CITY OF BONNERS FERRY

7232 Main Street
P.O. Box 149
Bonners Ferry, Idaho 83805
Phone: 208-267-3105 Fax: 208-267-4375

April 29, 2024

VIA ELECTRONIC FILING

Debbie-Anne A. Reese
Acting Secretary
Federal Energy Regulatory Commission
888 First Street NE
Washington D.C., 20426

Subject: Moyie River Hydroelectric Project (FERC No. 1991)
Notice of Intent to File License Application and Pre-Application Document
Request to Use Traditional Licensing Process

Dear Acting Secretary Reese:

The City of Bonners Ferry, Idaho (City) is submitting to the Federal Energy Regulatory Commission (Commission) its Notice of Intent (NOI) to File a License Application, Pre-Application Document (PAD), and a request to use the Traditional Licensing Process (TLP) for the relicensing of the Moyie River Hydroelectric Project (Project; FERC No. 1991).

The Project is operated by the City and is located on the Moyie River in Boundary County, Idaho. The Project was licensed by the Commission on June 9, 1999 (with an effective date of June 1, 1999), and the license expires on May 31, 2029. The City is requesting the use the TLP to provide the framework for its consultation with resource agencies, Indian Tribes, and other interested parties for the Project relicensing.

In accordance with the Commission's regulations, the City is sending notification of these filings via email notification to relevant resource agencies, Indian Tribes, local governments, non-governmental organizations, and other interested parties (as identified on the attached Distribution List) concurrent with this filing. Other parties interested in the relicensing process may obtain a copy of these filings electronically through FERC's e-library at https://www.ferc.gov/ferc-online/elibrary under docket number P-1991. Hard copies will be made available to review at the Bonners Ferry City Hall during regular business hours located at 7232 Main Street #149, Bonners Ferry, Idaho 80805.

Request for Designation as Non-Federal Representative

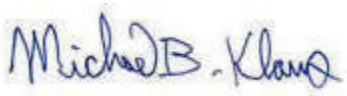
In conjunction with this filing, and as provided in 18 CFR § 5.5(e), the City is requesting that the Commission designate it as the Commission's non-federal representative for carrying out informal consultation, pursuant to Section 106 of the National Historic Preservation Act and the implementing regulations at 36 CFR Part 800.

In addition, the City is requesting that the Commission designate it as the Commission's non-federal representative for the purpose of consultation with the U.S. Fish and Wildlife Service, pursuant to Section 7 of the Endangered Species Action (ESA) and the joint agency ESA implementing regulations at 50 CFR Part 402.

Conclusion

The City looks forward to working with the Commission and other interested parties on the relicensing of the Project. If there are any questions regarding the NOI or PAD, please contact Michael B. Klaus, City of Bonners Ferry Engineer/Administrator and Relicensing Project Manager, by phone at 208-267-0357 or by email at mklaus@bonnersferry.id.gov.

Sincerely,



Michael B. Klaus, P.E.
City Engineer/Administrator

Enclosures: Distribution List
NOI
Request to Use TLP
PAD

Moyie River Hydroelectric Project
Distribution List

Federal Agencies

Advisory Council on Historic Preservation
Reid Nelson
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401 F Street NW, Suite 308
Washington, D.C. 20001
rnelson@achp.gov

Federal Energy Regulatory Commission
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Washington, DC 20426
Ingrid.brofman@ferc.gov

National Marine Fisheries Service
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West Coast Regional Office
justin.yeager@noaa.gov

National Park Service
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Hydropower Assistance Program
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Seattle, WA 98104
Susan_rosebrough@nps.gov

U.S. Army Corps of Engineers
Seattle District
4735 E. Marginal Way S. Bldg. 1202
Seattle, WA 98134-2388
paoteam@nws02.usace.army.mil

U.S. Bureau of Indian Affairs
Bryan Mercier, Regional Director
Northwest Region
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Portland, OR 97232
bryan.mercier@bia.gov

U.S. Bureau of Land Management
1387 S. Vinnell Way
Boise, ID 83709
blm_id_stateoffice@blm.gov

U.S. Environmental Protection Agency
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epa-seattle@epa.gov

U.S. Fish and Wildlife Service
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1387 S. Vinnell Way, Suite 368
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U.S. Fish and Wildlife Service
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kimberly_frymire@fws.gov

U.S. Forest Service
Kevin Knauth
Bonners Ferry District Ranger
Idaho Panhandle National Forests
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U.S. Forest Service
Brandon Glaza, Hydrologist
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Moyie River Hydroelectric Project
Distribution List

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Aquatics Program Manager
paul.hooper@usda.gov

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Idaho Water Science Center
230 Collins Rd. Boise ID, 83702
dc_id@usgs.gov

Indian Tribes

Coeur d'Alene Tribe
Jennifer Fletcher, Public Relations Director
850 A Street
Plummer, ID 83851
jfletcher@cdatribe-nsn.gov

Confederated Salish and Kootenai Tribes of the Flathead Reservation
42487 Complex Blvd.
Pablo, MT 59855
info@cskt.org

Confederated Tribes of the Colville Reservation
Jarred-Michael Erickson, Chairman
P.O. Box 150
Nespelem, WA 99155
jarred.erickson.cbc@colvilletribes.com

Kalispel Tribe of Indians
P.O. Box 39
Usk, WA 99180
info@kalispeltribe.com

Kootenai Tribe of Idaho
100 Circle Drive
Bonners Ferry, ID 83805
info@kootenai.org

Kootenai Tribe of Idaho
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Kootenai Tribe of Idaho
William Barquin
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Kootenai Tribe of Idaho
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Bonners Ferry, ID 83805
Theresa@kootenai.org

Kootenai Tribe of Idaho
Shawn Young, Fish and Wildlife Director
100 Circle Drive
Bonners Ferry, ID 83805
young@kootenai.org

Nez Perce Tribe
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P.O. Box 305
Lapwai, ID 83540
2moon@nezperce.org

State Agencies and Offices

Idaho Department of Environmental Quality
Robert Steed, Surface Water Manager
Coeur d'Alene Regional Office
208-666-4625
Robert.Steed@deq.idaho.gov

Idaho Department of Environmental Quality
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Surface Water Compliance Officer
Coeur d'Alene Regional Office
2110 Ironwood Parkway
Chantilly.Higbee@deq.idaho.gov

Idaho Department of Fish and Game
Merritt Horsmon, Technical Services
Panhandle Regional Office
2885 W. Kathleen Avenue
Coeur d'Alene, ID 83815
Merritt.Horsmon@idfg.idaho.gov

Moyie River Hydroelectric Project
Distribution List

Idaho Department of Lands
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Idaho Department of Parks and Recreation
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inquiry@idpr.idaho.gov

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Idaho Office of Species Conservation
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Idaho State Historic Preservation Office
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shpo@ishs.idaho.gov

Idaho State Historic Preservation Office
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chris.shaver@ishs.idaho.gov

Office of Congressman Russ Fulcher
Caleb Davis
1250 West Ironwood Drive, Suite 200
Coeur d'Alene, ID 83814
caleb.davis@mail.house.gov

Office of Senator Jim Risch
Marc Kilmer, Regional Director
610 Hubbard, Suite 213
Coeur d'Alene, Idaho 83814
marc_kilmer@risch.senate.gov

Moyie River Hydroelectric Project
Distribution List

Office of Senator Mike Crapo
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Coeur d'Alene, Idaho 83814
juli_smith@crapo.senate.gov

Local Agencies

Boundary County
Commissioners
P.O. Box 419
Bonners Ferry, Idaho 83805
commissioners@boundarycountyid.org

City of Bonners Ferry, Idaho
Mike Klaus, City Administrator
7232 Main St.
Bonners Ferry, ID 83805
mklaus@bonnersferry.id.gov

City of Moyie Springs, Idaho
3331 Roosevelt Rd.
Moyie Springs, ID 83845
cityofmoyiesprings@yahoo.com

Non-Governmental Organizations

American Whitewater
Thomas O'Keefe
Pacific Northwest Stewardship
Director
3537 NE 87th Street
Seattle, WA 98115
okeefe@americanwhitewater.org

Idaho Consumers-Owned Utilities
Association
Will Hart, Executive Director
407 West Jefferson St.
Boise, ID 83702
whart@icua.coop

Idaho Conversation League
Brad Smith, Conservation Director
P.O. Box 2308
Sandpoint, ID 83864
bsmith@idahoconservation.org

Idaho River United
Nic Nelson
Executive Director
Idaho Rivers United
3380 West Americana Terrace, Suite 410
Boise, ID 83706
nic@idahorivers.org

Trout Unlimited
Kira Finkler, Idaho State Director
Kira.finkler@tu.org

MOYIE RIVER HYDROELECTRIC PROJECT
FERC PROJECT NO. 1991
NOTICE OF INTENT TO FILE APPLICATION FOR NEW LICENSE

The City of Bonners Ferry (City or Licensee), the Licensee of the existing Moyie River Hydroelectric Project (FERC Project No. 1991), hereby notifies the Federal Energy Regulatory Commission (FERC) of its intent to file an Application for New License for the Moyie River Hydroelectric Project.

Pursuant to 18 C.F.R. § 5.5(b) of the Commission's regulations, the City provides the following information:

(1) Licensee's Name, Address, and Phone Number:

City of Bonners Ferry, Idaho
7232 Main Street #149
Bonners Ferry, ID 83805
Phone: (208) 267-0357

(2) FERC Project Number:

FERC Project No. 1991

(3) License Expiration Date:

May 31, 2029

(4) Statement of Intent to File Application for New License:

The City hereby unequivocally declares its intent to file an Application for New License for the Moyie River Hydroelectric Project on or before May 31, 2027. Concurrent with the filing of this Notice of Intent (NOI), the City has filed a request to utilize the Traditional Licensing Process (TLP) in support of this relicensing.

(5) Principal Works of the Moyie River Hydroelectric Project:

The Project works consists of: a 92-foot-high concrete gravity dam, impounding a 540-acre-foot reservoir approximately 1.1 miles long; the power tunnel intake leads through a steel-lined tunnel section to a partially-lined rock tunnel section, to a rock trap then to a concrete-lined section downstream of the rock trap to a surge chamber, and finally to a steel penstock which bifurcates into 48- and 26-inch penstocks feeding Powerhouse No. 1 Turbine-Generator Unit (Unit) 2 (rated 450 kilowatt [kW]) and Unit 4 (rated 1,500 kW), respectively, and a 60-inch penstock feeds Powerhouse No. 2 Units 1 and 3 (both units rated at 1,000 kW), with a total installed capacity of 3,950 kW; a 1.3-mile-long, 13.8 kilovolt (kV) transmission line; and appurtenant facilities.

(6) Project Location:

The Moyie River Hydroelectric Project is located on the Moyie River near the town of Moyie Springs, in Boundary County, Idaho.

(7) Plant Authorized Installed Capacity:

The Project's authorized installed capacity is 3.95 megawatts (MW).

(8)(i) The names and mailing addresses of every county in which any part of the project is located and in which any federal facility that is used by the project is located are:

Boundary County
Board of County Commissioners
P.O. Box 419
Bonners Ferry, ID 83805

(8)(ii)(A) The names and mailing addresses of every city, town, or similar political subdivision in which any part of the project is or is to be located and any federal facility that is or is to be used by the project is located:

There are no federal facilities used or proposed to be used by the Project. The Project occupies 1.55 acres of land managed by the U.S. Forest Service.

U.S. Forest Service
Idaho Panhandle National Forests
3232 West Nursery Road
Coeur d'Alene, ID 83815

(8)(ii)(B) The names and mailing addresses of every city, town, or similar political subdivision that has a population of 5,000 or more people and is located within 15 miles of the Project dam:

There are no cities, towns, or similar political subdivisions that have a population of 5,000 or more people located within 15 miles of the Project dam.

(8)(iii) The names and mailing addresses of every irrigation district, drainage district, or similar special purpose political subdivision (A) in which any part of the project is located, and any federal facility that is or is proposed to be used by the project is located, or (B) that owns, operates, maintains, or uses any project facility or any federal facility that is or is proposed to be used by the project:

(A) There are no irrigation districts, drainage districts, or similar special purpose political subdivisions in which any part of the Project is located.

(B) There are no irrigation district, drainage district, or similar special purpose political subdivision that owns, operates, maintains, or uses any Project facility.

There are no federal facilities used or proposed to be used by the Project.

8(iv) The names and mailing addresses of every other political subdivision in the general area of the project that there is reason to believe would likely be interested in or affected by the notification:

There are no political subdivisions in the general area of the Project.

8(v) The names and mailing addresses of affected Indian tribes:

Coeur d'Alene Tribe
850 A Street
Plummer, ID 83851

Confederated Salish and Kootenai Tribes of the Flathead Reservation
42487 Complex Blvd.
Pablo, MT 59855

Confederated Tribes of the Colville Reservation
P.O. Box 150
Nespelem, WA 99155

Kalispel Tribe of Indians
P.O. Box 39
Usk, WA 99180

Kootenai Tribe of Idaho
100 Circle Drive
Bonners Ferry, ID 83805

Nez Perce Tribe
P.O. Box 305
Lapwai, ID 83540

City of Bonners Ferry's Rationale for Relicensing the Moyie River Hydroelectric Project (FERC No. 1991) using the Federal Energy Regulatory Commission's Traditional Licensing Process

In support of its request to use the Traditional Licensing Process (TLP) for the relicensing of the Moyie River Hydroelectric Project (Project), the City of Bonners Ferry (City) provides the following information on the Federal Energy Regulatory Commission's (FERC) six criteria for using the TLP as defined by 18 CFR §5.3.

(A) Likelihood of Timely License Issuance

- The City anticipates that FERC will be able to complete the timely issuance of a new license for the Project through use of the TLP.
- The City has existing working relationships and familiarity with interested parties which should allow for the timely discussion and resolution of resource issues associated with the license application. This coordination will allow for issuance of the Project license by FERC on or before the expiration date of the existing license.

(B) Complexity of the Resource Issues

- The existing facility is a 3.95 megawatt conventional, run-of-river hydropower project with a a surface area of 45 acres and gross storage capacity of approximately 540 acre-feet at the impoundment's normal maximum pool elevation of 2,023 feet (NGVD 29).
- At this time, the City is not proposing any modifications to Project operations that would modify the Project's existing run-of-river operations.
- The City completed a number of mitigation measures as part of the current license including sediment removal, visual resources mitigation (including aesthetic flow releases), wildlife resource mitigation, development of a cultural resources management plan, and maintenance of recreation facilities for the public.
- The City has met with state and federal resource agencies to outline potential resource issues during development of the Pre-Application Document (PAD) and has identified limited information gaps and study needs related to water quality and recreation.

(C) Level of Anticipated Controversy

- The City has conducted informal consultation with the U.S. Forest Service, Kootenai Tribe of Idaho, Idaho Conservation League, Idaho Department of Environmental Quality, Idaho Fish and Game, Idaho Office of Energy and Mineral Resources, and other parties to discuss information needs and potential resource issues ahead of the formal relicensing process as well as the City's intention to utilize the TLP. The City received no responses in opposition to the TLP as part of those consultation meetings.
- The City anticipates very limited or no controversy associated with the relicensing of this small, run-of-river Project.

(D) Relative Cost of the Traditional Process Compared to the Integrated Process

- For the reasons noted above, the City believes that the TLP will prove to be a more efficient process for this run-of-river Project.
- Use of the Integrated Licensing Process (ILP) for this Project would be expected to result in significantly greater (and unnecessary) expenditures by all the parties to support the more formal and complex ILP study scoping process and to develop the additional documentation associated with the ILP.
- The flexible schedule associated with the TLP will better allow for the resource agencies and other parties to participate in the relicensing process in coordination with the City and accounting for the schedule of routine activities.

(E) Amount of Available Information and Potential for Significant Disputes over Studies

- As presented in the PAD and based on consultation with Project stakeholders to date, there is a sufficient amount of available information regarding resources associated with the Project. Limited information that was not located for the PAD or may not be available is clearly identified in the PAD.

(F) Other Factors Believed by the Applicant to be Pertinent

- The City believes that for the relicensing of this small, run-of-river Project the TLP will provide the most efficient, effective, and least-burdensome process for relicensing the Project for all parties involved. The City has existing working relationships with all parties to allow for effective consultation using the TLP.
- The City believes that this justification provides good cause for FERC to grant use of the TLP and appreciates FERC's consideration of this request.

Pre-Application Document
Volume 1 of 1

Moyie River Hydroelectric Project
(FERC No. 1991)

April 29, 2024

Prepared by:

Prepared for:
City of Bonners Ferry
Bonners Ferry, Idaho

Contents

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List of Acronyms and Abbreviations

°C	degrees Celsius
°F	degrees Fahrenheit
ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act
APE	area of potential effects
AU	Assessment Unit
AWA	American Whitewater Affiliation
B.P.	before present
BPA	Bonneville Power Administration
CEII	Critical Energy Infrastructure Information
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	cubic feet per second
City	City of Bonners Ferry, Idaho
COLD	cold water aquatic life
Commission	Federal Energy Regulatory Commission
CUI	Controlled Unclassified Information
CWA	Clean Water Act
DLA	Draft License Application
DPS	distinct population segment
DWS	domestic water supply
EJ	environmental justice
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
FLA	Final License Application
FMO	foraging, migration, and overwintering
FPA	Federal Power Act
FR	Federal Register
GLO	General Land Office
GSU	generator step-up unit
HPMP	Historic Properties Management Plan
HUC	hydrologic unit code
ICRIS	Idaho Cultural Resources Information System

IDAPA.....Idaho Administrative Procedures Act
IDEQ.....Idaho Department of Environmental Quality
IDFG.....Idaho Department of Fish and Game
IDPR.....Idaho Department of Parks and Recreation
IDWR.....Idaho Department of Water Resources
IPaC.....Information for Planning and Consultation
ISDA.....Idaho State Department of Agriculture
ITA.....Indian Trust Assets
kV.....kilovolt
kW.....kilowatt
mg/L.....milligrams per liter
mL.....milliliter
mm.....millimeter
MPN.....most probable number
MW.....megawatts
MWh.....megawatt hours
NEPA.....National Environmental Policy Act
NGOs.....non-governmental organizations
NGVD 29.....National Geodetic Vertical Datum of 1929
NHPA.....National Historic Preservation Act
NMFS.....National Marine Fisheries Service
NOI.....Notice of Intent
NRCS.....Natural Resources Conservation Service
NRHP.....National Register of Historic Places
NTU.....nephelometric turbidity units
NWAA.....Northwest Archaeological Associates, Inc.
NWI.....National Wetlands Inventory
O&M.....operations and maintenance
OEMR.....(Idaho) Office of Energy and Mineral Resources
PA.....programmatic agreement
PAD.....Pre-Application Document
PCR.....primary contact recreation
PNT.....Pacific Northwest Scenic Trail
Project.....Moyie River Hydroelectric Project
PURPA.....Public Utility Regulatory Policies Act of 1978

RM.....river mile
ROR.....run-of-river
RTE .....rare, threatened, or endangered
SCADA .....Supervisory Control and Data Acquisition
SCORP.....Statewide Comprehensive Outdoor Recreation Plan
SHPO .....State Historic Preservation Officer
SR.....spawning and rearing
SS.....salmonid spawning
STV.....statistical value threshold
SWAP .....State Wildlife Action Plan
TCP .....traditional cultural properties
TLP.....Traditional Licensing Process
TMDL.....total maximum daily load
U.S.C. .....United States Code
USACE .....U.S. Army Corps of Engineers
USCB.....U.S. Census Bureau
USDA.....U.S. Department of Agriculture
USEPA .....U.S. Environmental Protection Agency
USFS .....U.S. Forest Service
USFWS.....U.S. Fish and Wildlife Service
USGS .....U.S. Geological Survey
WDFW .....Washington Department of Fish and Wildlife
WQC.....Water Quality Certificate

1.0 Introduction and Background

The City of Bonners Ferry, Idaho (Bonners Ferry or City) is the licensee, owner, and operator of the Moyie River Hydroelectric Project (FERC No. 1991) (Project or Moyie River Project). The Project is located on the Moyie River in Boundary County, Idaho. The Project was licensed by the Federal Energy Regulatory Commission (FERC or Commission) on June 9, 1999 (with an effective date of June 1, 1999), and the license expires on May 31, 2029.

The Project is currently licensed by FERC under the authority granted by Congress through the Federal Power Act (FPA), 16 United States Code (U.S.C.) § 791(a), et seq., to license and oversee the construction and operation of non-federal hydroelectric projects on jurisdictional waters and/or federal lands. In accordance with FERC's regulations at 18 Code of Federal Regulations (CFR) § 16.9(b), the City must file an application for a new license for the Project on or before May 31, 2027.

As described in this Pre-Application Document (PAD) and the associated Notice of Intent (NOI), the City is pursuing a new FERC license for the Project using FERC's Traditional Licensing Process (TLP), as defined in 18 CFR Part 5. Based upon an analysis of available resources and in consultation with stakeholders, the City believes that the TLP will be the most effective process for this relicensing, and no issues that would affect the appropriateness of the TLP for this relicensing were identified based on the outreach the City conducted in support of preparing this PAD (see Section 6). The City's formal request for authorization to use the TLP and justification for this request, as required by Part 5.3 of FERC's regulations, is included in the NOI that is being filed concurrently with this PAD.

Pursuant to 18 CFR § 5.8 of FERC's regulations, following FERC's review of this PAD and associated NOI, FERC will issue notice of the commencement of the relicensing proceeding and act on the City's request to use the TLP. If approved, the TLP will require the City to host a Joint Agency/Public Meeting and site visit with the agencies, Indian Tribes, and the public within 30 to 60 days of FERC's authorization of the TLP. Stakeholder's written comments on this PAD and any study or information requests must be provided to the City within 60 days of the Joint Agency/Public Meeting. Comments and study requests should be provided to the individuals listed in Section 3.3 of this PAD.

The TLP also provides opportunities for the agencies and other interested parties to provide comments on the PAD and to make study requests. As a result of the pre-filing consultation meetings, the City believes that existing information, combined with the proposed water quality and recreation studies described in this PAD, will be sufficient for evaluation of potential Project effects. The Joint Agency/Public Meeting is anticipated to occur during the week of August 5-9, 2024.

2.0 Purpose of Pre-Application Document

The filing of this PAD and the associated NOI marks the formal start of the relicensing process for the Project. The purpose of the PAD is to provide a description of the existing Project facilities, operations, and other relevant and reasonably available information related to the Project at the time of filing of this PAD. Further, the PAD is intended to assist FERC, resource agencies, Indian Tribes, non-governmental organizations (NGOs), and other interested parties in identifying potential resource areas of interest and informational needs; to develop study requests; and to establish the information necessary to analyze the license application (18 CFR § 5.6[b]).

2.1 Search for Existing, Relevant, and Reasonably Available Information

The City has undertaken an extensive search to identify and review information that is reasonably available and relevant to the Project. A significant number of resource-specific references and information sources were identified, reviewed, researched, and analyzed in preparation of this PAD. These efforts consisted of the following four primary activities:

(1) A PAD Information Questionnaire was sent to over 30 parties on February 5, 2024, requesting the identification of any information related to the Project, the Project vicinity, and the region;

(2) An extensive review was made of the City's files and available documentation, including reports and correspondence relating to the previous licensing proceeding, as well as subsequent FERC Orders, amendments, and other germane information on the FERC docket;

(3) Research was conducted using publicly available sources and databases; and

(4) A review was performed of the state and Federal Comprehensive Plans relevant to the Project.

A copy of the PAD Information Questionnaire and associated distribution list is provided in Appendix A of this PAD. A total of nine parties responded to the Questionnaire either by email or with a completed copy of the Questionnaire—both types of responses are included in Appendix B of this PAD. The City reviewed each of the returned PAD Information Questionnaires and identified documents believed to be potentially relevant to the Project and consulted with those stakeholders on the information. To the extent it was available, these documents have been acquired and/or reviewed and relevant information summarized in the various resource-oriented sections of this PAD.

2.2 Description of the Consultation Process Prior to Submittal of the PAD

The City has performed preliminary consultation with potential stakeholders to discuss the City's intention to utilize the TLP and to obtain available information to support the development of this PAD. These consultation efforts also helped to inform the potential relationship between stakeholders' interests and Project operations and identify potential information gaps and study needs in advance of the formal relicensing process. The City began preliminary consultation with the identification of parties that may have an interest in the Project. Based on the information obtained during this process, over 30 parties, consisting of the primary resource agencies, Tribes, and NGOs, were sent a request for existing, relevant, and reasonably available information

regarding the Project and the surrounding environment. Section 6 of this PAD provides additional details regarding the consultation performed to date and responses to the PAD Information Questionnaire request, and Appendix B includes a PAD Consultation Summary.

3.0 Process Plan, Schedule, and Communication

3.1 Process Plan and Schedule

Pursuant to 18 CFR § 5.8, FERC will review this PAD and associated NOI. The City proposes to use FERC's TLP in support of obtaining a new license for the Project. As presented in Table 3.1-1, the City has prepared a TLP Process Plan and Schedule based on FERC's TLP. Within 60 days of the PAD and NOI being filed, FERC will issue notice of the commencement of the licensing proceeding and act on the City's request to use the TLP. If FERC grants permission to use the TLP, within 30 to 60 days of the notice, the City will hold a Joint Agency/Public Meeting with all pertinent agencies, Indian Tribes, and members of the public (collectively, the stakeholders) and include an opportunity for a site visit to the Project. Stakeholders' written comments on this PAD and any study or information requests must be filed with FERC within 60 days of the Joint Agency/Public Meeting.

Table 3.1-1. Moyie River Hydroelectric Project TLP process plan and schedule.

Activity/Regulation	Responsible Parties	Time Frame	Estimated Due Date[1]
Stage 1 Consultation			
File NOI, PAD, and request to use TLP; distribute to stakeholders, publish in local newspaper (18 CFR §§ 5.3, 5.5, and 5.6)	Bonners Ferry	As early as five and one half years, no later than five years prior to license expiration	Apr 29, 2024
File verification of public notices of NOI, PAD, and TLP request in local newspaper with FERC (18 CFR §5.3)	Bonners Ferry	Within 14 days of filing the NOI, PAD, and TLP request	May 13, 2024
File comments on request to use TLP (18 CFR §5.3)	Stakeholders	No later than 30 days of filing NOI/PAD	May 29, 2024
Initial Tribal Consultation Meeting, if needed (18 CFR §5.7)	FERC	No later than 30 days of filing NOI/PAD	May 29, 2024
FERC issues TLP authorization and Notice of NOI/PAD filing (18 CFR § 5.8[a])	FERC	Within 60 days of filing NOI/PAD	Jun 28, 2024
File written notice of Joint Agency/Public Meeting (18 CFR § 16.8[b][3][i])	Bonners Ferry	No later than 15 days in advance of the Joint Agency/Public Meeting	Jul 23, 2024
Publish notice of Joint Agency/Public Meeting in newspaper (18 CFR § 16.8[h][i])	Bonners Ferry	No later than 14 days in advance of the Joint Agency/Public Meeting	Jul 24, 2024
Hold Joint Agency/Public Meeting (18 CFR § 16.8[b][3][ii])	Bonners Ferry	30-60 days after FERC notices the NOI/PAD and grants request to use the TLP	Aug 7, 2024 (Tentative)
File comments on PAD and study requests (18 CFR § 16.8[b][5])	Stakeholders	60 days after Joint Agency/Public Meeting	Oct 7, 2024

Activity/Regulation	Responsible Parties	Time Frame	Estimated Due Date[1]
Stage 2 Consultation			
Conduct first season studies	Bonners Ferry	--	2025
Conduct second season studies, if necessary	Bonners Ferry	--	2026
Submit draft study report(s) to stakeholders	Bonners Ferry	--	Winter 2025/2026
Issue Draft License Application (DLA) and final study reports to stakeholders (18 CFR § 16.8[c][4])	Bonners Ferry	No later than 150 days prior to filing Final License Application (FLA).	Jan 1, 2027
File comments on DLA (18 CFR § 16.8[c][5])	Stakeholders	Within 90 days of filing DLA	Mar 15, 2027
File FLA with FERC (18 CFR § 16.9)	Bonners Ferry	No later than 24 months before the existing license expires	May 31, 2027

1 If the due date falls on a weekend or holiday, the due date is the next following business day.
2 Approximate dates identified by "~".

3.2 Joint Agency/Public Meeting and Site Visit

Pursuant to 18 CFR § 4.38(b)(3)(ii), the City will hold a Project site visit and Joint Agency/Public Meeting and at Bonners Ferry City Hall, 7232 Main Street #149, Bonners Ferry, ID 83805, in support of this relicensing proceeding. In accordance with FERC regulations, the latest the meeting and site visit can occur is by August 27, 2024 (based on the expected PAD filing date of April 29, 2024). In accordance with the TLP schedule, within 60 days of the PAD and NOI being filed, FERC will issue a notice of the commencement of the relicensing proceeding and grant the City's request to use the TLP by June 28, 2024. By approximately July 23, 2024, the City will provide a public notice with the date, time, and location of the Joint Agency/Public Meeting and site visit, tentatively scheduled to occur during the week of August 5-9, 2024. Interested parties are invited to participate in the meeting and site visit.

3.3 Proposed Communication Protocols

During the course of the relicensing process, communication will take place through public meetings, conference calls, and written correspondence. In order to establish the formal consultation record, all phases of formal correspondence require adequate documentation. The intent of the communication protocol is to provide a flexible framework for the dissemination of information and for documenting consultation among all participants in the Project relicensing. The communication protocol will remain in effect until issuance of the Project's new license by FERC.

3.3.1 Distribution of Relicensing Materials

Documents filed with FERC will be available from FERC's eLibrary[1] by searching under Docket P-1991. The City will provide this PAD to representatives of relevant agencies, local governments, Indian Tribes, NGOs, and members of the public included on the distribution list attached to the

[1] FERC eLibrary available at: www.ferc.gov/docs-filing/elibrary.asp.

cover letter transmitting this PAD. The City will also notify the distribution list when a document is available on FERC's eLibrary.

Any party that desires to be added to or removed from the distribution list should send a request to the individuals listed below:

Mike Klaus, PE
City Engineer/Administrator
City of Bonners Ferry, Idaho
7232 Main Street #149
Bonners Ferry, Idaho 83805
(208) 267-0357
mklaus@bonnersferry.id.gov

Matt Wiggs
Project Manager
HDR, Inc.
412 E. Parkcenter Blvd. Suite 100
Boise, ID 83706
(208) 387-7089
matthew.wiggs@hdrinc.com

The City is proposing to develop a relicensing website for the public to download primary licensing documents. The City intends for the website to be available for stakeholder use in advance of the Joint Agency/Public Meeting, tentatively scheduled to occur during the week of August 5-9, 2024.

Additionally, participants can request electronic or hard copies of documents. All requests for electronic or hard copies of relicensing documents should be sent to Mike Klaus and Matt Wiggs using the contact information provided above and should clearly indicate the document name, publication date (if known), and FERC Project No. 1991. A reproduction charge and postage costs may be assessed for hard copies requested by the public. Federal, State, and Tribal entities will not be subject to document processing or postage fees.

Certain documents are restricted from general distribution. These documents include: (1) those covered under FERC's regulations protecting CUI/CEII (Controlled Unclassified Information/Critical Energy Infrastructure Information) (18 CFR § 388.113); (2) archaeological survey reports or other information identifying the locations of historic properties; and (3) reports that contain information regarding the locations of rare, threatened, or endangered (RTE) species.

3.3.2 FERC Communication

FERC has presently assigned Ingrid Brofman of its staff to serve as the relicensing coordinator in support of this relicensing process. For questions related to FERC communications, please contact Ingrid Brofman at Ingrid.Brofman@ferc.gov or via telephone at (202) 502-8347.

All communications to FERC regarding the Project's relicensing must reference the Project number (P-1991). FERC strongly encourages paperless electronic filing of comments and interventions through its eFiling or eComment systems. Information and links to these systems can be found at the FERC webpage.[2] In order to eFile comments and/or interventions, interested parties must have an eRegistration account. After preparing the comment or motion to intervene go to www.ferc.gov and select the eFiling link. Select the new user option and follow the prompts. Users are required to validate their account by accessing the site through a hyperlink sent to the registered email account.

[2] http://www.ferc.gov/docs-filing/ferconline.asp.

An additional method to eFile comments is through the “eComment” system available via a hyperlink on the FERC homepage. “eComments” do not require the users to have a subscription; the comments are limited to 6,000 characters and all information must be public. Commenters are required to enter their names and email addresses. They will then receive an email with detailed instructions on how to submit “eComments.” Stakeholders without internet access may submit comments to FERC at the address below via hard copy, but should be aware that documents sent to FERC by regular mail can be subject to docket-posting delays:

Honorable Debbie-Anne Reese, Acting Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, D.C. 20426

4.0 Project Location, Facilities, and Operations

4.1 Authorized Agent

The exact name, business address, telephone number, and email address of each person authorized to act as an agent for the City is listed below.

Mike Klaus, PE
City Engineer/Administrator
City of Bonners Ferry, Idaho
7232 Main Street #149
Bonners Ferry, Idaho 83805
(208) 267-0357
mklaus@bonnersferry.id.gov

4.2 Project Location

The Moyie River Hydroelectric Project is located on the Moyie River in Boundary County, Idaho, as shown below in Figure 4.2-1. The Project is located approximately 1.5 miles upstream from its confluence with the Kootenai River near the small town of Moyie Springs, Idaho. The approximate FERC Project Boundary is shown in Figures 4.2-2, and the Project facilities are shown in Figure 4.2-3.

The Project occupies 1.55 acres of federal land located in the Idaho Panhandle National Forest. The forest lands occupied by the Project are located in the upper reach of the reservoir. The remainder of the Project lands are owned by the City. The Project's current detailed FERC Project Boundary[3] is presented in the Project's Exhibit G drawings, which are presented in Appendix C of this PAD.

[3] The Project Boundary location depicted in the figures included in this PAD is an approximate digitization based on the existing Project Boundary maps included in Appendix C of this PAD. During this relicensing process, the City will review and update the digitized Project Boundary with the best information available to include all Project lands and facilities that are required for Project operations and maintenance and to accurately depict the Project Boundary. In addition, Project Boundary drawings will be updated to meet FERC's guidelines for Exhibit G drawings.

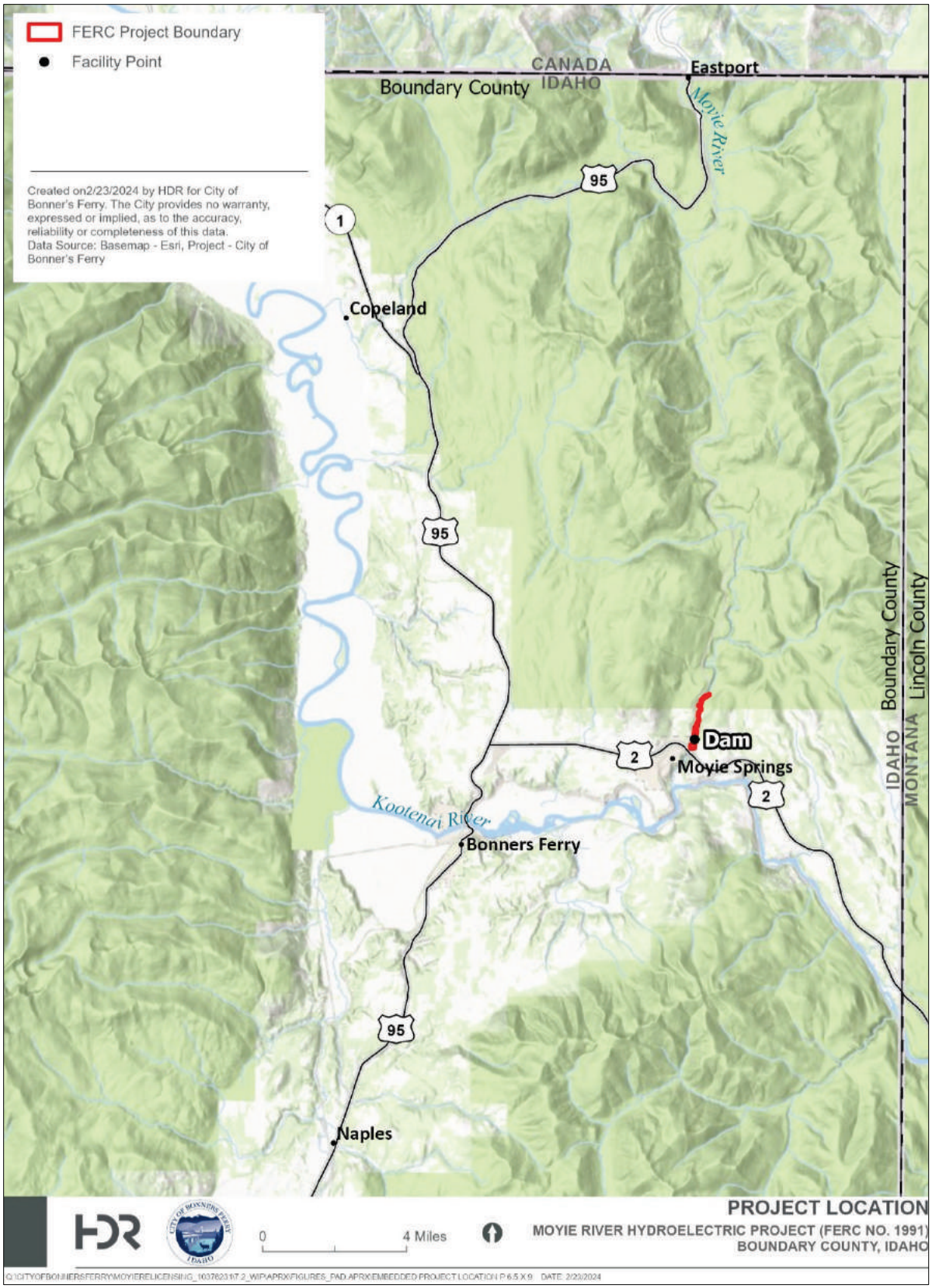

Figure 4.2-1. Project location.

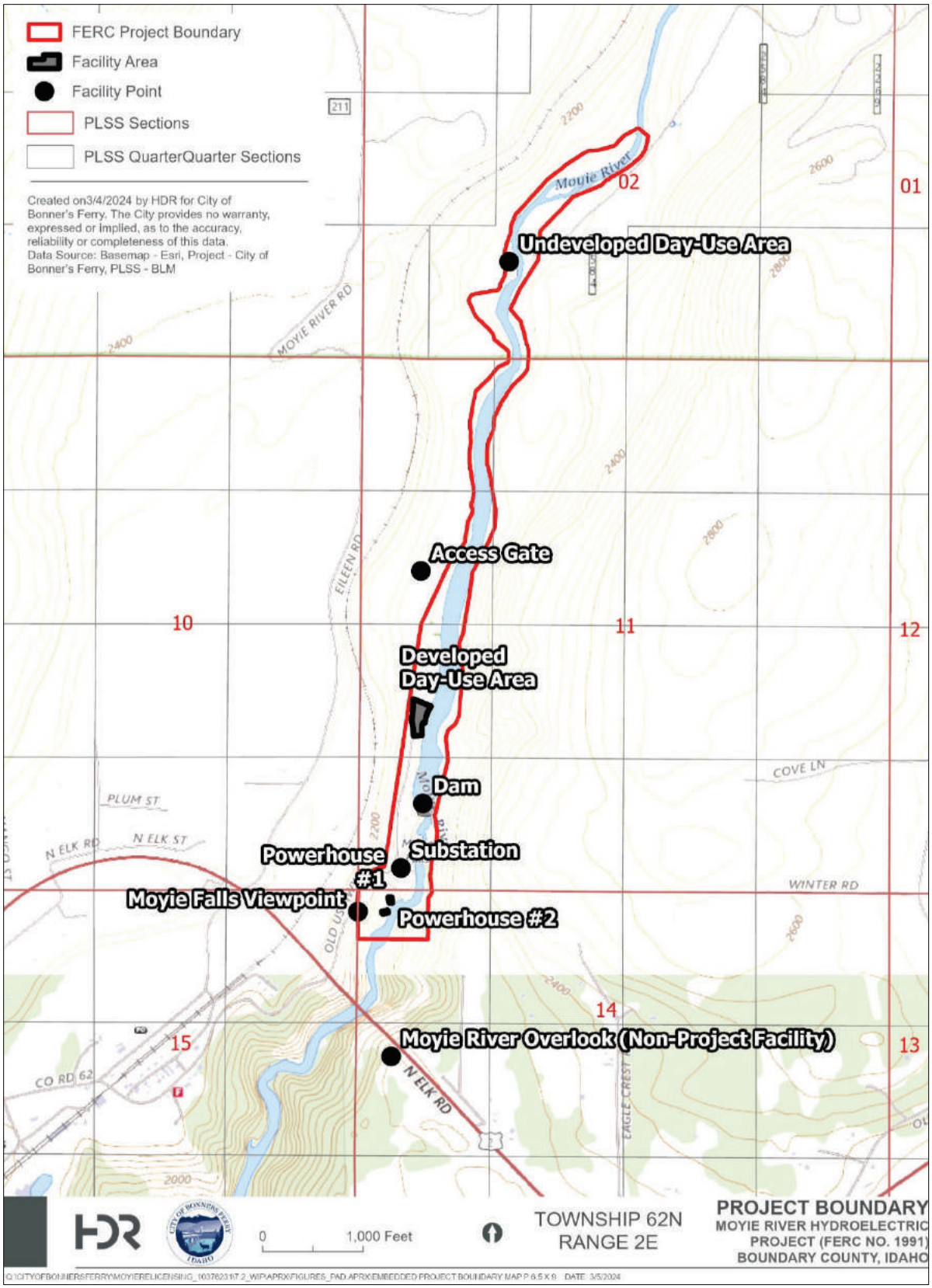

Figure 4.2-2. Project Boundary.

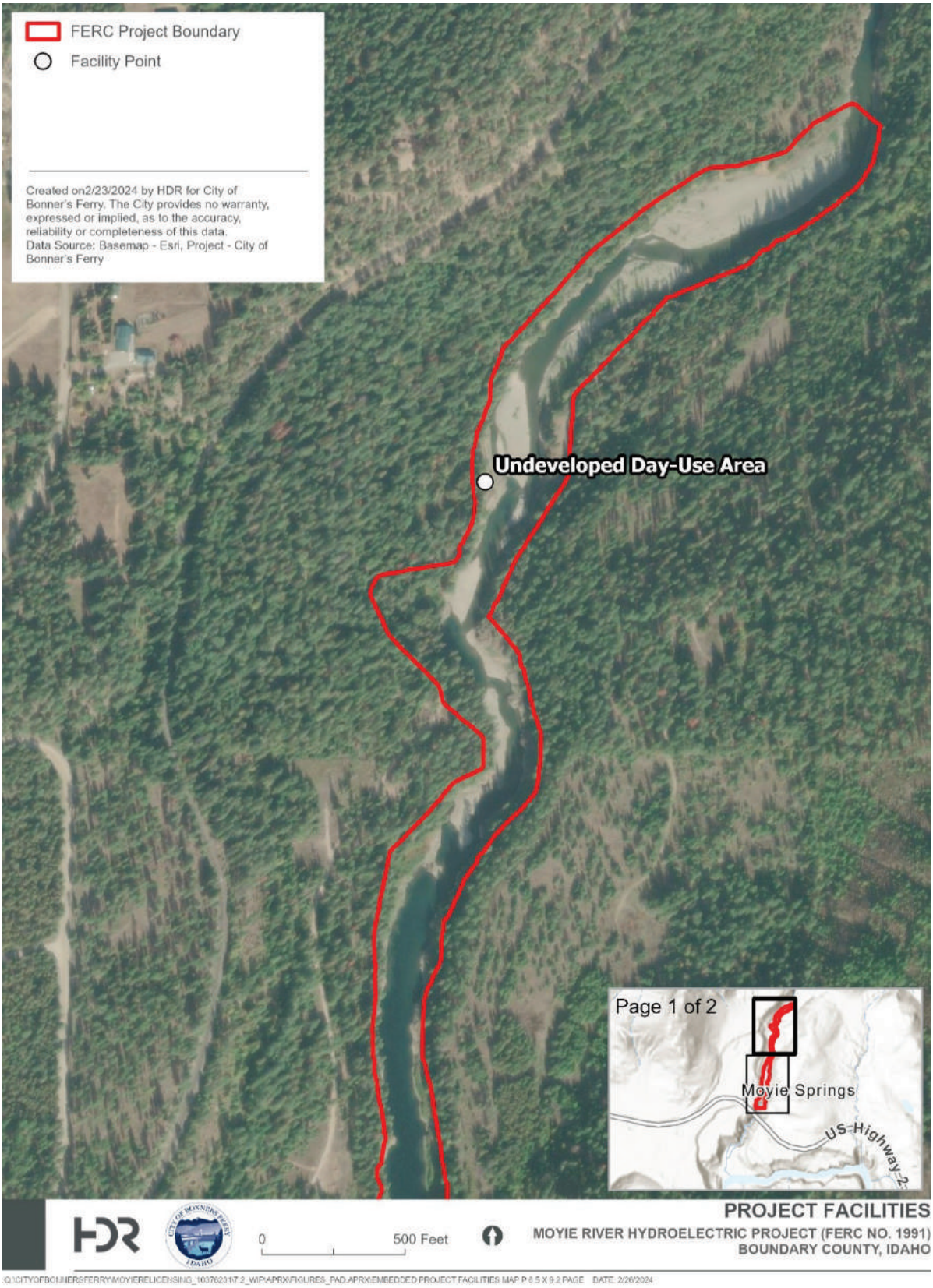

Figure 4.2-3. Project Boundary and facilities (page 1 of 2).

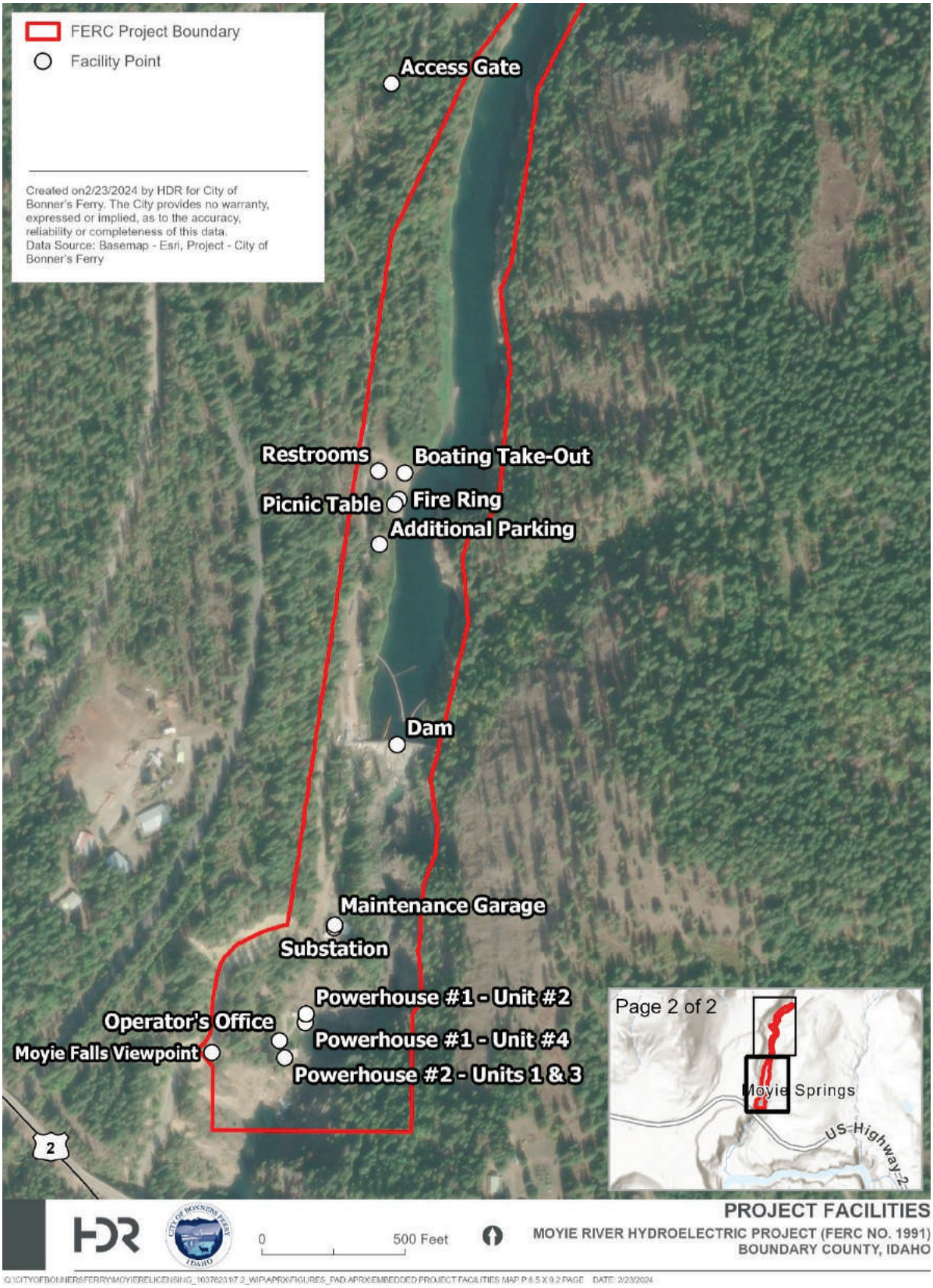

Figure 4.2-3. Project Boundary and facilities (page 2 of 2).

4.3 Project Facilities

The Project works consists of: a 92-foot-high concrete gravity dam, impounding a 540-acre-foot reservoir approximately 1.1 miles long; the power tunnel intake leads through a steel-lined tunnel section to a partially-lined rock tunnel section, to a rock trap then to a concrete-lined section downstream of the rock trap to a surge chamber, and finally to a steel penstock which bifurcates into 48- and 26-inch penstocks feeding Powerhouse No. 1 Turbine-Generator Unit (Unit) 2 (rated 450 kilowatt [kW]) and Unit 4 (rated 1,500 kW), respectively, and a 60-inch penstock feeds Powerhouse No. 2 Units 1 and 3 (both units rated at 1,000 kW), with a total authorized installed capacity of 3,950 kW; a 1.3-mile-long, 13.8 kilovolt (kV) transmission line (not currently in the Project Boundary); and appurtenant facilities.

Below are details providing the physical description of the Project. A summary of these Project features is provided in Table 4.3-1 and shown above in Figure 4.2-3.

Table 4.3-1. Moyie River Hydroelectric Project features list.

Feature	Data
General	
Location	Boundary County, Northern Idaho
Stream/River	Moyie River
Project Features/Function	Hydroelectric power
Original Construction	November 1949
Project River Mile	1.6
Dam	
Year Completed	1949
Material and Type	Concrete Gravity Dam
Length	376 feet
Height (hydraulic/structural)	68 feet / 92 feet
Crest Elevation	El. 2,040 feet[4]
Reservoir	
Reservoir Area	45 acres
Normal Maximum Pool	El. 2,023 feet
Reservoir Storage Volume	540 acre-feet
Drainage Area	755 square miles
Debris Booms	2-Tuff Boom and wood log boom
Spillways	
Type	Ogee crested
Material	Conventional concrete chute
No. of Bays	9
Bay Width	10.5 feet (varies slightly)
Width	95.5 feet

[4] All elevations referred to in this document are in the original Project datum (National Geodetic Vertical Datum of 1929 [NGVD 29]) unless mentioned otherwise.

Feature	Data
Available Head	17 feet
Crest Elevation	El. 2,023 feet
Maximum Capacity (at Reservoir El. 2,040 feet)	22,500 cubic feet per second (cfs)
Intake And Outlets Works	
Power Intake Gate Gate No. -Type Gate Invert	 1 - 60-inch slide gate 1,986.5 feet
Low-Level Outlet Gate No. -Type Gate Invert Elevation	 1 - 72-inch slide gate 1,968.5 feet
Aesthetic Release Valve Flow Capacity Gate No. - Type Valve Invert Elevation	 9 cfs 1 - 12-inch sluice gate 2,016.5 feet
Penstocks/Tunnels	
60-inch-diameter, steel lined	95 feet
96-inch-diameter, rock un-lined (shotcrete below springline)	650 feet
72-inch-diameter, concrete lined	260 feet
60-inch-diameter, steel penstock buried	205 feet
Tailrace Tunnel (Powerhouse No. 2)	7-foot x 12-foot unlined rock tunnel
Hydroelectric Powerplant	
Location	Approximately 1,000 feet downstream of dam
Original Powerhouse (1921)	Abandoned
Powerhouse No. 1 (1941/1982) Unit 2 (169.7 feet head) Unit 4 (179 feet head)	 450 kW vertical, installed 1921 1,500 kW horizontal, installed 1982
Powerhouse No. 2 (1982) Unit 1 (205 feet head) Unit 3 (179 feet head)	 1,000 kW vertical, installed 1941 1,000 kW vertical, installed 1949
Total Authorized Installed Capacity	3,950 kW

4.3.1 Project Impoundment (Reservoir)

The Project's reservoir is approximately 1.1 miles long and has a surface area of 45 acres and gross storage capacity of approximately 540 acre-feet at the impoundment's normal maximum pool elevation of 2,023 feet (NGVD 29). As the Project is operated in a run-of-river (ROR) mode, there is no useable storage capacity. Figure 4.3-1 shows the Moyie Reservoir facing upstream from the dam.

Figure 4.3-1. Moyie Reservoir.

4.3.2 Moyie Dam

Moyie Dam is located on the Moyie River about 1.5 miles upstream from the confluence of the Moyie and Kootenai rivers. It is a concrete gravity structure with a maximum height of 92 feet at the centerline of the river channel. The length of the top of the dam along an 8-foot-wide walkway is 376 feet. From the right abutment, Moyie Dam consists of a non-overflow gravity section that includes a power intake, an uncontrolled spillway overflow section, and a non-overflow gravity section to the left abutment. The power tunnel intake is controlled by a 60-inch-diameter guard valve at the right abutment. There is a 72-inch, low-level outlet at the base of the dam controlled by a sluice gate at the upstream face, which can be used to lower the reservoir elevation for operations and maintenance (O&M) on the dam or intake. The trashrack spacing associated with the low-level outlet is approximately 4 inches wide. In 2001, a 12-inch-diameter aesthetic release pipe was installed below the operating water surface which is controlled by an upstream gate near the right-center of the dam.

