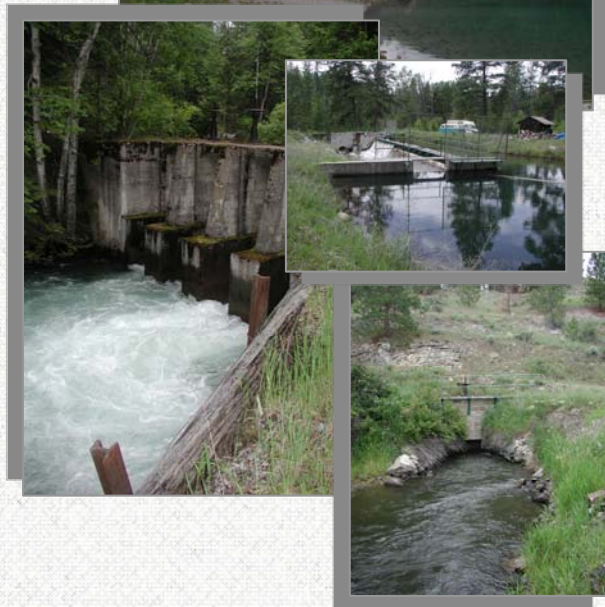
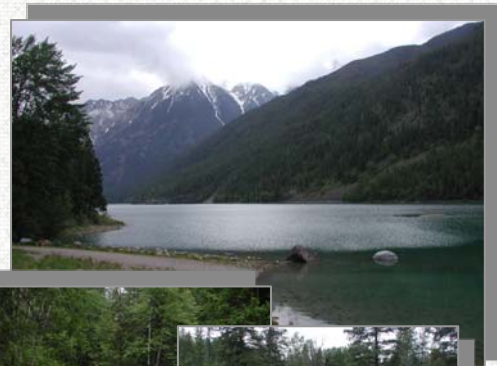




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ENVIRONMENTAL ASSESSMENT FOR OPERATION AND MAINTENANCE OF THE FLATHEAD INDIAN IRRIGATION PROJECT UPON TRANSFER

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ACRONYMS AND ABBREVIATIONS

BA	biological assessment
BIA	Bureau of Indian Affairs
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	cubic feet per second
CME	Cooperative Management Entity
CSKT	The Confederated Salish and Kootenai Tribes
dBA	A-weighted decibel
DNRC	Department of Natural Resources and Conservation
DOI	U.S. Department of the Interior
EA	environmental assessment
EIS	environmental impact statement
ESA	Endangered Species Act
FAID	Flathead Agency Irrigation Division
FIIP	Flathead Indian Irrigation Project
FJBC	Flathead Joint Board of Control
FWS	U.S. Fish and Wildlife Service
MNHP	Montana Natural Heritage Program
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
PM ₁₀	particulate matter with a diameter of 10 micrometers or less
SIP	state implementation plan
STATSGO	State Soil Geographic Database
USDA	U.S. Department of Agriculture

CHAPTER 1 INTRODUCTION

The Secretary of the Interior is proposing to transfer the operation and maintenance of the Flathead Indian Irrigation Project (FIIP), also known as the Flathead Agency Irrigation Division (FAID), to the owners of the lands irrigated by the project to be maintained at their expense under rules and regulations acceptable to the Secretary. The Secretary is required to transfer the operation and maintenance of the FIIP as provided by the Flathead Indian Allotment Act (May 29, 1908), Public Law 60-156, 35 Stat. 441 and a 1948 Act (May 25, 1948), Public Law 80-554, 62 Stat. 269.

The FIIP is located on the Flathead Indian Reservation in northwestern Montana (Figure 1-1). The Reservation was created by the Treaty of Hellgate, which was signed in 1855 and ratified in 1859. This treaty was the first land cession in present-day Montana. The Salish, Pend d'Oreille, and Kootenai Tribes ceded large tracts of their traditional lands to the United States, reserving from those ceded lands a delineated reservation of land for the Confederated Salish and Kootenai Tribes of the Flathead Reservation. The geographic boundaries of the Reservation remain unchanged today.

In 1904, the Flathead Indian Allotment Act (33 Stat. 302) authorized allotments of land within the Flathead Indian Reservation to members of the Confederated Salish and Kootenai Tribes (CSKT). After all the allotments were made, the remaining unallotted lands were to be disposed of under homestead, mineral, and town site laws. The Act was amended in 1908 and 1948 to provide for the future transfer of the operation and maintenance of the irrigation works to the owners of the lands irrigated by the project when certain construction repayment conditions were met (the United States will continue to hold title to the project). The construction repayment conditions were met in January 2004.

The Secretary of the Interior, through the Bureau of Indian Affairs (BIA), proposes to transfer the operation and maintenance of the project under rules and regulations acceptable to the Secretary. The transfer contract and accompanying documents, along with the Biological Opinion, will (1) identify specific short-term actions needed for FIIP system enhancement, and (2) establish a long-term process for the development and implementation of future rehabilitation and betterment measures to protect tribal fisheries resources and enhance the ability of the project to provide irrigation water to users.

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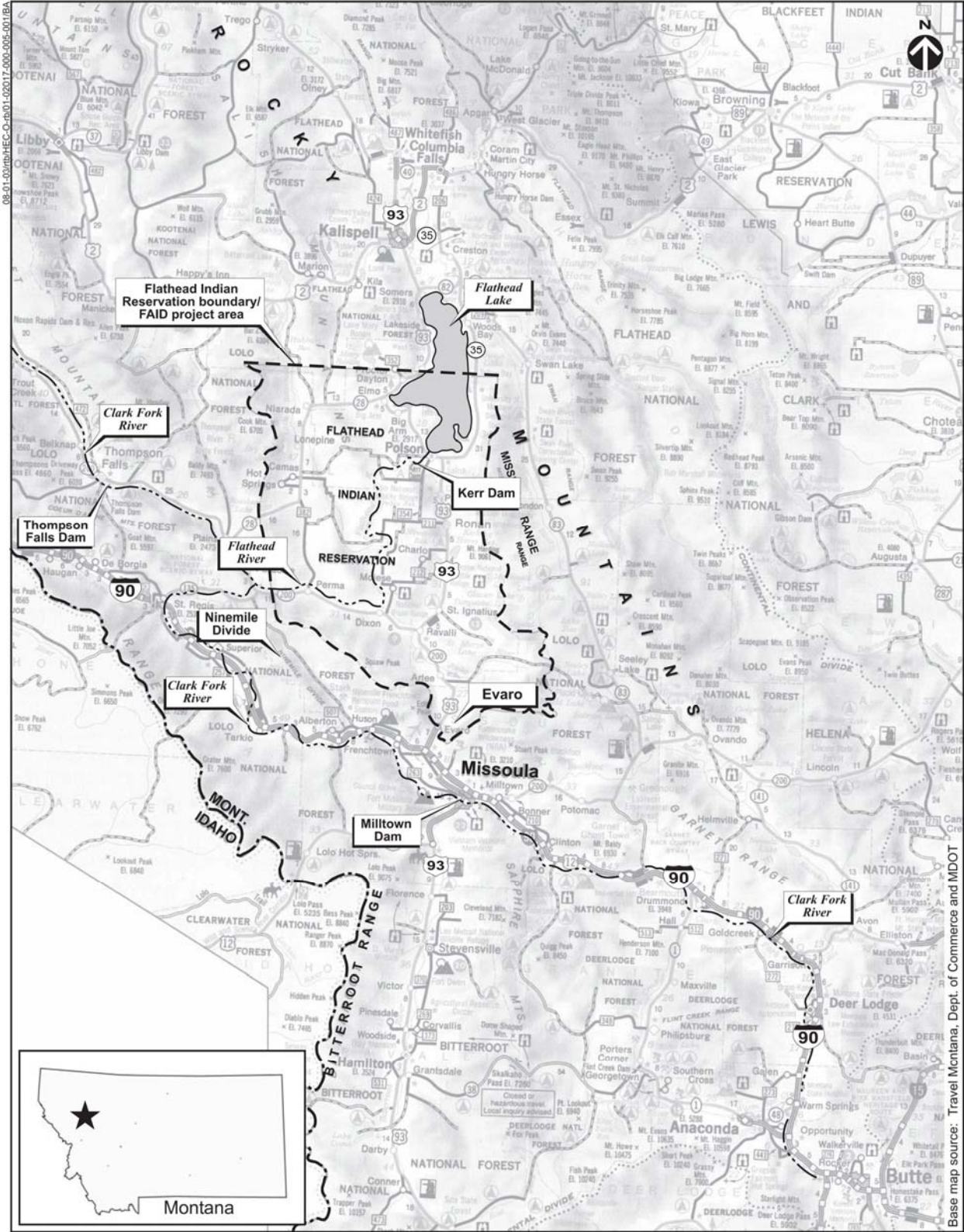


Figure 1-1. Vicinity Map of the FIIP Area in Montana

CHAPTER 2 PURPOSE AND NEED FOR AGENCY ACTION

This section discusses the Department of the Interior's (DOI) purpose and need for agency action. It also describes National Environmental Policy Act (NEPA) and other regulatory requirements and procedures.

As noted above, the Secretary of the Interior is required to transfer the operation and maintenance of FIIP as provided by the Flathead Indian Allotment Act (May 29, 1908), Public Law 60-156, 35 Stat. 441 and a 1948 Act (May 25, 1948), Public Law 80-554, 62 Stat. 269. The 1908 Act states:

“When the payments required by this Act have been made for the major part of the unallotted lands irrigable under any system and subject to charges for construction thereof, the management and operation of such irrigation works shall pass to the owners of the lands irrigated thereby, to be maintained at their expense under such form of organization and under such rules and regulations as may be acceptable to the Secretary of the Interior.”

The Act of May 25, 1948, established procedures for a reimbursement and repayment schedule to repay construction costs of the irrigation system.

Repayment of FIIP construction costs was fulfilled in early January 2004. Consequently, the Secretary of the Interior, through the Bureau of Indian Affairs (BIA), now needs to determine acceptable rules and regulations under which the project will be operated and maintained following the statutorily mandated transfer of operations and maintenance from the BIA to the owners of the irrigated lands. The current ownership of the irrigated land includes The Confederated Salish and Kootenai Tribes (CSKT) as well as individual Indian and non-Indian landholders.

BIA is responsible for the administration and management of lands and other assets held in trust by the United States for American Indians, Indian tribes, and Alaska Natives. Indian Trust Assets are property (e.g. lands, minerals, and other resources) held in trust by the United States for federally recognized Indian tribes or individual Indians. The federal government is obligated to protect trust resources – a duty that is referred to as trust responsibility and defined through treaties, laws, Executive Orders, judicial decisions, and agreements.

The FIIP is a federal asset, not a trust asset. Approximately 10 percent of the FIIP irrigated lands are held in trust by the United States for the benefit of individual Indian landowners and for the CSKT. Trust land totals 11,771 acres, while land in fee status (land subject to property taxes) totals 115,764 acres.

The BIA has decided to prepare an environmental assessment (EA) to determine if its Proposed Action (see Section 3.0) would result in significant environmental impacts and require the preparation of an environmental impact statement (EIS). In accordance with the Endangered Species Act (ESA) (16 U.S.C. §§ 1531 et seq.) and pursuant to informal consultations with the U.S. Fish and Wildlife Service (FWS), a biological assessment (BA) has been prepared to specifically address the potential impacts to threatened and endangered species that may result from the Proposed Action (BIA 2008). The BA is incorporated into this draft EA by reference; a copy of the BA is contained on the compact disc distributed with this draft EA. FWS has begun its review of the BA and has indicated that it may seek a supplemental BA to provide updated information and data. Any supplemental BA would be incorporated into any subsequent NEPA documents for this Proposed Action.

2.1 REGULATORY REQUIREMENTS

2.1.1 National Environmental Policy Act (NEPA) Requirements

The Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA (Title 40 Code of Federal Regulations [CFR] Parts 1500-1508) and DOI's implementing procedures for compliance with NEPA (DOI 2004a) require that DOI, as a federal agency:

- Assess the environmental impacts of its proposed actions;
- Identify any adverse environmental effects that cannot be avoided should a proposed action be implemented;
- Evaluate alternatives to the proposed action, including a no action alternative;
- Describe the relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity; and
- Characterize any irreversible and irretrievable commitments of resources that would be involved should the proposed action be implemented.

These requirements must be met before a final decision is made to proceed with any proposed federal action that could cause significant impacts to human health or the environment. This EA is intended to meet the BIA's requirements under NEPA and to provide DOI, the BIA, the State of Montana, the CSKT, and other agency decision-makers with the information they need to make informed decisions in connection with the Proposed Action. This draft EA has been prepared under DOI's revised NEPA Implementing Procedures (DOI 2004a) and is being distributed to interested members of the public, to federal and state agencies, to the CSKT, and to the Flathead Joint Board of Control (FJBC), which represents non-Indian irrigators and landowners, for review and comment prior to DOI's final decision on the Proposed Action.

This draft EA evaluates the potential individual and cumulative effects of the Proposed Action and the No Action Alternative. It is intended to be a concise public document that provides sufficient evidence and analysis for determining whether to prepare an EIS. If, after completion of the EA, the BIA concludes that the impacts would not be significant, it will issue a Finding of No Significant Impact and will subsequently proceed to implement the Proposed Action. If, after completion of the EA, the BIA concludes that there may be significant impacts, then it will issue a notice of intent to prepare an EIS.

Members of the public wishing to submit written comments on this draft EA should submit them by U.S. mail, by express mail services, by fax, or by website (or electronic mail [e-mail] via website) by October 27, 2008. Comments received after that date will be considered to the extent possible. Comments should be submitted to the following:

U.S. Mail or Express Mail Services: Mr. Travis Teegarden, Project Manager
Division of Irrigation, Power, and Safety of Dams
Bureau of Indian Affairs
490 N. 31st Street, Suite 203
Billings, Montana 59101

Fax: Mr. Travis Teegarden at (406) 657-5988

Website (or e-mail via website): <http://projects.battelle.org/fiipea/> "Commenting to BIA"

2.1.2 Scoping and Public Involvement

CEQ regulations note that public scrutiny is essential to implementing NEPA (40 CFR 1500.1(b)). For this reason, federal agencies are required, to the fullest extent possible, to encourage and facilitate public participation in agency decisions that affect the quality of the human environment (40 CFR 1500.2(d)). Agencies must also make diligent efforts to involve the public in implementing their NEPA procedures (40 CFR 1506.6(a)). Further, DOI's NEPA procedures state that (a) the public must be provided notice of the availability of EAs (40 CFR 1506.6), (b) where appropriate, bureaus and offices, when conducting the EA process, shall provide the opportunity for public participation and shall consider the public comments on the pending plan or program, and (c) the scoping process may be applied to an EA (40 CFR 1501.7).

Prior to its decision to prepare this EA, the BIA considered preparing an EIS for the same Proposed Action and initiated activities for the EIS process. The BIA completed EIS scoping activities in 2004 and prepared a report on the results of the scoping process (DOI 2004b). As work on the EIS progressed, it became evident that an EA would be a more appropriate NEPA document for the proposed transfer of the operation and maintenance of the project. A preliminary analysis of the current operation and maintenance of the project and the proposed future operations and maintenance after transfer showed the two to be very similar and indicated that any environmental effects of the limited changes and new actions to be taken would result primarily in environmental benefits. Thus, after consultation with the CSKT, FJBC, and FWS, the BIA now intends to prepare an EA instead of an EIS.

The BIA has considered the public and agency scoping activities conducted for the EIS in the preparation of this EA. Public outreach and scoping activities included:

- Publication in the *Federal Register* of a Notice of Intent to prepare an EIS [*Federal Register*: June 7, 2004 (Volume 69, Number 109)] [Notices] [Page 31835-31836];
- Local newspaper and radio announcements;
- Establishment of a website to inform the public; and
- Two public scoping meetings. The public meetings were held in June 2004 at the CSKT Community Center in Arlee, Montana, and the Ronan High School gymnasium in Ronan, Montana. Fifteen to twenty individuals attended the public meetings. Comments received at and after the public meeting are summarized in the *Results of Scoping for the Environmental Impact Statement for the Proposed Operation and Maintenance of the Flathead Indian Irrigation Project upon Transfer* (DOI 2004b).

2.1.3 Consultations

The BIA also initiated consultations with agencies and other organizations during the EIS process. As with the public outreach and scoping effort, the BIA has considered the results of those previous consultations in the preparation of this draft EA. On June 17, 2004, a letter was sent to 15 potentially interested federal, Tribal, and Montana agencies and organizations alerting them to the EIS and inviting them to attend an agency meeting. The agency scoping meeting took place on June 29, 2004, in Polson, Montana. Of the 15 agencies or organizations invited to attend, the following sent representatives:

- Natural Resource Conservation Service
- National Weather Service
- U.S. Environmental Protection Agency

- The Confederated Salish and Kootenai Tribes

The FJBC was also represented at the agency scoping meeting. A FWS representative who had planned to attend the meeting was unable to do so. However, the BIA has continued working with the FWS to identify and address issues of concern to the agency, including appropriate fish protection measures to ensure compliance with the ESA (see Section 2.1.5.)

BIA provided the preliminary draft EA to the CSKT and the FJBC in September 2006. Comments from the CSKT Tribal Council dated November 29, 2006, were received in December 2006. BIA met with the Tribal Council in March 2007, and spoke with Tribal representatives in April 2007, in an effort to resolve their comments and concerns. BIA did make several modifications to the preliminary draft EA that are reflected in this document. Further, BIA agreed to include additional material such as information on applicable tribal statutes and regulations and the results of a cultural resources survey conducted by the Tribes for the FIIP.¹ To the extent that information was made available before issuance of this draft EA, it is included here.

However, as discussed below, some of the Tribal Council's comments cannot be resolved in this draft EA.

