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Executive Director



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Gene Derfler
Oregon

Ed Bartlett
Montana

John Hines
Montana

August 3, 2004

MEMORANDUM

TO: Council Members

FROM: Mark Fritsch

SUBJECT: Step 1 review of the *Chief Joseph Dam Hatchery Program* (CJDHP), Project # 2003-023-00.

Please find attached a cover letter and issue paper for the master plan associated with the project titled *Chief Joseph Dam Hatchery Program*, Project # 2003-023-00. The master plan and support documents, received on May 26, 2004 from the Confederated Tribes of the Colville Reservation, are intended to address the conditions placed on this project as part of the Major Project Review process¹.

The issue paper is intended to solicit public comment, as part of the review of a master plan, by the ISRP and the Council. At your meeting in August the Council staff will present a short review of the project proposal and review the issue paper. Council staff presented the documents to the Fish and Wildlife Committee at their July meeting and is seeking the Council's approval to release the issue paper and master plan for public comment.

¹The Council (September 1997) adopted a policy that built upon the master plan element of the 1995 Program to ensure that 1) new artificial production projects would be considered by the Council while the Artificial Production Review was under way, 2) ensure that these projects would be considered in the context of their roles and potential impacts within specific subbasins and 3) receive the detailed scrutiny recommended by the ISRP prior to approval. This policy was known as the "three-step review." It called for "new production initiatives" to follow a basic development process that has three main steps or phases: (Step 1) conceptual planning, represented under the 1995 Program primarily by master plan development and approval; (Step 2) preliminary design and cost estimation, and environmental (i.e. National Environmental Policy Act and Endangered Species Act) review; and (Step 3) final design review prior to construction. In adopting the Three-Step Review Process, the Council agreed with the ISRP's recommendation to make use of independent peer review for projects as they move through each stage of the process. On October 18, 2001 the Council adopted an updated review process called the Major Project Review process that incorporating the three-step review process (Council document 2001-29).

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Dear Interested Party:

In December 2001, as part of the solicitation associated with the Columbia Cascade Province, the Confederated Tribes of the Colville Reservation (Colville Tribes) submitted a series of proposals to address habitat restoration, fish propagation, fish harvest, and research monitoring and evaluation needs in the Okanogan subbasin. In October 2002 the Council approved Proposal #29040 *Develop and Propagate Local Okanogan River Summer/Fall Chinook*¹ as part of the issue summary for the Columbia Cascade provincial review.

A master plan, as the first step in the Major Project Review process² for this project, was prepared by the Colville Tribes and the Bonneville Power Administration and submitted to the Council on May 26, 2004. The master plan proposes to increase the abundance, distribution, and diversity of naturally spawning populations of summer/fall Chinook salmon in the Okanogan River and in the Columbia River above Wells Dam by constructing a hatchery and acclimation ponds, and instituting terminal, selective fisheries. While the focus of the Chief Joseph Dam Hatchery Program Master Plan is on propagation of summer/fall Chinook salmon, an important secondary priority for the Colville Tribes is consideration of the proposed facility to include propagation of spring Chinook salmon³.

Council staff has prepared an issue paper on the master plan that can be found on the Council's web site www.nwccouncil.org. The Council invites comment on this issue paper and

¹ The proposal is now titled *Chief Joseph Dam Hatchery Program, Project # 2003-023-00*.

² The Council (September 1997) adopted a policy that built upon the master plan element of the 1995 Program to ensure that 1) new artificial production projects would be considered by the Council while the Artificial Production Review was under way, 2) ensure that these projects would be considered in the context of their roles and potential impacts within specific subbasins and 3) receive the detailed scrutiny recommended by the ISRP prior to approval. This policy was known as the "three-step review." It called for "new production initiatives" to follow a basic development process that has three main steps or phases: (Step 1) conceptual planning, represented under the 1995 Program primarily by master plan development and approval; (Step 2) preliminary design and cost estimation, and environmental (i.e. National Environmental Policy Act and Endangered Species Act) review; and (Step 3) final design review prior to construction. In adopting the Three-Step Review Process, the Council agreed with the ISRP's recommendation to make use of independent peer review for projects as they move through each stage of the process. On October 18, 2001 the Council adopted an updated review process called the Major Project Review process that incorporating the three-step review process (Council document 2001-29).

³ On June 9, 2004 the Council recommended that the spring Chinook component of the submitted summer/fall chinook Master Plan be reviewed by the ISRP and that at the time of the Step I decision, a determination of the scope and direction of this project will be determined.

on the master plan. In particular, public comment is requested on key issues listed in this issue paper. This issue paper is not intended to constrain alternatives the Council may consider or limit Council action on this project. Copies of the issue paper are available by calling the Council's central office in Portland, Oregon (1-800-452-5161) and requesting Council document 2004-??.

