointing out that numerous landscape changing wildfires and other events in the last 25 years have had tremendous impact. The county did not address these concerns. We have attached a copy of the wildlife map from the original inventories from the 1981 comprehensive plan, and the map from the plan immediately prior to the current plan. Although the inventories have not been updated the two attached maps are different from the map in the current plan.

We objected to numerous other aspects of the plan and the county did not change the plan or zoning ordinance based on our objections.

At the hearings the commissioners sat in front of the audience, asked no questions, and seemed to care little about what was said. The county knew what they wanted to do before the public process began. And what the county wanted is exactly what is in the plans that were adopted. Including we might add, the changes that the owner of Lake Creek Lodge had sought allowing what was formerly tourist rental cabins to be sold as single family residences.

The record from the hearings and public input on the county's new comprehensive plan and zoning ordinance is filled with objections like ours, including numerous objections to siting destination resorts in or near the Metolius Basin. It is simply not true to say that those who are now testifying in favor of a management plan that excludes destination resorts did not object previously.

Moreover, as soon as the county adopted its rewritten comprehensive plan, zoning ordinance and destination resort mapping, all three were challenged at LUBA by numerous parties. As you know, those challenges are ongoing and pending today.

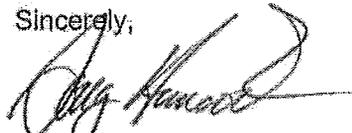
The public devoted every bit as much time as, and probably significantly more than, the commissioners and their staff did to review, comment on and object to the plan and ordinances. However, the county did not heed the comments made by the public and proceeded blindly ahead with the plan in order to arrive at a predetermined goal.

Local representatives clearly did not listen to local voices. This should be apparent to you by now from attending the first two hearings and from the attached petition.

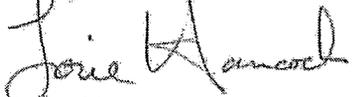
Is it Unfair for the State to Step in Now

No. Jefferson County is focused on what is in the best economic interest of the county, but the area that is at the center of this process, the Metolius Basin, is an area of critical concern to the entire state. When there is a conflict of interest between what is in the "best interest" of the county and the interest of the citizens of the state as a whole, local interests must give way to the broader good. In cases such as this it is necessary for the state to step in and protect a natural resource that is a statewide treasure. It is entirely appropriate for the state to evaluate measures that the county can pursue that enhance the county's tax base in other ways, such as allowing the county to immediately commence a remapping of destination resorts. It is not appropriate, however, for a public body to step in and focus its energy on providing a return to the developers who speculated on obtaining zone changes.

Sincerely,



Doug Hancock



Lorie Hancock

Attachments:

- a) Petitions
- b) Camp Sherman Appendix
- c) Wildlife Maps over the years

We request that you take legislative action to protect the Metolius Basin by not allowing the construction of destination resorts or similar large developments within 3 miles of the Metolius Basin.

Print Name	Signature	Address
SASHA TOMLIN LAWLESS	<i>Sasha Tomlin Lawless</i>	840 NW 12th Bend OR 97701
JJ YACOVELLA	<i>JJ Yacovella</i>	789 So Lewis Sisters 97759
L.A. PENROD YACOVELLA	<i>L.A. Penrod Yacovella</i>	789 S Lewis Sisters 97759
R.W. Kelm	<i>R.W. Kelm</i>	69346 Silver Spur Sisters
HAROLD BUSON	<i>Harold Buson</i>	68830 OACHE CT Sisters Ore
Darlene Kelm	<i>Darlene H. Kelm</i>	69346 Silver Spur Sisters OR 97759
Lynn Mary Sale	<i>Lynn Mary Sale</i>	64700 Old Road - Rd. Hwy Bend, Oregon 97701
Jennifer Babb	<i>Jennifer Babb</i>	148 NW Wilmington Ave Bend OR 97701
NANCY STEVENS	<i>Nancy Stevens</i>	1935 NE Highline Grand Ave Bend, OR 97701
TEALY ANGER	<i>Tealy Anger</i>	BEND, OR 97701
Kathleen Anger	<i>Kathleen Anger</i>	3285 NE STOREY RD LP Bend, OR 97701
Marie Olasen	<i>Marie Olasen</i>	marie@sistershabitat.org
ELIZABETH COLAMAN	<i>Elizabeth C. Colaman</i>	2215 NW PANAMA ST SCUMS, OR, 97701
AMY DAVIDSON	<i>Amy Davidson</i>	235 NW JEFFERSON PL. BEND OR 97701
Linda Gustafson	<i>Linda Gustafson</i>	P.O. Box 442 Camp Sherman, OR
Karen H. Sheldahl	<i>Karen H. Sheldahl</i>	PO Box 13 Camp Sherman OR 97730
Dawn Song-Scott	<i>Dawn Song-Scott</i>	PO Box 486 Camp Sherman OR 97730
CARL W. CAVALLA	<i>Carl W. Cavalla</i>	20840 Herford Ave Bend OR 97701
Jim Inkster	<i>Jim Inkster</i>	1715 NW 2nd St Bend OR 97701
Carl Vaughan	<i>Carl Vaughan</i>	22435 Victoria Ln Bend, OR 97702
JIM TAYLOR	<i>Jim Taylor</i>	3201 SW 73 RD REDMOND, OR 97756

We request that you take legislative action to protect the Metolius Basin by not allowing the construction of destination resorts or similar large developments within 3 miles of the Metolius Basin.

Print Name	Signature	Address
Barbara Haynes	Barbara Haynes	26348 Metolius Meadows ^{CS.}
LINDA THOMAS	Linda Thomas	26345 Metolius Meadows ^{CS.}
Lella Dordmeyer	Lella Dordmeyer	26234 Metolius " ^{CS}
ERHARD "	Erhard K. Dordmeyer	"
INGHAM, ANN & GEORGE	Ann Ingham	26248 SW METOLIUS ROAD CAMP SHERMAN OR 97730
ELIZABETH McCLARRE	Elizabeth McClarren	721 NW CEDAR REDMOND OR 97756
FRED LINDSEY	Fred Lindsey	708 N Wheeler Loop Sisters 97757
TOM DAVIS	H. Davis	69217 Turley Sisters, OR 97759
Fred East	Fred East	PMB 8307 Black Butte Ranch
Shay Nomin	S. KAY NORN	68385 Fryrear Rd Sisters ⁹⁷⁷⁵⁹
Jeanne Busch	Jeanne E Busch	68833 Cache Ct Sisters
Carl Huber	Carl Huber	1175 NW Hamm Blvd, Bend, OR
Emilie Marlinghaus	Emilie Marlinghaus	753 SW Silver Creek Bend 97702
Jerry Norquist	Jerry Norquist	PO Box 337 Sisters
Tompe B. Phillips	Tompe B Phillips	26050 SW Potlatch Lane Camp Sherman 97730
Patricia Perry	Patricia Perry	BOX 031, Sisters OR 97759
Greg Gass	Greg Gass	PO Box 12 Camp Sherman
Marti Dale	Mart Dale	PO BOX 43 C. Sherman
Jon Sheidahl	Jon Sheidahl	PO Box 13, Camp Sherman 97759
Wendy Holzman	Wendy Holzman	324 E. Wopato Ln Sisters
RAMON DUEAT	Ramon Dueat	98 NW RIVERSIDE BLVD BEND, OR 97701
Stephen Bryan	Stephen Bryan	526 E Tyee Dr Sisters, OR 97759

We request that you take legislative action to protect the Metolius Basin by not allowing the construction of destination resorts or similar large developments within 3 miles of the Metolius Basin.

Print Name	Signature	Address
RITA OLIN	Rita Olin	PO Box 7315 Bend OR 97708
Eloise Whitlaw	Eloise Whitlaw	18470 Pinehurst Rd Bend, OR 97701
JACK REMINGTON	Jack Remington	64868 Finley Lane Bend OR 97701
Kay B. Grady	Kay B. Grady	PO Box 496 Sisters, OR 97759
BARBARA R. BOTT	Barbara R. Bott	PO Box 198 588 S. Finch Sisters, OR 97759
MORSON WURZ	Morson Wurz	16000 Foothill Ln Sisters, OR 97759
David Grady	David H. Grady	PO Box 496 Sisters, OR 97759-0496
Brian Darkon	Brian Darkon	1053 SW 12th St Redmond, OR 97756
Dink Hall	Dink Hall	Box 24 BEND, OREGON 97709
CELIA LEBER	Celia Leber	2682 NW Shields Dr. Bend, OR 97701
George Leber	George Leber	2682 NW Shields Dr. Bend, OR 97701
Robert W. Hansen	Robert W. Hansen	26237 Pine Lodge Rd Camp Sherman
Jane Braccini	Jane Braccini	23065 Butterfield Trail Bend OR 97702
Alfons A. Braccini	Alfons A. Braccini	" " " "
Megan Prince	Megan Prince	810 NW Newport Ave #2 Bend
Cade Prince	Cade Prince	610 NW NEWPORT AVE #2 BEND, TRACT O/CAMP Sherman
Jill L. Current	Jill L. Current	PO Box 7498 Bend OR 97708-7498
Nancy Jurschi	Nancy Jurschi	3075 NW Corbett Rd
Dodd Jurschi	Dodd Jurschi	" Portland OR
Chris Jurschi	Chris Jurschi	" "
Cameron Jurschi	Cameron Jurschi	232 NW George Ave Bend OR 97701

We request that you take legislative action to protect the Metolius Basin by not allowing the construction of destination resorts or similar large developments within 3 miles of the Metolius Basin.

Print Name	Signature	Address
ERIK KAUCLER		21381 PELICAN DR. BEND, OR 97701
Jonathan Manton j.manton2008@gmail.com		476 SW Forest Grove Bend, OR 97702
MICKEY DUETHREN		PO Box 1642 Sisters
KILL DUEHREN		" "
Norm Coffelt		1847 S. E. Landing Way Prineville
DEAN E. PITTS		26074 SW Chedoke Ln Camp Sherman
DON SCHWARTZ		17599 Paladin Blvd Sisters, OR
ERIC STEELE		6807 CHESTNUT PL. SISTERS, OR
GAIL BUTLER		26325 SW METOLIUS RD CAMP SHERMAN, OR 97730
Katie Kruger		1636 NW Lombard Bend - 97701
Kevin Hatfield		3170 187th St. Eugene, OR 97405
Jeff Denzel		1850 SW Forest Ridge Bend, OR
Maria Martinez		20840 Heyford Ave Bend, Oregon
SHARON MILLER		4990 N.E. O'NEAL Redmond, OR 97756
VICKIE HORNBECK		Box 110, Sisters Camp 97710
Ronni Duff		69475 Greendale Ln Sisters
Irene Coats		16008 Cattle Dr. Sisters - OR
Dale Coats		" "
Ray Bahd		1414 NW Bend, OR
Lawrence C Thomas		P.O. Box 354 1422 SE Prineville, OR 97754
Margaret Duke		PO Box 254 689 W St. Sisters, OR 97759

We request that you take legislative action to protect the Metolius Basin by not allowing the construction of destination resorts or similar large developments within 3 miles of the Metolius Basin.

Print Name	Signature	Address
RICK THOMAS	Rick Thomas	26345 Metolius Meadows Camp Sherman 97288
Bruce Shaul	Bruce Shaul	26307 SW Metolius Meadows Dr CS 97230
BOB ROSE	Bob Rose	14867 Bluegrass LP Sisters, OR
BILL MERRILL	Bill Merrill	327 E. TICE DR SISTERS OR 97259
DICK KEUSEC	Dick Keusec	25287 METOLIUS MEADOWS DR CAMP SHERMAN 97730
Philip Blatt	Philip Blatt	13473 Hawks Bend along Butte Road, OR 97259
Linda Davis	Linda Davis	68111 Tapadero Sisters, 97257
RICHARD K QUINN	Richard K Quinn	68404 GEORGE CYRUS RD SISTERS, OR 97259
Sookie Quinn	Sookie Quinn	" "
Sheila Certe	Sheila Certe	70705 Dragon Head BBR, Oregon 97719
James R. Delp	James R. Delp	1685 NE Chestridge Dr. Bend, OR 97701
NEED ADDRESS	NEED ADDRESS	6790 Chestnut Hill Dr Bend, OR 97701
Karen Lillebo	Karen Lillebo	1629 NW Firwood Bend, OR 97701
Les Schell	Les Schell	26325 SW Metolius Meadows Dr. CS
Susan Shaul	Susan Shaul	26307 SW Metolius Meadows Dr. CS 97230
Carol Gilbert	Carol Gilbert	4940 N. E. O'Neil Way Bend, OR 97730
STEVE HANNA	Steve Hanna	PO Box 233 SISTERS, OR 97759
Roger White	Roger White	PO Box 638 Camp Sherman 97230
Merryn Ann Moore	Merryn Ann Moore	merrynann@bend.rod bend-or
Gary Eder	Gary Eder	P.O. Box 72 Powell Butte 97253
Christine Miller	Christine Miller	PO Box 1372 SISTERS OR 97259

We request that you take legislative action to protect the Metolius Basin by not allowing the construction of destination resorts or similar large developments within 3 miles of the Metolius Basin.

Print Name	Signature	Address
J. Clair Sagiv	J. Clair Sagiv	20786 Mira Circle Bend, OR 97701
Beth Hoover	Beth Hoover	3596 NE Jones Rd Bend OR 97701
FRANK L SALE	Frank L Sale	64700 OLD BEND AVE #14 BEND OR 97701
Robb Roavill	Robb Roavill	1468 NW Kingston Bend OR 97701
Shirlee Evans	Shirlee Evans	140 NW Dogwood Redmond OR 97756
RON EVANS	Ronald Evans	140 NW DOGWOOD AVE REDMOND OR 97756
Shane Coffey	Shane Coffey	60920 central st Bend, OR 97701
Jeffery Pinley	Jeffery Pinley	1243 NW STANNIUM Rd Bend, OR 97701
Bart Baenciger	Bart Baenciger	70600 Holmes Rd Sisters OR 97759
DAVID V. BARRY	David V. Barry	70532 Satal PMB 254 Black Butte Ranch 97759
Eloise J. Barry	Eloise J. Barry	" " " "
Sydney Harrison	Sydney Harrison	1039 W Yapack Crater Dr Sisters OR 97759
Roger A Nelson	Roger A Nelson	Po Box 2213 Sisters, OR
Gayla Nelson	Gayla Nelson	69050 Berkeley Dr Sisters OR
Thomas A. Haynes	Thomas A. Haynes	26348 SW Metolius Meadows Camp Sherman OR 97730
Mark Thompson	Mark Thompson	68957 Abraham Ct Sisters
Bunny Thompson	Bunny Thompson	68957 Abraham Ct Sisters
Jim REISS	Jim Reiss	17356 Wilt Rd SISTERS, OR

APPENDIX I

CAMP SHERMAN AREA

LOCAL ADVISORY COMMITTEE PLAN APPENDIX

PART I

INTRODUCTION TO CAMP SHERMAN PLANNING AREA

AREA DESCRIPTION

The Camp Sherman Area comprises the western portion of Jefferson County. The area is bounded on the north by the Warm Springs Indian Reservation, on the west by the Jefferson-Linn County line, on the east by U.S.F.S. Roads 1139 and 1140 and range lines R10E, and on the south by the Jefferson-Deschutes County line.

Lands in the area are owned and managed by the U.S. Government, the State of Oregon, local government and private owners.

Federal Ownership

X The Federal Government owns and maintains approximately 92,000 acres for timber and recreation use. Twelve campgrounds are maintained on the river for overnight and day use. The Sisters Ranger District, Deschutes National Forest, lists Special Use Fees for 112 lots in the Metolius Recreation Unit. These sites are leased to private individuals for use on a seasonal basis. The site is not to be used as a full time residence to the exclusion of a home elsewhere.

State Ownership

The State of Oregon owns two parcels in the area. These are Corbett Memorial State Park (63 acres) and an abandoned fish hatchery site in the Camp Sherman Area (15 acres). The State of Oregon operates the Wizard Falls Fish Hatchery under a Special Use Permit on National Forest Land.

Corbett State Park is a walk-in park located off Highway 20. There is a State Game Refuge in the Camp Sherman Area.

Private Ownership

10 7/10

Private lands in the area total approximately 12,000 acres. Of this amount, a private timber company owns approximately 10,000 acres in use for wood fiber production. Outside of the contiguous land area customarily referred to as Camp Sherman is another approximate 900 acres, mostly in meadows and forest land. Some land is used for grazing and hay production. One 150-acre parcel in the Camp Sherman area has been developed into a 141 lot subdivision called Metolius Meadows.

Jefferson County maintains designated roads on a year-round basis. The County operates and maintains a solid waste container site, located on federal land, under a Special Use Permit.

Also located in the Camp Sherman Area are a church, a fire station, a community hall and a two-room elementary school.

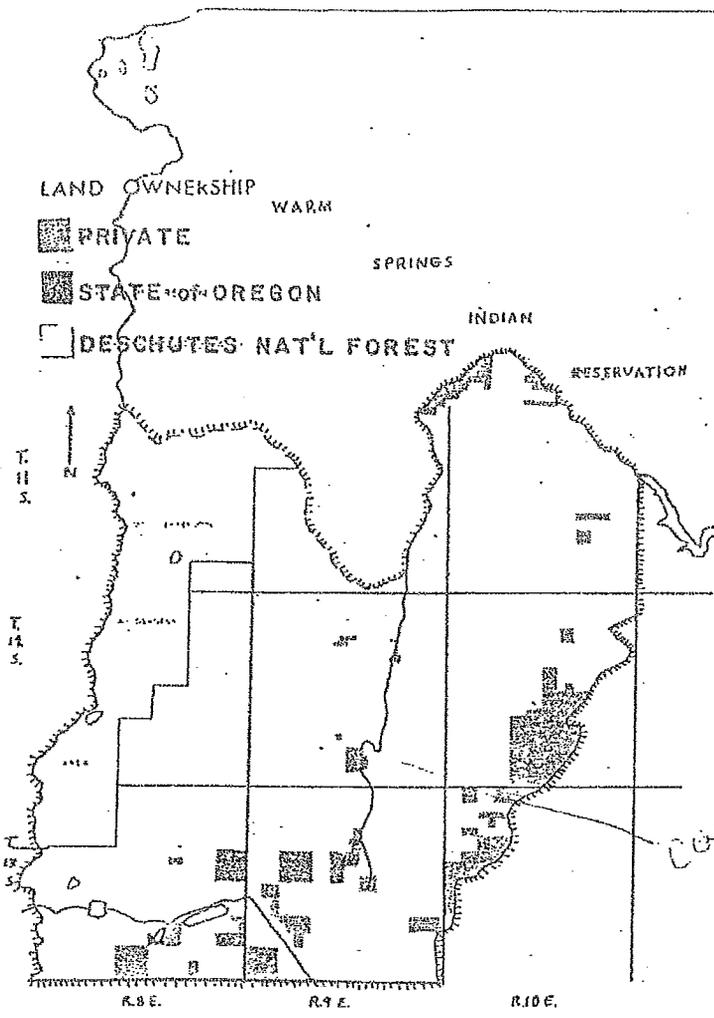
The area's population is concentrated along the upper one-half of the Metolius River; near the lower one-third of Lake Creek, and in the Blue Lake - Suttle Lake Area. The result is a very dense seasonal and week-end population in these three areas.

Population varies due to the seasonal and week-end recreational use of the area. The population consists of:

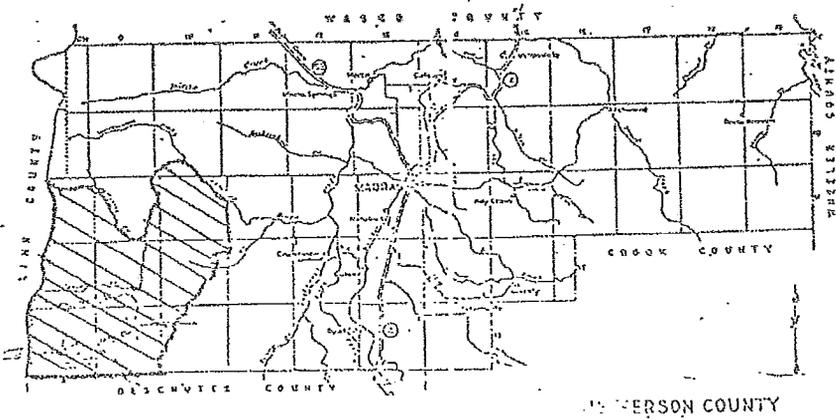
TABLE 1 CAMP SHERMAN POPULATION CHARACTERISTICS

<u>TYPE OF RESIDENT</u>	<u>POPULATION</u>
1. Full-time residents	approx. 134
2. Land owning seasonal residents	approx. 200
3. U.S.F.S. permittees	approx. 250
	<u>VISITOR DAYS</u>
4. Vacationers/Tourists - 1976	395,700*
*Developed Sites	223,300
Dispersed Areas	65,300
Summer Homes	33,600
Other Special Uses	73,500

Map No. 1 on the following page shows the land ownership, the study area boundaries and the area location in the County.



Camp Sherman Area



RATIONALE FOR THE DEVELOPMENT OF A CAMP SHERMAN PLAN

The need for a "Camp Sherman Plan" is based on the area's geographic location in the county, the early development of the area as a resort community, and the amount of public land surrounding the area, most of which is in commercial forest.

The Community of Camp Sherman is located in the southeast corner of the planning area, near the head-waters of the Metolius River. Immediately to the east of the Metolius River rises Green Ridge. This prominent, steep, west-facing fault scarp rising as much as 2,000 feet above the community, forms a geographic barrier. The north end of Green Ridge terminates at a deep canyon cut by the Metolius River. Mainly because of Green Ridge, the main road access to the community, from the east is through Deschutes County. This necessitates 65 miles of travel time between Camp Sherman and Madras, the County Seat. This distance often results in a communication problem.

The Camp Sherman planning area, which is a part of the Jefferson County Comprehensive Plan, is inside the boundaries of the Deschutes National Forest. The largest private land owner in the area is a private timber company with approximately 10,000 acres, which represents approximately 80% of the private land in this planning area.

Of the total land area in Jefferson County, 349,000 acres (approximated one-third of the County) has been classed as commercial forest land. One-hundred thousand (100,000) acres of the commercial forest land lies in the Camp Sherman study area. The County wide plan designates this area of the County as forest lands. Forest lands are available for recreation and other uses that do not hinder forest growth. The Forest Service has developed a program of multiple use management which involves timber cut on a sustained yield basis, fish and game management, forage for grazing, protection of primitive and wilderness areas and protection of scenic quality and increasing opportunities for outdoor recreation.

The most intensive recreation use of the National Forest in Jefferson County is centered around the Metolius River. The scenic qualities of the River are well known and compliment fly-fishing, hiking, and many other outdoor recreational activities.

Based on the early history of the area as a resort community; the intense use of the area now; the amount of public land surrounding the area and its geographic location; the County and the Camp Sherman Community have both recognized the need for specific planning in the area to meet community needs.

The County Comprehensive Plan and the Camp Sherman Area Comprehensive Plan must be coordinated. It is the intent of the Camp Sherman Plan to be more detailed in nature and to provide more specific planning guidelines and procedures to maintain the natural beauty of the area and the rural atmosphere.

HISTORY

Accounts of the early history of the area are sketchy. Reference to the Metolius River and the Camp Sherman Area are found in "Jefferson County Reminiscence" by Many Hands, published by Bindord and Mort, 1957, Portland, Oregon (out of print); "That Was Yesterday" by Tillie Wilson and Alvis Scott, Midstate Printing Inc., Redmond, Oregon, 1974; and "East of the Cascades", by Phil Brogan, published by Binford and Mort, 1964.

As early as 1881, when land was originally surveyed by the U.S. Government, there were already cabins and cattle trails in the locality. Clearings made in the forest and fields were irrigated from adjoining streams by 1885. Some ranches were homesteads and some were school sections purchased from the State.

One of the earliest ranches in the Camp Sherman Area was the Allingham Ranch, located about one mile down stream on the Metolius River from the present Camp Sherman Store. The Ranch was surveyed in 1881 and build in 1884. The Ranch was incorporated into the Deschutes National Forest in 1908.

The first post office on the Metolius River was established March 17, 1885. The office was named "Matoles" after the name of the river. "Matoles" is an Indian term meaning "white fish" or "spawning salmon". It is unclear how the spelling changed from "Matoles" to "Metolius". In 1893, M.J. Allingham became postmistress and the post office was moved to her home. The post office was discontinued in 1896 and mail was sent

to Sisters. In about 1922, the post office opened, in a part of the store at its present location. The office operated only during the summer months and the store operator was appointed the postmaster. In June of 1925, the office had an officially appointed postmaster and was made an all year office in about 1928.

In about 1912, wheat farmers from Sherman County started to come to vacation, to camp, fish and rest after summer fallow was plowed. More neighbors followed the first Sherman County vacationers and by 1920, there was quite a colony of Sherman County folks. They usually fished, hunted, and picked huckleberries as one big family. Gradually the name of the area changed from "Matoles" to Camp Sherman.

Most early day ranches are now resorts or summer homes. These are Lake Creek Lodge, House on the Metolius, Rogers (now Ford's River Resort), Suttle Lake and Blue Lake. The first fishing resort on the Metolius was reported to have opened in 1908. The Lake Creek Resort started in 1919, becoming quite popular for genial hospitality and good home cooked meals. Popularity of the area has increased since the early 1960's.

