

July 29, 2021

Via Electronic Filing

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Subject: Grand Rapids Hydroelectric Project (FERC No. 2362)
Draft License Application

Dear Secretary Bose:

ALLETE, Inc., doing business as Minnesota Power (MP or Applicant), is the Licensee, owner, and operator of the 2.1 megawatt (MW), run-of-river (ROR) Grand Rapids Hydroelectric Project (Project) (FERC Project No. 2362) located on the Mississippi River in the City of Grand Rapids in Itasca County, Minnesota.

MP operates and maintains the Project under a license from the Federal Energy Regulatory Commission (FERC or Commission). The Project's existing license expires on December 31, 2023. MP is pursuing a new license for the Project using the Commission's Integrated Licensing Process (ILP) as defined in 18 Code of Federal Regulations (CFR) Part 5. In accordance with 18 CFR §5.16(a), MP is filing herewith the Draft License Application (DLA) for the Project.

As described in the DLA, MP is proposing to continue the operation of the Project and does not propose the development of any new hydroelectric facilities or increased generation capacity, but provides for protection, mitigation, and enhancement (PM&E) measures related to cultural resources and terrestrial and aquatic invasive species resources associated with the Project. The proposed PM&E measures described in the DLA reflect careful consideration of available information, the results of studies conducted, and issues specific to the Project. The Recreation Resource Study for the Project is ongoing and field observations will conclude at the end of September; therefore, any proposed PM&E measures will be filed with the Final License Application (FLA). MP believes that the proposed PM&E measures as described in the DLA adequately take into consideration the important power and non-power values of the Project and the interests of stakeholders.

The DLA is composed of two volumes, as described below:

Volume I of II

- Initial Statement
- Exhibit A – Project Description
- Exhibit E – Environmental Exhibit
- Exhibit F – General Design Drawings
- Exhibit G – Project Boundary Maps
- Exhibit H – Plans and Ability of the Applicant to Operate the Project

Volume II of II (Critical Energy Infrastructure Information [CEII])

- Single-Line Diagram
- Exhibit F – General Design Drawings

The Exhibit E is a joint Exhibit E for the Grand Rapids Hydroelectric Project (FERC No. 2362) and the Prairie River Hydroelectric Project (FERC No. 2361). Although licensing of the two Projects are separate processes, due to the proximity of the Projects to each other and same license expiration dates, MP has been filing joint relicensing documents such as the Pre-Application Document, Proposed Study Plan, Revised Study Plan, and Initial Study Report.

MP notes that FERC's April 5, 2019 Additional Information Requests (AIRs) contained in Schedule C of FERC's Comments on Preliminary Study Plans, Request for Studies, and Additional Information have been addressed in Exhibits A, E, and F of this DLA.

MP is filing the DLA with FERC electronically and is distributing this letter to the parties listed on the attached distribution list. For parties who have provided an email address, MP is distributing this letter via email; otherwise, MP is distributing this letter via U.S. mail. One paper copy of the DLA is being sent to the Minnesota State Historic Preservation Office. All parties interested in the relicensing process may obtain a copy of the DLA electronically through FERC's eLibrary at <https://elibrary.ferc.gov/idmws/search/fercgensearch.asp> under docket number P-2362 or on MP's website www.mnpower.com/Environment/Hydro. If any stakeholder would like a CD copy of the DLA, please contact me at nrosemore@mnpower.com.

In accordance with 18 CFR §5.16(e), interested parties may file comments regarding the DLA on or by November 1, 2021. All comments must be eFiled with FERC or sent to FERC at the following address:

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
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MP appreciates the input and participation of relicensing stakeholders in the Grand Rapids relicensing process. MP believes the limited degree of Project effects associated with this small, run-of-river facility with a limited operating band, in concert with the diligent input of relicensing stakeholders, has allowed MP to provide FERC with a thorough License Application to allow FERC to conduct its environmental analyses and issue a new license for the Project.

Our relicensing team looks forward to continuing working with FERC's staff, resource agencies, Indian Tribes, local governments, non-governmental organizations, and members of the public in support of relicensing this renewable energy facility. If there are any questions regarding the DLA or the overall



AN ALLETE COMPANY

relicensing process for the Project, please do not hesitate to contact me at (218) 725-2101 or at the email address above.

Sincerely,

Nora Rosemore
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Attachments:
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DLA

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DRAFT LICENSE APPLICATION

Volume I of II

GRAND RAPIDS HYDROELECTRIC
PROJECT
(FERC PROJECT NO. 2362)

Prepared for:
Minnesota Power

July 29, 2021



Prepared by:
HDR Engineering, Inc.

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GRAND RAPIDS HYDROELECTRIC PROJECT

DRAFT LICENSE APPLICATION

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Acronym List

°C	degrees Celsius
°F	degrees Fahrenheit
µmhos/cm	microsiemens per centimeter
ACHP	Advisory Council on Historic Preservation
AIS	aquatic invasive species
APE	area of potential effects
CFR	Code of Federal Regulations
cfs	cubic feet per second
CIP	Conservation Improvement Program
CPUE	catch per unit effort
CRMP	Cultural Resources Management Plan
CWA	Clean Water Act
DLA	Draft License Application
DO	dissolved oxygen
ECOS	Environmental Conservation Online System
EPRI	Electric Power Research Institute
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission or Commission
FLA	Final License Application
FPA	Federal Power Act
GIS	geographic information system
IBI	Index of Biotic Integrity
ICSWCD	Itasca County Soil and Water Conservation District
IFIM	instream flow incremental methodology
ILP	Integrated Licensing Process
IPaC	Information for Planning and Consultation (USFWS)

ISR	Initial Study Report
LMF	Laurentian Mixed Forest
MDNR	Minnesota Department of Natural Resources
mg/L	milligram per liter
MP	Minnesota Power
MPCA	Minnesota Pollution Control Agency
MW	megawatt
MWh	megawatt hours
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act of 1966, as amended
NID	National Inventory of Dams
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	National Resource Conservation Service
NRHP	National Register of Historic Places
NRI	Nationwide Rivers Inventory
NWI	National Wetland Inventory
PAD	Pre-Application Document
PM&E	protection, mitigation, and enhancement
POR	period of record
PSP	Proposed Study Plan
RM	river mile
ROR	run-of-river
RSP	Revised Study Plan
SCORP	Statewide Comprehensive Outdoor Recreation Plan

SD1	Scoping Document 1
SD2	Scoping Document 2
SHPO	State Historic Preservation Office
SPD	Study Plan Determination
SU	standard units (pH)
TCP	traditional cultural properties
TMDL	Total Maximum Daily Load
USACE	U.S. Army Corps of Engineers
USC	United States Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WMA	wildlife management area

INITIAL STATEMENT

BEFORE THE FEDERAL ENERGY REGULATORY COMMISSION

Application for a New License for a Major Water Power Project, 5 Megawatts or Less (18 Code of Federal Regulations [CFR] §§4.61 and 4.32).

(1) Minnesota Power (MP, Applicant, or Licensee), a subsidiary to ALLETE, Inc., applies to the Federal Energy Regulatory Commission (FERC or Commission) for a New License for the Grand Rapids Hydroelectric Project (Project), FERC No. 2362, as described hereinafter.

(2) The location of the Project is:

State or Territory:	Minnesota
County:	Itasca County
Township or nearby town:	City of Grand Rapids
Stream or other body of water:	Mississippi River

(3) The exact name, address, and telephone number of the applicant are:

ALLETE, Inc.
30 West Superior Street
Duluth, MN 55802-2093
Phone: (218) 279-5000

(4) The exact name, address, and telephone number of each person authorized to act as agent for the applicant in this application are:

Mr. David R. Moeller
Senior Attorney & Director of Regulatory Compliance
ALLETE, Inc., d.b.a. Minnesota Power
30 West Superior Street
Duluth, MN 55802
218-723-3963
dmoeller@allete.com

(5) The Applicant is a domestic corporation and is not claiming preference under Section 7(a) of the Federal Power Act.

(6)(i) The statutory or regulatory requirements of the state in which the project is located that affect the project as proposed, with respect to bed and banks and to the appropriation, division, and use of water for power purposes, and with respect to the right to engage in the business of developing, transmitting, and distributing power and any other business necessary to accomplish the purposes of the license under the Federal Power Act, are:

a. Minnesota Statutes, sections:

- 103A.203 states that the Minnesota Legislature found the public health, safety, and welfare of the state are promoted by the use of state waters to produce hydroelectric power.

- 103F.125 indicates that proper consideration should be given to the needs of an industry whose business requires that it be located within a floodplain.
 - 103G.127 delegates authority to the Commissioner of Natural Resources, with the concurrence of Board of Water and Soil Resources and the Commissioner of Agriculture to establish a program for regulating the discharge of material into waters of the state as necessary to obtain approval from the United States Environmental Protection Agency to administer the permit program under Section 404 of the Clean Water Act.
 - 103G.245 requires a state-issued permit to make changes in a reservoir, dam, waterway, or on a public water in any manner or diminish the course, current, or cross-section of public waters.
- b. Minnesota Administrative Rules, parts:
- 6115.0190 requires permit authority to place fill into public waters.
 - 6115.0200 requires permit authority to excavate and remove materials in public waters.
 - 6115.0210 requires permit authority for construction of structures in public waters.
- (ii) The steps which the applicant has taken or plans to take to comply with each of the laws cited above and 33 USC §1341 (Section 401) of the Federal Clean Water Act are:
- a. Pursuant to 18 CFR §5.18(b)(3)(i), applicants must file a request for a water quality certification, pursuant to Section 401 of the Federal Water Pollution Control Act, 33 S.C.S1341. MP applied to the Minnesota Pollution Control Agency (MPCA) for a Section 401 water quality certification for the Grand Rapids Project on December 16, 1991. The MPCA granted certification on December 11, 1992. The applicant plans to coordinate with the MPCA and will be the applicant for the Water Quality Certificate pursuant to Section 401 of the Federal Clean Water Act and Minnesota Statutes, Section 103G.245.
 - b. There are no changes planned at the Project and, therefore, no changes that would diminish the course, current, or cross-section of public waters.
 - c. There are no current construction projects planned at the Project requiring permits under Minnesota Regulations.
- (7) The Grand Rapids Project consists of a 21-foot-high concrete dam; a 465-acre reservoir; a powerhouse containing two generating units; a short transmission line extending from the powerhouse to the Blandin Paper Mill; and other appurtenances. The original construction on the Project dam started in May in 1901 by the Grand Rapids Power and Boom Company and came on line in 1902. Blandin Paper Company sold the Project to MP in 2000. The Grand Rapids Project primarily serves to supplement the power supply for the Blandin Paper Mill, an important economic asset and employment base in Grand Rapids.
- (i) The Project has an installed generating capacity of 2.1 MW.
 - (ii) The Project is an existing constructed project.
- (8) The Project does not occupy any lands of the United States.
- (9) No construction is proposed.