Oral comments on this issue paper can be made at the Council's September 7-9, 2004 meeting in Seattle, Washington, and at the Council's October 12-14, 2004 meeting in Missoula, Montana. Written comments will be accepted through October 15, 2004. Comments should be mailed to Mark Walker at the Council's central office in Portland, Oregon, and reference Council document 2004-??. In addition, the master plan has been submitted to the Independent Scientific Review Panel (ISRP) and their review is anticipated later this year. Based on comments and reviews received, Council staff will develop a list of alternative actions that will be considered by Council. At the December 14-16, 2004 meeting in Portland, Oregon, the Council will consider whether to approve the Chief Joseph Dam Hatchery Program Master Plan (see attachment).

Thank you for your interest in the Council's review of this project.

Sincerely,

Stephen L. Crow
Executive Director

Step 1 Review Process - Chief Joseph Dam Hatchery Program

<u>Week⁴</u>	<u>Description</u>
May 4, 2004	Material for the Fish and Wildlife Committee presentation (packet)
May 11, 2004	Colville Tribe presents project proposal to the Fish and Wildlife Committee
1 (May 26, 2004)	Colville Tribe submits Master Plan to NPCC
2 (June 1, 2004)	NPCC staff request from Fish and Wildlife Committee regarding the spring chinook scope for ISRP review (packet)
3 (June 8, 2004)	NPCC Fish and Wildlife Committee considers the spring chinook scope for ISRP review
4 (June 14, 2004)	BPA/NPCC initiates Peer Review
7 (July 6, 2004)	NPCC staff Comments regarding Master Plan and draft Issue Paper to Fish and Wildlife Committee (packet)
8 (July 13, 2004)	NPCC Fish and Wildlife Committee reviews the Master Plan and draft Issue Paper
4- 17	Additional materials provided to Peer Review, if necessary
11 (August 3, 2004)	Fish and Wildlife Committee Recommendation to Council (packet)
12 (August 10 - 12, 2004)	NPCC considers releasing Master Plan and Issue Paper for review and comment
16 (September 7 - 9, 2004)	NPCC takes comments on Master Plan at Council Meeting
20 (October 8, 2004)	Peer Review findings submitted to NPCC
21 (October 12 - 14, 2004)	NPCC takes public comments at Council Meeting
21 (October 15, 2004)	Due date for all written comments on Master Plan
22-26	NPCC staff prepares a summary of comments and potential alternatives for decision
25 (November 9, 2004)	NPCC staff provides summary of comments and potential alternatives to Fish and Wildlife Committee to consider recommendation (packet)
26 (November 16, 2004)	Fish and Wildlife Committee considers potential alternatives for recommendation

⁴ Due to the needed alignment to Fish and Wildlife Committee and Council meetings, this schedule is based on the minimum amount of time required.

29 (December 7, 2004)	NPCC staff provides Decision Memo with Fish and Wildlife Committee recommendation to Council (packet)
30 (December 14 - 16, 2004)	Council considers approval of Master Plan

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Chief Joseph Dam Hatchery Program Master Plan¹

August 3, 2004

Council document 2004- XXXX

¹ The master plan was prepared for Bonneville Power Administration by the Confederated Tribes of the Colville Reservation (Project # 2003-023-00, *Chief Joseph Dam Hatchery Program*). You may obtain a copy of the master plan and support documents from Bonneville Power Administration's public Web site.

<http://www.efw.bpa.gov/Environment/EW/EWP/DOCS/REPORTS/HATCHERY/A00014495-1T.pdf> These documents can be viewed or downloaded for printing. If you do not have access to the Internet, please call Linda Hermeston at 503-230-4764.

Staff Issue Paper

Chief Joseph Dam Hatchery Program Master Plan

August 3, 2004

I. Introduction

The master plan, submitted by the Confederated Tribes of the Colville Reservation (Colville Tribes) proposes to increase the abundance, distribution, and diversity of naturally spawning populations of summer/fall Chinook salmon in the Okanogan River and in the Columbia River above Wells Dam by constructing a hatchery and acclimation ponds, and instituting terminal, selective fisheries.

In addition, the Colville Tribe has requested that the propagation of spring chinook be a component of the Mater Plan step review. While the focus of the Chief Joseph Dam Hatchery Program Master Plan is on propagation of summer/fall Chinook salmon, an important secondary priority for the Colville Tribes is consideration of the proposed facility to include propagation of spring Chinook salmon. The master plan also identifies research needs that are critical to the implementation of the proposed hatchery. The first of these is research to test the viability of live-capture, selective fishing gear for the anticipated broodstock collection. The second critical study consists of radio-telemetry research to determine where and when summer/fall Chinook migrate that is critical to the development of broodstock protocol and subsequent acclimation of progeny.

II. Relationship to the Council's Fish and Wildlife Program

In December 2001, as part of the solicitation associated with the Columbia Cascade Province, the Colville Tribes submitted a series of seven new proposals to address habitat restoration, fish propagation, fish harvest, and research monitoring and evaluation needs in the Okanogan subbasin. After working with existing projects², additional funds remained within the province allocation. The prioritization group sought to add new proposals that advanced their most pressing management objectives and had broad support from the ISRP, CBFWA, Bonneville, and NOAA Fisheries for ESA needs. This list of new proposals prioritized by the Columbia Cascade fish and wildlife managers that fit within the province allocation, included two of the series of new proposals submitted by the Colville Tribes. Proposal #29040 *Develop and Propagate Local Okanogan River Summer/Fall Chinook*³ and proposal #29033 *Design and Conduct Monitoring and Evaluation Associated with the Reestablishment of Okanogan Basin Natural Production*.