The residential use of the area varies according to the season with the largest number of people living in the area during the summer months. There are 134 persons living in the area on a year-round basis. Approximately 500 additional persons live in the area during the summer season.

Commercial interests in the Camp Sherman and Suttle Lake areas include two grocery stores, two restaurants, one self-service laundry, one nursery and two marinas.

A significant number of businesses are directly related to recreational activities. Included are seven resorts and trailer parks located in the Camp Sherman Area. In the Suttle Lake - Blue Lake area, there are three church camps and three private campgrounds, two with cabin facilities. In the Canyon Creek area, there is a private saddle club campground. Also, there is a horse rental facility in Camp Sherman and another in the Suttle Lake - Blue Lake area.

PHYSICAL FEATURES AND PROCESSES

Metolius Basin

The study area is principally a gently east-sloping basin at about 3,000 feet elevation bounded by Black Butte to the south, 4,800-foot Green Ridge to the east, and 3,100 to 3,800 feet morainal hills and ridges to the west. The Metolius Basin, composed of glacial outwash, has a gentle slope of .5% to 2.0% and local relief up to about 60 feet. It is characterized by flat-bottomed flood channels 50 to 1,000 feet wide, separated by higher abandoned terraces and gently curved convex interstratum divides. A system of normally dry over-flow channels mostly adjacent to streams occurs in the western half of the basin. Seasonal and perennial streams flow within the flood channels. Near the 3,200 feet elevation, along the western margin of the basin, a slope change causes streams to divide, broaden and meander during high surface runoff, and flooding usually occurs below the change in slope.

The Metolius Basin was formed by a series of downdropped fault blocks from Green Ridge and multiple lava flows coming from the west. Glacial outwash has completely filled and subdued a pre-glacial basin topography in favor of a nearly smooth, gently-sloping surface. This glacial out-wash filled basin has its overflow at the level of the Metolius River. Faults probably provide partial barriers to the eastward flow of unconfined ground water between lava flows. Much of the water may rise, contributing to springs, high water table and the Metolius River.

The present way in which the surface of the Metolius Basin handles water is the result of conditions during the last retreat of glaciers. Melt waters become less charged with glacial silt, sand and gravel and instead of adding material to the basin, it began to erode and remove material. Wide flat-bottomed scour channels were formed. Small overflow channels were cut when sudden increases in discharge could not be handled by the more shallow scour channels. Water channels would spread out fan-like, forming a pattern of over-flow channels.

These conditions are little changed today. Water, during high discharge, will follow the same over-flow channels which are usually one-half to three feet deep and will cover the entire floor of flat-bottomed scour channels to a depth of a few inches to 2 or 3 feet. During exceptionally high discharge rates, water will sheet-flood most of the Metolius Basin; that is, those areas with flat or concave surfaces. Water depths in sheet-flooding vary from one inch or less to several inches. Well defined inter-channel divides do not appear to flood.

The water sources of the Metolius Basin consist mainly of springs, glacial streams and wells. The major springs of the basin are the Metolius Springs, Cold Springs, Allingham, Hiesing, Jack Creek, and Wizard Falls. Lake Creek is included as a major water source. There are hundreds of minor springs throughout the basin. In the Hiesing area alone there are 108 springs. Springs are a good source of potable water but they must be well-boxed and screened.

Glacial streams fall into two groups, annual and seasonal. These are the streams that cause most of the flooding of the Metolius Basin. Glacial streams are not suited for human consumption in their natural state.

Groundwater below 3,200 feet elevation probably occurs at depths of 50 feet or less throughout the year over nearly the entire basin. Near the Metolius River, the water table is very shallow. The Metolius River represents minimum elevations that groundwater is likely to be encountered in the basin. Springs erupt above the Metolius River where the water table level encounters the surface. Slight variation in flow rates suggest distance sources to the west. Confined aquifers in the High Cascades probably fill unconfined aquifers in glacial out-wash

under the 3,200 - 3,800 foot contour lines. Other confined aquifers under the basin probably slowly and continuously release groundwater to basin material from between lava flows. This is due to north-south faults in bedrock along the Metolius River, under the 2,960 foot contour line, and under the 3,040 foot contour line. They provide barriers or partial barriers to the eastward flow of groundwater.

Soils

The soils of the Metolius Basin are derived from basically two origins, glacial and volcanic. Because glacial out-wash comprises a good part of the study area, it is of most importance to the Camp Sherman area. Glacial soils have gentle slopes of 0-10% and are 1-3 feet deep sandy loam with underlying deposits of out-wash gravel and stones. This is the area where the water table is the prime consideration for any development.

The glacial till of the study area is composed of unsorted and unstratified rock fragments deposited by glacial ice and melt water. Wind and water erosional processes are particularly sensitive to the presense or absense of trees, vegetation and vegetal mats on valley slopes. Erosion in this manner would be greatly accelerated by the removal of trees and foliage along the valley slopes. Some valley floors cannot support vegetation because of high-water discharge rates and removal of most silts, sands and gravel. Increased erosion of valley slopes would increase the size and width of the valley floor boulder field. Control of erosion and growth of vegetation under these conditions would be difficult.

Volcanically derived soils are generally located in parts of the study area that are not suitable for development or habitation because of slope, inaccessibility and climatic factors. They are usually well-drained so the water table is not a limiting factor, however a lack of a high water table is a limitation on development because of the difficulty of obtaining water from deep wells.

PART III

GOAL TOPICS

AGRICULTURE

The County Planning Department and the Camp Sherman Advisory Committee, in reviewing the state-wide Agricultural Planning Goal finds that the Agriculture Goal is inappropriate for the planning area. The facts and findings justifying this decision are:

1. The geographical location of the area, with late spring and early fall frost eliminates the consideration of the area for commercial agriculture development. The last attempt of a commercial crop in the area was an effort to grow mint on natural meadow land (less than 100 acres). The trial was a failure. This property has since been subdivided under the name of Metolius Meadows Development.
2. Very little of the private meadow land is actually used for grazing. Of the possible 250 acres more or less available for grazing, approximately 100 acres is used for this purpose. The National Forest acknowledges that the Metolius area has a good potential for forage production. However, the facilities needed to control livestock in a high recreation area would make the operation uneconomical. Further such "facilities" would cause conflicts with open space activities and other permitted uses of the national forest. Permits in the future will be recreational permits.
3. Total farm income in the area is less than \$2,000.00. Because of the short growing season, there are no prospects for future new crops in the area.

Even though the agricultural goal does not apply, this does not preclude minor agriculture activities in the area such as gardens or livestock on an incidental basis.

FOREST GOAL

The Jefferson County Comprehensive Plan proposes to designate nearly all of the lands in the Camp Sherman planning area as commercial forest lands. The lands immediately to the north of Camp Sherman, on the Warm Springs Indian Reservation, have also been designated as commercial forest lands. This classification is based on the classification of area by the Jefferson County Land Classification Committee, as Class II Timber Land.

The Camp Sherman Advisory Committee takes an exception to the Forest Goal on approximately 900 acres. These areas are identified on Map # 2. Portions of these parcels are Class III, primary use is grazing, not timber products.

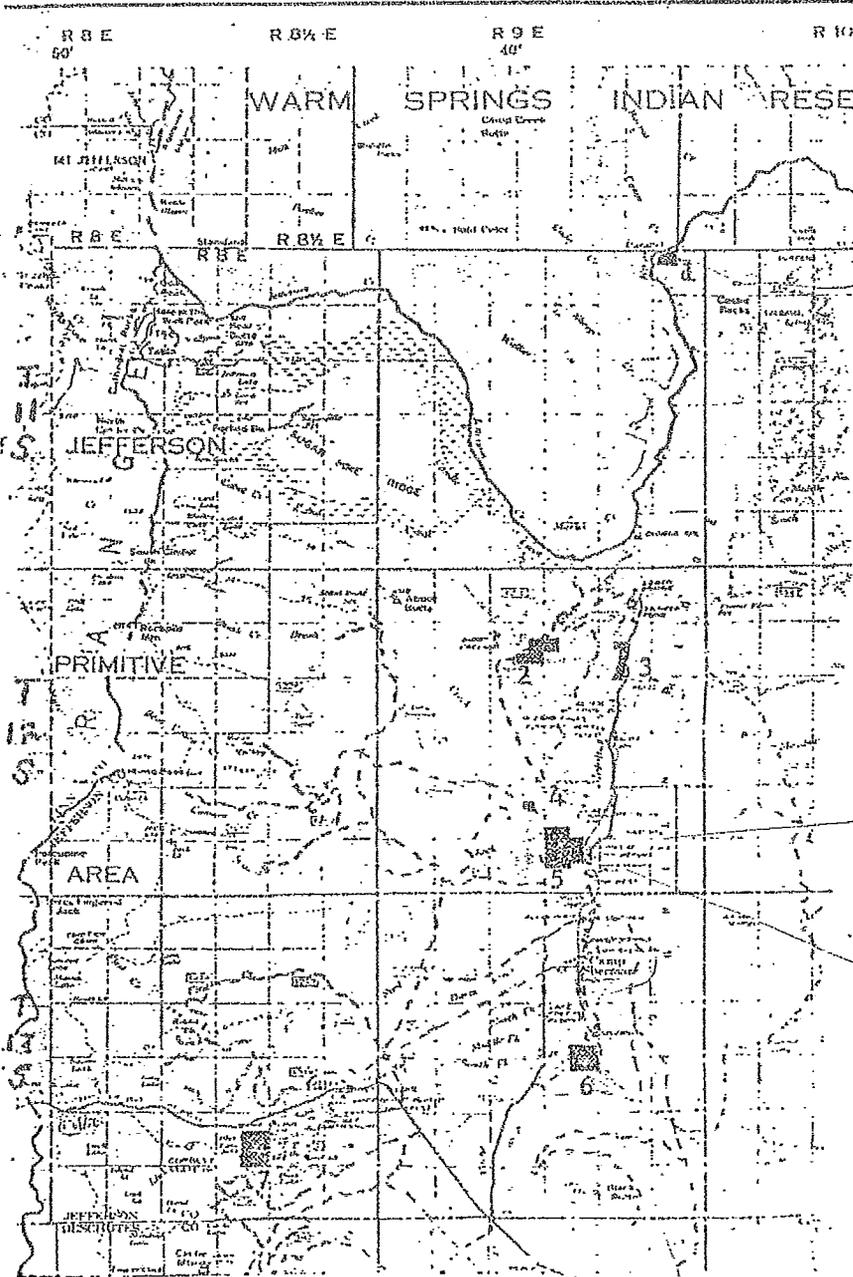
Exception

The "need" for the exception to the Forestry Goal on the parcels of land indicated on Map # 2 was agreed upon after a review of the land capabilities and their location. These parcels are located along major roads and/or on major water resources of the area. These parcels are not important for timber production. Revenue from timber harvest sales have been very limited. Provisions should be made for future resort-recreational development to occur on these lands.

The soil capabilities of the parcels indicate a limited potential for timber production. A review of the mapping units pertinent to the parcels are described in the Deschutes National Forest Soil Resource Inventory - 1976. Each mapping unit contains a dominant land type which accounts for at least 70% of the unit. Mapping units indicate that portions of the lands have wet meadows and are subject to high water tables; bottom lands; barren cinder cones, and steep slopes of 25% to 75% slope.

Portions of each parcel may support a commercial timber stand. However, lands to be considered for future development should be the lands adjacent to the main roads and major water resource. Soil capabilities making lands unsuitable for timber production also will limit the lands suitable for development. These requirements can be a part of the zoning for the lands.

LANDS EXCEPTED FROM FOREST GOAL



Parcel Identification and Acreage

1. T11S, R9E, Sec. 1 - 20 ac.
2. T12S, R9E, Sec. 9&10
160 acres.
3. T12S, R9E, Sec. 11 & 14
74 acres.
4. T12S, R9E, Sec. 28
20 acres.
5. T12S, R9E, Sec. 27 & 34
266 acres.
6. T13S, R9E, Sec. 15 & 22
158 acres.
7. T13S, R8E, Sec. 27
200 acres

Handwritten signature: Amy Skidmore

*Handwritten notes: House
near road*

*Handwritten notes: Blue lake
head water*

"Alternatives" for timber production are the remaining lands in the area, which will not require an exception. These lands in the forestry goal will not be available for development. Rather, they will be preserved for their timber production. Future development is to occur on only the lands excepted from the Forestry Goal.

The "consequences" of not applying the goal to the excepted lands will be the spreading of development in the area. Developments now are at three sites. These are the community of Camp Sherman, the House on the Metolius and Blue Lake-Suttle Lake areas. The developments are on lands marked for exception from the forestry goal. As noted earlier, the lands are some of the least productive timber lands in the area.

Development of the 900 acres can be "compatible" with the adjacent forest uses. This fact has been proven by the past history of the area. Development standards for the area will protect against nuisance complaints against forestry operations and to avoid trespass on forest lands.

The remaining lands in the planning area are suitable for forest use and are designated commercial forest land. Existing forest land* and forest uses* shall be protected unless proposed changes are in conformance with the Comprehensive Plan.

* Definition:

Forest Lands - are (1) lands composed of existing and potential forest lands which are suitable for commercial forest uses; (2) other forested lands needed for watershed protection, wildlife, fisheries habitat and recreation; (3) lands where extreme conditions of climate, soil and topography require the maintenance of vegetative cover irrespective of use; (4) other forested lands in urban and agricultural areas which provide urban buffers, wind breaks, wildlife, fisheries habitat, livestock habitat, scenic corridors, and recreational use.

Forest Uses - are (1) the production of trees and the processing of forest products; (2) open space, buffers from noise, and visual separation of conflicting uses; (3) watershed protection and wildlife and fisheries habitat; (4) soil protection from wind and water; (5) maintenance of clean air and water; (6) outdoor recreational activities and related support services and wilderness values compatible with these uses; and (7) grazing lands for livestock.

Based on the geographical and environmental constraints of the area, the study area has been arbitrarily divided into three zones. These are:

1. The Mt. Jefferson Wilderness Area, represents approximately 33,000 acres in the extreme western part of the area. County policy supports the restrictions of no logging or cutting in a natural wilderness area.

2. The area bordered by the Mt. Jefferson Wilderness on the west to a north/south line slightly east of Green Ridge (between Range 9 and Range 10) contains 4,093 acres of private timber lands. These forest lands are to be maintained for forest uses, except the lands excepted from the Forest Goal. Lands not excepted would have no provisions for transition. Land trades would be permitted. All proposed trades should be made public to the community.

3. The timber lands from Green Ridge to the east boundary of the planning area. This area contains an additional _____ acres of private land which is inside the National Forest Boundary. The same forest use provisions apply to lands in this area which are not excepted from the forestry goal.

Policies

Timberland, which covers most of the planning area is one of its most important natural resources. The timberlands of the area are to be maintained for timber products. The preservation of this natural resource is essential to the visual quality of the area. Care must be taken in the harvesting of the timber to preserve this natural and visual resource. This applies to both the private and U.S.F.S. lands.

It is the policy of the private land owners and the Forest Service to clear cut in isolated cases only and when no other solution can be found.

The County policy on public forest land is generally the same as Alternative III in the Deschutes National Forest Land Management Plan. This alternative is essentially the same practice that the Forest Service now follows in the area.

No off-road vehicle uses should be permitted (including motor bikes), because of ecological damage due to soil conditions. Snow-mobiling should

be permitted only on designated U.S.F.S. roads. Curtailment of "open" U.S.F.S. roads to the general public and curtailment of public camping except in designated campgrounds or camp sites is also recommended, due to the greatly increased hazards of fire, degradation of waterways, and destruction of the forest cover.

Alternatives

One alternative is that the private lands in the area, other than specific private parcels be excepted from the forestry goal, and therefore available for development. The commercial forest lands are to be maintained for timber production only, with no provisions for change of use. No land partitionings are permitted, no home sites allowed.

A second alternative is that all lands in the area having been classed as forest land by the Jefferson County Land Classification Committee will be zoned for forest use only with the possible provision of allowing single family dwellings on 40 acre tracts.

The third alternative is that all private lands in the area be treated equally. Private timber company land would not be zoned more restrictive than other lands in the area.

Alternative number one (1) has been selected as the best choice.

Proposed Zoning

The zoning map will show Mt. Jefferson Wilderness Area in the Forestry Zone. The Forestry Zone also applies to all lands in the planning area not excepted from the Forestry Goal. The Forestry Zone purpose and intent is to provide for the continued practice of timber production, harvesting, and related uses.

The lands excepted from the Forestry Goal are to be zoned Resort-Residential. Outright uses in the zone will permit single-family dwellings, two-family dwellings, gardens, nurseries, grazing, keeping of domestic animals on an individual basis.

OPEN SPACES, SCENIC AND HISTORIC AREAS AND NATURAL RESOURCES

Land Needed for Open Space

The principal owner is the U.S.F.S. The present multiple-use concept states that all Forest Service Land will be managed, not just for timber production but also for aesthetic values, wildlife protection, recreation, soil and water protection. These practices assure adequate space for the area at large.

Mineral and Aggregate

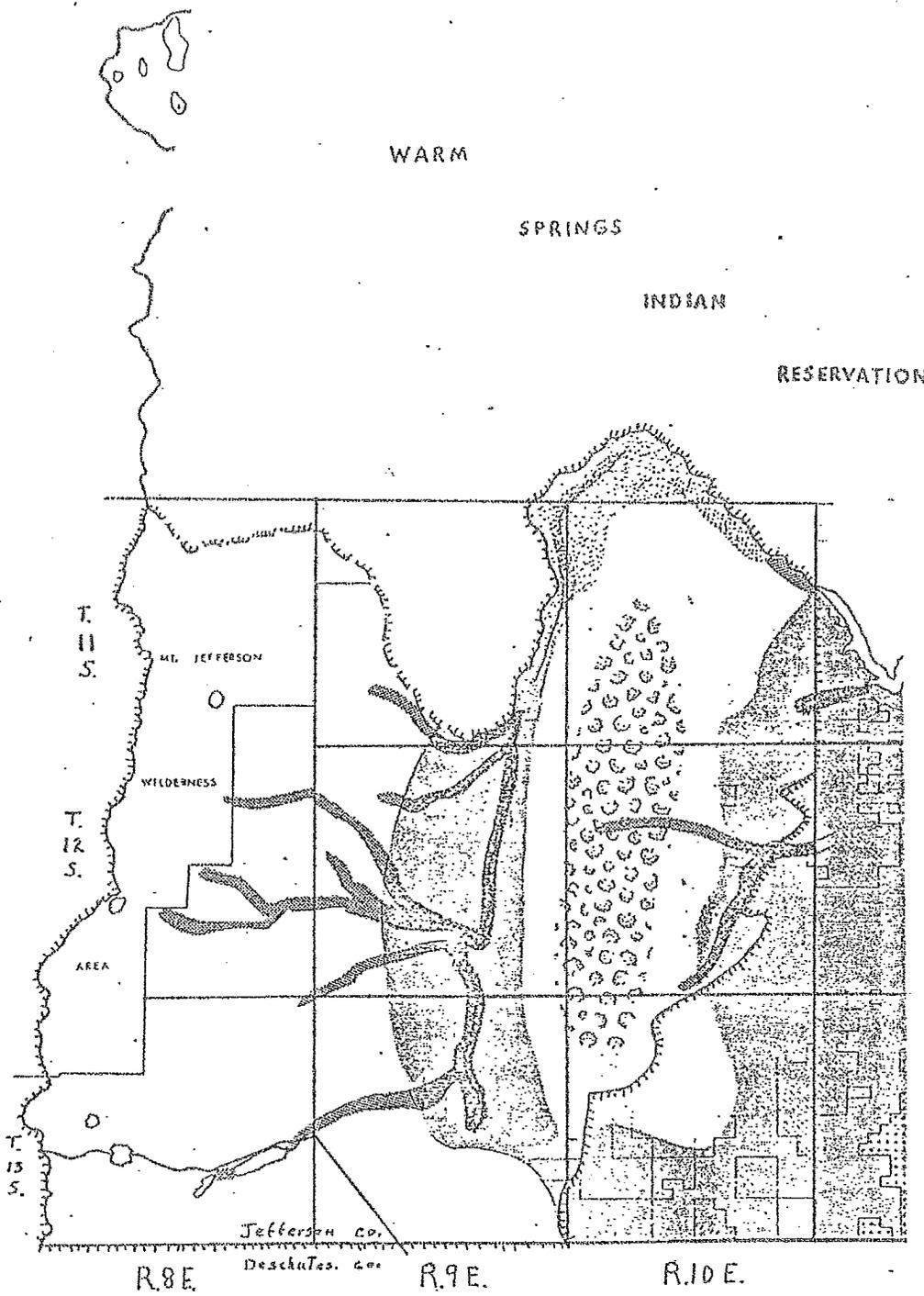
There is one active aggregate site in the area, the Shilling Pit on U.S.F.S. land. The pit is on the west side of Road 1138, a mile west of the Wizard Falls Fish Hatchery. There are no other sources of mineral or aggregate in the area west of Green Ridge.

Energy Sources

There are no known energy sources in the area.

Fish and Wildlife Areas

Fish and wildlife habitats are well documented in the area. Fish resources consist of rainbow trout, dolly varden, brown trout, brook trout, cutthroat, kokanee, atlantic salmon, and whitefish. The native population is supplemented by stocking programs. The Wizard Falls Hatchery on the Metolius is the primary source. Forty thousand legal rainbow trout are stocked annually in the Metolius River. A 1974 "creel check" showed anglers caught fish at a rate of 0.7 fish per angler and 0.42 fish per hour. Metolius River Creel Census Study for 1976 reports 38,000 angler visits. Angling pressure and catch rate highest in bait fishing area. Suttle Lake receives 6,000 rainbow trout annually and Blue Lake 12,000. The kokanee population is self-perpetuating in Suttle Lake. The stocking of other lakes is done annually by airplane as follows:



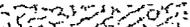
DEER WINTER RANGE 
 STREAMSIDE VEGETATION 
 TURKEY AREA 
 LIMITED ACCESS AREA 

TABLE 2 FISH STOCKING IN AREA LAKES

Booth Lake - 800 brook
Cabot Lake - 400 brook
Carl Lake - 500 brook
Catlin Lake - 400 brook
Dollarnine Lake - 200 cutthroat
Link Lake - 800 rainbow
Martin Lake - 200 brook
Minto Lake - 300 cutthroat
Patsy Lake - 200 brook
Round Lake - 1,000 brook
Hank Lake - 500 cutthroat
Island Lake - 500 brook
Jack Lake - 500 rainbow
Jefferson Lake - 400 brook
Koko Lake - 300 rainbow
Shirley Lake - 400 brook
Square Lake - 2,000 brook
Summit Lake - 600 brook
Table Lake - 400 brook
Wasco Lake - 1,000 brook

Numbers of released fish are adjusted annually depending on conditions of the population.

The principal spawning areas for these fish are shallow clear waters with gravel bottoms. The protection of these areas are of critical importance. All of the streams and lakes mentioned in the section on water resources are inhabited by the various species.

The mule deer is the principal large game animal in the area. A State Game Refuge along both sides of the upper one-third of the Metolius River provides a dual role of protecting the deer, residents and tourists. Outlined on Map # 3 is the area identified by the Department of Fish and Wildlife as part of the prime deer winter range (where they can survive the winter). This is of extreme importance as there are no alternatives.

Map # 3 shows the deer winter range area, State Game Refuge and principal spawning area of dolly varden, rainbow and kokanee.

Other wildlife of significance in the area are Bald Eagles (Suttle Lake and along the Metolius River), Osprey, a small herd of elk that winters in the Smith Cabin-El Rancho area, bear, coyotes, cougars, grouse, morning doves (during the summer), ducks, geese, blue herons, water ouzels, and many other species of birds, mink, porcupines, and raccoons.

Ecologically and Scientifically Significant Areas

Ecologically and scientifically significant areas are: Metolius Research Natural Area, the Head of the Metolius, Mt. Jefferson Wilderness Area, Suttle Lake Area, Black Butte, Upper Metolius Area, Castle Rocks, and Elliot Corbett State Park.

Outstanding Scenic Views

Scenic views and sites include, Upper Metolius Area, Head of Jack Creek Nature Trail, Wizard Falls Fish Hatchery, Metolius Natural Area, Suttle Lake Area, Mt. Jefferson Wilderness Area, Castle Rock and Corbett State Park. (See Recreation Section for further information.)

Water Resources

Water resources are perhaps the most important resources in the study area. The major water resource of the area is the Metolius River. In addition, there are several tributaries and lakes.

TABLE 3 STREAMS IN CAMP SHERMAN AREA

Lake Creek	
Spring Creek	
Cold Springs Resort Spring Creek	
Cache Creek)	
Davis Creek)	Springs run-off flows
First Creek)	
Jack Creek	
Canyon Creek	
Abbot Creek	
Candle Creek	
Jefferson Creek	
Miscellaneous springs	

TABLE 4 LAKES IN CAMP SHERMAN AREA

LAKE	SIZE
Suttle Lake	253 acres
Blue Lake	65 acres
Round Lake	22 acres
Dark Lake	30 acres
Scout Lake	8 acres
Cache Lake	8 acres
Hand Lake	12 acres
Link Lake	18 acres
Island Lake	8 acres
Circle Lake	2 acres
Jack Lake	4 acres
Jefferson Wilderness Lakes (16 major lakes)	

Wilderness Areas

The area of the Mount Jefferson Wilderness Area is approximately 33,000 acres in size.