4.3.3 Intake

The powerhouse intake is located in the right non-overflow section and consists of a 60-inch-diameter, steel-lined penstock with a sill elevation at 1,986.5 feet. The intake is controlled by a 60-inch-diameter slide gate. Trashracks span the entire height of the upstream face starting at the sill elevation of 1,980.0 feet up to 2,037 feet. The penstock trashrack spacing is 2 inches wide. The powerhouse intake begins in the right non-overflow section with the 60-inch-diameter penstock for approximately 95 feet to an approximately 96-inch-diameter unlined rock penstock. The unlined rock penstock was shotcrete below the springline and extends 650 feet to a surge tank and transitions to a 72-inch-diameter, concrete-lined penstock. The concrete-lined penstock has a length of 260 feet and connects with a 60-inch-diameter, buried-steel penstock which extends 205 feet to the powerhouses. A 36-inch-diameter penstock conveys flow from the main 60-inch-diameter penstock to Unit No. 2 in Powerhouse No. 1. A 48-inch-diameter penstock conveys flow from the main penstock to Unit No. 4 located in Powerhouse No. 1. The main 60-inch-diameter penstock bifurcates into two 36-inch-diameter penstocks at Powerhouse No. 2 and conveys flow to Units No. 1 and No. 3. Figure 4.2-3 shows the upstream face of the dam and intake structure.

Figure 4.3-2. Upstream face of the dam showing intake structure.

4.3.4 Spillway

The spillway is an ungated concrete gravity spillway with an ogee crest. The spillway crest lies at elevation 2,023 feet and is approximately 95.5 feet long. The spillway contains 9 bays, each approximately 10.5 feet wide, with a total combined spillway capacity of 22,500 cfs. The spillway has a base width of approximately 107 feet and variable slopes. The left and right non-overflow sections are approximately 80 feet above the foundation with a crest elevation of 2,040 feet. The non-overflow sections have a base width of approximately 50 feet. Piers supporting the walkway divide the spillway crest into nine segments. The piers are notched to serve as stoplog guides; however, stoplogs are not used. Figure 4.3-3 shows the dam spillway and low-level outlet.

Figure 4.3-3. Moyie Dam spillway and low-level outlet.

4.3.5 Bypass Reach

The bypass reach of the Moyie River between the Moyie Dam and powerhouses is approximately 0.25 miles long. When river flows exceed 360 cfs, the excess water is spilled over the dam into the bypass reach. Additionally, License Article 403 requires the City to release 9 cfs at the dam into the bypass reach for Moyie Falls during daytime hours on weekends in June, July and August.

4.3.6 Powerhouse and Turbines

Powerhouse No. 1 has an area of approximately 1,670 square feet and is constructed of reinforced concrete (Figure 4.3-4). Portions of Powerhouse No. 1 were built during the original construction in 1921 and includes Unit No. 2. Unit No. 2 is a horizontal turbine rated at 450 kW with a static head of 169.7 feet and a design flow of 42 cfs. Additions were made to Powerhouse No. 1 and Unit No. 4 was added in 1982. Unit No. 4 is a vertical turbine rated at 1,500 kW with a static head of 179.0 feet and a design flow of 140 cfs.

Figure 4.3-4. Powerhouse No. 1.

Powerhouse No. 2 was constructed in 1941 and contains Units Nos. 1 and 3 (Figure 4.3-5). Both units are vertical units rated at 1,500 kW with a head of 205 feet and a design flow of 80 cfs each. Powerhouse No. 2 has an area of approximately 1,390 square feet.

Figure 4.3-5. Powerhouse No. 2 (left) and control room (right).

The powerhouses are located at the bottom of a steep canyon, and there is no vehicular access. Pedestrian access is via a steel stairway constructed down the slope from the roadway above (Old Highway 2). Equipment and supplies are carried on a tramway, which consists of a wheeled dolly along a winch-operated, inclined railway adjacent to the pedestrian stairway. The tramway has a maximum capacity of 10 tons.

4.3.7 Tailrace

Flows from Powerhouses No. 1 and No. 2 discharge into the Moyie River. The tailrace channel downstream of the dam and powerhouses is a narrow, steep-gradient canyon, and the last 0.6 miles opens up onto a broader floodplain on the left bank.

4.3.8 Substation and Transmission

The generator step-up unit (GSU) was relocated from the powerhouse yard to the bluff above the powerhouse between 1996-1997. It contains two 3-phase transformer banks that take the generation voltage from 2,400 volts to 13.8 kilovolts for delivery to the Moyie substation. Secondary circuits are routed to each powerhouse in underground conduits. A 13.8 kV transmission line extends from the GSU at the Project, approximately 1.3 miles, to the Moyie substation. This transmission line is actually a transmission/distribution line since it serves distribution loads along its route.

The single-line diagram for the Project is included in Appendix D of this PAD.

4.3.9 Recreational Facilities

The City filed a Recreation Plan with FERC on January 7, 2000, which was approved on April 24, 2000. An addendum was filed on March 30, 2001, and was approved on June 15, 2001. The Recreation Plan (including revisions incorporated as part of the addendum) includes:

- Placement of a picnic table, fire ring, visitor sign, trash can and portable toilet near the boating take-out area from April 1 to July 31.
- Placement of a trash can and interpretive sign in the parking areas that provides visitors directions to the Moyie Falls Viewpoint.
- Road grading as needed to maintain access during the summer months for passenger cars to the north end reservoir day-use area.
- A new reservoir gate installed just north of the boating take-out.

4.3.9.1 Boating Take-out and Day-Use Area

The City developed and maintains a boating take-out and day-use area. A gravel surface boat ramp, an Americans with Disabilities Act (ADA)-accessible wheelchair platform, portable toilet on concrete pad, trash can, fire ring, picnic table, and parking area are provided at this site during the summer recreation period. See Figures 4.3-6 to 4.3-10.

Figure 4.3-6. Project boating take-out and day-use area—gravel surface boat ramp.

Figure 4.3-7. Project boating take-out and day-use area—ADA-accessible wheelchair platform.

Figure 4.3-8. Project boating take-out and day-use area—portable toilet on concrete pad.

Figure 4.3-9. Project boating take-out and day-use area—fire ring.

Figure 4.3-10. Project boating take-out and day-use area—picnic table and parking area.

4.3.9.2 Moyie Falls Viewpoint

Near the dam, the City provides parking and signage directing the public to the Moyie Falls Viewpoint (Figure 4.3-11), which is location approximately 1,000 feet south of the sign. The Moyie Falls Viewpoint provides the public with scenic views of Moyie Falls (Figure 4.3-12).

Figure 4.3-11. Moyie Falls Viewpoint signage.

Figure 4.3-12. View from Moyie Falls Viewpoint.

4.3.9.3 Upper Reservoir Recreation

The 2001 Recreation Plan Addendum describes that as a result of the recreation survey and consultation with the State Historic Preservation Officer (SHPO), the U.S. Forest Service (USFS) and other stakeholders, it was suggested that the upper end of the reservoir was to remain undeveloped to: (1) maintain existing recreation values of solitude and privacy; and (2) help protect the site and minimize vandalism due to the site's proximity to a historical site. FERC approved this proposal in their June 15, 2001 order. The City continues to provide access to the upper end of the reservoir as an undeveloped recreation site.

4.4 Description of Project Operations

4.4.1 Operations During a Normal Year

The Project operates in a ROR mode. The City operates the Project to maintain reservoir water surface elevation at 2,023 feet (NGVD 29). To minimize fluctuation in the reservoir surface elevation, License Article 402 requires that discharges from the Project are released so that, at any point in time, flows as measured immediately downstream of the Project tailrace approximate the sum of inflows into the Project reservoir. Flows up to 360 cfs in the Moyie River are diverted into the powerhouses for generation then released in the spillway immediately below the Project. Flows above 360 cfs are spilled over the dam into the bypass reach.

License Article 403 requires the City to provide for aesthetic flows over Moyie Falls. The City provides 9 cfs via a 12-inch diameter tunnel bored through the dam near the dam crest controlled by a 12-inch sluice gate. During normal spring runoff, inflows to the Project greatly exceed the 360 cfs capacity of the Project and are spilled over the spillway. When spring runoff flows decrease, the City monitors spillway flows and when they decrease below 9 cfs, the sluice gate is opened and bypass flows are released. These flows are released through the end of August on Saturday and Sunday mornings by 8:00 am and maintained throughout the day until dusk.

The Project is manned 10 hours per day, 7 days per week, with staff on call during other times. The operator has remote reading indication of forebay elevation which is logged by the local Supervisory Control and Data Acquisition (SCADA) system hourly for reference and record. The operator also observes spillway flows at the powerhouse as the river flows past the powerhouses on the right bank. The SCADA system is programmed to alarm the operator on shift or on stand-by if the forebay falls below 3 feet below spillway crest (crest El. 2,023, alarm at El. 2,020 feet) or above 11 feet above the crest (El. 2,034 feet).

The City is proposing to continue to operate the Project in a ROR mode, consistent with current operations. The City is not proposing any new or modified Project facilities.

4.4.2 Operations During High Flow and Adverse Flow Periods

During periods when inflow exceeds the maximum hydraulic capacity of the Project's main turbines (360 cfs combined), the Project normally operates at maximum capacity, and any excess flows are discharged over the spillway. Under low inflow conditions, down to approximately 50 cfs, Unit No. 1 or Unit No. 3 is normally utilized for generation and to maintain ROR operations.

4.5 Generation and Outflow Records

Annual and monthly average energy generation for the period of 2012-2022 is provided in Table 4.5-1. The monthly average energy production is 1,993 megawatt hours (MWh) for the past five years. Project streamflow characteristics are provided in Section 5.3 (Water Resources) of this PAD, and Project flow duration curves are provided in Appendix E of this PAD.

Table 4.5-1. Annual and average monthly generation 2016-2022 (MWh).

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2016	2,425	2,570	2,801	2,846	2,943	2,916	2,319	1,378	1,056	2,439	2,966	3,048	**29,707**
2017	457	0[1]	1,269	2,984	2,810	1,982	1,854	1,251	907	1,237	1,581	1,841	**18,172**
2018	1,848	1,726	2,673	2,824	3,025	2,982	2,411	1,211	976	1,111	1,361	1,334	**23,481**
2019	1,311	1,071	1,714	2,878	3,079	2,965	2,344	1,184	1,016	1,357	932	1,882	**21,732**
2020	1,883	2,177	2,743	2,959	3,063	2,928	2,414	1,234	860	1,057	1,487	1,519	**24,324**
2021	1,997	1,497	2,293	2,712	3,054	2,845	1,612	951	815	1,062	2,513	2,117	**23,467**
2022	1,511	1,333	2,405	2,564	2,268	1,805	1,982	1,177	811	823	886	750	**18,314**
Average	**1,633**	**1,482**	**2,271**	**2,824**	**2,891**	**2,632**	**2,134**	**1,198**	**920**	**1,298**	**1,675**	**1,785**	**22,743**

1 The Project was offline during late January-February 2017 due to O&M activities.

4.6 Dependable Capacity

Dependable capacity is generally defined as the amount of load a hydroelectric plant can carry under adverse hydrologic conditions during a period of peak demand; for example, during the hot, dry conditions typical of the July-September season at the Project. Under the Project's current license, the dependable capacity is estimated to be 1.95 megawatts (MW) during peak summer season.

4.7 Grid Interconnection

Power is transferred from the Project's transformers via a 13.8 kV transmission line that extends from the substation at the Project, approximately 1.3 miles, to the Moyie Substation, where power is interconnected with the regional grid. This transmission line is actually a transmission/distribution line since it serves distribution loads along its route.

4.8 Current License Requirements and Compliance History

Moyie Dam was designed and constructed by C.F. Griggs of Spokane, Washington, for the Village/City of Bonners Ferry. Construction began in 1948 and was completed in 1950 and has been operated by the City since that time. Portions of Powerhouse No. 1 and Powerhouse No. 2 were constructed earlier. The current FERC License, No. 1991, was issued on June 9, 1999, and expires June 1, 2029. Table 4.8-1 below summarizes significant events associated with the development, construction, and operation of the Project. Table 4.8-2 identifies major Project license milestones.

Table 4.8-1. Summary of major construction activities and/or other significant events.

Date	Construction and/or Other Significant Event
1921	Powerhouse No. 1 construction.
1941	Powerhouse No. 2 construction (dam delayed by WWII).
April 1948	Original license issued.
1949	Dam construction completed.
1980	Shortcreted the face of the spillway at the dam and reconstructed the wing walls and retaining walls on each side of the spillway.
February 1982	Powerhouse No. 2 and Powerhouse No. 1 additions for turbine/generator Unit No. 4 completed. Surge chamber modifications and shotcreting of intake tunnel also completed.
1983	Installed automatic synchronization equipment and associated speed controls.
1988	Reconstructed the concrete thrust blocking on the penstock near the intake structure.
1990	Reconstructed the concrete piers at the dam to replace deteriorating concrete.
1991	Reconstructed the spillway concrete at the transition from the spillway to the bypass reach.
1992	Dredged sediment behind dam.
1995	Completed comprehensive O&M plan for the four units at the powerhouse complex.
1996-1997	Relocation of substation from powerhouse yard to bluff above powerhouse.
June 1999	FERC issued new license for Project No. 1991.

Date	Construction and/or Other Significant Event
2001	Aesthetic release valve installed per license requirement.
March 2017	Five out of the six trashracks replaced due to ice damage.
April-May 2019	Silt removal program utilized to dredge the reservoir and allow use of the low-level outlet.
October 2022	Concrete resurfacing program to rehabilitate the dam and spillway, including spillway piers and non-overflow sections.

Table 4.8-2. Project license major milestones.

Date	Title
April 1, 1948	Original license issued.
June 7, 1985	Order approving revised Exhibits K, L and M.
December 10,1993	Order amending license.
June 16, 1998	Order approving revised exhibits.
June 9, 1999	Order issuing major new license.
April 24, 2000	Order approving revised Recreation Plan.
October 27, 2000	Order modifying and approving Article 403 Bypass Flow Release Plan.
March 9, 2001	Order authorizing construction of bypass flow release facilities.
June 5, 2001	Order approving Cultural Resources Management Plan (Article 405).
June 15, 2001	Order approving recreation plan addendum (Article 406).
July 21, 2005	Order approving sediment removal plan under Article 401.
February 15, 2019	Order granting temporary variance from sediment removal plan pursuant to Article 401.
May 1, 2019	Order granting extension of temporary variance from sediment removal plan pursuant to Article 401.
June 30, 2021	Order authorizing construction of concrete rehabilitation project.

4.8.1 Current License Requirements

FERC issued the current Project license to the City on June 9, 1999. The current license is effective for a term of 30 years, with an effective date of June 1, 1999, and expiring on May 31, 2029.

The licensed Project is subject to the terms and conditions set forth in Form L-1 (October 1975), entitled “Terms and Conditions of License for Constructed Major Project Affecting Lands of the United States.” Project operations are also subject to specific license articles stated in the 1999 license order (described below). The Project is additionally subject to a Water Quality Certificate (WQC) that was issued by the Idaho Department of Health and Welfare on July 11, 1996.

The City has assumed responsibility of complying with all of the requirements of the existing license, as well as all subsequent orders and WQC pursuant to Section 401 of the Clean Water

Act (CWA) issued to-date. A summary of the most applicable of these articles related to Project operations and environmental measures is provided below.

- **Article 401:** Requires the City to prepare and file a Sediment Removal Plan to clear area of the reservoir near the slide gate covering the low-level outlet.
- **Article 402:** Requires the City to operate the Project in a ROR mode.
- **Article 403:** Requires the City to prepare and file a visual resources mitigation plan and to release 9 cfs at the dam for Moyie Falls during daytime hours on weekends in June, July and August.
- **Article 404:** Requires the City to prepare and file a Wildlife Mitigation Plan and install and maintain two Canada goose nest boxes on the Project reservoir.
- **Article 405:** Requires the City to consult with the Idaho SHPO prior to future construction and if new sites are discovered, prepare and file a Cultural Resources Management Plan.
- **Article 406:** Requires the City to conduct a recreation survey of the upper end of the Project reservoir and file a Recreation Plan.
- **Article 407:** Requires the City to control non-Project use of Project lands and waters.

Based on a review of the City's and FERC records, there have been no identified major license compliance deviations.

4.9 Current Net Investment

The City is a municipality within the meaning of Section 3(7) of the FPA, and as such the Project is not subject to the takeover provisions of Section 14 of the FPA. Accordingly, FERC's regulations related to current net investment do not apply. However, to address the requirements of the PAD, the current net investment in the Project is $19,162,623 as of 2024 (adjusted for inflation and not inclusive of accumulated depreciation). This value should not be interpreted as the fair market value.

4.10 Potential for New Project Facilities

At this time, the City is not proposing any modifications to the physical plant or operational changes to the Project. While the City does not presently propose any new Project facilities or upgrades, they continually evaluate the potential for such improvements. If the City intends to propose any new Project facilities or upgrades in the FLA that would affect the scope of relicensing studies, they will inform FERC and licensing stakeholders of this proposal at a time early enough in the pre-filing consultation process to ensure that the effects of any new facilities or upgrades are appropriately evaluated as part of the relicensing process.

4.11 Public Utility Regulatory Policies Act (PURPA) Benefits

In accordance with 18 CFR § 5.6(e), the City is not seeking rights under Section 210 of the Public Utility Regulatory Policies Act of 1978 (PURPA) for the Project at this time and, therefore, no additional information is required. The City reserves the right to exercise any rights available to it under PURPA in the future.

5.0 Description of Existing Environment and Resource Impacts

5.1 Description of the River Basin

The Moyie River originates in British Columbia, Canada. In Canada, it flows northeast and east, collecting many headwater streams, before turning south and entering Moyie Lake between the towns of Cranbrook and Creston. Moyie Lake Provincial Park provides a day-use area, boat launch and 111 site campground (BC Parks 2023). Exiting Moyie Lake, the Moyie River continues south and crosses the border into Idaho near Eastport, where it flows south through the "canyon reach" until it reaches the confluence with the Kootenai River. The Project is in the lower portion of the Moyie River subbasin (hydrologic unit code [HUC] 17010105). The Moyie River watershed is a popular destination for typical Idaho reactional activities including fishing, hunting, camping, hiking, and rafting.

The Moyie River is generally confined to mountainous terrain with some access to its floodplain and isolated areas of agricultural production (Figure 5.1-1). The Moyie River has two historic dams near the confluence with the Kootenai River; the Project and the Eileen Dam (located approximately three miles upstream of the Project), which is a non-functioning and breached relic from historic mining. The Eileen Dam remains a popular sightseeing destination and popular challenge for rafters navigating the river (Idaho Department of Environmental Quality [IDEQ] 2022a; Idaho Department of Fish and Game [IDFG] 2023a).

Within Boundary County, the Moyie River is 92 miles long (IDFG 2024b). The drainage area of the Moyie River at Eastport is 570 square miles (U.S. Geological Survey [USGS] 2023a) and 755 miles at the Eileen gaging station (decommissioned in 1978)(USGS 2023b). The drainage area at Moyie Dam is about 760 square miles.

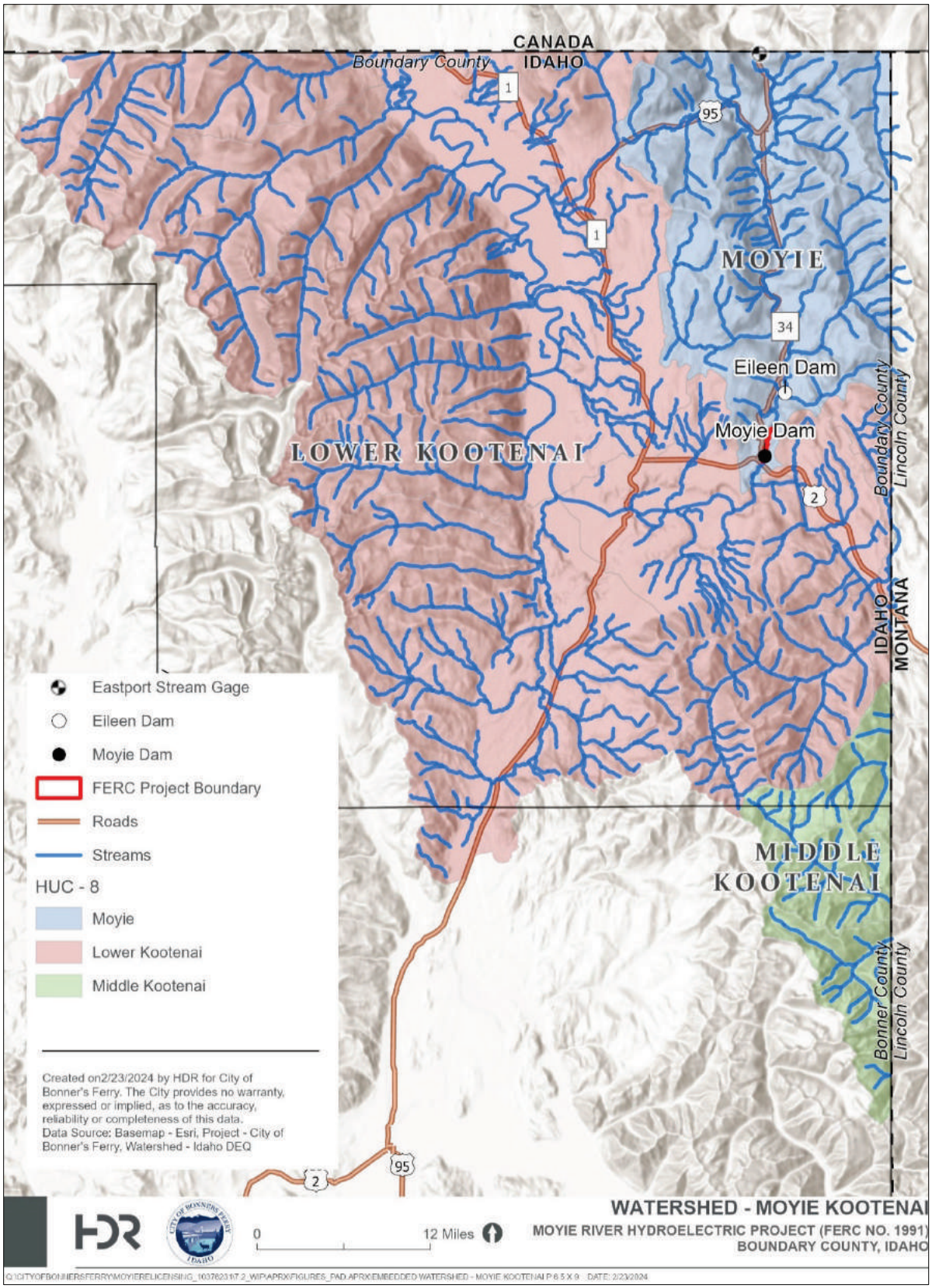

Figure 5.1-1. Moyie and Kootenai rivers watershed.

5.1.1 Major Land Use

The Moyie River watershed consists primarily of forested lands within the Idaho Panhandle National Forest (Figure 5.1-2). The lands immediately surrounding the Moyie River are a mixture of private and USFS lands (Figure 5.1-3). The City owns all of the Project Boundary land, except for approximately 1.55 acres at the upstream end of the reservoir managed by the USFS. Land adjacent to Project Boundary is owned by the City of Moyie Springs, State of Idaho, the USFS, and private landowners.

Approximately 1 mile downstream of the Project are lands owned by the United States in trust for the benefit of the Kootenai Tribe of Idaho. The Kootenai Tribe of Idaho operates the Twin Rivers Canyon Resort (Section 5.8.3.3 of this PAD) and Twin Rivers Hatchery (Section 5.1.2.1 of this PAD) downstream of the Project near the confluence with the Moyie and Kootenai rivers.

Timber harvest and wood production are important industries, with hops and cattle ranching the main agricultural uses. There are limited metropolitan areas, with the nearest towns being Moyie Springs and Bonners Ferry. Recreational activities include hunting, skiing, hiking, whitewater boating, fishing, and other outdoor activities. The area has a cool, temperate climate with warm, dry summers and moist winters with heavy snowfall, although precipitation is common at lower elevations (Idaho State Wildlife Action Plan [SWAP]; IDFG 2023b).

The onsite land use is focused on power production by hydroelectric facilities. Public access to and across the site is generally permitted to enable the public to use the reservoir for recreation. Surrounding area land uses include a transportation corridor of roads and railroad track and residential uses on the ridgetops above the Project.

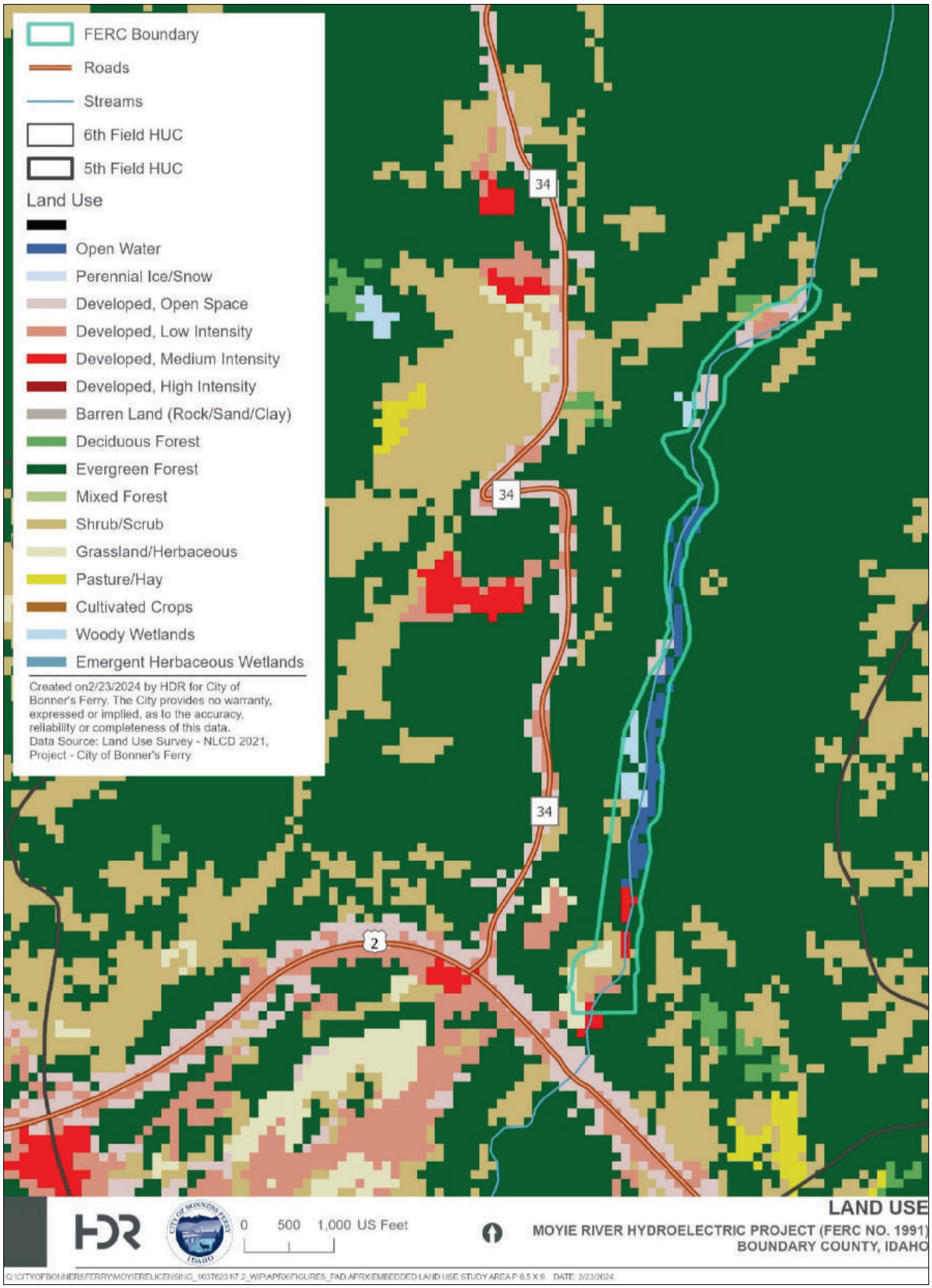

Figure 5.1-2. Land use types in the vicinity of the Moyie River Project.

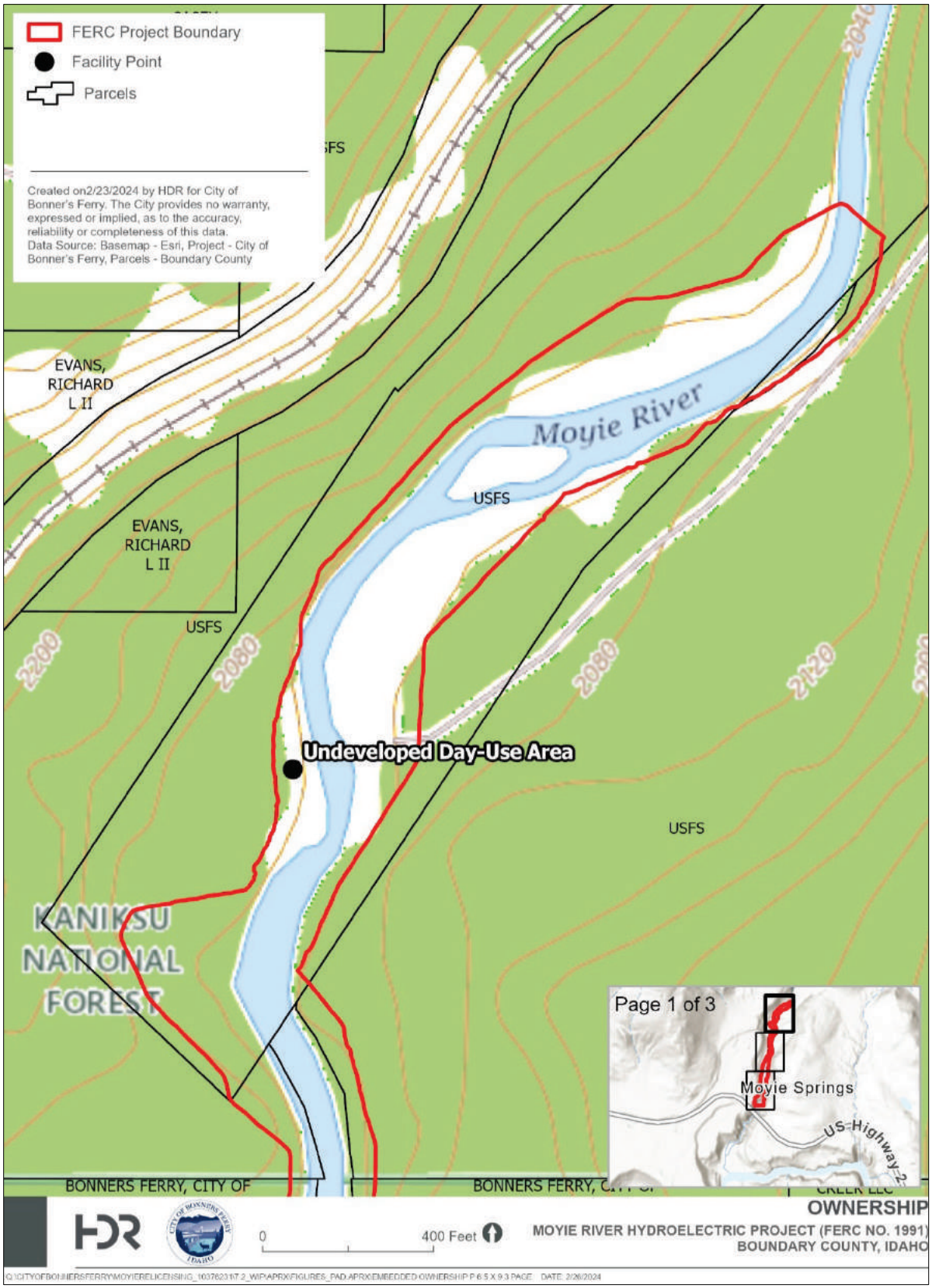

Figure 5.1-3. Land ownership at the Moyie River Project (page 1 of 3).

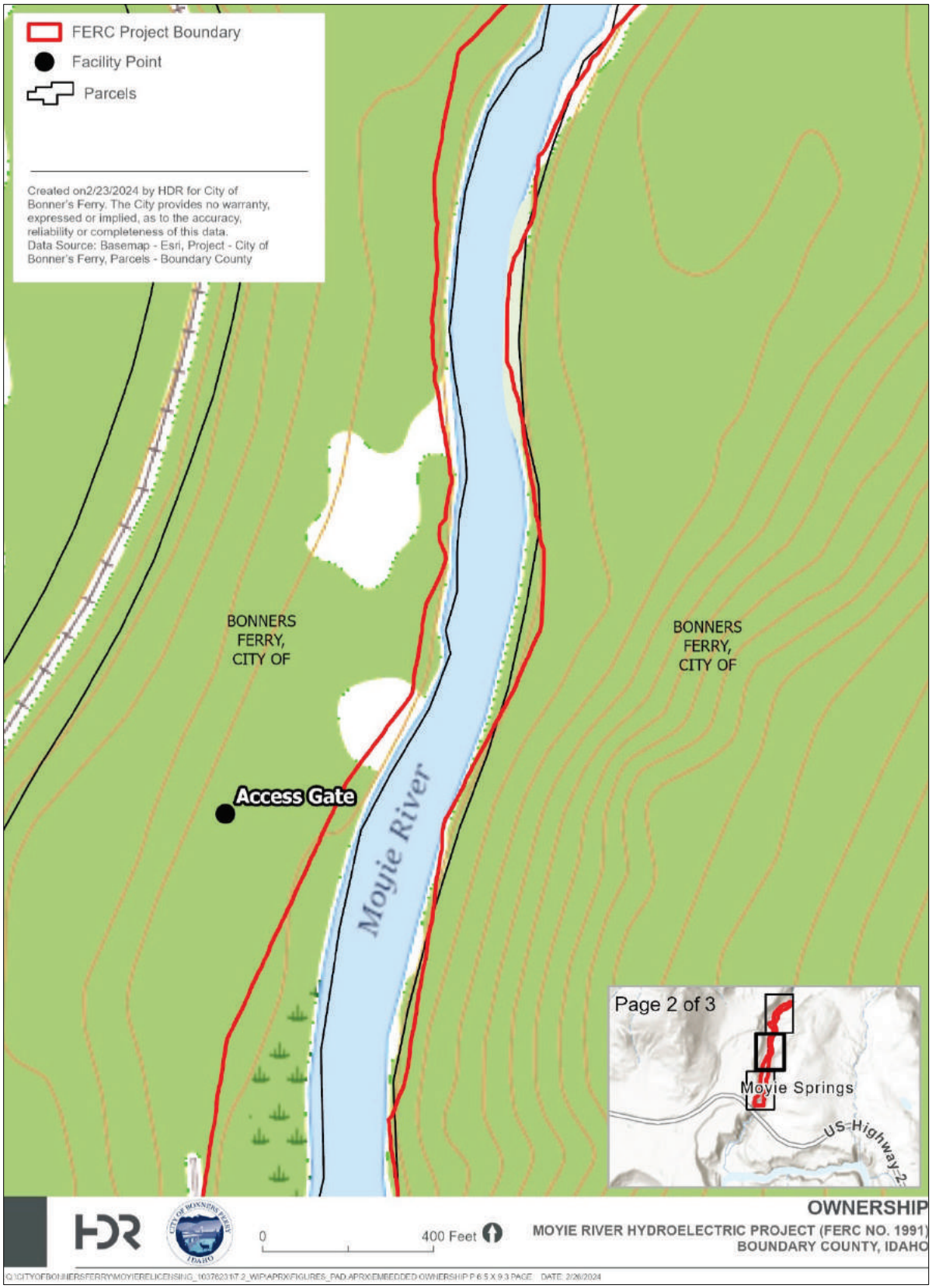

Figure 5.1-3. Land ownership at the Moyie River Project (page 2 of 3).

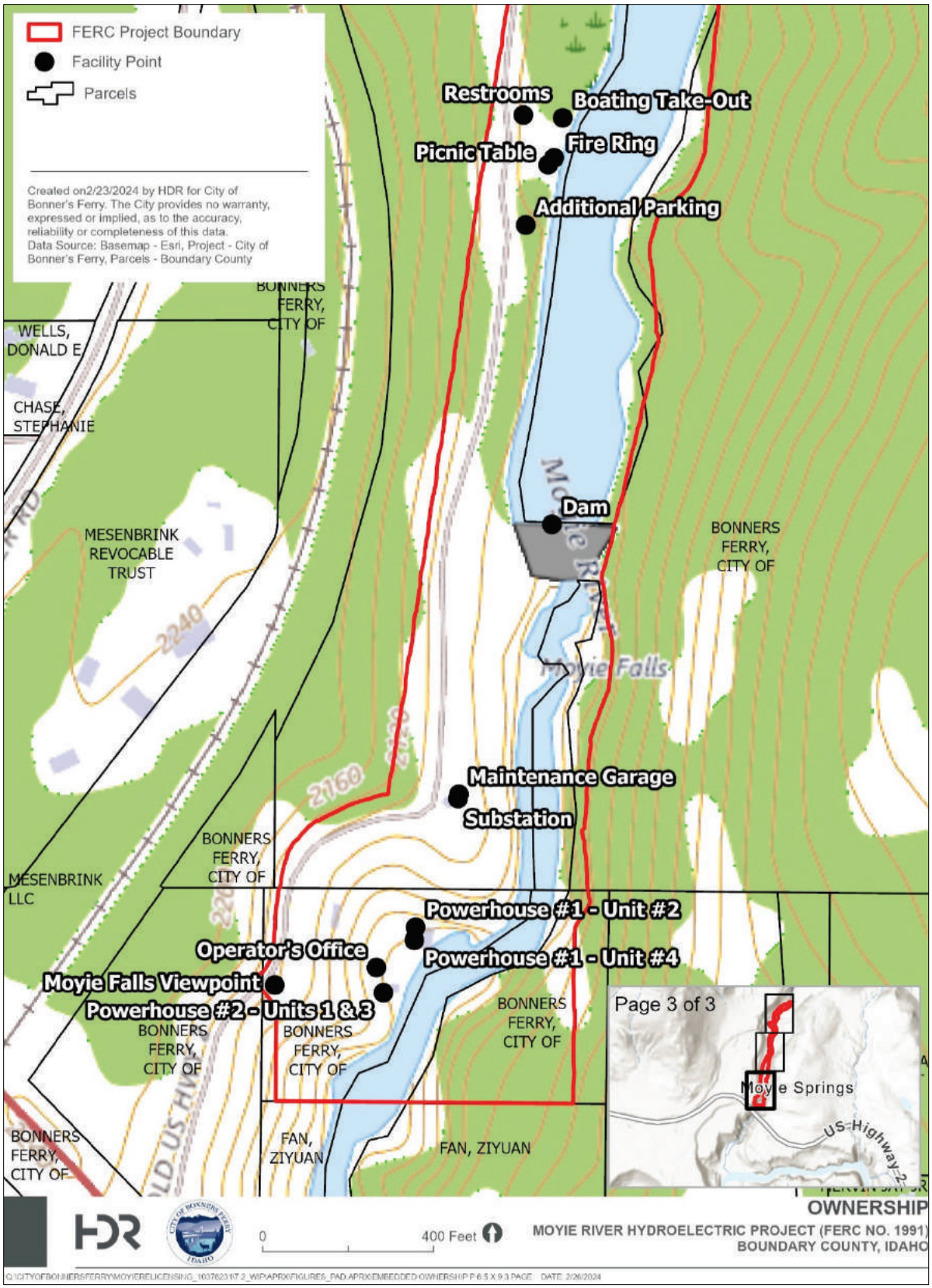

Figure 5.1-3. Land ownership at the Moyie River Project (page 3 of 3).

5.1.2 Major Water Use

The primary developed use of the Moyie River within the U.S. is the generation of electric power by the City of Bonners Ferry. Water diverted from the river at Moyie Dam passes through a tunnel and penstock to two powerhouses, and four turbine/generators are used to handle a maximum of 360 cfs. Water is also diverted for agricultural, domestic, municipal and industrial (hatchery) use. Additionally, the Moyie River remains a popular recreation site for fishing, hunting, camping, hiking, and rafting.

5.1.2.1 Twin Rivers Hatchery

In 2014, the Kootenai Tribe of Idaho opened the Twin Rivers Tribal Sturgeon and Burbot Hatchery downstream of the Project near the confluence of the Kootenai and Moyie rivers. Water for the hatchery is supplied from the Kootenai River, Moyie River, and groundwater wells. Groundwater and surface water sources are mixed as needed to achieve desired temperatures necessary for the various species and life stages being produced. Water permits were obtained from the State of Idaho Department of Water Resources for surface and groundwater withdrawals at the hatchery site (Permit No. 98•07913, 08/31/11).

5.1.3 Dams and Diversions within the Basin

There are no upstream or downstream water resource projects on the Moyie River. The Eileen Dam, built by the Cynide Gold Company to provide power to nearby mines, was breached due to a flood in 1925 (Boundary County Historical Society 2023). The nearest downstream water resource project is on the Kootenai River at Queensbay Dam, which impounds Kootenay Lake. Queensbay Dam is approximately 100 miles downstream from the confluence of the Moyie River and Kootenai River, in British Columbia, Canada.

5.1.4 Tributary Rivers and Streams

Between the Idaho border and the Project, several small streams flow into the Moyie River, notably Round Prairie Creek, Meadow Creek, Placer Creek, Deer Creek, and Skin Creek. Figure 5.1-4 provides a map of the Moyie River watershed and major tributaries.

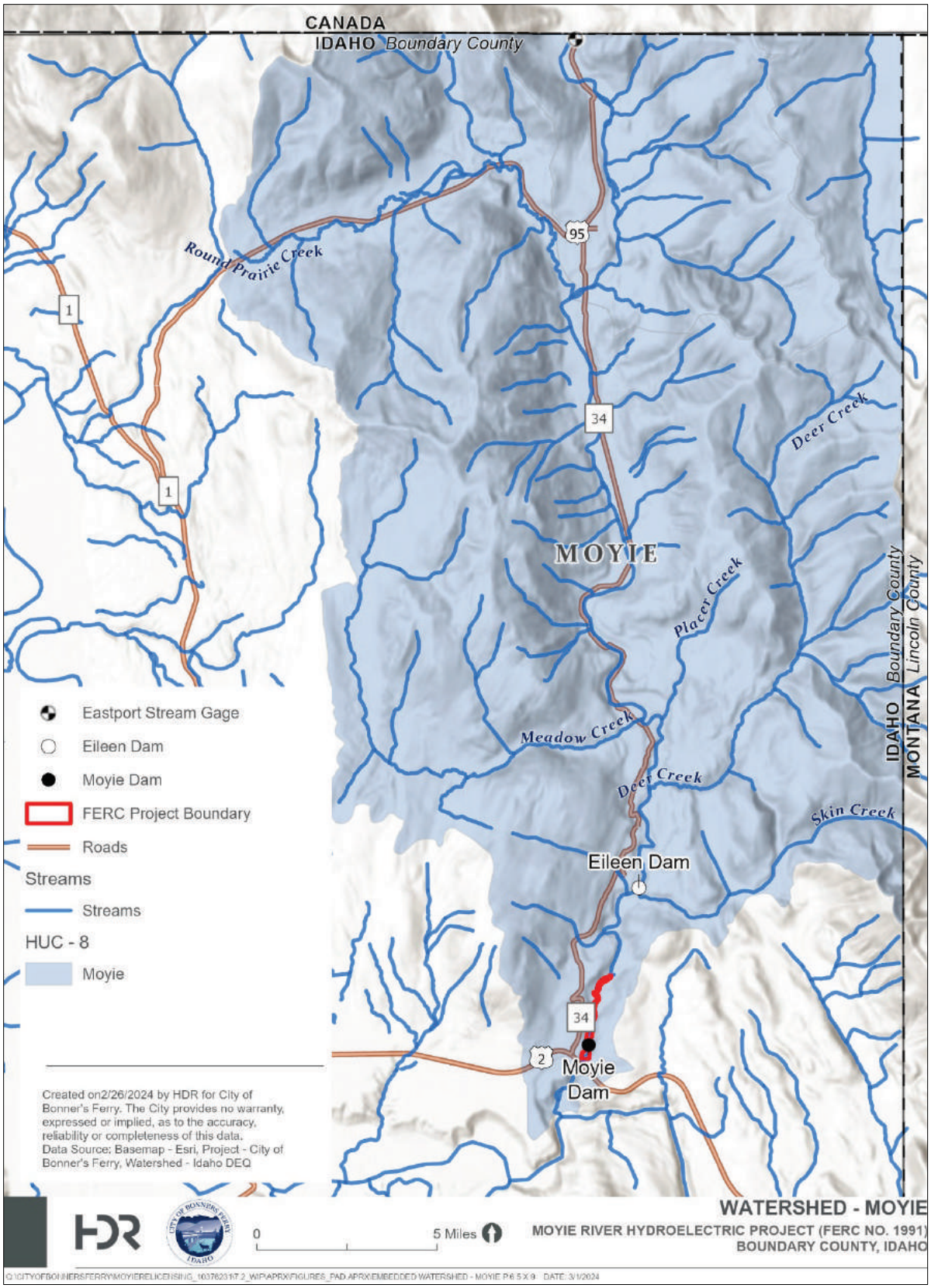

Figure 5.1-4. Moyie River watershed and major tributaries.

5.2 Geology, Topography, and Soils

5.2.1 Overview

The Moyie River Hydroelectric Project is 1.5 miles north of the confluence of the Moyie and Kootenai rivers. The Moyie River flows south from Canada, passing through the Purcell Mountains and USFS land before reaching the Project. The river is flanked by narrow erosional terraces at the Project, with nearly vertical slopes on the east bank near the lower stretch of the Project. Prior to the construction of the Project in the 1920s, the river traveled through a rock-walled canyon, creating several falls before entering the Kootenai River.

5.2.2 Topography and Geology

The Project is generally located within the Northern Rocky Mountain Physiographic Province, which is characterized by north to northwest trending mountain ranges separated by straight valleys that run parallel to the ranges. Elevations within the Project range from 2,040 feet at reservoir's downstream end near the dam to 1,850 feet at the powerhouses. Although the powerhouses are less than a mile downstream from the dam, the elevation difference is 190 ft. Between these points, the river once cascaded through a rock walled canyon, creating several falls before entering the Kootenai River.

The earliest known geologic event in the Project region was Precambrian deposition of the thick Belt Supergroup sediments in a shallow marine basin (City of Bonners Ferry 1996a). These Belt series sediments metamorphosed into agrillites, siltite, and quartzite, forming the bulk of the Cabinet and Purcell Mountains. Folding along a north-south axis and intrusion by gabbroic-dioritic dikes and sills occurred 870 million years ago. During the Cambrian period, 500 to 570 million years ago, the area was again inundated (City of Bonners Ferry 1996a).

Emplacement of diverse intrusive bodies, along with metamorphism and deformation, occurred intermittently from the Jurassic through the Tertiary. In the late Cretaceous, intrusion of the Idaho Batholith, accompanied by eastward thrusting and later downfaulting, created the Purcell Trench. At the same time, overthrust faulting determined the course of the Moyie River (Conners 1976; Moratto et al. 1990:2-3).

Glaciation during the Pleistocene is responsible for many topographic features in the Project region. During the Wisconsin glaciation, between 12,000 and 22,000 years ago, the Purcell Lobe of the Cordilleran Ice Sheet covered all but the highest peaks in the Purcell Mountains. As the climate warmed and the ice sheet retreated, till, outwash, and drift were deposited over bedrock, filling valleys. The Moyie River was left to cut through this material (City of Bonners Ferry 1996a). Figure 5.2-1 provides a map of identifying the topography near the vicinity of the Project and Figure 5.2-2 identifies a description of the geological setting near the vicinity of the Project.

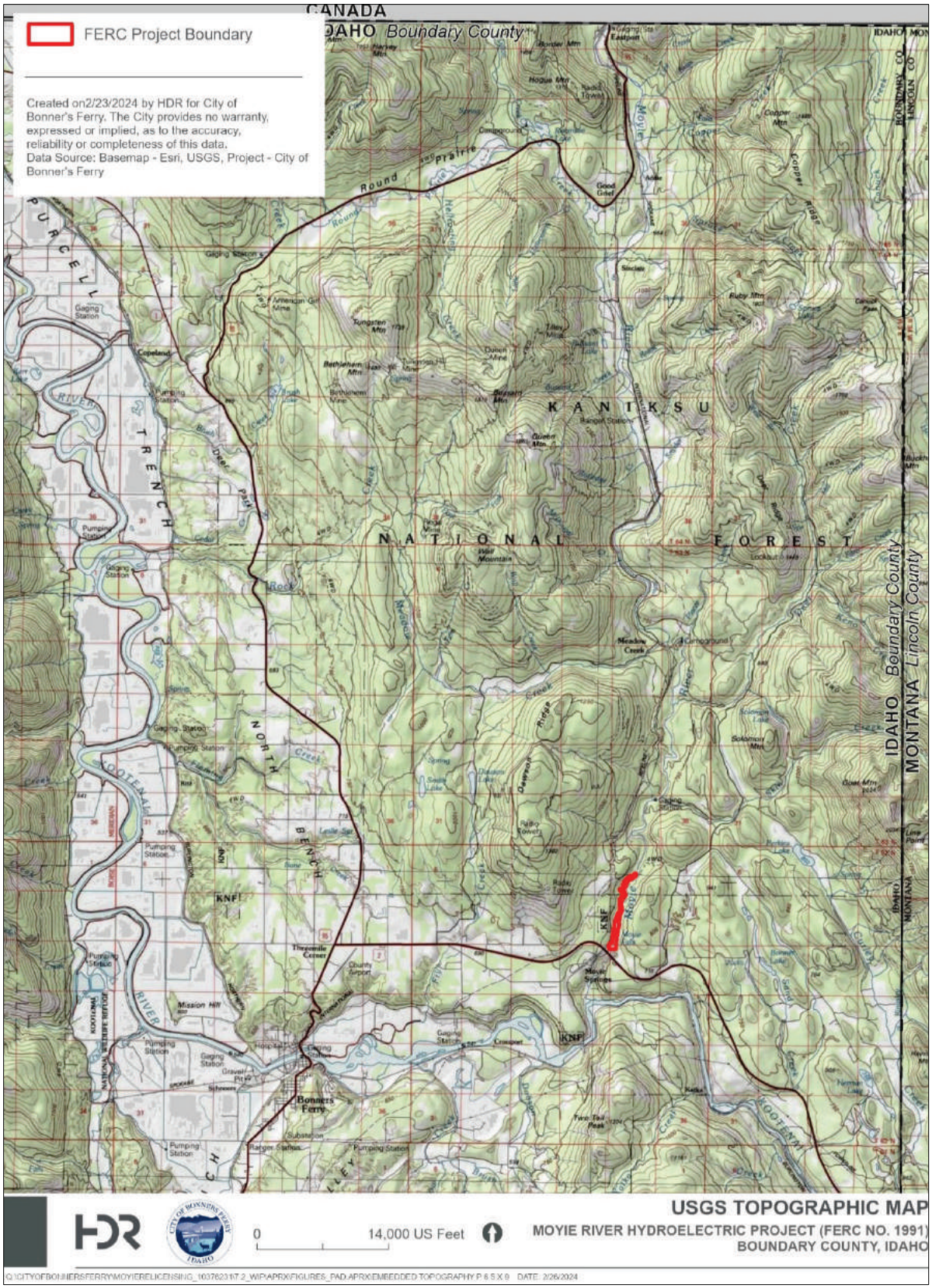

Figure 5.2-1. Topography in the vicinity of the Moyie River Project.

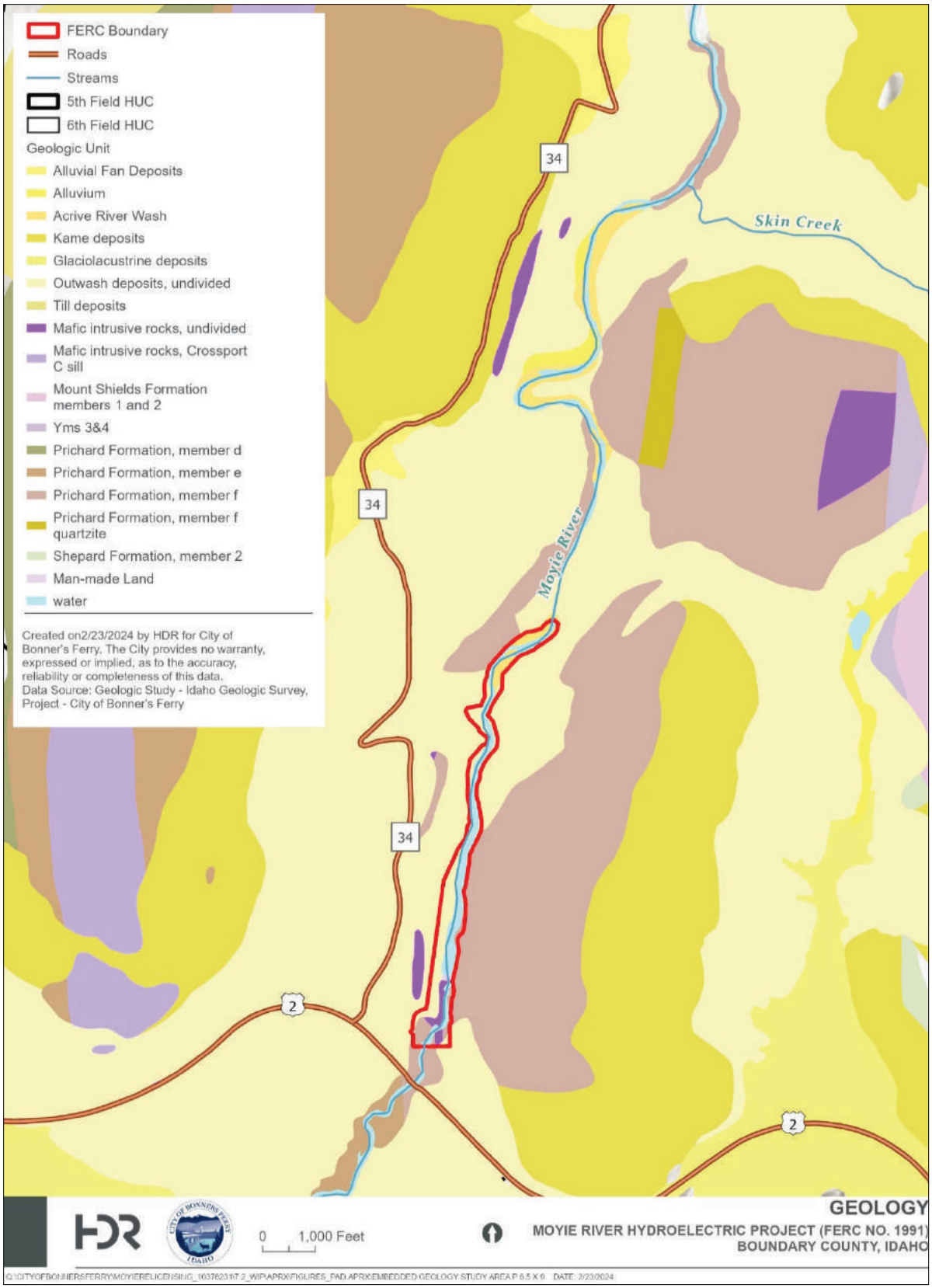

Figure 5.2-2. Geology of the Project vicinity.