² The prioritization meetings for the Columbia Cascade province were focused on the fish and wildlife managers within the province -- the Colville Tribes, the Yakama Indian Nation, and the Washington Department of Fish and Wildlife. While these were the primary participants in the process to reach a proposed package that fit within the allocated budget, those entities, as well as Washington and central office Council staff worked to ensure that projects sponsored by other entities were fairly reviewed and considered. This effort to ensure due consideration was benefited by the participation of these entities in the Upper Columbia River Salmon Board process, and their familiarity with other participants and projects that are also part of that state process.

³ The proposal is now titled *Chief Joseph Dam Hatchery Program*, and is implement through Project # 2003-023-00.

In October 2002 as part of the issue summary for the Columbia Cascade provincial review (i.e. Project Issue #3) the Council recommended a total of four new proposals that included the two of the original series of seven new proposals submitted by the Colville Tribes.

Prior to contracting for Chief Joseph Dam Hatchery Program⁴ the Colville Tribe raised concerns that some of the original proposals were not intended to stand alone, but were interrelated to the fish propagation proposals (e.g. selective fish collection and harvesting gear) and part of the Colville Tribes broader anadromous fish recovery objectives. Though some of key objectives of the unfunded proposals (e.g. selective fish collection and harvesting gear) could be addressed as part of the Master Plan during the Three-Step Review Process, the Colville Tribes was concerned with anticipated future needs regarding the spring Chinook production. The Colville Tribes thought it would be cost effective to simultaneously include separable spring Chinook facilities in the Hatchery's conceptual design.

Council and Bonneville staffs met with the Colville Tribes, and it was determined that inclusion of this additional information regarding spring Chinook at the Step 1 Master Plan stage for summer/fall Chinook would be beneficial to both plan reviewers and decision-makers. Moreover, all parties recognized that potential cost efficiencies might be secured through early identification of design and construction alternatives associated with the spring Chinook components of the Chief Joseph Dam Hatchery Program (CJDHP) proposal.

From this meeting Bonneville contracted for this project for the development of a Master Plan (Step I) including conceptual designs for hatchery facilities necessary for production of summer/fall Chinook and also for the spring Chinook. The reasons for including the spring Chinook component in Step 1 were:

- Very low relative cost to include both summer/fall and spring Chinook in the Master Plan development.
- To provide an opportunity for the Council and the Independent Science Review Panel to review the summer/fall and spring Chinook programs together within the context of the Okanogan subbasin ecosystem.
- Identify opportunities to achieve cost savings by developing, designing and constructing the summer/fall and spring Chinook propagation facilities at the same time.

On May 26, 2004 the Colville Tribes submitted the Step 1 documents (i.e. master plan) initiating the Three-Step Review Process. The spring Chinook components in the CJDHP Master Plan are presented in a single separate chapter and all costs and facility requirements are presented as separable components. Council staff determined that the inclusion of this additional information at the Step 1 Master Plan stage is a benefit to both plan reviewers and decision-makers. Moreover, all parties recognized that potential cost efficiencies might be secured through early identification of design and construction alternatives associated with the spring Chinook components of the CJDHP proposal.

⁴ In April 2003, BPA agreed to fund development of the CJDHP Master Plan. Then in July 2003, BPA negotiated a contract with the Colville Tribes to develop a CJDHP Master Plan.

Though Council staff determined that the addition of spring chinook to the Master Plan was permissible, any future efforts would need specific Council approval. Though a series of decisions will be made as the project proceeds through the review process, the initial decision regarding the addition of spring Chinook production was needed prior to initial ISRP review. Therefore, on June 9, 2004 the Council supported the staff recommendation that the spring Chinook component of the submitted Chief Joseph Dam Hatchery Program Master Plan be reviewed by the ISRP and that at the time of the Step 1 decision, a determination of the scope and direction of this project will be determined.

III. Historical and Current management of Anadromous and Resident Fish in the Subbasin

The Okanogan subbasin is the largest and most complex of the four mid-Columbia River tributaries (Entiat, Okanogan, Methow and Wenatchee). The subbasin includes nearly 2,600 square miles within the state of Washington, and about 6,300 square miles in the Canadian province of British Columbia. It currently supports summer/fall Chinook salmon, sockeye salmon, and summer steelhead. The Upper Columbia River Summer Steelhead and Upper Columbia River Spring Chinook are currently listed as endangered.