Additional Information Required by 18 CFR §4.32(a)

- (1) *Identify every person, citizen, association of citizens, domestic corporation, municipality, or state that has or intends to obtain and will maintain any proprietary right necessary to construct, operate, or maintain the project:*

MP presently holds, and will continue to hold, the proprietary rights necessary to operate and maintain the Project.

- (2) *Identify (providing names and mailing addresses):*

- (i) *Every county in which any part of the project and any Federal facilities that would be used by the project would be located:*

Itasca County
123 NE 4th Street
Grand Rapids, MN 55744

There are no federal lands or facilities associated with the Project.

- (ii) *Every city, town, or similar local subdivision:*

- (A) *In which any part of the project, and any Federal facilities that would be used by the project, would be located:*

City of Grand Rapids
420 N. Pokegama Avenue
Grand Rapids, MN 55744

There are no federal lands or facilities associated with the Project.

- (B) *That has a population of 5,000 or more people and is located within 15 miles of the Project Dam:*

Dale Adams, Mayor
City of Grand Rapids
420 North Pokegama Avenue
Grand Rapids, MN 55744

- (iii) *Every irrigation district, drainage district, or similar special purpose political subdivision:*

- (A) *In which any part of the project, and any Federal facilities that would be used by the project, would be located:*

Itasca County Soil and Water Conservation District
1889 East Highway 2
Grand Rapids, MN 55744

The Applicant is not aware of any additional drainage districts or other special purpose political subdivisions in the immediate vicinity of the Project. No federal facility is used or is proposed to be used by the Project.

- (B) *That owns, operates, maintains, or uses any project facilities or any Federal facilities that would be used by the project:*

No Project features will be owned, operated, maintained, or used by any irrigation district, drainage district, or other special purpose political subdivisions. No federal facility is used or is proposed to be used by the Project.

- (iv) *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 application:*

The Applicant is not aware of any other political subdivisions in the immediate vicinity of the Project that would be interested in, or affected by, this application.

- (v) *All Indian tribes that may be affected by the project:*

There are no tribal lands located within or adjacent to the FERC Project Boundary. The listing below includes Native American Tribes that may have an interest in the Project:

Bois Forte Band of Minnesota
Chippewa
5344 Lakeshore Drive
Nett Lake, MN 55772

Minnesota Chippewa Tribe
P.O. Box 217
Cass Lake, MN 56633

Leech Lake Band of Minnesota,
Chippewa Tribe
6530 U.S. Hwy 2 Northwest
Cass Lake, MN 56633

White Earth Band (Minnesota
Chippewa Tribe)
P.O. Box 418
White Earth, MN 56591

Lac du Flambeau Band of Lake,
Superior Chippewa Indians
P.O. Box 67
Lac du Flambeau, WI 54538

Menominee Indian Tribe of
Wisconsin
P.O. Box 910
Keshena, WI 54135

Apache Tribe of Oklahoma
P.O. Box 1330
Anadarko, OK 73005

Cheyenne and Arapahoe Tribes of
Oklahoma
P.O. Box 167
Concho, OK 73002

Upper Sioux Community of Minnesota
P.O. Box 147
Granite Falls, MN 56241

Mille Lacs Band of Ojibwe
43408 Oodena Drive
Onamia, MN 56359

Fort Belknap Indian Community of the Fort
Belknap Reservation of Montana
656 Agency Main Street
Harlem, MT 59526-9455

Fond du Lac Band of Lake Superior
Chippewa Administration
1720 Big Lake Road
Cloquet, MN 55720

Grand Portage Band of Chippewa
Indians
P.O. Box 428
Grand Portage, MN 55605

Red Lake Band of Chippewa Indians
15484 Migizi Drive
Red Lake, MN 56671

Exhibit A

Project Description

A.1 Project Location

A.1.1 Project Overview and Location

ALLETE, Inc. (ALLETE), doing business as Minnesota Power (MP or Applicant), is the Licensee, owner, and operator of the Grand Rapids Hydroelectric Project (Federal Energy Regulatory Commission [FERC] No. 2362). The Grand Rapids Project is a 2.1 megawatt (MW), run-of-river (ROR) facility located at river mile 1,182 on the Mississippi River in the City of Grand Rapids in Itasca County, Minnesota (see Figure A.1-1).

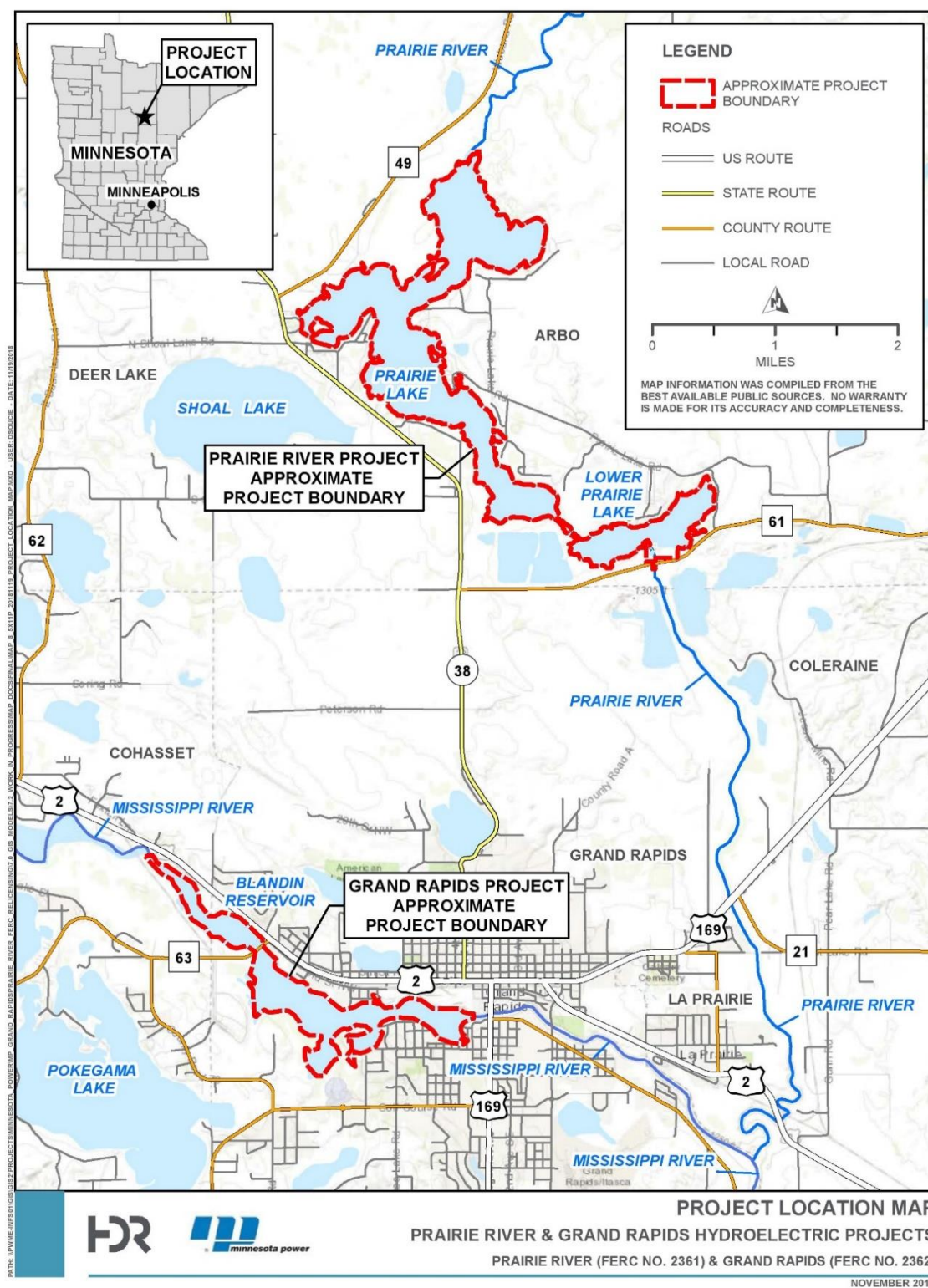


Figure A.1-1 Project Location Map

A.2 Turbines and Generators

A.2.1 Generating Units

Table A.2-1 provides the number and type of generating units. There are two units at the Project – Unit No.4 and Unit No. 5.

Table A.2-1 Generating Units

Unit No.	Year Installed	RPM	Manufacturer	MW	KVA	Power Factor
4	1917	120	Electric Machinery	0.6	750	0.80
5	1949	150	Electric Machinery	1.5	1,875	0.80

There are no auxiliary units or any provisions for future units at the Project. The dependable capacity of the Project is 0.6 MW.

A.2.2 Turbines

Table A.2-2 provides the number, type, and capacity of the turbines.

Table A.2-2 Turbine Units

Unit No.	Manufacturer	Geometry	Runner Type	Horsepower	Head (ft)	Capacity (cfs)	MW
4	James Leffel	Vertical	Francis	750	19	600	0.56
5	Allis-Chalmers	Vertical	4 Blade Propeller	1,900	19	1,000	1.42

A.3 Project Operation

A.3.1 Daily Operation

The Grand Rapids Project is an unmanned hydroelectric generating facility adjacent to MP's Rapids Energy Center. In December 2019, operational control and remote monitoring of the facility was transferred to the Hydro Operator located at MP's Thomson Development of the St. Louis River Project, FERC No. 2360 (Thomson). This transfer aligns the operation of Grand Rapids Hydro with the rest of MP's Hydro fleet. All operations are manual and are performed either locally or remotely. The generating units can be brought online either locally or remotely. The spillway Tainter gate and slide gate 3 can be remotely operated when temperatures are above freezing and free from ice. All other operations are performed locally by Hydro personnel dispatched from Thomson by the Hydro Operator. Standby personnel from the adjacent Rapids Energy Center are also available for assistance. The Manager of Rapids Energy Center is the

person responsible for station operation and maintenance. No operational model has been developed for this Project and operational decisions are based on procedures developed from experience gained while operating the Project.