- *The CSKT raised legal concerns regarding liability for injuries to tribal resources and responsibility for future costs.* The purpose of the draft EA is to determine whether the potential environmental impacts of rules and regulations governing the operation and maintenance of the project after transfer would be significant. The draft EA addresses potential environmental impacts associated with the terms and conditions of the operation and maintenance of the FIIP in compliance with NEPA and does not purport to address liability for past or future actions. Potential liability for past injury and future costs will be addressed outside of the NEPA process. In addition, by federal law, the "management and operation" of the FIIP are to be funded by the "owners of the land irrigated" by the project after transfer (see Flathead Indian Allotment Act (May 29, 1908), Public Law 60-156, 35 Stat. 441), not by special federal appropriations.
- *The CSKT also stated that the entity to which the project would be transferred is poorly defined.* The purpose of the draft EA is to address the potential environmental impacts of the operation and maintenance of the FIIP after transfer. The entity to whom those responsibilities would be transferred would not affect the existence or significance of those potential impacts. Although these are important issues that will need to be resolved before transfer occurs, the draft EA is not the appropriate document to address the legal capacity and the fiscal, technical, operational, and management capabilities of the entity that may be assuming FIIP's operation and maintenance responsibilities.
- *The CSKT stated that the draft EA must address the legal framework for the transfer and that a contract under Public Law No. 93-638 is the only viable form of contract that should be considered.* This is also an important issue that must be resolved prior to transfer, but the draft EA is not the appropriate document for this analysis. The potential environmental impacts of the operation and maintenance of the project after transfer are dependent on the operation and maintenance activities to be implemented, not on the type of contract to be executed by BIA.

¹ As of the date of this draft EA, the Tribes had not provided the results of the cultural resources survey.

- *The CSKT stated that the Proposed Action is poorly defined, although the description of the Proposed Action is based almost exclusively on the Plan of Operations for the Flathead Irrigation Project prepared for and provided by the CSKT for use in this draft EA (HKM 2004). The description of the Proposed Action was presented to CSKT representatives for review and has been the subject of meetings with CSKT representatives since 2004, without any indication from the Tribes that the description was deficient.² However, since the receipt of these comments, the BIA has been working closely with the CSKT and the FJBC to develop the framework for transfer; as part of those efforts, the 2004 Plan of Operations is being revised with significant input from the CSKT and FJBC.*
- *The CSKT stated that the draft EA should include a discussion of the Tribes' historical and ongoing lawsuits. BIA does not believe that a description of earlier litigation is relevant to the potential environmental impacts associated with the operation and maintenance of the FIIP after transfer.*

2.1.4 Applicable Federal and State Statutes and Regulations

- National Environmental Policy Act, 42 U.S.C. §§ 4321 et seq

NEPA requires that a federal agency evaluate the potential environmental effects of implementing a proposed action. The CEQ has promulgated regulations to implement the procedural provisions of NEPA. These regulations are binding on all federal agencies and are codified at 40 CFR 1500–1508. The regulations specify the content of an EA and include requirements for cooperating agency and public involvement. In addition, DOI has promulgated its own NEPA-implementing regulations (DOI 2004a). DOI has complied, or is complying, with these requirements in generating, publishing, and considering this draft EA.

- Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.)

The purpose of the ESA is to protect and recover imperiled species and the ecosystems upon which they depend. It is administered by DOI's FWS and the Department of Commerce's National Marine Fisheries Service (NMFS). The FWS has primary responsibility for terrestrial and freshwater organisms, while the responsibilities of NMFS are mainly marine species such as salmon and whales. Under the ESA, species may be listed as either "endangered" or "threatened." Endangered means a species is in danger of extinction throughout all or a significant portion of its range. Threatened means a species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. All species of plants and animals, except pest insects and non-native species, are eligible for listing as endangered or threatened.

Section 7 of the ESA requires federal agencies to use their legal authority to promote the conservation purposes of the law. It also requires federal agencies to consult with the FWS or NMFS to ensure that actions they authorize, fund, or carry out will not jeopardize listed species. The consulting agency then receives a "biological opinion" on the proposed action. If the FWS or NMFS determines that a proposed action would jeopardize the species, they must offer "reasonable and prudent alternatives" about how the proposed action could be modified to avoid jeopardy.

² Meetings between BIA, CSKT representatives, the FJBC, and FWS to discuss the description of the Proposed Action and alternatives occurred on October 26-27, 2004; April 11, 2005; and October 5, 2006.

The ESA also requires the designation of “critical habitat” for listed species when it is judged to be “prudent and determinable.” Critical habitat includes geographic areas that contain the physical or biological features essential to the conservation of the species and that may need special management or protection. Critical habitat designations affect only federal agency actions or federally funded or permitted activities. Federal agencies are required to avoid “adverse modification” of designated critical habitat. Critical habitat may include areas not occupied by the species at the time of listing but that are essential to its conservation. An area can be excluded from critical habitat designation if an economic analysis determines that the benefits of excluding it outweigh the benefits of including it, unless failure to designate the area as critical habitat may lead to extinction of the listed species (FWS 2006a).

- The Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.)

The Fish and Wildlife Coordination Act provides the basic authority for the FWS’s involvement in evaluating impacts to fish and wildlife from proposed water resource development projects. It requires that fish and wildlife resources receive equal consideration to other project features. It also requires federal agencies that construct, license, or permit water resource development projects to first consult with the FWS (and the NMFS in some instances) and the state fish and wildlife agency regarding the impacts on fish and wildlife resources and measures to mitigate these impacts (FWS 2006b).

- Montana Water Use Act of 1973 (Mont. Code Ann. § 85-2-101 et seq.).

Water rights in Montana are regulated by the Montana Water Use Act. The Water Use Act sets up two methods for perfecting a water right. First, all water rights existing prior to July 1, 1973, must be perfected in one of a number of statewide adjudications (§ 85-2-211 et seq.). Pre-1973 domestic and livestock water uses are exempt from the adjudication process. A special water court, divided into four water divisions, was created to adjudicate pre-1973 water rights. Second, new or additional water right claims made after 1973 must be perfected by seeking a permit from the Department of Natural Resources and Conservation (DNRC) (§ 85-2-301 et seq.).

- Executive Order 11514 (Protection and Enhancement of Environmental Quality)

Executive Order 11514 directs federal agencies to continually monitor and control their activities to protect and enhance the quality of the environment. It also directs the agencies to develop procedures that, to the fullest extent practicable, will ensure that interested parties are provided with timely public information and an understanding of federal plans and programs with environmental impacts in order to obtain their views.

- Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands)

Executive Orders 11988 and 11990 require federal agencies to evaluate actions they may take to avoid, to the extent possible, adverse effects associated with direct and indirect development of a floodplain or a wetland. The study area for this EA includes both floodplains and wetlands.

- Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations)

Executive Order 12898 requires each federal agency to identify and address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations. The study area for this EIS includes both minority and low-income populations.

- Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments)

Executive Order 13175 directs federal agencies to establish regular and meaningful consultation and collaboration with Tribal governments in the development of federal policies that have Tribal implications, to strengthen U.S. government-to-government relationships with Indian Tribes, and to reduce the imposition of unfunded mandates on Indian Tribes. The Proposed Action evaluated in this draft EA would affect the CSKT.

- CEQ Environmental Justice Guidance under the National Environmental Policy Act, Washington D.C.

The analysis for this draft EA was conducted in accordance with CEQ guidance addressing environmental justice (CEQ 1997).

2.1.5 Tribal Statutes and Regulations

The CSKT provided the following information regarding applicable tribal statutes and regulations:

- Cultural Resources Protection Ordinance No. 95
- Water Quality Management Ordinance No. 89-B
- Aquatic Lands Conservation Ordinance No. 87-A
- Preservation and Protection of Indian Archeological Sites and Artifacts Ordinance No. 73A

2.1.6 Related NEPA Processes and Documents

- Biological Assessment

As stated in Section 2.1.3, the BIA has informally consulted with the FWS regarding potential impacts to threatened and endangered species that could be affected by the Proposed Action and has prepared a project-specific BA on the impacts of current operation and maintenance of the FIIP on federally protected aquatic and terrestrial species, the impacts of operation and maintenance after transfer, and impact minimization measures that would be implemented (BIA 2008). The BA, which is incorporated into this draft EA by reference, has been submitted to the FWS to begin formal consultations. Two existing programmatic BAs, one aquatic (BIA 2004a) and one terrestrial (BIA 2004b), address the potential impacts of some of current operation and annual maintenance activities of the FIIP on federally protected species. Federally protected species evaluated in the programmatic BAs are the bull trout, grizzly bear, Canada lynx, gray wolf, bald eagle, water howellia, Spalding's campion, and slender moonwort.

- Other Recent NEPA Processes and Documents

The BIA has released a draft EIS (BIA 2006) to evaluate a drought management plan proposed by PPL Montana for the Kerr Hydroelectric Project on Flathead Lake and reasonable alternatives to that plan. The drought management plan would set forth

operational provisions to both avoid and resolve potential water use conflicts in years when there is insufficient water to meet all requirements. The cumulative impacts of implementing a drought management plan and the Proposed Action addressed in this draft EA are discussed in Section 4.14.

CHAPTER 3 PROPOSED ACTION AND NO ACTION ALTERNATIVE

This section summarizes the Proposed Action and the No Action Alternative. Complete descriptions of these alternatives are contained in Appendix A.

3.1 SUMMARY OF THE PROPOSED ACTION

Under the Proposed Action, the Secretary of the Interior would transfer the management (operation and maintenance) of the FIIP to a Cooperating Management Entity (CME), made up of representatives of the CSKT and the FJBC. A contract among DOI, CSKT, and FJBC would define in detail the authorities, legal setting, and requirements for transfer of operation and maintenance of the FIIP, including an approach for implementing the impact minimization measures described in the BA. Additional policy, authorities, legal settings, and requirements for the project after transfer would be proposed by the CME as project operations and maintenance required. Once a contractual agreement was reached, any modification to the contract would require the consent of DOI, CSKT, and FJBC.

The CME would be managed by representatives of the CSKT and the FJBC. The CME members would be appointed by the CSKT Tribal Council and the FJBC, with the exact numbers from each to be determined. The CME would set and administer the overall policy for supervision and management of the FIIP.

Proposed Action

The transfer of the FIIP to the owners of the irrigated lands and the maintenance of the project at the expense of the owners of the irrigated lands is mandated by federal law. BIA's only decision is the approval of rules and regulations under which the project will be operated and maintained following transfer. The potential environmental impacts associated with the proposed rules and regulations for operation and maintenance are the subject of this draft EA.

Thus, potential liability for past injury and future costs; the legal capacity and the fiscal, technical, operational, and management capabilities of the CME; the type of transfer contract to be executed by BIA; and the extent to which assessments imposed by the CME may increase or decrease with respect to current assessments have no bearing on the potential environmental impacts of the transfer and are outside of the scope of this document.

CME Roles and Responsibilities

The CME Project Manager would be fully authorized to administer, carry out, and enforce all responsibilities for managing the FIIP, either directly or through employees designated by him or her. The CME Project Manager's actions would be subject to the terms of the rules and regulations acceptable to the Secretary of the Interior and set forth in the project transfer contract and associated documents. Enforcement power would include the authority to refuse to deliver water. The CME Project Manager would also be responsible for the physical operation and maintenance of the FIIP, policy development, and overall water management.

The primary responsibilities of the Secretary of the Interior, through the BIA, would be to ensure that Tribal trust resources are protected, provide technical assistance as requested for the Trust programs, and carry out actions delegated by the BIA Northwest Regional Director to process final actions on all trust resource plans, activities, sales, permits, and leases. In addition, the BIA would remain responsible for

compliance with the ESA. After transfer, as BIA retains ownership of the FIIP facilities, BIA will continue to periodically inspect facilities and monitor and report on annual operations and maintenance plans developed by the CME.

DOI-Retained Titles and Authorities

Under the Proposed Action, title to all real property, such as irrigation distribution systems, dams, and reservoirs, would remain with DOI. The Secretary of the Interior would reserve the right to exercise all rights, powers, and privileges given to the Secretary by law and through contracts with the CME, CSKT, and FJBC. Federal oversight of day-to-day operations and maintenance on the project would be minimal. Federal oversight would include the Safety of Dams Program and periodic review of the Irrigation Operations and Maintenance Program.

Short-Term Actions

Immediately after transfer, the project would continue to be managed as it is currently managed (current operation and maintenance is described under the No Action Alternative in Section 3.2 and Appendix A). Within the first 5 years after transfer, certain operation and maintenance actions would be taken to improve the operation and maintenance of FIIP facilities by utilizing current state-of-the-art technology and procedures. The *Plan of Operations* (HKM 2004) outlines improvements in the following general areas: water measurement, water accounting/runoff forecasting, water distribution system management (reservoirs, pumping plants, diversion structures, canals, drains, return flows), water delivery and water use management, control of system losses (evaporation, seepage, waste, and spills), control of pool levels, water quality management and protection, instream flows and fisheries protection, and maintenance programs (for example, canal cleaning, access road construction or upgrades, and brush and tree clearing). The project would be managed by the CME to improve water conservation, system and irrigation efficiencies, and fisheries protection. To the extent funds are available, short-term actions would be funded from the project's annual operating budget; other funds would be used if they became available. The timing of the implementation of improved operation and maintenance would depend on the outcome of discussions with the FWS and the availability of funds.

In addition, several studies would be designed and conducted to obtain additional information regarding current environmental conditions. As specified in the BA, these studies would produce data and information necessary to implement improvements for fisheries protection, especially for federally protected species.

Within 6 months after transfer, an Implementation Committee would be created, with representatives from the BIA, FWS, CSKT, and FJBC serving as voting members, and other technical experts from other agencies participating as non-voting members when needed. The Implementation Committee would advise the CME on matters relating to ESA compliance.

Long-Term Actions

Future rehabilitation and betterment actions could include rehabilitation or replacement of project facilities. These long-term actions would be undertaken approximately 5 to 20 years from the date of project transfer. Implementation of any future actions may require additional consultation under the ESA and/or environmental analysis and documentation under NEPA.

Although it is possible that the short- and long-term actions could be funded through special federal appropriations or allocations, current federal law requires that the owners of the irrigated lands pay for the operation and maintenance of the FIIP after transfer (Flathead Indian Allotment Act, May 29, 1908, Public Law 60-156, 35 Stat. 441).

3.2 SUMMARY OF THE NO ACTION ALTERNATIVE

Under the No Action Alternative, the Secretary of the Interior would transfer the management (operation and maintenance) of the FIIP in accordance with the BIA's existing management guidelines. No improvements to the project would be undertaken or anticipated. The project is currently managed in accordance with federal regulations (25 CFR Part 171). Current operations are described in the *Operation and Maintenance Guidelines for the Flathead Indian Irrigation Project* (BIA 2004c).

3.3 ALTERNATIVES CONSIDERED BUT NOT ANALYZED

The transfer of the project is required by law. Other than the Proposed Action, the BIA has not identified any other alternative conditions under which the project could be transferred. No alternatives were identified during the scoping process for the EIS. Although the Proposed Action was refined in response to comments received, no other action alternatives have been developed for analysis. The BIA will consider all comments received on the draft EA by the comment deadline, including comments that offer a reasonable alternative to the Proposed Action.

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CHAPTER 4

EXISTING ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes the general characteristics of the study area³ and, for specific resource or impact areas, characterizes the existing environment and the adverse or beneficial environmental consequences that would or could reasonably be expected to occur if the short-term actions described in the Proposed Action were implemented. For long-term processes that would be undertaken approximately 5 to 20 years after project transfer, further environmental analysis and documentation under NEPA may be required, depending on the scope and potential impact of such activities. For comparison purposes and as required under NEPA, this section also describes adverse or beneficial environmental consequences that would occur if the Proposed Action were not implemented (that is, if the No Action Alternative were implemented).

4.1 GENERAL AREA DESCRIPTION

For the purposes of this draft EA, the BIA considered two possible study areas: (1) a narrowly delineated area encompassing only the geographic limits of the FIIP, and (2) a wider area encompassing the entire Flathead Indian Reservation. Although most of the direct and indirect impacts from the Proposed Action would be confined to the geographic limits of the FIIP, certain impacts (for example, socioeconomics and downstream water quality) have the potential to impact a larger area that would be generally confined to the geographic limits of the Reservation. The BIA decided to define the study area as the entire Reservation in order to assess possible impacts to this larger area, when appropriate, and also to take advantage of available Reservation-wide data. However, the BIA recognizes that for some impact areas, the larger study area encompasses significant expanses of land that would not experience any impacts from the Proposed Action. For example, any noise and aesthetics impacts would affect a small fraction of the entire Reservation. Consequently, in assessing some impacts, the draft EA confines its assessment to a subsection of the study area.

The study area, like much of the Rocky Mountains in the northwestern United States, has highly variable topography, with elevations ranging from approximately 2,500 feet (above mean sea level) to over 9,800 feet. The study area is generally bounded by the Mission Range and Swan Range to the east and by the Salish Mountains to the west, with Flathead Lake and the Flathead River Valley lying between these ranges. Flathead Lake lies at an elevation of approximately 2,890 feet. The study area is located in the lower Flathead River watershed within the Middle Clark Fork River drainage area. The lower Flathead River watershed encompasses the Jocko River watershed, the Mission Creek watershed, the Crow Creek watershed, the Little Bitterroot River watershed, and the Camas Creek watershed (BIA 2004a).

Flathead Indian Reservation

The Flathead Indian Reservation, located in western Montana, is home to the Bitterroot Salish, Kootenai, and Pend d'Oreilles Tribes - also known as The Confederated Salish and Kootenai Tribes of the Flathead Nation. The Reservation overlaps parts of four Montana counties: Lake, Sanders, Missoula, and Flathead. The Reservation occupies an area of approximately 1.3 million acres (2,030 square miles) of forested mountains and valleys just west of the Continental Divide.

³ The description of the existing environment takes into account the changes to the environment that have occurred as a result of the construction and operation of the FIIP over the last 100 years. This does not imply that the CSKT accept the altered baseline conditions.

Flathead Indian Irrigation Project

The FIIP includes 17 reservoirs, 4 pump facilities, over 1,300 miles of canals and laterals, and over 10,000 structures for diversion, control, and delivery of water encompassed within approximately 128,000 acres. The FIIP delivers water from nearly every stream within the Reservation boundaries. While much of the diverted water remains within the watershed basin of origin, some of the water crosses two or more watershed basins within the Reservation. The FIIP also delivers water through three transbasin diversions from streams located outside the Reservation. A transbasin diversion is a canal that diverts water from a river or stream in one watershed to a river, stream, canal, or reservoir in another watershed (BIA 2004a).

The project is divided into five divisions:

- The Camas Division – located in the western portion of the study area
- The Pablo Division – located in the northeastern portion of the study area, extending from the southern half of Flathead Lake south to South Crow Creek
- The Post Division – located south of the Pablo Division, encompassing the drainage area supplying Ninepipe and Kicking Horse Reservoirs
- The Mission Division – located south of the Post Division and centered around St. Ignatius, containing much of the Mission Creek drainage
- The Jocko Division – extending south from the Mission Division to the southern border of the Reservation, including much of the Jocko River drainage.

Figure 4-1 illustrates the FIIP divisions.