Summer/fall Chinook populations in the Okanogan subbasin are currently supplemented by a single hatchery program, which releases 576,000 yearling smolts annually from the Similkameen Pond. Washington Department of Fish and Wildlife (WDFW) operates and Chelan PUD funds the facility, which is located on the Similkameen River at river mile 3.1 (RM 3.1)⁵. This production results in the summer/fall Chinook spawning being largely concentrated within an 8.7-mile stretch of the Similkameen River between Enloe Dam (River Mile 8.8) and Driscoll Island (near the river's mouth).

In the last two years returns of summer/fall Chinook to the Similkameen River and upper Okanogan River have increased substantially due in large part to improved ocean conditions. However, records from previous years showed a downward trend. The Similkameen summer/fall Chinook program has not been able to consistently produce sufficient fish to meet its limited program objectives. In recent years the Similkameen production program has lost substantial numbers of fish due to a variety of diseases. In addition, water quality problems including high water temperature, pollution, and heavy loads of fine sediments have also posed challenges for the operators.

The summer steelhead of the Okanogan are considered part of the Upper Columbia Summer Steelhead ESU, and were listed as endangered in 1997. Current habitat conditions in much of the Okanogan subbasin are generally poor to support most life history requirements of steelhead. Salmon Creek historically supported self-sustaining steelhead runs, but lack of stream flow restricts access in many years. As much as half of the steelhead production in the U.S. portion of the Okanogan subbasin may have been lost to irrigation water withdrawals on Salmon Creek. Specific steelhead stock status, at the sub-watershed level, has not been determined in the Okanogan subbasin. In 2001 the Colville Tribes counted 19 adult summer steelhead Omak in Creek (entering the Okanogan at RM 31). When this is considered against a low total escapement

⁵ The Similkameen enters the Okanogan at RM 77

to the entire system of between 4 to 34 fish from 1977 to 1988, such populations, although small, become important.

Sockeye salmon continue to use the Okanogan subbasin for spawning and rearing. The Okanogan sockeye are not currently listed under the ESA. Spawning population escapement estimates ranged from 20,202 to 34,679 fish in 1993. Sockeye spawning occurs predominantly in the mainstem of the Okanogan River upstream of Osoyoos Lake (RM 75), with some spawning also taking place in the tributaries of Osoyoos Lake in years with high flows. McIntyre Dam, 12.5 miles upstream of Osoyoos Lake, generally represents the upstream limit of spawning under typical flow years.

Spring Chinook are considered extirpated from the Okanogan subbasin, although historical records indicate that they occurred in Salmon Creek, tributaries upstream of Lake Osoyoos, and possibly Omak Creek. The Similkameen River, the largest tributary to the Okanogan, also likely supported spring chinook, but there is no conclusive evidence to support this theory.

Resident species in the Okanogan watershed include mountain whitefish, rainbow trout, westslope cutthroat trout and Pacific lamprey. Stock status and distribution of resident salmonids is not fully determined. Bull trout are documented to have used only Salmon Creek and Loup Loup Creek. Currently, an assessment of bull trout stock status on a watershed basis is being completed. In addition, various introduced species are present in the basin including large mouth bass, smallmouth bass, black crappie, bluegill, yellow perch, pumpkinseed sunfish, black bullhead, tench, common carp and walleye.

IV. Summary of the Proposed Production Plan

A. Summer/Fall Chinook

The summer/fall Chinook components of the CJDHP consist of two complementary programs:

- 1) An integrated recovery program designed to increase abundance, distribution, and diversity of naturally-spawning summer/fall Chinook salmon within their historical Okanogan subbasin habitat.
- 2) An integrated harvest program designed to support a tribal ceremonial and subsistence fishery, and to provide increased recreational fishing opportunities for local citizens.

The summer/fall Chinook population in the Okanogan River is at present supported by natural production and a single hatchery program that produces up to 576,000 yearling smolts annually. The proposed CJDHP will increase production of juvenile summer/fall Chinook for the Okanogan River by 400,000 early arriving and 700,000 later arriving summer/fall Chinook.

The summer/fall Chinook integrated recovery program will be implemented through five conservation actions:

- Development of a local Okanogan River broodstock.
- Expansion of current broodstock collection by two months, in order to propagate the full historical run of summer/fall Chinook.
- Propagation of both the yearling and subyearling life histories to achieve full, natural diversity and provide necessary programmatic flexibility.
- Improved distribution of spawning throughout the historical summer/fall Chinook habitat.
- Control of the proportion of hatchery-origin fish spawning in the wild.

The summer/fall integrated harvest program is designed to support a tribal ceremonial and subsistence fishery and to provide increased recreational fishing opportunities for local citizens. To support the integrated harvest objectives 500,000 early-arriving, and 400,000 later-arriving summer/fall Chinook will be released at Chief Joseph Dam Hatchery. Total new production for the production and harvest purposes is therefore 2,000,000 summer/fall chinook.

B. Potential Production Goals for Spring Chinook

The Colville Tribes have developed a two-phase management plan to reintroduce extirpated spring Chinook. The CJDHP would provide the artificial production facilities necessary for this phased reintroduction. A combination of existing and new facilities will be used to accomplish the program objectives.