Historic Areas and Sites

Historic areas or sites include: (1) Camp Sherman, its name acquired from the wheat farmers of Sherman County coming to the area after wheat harvest to hunt, fish, and relax;

- (2) Allingham Ranch, the earliest ranch in the Camp Sherman area, and
 (3) Smith Cabin Site. Note: ecological, scenic and historic sites will be found on a map in Recreation Section.

Cultural Areas

There are no cultural areas to be considered.

Recreation Trails

Potential and approved Oregon recreation trails in Jefferson County are:

1. The Pacific Crest to Desert Trail (Ochoco). The proposed trail is 70 miles long, 25 miles is existing. This is a hiking and horse trail.

2. Pacific Crest Trail - 6 miles of which is in Jefferson County. This is a hiking and horse trail. (See Recreation Section for further information.)

Designated or Potential Scenic Areas

The only potential scenic waterway in the area is the Metolius River.

Ten miles of U.S. Highway 20 in the planning area is an Oregon Designated Scenic Highway.

Policy Development

One goal of the Camp Sherman Area Plan is to develop policies and guidelines to:

- a. insure open space
- b. protect scenic and historic areas and natural resources for future generations; and
- c. promote a healthy and visually attractive environment.

It is essential that the Camp Sherman Plan develop the policies necessary to achieve this goal.

The management of many of the reserves are in the hands of the state and federal agencies. However, this does not preclude the development of programs at the local and county level that insures local input in the resource management. It is required by state law that all agencies develop coordinated plans.

Additional open space requirements can be obtained on private lands by developing land with special attention to the cluster concept.

The water resource is being protected by the monitoring on ground water in the area. Limited monitoring of groundwater levels along the Metolius River and Lake Creek began September 20, 1971. Eighteen test holes 30-85 inches deep were dug adjacent to homes.

It is recommended that all streams and water-ways, lakes and shorelines be designated as open spaces. Riparian lands should have one hundred foot set-back requirements for any development.

AIR, WATER, AND LAND RESOURCES

Air Resources

The main source of smoke in the Camp Sherman area, especially in the fall, is slash burning in the Willamette National Forest. Other sources of smoke are from slash burning in Deschutes National Forest along with field burning in the Madras area and the Willamette Valley. The U.S.F.S. operates a smoke management dispersal system based on wind and humidity. The Federal 1977 Clean Air Act Amendment classified Mt. Jefferson Wilderness as Class I. Class I areas are subject to the most stringent restraints on air quality deterioration. Land use development in or near a Class I area must be carefully reviewed to assure that no impacts occur on the air quality of the Class I area. These regulations are directed toward Prevention of Significant Deterioration (PSD) areas. The PSD regulations apply to activities of the U.S.F.S.

Water Resources

The protection of the water resources in the area is of paramount importance. Point pollution (from specific sources such as a septic tank leak) and non-point pollution (such as may result from logging operations) must be prevented or controlled. Subsurface sewage disposal is a documented threat to the water resources of the study area. Increasing the number of septic tank systems significantly affects the water quality of the area. However, complete elimination of subsurface sewage disposal will not necessarily preserve the resource. A sewage system treatment facility can cause water resource problems as well. Such a system would likely encourage a much higher population density, perhaps causing a variety of environmental impacts.

The Metolius River is the most productive water supply of any tributary rising within Jefferson County. The fifty six-year (1921-1976) average total flow for the Metolius River is 1,087,000 acre feet per year. This translates into an average flow of 1501 cubic feet per second. Most of the surface water yield comes from the western side of the Deschutes Basin, from streams rising in the Cascade Range.

The first seven miles of the Metolius River drain an area of approximately 177 square miles from Mt. Washington to Mt. Jefferson on the Cascade

Crest. Before reaching the Metolius River, most or all water from this drainage area passes over the surface of the Metolius Basin, through glacial outwash, and through deep confined aquifers. This produces springs, near-surface ground water levels, and flooding.

Non-point pollution such as that produced by logging or agriculture is a possibility in the study area. In the past there has been little evidence of pollution from this source but it should be closely monitored to prevent such pollution.

Solid Waste

Solid waste in the area is deposited in a container transfer site maintained by the County. It seems to be a much better system than the land fill that had been used in the past. Solid waste not suitable for the container site is deposited in a land fill in another area.

Noise

Noise pollution is minimal because of lack of industry in the area. Noise pollution comes from the general use of the area by people. Control must be maintained over the use of motorcycles, snowbomiles, boats or any type of vehicle capable of noise pollution.

Soils

The suitability of soils for development or wildlife activities have limitations, such as soil wetness, bearing capacity, erosion and compaction hazards. The soils along the river and streams are quite fertile.

Soils in areas most likely to be developed for residential use are poorly suited for septic systems due to the periodically high water table and sub-surface flow toward the Metolius River. A grayish colored cemented glacial till occurs throughout the west central section of the area. This material is generally present at the depth of 2 to 5 feet from the surface and has a tendency to restrict spring runoffs. These drainages should be recognized and managed with the maximum water flow potential in mind. Soil texture in the area is fairly uniform and is usually in the

range from sandy loam to loamy sand. Water percolates readily through the soil material, and the soil has a tendency to dry out rapidly unless it receives fairly continuous water supplies. Some of the most severe erosion problems in the area have been observed on very gently sloping land. Many weakly defined intermittent drainages are present. Due to the gently sloped channel, changes will occur often. Soil compaction will be a problem with heavy traffic, either by vehicles or by foot, when soils are moist on relatively gentle slopes. Soils on the steep slopes have a relatively high displacement hazard and are dislodged easily by foot or vehicle when the soil is dry.

A Camp Sherman Area goal is not to allow any land use that exceeds the carrying capacity for the resources.

NATURAL DISASTERS AND HAZARDS

If the past is a criteria for the future there seems to be less danger from natural disaster than exists in other parts of the country. Other than stream flooding, minor ground water and some erosion, there are no specific areas of natural disaster and hazards.

Fires are probably the greatest hazard to the entire area. The area is 90% U.S. Forest land with heavy fuel cover which has the potential of becoming a major fire problem. The fire break on Green Ridge will help contain fires coming from the east. Development standards should specify buffer zones on the main roads to help reduce the spread of fire.

Flooding

Mild to severe flooding occurs throughout the Upper Metolius Basin usually between January and May. During this period, small changes in temperature and precipitation can be followed by rapid increases in surface runoff. Flooding conditions first appear in flat-bottomed flood (scour) channels where streams overtop their narrow channels. Increased surface discharge will deepen water in flat-bottomed flood channels and will fill the many small sinuous overflow channels that lace the entire Upper Metolius Basin. Very high surface discharge will cause sheet flooding over most of the area, with severe flooding conditions near all streams. Frozen ground causes extensive sheet flooding because rain or melt water

cannot sink through the frozen layer. Widespread flooding conditions have an estimated recurrence interval of about 10 years. Less widespread flooding is common.

Areas with a minimum flood hazard are well-defined, gently-curved convex divides. They are common in the northern half of the Upper Metolius Basin but not the southern half. If the surface of an area is flat (not necessarily horizontal) or concave, even mildly so, it is subject to sheet flooding.

Water depths in flooded flat-bottomed scour channels are usually a few inches to 2 to 3 feet. The water usually flows sluggishly with little erosion capability due to dense vegetation. Water depths in overflow channels can be as deep as the overflow channel which is usually 1/2 to 3 feet deep. Water in these channels can be quite swift, removing seedlings and soil. During sheet flooding, water depths are 1 inch or less to several inches. Large amounts of loose topsoil, sometimes several inches can be removed and deposited over more level ground. Man-made north-south barriers such as roads, ditches, and disturbed ground are subject to possible erosion because they create dams and a multitude of miniature steepened stream gradients.

Flooding has occurred in the more developed areas of Camp Sherman.

Erosion

Ground erosion has occurred to a small extent in the area but doesn't seem to meet the standards for natural hazard probability. There have been no land slides in the area in the past and occurrence is unlikely in the future.

Wind

In 1933, a wind storm did do some damage to property in the area, mostly to timber blow down, but very little to buildings. In October, 1962, another wind storm hit the area causing only timber blow down.

Earthquake

The Metolius River Area lies within an area where moderate damage (Intensity VII) due to earthquakes can occur. Estimated seismic activity for the Deschute Umatilla Plateau is one Intensity VI-VII earthquake per 40 years. An Intensity III earthquake occurred in Bend in 1973.

RECREATION

The topic of recreation refers to existing and future demands by citizens and visitors for recreation areas, facilities, and opportunities.

The natural geology, vegetation, climate, and hydrology of the Camp Sherman Area have provided a prime recreation area. Recreation has provided the foundation for economic development of the community.

The natural beauty of the area is its principal amenity. History tells us that the pressure on this amenity will continue to intensify. This plan should provide measures which control and divert future development in a manner which is complimentary to the natural beauty of the area.

The following inventory of recreation facilities have been prepared from U.S. Forest Service maps and with the aid of the local Forest Service Staff:

TABLE 5 CAMP SHERMAN AREA TRAILS

Metolius River Trail
No. 73 Round Lake
No. 65 Square Lake
No. 92 Meadow Lake - Hortense Lake
No. 91 Dark Lake
No. 82 Black Butte
No. 75 Jack Lake
No. 76 Minto Pass
No. 70 Rock Pile Lake
No. 69 South Cinder Peak
No. 68 Abbot Lake
No. 67 Sugarpine Ridge
No. 66 Patsy Lake
No. 84 Table Lake
No. 81 Reservation Point

Climbing

Mountain and rock climbing is readily available in our vicinity. The plan will continue to maintain access to Mr. Jefferson Wilderness Area.

Motor Bikes

Motor bikes are becoming increasingly popular for transportation and recreation. Motor bike activity should be limited to the use of the existing road systems. The hydrology of the area and the fragile nature of the soil prohibit extensive off-road motor bike activity.

Equestrian Activity

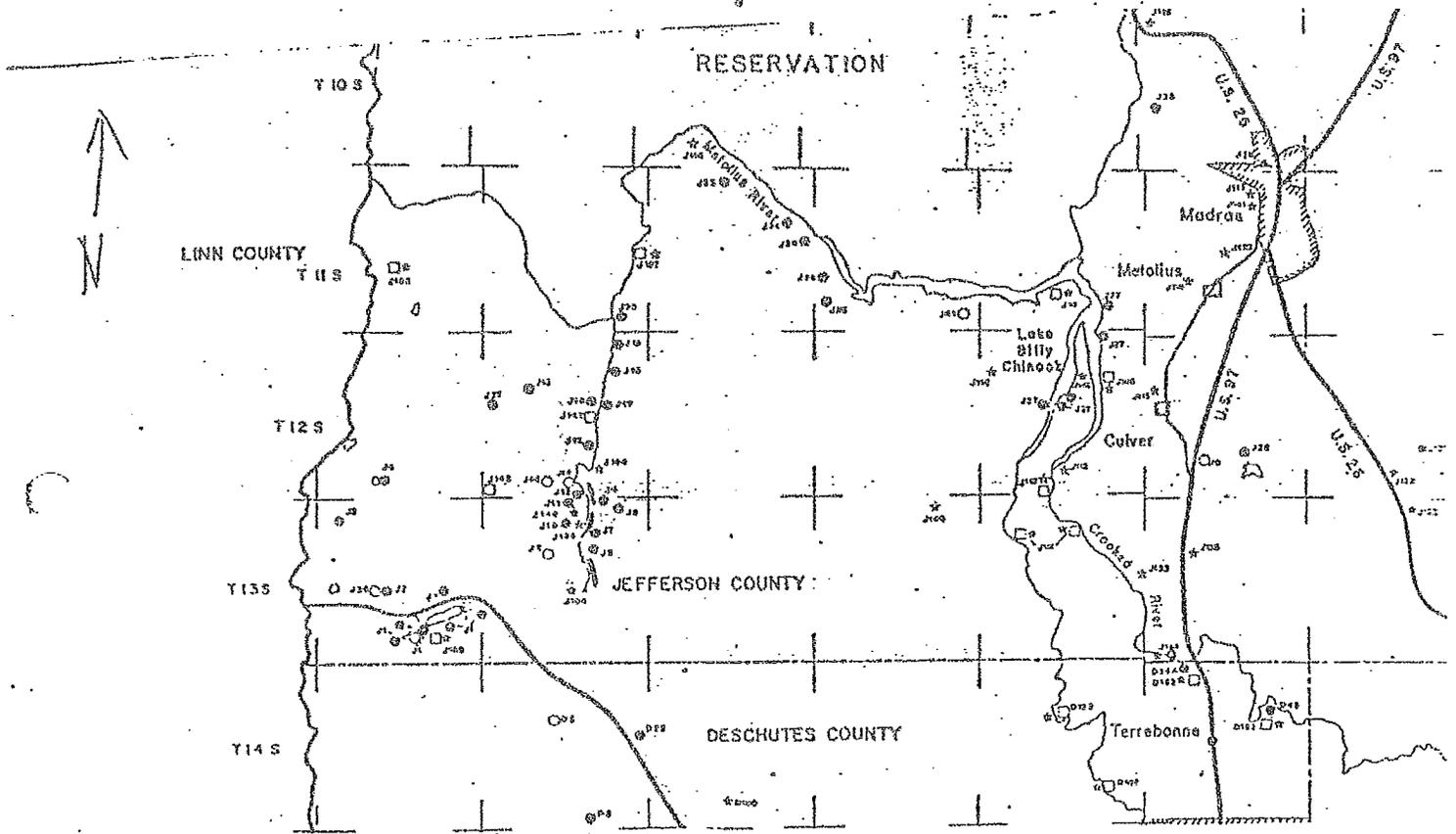
The area is ideal for horseback riding, hunting and fishing. There are five existing trail roads where unloading ramps are available. These include Jack Lake, Jefferson Lake, Cabbot Lake, Roaring Springs, and the Redmond Saddle Club. It is recommended that these stations be maintained and consideration be given to a north/south horse trail along the Green Ridge shaded fire break. The Forest Service is currently considering expansion of existing roads for horse trails from the Prairie Farm area south and north along Green Ridge.

Recreation Development

Table 6 presents the existing recreational development in the area. See map 4 for locations.

TABLE 6 RECREATION DEVELOPMENT

J- 1	Suttle Lake/Blue Lake Area
	Link Creek - Church Camp
	Methodist Youth Camp - Church Camp
	Scout Lake - Forest Service
	South Shore - Forest Service
	Suttle Lake Picnic Grounds - Community Kitchen
	Blue Bay
	Corbett State Park
	Blue Lake Resort - Private
	Camp Tamatack - Private girls camp
	Suttle Lake Resort - Resort



CAMPGROUNDS

- ⊙ Public
- Private

SUMMER HOMES

- ★ Natural Areas
- Scenic Areas
- ✱ Historic Areas

Additional recreation opportunities are available to the Camp Sherman Area. Some of these opportunities would include man-made sporting facilities such as a year around play field at Black Butte School and an opportunity for ice skating in the vicinity of Camp Sherman (possibly the use of an abandoned fish pond at the hatchery.) It is imperative that the community remain in close touch with the Confederated Tribes to determine their plans for major ski developments. The Camp Sherman area could be affected by access to such a ski area.

In conclusion, recreation is an integral part of Camp Sherman. The Forest Service logically will provide some funds for expansion of recreation programs and for this reason it is recommended that the strong liason between the community and the Sisters Ranger Station be continued. The community should explore alternate sources of funding to supplement those funds provided by the U.S.F.S.

Recreation Goals and Objectives

The intense recreational use of the area requires that efforts be made to maintain or improve the present level of quality and personal satisfaction of use of the area.

It is tourists, vacationers, and fishermen that comprise the major users of the area, and it is the U.S.F.S. and commercial resorts that are responsible for this segment of the population. It is therefore essential that these two agencies maintain close communications with and adherence to the Department of Fish and Wildlife, the Department of Environmental Quality, and Jefferson County Sanitation and Planning Departments specifications, and to requests to insure the maintenance of the quality recreation of the area.

In addition, the full-time and part-time residents and landowners must maintain close adherence to the specifications and request of the DEQ and County Sanitarian and Planning Departments.

Finally, it is recommended that, because of the periodic dense population in the area, emergency services be developed or improved to cover all segments of the population. These services should include adequate fire protection, emergency medical care and evacuation, and police security.

Future recreational activities in the area may be affected by U.S.F.S. actions and by changes in regulation of the Metolius River. Potential changes include:

1. The "phasing out" of some of the summer home permit sites. Such action may be taken in favor of providing additional day use space along the Metolius River. The community does not favor the removal of the recreational residence sites from along the river.
2. The Forest Service may find interested parties that would be willing to assume the operations of certain campgrounds. It is known that the Forest Service is looking at this possibility in isolated instances.
3. The Metolius River, widely known for its fly fishing beauty, can be changed to allow bait fishing as well. This action would have an adverse effect on the people who visit the area.
4. Consideration of regulations for canoeing, kayaking, and floating the Metolius River. This move appears consistent with the desires of the sport fishermen.

Since the vast majority of the land in the study area is government owned and controlled, the Camp Sherman Community must provide strong and specific direction for recreation planning. The Community as a whole has the added opportunity to serve in an advisory capacity to the forest service and insure that recreation planning is compatible with the Comprehensive Plan.

It is recommended the size of the game refuge be increased. The proposed boundaries are the head waters of the Metolius River to the south, Green Ridge to the east, Bridge 99 to the north and Forest Service Road 1138 to the west. The Department of Fish and Wildlife has been charged with the responsibility of protecting the wildlife.

As an alternative in considering the other recreation benefits of the area, it is recommended that the Department of Fish and Wildlife emphasize recreation benefits other than hunting, and provide a no hunting area to include all populated areas in the Camp Sherman vicinity.

Jefferson County should acquire ownership of the old fish hatchery property to be used as a community park and/or the property may be sold to the School District.

The following are recommended for additions to the existing trail system:

1. Castle Rock Lookout Point
2. A north/south Green Ridge trail (along the shaded fire break)
3. A conversion of the existing roadway north of Bridge-99 along the Metolius River to the trail status.
4. A nature trail in the vicinity of the Metolius River specifically near Camp Sherman would be very useful. This nature trail should be developed in an effort to help local residents and visitors identify the flora and fauna of our area.

The addition of bicycle paths would fill a need in the community. Presently, there is not adequate right-of-way for locating bike paths. Acquiring right-of-way could be pursued by committee action and county action. This is one area of the county that could use the funds allocated, by the state, for construction of bicycle paths.

ECONOMY

The state wide economy goal speaks to the diversification and the improvement of the economy in the area. The economy for the Camp Sherman Area has been largely dependent upon the tourist, fishermen, and vacationers, the major users of the area.

The major employers in the area are the U.S.F.S., Wizard Falls Hatchery, and Black Butte Ranch (Deschutes County).

TABLE 8 U. S. FOREST SERVICE RECEIPTS FROM STUDY AREA
(1976-1977 fiscal year)

ACTIVITY	INCOME
Timber	6,963,816.00
Summer House Permits	40,555.00
Campground Fees	32,659.00
Mineral Sales (Cinders)	137.00
Resort Fees	4,644.00
Non-recreational Special Uses	1,562.00
GRAND TOTAL	7,043,373.00

TABLE 9 TIMBER ECONOMICS IN STUDY AREA
(U.S.F.S. Only)

ACTIVITY	AMOUNT
Sales Area Betterment (Planting, thinning, etc.)	310,611.00
Sales Area Brush Disposal	324,569.00
Erosion Control (Grass seeding of exposed ground)	17,580.00
Sub-total	646,850.00
(Most of this total comes directly back to the area in salary and local contracts)	
Road Maintenance Deposits	30,554.00
Surface Rock Replacement	13,642.00
Sub-total	44,196.00
Stumpage receipts	6,272,770.00

Twenty-five percent of the stumpage receipts are returned to the County based on acreage of National Forest in the County. The remainder of the receipts other than timber also contribute to the County at the 25% rate. The above information furnished by U.S.F.S. Sisters Ranger District Office.

TABLE 10 ECONOMY OF WIZARD FALLS HATCHERY
(Oregon Wildlife Commission)

ACTIVITY	AMOUNT
1. Payroll (budgeted for 75-77 biennium)	
annual	60,000.00
(prorate of Regional & State A & G)	
estimated	6,000.00
2. Operations Budget (75-77 biennium)	
annual	67,000.00
3. Annual value of product raised	
\$150,000 based at \$1.00 per pound.	
(proposed 75-77 biennium *170,000 pounds annually)	170,000.00
*Didn't occur during 75 because of virus problem in hatchery fingerlings.	

The above information furnished by O.D.F.W. Regional Office, Bend Letter 5/6/75.

The area now receives limited benefits from the winter sports. One restaurant is open all year, at Blue Lake. Lodging is available in the area all year.

Presently, the problem facing the commercial sector is the lack of customers during the winter season to justify operating a business. Customers may not come to the area because there is a shortage of services. It is anticipated that if there is development in Camp Sherman, business will be able to justify year around operations.

Economic Alternatives

1. Remain in present status, do nothing to encourage new growth diversification.
2. Be prepared to accept an increase in population and accompanying services.

The selected alternative is No. 2.

HOUSING

The concensus of the Camp Sherman community is to allow for moderate controlled growth of residential and visitor facilities only to the extent that the ecology and the environment of the area are maintained at a high level of acceptability and desirability. Further housing in the area should be limited to location and densities which will not jeopardize the character or natural resource of the area.

Discussion

523/ A total of 600 dwelling units provides an arbitrary limit against which continuing studies over the next decade may monitor the effect of growth on the ecology of the area. Should an unanticipated or unexpected situation arise requiring consideration of a large development or subdivision, special studies will be required as provided for in the Zoning Ordinance and Subdivision Ordinance.

In addition to natural and regulatory constraints on development, there are, because of the limited amount of private land, constraints on the overall amount of available land.

Housing Trends

Review of the recent growth pattern shows a shift to more full time residency. Summer use of many earlier houses is also shifting to more of a year-round use basis. Housing starts to-date in the Metolius Meadows indicates more than 50% of the buyers are full time residents. There are 141 platted lots in the development. All of the lots with septic site approval have been sold. As of May, 1978, 25 homes have been built or are under construction.

Population increases in the Willamette Valley can be expected to exert pressure on the area in both short and long range timelines. Growth in the Central Oregon quadrangle of Bend, Prineville, Redmond, and Sisters is also spilling over and into the Camp Sherman area both for recreational and residential uses. The housing requirements of a viable resort and recreational community must also be flexible to meet seasonal peaks and demands by transient visitors. In essence, the area may be classified as a "bedroom" community in respect to housing needs.

Industrial activity is limited to timber management with little housing need. The state fish hatchery provides most of its housing requirements. Business and commercial activities are service oriented and to a large extent, owner-operated and provide housing on the site.

Demands for housing will be in the moderate to upper price range. Because of this, the demand for low cost housing may be met by expanded camping facilities and parks for recreational vehicles. Little or no demand is anticipated for permanent low cost housing.

Housing Need Calculations

Implementation of this goal shall be by the following methods:

1. Review the recreational needs.
2. Complete the inventory of private land to determine the total potential acreage for housing.
 - a. Determine the split between developed and underdeveloped.

- b. Establish a "rule-of-thumb" factor for ration of dwelling units to acreage, taking into consideration ecological constraints, open space requirement, plus roadways and service facility requirements.
 - c. Determine the number of dwelling units now in use.
 - d. From b & c, determine the maximum number of dwelling units possible.
3. Determine a possible population total based on maximum utilization of private lands for dwelling units as determined in 2 above. This will be done by comparing the present population, full and part time, and the total existing dwelling units to the maximum possible dwelling units which would be required to house the maximum population at the same person per dwelling unit rates.

The number of potential dwellings should also be calculated by using the state's person per dwelling unit ratio. If a large disparity is found, a median figure should be used.

Population and dwelling units referred to in these sections are on private lands only. Dwelling units include single family residence and lodge or motel units, whether in full or part-time use.

4. Apply a maximum growth point in time based on:
 - a. The actual trend based on the period 1970/1977.
 - b. An accelerated growth pattern based on the present inventory of available homesites.
5. The 108 homesites (U.S.F.S. permittees) are to be included in the ultimate permissible maximum of dwelling units and population for the area.

Housing Conclusions

Based on roughly 200 acres of private land in the Blue Lake Area, 100 dwelling units are to be allocated to this location.

There may be ultimately 500 dwelling units in the Camp Sherman Area, making a total of 600 dwelling units.

PUBLIC FACILITIES AND SERVICES

Definitions

Rural facilities and Service - refers to facilities and service which the governing body determines to be suitable and appropriate solely for the needs of rural use.

Urban facilities and Service - refers to key facilities and to appropriate types and levels of at least the following:

1. Police protection
2. Fire protection
3. Sanitary facilities
4. Health service
5. Recreation facilities and services
6. Energy and communication services
7. Community governmental service

Urban and rural development shall be guided and supported by the types and level of rural public facilities for the areas to be served. Public facilities and service should be appropriate to support sufficient amounts of land to maintain an adequate housing market and development.

Though the area is not considered an urban area, the needs for the area are best reflected under the definition of "urban facilities".

Police Protection

The area is in need of full time police protection. Camp Sherman, located approximately 65 miles from the county seat cannot expect to receive prompt protection from the County Sheriff's Office. State Police can supply some help to the area. The problem facing the area is the result of seasonal fluctuation of tourist, ranging up to 400,000 per season. The residents of the community cannot support this service on their own.