The facility is operated in ROR mode whereby inflows at the dam match outflows, to the greatest extent possible. The pond level at the dam is maintained at elevation 1,268.2 feet (National Geodetic Vertical Datum 1929 [NGVD 29]). As required by the current FERC License Article 402, reservoir fluctuations are limited to ± 0.1 feet under normal operating conditions. ROR mode is maintained by adjusting the water flow to the turbines and spillway gates as needed to maintain pond level within the allowable operating band. Available flow is first used to run the generating units at capacity and then any excess is passed through the spillway gates. This involves a combination of remote and local operations as directed by the Hydro Operator in response to changes in inflow.

MP proposes that FERC include language in the new Project license to clarify deviations and deviation reporting requirements, as follows:

Planned Deviations: *Run-of-river operation and minimum flows may be temporarily modified for short periods, of up to 3 weeks, after mutual agreement among the licensee and the Minnesota Department of Natural Resources (MDNR). After consultation with the agency, the licensee must file a report with the Secretary of the Commission as soon as possible, but no later than 14 calendar days after the onset of the planned deviation.*

Unplanned Deviations: *Run-of-river operation and minimum flows may be temporarily modified if required by operating emergencies beyond the control of the licensee (i.e., unplanned deviations). For any unplanned deviation that lasts longer than 3 hours or results in visible environmental effects such as a fish kill, turbidity plume, bank erosion, or downstream flooding, the licensee must file a report as soon as possible, but no later than 14 days after each such incident.*

Inflow to the Project is controlled by the U.S. Army Corps of Engineers (USACE) by releases from the USACE's Pokegama Dam, located approximately three miles upstream of the Grand Rapids Project. When the Pokegama Dam operator is notified by the USACE St. Paul District that dam release rates are to be changed, the operator provides notice of flow changes to MP operators by telephone. Typically, flow changes at Pokegama Dam are observed as elevation changes at Grand Rapids Dam, formerly Blandin Dam, one-half hour to an hour later.

MP participates in the Mississippi River Low Flow Management Plan coordinated by the MDNR in cooperation with the USACE. The plan defines operating procedures for Mississippi River dams upstream of St. Paul, Minnesota, under low-flow conditions.

A.3.2 Flow Monitoring and Recording

The reservoir elevation is monitored continuously using an electronic water level sensor. The signals are continuously transmitted to MP's Hydro Operator to be recorded and monitored. Other plant parameters electronically transmitted to the Hydro Operator include unit status and alarms. With the Project being operated in ROR mode, changes in operations are made in response to any increases or decreases in pond elevation.

Continuous operating records for the Grand Rapids Project are kept on servers at MP's Thomson Hydro Project and are backed up off site. The hourly data recorded consists of the pond elevation; river flow used for generation and river flow passed through the spillway gates; unit generation; and electrical data for the units. Flows are calculated from unit operating curves and gate discharge curves.

Water levels downstream of the Project are recorded by U.S. Geological Survey (USGS) Gage No. 05211000, approximately 2,000 feet downstream.

A.3.3 Maintenance and Construction

Routine maintenance work, including dam repairs, gate painting, and replacement of gate chains is performed as required to assure safe, reliable, and efficient operation of the Project. All equipment, structures, and facilities receive attention as needed in order to properly maintain the Project. Hydro personnel are on call on a 24-hour basis for assistance as required. The Project is inspected, at a minimum, once a week. Capital improvements are made as required. Maintenance personnel remove each unit from service once per year, if possible, for a unit inspection. During these inspections, the generator and auxiliary equipment are cleaned, inspected, and adjusted as required. The units are dewatered so that the turbines can be inspected at least every seven years.

Maintenance at this station also involves removal of debris from the trashracks. The debris that collects is removed from the trashracks and disposed of properly. Floatable litter and other material of unnatural origin which collects on the front wall of the forebay is removed from the river for proper disposal.

In conformance with FERC requirements for dam safety, the spillway Tainter gate is operated at least once per year. This verifies the integrity of the gate, hoist, and lifting operation. Depending on river flow and station operation, the spillway Tainter gate is normally operated more frequently than is required by the once-a-year FERC operation.

A.3.4 Public Safety

Safety for the public is provided by surrounding the perimeter of the gate structures with security fences. Locks are installed at access points through each fence and entry points into the facility. All outdoor equipment is secured with locks to limit access or use. Where appropriate, warning signs are posted on the fence, structures, or surrounding property warning of restricted access and danger. There are also signs warning of "Dam Ahead," "Danger Area," and "Keep Away." Signs also indicate the station name with company name and FERC Project number. designate the canoe portage route. Prior to the remote operation of a spillway gate, a horn and flashing light are activated to warn of an impending gate operation.

A positive boat-restraining barrier consisting of a steel cable with floats and warning signs is placed upstream of the entire spillway section of the dam. This restricts river access to the spillway gates and warns of danger ahead. This is placed in the water prior to Memorial Day weekend and remains in place until after Labor Day weekend. Two secondary barriers are directly in front of the powerhouse and the water intake for the Blandin paper mill and remain in place year-round.

Because the hydro facility is intertwined with the Blandin mill, the building entry alarm and fire alarm in the powerhouse are electronically monitored from Blandin's security office. In the event of an alarm, Blandin security personnel immediately notify MP's Rapids Energy Center.

Most water projects licensed under Part 1 of the Federal Power Act are required by law to have an Emergency Action Plan (EAP). The EAP contains instructions to key Project personnel, detailing plans for notifying affected persons and appropriate Federal, State, and local agencies and procedures for controlling the flow of water. It is designed to provide early warning to upstream and downstream inhabitants, property owners, operators of water-related facilities, recreational users, and other persons in the vicinity who might be affected by a Project emergency. The Grand Rapids EAP is updated annually. Developments upstream and downstream of the Project are reviewed annually for changes that could affect the potential for loss of life or significant property damage. The Grand Rapids Project is currently classified as having a significant hazard potential.

A.3.5 Inspection and Monitoring

Annually, personnel from FERC conduct an Operation Inspection and prepare a report. This inspection covers items such as dam safety, public safety, gate operation, and monitoring records. In addition, in 2018, BARR completed the Independent Consultant Safety 12D Inspection and found the Project “in good condition, well-maintained and suitable for continued safe and reliable operation.” The Independent Consultant evaluated the structural and physical condition and hydraulic capacity of the facility.

An elevation and movement survey is conducted each year as part of the Dam Safety Surveillance and Monitoring Plan (DSSMP). This involves monitoring alignment points at various locations encompassing the total facility. Any settlement or horizontal movement can be noted by comparing information to previous readings. Other components of the DSSMP include regular piezometers and crack gage readings, bathymetric surveys, visual inspections, and underwater dive inspections.

A.3.6 Miscellaneous

A combined Spill Prevention Control and Countermeasure Plan (SPCC Plan) has been prepared for the Rapids Energy Center and Grand Rapids Project and is implemented in response to, and in conformance with, the requirements of the U.S. Environmental Protection Agency's Oil Pollution Prevention Regulation 40 CFR Part 112. The SPCC Plan describes the facilities, lists equipment using oil, and discusses oil containment and clean up. The Plan also contains a telephone reporting procedure with names, addresses, and phone numbers of both company and agency personnel that need to be notified in the event of an oil spill.

A.4 Project Generation

The average annual generation at the Grand Rapids Project from 2013 through 2020 is approximately 7,676 megawatt hours (MWh).

A.5 Estimated Average Head

The design head is 19 feet.

A.6 Reservoir

Blandin Reservoir has a surface area of approximately 465 acres and a normal elevation of 1,268.2 feet.

A.7 Hydraulic Capacity of the Project

The range in hydraulic capacity for each unit varies from the minimum flow necessary for power generation to the flow necessary for economic operation. The flow range for Unit 4 varies from 270 to 600 cfs; Unit 5 flow varies from 450 to 1,000 cfs. Based on the maximum flow through the units, the hydraulic capacity of the plant is 1,600 cfs. The spillway gates have a discharge capacity of approximately 5,000 cfs at normal pool. Flow in excess of that required for generation is passed through the spillway gates.

The Grand Rapids Project is located at river mile 1,182 which has a drainage area of 3,370 square miles. The average stream flow from 1993 to 2020, based on data from USGS Gage No. 05211000 Mississippi River at Grand Rapids, MN (located approximately 2,000 feet downstream from the Grand Rapids Dam), is 1,443 cfs. Flow duration curves are attached as Attachment A-1.

A.8 Project Facilities

A.8.1 Existing Project Facilities

The facility consists of a concrete dam, reservoir (Blandin Reservoir or Paper Mill Reservoir), and powerhouse with two generating units (referred to as Units 4 and 5). Figure A.8-1 depicts the Grand Rapids Project facilities.



Figure A.8-1 **Grand Rapids Project Facilities**

A.8.1.1 Dam

Grand Rapids Dam has a maximum height of 27 feet and a total length of 349 feet. The dam primarily consists of an 80-foot-long training wall on the right abutment, a gated spillway section that is 21 feet high and 78 feet long with an operators' deck above the spillway, a Tainter gate spillway bay section that is 21 feet high and 12 feet long, a powerhouse and a left non-overflow section that is 27 feet high and 252 feet long. The top of the right abutment knee wall is at elevation 1,271.3 feet. The sill of the overflow spillway is at elevation 1,260.5 feet. The top of the operator's deck is at elevation 1,269.2 feet. The sill elevation of the Tainter gate spillway bay is at elevation 1,254.1 feet. The generator room floor of the powerhouse is at elevation 1,275.6 feet. The top of the left non-overflow section is at elevation 1,275.6 feet. All elevations are in NGVD 29. Left and right are referenced looking in the downstream direction.

The gated spillway section consists of a concrete ogee crest with a downstream concrete apron. The crest is founded on a rock-filled timber crib and the apron is founded on rocky gravel and wood "stub" piles. There are 20-foot-deep, steel sheetpile cutoff walls at the upstream and downstream of the section that run the length of the spillway. The spillway has piers for stoplogs and slide gates. The piers also support an operator's bridge, which provides access to the powerhouse and mill from the main office building. The bridge also crosses the Tainter gate spillway bay, which is located to the left of the spillway. Located along the left side of the spillway is a concrete training wall which is common with the Tainter gate spillway bay.

The Tainter gate bay section consists of a concrete slab that is a minimum of 4 feet thick at its downstream end. The concrete slab is founded on rocky gravel and 1-foot-diameter wood piles spaced at 3 feet on center. There is a steel sheetpile cutoff wall at the upstream end of the section that runs the length of the Tainter gate bay. The right wall of the Tainter gate bay consists of a massive concrete wall which is common with the gated spillway. The left side of the Tainter gate bay is separated from the powerhouse by the end of the wall of the powerhouse substructure and a downstream training wall.