The CJDHP spring Chinook component includes two complementary parts:

- 1) An integrated recovery program designed to restore naturally-spawning spring Chinook populations to their historical habitats in the waters in and around the Colville Reservation.
- 2) An isolated harvest program designed to restore a stable ceremonial and subsistence fishery, and to provide increased recreational fishing opportunities for local citizens.

If the full two-phase program is implemented, spring Chinook produced in the second phase may also provide benefit in the recovery of the listed Upper Columbia River Spring Chinook ESU.

The CJDHP spring Chinook programs will increase production of Carson stock spring Chinook destined for the Okanogan subbasin to 900,000 smolts. The spring Chinook integrated recovery program will initially re-introduce naturally-spawning populations of Carson stock spring Chinook into Omak Creek on the Colville Reservation. The isolated harvest program will support selective fisheries in the Okanogan and Similkameen rivers, in the tailrace of Chief Joseph Dam and in the Wells Pool, and near the confluence of the Okanogan River. These fisheries will target the Carson-stock spring Chinook produced in the program.

The CJDHP spring Chinook program is an experimental program and includes mechanisms to identify any potentially adverse interactions with summer/fall Chinook and steelhead populations, and to document the extent of tribal and recreational harvest. Information collected through monitoring and evaluation in the early phases of the program will be used to

adapt and refine secondary phases of the program. Specifically, the information will be used to determine if the Carson stock spring Chinook should be replaced with the ESA-listed Upper Columbia River Spring Chinook, when surplus to needs in the Methow subbasin, to foster recovery of the species.

C. Critical Research Needs

The Master Plan also identifies research needs that are critical to Step 2 planning. The first of these is research to test the viability of live-capture, selective fishing gear for local broodstock collection. The success of the live-capture, selective fishing methods will also be vital to controlling the ratio of hatchery to natural fish on the spawning grounds. The second critical study consists of radio-telemetry research to determine where and when summer/fall Chinook migrate, where they congregate, the extent to which they are spatially separated from other population components, and whether the timing of passage over Wells Dam is related to timing and location of subsequent spawning. This information is critical to the development of broodstock protocol and subsequent acclimation of progeny.

D. Conceptual Monitoring and Evaluation

The CJDHP conceptual monitoring and evaluation design is based on quantifiable performance standards and indicators. The primary goals of the monitoring and evaluation program are to:

- Measure the relative success of the CJDHP integrated recovery programs in restoring the abundance, distribution, and diversity of naturally-spawning populations of Chinook in the Okanogan River and upper Columbia River above Wells Dam.
- Measure the relative success of the integrated harvest program (and if implemented, the isolated harvest program) in providing a stable ceremonial and subsistence fishery for the Colville Tribes, and in providing increased recreational fishing opportunities.
- Provide information necessary to adapt the CJDHP in order to minimize deleterious effects and maximize desired results.

The CJDHP is designed to be flexible and responsive to ecosystem conditions both within and outside of the subbasin. The Master Plan includes examples of a variety of contingency actions that could be implemented in response to changing conditions, these include specific intra- and inter-program adjustments. Information provided through the monitoring and evaluation program will be vital in determining when and where to adapt and adjust the CJDHP over time.

Additional monitoring and evaluation costs that would be incurred for the spring Chinook portions of the CJDHP monitoring and evaluation program include:

- Costs associated with the base CJDHP monitoring and evaluation program; and
- Annual costs of tagging at the base facility

E. Fishery Benefit

1) Summer/Fall Chinook

Depending on out-of-subbasin factors, which have a direct influence on the highly variable summer/fall Chinook smolt-to-adult survival rates in the Okanogan subbasin, the CJDHP is expected to increase runs past Wells Dam by 3,000 to 15,000 early-arriving summer/fall Chinook, and 3,000-14,000 later-arriving summer/fall Chinook. In years with low returning numbers of fish, the programs would be managed to achieve escapement and broodstock needs, and provide a minimal ceremonial and subsistence fishery for the Colville Tribes. In years with higher numbers of returning fish, tribal and recreational selective fisheries would be expanded to capture surplus hatchery-origin fish. In those years characterized by very large run sizes, harvest of natural-origin fish could also take place. The live-capture, selective tribal and recreational fisheries will also be managed to optimize the escapement of hatchery-origin fish to the spawning grounds.

2) Spring Chinook

The Colville Tribes are proposing implementation of what is designed to be a long-term, two-phase plan for spring Chinook in the Okanogan subbasin, and in the Columbia River from Chief Joseph Dam downstream to the confluence of the Okanogan River. This framework for a two-phase approach addresses both recovery and mitigation goals.

Under Phase I, the Okanogan subbasin spring Chinook programs will use Carson stock spring Chinook commonly propagated in the Columbia Cascade Province. The overall goal of the Phase I integrated recovery program is to demonstrate the viability of spring Chinook in historical Okanogan subbasin habitat and to provide information to guide rehabilitation of that habitat. In Phase I, Carson composite stock will be used to test the suitability of historical spawning, rearing, and migration habitats in the Okanogan subbasin, to once again produce and support natural origin populations of spring Chinook.