Fire Protection

The area has a fire protection district.

The fire district needs additional equipment,

a hose drying tower, and an additional heated building. The 1977-78 tax rate for the Camp Sherman Rural Fire District is \$2.23. This tax rate will raise \$14,590.35. Additional sources of funding may be required to meet area needs.

Solid Waste

Jefferson County operates a solid waste site situated on National Forest Land, located near the junction of Forest Service Road 113 and Forest Service Road 1304.

Sanitary needs for the area are:

1. Additional facilities for the solid waste not put in the container, i.e. washing machines, car bodies, etc.
2. Dump station to service recreation vehicles.
3. Public rest room facilities near Camp Sherman Store.

Sub Surface Sanitation

Increased residential development relying on waste disposal by sub-surface methods can threaten the water supply in the area. Water pollution will continue to be a potential problem. It may, however, be some time before the complete elimination of sub-surface sewage disposal will be necessary to preserve the purity of the Metolius River and to provide adequate protection of the community's health and welfare.

If the area develops at a high density, water pollution is a very real threat. Domestic water sources now are: (1) from the Metolius River for many of the cabins along the river, (2) shallow wells in close proximity of the river, and (3) from a few drilled wells and from some springs in the area. Pollution could seriously impact the Wizard Falls Fish Hatchery.

Following the winter snowmelt, the ground water table is at or near the existing ground surface. Sub-surface soil conditions are reported to be extremely variable through the area. The uniqueness of the area's ground and surface water and its relationship with the present potential pollution from sub-surface waste disposal make water quality and sewer problems inseparable. From a practical view, it is

recognized that a part-time community cannot afford the luxury of a water and sewer system at this time. There has been a partial solution to the water problem with the development of a community water system in Metolius Meadows Development. The subdivision does provide a source of water to lots that would otherwise be unsuitable for a home.

The future development of the area is keyed to the water and subsurface waste disposal problems. Safety and health codes are presently enforced by the Building Inspector enforcing the Uniform Building Code and by the County Sanitarian who is responsible for the enforcement of state health codes administered by the Department of Environmental Quality.

Communications & Other Services

Energy and communication services are typical for areas such as Camp Sherman. Long periods of electric power outages are common. This is caused by miles of wires subject to damage by falling limbs and trees. Central Electric Co-op, Inc. has 300 accounts in the Camp Sherman and Suttle Lake Area.

Telephone service is provided by the United Telephone Company. There are 123 telephone connections, including residential and business phones.

The Camp Sherman Store is also the site of the Post Office, a class three office.

Other community governmental services include Road District 18 and Black Butte School District #41. The 1977-78 tax rate for the school is \$2.74 which will raise \$20,654.76. The road district tax rate for 1976-77 was \$0.43 which raised \$2,742.46. There is no road district tax for 1977-78.

TRANSPORTATION

The means to provide a safe, convenient, and economic transportation system for people and goods in the area are limited. When planning transportation facilities, major consideration should be given to the carrying capacity of the air, land, and water resources. Any development program should utilize all existing transportation facilities and rights-of-way as the basis for expansion.

There are many Forest Service roads that are of no direct benefit to the public at large. They should be closed off or otherwise restricted to "Official Forest Service Use Only". The road system proposed herein will provide adequate access to campgrounds, points of interest, service centers, trail heads, etc. At the same time, this road pattern provides improved traffic circulation, greater personal safety, reduces congestion and conserves energy.

Contrary to a rather general misconception, an improved road does less damage to the environment and can enhance the esthetic value of the area it traverses when compared to an unimproved road. It has also been recognized that an "unimproved" road is no deterrent to the visitor who has a "site" destination in mind.

It should be noted that no new roads are proposed and that an actual reduction of U.S.F.S. road mileage amounting to 250 miles is proposed. With fire and spur roads included, the total becomes approximately 600 miles. (Deschutes National Forest Service computation of August, 1975.)

The proposals presented herein are tailored to provide for an adequate and safe movement of people into and within the study area. Implementation will be the responsibility of local county government, and federal agencies, and should not await further projected growth of part time and full time residents or recreation-oriented visitors.

Existing System & Use Projections

The existing transportation system can be classified into the following categories:

1. Major access roads and feeder road to or through the study area.
2. Primary roads within the entire study area to campgrounds, points of interest, service centers and trail heads.

3. Secondary roads serving residential areas.
4. Special interest ways, such as:
 - a. Bicycle paths
 - b. Equestrian trails
 - c. Hiking trails
 - d. Motor bikes
 - e. Nature trails
 - f. Snowmobile

The Deschutes National Forest Traffic Summary indicates that the Camp Sherman area showed a substantial traffic increase in the 3-year period from 1970 to 1973.

Table II shows traffic counts on U.S.F.S. Road 1304, rounded to the nearest 1,000.

TABLE II TRAFFIC COUNT ON ROAD 1304 (1970-1973)

YEAR	COUNT (000)	INCREASE
1970	162	
1971	186	+15%
1972	207	+11.3%
1973	226	+9.4%

Using a straight line increase of 10% annually would indicate 574,000 vehicle trips for the year 1984. This is better than a 100% increase over the 1973 count.

Control of such volume by adequate and logical means, within the study area, requires both better circulation and dispersion as well as substantial improvement of certain existing roads that are presently in a marginal or undesirable condition.

Major Access Road Improvement

The County to take over, improve and maintain the road from Highway 20 to the vicinity of Link Creek Campground between Suttle and Blue Lakes

(approximately 2½ miles). In cooperation with the State Highway Department, the turnoff should be improved to eliminate the blind spot on the approach from the east, a crossing traffic situation.

The County to take over, improve and maintain that portion of Forest Service Roads 1138 and 1317 to the intersection with 1304 (approximately 4½ miles) as an alternate entrance to Camp Sherman for traffic to and from the west via Highway 20. The alignment is more direct and a close review of gradient does not show runoff or snowmelt to be a serious obstacle to improving and maintaining this route.

Turnoffs for both of the intersections with Highway 20, and for the intersection at Forest Service Road 1304 should, for safety purposes, be comparable to the recently installed turning land facility at Black Butte Ranch.

Suggested Road System

Proposed Forest Service roads for circulation and dispersion are shown on Map 5. These provide the basic and incidental traffic pattern for campgrounds, nature study areas, points of interest, trail heads and service centers.

Bicycles & Trails

Bicycle (and/or pedestrian) paths should be provided between the principal Forest Service campgrounds, resort areas and Camp Sherman "Service Center". Hard surfaced roads may be used for this purpose providing they are adequately marked for safety purposes. Continuing study by the Citizens Advisory Committee should provide plans for these paths to be located off vehicular road rights-of-way as soon as possible. This continuing study should investigate possible funding availability in order to implement the project.

Parking

Parking facilities in areas with increased vehicular traffic will need expansion.

The Camp Sherman "service area" parking should be substantially increased on each side of the river. As private land is not available,



It is recommended that the interested business community and Forest Service jointly undertake such a project in order to reduce hazardous conditions caused by increased use during peak visitor periods.

In the Suttle/Blue Lake areas, adequate parking appears to be available for the foreseeable future.

At trail-heads and points of interest, more parking areas are needed. The Forest Service is eminently qualified to determine the parking requirements of each particular spot.

Parking areas and improved turnoffs should be developed at both Camp Sherman access points to Highway 20. These parking areas should be immediately adjacent to Highway 20 so they can be plowed and used for snow parks and tire chaining areas in the winter.

ENERGY CONSERVATION

The approach to this goal is limited. Non-renewable energy would be conserved under Transportation Plan. Energy would also be conserved through the Zoning and Subdivision Ordinance requirements for location and layout of new development. Energy Conservation, as a part of timber management practices of the U.S.F.S. need not be detailed in this report.

URBANIZATION

The Urban Goal does not apply to the Camp Sherman area.

PART IV

ADMINISTRATIVE PROVISIONS

CARRYING OUT THE POLICIES AND PROPOSALS OF THE COMPREHENSIVE PLAN

INTRODUCTION → Purpose ←

The Comprehensive Plan is an effective tool for county government. ~~if public officials and citizens are able to understand its practical uses and limitations.~~ It is not enough to prepare the plan and then expect its implementation to be automatic. This expectation can cause misunderstanding or needless public controversy which may eventually render the plan useless in practical terms.

Public acceptance will come if human needs and desires are maintained as the criteria for new programs and developments. The primary goal of the planning process is a better environment for the people. The people are the heart of our system of government.

A variety of tools are required for plan implementation. The county's current planning program includes ~~only two tools,~~ the Zoning Ordinance and the Subdivision-Partitioning Ordinance. Other tools which may be needed are:

1. Financial Plan
2. Public Service Program
3. Revenue Program
4. Development Regulations

Zoning, properly conceived and administered becomes a most important means of translating the proposals of the comprehensive plan into reality. The following regulations are proposed for implementation of the Camp Sherman Plan.

STATEMENTS OF POLICY AND PLAN IMPLEMENTATION

The following statements represent the intent of the Camp Sherman area concerning implementation of the Plan and the future of development in the area. These statements shall be used by the Local Advisory Committee and the Planning Commission when they establish criteria for decisions on development, and when they apply those criteria to specific land use proposals after adoption of the plan.

Citizen Involvement

The area proposes development of a citizen involvement program that insures the opportunity for area citizens to be involved in all phases of the planning process. A local Advisory Committee is proposed to obtain citizen participation in, and to provide assistance with coordination of land use planning.

The Local Advisory Committee (LAC) shall be appointed by the County Court, after having received a recommendation of approval from the Jefferson County Planning Commission. Preference for membership is to be given registered voters of Jefferson County.

The LAC shall consist of six (6) members. The term of appointment shall be for four (4) years, or until their respective successors are appointed and qualified; excluding LAC members appointed initially. Terms of the initial members shall be staggered for one, two, three and four years. A member appointed may be removed by the County Court after hearing, for misconduct or nonperformance of duty. Any vacancy shall be filled by the County Court for the unexpired term of the predecessor in the office.

Members of the LAC shall serve without compensation other than reimbursement for duly authorized expenses. Members of the LAC shall be residents representing interests as set forth below. No more than two voting members shall be engaged principally in the buying, selling or developing of real estate for profit. No more than two voting members shall be engaged in the same kind of business, trade or profession.

LAC membership shall be composed of area residents representing the following interest:

1. A member of the business community from Camp Sherman.
2. A private land owner from Blue and Suttle Lake Area.
3. A private land owner, Camp Sherman Area, other than representative from Metolius Meadows Development.
4. A representative from Metolius Meadows Development.
5. A representative from U.S.F.S. homesite permittee group.
6. Area member County Planning Commission, who shall serve as ex-officio non-voting member.

Citizen Involvement

The area proposes development of a citizen involvement program that insures the opportunity for area citizens to be involved in all phases of the planning process. A local Advisory Committee is proposed to obtain citizen participation in, and to provide assistance with coordination of land use planning.

The Local Advisory Committee (LAC) shall be appointed by the County Court, after having received a recommendation of approval from the Jefferson County Planning Commission. Preference for membership is to be given registered voters of Jefferson County.

The LAC shall consist of six (6) members. The term of appointment shall be for four (4) years, or until their respective successors are appointed and qualified; excluding LAC members appointed initially. Terms of the initial members shall be staggered for one, two, three and four years. A member appointed may be removed by the County Court after hearing, for misconduct or nonperformance of duty. Any vacancy shall be filled by the County Court for the unexpired term of the predecessor in the office.

Members of the LAC shall serve without compensation other than reimbursement for duly authorized expenses. Members of the LAC shall be residents representing interests as set forth below. No more than two voting members shall be engaged principally in the buying, selling or developing of real estate for profit. No more than two voting members shall be engaged in the same kind of business, trade or profession.

LAC membership shall be composed of area residents representing the following interest:

1. A member of the business community from Camp Sherman.
2. A private land owner from Blue and Suttle Lake Area.
3. A private land owner, Camp Sherman Area, other than representative from Metolius Meadows Development.
4. A representative from Metolius Meadows Development.
5. A representative from U.S.F.S. homesite permittee group.
6. Area member County Planning Commission, who shall serve as ex-officio non-voting member.

7. Establishment of a local liaison working committee with various Federal and State agencies, commissions and/or departments concerning land use matters within the Camp Sherman Area.
8. Preservation and maintenance of the forest for the multiple uses of industry and recreation.

FUNCTION OF THE LAC

The Local Advisory Committee is established to gather citizen input, and to act as a coordinator for planning matters in the Camp Sherman Area. The Committee will function as an official advisory group to the County Planning Commission.

Upon receipt of an application for approval of any proposed use or development, the secretary of the LAC shall forward the application and all available information to the County Planning Department, and schedule a hearing of the proposal before the LAC. Hearings are to be conducted in accordance with the appropriate section of the Zoning Ordinance and/or Subdivision Ordinance. If the planning department is contacted by the applicant prior to contact with the LAC, the director will notify the secretary of the LAC and forward all available information.

LAC Review of Land Use Proposals

The LAC shall review all proposed development in the Camp Sherman Area, and render a written report to the Planning Commission within 60 days. The report shall include a recommendation for action, and findings to support that recommendation which are based on the Camp Sherman Plan and the County Comprehensive Plan. If no action has been taken within 60 days from the date of filing of the application, the application will automatically be forwarded to the Planning Commission.

The written report to the Planning Commission shall include, at a minimum, information on the following:

1. Is the proposal in conformance with the goals and policies of the Camp Sherman Plan and the Jefferson County Comprehensive Plan?
2. Is the proposal in conformance with design requirements of the plan and supporting ordinances, especially with regards to roads, land use configuration, open space, and drainage.

3. Does the proposal meet the standards for provisions of services and utilities.

The LAC's findings and recommendations are intended to serve as a basis for action by the Planning Commission. Special care will be taken to provide Commission members with information which they may need about the area which they do not possess due to geographic separation. Upon receipt of a report, the Commission shall affirm, modify, or overturn any recommendation of the LAC. If the Planning Commission affirms the recommendation of the Committee, the proposal shall not be resubmitted for a period of six months.

Statements of Direction for the LAC

The Local Advisory Committee shall direct its energies toward continued development of a planning program which will achieve the following:

1. Provide for growth and development which is in harmony with the Camp Sherman Plan and the County Comprehensive Plan.
2. Provide present and future residents with a choice in housing types, community facilities, and environments.
3. Provide adequate open spaces, and recreation areas which preserve the present open atmosphere of the area.
4. Provide adequate commercial and service facilities.
5. Preserve the natural, topographic, and geologic features with emphasis on:
 - a. Prevention of soil erosion
 - b. Conservation of water, air, and land resources.
 - c. Preservation of trees and other enhancing features of the environment.
6. Provide an efficient network of roads through a long range transportation planning effort, including traffic control, traffic routing, and study of alternative transportation methods.
7. Preserve and maintain the forest for multiple uses of industry and recreation.
8. Continue liaison with Federal and State agencies and departments on land use concerns of the Camp Sherman Area.
9. Continue to function as the advisory group from the Camp Sherman Area with the widest possible representation.
10. Initiate and recommend changes to the Comprehensive Plan and supporting ordinances when such changes appear necessary.

The LAC will provide the County Planning Commission with their opinions and recommendations in regards to planning and zoning matters of local concern.

Upon receipt of an application for approval of any proposed use and/or development, the secretary of the LAC shall assign a date to the application, preceded by the words "date of filing". The LAC shall review all proposed development within the Camp Sherman Area, and then render a written report to the Jefferson County Planning Commission, and applicant, within sixty (60) days of applicant's filing. If no action has been taken within a period of sixty (60) days from the date of filing, the application will automatically be forwarded to the Jefferson County Planning Commission.

The LAC shall determine whether any proposed use and/or development in the Camp Sherman Area is in conformity with standards set by the Camp Sherman Plan. In making this determination, a hearing shall be conducted by the LAC. The hearing shall be held in compliance with standards set for quasijudicial proceedings in the Comprehensive Plan. A record of such hearings shall be kept, and findings made to support a recommendation to the Planning Commission. The LAC's opinions and recommendations are only advisory, with the Jefferson County Planning Commission retaining final decision making powers in every matter. If the Jefferson County Planning Commission upholds the LAC in a decision to deny a request, resubmission of the proposed land use and/or development shall be unavailable for a period of six months.

Preservation of the Environment

The goal of the area is to remain rural in nature. Every effort should be made to achieve and maintain a harmonious balance between the natural and man-made environments, and to preserve, protect, and improve the quality of the area's natural resources. Of primary concern is the protection of all water resources in the Metolius Basin. All proposals for development must be viewed in relationship to this goal.

Location of Developments within the Resort-Residential Area

Commercial development shall be limited to resort-recreation oriented enterprises and service. This commercial development shall occur within

the present community service center located near the Camp Sherman Bridge and in the developed area of Blue Lake/Suttle Lake.

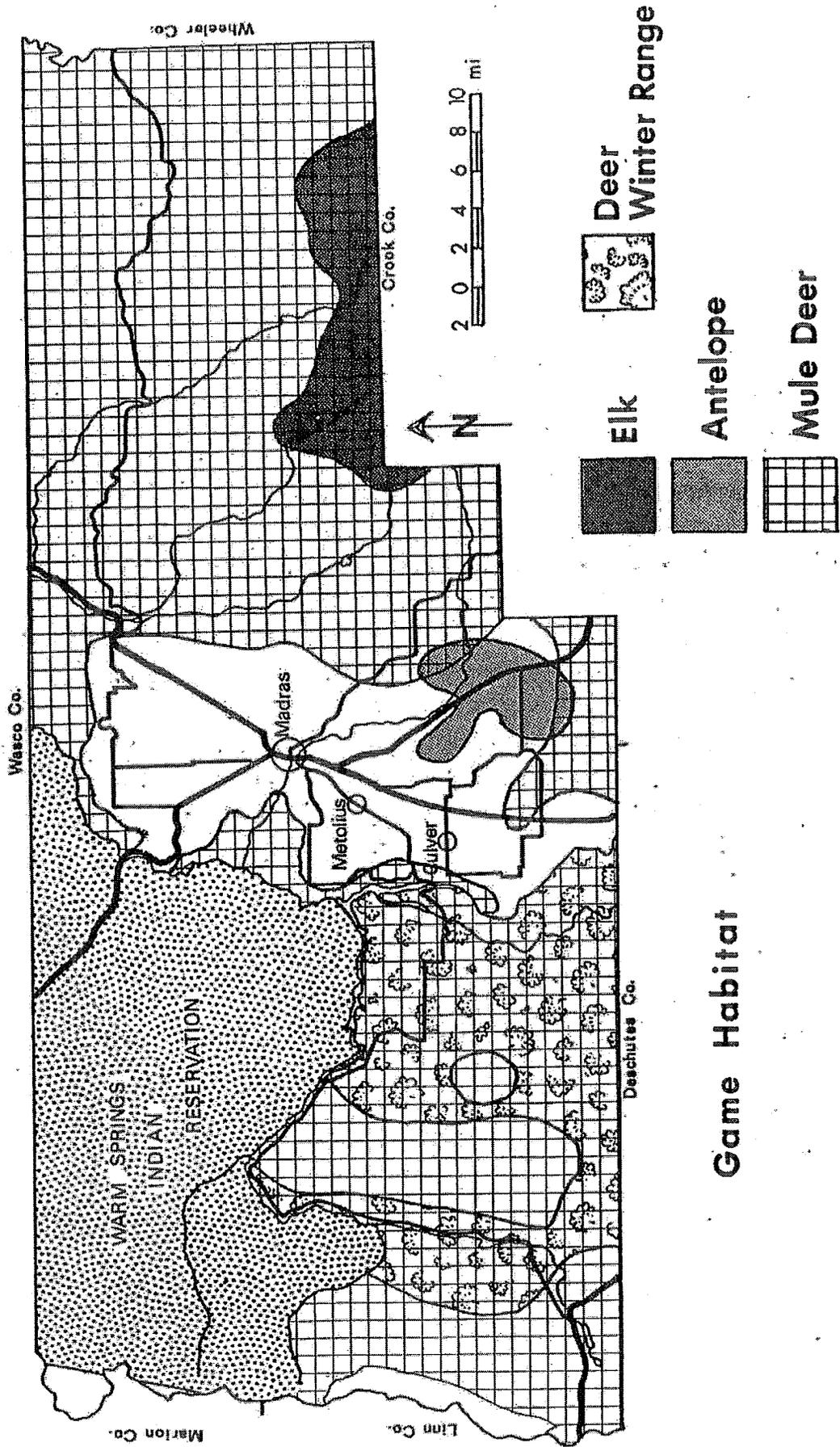
Residential development along waterways and in timberlands is discouraged. Residential developers should make use of cluster development concepts and any other strategies which save land, prevent sprawl, address the special water and sanitation needs of the area, and insure efficient transportation. Timber, scenic resources, and water resources are to be protected in all developments.

This document recognizes the presence of 108 Metolius River homesites on U.S.F.S. land. It is the wish of the area that this land use be permitted to continue.

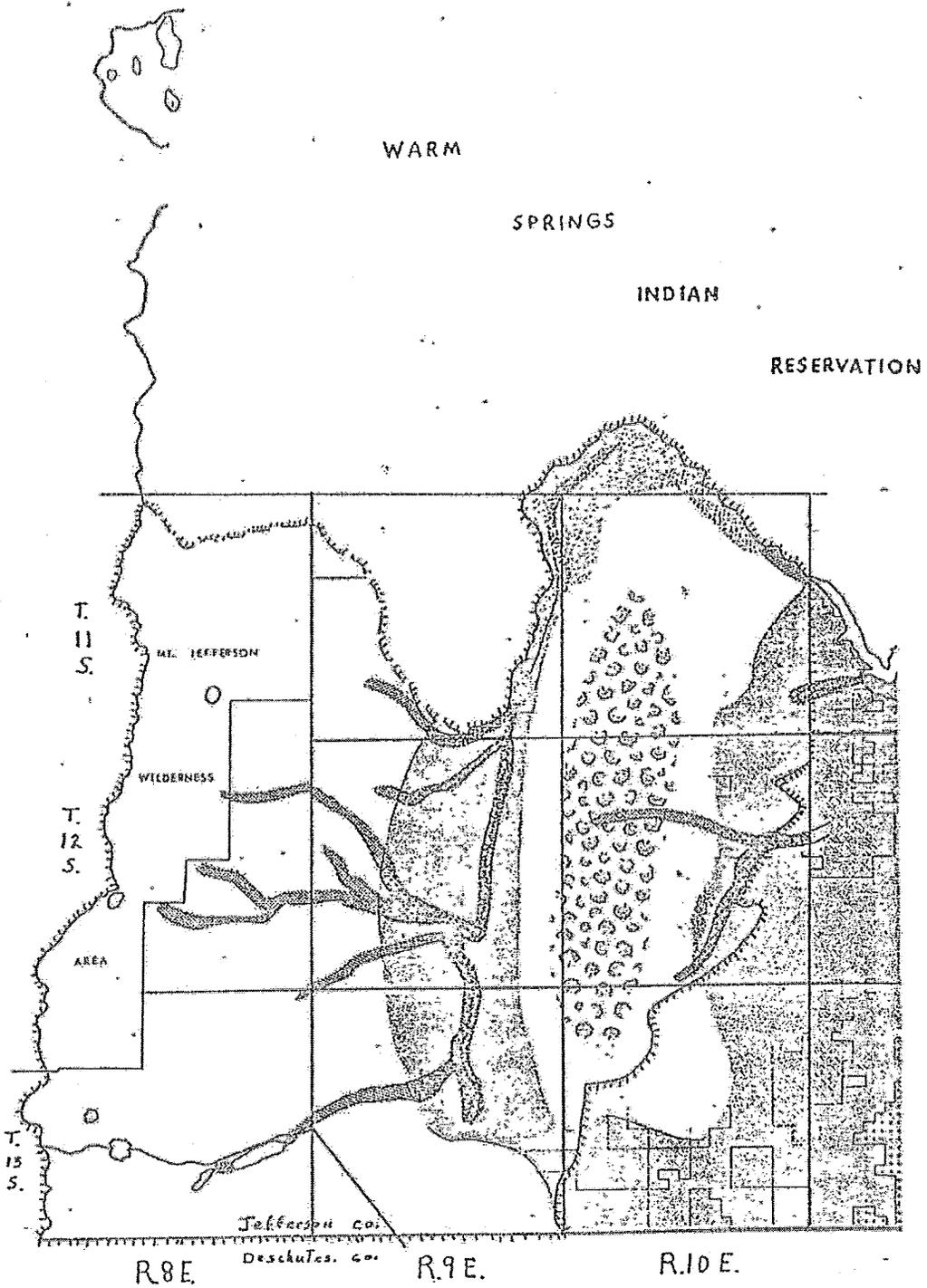
Long Range Plan Revision

Proposals for modification of this document, and the Jefferson County Comprehensive Plan may be initiated by an individual or by the Local Advisory Committee. Over the lifetime of this planning program, the LAC will review the documents to insure that the program is achieving the following objectives:

1. The program provides for growth which is in harmony with the natural environment of the area, and meets the overall intent of the Comprehensive Plan of Jefferson County, and the Camp Sherman Plan.
2. Present and future residents are provided a choice in housing types, service facilities, and neighborhood environments.
3. Open space and recreation areas shall be preserved and provided for.
4. Adequate commercial and service facilities shall be provided for.
5. Natural topographic and geological features shall be preserved with emphasis on:
 - a. Prevention of soil erosion
 - b. Conservation of air, water, and land resources
 - c. Conservation of timber and other enhancing features of the environment.
6. Provision of an efficient network of roads including traffic control and routing, and along range transportation study.