The left non-overflow section consists of a concrete retaining wall that is founded on wood bearing piles that are 25 to 35 feet deep. There is a 30-foot-deep, steel sheetpile cutoff wall at the heel of the section that runs the length of the section.

The gated spillway section has six spillway bays with three stoplog gates and three steel slide gates. The spillway bays are numbered Bay 1 to 6 from right to left, with the stoplog gates and the steel slide gates numbered based on the bay numbering. The stoplog gates are located in

Bays 1, 5, and 6. The steel slide gates are located in Bays 2, 3, and 4. Stoplog gate 1 is approximately 12.6 feet wide by 8 feet high; stoplog gate 5 is approximately 12 feet wide by 8 feet high; and stoplog gate 6 is approximately 14.4 feet wide by 8 feet high. The south slide gate (gate 2) is approximately 8.5 feet wide by 8 feet high; the center slide gate (gate 3) is approximately 12 feet wide by 8 feet high; and the north slide gate (gate 4) is approximately 8.5 feet wide by 8 feet high, all over a sill at elevation 1,260.6 feet. The Tainter gate bay has one Tainter gate that is approximately 12 feet wide by 14 feet high over a sill elevation of 1,254.1 feet.

The stoplog gates are moved by operators using metal hooks that are used for lifting/lowering the individual timber logs. The slide gates are electrically driven and locally operated by an operator at each gate. The slide gates have an overhead lifting frame and can be manually lifted with a chain hoist in the event of power failure. The Tainter gate is operated locally with an electrically driven chain hoist. It can also be operated with a manual hand crank or an electrically driven portable driver that can be powered by a back-up battery bank and inverter. A steam de-icing system is manually operated and can be used on the Tainter gate to assist with de-icing of the gate pivot points and gate/wall interface.

A.8.1.2 *Intake*

The intake and outlet works are integral with the powerhouse. Unit No. 4 has a 21-foot-wide by 16.5-foot-high intake and Unit No. 5 has a 31-foot-wide by 16.5-foot-high intake. The steel trashracks have the same dimensions of the intakes and protect both turbines. The 3/8-inch vertical trashrack bars have 4 inches and 3 inches of clear spacing on Units 4 and 5, respectively. The adjacent mill water intake structure (a non-Project facility) is equipped with a separate trashrack and a traveling wire mesh screen.

A.8.1.3 *Powerhouse*

The 58-foot by 60-foot powerhouse is a concrete, steel, and masonry structure and contains two vertical units. The powerhouse has a concrete substructure that is supported by timber piles and there is a sheetpile cutoff wall at the upstream end of the powerhouse. There is also a steel sheetpile cutoff wall under the concrete foundation of the mill building that is located upstream and to the left of the powerhouse.

The concrete substructure of the powerhouse contains the main generator floor, turbine intakes, turbine pits, and draft tubes. The turbine pits are 21 feet by 27 feet for Unit 4 and 31 feet by 27 feet for Unit 5. The turbine pits are defined as the downstream wall to the headgate slot. The draft

tube for Unit 4 has two openings that discharge into the tailrace that are both 9.5 feet wide by 10.75 feet tall. The draft tube for Unit 5 has two openings that discharge into the tailrace that are both 15 feet wide by 10.75 feet tall. The superstructure consists of a steel frame building and masonry walls. The structure shelters the generators, controls, and switchgear. The powerhouse also has an overhead crane and steel bulkheads which are used for dewatering the turbine bays. The current powerhouse was constructed following a cofferdam breach in 1948; reconstruction efforts included a new powerhouse and turbine repairs and replacement.

A.8.1.4 *Transmission*

There is no transmission line, switchyard, or substation associated with the Project.

A.9 Project Costs, Value, and Purpose

A.9.1 Estimated Cost of the Project

Information to be presented in the Final License Application (FLA).

A.9.2 Estimated Capital Costs

Information to be presented in the FLA.

A.9.2.1 *Estimated Operations and Maintenance Cost of Proposed Environmental Measures*

MP is not proposing any modifications to the Project or changes in Project operations. Table A.9-1 presents the estimated capital costs and the estimated operations and maintenance (O&M) expenses of each proposed environmental measure.

Table A.9-1 Costs of Proposed Environmental Measures

Proposed Environmental Measure	Estimated Capital Cost (2021 USD)	Estimated Annual O&M Expense (2021 USD)
Continued implementation of the Cultural Resources Management Plan	To be presented in the FLA.	
Continued implementation of best management practices to prevent the spread of terrestrial and aquatic invasive species	To be presented in the FLA.	

A.9.3 Purpose of the Project

All energy output from the Project is used in the Blandin Paper Mill for lighting and to power machinery. No power is sold or delivered to the local utility grid. The continued availability of low-cost power generated by the Project is essential to the economic viability of the Blandin Paper Mill.

A.9.4 Cost to Develop the License Application

Information to be presented in the FLA.

A.9.5 Value of Project Power

A.9.5.1 *On-Peak and Off-Peak Value*

The Project operates in ROR mode. Therefore, this section is not applicable.

A.9.6 Changes in Project Generation or Operations

No changes to Project facilities, generation, or operations are proposed.

A.9.7 Net Investment of the Project

Information to be presented in the FLA.

A.9.8 Annual Operation and Maintenance Costs

Table A.9-2 presents the estimated annual costs of Project O&M, including insurance, administration, taxes, depreciation, and general costs.

Table A.9-2 Estimated Annual Cost of Project O&M

Item	Estimated Annual Cost (2021 US Dollars)
Operations and Maintenance (O&M)	To be presented in the FLA.
Insurance Fees	To be presented in the FLA.
Administrative and General	To be presented in the FLA.
Taxes	To be presented in the FLA.
Depreciation	To be presented in the FLA.
Total	To be presented in the FLA.

A.10 Single Line Diagram

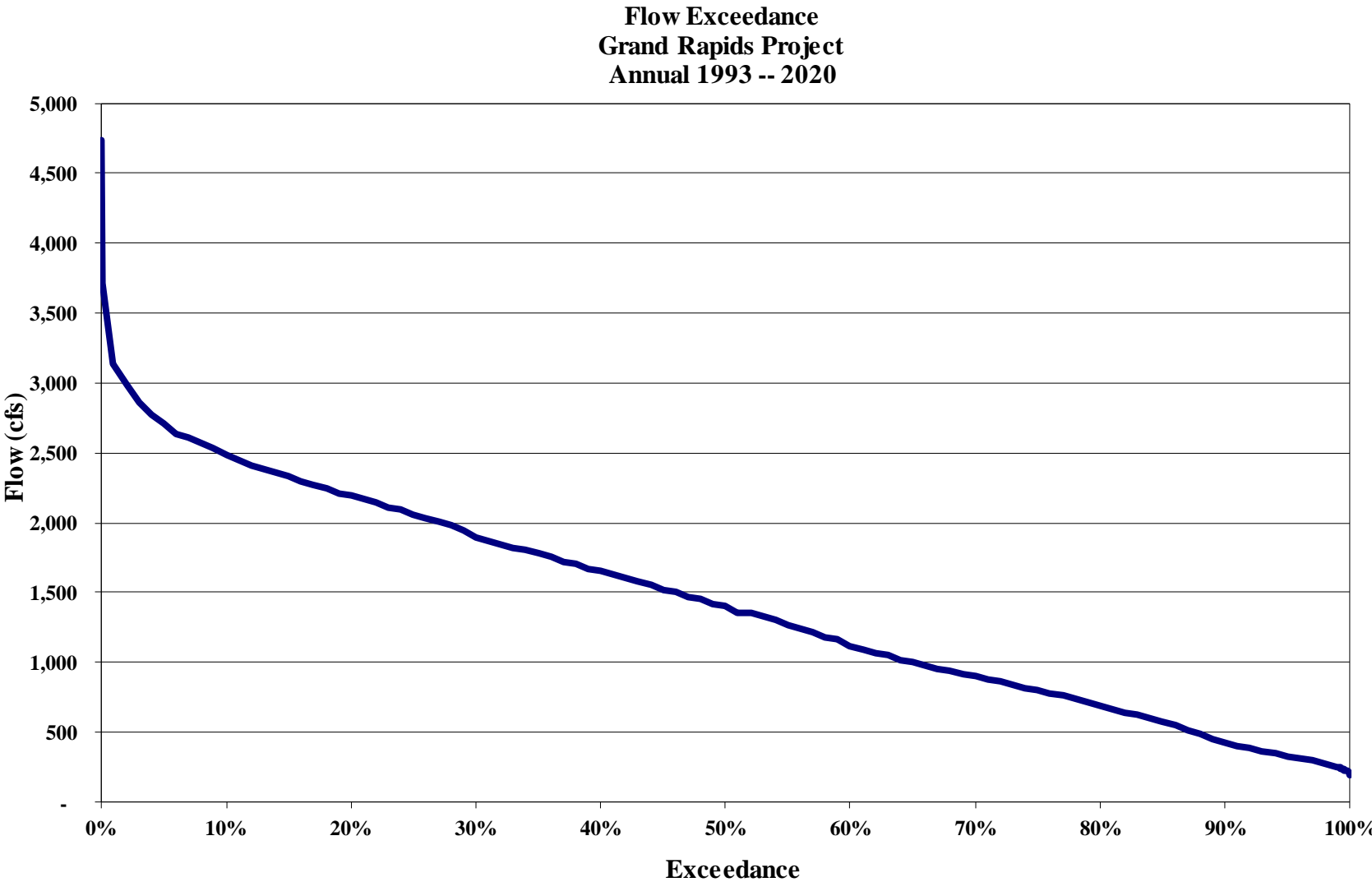
The Grand Rapids Project single-line diagram will be included in Volume II of the FLA (Filed as Controlled Unclassified Information//Classified Energy/Electric Infrastructure Information [CUI//CEII]).