The Phase II programs will transition to use of Methow composite stock from the adjacent Methow subbasin. The goal of the Phase II integrated recovery program will be to aid the recovery, and possibly eventual de-listing, of the ESA-listed Upper Columbia River Spring Chinook by increasing its abundance, productivity, distribution, and diversity. The Phase II program will operate to re-establish, and if necessary, supplement natural spawning populations of spring Chinook.

The CJDHP spring Chinook programs will increase the production of Carson stock spring Chinook destined for the Okanogan subbasin to 300,000 smolts and to the terminal fishery below Chief Joseph Dam to 600,000 smolts. This increased production level is expected to result in an average adult return to the waters around the Colville Reservation, of about 2,700 spring Chinook.

F. Harvest

1) Summer/Fall Chinook

The goal of the CJDHP integrated harvest program is to support a tribal ceremonial and subsistence fishery and to provide increased recreational fishing opportunities for local citizens.

The integrated harvest program as defined in the submitted master plan is composed of four actions:

- In order to determine their role in population viability, to support tribal ceremonial and subsistence fishing, and recreational angling on hatchery-origin fish surplus to conservation needs, all hatchery-origin summer/fall Chinook produced at Chief Joseph Dam Hatchery will be adipose fin clipped, and approximately 40% will be coded wire tagged.
- The success of the CJDHP requires deployment of live-capture, selective fishing gear as the primary means of harvest. The major objective for these new, selective fisheries is to harvest surplus hatchery-origin summer/fall Chinook specifically to rebuild ceremonial and subsistence fishing. This innovative fishing strategy will be critical to limiting the proportion of hatchery origin fish spawning in the wild and limiting the take of non-target species.
- Future harvest management of Okanogan summer/fall Chinook will be managed to: 1) ensure adequate natural escapement of Okanogan summer/fall Chinook, 2) ensure broodstock collection for summer/fall Chinook propagation programs, 3) provide at least a minimal ceremonial and subsistence fishing opportunity for tribal members, 4) share surplus hatchery origin Chinook between tribal and recreational fisheries, and 5) develop fishery capacity in strong run years to harvest significant surpluses of hatchery origin chinook and even natural-origin fish when appropriate.
- In addition to addressing federal trust obligations and meeting the ceremonial and subsistence needs of the Colville Tribes, the summer/fall Chinook releases from the Chief Joseph Dam Hatchery will increase recreational angling opportunities in the Columbia River between Wells and Chief Joseph dams from approximately mid-July through October. The Lower Columbia River and ocean fisheries will also be supported by production from the CJDHP summer/fall Chinook programs.

To support the CJDHP integrated harvest objectives 500,000 early-arriving (200,000 subyearling and 300,000 yearling), and 400,000 later-arriving summer/fall Chinook (200,000 subyearling and 200,000 yearling) will be released at Chief Joseph Dam Hatchery.

The CJDHP integrated harvest program will rear summer/fall Chinook using the same broodstock as the CJDHP integrated recovery program to ensure that naturally-spawning fish from both programs are the same. Summer/fall Chinook will be reared and released at Chief Joseph Dam Hatchery to enhance the Colville Tribes' ceremonial and subsistence fishery located immediately below Chief Joseph Dam. Hatchery fish released at Chief Joseph Dam Hatchery specifically for the integrated harvest program will return to the terminal fishing area below Chief Joseph Dam.

2) Spring Chinook

The primary purpose of the spring chinook harvest program is to re-establish the ceremonial and subsistence fisheries, and to provide recreational fisheries in the Okanogan

subbasin and upper Columbia River. The harvest program is design to create selective fisheries in the Okanogan and Similkameen rivers, in the tailrace of Chief Joseph Dam and in the Wells Pool, and near the confluence of the Okanogan River, which will target these Carson-stock spring Chinook fish. The goal of the harvest activities will be to remove all adult fish from the waters of the Okanogan subbasin for ceremonial, subsistence, and recreational purposes and to collect broodstock to support production activities at Chief Joseph Dam Hatchery.

The primary management tool for this program is the marking protocols. All spring Chinook for the isolated harvest program will be adipose fin clipped – these will be the only adipose fin clipped spring Chinook returning to the areas above Wells Dam. Spring Chinook will also be coded wire tagged (42%) for monitoring and evaluation purposes. The adipose fin clip will allow these fish to be distinguished from hatchery-origin and natural-origin Upper Columbia River Spring Chinook that are ESA-listed. The isolated harvest program is sized to return 600 adults on average to the Okanogan subbasin (400 - 1,400) and 1,800 adults to the vicinity of Chief Joseph Dam (1,200 - 4,200). This program size should be sufficient to determine critical survival parameters pertaining to viability and to support assessment of the suitability of Okanogan River habitat. This program size should also be sufficient to provide for tribal ceremonial and subsistence and recreational fisheries; as well as providing adequate returns to test selective, live-capture fishing gear.