5.2.3 Mineral Resources

Although it is no longer prominent, mining was a major industry in the 1800s in Boundary County. When gold was discovered in British Columbia in 1863, a rush of settlers from the west came north over the Wildhorse Trail. A ferry was established by Edwin Bonner in 1864 where the trail crossed the Kootenai River, and by 1883, a steamboat called "Midge" was carrying passengers and freight between the town soon to be known as Bonners Ferry and British Columbia. Railroads were soon developed as well, with the Great Northern Railroad (now Burlington Northern Sante Fe Railway) being built in 1892, and the Spokane International (now Union Pacific), just west of the Project, and Kootenai Valley lines (now ceased) soon following (IDEQ 2006). The Spokane International and Burlington Northern Railroad systems remain active in the area today.

One of the most prominent mines of the time was the Idaho Continental Mine, which was discovered in 1890 on the crest of the Selkirk Range in northwestern Boundary County near Porthill, Idaho. The mine produced large quantities of lead and silver, as well as smaller amounts of gold, zinc, and copper. Ore was shipped out of the mine until 1980, the same year it was leased by New Idaho Continental Mines. In 1984, a cooperative program between the USFS, the Idaho Department of Health and Welfare, the Soil Conservation Service (now the Natural Resources Conservation Service [NRCS]), the University of Idaho, the Idaho National Guard, and New Idaho Continental Mines, Inc., was formed to reclaim the Idaho Continental Mine tailings piles (IDEQ 2006). Through this program, it was found that the major sources for metals in Blue Joe Creek, which is currently on the §303(d) list for failing to meet water quality criteria, are seepage and leaching of tailings piles of the Idaho Continental Mine's Tunnel No. 5 (Mitchell 2000).

Currently, no active mines are present in the Lower Kootenai and Moyie subbasins. Metallic minerals, both precious and base metals, are present, but in northern Idaho base metals seem to be better developed than precious metals. The most important minerals are lead, zinc and copper. Of the precious metals, silver is more abundant than gold. Placer gold mining was active in the 1890s, particularly the Moyie River, and hydraulic mines to speed up the process were in operation in the 1910s. Most of the other mining claims in the county were filed in the late 1890s or early 1900s and were operated infrequently (Boundary County 2008).

Non-metallic mineral resources are limited in the region. There are no important deposits of phosphatic shale, such as occur in southeastern Idaho, and neither limestone nor gypsum is present. There are also no occurrences of energy minerals such as coal or uranium.

Sand and gravel deposits occur throughout the region and are an important resource, although many deposits tend to be somewhat limited in extent. Sand and gravel deposits are present along the Moyie River, and in years past at least two deposits have been exploited near Meadow Creek. However, to date, development of gravel resources along the Moyie River has been limited. There are several types of rock that make good building stone. These deposits are voluminous and constitute an important potential resource for the future.

5.2.4 Project Area Soils

The U.S. Department of Agriculture (USDA) NRCS soil survey information was reviewed for the general Project vicinity. Soil types within and immediately adjacent to the Project are generally classified as rock outcrop and ashy silt loam. Figure 5.2-3 shows the soil types within the vicinity of the Moyie River Project.

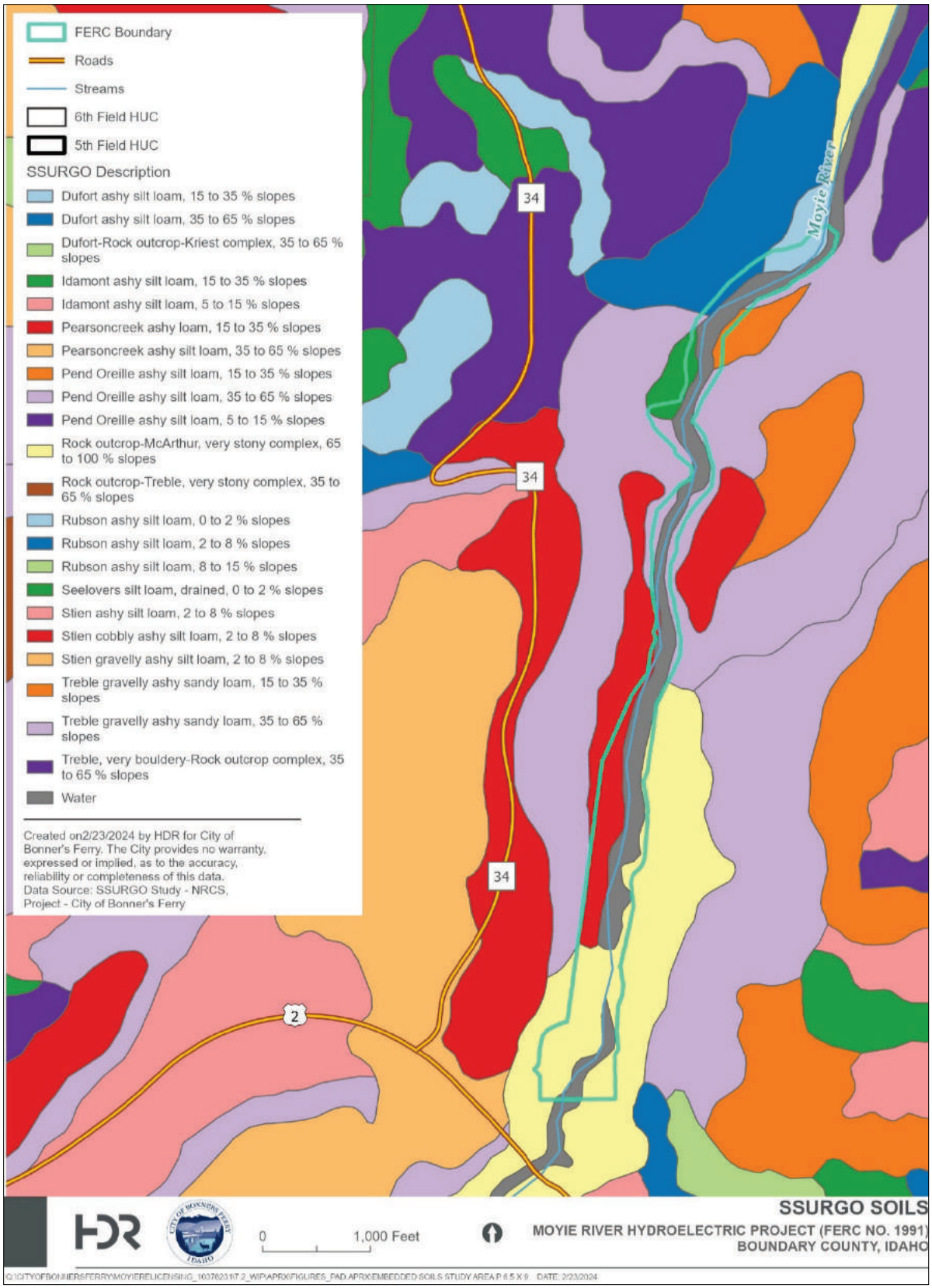

Figure 5.2-3. Soils in the vicinity of the Moyie River Project.

5.2.5 Shoreline and Stream Banks

The shoreline around the reservoir is mostly steep, composed primarily of forested lands. The river is flanked by narrow erosional terraces at the Project, with nearly vertical slopes on the east bank near the lower stretch of the Project. A lateral freshwater forested/shrub wetland exists on the west side of the Project reservoir (see Section 5.6 of this PAD).

The City owns and operates an existing boating take-out and day-use area upstream of the Project dam. The take-out area is a gravel ramp maintained by the City. The area also provides day-use recreation opportunities, with amenities including an ADA-accessible portable restroom, a picnic table, fire ring, trash can, and an ADA-accessible fishing dock at the end of a concrete trail. Additionally, there is an undeveloped day-use area near the upper end of the reservoir.

5.2.6 Seismicity

There are no faults within the vicinity of the Project. The closest faults are located southeast of the Project along the Cabinet Mountain range in Montana. All nearby faults have an approximated movement of less than 0.2 millimeters (mm)/year and are considered from the undifferentiated quaternary period (<1.6 million years). A map of the nearby faults can be seen in Figure 5.2-4. Fault characteristics are summarized in Table 5.2-1. The closest fault is the Pine Creek Valley Fault which is located downstream and adjacent to the Kootenai River southwest of the Town of Sylvanite, Montana approximately 12 miles away.

Table 5.2-1. Nearby faults and details.

Fault	Distance from Project (miles)	Approximate Length (miles)	Period	Approximate Movement
Pine Creek Valley Fault	12	1.9	Undifferentiated Quaternary	Less than 0.2 mm/year
O'Brien's Creek Fault	14	9.3	Undifferentiated Quaternary	Less than 0.2 mm/year
Savage Lake Fault	27	11.2	Undifferentiated Quaternary	Less than 0.2 mm/year
Bull Lake Fault	36	13.7	Undifferentiated Quaternary	Less than 0.2 mm/year

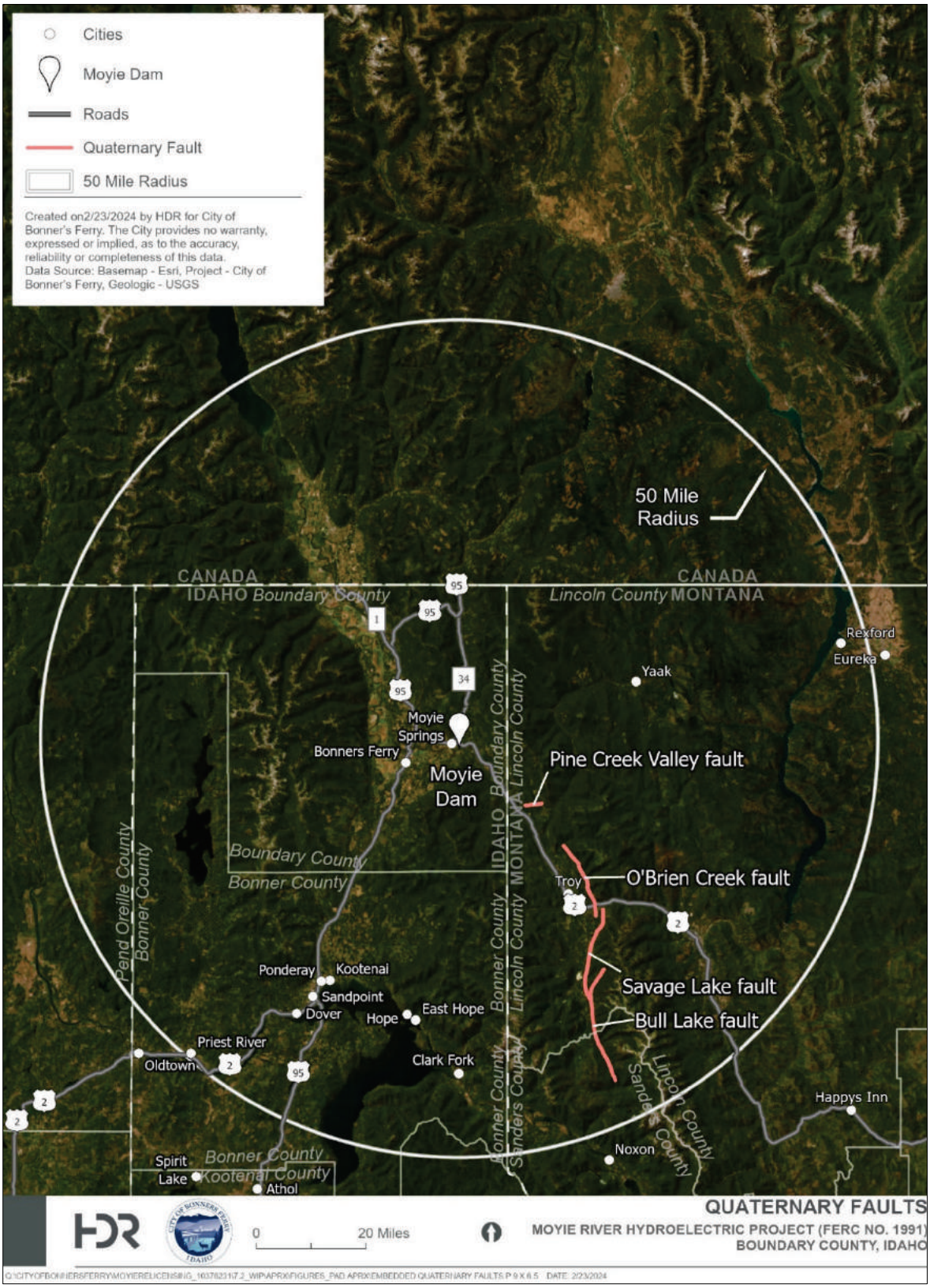

Figure 5.2-4. Map of nearby faults within a 50 mile radius of Moyie Dam.

5.3 Water Resources

5.3.1 Drainage Area

The Moyie River Hydroelectric Project is located near Moyie Springs, in Boundary County, Idaho and approximately 1.5 miles upstream of the confluence of the Moyie and Kootenai rivers. The Project drainage area is approximately 755 square miles. The closest gaging station on the Moyie River is located at Eileen (Station 12307500), approximately 3 miles upstream from the Project dam. Unfortunately, the Eileen Station was decommissioned in 1978, and flow data are not available after that date. However, a gaging station is located approximately 22 miles upstream from the Project on the Moyie River at Eastport (Station 12406500). The drainage area at the Eastport Station is approximately 75 percent of the total Moyie River drainage area. Therefore, the basin hydrology at Eastport should be reasonably representative of the Moyie Basin as a whole.

5.3.2 Stream Flow Characteristics

The median streamflow of the Moyie River at Eastport is approximately 679 cfs at the Moyie River at Eastport Station. Monthly daily average flows for the Moyie River for the period of record range from 23 cfs to 8,930 cfs (Table 5.3-1).

Table 5.3-1. Summary of annual and monthly flows September 1929 through December 2022.

Month	Minimum (cfs)	90% Exceedance (cfs)	Average (cfs)	10% Exceedance (cfs)	Maximum (cfs)
January	30	64	165	290	1,960
February	44	69	185	349	3,190
March	44	91	323	654	5,240
April	72	320	1,278	2,620	6,100
May	415	1,400	3,036	4,980	8,930
June	217	539	1,911	3,640	7,320
July	67	143	453	932	2,830
August	39	60	129	222	717
September	26	48	92	146	728
October	23	51	137	250	2,720
November	33	64	226	496	3,510
December	35	64	216	425	3,100
Annual	**23**	**65**	**679**	**2,200**	**8,930**

Source: USGS Moyie River at Eastport, ID.

5.3.3 Flow Duration Curves

The flow duration curves can be found in Appendix E of this PAD.

5.3.4 Existing and Proposed Uses of Project Waters

The Idaho Department of Water Resources (IDWR) approves or denies proposals to appropriate water or change existing water rights, archives water right records, recommends and records adjudicated water rights, and oversees the delivery of water in times of shortage.

Available permits and water rights were reviewed. The City has four licensed water rights for power production at the Moyie River Dam. The water right numbers are: 98-2036, 98-2060, 98-7320, and 98-7492. The water rights cumulatively allow for diversion of 453 cfs of water for power production. Within the Project Boundary, the only permitted use is for the generation of electric power by the City of Bonners Ferry. Water diverted from the river at Moyie Dam passes through a tunnel and penstock to two powerhouses, and four turbine/generators are used to handle a maximum of 360 cfs. Outside of the Project Boundary, water is diverted for agricultural domestic and municipal use. Additionally, the Moyie River remains a popular recreation site for fishing, hunting, camping, hiking, and rafting.

5.3.5 Existing Instream Flow Uses in the Project Area

In addition to the existing instream flow uses described in Section 5.3.4 above, the State of Idaho Water Resources Board holds a minimum stream flow water right (98-7704; IDWR 2024) on Moyie River. Idaho's Minimum Stream Flow Program was approved by the Legislature in 1978 to preserve stream flows and lake elevations for public health, safety, and welfare. The minimum stream flow is the amount of flow necessary to preserve desired stream values, including fish and wildlife habitat, aquatic life, navigation and transportation, recreation, water quality, and aesthetic beauty. Minimum stream flow water rights are held by the Idaho Water Resource Board in trust for Idaho citizens.

5.3.6 Approved Water Quality Standards

Water quality standards are found in the Idaho Administrative Procedures Act (IDAPA) 58.01.02 State Water Quality Standards and administered by the IDEQ (Table 5.3-2). The Moyie River is within the Moyie River subbasin assigned the HUC 17010105. The Moyie River subbasin is comprised of twelve water body units. The Project divides Unit P-1 (Moyie River: Moyie Falls Dam to mouth [assessment unit (AU): ID17010105PN001_05]) and Unit P-2 (Moyie River: Meadow Creek to Moyie Falls Dam [AU: ID17010105PN002_05]). The designated beneficial uses in both units consist of cold water aquatic life (COLD), salmonid spawning (SS), primary contact recreation (PCR), and domestic water supply (DWS).

Table 5.3-2. Applicable Idaho water quality standards.

Designated Uses	Criteria	Standards
Aquatic Life (COLD and SS)	pH	Within the range of 6.5 to 9.0.
	Total dissolved gas	Not to exceed 110% of saturation at atmospheric pressure at the point of sample collection.
	Dissolved Oxygen	Exceed 6 milligrams per liter (mg/L) at all times. In areas used for spawning and during the time spawning and incubation occurs, the 1-day minimum shall not be less than 5 mg/L in intergravel water, with a 7-day average mean of not less than 6 mg/L. For the water column, the 1-day minimum shall not be less than 6 mg/L or 90% of saturation, whichever is greater. In lakes and reservoirs this standard does not apply to: (1) The bottom twenty percent (20%) of water depth in natural lakes and reservoirs where depths are thirty-five (35) meters or less; (2) The bottom seven (7) meters of water depth in natural lakes and reservoirs where depths are greater than thirty-five (35) meters; and (3) Those waters of the hypolimnion in stratified lakes and reservoirs.
	Temperature	22 degrees Celsius (ºC) or less with a maximum daily average of no greater than 19ºC. In areas used for spawning and during the time spawning and incubation occurs, temperature shall be 13ºC or less with a maximum daily average no greater than 9ºC.[1] The temperature in lakes, including reservoirs with mean detention times of greater than 15 days, shall have no measurable change from natural background conditions.
	Ammonia	1-hour and 30-day average concentrations on total ammonia nitrogen (in mg N/L) is not to exceed, more than once every 3 years, the values calculated using the equations specified in IDAPA 58.01.02.250.02.d.i and IDAPA 58.01.02.250.02.d.ii, respectively. The highest 4-day average within the 30-day period should not exceed 2.5 times the average calculated in IDAPA 58.01.02.250.02.d.ii.
	Turbidity	Shall not exceed background turbidity by more than 50 nephelometric turbidity units (NTUs) instantaneously or more than 25 NTUs for more than 10 consecutive days in waters below any applicable mixing zone set by IDEQ.
PCR	*E. coli*	Not to exceed a geometric mean of 126 E. coli organisms per 100 mL based on a minimum of 5 samples taken every 3 to 11 days over a 45-day period; or A statistical threshold value (STV) of four hundred and ten (410) *E. coli* counts per one hundred (100) mL in more than ten percent (10%) of samples collected over a forty-five (45) day period.
	Enterococci	Not to exceed geometric mean of thirty-five (35) enterococci counts per one hundred (100) mL based on a minimum of five (5) samples taken every three (3) to eleven (11) days over a forty-five (45) day period; or A STV of one hundred and thirty (130) enterococci counts per one hundred (100) mL in more than ten percent (10%) of samples collected over forty-five (45) day period.

Designated Uses	Criteria	Standards
DWS	Turbidity	As measured at any public water intake shall not be increased by more than five (5) NTU above background when background turbidity is fifty (50) NTU or less; Increased by more than ten percent (10%) above background when background turbidity is greater than fifty (50) NTU and less than two hundred and fifty (250) NTU; or Increased by more than twenty-five (25) NTU above background when background turbidity is two hundred and fifty (250) NTU or greater.
	Radioactive Materials	Not to exceed concentrations specified in IDEQ Rules, IDAPA 58.01.08, Rules Governing Public Drinking Water Systems.

1 U.S. Environmental Protection Agency (USEPA) Bull Trout Temperature Criteria do not apply to the Moyie River below Skin Creek.

Agricultural water supply, industrial water supply, wildlife habitats, and aesthetics are beneficial uses that apply to all waters of the state of Idaho and are generally satisfied under the general water quality standards in Section 250 of the Idaho Water Quality Standards (IDAPA 58.01.02).

The general surface water quality criteria applicable to all surface waters of the state are as follows (IDAPA 58.01.02.200):

- Surface waters of the state shall be free from hazardous materials in concentrations found to be of public health significance or to impair designated beneficial uses.
- Surface waters of the state shall be free from toxic substances in concentrations that impair designated beneficial uses.
- Surface waters of the state shall be free from deleterious materials in concentrations that impair designated beneficial uses.
- Radioactive materials or radioactivity shall not exceed the values listed in the Code of Federal Regulations, Title 10, Chapter 1, Part 20, Appendix B, Table 2, Effluent Concentrations, Column 2. (b) Radioactive materials or radioactivity shall not exceed concentrations required to meet the standards set forth in Title 10, Chapter 1, Part 20, of the Code of Federal Regulations for maximum exposure of critical human organs in the case of foodstuffs harvested from these waters for human consumption.
- Surface waters of the state shall be free from floating, suspended, or submerged matter of any kind in concentrations causing nuisance or objectionable conditions or that may impair designated beneficial uses.
- Surface waters of the state shall be free from excess nutrients that can cause visible slime growths or other nuisance aquatic growths impairing designated beneficial uses.
- Surface waters of the state shall be free from oxygen-demanding materials in concentrations that would result in an anaerobic water condition.
- Sediment shall not exceed quantities specified in IDAPA Sections 250 and 252, or, in the absence of specific sediment criteria, quantities which impair designated beneficial uses.

- When natural background conditions exceed any applicable water quality criteria set forth in IDAPA Sections 210, 250, 251, 252, or 253, the applicable water quality criteria shall not apply; instead, there shall be no lowering of water quality from natural background conditions.

5.3.7 Existing Water Quality Conditions

The 2022 §303(d) identified 9 streams (11 assessment units) within the Moyie River subbasin (all above/upstream of the Project) that were impaired for temperature. All 11 AUs were also included in the Assessment of Water Quality in Kootenai River and Moyie River subbasins (total maximum daily load [TMDL]) 2014 Temperature Addendum (IDEQ 2014). Per the 2014 Temperature Addendum, all Moyie River AUs lack shade and most require substantial reductions in excess load to meet targets.

5.3.7.1 Moyie River: Meadow Creek to Moyie Falls Dam (Tributaries to the Moyie River; AU: ID17010105PN002_02).

According to IDEQ's 2022 Integrated Report, this AU is in category 4a[5] (IDEQ 2022b) as it is not supporting of the COLD and SS beneficial uses due to temperature impairment. A USEPA-approved TMDL was developed in 2006.[6] In 2014, a Temperature Addendum was prepared and approved by USEPA.

5.3.7.2 Moyie River: Moyie Falls Dam to mouth (AU: ID17010105PN001_05)

According to IDEQ's 2022 Integrated Report, this assessment unit is in Category 5[7] as it is not supporting of the COLD and SS beneficial uses due to temperature impairment; therefore, a USEPA-approved total maximum daily load needs to be developed (IDEQ 2022b).

IDEQ's 2022 Integrated Report mapper states that this AU met the metals criteria for arsenic, cadmium, lead, nickel, selenium, and zinc for the COLD beneficial use based on USGS water quality data collected during one event in 2020. The 2022 Integrated report mapper also states that this AU met the Idaho water quality standards for DWS based on the USGS water quality data for selenium, copper, nickel, and zinc collected during one event in 2020. Additionally, a single *E. coli* sample was collected on June 14, 2017, which had a concentration of 25 most probable number per 100 milliliters (MPN/100mL). This *E. coli* concentration along with the selenium, nickel, and zinc concentrations collected in 2020 meet the Idaho water quality standards for recreation (IDEQ 2022c). Periodic water quality sampling data of other parameters near the Project are available at the National Water Quality Monitoring Council Water Quality Portal (2024) and provided in Table 5.3-3.

Table 5.3-3. Water quality sampling results below Project.

Sample Date	Sample Time	Streamflow (cfs)	Water Temperature (°C)	pH (Standard Units)
2018-09-26	10:05:00	97	11.3	7.8
2018-12-11	08:15:00	151	0.1	7.2
2019-05-17	11:50:00	4200	8.6	6.9

[5] Waters have insufficient (or no) data and information to determine if beneficial uses are being attained or impaired.
[6] Assessment of Water Quality in Kootenai River and Moyie River Subbasins (TMDL). September 2006.
[7] Waters do not meet applicable water quality standards for one or more beneficial uses due to one or more pollutants, therefore, a USEPA approved TMDL is needed.

Sample Date	Sample Time	Streamflow (cfs)	Water Temperature (°C)	pH (Standard Units)
2020-08-13	07:30:00	151	17.5	7.8
2021-04-08	10:10:00	1070	6.1	7.0
2021-09-16	10:05:00	84	14.5	7.0
2022-04-07	07:55:00	1460	4.7	7.4
2022-09-07	16:00:00	115	17.8	6.9
2022-04-11	09:10:00	1240	6.1	7.0
2023-09-12	11:05:00	74	16.0	7.9

5.3.8 Reservoir Information

The Project's reservoir is approximately 1.1 miles long and has a surface area of 45 acres and gross storage capacity of approximately 540 acre-feet at the impoundment's normal maximum pool elevation of 2,023 feet (NGVD 29). As the Project is operated in ROR mode, there is no useable storage capacity.

5.3.8.1 Reservoir Sediment Removal Plan

License Article 401 requires the City to prepare and file a Sediment Removal Plan to describe the protocols for periodic removal and disposal of accumulated sediment from the Project's reservoir and to clear the area of the reservoir in the vicinity of a slide gate covering the low-level outlet at the base of the dam after consultation with IDEQ and U.S. Fish and Wildlife Service (USFWS). On July 21, 2005, FERC approved the Sediment Removal Plan filed March of that year. While the City did not have plans to commence sediment removal at that time, the plan was submitted for approval so that consultation could be complete and plan on file with FERC in advance of when the City needed to perform the sediment removal. In January 2019, the IDEQ issued a modified water quality certification to accommodate the City's request. FERC approved the variance and revised Sediment Removal Plan in February 2019. Sediment removal activities were complete in May 2019.

5.4 Fish and Aquatic Resources

5.4.1 Aquatic Habitat

The Moyie Reservoir is small and narrow (approximately 45 surface acres, 540 acre-feet storage volume) with steep shorelines. Water passes through the reservoir very rapidly with an average of only 17 hours of water residence time during the growing season. This rapid water exchange rate likely precludes the development of a lacustrine (lake-dwelling) plankton community in the reservoir that, in turn, severely limits fish production.

Immediately below the dam is Moyie Falls, a two-tiered set of falls (Figures 5.4-1 and 5.4-2). The upper falls, adjacent to the powerhouse yard, drops approximately 55 feet. The lower falls, one-quarter mile downstream of the powerhouse yard, drops approximately 30 feet. Moyie Falls is known as a natural barrier to fish migration (IDFG 2013; Kootenai Tribe of Idaho and Montana Fish, Wildlife and Parks 2004; Kootenai Tribe of Idaho 2010; IDFG 2024a).

Figure 5.4-1. Upper Moyie Falls.

Figure 5.4-2. Lower Moyie Falls.

The lower Moyie River (below Moyie Falls) has two distinct reaches: one from the confluence with the Kootenai River to the mouth of the canyon, and the other from the mouth of the canyon upstream to the lower falls below the powerhouse. The gradient is lower and the channel more exposed in the reach below the canyon mouth. In the canyon, bedrock walls extend into the channel in many places.

The lower Moyie River below Moyie Falls is a high-gradient river characterized by alternating high-gradient riffles and deep bedrock pools in the canyon reach and long glides in the lower reach. The channel is fairly straight, as indicated by a sinuosity of only about 1.2. Pools and riffles dominate the canyon reach, whereas glides dominate the lower reach. Rapids are common but generally short. Runs, steps, and cascades also tend to be short but alternate with other larger habitat types such as pools and glides, thus creating good habitat diversity. Four types of pools are present, but corner pools predominate. The quality of most pools is excellent because of their depth. The pool-riffle ratio is fair at 0.6:1. The pools are generally devoid of cover other than substrate and depth. Some pools are over 8 feet deep.

The substrate composition is strongly dominated by cobble, which represents 70 percent of the total channel surface area. Gravel, while representing 21 percent of channel surface area, is evenly dispersed among the cobble. As a consequence, spawning area is sparse. There is very little fine sediment in the channel and thus a low degree of gravel/cobble embeddedness.

Large woody debris is almost totally lacking, most likely because of the high gradient, the rocky nature of the canyon, and high flows during runoff. Large woody debris does not contribute to any pool forming, nor does it provide any in-stream cover where found.

The riparian vegetation density is sparse, consisting of young willows and native conifers set back from the channel. The sparseness of streamside vegetation is a result of a combination of high flows, expansive cobble bars, and steep-sloped bedrock. Shading below the mouth of the canyon is minimal because of the exposed nature of the channel and its north-south aspect. Shading in the canyon is greater because of the narrow, steep canyon walls.

5.4.2 Existing Fish and Aquatic Resources

Historically, IDFG managed the Moyie River primarily as a put-and-take trout fishery but concerns about potential fish disease impacts in Canadian waters and poor returns of hatchery stocked Rainbow Trout resulted in a change to wild trout management in 2000 (IDFG 2019). Subsequently, little data exists to inform species-specific temporal and geographic use or occurrence within the Moyie River.

IDFG surveys in 2005 and 2006 indicate that the Moyie River above the Project supports densities of about 250 Rainbow Trout and Brook Trout (combined) per mile and only a few Cutthroat Trout. Mountain Whitefish were numerous (IDFG 2019). The lower Moyie River downstream of the Project is known to support several species of suckers, Rainbow Trout, Kokanee Trout, Northern Squawfish, and Mountain Whitefish, among other species (see Table 5.4-1 below). Bull Trout and Kootenai River White Sturgeon (*Acipenser transmontanus*) can also be found in the Project vicinity, however, use of the lower Moyie River for spawning by either species has been limited and is considered highly unlikely given the available habitat (see Section 5.7 of this PAD for more detail).

Table 5.4-1 summarizes the current status and distribution of fish species in the lower Moyie River upstream of the Kootenai River confluence. Information about RTE fish species and designated critical habitat in the Moyie River subbasin is presented in sections 5.7.1 and 5.7.2 of this PAD, respectively.

Table 5.4-1. Fish species found in Moyie River near the Project.

Common Name	Scientific Name	Observed or Expected within Project Area
Bull Trout	*Salvelinus confluentus*	Observed
Kootenai White Sturgeon	*Acipenser transmontanus*	Not observed
Rainbow Trout	*Oncorhynchus mykiss*	Observed
Cutthroat Trout	*Oncorhynchus clarkii lewisi*	Expected
Kokanee	*Oncorhynchus nerka*	Observed
Brook Trout	*Salvelinus fontinalis*	Expected
Mountain Whitefish	*Prosopium williamsoni*	Observed
Burbot	*Lota lota*	Not observed
Largescale Sucker	*Catostomus macrocheilus*	Expected
Redside Shiner	*Richardsonius balteatus*	Observed
Longnose Dace	*Rhinichthys cataractae*	Observed
Largemouth Bass	*Micropterus salmoides*	Observed
Longnose Sucker	*Catostomus catostomus*	Observed
Pumpkinseed Sunfish	*Lepomis gibbosus*	Observed
Slimy Sculpin	*Cottus cognatus*	Observed
Torrent Sculpin	*Cottus rhotheus*	Observed
Northern Squawfish	*Ptychocheilus oregonensis*	Observed

Sources: City of Bonners Ferry 1996b; IDFG 2024a; IDFG 2024b.

5.4.3 Essential Fish Habitat

Based on a review of the National Marine Fisheries Service (NMFS) online database, no essential fish habitat under the Magnuson-Stevens Fishery Conservation and Management Act or established by the NMFS has been identified in the vicinity of the Project (NMFS 2024).

5.4.4 Temporal and Spatial Distribution/Life History Information of Primary Fish Communities

The life history strategies of fish species (such as, but not limited to, the timing and habitat requirements of spawning, hatching, recruitment, dispersal, feeding) determines the behavior and movement over the life of a fish. The Moyie River is home to several fish species, and this section details the life history characteristics of the most common species found in the Moyie River.

5.4.4.1 Rainbow Trout

Rainbow Trout are the resident form of *O. mykiss* that are native to cold water rivers and tributaries in the western U.S. Rainbow Trout, like Brook Trout, are non-native to Idaho however they were stocked generations ago and in many locations have become self-sustaining (IDFG 2019).

Spring is when Rainbow Trout spawn in Idaho's rivers and streams, driven by increasing daylight and water temperatures. Fish will seek out areas where the water is well oxygenated and there is a gravel stream bottom. Of particular importance is that the gravels are clean and not filled with silt or sediment. They require cold, clean streams, and lakes for spawning, rearing, and foraging (IDFG 2020).

Spawning areas near the Project are limited, as the substrate composition is strongly dominated by cobble, which represents 70 percent of the total channel surface area. Gravel, while representing 21 percent of channel surface area, is evenly dispersed among the cobble. There is very little fine sediment in the channel and thus a low degree of gravel/cobble embeddedness (City of Bonners Ferry 1996b).

5.4.4.2 Brook Trout

Brook Trout are a char species native to high elevation streams in eastern North America (USFWS 2024a). Brook Trout were introduced to Idaho over 100 years ago and have proliferated across many drainages throughout the state, including the Moyie watershed (IDFG 2022a). Brook Trout are known to regularly outcompete native Bull Trout for food and habitat, and they can also crossbreed, which threatens the future success of endangered Bull Trout and other native fishes (IDFG 2006 and 2022a). Brook Trout eat a variety of aquatic organisms including insects and other invertebrates. Young Brook Trout consume plankton until they are large enough to consume insects (USFWS 2024a).

Brook Trout spawn in the fall between September and October, usually over gravel in streams or lakes with ground water percolation or springs (IDFG 2006; USFWS 2024a). Brook Trout reach maturity around two years of age; however, they are able to spawn when they are one year of age (USFWS 2024a). Fry emerge between February and April, and young fish of this species inhabit sheltered areas with aquatic vegetation or shallow areas close to the shoreline (USFWS 2024a).

As mentioned in Section 5.4.4.1 above, spawning areas with gravel near the Project are limited.

5.4.4.3 Westslope Cutthroat Trout

Westslope Cutthroat Trout are a widely distributed subspecies of Cutthroat Trout that inhabit streams on either side of the Continental Divide (Allendorf and Leary 1988; Behnke 1992, as cited in IDFG 2013). To the west, they are found in the upper Kootenai River; the Clark Fork drainage in Montana and Idaho downstream to the falls of the Pend Oreille River; the Spokane River above Spokane Falls; the Coeur d'Alene and St. Joe River drainages; and the Clearwater and Salmon river basins (IDFG 2013). Westslope Cutthroat Trout are native to all large lakes of the upper Columbia River basin of Idaho and Montana (Coeur d'Alene, Pend Oreille, Priest, and Flathead lakes). Westslope Cutthroat Trout are estimated to occupy approximately 58 percent of their historical habitat in the U.S., 51 percent of which is in Idaho (IDFG 2013). Though it has been stated that Westslope Cutthroat Trout are the only indigenous trout species on the Moyie River, Cutthroat Trout are uncommon in the mainstem Moyie River today (Goodnight 1977, as cited in IDFG 2013; IDFG 2013).

There are three distinct life history forms of Westslope Cutthroat Trout, including lacustrine-adfluvial stocks, fluvial-adfluvial stocks, and fluvial or resident stocks. Lacustrine-adfluvial stocks migrate between lakes and streams, fluvial-adfluvial stocks move between mainstem rivers and tributaries, and fluvial or resident stocks spend their full life cycle in small headwater streams (Liknes and Graham 1988; Behnke 1992, as cited in IDFG 2013). Westslope Cutthroat Trout prefer cold, nutrient-poor streams, and early life stages are strongly influenced by substrate composition (Liknes and Graham 1984; Rieman and Apperson 1989, as cited in IDFG 2013; IDFG 2013). Higher levels of fine sediments are associated with success (Weaver and Fraley 1991; Irving and Bjornn 1984; Bjornn et al. 1977, as cited in IDFG 2013).

Westslope Cutthroat Trout prefer water velocities between 0.1 to 0.3 meters per second (Griffith 1970; Pratt 1984, as cited in IDFG 2013), well-developed and numerous pools (Shepard 1983; Pratt 1984; Peters 1988; Hoelscher and Bjornn 1989; Ireland 1993, as cited in IDFG 2013), and areas with some form of cover (Griffith 1970; Pratt 1984; Lider 1985, as cited in IDFG 2013). They are opportunistic feeders with a preference for consuming invertebrates over piscivory (Roscoe 1974; Liknes and Graham 1988; Behnke 1992, as cited in IDFG 2013).

Westslope Cutthroat Trout mature at age 3 and often spawn between ages 4 and 5 (McIntyre and Rieman 1995, as cited in IDFG 2013). All Westslope Cutthroat Trout are believed to spawn in small tributaries (IDFG 2013). Adfluvial stocks occupy areas close to tributaries in the fall before migrating upstream in the spring, and they spawn between March and July in areas where water temperatures are near 10 °C (Roscoe 1974; Liknes 1984; Shepard et al. 1984, as cited in IDFG 2013).

5.4.4.4 Burbot

Burbot are a North American freshwater cod species and are native to the Kootenai River system in Idaho (Simpson and Wallace 1982; Wallace and Zaroban, as cited in Beard et al. 2017; IDFG 2022b). They are most active at night and prey on crayfish and other fish as adults and zooplankton and other aquatic invertebrates when they are young (IDFG 2022b). They spend the daytime in cold, deep pools with slow water velocities (IDFG 2022b). Burbot are considered a keystone species in the Kootenai River (USFWS 2022). Once in critical decline in the Kootenai River, the Burbot population is now bolstered by an aquaculture program run by the Kootenai Tribe of Idaho and its partners out of the Twin Rivers hatchery at the confluence of the Kootenai and Moyie rivers in Idaho (USFWS 2022). Since the creation of the Burbot aquaculture program, the Burbot population has increased from an estimated 50 fish to more than 50,000 (USFWS 2022). Burbot are not known to reside in the Moyie River.

Burbot reach spawning maturity between three and four years of age. Burbot spawn from December to the end of March, with most spawning happening in mid-February to mid-March (IDFG 2022b). Burbot spawn at low water temperatures (1-4 °C: Fabricius 1954; McCrimmon and Devitt 1954; Hewson 1955; Lawler 1963; Meshkov 1967, as cited in McPhail and Paragamian 2000). Burbot migrate to shallow areas and form “spawning balls.” They do not build nests. Males and females swim around each other and release their eggs and sperm. The eggs are fertilized in the water and drift down to the river bottom to incubate. In rivers, Burbot appear to prefer to spawn over fine gravel, sand, or even fine silt, but coarse gravel and cobbles are used in lakes (McPhail and Paragamian 2000). Females can release anywhere from 60,000 to over 3 million very small eggs. The length of time the eggs incubate depends on the temperature of the water; colder water results in a longer incubation time and later hatching (IDFG 2022b). The Burbot native to the Kootenai River can live for eight to ten years (IDFG 2022b).

Burbot are adapted for cold water and can be physiologically and behaviorally impacted by warmer water temperatures. They are also vulnerable to changes in flow, as reduced flows can degrade their spawning habitat and increased flows can impede adults as they swim upstream (Washington Department of Fish and Wildlife [WDFW] 2024).

5.4.4.5 Mountain Whitefish

Mountain Whitefish are members of the family Salmonidae which also includes trout and char. They are a recognized game fish in Idaho although often overlooked and underutilized by anglers. Mountain Whitefish are widely distributed in Idaho's rivers and lakes and they require clean, cold water. This species spawns from October into December.

5.5 Wildlife and Botanical Resources

This section describes existing and potential wildlife and botanical resources within the Project Boundary and general vicinity. The wildlife section describes federal, and state-listed species with potential to occur based on observations or habitat availability. The botanical section provides an overview of land cover vegetation communities, including wetlands, riparian areas, lentic or littoral areas, federal or state-listed plant species and invasive plant species which may occur.

5.5.1 Land Use

The Project is in the northern panhandle of Idaho which is dominated by coniferous forests. The Moyie River watershed, like much of the region, consists primarily of forested lands within the Idaho Panhandle National Forest and private and corporate-owned forest lands used for timber harvest, with private agriculture at lower elevations. Timber harvest and wood production are important industries, with hops and cattle ranching the main agricultural uses. There are limited metropolitan areas, with the nearest towns being Bonners Ferry and Moyie Springs. Recreational activities abound, includes hunting, skiing, hiking, boating, fishing, and other outdoor activities. The area has a cool, temperate climate with warm, dry summers and moist winters with heavy snowfall, although rain is the common form of precipitation at lower elevations (Idaho SWAP; IDFG 2023b).

Fire suppression in the region has shifted the ecology of many forests, with an increase of shade-tolerant species and a decrease of fire-tolerant species, and changes in stand structure and density. These changes have contributed to reducing forest resistance and resilience to disturbances and climate change (Hessburg et al. 2022). Other areas with large swaths of clearcut and harvested forests have impacted big game use, and increased the cover of some invasive plants, reducing wildlife habitat (IDFG 2023b).

Climate change and local weather changes such as increased temperatures and more prolonged periods of summer drought may additionally change the composition and health of forests and have impacts on wildlife habitats. Warmer conditions will result in precipitation falling increasingly as rain rather than snow, reducing snowpack and causing early snowmelt (IDFG 2023b).

5.5.2 Natural Communities

The Project is located in the Flathead Valley within the Northern Rocky Mountain Forest-Steppe – Coniferous Forest – Alpine Meadow Provence according to the Idaho SWAP (IDFG 2023b). The dominant land cover in the Project Boundary and vicinity is Central Rocky Mountain Douglas-fir - Pine Forest, with small pockets of Rocky Mountain & Great Basin Lowland & Foothill Riparian Shrubland, developed areas (USGS 2016). Vegetation is sparse along the rocky slopes in the Project vicinity.

The Central Rocky Mountain Douglas-fir - Pine Forest Group is composed of highly variable montane coniferous forests dominated by a mix of Douglas fir (*Pseudotsuga menziesii*) and ponderosa pine (*Pinus ponderosa),* often with some lodgepole pine (*Pinus contorta*), western larch (*Larx lyllii*), or western white pine (*Pinus monticola*). The understory of these forests are variable but are often open, with grasses or deciduous shrubs (USGS 2016). Previous surveys[8] indicate these forests likely also include grand fir (*Abies grandis*) and western red cedar (*Thuja plicata*) with understory plant associations including ninebark (*Physocarpus malvaceus*), pinegrass (*Calamagrostis rubescens*), serviceberry (*Amelanchier alnifolia*) and Oregon boxwood (*Paxistima myrsinites*) (City of Bonners Ferry 1996a).

Rocky Mountain & Great Basin Lowland & Foothill Riparian Shrubland Group consists of riparian shrublands dominated by low to tall shrubs in between mountain valleys and lowlands. These generally include woodlands, shrublands and wetlands found along the streams usually occurring within a forested landscape. They are generally dominated by cottonwood (*Populus* sp.), with some conifers including spruce (*Picea* sp.), pine (*Pinus* sp.) or grand fir usually, or tall shrubs such as mountain alder (*Alnus incana*), red-osier dogwood (*Cornus sericea*), or birch (*Betula* sp.). Low shrubs such as snowberry (*Symphoricarpos* sp.) and rose (Rosa sp.) and forbs including lady fern (*Athyrium filix-femina*), male fern (*Dryopteris filix-mas*) and meadow senecio (*Senecio jacobaea*) are common (USGS 2016).

5.5.3 Developed and Other Human Use

Landcover types interspersed within the natural forest and riparian woodland communities include areas of Developed and Urban, Recently Disturbed or Modified Areas, and Pasture and Hay Field Crop (USGS 2016).

Developed and Urban areas in the Project Boundary and vicinity include those areas around the powerhouses, access roads and highways. This includes a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses and vegetation planted for recreation, erosion control, or aesthetic purposes. A road developed along the west side of the area for recreation and maintenance access is vegetated by forest, grass, and forbs.

Recently Disturbed or Modified Areas occur in small patches outside of the Project Boundary but within the vicinity. These are dominated by shrubby vegetation such as true shrubs, young trees in early successional stage or trees stunted from environmental conditions following tree-harvest (USGS 2016).

Pasture & Hay Field Crop Group includes pastures and hayfields, which are often mowed, fertilized, grazed, and/or manipulated to maintain a particular desirable agricultural structure and composition. Small patches occur outside of the Project Boundary, but within the vicinity (USGS 2016).

5.5.4 Botanical Resources

5.5.4.1 Trees and Herbaceous Plants

Potential botanical species in the Project vicinity are those typically associated with the Central Rocky Mountain Douglas-Fir-Pine Forest group or the Rocky Mountain & Great Basin Lowland &

[8] Maps from the City's 1996 FLA indicate vegetation mapping was performed using the Daubenmire and Daubenmire method. More information on the methodology can be found at: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsbdev7_002633.pdf.

Foothill Riparian Shrubland Group (USGS 2016). No endangered, threatened, candidate, or unique plant species are known to occur in the Project vicinity. See Table 5.5-1, below.

Table 5.5-1. List of potential botanical species in the Project vicinity.

Trees and Shrubs		Herbaceous Plants	
Common Name	**Scientific Name**	**Common Name**	**Scientific Name**
Grand Fir	*Abies grandis*	Artemisia	*Artemisia* sp.
Choke-Cherry	*Prunus virginiana*	Bluejoint Reedgrass	*Calamagrostis canadensis*
Douglas Fir	*Pseudotsuga menziesii*	Common Beaked Sedge	*Carex utriculata*
Desert Olive	*Forestiera pubescens*	Creeping Glow Wort	*Sibbaldia procumbens*
Dogwood	*Cornus sericea*	Fowl Manna Grass	*Glyceria striata*
Grey Alder	*Alnus incana*	Lady Fern	*Athyrium filix-femina*
Hawthorn	*Crataegus* sp.	Male Fern	*Dryopteris filix-mas*
Lewis' Mock-Orange	*Philadelphus lewisii*	Meadow Ragwort	*Senecio jacobaea*
Lodgepole Pine	*Pinus contorta*	Mountain Sedge	*Carex scopulorum*
Mountain Maple	*Acer glabrum*	Ninebark	*Physocarpus malvaceus*
Ponderosa Pine	*Pinus ponderosa*	Oregon Boxwood	*Paxistima myrsinites*
Resin Birch	*Betula glandulosa*	Pinegrass	*Calamagrostis rubescens*
Rose	*Rosa* sp.	Serviceberry	*Amelanchier alnifolia*
Three-Leaf Sumac	*Rhus trilobata*	Sierra Shooting Star	*Dodecatheon jeffreyi*
Thorny Buffaloberry	*Shepherdia argentea*	Shrubby Cinquefoil	*Dasiphora fruticosa* ssp. *floribunda*
Water Birch	*Betula occidentalis*	Snowberry	*Symphoricarpos* sp.
Western Larch	*Larx leyllii*	White Marsh Marigold	*Caltha leptosepala*
Western Red Cedar	*Thuja plicata*		
Western White Pine	*Pinus monticola*		
Willows	*Salix* sp.		

Sources: USGS 2016; City of Bonners Ferry 1996a, IDFG 2023b.

5.5.4.2 Invasive Plant Species

Six invasive plant species are known to occur in the Project vicinity (Table 5.5-2) (ISDA 2023). All of the species are terrestrial and occur in disturbed areas. There are no known occurrences of wetland or aquatic plants in the Project Boundary or vicinity. Five of the species are on Idaho's statewide containment list, while one (black henbane [*Hycosyamus niger*]) is on the statewide control list.

Table 5.5-2. Invasive terrestrial plant species potentially occurring in the Project vicinity.

Common Name	Scientific Name	Habitat
Canada Thistle	*Cirsium arvense*	Disturbed areas, stream banks, gardens, moist soils
Dalmation Toadflax	*Linaria dalmatica*	Disturbed places, pastures, fields
Houndstongue	*Cynoglossum officinale*	Disturbed areas, roadsides, rangelands, forest margins, and riparian zones
Oxeye Daisy	*Leucanthemum vulgare*	Disturbed areas, grasslands, meadows, pastures, and roadsides
Spotted Knapweed	*Centaurea stoebe*	Dry disturbed sites such as roadsides, waste areas, plains, and dry rangelands
Black Henbane	*Hycosyamus niger*	Disturbed sites such as roadsides, building sites, field margins, and pastures

Source: ISDA 2023.

5.5.5 Wildlife Resources

Pursuant to Article 404 of the current license, the City prepared and filed a Wildlife Mitigation Plan and installed and maintained two Canada goose nest boxes on the Project reservoir. On April 4, 2000, the City filed a letter with FERC stating that the City consulted with IDFG relative to the design and location of the goose nest boxes at the Project. Subsequently, two Canada goose boxes were constructed and installed along the east side of the reservoir during late March 2000.

5.5.5.1 Mammals

A variety of big game, furbearers, upland game, and nongame species occur in the Project vicinity along the Moyie River, although few species are found near the dam and powerhouse because of the limited wildlife habitat of that area. Table 5.5-3 provides a list of mammals that may occur in the Project vicinity (IDFG 2023c).

Table 5.5-3. Mammalian species potentially occurring in the Project vicinity.

Common Name	Scientific Name	Classification
American Badger	*Taxidea taxus*	Furbearing Animal
American Beaver	*Castor canadensis*	Furbearing Animal
American Black Bear	*Ursus americanus*	Big Game
American Marten	*Martes americana*	Furbearing Animal
American Mink	*Neogale vison*	Furbearing Animal
American Pika	*Ochotona princeps*	Protected Nongame
Big Brown Bat	*Eptesicus fuscus*	Protected Nongame
Bobcat	*Lynx rufus*	Furbearing Animal
California Myotis	*Myotis californicus*	Protected Nongame
Caribou	*Rangifer tarandus*	Protected Nongame
Common Muskrat	*Ondatra zibethicus*	Furbearing Animal
Coyote	*Canis latrans*	Predatory

Common Name	Scientific Name	Classification
Elk	*Cervus canadensis*	Big Game
Ermine (short-tailed weasel)	*Mustela erminea*	Predatory
Fisher	*Pekania pennanti*	Furbearing Animal
Fringed Myotis	*Myotis thysanodes*	Protected Nongame
Gray Wolf	*Canis lupus*	Big Game
Golden-Mantled Ground Squirrel	*Callospermophilus lateralis*	Protected Nongame
Grizzly Bear	*Ursus arctos*	Big Game
Little Brown Myotis	*Myotis lucifugus*	Protected Nongame
Long-Eared Myotis	*Myotis evotis*	Protected Nongame
Long-Legged Myotis	*Myotis volans*	Protected Nongame
Long-Tailed Weasel	*Mustela frenata*	Predatory
Northern Flying Squirrel	*Glaucomys sabrinus*	Protected Nongame
Moose	*Alces alces*	Big Game
Mountain Lion	*Puma concolor*	Big Game
Mule Deer	*Odocoileus hemionus*	Big Game
Northern Raccoon	*Procyon lotor*	Predatory
Northern River Otter	*Lontra canadensis*	Furbearing Animal
Red Fox	*Vulpes vulpes*	Furbearing Animal
Red Squirrel	*Tamiasciurus hudsonicus*	Upland Game Animal
Red-Tailed Chipmunk	*Neotamias ruficaudus*	Protected Nongame
Snowshoe Hare	*Lepus americanus*	Upland Game Animal
Striped Skunk	*Mephitis mephitis*	Predatory
Townsend's Big-Eared Bat	*Corynorhinus townsendii*	Protected Nongame
Western Small-Footed Myotis	*Myotis ciliolabrum*	Protected Nongame
White-Tailed Deer	*Odocoileus virginianus*	Big Game
Wolverine	*Gulo gulo*	Protected Nongame
Yellow-Pine Chipmunk	*Neotamias amoenus*	Protected Nongame
Yuma Myotis	*Myotis yumanensis*	Protected Nongame

Source: IDFG 2023c.

5.5.5.2 Birds

Birds may use the Project vicinity for nesting/roosting or foraging. According to an inquiry of eBird (2023), no federally or state-listed birds are known to occur in the Project vicinity. Waterfowl are known to use the reservoir pool area, but not immediately downstream of the dam. Two Canada goose nest boxes were constructed and installed on the east side of the reservoir in 2000 under consultation with the IDFG, although use of the boxes has not been recorded. Table 5.5-4 indicates bird species which may occur in Boundary County (IDFG 2023c).