The current condition of the project is described in detail in a report prepared by HKM Engineering Inc. for the CSKT entitled *Engineering Evaluation of Existing Conditions Flathead Agency Irrigation Division (FAID) Volumes I – V, Final Report* (HKM 2005, revised 2008). That report is briefly summarized here and incorporated by reference in this draft EA.

The purpose of the engineering evaluation was to evaluate the existing operations and management and physical conditions of the FIIP. The report provides baseline information used to draw conclusions regarding the effectiveness of existing operations and management and to provide recommendations for improvements following transfer of the operation and maintenance of the project.

The majority of the field work was completed in two phases in late summer and fall of 2004. Phase One consisted primarily of an evaluation of the canal system itself and was completed during a period of active water distribution, so that operational deficiencies could more easily be observed. Phase Two of the field work focused on the evaluation of key structures, facilities, and canal linings at the end of the irrigation season, when there was little or no water in the canal system and the majority of the facilities could be visually inspected.

A list of deficiencies was compiled for each key structure and lined canal section. Specific deficiencies that were identified include concrete spalling, break-up, cracking, exposed reinforcing bars, corrosion, deterioration, and structural failure. Some structures also had deficiencies associated with erosion, such as undermining, scour, or bank sloughing. Along with identifying and documenting these deficiencies, the report also estimated and documented remediation and/or replacement materials and quantities of

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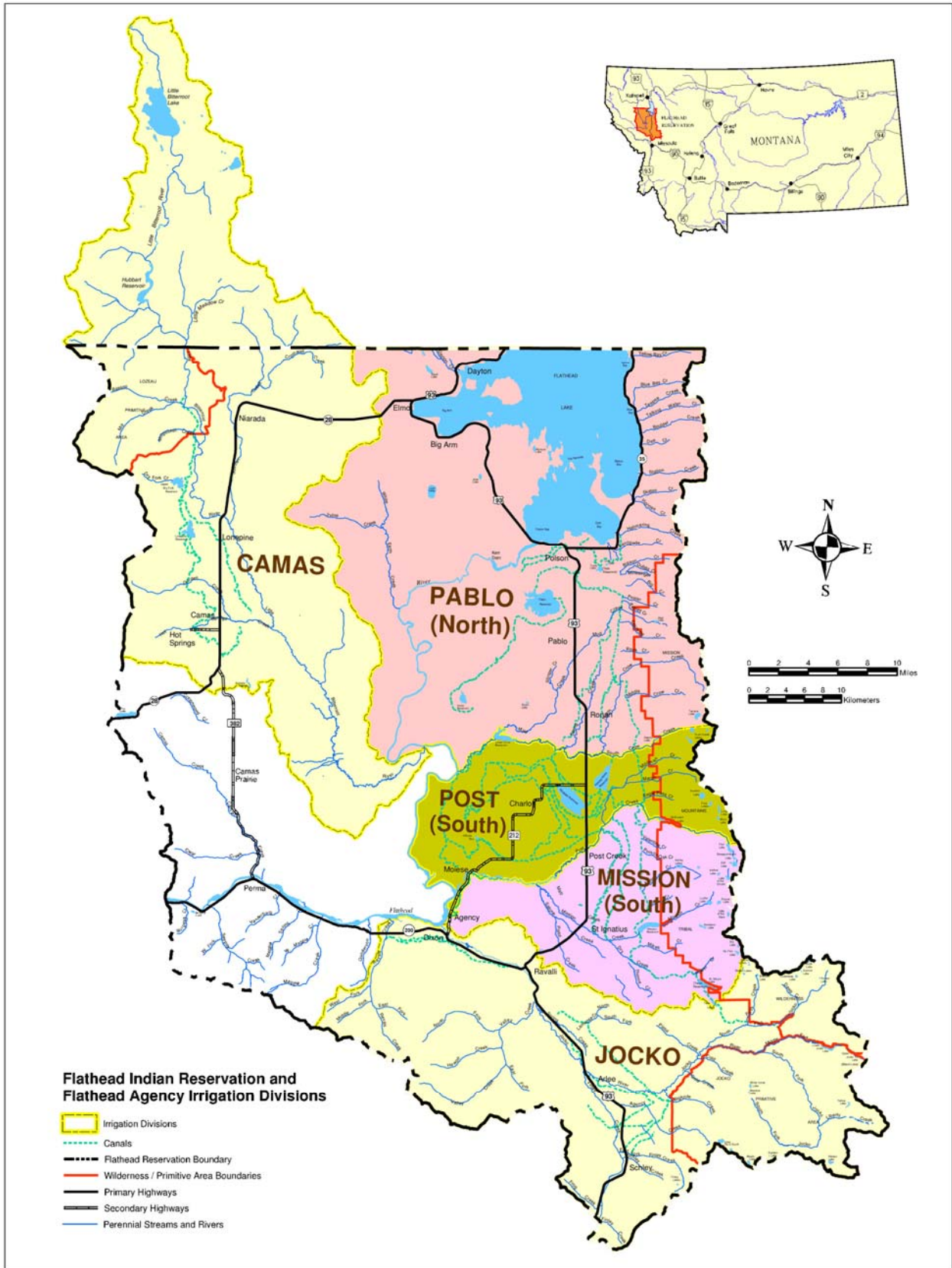


Figure 4-1. Locations of FIIP Irrigation Divisions

them. These materials and their quantities were subsequently used to develop the remediation and replacement cost estimates for each structure.

Lack of adequate water measurement was identified as a key operational deficiency of the FIIP. Additionally, automated gate controls at key diversion points would allow for more efficient water management throughout the project. The need also exists for installation of motorized gate controls on many of the key diversion facilities. The need for additional fish protection was identified as another deficiency with current project operations. The total estimated cost for rehabilitating all existing infrastructure to a like-new condition, as well as building necessary water measurement structures and installing additional fish screens for the FIIP irrigation system infrastructure, would be approximately \$109 million. With the exception of the measures specifically required by the Biological Opinion for the FIIP, rehabilitation and replacement decisions would be made by the CME as part of its management responsibilities as budget and funding allow.

4.2 BIOLOGICAL RESOURCES

4.2.1 Existing Environment

Fish, Wildlife, and Plants

Since the FIIP began its operation, many factors have defined or contributed to the environmental baseline within its service area, including habitat degradation and fragmentation, alteration of rivers and streams and associated hydrology by dewatering, construction of dams and irrigation diversions, road construction and maintenance, mining, forest management practices, grazing, loss of wetland and riparian habitat, degradation of water quality, disruption of migration corridors, conversion of land to agriculture and residential or urban development, and introduced species. Agricultural and residential developments in this area exist side-by-side with rangelands and wildlife habitat. Human activities in the project area that contribute to potential and actual impacts to wildlife and plant species in this region include hunting, predator control programs, pesticide and herbicide application, human disturbance, and trampling of plant species as a result of recreational and development activities.

The terrain around the FIIP is mountainous with broad valley bottoms. Irrigated agriculture is typically limited to the lower-elevation valley bottoms. Habitat types throughout the project area are diverse and varied with a mosaic of forests, glacial-fed streams and rivers, spring creeks, riparian areas, glacial potholes, and small remnants of native Palouse prairie surrounding the developed agricultural lands, rangelands, and communities of the lower Flathead Valley. Forest types in the larger project area vary depending on elevation and other factors, and may be dominated by ponderosa pine, Douglas fir, lodgepole pine, western larch, western red cedar, or grand fir. Typical understory species include ninebark, snowberry, spirea, wheatgrasses, fescues, and pinegrass. These forests are interspersed with grasslands and shrub-grasslands, especially at lower elevations where most of the canals and laterals of the project are located. Riparian areas and river floodplains are dominated by ponderosa pine, Rocky Mountain juniper, black cottonwood, paper birch, willows, and other species.

Important terrestrial wildlife that populate the project area in the Lower Flathead River watershed include whitetail deer, moose, wolverines, ptarmigans, bighorn sheep, bobcats, mountain lions, lynx, grizzly bear, black bear, and numerous bird species. The diversity of habitats available and adjacent agricultural and rangelands allow the lower Flathead Valley to support some of the highest densities of ground-nesting migratory birds in the lower 48 states. Over 260 species of birds and over 70 species of mammals have been reported within the project area. In addition to several federally listed species, at least 34 animal species (Table 4-1) and 60 plant species (Table 4-2) are listed as species of concern by the Montana Natural Heritage Program (MNHP).

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Table 4-1. Animal Species of Concern Potentially Occurring within the Project Area

Species	Scientific Name	FWS	MNHP
Bull Trout	<i>Salvelinus confluentus</i>	LT	G3/S2
Westslope Cutthroat Trout	<i>Oncorhynchus clarki lewisi</i>		G4/S2
Coeur D'Alene Salamander	<i>Plethodon idahoensis</i>		G4/S2
Western Toad	<i>Bufo boreas</i>		G4/S2
Northern Leopard Frog	<i>Rana pipiens</i>		G5/S1
Northern Alligator Lizard	<i>Elgaria coerulea</i>		G5/S3
Western Skink	<i>Eumeces skiltonianus</i>		G5/S3
Common Loon	<i>Gavia immer</i>		G5/S2
American White Pelican	<i>Pelecanus erythrorhynchos</i>		G3/S3
Black-Crowned Night-Heron	<i>Nycticorax nycticorax</i>		G5/S3
White-Faced Ibis	<i>Plegadis chihi</i>		G5/S1
Trumpeter Swan	<i>Cygnus buccinator</i>		G4/S2
Harlequin Duck	<i>Histrionicus histrionicus</i>		G4/S2
Bald Eagle	<i>Haliaeetus leucocephalus</i>	LT	G5/S3
Northern Goshawk	<i>Accipiter gentilis</i>		G5/S3
Ferruginous Hawk	<i>Buteo regalis</i>		G4/S2
Peregrine Falcon	<i>Falco peregrinus</i>		G4/S2
Columbian Sharp-Tailed Grouse	<i>Tympanuchus phasianellus columbianus</i>		G4/S1
Franklin's Gull	<i>Larus pipixcan</i>		G4G5/S3
Caspian Tern	<i>Hydroprogne caspia</i>		G5/S2
Common Tern	<i>Sterna hirundo</i>		G5/S3
Forster's Tern	<i>Sterna forsteri</i>		G5/S2
Black Tern	<i>Chlidonias niger</i>		G4/S3
Yellow-Billed Cuckoo	<i>Coccyzus americanus occidentalis</i>	Candidate	G5/S1S2
Flammulated Owl	<i>Otus flammeolus</i>		G4/S3
Burrowing Owl	<i>Athene cunicularia</i>		G4/S2
Great Gray Owl	<i>Strix nebulosa</i>		G5/S3
Black Swift	<i>Cypseloides niger</i>		G4/S3
Black-Backed Woodpecker	<i>Picoides arcticus</i>		G5/S2
Loggerhead Shrike	<i>Lanius ludovicianus</i>		G4/S4
Baird's Sparrow	<i>Ammodramus bairdii</i>		G4/S2
Le Conte's Sparrow	<i>Ammodramus leconteii</i>		G4/S1S2
Townsend's Big-Eared Bat	<i>Corynorhinus townsendii</i>		G4/S2
Northern Bog Lemming	<i>Synaptomys borealis</i>		G4/S2
Bison	<i>Bos bison</i>		G4/S2
Gray Wolf	<i>Canis lupus</i>	LE	G4/S3
Grizzly Bear	<i>Ursus arctos</i>	LT	G4/S2S3
Fisher	<i>Martes pennanti</i>		G5/S3
Wolverine	<i>Gulo gulo luscus</i>		G4/S3
Lynx	<i>Lynx canadensis</i>	LT	G5/S3

Sources: CSKT 2000, BIA and CSKT 1999, MNHP 2006a.

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Table 4-2. Plant Species of Concern Potentially Occurring within the Project Area

Common Name	Scientific Name	FWS	MNHP
Sweetflag	<i>Acorus americanus</i>		G5/ SH
Round-leaved Orchis	<i>Amerorchis rotundifolia</i>		G5/ S2S3
Green-leaf Manzanita	<i>Arctostaphylos patula</i>		G4/ S1
Maidenhair Spleenwort	<i>Asplenium trichomanes</i>		G5/ SH
Alkali Aster	<i>Aster frondosus</i>		G4/ SH
Wedge-leaved Saltbush	<i>Atriplex truncata</i>		G5/ S1
Beck Water-marigold	<i>Bidens beckii</i>		G4/ S2
Dense Spike-Primrose	<i>Boisduvalia densiflora</i>		G5/ SH
Wavy Moonwort	<i>Botrychium crenulatum</i>		G3/ S2S3
Western Moonwort	<i>Botrychium hesperium</i>		G3G4/ S2
Linearleaf Moonwort	<i>Botrychium lineare</i>	Candidate	G1/ S1
Mountain Moonwort	<i>Botrychium montanum</i>		G3/ S3
Peculiar Moonwort	<i>Botrychium paradoxum</i>		G2/ S2
Watershield	<i>Brasenia schreberi</i>		G5/ S1S2
Cliff Toothwort	<i>Cardamine rupicola</i>		G3/ S3
Bristly Sedge	<i>Carex comosa</i>		G5/ S1
Lake-bank Sedge	<i>Carex lacustris</i>		G5/ S1
Many-headed Sedge	<i>Carex sychnocephala</i>		G4/ S1
Slender Sedge	<i>Carex tinctoria</i>		G4G5/ S1
Deer Indian Paintbrush	<i>Castilleja cervina</i>		G4/ SH
Short-styled Thistle	<i>Cirsium brevistylum</i>		G4/ S1S2
Sand Springbeauty	<i>Claytonia arenicola</i>		G4/ S1
Yellow-staining Collomia	<i>Collomia tinctoria</i>		G5/ S1
Short-pointed Flatsedge	<i>Cyperus acuminatus</i>		G5/ S1
Red-root Flatsedge	<i>Cyperus erythrorhizos</i>		G5/ SH
Clustered Lady's-Slipper	<i>Cypripedium fasciculatum</i>		G4/ S2
Scribner's Panic Grass	<i>Dichanthelium oligosanthes var. scribnerianum</i>		G5T5/ S1
English Sundew	<i>Drosera anglica</i>		G5/ S2S3
Buckler Fern	<i>Dryopteris cristata</i>		G5/ S2
Beaked Spikerush	<i>Eleocharis rostellata</i>		G5/ S2
Giant Helleborine	<i>Epipactis gigantea</i>		G3G4/ S2
Eaton's Daisy	<i>Erigeron eatonii ssp. eatonii</i>		G5T5/ S1
Slender Cottongrass	<i>Eriophorum gracile</i>		G5/ S2
Howell's Gum-Weed	<i>Grindelia howellii</i>		G3/ S2S3
Water Star-Grass	<i>Heteranthera dubia</i>		G5/ S1
Western Pearl-Flower	<i>Heterocodon rariflorum</i>		G5/ S2
Water Howellia	<i>Howellia aquatilis</i>	LT	G3/ S2
Slender Hareleaf	<i>Lagophylla ramosissima</i>		G5/ S1
Latah Tule Pea	<i>Lathyrus bijugatus</i>		G4/ S1
Flowering Quillwort	<i>Lilaea scilloides</i>		G5?/ SH
Loesel's Twayblade	<i>Liparis loeselii</i>		G5/ S1S2
Guadalupe Water-Nymph	<i>Najas guadalupensis</i>		G5/ S1
Pygmy Water-Lily	<i>Nymphaea tetragona ssp. leibergii</i>		G5/ S1
Adder's Tongue	<i>Ophioglossum pusillum</i>		G5/ S2
Columbia Crazyweed	<i>Oxytropis campestris var. columbiana</i>		G5T3/ S1
Kruckeberg's Sword-Fern	<i>Polystichum kruckebergii</i>		G4/ S1

Table 4-2. Plant Species of Concern Potentially Occurring within the Project Area (continued)

Common Name	Scientific Name	FWS	MNHP
Blunt-leaved Pondweed	<i>Potamogeton obtusifolius</i>		G5/ S2
Five-leaf Cinquefoil	<i>Potentilla quinquefolia</i>		G5T4/ S1
Dwarf Woolly-Heads	<i>Psilocarphus brevissimus</i>		G4/ S1
Northern Buttercup	<i>Ranunculus pedatifidus</i>		G5/ S1
Toothcup	<i>Rotala ramosior</i>		G5/ S1
Pod Grass	<i>Scheuchzeria palustris</i>		G5/ S2
Tufted Club-Rush	<i>Scirpus cespitosus</i>		G5/ S2
Water Bulrush	<i>Scirpus subterminalis</i>		G4G5/ S2
Oregon Checker-Mallow	<i>Sidalcea oregana</i>		G5/ S1
Spalding's Campion	<i>Silene spaldingii</i>	LT	G2/ S1
Small Dropseed	<i>Sporobolus neglectus</i>		G5/ S1
Mission Mountain Kittentails	<i>Synthyris canbyi</i>		G3/ S3
Slender Thelypody	<i>Thelypodium sagittatum</i>		G4/ S2
Flat-leaved Bladderwort	<i>Utricularia intermedia</i>		G5/ S1S2
Velvetleaf Blueberry	<i>Vaccinium myrtilloides</i>		G5/ S1
Columbia Water-Meal	<i>Wolffia columbiana</i>		G5/ S2

Source: MNHP 2006b.

The FIIP area encompasses a diversity of aquatic resources, including streams, lakes, and over 30,000 acres of wetlands (CSKT 2000). Streams and lakes within the project area are home to over 300 species of aquatic insects and 22 native and introduced species of fish. Two fish species are of special concern in the region: the bull trout, listed as Threatened under the ESA, and the westslope cutthroat trout, a MNHP Species of Concern. The bull trout is described in detail in the BA (BIA 2008). The westslope cutthroat trout occurs in scattered populations throughout the project area; individuals have been found in FIIP canals (including Camas A; Mission A, B, C, F, H, and 21A; Jocko J, K, N, and S; Pablo feeder, Tabor feeder, Revais R, and Ronan A and B; and Dry Creek pool). However, most of the pure-strain populations of this species are limited to stream reaches above natural or artificial fish barriers that prevent intermixing with non-native trout species.

The project area includes two national wildlife refuges with both terrestrial and aquatic habitats. The Pablo National Wildlife Refuge, located just south of Polson, occupies 2,500 acres of water, marsh, and upland grassland. The refuge provides important nesting and resting areas for migratory birds and other wildlife. Shaped by glacial activity approximately 12,000 years ago, the terrain surrounding Pablo National Wildlife Refuge is rolling and interspersed with many pothole wetlands.