To provide a selective fishery in the tailrace of Chief Joseph Dam, in the Wells Pool, and near the confluence of the Okanogan River, and to provide broodstock for the Chief Joseph Dam Hatchery: 600,000 spring Chinook will be reared and released from the Chief Joseph Dam hatchery facility as yearlings. Prior to release, fish will be reared on a mix of relief tunnel water from Chief Joseph Dam and water from Rufus Woods Lake to promote homing back to the hatchery site and terminal fisheries. Prior to release, acclimation will be solely in river water. To provide a fishery in the Okanogan River, 200,000 subyearling Chinook will be transported to the Ellisforde acclimation pond in October, depending on fish size and temperature of the Okanogan River. Fish will be reared over the winter for six months in the pond. Fish will be reared on pumped Okanogan River water, at low densities, until release in approximately mid-April, providing a six-month acclimation period.

G. Facilities and Sites

1) Summer/Fall Chinook

The proposed main hatchery facility is located on the plateau area along the north bank of the Columbia River between the Chief Joseph Dam and Washington State Highway 17, extending northward to Half-Sun Way. At the west end of this 24.5-acre area is an existing COE visitor information and picnic area of about 13 acres. The area available for the hatchery development has a general slope from east to west, from elevation 900 feet to elevation 850 feet. The river bank drops from those elevations to the water's edge at about elevation 780 feet. Vehicle access is provided by Half-Sun Way, which connects to SR-17 about 1,000 feet west of the site. The nearest city is Bridgeport, approximately 1 mile to the southwest on the south side of the river.

The conceptual design for the water supply to the proposed hatchery requires a combination of reservoir water from the Rufus Woods Lake and groundwater to meet the various

rearing program temperature and biological flow requirements. The water from groundwater sources will be mixed with the reservoir water to cool or warm (depending on the season) the temperature of the reservoir water in order to meet optimal juvenile fish rearing conditions. Reservoir water is desirable because it will allow fish to be reared on their home waters, as well as providing a readily available and reliable water supply. Water from the relief tunnel is desirable for hatchery operations because the water temperature is 6 months out of phase with the temperature of the surface water. Therefore, the relief tunnel water will be warm in the winter and cool in the summer relative to the temperature of the river or reservoir water. Similarly, water extracted from the right bank groundwater wells would provide similar temperature variations.

The master plan proposes to build a hatchery building, which will contain the incubation area, a start tank room, and water treatment facilities as needed (it is anticipated that this will include a water chilling system for incubation water and drum filters and UV sterilization for treatment of Rufus Woods Lake water). In addition, the hatchery building will also contain support facilities such as a food storage room, maintenance shop, vehicle storage, associated storage room, a biological/pathology laboratory, crew restrooms and wet gear storage, crew break room, an electrical power room, a building heat/boiler room, a standby generator room and a general overhead storage area above the start tank room.

West of the hatchery building will be groups of raceways, designed to receive fry by gravity from the start tank room. Each group of raceways will be a concrete structure with a common supply channel and a common drain channel. The common supply channel is anticipated to have multiple channel slots and to have both water sources supplied to each end. This will allow the supply channel to be divided into two segments of variable lengths so that each group of raceways can be used for two separate rearing programs of different temperature requirements. The process is designed for single pass flow with no re-use, although re-use capability could be installed for emergencies or other future needs.

An aeration/settling structure is located southwest of the raceways. This cleaning system will be operated by gravity. The aeration/settling structure will also receive the drum filter backwash. Normal rearing and drainage flows from the hatchery building and the raceways will go to a detention pond, bypassing the aeration/settling structure. This pond will be sized to provide one hour of detention at the facility's peak flow. Due to the slope and limited area of the hatchery site, the detention pond will be located west of the present COE visitor trail between the information/picnic area and the shoreline-viewing platform. This pond will be incorporated into a constructed wetland to shield the pond and to enhance the visitor experience.

The adult holding and spawning facilities are located along the river bank about 900 feet east of the hatchery building and at an elevation of approximately 810 feet. This will place these facilities above the probable maximum river level while keeping the fish ladder reasonably short. It also will separate the adult/spawning facilities from the incubation and rearing facilities to provide better disease control. Vehicle access to these facilities will be from an existing paved road down to the face of the dam and along an existing gravel road that intersects the paved road at an acute angle. Improvements will be required on this access route to provide a turn-around at both the junction of the gravel road with the paved road and at the spawning facility.

A 2,000-square-foot administration and visitor facility will be located at the east end of the hatchery complex. Adjacent to this building will be an area that can be developed for significant parking, including visitor buses and motor home spaces.

Housing for some of the permanent staff, and camp trailer spaces for temporary staff will be provided in a location northeast of the hatchery.

In addition to the main hatchery facility, the CJDHP will rely on four summer/fall Chinook acclimation sites (plus one contingency pond). These include two new acclimation ponds, and three existing acclimation ponds. The three existing ponds are Similkameen, Bonaparte, and a contingency pond, Tonasket Pond. The Similkameen Pond is operated by WDFW and will require no modifications. Some of the existing ponds will require some modifications.