Game Habitat



DEER WINTER RANGE [Solid Black Pattern]

STREAMSIDE VEGETATION [Cross-hatch Pattern]

TURKEY AREA [Small Circle Pattern]

LIMITED ACCESS AREA [Wavy Line Pattern]



Oregon

Theodore R. Kulongoski, Governor

Department of Fish and Wildlife

High Desert Region
61374 Parrell Road
Bend, OR 97702
(541) 388-6363
FAX (541) 388-6281

7 pages

January 27, 2009

E. Timothy Wall
Oregon Water Resources Department
725 Summer St. NE, Suite A
Salem, OR 97301-1266

Re: Proposed Final Order for Water Right Application G-16674

The purpose of this letter is to provide Oregon Department of Fish and Wildlife's (department) comments on Oregon Water Resources Department's (OWRD) Proposed Final Order (PFO) for groundwater application G-16674 submitted by Ponderosa Land and Cattle Company, LLC. Department comments focus upon potential impacts to fish populations and habitats resulting from the proposed ground water withdrawals.

Proposed Final Order

The PFO recommends issuance of a groundwater right for quasi municipal use between the Metolius River and Whychus Creek watersheds. The PFO would authorize the use of 10 wells in Jefferson County.

The total volume of groundwater used is 8.8 cubic feet per second (CFS), with a maximum annual volume of 2422 acre feet. OWRD has determined the proposed use is within the Deschutes Ground Water Study Area, and is subject to the Deschutes Ground Water Mitigation Rules (OAR 690-505). OWRD has further determined the proposed use will have the potential for substantial interference with the Deschutes River (OAR 690-09) and consequently, the applicant must mitigate for the proposed use.

OWRD identified the required mitigation obligation as 968.8 acre feet which must be provided in the General Zone of Impact, located anywhere in the Deschutes Basin above the Madras gage.

Issues

The department has identified the following fishery related issues associated with PFO G-16674.

- Existing hydrologic reviews and analysis suggest the proposed well field will diminish surface flows in the Metolius River, Whychus Creek and Fly Creek watersheds. However, the analysis to date has been insufficient to quantify the magnitude of reduced flows and its potential fishery affects.
- Each of the affected streams harbors important fish populations, including federally listed bull trout in the Metolius River and Whychus Creek and Mid-Columbia summer steelhead in Whychus Creek. Redband trout are present in all three watersheds. In addition, there is an exceptionally important recreational fishery in the Metolius River and redband trout in Fly Creek are genetically unique due to their isolated nature and limited distribution.
- Reductions in surface flow will likely adversely impact the productivity and viability of fish populations in each watershed limiting the department's ability to meet its legally mandated conservation and recreational goals under the Metolius River Basin Fish Management Plan (OAR 635-500-1820), the Upper Deschutes River Basin Fish Management Plan (OAR 635-500-3120), the Anadromous Fish and Bull Trout Management Plan in the Upper Deschutes, Crooked and Metolius River Subbasins (OAR 635-500-6000 through 6060) and the Native Fish Conservation Policy (OAR 635-007-0502 through 0509).
- The State holds instream water rights for each stream and Scenic Waterway flows are protected in the Metolius River. Scenic Waterway flows in the Metolius River have been designated to protect indigenous fish as an "Outstandingly Remarkable Resource". The proposed groundwater withdrawal will likely diminish these remarkable resources.

- OWRD's PFO prescribes mitigation only in the general zone of impact (anywhere in the Deschutes Basin above the Madras gage). This fails to adequately mitigate for the loss of cold spring-fed surface water in the Metolius River and Whychus Creek local zones of impact.
- The department recommends OWRD conduct further hydrologic analysis to assess the impact to surface flows in the Metolius River, Whychus Creek and Fly Creek watersheds. Based upon the results of this assessment, the mitigation requirement associated with G-16674 should be modified accordingly to address local impacts and protect fisheries resources. Without this critical information issuance of a Final Order authorizing development of the well field is premature.

Hydrologic Impacts

Zone of Impact/Mitigation

The OWRD's groundwater review of application G-16674 found that there will likely be localized impact on the Metolius River, Whychus and Fly Creeks. Of these streams, Fly Creek is the closest to the proposed well field, and could proportionally be the most affected due to already low base flows.

Despite evidence of hydrologic connection between groundwater extracted from the proposed wells and surface waters in both the Metolius and Whychus *local* zones of impact, application of the current groundwater mitigation rules fails to recognize the impact on local springs and streams by requiring mitigation in the *general* zone of impact only in the PFO for G-16674.

The department recommends additional analysis be conducted to determine estimated volumes of surface water impacted in the Metolius and Whychus local zones. The required mitigation for the applicant should be applied in the *local* zone of impact at the appropriate ratios.

Timing of Mitigation

The current mitigation rules allow for the use of irrigation water as mitigation. This allows a seasonal use to mitigate for year around use which will improve flows in the mainstem Deschutes during the irrigation season but will lead to an eventual reduction in groundwater levels and spring flows in the non irrigation season. Diminishment of spring flows through reduced groundwater levels will have an impact on fish habitat year around. The department recommends the PFO include mitigation requirements that provide year around instream flow proportionally into the streams impacted by G-16674 rather than seasonally during the April 15 – October 31 irrigation season.

Water Quality

Groundwater in the Deschutes Basin resurfaces in the watershed as springs. These springs discharge cold water into the receiving streams. The hydrology of the Deschutes basin is greatly altered by water management and irrigation withdrawals. This results in significantly reduced stream flows in most reaches and water temperatures exceeding the state standard. The Deschutes River and Whychus Creek are both on the State 303d list as water quality limited for temperature. In both of these streams spring recharge serve as important thermal refugia for salmonids. The Metolius River is unique in that natural flows are largely unaltered, with the majority of stream flow originating from groundwater surfacing as springs. The result is stream flows and temperatures that support highly productive salmonid populations.

PFO G-16674 would remove 8.8 cfs of groundwater which in turn has the potential to affect the volume of groundwater available to feed local springs. This would result in an undetermined decrease in the volume of cold spring water contributing to flows in the Metolius River and Whychus and Fly Creeks. The PFO proposes to

mitigate with 964 acre of surface water elsewhere in the basin. The likely mitigation water would be surface water which is warmer than spring water and does not provide equal fisheries or water quality value.

Water Rights

The State of Oregon holds instream water rights for each of the three watersheds that may be hydrologically connected to the proposed well field. These water rights are to provide migration, spawning, egg incubation, fry emergence and juvenile rearing of salmonids (ORS 537.341). The Instream Water Rights Act states instream water rights are granted the same legal standing as all other rights. ORS 537.350. Thus, OWRD needs to ensure in permitting Water Right Application G-16674 that the instream water rights in the affected local streams are not injured by reductions in stream flows from this proposed junior water right. ORS 537.621.

Potentially affected instream water rights include:

- IS 70698 Metolius River from Canyon Creek (River mile 35.6) to Lake Billy Chinook.
- IS 70699 Metolius River from Metolius Springs (River mile 41) to Canyon Creek (River mile 35.6)
- IS 70753 Whychus Creek from Indian Ford Creek (River mile 19.5) to mouth (River mile 0).
- IS 70761 Fly Creek from Meadow Creek to the mouth.

Wild and Scenic Designations

Sections of the Metolius River are designated a “Scenic Waterway” under the Oregon Scenic Waterways Program. In 1991 Scenic Waterway flows were established for both the Deschutes and Metolius Rivers. The program is designed to protect and enhance scenic, aesthetic, natural, recreation, scientific, and fish and wildlife qualities along scenic waterways. New development or changes in existing uses proposed within a scenic waterway are reviewed before they may take place.

The Scenic Waterway Act states that the highest and best uses of water within scenic waterways are recreation, fish and wildlife uses. (ORS 390.835). When a groundwater application has been found to measurably reduce stream flow, mitigation must ensure the maintenance of the free-flowing character of the scenic waterway in quantities necessary for recreation, fish and wildlife.

The Metolius River was added to the national Wild and Scenic Rivers System in 1988. Wild and scenic river designation strengthens protection given under the state scenic waterways program.

Scenic Waterway flows in the Metolius River have been designated to protect indigenous fish as an “Outstandingly Remarkable Resource”. The proposed groundwater withdrawal and prescribed mitigation in the general zone of impact will likely diminish this remarkable resource.

Affected Fish Populations

The proposed removal of 8.8 cfs of groundwater could potentially impact fish species in three watersheds: Metolius River, Whychus Creek and Fly Creek.

Metolius River

The Metolius River subbasin is inhabited by bull trout (*Salvelinus confluentus*) a federally threatened species under the Endangered Species Act. Bull trout have a strong affinity for cold water. The abundant discharge of groundwater surfacing as springs in the Metolius Basin results in favorable water temperatures supporting a

robust bull trout population. This population is one of the healthiest in the state and is critical to meeting conservation and recovery goals of the species.

Redband trout (*Oncorynchus mykiss*), a state and federal sensitive species are present in the Metolius River and tributaries. The healthy redband trout population supports a very popular catch and release, fly angling only fishery. The Metolius River is nationally renowned as a premier angling destination.

Kokanee salmon (*Oncorynchus nerka*), a landlocked form of sockeye salmon, migrate between the Metolius River and Lake Billy Chinook to complete their life history. The kokanee salmon population supports a popular recreational fishery in Lake Billy Chinook. The species is also the primary forage base for the threatened bull trout population. Data suggests that kokanee salmon abundance has a direct impact on bull trout abundance.

The Metolius River subbasin was historically inhabited by mid- Columbia spring Chinook salmon (*Oncorynchus tshawytscha*). This species was extirpated in the mid 1960s following completion of the Pelton-Round Butte Dam complex when early attempts at fish passage failed. As a condition of the Federal Energy Regulatory Commission (FERC) license issued in 2005, the project licensees in collaboration with multiple stakeholders, including the department, are re-introducing spring Chinook salmon into historic habitats, including the Metolius River subbasin. The initial releases of Chinook salmon fry took place in 2008 and will continue annually until self sustaining populations are established. The FERC license and the department Subbasin Fish Management Plans also direct the re-establishment of a sockeye salmon population in the Metolius River subbasin. The existing kokanee salmon population is the preferred founder stock.

Each of these salmonid species thrive in cold, clear water. Diminishment of spring flows would lead to a reduction in valuable cold water habitat for these species leading to less robust populations.

Whychus Creek

Whychus Creek is inhabited by redband trout from the confluence with the Deschutes River upstream to the Three Sisters Irrigation District dam. The population abundance of these trout is significantly reduced as a result of water quantity and quality issues. Whychus Creek is on the 303d list as water quality limited for temperature. The strongest redband trout populations are associated with areas receiving inputs of cold water from springs.

Mid-Columbia summer steelhead trout and spring Chinook salmon were historically present in Whychus Creek. Similar to Chinook salmon in the Metolius subbasin, both species were extirpated as a result of the Pelton-Round Butte Dam complex. Mid-Columbia River steelhead trout are listed as threatened under the federal Endangered Species Act. Both steelhead trout and Chinook salmon are being reintroduced into Whychus Creek, with steelhead trout fry releases initiated in 2007 and the first Chinook salmon releases targeted for 2009. Success of these efforts will largely be dependent upon availability of spawning and rearing habitat for both species.

Fly Creek

Fly Creek is a small watershed which historically was a tributary of the Metolius River before the lower reaches of the Metolius were inundated by Lake Billy Chinook as a result of construction of Round Butte Dam. The creek has intermittent flows with sections being dry most of the year. These dewatered sections have served to effectively isolate the small population of redband trout inhabiting Fly Creek from the remainder of the Metolius River subbasin. Fly Creek has never been stocked with hatchery trout. As a result of these two factors, Fly Creek harbors one of the most genetically pure populations of redband trout in the Deschutes basin. Preserving this unique genetic material is important for the long term viability of the species. Conservation biology principles identify the vulnerability of small, isolated populations to both deterministic and stochastic events. Reductions in stream flows here will have a detrimental effect on this population.

Potential Fisheries Impacts

Potential declines in stream flow resulting from groundwater withdrawal could limit available spawning and rearing habitat for resident redband and bull trout as well as reintroduced steelhead trout, Chinook and sockeye salmon. If reduced streamflows result in elevated water temperatures, reductions in productivity could be exacerbated by reduced survival and ultimately species viability.

Redband Trout

Research conducted by the department from 1991-1993 demonstrated that 86% of redband trout spawning in the Metolius subbasin occurred in the two mile reach from the headwater springs to Camp Sherman. The department and the U.S. Forest Service annually monitor redd counts in this reach of stream.

Surveys from 2001 to 2007 show a direct relationship between the abundance of redband trout redds and streamflow of the Metolius River as measured at Grandview gage (Fig. 1). During drought periods with reduced streamflow the number of redds observed declined by 32% in 2005 from a mean of 906 redds over the seven year period. Chronic reductions in streamflow resulting from groundwater withdrawals and reduced spring discharge would be anticipated to reduce productivity of redband trout in the Metolius River.

Natural low flows in Fly Creek render this genetically important redband trout population particularly vulnerable to activities that would further reduce streamflow. If projections of hydrologic connection are correct, wells authorized in the PFO could permanently reduce flows in Fly Creek. This could constitute injury to the instream water right and adversely impact the redband trout population.

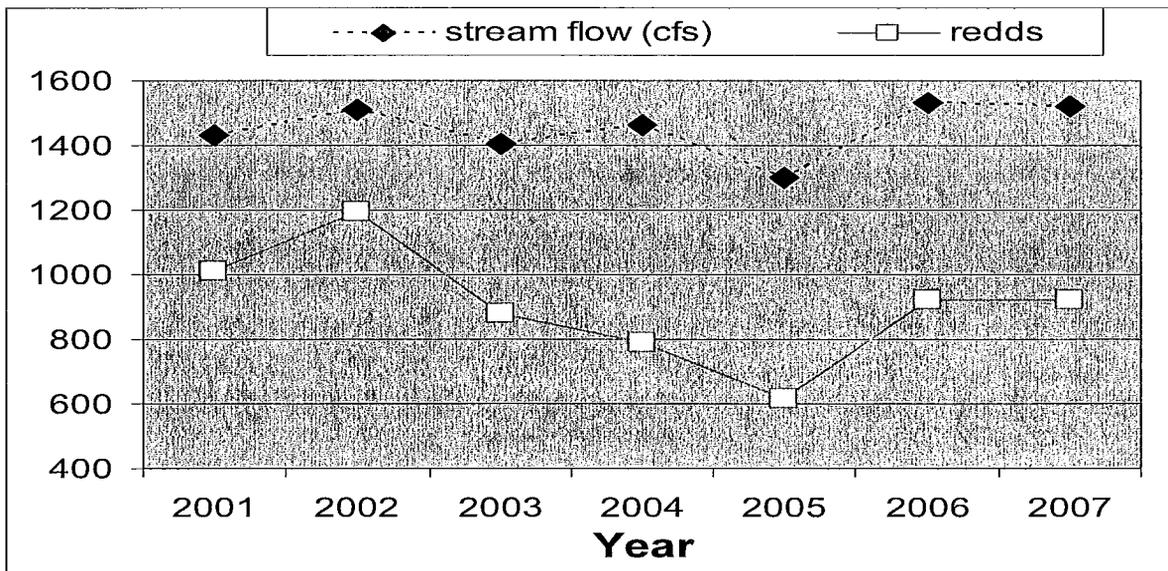


Figure 1. Comparison of redband trout redds observed in the upper Metolius River subbasin and stream flow (cfs) measured at the Grandview gage, 2001-2007.

Bull Trout

Bull trout are unique among native Oregon salmonids in being particularly dependent upon cold water temperatures (10-14 C). Temperatures rising above 14 C will initially result in reduced productivity and growth and ultimately lead to local or regional extirpation. The unique hydrology of the Metolius River basin, dominated by groundwater surfacing as cold springs, is a key factor supporting its robust population of bull trout. Scientists predict this species could be particularly vulnerable to the effects of global climate change. As such, the spring-dominated Metolius River is particularly critical to overall species conservation

Anadromous Fish Re-introduction

As a condition of their FERC license, the co-licensees of the Pelton Round Butte Hydroelectric Project, Portland General Electric and Confederated Tribes of the Warm Springs, in collaboration with multiple stakeholders including the department, USFWS, NMFS, US Forest Service, Deschutes Resource Conservancy, Deschutes Land Trust and area Watershed Councils are reintroducing native anadromous salmonids into their historic habitats in the Upper Deschutes River Basin.

Spring Chinook and sockeye salmon are being reintroduced into the Metolius River while spring Chinook and summer steelhead trout are being reintroduced in to the Metolius River and Whychus Creek. The success of this effort will be largely dependent upon the available adult spawning and juvenile rearing habitat. Activities that result in decreases in streamflow and degraded water quality will adversely impact reintroduction goals and compromise the considerable investment in this effort.

Summary

The department has identified unique and valuable fisheries in the Metolius River and Whychus and Fly Creek watersheds. Hydrologic review of the PFO associated with G-16674 indicates there is a likely, yet unquantified, impact to surface waters in each of these streams. Reductions in stream flow will negatively impact resident and anadromous fish populations. The department recommends OWRD conduct a comprehensive analysis to quantify the relative hydrologic impact to each of the streams and prescribe mitigation by the applicant within the respective *local* zones of impact. Without this critical information issuance of a Final Order authorizing development of the well field is premature at this time.

The department appreciates the opportunity to comment on the proposed final order and other OWRD issues pertinent to fisheries resources in the Deschutes Basin. Please contact me for further input regarding this issue.

Respectfully submitted,



Brett Hodgson
Deschutes District Fish Biologist
Oregon Department of Fish and Wildlife
61374 Parrell Road, Bend, OR 97702
541-388-6363
brett.l.hodgson@state.or.us

Cc:

Nancy Gilbert – U.S. Fish and Wildlife Service

Brad Houslett – Confederated Tribes of the Warm Springs of Oregon, Natural Resources

Scott Carlon – National Marine Fisheries Service

Bill Anthony – U.S. Forest Service

Bruce Thorn – Colson and Colson

Lisa Howard - Fw: LCDC subcomm. hearings on Metolius Basin resorts

From: "John Anderson" <jranderson@bendbroadband.com>
To: HOWARD Lisa <Lisa.Howard@state.or.us>
Date: 02/17/2009 7:57 AM
Subject: Fw: LCDC subcomm. hearings on Metolius Basin resorts

I am sending you a copy of this forwarded email for your information.

----- Original Message -----

From: John Anderson
To: richard.whitman@state.or.us
Sent: Sunday, February 15, 2009 7:43 PM
Subject: LCDC subcomm. hearings on Metolius Basin resorts

Dear Mr. Whitman: As the objective of the LCDC subcommittee hearings is to take comments on an Area of Critical STATE Concern I believe that the subcommittee should cancel the last two hearings scheduled for Madras. Comments already have been taken at Madras and in nearby Sisters. Because these hearings are focused on an ACSC I believe the subcommittee needs to hold the next two hearings in areas where a maximum number of people can be reached. I therefore request that the last two hearings be held in Portland and Eugene. I also believe that LCDC should fully protect all three zones on the planning map for the Metolius Basin. Sincerely, John R. Anderson, 61040 Minaret Circle, Bend, OR 97702.

From: Donna Barton <aquila@bendbroadband.com>
To: HOWARD Lisa <Lisa.Howard@state.or.us>
Date: 02/22/2009 10:17 PM
Subject: Public comment for Metolius Basin ACSC
Attachments: Metolius Letter.doc

Lisa,

Public comment for metolius basin ACSC attached.

Donna Barton
2419 NE Ravenwood Dr.
Bend, Or. 97701
aquila@bendbroadband.com

To: Land Conservation and Development Commission (LCDC)
Re: Metolius River Basin Area of Critical State Concern (ACSC)

I am submitting this written comment as I am unable to attend the scheduled public comment sessions.

In answer to the questions posted on the website
http://www.lcd.state.or.us/LCD/metolius_river_basin_acsc.shtml:

- 1) Resorts and other large scale developments should not be allowed in the Metolius basin.
 - Large scale developments should not be allowed either inside the Metolius Basin (including Deschutes County portions), nor in a three mile buffer around the basin.
 - Any development that introduces more than ten dwellings or accommodation for more than 50 people should be considered “large scale development”. This would apply to both resorts and subdivisions. Additionally, an overall cap should be placed on development in the Basin to limit accommodation to 150% of the population of Camp Sherman as of Feb. 2009.
 - The same ‘no large-scale development’ restrictions applied in the Metolius Basin should extend to the Metolius Basin watershed (approximately a 3-mile buffer). Areas outside of this buffer currently designated for “forest-related use” should remain for “forest-related use”, with no adverse affects to water quality of the surrounding watersheds, or on deer winter range and migration routes. Areas open to development should be required to consider impact to surrounding communities and should not exceed 1/10th the size of existing communities.
- 2) The ACSC should not “assure” that Jefferson County may proceed with some destination resort development. However, the ASCS may assist Jefferson County in determining whether a destination resort would be beneficial in Jefferson County, and if so, where.
- 3) The ACSC should not provide “relief” to property owners unable to proceed with their development plan. However, the property owners should be encouraged to develop smaller-scale outdoor recreation-oriented in areas where the development may actually benefit the community and where development does not negatively impact water, wildlife, and community resources. Generally, these developments should bring in tourist dollars, and not real-estate dollars.

The reasons for my answers are as follows:

The Metolius Basin is a unique place in Oregon where the wet western Cascades, the dry High Desert, and sparkling springs come together. The result is a mixed forest of fir, tamarack, cedar, lodgepole, and ponderosa pine that is not found in other areas of Oregon. Although these species can be found in other places in Oregon, there are not other places where they can be found together. A visitor to this area can feel there is something different about this basin than other parts of Oregon.

It is for this reason that I believe the basin should be left open to all Oregonians and not parceled out to a wealthy few. Anyone can visit the Metolius Basin now – fisherman, campers, hikers, horseman, backpackers, families, singles, the wealthy and the poor. Once development is allowed into the basin, parts will be restricted to only the few wealthy enough to afford such an indulgence. As more forested land is developed into subdivisions, there are fewer recreational acres which become more and more crowded. Overcrowding is already an issue in nearby Three Sisters Wilderness and Jefferson Wilderness as evidenced by the day permits required at some popular trailheads.

When considering protection from development for the Metolius Basin, it is important to include the surrounding areas that make up the Metolius watershed. It does little good to protect a tiny island of pristine environment only to surround it with overbearing development. These tiny islands get “loved to death” as the sheer number of people overwhelm a small place. The development proposed just outside the Metolius Basin on Green Ridge would overwhelm the small town of Sisters, let alone the Metolius Basin.

The Metolius Basin and its surrounding watershed do not need a destination resort to attract visitors – it is already a destination as it is. Several hundreds of homes will not add to this area – it will only detract. For those who wish to buy a piece of paradise, I have a piece of advice. Bring your tent and your sleeping bag, enjoy what the Metolius Basin has to offer – and then leave. If you leave, it will be there when you return. But if try to buy a piece of it, it will disappear before your eyes.

If the Jefferson County commissioners believe that a destination resort will bring them wealth, they should carefully consider who has really benefitted from the resorts created in Deschutes County versus what has been the true cost to Deschutes county including increased demand for water, for public services, impact on traffic and wildlife, and protection from wildfires. Destination resorts rarely bring high-paying jobs to a region. If a destination resort still seems attractive after this analysis, it should be placed in an area where it can help reclaim a landscape, or reclaim a poor community near Madras.

As for the owners of the two areas proposed for development, they must have known these areas were outside of the Urban Growth Boundary, and would need special

designation or a waiver to develop housing on them. Consequently, they were betting on being able to get special designation or a waiver. If they lose that bet, it is not the state's responsibility to cover their ante. However, if Jefferson County does find another more favorable location for a destination resort, I think it would be fair if they were given an opportunity to bid on the development.

I hope the LCDC will consider the comments above, and protect the Metolius Basin and its surrounding watershed from large-scale developments.

Sincerely,

Donna Barton
Bend, OR. 97701

Lisa Howard - Metolius River

From: "Bill Bodden" <bbodden@bendcable.com>
To: HOWARD Lisa <Lisa.Howard@state.or.us>
Date: 02/17/2009 1:25 PM
Subject: Metolius River

It is clear from the debate over the Metolius that the State of Oregon needs to develop a statewide policy for protection of special places such as the Metolius river and its basin. Instead of having three meetings on this issue in Madras and focusing on a Jefferson County perspective there need to be other debates on other sensitive areas to preclude future controversies of this nature.

William Bodden, Redmond, OR

February 5, 2009

Lisa Howard
LCDC, Suite 150
635 Capitol St. NE,
Salem, OR 97301

Dear Ms Howard:

I may not be able to attend the hearing in Sisters, so I am mailing my testimony. I support recommendations proposed by the LCDC to place additional restrictions on destination resorts. I also support a ban on resorts in the Metolius Basin.

According to the Kittelson Report, which was done for Eagle Crest, every home built on a resort will generate about four vehicles per day. One of the proposed resorts in the Metolius Basin will have 2500 home sites. The resort would generate about 10,000 vehicles per day. When the highway infrastructure is developed, that will mean wider roads and overpasses in a fragile ecosystem. If the developers compromise and build 1000 homes, that would still be an additional 4000 vehicles per day. Some places should not be developed.