The Ninepipe National Wildlife Refuge, south of Ronan, consists of 390 acres of upland habitat surrounding the 1,672-acre Ninepipe reservoir. The reservoir and wildlife refuge are surrounded by over 8,000 acres of state game management lands, Tribal lands, and FWS conservation easements. This refuge is an important waterfowl nesting and staging area.

Threatened and Endangered Species

The existing federally listed threatened and endangered species in the study area are described in detail in the BA (BIA 2008).

4.2.2 Consequences of the Proposed Action

This section describes the potential impacts of the Proposed Action on terrestrial and aquatic biological resources in general. The Proposed Action is not likely to noticeably alter the direct or indirect impacts of FIIP operations on biological resources in the project area.

The existing canal systems likely function as blocks to migration and travel for wildlife species such as deer or elk, and concrete-lined canals may be hazardous to some wildlife. The physical changes under the Proposed Action would not increase these impacts to wildlife and would have minor impacts on habitat resources. Noise associated with system operation and the increased human presence in the vicinity of the FIIP facilities may deter some wildlife species from using habitats adjacent to project facilities during maintenance or construction activities and when humans are present.

For the most part, wildlife can negotiate their way around or over the FIIP facilities such as canals, reservoirs, and work camps. However, the Dry Creek (DC) liner canal and the DC pool pose a risk of mortality for wildlife should they attempt to enter or cross this system. The DC liner canal is located below St. Mary's Lake in the South division. At this location, the DC liner canal has replaced the natural Dry Creek stream channel. The entire canal, approximately 6 feet deep and 10 to 20 feet wide, is lined with concrete. The DC liner canal flows approximately 5.2 miles and terminates at an energy-dissipation pool locally known as the DC pool.

Although an access road parallels most of the length of the DC liner canal, wildlife are attracted to this canal as a water source, foraging site, and potential travel corridor because the facility is densely vegetated on both sides. Wildlife mortality is reported at this system, although no systematic records are maintained. Most wildlife mortality involve deer, but black bear mortality has also occurred. Due to the nature of this structure (a deep concrete chute with fast-flowing water, sloped sides, and no means for escape), any wild animals trapped in this system are likely to be killed. However, if the animals survive and enter the DC pool at the end of the DC liner canal, it is possible for them to successfully exit the pool.

The installation of water measurement structures, fish screens, and ladders and activities such as seepage control and facility improvements and maintenance would result in a short-term increase in human presence and noise that may trigger avoidance behavior in many wildlife species. These parts of the Proposed Action could have small, temporary, adverse impacts to terrestrial wildlife in the project area beyond those of the No Action Alternative. Because the FIIP has been in operation since the early 1900s, most terrestrial resources have become acclimated to the presence and maintenance of FIIP structures. It is expected that this is also true for the state species of concern, which are likely affected in a similar manner as more common wildlife species.

The proposed FIIP operation and maintenance improvements would likely be beneficial to, or at least have no appreciable adverse impacts on, native fish species. Installation of the fish screens (listed in Appendix A, Table 1) that are proposed for streams and reservoirs would be beneficial to these species due to decreased entrainment and stranding.

Installation of proposed fish ladders and screens in key locations would generally assist fish to by-pass diversion structures that may otherwise block upstream passage to spawning reaches. However, in some cases, installation of fish ladders would allow non-native species access to stream reaches occupied by westslope cutthroat trout. Some non-native species are able to out-compete and/or hybridize with native species and diminish their genetic integrity and fecundity. The potential effects of fish ladders vary with species and location. While generally beneficial for the westslope cutthroat trout, the impact to this species ranges from none to adverse, depending on the location. The planning, construction, and

installation of fish screens, and particularly fish ladders, should be done in close consultation and coordination with the Implementation Committee in order to mitigate against adverse impacts.

Finally, any potential short-term adverse impacts due to the installation of proposed screens and ladders, such as increases in sedimentation and accidental spills, would be mitigated to the extent practicable by implementing temporary erosion and sedimentation control plans.

Threatened and Endangered Species

The BA (BIA 2008) provides a detailed evaluation of potential impacts to federally listed threatened or endangered species. Based on that evaluation, the Proposed Action would likely not adversely impact bull trout, and at least some of the proposed measures (e.g., installation of fish screens at McDonald, Tabor, and Mission reservoirs) would be beneficial to the species. Although the Proposed Action would in some ways be beneficial to bull trout, there would be residual adverse impacts to the species from some continued ongoing operation and maintenance practices not fully rectified under the Proposed Action. The Proposed Action is not likely to adversely affect any other federally listed species.

4.3 LAND OWNERSHIP AND USE

4.3.1 Existing Environment

The Reservation encompasses approximately 1.3 million acres. About a third of that area, some 459,000 acres, is forested. Most of these timbered acres are on the hills and mountains along the perimeter and central portions of the Reservation and represent the bulk of the Tribal land holdings. Six towns are located on the Reservation. The approximately 128,000 acres irrigated by the FIIP for agriculture comprises about 10 percent of the Reservation land. Other land use features include the National Bison Range, tourism and recreational uses associated primarily with Flathead Lake and Flathead River, Tribal Wilderness Areas, grazing, and major state and federal transportation corridors.

Most commercial land use areas are found along the U.S. Highway 93 (US 93) corridor, which runs south from Polson to the Reservation's southern border. The Reservation contains a patchwork of land ownership that includes Tribal, allotted, state, federal and private ownerships (Figure 4-2). When compared, Figure 4-2 and Figure 4-1 demonstrate that the majority of the land irrigated by the FIIP is fee-patent land, which is owned primarily but not exclusively by non-Indian landowners. The FIIP area also includes a relatively small section of land in the northern section of the Camas irrigation district. This largely privately owned, off-reservation area, which includes land in the valley of the Little Bitterroot River from Little Bitterroot Lake south to the Reservation's northern border, can be seen in Figure 4-1. However, as is true for all FIIP infrastructure, DOI holds title to FIIP infrastructure in this off-reservation area (for example, Little Bitterroot Dam, Hubbart Dam, and FIIP system canals). Similarly, the BIA operates the FIIP in this portion of the Camas irrigation district.

Additional detail regarding use and ownership of agricultural land on the Reservation is shown in Table 4-3. This table contains selected characterization data for agriculture land use and ownership on the Flathead Indian Reservation, based on data from the U.S. Department of Agriculture. These data show that approximately 85 percent of farm operations, including irrigated land operations, on the Reservation are done by non-Indian operators and that irrigated land represents over 60 percent of the total cropland on the Reservation.

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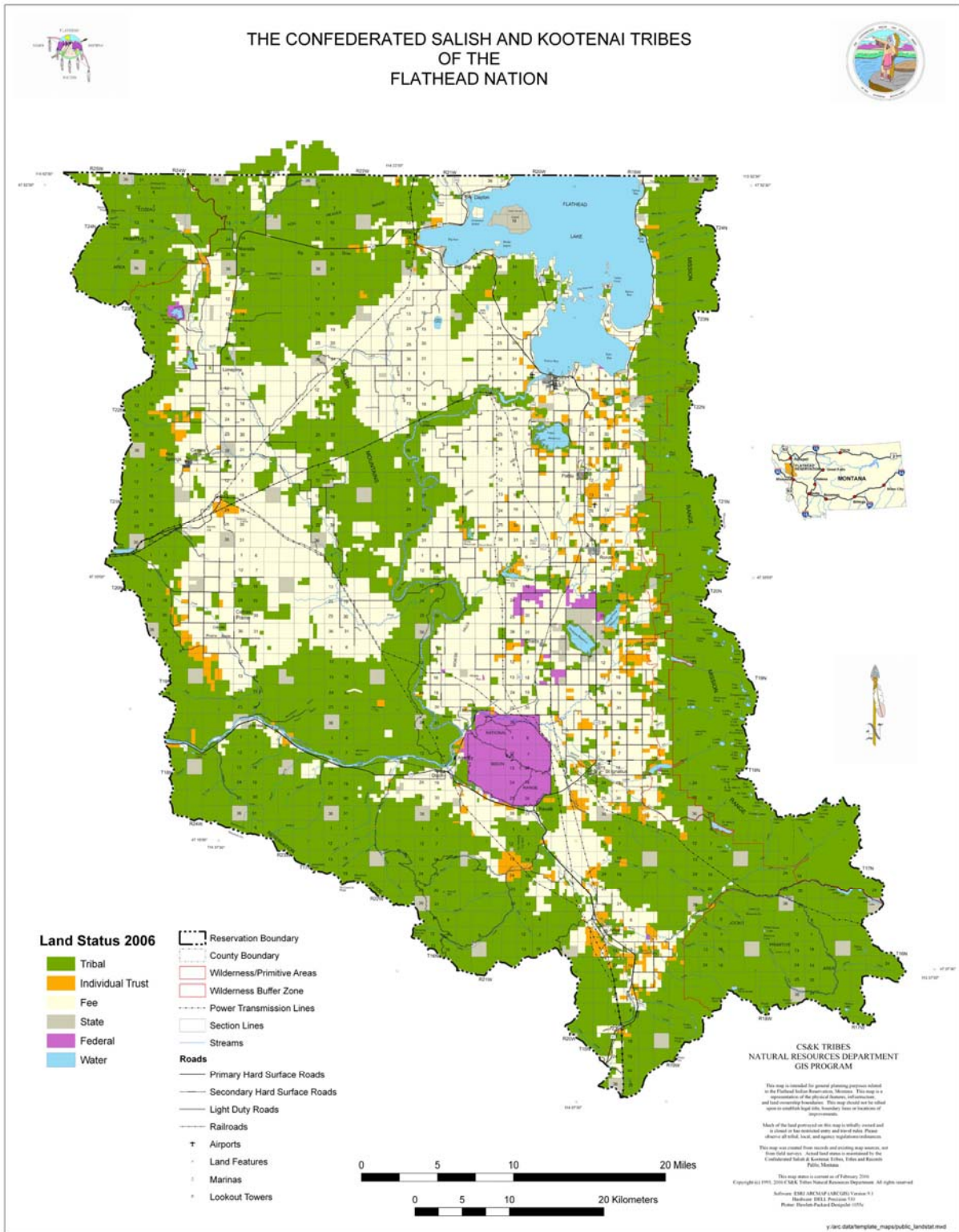


Figure 4-2. Reservation Land Use Status, 2006

Table 4-3. Agricultural Land Characteristics on the Reservation

Characteristic	Unit	Total ^a	Indian Operators ^b
Farms	Number	931	155
Operators	Number	1,442	190
Operators Living on Reservation	Number	1,323	187
Land in Farms	Acres	889,986	489,867
Reservation Acres in Farms	Acres	782,173	482,937
Total Cropland	Farms	726	117
	Acres	146,820	24,598
Harvested Cropland	Farms	604	89
	Acres	83,561	14,837
Irrigated Land	Farms	654	99
	Acres	89,497 (61 percent of total crop land)	14,650
Forage Land	Farms	515	81
	Acres	70,665	13,430
	Dry Tons	168,075	28,545

a. Data are for farms and ranches reporting at least some agricultural production on reservations during 2002.

b. At least one of the reported operators (out of a maximum of three) is self-identified as American Indian either exclusively or in combination with other races.

Source: USDA 2002a.

4.3.2 Environmental Consequences of the Proposed Action

The Proposed Action would have little or no foreseeable impact on land ownership because it would entail no sale or transfer of land, legal control, or operational control of irrigated or other Reservation land. Ownership of the FIIP itself would remain with the U.S. Government after transfer.

With regard to land use, the Proposed Action neither specifies nor contemplates any expansion or contraction of the acreage currently irrigated by the FIIP. Enhanced water use efficiencies realized through the Proposed Action could marginally increase the acreage that could be irrigated by a more efficient FIIP. On the other hand, increased instream volumes mandated by more precise water measurements and allocations might reduce overall water volumes delivered for irrigation. Because of uncertainties surrounding the ultimate volumes of water delivered by the FIIP for agriculture or for fisheries protection upon transfer (and upon possible future implementation of system efficiency enhancements), a reliable quantitative assessment of the impacts of the Proposed Action on overall land use patterns is not feasible.

4.4 WATER QUALITY

This section describes the existing water quality data for water resources associated with the FIIP. These data are presented as a baseline for assessing impacts of the Proposed Action.

4.4.1 Existing Environment

Applicable Regulations. Water quality in the study area is regulated by the 1977 Clean Water Act⁴, Montana Water Quality Act Standards⁵, and Tribal water quality standards. Tribal water quality standards apply to the surface waters within the Reservation.

Recent Water Quality Information. A 2002 water quality report states that “findings demonstrate pervasive levels of impairment in surface waters” (CSKT 2002). This report categorized waters on the Reservation into four use categories: fully supporting, fully supporting but threatened, partially supporting, and not supporting. These categories were based upon CKST numeric and narrative water quality standards in conjunction with the designated beneficial use of the waterbody. Table 4-4 shows the water quality categories for the Flathead Indian Reservation; the data show that 72 percent of perennial streams are impaired for one or more uses, and 87 percent of intermittent streams are impaired for one or more uses.

Table 4-4. Water Quality on the Flathead Indian Reservation, 2002

Water Quality Category	Stream Miles	Percent of Total Stream Miles
Fully support for all uses (perennial)	239 miles	25%
Fully support for all uses (intermittent)	311 miles	10%
Fully support for all uses, but threatened for at least one use (perennial)	35 miles	3%
Fully support for all uses, but threatened for at least one use (intermittent)	96 miles	3%
Impaired for one or more use (perennial)	690 miles	72%
Impaired for one or more use (intermittent)	2,712 miles	87%
Not supporting any uses (perennial)	0 miles	0%
Not supporting any uses (intermittent)	0 miles	0%

Source: CSKT 2002.

Causes and Sources of Impairment. Water quality on the Reservation is impaired by environmental stressors that are generally related to land use practices generating nonpoint sources of pollution. Major causes and sources of impairment include habitat alteration, suspended solids, siltation, agriculture (grazing), and hydromodification. According to the CSKT, the predominant effect on surface waters within the Reservation is from irrigated agriculture. In addition, most of the streams on the Reservation are used as irrigation conveyances for much of their length.

4.4.2 Environmental Consequences of the Proposed Action

Under the Proposed Action, several short-term and long-term actions would be undertaken with the specific objective of improving water quality and distribution. These improvements could be achieved through better water quality data collection, reporting, and analysis, along with stricter monitoring of spills and overall management of the irrigation system.

⁴ The Clean Water Act is an amendment to the Federal Water Pollution Control Act of 1972. 33 U.S.C. 1251 *et.seq.*

⁵ Montana water quality standards are found in the Administrative Rules of Montana (ARM), Subchapter 6, Title 17, Chapter 30, and the 1999 Montana Code Annotated, Title 75, Environmental Protection, Chapter 5, Water Quality.

The following proposed short-term actions could result in beneficial impacts to water quality and availability:

- *Water Distribution System Management – Reservoirs, Pumping Plants, Diversion Structures, Canals, Drains, and Return Flow.* The service or farm ditches into which water would be delivered from project canals or laterals would have to have ample capacity and be maintained by the water user in proper condition to receive water and convey it to the place of use with a minimum of loss. Water delivery would be refused to such ditches not satisfactorily maintained. This could improve the quality of irrigation water by minimizing losses and increasing the efficiency of canals and laterals. Minimization of water loss and increased efficiency would also increase the availability of water for irrigation.
- *Water Delivery and Water Use Management.* All water delivery records, diversions, canal flows, spills, quota water usage, and assessed acreage for the project would be maintained on notebook computers and on the server at the project headquarters. This could improve water quality by decreasing response time to spills and increasing the accuracy and reliability of water records. Decreasing the response time to spills could also increase the availability of water.
- *Water Quality Management.* Project staff would evaluate areas of water quality concern for project activities that could be implemented to improve water quality. Ditch riders would monitor and adjust for diversions and releases to meet interim instream flows, where such flows are established; monitor water deliveries; and monitor and record operational tail water into draws and wasteways to limit excess flow and manage water quality.

Other short-term processes would involve the initiation and subsequent completion of studies to obtain additional information regarding current environmental conditions. Water quality studies could provide more detailed information to water managers about the causes and sources of impairment, along with a record of water quality improvements due to various measures implemented. Modeling, development of a water accounting system, and crop irrigation requirement evaluations would likely result in the more efficient delivery of water, while the canal lining and sealing would increase the availability of water for irrigation purposes in the FIIP system and increase the availability of water for fisheries resources.

The relationship between canal seepage and domestic groundwater supplies is unknown at this time. It is possible, however, that canal lining could affect domestic groundwater supplies.

Construction activities associated with the implementation of short- and long-term actions to improve the operation and maintenance of FIIP facilities could result in temporary increases in sedimentation, resulting in minor and intermittent impacts to water quality.

4.5 SOCIOECONOMICS

4.5.1 Existing Environment

General Population

For the purposes of assessing socioeconomic impacts, the region of influence is defined as the Flathead Indian Reservation. This geographically extensive area includes some areas whose socioeconomic profile would probably not be directly or indirectly impacted by transfer of FIIP operations and management (for example, Tribal Wilderness Areas, upland forest areas, and other non-agricultural areas such as the more densely populated southern Flathead Lake area around Polson). However, this region of influence

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delineates the area where the great majority of residents who would be expected to experience direct or indirect socioeconomic impacts live and work.

Relevant socioeconomic data are available for this area because the U.S. Census Bureau tabulates Reservation demographic and socioeconomic data. Table 4-5 shows year 2000 U.S. Census demographic and socioeconomic data for the Flathead Indian Reservation. Data for Lake County, Montana, and the State of Montana are included for comparison.

Table 4-5 shows that the Flathead Indian Reservation and Lake County have nearly identical socioeconomic profiles due to the large degree of geographic overlap. For that reason, agriculture statistics for Lake County will closely reflect those for the Reservation. Table 4-6 summarizes U.S. Department of Agriculture (USDA) 2002 Census data for Lake County, Montana.

Tribal Income

Timber sales and revenue from Kerr Dam power sales are major sources of income for the CSKT. The Tribes also own and operate the Kwataqnuq Resort Hotel in Polson and the S&K electronics manufacturing facility.

FIIP Employees

The FIIP typically employs 48 to 52 individuals. The staff includes tribal members, non-tribal member Indians, and non-Indians. Table 4-7 shows the positions and approximate numbers of personnel employed in each position. Detailed position descriptions and grades are retained on file at the FIIP office.

