Chapter 8

Compliance with Applicable Federal Environmental Statutes and Regulations

8. Compliance with Applicable Federal Environmental Statutes and Regulations

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This section addresses Federal statutes, implementing regulations, and executive orders potentially applicable to the proposed lower Snake River actions. In each case, the text provides a brief summary of the relevant aspects of the law or order. The conclusions on compliance are based on the impact analysis presented in Section 5.0, Environmental Effects of Alternatives and the appendices.

8.1 National Environmental Policy Act

This FR/EIS was prepared pursuant to regulations implementing the National Environmental Policy Act (NEPA) (42 USC 4321 et seq). NEPA provides a commitment that Federal agencies will consider the environmental effects of their actions. It also requires that an EIS be included in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment. The EIS must provide detailed information regarding the proposed action and alternatives, the environmental impacts of the alternatives, potential mitigation measures, and any adverse environmental impacts that cannot be avoided if the proposal is implemented. Agencies are required to

demonstrate that these factors have been considered by decisionmakers prior to undertaking actions.

This FR/EIS was prepared pursuant to NEPA for four alternative actions. In early 2000, the Corps held several series of public meetings to gather public opinions and comments on the alternatives in the Draft FR/EIS. Public comments received on the Draft FR/EIS are addressed in this Final FR/EIS.

8.2 Endangered and Threatened Species and Critical Habitat

The Endangered Species Act (ESA), (16 USC 1531-1544), amended 1988, establishes a national program for the conservation of threatened and endangered species of fish, wildlife, and plants and the habitat upon which they depend. Section 7(a) of the ESA requires Federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS), as appropriate, to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or adversely modify or destroy their critical habitats.

Section 7(c) of the ESA and the Federal regulations on endangered species coordination (50 CFR § 402.12) require that Federal agencies prepare biological assessments of the potential effects of major actions on listed species and critical habitat. The Corps has been and continues to consult with USFWS and NMFS concerning listed species that could be affected by the actions addressed in this FR/EIS. The most current biological opinions related to the FCRPS and this Feasibility Study are the NMFS and USFWS 2000 Biological opinions.

8.3 Fish and Wildlife Conservation

8.3.1 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (FWCA) of 1980 (16 USC 661 et seq.) requires consultation with USFWS when any water body is impounded, diverted, controlled, or modified for any purpose. USFWS and state agencies charged with administering wildlife resources are to conduct surveys and investigations to determine the potential damage to wildlife and the mitigation measures that should be taken. USFWS incorporates the concerns and findings of the state agencies and other Federal agencies, including NMFS, into a report that addresses fish and wildlife factors and provides recommendations for mitigating or enhancing impacts to fish and wildlife affected by a Federal project. The Federal project must include justifiable measures that address USFWS recommendations and concerns. Federal agencies that construct or operate water-control projects are authorized to modify or add to the structures and operation of those projects to accommodate the means and measures for conservation of fish and wildlife.

The Corps has coordinated with USFWS throughout the Feasibility Study process. USFWS staff participated in the analyses conducted by several Corps study groups. USFWS completed the draft Fish and Wildlife Coordination Act Report, which is appended to the FR/EIS (Appendix M, Fish and Wildlife Coordination Act Report).

8.3.2 Fishery Conservation and Management Act of 1976

The Fishery Conservation and Management Act of 1976 (16 USC 1801-1882; 90 Stat. 331; as amended), also known as Magnuson Fishery Conservation and Management Act, established a 200-mile fishery conservation zone, effective March 1, 1977, and established the Regional Fishery Management Councils consisting of Federal and state officials, including the USFWS. The fishery conservation zone was subsequently dropped by amendment and the geographical area of coverage was changed to the Exclusive Economic Zone, with the inner boundary being the seaward boundary of the coastal States. Columbia River salmon and steelhead are found in this zone. Therefore, the potential effects of the alternatives on the fisheries in this zone have been examined in Section 5.0, Environmental Effects of Alternatives.

8.3.3 Migratory Bird Conservation Act

The Migratory Bird Conservation Act (16 USC 715 et seq.,) requires that lands, waters, or interests acquired or reserved for purposes established under the Act be administered under regulations promulgated by the Secretary of the Interior. This act involves conservation and protection of migratory birds in accordance with treaties entered into between the United States and Mexico, Canada, Japan, and the former Union of Soviet Socialist Republics; to protect other wildlife, including threatened or endangered species; and to restore or develop adequate wildlife habitat. The migratory birds protected under this Act are specified in the respective treaties. In regulating these areas, the Secretary of the Interior is authorized to manage timber, range, agricultural crops, and other species of animals, and to enter into agreements with public and private entities.

Section 5.6, Terrestrial Resources, addresses affected avian species as well as other terrestrial species of concern.

8.3.4 Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act)

The Northwest Power Act was passed by Congress on December 5, 1980 (16 USC 829d-1). This law created the eight-member Northwest Power Planning Council (NPPC), an interstate agency whose members are appointed by the Idaho, Montana, Oregon, and Washington governors. NPPC was entrusted with adopting a Fish and Wildlife Program for the Columbia River Basin by November 1982 and preparing a 20-year Regional Electric Power and Conservation Plan by April 1983. These plans are periodically updated and amended.