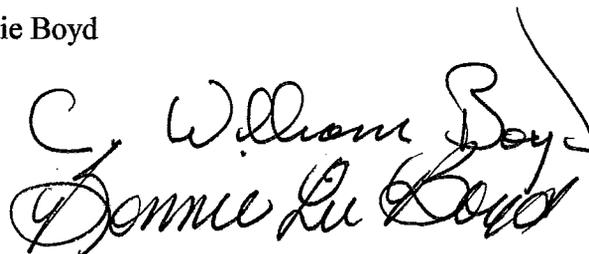
The concept that this is an issue of local control is specious. In Deschutes County, local control means control by the wealthy and well connected. I suspect the same is true for Jefferson County. I have enclosed a survey done by Deschutes County which shows a citizen preference for more natural rural areas and a dislike for destination resorts. These results will probably be ignored by Deschutes County Commissioners who keep opting for short term financial gains with a result of long term environmental deterioration. In ten years, our rural areas will be overwhelmed with traffic. (About ten to twelve thousand vehicles daily from Eagle Crest and Thornburgh alone.)

Counties do not have the finances to do independent investigations on resorts. They accept the developer's data and usually ignore the opponents. (Examples = hydrology and traffic studies done by opponents of Thornburgh.) If you go to the county to request information about resort impacts, you will be referred to developer's data, or state of Oregon information provided by agencies who often do not have adequate resources to study the issues. (ODOT and Fish and Wildlife)

Destination resorts are simply subdivisions disguised as resorts. Their income is derived primarily from home development. Deschutes County has offered several extensions to Pronghorn, so they still have not built a promised hotel. I would recommend the required ratio of homes to overnight lodging be changed to require a higher percentage of overnight facilities. There should be no more permits issued for resorts in the state of Oregon until their long range impacts have been studied.

Enough is enough,

C. William and Bonnie Boyd
20160 Tumalo Rd.
Bend, OR 97701



DEPT OF

FEB 13 2009

LAND CONSERVATION
AND DEVELOPMENT

In Deschutes, resorts a top concern

By Hillary Borrud
The Bulletin

Deschutes County residents who attended six community meetings held across the county in recent months spoke out overwhelmingly against destination resorts.

A majority of people at the meetings said their least favorite county land use goal is one that allows destination resorts, according to documents and staff reports presented to the County Commission on Monday morning.

Resorts

Continued from B1

Deschutes County has estimated that 80 percent of the land mapped in the 1992 destination resort zone cannot be developed for resorts. Much of the land fails to meet standards such as the state's requirement that a resort site must be at least 160 acres, or because it is already committed to another use, such as a rural subdivision.

During the recent community meetings, which the county calls listening sessions, residents said their favorite county land use goal is preserving and enhancing the county's rural character, scenic values and natural resources, according to county documents. Out of 82 people who attended the listening sessions, 29 said this goal was their favorite.

The goal to provide for the development of destination resorts was the most unpopular among people who attended the meetings, and 48 people voted for it as their least favorite.

Maze said, "The common theme was mistrust of county land use and government in

Inside

• Proposals for remapping the resort zone,
Page B3

"The consensus was that the county does not truly understand the impacts of the approved destination resorts, and we cannot enforce the regulations, and should not allow any more resorts in the county," said Associate Planner Kristen Maze.

County staff also presented several options to the commission on how to update the resort zone map, which identifies where destination resorts will be built, and what process to use in the future when people want to add or remove land.

The County Commission did not make any decisions Monday on the map. Maze said county planners will bring a list of the different options for processes to add and remove land from the resort map before the County Commission again sometime in the near future.

Under state law, counties that want to change their destination resort maps have to adopt a process for adding and removing land. Deschutes County first mapped its destination resort zone in 1992.

The destination resort zone is one element of the county's 1979 comprehensive zoning plan, which guides land use decisions, and officials are considering whether to change the map as part of an update of the whole plan.

See Resorts / B3

Remapping the resort zone

Possibilities for remapping Deschutes County's destination resort zone, proposed by county planning staff:

- Do not remap without a specific request from a property owner, except for mapped wildlife areas where resort development is prohibited.
- Remove all parcels of land without 160 contiguous acres; the minimum required resort size under state law, from the map.
- Notify property owners that they could be removed from the resort map and their property values could change, and remove all properties where there is not an objection to being removed from the resort map.

Options for processes to remove and add land to the resort zone map, proposed by county staff:

- A request to add land to the map would be submitted to the county with a preliminary application for the resort, and developers would pay fees so the county could hire independent experts to evaluate potential impacts of the planned resort.
- A request for land to be added to the map could be evaluated based on a checklist and point system, which would identify the benefits and impacts of the resort. A set number of points would be required to add the land.
- The county could review the list of areas excluded from the destination resort map, and change them to ensure resorts are located in compatible areas.

Source: Deschutes County

Unger also said he wants to hold more meetings with those who have an interest in destination resorts. "What I'm frustrated with on destination resorts is they're unplanned growth," Unger said.

Luke said the county planned for destination resorts it has approved, and resorts have brought benefits for the county. For example, Luke said, the Redmond Airport would not have expanded as much without nearby Eagle Crest Resort.

The county will likely hold two more meetings with people interested in resorts early this year and then two public meetings on the destination resort map. Stakeholders invited to the meetings could include lobbyist Linda Swearingen, who often works for resorts and is a former Deschutes County commissioner; an attorney who often works for resort developers; and the land use advocacy groups 1000 Friends of Oregon and Central Oregon LandWatch, said Senior Planner Terri Hansen Payne.

Hillary Borrud can be reached at 541-617-7829 or at hborrud@bendbulletin.com.

people were concerned about resorts."

Commissioner Dennis Luke asked whether numerous residents expressed opposition to resorts, or if the sentiment came from a small group. Maze said, "It was at every listening session, and numerous county land use process, and the county needs to change that."

Commissioner Alan Unger, who was sworn in Monday morning, said he was disappointed to hear that residents mistrust the county land use process, and the county needs to change that.

APPENDIX C

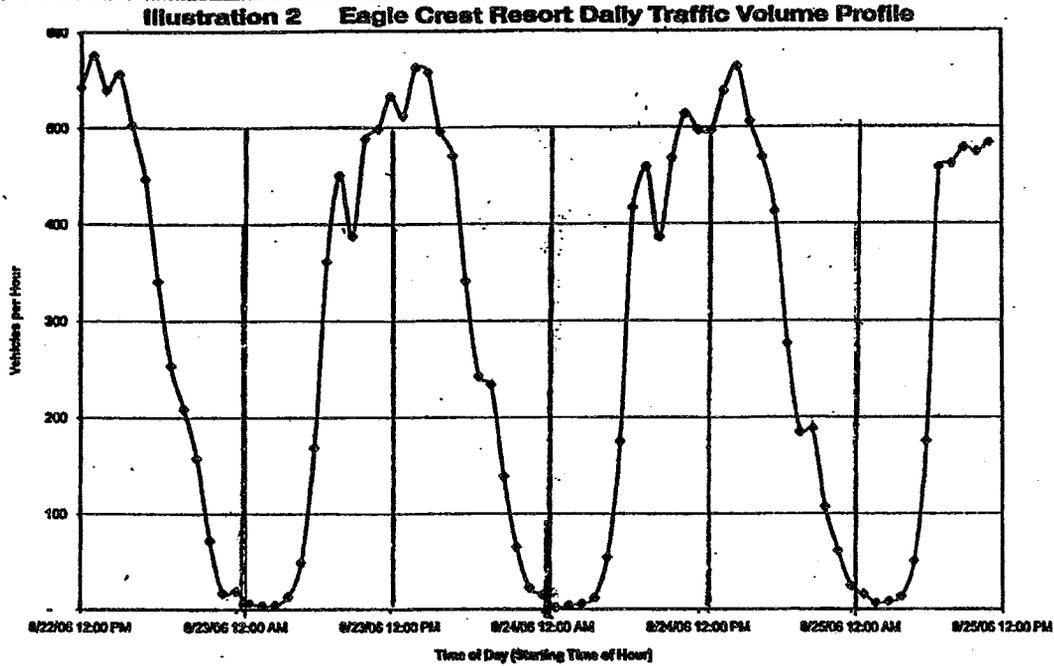


Table 4 Eagle Crest Resort Daily Traffic Volumes

Weekday	24-Hour Traffic Volume (Vehicles per day)	24-Hour Trip Generation Rate (Trips/Residential Unit)
Tuesday August 22, 2006	-	-
Wednesday August 23, 2006	6,621	4.34
Thursday August 24, 2006	6,811	4.46
Average	6,716	4.40

As shown in Table 4, the average daily trip rate for the Eagle Crest Resort range is 4.40 trips per unit.

Table 5 Eagle Crest Resort Hourly Trip Rates

Time of Day	Hourly Traffic Volumes	% of Daily Trips	Hourly Trip Generation Rate
7:00 to 8:00 AM	409	6.1%	0.27
8:00 to 9:00 AM	456	6.8%	0.30
9:00 to 10:00 AM	433	6.5%	0.28
10:00 to 11:00 AM	481	7.2%	0.32
11:00 to 12:00 PM	491	7.3%	0.32
12:00 to 1:00 PM	524	7.8%	0.34
1:00 to 2:00 PM	528	7.9%	0.35
2:00 to 3:00 PM	546	8.1%	0.36
3:00 to 4:00 PM	559	8.3%	0.37
4:00 to 5:00 PM	501	7.5%	0.33
5:00 to 6:00 PM	462	6.9%	0.30
6:00 to 7:00 PM	365	5.4%	0.24
7:00 to 8:00 PM	257	3.8%	0.17
8:00 to 9:00 PM	209	3.1%	0.14

As shown in Table 5, the peak of the resort occurs between the hours of 3:00 and 4:00 p.m., and the resort trip rate remains high between the hours of 10:00 a.m. and 6:00 p.m. It is expected that

Barton E. Clements, Ed.D.
2575 NE Community Lane
Bend, Oregon 97701

541 389-6676

February 12, 2009

Department of Land Conservation & Development
635 Capitol Street NE Ste 150
Salem, Oregon 97301

Greetings:

My sincere thanks to you and Governor Kulongoski for organizing a hearing at Sisters High School on February 11 on the issue of designating the Metolius River Basin as an area of critical concern.

I could not be present, but I would like to add my concern and recommendation for preserving the Metolius Basin as a site protected from destination resort development. It has all been said: we have a world class river, precious to all of us in Oregon, and we must resist any impact that could destroy the beauty, ecology and quality of life of the area.

The growing awareness and urgency of stewardship to the land puts us in the unenviable position of denying revenue to counties or landowners who look to such development as revenue. However, the need to protect and preserve Oregon's great natural resources tips the balance.

Please consider my letter a vote for protection of the Metolius River Basin from resort destinations, rural subdivisions, or any development that threatens the ecology and liveability of the Metolius and surrounding areas. We must do this for ourselves and for future generations.

Sincerely,



Barton E. Clements, Ed.D.

DEPT OF

FEB 17 2009

**LAND CONSERVATION
AND DEVELOPMENT**

Lisa Howard - Metolius Destination Resort???

From: "Richard Corbat" <alsorich@earthlink.net>
To: HOWARD Lisa <Lisa.Howard@state.or.us>
Date: 02/20/2009 3:41 PM
Subject: Metolius Destination Resort???

Destination resort on the Metolius??? This question shouldn't even come up! How dumb!
Please do all you can to stop this proposal and save this beautiful wild area and its' precious water resource.

Richard Corbat
alsorich@earthlink.net
EarthLink Revolves Around You.

From: <logancurrie@bendbroadband.com>
To: HOWARD Lisa <Lisa.Howard@state.or.us>
Date: 02/10/2009 9:00 PM
Subject: Metolius

Dear Ms. Howard,
I am emailing you to register my opposition to any development in the Metolius Basin. Thanks.
Robert Currie
71 SE Myrtlewood
Bend, OR 97702

Lisa Howard - ACSC Hearings

From: "H. Tom Davis" <tomlin2@bendcable.com>
To: WHITMAN Richard <Richard.Whitman@state.or.us>
Date: 02/18/2009 3:27 PM
Subject: ACSC Hearings
CC: "Lisa Howard" <Lisa.Howard@state.or.us>

Hi Mister Whitman -

Thanks for your work on the ACSC for the Metolius. I testified at the Sisters hearing and won't repeat myself. An expanded issue paper on the issue that may be of interest can be found at:

http://www.nativefishsociety.org/includes/documents/MythsTruths_021209_NFS.pdf

The key word in ACSC is "STATEWIDE". With "CRITICAL" also being - - well - a critical word. The rest of Oregon's planning process, requirements and guidelines apply primarily to areas of LOCAL concern.

So why did LCDC/DLCD hold one hearing in Sisters, one in Madras and plan TWO more in Madras with none in the rest of the State. Madras has already failed to understand the values of the Metolius and why there's nationwide and statewide concern.

This is to ask that the **last two hearings/meetings** at Madras be canceled and **held in** Portland and one other location such as Eugene or Salem. **Portland and Eugene** would probably be the most central to the largest number of Oregonians.

The process LCDC is using compromises the ACSC promise and purpose. The ACSC may not be sufficient to protect the Metolius and good bills are hoped for soon, but we can't let the ACSC process be buried or compromised for more decades. This is important for all Oregon special areas as well as the Metolius. For the Metolius the ACSC process could and should be applied to special planning involving state, federal and tribal agencies to enhance the outstanding amenities there such as:

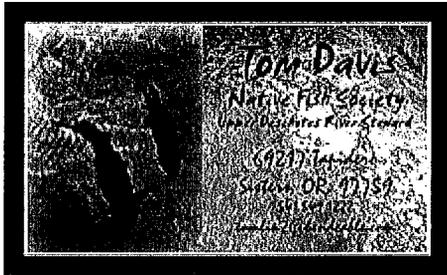
1. Protection and improvement of existing, reintroduced and threatened/vulnerable salmonid resources including pure, native redband DNA. These are particularly important for the Metolius, but Metolius salmonid health and the process used to protect and enhance it are important for the entire State.
2. Wildlife habitat and migration corridors.
3. Wildfire prevention and suppression.
4. Native American cultural resources.
5. Water quality.
6. Erosion - sedimentation - note in the issue paper how this differs from "water quality" in the Metolius watershed and other Deschutes west-side watersheds, particularly for egg-alevin health in the gravel for as much as eight months.
7. Groundwater - surface water relationships and fish habitat impacts.
8. Low impact passive recreation improvements (not associated with destination resorts or

other new dwellings).

Thanks,

Tom Davis

*Tom Davis, PE
Native Fish Society,
Volunteer River Steward
Upper Deschutes
69217 Tapidero
Sisters OR, 97759
541 549 1222*



From: "Elke & Erhard Dortmund" <elkeerhard25@bendnet.com>
To: HOWARD Lisa <Lisa.Howard@state.or.us>
Date: 02/17/2009 3:24 PM
Subject: Metolius Destination Resorts

Lisa Howard
c/o L.C.D.C.
635 Capitol Street. N.E.
Salem, OT 97301-2540

Dear Ms. Howard:

We are opposed to ANY destination resorts in or near the Metolius Basin for the reasons so well stated at the hearing in Sisters on February 11, 2009. It is imperative to not take any chances in diminishing the water flows of the Wild and Scenic Metolius River.

We noticed that at the hearing, the only folks arguing in favor of development in the Basin were either developers or county officials. Yes, Jefferson County had the required hearings prior to the zoning changes but chose not to pay attention to the MAJORITY of those testifying against the destination resort mapping. In addition, the "Metolian" developers held a public information meeting at the Community Hall in Camp Sherman where they encountered strong opposition from local residents which they ignored. As you know, hearings for SB 30 brought out numerous testimony from throughout the State in favor of protecting the Basin.

In case you were unaware, all three commissioners who voted for the destination resort mapping have since been voted out of office. In addition, the Planning Commissioner and the Jefferson County Counsel resigned shortly after the zoning changes were approved.

Sincerely,
Elke and Erhard Dortmund
26234 Metolius Meadows Dr.
Camp Sherman, OR 97730

Lisa Howard - Metolius Basin ACSC designation

From: Stephen Erickson <serickson50@gmail.com>
To: "lisa.howard@state.or.us" <Lisa.Howard@state.or.us>
Date: 02/12/2009 11:47 AM
Subject: Metolius Basin ACSC designation

Hello,

My name is Stephen Erickson, I reside in Sisters Oregon.

I was in attendance during the 02/11/09 meeting in Sisters. It was blatantly clear from the overwhelmingly antagonistic comments that development in the Metolius basin was not in the best interest of the state of Oregon and it's inhabitants.

I would like to add my name and brief comments to the opposition of development of any recreational or urban development in the Metolius basin. Let me address the questions as they are outlined in the Public Comment section of the DLCD website.

1.) Should resorts and other large scale development be allowed in the Metolius Basin?

- Absolutely not.

If I understand correctly the area is designated for timber management practices and the petition by Jefferson County for designation of the Metolius basin as viable for development is still, at this time, in appeal. So, if I understand correctly, the Jefferson County Planning Commissioners are actually speculating the approval of the development plans based on the State accepting the appeal and ruling on behalf of Jefferson County. The fact that the designation is still awaiting approval from the Oregon Supreme Court should curtail any further activities regarding the proposed development.

- Additionally, these "resorts" were more accurately described in the 02/11/09 meeting as rural developments based on the number of permanent residences vs. travel accommodations and recreational lodging. The Metolius basin has absolutely no designation for large scale urban development.

- Given the designation of the upper Metolius river by the state and federal governments that precedes Jefferson Counties designation of the lower Metolius basin as viable for destination resorts (read large scale urban development) it would seem incongruous to allow development in one section that would irrevocably effect another section that has been designated for protection.

- Given this it seems not only logical, practical and obvious that large scale urban development be prohibited from all 3 zones.

2.) Should an ACSC assure that Jefferson County may proceed with some destination resort development? If so Where.

- I believe that it is outside the scope of the designation of ACSC to include language guaranteeing development of anything anywhere else. Jefferson County irresponsibly speculated that the State would approve the amendments to designation of the Metolius basin and they simply miscalculated.

- Jefferson County certainly retains the right to allow large scale urban development in areas that don't have existing protective covenants from overarching state designations.

3.) Should the ACSC provide relief to property owners if they are unable to proceed with resort development as a result of the ACSC?

- Again, it is outside the scope of an ACSC designation to allow for remedy in the case of lost value owed to rezoning or other inhibiting designations. The affected parties can pursue remedy through existing avenues (measure 37) .

- All development within the state should proceed with the covenant of responsible environmental stewardship.

Summary:

As you can tell from my verbiage, I am adamantly against any development in the Metolius basin. As with all the folks that gave testimony last night my opposition to development in the Metolius basin is of a very visceral

nature. I'm not sure what weight that plays in the role of determining the viability of an ACSC designation. The LCDC should keep the concept of scope in mind. PLC wants to build a community in the Metolius basin.

IMPORTANT: the presumption amongst the developers and Jefferson County Commissioners is that if allowed these developments will provide an unending revenue stream. The reality is that there is an equal probability that these developments will fail, particularly given the prevailing economic conditions. What then? The state acquiesces to Jefferson County and allows development that fails and the Metolius Basin now not only ruined from an aesthetic, even spiritual perspective, but also reduced significantly in value from a commercial/development perspective.

The rewards derived by a very few are not worth the risk/loss incurred by many.

--

Stephen A. Erickson

Lisa Howard - Proposed Metolius basin development

From: "Steve Erickson" <serickson50@gmail.com>
To: HOWARD Lisa <Lisa.Howard@state.or.us>
Date: 02/17/2009 8:11 AM
Subject: Proposed Metolius basin development

Ms. Howard and Members of the Committee,

I have written you before stating my vehement opposition to the proposed developments in the Metolius basin. While I reluctantly support the designation of zones 1,2 and 3 as an ASCS (I feel that designation doesn't offer enough protection) I offer as additional consideration the following:

Oregon's Department of Land Conservation and Development currently (unless updated and not on the LCD website) operates under 19 stated goals:

I refer you to goal # 5:

Let me paraphrase.

Regarding lands and waterways that bear a State or Federal designation as "Wild" or "Wild and Scenic" these lands and waterways shall be protected from development and preserved for current and future generations;

Here's the actual verbiage

To protect natural resources and conserve scenic and historic areas and open spaces.

*"Local governments shall adopt
programs that will protect natural
resources and conserve scenic, historic,
and open space resources for present
and future generations."*

Members of the committee, if there is anything aside from napalm and torches that would be in greater direct contradiction to this stated goal it is these proposed developments. This contradiction alone should be enough to designate the entire basin as an ASCS.

Quickly I must also protest the process. You've designated Madras as the site of three out of the four venues for testimony. I suggest that you move one venue to Redmond and one venue to Bend. As you can plainly see from the turnout. The proposed development effects many more people than those that live in Madras. I would suggest that the users of the Metolius as it stands today are much greater in number from outside Madras than from within.

Thank you sincerely for considering these arguments. I wish you courage in your decision making process.

Sincerely

Stephen Erickson

Lisa Howard - Fwd: FW: Amend HB 2226 to prohibit destination resorts or other large scale development in or within 3 mile of the Metolius Basin

From: Richard Whitman
To: Howard, Lisa
Date: 02/23/2009 8:21 AM
Subject: Fwd: FW: Amend HB 2226 to prohibit destination resorts or other large scale development in or within 3 mile of the Metolius Basin
CC: Jinings, Jon; Morrissey, Michael; Voliva, Cliff
Attachments: Petition with signatures.pdf; ODFW comments on Ponderosaresort-2.pdf

Please include in the record for the Metolius ACSC.

Richard

Richard Whitman | Director
Oregon Dept. of Land Conservation and Development
635 Capitol Street NE, Suite 150 | Salem, OR 97301-2540
Office: (503) 373-0050 ext. 280 | Fax: (503) 378-5518
richard.whitman@state.or.us | www.oregon.gov/LCD

>>> On 02/22/2009 at 6:56 PM, in message
<5B12013EED2A534ABD6DCE413D60B98401F33E42@exchnode02.ad.state.or.us>,
"CARRIER Michael * GOV OFC" <Michael.Carrier@state.or.us> wrote:

FYI

From: Lorie Hancock [mailto:lorie_hancock@hotmail.com]
Sent: Sunday, February 22, 2009 7:25 PM
To: CARRIER Michael
Subject: Amend HB 2226 to prohibit destination resorts or other large scale development in or within 3 mile of the Metolius Basin

c/o Michael Carrier

Governor Kulongoski,

Time is of the essence to save the Metolius River.

Your actions to date have not tracked with your written desire to protect the Metolius. Both the proposed HB 2226 and the initial draft of the Area of Critical State Concern management plan fail to prohibit the largest (by tenfold) of the two proposed destination resorts that threatened the Metolius. **IT'S HARD TO IMAGINE THAT THIS IS A SIMPLE OVERSIGHT ON YOUR PART.** I urge you to be true to your promise and support moving forward with an amended HB 2226. **HB 2226 should be amended to add language that expands the prohibition to destination resorts or other large scale development in or within 3 mile of the Metolius Basin.** You should also delete the unnecessary language regarding loss of Measure 49 claims – it will only impede the bills passage. Moving forward with an amended HB 2226 will accomplish the goal of protecting the Metolius – a precious state resource – and is not inconsistent with the eventual designation of this area as an Area of Critical Concern and development of a management plan for the area. I urge you to move forward to

protect the Metolius now. I have attached a copy of a petition with over 150 signatures of citizens who agree that the protection needs to prohibit resorts within 3 miles of the Metolius Basin. If you continue to wait and see, the opportunity for success may vanish.

Most people acknowledge that the Metolius basin is a special place. It was found to have all of the outstandingly remarkable values (geologic features, hydrologic values, ecology, wildlife resources, fisheries resources, scenic resources, prehistoric values, historic values and recreation values) measured in determining whether a river deserves status as a Wild and Scenic River. Destination resorts or other large scale development within 3 miles of the watershed will likely reduce water flow and quality in the river, and will overpopulate the area forever destroying the primitive and rustic nature of the Metolius Basin. See attached comments from Oregon Fish and Wildlife regarding the impact on the Metolius River of the wells proposed for the Ponderosa Land and Cattle Co. destination resort with usage estimated at more than 8% of the estimated 50,000 gallons per hour flow at the headwaters of the Metolius - including the following remark "*Existing hydrologic reviews and analysis suggest the proposed well field will diminish surface flows in the Metolius River, Whychus Creek and Fly Creek watersheds.*"

Please take action now.

Lorie Hancock

Windows Live™: Discover 10 secrets about the new Windows Live. [View post.](#)

February 10, 2009

Land Conservation & Development Commission
c/o Jon Jinings, DLCD
888 N.W. Hill Street, Suite 2
Bend, OR 97701
jon.jinings@state.or.us

Dear Commissioners,

I appreciate this opportunity to comment, as a private citizen, on the proposed Area of Critical Concern (ACC) designation. My background is that of a land use planner with Clackamas County for the past nearly 10 years. Prior to my tenure with Clackamas County, I obtained a Masters Degree in Community and Regional Planning from the University of Oregon. As a result, I am quite familiar with the state's planning system.

LCDC appears to be venturing into uncharted territory by utilizing an obscure land use control that has never been implemented in the State's history. Further, LCDC is taking a stand that ignores the policy direction of Jefferson County that was adopted through a long public process. This letter focuses on two problems with this approach by the Governor and LCDC to create the ACC.