Table 5.5-4. Avian species potentially occurring in the Project vicinity.

Common Name	Scientific Name
American Avocet	*Recurvirostra americana*
American Bittern	*Botaurus lentiginosus*
American Coot	*Fulica americana*
American Crow	*Corvus brachyrhynchos*
American Dipper	*Cinclus mexicanus*
American Goldfinch	*Spinus tristis*
American Kestrel	*Falco sparverius*
American Pipit	*Anthus rubescens*
American Redstart	*Setophaga ruticilla*
American Robin	*Turdus migratorius*
American Three-Toed Woodpecker	*Picoides dorsalis*
American Tree Sparrow	*Spizella arborea*
American White Pelican	*Pelecanus erythrorhynchos*
American Wigeon	*Anas americana*
Anna's Hummingbird	*Calypte anna*
Baird's Sandpiper	*Calidris bairdii*
Bald Eagle	*Haliaeetus leucocephalus*
Bank Swallow	*Riparia riparia*
Barn Swallow	*Hirundo rustica*
Barred Owl	*Strix varia*
Barrow's Goldeneye	*Bucephala islandica*
Belted Kingfisher	*Megaceryle alcyon*
Black Swift	*Cypseloides niger*
Black Tern	*Chlidonias niger*
Black-Backed Woodpecker	*Picoides arcticus*
Black-Bellied Plover	*Pluvialis squatarola*
Black-Billed Magpie	*Pica hudsonia*
Black-Capped Chickadee	*Poecile atricapillus*
Black-Chinned Hummingbird	*Archilochus alexandri*
Black-Crowned Night-Heron	*Nycticorax nycticorax*
Black-Headed Grosbeak	*Pheucticus melanocephalus*
Black-Necked Stilt	*Himantopus mexicanus*
Blue-Winged Teal	*Anas discors*
Bobolink	*Dolichonyx oryzivorus*

Common Name	Scientific Name
Bohemian Waxwing	*Bombycilla garrulus*
Bonaparte's Gull	*Chroicocephalus philadelphia*
Boreal Chickadee	*Poecile hudsonicus*
Boreal Owl	*Aegolius funereus*
Brewer's Blackbird	*Euphagus cyanocephalus*
Brown Creeper	*Certhia americana*
Brown-Headed Cowbird	*Molothrus ater*
Bufflehead	*Bucephala albeola*
Bullock's Oriole	*Icterus bullockii*
Cackling Goose	*Branta hutchinsii*
California Gull	*Larus californicus*
California Quail	*Callipepla californica*
Calliope Hummingbird	*Selasphorus calliope*
Canada Goose	*Branta canadensis*
Canvasback	*Aythya valisineria*
Caspian Tern	*Hydroprogne caspia*
Cassin's Finch	*Haemorhous cassinii*
Cassin's Vireo	*Vireo cassinii*
Cedar Waxwing	*Bombycilla cedrorum*
Chestnut-Backed Chickadee	*Poecile rufescens*
Chipping Sparrow	*Spizella passerina*
Chukar	*Alectoris chukar*
Cinnamon Teal	*Anas cyanoptera*
Clark's Nutcracker	*Nucifraga columbiana*
Cliff Swallow	*Petrochelidon pyrrhonota*
Common Goldeneye	*Bucephala clangula*
Common Loon	*Gavia immer*
Common Merganser	*Mergus merganser*
Common Nighthawk	*Chordeiles minor*
Common Raven	*Corvus corax*
Common Redpoll	*Acanthis flammea*
Common Tern	*Sterna hirundo*
Common Yellowthroat	*Geothlypis trichas*
Cooper's Hawk	*Accipiter cooperii*
Cordilleran Flycatcher	*Empidonax occidentalis*

Common Name	Scientific Name
Dappling Ducks	*Anas*
Dark-Eyed Junco	*Junco hyemalis*
Double-Crested Cormorant	*Phalacrocorax auritus*
Downy Woodpecker	*Picoides pubescens*
Dunlin	*Calidris alpina*
Dusky Flycatcher	*Empidonax oberholseri*
Dusky Grouse	*Dendragapus obscurus*
Eared Grebe	*Podiceps nigricollis*
Eastern Kingbird	*Tyrannus tyrannus*
Eurasian Collared-Dove	*Streptopelia decaocto*
Eurasian Wigeon	*Anas penelope*
European Starling	*Sturnus vulgaris*
Evening Grosbeak	*Coccothraustes vespertinus*
Flammulated Owl	*Psiloscops flammeolus*
Forster's Tern	*Sterna forsteri*
Fox Sparrow	*Passerella iliaca*
Franklin's Gull	*Leucophaeus pipixcan*
Gadwall	*Anas strepera*
Golden Eagle	*Aquila chrysaetos*
Golden-Crowned Kinglet	*Regulus satrapa*
Gray Catbird	*Dumetella carolinensis*
Gray Jay	*Perisoreus canadensis*
Gray Partridge	*Perdix perdix*
Gray-Crowned Rosy-Finch	*Leucosticte tephrocotis*
Great Blue Heron	*Ardea herodias*
Great Egret	*Ardea alba*
Great Gray Owl	*Strix nebulosa*
Great Horned Owl	*Bubo virginianus*
Greater Scaup	*Aythya marila*
Greater White-Fronted Goose	*Anser albifrons*
Greater Yellowlegs	*Tringa melanoleuca*
Green-winged Teal	*Anas crecca*
Hairy Woodpecker	*Picoides villosus*
Hammond's Flycatcher	*Empidonax hammondii*
Harlequin Duck	*Histrionicus histrionicus*

Common Name	Scientific Name
Hermit Thrush	*Catharus guttatus*
Herring Gull	*Larus argentatus*
Hooded Merganser	*Lophodytes cucullatus*
Horned Grebe	*Podiceps auritus*
Horned Lark	*Eremophila alpestris*
House Finch	*Haemorhous mexicanus*
House Sparrow	*Passer domesticus*
House Wren	*Troglodytes aedon*
Killdeer	*Charadrius vociferus*
Lazuli Bunting	*Passerina amoena*
Least Flycatcher	*Empidonax minimus*
Least Sandpiper	*Calidris minutilla*
Lesser Scaup	*Aythya affinis*
Lesser Yellowlegs	*Tringa flavipes*
Lewis's Woodpecker	*Melanerpes lewis*
Limnodromus sp.	*Limnodromus*
Lincoln's Sparrow	*Melospiza lincolnii*
Long-Billed Curlew	*Numenius americanus*
Long-Billed Dowitcher	*Limnodromus scolopaceus*
MacGillivray's Warbler	*Geothlypis tolmiei*
Mallard	*Anas platyrhynchos*
Marsh Wren	*Cistothorus palustris*
Merganser	*Mergus*
Merlin	*Falco columbarius*
Mountain Bluebird	*Sialia currucoides*
Mountain Chickadee	*Poecile gambeli*
Mountain Quail	*Oreortyx pictus*
Mourning Dove	*Zenaida macroura*
Nashville Warbler	*Oreothlypis ruficapilla*
Northern Flicker	*Colaptes auratus*
Northern Goshawk	*Accipiter gentilis*
Northern Harrier	*Circus cyaneus*
Northern Hawk-Owl	*Surnia ulula*
Northern Mockingbird	*Mimus polyglottos*
Northern Pintail	*Anas acuta*

Common Name	Scientific Name
Northern Pygmy-Owl	*Glaucidium gnoma*
Northern Rough-Winged Swallow	*Stelgidopteryx serripennis*
Northern Saw-Whet Owl	*Aegolius acadicus*
Northern Shoveler	*Anas clypeata*
Northern Shrike	*Lanius excubitor*
Northern Waterthrush	*Parkesia noveboracensis*
Olive-Sided Flycatcher	*Contopus cooperi*
Orange-Crowned Warbler	*Oreothlypis celata*
Osprey	*Pandion haliaetus*
Ovenbird	*Seiurus aurocapilla*
Pacific Wren	*Troglodytes pacificus*
Pectoral Sandpiper	*Calidris melanotos*
Peregrine Falcon	*Falco peregrinus*
Pied-Billed Grebe	*Podilymbus podiceps*
Pileated Woodpecker	*Dryocopus pileatus*
Pine Grosbeak	*Pinicola enucleator*
Pine Siskin	*Spinus pinus*
Poecile sp.	*Poecile*
Pygmy Nuthatch	*Sitta pygmaea*
Red Crossbill	*Loxia curvirostra*
Red-Breasted Merganser	*Mergus serrator*
Red-Breasted Nuthatch	*Sitta canadensis*
Red-Eyed Vireo	*Vireo olivaceus*
Redhead	*Aythya americana*
Red-Naped Sapsucker	*Sphyrapicus nuchalis*
Red-Necked Grebe	*Podiceps grisegena*
Red-Necked Phalarope	*Phalaropus lobatus*
Red-Tailed Hawk	*Buteo jamaicensis*
Red-Winged Blackbird	*Agelaius phoeniceus*
Ring-Billed Gull	*Larus delawarensis*
Ring-Necked Duck	*Aythya collaris*
Ring-Necked Pheasant	*Phasianus colchicus*
Rock Pigeon	*Columba livia*
Rock Wren	*Salpinctes obsoletus*
Rough-Legged Hawk	*Buteo lagopus*

Common Name	Scientific Name
Ruby-Crowned Kinglet	*Regulus calendula*
Ruddy Duck	*Oxyura jamaicensis*
Rufous Hummingbird	*Selasphorus rufus*
Sandhill Crane	*Grus canadensis*
Savannah Sparrow	*Passerculus sandwichensis*
Say's Phoebe	*Sayornis saya*
Semipalmated Plover	*Charadrius semipalmatus*
Semipalmated Sandpiper	*Calidris pusilla*
Sharp-Shinned Hawk	*Accipiter striatus*
Short-Billed Dowitcher	*Limnodromus griseus*
Snowy Owl	*Bubo scandiacus*
Solitary Sandpiper	*Tringa solitaria*
Song Sparrow	*Melospiza melodia*
Sora	*Porzana carolina*
Spotted Sandpiper	*Actitis macularius*
Spotted Towhee	*Pipilo maculatus*
Spruce Grouse	*Falcipennis canadensis*
Steller's Jay	*Cyanocitta stelleri*
Stilt Sandpiper	*Calidris himantopus*
Swainson's Hawk	*Buteo swainsoni*
Swainson's Thrush	*Catharus ustulatus*
Swan	*Cygnus*
Townsend's Solitaire	*Myadestes townsendi*
Townsend's Warbler	*Setophaga townsendi*
Tree Swallow	*Tachycineta bicolor*
Trumpeter Swan	*Cygnus buccinator*
Tundra Swan	*Cygnus columbianus*
Turkey Vulture	*Cathartes aura*
Unclassified Duck	*Anatidae - Duck spp.*
Unclassified Sandpiper	*Scolopacidae - Sandpiper spp.*
Unclassified Teal	*Anas - Teal spp.*
Unclassified Yellowlegs	*Tringa - Yellowlegs spp.*
Varied Thrush	*Ixoreus naevius*
Vaux's Swift	*Chaetura vauxi*
Veery	*Catharus fuscescens*

Common Name	Scientific Name
Vesper Sparrow	*Pooecetes gramineus*
Violet-Green Swallow	*Tachycineta thalassina*
Virginia Rail	*Rallus limicola*
Warbling Vireo	*Vireo gilvus*
Western Bluebird	*Sialia mexicana*
Western Grebe	*Aechmophorus occidentalis*
Western Kingbird	*Tyrannus verticalis*
Western Meadowlark	*Sturnella neglecta*
Western Sandpiper	*Calidris mauri*
Western Screech-Owl	*Megascops kennicottii*
Western Tanager	*Piranga ludoviciana*
Western Wood-Pewee	*Contopus sordidulus*
White-Breasted Nuthatch	*Sitta carolinensis*
White-Crowned Sparrow	*Zonotrichia leucophrys*
White-Headed Woodpecker	*Picoides albolarvatus*
White-Throated Sparrow	*Zonotrichia albicollis*
White-Winged Crossbill	*Loxia leucoptera*
Wild Turkey	*Meleagris gallopavo*
Williamson's Sapsucker	*Sphyrapicus thyroideus*
Willow Flycatcher	*Empidonax traillii*
Wilson's Phalarope	*Phalaropus tricolor*
Wilson's Snipe	*Gallinago delicata*
Wilson's Warbler	*Cardellina pusilla*
Wood Duck	*Aix sponsa*
Yellow Warbler	*Setophaga petechia*
Yellow-Headed Blackbird	*Xanthocephalus xanthocephalus*
Yellow-Rumped Warbler	*Setophaga coronata*

Source: IDFG 2023c.

5.5.5.3 Amphibians and Reptiles

There are no recorded occurrences of amphibians or reptiles in the Project Boundary, and no listed species documented in the Project vicinity. Table 5.5-5 lists amphibian and reptile species that may occur in the Project vicinity (IDFG 2023c).

Table 5.5-5. List of amphibians and reptiles potentially occurring in the Project vicinity.

Common Name	Scientific Name
Reptiles	
Common Gartersnake	*Thamnophis sirtalis*
Northern Alligator Lizard	*Elgaria coerulea*
Northern American Racer	*Coluber constrictor*
Northern Rubber Boa	*Charina bottae*
Striped Whipsnake	*Coluber taeniatus*
Terrestrial Gartersnake	*Thamnophis elegans*
Western Skink	*Plestiodon skiltonianus*
Amphibians	
Coeur d'Alene Salamander	*Plethodon idahoensis*
Long-Toed Salamander	*Ambystoma macrodactylum*
Northern Leopard Frog	*Lithobates pipiens*
Sierran Treefrog	*Pseudacris sierra*
Rocky Mountain Tailed Frog	*Ascaphus montanus*
Western Toad	*Anaxyrus boreas*
Wood Frog	*Lithobates sylvaticus*

Source: IDFG 2023c.

5.5.5.4 Invasive Mammalian Species

No invasive mammalian species are known to occur in the Project Boundary or vicinity. The nutria (*Myocastor coypus*) is the only mammalian invasive species with potential to occur in Idaho according to the Invasive Species of Idaho (ISDA 2023). It is a large rodent that resembles beavers and muskrats. They are known to occur in Washington State but have not been identified in Idaho (USDA 2023).

5.6 Wetlands, Riparian, and Littoral Habitats

The Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979) defines wetlands below:

> *…wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water…Wetlands must have 1 or more of the following 3 attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year* (Cowardin et al. 1979).

The National Wetlands Inventory (NWI) mapper (USFWS 1987) provides a geospatial dataset that represents the location and type of wetland habitats. While NWI mapped wetlands are not delineated or ground-truthed, they provide a reasonable approximation. Classification of these

wetlands follows a hierarchical system that captures the aquatic system, type of substrate, and water regime of wetlands and deepwater habitats (Cowardin et al. 1979).

5.6.1 Wetlands, Riparian, and Littoral Vegetation

The steeply incised banks of the Moyie River and nearby dense forest canopy have restricted riparian vegetation to narrow bands along each side of the river. The narrow riparian communities are dominated by willow (*Salix* sp.), red-osier dogwood, occasional alder (*Alnus* sp.) or birch, low shrubs such as snowberry and wild rose, and an understory of graminoids and forbs (lady fern, male fern and meadow ragwort) (USGS 2016). Table 5.6-1 identifies common wetland vegetation in Boundary County.

Table 5.6-1. Common wetland vegetation in Boundary County.

Common	Scientific	Growth habit	Wetland Status[1]
Bluejoint Reedgrass	*Calamagrostis canadensis*	Palustrine emergent or scrub-shrub	FACW
Creeping Glow Wort	*Sibbaldia procumbens*	Palustrine emergent	FACU
Fowl Manna Grass	*Glyceria striata*	Palustrine emergent	OBL
Indian Valley Sedge	*Carex aboriginum*	Palustrine emergent	OBL
Lady Fern	*Athyrium angustum*	Palustrine emergent	FAC
Male Fern	*Dryopteris filix-mas*	Palustrine scrub-shrub	Not listed
Mountain Sedge	*Carex scopulorum*	Palustrine emergent	OBL
Ragworts	*Senecio* sp.	Palustrine emergent	FACW and FACU
Red-Osier Dogwood	*Cornus sericea* ssp. *sericea*	Palustrine scrub-shrub	Not listed
Shrubby Cinquefoil	*Dasiphora fruticosa ssp. floribunda*	Palustrine emergent	FAC
Sierra Shooting Star	*Dodecatheon jeffreyi*	Palustrine emergent	FACW
Snowberry	*Symphoricarpos* sp.	Palustrine scrub-shrub	FAC and FACU
Ute Ladies-Tresses	*Spiranthes diluvialis*	Palustrine emergent	FACW
Water Birch	*Betula occidentalis*	Palustrine scrub-shrub	FACW
Water Howellia	*Howellia aquatilis*	Palustrine emergent	OBL
White Marsh Marigold	*Caltha leptosepala*	Palustrine emergent	OBL
Willows	*Salix* sp.	Palustrine scrub-shrub	FACW, FAC and FACU

Sources: U.S. Army Corps of Engineers (USACE) 2020; Cowardin et al 1979.

1 There are five categories of wetland indicator status ratings, used to indicate a plant's likelihood for occurrence in wetlands versus non-wetlands: Obligate Wetland (OBL), Facultative Wetland (FACW), Facultative (FAC), Facultative Upland (FACU), and Upland (UPL).

5.6.2 Wetlands, Riparian, and Littoral Wildlife

According to the Idaho SWAP, both Lowland and Montane Marsh, Wet Meadow & Shrublands may occur in the Project vicinity near rivers. Wildlife associated with these include amphibians such as Western toad (*Anaxyrus boreas*), Northern leopard frog (*Lithobates pipiens*), Coeur d'Alene salamander (*Plethodon idahoensis*), long-toed salamander (*Ambystoma macrodactylum*), wood frog (*Lithobates sylvaticus*), Sierran treefrog (*Pseudacris sierra*), and Rocky Mountain tailed frog (*Ascaphus montanus*). While many birds may pass through the Project vicinity, birds associated with these habitat types include Northern pintail (*Anas acuta*), black tern (*Chlidonias niger*), Sandhill crane (*Grus canadensis*), short-eared owl (*Asio flammeus*) and the migratory shorebird assemblage. Other wildlife species include moose (*Alces alces*), spotted bat (*Euderma maculatum*), terrestrial gartersnake (*Thamnophis elegans*), and yellow and Western bumble bees (*Bombus terricola* and *B. occidentalis*) (IDFG 2023b).

5.6.3 Wetlands, Riparian, and Littoral Mapping

The Project vicinity supports wetlands, riparian and littoral habitats which are generally representative of those throughout Boundary County. These are primarily freshwater emergent wetlands and freshwater forested/shrub wetlands associated with streams, riverine habitats, ponded areas, and lake habitats. Within the Project Boundary, riverine and lake habitats are present, with a lateral freshwater forested/shrub wetland on the west side of the Project reservoir (Figure 5.6-1). One area outside of the Project Boundary, approximately 0.5 miles west of the Moyie River and across Highway 63 is mapped as about 16 acres of freshwater emergent wetlands but does not appear to support vegetation (Google Earth imagery 1985 through 2021). Table 5.6-2 lists NWI mapped wetlands in the Project Boundary.

Table 5.6-2. NWI wetland classifications and acreage within the Project Boundary.

Wetlands Code	System	Subsystem	Class	Subclass	Regime	Special Modifier(s)	NWI Acreage
PEM1A	Palustrine	-	Emergent	Persistent	Temporary Flooded		16.27
R3UBH	Riverine	Upper Perennial	Unconsolidated Bottom	-	Permanently Flooded	-	3.60
L1UBHh	Lacustrine	Limnetic	Unconsolidated Bottom	-	Permanently Flooded	Diked/ Impounded	24.69
PSS1C	Palustrine	-	Scrub-Shrub	Broad-Leaved Deciduous	Seasonally Flooded	-	2.78
Total							35.41

Source: USFWS 1987; USFWS 2019a.

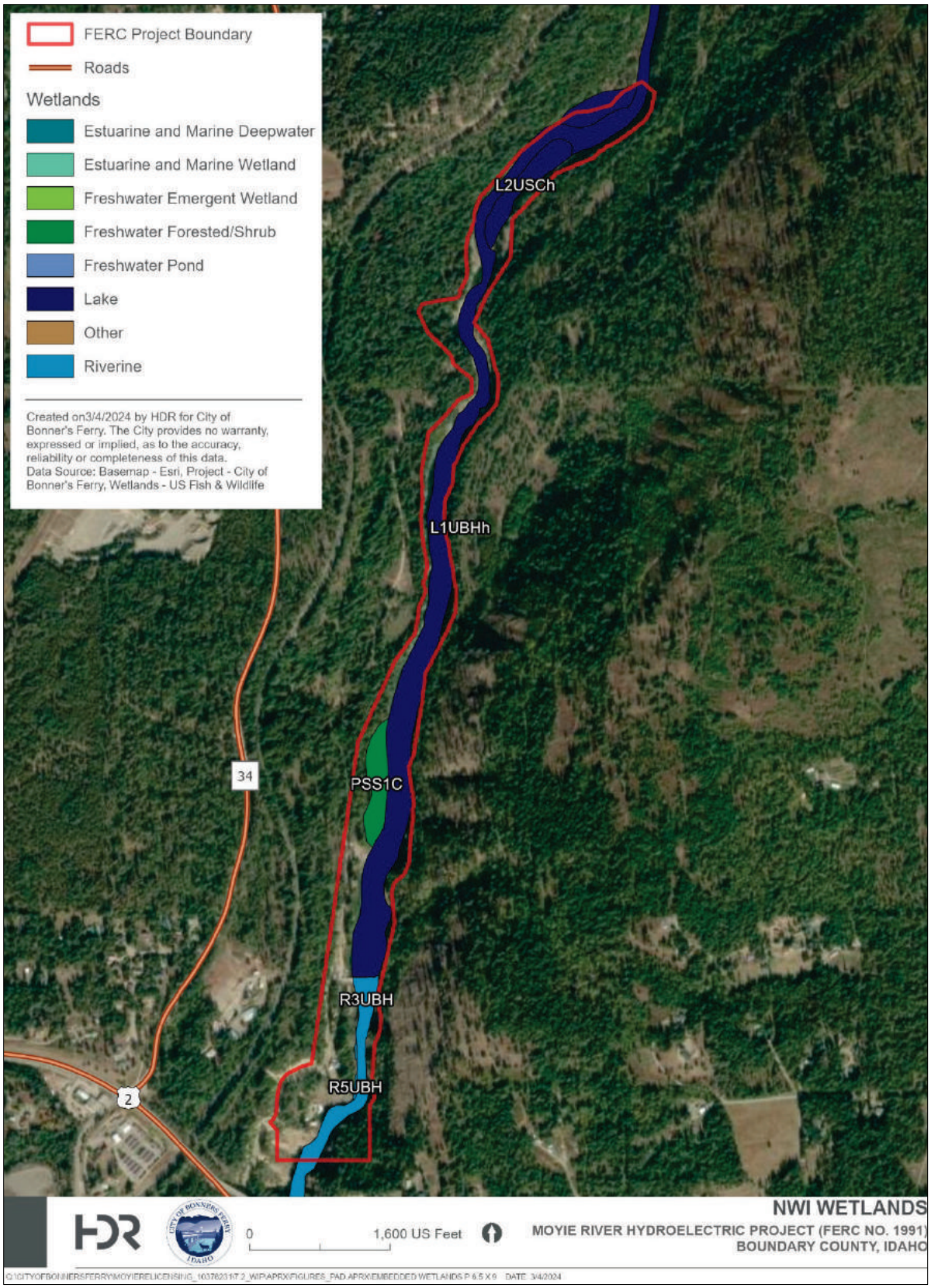

Figure 5.6-1. Mapped NWI wetlands in the Project Boundary.

5.7 Rare, Threatened, and Endangered Species

On January 1, 2024, the City conducted an informal USFWS Information for Planning and Consultation (IPaC) search for the Moyie River Project. The IPaC search generates a report listing species and other resources such as critical habitats under the USFWS's jurisdiction that are known or expected to be in or near the Project Boundary. The City will conduct formal RTE consultation with USFWS during the licensing process.

According to the January 1, 2024, informal IPaC search, the species listed in Table 5.7-1 are listed as potentially occurring in the Project Boundary. No other federally listed species or critical habitats were listed in the informal search. Descriptions of identified species are provided below.

Table 5.7-1. Endangered Species Act-listed threatened, endangered and candidate species.

Common Name	Scientific Name	Federal Status
Bull Trout	*Salvelinus confluentus*	Threatened
White Sturgeon	*Acipenser transmontanus*	Endangered
Monarch Butterfly	*Danaus plexippus*	Candidate
Canada Lynx	*Lynx canadensis*	Threatened
Grizzly Bear	*Ursus arctos horribilis*	Threatened
North American Wolverine	*Gulo gulo luscus*	Threatened

Source: IPaC 2024.

5.7.1 Bull Trout

Native Bull Trout are listed as threatened under the Endangered Species Act (ESA). Bull Trout have been reported in tributary streams and Moyie Lake, all in Canada, and are known to use the upper Kootenai River and tributaries for spawning and early rearing. However, Moyie Falls is a natural upstream barrier to Bull Trout and all other migratory fish (IDFG 2013; Kootenai Tribe of Idaho and Montana Fish, Wildlife and Parks 2004; Kootenai Tribe of Idaho 2010; IDFG 2024a). The 1996 fish survey conducted as part of the previous relicensing did not identify any Bull Trout in the Moyie River below the Project. Since then, four radio-tagged Bull Trout were documented using the lower Moyie River between 2001 to 2006 (Paragamian, et al., 2010, as cited in Bonneville Power Administration [BPA] 2013). Bull Trout in the lower Moyie River were documented in May, June, July, September and November. The longest occupancy event occurred for 29 days in November 1999 (BPA 2013).

Bull Trout typically spawn from August to November during periods of decreasing water temperatures. Water temperatures during spawning vary, but generally range from 4 to 10 °C (39 to 51 degrees Fahrenheit [°F]) (Howell et al. 2010, as cited in USFWS 2015). Redds are often constructed in stream reaches fed by springs or near other sources of cold groundwater (Goetz 1989; Pratt 1992; Rieman and McIntyre 1993, as cited in USFWS 2015). Time from egg deposition to emergence of fry may surpass 200 days. Fry normally emerge from early April through May, depending on water temperatures and increasing stream flows (Pratt 1992; Ratliff and Howell 1992; McPhail and Baxter 1996, as cited in USFWS 2015). Spawning likely does not occur in the lower Moyie River downstream of the Moyie Dam likely due to lack of suitable spawning habitat, mainly due to elevated water temperatures.

Bull Trout are opportunistic feeders, with food habits primarily a function of size and life history strategy. Resident and juvenile migratory Bull Trout prey on terrestrial and aquatic insects, macro-zooplankton, and small fish (Goetz 1989; Donald and Alger 1993, as cited in USFWS 2015). Adult migratory Bull Trout feed primarily on a wide variety of resident and anadromous fish species (Fraley and Shepard 1989; Brown 1992; Donald and Alger 1993; Guy et al. 2011, as cited in USFWS 2015).

Bull Trout have very specific habitat requirements (Rieman and McIntryre 1993, as cited in USFWS 2015), commonly known as “the four Cs”: Cold, Clean, Complex, and Connected habitat (USFWS 2015). These requirements include cold water temperatures (generally less than 12 °C [54 °F]), complex stream habitat comprised of deep pools, overhanging banks and large woody debris, and connectivity between spawning and rearing (SR) areas and downstream foraging, migration, and overwintering (FMO) habitats (USFWS 2015).

Regionally, Bull Trout use Kootenai River habitat for foraging, migration and over-wintering. Spawning has not been documented nor is it suspected to occur in the Moyie River, primarily due to higher water temperatures (BPA 2015). Bull Trout are most likely to be found in the mainstem Kootenai River in Idaho during the winter, spring, early- to mid-summer and late fall in relatively low abundances (USFWS 2011, as cited in BPA 2013). Bull Trout within the Kootenai River core area are comprised of eight local populations, including two located in Idaho (Boulder Creek and Long Canyon Creek) (USFWS 2020). Bull Trout populations in the core area were considered stable and widespread until 2009 when redd counts in Montana began to decline (USFWS 2020). The Idaho Bull Trout populations have not been monitored as intensively, but available data suggest that these populations are very small (Paragamian et al. 2010, as cited in USFWS 2020).

The Kootenai River from the Canadian border with Idaho upstream 114 miles to Libby Dam is designated as Bull Trout critical habitat and provides FMO habitat. The Moyie River from its confluence with the Kootenai River upstream 1.6 miles is also designated as FMO critical habitat (USFWS 2010).

5.7.2 Kootenai River White Sturgeon

The Kootenai River White Sturgeon are a land-locked population of White Sturgeon known to occur in Idaho, Montana, and British Columbia, Canada (USFWS 2024b). Their range is restricted to approximately 167.7 river miles (RM) of the Kootenai River extending from Kootenai Falls, Montana, located 31 RMs below Libby Dam, Montana, downstream through Kootenay Lake to Corra Linn Dam at the outflow from Kootenay Lake in British Columbia (USFWS 2024b). Juvenile and adult Kootenai White Sturgeon may be found year-round in the Kootenai River downstream of Bonners Ferry (USFWS 2006, as cited in BPA 2013). Adult sturgeon infrequently occur upstream of Bonners Ferry but juvenile sturgeon may occur year-round. Although about a third of Kootenai sturgeon in spawning condition migrate upstream to the Bonners Ferry area annually (May through July), few remain there to spawn (USFWS 2011, as cited in BPA 2013). Use of the Moyie River for spawning by the Kootenai White Sturgeon has not been documented and is highly unlikely because of the relatively small size of the river. White Sturgeon, originating in Kootenay Lake, use the Kootenai River for spawning as far upstream as Kootenai Falls in Montana. Kootenai River White Sturgeon are considered opportunistic feeders that prey on a variety of organisms including clams, snails, aquatic insects, and fish (Partridge 1983, as cited in USFWS 2019b).

5.7.3 Monarch Butterfly

The monarch butterfly is classified as a federal and state candidate for listing, a species of greater conservation need in SWAP, and the official state insect of Idaho. Monarch eggs, caterpillars, and pupae are vulnerable to extreme weather, predation, and disease, although the declines in population are heavily linked to habitat loss through urbanization and other disturbances.

Monarchs rely primarily on milkweeds (*Asclepias* sp.), as females lay their eggs on the underside of leaves or buds and the caterpillar feed on the plants as soon as they hatch. The milkweed plants provide nutrients and energy, and also contain cardenolides, rendering them unpalatable to many predators. Breeding adults mate for a period of a few days after emergence in spring and summer and live for 2-5 weeks, and may produce several generations during these seasons as they migrate northward across the western U.S. Monarchs undergo physiological changes in the autumn which result in reproductive diapause. Excluding reproduction during this time, adults may live 6 to 9 months, and migrate south to overwinter.

Monarch breeding in the western U.S. occurs concurrent with milkweed distribution, which occurs in most western states, but is less common in northern regions. In Idaho, milkweed is more common in south and western areas, with limited occurrences in the Project vicinity. Monarch mapper indicates there is one occurrence of milkweed and a potential breeding population west of Bonners Ferry near the Kootenai River, but there are no mapped occurrences near the Project.

A candidate species listing indicates that the USFWS has sufficient information on a species' biological status and threats to propose it as endangered or threatened, but for which other higher priority listing activities preclude the development of a proposed listing regulation. Candidate species receive no statutory protection under the ESA. The Western Monarch Butterfly Conservation Plan (Western Association of Fish and Wildlife Agencies 2019) encompasses several western states, including Idaho, and is designed to protect and restore and increase monarch butterfly populations and habitats. The plan primarily focuses on educating the public to garner support for protecting overwintering groves (primarily in California for western populations), protecting and planting milkweed plants, and collecting data to provide more information on lifecycles. The IDFG has participated in multiple efforts to determine more about information gaps on the distribution and status of the monarch butterfly and its key breeding habitats in Idaho.

5.7.4 Canada Lynx

The Canada lynx is both federally and state listed as threatened. Primary threats to the species include habitat loss and overutilization (trapping) (65 Federal Register [FR] 16051). On November 9, 2006, USFWS designated critical habitat for lynx, which occurs west of the Project in the Rocky Mountains along the Idaho border, with the nearest extant over 6 miles from the Project. While the lynx was federally listed as threatened in March 2000, in January of 2018 the USFWS announced the Canada lynx was being considered for delisting due to nearly 20 years of successful recovery efforts outlined in the USFWS's Canada Lynx Conservation and Assessment Strategy (Interagency Lynx Biology Team 2013).

The Canada lynx is a distinct population segment (DPS), with the core population believed to be in Canada, with extensions of the population in boreal forests associated with the Cascade and Rocky Mountains. The Canada lynx is closely associated with boreal forests with deep snow because of near-dependence on a single prey species during the winter months, the snowshoe hare, which is mostly limited to this habitat type (Interagency Lynx Biology Team 2013).

The IDFG has documented occurrences of the Canada lynx from 2013 to 2019, with the nearest to the Project west of the Kootenai River over 25 miles away, and to the northeast about 17 miles away (IDFG 2023c).

5.7.5 Grizzly Bear

Grizzly bears are listed as federally threatened but not listed in the state of Idaho. USFWS delisted grizzly bears in July of 2017 because of successful recovery of the Greater Yellowstone Ecosystem population near the intersection of Idaho, Montana, and Wyoming, although protection was restored in September of 2018. A second population, known as the Selkirks, occurs in the Idaho panhandle along the intersecting borders of Washington, Montana, and Canada. The Selkirks population is being monitored by the Interagency Grizzly Bear Committee, Selkirk and Cabinet-Yaak Ecosystems Subcommittee, which includes agencies and Indian Tribes from Idaho, Washington, and Montana, and the USFWS. The Selkirk Mountains Grizzly Bear Recovery Area 2021 Research and Monitoring Progress Report (Kasworm et al. 2022) indicates the Selkirks population is stable or recovering.

Before the arrival of Europeans, grizzly bears occupied much of the western U.S., central Mexico, western Canada, and most of Alaska. By the 1930s, the species was eliminated from all but two percent of its historical range in the lower 48 states as a result of extermination programs, habitat loss, and continuing excessive human-caused mortality (USFWS 2023).

Grizzly bears are considered generalists in habitat use and diet but are associated with large areas of diverse habitat to accommodate their seasonal dietary needs and large body size. Habitats include valley bottoms, high meadows, forests, woodlands, and prairies. Individuals range over large areas seasonally. Habitat suitability is related to distance from roads and, more generally, isolation from human developments and activities, where human-bear interactions are less likely to occur. Male grizzly bears have a known dispersal distance of 42-109 miles compared to a maximum distance of 56 miles for females. Because females do not begin breeding until four years old or older, have small litters, and have long periods between breeding, population growth, even under good conditions, is a slow process (Kasworm et al. 2022).

There are no known occurrences of grizzly bear near the Project. The IDFG has documented occurrences of grizzly bear outside the Project Boundary, with the nearest on the west side of the Kootenai River, approximately 17 miles to the southwest in 2021, and to the northwest about 19 miles at a camera trap over several years in 2022. There is also an unverified incidental sighting reported at Highway 1 just south of Copeland in 2022 (IDFG 2023c).

5.7.6 North American Wolverine

The North American wolverine is listed as a federally threatened species as of January 2, 2024. The listing has been controversial because the wolverine is reclusive, with large, exclusive territories and is difficult to track. In 2020, the USFWS withdrew a proposed rule to list the DPS of the North American wolverine occurring in the contiguous U.S. as a threatened species (85 FR 64618). USFWS concluded that the species was not now or projected to be threatened in the near future. In addition, USFWS concluded listing was not warranted because wolverines in the contiguous U.S. are not genetically isolated from wolverines in Canada, which indicates they are part of the same population. However, a federal District Court ruled on May 26, 2022, that the species should be restored to the candidate species list while USFWS reconsiders its 2020 decision. In March 2023 the wolverine was listed as a federally proposed threatened species, with the most recent Management Plan for the Conservation of Wolverines in Idaho 2014-2019. On

November 30, 2023, the USFWS determined threatened species status, for the DPS of the North American wolverine occurring in the contiguous U.S.

The wolverine is naturally uncommon (i.e., occurring at low densities), and is broadly associated with high-elevation montane areas with alpine climatic conditions and isolation from human activity. Seasonal food resources include large game carrion in winter, and small mammals and birds in summer, at slightly higher-elevation subalpine and alpine habitats (IDFG 2014). Wolverines are wide-ranging, with documented long-distance dispersals across habitats far from the high mountains near the timberline where known populations reside in Washington, Idaho, Montana, and Wyoming (USFWS 2018). These southern occurrences represent less than 4 percent of the greater North American metapopulation, which extends to the far north of Canada and Alaska (USFWS 2018).

There are no known occurrences of wolverine near the Project. The nearest documented occurrences of wolverine are outside of the Project Boundary at two bait stations with camera traps. The most recent occurrences were documented in 2016 and 2015 approximately 12 miles northeast of the Project near the border between Idaho and Montana. Other occurrences are documented in 2013 and earlier about 26 miles northwest of the Project on the west side of the Kootenai River (IDFG 2023c).

5.8 Recreation and Land Management

5.8.1 Existing Recreation Facilities and Opportunities

Primary existing recreation facilities and uses at the Project include a boating take-out and day-use area, a viewpoint of Moyie Falls, sightseeing, whitewater boating, and casual recreational use such as hiking and fishing. As part of the previous relicensing, the City conducted a recreation study which found that most visitors were interested in sightseeing canyon scenery, wildlife, and waterfalls. Take-out access for whitewater boating was of great interest during the May-June seasons, but it significantly decreased in interest as the summer months passed and the Moyie River flows decreased.

On January 7, 2000, the City filed a Recreation Plan for the Project, which included:

- Placement of a trash can and interpretive sign in the parking areas that provides visitors directions to the Moyie Falls Viewpoint.
- Placement of a picnic table, fire ring, visitor sign, trash can and portable toilet near the boating take-out area from April 1 to July 31.
- Road grading as needed to maintain access during the summer months for passenger cars to the north end reservoir day-use area.
- A new reservoir gate installed just north of the boating take-out.

On April 24, 2000, FERC approved the Recreation Plan and required the City to conduct a recreation survey related to the upper end of the reservoir. On March 30, 2001, the City filed the recreation plan addendum (addendum). The entities who provided comments on the addendum included the USFS, Idaho Rivers United, American Whitewater Affiliation (AWA), Idaho Department of Parks and Recreation, River Odysseys West, Inc., and the IDFG.

The City conducted a recreational user survey from Memorial Day to September 30, 2000. The survey gathered information regarding number of visitors, purpose of visit, and recreational

preferences. Survey results were included in the March 30, 2001 filing. The results indicated that most visitors were local to the area. These recreationists recommend the area stay in a natural state with no improvements. As a result of the recreationists' preference to keep the area in a natural state and the City's concern regarding protection of an identified historic site (described in Section 5.10 of this PAD), the City did not propose any major improvements to the area. Through consultation, the USFS recommended that the City continue to periodically maintain the access road to accommodate existing use, and AWA recommended the access gate remain open from April 15 through September 30 each year to better accommodate the whitewater use which commences in April when the spring runoff begins. The City agreed with these comments and committed to maintaining the access road and keeping the gate open for the specified times, except during periods of high fire danger or during maintenance. FERC concluded that the City's proposal to keep the area relatively undeveloped with the exception of maintaining the road was reasonable, met the needs of the users, and helped to protect an eligible historic site from disturbance. The City and the USFS also took additional measures to ensure the site remained protected as part of its Cultural Resource Management Plan, approved on June 5, 2001. The recreation addendum, filed on March 30, 2001, was approved.

5.8.2 FERC-Approved Recreational Facilities at the Project

The two existing Project recreation sites are maintained by the City and include a boating take-out and day-use area and Moyie Falls Viewpoint (Figure 5.8-1).

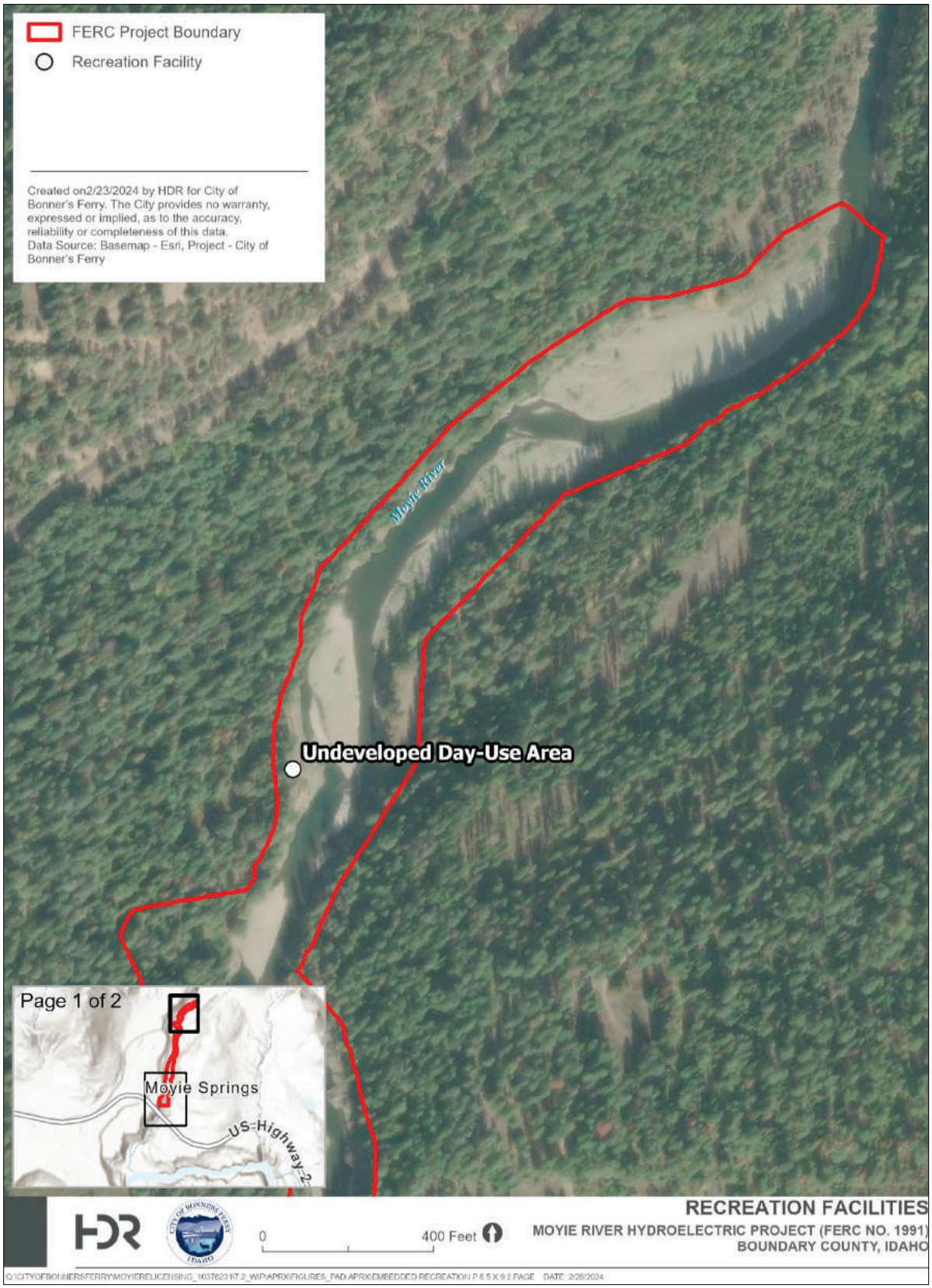

Figure 5.8-1. Recreational facilities associated with the Project (page 1 of 2).

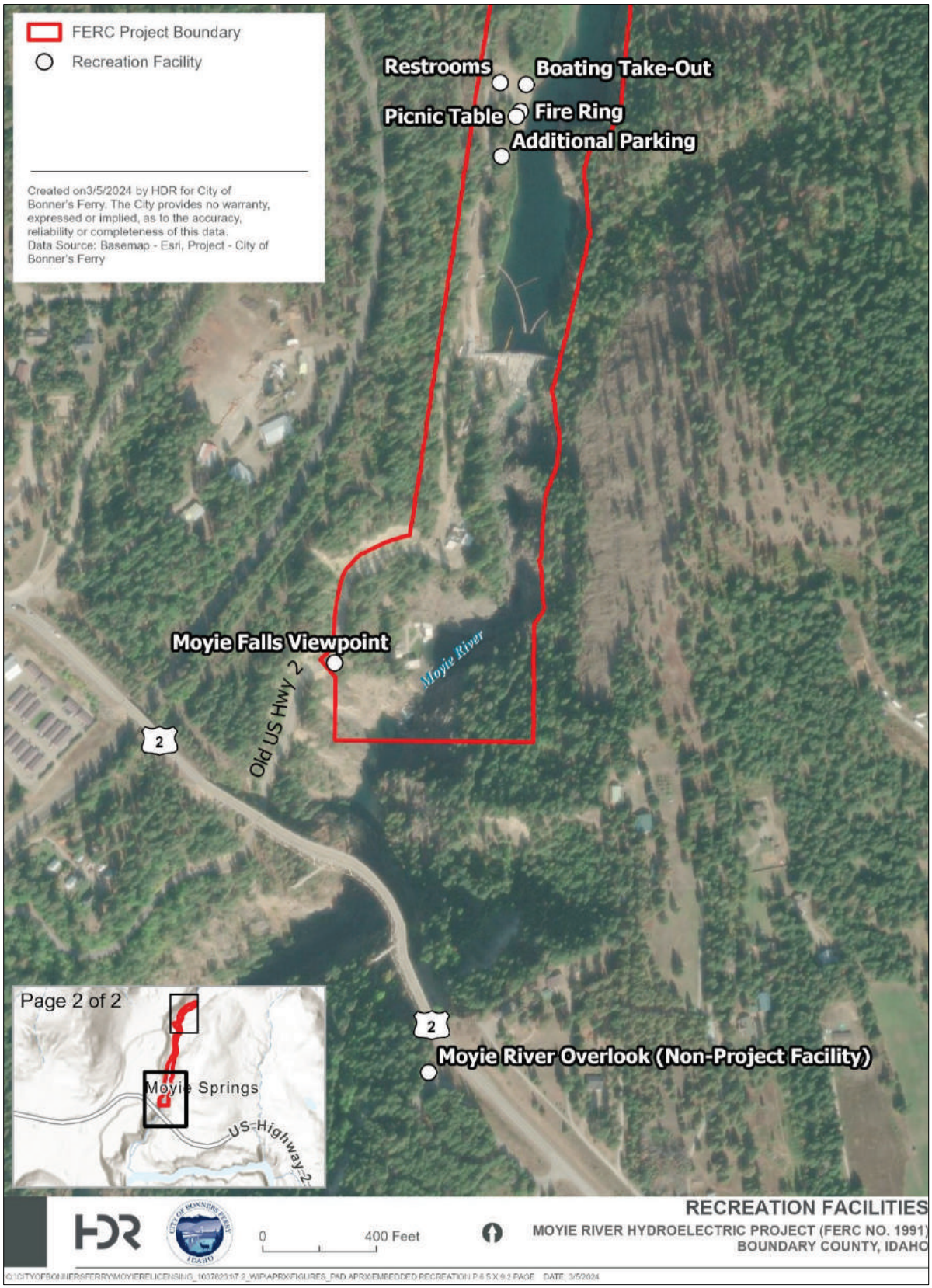

Figure 5.8-1. Recreational facilities associated with the Project (page 2 of 2).

5.8.2.1 Moyie River Boating Take-Out and Day-Use Area

The Moyie River offers beginner to intermediate paddlers a Class II-III whitewater run down the beautiful Moyie River Canyon with significant rapids at the Old Eileen Dam and Hole in the Wall Rapid. The 15-mile river run is from the Canada border to Moyie Falls Dam, with the take-out on the south end of the reservoir, just before the dam (ROW Adventures 2023).

The take-out area is a gravel ramp maintained by the City. The area also provides day-use recreation opportunities, with amenities including an ADA-accessible portable restroom, a picnic table, fire ring, trash can, and an ADA-accessible fishing dock at the end of a concrete trail (Figure 5.8-2). The circular gravel loop offers parking for ten vehicles with additional overflow parking areas.

Figure 5.8-2. ADA-accessible fishing dock (left) and day-use area (right).

5.8.2.2 Moyie Falls Viewpoint

Near the dam, the City provides for parking and signage directing the public to the Moyie Falls Viewpoint, which is located approximately 1,000 feet south of the sign (Figure 5.8-3). The Moyie Falls Viewpoint provides the public with scenic views of Moyie Falls (Figure 5.8-4).

Figure 5.8-3. Moyie River Hydroelectric Project sign.

Figure 5.8-4. View from Moyie Falls Viewpoint.

5.8.3 Non-Project Recreation Facilities and Opportunities

5.8.3.1 Moyie River Overlook and Bridge

The Moyie River Overlook is a non-Project recreation facility located on the far side of the Old Highway 2 Bridge and provides spectacular views of Moyie Falls Dam with signage describing the Moyie River Canyon, the Moyie River Bridge, and signage related to the Project, direction to the Moyie Falls Viewpoint and when flows are provided over Moyie Falls (Figure 4.2-2). The overlook is on land owned by the State of Idaho and managed by the Idaho Transportation Department, but the overlook itself is maintained by Boundary County.

5.8.3.2 Kaniksu/Idaho Panhandle National Forest

In June 1973, the USFS consolidated the Kaniksu (near the Project), Coeur d'Alene and St. Joe National Forests under the administration of the Idaho Panhandle National Forest (USFS 2013). The Project occupies 1.55 acres of land located within this national forest.

The Idaho Panhandle is 1.6 million acres of outdoor recreation. Nearby recreation opportunities include the Meadow Creek Campground, approximately 6 miles upstream of the Project, which provides 22 camp units, potable water, vault toilets, trails and access to the Moyie River (USFS 2023). Additional recreation opportunities include hiking, horse trails, mountain bike trails, rock climbing, boating, swimming, fishing, cross country skiing, snowmobiling, camping, picnicking, sightseeing, and wildlife viewing.

5.8.3.3 Twin Rivers Resort

Located at the confluence of the Kootenai and Moyie rivers, this 40-acre Recreational Vehicle and camping resort managed by the Kootenai Tribe of Idaho provides access to hiking, fishing, swimming, rafting, boating, and abundant wildlife. Aside from riverside camping sites, Twin Rivers Resort also offers a vacation rental home, playgrounds, picnic areas and a pavilion for weddings or reunions (Kootenai Tribe of Idaho 2023).

5.8.3.4 Kootenai National Forest

The Kootenai National Forest, located east of the Project Boundary, is 2.2 million acres of outdoor recreation. Recreation opportunities include hiking, horse trails, mountain bike trails, rock climbing, boating, swimming, fishing, cross country skiing, snowmobiling, camping, picnicking, sightseeing, and wildlife viewing.

5.8.3.5 Kootenai National Wildlife Refuge

The Kootenai National Wildlife Refuge was established in 1965 to primarily provide habitat and a resting area for migrating waterfowl. The 2,774 acres of wetlands and meadows provides habitat to 230 species of birds, 45 species of mammals, and 22 species of fish. There is a 4.5-mile auto tour, which circumnavigates the main ponds and a system of foot trails for visitors to enjoy the natural beauty of Boundary County.

5.8.4 Specially Designated Recreation Areas in Close Proximity to the Project

5.8.4.1 Protected Waterways and Wild and Scenic River System

No existing or proposed Wild and Scenic River designations are located within the Project Boundary or vicinity, nor any national or state protected river segments. Section 5(a) of the Wild and Scenic Rivers Act (1968) designated the Moyie River as a Study River under the Wild and

Scenic Rivers Act. The study concluded that the river did not have any outstandingly remarkable values and that the river should not be included in the National Wild and Scenic Rivers System. A report was transmitted to Congress on September 13, 1982 (National Wild and Scenic Rivers System 2013).

5.8.4.2 National Trails System and Wilderness Areas

No Wilderness Areas or National Trails are located or proposed within or directly adjacent to the Project Boundary. The following section identifies a designated National Trail in the Project vicinity.

Pacific Northwest Scenic Trail

While it does not intersect the Project Boundary, the Pacific Northwest Scenic Trail (PNT) is approximately 11 miles north of the Project. In 2009, Congress designated the PNT as a National Scenic Trail, granting administrative responsibility to USFS. The PNT runs from the Continental Divide to the Pacific Ocean, and passes through seven national forests, three national parks, one Bureau of Land Management resource area, lands managed by the Washington Department of Natural Resources, Idaho Department of Lands, Washington State Parks, Idaho State Parks, and small sections of private land (USFS 2018).

5.8.4.3 Scenic Byways

Wild Horse Trail Scenic Byway

While it does not intersect the Project Boundary, the Wild Horse Trail Scenic Byway is approximately 5 miles west of the Project. Part of the International Selkirk Loop, the Wild Horse Trail Scenic Byway begins in Sandpoint's scenic downtown, located on the shores of Idaho's largest lake, Lake Pend Oreille. The route follows the “Wild Horse Trail,” which was crucial for the Kootenai Tribe and settlers alike as this area of northern Idaho grew through the gold rush era. The byway traverses through the McArthur Lake Wildlife Corridor toward the historic gold-mining town of Bonners Ferry and the Kootenai National Wildlife Refuge before ending at Porthill, the Canadian international border crossing.

5.8.5 Documented Project Recreation Use Levels

Section 10(a)(1) of the FPA requires the Commission to ensure that any licensed project is best adapted to a comprehensive plan for improving and developing a waterway for a variety of beneficial public uses, including recreational use. FERC Form 80 solicited information on the use and development of recreation facilities at hydropower Projects licensed by the Commission under the FPA. Form 80s have since been eliminated due to the increase in project-specific license conditions for approved recreation plans. However, past Form 80s act as a valuable tool in determining recreation usage for the present. Table 5.8-1 provides FERC Form 80 report data from 2002 and 2014.