NPPC's Fish and Wildlife Program established a number of goals for restoring and protecting fish and wildlife populations in the basin. These goals led to changes in the operation of the Coordinated Columbia River System during the mid-1980s. One of the most notable changes resulted in the Water Budget, which provides for the release of specific amounts of water in the upper Columbia and Snake rivers to help juvenile salmon migrate downstream in the spring. More recently, the NPPC developed its own proposals to protect threatened and endangered salmon stocks. The NPPC has completed amendments to its Columbia River Basin Fish and Wildlife Program. The amendments adopted to date include mainstem survival, harvest,

production, habitat, flow measures that can be used to increase salmon and steelhead runs, and resident fish and wildlife measures. The Corps takes these amendments into consideration when making operating plans.

8.4 Heritage Conservation

A number of Federal laws have been promulgated to protect the nation's historical, cultural, and prehistoric resources.

8.4.1 National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA) (16 USC 470) requires that Federal agencies evaluate the effects of Federal undertakings on historical, archeological, and cultural resources and afford the Advisory Council on Historic Preservation (ACHP) opportunities to comment on the proposed undertaking. The first step in the process is to identify cultural resources included in (or eligible for inclusion in) the National Register of Historic Places that are located in or near the project area. The second step is to identify the possible effects of proposed actions. The lead agency must examine whether feasible alternatives exist that would avoid such effects. If an effect cannot reasonably be avoided, measures must be taken to minimize or mitigate potential adverse effects.

The Corps, in coordination with other Federal agencies, the State Historic Preservation Offices (SHPOs), and Native American tribes, has identified cultural resources and sites in the project area for inclusion on the National Register. In addition, the agencies are evaluating the effects of the proposed alternatives on these sites and measures that might be implemented to mitigate the potential effects. Implementation of any of the alternatives would affect cultural sites to varying degrees. A large area of cultural sites would be exposed with dam breaching. Sites normally inundated might be exposed and subject to impacts from traffic, vandalism, and erosion from wind and waves. Those issues are addressed in Section 5.7, Cultural Resources.

8.4.2 Archeological Resources Protection Act

The Archeological Resources Protection Act (ARPA) (16 USC 470aa-470ll) provides for the protection of archeological sites located on public and Indian lands, establishes permit requirements for the excavation or removal of cultural properties from public or Indian lands, and establishes civil and criminal penalties for the unauthorized appropriation, alteration, exchange, or other handling of cultural properties.

Any of the alternatives could result in continued erosion or exposure of cultural sites and subsequent damage. The drawdown included in Alternative 4—Dam Breaching could result in the new or increased exposure of sites. This in turn could lead to vandalism or an increase in ongoing vandalism at cultural sites. Appropriate monitoring/surveillance methods and awareness programs will need to be developed to prevent or minimize vandalism as part of overall monitoring and mitigation for cultural resources. The Corps will recommend prosecution of individuals caught vandalizing cultural sites.

8.4.3 Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA) (25 USCA 3001) addresses the discovery, identification, treatment, and repatriation of Native American and Native Hawaiian human remains and cultural items (associated funerary objects, unassociated funerary objects, sacred objects, and objects of cultural patrimony). This Act also establishes fines and penalties for the sale, use, and transport of Native American Cultural items. Consistent with procedures set forth in applicable Federal laws, regulations, and policies, the Corps will proactively work to preserve and protect natural and cultural resources, establish NAGPRA protocols and procedures, and allow reasonable access to sacred sites.

8.4.4 American Indian Religious Freedom Act

The American Indian Religious Freedom Act (AIRFA) of 1978 (42 USCA 1996) established protection and preservation of Native American's rights of freedom of belief, expression, and exercise of traditional religions. Courts have interpreted AIRFA to mean that public officials must consider Native American's interests before undertaking actions that might harm those interests. The Corps will continue to coordinate with affected Native American Tribes on this study and future implementation plans.

8.5 State, Area-Wide, and Local Plan and Program Consistency

The Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 CFR § 1506.2) require agencies to consider the consistency of a proposed action with approved state and local plans and laws. State and local government agencies operate a variety of recreational, infrastructure, and related resources along the river system. Impacts to these resources that could result from the various alternatives are identified in Section 5.0, Environmental Effects of Alternatives.

In accordance with Executive Order 12372, this FR/EIS will continue to be circulated to the appropriate state agencies for review and consultation requirements, as it has been at each stage in the process.

8.6 Coastal Zone Management Consistency

The Coastal Zone Management Act of 1972 (16 USC 1451-1564) requires that Federal actions be consistent, to the maximum extent practicable, with approved state coastal zone management programs. A state coastal zone management program (developed under state law and guided by the Act) sets forth objectives, policies, and standards to guide public and private uses of lands and waters in the coastal zone. The coastal zone as defined in the Act extends inland as far as necessary to account for factors that influence coastal shorelines. Washington and Oregon have approved coastal zone management programs, both of which list seven types of Federal activities directly affecting the coastal zone. The upper boundary of the coastal zone is downstream of Bonneville Dam.

The Feasibility Study alternatives would have little effect on water levels or river uses downstream of Bonneville Dam and therefore all alternatives are in compliance with the Act.

8.7 Environmental Justice

Environmental justice refers to executing a policy of the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws. Increasing concern with environmental equity or justice evolved from a series of studies, conducted in the late 1980s and early 1990s, that suggested that certain types of government and corporate environmental decisions may adversely affect low-income and minority populations to a greater extent than the general population. This finding was particularly the case with locally unpopular land uses, such as landfills and toxic waste sites. Recent guidelines addressing environmental justice include President Clinton's 1994 Executive Order 12898 and accompanying memorandum, the 1996 draft guidelines for addressing environmental justice under NEPA issued by the CEQ, and the 1997 interim guidelines issued by EPA.

EPA's Office of Environmental Justice defines environmental justice as:

> "*The fair and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies*" (EPA, 1998b).