First, DLCD and the state were notified of Jefferson County's Comprehensive Plan amendment process in April of 2006 and its policy direction to site Destination Resorts in the County. Both DLCD and the Governor had the opportunity to comment on the matter to assure that any concerns were addressed. Neither the Governor nor DLCD chose to engage in the public process at that time. The public record pertaining to these changes closed in December of 2006. The proposed ACC designation circumvents Jefferson County's legitimate public process. Both the Governor and appointed officials such as LCDC commissioners should respect local public processes. Not doing so ignores our planning system and the legitimacy of local government.

Second, the Oregon Planning System is not authoritarian in nature. The system requires local planning documents to comply with the Statewide Planning Goals and Guidelines but assures that local land use decisions are rendered locally. Jefferson County considered the merits of the two sites and adopted a map identifying the sites as destination resort eligible consistent with ORS 197.455. The ACC designation is not intended to be used as a tool by specific legislators or the Governor to interfere with the economic development and recreational policy choices of the duly elected County officials in Jefferson County.

I sincerely appreciate your service to the State by sitting on the Land Conservation and Development Commission, but I feel that the public policy developed by locally elected officials in public hearings should be respected. Moving forward with the ACC designation in the Metolius Basin does not respect the residents of Jefferson County, the Commissioners they elected or government in general. Further, this action would set a difficult precedent by removing all certainty in Oregon's nationally respected planning program. I respectfully request that you vote to deny the ACC designation for the Metolius Basin.

Sincerely,



Stephen F. Hanschka, Certified Floodplain Manger (CFM)

Lisa Howard - Metolius River Basin

From: Michael HOLLOWAY <holloway9024@msn.com>
To: HOWARD Lisa <Lisa.Howard@state.or.us>
Date: 02/17/2009 7:40 AM
Subject: Metolius River Basin

This watershed, above any other place I have ever been should be saved, at all costs. It has somehow remained serene, scenic and unpretentious in a state that is sadly over developed. I have spent many a day fruitlessly searching for a place to sit undisturbed and just enjoy being alone and quite. Somehow, the Metolius River still manages to be that place. Should I never go there again, just the knowledge that such a place exists gives me a certain sense of peace and hope. The thought of loosing this special place brings tears to my eyes. Please, save this place for posterity rather than sacrificing it for the profit of a small group of people. The Metolius River is the reason for these destination resorts. Once the river is sucked dry and the habitat is destroyed what will become of these resorts? The generated taxes are a fleeting thing and will soon dry up just as the Metolius itself will.

Thank you,
Michael Holloway
Salem, OR

Lisa Howard - The Metolius

From: Wendy Holzman <wendomere@gmail.com>
To: WHITMAN Richard <Richard.Whitman@state.or.us>
Date: 02/18/2009 9:43 PM
Subject: The Metolius
CC: HOWARD Lisa <Lisa.Howard@state.or.us>

Dear Mr. Whitman,

I would like to share with you the following about the Metolius Basin as an Area of Critical Statewide Concern. I request the -

1. **LCDC fully protect all three zones shown on their DRAFT plan map,**
2. LCDC hold hearings in Portland and Eugene (or the second town of your choice), to truly determine "STATEWIDE CONCERN",
3. LCDC cancel the last two hearings in Madras since they've already taken comments there, and
4. The Metolius is important to me and everyone in Oregon and simply is a place that should not be developed. It is one of our jewels and we can't afford to not get it right, and lose this amazing little spot in our state. After all, once irreparable harm is done there are no second chances.

Respectfully,
Wendy Holzman
324 E. Wapato Loop
Sisters, OR 97559

Lisa Howard

From: "Chuck Humphreys" <chuckinsisters@msn.com>
To: WHITMAN Richard <Richard.Whitman@state.or.us>
Date: 02/20/2009 8:43 AM
CC: HOWARD Lisa <Lisa.Howard@state.or.us>

Dear Richard,

Regarding the Metolius Basin as an Area of Critical Statewide Concern, I would respectfully like to request that:

1. LCDC fully protect all three zones shown on their DRAFT plan map.
2. LCDC hold hearings in Portland and Eugene (or the second town of your choice) as this is an area of "statewide concern" with many of the users coming from west of the Cascades, rather than limit hearings to the immediate neighborhood .
3. LCDC cancel the last two hearings in Madras since they've already taken comments there (a total of 3 hearings in Madras seems both excessive and likely to bias results).

In closing, I would like to stress that the Metolius is important to me and everyone in Oregon. It is one of our state's natural jewels that we should cherish and protect, not develop as proposed by a few. If we fail to hold the line around this unique environmental asset, if we allow the proposed private developments to proceed, we will lose some precious, forever and all time. This sort of development cannot be undone, and we all will have lost a priceless public assets so that a few private individuals could benefit. It would be unsound public policy, as well as a tragedy. Help us protect this treasure for all of Oregon, and for all our visitors.

Thank you.

Charles Humphreys
PO Box 653
Sisters, OR 97759
541 549 1943

February 17, 2009

My name is Morton Hurt. I live at 16000 Foothill Lane, Sisters, OR, 97759. The time is 3:45 am. I am leaving this morning to return to Vietnam where I was stationed as a Marine in 1968 - 1969. My return is a very long story so I will spare you the details. It's enough to say I have some unfinished business I need to complete.

Before I leave I have some unfinished business here in Sisters and that business is writing this letter to offer my support in the effort to designate the Metolius River Basin as an "Area of Critical State Concern" to preclude the development of any destination resorts in or within 3 miles of the Metolius River Basin.

You see, I have a love affair with the Metolius River. I don't believe I am special. I believe anyone who comes to visit the Metolius River falls in love. My love affair began some 14 years ago. My wife and I had come to stay at Eagle Crest for a weekend of free golf. All we had to do was listen to a condo sales pitch. We were both familiar with Central Oregon having visited in the early 70s in our prior marriages. On arriving at Eagle Crest we looked at each other and asked where are the trees? Rather than staying we decided to return to Seattle but instead of driving home over Mount Hood we would return via the Santiam Pass. It was the middle of July when we passed through Sisters. I remarked how attractive Sisters looked and said why don't we see if there is a place we could stay for a couple of nights. We stopped in at the Chamber of Commerce where we were given a phone and a list of places to call. As luck would have it there was one cabin left at the Metolius River Resort for one night when we would then move to the Metolius River Lodges for our remaining two nights. This is how my love affair began and for the next the 11 years we would return almost every summer to a cabin on the river for our annual retreat to the beauty of the Metolius River and the surrounding mountains of Central Oregon.

When we retired from our respective professions we naturally thought of retiring to Central Oregon even though we lived most of our adult life in Seattle and four of our five daughters and their families lived in Puget Sound. We bought our first home in Camp Sherman in 2005 where walking the Metolius River became a daily ritual. Each passing day would present a new picture of the river's beauty. We would live in our home at Camp Sherman for a year when we would buy our current

home in Sisters. Although we are not as close we still find time to return to the Metolius River to walk the river to enjoy its beauty and solitude.

I am not going to present any facts and data as to why the Metolius River Basin should be designated as an Area of Critical State Concern. I am confident others have presented that information already to the Oregon Department of Land Conservation and Development. It's enough to say that Oregon has a history of doing what is right to protect the beauty of its state. As I often describe it, the Metolius River is a "little slice of heaven". I trust the State of Oregon will do what is right to protect and preserve this magnificent gift nature has given all of us to enjoy.

Very truly yours,

Morton Hurt

February 11, 2009

DEPT OF

FEB 19 2009

**LAND CONSERVATION
AND DEVELOPMENT**

Richard Whitman
Oregon Department of Land Conservation & Development
635 Capitol St. NE, Suite 150
Salem 97301-2540

Dear Mr. Whitman,

Although economic benefits of destination resorts sound appealing in tough times, the 10 destination resorts approved in Central Oregon amount to suburban sprawl and should not be allowed in the Metolius Basin. Destination resorts and other intensive residential development within the Metolius basin are not consistent with protecting water and important natural resources. Large scale development is much less costly and makes more sense within Urban Growth Boundaries.

Destination resort developments do not fully pay their own way and require tax-payer subsidies for infrastructure costs. Destination resort developers seek windfall profits, by buying cheap forest land and changing rules, while burdening other taxpayers who subsidize the full costs of roads, schools, police, fire and other infrastructure. This is exactly what Jefferson County tried to avoid in the early 1970's when they sought to prevent large scale subdivisions by designating the Metolius Basin as an Area of Critical Concern. Jefferson County successfully limited residential development and protected the Metolius Basin with zoning for forest and farm uses.

Hoping to change land use rules is risky and speculative. Most people who purchase forest lands and farm lands are aware of permitted timber management and forest related uses. Intensive development like destination resorts has never been a permitted use. Taxpayers should not have to pay real estate speculators for development rights they never possessed.

As recognized by the Governor, state and local land laws do not adequately protect groundwater in the Metolius basin. The proposed well system for the largest destination resort in Oregon, seeks four times the water currently used in Sisters. ACSC designation should strengthen existing regulatory guidelines to protect groundwater and other important natural resources.

The water and natural resources of the Metolius Basin should be protected for future generations to enjoy. To prevent taxpayer subsidized urban sprawl and protect natural resources destination resorts should not be permitted within at least three miles of the Metolius Basin.

Sincerely,



James L. Inkster
1715 N.W. 2nd Street
Bend, OR 97701

DEPT OF

FEB 19 2009

LAND CONSERVATION
AND DEVELOPMENT

February 18, 2009

Richard Whitman
Oregon Department of Land Conservation & Development
635 Capitol St. NE, Suite 150
Salem 97301-2540

Dear Mr. Whitman,

For over five generation, our family treasured the Metolius River as Oregon's crown jewel worthy of the best possible protection. Most Oregonians who visit the Metolius River, similarly recognize its unique beauty and believe Federal, State and Local protection are necessary to preserve its unique qualities. After attending the Sisters public hearing, listening to testimony and reviewing agency correspondence with our governor, I feel even more strongly in favor of designating the Metolius Basin as an Area of Critical Statewide Concern.

The draft plan does not go far enough to protect the Metolius basin and its critical groundwater watershed (which is larger than the surface watershed). To ensure protection of this critical statewide resource, **I urge you to modify the plan and prohibit destination resorts and other development in Zones 1, 2& 3.** This action is the only adequate way to protect critical groundwater resources for the Metolius basin.

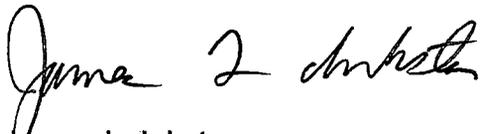
It is important not to dilute LCDC's process to designate the Area of Critical Statewide Concern, by placing too much weight on a small number of local interests who oppose federal or state land-use protection in Jefferson County. If asked, this same minority would object to federal and state designation of the Metolius River as part of the National Wild and Scenic River System and as a state Scenic Waterway. In fact, these legislative measures and administrative guidelines were adopted because the Metolius is recognized as a treasure of our state and our nation.

Designation as an Area of Critical Statewide Concern is necessary to strengthen protection of critical resources. As mentioned in the governor's letter, "groundwater sources that supply the Metolius River are specifically excluded from the natural resources that are protected under Jefferson County's comprehensive land use plan and corresponding state land use laws. As a result, local and state land use plans and goals do not protect the water sources that supply the Metolius River.....the combination of inadequate state protections and absent local safeguards for groundwater leaves the unique and irreplaceable

resources of the Metolius exposed to the harmful effects of large-scale development.”

As one speaker mentioned during the Sister’s meeting “Natural systems don’t recognize political boundaries”. The costs to Oregon outweigh the economic benefits of destination resorts. It is important to hear from as many Oregonian stakeholders as possible during the next few weeks and not just a limited number of people in Jefferson County. You have already heard from many Central Oregon citizens during the two meetings in Madras and one meeting in Sisters. **In fairness to all Oregonians, I urge you to cancel the additional two hearings in Madras and hold them in either Portland, Salem or Eugene.**

Sincerely,

A handwritten signature in black ink that reads "James L. Inkster". The signature is written in a cursive, flowing style.

James L. Inkster
1715 N.W. 2nd Street
Bend, OR 97701

Ann Ingham

26248 SW Metolius Meadows Drive
Camp Sherman, OR 97730
541-595-2183

February 17, 2009

To: Lisa Howard and LCDC

Re: Metolius Basin designation as Area of Critical State Concern
Testimony for the Madras meeting on February 26

Dear LCDC members,

At the Sisters meeting on February 11 there were several issues not addressed by those attending and I was not able to explain some of them in my testimony. My husband said I ran past my allotted three minutes, so I am writing this letter in an attempt to fully explain my concerns so that you may get a better idea of events that have occurred in the past concerning destination resorts and zoning in the basin. Therefore, I will begin with a history of our dealings with the Jefferson County commissioners and the planning committee.

In 1991, a Sisters developer obtained permits for the Metolius River Resort cabins. No public input was asked for. We only learned of the resort after the permits were issued and construction was about to begin. Since the property was already zoned for cabins, there was no variance required. There was a lot of discussion over the project and most property owners in Camp Sherman were against the resort being allowed primarily because of the number of cabins allowed and the closeness to the riverbank. The resort was zoned for travelers' accommodations, but the cabins are individually owned. They are allowed only so many personal use days per year as per tax laws.

The owners of the property adjacent to the Metolius River Resort, Black Butte RV Park, also presented plans for developing their property in the same manner, only more cabins would be built with slightly more density than the Metolius River Resort. The majority of property owners in the valley were against the proposed development of the RV Park and asked the county to allow our input in the final design of the new site. Due to the resistance of residents against the project, the owners withdrew their plans and eventually sold the property. As a result of this controversy a Local Advisory Committee was formed, consisting of local residents with the purpose of working with Jefferson County planning department and the commissioners to arrive at suitable zoning ordinances that would be acceptable to everyone in the basin, including the Suttle Lake complex.

In 2001 or 2002, I am not sure exactly when, the Lake Creek Resort was sold to a Sisters realtor. He submitted plans for expansion of the resort that included approximately sixteen new cabins and a meeting hall. The plan was to have individual ownership of each of the cabins. The zoning at that time for the resort was for travelers' accommodations and did not include individual cabin ownership. The consensus of Camp Sherman property owners was that these cabins would ultimately become another housing development in disguise, thereby infringing upon our zoning laws for travelers' accommodations. Several organizations raised issues with the decisions of the planning department and the commissioners' approval of the expansion and eventually took the issue to the Land Use Board of Appeals. The resort application was referred back to Jefferson County Planning for further review. The result was to drop the application for individual cabin ownership and a compromise was agreed upon with the rest of the expansion.

I am not exactly sure when Willamette Industries sold their properties on Green Ridge and in the basin. Everyone in the valley knew about the sale and our worst fears were that destination resorts would fill the basin. Willamette Industries sold twelve hundred acres on FS Road 1216 to the Deschutes Land Trust before the property went up for sale, hoping to save at least that portion from resort development. The Land Trust later established the Metolius Preserve.

Everyone has realized that Jefferson County would eventually push for development on Green

Ridge. The major obstacle was the lack of destination resort zoning laws for the county. I disagree with their statement that they have done their due diligence in creating the zoning laws for the Metolius Basin. They have actually skirted around involving the residents of Camp Sherman and Suttle Lake in an effort to pave the way for resort development in the basin. They did not advise our LAC members that they would be revising all our zoning ordinances. We only heard about the rezoning when it was almost completed. They revised almost every ordinance for the entire basin without our input. We have struggled since 1991 to work with the county commissioners and the planning department to come to acceptable zoning ordinances that are amenable to everyone. It has become apparent that our county officials have no respect for residents in the basin and feel they should be able to do as they desire with no regard to the impact it will have on this basin, the residents and the thousands of visitors we have each year.

I am very concerned about the impact that a development the size of the Ponderosa resort will have on Sisters and the surrounding area. I recognize that Jefferson County needs the property tax revenues that a resort of any size will bring. We are a poor county with large areas of BLM and national forest lands, the Warm Springs reservation, and large areas of farmland. I do not believe the county will realize any revenue other than property taxes from a resort on Green Ridge and the Basin. All the tourist money and the burden of providing the infrastructure to serve the resorts will go to Sisters and Deschutes County. An influx of several thousand more tourists than we currently have will have a huge impact on the infrastructures of both Sisters and the Metolius Basin. I do not believe that the developers of either resort have fully realized just how much of an impact this will be, nor do they care. Bill Smith, one of the developers of Black Butte Ranch, stated, "It is better to accommodate the increase in use with development than to let unprogrammed use run roughshod over the area. Both talked about 'resorts' can help create the infrastructure needed to protect the Basin from uncontrolled use. . . . We need development in the Basin to keep it from being overused." How absurd is this statement. The development of a "resort" with a population of five thousand or more will definitely have the opposite effect. One cannot possibly believe that several thousand "visitors" will stay within the boundaries of their resort and not leave it to visit the surrounding countryside. Do all the visitors and owners in Black Butte Ranch stay within the confines of the Ranch? I think not. And the Ponderosa resort will be three times the size of the Ranch. And what is "unprogrammed use"? Mr. Smith can only be referring to the hunters, campers, hikers, anglers, mushroom pickers, and other visitors who come to the Metolius Basin every year. Their impact on the Basin is far lighter than several thousand resort vacationers will be.

Another concern is that of access to both resorts. We have only three paved roads that provide access to the Basin. They are forest service roads, with minimal maintenance provided by the county in only a few areas. Road 12 is on the west side of the valley floor and would provide access to the Metolian resort. The traffic is primarily campers, hunters, hikers and mushroom pickers. It is the only road in and out of the area that is paved. All other roads in the area are graveled. The Ponderosa development would be served by Road 11 on Green Ridge. It is also a forest service road that is county maintained. It has only light traffic most of the year. It provides the only paved access in and out of the area and receives the same level of maintenance that Roads 12 and 14 receive. That is, an occasional pothole patch and striping of the centerlines.

Road 14 serves Camp Sherman proper, the river cabins, campers, etc. It has received heavy use due to the wildfires over the past five years. It is in need of repairs and repaving in many areas. Every year we ask for repairs and needed maintenance and we always get the same answer. "There is no money in the budget for road maintenance in your area". When the Metolius Meadows development was built in 1974, the developer dedicated our roads to the county and they accepted the responsibility. The only maintenance they do is restriping the lines every other year, and an occasional shoulder patch. They blame us for building so many houses and allowing heavy trucks in the development. We average about two one new houses per year. They take our road tax dollars and spend it in other areas of the county. One of my neighbors has been trying to get them to repave our streets. They are willing to do so only if we come up with the money to buy the asphalt and other supplies. They will supply the equipment and work force, which is half the cost of over \$250,000. I for one do not believe we should give the county relief from this obligation as our property taxes include road maintenance and repairs. Why should we "bail out" the county when they have not spent a dime on our roads since 1974? Ask the county how they plan to deal with road maintenance for a very large "city-sized" development?

These questions keep coming to mind when I think of two new resorts in the Metolius Basin. How

will Jefferson County accommodate the needs of an influx of five to six thousand additional residents and visitors to our area? How will Sisters and ODOT accommodate the major increase in traffic on an already heavily congested highway? Who will provide police and fire protection, schools, road maintenance, and medical services? Where will the huge volume of water come from needed to supply such resorts? How will they provide sewer and garbage disposal? Where will the population shop for souvenirs, food, and other essentials? Who will pay for everything? Jefferson County does NOT have the resources to sustain a city-resort in the middle of a national forest. How will the Sisters Ranger District handle such an intrusion on our national forest? How will these resorts affect the wildlife in the Basin? We need the answers to all the above from the developers and Jefferson County before the zoning issues are resolved. In fact, I believe that in reviewing these concerns and issues raised by other agencies, you will be convinced that the Metolius Basin and Green Ridge should be given the "Area of Critical State Concern" status.

If these developments are allowed, the Metolius basin will be irreparably lost, and Sisters so congested, that these areas will no longer be enjoyable places to live in and visit. We will become just another dot on the map.

Sincerely,

Ann Ingham

Ann Ingham

Ann Ingham

26248 SW Metolius Meadows Drive
Camp Sherman, OR 97730
541-595-2183

February 11, 2009

To: Governor Kulongoski

Re: Resort Developments in Metolius River Basin

Dear Governor Kulongoski,

I would like to thank you for giving me this opportunity to express my opinions concerning the proposed destination resorts in the Metolius Basin. I am deeply concerned about the impact these two resorts will have on the basin.

Our first visit to the Metolius area was in 1972. We returned every summer to camp out on the river and enjoy activities within the valley until we moved there to live full-time in 1992. We immediately recognized the uniqueness and unrivaled beauty of the area. We have witnessed the gradual changes and growing tourist population for thirty-eight years. Every summer we have a large influx of visitors to the valley. That is not just tourists and anglers. It includes horseback riders, mushroom pickers, day hikers, overnight hikers, game hunters, and Christmas tree hunters. I have heard figures quoted of as many as four to five thousand visitors during the height of the tourist and hunting seasons. The valley has been able to accommodate all of these activities and the gradual growth in visitors every year.

My fear is that with the building of two destination resorts and the increase in tourist activities, and population in the basin that these two resorts will bring, will be far more than the valley and the forests can withstand.

First of all, I have heard quotes of three hundred and sixty dwelling units for the Metolian, which was recently revised to six hundred and thirty. At two people per unit, that would equal a population of twelve hundred and sixty people. There would be an increase of over six hundred vehicles using the only road (a forest service road, not state or county road) into the area and entering and leaving Highway 20. There would be over six hundred dwellings that requiring water for drinking and domestic use, postal services, police services, and fire protection services. A certain percentage of the population would want to live in the resort year-round, thereby requiring education at the local two-room Black Butte School for their children. So far, no mention has been made for providing any of these expensive services on-site such as Black Butte Ranch and Sun River resorts do. I am deeply concerned with the logistics of providing all these services for twelve hundred and sixty people.

The Ponderosa Land and Cattle resort planned for Green Ridge has projected a minimum of twenty-five hundred dwelling units, possibly three thousand. That equates to an additional five to six thousand people visiting the area on any given day at full build-out. As I apply the need for the same services as the Metolian I am overwhelmed at the logistics of providing all the services that a destination resort of that size will need. At full build-out, it will be three times the size of the Sun River Resort and Black Butte Ranch, and larger than the city of Sisters. In other words, a full sized city in the middle of the Deschutes National Forest, with a single forest service road for access and several hundred vehicles a day entering and leaving Highway 20 at

the Indian Ford Campground. This amount of traffic will also affect the city of Sisters, which already has a problem accommodating the normal tourist parking. There has also been no mention of providing the necessary police, fire protection and postal services. Water for drinking and domestic use is another story. There will also be an impact on the resident deer and elk population.

My question to the two developers is this, "Are you expecting the city of Sisters and the community of Camp Sherman to provide all these services for the host of visitors and prospective owners that your resorts will bring to the Metolius basin?" If you are, then I have to say that we cannot possibly accommodate your needs and requirements for what you are proposing. It would take years of development for the city of Sisters to be able to accommodate your needs. Camp Sherman will never be able to provide even a small amount. The Camp Sherman store barely has enough parking spaces for the normal number of seasonal visitors. The Camp Sherman post office does not have room for expansion. The Kokanee Café is packed from beginning to the end of their season. Our two-room school can only handle so many children. We have very little room for expansion in any area.

There are proponents of the resorts that could argue it will bring economic relief to the area by providing jobs and much needed tax revenue for Jefferson County. But at what cost to our national forests, I ask you? Can the Metolius Basin withstand several thousand more people per year hiking and riding horses on the forest trails, fishing in the Metolius River, and driving on poorly maintained forest service roads? There would also be a major increase in vehicular traffic on Highway 20, which is already a nightmare. Do we really need two more destination resorts within ten miles of each other, Black Butte Ranch and Suttle Lake? The increase in population and demand on our resources won't come in gradual annual increments. It will come almost overnight, within a short period of time, and the effects will last for a very, very long time. I don't believe the Metolius River Basin will be able to accommodate that many people and maintain its current pristine beauty and uniqueness.

I have one final point to make. As a member of the Camp Sherman search and rescue team, I am very concerned about the ability of our area resources to evacuate a destination resort of several thousand people with only one access into and out of Green Ridge. It frightens me terribly to think of all the things that could go wrong up there. Black Butte Ranch has been threatened at least three times in the past five years. They are in a much easier area to be defended from wildfires than any development on Green Ridge.

Sincerely,

Ann Ingham

Ann Ingham

Lisa Howard - Opposition to Resort

From: "Tony & Missy Johnson" <tonyandmissyjohnson@comcast.net>
To: HOWARD Lisa <Lisa.Howard@state.or.us>
Date: 02/13/2009 4:56 PM
Subject: Opposition to Resort

Dearest Lisa,

This letter is to voice our families very STONG opposition to the destination resorts in the Metolious River area. Our family is a visitor to that area 3-4 times per year and go their for its peacefulness, quietness, access to all things wilderness and family togetherness. We enjoy the fish hatchery every spring and summer with our 3 young children. They enjoy learning and experiencing the growth and development of Oregon's fish. We enjoy the bike riding and hiking on and around the areas well maintained trails. Most importantly we enjoy the lack of traffic the area has to offer and the escape from city living. The destination resorts that are being planned for that area will most definitely destroy all that we enjoy about the area.