2) Spring Chinook

Facilities necessary for the proposed spring Chinook program to the summer/fall Chinook facility would require the development of a well water supply from 2.5 miles upstream from the proposed facility, the construction of 28 raceways, additional space in the main hatchery building for rearing and incubation, modification of two additional existing acclimation ponds.

H. Capital Costs⁶

1) Summer/Fall Chinook

The total cost for the CJDHP master plan and design work was \$426,179 and includes master plan completion and submittal, conceptual engineering designs and costing, staffing necessary to complete necessary work for the submission of the master plan⁷. Preliminary designs (Step 2) are estimated to cost \$425,000 and is anticipated in FY 2005 and 2006. Research needs required to provide critical information needs (i.e. Brood Research Plan to Access Behavior and Broodstock Testing Collection Plan) during the preliminary planning process (Step 2) are estimated to cost \$892,300 in FY 2006 and 2007. Planning and final designs associated with Step 3 is estimated to cost \$2,400,000. Construction of all the project elements outlined in the Chief Joseph Dam Hatchery Program Master Plan is estimated to cost \$17,370,000⁸ and assumes the major project construction to occur in 2008 and 2009 with capital equipment being purchased (\$584,000) in 2009 and 2010. Total cost for all aspects of this proposed project including planning and designs, including research and construction costs is estimated to be \$22,097,479⁹. Annual operation and maintenance costs after all facilities are fully

⁶ As part of the Council's decisions (Major Project Review process -Council document 2001-29) regarding this proposed project the associated costs will be further defined and detailed.

⁷ The total cost includes \$386,799 from Project # 2003-023-00 and \$39,380 for the development of the summer/fall Chinook HGMP from Project #2003-005-00.

⁸ These costs are preliminary estimates, based on a conceptual design. Due to the level of certainty, a 30% contingency is applied to the overall costs. However, contingency is largely dependent on the quantity of uncertainties associated with the project and the amount of pre-investigation work completed. It is expected that the estimated construction costs represent a maximum range and that cost reductions would be identified in future planning stages through analysis of alternatives and elimination of many uncertainties.

⁹ Figures are based on FY 2004 dollars.

developed (2009) would approximate \$858,000. Monitoring and evaluation is estimated to cost about \$345,000 annually.

2) Spring Chinook

The cost to add facilities necessary for the proposed spring Chinook program is approximately \$5,570,000. Operational costs would add about \$221,693 to the summer/fall Chinook program costs. Additional monitoring and evaluation costs associated with the spring Chinook portion of the proposal are estimated to be \$161,998. Total cost for all aspects for the spring chinook portion of the project including planning, designs, and construction costs is estimated to be \$5,953,691¹⁰.

V. Key Questions and Issues

The Council invites comment on any aspect of the issue paper or master plan. Particular emphasis is encouraged on the following questions:

A. Concept

The Council could decide that there are still significant concerns, and risks that are still unacceptable and need to be further addressed at this step level in the decision process. This could be due to the relationship of this project to the U.S Bureau of Reclamation and the authorized mitigation associated with the construction of Grand Coulee Dam. Is it appropriate for Program funds to be used for funding the construction of this facility? Do any non-federal parties have outstanding mitigation obligations that could be satisfied with implementation of the CJDHP?

Are the appropriate purposes as described for the summer/fall Chinook appropriate and a priority for this part of the Columbia River Basin? That is, the master plan proposes a major integrated recovery program and harvest programs for summer/fall.

The Colville Tribe undertook an intensive planning process using existing knowledge of the habitat and the fish runs. Given this, is there any reason not to move forward with this proposed artificial production initiative? Do the potential benefits from the project outweigh the associated risks? Are the risks associated with doing nothing equal to or greater than what might be expected from the proposed project? Are there other less risky alternatives the fishery managers should consider that would meet their management goals for the spring chinook? Could the production of summer/fall Chinook needed to meet the management goals outlined in the master plan be produced somewhere else at less cost and with no substantial increase in risks? Is there some other way to achieve the production objectives (management goals) in the subbasins for spring chinook that is less costly?

B. Genetic Risk

¹⁰ In addition to the figures reflecting a 30% contingency and in FY 2004 dollars, construction of the spring Chinook facilities at the same time as the summer/fall Chinook facilities would result in a savings of approximately \$280,000.

Is there a significant increase in genetic risk(s) to the current stock of the summer/fall Chinook from the proposed alternative? If there are, what other actions to those proposed in the master plan could the fishery managers take to further reduce the genetic risk(s)?

C. Subbasin Planning

Subbasin plans have been submitted for the basins in the Columbia River. These plans will be consistent with Artificial Production Review purposes, policies, and recommend actions. Should a decision on this master plan be delayed until the Council has approved the subbasin plan, guided in part by the approved plan's goals and objectives and the anticipated implementation of the Artificial Production Review Evaluation?

D. Spring Chinook Program Components

Is it appropriate to also address the spring Chinook production addressed in the master plan? Are there similar concerns regarding the items outlined above with summer/fall Chinook that also apply to spring Chinook component?