Potential effects to low income and/or minority populations are discussed in Section 5.14.3.

8.8 Flood Plain Management

If a Federal agency program will affect a flood plain, the agency must consider alternatives to avoid adverse effects in the flood plain or to minimize potential harm. Executive Order 11988 requires Federal agencies to evaluate the potential effects of any actions they might take in a flood plain and to ensure that planning, programs, and budget requests reflect consideration of flood hazards and flood plain management.

The impacts of the alternatives on flood control capability are considered minor or negligible.

8.9 Wetlands Protection

Executive Order 11990 encourages Federal agencies to take actions to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands when undertaking Federal activities and programs. Any agency considering a proposal that might affect wetlands must evaluate factors

affecting wetland quality and survival. These factors should include the proposal's effects on the public health, safety, and welfare due to modifications in water supply and water quality; maintenance of natural ecosystems and conservation of flora and fauna; and other recreational, scientific, and cultural uses.

Emergent wetlands communities are prevalent in several areas along the lower Snake River. For wetlands that depend on full pool levels for water supply through subirrigation or shallow inundation, the wetlands might be lost or species composition would be altered with Alternative 4—Dam Breaching.

8.10 Farmland Protection

8.10.1 Farmland Protection Policy Act

The Farmland Protection Policy Act (7 USC 4201 et seq.) requires Federal agencies to identify and take into account the adverse effects of their programs on the preservation of farmlands. Each alternative in this study has been evaluated to determine whether it would cause physical deterioration and/or reduction in productivity of farmlands (see Section 8.10.2).

8.10.2 CEQ Memorandum, August 11, 1990, on Analysis of Impacts on Prime or Unique Agricultural Lands

The CEQ Memorandum establishes criteria to identify and consider the adverse effects of Federal programs on the preservation of prime and unique farmland; to consider alternative actions, as appropriate, that could lessen adverse effects; and to ensure Federal programs are consistent with all state and local programs for protection of farmland. The alternatives in this study were determined not to have a direct impact on prime or unique agricultural lands; direct impacts would be confined to the reservoirs. The Corps actions could, however, diminish the productive capacity of prime or unique agricultural lands that are adversely affected by changes in transportation or irrigation as a result of the project.

8.11 Recreation Resources

8.11.1 Wild and Scenic Rivers Act

The Wild and Scenic Rivers Act (16 USC 1278 et seq.) designates qualifying free-flowing river segments as wild, scenic, or recreational. The Act establishes requirements applicable to water resource projects affecting wild, scenic, or recreational rivers within the National Wild and Scenic Rivers System, as well as rivers designated on the National Rivers Inventory. Under the Act, a Federal agency may not assist the construction of a water resources project that would have a direct and adverse effect on the free-flowing, scenic, and natural values of a Federally designated wild or scenic river. If the project would affect the free-flowing characteristics of a designated river or unreasonably diminish the scenic, recreational, and fish and wildlife values present in the area, such activities should be undertaken in a manner that would minimize adverse impacts and should be developed in consultation with the National Park Service (NPS).

Several reaches of the Snake River have been designated under the Wild and Scenic Rivers System, however, none are within the lower Snake River. The Hells Canyon reach, which is downstream of Brownlee Reservoir, is of primary interest.

The Hanford Reach of the Columbia River was studied by the NPS and an interagency team as a potential Federal Wild and Scenic River. The preferred alternative in a Final EIS on the Hanford Reach study was distributed in June 1994. It recommended the reach be designated as a combination National Wildlife Refuge and National Wild and Scenic River.

8.11.2 Columbia River Gorge National Scenic Area Act

On November 17, 1986, Congress established the Columbia River Gorge National Scenic Area (Scenic Area) as a Federally recognized and protected area (PL 99-663). The National Scenic Area Act (16 USCA 444 a-p) also created the bi-state Columbia River Gorge Commission and directed the Commission and the USDA Forest Service to jointly develop a management plan for the Scenic Area. The management plan is to reflect legislatively established purposes, which include a mandate to protect and provide for the enhancement of the scenic, cultural, recreational, and natural resources of the Scenic Area.

The Commission adopted a management plan on October 15, 1991. Counties affected by the plan have been encouraged to adopt ordinances consistent with this plan. The plan establishes land use designations for lands within the Scenic Area and specifies broad policies that provide for the protection of resources within the Scenic Area. Feasibility Study alternatives do not include any specific actions at the dams located within the Scenic Area (Bonneville and The Dalles).

8.11.3 Wilderness Act

The Wilderness Act of 1964 (16 USCA 1131 et seq.) established the National Wilderness Preservation System. Areas designated as wilderness under the original Act and subsequent wilderness legislation are to be administered for the use and enjoyment of the public in such a manner as to leave them unimpaired as wilderness. Development activities are generally prohibited within wilderness areas, and Federal agencies proposing actions must consider whether the effects of those actions would impair wilderness values. Although there are Wilderness Areas in this basin, none are located on the lower Snake River.

8.11.4 Water Resources Development Act

Congress generally authorizes water resources projects through biennial legislation, such as the Water Resources Development Act (WRDA) of 1990 (33 USC 2201). Section 310(b) of WRDA 1990 requires public participation in changes to reservoir operation criteria. Section 415(b) specifically requires public notification (hearings) of actions associated with drawdown of Dworshak Reservoir. No new drawdowns at Dworshak are contemplated in this FR/EIS.