Sincerely,
Tony, Missy, Hunter (8), Cam(6), and Davis(4) Johnson
9031 SE 59th St
Mercer Island, WA 98040

(Seattle, WA)

Lisa Howard - Comments about Metolius Basin

From: "Carol and Perry" <carolandperry@gmail.com>
To: HOWARD Lisa <Lisa.Howard@state.or.us>
Date: 02/13/2009 11:33 AM
Subject: Comments about Metolius Basin

Dear Oregon State LCDC:

I live in central Oregon and believe that the Metolius Basin needs to be protected from nearby resort development. I feel that resorts should be prohibited in all three of the proposed Metolius Basin sub-zones.

The Metolius Basin is a unique and beautiful area that needs continued preservation. Preservation began long ago and there is no new strong reason that resort development should happen.

We travel to the headwaters area and north of there in the hot summer days for the cooling waters, and unique flora. This special flora needs constant levels of water at a steady temperature to exist. The unique bull trout also require these conditions.

We also bring our visiting friends to the area, and they are just as amazed by this special beauty.

Perry Johnson
1917 NE Higher Ground Ave
Bend, OR 97701

Lisa Howard - Metolius LCDC draft plan

From: Kathy Krause <kkmkra@gmail.com>
To: WHITMAN Richard <Richard.Whitman@state.or.us>
Date: 02/17/2009 9:02 PM
Subject: Metolius LCDC draft plan
CC: HOWARD Lisa <Lisa.Howard@state.or.us>

Dear Mr. Whitman,

I am writing to urge LCDC to fully protect zone one, zone two and zone three shown on the DRAFT plan map. I believe this IMPERATIVE in order to protect the groundwater watershed from the larger, proposed Ponderosa resorts potential ramifications on the river.

I also want to mention, the state stepping in when necessary is part of the process (our process, governmental process working at a higher level) when a local government doesn't offer proper stewardship or when a resource with larger significance is at risk. I believe this issue is one which involves Oregonians and not just Jefferson County residents. Many ramifications of resort development may potentially affect state and federal taxes (wildfire suppression, roads, infrastructure etc.). For this reason, I would like to suggest moving the two future Madras hearings to Salem, Eugene or Portland. I attended both the Sisters and Madras hearings and feel the comments of these two areas have been heard and were well executed for both sides. It is important to involve Oregonians from all areas of the state. The winter driving conditions and a hearing time of 500pm make it difficult for locals to attend, let alone being able to have attendance of Oregonians who live other parts of the state who own property in Jefferson County or frequently visit the Metolius.

The reasons for protecting the Metolius are numerous, and because I have attended the first two hearings, I know you have heard the list of reasons. I do wish to close with this; how lucky we are to have something as unique as the Metolius in Oregon? How lucky are we that it is still here to protect?! We are very lucky!

Thank you very much for your attention!

Best,

Kathy Krause
2725 NE 66th Avenue
Portland, Oregon 97213

Lisa Howard - ACSC Process

From: Al Krause <ahkra@comcast.net>
To: WHITMAN Richard <Richard.Whitman@state.or.us>
Date: 02/18/2009 7:44 AM
Subject: ACSC Process
CC: HOWARD Lisa <Lisa.Howard@state.or.us>

Mr. Whitman,

I write to respectfully request that the LCDC fully protect all three zones defined around the Metolius Basin from destination resort development, and because the issue of Metolius protection being a statewide issue that the remaining public hearings on this issue be held in the Willamette Valley, preferably Portland and Eugene. The latter request would give people in the larger population areas an opportunity to weigh in on this "statewide" issue.

The Metolius River is after all a "state" treasure, not a Jefferson County treasure, and clearly from their past actions Jefferson CO has demonstrated it does not consider the river worth protecting.

Thank you,
Al and Jane Krause
Sisters, OR

Al Krause
ahkra@comcast.net

Lisa Howard - I'm OPPOSED to ANY DEVELOPMENT IN OR NEAR THE METOLIUS!

From: Mad <yurtwoman@mac.com>
To: HOWARD Lisa <Lisa.Howard@state.or.us>
Date: 02/11/2009 11:49 AM
Subject: I'm OPPOSED to ANY DEVELOPMENT IN OR NEAR THE METOLIUS!

Hello,

Thank you for holding the hearings, I am sorry due to prior commitments I cannot attend the one tonight in Sisters but will go to the one in Madras March 11.

I am voicing my strong opposition to ANY destination resort development in and around the Metolius Basin; large or 'small' scale. I have been a full time resident here since 1989 and have worked to protect the fragile natural resource since then. Allowing the flanking of Camp Sherman and the Metolius Basin on two sides with 'resorts' that most likely would become just two more thinly disguised full time subdivisions, is outrageous! Increasing the number of houses within a few miles on each side of Camp Sherman by almost 3000, and overnight rooms by over 1000, would be an irreversible, regrettable travesty.

I'm concerned about problems with water quality and total amounts withdrawn from this watershed for golf, landscaping and hundreds of new houses, wildlife overlays, scenic view resource protection so close to Mt. Jefferson Wilderness, protecting the dark night sky from excess lighting, WUII fire protection challenges, increased traffic in basin and on the main highway into Sisters, increased negative social behaviors that come with increased populations in rural areas (ie attracting crime) and the overall integrity of a special place that thousands of caring visitors come to for relaxing, communing with nature, to escape pressures of urban lifestyles.

Please don't allow the ruin of "the destination" for the common citizen, with high-end resorts... whether marketed as 'eco' or not, they are proposing hundreds of permanent structures in a fragile environment and in no way can qualify as **eco logical** to be built right between a Wilderness and Wild and Scenic River. Black Butte Ranch and dozens of other existing resorts in Central Oregon surely fill the demand for golf oriented resorts.

This beautiful place is already suffering the abuses of those, few but highly impacting people, who come here and are careless about leaving no trace of their activities. The Wild and Scenic River & its watershed needs the highest protection it can get, as Oregon's own state laws don't fully protect it, (yet!) sad to say. From studying a map, it looks like the proposed Ponderosa development's thirsty wells could easily tap right into the same elevation as the underground aquifers that feed the source of the river! To allow that is simply unconscionable... it is too risky to assume any risk in affecting the the springs, the source of the river, the heart of this natural wonder.

Madeleine Landis

PS You have two **glaring omissions** on your map that shows the buffer zones and proposed resorts. I don't know how you did this (hope not intentional...) but you left out Camp Sherman... which sits like a bull's eye right between the two proposals.

Also, you omitted the Mt. Jefferson Wilderness Boundary. It is vital to show how close it is to the entire west side of the basin, and the Dutch Pacific proposal.

Please add these two important designations on all future maps, so people can see what all this really means. I'm a Geographer and know maps, and this one is totally ineffective for these crucial reasons, as it does not show the whole picture.

Thank you!

1) Should resorts and other large-scale development be allowed in the Metolius basin?
 NO! Jefferson County has plenty of land to the east for such things. They should be questioning 'large scale development'

anyway, in the current financial and job climate.

2) Should an ACSC assure that Jefferson County may proceed with some destination resort development? Yes, where it makes more sense and does no damage to our natural environment and not surrounded by public lands.

If so, where? Closer to Madras, away from the National Forest, Mt. Jefferson Wilderness and Metolius Wild and Scenic River and their watersheds.

3) Should an ACSC provide relief to property owners if they are unable to proceed with resort development as a result of the ACSC? NO!

They bought the land knowing full well what it was zoned for, which was NOT destination resort.

- o If so, what form should relief take? Non issue, sorry. They can comply with zoning as it was when they bought it.
- o Is a smaller-scale outdoor recreation-oriented resort with a small footprint a concept the state should encourage in other locations? Perhaps, but NOT IN THE METOLIUS BASIN, which is already a heritage area w/ 8 special areas of protection that generations of people to come should be able to enjoy in as relatively a natural state as things are now. The public lands should NOT have to take on the extra pressures of a private development encouraging all their owners and visitors to constantly use them as if they were their own lands.

George & Celia Leber
2682 NW Shields Drive
Bend, OR 97701
February 12, 2009

Subject: Public Comment regarding Metolius Basin – Area of Critical Concern

Dear: Land Conservation & Development Commission:

We strongly urge you to identify the Metolius Basin as an area of critical concern. Specifically we request the following:

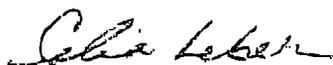
- **Establish Zones 1, 2, & 3, as identified in the 2-6-09 Draft Proposal, as areas that cannot have any large scale residential, commercial, or industrial development.** Allowing destination resorts (aka: rural housing developments) jeopardizes the watershed, diminishes wildlife habit for deer, elk, bobcat, and other wildlife, places developments in an area prone to severe wild fires, and will overwhelm a unique area with automobile traffic. Ultimately, large scale development in this area will destroy one of Oregon's treasures.
- **Jefferson County should be allowed to identify destination resort locations near county population centers of Madras, Metolius or Culver.** We recognize the high unemployment of this area and believe any potential positive impact from a resort can best be achieved when near the citizens and goods and services of these communities. The current proposed resort locations are essentially inaccessible to the residents of Madras, Culver, and Metolius.
- **Offer no reimbursement for the developers' risk.** The land Dutch Pacific and Ponderosa Cattle Company purchased was zoned forest use. It was purely speculative on their part that they could get the rules changed to develop their land. It was a risk they accepted when they purchased the land. It is incomprehensible that taxpayers would be required to compensate an individual or company for a risk they accepted. They bought a working forest and it is still a working forest.

If you have not spent time in the Metolius Basin or along Green Ridge please do. My wife and I have camped, fished, hiked, and biked in this amazing area. The area possesses beauty and solitude that is becoming a rarity as the planet becomes smaller. It is a very special rejuvenating place.

Once again I encourage you to designate Zones 1, 2, and 3 as Areas of Critical Concern that cannot accept any large scale development. Short term monetary gain is a very poor reason to destroy an Oregon treasure. Development of the Green Ridge area and the Metolius Basin will forever change this special place.

Sincerely,


George Leber


Celia Leber

My name is Elizabeth McClarren. I reside at 721 NW Cedar Street, Redmond Oregon. I respectfully submit the following:

Thank you for this opportunity to express my opinion. I believe that the proposed Metolius River Basin Area of Critical State Concern process is needed and I applaud the Governor for initiating this process.

I do not believe that the need exists for additional resorts in the Metolius basin. This place we call "The Metolius" already has the appropriate level of resort development to accommodate the public need and the land's capacity. The public need being gentle recreation, restoration and communion with nature, as the public has demonstrated for the past 100 years. This is why the Metolius should be preserved. Therefore, the whole basin should be protected from any large-scale development both inside the entire Metolius basin and in a three-mile buffer area around the basin.

Any additional resorts or subdivisions should be limited by current law. Forest land within the basin should not be re-zoned as destination resort or for subdivisions.

Jefferson County should not be denied destination resort development. However, any destination resort development proposed should be situated abutting established Jefferson County incorporated communities so that these communities can benefit directly from the economics of the development. Jefferson County residents need to have the opportunity to benefit from not only the tax base but also the construction, maintenance, and service jobs. The county also needs to be responsible for the repercussions of any destination resort development. The only benefit to county residents with the current sites will be tax revenues. Deschutes County residents will benefit from the construction, maintenance, and service jobs while being responsible for all the infrastructure expense needed to support this development.

As stated, in 1984, LCDC amended the Statewide Planning Goal 8 to allow destination resorts on *certain* lands outside urban growth boundaries to include forest lands. My question is how is the word *certain* defined? Do the two proposed destination resorts on former forest land qualify for this amendment? If indeed they do, then I believe that the State is somehow obligated to provide relief to the property owners if they are unable to proceed with resort development as a result of the ACSC. The form of that relief should be very carefully considered.

All future recreation-oriented resort development should be small scale and always situated abutting current urban growth boundaries.

Lisa Howard - Metolius River Basin

From: "Robert Morton" <letamorton@clearwire.net>
To: HOWARD Lisa <Lisa.Howard@state.or.us>
Date: 02/18/2009 8:40 AM
Subject: Metolius River Basin

My name is Robert Morton. I presently live in Madras, OR. In the late 1940s and 1950s I lived year around at Allingham Guard Station, which no longer exists. I attended the ACSC meeting recently held in Madras at the Senior Center. Your meeting seemed to start out with good intentions but you quickly lost control by not enforcing your time limit on speakers. Those who stand to gain from the Resorts/Subdivisions planned for the Metolius River Basin took up so much time touting their plans that the citizens of the county didn't have time to speak. I felt that if you were going to set time limits you should have enforced them. I left in the middle of the meeting out of boredom about how the toilets flushed.

For future meetings/decisions please remember the Metolius River basin is a pristine, albeit currently overused, area that once ruined by the establishment of more development will never be able to be restored, at least in my children's lifetime and beyond. My personal feelings is that there should be a moratorium on any future building of any structures within a 4 (four) mile corridor of the main stem of the Metolius River. Also, when the 99 year leases mature for the "summer homes" along the river the structures should be removed as the Forest Service has done in other areas of the state. Please do not let a few people trying to fill their pockets with gold ruin what is enjoyed by not only people from Oregon but people from all over the world.

Robert Morton

e-mail: letamorton@clearwire.net

Phone: 541-475-1963

Lisa Howard - Protect the Metolius

From: "Dave Nissen" <dave@wanderlusttours.com>
To: HOWARD Lisa <Lisa.Howard@state.or.us>
Date: 02/17/2009 7:30 AM
Subject: Protect the Metolius

To whom it may concern,

Under no circumstances should any resort be allowed to be built around the Metolius Basin.

First and foremost the protection of the water resource in this basin is crucial. But because everyone else argues this same point, here is an equally important reason to not allow it:

Sustainability in the economic market. In central Oregon there is presently too many private developments. There are too many transient rooms available as well. Present resorts, hotels and private home rentals are suffering with low occupancy as so many units have been added to the pool. These additional resorts are foolish for this reason.

Stewardship of our land and our economic base calls for no additional resorts at this time and NEVER in the Metolius area.

Yours,
Dave Nissen
Bend, OR
541-815-9455

Lisa Howard - Metolius Basin

From: "John Ries" <ducktorj@msn.com>
To: HOWARD Lisa <Lisa.Howard@state.or.us>
Date: 02/18/2009 3:45 PM
Subject: Metolius Basin

I have been a resident of Sisters since 2001 having lived in Coos Bay for the previous 26 years. My first exposure was during the summers when we would camp with our kids and fish the river. When you are on that river it is like no other experience. Memories of my younger years spent with my children on the river are fresh in my mind. Whenever we get outside visitors our first trip is to the Metolius headwaters and then driving to the fish hatchery taking in the views of old waterwheels and cabins along the river.

There is a reason the Forest Service only grants long term leases to cabin residents with very restrictive regulations on changing their structures. This river is so precious not only to our beautiful state but to our entire country. The proposed developments will harm this natural gem no matter how careful they are. We humans have a long history of wrecking mother nature with development in the name of progress.

Please work to get the special designation for the jewel of Oregon rivers! Thank you,
John P. Ries M.D.
294 N. Cowboy st.
Sisters OR 97759

February 20, 2009

To the LCDC Subcommittee;

I find myself unable to answer the questions posed to us as I do not feel that I have all the facts. I have not yet found a detailed explanation of this plan or the scientific studies supporting the assumptions that would allow me the opportunity to make a sound judgment. The following description is posted on the website ~ "An ACSC designation identifies an area where potential development conflicts with resources of state importance and establishes a management plan to address those conflicts."

If the Area of Critical State Concern is truly a management plan then what does this plan entail for the future of the Metolius Basin? Where are the 5 year or 10 year plans showing how this plan will safeguard or improve water quality and fish habitat in the river, the basin, private property and on state and federal lands? I have not been able to find this information and I, therefore, question whether or not this is just a mechanism put in place, at this time, to stop these two property owners from accomplishing their projects?

I question whether or not this plan is to become yet another "tool in the shed" for the special interest groups' to tie up proposed projects of private property owners through long, expensive and arduous court battles.

Is it the intention of the Governor that if this management plan is passed that the entire basin be put under the microscope and be held to a higher standard? Would the plan include a commitment from the Forest Service to not renew any of the 104 cabin leases as they come up for renewal, and to then demolish those existing cabins and return the sites to natural habitat? Is it time for the public of the State of Oregon to take back that which is truly public land?

Why would these "new" property owners be subject to these "new" standards and not the existing property owners? Is it the intention that this plan would look to the first "urban subdivision" of the basin - The Metolius Meadows -and ask that they NOW put in a place state of the art sanitary sewer system facilities? If not ... why not?

Would the passing of this plan therefore examine other practices of the Forest Service in the Metolius Basin? Should the Forest Service be allowed to continue prescribed burning and research programs in the basin? Would the plan address private property decorative water features fed by the waters of Lake Creek; Spring Creek or the Metolius River? What about fire woodcutting and Christmas tree cutting within the basin? Would it address the numerous camp sites along this Oregon treasure and the possibility that their

continued usage could cause damage to the natural habitat of fish and wildlife and have ill effects on the water quality?

Would it be the intention of this plan that the streamside trails along the river be pulled back to enhance and protect the riparian zone?

If this area is of such "critical concern" would it not be best for the river and the basin that all things not good and proper be scrutinized and a plan put in place to address these issues? These are the types of questions that I would ask be addressed by the "powers that be" before I would buy into passing a law that is set to protect the Metolius basin – a law that will never be reversed.

If as Richard Whitman, the director of the State Department of Land Conservation and Development, states that the "3 mile buffer" is "kind of arbitrary" then so it the definition of this law as it now stands. In my opinion, it is unfair and unjust to impose a law on the current and future property owners of the basin that has no substance.

Kindest regards,
Jennifer Severeide
13070 SW Forest Service Rd. #1419
P.O. Box 473
Camp Sherman, OR 97730

From: Mary Smith <sukakum@webtv.net>
To: HOWARD Lisa <Lisa.Howard@state.or.us>
Date: 02/11/2009 11:06 AM
Subject: Metolius Basin

I strongly endorse the governor's wish to "designate the Metolius Basin as an area of critical concern". Any destination resort or large scale development should never be allowed in the Basin or in its larger watershed. from Mary B. Smith 69991 Meadowview Rd., Sisters, Or. 97759

Lisa Howard - Development of the Metolius Basin

From: "Fred Tedeschi" <ftedeschi@bulls.com>
To: HOWARD Lisa <Lisa.Howard@state.or.us>
Date: 02/19/2009 11:33 AM
Subject: Development of the Metolius Basin

Lisa;

I am writing to express my **opposition** to the proposed development of the Metolius Basin. As an annual visitor to the area I have enjoyed the area as it is now and have come to appreciate it's unique characteristics. I enjoy the quiet solitude, the beautiful scenery, and the ample golf resorts currently present in the area. In my opinion further large scale development of this region would initiate a change that would be regrettable for future generations as well as adversely affecting the natural habitat. I grew up in the Napa Valley and have seen firsthand what this type of development can do to a natural habitat as well as a community. The tourism eroded the basic fiber that bound the community together and introduced smog, water pollution, as well as endangering wildlife.

I urge you to consider this when evaluating the various large scale proposals for the region.

Thank you for your time and consideration.

Fred

Fred Tedeschi
Head Athletic Trainer
Chicago Bulls
550 Lake Cook Road
Deerfield, IL 60015
Office 847.444.8728
Fax 847.444.8998
ftedeschi@bulls.com
www.bulls.com
Chicago Bulls "Go Green"

Please consider the environment before printing this email.

}

Lisa Howard - Support for designating the Metolius River basin an Area of Critical State Concern

From: "Cheryl Thoen" <cthoen@teleport.com>
To: HOWARD Lisa <Lisa.Howard@state.or.us>
Date: 02/18/2009 9:28 PM
Subject: Support for designating the Metolius River basin an Area of Critical State Concern

Hello –

I am writing in support of designating the Metolius River basin an Area of Critical State Concern. I believe that development of additional resorts and subdivisions should be limited in the Metolius River basin, particularly based on water resource and infrastructure concerns.

No adverse effects (or no substantial adverse effects) on water quantity or quality in the upper or lower Metolius basin should be allowed, in order to protect the existing watershed, wildlife, and pristine water resources. Likewise, additional use by visitors should not be allowed to harm critical habitat for fish, birds or mammals, and the area's incredible recreation, angling, and scenic areas must be protected.

The total number of acceptable new overnight units in the Basin should be based on the available water supply, resources for road improvement and maintenance, and preservation of wildlife habitat and scenic areas. The State should be able to establish a number of overnight units and residences that can be accommodated without damaging the area.

I believe that small new resorts and subdivisions can be allowed in the basin (use as a metric those already existing along the Metolius River in Camp Sherman). Additional developments of more than 100 overnight units or larger should not be allowed, especially if they include golf courses, again particularly because of water resource concerns.

In all cases, only very low water use should be allowed. No additional golf courses should be allowed within the basin

I would support a 3-mile buffer around the basin, in which development is also limited.

However, I would support additional development efforts by Jefferson County. The State and the affected counties should work with land-owners to either design smaller-scale development plans, or to look for other locations in which larger development could take place. Perhaps land-swaps could be arranged to allow for such development.

The Metolius Basin, like the Columbia River Gorge, is an Oregon jewel that should and must be protected for future generations.

Respectfully yours,
Cheryl Thoen
2933 NW 53rd Dr.
Portland, OR 97210

From: Thomas <rthomas26345@msn.com>
To: HOWARD Lisa <Lisa.Howard@state.or.us>
Date: 02/13/2009 11:28 AM
Subject: Keep Destination Resorts out of the Metolius Basin

To The Members of the Commission,

Thank you for the time you have given the issue of the Metolius Basin. I attended one of the public comment meetings and now feel compelled to chime in on yet another reason for denying destination resorts in the entire Metolius Basin. I live in Camp Sherman. I feel that it is an honor and privilege to live here. I also feel that it is my duty to be a good steward of the area and give back. Hence, in the spring and summer I am a member of the Camp Sherman Weed Warriors. Once a week during this period, we go and pull noxious weeds along roadsides, in the forest, along the waterways and in developed areas around in the basin. Knapweed, though not the only noxious weed, is the primary infestation. A couple years ago, I took a raft trip on the Grand Ronde River. We stopped at a landing to camp for the night and I noticed right away a knapweed plant. I pulled it and then noticed another and another! I finally was aware that the whole area was nothing but an infestation of knapweed! And, as the trip went on, this was the case with the better part of the river. It made me sick to know that this had happened to this beautiful river! As Weed Warriors, we are doing our best to keep the infestation in the Metolius Basin down. But, there are already heavy pockets in the basin that require twice yearly pulling and can take up to 5-10 years to eradicate if we keep on them. Many of these are on private property and around newly built homes. Disturbed earth is the birthplace of knapweed. I can not imagine the setup that is going to be created for this noxious weed should these developments be allowed to happen. It is perfect storm in the world of noxious weed infestation! Large earth moving equipment carving out roads and homesites etc. One of the speakers the other night noted that she did not want to have to be the one who had to go in and evacuate up to 5000 homes with a fire bearing down. In my world of noxious weeds, this is the same scenario. Please Save the Metolius River and the Basin!

Thank you again for your time,
Linda Thomas
26345 Metolius Meadows Dr
Camp Sherman, OR 97730

Lisa Howard - Metolius River basin

From: "Larry & Mary T" <Tbird2LM@bendcable.com>
To: "Howard, Lisa" <Lisa.Howard@state.or.us>
Date: 02/11/2009 2:51 PM
Subject: Metolius River basin

February 11, 2009
1057 Niagara Falls Drive
Redmond, OR 97756

Dear Commissioners:

I would like to recommend that NO resorts or any large-scale developments be allowed inside the entire Upper Metolius basin or within at least a three-mile buffer around the basin. Large-scale should include both resorts and subdivisions.

The habitat in this basin is a priceless treasure that we can not allow to be permanently or irretrievably damaged. The water, both surface and ground, is the most precious resource to protect in quality and quantity. The connection of this water to vegetation and animals is what creates life and human appreciation that makes this area so valuable.

Those individuals who bought the land knew that it was zoned "forestry" when they invested. That zoning category is valuable only in the long-term. Similarly, people who buy homes near railroads and airports have no right to complain about noise due to the railroads and airports.

The Metolius basin habitat and its wild and scenic status need to be preserved for the people who can appreciate it today as well as future generations that are yet to be. We are running out of these natural areas.

Thank you for including our input in your decision making.

Larry Thornburgh

Mary Thornburgh

February 13, 2009

Department of Land Conservation and Development
635 Capital Street NE Ste 150
Salem, Oregon 97301

Sirs,

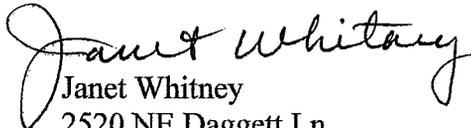
I would like to thank you for your courteous compoment as you visited Sisters this week regarding the Metolius River Basin. You were especially patient, as testimony far exceeded time expectations.

There is nothing I can add to the excellent testimony given by professionals and ordinary citizens concerning our desire to protect the river and the basin from destination resorts or rural subdivisions.

It is difficult to speak for the river and its environs, to give voice to what is perceived as object, powerlessness against manipulation. Many of us feel the land connection, and will advocate as responsibly as we can.

I thank all of you and Governor Kulongoski for your recognition of this very important issue, and will do my best to represent an environment whose very silence is its sacred gift.

Sincerely,



Janet Whitney
2520 NE Daggett Ln
Bend, Oregon
97701

DEPT OF

FEB 17 2009

**LAND CONSERVATION
AND DEVELOPMENT**