Table 5.8-1. FERC Form 80 report data.

Year	Number of visits to all recreation areas at Project (Recreation Days)		Capacity Utilization
	Annual Total	Peak Weekend Average	
2002	250	125	Boat Access Areas: 50%
			Boat Ramps: 5%
			Boat Launching Lanes: 5%
			Parks: 5%
			Picnic Areas: 5%
			Overlooks: 1%
2014	11,578	300	Boat Launch Areas: 20%
			Picnic Areas: 50%
			Overlooks: 1%
			Access Points: 50%

Source: FERC 2003; FERC 2014.

5.8.6 Existing Shoreline Buffer Zones

As a ROR facility, the Project is operated in a way that minimally affects the reservoir level and has limited impacts on the shoreline. The Project reservoir is largely contained by a natural canyon with a shoreline comprised predominantly of steep canyon walls containing sparse vegetation. In several locations within the Project Boundary where more gentle slopes exist on the shoreline, emergent wetland areas fringe the reservoir. Additionally, vegetated scrub-shrub wetland islands exist in a few locations within the Project Boundary.

In the Moyie River below the Project, the riparian vegetation is sparse, consisting of young willows and native conifers set back from the channel. The sparseness of streamside vegetation is a result of a combination of high flows, expansive cobble bars, and steep-sloped bedrock. Shading below the mouth of the canyon is minimal because of the exposed nature of the channel and its north-south aspect. Shading in the canyon is greater because of the narrow, steep canyon walls.

5.8.7 Recreation Needs Identified in Management Plans

5.8.7.1 Idaho Statewide Comprehensive Outdoor Recreation Plan

The Idaho Statewide Comprehensive Outdoor Recreation Plan (SCORP 2023-2028) is intended to guide outdoor recreation in Idaho for the next five years. The Idaho SCORP provides a comprehensive assessment of the outdoor recreation system in Idaho by understanding the overall demand and needs, while identifying issues impacting outdoor recreation throughout the state.

The Idaho Department of Parks and Recreation conducted an online survey in January 2022. Across Idaho regions, the majority of residents think recreation is important to themselves, their community's economy, and Idaho's economy. Most people tend to recreate in or near the region where they live (Idaho Department of Parks and Recreation [IDPR] 2022). Idaho residents in the panhandle region (Boundary, Bonner, Kootenai, Benewah, and Shoshone counties) rank the outdoor recreation facilities they would like to see provided in their area (Table 5.8-2). This region’s desired priorities are to upgrade and maintain facilities (90.9 percent), protect resources

(85.9 percent), connect young people (84.3 percent), provide adequate funds (81.8 percent), and additional facilities (74.4 percent) (IDPR 2022).

Table 5.8-2. Desired recreation facilities for the panhandle region.

Facility	Respondents[1] (%)	Facility	Respondents[1] (%)
Hiking and walking trails	57.9	Off-road vehicle trails	28.1
Campgrounds	42.2	Equestrian trails	27.3
Community parks	38.8	Mountain bike trails	23.9
Trailhead parking	35.5	Playground equipment	23.9
Paved pathways	33.9	Splash pads	20.7
Archery ranges	33.1	Skate parks	16.5
Shoreline fishing	31.4	Disc golf courses	14.9
Boat ramps	30.6	Baseball fields	10.7
Swimming pools	30.6	Pickleball courts	9.9
Off-leash dog areas	28.9	Basketball courts	9.1
Fishing docks	28.1	Soccer/football fields	7.4
Hunting areas	28.1	Tennis courts	4.1

1 Respondents were able to select all that apply, as such, column total does not add to 100 percent.

5.8.7.2 Boundary County, Idaho Comprehensive Planning

Boundary County (2008) is endowed with public lands unparalleled for unstructured outdoor recreation, including hunting, fishing, bicycling, hiking, climbing, picnicking, camping, horseback riding, and rafting. The Project is located on the northwest edge of the rural residential area and surrounded by agriculture/forestry (Figure 5.8-5).

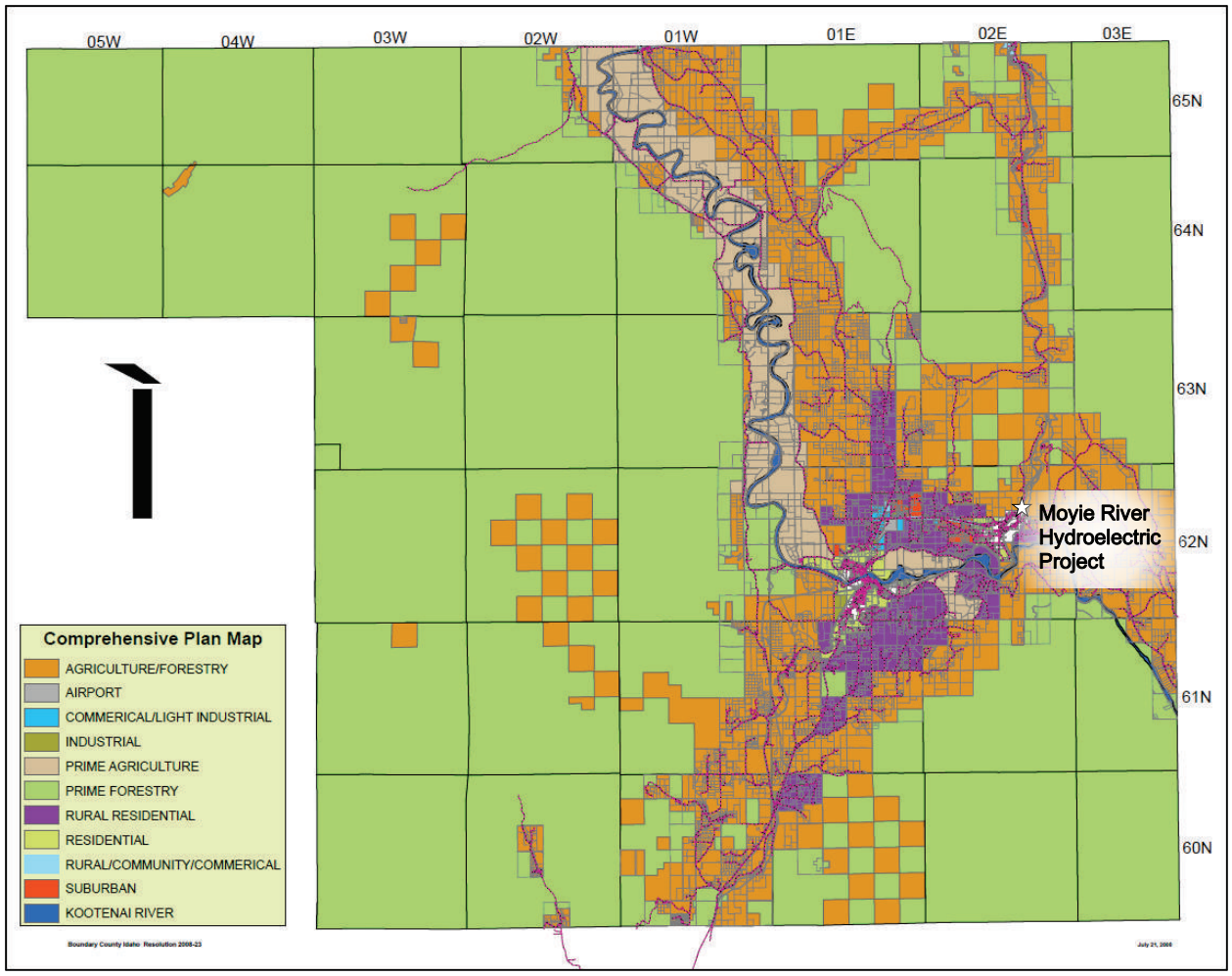

Figure 5.8-5. Boundary County Comprehensive Plan map (2008).

5.8.8 Non-Recreational Land Use and Management

The City owns all of the land in the Project Boundary except for a small parcel near the upstream end of the reservoir managed by the USFS (approximately 1.55 acres within the Project Boundary). The City's management of the land focuses on the use of hydroelectric facilities to produce power. However, public access to and across the Project is generally permitted in order to enable the public to use the reservoir for recreational purposes.

5.9 Aesthetic Resources

5.9.1 Existing Aesthetic Resource Conditions

Primary existing aesthetic is the picturesque Moyie Falls, a two-tiered set of falls. The upper falls, adjacent to the powerhouse yard, drops approximately 55 feet (Figure 5.9-1). The lower falls, one-quarter mile downstream of the powerhouse yard, drops approximately 30 feet (Figure 5.9-2). As part of the previous relicensing, the City conducted a visual resources study which found that visitors viewed the falls as a picturesque viewing experience with consistently high flow levels mainly in May and June, and an acceptable viewing experience in July and August. The falls were rated by visitors as an acceptable viewing experience under flows as low as 9 cfs, which is the current minimum release per Article 403 issued on October 27, 2000.

The Moyie River Hydroelectric Project, located 1.5 miles north of the Moyie and Kootenai rivers' confluence, showcases unique natural features. Originating in Canada, the Moyie River passes through the Purcell Mountains and USFS land before reaching the Project. At the Project, narrow erosional terraces line the river, accompanied by steep slopes on the east bank. Historically, before the Project's 1920s construction, the river flowed through a rock-walled canyon, creating picturesque falls before joining the Kootenai River. Presently, the Moyie Dam operates as a ROR dam without utilizing the reservoir for storage. The Project holds water rights to divert up to 453 cfs year-round for power generation. Consequently, during low river flows (below 360 cfs), no water spills over the dam except for the aesthetic flows required under License Article 403.

Figure 5.9-1. Moyie Upper Falls and powerhouse from viewpoint.

Figure 5.9-2. Moyie Lower Falls.

5.9.1.1 Moyie River Overlook and Bridge

The Moyie River Overlook is a non-Project recreation facility located on the far side of the Old Highway 2 Bridge and provides spectacular views of Moyie Falls Dam (Figure 5.9-3). The overlook also provides signage describing the Moyie River Canyon, the Moyie River Bridge, and signage related to the Project, direction to the Moyie Falls Viewpoint and when flows are provided over Moyie Falls. The overlook is on land owned by the State of Idaho and managed by the Idaho Transportation Department, but the overlook itself is maintained by Boundary County.

Figure 5.9-3. Project across Highway 2 from Moyie Overlook.

5.10 Cultural and Tribal Resources

In considering a new license for the Project, FERC has the lead responsibility for compliance with applicable federal laws, regulations, and policies pertaining to historic properties, including the National Historic Preservation Act of 1966 (NHPA), as amended. Section 106 of the NHPA (Section 106) requires federal agencies to consider the effects of their undertakings on historic properties and to afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment.

The regulations implementing Section 106 (36 CFR Part 800 – The Protection of Historic Properties) define a "historic property" as any precontact or historic period district, site, building, structure, or individual object listed in or eligible for inclusion in the National Register of Historic Places (NRHP). This term includes artifacts, records, and remains that are related to and located within historic properties, as well as properties of traditional religious and cultural significance (often referred to as "traditional cultural properties" or "TCPs") that meet the NRHP criteria. The Section 106 process is intended to accommodate historic preservation concerns with the needs of federal undertakings through a process of consultation with agency officials, the SHPO, Tribal Historic Preservation Officers, federally recognized Indian Tribes, and other parties with a potential interest in an undertaking's effects on historic properties. Concurrent with the filing of

this PAD and the NOI, the City is requesting designation as FERC's non-federal representative for purposes of conducting informal consultation pursuant to Section 106.

The Secretary of the Interior has established the National Register criteria for evaluation for use in determining the eligibility of properties for inclusion in the NRHP (36 CFR § 60.4). In accordance with the criteria for evaluation, properties are eligible if they are significant in American history, architecture, archaeology, engineering, or culture. The quality of significance is present in historic properties that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- Criterion A: Are associated with events that have made a significant contribution to the broad patterns of our history; or
- Criterion B: Are associated with the lives of persons significant in our history; or
- Criterion C: Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant or distinguishable entity whose components may lack individual distinction; or
- Criterion D: Have yielded or may be likely to yield information important in prehistory or history.

5.10.1 Area of Potential Effects

Under the NHPA Section 106 implementing regulations at 36 CFR § 800.16(d), the area of potential effects (APE) is defined as "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist." Based on this regulatory definition, the APE for the Project relicensing has been initially identified by the City as including all lands within the FERC Project Boundary. This is the area identified by the City where Project operations or Project-related activities may cause changes in the character or use of historic properties, if any such properties exist. Pursuant to 36 CFR § 800.4(a)(1), and as part of subsequent relicensing efforts, the SHPO will be consulted regarding the determination of the APE. If Project activities or Project related effects outside of the current APE are identified, the APE will be expanded, in consultation with the SHPO, to address these other areas or activities.

5.10.2 Cultural Context - Cultural Sequence of the Project Area

Below is a brief overview of the cultural history of the Project region. The following cultural context is largely drawn from a previous cultural resources survey report prepared in 1995 for the previous Project relicensing effort (Hudson 1995), with updates to reflect current information.

5.10.2.1 Precontact Period

Schalk's 1984 model of prehistory, which is applicable to the study area, is based on post-glacial climate change (Thoms 1984). "This model focuses on the rugged, densely forested mountain terrain of the Middle Kootenai Region where big game, deer, elk, moose, caribou, mountain sheep, and mountain goats, was the primary subsistence resource" (Moratto et al. 1990:3-3). Abundance of game was largely determined by habitat availability.

The earliest evidence of human occupation in the region comes from western Idaho and south-central Oregon, at the Cooper's Ferry site and the Paisley Caves site respectively. Radiocarbon dating places the earliest occupation at the Cooper's Ferry site potentially starting more than 16,000 years before present (B.P.) (Davis et al. 2019). After the region became ice-free, 11,000 years ago, the climate was cold and wet and the landscape supported tundra-steppe plant

communities. This was quickly superseded by forests of spruce, fir, and pine. About 8,000 B.P. the climate became warmer and drier and supported a Douglas-fir, pine forest. The climate began to cool again about 4,000 B.P., as evidenced by an increase in coniferous forest cover and later by montane glacial advance. By 3,000 B.P., the modern forest community, dominated by fir, pine, and spruce, was established.

Human response to these climate changes is reflected in site locations. Human and animal populations increased following deglaciation, through the warmer and drier Altithermal, to about 4,000 B.P., During this time, people lived in small, highly mobile groups whose yearly subsistence cycle was strongly conditioned by availability of big game. When climate conditions became cooler and moister, coniferous species changed, creating a more closed forest, resulting in less favorable habitat for certain ungulates. Human groups responded to reduction of this food source by increasing the use of other plant, mammal, and fish resources, and intentional burning to improve big game habitat.

Site locations reflect these subsistence changes: sites older than about 4,000 B.P. are found on valley walls, near water sources, at locations warmed by solar exposure and in close proximity to relatively predictable concentrations of game. Later land use adds sites, located in valley bottoms to take advantage of riverine resources, to the basic big game hunter pattern. Other sites are also found at more diverse locations as new resources were exploited (Schalk 1984, Thoms 1984).

The Moyie River is within the traditional homeland of the Kutenai. There were at least four major divisions of the Kutenai: the Plains Kutenai, Upper Kutenai, Mid-river Kutenai, and the Lower Kutenai (Turney-High 1941). The Project location falls within the traditional territory of the Lower Kootenai, which was centered on the Purcell Trench in Idaho and southeastern British Columbia. Primary subsistence activities of the Kutenai were focused on hunting, fishing, and gathering. Riverine resources were exploited more by the Lower Kutenai than their eastern relatives who used horses to travel to root grounds and for bison hunting on the Great Plains (Smith 1984). The Kutenai gathered together at various times during the year to exploit especially productive food resources. Summer brought the largest gatherings at fish-trapping locations on the Kootenai River flood plain. In spring and fall duck hunting with large nets brought smaller groups together, and in winter communal deer drives occurred. During fall berry gathering season, large base camps were established near this resource. Small, temporary camps were located near other food resources throughout the year. In winter, Kutenai family groups separated from one another and lived along the Kootenai River, supplementing their stored foodstuffs by fishing and hunting locally.

5.10.2.2 Historic Period

The first Euroamericans in the area represented the North West Company and Hudson's Bay Company. These trappers and traders travelled over well-established American Indian trails as they extended their fur trading empires. In 1808, David Thompson travelled down the Kootenai River to Kootenay Lake in southeastern British Columbia. On his return trip he stored canoes at an Indian Tribe camp in the vicinity of Bonners Ferry and proceeded on horseback up the Moyie River valley to the present area of Cranbrook and Ft. Steele (Tyrrell 1916). His travels the following year took him down the Moyie and Kootenai rivers to Bonners Ferry and south along the Purcell Trench, on a trail which he called "Great Road of the Flat Head." When he reached the Pend Oreille River and Lake Pend Oreille he established Kullyspell House, a short lived trading post. For the next 50 years, few Euroamericans were drawn to the area other than fur trappers, traders, and missionaries and most used the same routes. In 1841 Governor George Simpson of the Hudson's Bay Company travelled down the Moyie River on his journey to Ft.

Colville (Simpson 1847). The following year, Father DeSmet, a Jesuit missionary, first visited the Lower Kutenai. British and American survey teams establishing the International Boundary were also in the area from 1857 to 1862.

In the 1860s, gold was discovered along the Wild Horse Creek in southeastern British Columbia. Miners rushed north from Spokane Falls, crossing the Pend Oreille River at Seneacquoteen, and continuing on along the Wild Horse Trail to the Kootenai River. After crossing the Kootenai at Bonners Ferry, gold seekers selected one of several Wild Horse Trail routes leading to Canada. One of these was along the Moyie River valley. Although Canada was the destination for most of these miners, prospecting likely occurred along the way.

Permanent Euroamerican settlement began with the construction of the Northern Pacific Railroad in the 1880s and the Great Northern in the early 1890s. The Spokane International Railroad, which passes just west of the Project, was completed in 1906. Prior to construction of the Great Northern, the area was connected by trails to the Northern Pacific railhead at Kootenai Station, about two miles north of Sandpoint. Stagecoaches ran from the Northern Pacific north to Bonners Ferry and Crossport, as well as the length of the Kootenai Valley to Porthill (Boundary County Historical Society 1987). Railroads opened the area to large-scale logging, mining, and agricultural development and communities and lumber mills sprang up along their routes. Addie, Meadow Creek, Snyder, Moyie Springs, all small towns along the Spokane International near the Moyie River, depended on the railroad for supplies and communication. This would later change as county, state, and federal road systems developed.

5.10.2.3 Moyie River Hydroelectric Project

Section 4.3 of this PAD provides a description of the Project facilities as they exist today. The first hydroelectric facilities at this location were built in 1921-1922 and consisted of a small concrete diversion dam, now abandoned, and one powerhouse (Powerhouse 1) (Hudson 1995:11-14). Powerhouse 1 is a 25 foot by 35 foot concrete building that contains a horizontal Francis turbine/generator rated at 450 kW (Unit No. 2). In 1982, Powerhouse 3 (now considered part of Powerhouse 1) was added to the south side of this building. This 20 foot by 35 foot addition houses a vertical Francis turbine/generator rated at 1500 kW (Unit No. 4). Powerhouse 2 was built from 1941 to 1944. It is a concrete structure and has two vertical Francis turbine/generator units rated at 1,000 kW each (Units No. 1 and No. 3). The current Moyie Dam, completed in 1949, is a concrete gravity structure with a maximum height of 92 feet. There is an integral ogee spillway on the downriver side of the dam.

5.10.3 Known Cultural Resources

This section includes a description of previously conducted cultural resources studies and previously recorded cultural resources within one mile of the Project Boundary as identified using the Idaho Cultural Resources Information System (ICRIS), along with review of previous relicensing studies (Hudson 1995, Southworth et al. 2001). This section also identifies potential historical features that may be present within one mile of the Project Boundary based on historical map data.

5.10.3.1 Previous Cultural Resources Investigations

According to ICRIS, eight previous cultural resources investigations occurred within one mile of the Project Boundary, of which only one overlaps within the Project Boundary. This report, prepared by Lorelea Hudson of Northwest Archaeological Associates, Inc, (NWAA), was conducted in support of previous FERC relicensing efforts for the Project (Hudson 1995). The

fieldwork for this inventory was completed in 1994 and included the survey of approximately 64 acres. As noted in the survey report, much of the area was too steep to access and the Project impoundment inundated a significant portion of the area and prevented pedestrian field survey. This investigation resulted in the identification of six resources (three newly recorded and three previously recorded), including five archaeological resources (10-BY-389, 10-BY-390, LOC 256, NWAA MR-1, and NWAA MR-2) and one built environment resource, the Moyie River Hydroelectric Complex (NWAA MR-3). All six resource are historic-era resources and are further described in the following section.

Additionally, three other previous cultural resources investigations have been conducted within the Project Boundary, as described below and further summarized in previous FERC relicensing studies (Hudson 1995, Southworth et al. 2001). These three investigations do not appear in ICRIS within the Project Boundary.

Of the three previous investigations, one was conducted by the University of Idaho under contract to the USFS. This investigation included a survey of the Moyie River from the Canada/U.S. border to its confluence with the Kootenai River, as part of the National Wild and Scenic Rivers study in 1975. Although this effort identified archeological sites along the river, none were identified within the Project Boundary. Another investigation that included portions of the Project Boundary was conducted by the Idaho Panhandle National Forest in 1988. This investigation identified three sites within the Project Boundary (10-BY-389, 10-BY-390, and LOC 256), which are described in the following section.

The third previously conducted cultural resources investigation that occurred within the Project Boundary, based on previous relicensing studies, consisted of both field and documentary collection of information related to sites 10-BY-389 and 10-BY-390 (Southworth et al. 2001). This effort resulted in merging the two sites into one. These efforts and results were documented and disseminated to interested parties in the Cultural Resources Management Plan prepared for the Project as part of previous relicensing efforts (Southworth et al. 2001).

5.10.3.2 Previously Identified Cultural Resources

Archaeological and Built Environment Resources

A total of eight archaeological sites and 13 built environment resources have been previously recorded within one mile of the Project Boundary, as identified by ICRIS. These 21 resources are variously associated with historic mining, transportation, habitation, and the development of hydroelectric power in Northern Idaho. Based on ICRIS, of the 21 resources, seven are eligible for inclusion in the NRHP, 13 are not eligible, and one remains unevaluated. Six of the 21 resources fall within the Project Boundary (10-BY-389, 10-BY-390, 10-BY-391, 10-BY-487, 10-BY-488, and 10-YB-489). These six resources include five historic-era archaeological sites and one historic built environment resource. Four of these six resources are eligible for inclusion in the NRHP, and two are not eligible. All 21 previously recorded cultural resources are listed in Table 5.10-1.

Table 5.10-1. Archaeological and built environment resources within one mile of the Project Boundary.

Site Name / Identifier	Period	Description	NRHP Eligibility Based on ICRIS	Within Project Boundary (Yes/No)
10-BY-389 / MM K	Historic	**Archaeological Site.** Mining site dating to the first half of the 20th century – refuse dump, one structure, three prospect pits, two adits, and a machine-made pit.	Eligible	Yes
10-BY-390 / MM Q	Historic	**Archaeological Site.** Mining site dating to the first half of the 20th century – Collapsed remains of a framed structure, and refuse dump, a clearing, and the remnants of placer mining.	Eligible	Yes
10-BY-391 / MM A and J (LOC 256)[1]	Historic	**Archaeological Site.** Old Red Bridge, however, at this point in time the bridge no longer remains.	Not Eligible	Yes
10-BY-412 / S-3	Historic	**Archaeological Site.** Refuse dump containing sanitary cans, bottles, automobile parts, and other refuse.	Not Eligible	No
10-BY-487 / NWAA-MR-1	Historic	**Archaeological Site.** Mining site dating to the early 20th century – improved spring, a prospect pit, and a series of ditches. This site may be related to or associated with 10-BY-389.	Eligible	Yes
10-BY-488 / NWAA-MR-2	Historic	**Archaeological Site.** Old Highway 2, bridge built in 1922, and bridge abutment remnants.	Not Eligible	Yes
10-BY-489 21-017886 / MWAA MR-3	Historic	**Built Environment Resource.** Moyie River Hydroelectric Complex dating between 1921 and 1982 – Concrete dam, penstock, three powerhouses, and the power plant grounds.	Eligible	Yes
10-BY-515 / 95C/E 13	Historic	**Archaeological Site.** Single track railroad and roadbed, originally constructed in 1907.	Not Eligible	No
10-BY-523 / MM-A and J (LOC 256)	Historic	**Archaeological Site.** Unimproved road leading to Old Red Bridge.	Not Eligible	No
21-005591	Historic	**Built Environment Resource.** Log house.	Unevaluated	No
21-017932	Historic	**Built Environment Resource.** Spokane International Railway.	Eligible	No
21-017950 / MS-3	Historic	**Built Environment Resource.** Melvin and Cathie Peterson House.	Not Eligible	No
21-017951 / MS-4	Historic	**Built Environment Resource.** Evan Rentals LLC House.	Not Eligible	No
21-017952 / MS-5	Historic	**Built Environment Resource.** Estaline E. Reader House.	Not Eligible	No

Site Name / Identifier	Period	Description	NRHP Eligibility Based on ICRIS	Within Project Boundary (Yes/No)
21-017953 / MS-6	Historic	**Built Environment Resource.** Moyie Club & Café.	Not Eligible	No
21-017954 / MS-7	Historic	**Built Environment Resource.** Moyie Cash Store.	Not Eligible	No
21-017955 / MS-8	Historic	**Built Environment Resource.** Moyie Springs Post Office.	Not Eligible	No
21-017956 / MS-9	Historic	**Built Environment Resource.** House at Roosevelt St. and Canyon View Rd.	Not Eligible	No
21-017958 / 10-BY-436	Historic	**Built Environment Resource.** La Fountain Barn.	Eligible	No
21-018030 / 10030	Historic	**Built Environment Resource.** US-2, UPRR Bridge.	Not Eligible	No
21-018031 / 10035	Historic	**Built Environment Resource.** Moyie River Gorge Bridge.	Eligible	No

1 The Old Red Bridge and the road leading up to the bridge were both previously designated as LOC 256 (Hudson 1995) but are now two separate resources (10-BY-391 and 10-BY-523).

Potential Historic Resources Identified from Historic Maps

A review of historic USGS topographic quadrangles and General Land Office (GLO) plats of the area identified only one historic-era feature within the Project Boundary (the Moyie Dam) (Table 5.10-2). Potential historic-era sites or features within one mile of the Project Boundary include roads, railroads, buildings, and springs.

Table 5.10-2. Features depicted within one mile of the Project Boundary on historic maps.

Historic Map Name and Date	Description of Historic Features within One Mile	Description of Historic Features within Project Boundary
GLO Plat T62N R2E 1898	Unnamed, improved road	None
Priest Lake, ID 1911 (1:250,000)	“Spokane International Railroad,” “Moyie Sprs [Springs],” one improved road, two unnamed structures	None
Priest Lake, ID 1913 (1:250,000)	“Spokane International Railroad,” “Moyie Sprs [Springs],” one improved road, two unnamed structures	None
Sandpoint, ID 1958 (1:250,000)	“Spokane International,” US Highway 2	Moyie Dam
Moyie Springs, ID 1965 (1:24,000)	“Spokane International,” “Moyie River Road,” US Highway 2, unimproved road, “Powerplant”	Moyie Dam

5.10.4 Known Traditional Cultural Properties and Tribal Interests

Indian Trust Assets (ITAs) are legal interests in property held in trust by the U.S. for Indian Tribes or individual Native Americans. The Secretary of the Interior, acting as the trustee, holds many assets in trust. ITAs can be real property, physical assets, or intangible property rights. Examples of ITAs are lands, including reservations and public domain allotments; minerals; water rights; hunting and fishing rights; other natural resources; and money or claims. While most ITAs are on reservations, they may also be found off-reservation. A characteristic of an ITA is that it cannot be sold, leased, or otherwise alienated without the U.S. government's approval. Assets that an Indian Tribe or individuals have no legal interest are not ITAs. For example, off-reservation sacred lands or archaeological sites in which an Indian Tribe has no interest are not ITAs.

Traditional Cultural Properties are explained and defined in Parker and King (1998:1) as follows:

> *One kind of cultural significance a property may possess, and that may make it eligible for inclusion in the [National] Register, is traditional cultural significance. "Traditional" in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice. The traditional cultural significance of a historic property, then, is significance derived from the role the property plays in a community's historically rooted beliefs, customs, and practices. Examples of properties possessing such significance include:*
>
> - *a location associated with the traditional beliefs of a Native American group about its origins, its cultural history, or the nature of the world;*
> - *a rural community whose organization, buildings and structures, or patterns of land use reflect the cultural traditions valued by its long-term residents;*
> - *an urban neighborhood that is the traditional home of a particular cultural group, and that reflects its beliefs and practices;*
> - *a location where Native American religious practitioners have historically gone, and are known or thought to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice; and*
> - *a location where a community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historic identity.*
>
> *A traditional cultural property, then, can be defined generally as one that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community.*

As detailed in the sections above, a review of previously identified cultural resources and the cultural context of the area did not identify any ITAs or known TCPs within the Project Boundary.

The Project Boundary does not include any Indian reservations or other lands under Tribal ownership. Approximately 1 mile downstream of the Project are lands owned by the United States in trust for the benefit of the Kootenai Tribe of Idaho. The Kootenai Tribe of Idaho operates the Twin Rivers Canyon Resort (Section 5.8.3.3 of this PAD) and Twin Rivers Hatchery (Section 5.1.2.1 of this PAD) downstream of the Project near the confluence with the Moyie and Kootenai rivers.

Additionally, the Cultural Resources Management Plan prepared for the Project as part of previous relicensing efforts (Southworth et al. 2001:9) noted the following:

> *No traditional cultural resources were identified within the MRHP [Moyie River Hydroelectric Project] area. During the public meeting held on March 7, 2000, at the City Council chambers, Raymond Abraham, Chief of the Kootenai Tribe of Idaho, stated that the nearest Kootenai Tribal activity to the MRHP was a camping and fishing area at the confluence of the Moyie and Kootenai Rivers located approximately a mile downstream of any project facilities. He indicated that they (the Kootenai Tribe) had not made significant use of the portion of the river occupied by the MRHP.*

5.10.4.1 Identification of Potentially Affected Indian Tribes

A list of potentially affected Indian Tribes was identified during the Moyie River Hydroelectric Project relicensing efforts in 1995 (see Table 5.10-3). These Indian Tribes were consulted with as a part of that relicensing effort. The City will consult with these Indian Tribes for purposes of the present relicensing efforts, and any other interested Indian Tribes identified during the relicensing process.

Table 5.10-3. Potentially affected Indian Tribes.

Indian Tribe
Coeur d'Alene Tribe
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Colville Reservation
Kalispel Tribe of Indians
Kootenai Tribe of Idaho
Nez Perce Tribe

5.10.5 Known Project-Related Effects to Cultural and Tribal Resources

Existing, relevant, and reasonably available information regarding cultural and Tribal resources within the Project Boundary is provided in the sections above. While no known Tribal resources have been identified within the Project Boundary, the City intends to consult with the potentially affected Indian Tribes as previously unknown Tribal resources may exist in this area and could be affected by the Project. The City understands that Indian Tribes are the experts on identifying their own Tribal resources and potential Project-related effects to them.

Previously identified cultural resources,[9] as described above, include five archaeological sites and one built environment resource within the Project Boundary, of which four are NRHP eligible (three archaeological sites and the one built environment resource) and two are not eligible (two archaeological sites). Management considerations to address potential Project-related effects for all six of these cultural resources are included in the Cultural Resources Management Plan prepared for the Project as part of previous relicensing efforts (Southworth et al. 2001:9). In this plan, the two resources recommended not eligible for the NRHP require no further management consideration. The three archaeological sites that are recommended eligible for the NRHP are

[9] It should be noted that cultural resources and Tribal resources are not mutually exclusive. Cultural resources can also be Tribal resources and vice versa.

required by the plan to be avoided and monitored annually. The plan requires the NRHP eligible built environment resource, which consists of the hydroelectric facilities comprising the Project, to be considered during any landscaping or exterior maintenance/modification/upgrade. This consideration includes assessing any potential effects these activities may have on the resource and may require consultation with the Idaho SHPO.

No ongoing Project-related activities are known to be affecting cultural resources, and no ground-disturbing activities or modifications to Project facilities are proposed as part of this relicensing. However, the new license may ultimately include measures or modifications to Project facilities that could affect cultural resources under the new FERC license. These activities could affect documented or previously unidentified historic properties.

The City intends to include a Historic Properties Management Plan (HPMP) in its license application, consistent with FERC's guidance,[10] that will incorporate procedures to manage and consider potential Project-related effects to known historic properties and currently unknown historic properties under the new FERC license. The HPMP will also include guidance to identify when the City will consult with potentially affected Indian Tribes and the Idaho SHPO under the new license. The City anticipates that the HPMP will be developed in consultation with Section 106 consulting parties and would be implemented under a programmatic agreement (PA) drafted and distributed by FERC to consulting parties. As all potential Project-related effects to historic properties cannot be identified prior to license issuance, the City expects that FERC will conclude the Section 106 process through the development, execution, and implementation of a PA that will lay out a phased process for Section 106 compliance, pursuant to 36 CFR § 800.4(2) and § 800.5(3).

5.11 Socioeconomic Resources and Environmental Justice

5.11.1 Existing Socioeconomic Conditions

5.11.1.1 Demographics

Population

The Project is located within Boundary County, Idaho. The 2021 U.S. Census Bureau (USCB) reported that approximately 11,966 people reside in Boundary County, which encompasses approximately 1,269 square miles with a population density of 9.4 persons per square mile. The median age for Boundary County is 43.8 years. The population in Moyie Springs is 1,174 with a median age of 42.9 years (Data USA 2023a) and Bonners Ferry has a population of 2,495 with a median age of 40.3 years (Data USA 2023b).

Moyie Springs and Bonners Ferry are in the top ten cities where people live and work in Boundary County (Table 5.11-1). The 2020 Boundary County top ten cities to live and work in identified Bonners Ferry as number one for both residence and employment, and Moyie Springs as number two for residence and number six for employment (Idaho Department of Labor 2023).

[10] The *Guidelines for the Development of Historic Properties Management Plans for FERC Hydroelectric Projects* (May 2002) issued jointly by FERC and the ACHP.

Table 5.11-1. Boundary County 2020 residence and employment.

City	Residence All Jobs (count)	Residence Total Jobs (%)	Employment All Jobs (count)	Employment Total Jobs (%)
Bonners Ferry	536	15.5	1,315	32.0
Moyie Springs	164	4.7	75	1.8

Source: USCB – Longitudinal Employer – Household Dynamics.

Education

Approximately 30 percent of the population of Moyie Springs holds a high school diploma or equivalent, nearly 9 percent hold a bachelor's degree, and approximately 17 percent have some college or an associate degree, and approximately 16 percent have a graduate degree or higher (U.S. Census Bureau 2022a).

Approximately 40 percent of the population of Bonners Ferry holds a high school diploma or equivalent, nearly 13 percent hold a bachelor's degree, and approximately 26 percent have some college or an associate degree, and approximately 5 percent have a graduate degree or higher (U.S. Census Bureau 2022b).

5.11.1.2 Industry and Employment

Labor Force and Unemployment Rates

The economy of Bonners Ferry employs 1,003 people. The largest industries are retail trade (16.3 percent), accommodation and food services (11.9 percent), and construction (11.5 percent). The economy of Moyie Springs employs 374 people. The largest industries are Health Care & Social Assistance (26.7 percent), Retail Trade (13.1 percent), and Agriculture, Forestry, Fishing & Hunting (8.3 percent). Boundary County had an unemployment rate of 3.5 percent in 2022.

Local Industries and Major Employers

The major employers in Boundary County are ranked in Table 5.11-2.

Table 5.11-2. Boundary County top employers.

Employer	Ownership	Employment Range
Boundary County School District	Local Government	100 – 249
Boundary Community Hospital	Local Government	100 – 249
Kootenai Tribe Development Corporation	Local Government	100 – 249
Idaho Forest Group	Private	100 – 249
Boundary County	Local Government	100 – 249
Alta Forest Products	Private	100 – 249
U.S. Department of Homeland Security	Federal Government	050 – 099
Safeway	Private	050 – 099
Panhandle Doors	Private	050 – 099
Kootenai Tribe of Idaho	Local Government	050 – 099

Source: Idaho Department of Labor – Quarterly Census of Employment Wages.

Employment by Industry

From 2020 to 2021, employment in Moyie Springs, ID grew at a rate of 38 percent, from 271 employees to 374 employees (Data USA 2023a). The most common employment sectors for those who live in Moyie Springs are health care and social assistance, retail trade, and agriculture, forestry, fishing, and hunting (Table 5.11-3).

During the same years, Bonners Ferry, ID employment grew at a rate of 0.68 percent, remaining at approximately 1,030 employees (Data USA 2023b). The most common employment sectors for Bonners Ferry residents are retail trade, accommodation and food service, construction, health care and social assistance, and educational services (Table 5.11-4).

Table 5.11-3. Moyie Springs top employment by industries.

Industry	People in workforce (count)	Percent of population (%)
Health care and social assistance	100	26.7
Retail trade	49	13.1
Agriculture, forestry, fishing, and hunting	31	8.3
Public administration	30	8.0
Manufacturing	28	7.5

Source: Data USA 2023a.

Table 5.11-4. Bonners Ferry top employment by industries.

Industry	People in workforce (count)	Percent of population (%)
Retail trade	168	16.3
Accommodation and food services	123	11.9
Construction	119	11.5
Health care and social assistance	97	9.4
Educational services	96	9.3

Source: Data USA 2023b.

Income and Poverty Rates

In 2021, the median household income in Moyie Springs was $54,626 (Data USA 2023a) and $38,243 in Bonners Ferry (Data USA 2023b). Boundary County and the state of Idaho were $51,261 and $63,377, respectively. The poverty rate in 2021 was nearly 14 percent in Moyie Springs (Data USA 2023a) and almost 19 percent in Bonners Ferry. Boundary County and the state of Idaho were about 17 percent and 11 percent, respectively. The employment industry and wages for Boundary County are detailed in Table 5.11-5 for the years 2011, 2020, and 2021.

Table 5.11-5. Boundary County industry employment and wages, 2011, 2020, and 2021.

Super sector	2011		2020		2021	
	Average Employment	Average Wages	Average Employment	Average Wages	Average Employment	Average Wages
Total Covered Wages	3,326	$30,629	3,709	$40,293	3,884	$42,320
Natural Resources & Mining	251	$35,315	369	$40,352	398	$43,118
Construction	206	$38,143,	285	$41,973	317	$46,788
Manufacturing	293	$43,173	498	$49,777	543	$50,674
Trade, Transportation, & Utilities	545	$25,783	628	$39,167	674	$40,563
Information	27	$15,664	22	$40,676	24	$40,986
Financial Activities	74	$30,489	85	$46,130	78	$47,574
Professional & Business Services	392	$20,393	251	$37,839	254	$40,034
Education & Health Services	733	$31,260	748	$37,192	770	$38,518
Leisure & Hospitality	273	$16,066	294	$18,189	310	$21,153
Other Services	67	$18,078	65	$25,279	65	$32,017
Public Administration	459	$41,971	455	$52,937	444	$54,867

Source: Idaho Department of Labor – Quarterly Census of Employment Wages.

5.11.2 Environmental Justice Communities

In conducting National Environmental Policy Act (NEPA) reviews of proposed hydropower projects, FERC follows Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, which directs federal agencies to identify and address "disproportionately high and adverse human health or environmental effects" of their actions on minority and low-income populations (i.e., environmental justice communities). Executive Order 14008, *Tackling the Climate Crisis at Home and Abroad*, also directs agencies to develop "programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts." The term "environmental justice community" includes disadvantaged communities that have been historically marginalized and overburdened by pollution. Environmental justice communities include, but may not be limited to minority populations, low-income populations, or indigenous peoples (USEPA 2023a).

This section presents information on environmental justice (EJ) communities, including race and ethnicity, income status, and English proficiency of people in the Project vicinity. This section relies on available USCB data for the state, counties, census tracts, and block groups relevant to the Project vicinity.

5.11.2.1 EJ Communities Identification

The City used the Federal Interagency Working Group on Environmental Justice and NEPA Committee (2016) publication *Promising Practices for EJ Methodologies in NEPA Reviews* (*Promising Practices*) for this Project, which provides methodologies for conducting EJ analyses throughout the NEPA process. These methodologies are described throughout this section.

The Project is located in the Moyie River Watershed in Boundary County, Idaho. The geographic scope of analysis of affected environment is a one-mile buffer from the Project Boundary, and each county, census tract, and block group were analyzed for racial and ethnic and poverty statistics using the 2021 USCB, 2017–2021, American Community Survey 5-year Estimate (Table 5.11-6).

It is important to note that census data is self-reported and can only be disaggregated to certain prescribed levels (e.g., census blocks, census tracts). This suggests that pockets of minority or low-income communities, including those that may be experiencing disproportionately high and adverse effects, may be missed in a traditional census tract-based analysis. This is why census data also has the possibility of distortion of population breakdowns. However, census data is the most comprehensive and standardized database of the population composition and its distribution, as well as the recommended statistical source of data for EJ analysis (Federal Interagency Working Group on Environmental Justice and NEPA Committee 2016).

Each method of analysis is described below prior to discussion of the block groups identified as EJ communities using the respective method. The assessment identified no EJ communities as minority populations (by race and ethnicity) using the 50 percent analysis or the meaningfully greater analysis, and none as low-income populations using the low-income threshold analysis.

Minority Populations

Fifty Percent Analysis

The term *minority* means “individual(s) who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic” (Council on Environmental Quality [CEQ] 1997; USEPA 2023b). A population is identified as minority in a potentially affected area by either a fifty percent analysis or meaningfully greater analysis. The fifty percent analysis highlights populations with a cumulative minority population that exceeds fifty percent in the affected area (CEQ 1997). No block groups were identified as EJ communities in the area of analysis using the fifty percent analysis method (Table 5.11-6).

Meaningfully Greater Analysis

The meaningfully greater analysis highlights populations with a cumulative minority population percentage that is meaningfully greater than the minority population percentage in the general population. (CEQ 1997). No block groups were identified as EJ communities in the area of analysis using the meaningfully greater analysis method of ten percent higher minority population than their respective county (Table 5.11-6).

Low-Income Populations

Low-Income Threshold Analysis

Low-income references “populations characterized by limited economic resources.” The U.S. Office of Management and Budget has designated the USCB’s annual poverty measure as the

official metric for program planning and analysis" (USEPA 2023b). The low-income threshold analysis highlights populations within the affected area with an income below the poverty level percentage which is equal or greater than the respective county. No block groups were identified as EJ communities in the area of analysis area using the low-income threshold analysis method (Table 5.11-6).

Table 5.11-6. American Community Survey information for block groups within one mile of the Project Boundary (USCB 2023).[1]

Geography	Race and ethnicity data										Low-income data
	Total population (count)	White (count)	African American (count)	American Indian/ Alaska Native (count)	Asian (count)	Native Hawaiian/ Other Pacific Islander (count)	Some other race (count)	Two or more races (count)	Hispanic or Latino (count)	Total minority population (%)	Below poverty level (%)
Idaho	1,811,617	1,459,942	11,392	17,174	23,902	2,519	6,507	55,620	234,561	19.4	11.1
Boundary County	11,966	10,630	27	167	153	115	20	224	630	11.2	15.7
Census Tract 9701, Block Group 3	2,065	1,914	0	3	1	74	0	40	33	7.3	12.0
Census Tract 9701, Block Group 4	894	831	0	0	7	41	0	15	0	7.0	7.8

1 Calculations performed adhered to Promising Practices for EJ Methodologies in NEPA Reviews (Federal Interagency Working Group on Environmental Justice and NEPA Committee 2016). Race and ethnic, and low-income percent analysis calculations have been rounded to the nearest whole number.

5.11.2.2 Meaningful Interactions

Throughout the relicensing process, the City intends to provide outreach and collaboration with interested parties, EJ community representatives, and Indian Tribes. These representatives include entities summarized below.

EJ Communities

In preparing for and initiating Project relicensing, the City engaged in outreach with surrounding and potentially affected communities, including the Kootenai Tribe of Idaho and the Kootenai Valley Resource Initiative collaborative group. It is the City's understanding these cities, towns, and county commissioners informed and will continue to represent the public within their respective communities. The following are the communities the City has been in extensive outreach and collaboration within this relicensing process.

- Moyie Springs City Council
- Boundary County Commissioners
- Kootenai Tribe of Idaho

Tribal Nations

The Project is located in the Moyie River Watershed. Tribal Nations may have traditional territories and interests overlapped by the Project Boundary. The surrounding ecosystem provides many plant and animal species important to Indian Tribes that were, are, or could be used for sustenance, tool making, shelter, and ceremonies, as well as other opportunities that may be of modern interest to Indian Tribes. The City intends to provide outreach to the following federally recognized Indian Tribes:

- Coeur d'Alene Tribe
- Confederated Salish and Kootenai Tribes of the Flathead Reservation
- Confederated Tribes of the Colville Reservation
- Kalispel Tribe of Indians
- Kootenai Tribe of Idaho
- Nez Perce Tribe

6.0 Preliminary Issues, Project Effects, and Potential Studies List

6.1 Consultation to Date and Summary of Relevant Issues for the Moyie River Hydroelectric Project Relicensing

The primary purpose of the PAD is to identify and compile the existing, relevant, and reasonably available information and distribute to the stakeholders to enable them to identify issues and related information needs, develop study requests and study plans. It is also a precursor to the environmental analysis section of the Preliminary Licensing Proposal or Draft License Application provided for in 18 CFR §5.16, Exhibit E of the Final License Application, and the Commission's scoping document(s) and environmental impact statement or environmental assessment under NEPA. As stated previously, the City distributed the PAD Information Questionnaire and Project Fact Sheet to over 30 parties to:

- Notify and identify interested governmental agencies, municipalities, non-governmental organizations, Indian Tribes, and individuals of the upcoming relicensing proceeding;
- Identify existing, relevant, and reasonably available information that describes the existing Project's existing or historical environment;
- Help identify resource interests for consideration during the relicensing process; and
- Inform Stakeholders of the City's intention to pursue the TLP.

The City received responses from the following stakeholders: IDEQ; Idaho Department of Lands; IDWR; Idaho Office of Energy and Mineral Resources (OEMR); Idaho SHPO; Kootenai Tribe of Idaho; USFS, and the USFWS. Responses received from the Questionnaire are provided in Appendix B of this PAD.

To date, the City has performed the following initial consultation activities:

- PAD Information Questionnaires were distributed to over 30 parties in February 2024.
- IDFG and USFWS were contacted with requests for meeting regarding federal or state-listed, threatened, or endangered species, critical habitat, sensitive natural communities, and species of special concern within the Project's vicinity. USFWS referred the City to the IPaC system, which was researched as part of development of this PAD. The City also held consultation meetings January-March 2024 with Idaho DEQ, IDFG, Idaho OEMR, Kootenai Tribe of Idaho, USFS, and the Idaho Conversation League. Appendix B describes the consultation meetings that occurred. No stakeholders expressed opposition to the TLP.

Based on information gathered in support of the PAD, the City presents potential resource effects and studies by resource area in Table 6.1-1. The City notes that this list of resource issues is preliminary and anticipates consulting with the resource agencies, stakeholders, and other interested parties regarding these resources areas as well as other potential resources areas of interest to the parties.

Table 6.1-1. Resource areas, potential resource effects, and potential studies.

Resource Area	Issues Pertaining to Specific Resource Areas
Geology and Soils	There are no known issues regarding geology and soils at the Project. The Project will continue to operate in run-of-river mode and maintain reservoir elevations at normal maximum pool, and therefore, it is not anticipated that Project operations will adversely affect shoreline erosion.
Water Resources	There are no known issues regarding water resources at the Project. The Project will continue to operate in run-of-river mode and maintain reservoir elevations at normal maximum pool, and therefore, it is not anticipated that Project operations will adversely affect water quality or quantity in the Moyie River. Following consultation with IDEQ, the City is proposing to conduct a study to collect water quality information related to water temperature and total dissolved gas, at a minimum. The City will consult with IDEQ and other interested parties in development of the study.
Fish and Aquatic Resources	There are no known issues regarding fish and aquatic resources at the Project. The Project will continue to operate in run-of-river mode and maintain reservoir elevations at normal maximum pool, and therefore, it is not anticipated that Project operations will adversely affect fish and aquatic resources in the Moyie River.
Wildlife and Botanical Resources	There are no known issues regarding wildlife and botanical resources at the Project. The Project will continue to operate in run-of-river mode and maintain reservoir elevations at normal maximum pool, and therefore, it is not anticipated that Project operations will adversely affect wildlife and botanical resources in the Moyie River.
Wetland, Riparian and Littoral Habitats	There are no known issues regarding wetland, riparian, and littoral resources at the Project. The Project will continue to operate in run-of-river mode and maintain reservoir elevations at normal maximum pool, and therefore, it is not anticipated that Project operations will adversely affect these resources at the Project.
Threatened and Endangered Species	The federally listed species that have the potential to occur within the Project vicinity are identified in Section 5.7 of this PAD. There are no documented concerns of Project operations adversely affecting these species. The Project will continue to operate in run-of-river mode and maintain reservoir elevations at normal maximum pool, and the City is not proposing ground-disturbing activities or modifications to Project facilities that may adversely affect these species. Consequently, no issues relating to rare, threatened, and endangered species are currently known at the Project.
Recreation and Land Management	There are no known issues regarding recreation resources at the Project. The Project will continue to operate in run-of-river mode and maintain reservoir elevations at normal maximum pool, and the City proposes to maintain and provide access to the recreation facilities at the Project. Additionally, the City is proposing to conduct a recreation use survey and facilities assessment to better understand current recreation use patterns and to evaluate the status of the existing recreation amenities. The City will consult with the USFS and other interested stakeholders in development of the study.
Aesthetic Resources	There are no known issues regarding aesthetic resources at the Project. The Project will continue to operate in run-of-river mode and maintain reservoir elevations at normal maximum pool and release aesthetic flows at the dam.

Resource Area	Issues Pertaining to Specific Resource Areas
Cultural and Tribal Resources	There are no Project-related activities known to be affecting cultural resources, and no ground-disturbing activities or modifications to Project facilities are proposed as part of this relicensing. However, the new license may ultimately include measures or modifications to Project facilities that could affect cultural resources under the new FERC license. These activities could affect documented or previously unidentified historic properties. The City intends to include a HPMP in its license application, consistent with FERC's Guidelines for Development of Historic Properties Management Plans[1] that will incorporate procedures to manage and consider potential Project-related effects to known historic properties and currently unknown historic properties under the new FERC license. The HPMP will also include guidance to identify when the City will consult with potentially affected Indian Tribes and the Idaho SHPO under the new license.
Socioeconomic Resources and Environmental Justice	There are no known issues related to socioeconomic or environmental justice resources at the Project.

1 The *Guidelines for the Development of Historic Properties Management Plans for FERC Hydroelectric Projects* (May 2002) issued jointly by FERC and the ACHP.

6.2 Potential Studies or Information Needs List

Per the relicensing schedule included in Section 3.1 of this PAD, stakeholders have 60 days after the Joint Agency/Public Meeting to provide comments on the PAD and study requests. The City respectfully requests that resource agencies, Indian Tribes, and other interested parties that may request a study consider FERC's study request criteria set forth in 18 CFR § 5.9(b) and outlined below:

- Describe the goals and objectives of each study proposal and the information to be obtained;
- If applicable, explain the relevant resource management goals of the agencies or Indian Tribes with jurisdiction over the resource to be studied;
- If the requester is not a resource agency, explain any relevant public interest considerations in regard to the proposed study;
- Describe existing information concerning the subject of the study proposal and the need for additional information;
- Explain any nexus between Project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied and how the study results would inform the development of license requirements;
- Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant Tribal values and knowledge; and
- Describe considerations of the level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs.

7.0 Qualifying Comprehensive Plans Deemed Applicable

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

On April 27, 1988, FERC issued Order No. 481-A, revising Order No. 481, issued October 26, 1987, establishing that FERC will accord FPA section 10(a)(2)(A) comprehensive plan status to any federal or state plan that:

(1) Is a comprehensive study of one of more of the beneficial uses of a waterway or waterways;

(2) Specifies the standards, the data, and the methodology used; and,

(3) Is filed with the Secretary of the Commission.

The City reviewed FERC's September 2023 revised list of comprehensive plans for Idaho and has identified that the following comprehensive waterway and resource management plans do, or have the potential to, relate to the Project area:

- Idaho Department of Environmental Quality. 2018. Water Quality Standards. Boise, Idaho.
- Idaho Department of Fish and Game. 2005. Idaho comprehensive wildlife conservation strategy. Boise, Idaho. September 2005.
- Idaho Department of Fish and Game. 2007. Management plan for the conservation of Bonneville cutthroat trout in Idaho. Boise, Idaho. November 2007.
- Idaho Department of Fish and Game. 2007. Management plan for the conservation of Yellowstone cutthroat trout in Idaho. Boise, Idaho. April 2007.
- Idaho Department of Fish and Game. 2008. Idaho mule deer management plan: 2008-2017. Boise, Idaho. March 2008.
- Idaho Department of Fish and Game. 2008. Management plan for the conservation of Snake River white sturgeon in Idaho. Boise, Idaho. September 2008.
- Idaho Department of Fish and Game. 2010. Mule deer initiative action plan. Boise, Idaho. 2010.
- Idaho Department of Fish and Game. 2013. Management plan for the conservation of Westslope cutthroat trout in Idaho. Boise, Idaho. November 2013.
- Idaho Department of Fish and Game. 2014. Idaho Elk management plan: 2014-2024. Boise, Idaho. June 2014.
- Idaho Department of Fish and Game. 2019. Fisheries Management Plan, 2019-2024. Boise, Idaho. 2019.
- Idaho Department of Fish and Game. Bonneville Power Administration. 1986. Pacific Northwest Rivers Study. Final report. Boise, Idaho.
- Idaho Department of Parks and Recreation. 2018. Idaho Statewide Comprehensive Outdoor Recreation Plan 2018-2022. Boise, Idaho.