Table 4-5. Reservation, County, and State-Wide Demographic and Economic Profile

Socioeconomic Indicator	Flathead Reservation	Lake County	Montana
Total Population	26,172	26,507	902,195
Percent White	68.1 %	71.4	90.6 %
Percent American Indian	26.7 %	23.8	6.2 %
Labor Force	11, 878	12,038	454,687
Farming, Fishing and Forestry	4.5 %	4.1 %	2.2 %
Unemployed	7.9 %	4.8 %	4.1 %
Worker Class Distributions			
Private Wage and Salary	61.4 %	61.9 %	69.2 %
Government	23.2 %	21.6 %	18.3 %
Self employed	14.8 %	15.8 %	11.8 %
Income (1999 dollars)			
Median Household	\$ 27,424	\$ 28,740	\$ 33,024
Median Family	\$ 33,210	\$ 34,033	\$ 40,487
Per Capita	\$ 14,503	\$ 15,173	\$ 17,151
Poverty Status (1999)			
Families below Poverty Level	15.8 %	14.0 %	10.5 %
Individuals below Poverty Level	20.3 %	18.7 %	14.6 %

Source: U.S. Census Bureau 2000.

Table 4-6. Selected Census of Agriculture Data for Lake County, Montana, 2002

Indicator	Values and 5-year trends
Number of Farms	1,185; down 3 percent from 1997
Average Size of Farms	508 acres, unchanged since 1997
Total Market Value of Production	\$39,360,000; down 3 percent from 1997 Ranks 19 th among 56 Montana counties (Approximately 54 percent livestock value and 46 percent crop value)
Average Market Value Production per Farm	\$33,215; down slightly from 1997
Average Government Payment per Farm Receiving Payments.	\$4,051; up 4 percent from 1997
Top-Value Commodity Groups	Cattle and calves: \$17,021,000; 22 nd among 56 Montana counties Vegetables, melons and potatoes: \$ 6,445,000; 2 nd among 41 Montana counties Fruits, nuts and berries: \$ 4,568,000; 1 st among 22 Montana counties Other crops and hay: \$3,970,000; 13 th among 56 Montana counties Milk and dairy products: \$ 2,352,000; 3 rd among 46 Montana counties
Top Acreage Crops	Forage : 59,000 acres Wheat: 10,847 acres Barley: 2,562 acres Potatoes: 2,037 Oats: 1,019 acres
Average Value of Crops Sold Per Acre of Harvested Cropland	\$231.01

Source: USDA 2002b.

Table 4-7. FIIP Employee Positions

Position	Number
Irrigation Systems Manager	1
Hydrologist/Information Technology	1
Fisheries Technicians	2
Supervisory Irrigation System Operators	4
Irrigation System Operators	22
Engineering Equipment Operators	4
Mechanics	2
Utility Systems Repairer/Operator	1
Maintenance Workers	5
Administration Staff and Support	6
Other	0-4
Total	48-52

Source: BIA 2004c.

4.5.2 Environmental Consequences of the Proposed Action

Overall Regional Economy

Table 4-3 shows that irrigated land comprises over 60 percent of the total cropland in the study area, and Table 4-6 shows that agriculture is a major factor in the overall economy of the study area. The Proposed Action neither specifies nor contemplates any expansion or contraction of the acreage currently irrigated by the FIIP. However, enhanced water use efficiencies realized by the Proposed Action might increase the availability of water to lands already under irrigation or might marginally increase the acreage that could be irrigated by a more efficient FIIP. On the other hand, increased instream volumes mandated by more precise water measurements and allocations might increase overall water volumes reserved for fisheries, which could reduce the volume of water allocated for irrigation. Because of these uncertainties, a quantitative assessment of the impact of the Proposed Action on overall socioeconomic patterns is not feasible. However, Table 4-6 shows that the average value of crops sold per acre is approximately \$231. Thus, it is reasonable to assume that on average, for every acre of land that becomes productive due to increased water availability or that becomes non-productive due to decreased water availability, the direct economic gain or loss to agricultural interests would be approximately \$231 annually and that this gain or loss would ripple through the overall regional economy.

Assessments

The Proposed Action does not involve or propose any change to current irrigation water rates. However, it does provide that additional policy, authorities, legal settings, and requirements for the project after transfer would be proposed by the CME as project operations and maintenance required and that once a contractual agreement was reached, any modification to the contract would require the consent of the BIA, CSKT, and FJBC.

In the short term, additional requirements for the project may require increased assessments to recover costs associated with FIIP operation and maintenance. Current and projected direct and indirect system costs (for example, insurance, salaries, deferred maintenance, computers, etc.) that are currently borne by the BIA will, upon transfer, become the financial responsibility of the CME, and those costs may have to be recovered through increased fees to irrigators. In the long term, increased system and manpower efficiencies may offset capital investments and additional operating costs. Current assessments may increase, decrease, or remain approximately as they currently are.

Because the CME would be responsible for managing system costs, it is not possible for BIA to estimate the extent to which current assessments may increase or decrease. The CSKT believes that a potential impact of increased fees to irrigators would be to force them to sell off some of their landholdings in order to pay the higher fees, causing a continuing division of land served under the FIIP into smaller, non-farmsize tracts. BIA has no information to validate or invalidate this conclusion.

FIIP Employees

The employment status of FIIP employees upon transfer would be determined by the terms of the contract between the BIA and the CME. This contract could result in changes to FIIP positions. While these changes could impact some or all current FIIP employees, analysis of the impact of such changes is outside the scope of this draft EA. However, any changes would not be expected to significantly impact the overall economy of the study area.

4.6 TRIBAL RESOURCES

4.6.1 Existing Environment

The CSKT have always highly valued water for its many uses and life-giving properties.⁶ The CSKT are of the view that cultural and recreational uses are enriched by the purity and beauty of these waters and the resources they nourish. The waterways have always been an important resource to the Tribes, both for subsistence and culture. Because these Tribal uses depend upon water quality, this resource is directly affected by irrigation diversions, as well as forestry, agriculture, residential, and recreational practices.

In addition to Flathead Lake, there are over 500 miles of fishable streams on the Reservation. These include 67 miles of the lower Flathead River between Kerr Dam and the Reservation boundary, as well as a number of tributaries. These tributaries provide important fish and wildlife habitat and provide critical spawning habitat for Flathead River trout populations.

The lower Flathead River is a major historical and cultural water resource for the Tribes. To the Salish and Kootenai people, proximity to water and an abundant food supply were primary factors in choosing these areas as regular stopping points along their migration routes. The river remains vital to the Tribes today as an important food source for subsistence and for reaffirming cultural traditions. Along with fishing and hunting in the riparian zones, plants are gathered for food and for medicinal purposes. The seclusion of the river provides solitude for personal reflection. Preservation of the river water quality, the environment, and the river's natural processes are vital to the interests of the Salish and Kootenai people.

Since the 1970s, the CSKT has worked toward assuming management responsibilities for their natural resources.

Recently, the CSKT began to survey the FIIP for cultural resources and to inventory resources found. As a result of these efforts, the CSKT have identified at least one traditional cultural property that they believe has been damaged by the project. When the results of the Tribes' cultural resources survey and report are made available, BIA will provide a description of the existing resources.

4.6.2 Environmental Consequences of the Proposed Action

Impacts to Tribal resources and other cultural resources were considered in relation to the American Indian Religious Freedom Act and the National Historic Preservation Act. The physical impacts of the Proposed Action would be contained within the existing footprint of the FIIP and, with the exception of new fish screens and ladders, would affect only those areas already disturbed by the initial construction of the irrigation system. This indicates a high degree of likelihood that no culturally significant sites (for example, archaeological sites) would be subject to additional disturbance beyond that caused by the initial construction and current operation of the FIIP. Therefore, no new impacts to sites potentially eligible for the National Register of Historic Places are anticipated.

When the results of the Tribes' cultural resources survey and report are made available, BIA will reassess the potential for impacts to cultural resources as a result of the implementation of the Proposed Action.

⁶ The description of the significance of tribal resources set forth in Section 4.6 was provided by CSKT staff.

4.7 GEOLOGY AND SOILS

4.7.1 Existing Environment

Geology

The geology of the study area is dominated by two primary components: bedrock uplifted during the development of the Rocky Mountains at higher elevations, and glacial and river deposits in the valley floors. The Mission and Swan Ranges as well as the Salish Mountains consist of various metamorphosed sedimentary formations of the Precambrian Belt Series; these formations include the Appekunny argillite, the Grinnel argillite, the Missoula group, the Piegan group, the Pricard formation, the Ravalli group, the Siyeh limestone, and the Wallace formation. The area is heavily faulted as a result of the compression of the bedrock during the uplift of the Rocky Mountains. A major fault extends along the eastern edge of Flathead Lake and the Flathead River Valley below the lake.

The valleys in the study area were carved deeper and wider by the advancement of glaciers during the past several hundred thousand years. Surficial deposits in the Flathead River Valley below the lake consist of glacial ground and end moraine, glacial lake deposits, and alluvial deposits; these deposits may be as much as 4,000 feet thick (LaFave et al. 2002).

Flathead Lake was formed from the melting of glacial ice. The melt water was trapped by end moraines present at the south end of the lake. The runoff from the melting glacier eroded through the end moraine until it encountered an area of higher elevation bedrock at the west edge of current-day Polson. The runoff then eroded what is now the current Flathead River gorge south and west of Flathead Lake.

There are two primary groundwater regimes in the study area: the water table aquifer and a deeper aquifer system consisting of a combination of buried alluvial/glacial deposits and fractured bedrock. The water table aquifer generally ranges between zero and 50 feet below ground surface in the river valleys and is generally greater than 50 feet below ground surface in the mountains. The water table aquifer is generally recharged directly by precipitation and surface water; the deeper aquifer is recharged by fracture flow from the mountain fronts. Groundwater flow is generally toward Flathead Lake or toward the Flathead River. The deeper aquifer unit is generally the groundwater resource used most for water supply and irrigation purposes in the study area.

Groundwater quality is generally good in the deeper aquifer, with low dissolved solid concentrations and relative few indications of contamination from surficial activities such as herbicide, pesticide, and fertilizer application to agricultural land. Isolated areas may have greater connectivity between the water table aquifer and the deeper aquifer. In these areas, there is some evidence of elevated nitrate levels; however, these levels meet health standards for drinking water (LaFave et al. 2002).

Soils

A review of the Natural Resources Conservation Service State Soil Geographic Database (STATSGO) for the study area indicates that soils surrounding and south of Flathead Lake consist of a variety of loamy soils (USDA 1994). This finding is consistent with the environment in which these soils were deposited; the mixing of parent materials by the advancement and recession of glaciers results in variably textured soils with clay, silt, sand, and gravel components. Similarly, the Flathead River and its tributaries deposit soil materials ranging from clay to gravel, depending on the flow rate of the water.

4.7.2 Environmental Consequences of the Proposed Action

Implementation of the Proposed Action is generally not anticipated to impact geology and soil resources in the study area. The potential for impacts to groundwater resources were considered. The short- and long-term system improvements would minimize leakage from the canals in the FIIP; this could reduce groundwater recharge. However, it is anticipated that the impacts would be limited to the water table aquifer in the immediate vicinity of the FIIP system components. The deeper aquifer that is most frequently used for supplemental irrigation purposes is primarily recharged from water infiltrating through bedrock fractures at higher elevations.

4.8 AIR QUALITY

4.8.1 Existing Environment

Under the Clean Air Act of 1970, the EPA developed primary and secondary National Ambient Air Quality Standards (NAAQS) for each of seven criteria pollutants: carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter with a diameter of 10 micrometers or less (PM₁₀), fine particulate matter, and sulfur dioxide. These standards establish pollution levels in the United States that cannot legally be exceeded during a specified time period. Areas that violate federal air quality standards are designated nonattainment areas. EPA declares each area as nonattainment for a specific criteria pollutant.

Montana has 13 official nonattainment areas, two of which, Polson and Ronan, are within the study area for this draft EA. Both of these communities are moderate nonattainment areas for PM₁₀, and both are under Tribal/EPA jurisdiction. Figure 4-3 illustrates the geographic boundaries of these two nonattainment areas.

Conformity Review Process

A conformity review must be performed when a federal action generates air pollutants in a region that has been designated a nonattainment or maintenance area under one or more NAAQS. Before any approval is given for an action to go forward, an agency must apply the applicability requirements to a proposed federal action to determine if a conformity determination is required. The applicability analysis can be completed concurrently with the NEPA analysis, most likely at the EA stage (EPA 1994).

A conformity review is a multi-step process used to determine whether a federal action meets the requirements of general conformity rule and an associated state implementation plan (SIP). It requires the affected federal agency to do one or more of the following:

- Evaluate the nature of the proposed action and associated air pollutant emissions
- Determine whether the action is exempt by rule
- Calculate air pollutant emissions and air quality impacts associated with the proposed action
- Mitigate emissions if regulatory thresholds are exceeded
- Prepare formal documentation of findings
- Publish findings to the public and regulatory community

4.8.2 Environmental Consequences of the Proposed Action

Conformity Review Results

The Proposed Action would result in low levels of PM₁₀ emissions caused primarily by periodic vehicle travel on dirt roads and vehicle exhaust during upgrades to and maintenance of FIIP infrastructure

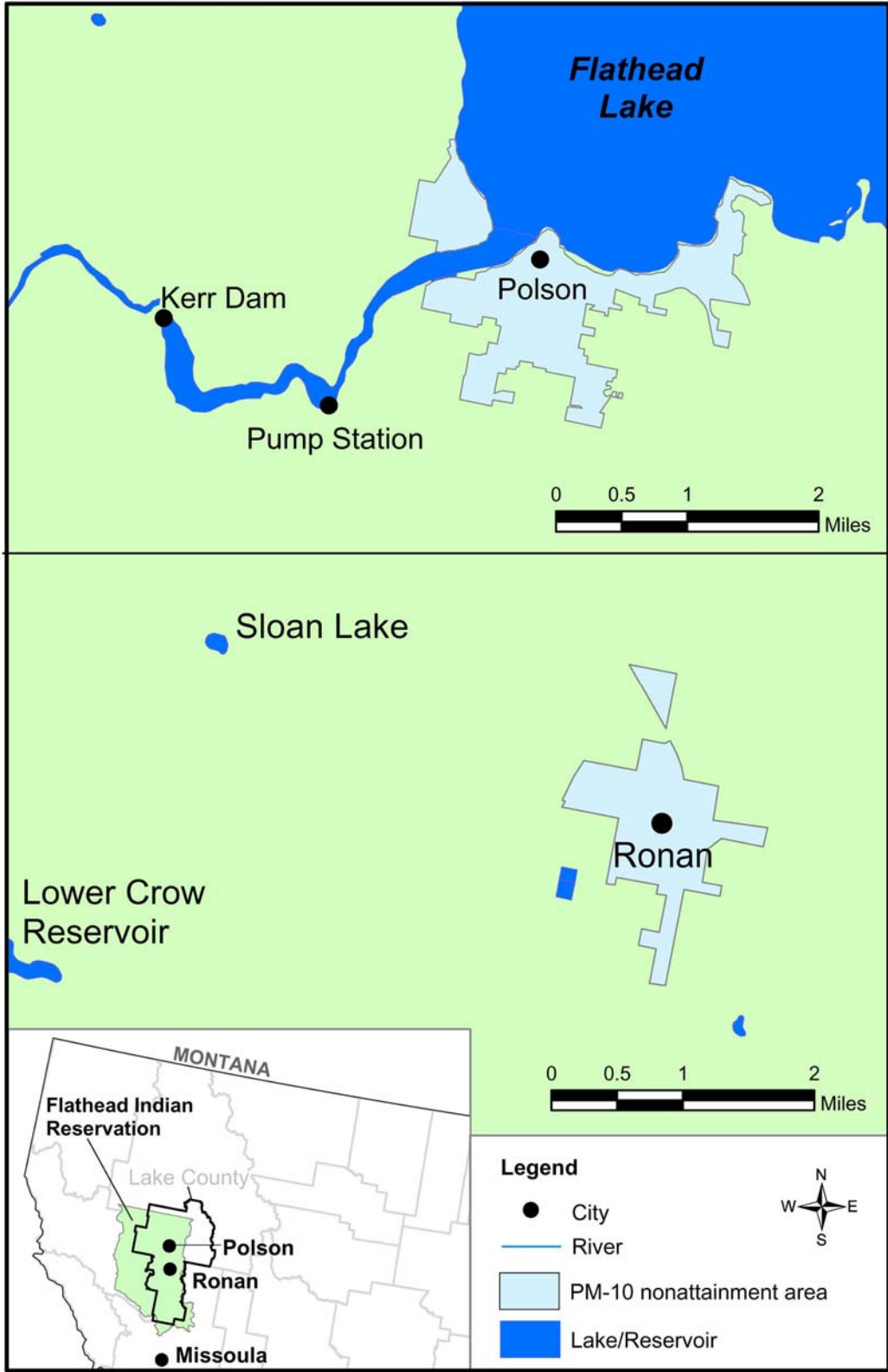


Figure 4-3. Nonattainment Areas for PM₁₀ within the Study Area

elements. Other potential sources could include occasional brush clearing or burning to maintain rights-of-way and construction or maintenance of new or existing rights-of-way access roads.

Certain actions are exempted from the general conformity review requirements (40 CFR 93.153(c)(2) - 93.153(e)). Examples of exempt actions include recurring activities similar in scope to current activities 40 CFR 93.153(c) (2) (ii); routine maintenance and repair 40 CFR 93.153(c) (2) (iv); future activities similar in scope to current activities 40 CFR 93.153(c) (2) (x); and routine operations 40 CFR 93.153(c) (2) (xiii).

The BIA finds that the Proposed Action would conform with (i.e., would not undermine) the approved SIP for the study area and that a detailed conformity determination is not required for the following reasons:

- Most or all of the Proposed Action activities that would generate PM₁₀ appear to be exempt actions.
- Most or all of the Proposed Action activities that would generate PM₁₀ would occur outside of the Polson and Ronan PM₁₀ nonattainment areas.
- The PM₁₀ emissions attributable to the Proposed Action would be both minor in quantity and intermittent in duration.

Construction activities associated with the implementation of short- and long-term actions to improve the operation and maintenance of FIIP facilities could result in temporary increases in dust, resulting in minor and intermittent impacts to air quality.

4.9 VISUAL AND NOISE IMPACTS

4.9.1 Existing Environment

The study area encompasses a remarkably wide range of visual and noise environments. These environments include:

- the pristine beauty and silence of the Mission Mountain Tribal Wilderness Area,
- extensive forested land,
- hundreds of small, medium, and large-sized FIIP infrastructure elements of various size and shape,
- extensive, largely flat, sparsely populated irrigated farmland, and
- urban neighborhoods near Polson, Ronan, and other communities.