8.11.5 Federal Water Project Recreation Act

In planning any Federal navigation, flood control, reclamation, or water resource project, the Federal Water Project Recreation Act (16 USCA 4612 et seq.) requires that full consideration be given to the opportunities that the project affords for outdoor recreation and fish and wildlife enhancement. The Act requires planning with respect to the development of recreation potential. Projects must be constructed, maintained, and operated to provide recreational opportunities, consistent with the purpose of the project. The FR/EIS considers recreation opportunities of each alternative.

8.11.6 Land and Water Conservation Fund Act

The Land and Water Conservation Fund Act (LWCFA) (16 USCA 4601-11) assists in preserving, developing, and ensuring accessibility of outdoor recreation resources. The LWCFA establishes specific Federal funding for acquisition, development, and preservation of lands, water, or other interests authorized under the ESA and National Wildlife Refuge Areas Act. Funds appropriated under the Act are allocated to Federal agencies or as grants to states and localities. Recreation facilities on the lower Snake River as evaluated in the FR/EIS are not LWCFA funded facilities.

8.12 Navigable Waters

The Rivers and Harbors Appropriation Act of 1899 (33 U.S.C. 1344) prohibits constructing bridges, dams, dikes, or causeways over harbors or navigable waters of the United States in the absence of Congressional consent and approval of plans by the Chief of Engineers and Secretary of the Army (33 U.S.C. 401). The Act prohibits any obstruction or alteration of any navigable water of the United States (33 U.S.C. 403). The purpose of the Act was to place the navigable waters of the United States under the exclusive control of the United States to prevent any interference with their navigability, whether bridges or other obstructions, except by express permission of the United States Government. It preserves the public right of navigation and prevents the interference with interstate and foreign commerce.

Alternative 4—Dam Breaching of the Feasibility Study is the only alternative course of action that would dramatically change the navigability of the lower Snake River. Under the other alternatives, the impacts to navigation would be minimal or nonexistent. Under Alternative 4—Dam Breaching, commercial navigation would change dramatically due to the permanent drawdown of reservoirs to near-natural river levels. This alternative would eliminate traditional barge transportation and would cause shifts in regional commodity transportation, as discussed in Section 5.9.

The Feasibility Study addresses the potential changes in navigation as one of many resources potentially affected by the actions considered within the study. If dam removal was the selected alternative, the Corps would require Congressional approval of such an action and that would involve Congressional consideration of effects to navigation in relation to the Rivers and Harbors Appropriation Act.

8.13 Pollution Control at Federal Facilities

In addition to their responsibilities under NEPA, Federal agencies are required to carry out the provisions of other Federal environmental laws. The alternatives discussed in this FR/EIS do not require any particular response with regard to Federal pollution control laws, which are more concerned with site-specific proposals and alternatives, rather than the broad decisions analyzed in this FR/EIS. Other areas will be addressed as appropriate in any site-specific document tiered to this FR/EIS.

To the extent applicable to an alternative presented in this FR/EIS, compliance with the standards contained in the following legislation will be included in this report:

- Title 42 USC 300 F, et seq., The Safe Drinking Water Act, as amended.
- Title 42 USC 6901, et seq., The Solid Waste Disposal Act.
- Title 33 USC 2701, et seq., Oil Pollution Act.
- Title 42 USC 9601 [9615] et seq., The Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA).
- Title 7 USC 136, et seq., The Federal Insecticide, Fungicide, and Rodenticide Act, as amended (FIFRA)
- Title 42 USC 6901, et seq., The Resource Conservation and Recovery Act of 1976, as amended (RCRA).
- Title 15 USC, et seq., Toxic Substances Control Act (TSCA), as amended; Title 40 CFR Part 761, “Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions.”
- Title 42 USC 4901, et seq., The Noise Control Act of 1972, as amended.
- Title 29 USC 651, et seq., Occupational Health and Safety Act.

Short summaries of two of these acts are provided for additional information:

8.13.1 Federal Water Pollution Control Act (Clean Water Act)

The Federal Water Pollution Control Act (33 USC 1251 et. seq.) is more commonly referred to as the Clean Water Act (CWA). This act is the primary legislative vehicle for Federal water pollution control programs and the basic structure for regulating discharges of pollutants into waters of the United States. The CWA was established to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." The CWA sets goals to eliminate discharges of pollutants into navigable water, protect fish and wildlife, and prohibit the discharge of toxic pollutants in quantities that could adversely affect the environment. The Act has been amended numerous times and given a number of titles and codifications.

Further discussions on the CWA are found in Sections 4.4, 5.4, and 6.4 of the Final FR/EIS, as well as in Appendices C and T.

8.13.2 Clean Air Act

The Clean Air Act (CAA) (42 USC 7401 et. seq.), amended in 1977 and 1990, was established "to protect and enhance the quality of the nation's air resources so as to

promote public health and welfare and the productive capacity of its population." CAA authorizes the Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) to protect public health and the environment. The CAA establishes emission standards for stationary sources, volatile organic compound emissions, hazardous air pollutants, and vehicles and other mobile sources. The CAA also requires the states to develop implementation plans applicable to particular industrial sources.

Additional discussions on the CAA are found in Sections 4.3, 5.3, and 6.4 of the Final FR/EIS, as well as in Appendix P.

8.14 Relevant Agreements

Implementation of the various proposed alternatives may affect or be affected by other specific relevant agreements. These agreements are not statutes or regulations but are important to consider with Columbia and Snake River actions. This section analyzes and presents the possible implications of implementing the alternatives with respect to the following selected relevant treaties and agreements:

- Canadian Entitlement Allocation Agreement (CEAA)
- Pacific Northwest Coordination Agreement (PNCA)
- Memorandum of Agreement (MOA) on the Bonneville Power Administration's (BPA's) financial commitment for fish and wildlife costs
- MOA on direct funding by BPA of power operation and maintenance costs at Corps projects
- United States Canada Salmon Agreement
- Tribal Treaties
- Specific Water Agreements in Idaho.