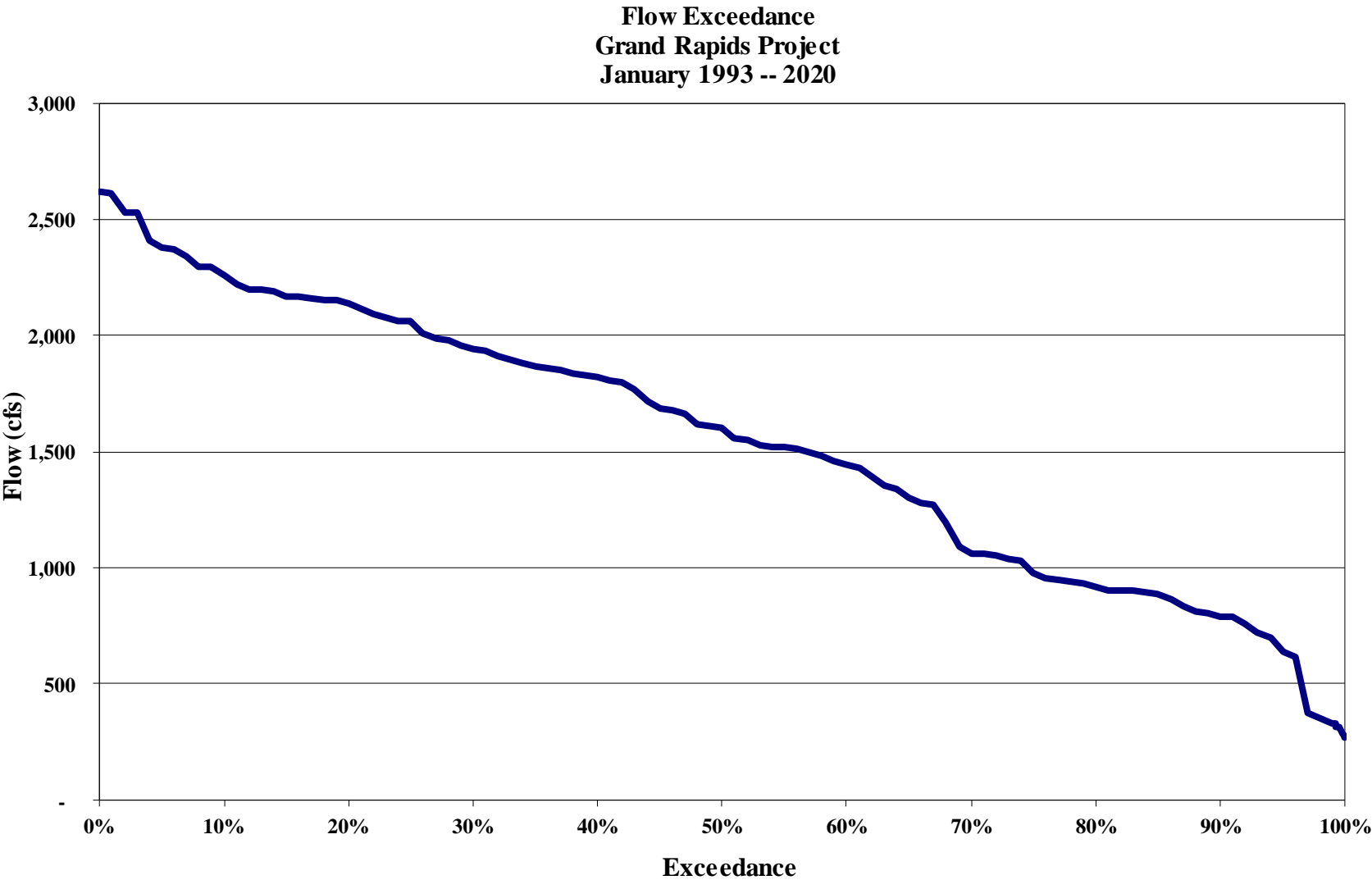
A.11 Measures to Ensure Safe Management of the Project

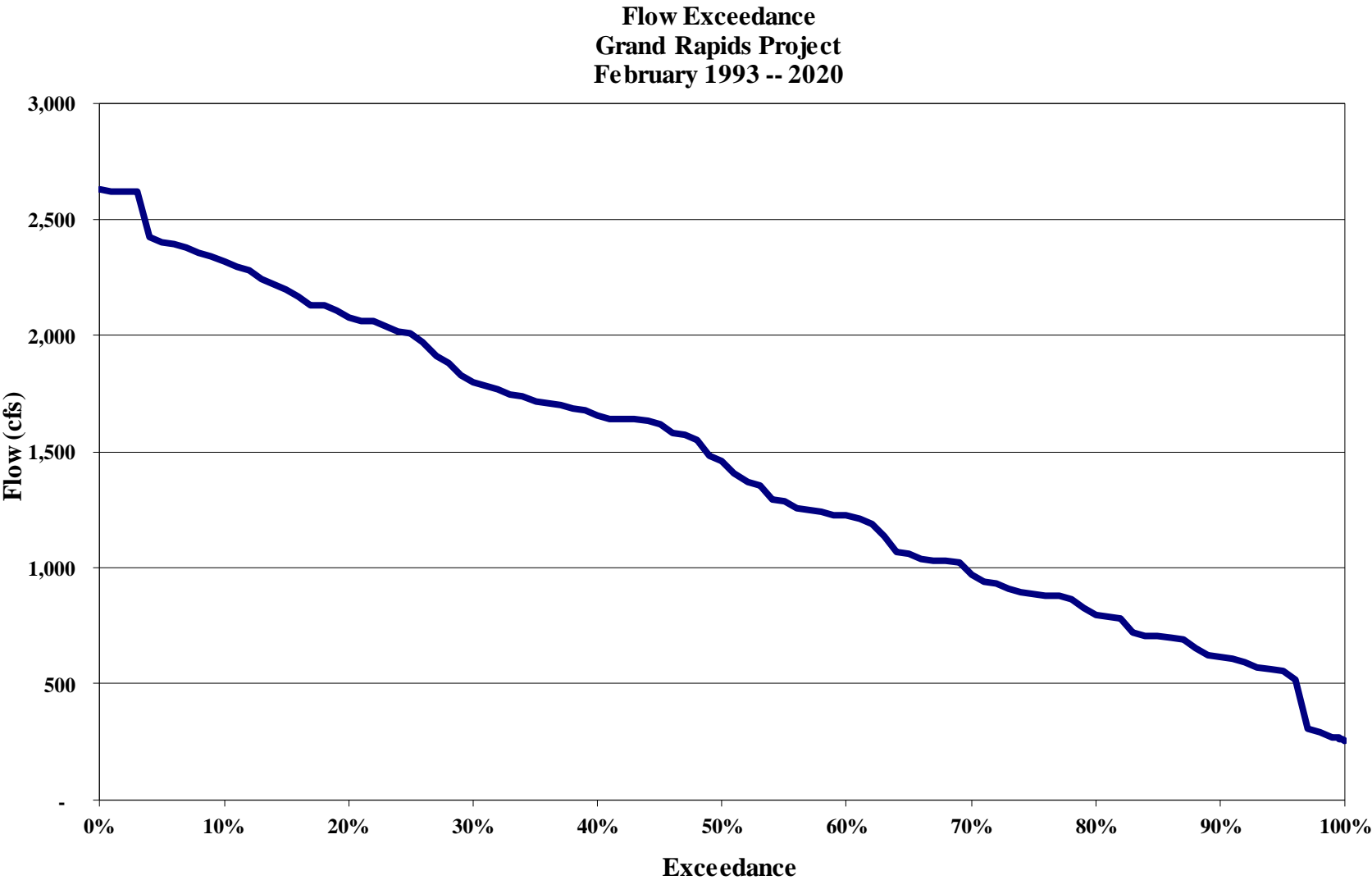
The Licensee has safely operated, maintained, and managed the Project since its acquisition. These same practices will be continued under the new license, subject to any new terms and conditions contained therein.