Figure 4-4 shows the range of visual and noise environments across the study area. Further detailed characterization of the current visual and physical condition of the FIIP is provided in a recent engineering evaluation (HKD 2005) which is incorporated into this draft EA by reference.

Ambient noise is the collective sound resulting from the omnipresent background noise associated with a given environment. It is usually a composite of many sounds from many sources. An environment's ambient noise serves as a point of departure and comparison for analyzing the impact of a new or additional noise on a sensitive environment.



Figure 4-4. Representative Visual and Noise Environments in the FIIP Study Area

Clockwise from upper left:

- Mission Mountain Tribal Wildness overlooking McDonald Reservoir
- Post Creek and Pablo intercept ditch
- Flathead River pumping plant
- Residential neighborhood in Polson
- Canal from Lower Dry Fork Reservoir/Lonepine Reservoir)
- Middle Fork Jocko fish ladder

Noise is generally considered to be low when its ambient levels are below 45 A-weighted decibels (dBA), moderate in the 45- to 60-dBA range, and high above 60 dBA. Typical wilderness area ambient sound is about 35 dBA, typical rural residential levels are about 40 dBA, agricultural cropland is about 45 dBA, and typical urban residential sound levels on a busy street are about 68 dBA (outdoor day-night average sound levels) (Suter 1991).

Throughout most of the study area, ambient noise levels are low to medium, reflecting the wilderness, forestry, grazing, and agricultural land uses. Ambient noise levels adjacent to cascading streams and FIIP infrastructure elements such as reservoir outlets vary seasonally in response to the severity of runoff or drought conditions and in response to water management and distribution operations.

4.9.2 Environmental Consequences of the Proposed Action

Visual

Under the Proposed Action, the primary activities with the potential to impact visual aspects of the environment are tree removal along laterals, installation of new fish screens and ladders, and installation of new or improved access roads along FIIP rights-of-way. Due to their modest scope and low physical profile, most new short-term construction and maintenance activities would be visually inconspicuous other than in the area immediately adjacent to the new or refurbished structures. Removal of established trees that over the years have come to serve as visibility or privacy screens along canals or laterals or as landscape elements for adjacent residential areas near Polson and other residential areas may be perceived as an adverse visual impact by affected landowners. The long-term processes described in the Proposed Action may lead to refurbishment or replacement of larger FIIP infrastructure elements. If properly designed and executed, such enhancements could improve the visual aspects of system elements that have begun to deteriorate over the last century. However, as implied in the Proposed Action, impacts resulting from future long-term process enhancements would be assessed on a case-by-case basis.

Noise

Under the Proposed Action, short-term activities with the potential to result in noise impacts include tree removal along laterals, installation of new fish screens and ladders, installation of new or improved access roads along FIIP rights-of-way, and more vigorous and regularly scheduled system maintenance. Among these activities, those with the greatest potential impact (new construction and tree clearing) would be of short duration and would occur in areas that do not have highly sensitive noise receptors such as schools or hospitals. However, tree clearing, access road installation or upgrades, and periodic system maintenance would result in short-term noise impacts during workday hours. In the relatively few areas where there are nearby residences, these noise impacts could be annoying for the limited duration of the activity.

4.10 ENVIRONMENTAL JUSTICE

4.10.1 Existing Environment

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (59 FR 7629), directs federal agencies to identify and address, as appropriate, any activities that may adversely and disproportionately affect minority and low-income populations. CEQ has published implementing guidance for assessing environmental justice in EISs (CEQ 1997).

The BIA recently announced the availability of a draft EIS for a proposed drought management plan for operation of the Kerr Hydroelectric Project at Flathead Lake (BIA 2006). That EIS describes and illustrates minority and low-income populations on the Flathead Indian Reservation and describes in

detail the methodology used to delineate them. The descriptions of the current minority and low-income populations on the Reservation are incorporated into this draft EA by reference. Figures 4-5 and 4-6 illustrate the locations of these predominantly low-income and minority populations.

4.10.2 Environmental Consequences of the Proposed Action

The block groups in the study area where predominantly low-income and predominantly minority populations live occur in small, generally noncontiguous neighborhoods widely dispersed across the study area. Moreover, these block groups occur in areas that are both irrigated by and not irrigated by the FIIP. This geographic pattern suggests that any adverse health or environmental impacts from the Proposed Action would not *disproportionately* impact predominantly minority or predominantly low-income populations. Moreover, with regard to impacts to Tribal members and resources, upon transfer of the project, the CME decision-making board would include representatives of the CSKT. This representation would provide assurances that disproportional impacts to minority (Native American) populations would not occur.

Role of the CME

As noted in Chapter 3, the CME would be managed by representatives of the CSKT and the FJBC. The CME members would be appointed by the CSKT Tribal Council and the FJBC, with the exact numbers from each to be determined. The CME would set and administer the overall policy for supervision and management of the FIIP.

4.11 WETLANDS

4.11.1 Existing Environment

The National Wetlands Inventory (FWS 1982) indicates that there are a number of small palustrine wetlands in the Flathead Valley. Most of these wetlands are located east of the lower Flathead River and west of the Mission Range. Many of the wetlands appear to be isolated basins; however, there is a large concentration of wetlands around Kicking Horse and Ninepipes Reservoirs. A smaller concentration of palustrine wetlands is present in the region around Dry Fork Reservoir, Dry Fork Creek, and the Little Bitterroot River. Riverine wetlands are found along the lower Flathead River, and the lower stretches of the Jocko River, Mission Creek, Post Creek, and Crow Creek.

In addition to wetlands identified in the National Wetlands Inventory, it is reasonable to assume that persistent, long-term leaks or seepages from aging FIIP infrastructure (aqueducts, canals, diversions, etc.) may have created small, “leak-induced” wetlands where basin-like areas occur adjacent to and downslope from leaking FIIP infrastructure. Moreover, if such areas do exist, they likely would not be included in the National Wetlands Inventory due to their small size. However, depending on the topography and the duration and severity of FIIP infrastructure leaks, limited areas of hydrophytic vegetation and hydric soils adjacent to leaking FIIP infrastructure may exist.

4.11.2 Environmental Consequences of the Proposed Action

Under short-term activities, the Proposed Action would implement water resource facility betterment programs to reduce irrigation system losses. Canal seepage areas would be prioritized, and alternatives for seepage control would be developed and analyzed. Implementation of facility betterment programs to reduce irrigation system losses could reduce or eliminate leak-induced wetland areas adjacent to FIIP infrastructure (if such wetland areas do in fact exist).

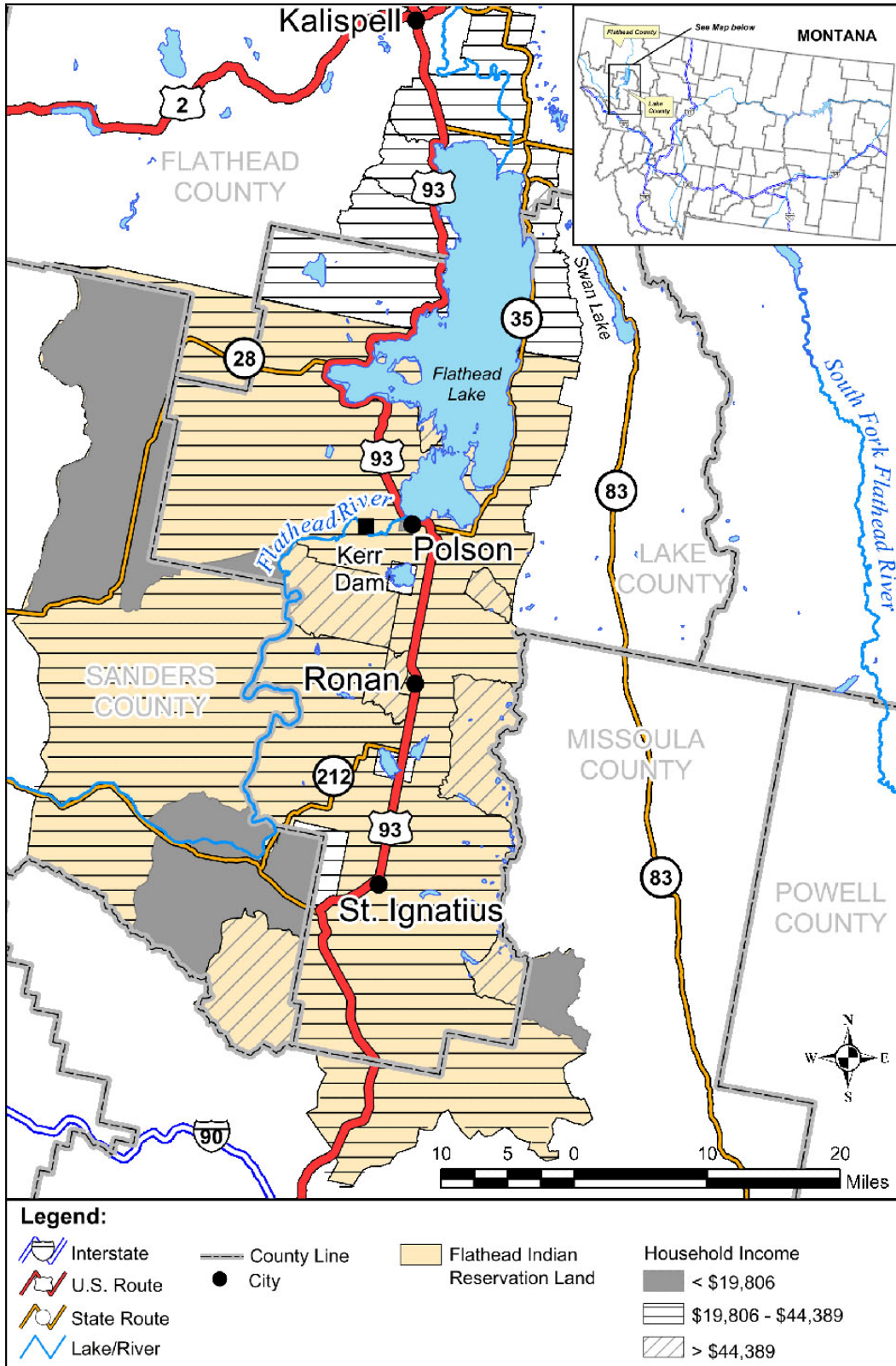


Figure 4-5. Low-income Block Groups in the Study Area

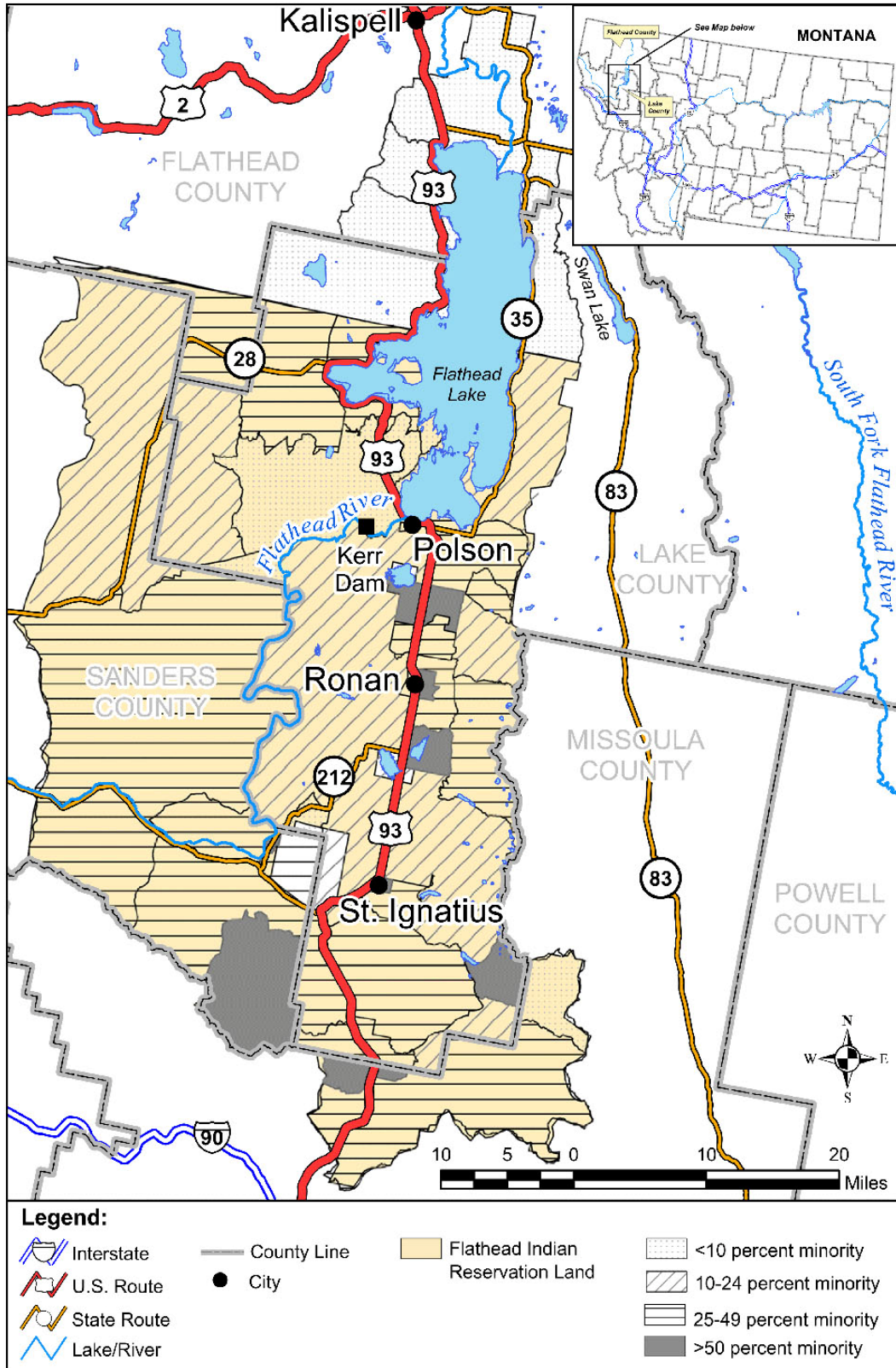


Figure 4-6. Minority Block Groups in the Study Area

4.12 ENVIRONMENTAL CONSEQUENCES OF THE NO ACTION ALTERNATIVE

As described in Section 3.2, under the No Action Alternative, the Secretary of the Interior would transfer the management (operation and maintenance) of the FIIP in accordance with the BIA's existing management guidelines. No new short- or long-term activities would be undertaken. The project is currently managed in accordance with federal regulations (25 CFR Part 171). Under this status quo No Action Alternative, several minor, potentially adverse impacts that could occur under the Proposed Action would be avoided or delayed indefinitely. These potentially adverse impacts include minor PM₁₀ emissions from rights-of way clearing and access road upgrades, elimination of established privacy screens, short-term noise in residential or forest areas, and elimination of leak-induced wetland areas adjacent to FIIP infrastructure.

The overall determination from the BA is that the No Action Alternative would adversely impact bull trout but is not likely to adversely affect any other federally listed species.

The No Action Alternative would provide the CSKT with fewer tools to manage Tribal water resources within the Flathead Indian Reservation, including state-of-the-art analysis and management tools to better balance operations and natural resource preservation.

4.13 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The Proposed Action entails application of a set of new, more efficient operation and maintenance procedures to a long- and well-established project whose principal objective is water distribution and conservation. Very few activities that would occur under the Proposed Action would require an irreversible and irretrievable commitment of resources. Examples of activities that would require such commitments are construction of new fish ladders and diversions; investments in new state-of-the-art technology elements such as software, computers, and communications equipment; investments in personnel training; and investments in right-of-way clearing and access roads. The Proposed Action could ultimately result in different water allocation patterns compared to current patterns; however, redistributions would not constitute an irreversible and irretrievable commitment of water. The water is currently being committed to instream volumes and irrigation, and under the Proposed Action, the water would continue to be committed to instream volumes and irrigation.

4.14 CUMULATIVE IMPACTS

The CEQ regulations implementing the procedural provisions of NEPA require federal agencies to consider the cumulative impacts of a proposal (40 CFR 1508.25[c]). A cumulative impact on the environment is the impact that would result from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions (40 CFR 1508.7). This type of assessment is important because significant cumulative impacts can result from several smaller actions that by themselves do not have significant impacts. This section describes the impact of the Proposed Action when combined with any reasonably foreseeable past, present, or future actions on susceptible impact areas.

The discussion of the existing environment in the preceding sections takes into account the changes to the environment that have occurred as a result of the construction and operation of the FIIP over the last 100 years. The discussion of environmental consequences in the preceding sections describes how the Proposed Action could affect the existing environment. The current condition of the project is described in detail in a report prepared by HKM Engineering Inc. for the CSKT entitled Engineering Evaluation of Existing Conditions Flathead Agency Irrigation Division (FAID) Volumes I – V, Final Report (HKM 2005). That report is briefly summarized in Section 4.1 and is incorporated by reference in this draft EA.

4.14.1 Past, Present, and Reasonably Foreseeable Future Actions

PPL Montana Regional Drought Management Plan

The DOI, through the BIA, has released a draft EIS (BIA 2006) that evaluates the drought management plan proposed by PPL Montana for the Kerr Hydroelectric Project on Flathead Lake, and reasonable alternatives to that plan. The drought management plan would set forth operational provisions to both avoid and resolve potential water use conflicts in years when there is insufficient water to meet all requirements. Historically, this type of drought condition occurs about once every 18 years.

Other Activities Considered

The BIA also reviewed the activities identified as potential cumulative impacts during preparation of the drought management plan EIS to determine if they also represented potential cumulative impacts to the transfer of operations and maintenance of the FIIP. These activities included rapid regional growth; Hungry Horse Dam flood control and fish operations; a Pacific Northwest Coordinating Agreement; a possible new domestic water treatment plant south of Polson; and upgrades to the Kerr Hydroelectric plant turbines. The BIA has concluded that these other activities would not constitute significant incremental impacts when considered together with the transfer of FIIP operations and maintenance.