These agreements and their relationships to the proposed alternatives are summarized in the following sections.

8.14.1 Canadian Entitlement Allocation Agreement

8.14.1.1 Description

The Columbia River Treaty between the United States and Canada was signed in 1961 and ratified by the Governments in 1964. The Treaty required Canada to construct and operate 15.5 million-acre feet (MAF) of storage on the Columbia River and a tributary in Canada for optimum power generation and flood control downstream in Canada and the United States. Construction of reservoirs in Canada was undertaken at Duncan, Keenleyside (Arrow Lakes), and Mica.

The Treaty established United States and Canadian Entities as the implementing agencies for each Government. The Canadian Government designated British Columbia Hydro and Power Authority as the Canadian Entity. The United States Government designated the Administrator of BPA and the Division Engineer of the Corps, North Pacific Division as the United States Entity. The Entities are charged with carrying out most of the functions agreed to under the Treaty. Either

Government has the option to terminate the Treaty (except for certain provisions) after September 2024 with 10 years written notice.

Regulation of streamflows by the three Canadian Treaty reservoirs enables dams downstream in the United States to generate more usable electricity. This increase in usable electricity is referred to as the "downstream power benefits." The Treaty specifies that the downstream power benefits be shared equally between the two countries. Canada's portion of the downstream power benefits is known as the Canadian Entitlement. The downstream power benefits are derived under a formula prescribed by the Treaty and are determined by computing the difference in the hydroelectric power capable of being produced in the United States base system with and without the use of Canadian storage. The United States base system, defined in Annex B of the Treaty, is essentially the hydroelectric system that existed in the Columbia River Basin in 1961. The Treaty specifies a point on the United States/ Canadian border near Oliver, B.C. for the delivery of the Canadian Entitlement power unless a different point of delivery is mutually agreed upon by the United States and Canadian Entities.

The Canadian entitlement has both an energy and capacity component, defined by the Treaty as average annual usable energy and dependable capacity. The energy component may be characterized as the total number of megawatt-hours delivered over a specified time—usually one year. More typically, it is characterized as the average rate of delivery over such a time period, or average megawatts (aMW). The capacity component may be characterized as the maximum rate of delivery allowed in megawatts. Defining a capacity component in excess of the average megawatt energy figure allows the flexibility to shape the returned energy into time periods that more closely reflect the use of the energy, or its marketability.

The Treaty provided that if Canada and the United States agreed, Canada could sell its share of the downstream power benefits in the United States. Canada did not need the additional power at the time the Treaty was signed. Therefore, the Canadian entitlement was initially sold to the Columbia Storage Power Exchange (CSPE), a nonprofit corporation representing a group of 41 Pacific Northwest utilities in the United States, for a period of 30 years from the completion of each dam. These 30-year periods expire in 1998, 1999, and 2003.

8.14.1.2 Discussion of Impacts

The Canadian entitlement is guaranteed by law through at least 2024 and will continue to be provided, regardless of the power system in place. The CEAA is calculated based on theoretical water flows, not by actual water flows. However, there is a clause in the CEAA, which decreases the Canadian entitlement if the region buys more thermal power. As a result, the current level of entitlement will not be impacted by alternatives that leave the dams in place.

Under Alternative 4—Dam Breaching, the Canadian entitlement could decrease at a more rapid rate than under the dam retention alternatives, because the reliance on thermal power resources would occur more rapidly. The rule of thumb for the magnitude of these impacts is a decrease of approximately 3 megawatts (MW) benefit to the Canadians for each additional 100 MW of thermal power.

The expected range of the contribution of Federal and non-Federal sources during the life of the contract is approximately 70 to 75 percent Federal and 25 to 30 percent non-Federal. This range will continue under all alternatives. However, factors that cannot be predicted at this time could cause the percentage allocations to be outside the expected range.

8.14.2 Pacific Northwest Coordination Agreement (PNCA)

8.14.2.1 Description

The PNCA was developed to coordinate Pacific Northwest hydroelectric resources owned or operated by the signatory parties and also allows incidental coordination of other resources (thermal and miscellaneous) at the option of the parties. The parties to the current PNCA are: Montana Power Company, PacifiCorp, Portland General Electric Company, Puget Sound Power and Light Company, Washington Water Power Company, Colockum Transmission Company, Inc., Chelan County Public Utility District (PUD) #1, Cowlitz County PUD #1, Grant County PUD #2, Douglas County PUD #1, Pend Oreille County PUD #1, Snohomish County PUD #1, Seattle City Light, Tacoma City Light, Eugene Water and Electric Board, and the United States through the BOR, Corps, and BPA. The parties annually coordinate planning to estimate the firm load that can reliably be served by the coordinated resources and participate in energy exchanges throughout the contract year to achieve planned firm energy load carrying capacity (FELCC).

The overall purposes of coordination include:

- Optimizing generation through diversities and efficiencies
- Providing certainty in meeting firm load by coordinated resources
- Providing a mechanism to develop benefits from Canadian Storage.