- Idaho Water Resource Board. 1995. Comprehensive state water plan: Priest River Basin. Boise, Idaho. November 1995.
- Idaho Water Resource Board. 1996. Comprehensive state water plan: North Fork Clearwater Basin. Boise, Idaho. January 1996.
- Idaho Water Resource Board. 2005. Comprehensive state water plan: South Fork Clearwater River Basin. Boise, Idaho. January 13, 2005.
- Idaho Water Resource Board. 2012. Idaho State water plan. Boise, Idaho. November 2012.
- National Marine Fisheries Service. 2008. Mainstem Columbia River Hydropower Projects Recovery Plan Module. Portland, Oregon. September 2008.
- National Marine Fisheries Service. 2015. ESA Recovery Plan for Snake River Sockeye Salmon. Portland, Oregon. June 2015.
- National Park Service. 1982. Lewis and Clark Trail National Historic Trail: Comprehensive Plan for Management and Use. January 1982.
- National Park Service. 2012. Foundation Document: Lewis and Clark National Historic Trail (IL, MO, KS, NE, IA, SD, ND, MT, ID, WA, OR). September 2012.
- Northwest Power and Conservation Council. 1988. Protected areas amendments and response to comments. Portland, Oregon. Council Document 88-22. September 14, 1988.
- Northwest Power and Conservation Council. 2014. Columbia River Basin Fish and Wildlife Program. Portland, Oregon. Council Document 2014-12. October 2014.
- Northwest Power and Conservation Council 2020. 2020 Addendum to the 2014 Columbia River Basin Fish and Wildlife Program. Portland, Oregon. Council Document 2020-9. October 2020.
- Northwest Power and Conservation Council. 2022. The 2021 Northwest Power Plan. Portland, Oregon. Council Document 2022-03. February 2022.
- State of Idaho. State of Oregon. State of Washington. Confederated Tribes of the Warm Springs Reservation of Oregon. Confederated Tribes of the Umatilla Indian Reservation. Nez Perce Tribe. Confederated Tribes and Bands of the Yakima Indian Nation. 1987. Settlement Agreement pursuant to the September 1, 1983, Order of the U.S. District Court for the District of Oregon in Case No. 68-5113. Columbia River fish management plan. Portland, Oregon. November 1987.
- U.S. Fish and Wildlife Service. n.d. Fisheries USA: the recreational fisheries policy of the U.S. Fish and Wildlife Service. Washington, D.C.
- U.S. Forest Service. 1987. Idaho Panhandle National Forests plan. Department of Agriculture, Coeur d'Alene, Idaho. September 17, 1987.

In conducting its research and outreach to identify relevant Comprehensive Plans, the City has attempted to identify additional plans which may be relevant to the Project as Resource Plans, but which have not been certified by the Secretary of the Commission as Comprehensive Plans. The resource management plans listed below were identified as relevant to the Project.

- Boundary County Comprehensive Plan. 2008. Boundary County Idaho Resolution 9B18CPV1. Boundary County Planning and Zoning. Bonners Ferry, ID. July 21, 2008.
- Idaho Department of Fish and Game. 2017. State Wildlife Action Plan. Prepared for U.S. Fish and Wildlife Service. Portland, Oregon. January 2017.

8.0 References

BC Parks. 2023. BC Parks Moyie Lake Park. [Online] URL: https://bcparks.ca/moyie-lake-park/.

Beard, Z.S., M.C. Quist, R.S. Hardy, and T.J. Ross. 2017. Habitat associations of juvenile burbot in a tributary of the Kootenai River. Transactions of the American Fisheries Society, 146:5, 1008-1015, DOI: 10.1080/00028487.2017.1334702.

Bonneville Power Administration (BPA). 2013. Kootenai River white sturgeon and burbot hatcheries project. Final environmental assessment and response to public comments. May 2013. [Online] URL: https://www.energy.gov/nepa/articles/ea-1901-final-environmental-assessment.

Boundary County. 2008. Boundary County Comprehensive Plan. Boundary County Idaho. Resolution 9B18CPV1. Boundary County Planning and Zoning. Bonners Ferry, ID. July 21, 2008. [Online] URL: http://www2.boundarycountyid.org/planning/compplan/index.htm.

Boundary County Historical Society. 1987. History of Boundary County Idaho. Boundary County Historical Society. Bonners Ferry, Idaho.

_____. 2023. Electrifying Bonners Ferry. [Online] URL: https://apps.itd.idaho.gov/apps/env/cultural/ENV_BonnersFerryElectrical.pdf.

City of Bonners Ferry, Idaho. 1996a. Cultural Resources Investigations for the Moyie River Hydroelectric Project. License Application, FERC No. 1991. Prepared by Northwest Archaeological Associates, Inc. July 1995. Application for New License for Major Project – Existing Dam 5 Megawatts or Less, Moyie River Hydroelectric Project, FERC Project No. 1991. Volume III, Environmental Studies (Stage 2 Consultation). March 1996.

_____. 1996b. Fisheries Studies for the Moyie River Hydroelectric Project. License Application, FERC No. 1991. Prepared by CH2M Hill. June 1995. Application for New License for Major Project – Existing Dam 5 Megawatts or Less, Moyie River Hydroelectric Project, FERC Project No. 1991. Volume III, Environmental Studies (Stage 2 Consultation). March 1996.

_____. 2003. FERC Form 80 – Recreation Report. Filed with the Federal Energy Regulatory Commission.

_____. 2014. FERC Form 80 – Recreation Report. Filed with the Federal Energy Regulatory Commission.

Council on Environmental Quality (CEQ). 1997. Environmental Justice: Guidance Under the National Environmental Policy Act. [Online] URL: http://www3.epa.gov/environmentaljustice/resources/policy/ej_guidance_nepa_ceq1297.pdf.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. FWS/OBS-79/31. U.S. Fish and Wildlife Service.

Data USA. 2023a. Moyie Springs, Idaho. [Online] URL: https://datausa.io/profile/geo/moyie-springs-id. Accessed October 2023.

_____. 2023b. Bonners Ferry, Idaho. [Online] URL: https://datausa.io/profile/geo/bonners-ferry-id. Accessed October 2023.

Davis, L.G., D.B. Madsen, L. Becerra-Valdivia, T. Higham, D.A. Sisson, S.M. Skinner, D. Stueber, A.J. Nyers, A. Keen-Zebert, C. Neudorf, M. Cheyney, M. Izuho, F. Iizuka, S.R. Burns, C.W. Epps, S.C. Willis, and I. Buvit. 2019. Late Upper Paleolithic occupation at Cooper's Ferry, Idaho, USA, ~16,000 years ago. Science 365:891-897.

eBird. 2023. eBird database maintained by Cornell Lab of Ornithology. [Online] URL: https://ebird.org/region/US-WA?yr=all.

Federal Interagency Working Group on Environmental Justice and NEPA Committee. 2016. Promising Practices for EJ Methodologies in NEPA Reviews. [Online] URL: https://www.epa.gov/sites/default/files/2016-08/documents/nepa_promising_practices_document_2016.pdf.

Hessburg P.F., S. Charnley, A.N. Gray, T.A. Spies, D.W. Peterson, R.L. Flitcroft, K.L. Wendel, J.E. Halofsky, E.M. White, J. Marshall. 2022. Climate and wildfire adaptation of inland Northwest U.S. forests. Front Ecol Environ. 20(1):40–48.

Hudson, L. 1995. Cultural Resources Investigations for the Moyie River Hydroelectric Project. License Application, FERC No. 1991. Prepared by Northwest Archaeological Associates, Inc. Prepared for City of Bonners Ferry, Idaho.

Idaho Department of Environment Quality (IDEQ). 2006. Assessment of Water Quality in Kootenai River and Moyie River Subbasins (TMDL).

_____. 2014. Assessment of Water Quality in Kootenai River and Moyie River Subbasins (TMDL): 2014 Temperature Addendum.

2022a. Kootenai and Moyie Subbasins. Idaho Department of Environmental Quality (IDEQ), 5-Year Review. Subbasin at a Glance. Kootenai and Moyie Subbasins. Moyie River (Hydrologic Unit Code 17010104). August 24, 2022. [Online] URL: https://storymaps.arcgis.com/stories/02151f8c13fd4faab4ec2249a56cfe87.

_____. 2022b. Final 2022 §305(b) Status Report. Subbasin 17010105 Moyie. [Online] URL: https://mapcase.deq.idaho.gov/wq2022/scripts/adb2022.aspx?WBIDSEGID=ID17010105PN002_02.

_____. 2022c. Final 2022 §305(b) Integrated Report Mapping Tool. [Online] URL: https://mapcase.deq.idaho.gov/wq2022/.

Idaho Department of Fish and Game (IDFG). 2006. Brook trout: Idaho's most popular non-native trout. [Online] URL: https://idfg.idaho.gov/press/brook-trout-idahos-most-popular-non-native-trout.

_____. 2013. Management Plan for the Conservation of Westslope Cutthroat Trout in Idaho. November 2013. [Online] URL: https://idfg.idaho.gov/old-web/docs/fish/planWestslopeCutthroat.pdf.

_____. 2014. Management Plan for the Conservation of Wolverines in Idaho 2014-2019. Idaho Department of Fish and Game, Boise, Idaho.

_____. 2019. Fisheries Management Plan 2019–2024. Idaho Department of Fish and Game, Boise, Idaho. [Online] URL: https://idfg.idaho.gov/sites/default/files/2019-2024-idaho-fisheries-management-plan-original.pdf.

_____. 2020. Rainbow trout are wrapping up their spawning season. Magic Valley Regional Office. [Online] URL: https://idfg.idaho.gov/press/rainbow-trout-are-wrapping-their-spawning-season.

_____. 2022a. Understanding brook trout invasions in Idaho high country bull trout streams. [Online] URL: https://idfg.idaho.gov/blog/2022/11/understanding-brook-trout-invasions-idaho-high-country-bull-trout-streams.

_____. 2022b. Idaho Fish and Game Wildlife Express: Burbot. Volume 35 | Issue 5. January 2022. [Online] URL: https://idfg.idaho.gov/sites/default/files/wildlife-express-burbot-0122.pdf.

_____. 2023a. Moyie River Tributary of the Kootenai River. [Online] URL: https://idfg.idaho.gov/ifwis/fishingplanner/water/1161862487149#:~:text=Tributary%20of%20the%20Kootenai%20River&text=Moyie%20River%20in%20Boundary%20County%20is%2091.7%20miles%20in%20length.

_____. 2023b. Idaho state wildlife action plan. 2023 rev. ed. Boise (ID): Idaho Department of Fish and Game. [Online] URL: https://idfg.idaho.gov/.

_____. 2023c. Idaho Classification of Wildlife (IDADA). [Online] URL: https://idfg.idaho.gov/species/taxa/list/idapa.

_____. 2024a. Personal communication between Matt Wiggs (HDR) and Merritt Horsmon (IDFG), March 15, 2024.

_____. 2024b. Idaho Fishing Planner: Moyie River. [Online] URL: https://idfg.idaho.gov/ifwis/fishingplanner/water/1161862487149.

Idaho Department of Labor (IDOL). 2023. Boundary County Labor Force and Economic Profile. [Online] URL: https://lmi.idaho.gov/wp-content/uploads/publications/2023/WorkforceTrends/BoundaryProfile.pdf.

Idaho Department of Parks and Recreation (IDPR). 2022. Idaho Statewide Comprehensive Outdoor Recreation Plan. [Online] URL: https://parksandrecreation.idaho.gov/wp-content/uploads/2023-SCORP-Final.pdf.

Idaho Department of Water Resources (IDWR). 2024. Water Right Report: 98-7704 (License/Active). [Online] URL: https://research.idwr.idaho.gov/apps/shared/WrExtSearch/Reports/WaterRightReport?basin=98&seq=7704&suffix=.

Idaho State Department of Agriculture (ISDA). 2023. Invasive Species of Idaho. [Online] URL: https://invasivespecies.idaho.gov/plants.

Interagency Lynx Biology Team. 2013. Canada lynx conservation assessment and strategy. 3rd edition. USDA Forest Service, USDI Fish and Wildlife Service, USDI Bureau of Land Management, and National Park Service (NPS). Forest Service Publication R1-13-19, Missoula, Montana. 128 pp.

Kasworm, W.F., T.G. Radandt, J.E. Teisberg, T. Vent, M. Proctor, H. Cooley, and J.K. Fortin-Noreus. 2022. Selkirk Mountains grizzly bear recovery area 2021 research and monitoring progress report. U.S. Fish and Wildlife Service. Missoula, Montana. 73 pp.

Kootenai Tribe of Idaho. 2010. Kootenai River Native Fish Conservation Aquaculture Program Master Plan. June 2010. [Online] URL: https://www.nwcouncil.org/sites/default/files/isrp2009-40response.pdf.

_____. 2023. Twin River Resort. [Online] URL: https://www.kootenai.org/pages_Enterprise/twinRiverResort.html.

Kootenai Tribe of Idaho and Montana Fish, Wildlife, and Parks. 2004. Kootenai Subbasin Plan. Part I: Kootenai River Subbasin Assessment. A report prepared for the Northwest Power and Conservation Council. Portland, Oregon. [Online] URL: https://www.nwcouncil.org/sites/default/files/EntirePlan_6.pdf.

McPhail, J. D., and V. L. Paragamian. 2000. Burbot biology and life history. Pages 11–23 Burbot: biology, ecology, and management. American Fisheries Society, Bethesda, Maryland. [Online] URL: https://collaboration.idfg.idaho.gov/FisheriesTechnicalReports/Burbot%20Biology%20And%20Life%20History.pdf.

Moratto, M.J., T.L. Jackson, R.M. Pettigrew, R.F. Schalk, D. Chavez, E.C. Gibson, C.B. Hemphill, C.J. Miss, B.A. Price, M. Romano, C.K. Roper, B.P. Wickstrom, M.S. Burney, C.G. Lebow, J. Silvermoon, and M.K. Crist. 1990. Cultural Resources Assessment Report PGT-PG&E Pipeline Expansion Project Idaho, Washington, Oregon, and California. Phase 1: Survey, Inventory, and Preliminary Evaluation of Cultural Resources. Draft. Report submitted to Pacific Gas Transmission Company. San Francisco, California.

National Marine Fisheries Service (NMFS). 2024. Essential Fish Habitat Mapper: Pacific. [Online] URL: https://www.habitat.noaa.gov/apps/efhmapper/?page=page_4&org=noaa.

National Water Quality Monitoring Council Water Quality. 2024. National Water Quality Monitoring Council Water Quality Portal. Boundary County. [Online] URL: https://www.waterqualitydata.us/#countrycode=US&statecode=US%3A16&countycode=US%3A16%3A021&within=2&lat=48.73396063211587&long=-116.17538986849374&mimeType=xlsx&sorted=no&providers=NWIS&providers=STEWARDS&providers=STORET.

National Wild and Scenic Rivers System (NWSRS). 2023. Study Rivers. [Online] URL: https://www.rivers.gov/study-rivers.

Parker, Patricia, and T.F. King. 1998. Guidelines for Evaluating and Documenting Traditional Cultural Properties. National Register Bulletin 38. U.S. Department of the Interior, National Park Service (NPS), Interagency Resources Division, Washington, D.C.

ROW Adventures 2023. Moyie River Rafting. [Online] URL: https://www.rowadventures.com/adventures/moyie-river-idaho-s-hidden-whitewater-rafting-jewel?utm_source=raftingamerica&utm_medium=cpc&utm_campaign=raftingamerica-business-listing#faq.

Schalk, R. 1984. Prehistoric land use in the Montana Coniferous Forest. In Environment, Archaeology, and Land Use Patterns in the Middle Kootenai River Valley. Volume 1 of Cultural Resources Investigations for Libby Reservoir, Lincoln County, Northwest Montana, pp. 37-48. Center for Northwest Anthropology Project Report 2. Washington State University, Pullman, Washington.

Simpson, G. 1847. Narrative of a Journey Round the World During the Years 1841-1842. Henry Colburn, London.

Smith, A.H. 1984. Kutenai Subsistence and Settlement Patterns. Northwest Montana, Volume 2 of Cultural Resources Investigations at Libby Reservoir, Kootenai River Valley, Northwest Montana. Center for Northwest Anthropology Project Report 2. Washington State University, Pullman, Washington.

Southworth, Don, Michael K. Polk, and Saniel Sayers. 2001. Cultural Resource Management Plan, Moyie River Hydroelectric Project (FERC No. 1991). Prepared by Sagebrush Consultants, L.L.C. Prepared for City of Bonners Ferry, Idaho.

Thoms, A. V. 1984. Environment, Archaeology, and Land Use Patterns in the Middle Kootenai River Valley. Volume 1 of Cultural Resources Investigations for Libby Reservoir, Lincoln County, Northwest Montana, pp. 37-48. Center for Northwest Anthropology Project Report 2. Washington State University, Pullman, Washington.

Turney-High, H. H. 1941. Ethnography of the Kutenai. Memoirs of the American Anthropology Association, No. 56.

Tyrrell, J. B. (editor). 1916. David Thompson's Narrative of His Explorations in Western America, 1784-1812. Champlain Society, Toronto, Ontario.

U.S. Army Corps of Engineers (USACE). 2020. National Wetland Plant List Western Mountains, Valleys, and Cost Regional List. [Online] URL: https://wetland-plants. sec.usace.army.mil /nwpl_static/v34/home/home.html.

U.S. Census Bureau. 2022a. Education. Moyie Springs city, Idaho Profile. 2022 American Community Survey 5-Year Estimates. [Online] URL: https://data.census.gov/profile/Moyie_Springs_city,_Idaho?g=160XX00US1655270#education.

_____. 2022b. Education. Bonners Ferry city, Idaho Profile. 2022 American Community Survey 5-Year Estimates. [Online] URL: https://data.census.gov/profile/Bonners_Ferry_city,_Idaho?g=160XX00US1609370#education.

U.S. Department of Agriculture (USDA). 2023. Nutria. National Invasive Species Information Center. [Online] URL: [Online] https://www.invasivespeciesinfo.gov/aquatic/fish-and-other-vertebrates/nutria.

U.S. Environmental Protection Agency (USEPA). 2023a. Learn About Environmental Justice. Environmental Justice. United States Environmental Protection Agency. August 16, 2023. [Online] URL: https://www.epa.gov/environmentaljustice/learn-about-environmental-justice.

_____. 2023b. EJScreen Community Report. [Online] URL: https://ejscreen.epa.gov/mapper/.

U.S. Fish and Wildlife Service (USFWS). 1987. National Wetland Inventory, Surface Waters and Wetlands. [Online] URL: https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/.

_____. 2010. Bull Trout Final Critical Habitat Justification: Rationale for Why Habitat is Essential, and Documentation of Occupancy. U.S. Fish and Wildlife Service, Idaho Fish and Wildlife Office, Boise, Idaho. 979 pp. plus appendices.

_____. 2015. Recovery plan for the coterminous United States population of bull trout (*Salvelinus confluentus*). Portland, Oregon. xii + 179 pages. [Online] URL: https://ecos.fws.gov/docs/recovery_plan/Final_Bull_Trout_Recovery_Plan_092915-corrected.pdf.

_____. 2018. Species Status Assessment for the North American Wolverine (Gulo luscus). Version 1.2. US Fish and Wildlife Service, Mountain-Prairie Region, Lakewood, Colorado. 168 pp. March 1, 2018.

_____. 2019. National Wetland Inventory. [Online] URL: https://www.fws.gov/wetlands/.

_____. 2019. Revised Recovery Plan for the Kootenai River Distinct Population Segment of the White Sturgeon. U.S. Fish and Wildlife Service, Portland, Oregon. vi + 35 pp. [Online] URL: https://ecos.fws.gov/docs/recovery_plan/Kootenai_River_White_Sturgeon_Revised_Recovery_Plan_20190923.pdf.

_____. 2020. Biological Opinion for the Ball Creek Ranch Wetland Connection Project. FWS/IR9/ES/IFWO/2020-F-0882; FWS/IR9/ES/IFWO/2020-I-1430. December 17, 2020. Coeur d'Alene, Idaho.

_____. 2022. Kootenai Tribe, Service and Partners Work Together on International Effort. Story written by Cheri Anderson. September 6, 2022. [Online] URL: https://www.fws.gov/story/2022-09/burbot-across-border.

_____. 2023. Grizzly Bears. [Online] URL: https://www.fws.gov/species/grizzly-bear-ursus-arctos-horribilis.

_____. 2024a. FWS Focus: Brook Trout. [Online] URL: https://www.fws.gov/species/brook-trout-salvelinus-fontinalis.

_____. 2024b. FWS Focus: White Sturgeon. [Online] URL: https://www.fws.gov/species/white-sturgeon-acipenser-transmontanus.

U.S. Forest Service (USFS). 2013. Final Environmental Impact Statement for the Revised Land Management Plan: Idaho Panhandle National Forests. [Online] URL: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5436506.pdf.

_____. 2018. Pacific Northwest Trail. [Online] URL: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd586067.pdf.

_____. 2023. Meadow Creek Campground. [Online] URL: https://www.fs.usda.gov/recarea/ipnf/recarea/?recid=6823.

U.S. Geological Survey (USGS). 2016. GAP/LANDFIRE National Terrestrial Ecosystems 2011. Online mapper. [Online] URL: https://maps.usgs.gov/terrestrial-ecosystems-2011/.

_____. 2023a. Moyie River at Eastport ID – 12306500. Gage height, feet. 2007-10-01 to 2013-12-07. USGS Current Water Data for the Nation.. [Online] URL: https://waterdata.usgs.gov/monitoring-location/12306500/#parameterCode=00065&period=P7D&showMedian=true.

_____. 2023b. USGS 12307500 Moyie River At Eileen ID. 0060 Discharge (Mean). 1925-10-01 to 1978-09-29. USGS National Water Information System: Web Interface. USGS Water Resources. [Online] URL: https://waterdata.usgs.gov/id/nwis/dv/?referred_module=sw&site_no=12307500.

Western Association of Fish and Wildlife Agencies (WAFWA). 2019. Western Monarch Butterfly Conservation Plan, 2019–2069. Version 1.0.

Washington Department of Fish and Wildlife (WDFW). 2024. Burbot. [Online] URL: https://wdfw.wa.gov/species-habitats/species/lota-lota#conservation.

Appendix A

PAD Information Questionnaire and Distribution List

Moyie River Hydroelectric Project (FERC Project No. 1991)
Relicensing Pre-Application Document Questionnaire

The City of Bonners Ferry, Idaho (City) is the licensee, owner, and operator of the 3.95-megawatt Moyie River Hydroelectric Project (Project). The Project was built in 1949 and is located on the Moyie River in Boundary County, approximately 1.5 miles upstream of the confluence of the Moyie River and Kootenai River. The Project consists of a 92-foot-high concrete dam impounding a 540-acre-foot reservoir. The Project operates as run-of-river and generates electricity for the City. The City proposes to continue operations in the new license consistent with current operations.

The City is beginning the Federal Energy Regulatory Commission (FERC) relicensing process for the Project and is preparing a Pre-Application Document (PAD). The PAD provides FERC and other entities with existing, relevant, and reasonably available information pertaining to the Project. This document is submitted to FERC between five to five and a half years before the license expiration. This existing, relevant, and reasonably available information is distributed to Tribes, agencies, and stakeholders to enable them to identify issues and related information needs. It is also a precursor to the environmental analysis section of the license application.

To prepare the PAD, the City will use information in its possession, obtained from others, or readily available online. This questionnaire is intended to assist in identifying sources of existing, relevant, and reasonably available information that is not currently in the City's possession.

Please submit your information by completing the following questionnaire and returning it by email to mklaus@bonnersferry.id.gov or matthew.wiggs@hdrinc.com or by mail to Moyie River Hydroelectric Project, ATTN: Mike Klaus, 7232 Main Street #149, Bonners Ferry, Idaho 83805. We look forward to hearing from you and value your input. To allow time for follow-up communication and ensure inclusion of all relevant feedback in the PAD, we ask that you please respond by February 23, 2023. After this time, we will begin moving forward with the finalization of the PAD. In the absence of updated contact info, we will continue to provide information about the relicensing process and opportunities to engage in the process to the contact information we have on file.

Moyie River Hydroelectric Project (FERC Project No. 1991)
Relicensing Pre-Application Document Questionnaire

The City respectfully requests the following information:

1. Information about the person completing this questionnaire:

Date	
Name & Title	
Organization	
Address	
Phone	
Email Address	

2. Do you or your organization know of existing, relevant, and reasonably available information describing the existing Moyie River Hydroelectric Project's environment that could inform the relicensing process (i.e., information regarding the Moyie River in or close to the Moyie River Hydroelectric Project)?

☐ Yes (If yes, please complete 2a through 2d.) ☐ No (If no, go to 3.)

a. Please check the specific resource areas that the information relates to:

☐ Geology and soils
☐ Water resources
☐ Fish and aquatic resources
☐ Wildlife and botanical resources
☐ Wetlands, riparian, and littoral habitat
☐ Rare, threatened, and endangered species
☐ Recreation and land use
☐ Aesthetic resources
☐ Cultural resources
☐ Socioeconomic resources
☐ Tribal resources
☐ Other resource information

b. Please briefly describe the information referenced above or list available documents.

c. Where or from whom can the City obtain this information?

d. Please list any specific representatives your organization wishes to designate for follow-up contact by the City regarding information about the resource areas checked above.

Representative Contact Information

Name & Title	
Organization	
Address	
Phone	
Email Address	

Name & Title	
Organization	
Address	
Phone	
Email Address	

3. We are interested in your comments and questions about the Moyie River Hydroelectric Project and the relicensing process. If you have any comments and questions you would like to share at this time, please provide them below. You may also submit comments and questions via email to mklaus@bonnersferry.id.gov or matthew.wiggs@hdrinc.com.

4. Please let us know if there is anyone else you believe should receive this questionnaire.

Name	
Address	
Phone	
Email Address	

Name	
Address	
Phone	
Email Address	

To submit additional comments, questions, or information, please email to mklaus@bonnersferry.id.gov or matthew.wiggs@hdrinc.com.

Moyie River Hydroelectric Project
PAD Questionnaire Distribution List

Distributed February 5, 2024, via electronic mail

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National Marine Fisheries Service
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West Coast Regional Office
justin.yeager@noaa.gov

U.S. Army Corps of Engineers
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U.S. Geological Survey
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U.S. Bureau of Indian Affairs
Bryan Mercier, Regional Director
Northwest Region
911 Northeast 11th Ave.
Portland, OR 97232
bryan.mercier@bia.gov

U.S. Environmental Protection Agency
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Seattle, WA 98101
epa-seattle@epa.gov

U.S. Fish and Wildlife Service
Idaho Fish and Wildlife Office
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Boise, ID 83709
IFWO@fws.gov

U.S. Fish and Wildlife Service
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Shannon_ehlers@fws.gov

U.S. Forest Service
Idaho Panhandle National Forests
– Public Affairs Officer
3232 West Nursery Road
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Patrick.Lair@usda.gov

U.S. National Park Service
Susan Rosebrough, Project Manager –
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909 1st Avenue
Seattle, WA 98104
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Indian Tribes

Coeur d'Alene Tribe
Jennifer Fletcher, Public Relations Director
850 A Street
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Confederated Salish and Kootenai Tribes of the Flathead Reservation
42487 Complex Blvd.
Pablo, MT 59855
info@cskt.org

Moyie River Hydroelectric Project
PAD Questionnaire Distribution List

Confederated Tribes of the Colville Reservation
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Kootenai Tribe of Idaho
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Kootenai Tribe of Idaho
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Kootenai Tribe of Idaho
Theresa Wheat, Administrative Director
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Bonners Ferry, ID 83805
Theresa@kootenai.org

Kootenai Tribe of Idaho
Shawn Young, Fish and Wildlife Director
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young@kootenai.org

Nez Perce Tribe
Aaron Miles – Natural Resources
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2moon@nezperce.org

State Agencies and Offices

Idaho Department of Environmental Quality
Robert Steed
Surface Water Manager
Coeur d'Alene Regional Office
208-666-4625
Robert.Steed@deq.idaho.gov

Idaho Department of Environmental Quality
Chantilly Higbee
Surface Water Compliance Officer
Coeur d'Alene Regional Office
2110 Ironwood Parkway
Chantilly.Higbee@deq.idaho.gov

Idaho Department of Fish and Game
Merritt Horsmon, Technical Services Manager
Panhandle Regional Office
2885 W. Kathleen Avenue
Coeur d'Alene, ID 83815
Merritt.Horsmon@idfg.idaho.gov

Idaho Department of Lands
Sharla Arledge, Public Information Officer
300 N. 6th Street, Suite 103
Boise, ID 83702
sarledge@idl.idaho.gov

Idaho Department of Parks and Recreation
5657 Warm Springs Avenue
Boise, ID 83716
inquiry@idpr.idaho.gov

Idaho Department of Water Resources
Idaho Water Center
322 E. Front Street, Suite 648
Boise, ID 837202
idwrinfo@idwr.idaho.gov

Idaho Office of Attorney General
Raúl Labrador, Attorney General
700 W. Jefferson Street, Suite 210
Boise, ID 83720
AGLabrador@ag.idaho.gov

Moyie River Hydroelectric Project
PAD Questionnaire Distribution List

Idaho Office and Energy and Mineral Resources
Richard Stover, Administrator
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Boise, ID 83702
richard.stover@oer.idaho.gov

Idaho Office of Species Conservation
Michael Edmondson, Administrator
304 N. 8th Street, Suite 149
Boise, ID 83702
mike.edmondson@osc.idaho.gov

Idaho State Historic Preservation Office
210 Main St.
Boise, ID 83702
shpo@ishs.idaho.gov

Office of Congressman Russ Fulcher
Caleb Davis
1250 West Ironwood Drive, Suite 200
Coeur d'Alene, ID 83814
caleb.davis@mail.house.gov

Local Agencies
Boundary County Commissioners
P.O. Box 419
Bonners Ferry, Idaho 83805
commissioners@boundarycountyid.org

Non-Governmental Organizations
American Whitewater
Thomas O'Keefe
Pacific Northwest Stewardship Director
3537 NE 87th Street
Seattle, WA 98115
okeefe@americanwhitewater.org

Idaho Consumers-Owned Utilities Association
Will Hart, Executive Director
407 West Jefferson St.
Boise, ID 83702
whart@icua.coop

Idaho Conversation League
Brad Smith, Conservation Director
P.O. Box 2308
Sandpoint, ID 83864
bsmith@idahoconservation.org

Idaho River United
Nic Nelson
Executive Director
Idaho Rivers United
3380 West Americana Terrace, Suite 410
Boise, ID 83706
nic@idahorivers.org

Trout Unlimited
Kira Finkler, Idaho State Director
Kira.finkler@tu.org

Appendix B

PAD Information Questionnaire Responses and PAD Consultation Summary

Moyie River Hydroelectric Project (FERC Project No. 1991)
Relicensing Pre-Application Document Questionnaire

The City of Bonners Ferry, Idaho (City) is the licensee, owner, and operator of the 3.95-megawatt Moyie River Hydroelectric Project (Project). The Project was built in 1949 and is located on the Moyie River in Boundary County, approximately 1.5 miles upstream of the confluence of the Moyie River and Kootenai River. The Project consists of a 92-foot-high concrete dam impounding a 540-acre-foot reservoir. The Project operates as run-of-river and generates electricity for the City. The City proposes to continue operations in the new license consistent with current operations.

The City is beginning the Federal Energy Regulatory Commission (FERC) relicensing process for the Project and is preparing a Pre-Application Document (PAD). The PAD provides FERC and other entities with existing, relevant, and reasonably available information pertaining to the Project. This document is submitted to FERC between five to five and a half years before the license expiration. This existing, relevant, and reasonably available information is distributed to Tribes, agencies, and stakeholders to enable them to identify issues and related information needs. It is also a precursor to the environmental analysis section of the license application.

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The City respectfully requests the following information:

1. Information about the person completing this questionnaire:

Date	2/22/2024
Name & Title	Chantilly Higbee, Surface Water Compliance Officer
Organization	Idaho Department of Environmental Quality
Address	2110 Ironwood Parkway Coeur d'Alene, ID 83814
Phone	208-769-1422
Email Address	Chantilly.Higbee@deq.idaho.gov

2. Do you or your organization know of existing, relevant, and reasonably available information describing the existing Moyie River Hydroelectric Project's environment that could inform the relicensing process (i.e., information regarding the Moyie River in or close to the Moyie River Hydroelectric Project)?

■ Yes (If yes, please complete 2a through 2d.) ☐ No (If no, go to 3.)

   a. Please check the specific resource areas that the information relates to:

- ■ Geology and soils
- ■ Water resources
- ■ Fish and aquatic resources
- ☐ Wildlife and botanical resources
- ■ Wetlands, riparian, and littoral habitat
- ☐ Rare, threatened, and endangered species
- ☐ Recreation and land use
- ☐ Aesthetic resources
- ☐ Cultural resources
- ☐ Socioeconomic resources
- ☐ Tribal resources
- ■ Other resource information

b. Please briefly describe the information referenced above or list available documents.

1. Assessment of Water Quality in Kootenai River and Moyie River Subbasins (TMDL), 2006
2. Assessment of Water Quality in Kootenai River and Moyie River Subbasins (TMDL) 2014 Temperature Addendum
3. 2022-2023 Moyie River surface water data, various parameters
4. Water Quality Summary Moyie River, 1977
5. Boundary County: Moyie River Geographic Response Plan (GRP), 2015

c. Where or from whom can the City obtain this information?

To obtain everything listed above, follow the instructions on DEQ's website to submit a public records request to the agency: https://www.deq.idaho.gov/public-records-request/

Water quality information is also available through DEQ's Integrated Report Mapper, available at: https://mapcase.deq.idaho.gov/wq2024/

d. Please list any specific representatives your organization wishes to designate for follow-up contact by the City regarding information about the resource areas checked above.

Representative Contact Information

Name & Title	Chantilly Higbee, Surface Water Compliance Officer
Organization	Idaho Department of Environmental Quality
Address	2110 Ironwood Parkway Coeur d'Alene, ID 83814
Phone	208-769-1422
Email Address	Chantilly.Higbee@deq.idaho.gov

Name & Title	Bob Steed, Surface Water Manager
Organization	Idaho Department of Environmental Quality
Address	2110 Ironwood Parkway Coeur d'Alene, ID 83814
Phone	208-769-1422
Email Address	Robert.Steed@deq.idaho.gov

3. We are interested in your comments and questions about the Moyie River Hydroelectric Project and the relicensing process. If you have any comments and questions you would like to share at this time, please provide them below. You may also submit comments and questions via email to mklaus@bonnersferry.id.gov or matthew.wiggs@hdrinc.com.

4. Please let us know if there is anyone else you believe should receive this questionnaire.

Name	Merritt Horsmon, Idaho Fish and Game
Address	2885 W. Kathleen Ave. Coeur d'Alene, ID 83815
Phone	208.769.1414
Email Address	merritt.horsmon@idfg.idaho.gov

Name	
Address	
Phone	
Email Address	

To submit additional comments, questions, or information, please email to mklaus@bonnersferry.id.gov or matthew.wiggs@hdrinc.com.

Moyie River Hydroelectric Project (FERC Project No. 1991)
Relicensing Pre-Application Document Questionnaire

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The City respectfully requests the following information:

1. Information about the person completing this questionnaire:

Date	
Name & Title	Erik Sjoquist, Area Manager, Pend Oreille Lake Supervisory Area
Organization	Idaho Department of Lands (IDL)
Address	2550 Hwy 2 West, Sandpoint, ID 83864
Phone	208-263-5104
Email Address	esjoquist@idl.idaho.gov

2. Do you or your organization know of existing, relevant, and reasonably available information describing the existing Moyie River Hydroelectric Project's environment that could inform the relicensing process (i.e., information regarding the Moyie River in or close to the Moyie River Hydroelectric Project)?

■ Yes (If yes, please complete 2a through 2d.) ☐ No (If no, go to 3.)

   a. Please check the specific resource areas that the information relates to:

☐ Geology and soils
■ Water resources
☐ Fish and aquatic resources
☐ Wildlife and botanical resources
☐ Wetlands, riparian, and littoral habitat
☐ Rare, threatened, and endangered species
☐ Recreation and land use
☐ Aesthetic resources
☐ Cultural resources
☐ Socioeconomic resources
☐ Tribal resources
■ Other resource information

b. Please briefly describe the information referenced above or list available documents.

The IDL administers the the Idaho Lake Protection Act and regulates encroachments and activities on, in, or above navigable lakes and rivers in Idaho. The Moyie River is considered navigable from the Canadian border to its confluence with the Kootenai River.

- Idaho Lake Protection Act, Idaho Code, Title 58, Chapter 13
- Idaho Administrative Procedures Act 20.03.09, Rules for Easements on State-Owned Navigable Waterways.

c. Where or from whom can the City obtain this information?

IDL Pend Oreille Lake Supervisory Area office, 2550 Hwy 2 West, Sandpoint, ID.

IDL website: https://www.idl.idaho.gov/lakes-rivers/

d. Please list any specific representatives your organization wishes to designate for follow-up contact by the City regarding information about the resource areas checked above.

Representative Contact Information

Name & Title	Erik Sjoquist, Area Manager-Pend Oreille Lake Area
Organization	Idaho Dept. of Lands
Address	2550 Hwy 2 West, Sandpoint, ID 83864
Phone	208-263-5104
Email Address	esjoquist@idl.idaho.gov

Name & Title	Marde Mensinger, Program Manager-Navigable Waters
Organization	Idaho Dept. of Lands
Address	300 N. 6th Street, Suite 103 Boise, ID 83702
Phone	(208) 334-0248
Email Address	mmensinger@idl.idaho.gov

3. We are interested in your comments and questions about the Moyie River Hydroelectric Project and the relicensing process. If you have any comments and questions you would like to share at this time, please provide them below. You may also submit comments and questions via email to mklaus@bonnersferry.id.gov or matthew.wiggs@hdrinc.com.

IDL submerged land easements are required for dams on Idaho's navigable waters. The IDL has no record of an easement for the Moyie River Dam. The Moyie River was determined navigable in 1957 by the U.S. District Court for the District of Idaho, Northern Division. Although this might not affect FERC licensing, it would be good to address.

I briefly spoke with Mike Klaus and we'll get together in the next couple of weeks to review this.

4. Please let us know if there is anyone else you believe should receive this questionnaire.

Name	
Address	
Phone	
Email Address	

Name	
Address	
Phone	
Email Address	

To submit additional comments, questions, or information, please email to mklaus@bonnersferry.id.gov or matthew.wiggs@hdrinc.com.

Moyie River Hydroelectric Project (FERC Project No. 1991)
Relicensing Pre-Application Document Questionnaire

The City of Bonners Ferry, Idaho (City) is the licensee, owner, and operator of the 3.95-megawatt Moyie River Hydroelectric Project (Project). The Project was built in 1949 and is located on the Moyie River in Boundary County, approximately 1.5 miles upstream of the confluence of the Moyie River and Kootenai River. The Project consists of a 92-foot-high concrete dam impounding a 540-acre-foot reservoir. The Project operates as run-of-river and generates electricity for the City. The City proposes to continue operations in the new license consistent with current operations.

The City is beginning the Federal Energy Regulatory Commission (FERC) relicensing process for the Project and is preparing a Pre-Application Document (PAD). The PAD provides FERC and other entities with existing, relevant, and reasonably available information pertaining to the Project. This document is submitted to FERC between five to five and a half years before the license expiration. This existing, relevant, and reasonably available information is distributed to Tribes, agencies, and stakeholders to enable them to identify issues and related information needs. It is also a precursor to the environmental analysis section of the license application.

To prepare the PAD, the City will use information in its possession, obtained from others, or readily available online. This questionnaire is intended to assist in identifying sources of existing, relevant, and reasonably available information that is not currently in the City's possession.

Please submit your information by completing the following questionnaire and returning it by email to mklaus@bonnersferry.id.gov or matthew.wiggs@hdrinc.com or by mail to Moyie River Hydroelectric Project, ATTN: Mike Klaus, 7232 Main Street #149, Bonners Ferry, Idaho 83805. We look forward to hearing from you and value your input. To allow time for follow-up communication and ensure inclusion of all relevant feedback in the PAD, we ask that you please respond by February 23, 2023. After this time, we will begin moving forward with the finalization of the PAD. In the absence of updated contact info, we will continue to provide information about the relicensing process and opportunities to engage in the process to the contact information we have on file.

The City respectfully requests the following information:

1. Information about the person completing this questionnaire:

Date	2/6/2024
Name & Title	Michelle Richman, Northern Region Manager
Organization	Idaho Department of Water Resources
Address	7600 N Mineral Drive, Suite 100 Coeur d' Alene, ID 83815
Phone	208-762-2803
Email Address	michelle.richman@idwr.idaho.gov

2. Do you or your organization know of existing, relevant, and reasonably available information describing the existing Moyie River Hydroelectric Project's environment that could inform the relicensing process (i.e., information regarding the Moyie River in or close to the Moyie River Hydroelectric Project)?

☐ Yes (If yes, please complete 2a through 2d.) ☐ No (If no, go to 3.)

a. Please check the specific resource areas that the information relates to:

- ☐ Geology and soils
- ■ Water resources
- ☐ Fish and aquatic resources
- ☐ Wildlife and botanical resources
- ☐ Wetlands, riparian, and littoral habitat
- ☐ Rare, threatened, and endangered species
- ☐ Recreation and land use
- ☐ Aesthetic resources
- ☐ Cultural resources
- ☐ Socioeconomic resources
- ☐ Tribal resources
- ☐ Other resource information

b. Please briefly describe the information referenced above or list available documents.

City of Bonners Ferry has four licensed water rights for power production at the Moyie River Dam. The water right numbers are: 98-2036, 98-2060, 98-7320, and 98-7492. The water rights cumulatively allow for diversion of 453 cfs of water for power production.

c. Where or from whom can the City obtain this information?

All water rights can be accessed on IDWR's public website at: https://research.idwr.idaho.gov/apps/waterrights/wrajsearch/wradjsearch.aspx

Accompanying documents are also available using the same link.

You may also contact me at the above number for assistance.

d. Please list any specific representatives your organization wishes to designate for follow-up contact by the City regarding information about the resource areas checked above.

Representative Contact Information

Name & Title	Michelle Richman
Organization	Idaho Dept. Water Resources
Address	7600 N Mineral Dr. Ste. 100
Phone	208-762-2803
Email Address	michelle.richman@idwr.idaho.gov

Name & Title	
Organization	
Address	
Phone	
Email Address	

3. We are interested in your comments and questions about the Moyie River Hydroelectric Project and the relicensing process. If you have any comments and questions you would like to share at this time, please provide them below. You may also submit comments and questions via email to mklaus@bonnersferry.id.gov or matthew.wiggs@hdrinc.com.

4. Please let us know if there is anyone else you believe should receive this questionnaire.

Name	
Address	
Phone	
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Email Address	

To submit additional comments, questions, or information, please email to mklaus@bonnersferry.id.gov or matthew.wiggs@hdrinc.com.

Moyie River Hydroelectric Project (FERC Project No. 1991)
Relicensing Pre-Application Document Questionnaire

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To prepare the PAD, the City will use information in its possession, obtained from others, or readily available online. This questionnaire is intended to assist in identifying sources of existing, relevant, and reasonably available information that is not currently in the City's possession.

Please submit your information by completing the following questionnaire and returning it by email to mklaus@bonnersferry.id.gov or matthew.wiggs@hdrinc.com or by mail to Moyie River Hydroelectric Project, ATTN: Mike Klaus, 7232 Main Street #149, Bonners Ferry, Idaho 83805. We look forward to hearing from you and value your input. To allow time for follow-up communication and ensure inclusion of all relevant feedback in the PAD, we ask that you please respond by February 15, 2023. After this time, we will begin moving forward with the finalization of the PAD. In the absence of updated contact info, we will continue to provide information about the relicensing process and opportunities to engage in the process to the contact information we have on file.

The City respectfully requests the following information:

1. Information about the person completing this questionnaire:

Date	22 February 2024
Name & Title	William Barquin, Attorney General
Organization	Kootenai Tribe of Idaho
Address	P.O. Box 1269, Bonners Ferry 83805
Phone	2082673519
Email Address	wbarquin@kootenai.org

2. Do you or your organization know of existing, relevant, and reasonably available information describing the existing Moyie River Hydroelectric Project's environment that could inform the relicensing process (i.e., information regarding the Moyie River in or close to the Moyie River Hydroelectric Project)?

■ Yes (If yes, please complete 2a through 2d.) ☐ No (If no, go to 3.)

   a. Please check the specific resource areas that the information relates to:

- ■ Geology and soils
- ■ Water resources
- ■ Fish and aquatic resources
- ■ Wildlife and botanical resources
- ■ Wetlands, riparian, and littoral habitat
- ■ Rare, threatened, and endangered species
- ☐ Recreation and land use
- ☐ Aesthetic resources
- ■ Cultural resources
- ☐ Socioeconomic resources
- ■ Tribal resources
- ■ Other resource information

b. Please briefly describe the information referenced above or list available documents.

The Tribe has a great deal of information relative to Treaty and cultural resources, including fish, wildlife, plants and water quality. The Idaho Department of Fish & Game, US Environmental Protection Agency, US Fish and Wildlife Service, and other government agencies likely also have a great deal of information.

c. Where or from whom can the City obtain this information?

The Tribe suggests a meeting to determine what information may be needed and how best to transfer the information. A joint meeting with other government agencies may be the most efficient and effective.

d. Please list any specific representatives your organization wishes to designate for follow-up contact by the City regarding information about the resource areas checked above.

Representative Contact Information

Name & Title	William Barquin, Attorney Genearl
Organization	Kootenai Tribe of Idaho
Address	
Phone	
Email Address	wbarquin@kootenai.org

Name & Title	Shawn Young, F&W Dept Director
Organization	Kootenai Tribe of Idaho
Address	
Phone	
Email Address	young@kootenai.org

3. We are interested in your comments and questions about the Moyie River Hydroelectric Project and the relicensing process. If you have any comments and questions you would like to share at this time, please provide them below. You may also submit comments and questions via email to mklaus@bonnersferry.id.gov or matthew.wiggs@hdrinc.com.

The Tribe will remain an active participant in the relicensing process to ensure Tribal Treaty and other resources are addressed.

4. Please let us know if there is anyone else you believe should receive this questionnaire.

Name	
Address	
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Email Address	

Name	
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To submit additional comments, questions, or information, please email to mklaus@bonnersferry.id.gov or matthew.wiggs@hdrinc.com.

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Please submit your information by completing the following questionnaire and returning it by email to mklaus@bonnersferry.id.gov or matthew.wiggs@hdrinc.com or by mail to Moyie River Hydroelectric Project, ATTN: Mike Klaus, 7232 Main Street #149, Bonners Ferry, Idaho 83805. We look forward to hearing from you and value your input. To allow time for follow-up communication and ensure inclusion of all relevant feedback in the PAD, we ask that you please respond by February 23, 2023. After this time, we will begin moving forward with the finalization of the PAD. In the absence of updated contact info, we will continue to provide information about the relicensing process and opportunities to engage in the process to the contact information we have on file.

Moyie River Hydroelectric Project (FERC Project No. 1991)
Relicensing Pre-Application Document Questionnaire

The City respectfully requests the following information:

1. Information about the person completing this questionnaire:

Date	February 5, 2024
Name & Title	Kenneth Huston, Policy Analyst
Organization	Idaho Governor's Office of Energy and Mineral Resources (OEMR)
Address	304 8th St. Suite 250 Boise, Idaho 83720
Phone	208-332-1665
Email Address	kenny.huston@oer.idaho.gov

2. Do you or your organization know of existing, relevant, and reasonably available information describing the existing Moyie River Hydroelectric Project's environment that could inform the relicensing process (i.e., information regarding the Moyie River in or close to the Moyie River Hydroelectric Project)?

☐ Yes (If yes, please complete 2a through 2d.) ■ No (If no, go to 3.)

a. Please check the specific resource areas that the information relates to:

☐ Geology and soils
☐ Water resources
☐ Fish and aquatic resources
☐ Wildlife and botanical resources
☐ Wetlands, riparian, and littoral habitat
☐ Rare, threatened, and endangered species
☐ Recreation and land use
☐ Aesthetic resources
☐ Cultural resources
☐ Socioeconomic resources
☐ Tribal resources
☐ Other resource information

b. Please briefly describe the information referenced above or list available documents.

c. Where or from whom can the City obtain this information?

d. Please list any specific representatives your organization wishes to designate for follow-up contact by the City regarding information about the resource areas checked above.

Representative Contact Information

Name & Title	Emily Her, Energy Program Manager
Organization	OEMR
Address	304 8th St. Suite 250 Boise, Idaho 83720
Phone	208-332-1660
Email Address	emily.her@oer.idaho.gov

Name & Title	Kristina Fugate, Legal Counsel
Organization	OEMR
Address	304 8th St. Suite 250 Boise, Idaho 83720
Phone	208-332-1660
Email Address	kristina.fugate@oer.idaho.gov

3. We are interested in your comments and questions about the Moyie River Hydroelectric Project and the relicensing process. If you have any comments and questions you would like to share at this time, please provide them below. You may also submit comments and questions via email to mklaus@bonnersferry.id.gov or matthew.wiggs@hdrinc.com.

OEMR is an Executive Office of the Governor and is charged with the coordination of all state comments involving energy resources in accordance with Executive Order 2020-17. OEMR will therefore submit comments on behalf of other state agencies.

4. Please let us know if there is anyone else you believe should receive this questionnaire.

Name	
Address	
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Email Address	

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Email Address	

To submit additional comments, questions, or information, please email to mklaus@bonnersferry.id.gov or matthew.wiggs@hdrinc.com.

Moyie River Hydroelectric Project (FERC Project No. 1991)
Relicensing Pre-Application Document Questionnaire

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The City is beginning the Federal Energy Regulatory Commission (FERC) relicensing process for the Project and is preparing a Pre-Application Document (PAD). The PAD provides FERC and other entities with existing, relevant, and reasonably available information pertaining to the Project. This document is submitted to FERC between five to five and a half years before the license expiration. This existing, relevant, and reasonably available information is distributed to Tribes, agencies, and stakeholders to enable them to identify issues and related information needs. It is also a precursor to the environmental analysis section of the license application.

To prepare the PAD, the City will use information in its possession, obtained from others, or readily available online. This questionnaire is intended to assist in identifying sources of existing, relevant, and reasonably available information that is not currently in the City's possession.

Please submit your information by completing the following questionnaire and returning it by email to mklaus@bonnersferry.id.gov or matthew.wiggs@hdrinc.com or by mail to Moyie River Hydroelectric Project, ATTN: Mike Klaus, 7232 Main Street #149, Bonners Ferry, Idaho 83805. We look forward to hearing from you and value your input. To allow time for follow-up communication and ensure inclusion of all relevant feedback in the PAD, we ask that you please respond by February 23, 2023. After this time, we will begin moving forward with the finalization of the PAD. In the absence of updated contact info, we will continue to provide information about the relicensing process and opportunities to engage in the process to the contact information we have on file.

The City respectfully requests the following information:

1. Information about the person completing this questionnaire:

Date	
Name & Title	Chris Shaver Compliance Archaeologist
Organization	Idaho State Historic Preservation Office (SHPO)
Address	210 Main Street Boise, Idaho 83702
Phone	208.488.7467
Email Address	chris.shaver@ishs.idaho.gov

2. Do you or your organization know of existing, relevant, and reasonably available information describing the existing Moyie River Hydroelectric Project's environment that could inform the relicensing process (i.e., information regarding the Moyie River in or close to the Moyie River Hydroelectric Project)?

■ Yes (If yes, please complete 2a through 2d.) ☐ No (If no, go to 3.)

   a. Please check the specific resource areas that the information relates to:

☐ Geology and soils
☐ Water resources
☐ Fish and aquatic resources
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☐ Wetlands, riparian, and littoral habitat
☐ Rare, threatened, and endangered species
☐ Recreation and land use
☐ Aesthetic resources
■ Cultural resources
☐ Socioeconomic resources
☐ Tribal resources
☐ Other resource information

b. Please briefly describe the information referenced above or list available documents.

Our offices contain the confidential records of all known cultural resources (sites, buildings, objects, etc) surrounding the project area including the National Register of Historic Places-eligible Moyie River Hydroelectric Plant and associated infrastructure (10BY489).

c. Where or from whom can the City obtain this information?

The information is not accessible to the general public but may be accessed through a Secretary of Interior Standards qualified individual.

d. Please list any specific representatives your organization wishes to designate for follow-up contact by the City regarding information about the resource areas checked above.

Representative Contact Information

Name & Title	Chris Shaver, Compliance Archaeologist
Organization	Idaho State Historic Preservation Office
Address	210 Main Street, Boise, Idaho 83702
Phone	208.488.7467
Email Address	chris.shaver@ishs.idaho.gov

Name & Title	
Organization	
Address	
Phone	
Email Address	

3. We are interested in your comments and questions about the Moyie River Hydroelectric Project and the relicensing process. If you have any comments and questions you would like to share at this time, please provide them below. You may also submit comments and questions via email to mklaus@bonnersferry.id.gov or matthew.wiggs@hdrinc.com.

4. Please let us know if there is anyone else you believe should receive this questionnaire.

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To submit additional comments, questions, or information, please email to mklaus@bonnersferry.id.gov or matthew.wiggs@hdrinc.com.

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The City respectfully requests the following information:

1. Information about the person completing this questionnaire:

Date	
Name & Title	Kevin Knauth Bonners Ferry District Ranger
Organization	U.S. Forest Service - Idaho Panhandle National Forests
Address	6286 Main St Bonners Ferry, ID 83805
Phone	208.691.7657
Email Address	kevin.knauth@usda.gov

2. Do you or your organization know of existing, relevant, and reasonably available information describing the existing Moyie River Hydroelectric Project's environment that could inform the relicensing process (i.e., information regarding the Moyie River in or close to the Moyie River Hydroelectric Project)?

☒ Yes (If yes, please complete 2a through 2d.) ☐ No (If no, go to 3.)

   a. Please check the specific resource areas that the information relates to:

- ☒ Geology and soils
- ☒ Water resources
- ☒ Fish and aquatic resources
- ☒ Wildlife and botanical resources
- ☒ Wetlands, riparian, and littoral habitat
- ☒ Rare, threatened, and endangered species
- ☒ Recreation and land use
- ☒ Aesthetic resources
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- ☒ Socioeconomic resources
- ☐ Tribal resources
- ☐ Other resource information

b. Please briefly describe the information referenced above or list available documents.