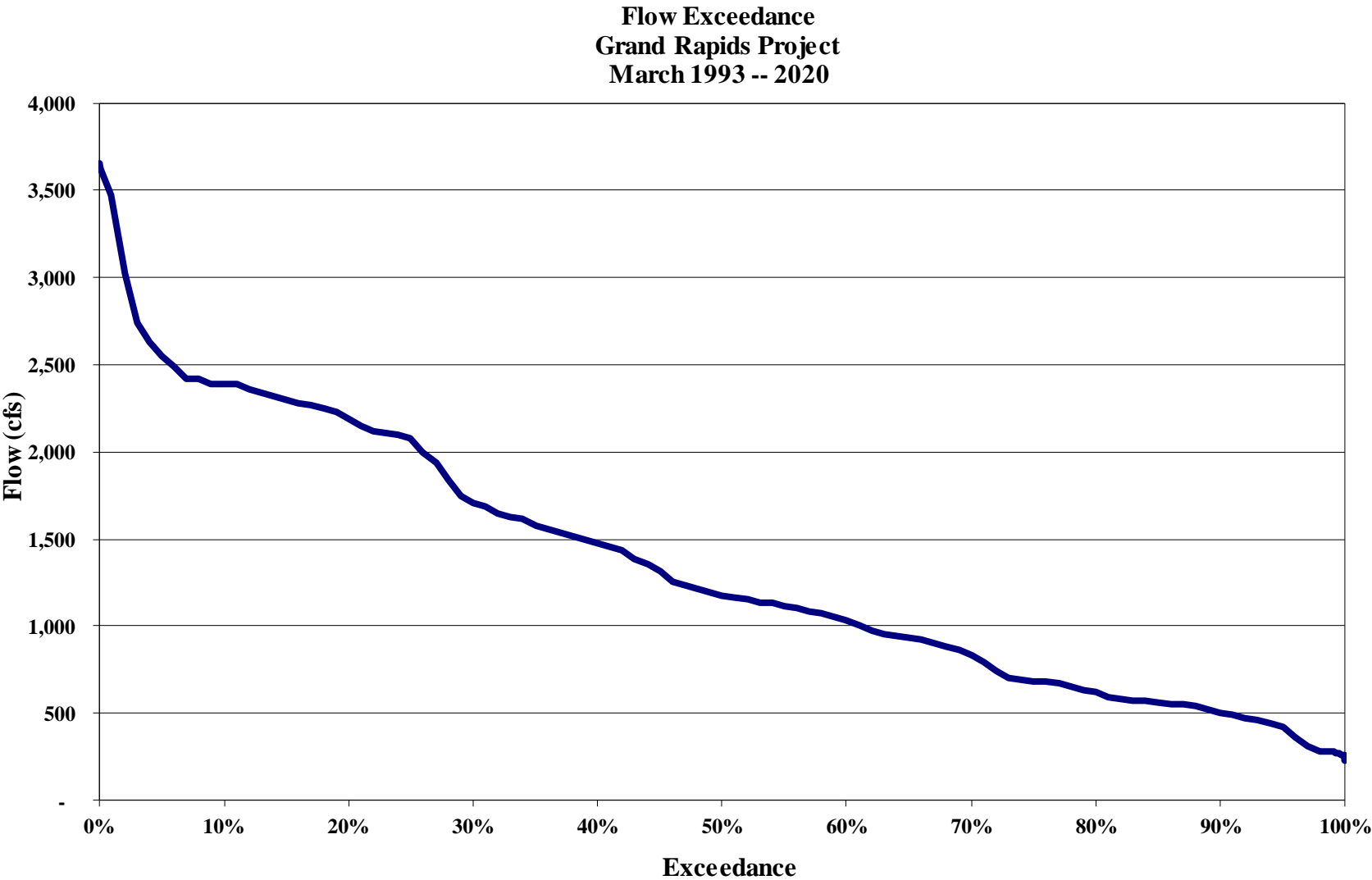
Attachment A-1

Grand Rapids Flow Duration Curves

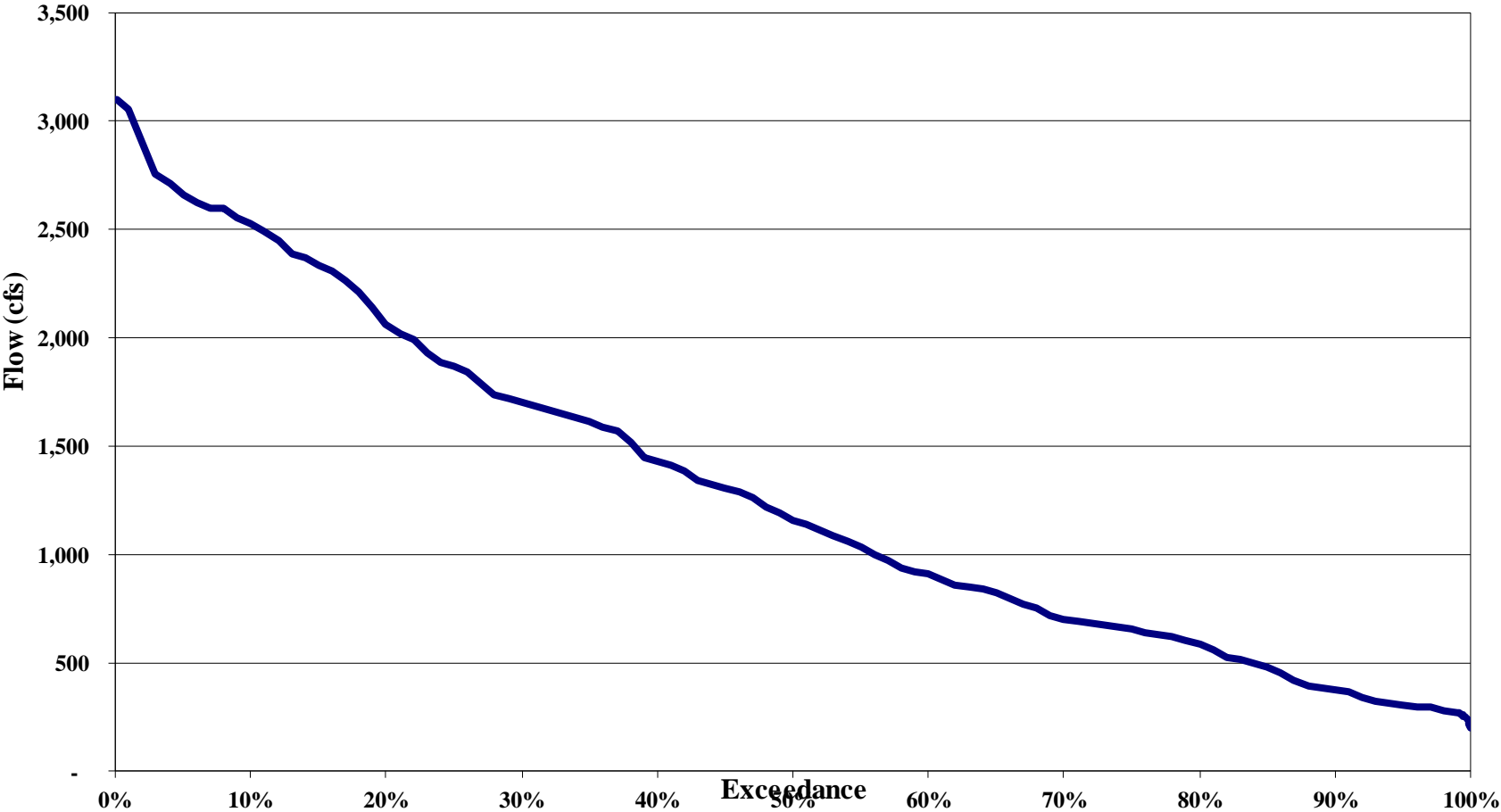




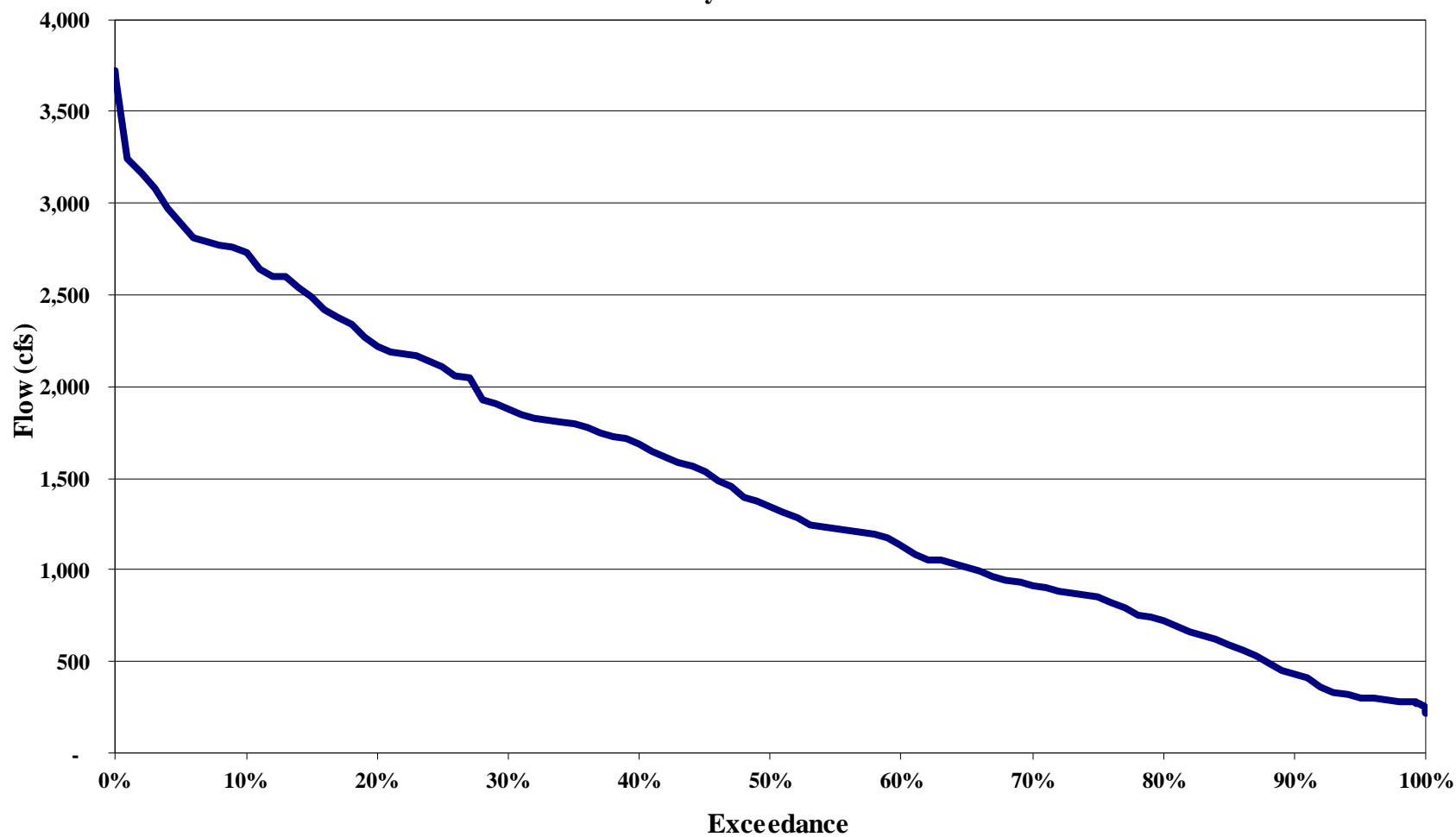