The Columbia River Treaty between the United States and Canada also calls for the two countries to share the power benefits produced downstream in the United States as a result of the development of reservoir storage in Canada. The treaty assumes that the benefits are maximized if this storage is operated as part of a structure coordinated between the major power producers in the Pacific Northwest. In accordance with a set of principles developed by the Secretary of the Interior in 1961, the Pacific Northwest region's non-Federal utilities committed to provide a portion of the share of Treaty benefits the United States was required to deliver to Canada. In return, the U.S. Government agreed to participate in coordinated operation under the same set of principles. The CEAA and PNCA, both signed in 1964, implement those commitments. The CEAA and the PNCA will expire in 2003, but the earliest date possible for expiration of the Treaty is 2024. The parties recently agreed to a new PNCA, that, pending regulatory approval, will likely become effective in the near future.

8.14.2.2 Discussion of Impacts

The PNCA has as its primary goal the coordination of resources to maximize the efficiency and flexibility of operations to meet unusual or severe conditions (such as

may occur in severe cold weather conditions). If the power resource remains substantially unchanged, there will typically be little impact on the PNCA. However, flow augmentation occurrences in previous years (e.g., at 427,000 acre feet) have occasionally impacted the PNCA by reducing the flexibility of response. This is the case with Alternatives 1 through 3.

If an alternative under consideration further reduces the flexibility of the resources to meet the unusual or severe conditions, it could negatively impact the PNCA.

Under Alternative 4—Dam Breaching, the hydro-power resource base is reduced and is assumed to be replaced by combined turbine gas generators. The DREW Hydropower Impact Team (DREW HIT), which evaluated the potential impact of the study alternatives on the power system, concluded that 900 MW of production would be the economical level of power replacement. However, in order to develop a system that would meet the demand in severe weather (e.g., meeting the probable load factor required in a 1 in 20 winter), up to 1,550 MW of production would be required. If 1,550 megawatts of power are developed and included in the PNCA, there may be no significant affect on the PNCA. If this level of power is not developed, then the effectiveness of the PNCA could be negatively impacted.

8.14.3 Memorandum of Agreement on the Bonneville Power Administration's (BPA) Financial Commitment for Fish and Wildlife Costs

8.14.3.1 Description

A MOA was entered into by the Department of Energy (on behalf of BPA), the Department of the Army (on behalf of the Corps), the Department of the Interior (on behalf of BOR and the USFWS), and the Department of Commerce (on behalf of the National Oceanic and Atmospheric Administration [NOAA] through the NMFS) to "set forth the expectations of the Parties for the Fiscal Years 1996 through 2001 with regard to the budget commitment of Bonneville's ratepayers for the fish and wildlife costs covered under this Agreement, including a description of the procedures to be used to account for the spending of this budget commitment." The MOA placed a cap on BPA's expenditures for these programs at $252 million per year plus an estimated impact due to operational changes (e.g., lost revenue and/or power purchases).

The BPA fish and wildlife budget commitment and the MOA implementing that commitment are intended to reflect three working principles:

1. Provide greater financial certainty to BPA through a stable, multi-year budget for its fish and wildlife obligations
2. Identify a budget to meet BPA's fish and wildlife funding obligations, barring unforeseen events
3. Ensure that the funds expended for the survival, protection, mitigation, and recovery of dwindling runs of salmon and other fish and wildlife are expended soundly and efficiently."

The MOA recognizes:

1. Decisions on the part of BPA to fund the implementation of the 1995 and 1998 Biological Opinions on the operation of the Federal Columbia River Power System (FCRPS) in the manner and at the funding levels described in this Agreement.
2. Decisions on the part of the Corps and BOR to operate and modify the FCRPS in a manner consistent with the Biological Opinions and reflected in their records of decision on the Biological Opinions
3. The funding commitments in the MOA are adequate to implement the requirements of the Biological Opinions
4. A commitment on the part of BPA to fund the implementation of the Council's Fish and Wildlife Program
5. The Corps and BOR will take the Council's program into account to the fullest extent practicable when deciding on the operations of the FCRPS and other actions that affect fish and wildlife in the Columbia Basin
6. The Parties have also committed to fish and wildlife actions carried out by Columbia River Basin Indian Tribes, the states, and others that are funded by moneys subject to this budget.

The Parties agree that BPA's financial commitment under the MOA for Columbia River Basin fish and wildlife costs for Fiscal Years 1996 through 2001 is as follows:

7. BPA shall absorb the financial consequences of the System operations called for in the 1995 Biological Opinions, supplemented by certain other specific operations
8. With regard to expenditures for fish and wildlife in areas other than system operations, BPA's financial commitment shall average $252 million per year plus interest through these fiscal years for direct program costs (non-capital expenditures for fish and wildlife activities funded directly by BPA), reimbursable expenditures costs (the hydroelectric share of operation and maintenance and other non-capital expenditures for fish and wildlife related activities by the Corps, BOR and USFWS that are funded by Congressional appropriations and then reimbursed to the U.S. Treasury by BPA), and capital investment costs (the projected amortization, depreciation and interest payments for past fish and wildlife-related borrowing by BPA, the portion of past fish and wildlife capital investments by the Corps and BOR for which BPA is already obligated to repay the U.S. Treasury, the hydroelectric share of future fish and wildlife-related capital investments by the Corps and BOR that will be funded by appropriations and then reimbursed to the U.S. Treasury by BPA, based on activities called for in the Biological Opinions, the Council's Fish and Wildlife Program and other authorities, and other capital investments directly funded by BPA borrowing that are based on activities called for in the Biological Opinions and the Council's Fish and Wildlife Program).
9. The Corps, BOR, and USFWS are to be consistent with regional priorities. The MOA states: “When submitting budget requests for appropriations that will be reimbursed by Bonneville within this category, the regional offices of the Corps

of Engineers, Bureau of Reclamation, and USFWS will act in a manner consistent with this Agreement and with the regional priorities and recommendations of the Parties, Tribes, and Council developed under this Agreement pursuant to the procedures described in the Annex. If the President subsequently submits a proposed budget to Congress seeking appropriations for reimbursable expenses that will result in expenditures by Bonneville that differ from the expected budget allocation (as described in the previous sentence) for this category under this Agreement, it will be explained to Congress, NPPC Council and the Tribes the way in which the proposed budget differs from that developed under this Agreement, including an explanation of the reason for this difference and the impact of the difference on the ability to carry out other activities under this Agreement.