4.14.2. Cumulative Impacts of PPL Montana Regional Drought Management Plan

Because the FIIP relies primarily on reservoirs that are recharged annually by mountain runoff, it is (with one notable exception) operationally isolated from Flathead Lake and the Lower Flathead River and would therefore neither directly impact nor be impacted by actions taken to manage lake water levels and instream flows. The one exception is the Flathead River pumping plant, which pumps water from the Flathead Lake outlet (above Kerr Dam) to the Pablo Reservoir. This plant, shown in Figure 4-4 (right column, middle photograph), is operated as needed to augment natural runoff in accordance with FIIP storage and distribution system capabilities and projected irrigation demand. Additionally, the pumping plant is used to raise the post-season elevation of Pablo Reservoir to between elevations of 3,201 and 3,202 feet. The purpose of this practice is to provide carryover storage with which to begin deliveries the next irrigation season. Kerr Dam operations are allowed to adjust water releases to compensate for water pumped to Pablo Reservoir.

Because the pumping plant physically connects the Lower Flathead River and the Pablo Reservoir (a major FIIP reservoir), and because the Proposed Action described in this draft EA also addresses drought management, implementation of these plans may result in cumulative impacts. However, as described below, impacts on Flathead Lake water levels due to pumping plant operations would be minimal.

The plant's maximum pumping rate is 210 cubic feet per second (cfs), which would remove approximately 420 acre-feet per day. The station typically operates for 90 days a year, which would result in the removal of approximately 37,800 acre-feet annually assuming 24-hour-a-day operation. FIIP and Kerr Dam operating procedures limit the withdrawal to 50,000 acre-feet during any one season.⁷

The total volume of water in Flathead Lake is approximately 5.6 cubic miles, or about 19 million acre-feet (University of Montana 2006). The surface area of Pablo Reservoir is approximately 1,850 acres, which is less than 2 percent of the area of Flathead Lake. The amount of water withdrawn from Flathead

⁷ Personal communication, telephone conversation between Chuck Courville, Irrigation Systems Manager, Flathead Indian Irrigation Project, and William Fallon, Battelle, June 23, 2006.

Lake to recharge Pablo Reservoir varies annually, depending on irrigation requirements and weather. However, the impact on lake water levels would be very minor given the relative volumes of water. For example, the 50,000-acre-foot annual withdrawal limit is less than 0.3 percent of the approximately 19 million acre-feet of water in the lake and, withdrawn over the course of 3 to 4 months, would not noticeably impact lake water levels.

Nevertheless, because the removal of water from the lower Flathead River by the Flathead River pumping plant is an incremental demand for lower Flathead River water, during severe drought conditions it would represent a cumulative demand for a limited resource. Moreover, because the short-term provisions of the Proposed Action for this draft EA include implementation of a drought management plan for the FIIP, there is the possibility that the provisions of the two plans would require coordination and or reconciliation.

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APPENDIX A
FLATHEAD INDIAN IRRIGATION PROJECT – NEPA ANALYSIS
DESCRIPTION OF PROPOSED ACTION AND NO ACTION ALTERNATIVE

PROPOSED ACTION

The Secretary of the Interior would transfer the management (operation and maintenance) of the Flathead Indian Irrigation Project (FIIP) to a Cooperative Management Entity (CME), made up of representatives of the Confederated Salish and Kootenai Tribes (CSKT) and Flathead Joint Board of Control (FJBC), to be managed at their expense. A contract among the Department of the Interior (DOI), CSKT, and FJBC would define in detail the authorities, legal setting, and requirements for the FIIP transfer to the CME. Additional policy, authorities, legal settings, and requirements for the project after transfer would be proposed by the CME as project operations and maintenance required. Once a contractual agreement was reached, any modification to the contract would require the consent of DOI, CSKT, and FJBC.

The Secretary would transfer the operation and maintenance of the project under rules and regulations acceptable to the Secretary. The contract and accompanying documents, along with the Biological Opinion, would (1) identify (within approximately 5 years after transfer) specific short-term actions and studies needed for system enhancement, including fisheries improvements for federally protected species; and (2) establish a long-term process for the development and implementation of future rehabilitation and betterment measures to protect Tribal fisheries resources and federally protected species and to enhance the ability of the project to provide irrigation water to users.

Specific short-term actions would include those that would improve and/or address the overall management, operation, and maintenance of the project using state-of-the-art technology. The project would be managed by the CME to improve water conservation, system and irrigation efficiencies, and fisheries protection. The short-term actions would be funded from the project's annual operating budget (or other outside funding if secured) and would be completed within approximately 5 years from the date of transfer of the management of the project. The timing of the implementation of improved operation and maintenance would depend on the outcome of discussions with the U.S. Fish and Wildlife Service (FWS) and the availability of funds.

The short-term actions would also involve the initiation and subsequent completion of studies to obtain additional information regarding current environmental conditions. In addition, an Implementation Committee would be responsible for reviewing the results of the additional required environmental studies and other information as it became available, making recommendations to the CME for additional rehabilitation and betterment actions, and identifying funding sources for such actions. The Implementation Committee would also advise the CME on matters relating to Endangered Species Act (ESA) compliance.

Long-term, future rehabilitation and betterment actions could include rehabilitation or replacement of project facilities. These long-term actions would be undertaken approximately 5 to 20 years from the date of project transfer. Implementation of any future actions may require additional consultation under the ESA and/or environmental analysis and documentation under the National Environmental Policy Act (NEPA).

Organization of the Cooperative Management Entity

The CME would be managed by representatives of the CSKT and the FJBC. The CME members would be appointed by the CSKT Tribal Council and the FJBC, with the exact numbers from each to be determined. The CME would set and administer the overall policy for supervision and management of the FIIP.

The headquarters for the FIIP would remain at St. Ignatius, Montana, with four water master camps located at St. Ignatius, Charlo, Pablo, and Lonepine. The CME Project Manager would be fully authorized to administer, carry out, and enforce all responsibilities for managing the FIIP, either directly or through employees designated by him or her. The CME Project Manager's actions would be subject to the terms of the rules and regulations acceptable to the Secretary of the Interior and set forth in the project transfer contract and associated documents. Enforcement power would include the authority to refuse to deliver water. The CME Project Manager would also be responsible for the physical operation and maintenance of the FIIP, policy development, and overall water management.

The primary responsibility of the Secretary of the Interior, through the Bureau of Indian Affairs (BIA), would be to ensure that Tribal trust resources are protected, to provide technical assistance as requested for the Trust programs, and to carry out actions delegated by the BIA Northwest Regional Director to process final actions on all trust resource plans, activities, sales, permits, and leases. After transfer, as BIA retains ownership of the FIIP facilities, BIA will continue to periodically inspect facilities and monitor and report on annual operations and maintenance plans developed by the CME.

Title to all real property, such as irrigation distribution systems, irrigation structures, dams, and reservoirs would remain with DOI. The Secretary of the Interior would reserve the right to exercise all rights, powers, and privileges given to the Secretary by law and through contracts with the CME, CSKT, and FJBC. Federal oversight of day-to-day operations and maintenance on the project would be minimal. Federal oversight would include the Safety of Dams Program and Review of the Irrigation Operations and Maintenance Program on an annual basis.

Operation and Maintenance of the Project

Operations and maintenance of the FIIP would be improved over a period of years, to the extent funding is available, utilizing current state-of-the-art technology and procedures in the following areas:

Water Measurement

Expanded water measurement would be implemented as soon as possible. The FIIP would provide all ditch riders with portable water meters. Project staff would install new pre-cast concrete measured turnout structures at all farm turnout locations to facilitate flow measurement with these meters.

All pumps from the canals would be metered; flow estimates based on the number of sprinkler irrigation nozzles, pump size, and device type would no longer be acceptable.

Water measurement devices for the entire project would be evaluated for replacement with automated water measurement equipment. An automated, computer-based water measurement data collection system would be set up utilizing DOI's HYDROMET database.

Water Accounting/Runoff Forecasting

A computer-based daily water accounting program would be developed for the project. The water accounting would include tract number, date water ordered, type (on, off, or transfer), date of requested water delivery, lateral, turnout, flow amount, farm owner, telephone number, and name of project staff taking water order. The water accounting program would also provide water use summary data for each tract, assessed acres per tract, and tax assessment payment status.

Water Distribution System Management – Reservoirs, Pumping Plants, Diversion Structures, Canals, Drains, and Return Flows

The project would develop an updated, comprehensive, monthly time-step water operations model for all reservoirs, diversion structures, major canals, rivers, and tributaries. The operations model would represent a running 12-month period updated on the first of each month as water resource conditions change. The operations model would include reservoir inflow, river gains, reservoir release, minimum river release, spill/bypass flow, pumped water, evaporation, reservoir storage targets, reservoir end-of-month content and elevation, canal flows, diversion amounts, seepage losses, irrigation demand, irrigation delivery, percent of required irrigation delivery, and shortage. The operations model would be run for three distinct runoff forecast conditions: reasonable maximum inflow condition, most probable runoff condition, and reasonable minimum runoff condition.

The project would develop a snowmelt runoff model for the April-July inflow of the river basins into the project facilities. The snowmelt runoff model would be a multiple regression analysis of past hydrologic data for the project. At a minimum, the runoff model would utilize current snow water equivalent, precipitation to date, forecasted average precipitation, and October-December inflows as input data. The three ranges of forecasted April – July inflow would be the reasonable maximum inflow condition, the most probable runoff condition, and the reasonable minimum runoff condition. These runoff conditions would become input to the above-referenced water operations model. April – July forecasted inflows would be completed during the months of snowpack measurements, which are December through July. Average, maximum, and minimum August through March inflows for the monthly operating plan would be utilized for the three runoff conditions. The project would continue to utilize the current SNOTEL sites and evaluate the need for additional sites.

The project would write and publish an annual operating plan that summarizes the actual water operations for the past water year and contains the three forecasted annual operating plans for the current water year. This document would provide a project history of hydrologic conditions and water operations that can be utilized by project personnel to optimize future water operations. The annual operating plan would also contain a description of the project, project planning, irrigation requirements, minimum required reservoir and river releases, and reservoir and river operating criteria.

The project would develop a comprehensive daily water accounting spreadsheet representing all reservoirs, diversion structures, major canals, return flows, seepage and evaporation, and rivers. This spreadsheet would provide a record of the daily project water accounting and can be utilized to apportion water equitably based on water rights priorities during times of shortage.

Storage levels in project reservoirs would be recorded on a daily basis during the irrigation season. The daily record keeping would also include any project operations, maintenance, and comments for that day. Daily flow at major irrigation facilities would be recorded at each division. Hydrologic data for the project reservoirs would be sent to the U.S. Geological Survey (USGS) and Natural Resources Conservation Service (NRCS) at the end of each month for incorporation into a regional data base.

The project would implement a Water Management Plan, a Water Conservation Plan, and a Drought Management Plan.

As required by regulation (25 CFR 171.18), the service or farm ditches into which water was delivered from project canals or laterals would have to have ample capacity and be maintained by the water user in proper condition to receive water and convey it to the place of use with a minimum of loss. Water delivery would be refused to such ditches not satisfactorily maintained. Project irrigation water would be put to beneficial use. This policy would be maintained and enforced by the CME Board.

Water Delivery and Water Use Management

Inclusion of the water delivery and termination requested dates would be included in the Water Order Summary and serve as a valuable tool for monitoring project water delivery efficiency. The water ordering procedures would be computerized on laptop computers that ditch riders would carry in their trucks. The computerized water delivery logs would be linked to the water accounting program located on the headquarters-based server. All water delivery records, diversions, canal flows, spills, quota water usage, and assessed acreage for the project would be maintained on the laptop computers and server at the project headquarters.

Water users would be required to give 48 hours' notice to order water delivered to their farm turnout and 24 hours' notice for water delivery to be terminated. This policy would be strictly enforced, as many water users currently operate the farm turnouts themselves for water delivery. In addition, water users would no longer be allowed to check water and make their own deliveries.

Written procedures for water rationing during periods of shortage would be developed for all FIIP divisions.

The computer-based water accounting system to be developed for the project would include a tax assessment list to prevent delivery of water to delinquent accounts. Continuation of the policy of delivering Non-Quota water without charge to the water user would be evaluated.

Control of System Losses – Evaporation, Seepage, Waste, and Spills

The project would implement water resource facility betterment programs to significantly reduce irrigation system losses with an overall system efficiency target of 50 to 65 percent. Canal seepage areas would be prioritized and alternatives for seepage control would be developed and analyzed. Seepage reduction would be addressed as a FIIP maintenance requirement utilizing project staff.

The project would implement operational improvements for water measurement, water accounting, automation of gauging stations and gate controllers, control of irrigation structures, and public education on water resources and crop water requirements.

CSKT and the water users would continue to monitor the drainages for excessive spill water and notify project staff. Operational changes would be made by project staff and the spill water would be reduced, resulting in a decreased amount of drainage area erosion. The CSKT would continue their ongoing bank stabilization program to rehabilitate drainages that have experienced significant erosion damage. The bank stabilization program would be incorporated into the project maintenance program after all eroded areas are stabilized and operational changes are implemented.

Water Quality Management

Project staff would continue to evaluate areas of water quality concern for project improvements that can be implemented to improve water quality. Ditch riders would continue to monitor and adjust for diversions and releases to meet interim instream flows, where established; monitor water deliveries; and monitor and record operational tail water into draws and wasteways to limit excess flow and manage water quality.

Instream Flows and Fishery Management

The flow measurement network for the interim instream flow requirements would continue to be maintained by CSKT. The FIIP would keep a daily record of actual streamflow in comparison to the requirements during the irrigation season. Interim instream flows would continue to be utilized until final quantification of the instream flow requirements was completed and instream flow adjustments are required to be enforced. Instream flow violations would be reduced by irrigation water ordering procedures being adhered to by water users, gate automation, control of all irrigation facilities being limited to project staff only, and increased water operations efficiency.

Maintenance Programs

A year-by-year work plan would be developed for annual maintenance to be completed. A long-term deferred maintenance plan would also be developed. Work orders would continue to be available at all field offices to identify maintenance work needed on project facilities. Ditch riders would complete the work order, the water master would review the work order, and the Project Operations and Maintenance Foreman would schedule and oversee the maintenance work. An Operation and Maintenance Accomplishment Summary for the Past Year and Work Plan Schedule for the Current Year would be completed by the project. An Accomplishment Report would be completed annually and include the division number, project name, project type (rehabilitation or betterment), project size, staff hours, staff cost, equipment hours, equipment cost, material cost, total project cost, landowner cost, fish screen construction cost, and total cost. The FIIP would continue to utilize the Safety of Dams program that is currently implemented.

Water measurement systems. The project would replace all staff gauges that are in need of replacement and evaluate all water measurement devices for possible replacement. The project would evaluate project operations to determine where additional check structures, parshall flumes, cippolletti weirs, ramp flumes, fish protection devices and flow meters should be installed to optimize irrigation system management.

Reservoirs and associated facilities. A significant amount of Safety of Dams work has been accomplished to date through the CSKT Safety of Dams Program. No changes to the Safety of Dams Program would be undertaken.

Diversion structures. A detailed summary of rehabilitation or maintenance needs for the diversion structures would be provided through the on-going Engineering Evaluation.

Canals, Laterals, and Drains. A major ditch cleaning effort would be implemented. All project canals and laterals would be evaluated for seepage control and alternatives developed to reduce seepage loss. Tree, brush, and grass removal along canal and lateral embankments would be conducted as an annual maintenance project. Ditch rider roads would be properly graded and additional gravel placed when necessary. Drains would be properly maintained and cleaned as necessary.

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Irrigation System Distribution Structures. Maintenance projects and priorities for the following year would be determined in the fall, after water deliveries were completed. Major projects would be initiated 2 or more years in advance to allow time for planning, design, funding, and construction. The CME would allocate the “funds for special projects” as a line item in the budget. Work orders would continue to be utilized to track all maintenance work, and work order records would be tabulated on a computerized spreadsheet. Maintenance planning, priority setting, and monitoring would continue to be completed in the current manner.

Pumping Plants. Pumping plant maintenance would continue to be completed by project staff on an annual basis and modernization of the Crow Pump, Revais Pump, and Pray Pump would be evaluated.

Fish Passage Construction Sites. The project would continue to install fish screens and ladders as funding and work schedules allow and in coordination with the CSKT Fishery Program. Table A-1 shows the additional fish protection structures that would be constructed within 5 years of transfer (existing fish protection structures are discussed under “No Action Alternative” [see Table A-2]).

Table A-1. Proposed Fish Protection Structures

Site Name	Device Type	Screened Flow (cfs)	Siphon Capacity (cfs)
Stream/Canal Intersections			
Agency @ S	Static Screen/Siphon	20	50
Agency @ J	Flat Plate Screen/Ladder	20	N/A
Agency @ E	Static Screen/Siphon	20	30
Big Knife @ S	Static Screen/Siphon	15	50
Finley @ E	Flat Plate Screen/Ladder	10	N/A
Kicking Horse @ S. Crow	Flat Plate Electrical/Ladder	300	N/A
Pablo Feeder @ S. Crow	Static Screen/Siphon	50	400
Mud Creek @ Ronan B	Flat Plate Screen/Ladder	20	N/A
Middle Crow @ Pablo Feeder	Static Screen/Siphon	75	400
North Crow @ Pablo Feeder	Static Screen/Siphon	75	350
Mud Creek @ Pablo Feeder	Static Screen/Siphon	30	350
Mission Creek @ Pablo Feeder	Flat Plate Electrical/Ladder	325	N/A
Crow Pumps	Pump Screen/Ladder	25	N/A
Mill Creek @ Canal	Flat Plate Screen/No Ladder Needed	100	N/A
Hot Springs Creek @ Camas A	Flat Plate Screen/Ladder	20	N/A
Garden Creek @ C Canal	Static Screen/Siphon Only	0	40
Twin Feeder @ Hellroaring Creek	Flat Plate Screen/Ladder	30	N/A
Twin Feeder @ Centipede Creek	Static Screen/Siphon	30	15
Bisson @ S. Turtle Lake Feeder	Flat Plate Screen/Siphon	30	15
North Fork @ Jocko	Flat Plate Screen/Ladder	450	N/A
Placid Creek @ Jocko Lake Feeder	Flat Plate Screen/Ladder Exists	140	N/A
Reservoir Outlets			
McDonald	Static Screen	290	N/A
Mission	Static Screen	1,000	N/A
Tabor	Static Screen	400	N/A
Pablo	Static Screen	350	N/A
Kicking Horse	Static Screen	870	N/A
Nine Pipes	Static Screen	740	N/A
Flathead Pumps	Pump Screen	210	N/A

N/A = not applicable

The project would also continue to operate project reservoirs to achieve target levels to enhance spawning and rearing.