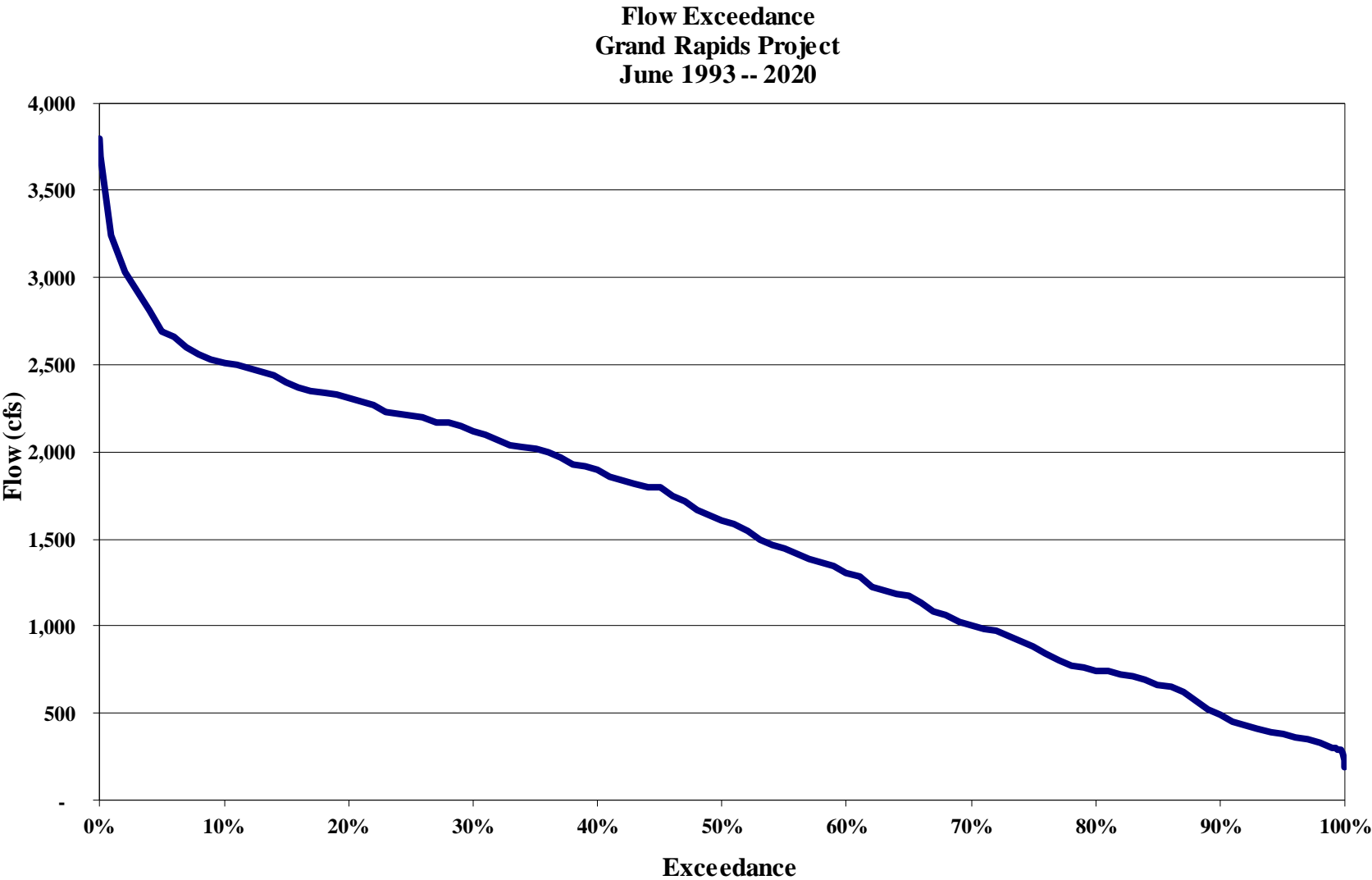


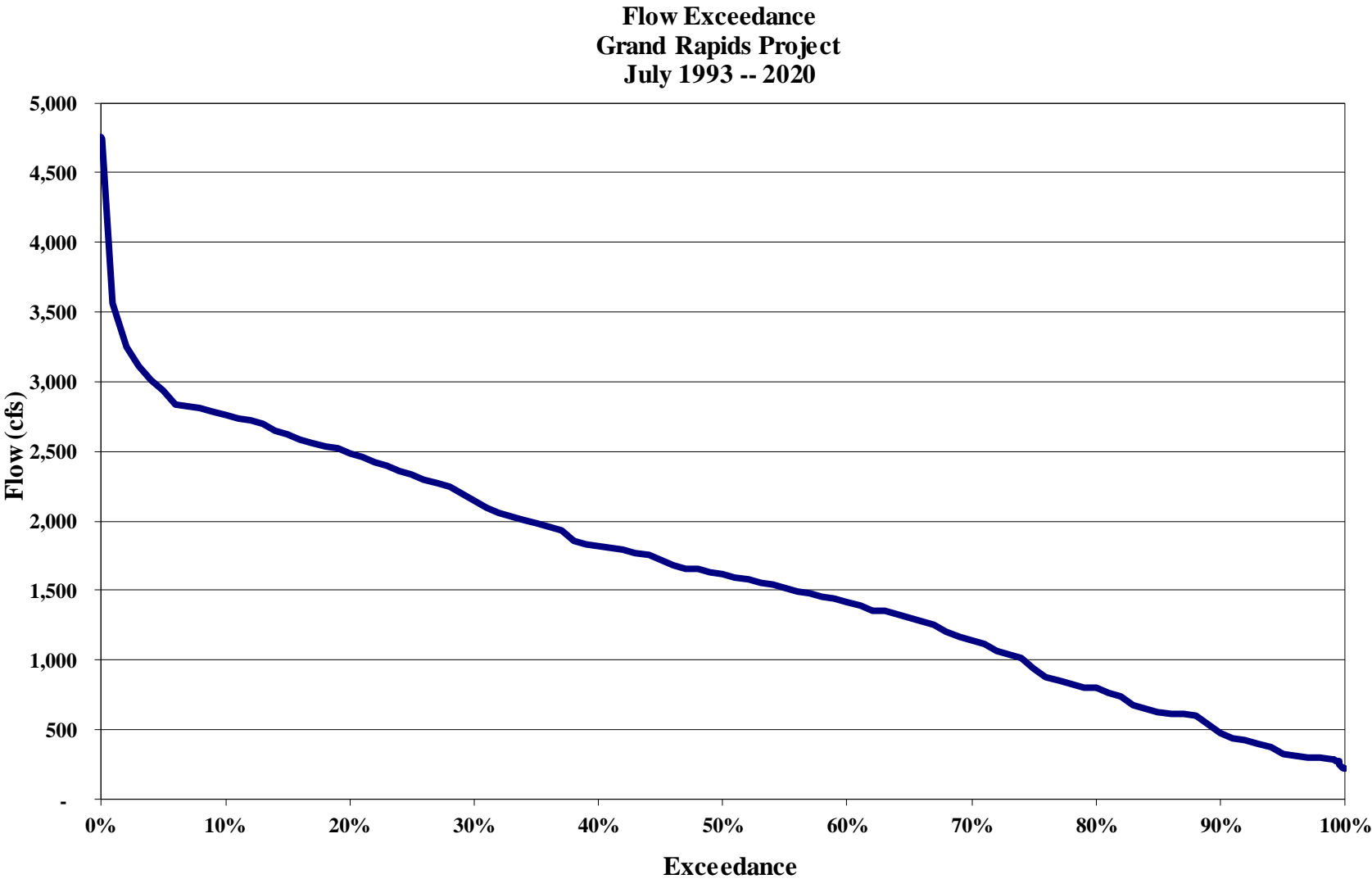
**Flow Exceedance
Grand Rapids Project
April 1993 -- 2020**