8.14.3.2 Discussion of Impacts

This MOA does not limit the fish and wildlife obligations of the various agencies involved under any of the alternatives under consideration. In addition, the MOA runs through 2001, which is likely to be before any of the action alternatives are scheduled for implementation.

If the budget for fish and wildlife programs needs to be increased (under any of the alternatives), it could be reflected in a modification of the budget. As a result, the MOA could remain in its present form with a modified budget or be eliminated.

8.14.4 MOA on Direct Funding of Power Operation and Maintenance Costs at Corps Projects

8.14.4.1 Description

The National Energy Policy Act of 1994 (PL 102-486, Section 2406) authorized BPA to direct fund generation additions, improvements, and replacements at Department of Army, North Pacific Region hydropower generation facilities.

A MOA was entered into by BPA and the Department of Army (Corps), subsequent to the Act, on December 4, 1994. This MOA established the framework and administrative details for BPA direct funding of large capital hydropower Operation and Maintenance (O&M) generation additions, improvements, repairs, replacements, or rehabilitations. The Corps headquarters guidance limited the use of this vehicle to non-routine capital items.

Another MOA between BPA and the Department of Army was signed on December 22, 1997. This MOA implements a major policy change by authorizing the funding of hydropower specific baseline and small capital O&M work, and the power portion of joint use costs, from congressional appropriations to direct funding by BPA. The non-power portion of the joint use costs continues to be fully funded by congressional appropriation.

The power share of joint costs account for approximately 90 percent of total costs and non-power share of joint costs account for approximately 10 percent of total costs (based on an average of all four Lower Snake River projects).

The agreement took effect in fiscal year 1999 and will continue in effect until 2008. However, the budget for direct funding has only been estimated through 2003.

8.14.4.2 Discussion of Impacts

The direct funding provisions of the MOA include both O&M and small construction costs. The MOA could continue to operate under any of the alternatives under consideration. However, if construction costs increase significantly, the budget would need to be modified. This would be the case under both Alternative 2—Maximum Transport of Juvenile Salmon and Alternative 4—Dam Breaching. There could also need to be a modification to the cost allocation process under Alternative 4 —Dam Breaching.

8.14.5 Tribal Treaties

8.14.5.1 Description

Two documents prepared for this study shed further light on tribal issues. The Corps prepared Appendix Q, Tribal Consultation/Coordination, which addresses issues related to 14 tribes that are resident in the study area. In addition, the Tribal Circumstances report prepared for this study by Meyer Resources, Inc. in association with the Columbia River Inter-Tribal Fisheries Commission (CRITFC) (Meyer Resources, 1999) addresses issues related to the Treaty Tribes. These documents provide additional information on issues related to the tribes and tribal treaties. The tribes included in these reports are (Treaty Tribes are denoted with an asterisk):

- Confederated Tribes of the Warm Springs Reservation of Oregon*
- Burns Paiute Tribe of the Burns Paiute Indian Colony
- Kootenai Tribe of Idaho
- Northwestern Band of Shoshoni Nation
- Shoshone-Paiute Tribes of Duck Valley Reservation
- Confederated Tribes of the Colville Indrau Reservation
- Nez Perce Tribe*
- Coeur d'Alene Tribe
- Shoshone-Bannock Tribes of the Fort Hall Reservation*
- Confederated Tribes and Bands of the Yakama Indian Nation of the Yakama Reservation*
- Spokane Tribe of Spokane Reservation
- Confederated Tribes of the Umatilla Reservation*
- Kalispel Indian Community of the Kalispel Reservation.
- Wanapum Band.

The Corps has long recognized the sovereign status of Indian tribes. Principles outlined in the Constitution and treaties, as well as those established by federal laws,

regulations, and Executive Orders, continue to guide the Corps' national policy towards Indian Nations.

The Corps operates within a government-to-government relationship with Federally recognized Indian tribes. This involves consulting, to the greatest extent practicable and permitted by law, with Indian tribal governments; assessing the impact of agency activities on tribal trust resources and assuring that tribal interests are considered before the activities are undertaken; and removing procedural impediments to working directly with tribal governments on activities that affect trust property or the governmental rights of the tribes.

The Corps recognizes that tribal governments are sovereign entities, with rights to set their own priorities, develop and manage tribal resources, and be involved in Federal decisions or activities which have the potential to affect these rights. The Corps worked to meet trust obligations, protect trust resources, and to obtain tribal views of trust and treaty responsibilities or actions related to this study, in accordance with provisions of treaties, laws, and Executive Orders as well as principles lodged in the Constitution of the United States. Several tribal chairs/leaders have met with Corps commanders/leaders with regard to the study. The Corps has also reached out, through designated points of contact, to involve tribes in collaborative processes designed to ensure information exchange and consideration of disparate viewpoints.

Appendix Q, Tribal Coordination/Consultation, address the Corps' work toward fulfilling obligations regarding preservation and protection of trust resources, comply with the Native American Graves Protection and Repatriation Act, and ensure reasonable access to sacred sites in accordance with published guidance.