Weed, Tree, and Brush Control. Pesticide/herbicide management would be a significant portion of the property and facility management of the project. The Irrigation Pesticide Plan would be certified by the State with the appropriate permits or with the CSKT as appropriate. All of the plans, manuals, and handbooks that the project currently utilizes would continue to be utilized by project staff for the weed control program. The applicator license certification, operator license certification, and training would continue as administered by the Montana Department of Agriculture.

The FIIP Annual Operations Plan would include data on actual application sites, a summary of overall results, and a summary of problems that were encountered. A Pre-Season Plan would be developed that describes the location of planned treatment areas, type of pest management activities planned, approximate time frames for application of the pest management activities, quantification of treatment areas, anticipated difficulties, site characteristics, possible or expected local impacts to the treatment area, and identification of the areas that require site specific consultation.

The project would utilize a Pest Management Application Analysis Checklist that includes pest management application type, treatment ID number, proposed treatment date, beginning and ending location, loading mixing area location, and comments. The anticipated effects, area effected, duration of effects, and sensitive areas would be analyzed for land resources, water resources, air resources, and human, wildlife, fisheries, and vegetative living resources.

Pond weed and algae control in the project canals would be performed by certified project staff. The project's Aquatic Weed Control Management Plan would be the document utilized by the Montana Department of Agriculture to certify the application of aquatic weed chemicals. The project would also apply for necessary and appropriate water quality permits from the Montana Department of Environmental Quality and coordinate with the CSKT Water Quality personnel.

The project would implement an aggressive canal cleaning program using qualified operators to remove the trees and brush. The project would purchase additional equipment to adequately mow the grass and exterminate rodents, as necessary.

Accessibility and Rights-of-Way. The CME Board policy would contain a section addressing project access roads, rights-of-way, fences, gates, and cattle guards. The project would post right-of-way signs on canal, reservoir, dam, and diversion structure access roads. These signs would state that the road is for authorized use only by FIIP staff for the sole purpose of operating and maintaining project facilities. This provides notification to the public of the purpose of the road and warns against unauthorized use.

The project would construct and/or maintain roadways on all project canals and laterals to provide maintenance personnel and ditch riders with vehicular access to all points of delivery. The project would implement a program to remove all gates from canal roadways and replace with cattle guards. Cost sharing for the construction and installation of cattle guards would be provided on roadways with project right-of-way access. Project staff would construct the cattle guards and footings for installation on project rights-of-way. Locked gates would be allowed across the cattle guards during the non-irrigation season, but during the irrigation season the locks would be removed to allow unimpeded ditch rider access.

Studies

Several studies would be designed and conducted to obtain additional information regarding current environmental conditions. As specified in the BA, these studies would produce data and information necessary to implement improvements for fisheries protection, especially for federally protected species.

Within 6 months after transfer, an Implementation Committee would be created, with representatives from the BIA, FWS, CSKT, and FJBC serving as voting members, and other technical experts from other agencies participating as non-voting members when needed. The Implementation Committee would advise the CME on matters relating to ESA compliance.

Future rehabilitation and betterment actions could include rehabilitation or replacement of project facilities. These long-term actions would be undertaken approximately 5 to 20 years from the date of transfer of the management of the project. Implementation of any future actions may require additional consultation under the ESA and/or environmental analysis and documentation under NEPA.

A summary report would be published each year by the CME Project Manager that summarizes the Rehabilitation and Betterment Projects completed by the FIIP during that year. These rehabilitation and betterment projects would be funded by the FIIP operation and maintenance assessments, available federal or state funds, and funding from local governments and landowners. Local governments and local landowners would contribute to material costs for joint-venture projects. The Safety of Dams Program would also continue to be a major contributor to these projects.

NO ACTION ALTERNATIVE

Under the No Action Alternative, the Secretary of the Interior would transfer the management (operation and maintenance) of the FIIP in accordance with existing management guidelines. No improvements to the project would be undertaken. The project is currently managed in accordance with federal regulations (25 CFR Part 171).

Organization of the Project

The FIIP is currently under the responsibility of the Department of the Interior, Bureau of Indian Affairs, Flathead Agency. Operation and maintenance of the irrigation facilities is carried out by the Flathead Agency's Irrigation Division under federal regulations (25 CFR Part 171). Delivery of available irrigation water is made in a fair and equitable manner to all acres served in accordance with the regulations; no type of delivery priority is recognized among irrigators or assessable land.

The BIA, BIA Northwest Regional Office, CSKT, and the Bureau of Reclamation share a variety of roles associated with operating and maintaining the project.

The current line of authority for the project is as follows:

- Director, Bureau of Indian Affairs
- Director, BIA Northwest Region
- Superintendent, Flathead Agency
- Irrigation Systems Manager, FIIP

The Agency Superintendent has delegated the operation and maintenance responsibility of the project to the Irrigation Systems Manager.

Operation and Maintenance of the Project

The operating guidelines for the irrigation season are based on the following conditions:

- Water availability forecasts based on snow pack surveys
- Weather conditions
- Preliminary quota set (calculation recommendations made by the project hydrologist to the Irrigation System Manager)
- Begin delivery of water in early to mid April (in some areas, depending on runoff)
- Coordinate Flathead River pumping plant with Mission Valley Power

The following is a description of the actions taken on an annual basis to manage the project:

Pre-Season Planning

The Irrigation System Manager is responsible to performing the following activities in the months (September through April) for the next irrigation season:

- Developing staffing requirements
- Preparing equipment and supply requisitions, as needed
- Determining training needs for staff
- Reviewing previous year's maintenance logs
- Scheduling maintenance planning meetings
- Conducting regular meetings with staff
- Conducting meetings with water users

Pre-season Maintenance

The Irrigation System Manager reviews maintenance needed (September through April) on equipment and facilities so that the irrigation system will be ready and water deliveries can be met according to schedule.

Water Orders

The Irrigation System Manager begins receiving water orders from water user customers in April. Water orders are sent in on the card entitled "Water Orders." Water orders are tracked on the "Green Sheet" form. This data is entered into the water accounts program.

Processing Delivery Requests

The goal of the project is to deliver the water to the headgate no later than 48 hours after receipt of the water request. Circumstances beyond the control of the project, such as water shortages, may cause a delay in water delivery beyond 48 hours.

Special Requests

Excess irrigation water may be available to customers and other water users at the end of the irrigation season, or before, depending on water availability (for example, stockwater). When water flows exceed the project's ability to transport and store irrigation water, it can be made available as "non-quota" water.

Fisheries Protection

Fisheries protection facilities are located throughout the project. These are a combination of static and mechanical fish screens and fish ladders. Initial startup, maintenance and repair of these facilities are the responsibility of the Biological Technician(s). Routine maintenance, such as removal of debris from structures, is the responsibility of the Irrigation System Operator on the system where the facility is located.

Regular monitoring and maintenance of fish screens and fish passage structures is necessary to ensure that interim instream flows are met, that the screens are kept clear, and that fish passage is maintained. Table A-2 is a list of structures that are operational as of the 2005 irrigation season. The fish ladder at the Middle Fork of the Jocko River is now maintained as a fish barrier at the request of the CSKT.

Table A-2. Existing Fish Protection Structures

Site Name	Device Type	Capacity (cfs)	Date Constructed
Crow @ MA	Static Screen	120	1987/88
Lower J	Flat Plate Screen	33	1988/89
Lower S	Flat Plate Screen	15	1989
Upper S	Flat Plate Screen	50	1989/90
Mission C	Flat Plate Screen	88	1990/91
Mission B	Flat Plate Screen	45	1991/92
Mission 6-C	Flat Plate Screen	20	1992
Mission H	Flat Plate Screen	25	1992/93
Jocko K	Static Screen	270	1993/94
Post F	Flat Plate Screen	50	1997/98
Middle Fork	Vertical Slot Fishway		1986
Crow	Step and Pool Fishway	22	1987/88
Post @ F	Denil Fishway	7	1989
Mission @ C	Denil Fishway	15	1990
Mission @ B	Denil Fishway	15	1994
Jocko @ K	Denil Fishway	36	1995
Post F at Post	Flat Plate Electrical	50	2000
Kicking Horse Feeder @ Post	Flat Plate Electrical	350	2004
East Finley @ N	Flat Plate Screen	10	2005
Middle Fork @ Jocko	Flat Plate Screen	140	2005
Pablo Feeder Below Post	Flat Plate Screen	250	2006
Pablo Feeder Canal @ Post	Flume	250	2005

As funds became available from operation and maintenance and other sources, planning, design and construction of fish screen and fish passage structures at additional sites would continue to be undertaken. Funding from other sources may be utilized for materials, supplies, necessary contract services, and portions of the labor. The Division of Irrigation would provide equipment required for construction and portions of the labor. All ground-disturbing activity would be conducted in full compliance with applicable NEPA, ESA, and Tribal regulatory controls.

To meet treaty fisheries obligations, minimum instream flows and minimum reservoir pool levels were implemented in 1986 for the protection of the fishery in Reservation waters impacted by operation of the irrigation system. Minimum pool levels have been established to provide seasonal protection and enhancement of the native Bull trout population in certain reservoirs. Current flows, monitoring points,

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and minimum pool levels are used to ensure that instream flows are not adversely impacted by diversions into the irrigation system. Where necessary, project canals may be used to enhance fisheries. These situations are evaluated on a case-by-case basis by the applicable Tribal and project program personnel. In some cases, minimum instream flows may be affected. The instream flows are interim in nature, pending the outcome of various legal actions and studies undertaken by various parties and are subject to change.

Interim instream flows on waters impacted by the project were established using a combination of the Wetted Perimeter and Tennant methodologies. Flows in Mud Creek, Big Knife Creek, Hot Springs Creek, Little Bitterroot River, and the Jocko River use the Tennant methodology. The Jocko River presents a special case; because of safety concerns associated with the Black Lake Reservoir, Jocko River flows were held to the Tennant level at the “K” Canal diversion. Emergency repairs to the reservoir were completed in 1992 and Black Lake Dam and Reservoir operations were scheduled to be released to the project after filling during the 1994 irrigation season. However, deficiencies at the outlet involving “sand boils” were noted in the 1994 and 1995 seasons. The Safety of Dams program will not release Black Lake Dam to store water above 2,840 acre-feet and will not release the combined storage of Black Lake Dam and Lower Jocko Dam to above 9,180 acre-feet. Once funding became available, these deficiencies would be corrected and the filling restrictions would be reevaluated. The Tennant Level method flow referenced above would remain in effect until after the dam was released to the project without restrictions.

Table A-3 is a list of interim instream flow measurement locations and their corresponding flows.

Table A-3. Instream Flow Measurement Locations

Streams	Minimum Flow (cfs)	Control Method	Monitoring Point	Remarks
Mud Creek				
a. Below Ronan “B”	0.8	Orifice	Gage	
b. Below Pablo Feeder	0.8	Gate Orifice	Gate opening	
Big Knife Creek				
a. Below Jocko “S”	2.00	Fixed orifice	Gage	Controlled head
Hot Springs Creek				
a. At MT Hwy 28	1.0	Upstream gates	Gage	Controlled head
b. Below Camal “C”	1.0	Fixed orifice	Gage	
Little Bitterroot River				
a. Below Camas “A”	6.0	Fixed orifice	Gage	
NOTE: Site in progress of being re-evaluated by CSKT Natural Resources Department and FIIP. Flow is made up from flow at two locations: Little Bitterroot at the canyon mouth and Mill Creek above Camas “A” canal.				
Jocko River				
a. Below Jocko “K”	36.0	Fixed orifice	Gage	
b. Below Lower “S”	43.0	Diversion gates	Gage	
c. Below Lower “J”	76.0	Diversion gates	Gage	
d. At Dixon Bridge	96.0	Diversion gates	Gage	
North Fork Jocko River				
a. Below Tabor Feeder	18.0	Diversion gate	Gage	Wetted P
Middle Fork Jocko River				
a. Below Tabor Feeder	20.0	Fixed orifice	Gage	Wetted P
Mission Creek				
a. Below Pablo Feeder	18.0	Gate	Weir	Wetted P
NOTE: Action needed for Secretarial diverters.				
b. Below Mission “C”	20.0	Diversion gate & fish ladder	Gage	Wetted P
c. Below Mission “6-C”	22.0		Gage	Wetted P

Table A-3. Instream Flow Measurement Locations (continued)

Streams	Minimum Flow (cfs)	Control Method	Monitoring Point	Remarks
Post Creek				
a. Above Pablo Feeder	20.0	McDonald Dam gate	Gage	
b. Below Kicking Horse Feeder	19.0 22.0	Fixed orifice Fixed orifice & fish ladder	Gage Gage Gage	Wetted P Wetted P
c. Below Post "F"				
South Crow Creek				
a. Below Pablo Feeder	24.0	Fixed orifice	Gage	Wetted P
NOTE: Flow is 24 cfs or flow in S. Crow above Pablo Feeder, whichever is less.				
b. Below South Crow Feeder	9.5	Fixed orifice	Gage	Wetted P
North Crow Creek				
a. Below Pablo Feeder	10.0	Gate orifice	Gage	Wetted P
NOTE: Action needed for Secretarial diverters.				
Middle Crow Creek				
a. Below Pablo Feeder	1.0	Gate	Weir	
NOTE: Not formal in-stream flow. Traditional release to maintain creek.				
Crow Creek				
a. Below Crow Pump	17.0	Pump control	Weir & gage	
b. Below Moiese "A"	21.0	Fixed orifice	Gage	Wetted P
Finley Creek				
a. Below Jock "E"	7.5	Fixed orifice	Gage	
b. Above confluence with Jocko River	8.5	Diversion gates	Gage	
NOTE: Action needed for Secretarial diverters.				
Agency Creek				
a. Below Jocko Upper "J"	8.0	Fixed orifice	Gage	Wetted P
East Finley Creek				
a. Below Jocko "N"	8.0	Fixed orifice	Gage	Wetted P

For fish rescue, operational procedures require that the canals not protected by screening facilities be progressively shut down over a period of up to 5 days. A typical shutdown for a larger canal would encompass 5 days with a flow reduction of 20 percent each day and fish rescue on the fifth or later day (20 percent reduction, 40 percent reduction, 60 percent reduction, 80 percent reduction, and shutoff). For smaller canals or flows, (i.e. 10 to 15 cubic feet per second [cfs], or less), flows would be reduced to about 4 to 5 cfs for 2 days before shutdown and fish rescue. This operational procedure may encourage limited out-migration and could reduce the number of fish in a canal prior to rescue. In conjunction with the reduction of water into the canal, it is necessary to reduce the hydraulic head on the gate to reduce the water velocity through the gate opening. This helps to promote fish passage back into the stream.

Rescue of the fish by physical removal is utilized during and after operational procedures as described above. These operations would be carried out in close cooperation with the CSKT. The Tribes would be given verbal notification 1 week (7 calendar days) in advance of any planned facility dewatering and at the earliest possible moment in an emergency dewatering.

Stock Water Policy

As provided for in federal regulations, “stock water will not be carried in the project’s or unit’s irrigation system when, in the judgment of the Officer-in-Charge, such practice will:

1. Interfere with the operation and maintenance of the system;
2. Be detrimental to or endanger the canal, lateral system and/or related structures;
3. Adversely affect the stored water supply for irrigation.” 25 CFR 171.3.

Interim instream flows for fisheries have the first priority over all other water uses on the Flathead Indian Reservation.

The following procedures would apply in administering the stock water policy:

- Normally, stock water deliveries would be made only in the Jocko Division and from the Pablo Feeder above Ashley Creek in the Mission Division.
- Irrigation system water would not be delivered for household use, as it is considered unsafe for such use.
- Stock water would be delivered, provided it is available, from the end of the irrigation season until freeze-up prevents such delivery.
- Canals that freeze up would be shut off immediately when loss of control occurs.
- No provisions for stock water deliveries would be made on canals that are receiving maintenance.
- Stock water deliveries in the Camas Division would adversely affect the stored water supply for irrigation and therefore would not be permitted.
- After winter freeze-up occurred, approximately December 1, all water that naturally enters the irrigation distribution system would be passed through the system and released in the nearest natural drainage channel.
- Waste water from Secretarial water users would not be allowed to enter irrigation distribution facilities during the winter season.
- Stock water released from an irrigation reservoir and transferred to another drainage area within the project would primarily be used for stock water. A portion of the transferred water may be used to supplement the interim instream flow in the receiving drainage.
- During the irrigation season, April 15 to September 15, if stock water is demanded on a distribution system where irrigation water is not being delivered to other downstream users, the total amount of water, including system losses, would be charged against the ordering water user’s basic quota.
- Stock water that is delivered prior to or after the designated irrigation season, March 1 through April 15 and September 15 through freeze-up, would also be subject to being charged against the water user’s quota during the years in which no spill or non-quota water is available.

- Water masters and Irrigation System Operators would keep records of all stock water deliveries.
- Landowners would be responsible for all costs incurred by the project for repairing any structures, canals, or lateral banks that are damaged due to cattle or livestock tromping and winter stock water deliveries. Landowners would be billed for all costs incurred in completing these repairs.

Maintenance Management

A continuous program of preventative maintenance, combined with equipment overhaul when required, best suits the need of the FIIP. This would include continually performing routine maintenance and adjustment work to the critical items of a structure or facility in a scheduled and organized manner so as to make special inspection and heavy repairs less necessary. Maintenance work would be scheduled so as to make the best use of available personnel to coincide with favorable weather when possible and to coincide with periods when outages of the equipment can best be tolerated.

Data Reporting

The Irrigation System Operators would be required to maintain detailed daily records of water deliveries in order to account as accurately as possible for the amount of water delivered in any given time period. A weekly summary report of items accomplished during the previous week would be completed and submitted to the Agency Superintendent and the Irrigation System Manager.

On a monthly basis, the project hydrologist would gather reservoir and weather data and submit a summary report to the Irrigation System Manager, U.S. Geological Survey, Natural Resources Conservation Service, and National Weather Service. A spreadsheet summary of water conditions on the project would be prepared and, upon approval by the Superintendent, would be released to the public. Monthly budget reports would be prepared by the project's Finance Technician for submission to the FJBC.

The following annual reports would be prepared:

- Crop reports
- Operation and maintenance report
- Maintenance report (a list of all maintenance accomplished for the current fiscal year; the report includes a (1) description of maintenance activity, and (2) cost estimate for each item, broken down by personnel, salary costs, equipment, and supplies.

The annual operation and maintenance budget plan for the upcoming fiscal year would be due to the Regional Irrigation Engineer for review before July 15 of each year.