The Forest Service has an array of data and information that may be relevant to the hydroelectric project's environment. Most information has been collected to support past or ongoing projects on National Forest System Lands. Please reach out when you have a more focused request and we'd be happy to support the effort with whatever data or local knowledge we have available.

c. Where or from whom can the City obtain this information?

The Supervisor's Office of the Idaho Panhandle National Forests will be integral to any coordination that may occur, but the Bonners Ferry Ranger District will be the best local point of contact.

d. Please list any specific representatives your organization wishes to designate for follow-up contact by the City regarding information about the resource areas checked above.

Representative Contact Information

Name & Title	Brandon Glaza - NZ Hydrologist
Organization	U.S. Forest Service - Bonners Ferry RD
Address	6286 Main St, Bonners Ferry, ID 83805
Phone	208.267.5561
Email Address	brandon.glaza@usda.gov

Name & Title	Paul Hooper - Aquatics Program Manager
Organization	U.S. Forest Service - Idaho Panhandle National Forests
Address	
Phone	208.765.7223
Email Address	paul.hooper@usda.gov

3. We are interested in your comments and questions about the Moyie River Hydroelectric Project and the relicensing process. If you have any comments and questions you would like to share at this time, please provide them below. You may also submit comments and questions via email to mklaus@bonnersferry.id.gov or matthew.wiggs@hdrinc.com.

No specific questions or concerns at this time.

4. Please let us know if there is anyone else you believe should receive this questionnaire.

Name	
Address	
Phone	
Email Address	

Name	
Address	
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Email Address	

To submit additional comments, questions, or information, please email to mklaus@bonnersferry.id.gov or matthew.wiggs@hdrinc.com.

Moyie River Hydroelectric Project (FERC Project No. 1991)
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The City respectfully requests the following information:

1. Information about the person completing this questionnaire:

Date	Febraury 22, 2024
Name & Title	Erin Kenison, Hydropower Branch Chief
Organization	U.S. Fish and Wildlife Service
Address	1387 S. Vinnell Way, Suite 368, Boise, ID 83709
Phone	208-510-5527 (0ffice) 208-803-4896 (cell)
Email Address	erin_kenison@fws.gov

2. Do you or your organization know of existing, relevant, and reasonably available information describing the existing Moyie River Hydroelectric Project's environment that could inform the relicensing process (i.e., information regarding the Moyie River in or close to the Moyie River Hydroelectric Project)?

■ Yes (If yes, please complete 2a through 2d.) ☐ No (If no, go to 3.)

   a. Please check the specific resource areas that the information relates to:

☐ Geology and soils
☐ Water resources
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☐ Wetlands, riparian, and littoral habitat
■ Rare, threatened, and endangered species
☐ Recreation and land use
☐ Aesthetic resources
☐ Cultural resources
☐ Socioeconomic resources
☐ Tribal resources
☐ Other resource information

b. Please briefly describe the information referenced above or list available documents.

The U.S. Fish and Wildlife Service recommends an in-depth analysis of the potential effects of the proposed operations of the Moyie Dam on listed species. The analysis should include current and proposed conservation measures for aquatic and terrestrial species present within the project area.

c. Where or from whom can the City obtain this information?

Please visit the Information for Planning and Consultation (IPAC) website (https://ipac.ecosphere.fws.gov/) for current information on listed species, candidate species, and designated critical habitats within the Moyie Dam project area.

d. Please list any specific representatives your organization wishes to designate for follow-up contact by the City regarding information about the resource areas checked above.

Representative Contact Information

Name & Title	Erin Kenison
Organization	U.S. Fish and Wildlife Service
Address	
Phone	
Email Address	erin_kenison@fws.gov

Name & Title	Kim Frymire
Organization	U.S. Fish and Wildlife Service
Address	
Phone	
Email Address	kimberly_frymire@fws.gov

3. We are interested in your comments and questions about the Moyie River Hydroelectric Project and the relicensing process. If you have any comments and questions you would like to share at this time, please provide them below. You may also submit comments and questions via email to mklaus@bonnersferry.id.gov or matthew.wiggs@hdrinc.com.

4. Please let us know if there is anyone else you believe should receive this questionnaire.

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To submit additional comments, questions, or information, please email to mklaus@bonnersferry.id.gov or matthew.wiggs@hdrinc.com.

Table B-1 PAD Consultation Summary.

Date	Type	Consulting Party	Summary
1/11/2024	Meeting	Kootenai Tribe of Idaho: Gary Aitken Jr.	Mike Klaus (City of Bonners Ferry [City]) met with Gary Aitken Jr (Kootenai Tribe of Idaho) to discuss the upcoming relicensing, the relicensing processes available, and the City's intention to pursue the Traditional Licensing Process (TLP).
1/22/2024	Meeting	Kootenai Valley Resource Initiative	Mike Klaus (City) and Matt Wiggs (HDR Engineering, Inc. [HDR]) met with the Kootenai Valley Resource Initiative to provide a presentation on the upcoming relicensing, the City's intention to pursue the TLP, and solicit feedback to inform the PAD.
1/30/2024	Meeting	Idaho Department of Environmental Quality (IDEQ): Robert Stead, Chantilly Higbee	Mike Klaus (City) met with IDEQ to discuss the upcoming relicensing, the relicensing processes available, and the City's intention to purse the TLP.
2/5/2024	Emails (Attached)	*See distribution list in Appendix A*	PAD Questionnaire and Project Fact Sheet emailed to distribution list, including the City's intention to pursue the TLP.
2/20/2024	Meeting	Idaho Conservation League (ICL): Brad Smith, Jennifer Ekstrom, Karissa Huntsman	Mike Klaus (City) and Matt Wiggs (HDR) met with ICL to discuss the upcoming relicensing and the City's intention to pursue the TLP. The discussion included responding to questions related to timeframes for stakeholder comments and interest in the existing mitigation programs required as part of the existing license.
2/20/2024	Meeting	Idaho Office of Energy and Mineral Resources (OEMR): Kenny Huston, Emily Her, Kristina Fugate	Mike Klaus (City) and Matt Wiggs (HDR) met with OEMR to discuss the upcoming relicensing. The discussion included the upcoming relicensing schedule, the City's intention to pursue the TLP, and the limited complexity of resources issues and the City's anticipated low level of controversy. Additionally, the City discussed with OEMR their level of engagement in the City's coordination with other state agencies.
3/1/2024	Meeting	IDEQ: Robert Stead, Chantilly Higbee	Mike Klaus (City) and Matt Wiggs (HDR) met with IDEQ to discuss the upcoming relicensing. The City presented IDEQ with a summary of available water quality information and requested IDEQ share any additional information they may hold. The parties discussed potential water quality information needed for IDEQ and agreed to consult on development of water quality monitoring study as part of the upcoming relicensing.

Date	Type	Consulting Party	Summary
3/14/2024	Meeting	Kootenai Tribe of Idaho: Gary Aitken, Jr., William Barquin, Theresa Wheat United States Forest Services (USFS): Bradon Glaza Idaho Department of Fish and Game (IDFG): Merritt Horsmon IDEQ: Robert Steed, Chantilly Higbee *Invited but did not participate:* Kootenai Tribe of Idaho: Gennie Hoyle, Shawn Young USFS: Kevin Knauth, Paul Hooper U.S. Fish and Wildlife Service: Shannon Ehlers, Erin Kenison, Kim Frymire	Mike Klaus (City) and Matt Wiggs (HDR) provided a presentation related to the upcoming relicensing, the City's intention to pursue the TLP, and presented information obtained related to water quality and fish and aquatic resources. The Kootenai Tribe of Idaho represented that they have information related to water quality, stream flows, and fish and aquatic resources in the Moyie River, and that they will reach out to their technical staff to facilitate sharing the information. The parties discussed the upstream fish migration barrier to fish migration at Moyie Falls and fish communities in the Moyie River. The parties suggested the City coordinate with IDFG to refine the fish and aquatic communities table as it identifies species that are known in the region but unlikely to reside in the Moyie River. USFS provided information related to sculpin species.
3/14/2024	Email (Attached)	USFS: Brandon Glaza	Email between Matt Wiggs (HDR) and Brandon Glaza (IDFG) related to sculpin information in the Northwest.
3/15/2024	Email (Attached)	IDFG: Merritt Horsmon	Email string between Matt Wiggs (HDR) and Merritt Horsmon (IDFG) related to fish and aquatic communities in the Moyie River.
3/25/2024	Email (Attached)	Kootenai Tribe of Idaho: Nathan Jensen, Genny Hoyle	Email string between Mike Klaus (City) and Matt Wiggs (HDR) and the Kootenai Tribe of Idaho related to available information.

From:	Wiggs, Matthew
Cc:	"Mike Klaus"
Bcc:	"rnelson@achp.gov"; "justin.yeager@noaa.gov"; "paoteam@nws02.usace.army.mil"; "dc_id@usgs.gov"; "blm_id_stateoffice@blm.gov"; "bryan.mercier@bia.gov"; "epa-seattle@epa.gov"; "Susan Rosebrough"; "jfletcher@cdatribe-nsn.gov"; "info@cskt.org"; "jarred.erickson.cbc@colvilletribes.com"; "info@kalispeltribe.com"; "info@kootenai.org"; "Theresa@kootenai.org"; "young@kootenai.org"; "2moon@nezperce.org"; "sarledge@idl.idaho.gov"; "inquiry@idpr.idaho.gov"; "idwrinfo@idwr.idaho.gov"; "AGLabrador@ag.idaho.gov"; "mike.edmondson@osc.idaho.gov"; "shpo@ishs.idaho.gov"; "caleb.davis@mail.house.gov"; "commissioners@boundarycountyid.org"; "okeefe@americanwhitewater.org"; "whart@icua.coop"; "bsmith@idahoconservation.org"; "nic@idahorivers.org"; "Kira.finkler@tu.org"; Wiggs, Matthew
Subject:	Moyie River Hydroelectric Project Relicensing PAD Questionnaire
Date:	Monday, February 5, 2024 9:06:00 AM
Attachments:	Moyie River Project - PAD Questionnaire.pdf Moyie Project Relicensing Factsheet.pdf

Hello,

The City of Bonners Ferry, Idaho (City) is the licensee, owner, and operator of the 3.95-megawatt Moyie River Hydroelectric Project (Project), located on the Moyie River in Boundary County, Idaho, approximately 1.5 miles upstream of the confluence of the Moyie River and Kootenai River. The Project consists of a 92-foot-high concrete dam impounding a 540-acre-foot reservoir.

The Federal Energy Regulatory Commission (FERC) issued the current license to operate in June 1999 and the license expires on May 31, 2029. The City is beginning to take the steps necessary to obtain a new license (relicense) the Project. The first step in the relicensing process is the development of the Pre-Application Document (PAD). The PAD provides FERC and other entities with existing, relevant, and reasonably available information pertaining to the Project. This document is submitted to FERC between five to five and a half years before the license expiration. This existing, relevant, and reasonably available information is distributed to Tribes, agencies, and stakeholders to enable them to identify issues and related information needs. It is also a precursor to the environmental analysis section of the license application.

The attached PAD Questionnaire is one tool that will help identify available information pertinent to the Project. The City's intent is to include relevant information received in response to the questionnaire within the PAD. Accordingly, the City respectfully requests that you complete the attached PAD Questionnaire and provide any relevant information your organization may have regarding the Project by February 23, 2024. As detailed in the attached letter, you can complete and return this PAD Questionnaire by email to Matt Wiggs with HDR at matthew.wiggs@hdrinc.com.

We appreciate your response and your assistance in this effort to identify information resources and parties interested in this proceeding.

Thank you,

Matt Wiggs

HDR
412 E. Parkcenter Blvd., Suite 100
Boise, ID 83706
D 208.387.7089
Matthew.Wiggs@hdrinc.com

Wiggs, Matthew

From: Wiggs, Matthew
Sent: Monday, February 5, 2024 9:06 AM
To: 'richard.stover@oer.idaho.gov'
Cc: Mike Klaus
Subject: Moyie River Hydroelectric Project Relicensing PAD Questionnaire
Attachments: Moyie Project Relicensing Factsheet.pdf; Moyie River Project - PAD Questionnaire.pdf

Richard,

The City of Bonners Ferry, Idaho (City) is the licensee, owner, and operator of the 3.95-megawatt Moyie River Hydroelectric Project (Project), located on the Moyie River in Boundary County, Idaho, approximately 1.5 miles upstream of the confluence of the Moyie River and Kootenai River. The Project consists of a 92-foot-high concrete dam impounding a 540-acre-foot reservoir.

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Additionally, the City respectfully requests a virtual or in-person meeting with your team to discuss working with the State during the upcoming relicensing. If interested, please provide a contact to coordinate with on meeting logistics or suggest some available timeframes.

We appreciate your response and your assistance in this effort to identify information resources and parties interested in this proceeding.

Thank you,

Matt Wiggs

HDR
412 E. Parkcenter Blvd., Suite 100
Boise, ID 83706
D 208.387.7089
Matthew.Wiggs@hdrinc.com

hdrinc.com/follow-us

Wiggs, Matthew

From: Wiggs, Matthew
Sent: Monday, February 5, 2024 9:06 AM
To: 'Robert.Steed@deq.idaho.gov'; 'Chantilly.Higbee@deq.idaho.gov'
Cc: Mike Klaus
Subject: Moyie River Hydroelectric Project Relicensing PAD Questionnaire
Attachments: Moyie River Project - PAD Questionnaire.pdf; Moyie Project Relicensing Factsheet.pdf

Bob and Chantilly,

The City of Bonners Ferry, Idaho (City) is the licensee, owner, and operator of the 3.95-megawatt Moyie River Hydroelectric Project (Project), located on the Moyie River in Boundary County, Idaho, approximately 1.5 miles upstream of the confluence of the Moyie River and Kootenai River. The Project consists of a 92-foot-high concrete dam impounding a 540-acre-foot reservoir.

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Additionally, the City respectfully requests a virtual or in-person meeting with your team to discuss any Moyie River water quality information in your possession or any additional questions you may have regarding the upcoming relicensing. If interested, please provide a contact to coordinate with on meeting logistics or suggest some available timeframes.

We appreciate your response and your assistance in this effort to identify information resources and parties interested in this proceeding.

Thank you,

Matt Wiggs

HDR
412 E. Parkcenter Blvd., Suite 100
Boise, ID 83706
D 208.387.7089
Matthew.Wiggs@hdrinc.com

hdrinc.com/follow-us

Wiggs, Matthew

From: Wiggs, Matthew
Sent: Monday, February 5, 2024 9:06 AM
To: Patrick.Lair@usda.gov
Cc: Mike Klaus
Subject: Moyie River Hydroelectric Project Relicensing PAD Questionnaire
Attachments: Moyie River Project - PAD Questionnaire.pdf; Moyie Project Relicensing Factsheet.pdf

Patrick,

The City of Bonners Ferry, Idaho (City) is the licensee, owner, and operator of the 3.95-megawatt Moyie River Hydroelectric Project (Project), located on the Moyie River in Boundary County, Idaho, approximately 1.5 miles upstream of the confluence of the Moyie River and Kootenai River. The Project consists of a 92-foot-high concrete dam impounding a 540-acre-foot reservoir.

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Additionally, the City respectfully requests a virtual or in-person meeting with your team to discuss any information related to the Project area in your possession or any additional questions you may have regarding the upcoming relicensing. If interested, please provide a contact to coordinate with on meeting logistics or suggest some available timeframes.

We appreciate your response and your assistance in this effort to identify information resources and parties interested in this proceeding.

Thank you,

Matt Wiggs

HDR
412 E. Parkcenter Blvd., Suite 100
Boise, ID 83706
D 208.387.7089
Matthew.Wiggs@hdrinc.com

hdrinc.com/follow-us

Wiggs, Matthew

From: Wiggs, Matthew
Sent: Monday, February 5, 2024 9:06 AM
To: 'IFWO@fws.gov'; 'Shannon_ehlers@fws.gov'
Cc: Mike Klaus
Subject: Moyie River Hydroelectric Project Relicensing PAD Questionnaire
Attachments: Moyie River Project - PAD Questionnaire.pdf; Moyie Project Relicensing Factsheet.pdf

Hello,

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Additionally, the City respectfully requests a virtual or in-person meeting with your team to discuss any information on rare, threatened or endangered species within the Project vicinity in your possession or any additional questions you may have regarding the upcoming relicensing. If interested, please provide a contact to coordinate with on meeting logistics or suggest some available timeframes.

We appreciate your response and your assistance in this effort to identify information resources and parties interested in this proceeding.

Thank you,

Matt Wiggs

HDR
412 E. Parkcenter Blvd., Suite 100
Boise, ID 83706
D 208.387.7089
Matthew.Wiggs@hdrinc.com

hdrinc.com/follow-us

Wiggs, Matthew

From: Wiggs, Matthew
Sent: Monday, February 5, 2024 9:06 AM
To: Merritt.Horsmon@idfg.idaho.gov
Cc: Mike Klaus
Subject: Moyie River Hydroelectric Project Relicensing PAD Questionnaire
Attachments: Moyie River Project - PAD Questionnaire.pdf; Moyie Project Relicensing Factsheet.pdf

Merritt,

The City of Bonners Ferry, Idaho (City) is the licensee, owner, and operator of the 3.95-megawatt Moyie River Hydroelectric Project (Project), located on the Moyie River in Boundary County, Idaho, approximately 1.5 miles upstream of the confluence of the Moyie River and Kootenai River. The Project consists of a 92-foot-high concrete dam impounding a 540-acre-foot reservoir.

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Additionally, the City respectfully requests a virtual or in-person meeting with your team to discuss any information on fish and wildlife species within the Project vicinity in your possession or any additional questions you may have regarding the upcoming relicensing. If interested, please provide a contact to coordinate with on meeting logistics or suggest some available timeframes.

We appreciate your response and your assistance in this effort to identify information resources and parties interested in this proceeding.

Thank you,

Matt Wiggs

HDR
412 E. Parkcenter Blvd., Suite 100
Boise, ID 83706
D 208.387.7089
Matthew.Wiggs@hdrinc.com

hdrinc.com/follow-us

From: Horsmon,Merritt
To: Wiggs, Matthew
Subject: RE: Moyie Dam Relicensing: Fish and Aquatic Communities
Date: Friday, March 15, 2024 12:24:03 PM
Attachments: image001.png

Hi Matt,
After looking through some fisheries inventory data, and speaking to one of our fish biologists, it appears that there are low densities of some lowland lake species that migrate into the Moyie from Robinson Lake and Flory Alan Lake. These species may live in the Moyie for a bit, but likely don't persist for long. We don't have an inventory of the reservoir behind the dam, but that would be the best and most likely habitat for those lake species. Trout species are made up of Rainbow (~77%), Brook (~23%) and Cutthroat (>1%) in the main river. Cutthroat and Brook trout densities are higher in the tributaries. There is also data from Canada that says Bull Trout from Moyie Lake drop down and spawn in the tributaries, but likely don't make it to the dam. The falls are a know fish barrier according to all reports.

Does that help?

Thanks,

Merritt Horsmon
Regional Technical Assistance Manager
Panhandle Region
2885 W. Kathleen Ave.
Coeur d'Alene, ID 83815
208.769.1414 office
208.251.4509 mobile
merritt.horsmon@idfg.idaho.gov

From: Wiggs, Matthew <Matthew.Wiggs@hdrinc.com>
Sent: Friday, March 15, 2024 10:50 AM
To: Horsmon,Merritt <merritt.horsmon@idfg.idaho.gov>
Cc: Mike Klaus <mklaus@bonnersferry.id.gov>

Subject: Moyie Dam Relicensing: Fish and Aquatic Communities

Hi Merritt,

Thanks for the meeting yesterday. Following up on the conversation related to fish and aquatic resources, I wanted to share the table I presented on the screen to see if IDFG had any feedback, as the participants yesterday stated several species likely didn't reside in the Moyie. I believe the species highlighted below may be watershed-based species but perhaps not likely to occur in the Moyie. Any feedback you can provide would be greatly appreciated.

Common Name	Scientific Name	Observed or Expected within Project Area
Bull Trout	*Salvelinus confluentus*	Observed
Kootenai White Sturgeon	*Acipenser transmontanus*	Not observed
Rainbow Trout	*Oncorhynchus mykiss*	Observed
Cutthroat Trout	*Oncorhynchus clarkii lewisi*	Expected
Kokanee	*Oncorhynchus nerka*	Observed
Brook Trout	*Salvelinus fontinalis*	Expected
Mountain Whitefish	*Prosopium williamsoni*	Observed
Largescale Sucker	*Catostomus macrocheilus*	Expected
Redside Shiner	*Richardsonius balteatus*	Observed
Longnose Dace	*Rhinichthys cataractae*	Observed
Largemouth Bass	*Micropterus salmoides*	Observed
Longnose Sucker	*Catostomus catostomus*	Observed
Pumpkinseed	*Lepomis gibbosus*	Observed
Slimy Sculpin	*Cottus cognatus*	Observed
Torrent Sculpin	*Cottus rhotheus*	Observed
Northern Squawfish	*Ptychocheilus oregonensis*	Observed
Black Crappie	*Pomoxis nigromaculatus*	Expected
Peamouth	*Mylocheilus caurinum*	Expected
Black Bullhead	*Ictalurus melas*	Expected
Yellow Perch	*Perca flavescens*	Expected

Thanks!

Matt Wiggs

HDR
412 E. Parkcenter Blvd., Suite 100
Boise, ID 83706
D 208.387.7089
Matthew.Wiggs@hdrinc.com

From: Nathan Jensen
To: Genny Hoyle; Wiggs, Matthew; Theresa Wheat; Shawn Young
Cc: Mike Klaus; Nathan Jensen; Jose Ponce; Glenn Owsley
Subject: RE: Introduction and Moyie Dam Re-Licensing Data Request
Date: Monday, March 25, 2024 9:49:51 AM
Importance: High

Hi Matt, we have been working with IDWR for several years to develop a water right for the Twin Rivers Hatchery. Here are the recent diversion estimates we reported from the Moyie River for the hatchery since 2021:

Moyie river 2021	No data		
Moyie river 2022	44.3	MG	Based on 57 Days operational (SCADA TRENDS)
Moyie river 2023	27.4	MG	Based on 38 Days operational (SCADA TRENDS)

*Water diversions are in Million Gallons (MG) and were derived using our SCADA system trends.

We do log continuous temperature data within SCADA Trends but I do not have that readily available at this time. If you were to provide specific time frames we may be able to pull that for you but it is not something we report on and may take some considerable effort to summarize.

Regards to Aquatic resource surveys or species assemblages, we do not monitor that.

All the best, Nate

From: Genny Hoyle <genhoyle@kootenai.org>
Sent: Friday, March 22, 2024 7:12 AM
To: Wiggs, Matthew <Matthew.Wiggs@hdrinc.com>; Theresa Wheat <Theresa@kootenai.org>; Shawn Young <young@kootenai.org>; Nathan Jensen <njensen@kootenai.org>
Cc: Mike Klaus <mklaus@bonnersferry.id.gov>
Subject: RE: Introduction and Moyie Dam Re-Licensing Data Request

Hi Matt –

I don't have Moyie River-specific data except for an occasional grab sample for selenium. I am not sure what the Twin Rivers Hatchery collects so I am including Nate Jensen.

I am curious to know if IDEQ or the City has Hg/methyl-Hg data for the reservoir?

genny

Genny Hoyle
Environmental Director
Kootenai Tribe of Idaho
genhoyle@kootenai.org
(208) 267-3620
(208) 610-9293 (cell)

From: Wiggs, Matthew <Matthew.Wiggs@hdrinc.com>
Sent: Thursday, March 21, 2024 2:07 PM
To: Theresa Wheat <Theresa@kootenai.org>; Shawn Young <young@kootenai.org>; Genny Hoyle <genhoyle@kootenai.org>
Cc: Mike Klaus <mklaus@bonnersferry.id.gov>
Subject: RE: Introduction and Moyie Dam Re-Licensing Data Request

Thank you, Theresa!

Shawn and Genny, it's my understanding that you may have information related to the topics below. If that's available to share, we'd certainly appreciate it. Please don't hesitate to reach out if you need to clarify anything or give me a call (my phone number is below if you'd like to discuss in more detail).

Thank you!

Matt Wiggs
D 208.387.7089

hdrinc.com/follow-us

From: Theresa Wheat <Theresa@kootenai.org>
Sent: Thursday, March 21, 2024 2:47 PM
To: Shawn Young <young@kootenai.org>; Genny Hoyle <genhoyle@kootenai.org>
Cc: Mike Klaus <mklaus@bonnersferry.id.gov>; Wiggs, Matthew <Matthew.Wiggs@hdrinc.com>
Subject: Introduction and Moyie Dam Re-Licensing Data Request

Hi Shawn and Genny,

I would like to introduce you to Matthew Wiggs, HDR Inc., who is working with the City of Bonners

Ferry's Mike Klaus on the Moyie Dam Re-Licensing Project. They have a few questions, shown below:

- Moyie River flows at the intake for the hatchery (in CFS)
- Moyie River water quality information, such as temperature, PH, etc…
- Moyie River aquatic resource surveys or information related to species assemblage or status.

Please let me know if you need further assistance from me.

Thanks,

Theresa

Theresa Wheat
Administrative Director
Kootenai Tribe of Idaho
theresa@kootenai.org
KVRI Facilitator
www.kvricollaborative.com
Office: 208-267-3519
Cell: 208-255-0075

From: Campbell, Scott
To: Wiggs, Matthew
Cc: Ingrid Brofman; Wycoff, Anne
Subject: RE: Moyie River Hydroelectric Project Relicensing PAD Questionnaire
Date: Tuesday, February 13, 2024 2:46:53 PM
Attachments: image001.png
image003.png
image005.png
image007.png

Matt,

I'm contacting you regarding the Moyie River Hydroelectric Project Relicensing PAD Questionnaire. At this point, we do not have existing, relevant, or reasonably available information pertaining to the Moyie River Hydroelectric Project; however, if you still would like us to look at it, please forward it to me.

Thanks,
Scott

Scott W. Campbell
Senior NEPA Reviewer
Policy and Environmental Review Branch
U.S. EPA, Region 10
(206) 553-6349
campbell.scott.w@epa.gov

From: Ingrid Brofman <Ingrid.Brofman@ferc.gov>
Sent: Tuesday, February 13, 2024 11:20 AM
To: Campbell, Scott <Campbell.Scott.W@epa.gov>
Cc: Douglas Johnson <Douglas.Johnson@ferc.gov>; David Turner <David.Turner@ferc.gov>
Subject: RE: Moyie River Hydroelectric Project Relicensing PAD Questionnaire

Scott,

David summed that up well; the City is just gathering preliminary information. If you have further

questions, please do not hesitate to reach out.

Thank you,
Ingrid

From: David Turner <David.Turner@ferc.gov>
Sent: Tuesday, February 13, 2024 2:12 PM
To: Campbell, Scott <Campbell.Scott.W@epa.gov>
Cc: Douglas Johnson <Douglas.Johnson@ferc.gov>; Ingrid Brofman <Ingrid.Brofman@ferc.gov>
Subject: RE: Moyie River Hydroelectric Project Relicensing PAD Questionnaire

Scott,

Ingrid Brofman will be the FERC project coordinator for the relicensing of the Moyie Project. She is cc'd here so that you have her email. She should be able to answer your questions.

At this point, the licensee is preparing the pre-application document that will describe what is known about the existing environment at the project and help determine what information might be missing that would be useful for evaluating project effects. Our regulations require that they reach out to agencies to obtain existing relevant information. That is why they are asking for any information various agencies may have. The NEPA process is quite a ways out yet.

David Turner
Chief, Northwest Branch
Federal Energy Regulatory Commission
202-502-6091
David.Turner@ferc.gov

From: Campbell, Scott <Campbell.Scott.W@epa.gov>
Sent: Tuesday, February 13, 2024 12:09 PM
To: David Turner <David.Turner@ferc.gov>
Cc: Douglas Johnson <Douglas.Johnson@ferc.gov>
Subject: FW: Moyie River Hydroelectric Project Relicensing PAD Questionnaire

Hello David,

Douglas Johnson gave me your name as a FERC point of contact for the Moyie River Hydroelectric Project Relicensing PAD Questionnaire (please see below email from Matthew Wiggs at HDR).

Because the NEPA process requires us to work primarily with the lead federal agency on any NEPA documents, I wanted to first contact you before initiating the PAD Questionnaire.

At this point, we do not have existing, relevant, or reasonably available information pertaining to the Moyie River Hydroelectric Project.

Thank you,

Scott W. Campbell
Senior NEPA Reviewer
Policy and Environmental Review Branch
U.S. EPA, Region 10
(206) 553-6349
campbell.scott.w@epa.gov

From: Douglas Johnson <Douglas.Johnson@ferc.gov>
Sent: Tuesday, February 13, 2024 7:44 AM
To: Campbell, Scott <Campbell.Scott.W@epa.gov>
Subject: RE: Moyie River Hydroelectric Project Relicensing PAD Questionnaire

> **Caution:** This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

Scott, you should contact the following person at FERC HQ

David Turner
Northwest Branch
Telephone: 202-502-6091
Email: david.turner@ferc.gov

Douglas L. Johnson, P.E.
Regional Engineer
FERC – Portland Regional Office
1201 NE Lloyd Blvd. Suite 750
Portland, OR 97232
Office (503) 552-2715

From: Campbell, Scott <Campbell.Scott.W@epa.gov>
Sent: Monday, February 12, 2024 4:14 PM
To: Douglas Johnson <Douglas.Johnson@ferc.gov>
Subject: FW: Moyie River Hydroelectric Project Relicensing PAD Questionnaire

> You don't often get email from campbell.scott.w@epa.gov. Learn why this is important

Hello Douglas,

I'm contacting you because I found your name in the attached letter regarding the Moyie River Hydroelectric Project. Are you the FERC PM for the relicense of the Moyie River Hydroelectric Project? If not, do you know who is?

I would like to contact someone at FERC about the below request for the Moyie River Hydroelectric Project Relicensing PAD Questionnaire.

Thanks,
Scott

Scott W. Campbell
Senior NEPA Reviewer
Policy and Environmental Review Branch
U.S. EPA, Region 10
(206) 553-6349
campbell.scott.w@epa.gov

From: Wiggs, Matthew <Matthew.Wiggs@hdrinc.com>
Sent: Monday, February 5, 2024 8:07 AM
Cc: mklaus@bonnersferry.id.gov
Subject: Moyie River Hydroelectric Projec

Hello,

The City of Bonners Ferry, Idaho (City) is the licensee, owner, and operator of the 3.95-megawatt Moyie River Hydroelectric Project (Project), located on the Moyie River in Boundary County, Idaho, approximately 1.5 miles upstream of the confluence of the Moyie River and Kootenai River. The Project consists of a 92-foot-high concrete dam impounding a 540-acre-foot reservoir.

The Federal Energy Regulatory Commission (FERC) issued the current license to operate in June 1999 and the license expires on May 31, 2029. The City is beginning to take the steps necessary to obtain a new license (relicense) the Project. The first step in the relicensing process is the development of the Pre-Application Document (PAD). The PAD provides FERC and other entities with existing, relevant, and reasonably available information pertaining to the Project. This document is submitted to FERC between five to five and a half years before the license expiration. This existing, relevant, and reasonably available information is distributed to Tribes, agencies, and stakeholders to enable them to identify issues and related information needs. It is also a precursor to the environmental analysis section of the license application.

The attached PAD Questionnaire is one tool that will help identify available information pertinent to the Project. The City's intent is to include relevant information received in response to the questionnaire within the PAD. Accordingly, the City respectfully requests that you complete the attached PAD Questionnaire and provide any relevant information your organization may have regarding the Project by February 23, 2024. As detailed in the attached letter, you can complete and return this PAD Questionnaire by email to Matt Wiggs with HDR at matthew.wiggs@hdrinc.com.

We appreciate your response and your assistance in this effort to identify information resources and parties interested in this proceeding.

Thank you,

Matt Wiggs

HDR
412 E. Parkcenter Blvd., Suite 100
Boise, ID 83706
D 208.387.7089
Matthew.Wiggs@hdrinc.com

hdrinc.com/follow-us

From: Glaza, Brandon - FS, ID
To: Wiggs, Matthew
Subject: sculpin info in the Moyie River
Date: Thursday, March 14, 2024 5:19:20 PM
Attachments: image001.png
image002.png
image003.png
image004.png
sculpin tech note.pdf

Matt,

Nice to visit with you in BF today. Per our brief conversation about sculpin in the area. Please see attached.

This website has a bunch of sculpin info, including an interactive map!

Sculpins of the West - A molecular taxonomy of Cottus in western North America | Water and Watersheds (W&W) Program - USDA Forest Service Science - RMRS

Good luck with your project and please reach out with any questions. Thanks. -bg

Brandon Glaza
Hydrologist

Forest Service
Idaho Panhandle National Forests
Bonners Ferry Ranger District

p: 208-267-6771
f: 208-267-3732
brandon.glaza@usda.gov

6286 Main St.
Bonners Ferry, ID 83805
www.fs.fed.us

Caring for the land and serving people

Federal Energy Regulatory Commission (FERC) Hydropower Relicensing

An introduction to the FERC relicensing process of the Moyie River Hydroelectric Project.

Relicensing is a multi-year regulatory and environmental review process that provides the opportunity for consultation and engagement with agencies, Tribes, non-governmental organizations, and other interested parties to inform the development of a license application to FERC.

THE MOYIE RIVER HYDROELECTRIC PROJECT

The City of Bonners Ferry, Idaho (City) is the licensee, owner, and operator of the 3.95-megawatt Moyie River Hydroelectric Project (Project) (FERC No. 1991). The Project was built in 1949 and is located on the Moyie River in Boundary County, approximately 1-1/2 miles upstream of the confluence of the Moyie River and Kootenai River. The Project consists of a 92-foot-high concrete dam impounding a 450-acre-foot reservoir. The Project operates run-of-river and generates electricity for the City. The City proposes to continue operations in the new license consistent with current operations.

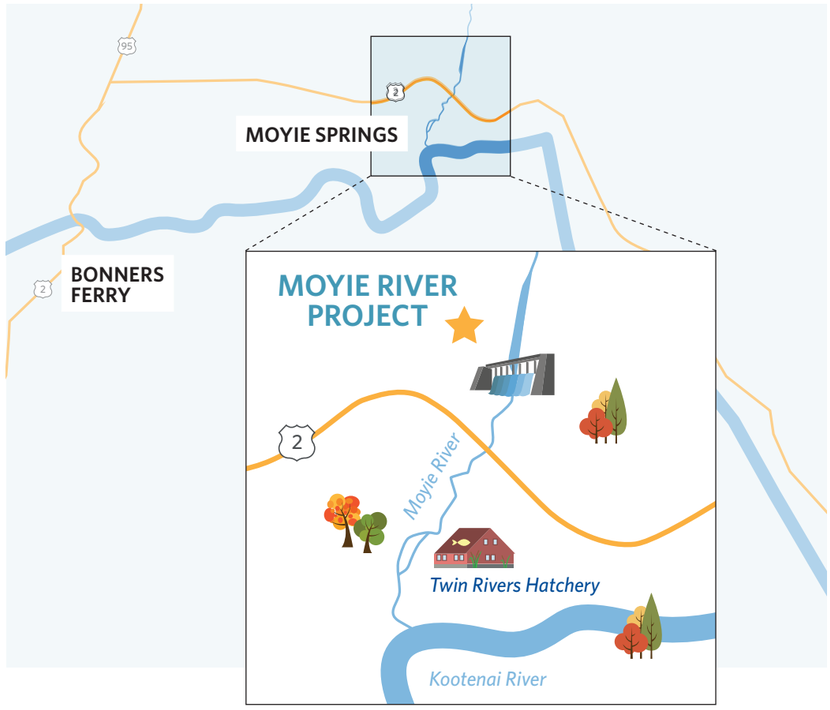
The existing license for the Project was issued by FERC in June 1999 and expires on May 31, 2029.

WHO IS FERC AND WHAT IS THE PURPOSE OF RELICENSING?

The Federal Energy Regulatory Commission (FERC) is an independent federal agency with the responsibility of issuing licenses for non-federally owned hydropower projects, enforces the conditions of each license for the duration of its term, and conducts project safety and environmental inspections.

Obtaining a new license (relicense) from FERC for the continued operation of an existing hydroelectric facility is a multi-year regulatory process that involves consultation with federal and state agencies, Indian tribes, and the public. Between five to five and a half years before the license expires, the City must file a notice of intent (NOI) declaring its intention to seek a new license (relicense) for the Project. At least two years before a license expires, the City must file an application for a new license. The license application will contain the necessary information for FERC to evaluate Project effects and prepare the environmental documents required by the National Environmental Policy Act (NEPA) and its regulations.

Following submittal of the license application, FERC initiates the NEPA process, which triggers coordination with Indian Tribes and state and federal agencies, such as the Idaho Department of Environmental Quality on a Clean Water Act Section 401 Water Quality Certification, coordination with state and federal agencies in consideration of Threatened and Endangered Species, and coordination with the Idaho State Historic Preservation Office and Tribes in consideration of impacts on sites and facilities listed on, or eligible for, the National Register of Historic Places.



RELICENSING PROCESS

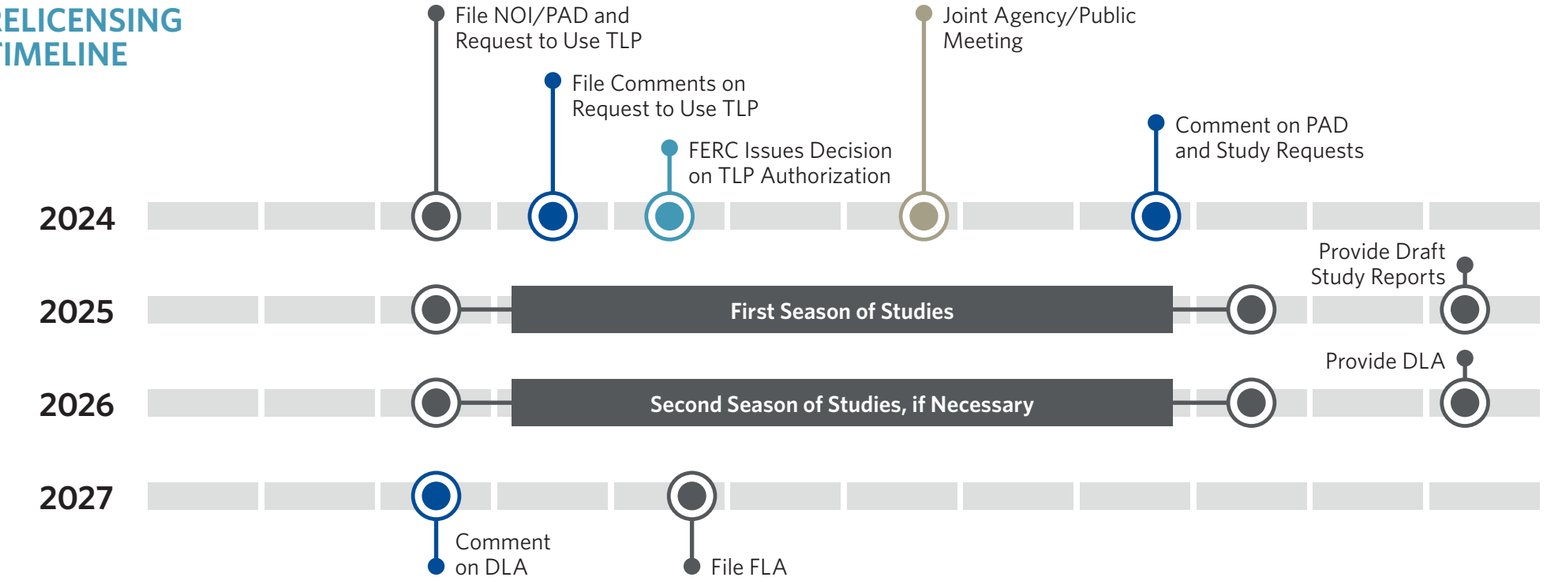
FERC provides licensees with three licensing process options:

- Integrated Licensing Process
- Traditional Licensing Process
- Alternative Licensing Process

The City is proposing to use the Traditional Licensing Process (TLP). The TLP provides more flexibility for the City and interested stakeholders to complete the various steps in the relicensing process.

As part of the TLP, the City will provide information to stakeholders about the Project, and work with stakeholders to identify relevant resource information and any studies that may be necessary to inform the license application to be filed with FERC.

RELICENSING TIMELINE



KEY

FERC | STAKEHOLDERS | THE CITY | THE CITY & STAKEHOLDERS

City | City of Bonners Ferry, ID
DLA | Draft License Application
FERC | Federal Energy Regulatory Commision
FLA | Final License Application
NEPA | National Environmental Policy Act
NOI | Notice of Intent
PAD | Pre-Application Document
Project | Moyie River Hydroelectric Project
TLP | Traditional Licensing Process

NOTICE OF INTENT

Pursuant to FERC regulations, the City will declare their intent to relicense a project between five to five and a half years before license expiration.

Filed concurrently with the PAD, the NOI provides information about the Project and identifies applicable municipalities, Tribes and other political organizations that may be affected by the Project.

PRE-APPLICATION DOCUMENT

The PAD summarizes the known, available information for the Project. This document is submitted to FERC between five to five and a half years before the license expiration. This existing, relevant, and reasonably available information is distributed to Tribes, agencies, and stakeholders to enable them to identify issues and related information needs. It is also a precursor to the environmental analysis section of the license application.

The PAD will include the following elements:

- Plan and schedule for all the work that will happen before submission of the license application.
- Project description/location
- Existing site and resource conditions, including:
  - *Description of the River Basin*
  - *Geology and Soils*
  - *Water Resources*
  - *Fish and Aquatic Resources*
  - *Wildlife and Botanical Resources*
  - *Wetlands, Riparian and Littoral Habitat*
  - *Recreation and Land Use*
  - *Rare, Threatened, and Endangered Species*
  - *Aesthetic, Cultural, Tribal, and Socioeconomic Resources*

TLP REQUEST

The City plans to request use of the TLP from FERC. That request will address the following factors:

- Likelihood of timely license issuance;
- Complexity of the resource issues and level of anticipated controversy;
- Relative cost of the TLP compared to the ILP;
- The amount of available information and potential for significant disputes over studies; and
- Other factors believed by the commenter to be pertinent.

Stakeholders will have 30 days to file comments on the request to use the TLP.

GET INVOLVED!

Development of the PAD

- Prior to submission of the PAD, the City will reach out to Tribes and state and federal agencies to compile available information related to the Project and Project Area.
- The City will also develop a PAD Questionnaire to solicit relevant information related to the Project and Project Area.

Joint Agency/Public Meeting

- Approximately four months following submission of the PAD, the City will host a Joint Agency/Public Meeting and Site Visit.
- The purpose of the meeting is to:
  - Provide an overview of the Project
  - Review information about the Project
  - Discuss and answer questions about the data and any potential studies to be developed to inform information gaps.

Distribution of Relicensing Materials and Distribution List

- Documents filed with the Commission will be available from FERC's eLibrary at www.ferc.gov/docs-filing/elibrary.asp by searching under Docket P-1991.
- The City will also maintain a Distribution List to inform stakeholders on relicensing activity and materials. ***Reach out to the contacts below to be added to the Distribution List.***

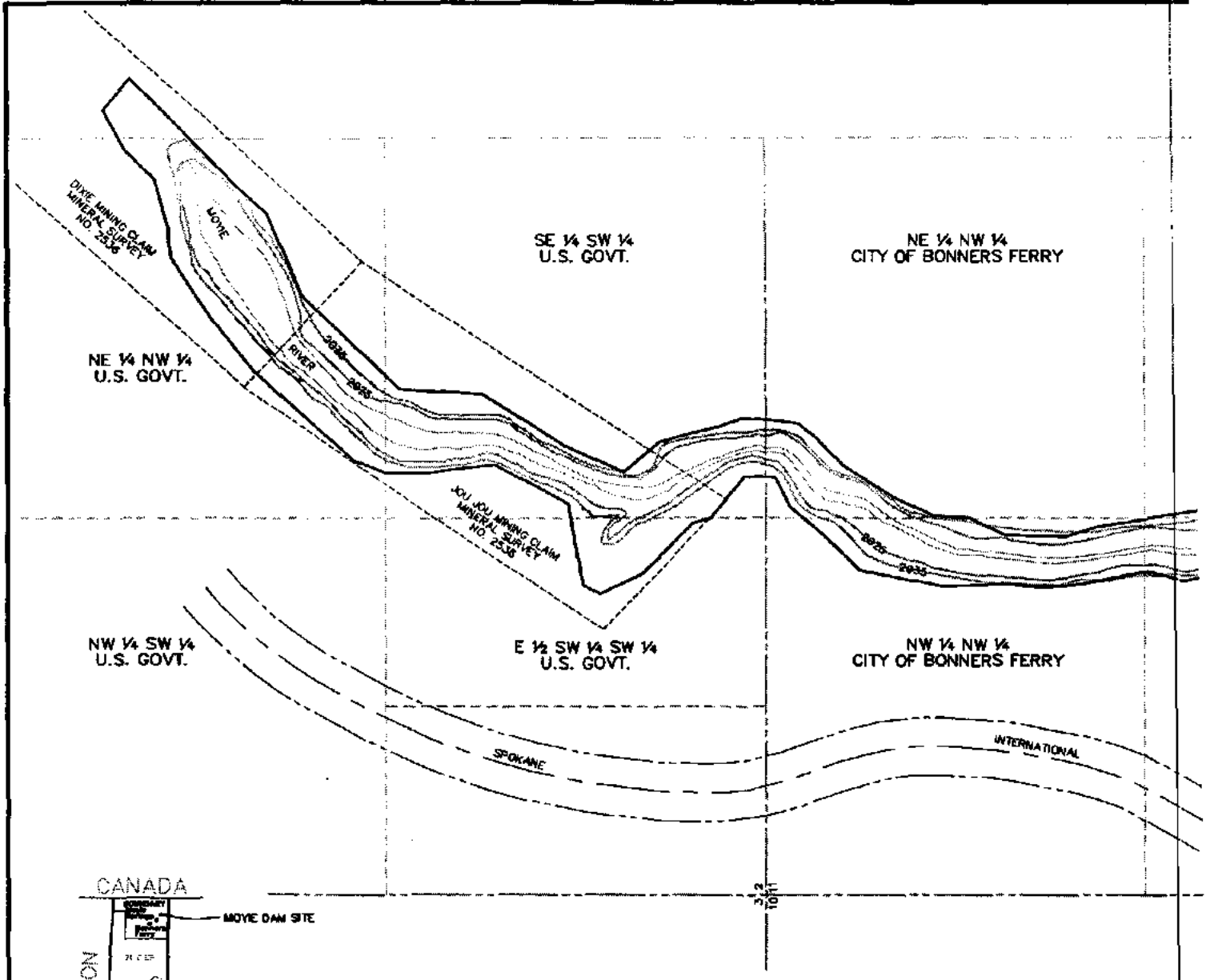
CONTACTS

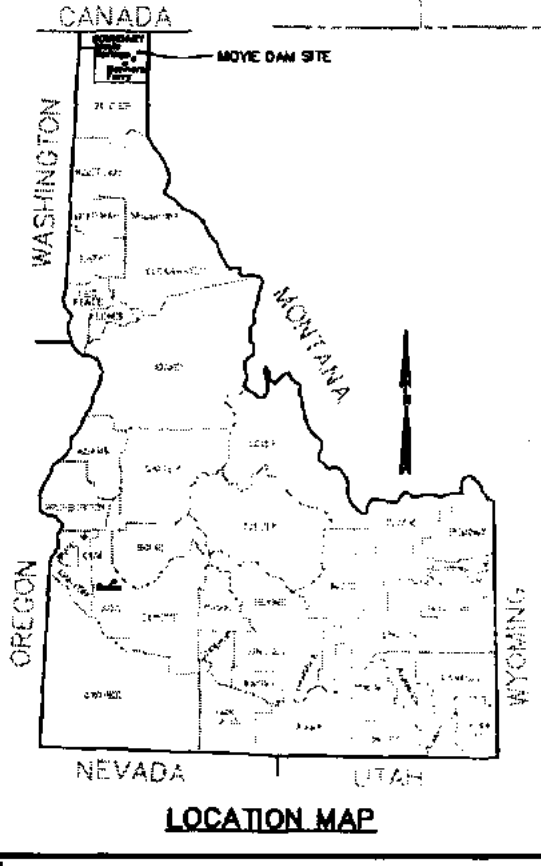
Mike Klaus, PE
City Engineer
City of Bonners Ferry
7232 Main Street #149
Bonners Ferry, ID 83805
(208) 267-0357
mklaus@bonnersferry.id.gov

Matt Wiggs
Project Manager
HDR Engineering, Inc.
412 E Parkcenter Blvd Ste 100
Boise, ID 83706
(208) 387-7089
matthew.wiggs@hdrinc.com

Appendix C

Existing Project Boundary (Exhibit G)





LOCATION MAP

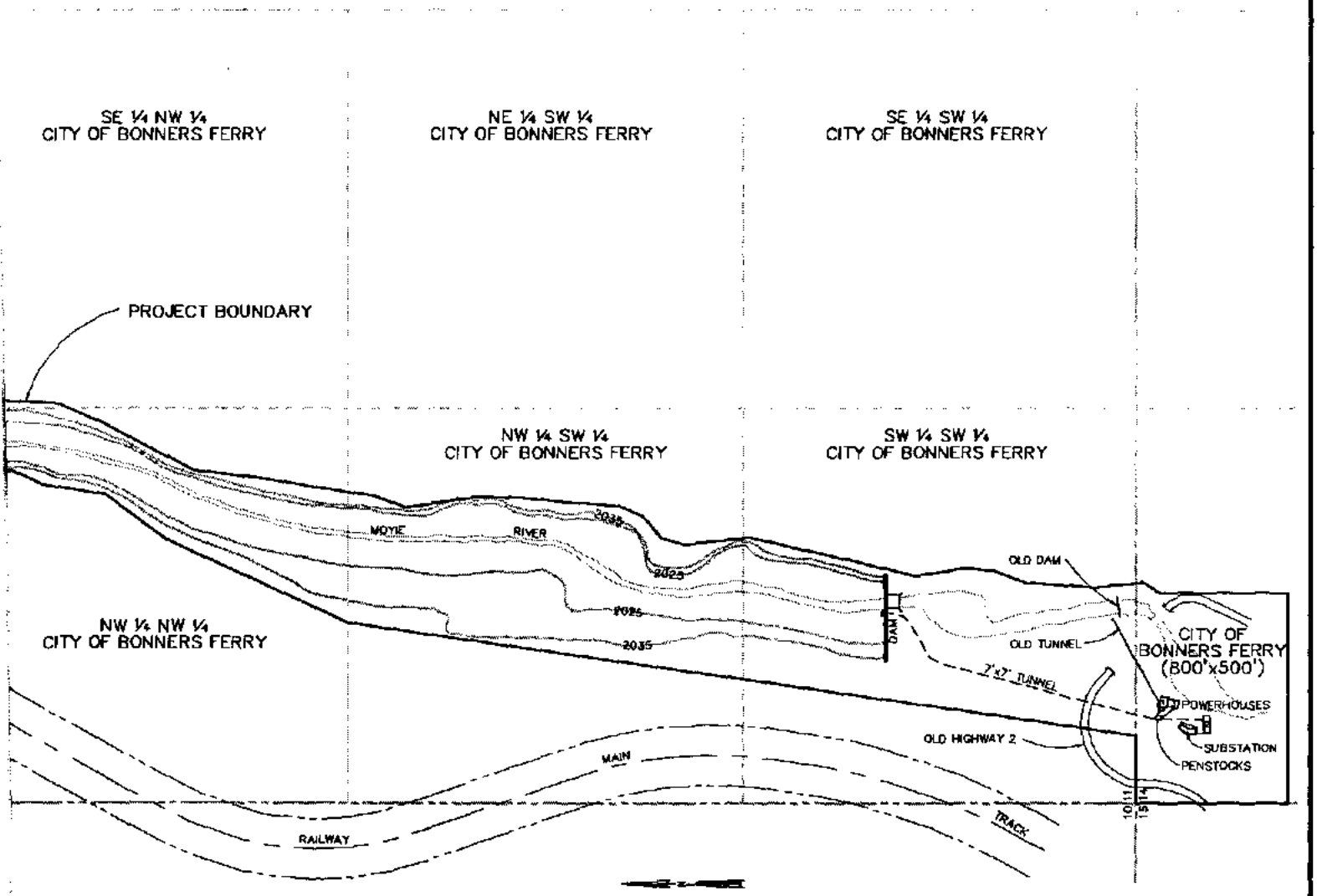
BOUN

0 2M

APPROX. SC

NOTES:

1. SEE THE ORI (FILED BY TH THE FEDERA FOR BEARING BOUNDARY.
2. ALL LANDS I RANGE 2 EA



DARY MAP

400 600 800

CALE IN FEET

THIS DRAWING IS PART OF THE APPLICATION FOR NEW LICENSE MADE BY THE UNDERSIGNED, THIS 29TH DAY OF MARCH, 1996.

Mike Woodward

MIKE WOODWARD, CITY ADMINISTRATOR

INAL PROJECT BOUNDARY MAP
E VILLAGE OF BONNERS FERRY WITH
POWER COMMISSION ON JAN. 24, 1948)
S AND DISTANCES ALONG PROJECT

OCATED WITHIN TOWNSHIP 62 NORTH,
T, BOISE MERIDIAN.