8.14.5.2 Discussion of Impacts

The tribal impacts of the alternatives under consideration are being evaluated using many resources. These include the Tribal Circumstances and Perspectives report; Cultural Resources; Appendix Q, Tribal Coordination/Consultation; Consultation efforts; and other comments received throughout the study process. The Corps is committed to carrying out their activities in a manner that fulfills their Treaty and Trust obligations. For a more detailed discussion on alternative impacts see Sections 5.7, Cultural Resources and Section 5.8, Native American Indians.

8.14.6 Water Rights Agreements

8.14.6.1 Description

The current flow augmentation program provides approximately 427,000 acre-feet of water. The current program follows the principle of acquiring water only from willing sellers and, after 4 years, there has been permanent acquisition of approximately 78,000 acre-feet of storage space and natural flow rights. Rental pools and other sources provide the remaining volume under current conditions.

The Western States obtained ownership of streams and control of the water within each state upon admission to the United States. Section 8 of the Reclamation Act of 1902 recognizes this principle by requiring that the acquisition and use of water for

BOR projects be governed by state law, unless preempted by Federal law. Section 8 (32 Statute 390; 43 U.S.C. SS 372, 383) states:

> "Nothing in this act shall be construed as affecting or intended to affect or to in any way interfere with the laws of any State or Territory relating to the control, appropriation, use, or distribution of water used in irrigation, or any vested right acquired thereunder, and the Secretary of the Interior, in carrying out the provisions of this act, shall proceed in conformity with such laws, and nothing herein shall in any way affect any right of any State or of the Federal government or any landowner, appropriator, or user of water in, to, or from any interstate stream or the waters thereof: Provided, that the right to the use of water acquired under the provisions of this act shall be appurtenant to the land irrigated and beneficial use shall be the basis, the measure, and the limit of the right."

Reclamation storage and release of water for project purposes has complied with state water law. State laws regulate the acquisition and the use of water and limit the use of water to beneficial purposes as determined by the state. Water rights are secured in accordance with state water law, and water rights granted by the state are defined in terms of the type of water use, the period of use, the source of water, the location of the point of diversion and place of use, and the rate and total volume that may be diverted, if applicable (some rights do not involve a diversion). Any changes in water use from those described in the water right definition must generally be authorized by the state through an approval of a transfer of water right. The BOR has secured changes in purpose of use of Oregon natural flow rights and secured interim Idaho legislation approving the use of stored water for flow augmentation.

Watermasters in Idaho and Oregon oversee the local diversion and use of water to assure compliance with water rights of record. These activities tend to be more intense for those stream segments or basins where there is insufficient water to meet all valid water rights. In these cases, the watermasters regulate the diversion of water to assure that the available water supply is distributed to valid rights of record in accord with the prior appropriation doctrine.

8.14.6.2 Discussion of Impacts

Under Alternative 1—Existing Conditions, Alternative 2—Maximum Transport of Juvenile Salmon, and Alternative 3—Major System Improvements, there are no major impacts to water rights agreements. Under Alternative 4—Dam Breaching, there would be impacts to irrigators on the Ice Harbor reservoir.

8.14.7 Pacific Salmon Treaty

8.14.7.1 Description

The 1985 Canada-United States Pacific Salmon Treaty was negotiated to ensure conservation and an equitable harvest of salmon stocks. Representatives from the two countries meet annually to review the past year's fishery and to negotiate fishing regimes for future years. The main implementing body for the Treaty is the Pacific Salmon Commission. The Commission is divided into two national sections, with

commissioners appointed by each nation. Enabling legislation in the United States prescribes that the U.S. section have one member from Alaska, one from Oregon or Washington, one representing treaty tribes, and one non-voting Federal official. The Canadian section is led by the Federal Department of Fisheries and Oceans and includes representatives from First Nations, recreational and commercial fisheries, as well as the provincial government of British Columbia. The Treaty also established several scientific and technical committees, which provide the Commission with essential data on the stocks and fisheries.

The two principles on which the Treaty rests are conservation and equity.

- The conservation principle obliges the two parties to prevent overfishing and provide for optimum production.
- The equity principle provides for each country to receive fishery benefits equivalent to the production of salmon from its own rivers.

In 1985, when the Treaty was signed, Canada and the United States agreed on fishing arrangements to address chinook conservation problems and limit major interception fisheries in both countries. It was acknowledged, in a Memorandum of Understanding (MOU) attached to the Treaty, that the equity principle was not implemented in 1985. The MOU also provided limited guidance on how the equity principle should be implemented when the necessary data on salmon interceptions were developed.

Although the parties have made substantial improvements in the estimates of stock contributions to intercepting fisheries, agreement on how the equity principle should be implemented has not been reached. The Commission has not been able to agree on key policy issues affecting equity implementation.

8.14.7.2 Discussion of Impacts

NMFS estimates that "nearly two-thirds of the ocean harvest impacts on Snake River fall chinook occurred in Canadian fisheries during the base period, although this is a very small fraction of the harvest. As a result, substantial ocean impact reductions, which are necessary to protect the listed salmon, can only be achieved with the cooperative involvement of Canada. Canada's cooperation can best be achieved by focusing on the general coast-wide status of wild chinook stocks that have been the concern of the bilateral chinook rebuilding program (and a key element of the Pacific Salmon Treaty) since 1985."

The alternatives under consideration that meet the NMFS jeopardy standards are considered the best options to enhance United States obligations with respect to the Pacific Salmon Treaty.