MOYIE RIVER HYDROELECTRIC PROJECT
FERC PROJECT NUMBER 1991
CITY OF BONNERS FERRY

EXHIBIT G SHEET 1 OF 1

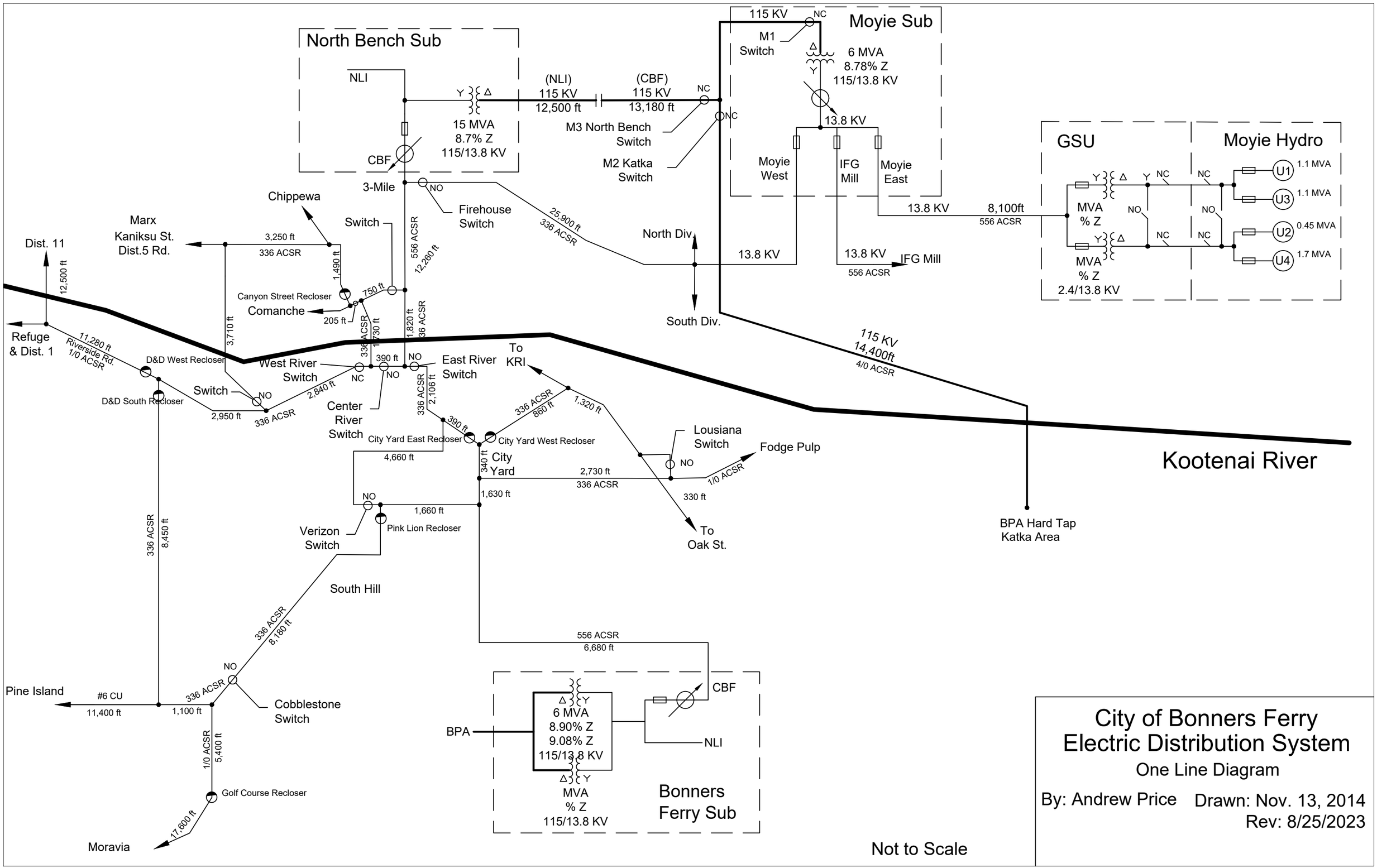
PROJECT BOUNDARY MAP

CH2MHILL

109009.EG.EG

Appendix D

Single-Line Diagram



City of Bonners Ferry
Electric Distribution System

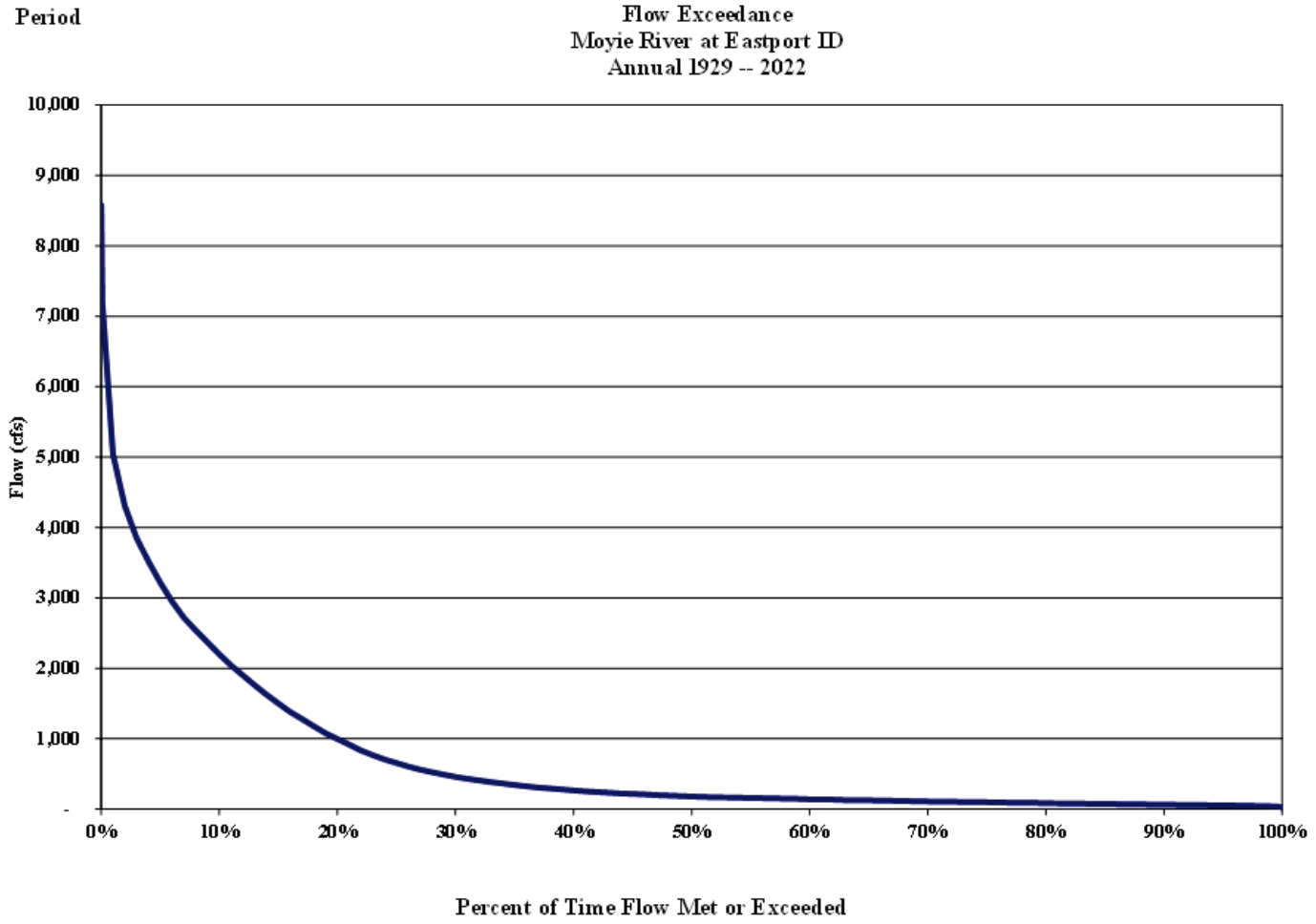
One Line Diagram

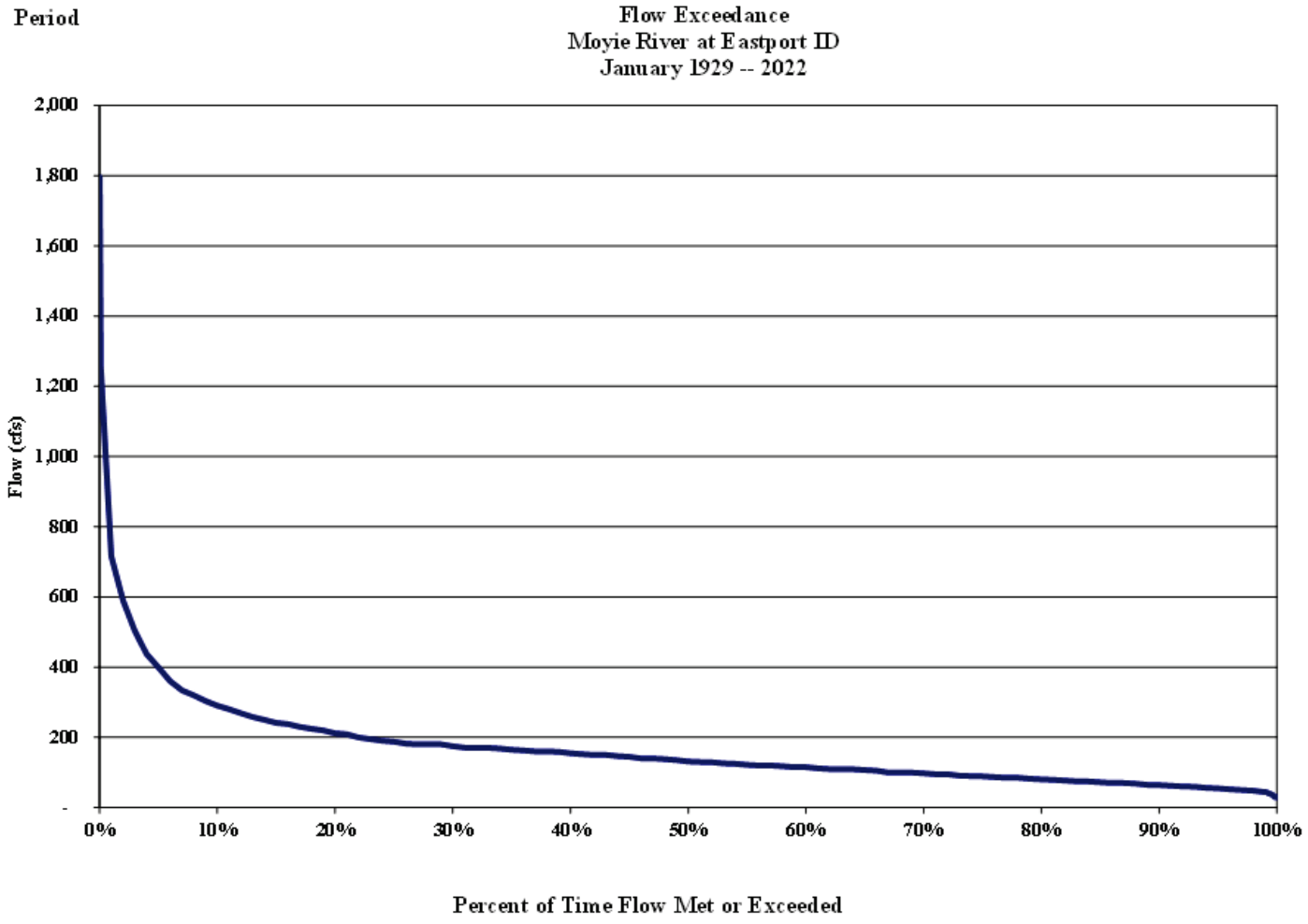
By: Andrew Price

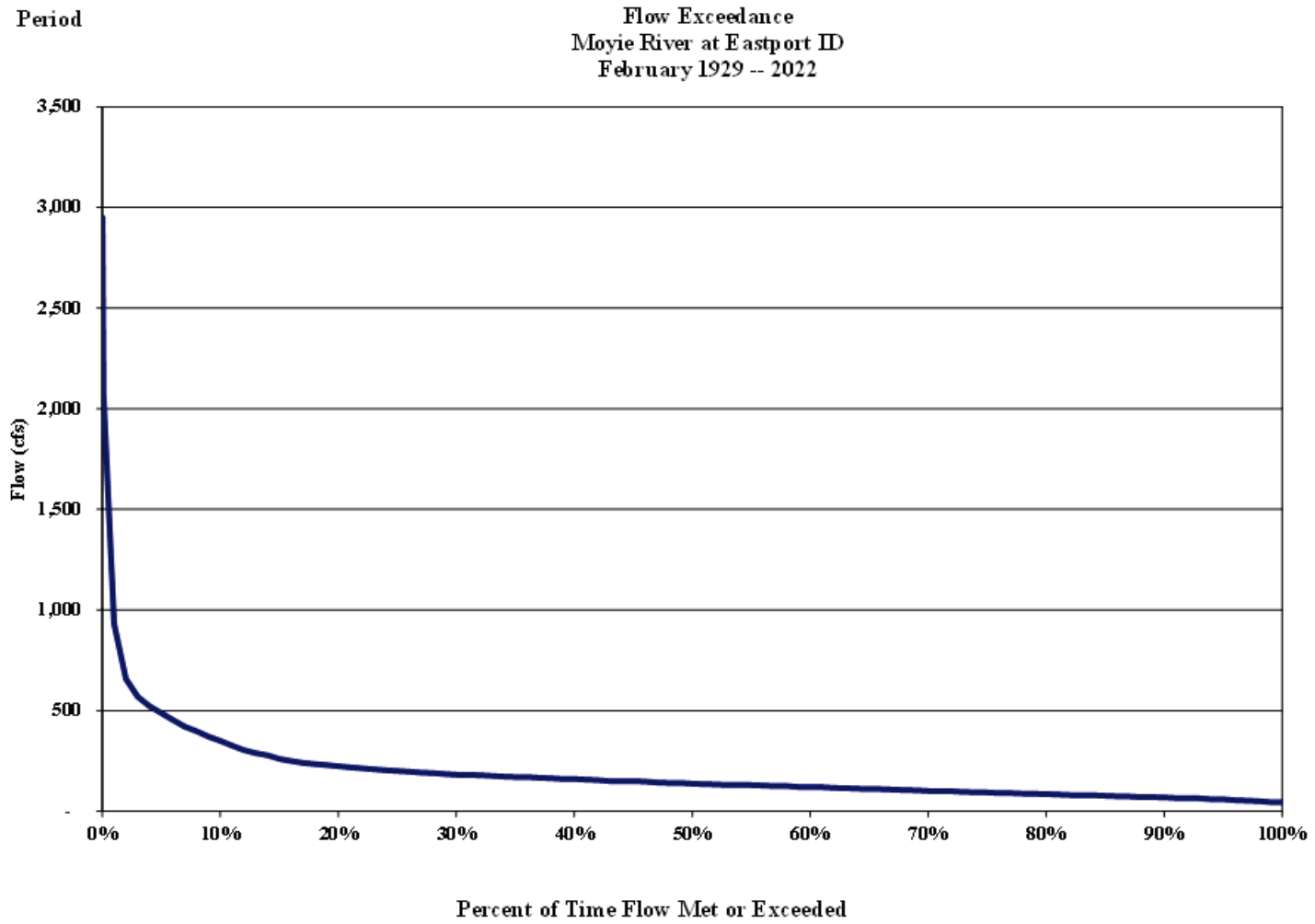
Drawn: Nov. 13, 2014

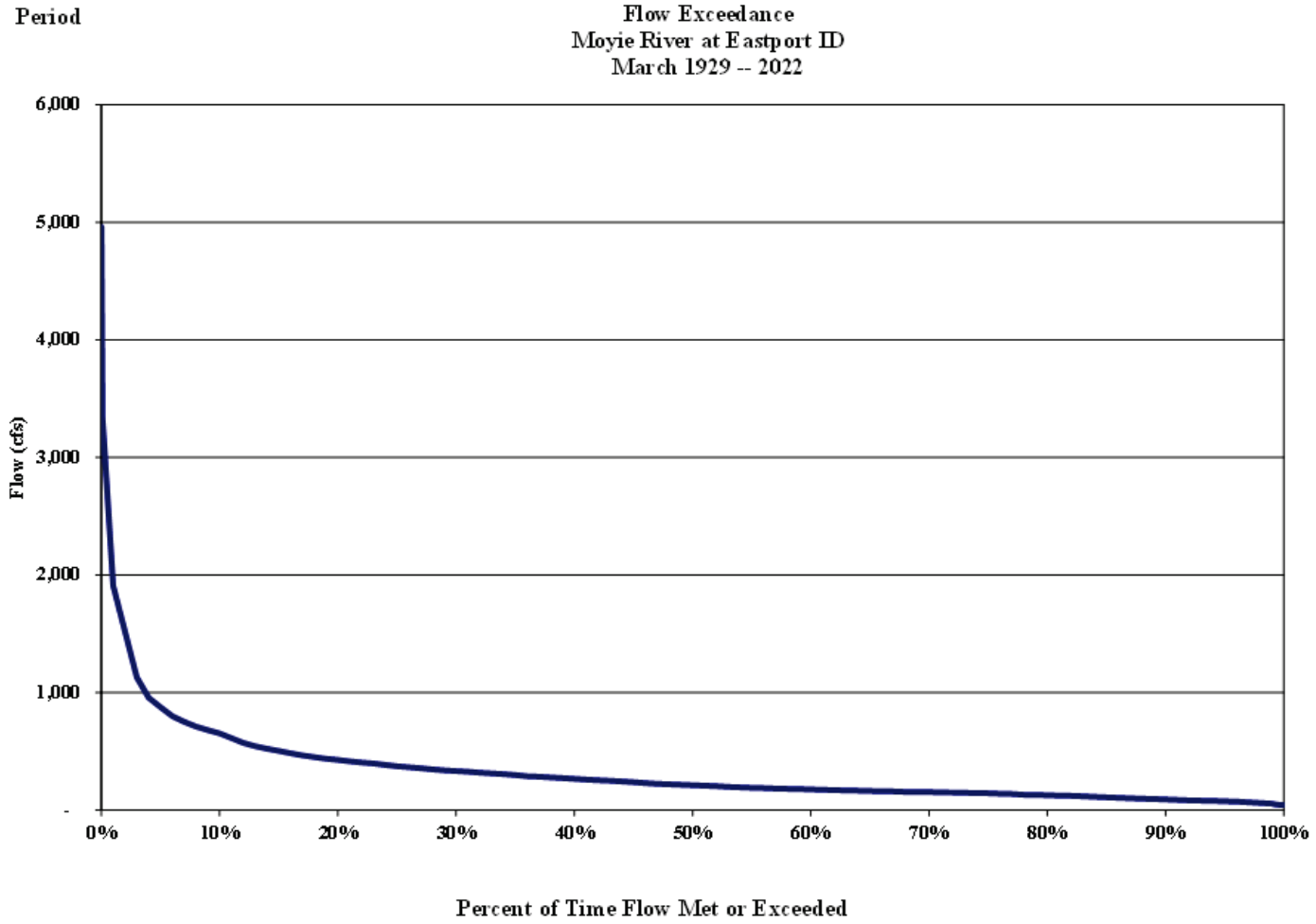
Rev: 8/25/2023

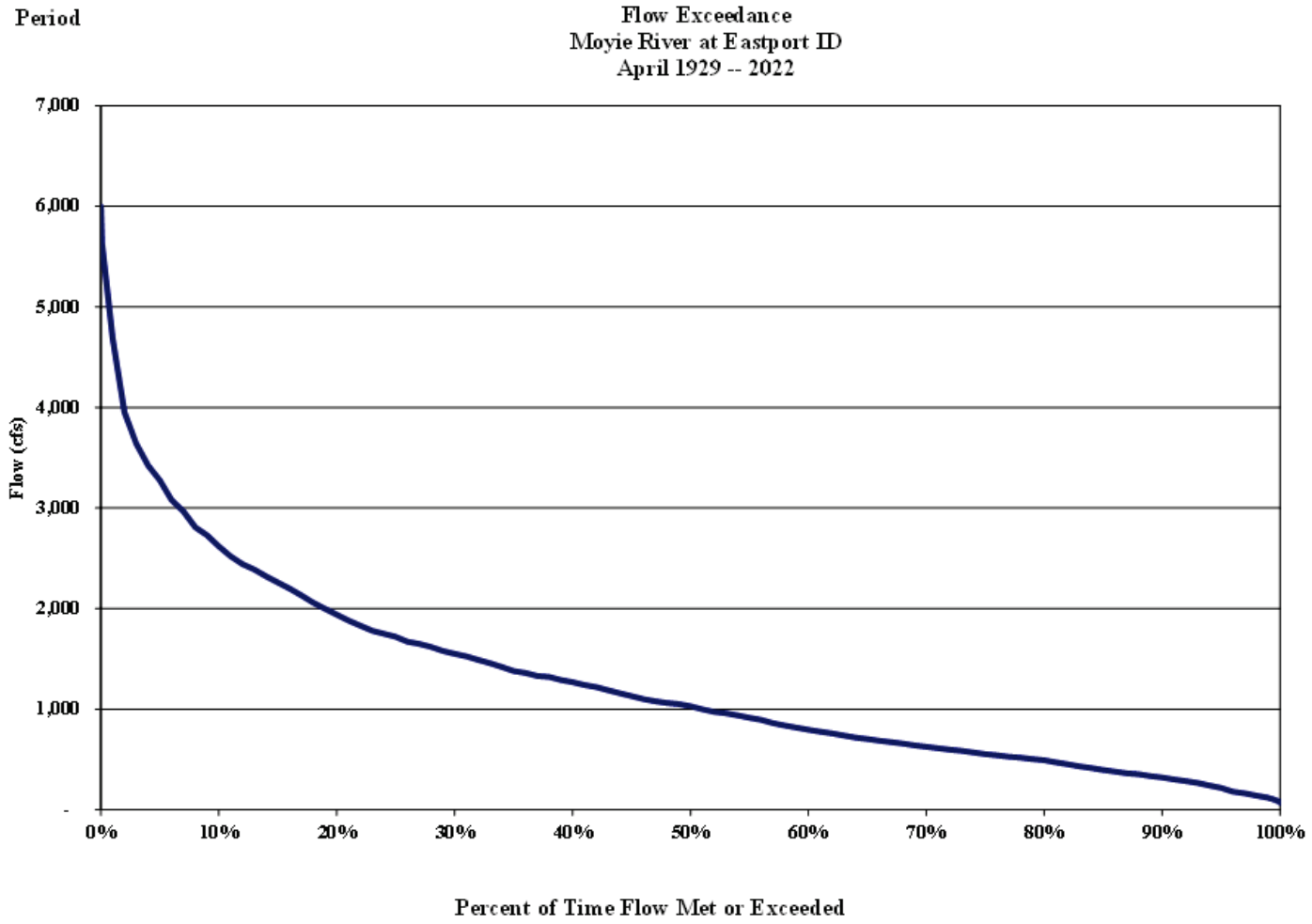
Appendix E
Flow Duration Curves

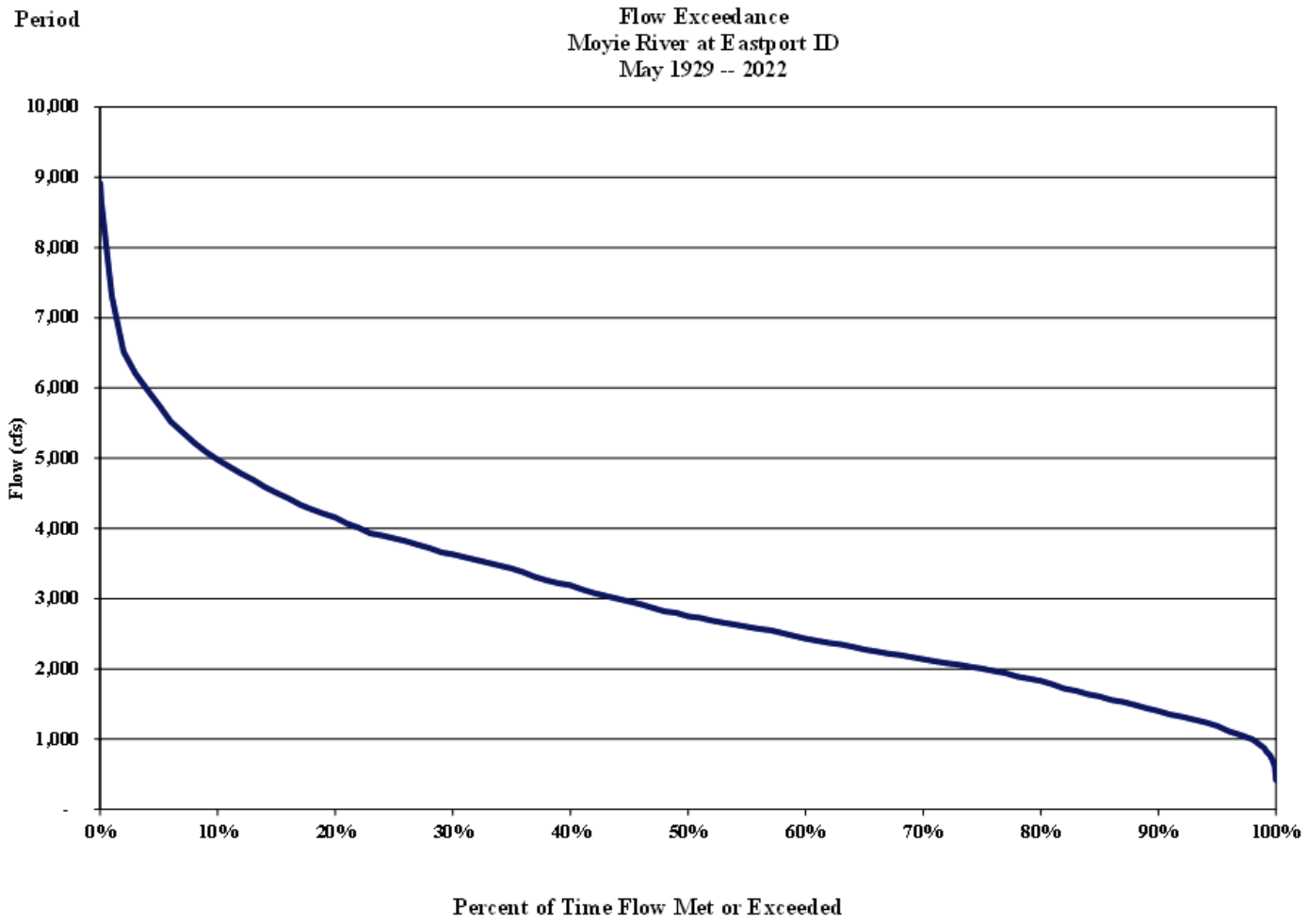

Period
Flow Exceedance
Moyie River at Eastport ID
Annual 1929 -- 2022
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded

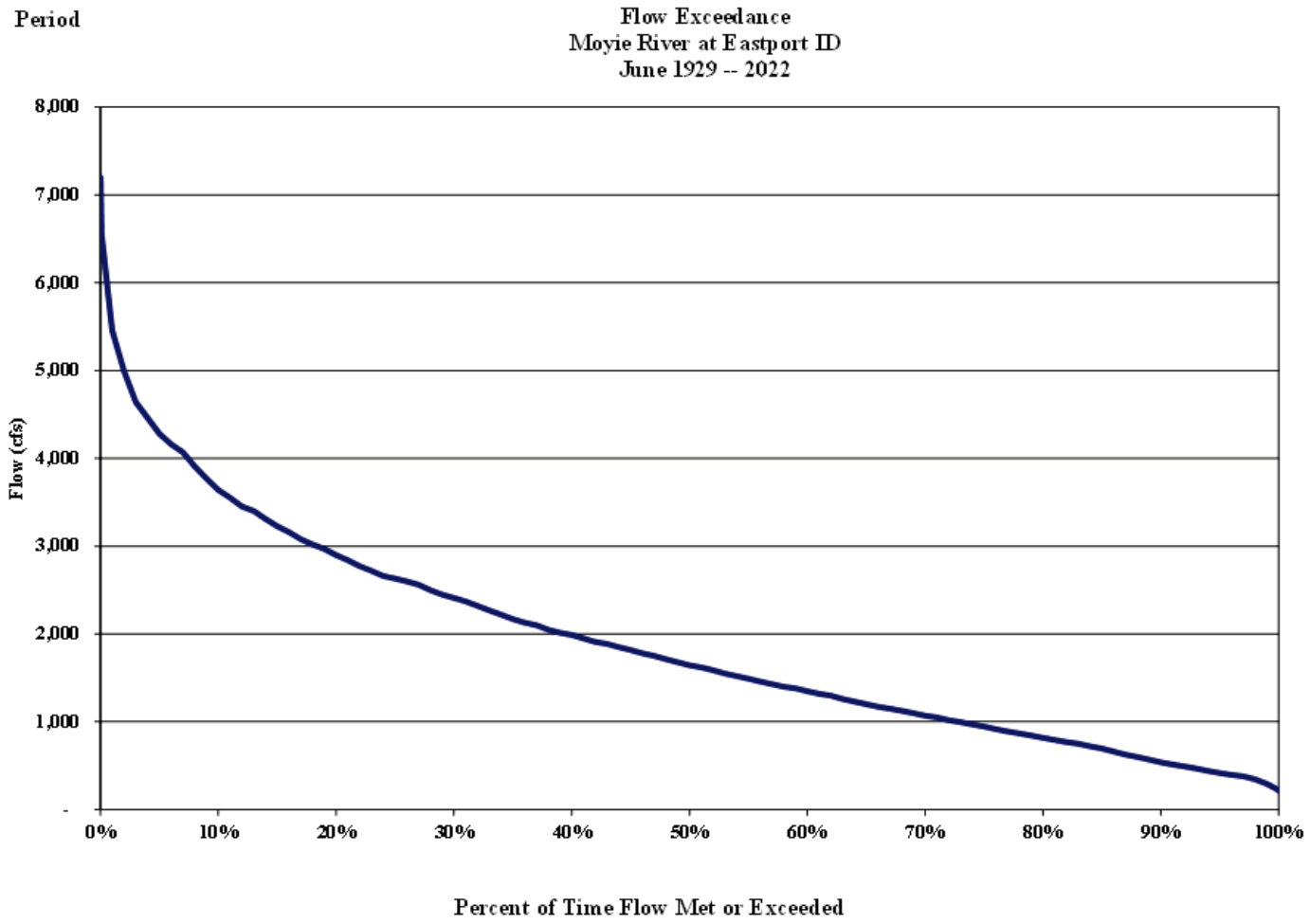

Period
Flow Exceedance
Moyie River at Eastport ID
January 1929 -- 2022
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded

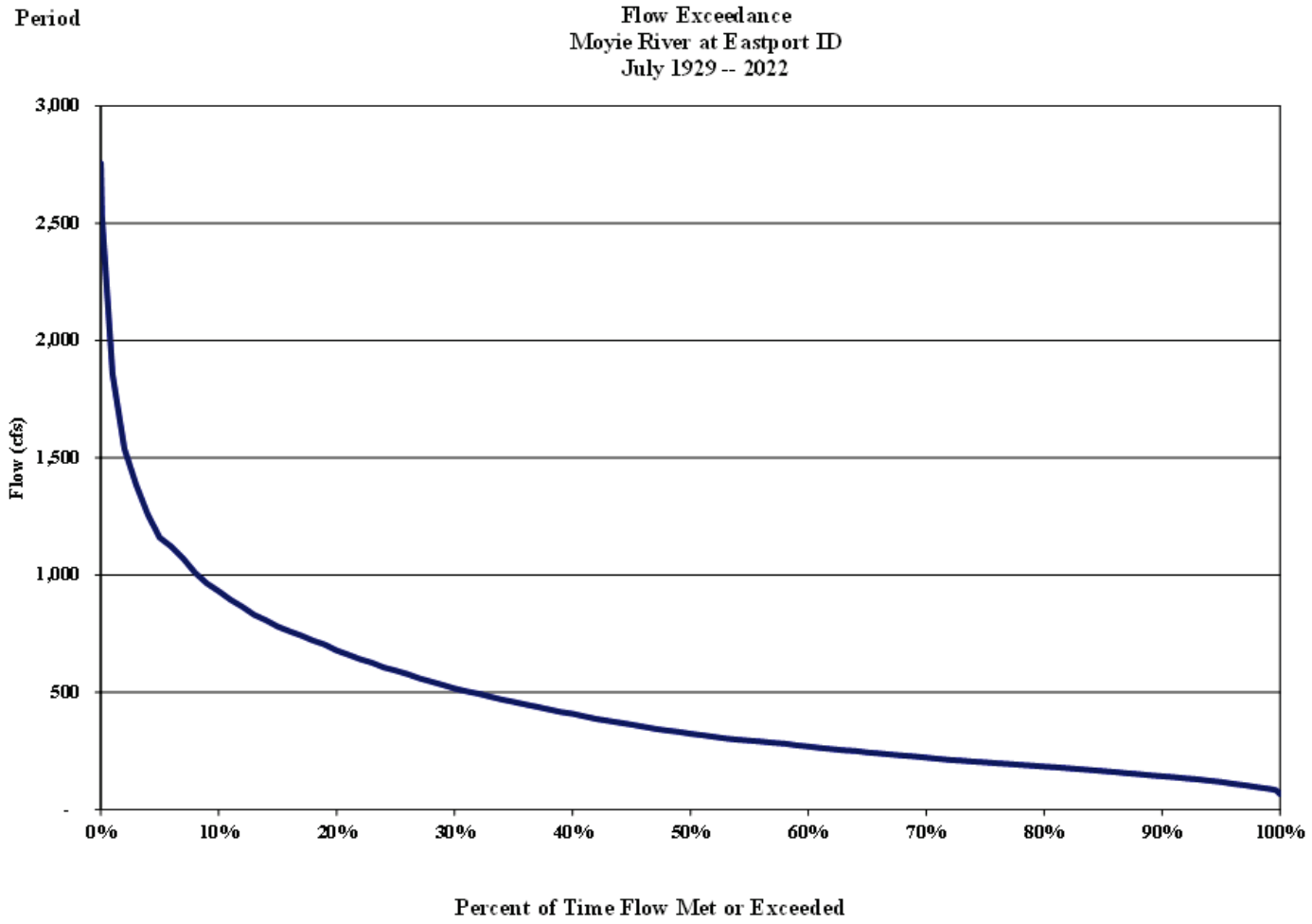

Period
Flow Exceedance
Moyie River at Eastport ID
February 1929 -- 2022
3,500
3,000
2,500
2,000
1,500
1,000
500
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded

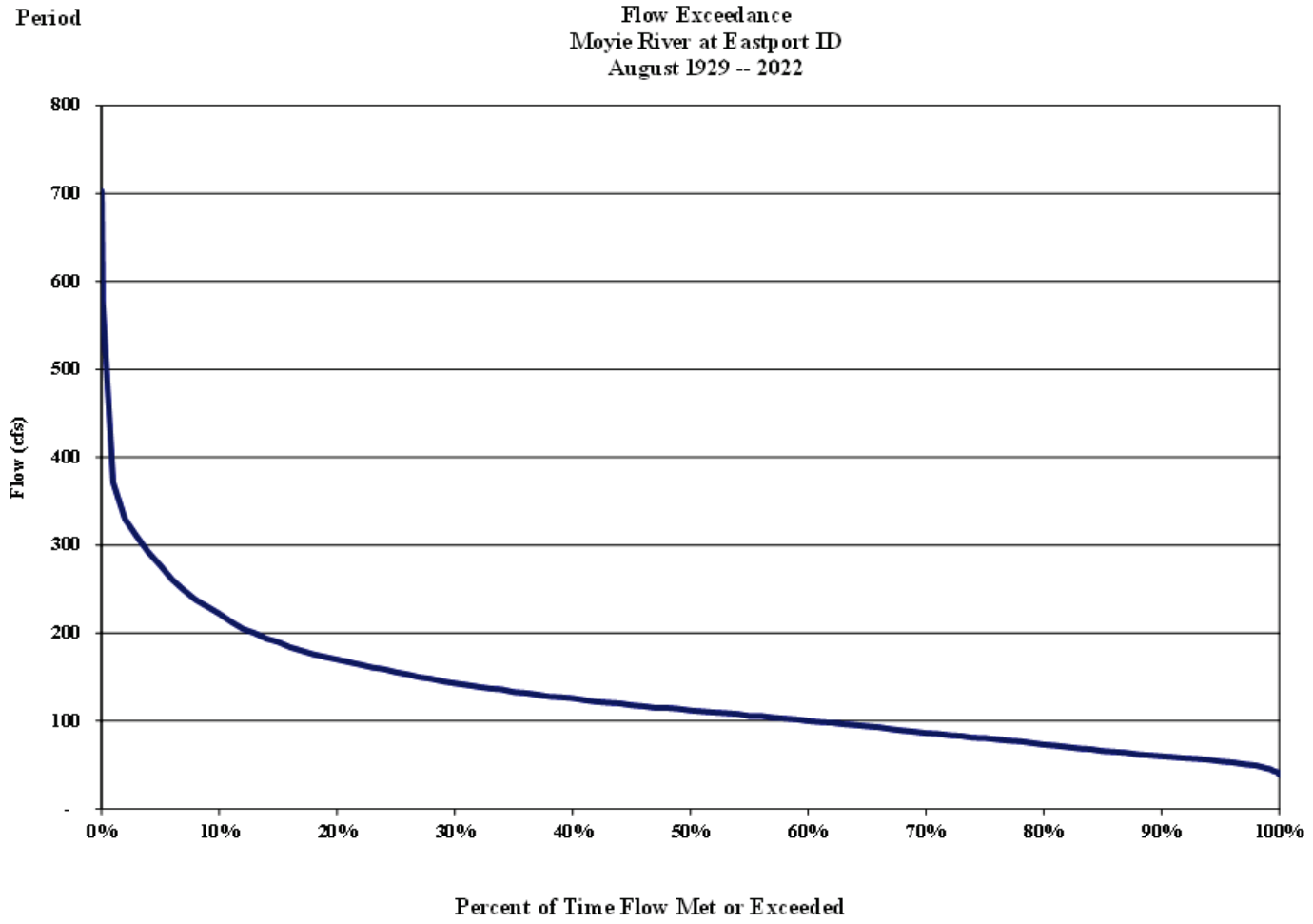

Period
Flow Exceedance
Moyie River at Eastport ID
March 1929 -- 2022
6,000
5,000
4,000
3,000
2,000
1,000
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded

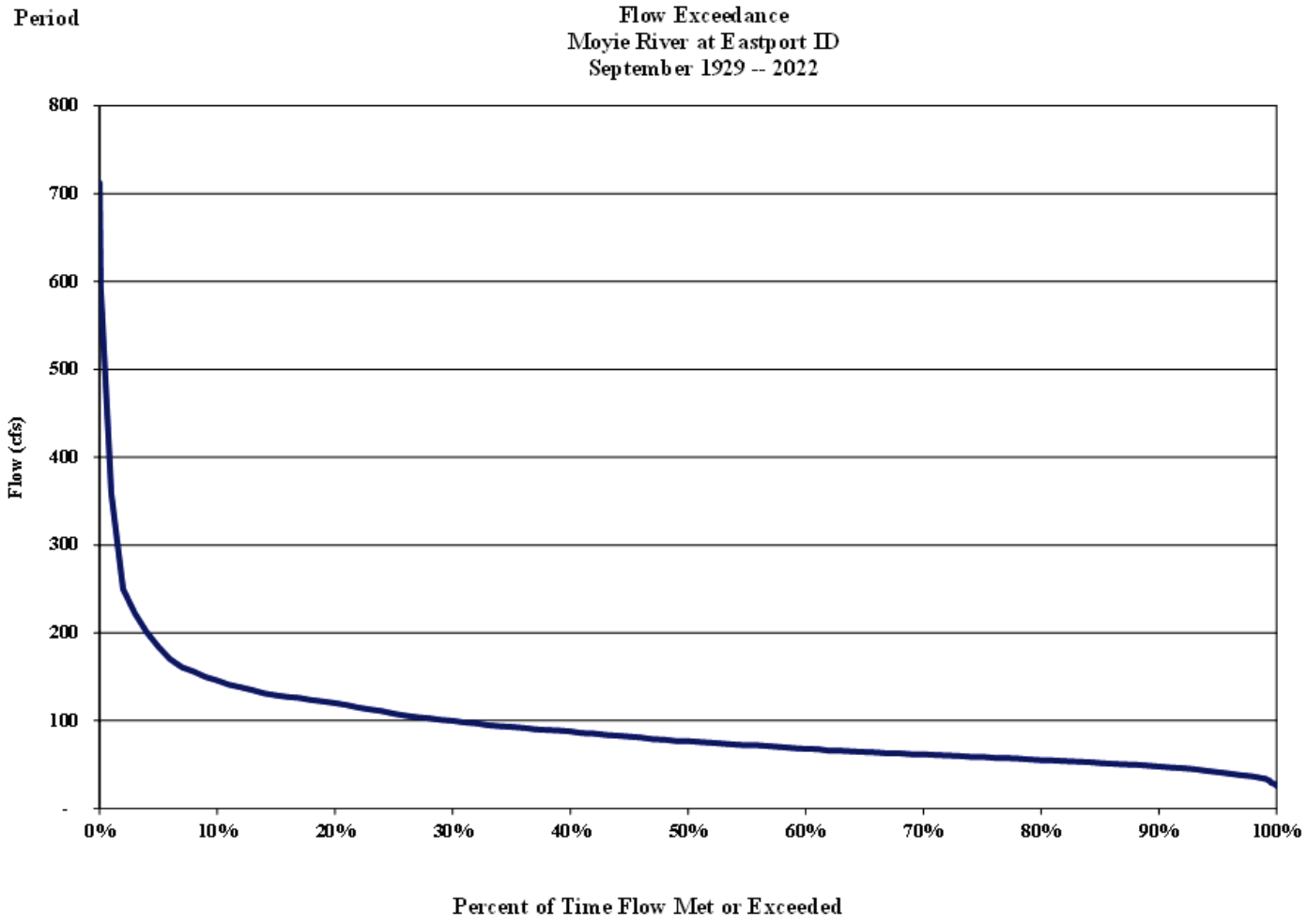

Period
Flow Exceedance
Moyie River at Eastport ID
April 1929 -- 2022
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded

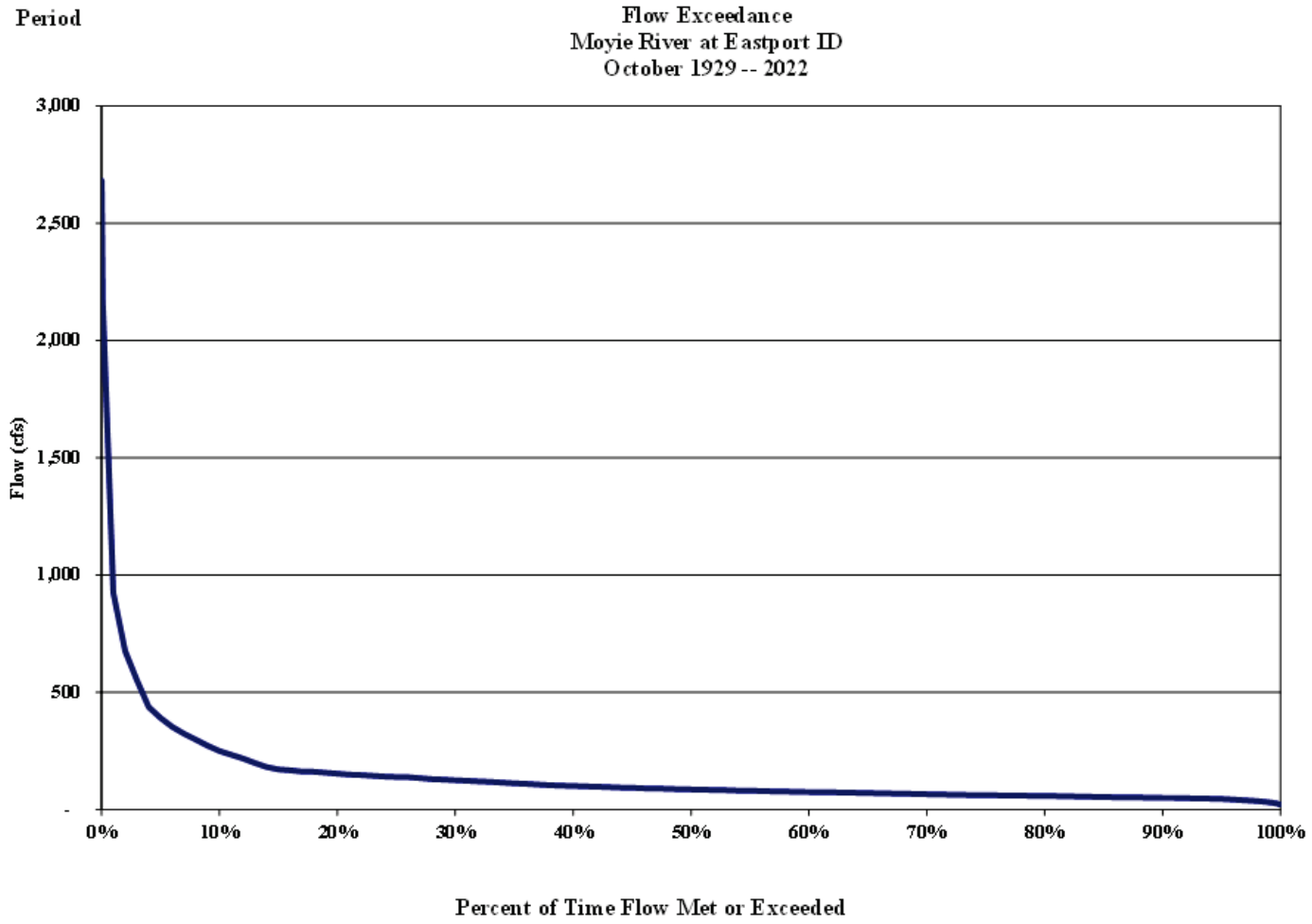

Period
Flow Exceedance
Moyie River at Eastport ID
May 1929 -- 2022
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded

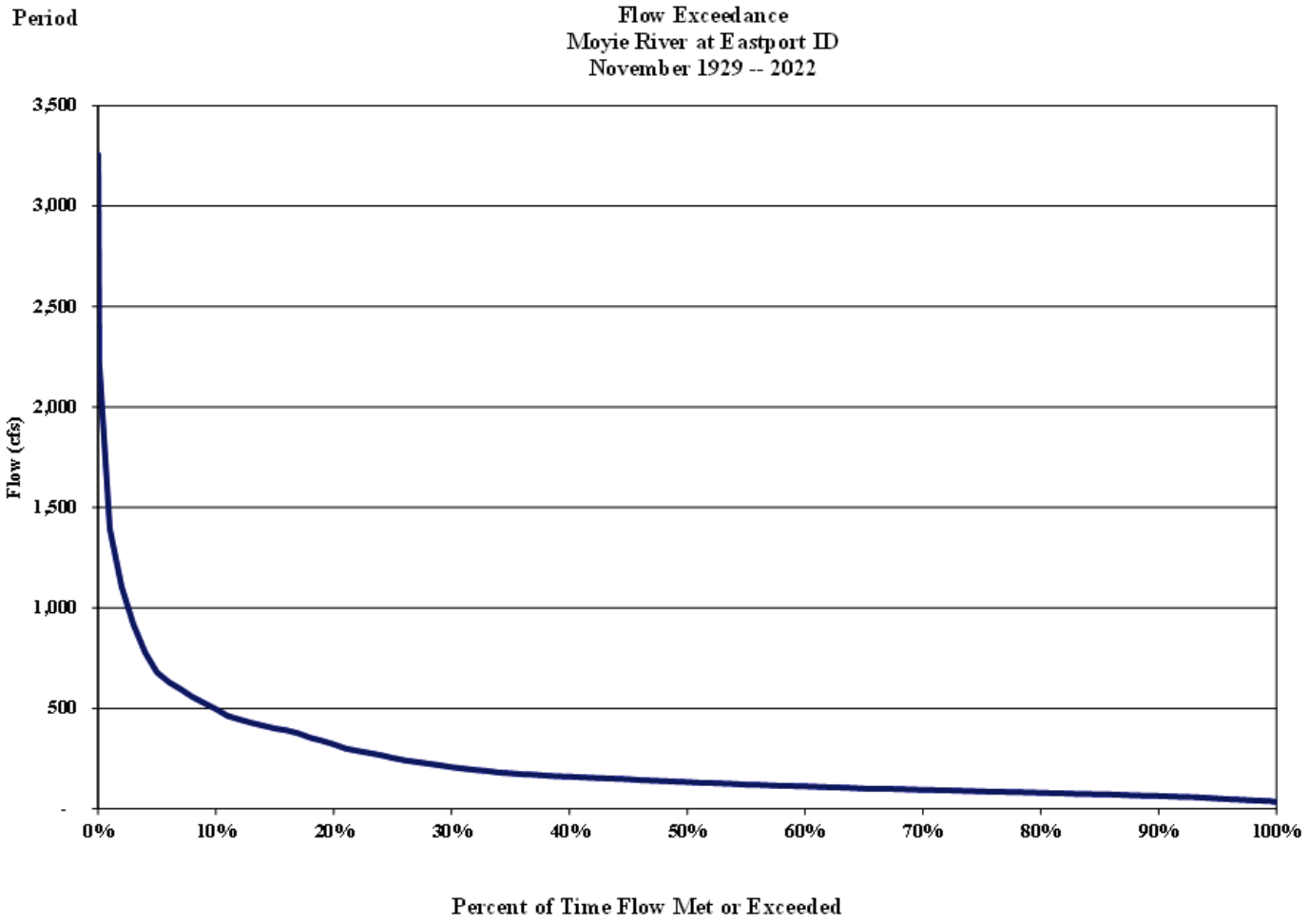

Period
Flow Exceedance
Moyie River at Eastport ID
June 1929 -- 2022
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded

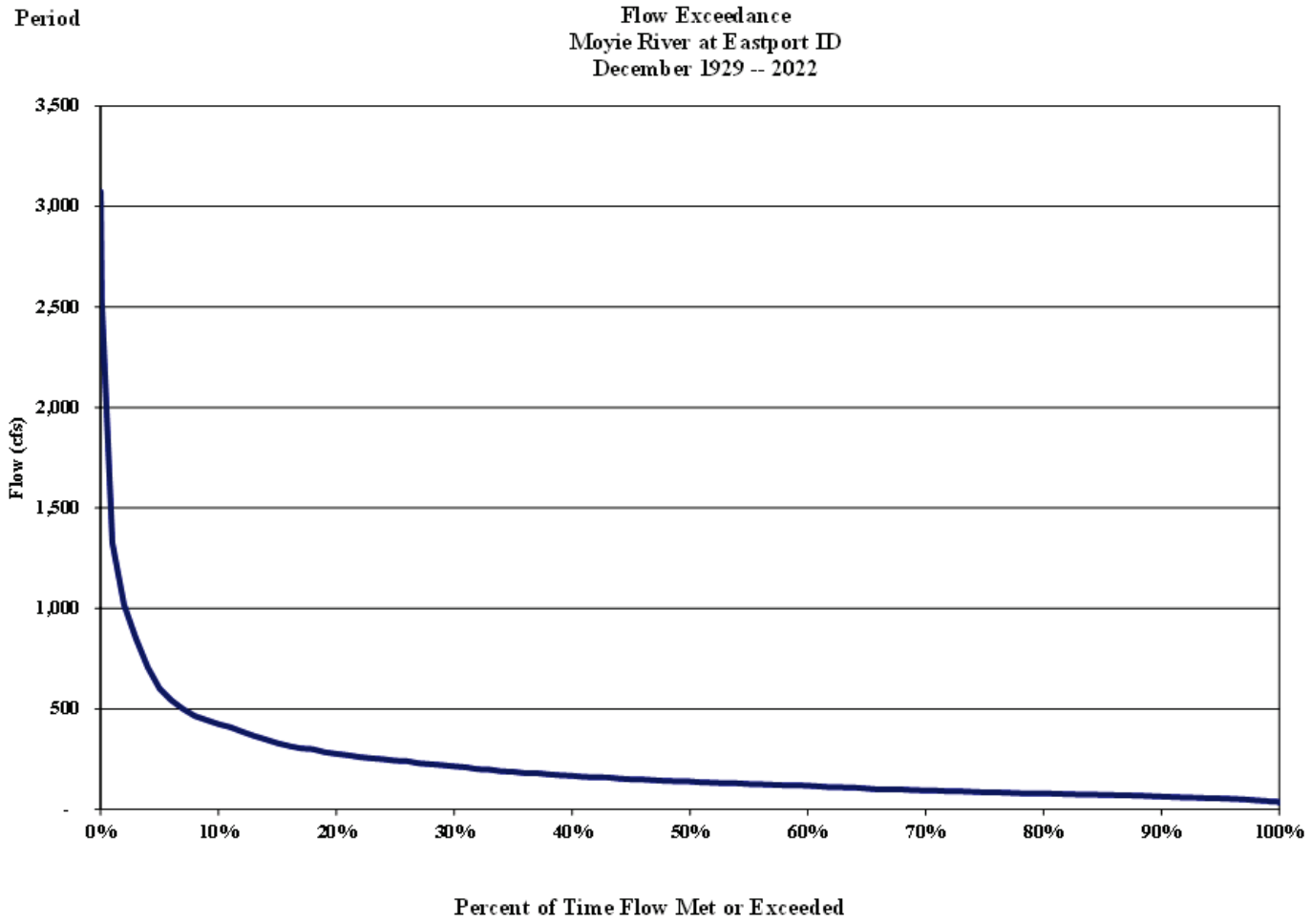

Period
Flow Exceedance
Moyie River at Eastport ID
July 1929 -- 2022
3,000
2,500
2,000
1,500
1,000
500
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded


Period
Flow Exceedance
Moyie River at Eastport ID
August 1929 -- 2022
800
700
600
500
400
300
200
100
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded


Period
Flow Exceedance
Moyie River at Eastport ID
September 1929 -- 2022
800
700
600
500
400
300
200
100
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded


Period
Flow Exceedance
Moyie River at Eastport ID
October 1929 -- 2022
3,000
2,500
2,000
1,500
1,000
500
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded


Period
Flow Exceedance
Moyie River at Eastport ID
November 1929 -- 2022
3,500
3,000
2,500
2,000
1,500
1,000
500
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded


Period
Flow Exceedance
Moyie River at Eastport ID
December 1929 -- 2022
3,500
3,000
2,500
2,000
1,500
1,000
500
-
Flow (cfs)
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Percent of Time Flow Met or Exceeded