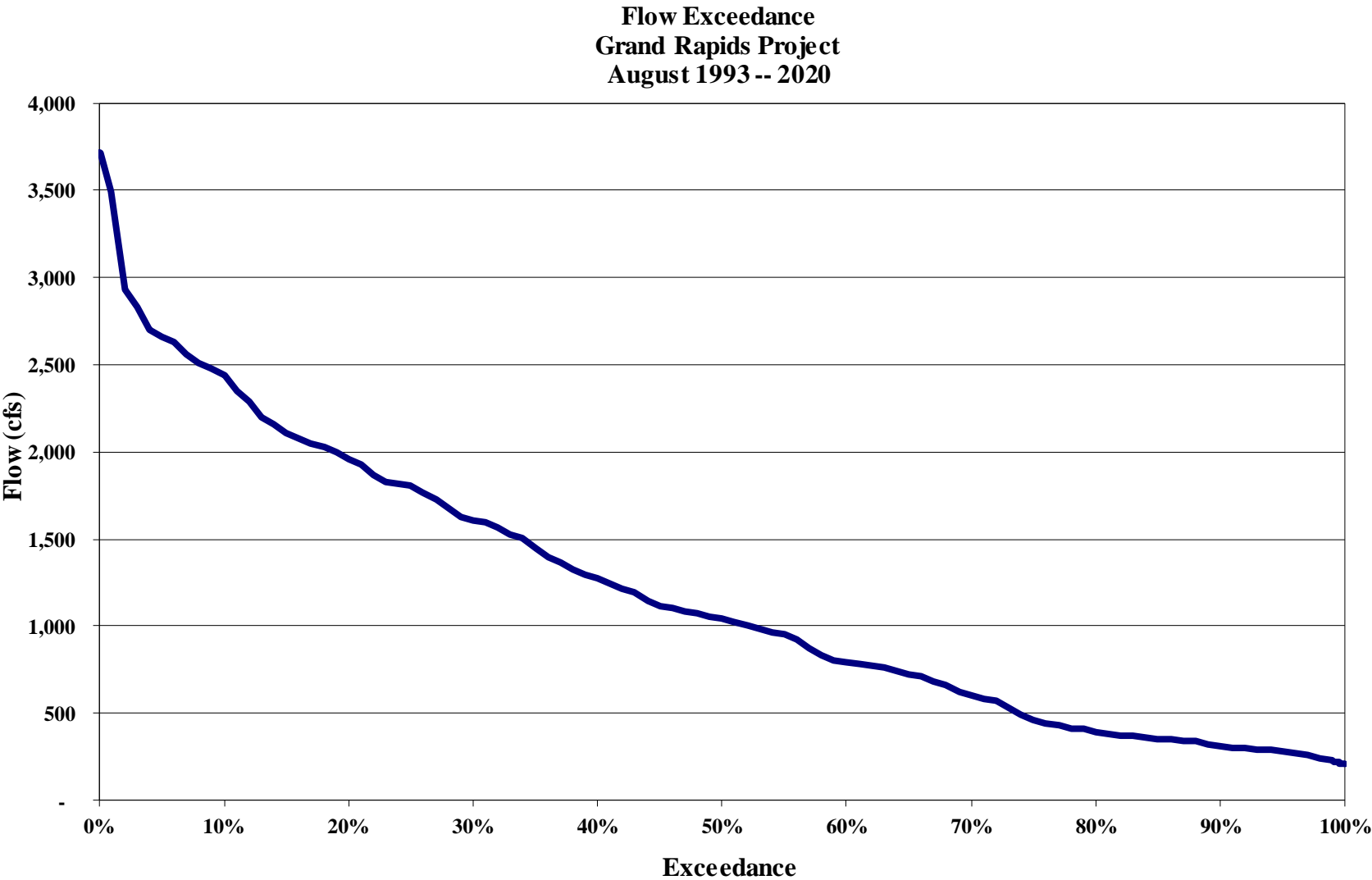


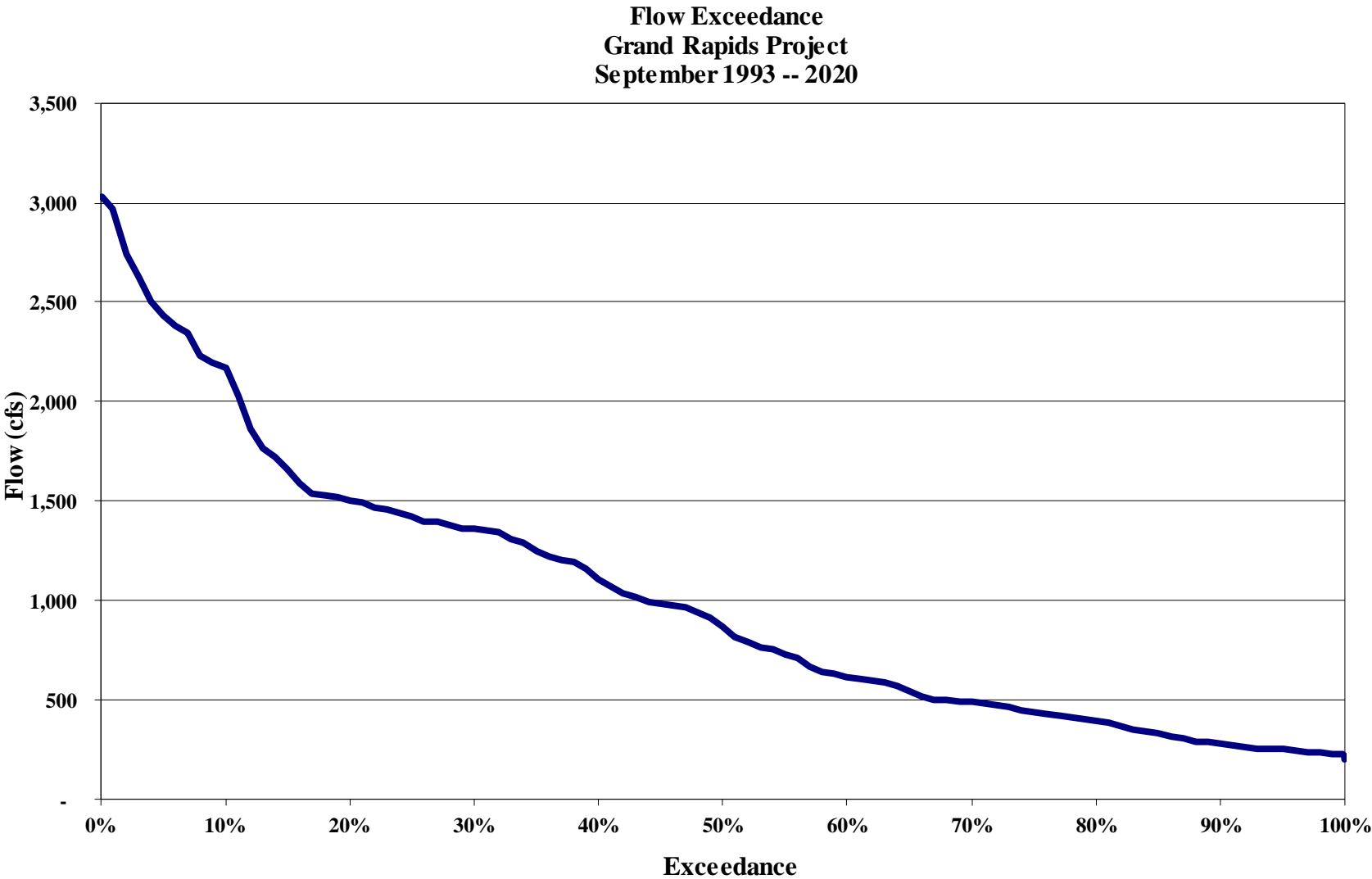
**Flow Exceedance
Grand Rapids Project
May 1993 -- 2020**

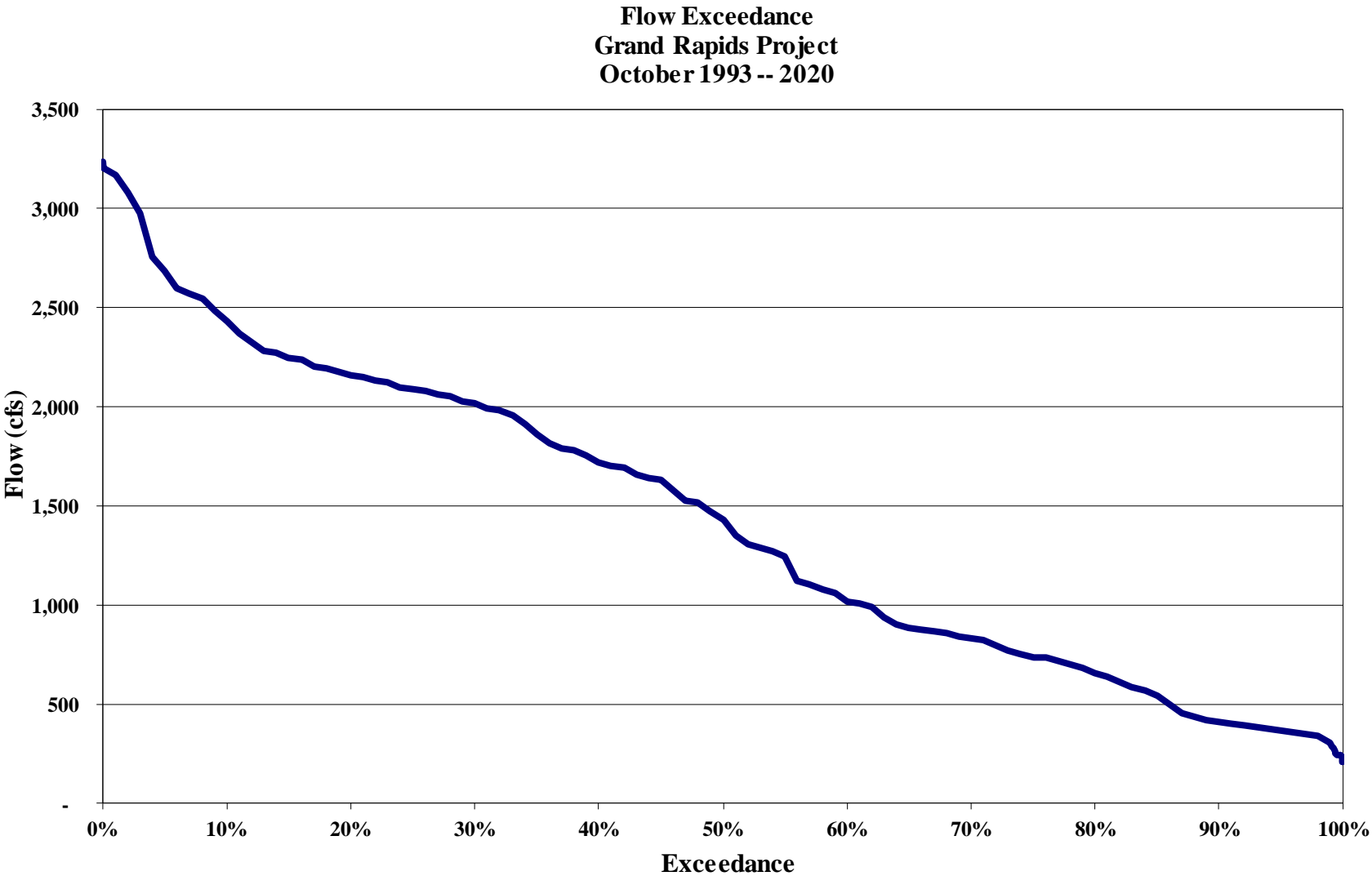




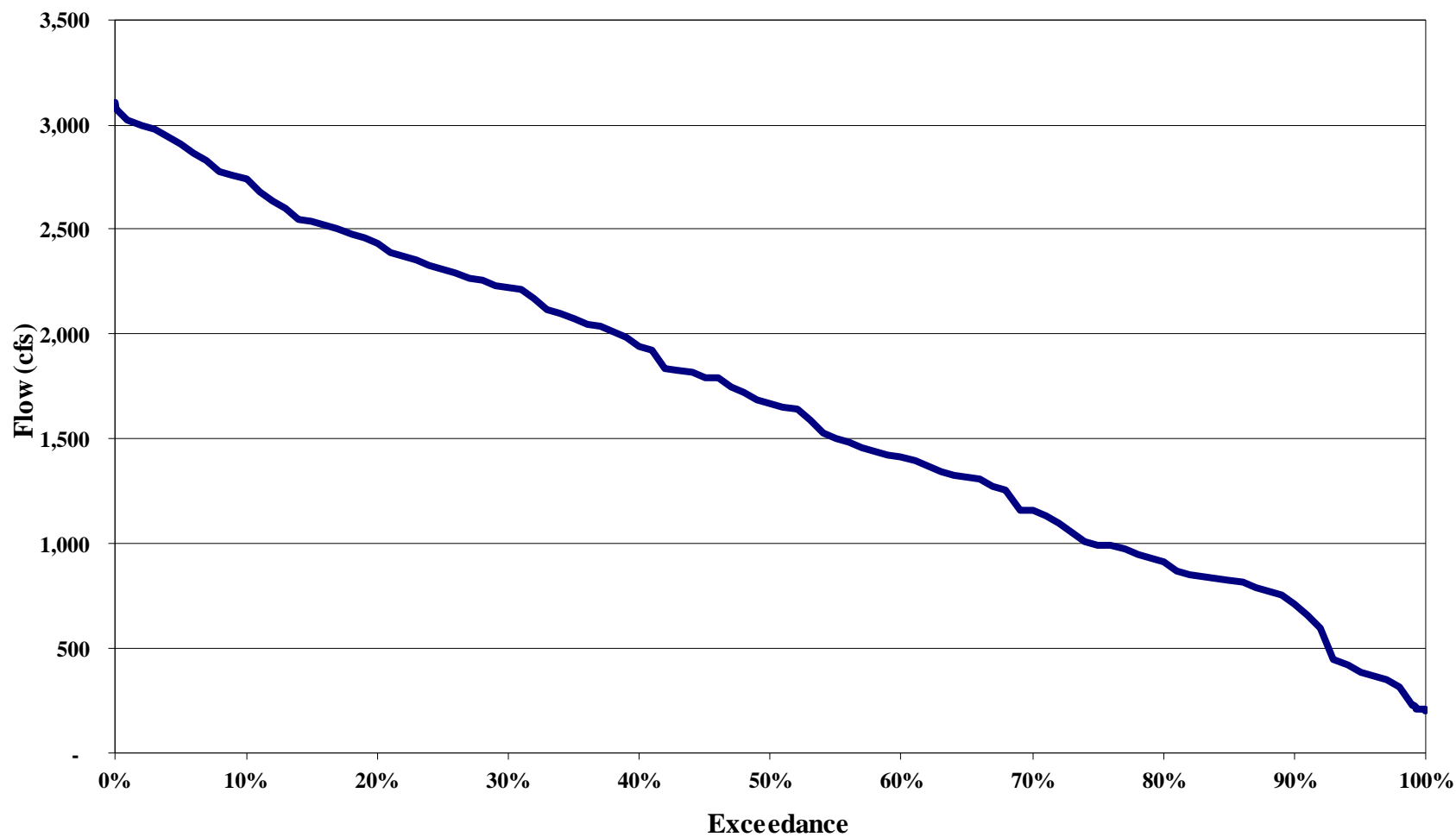








**Flow Exceedance
Grand Rapids Project
November 1993 -- 2020**



**Flow Exceedance
Grand Rapids Project
December 1993 -- 2020**

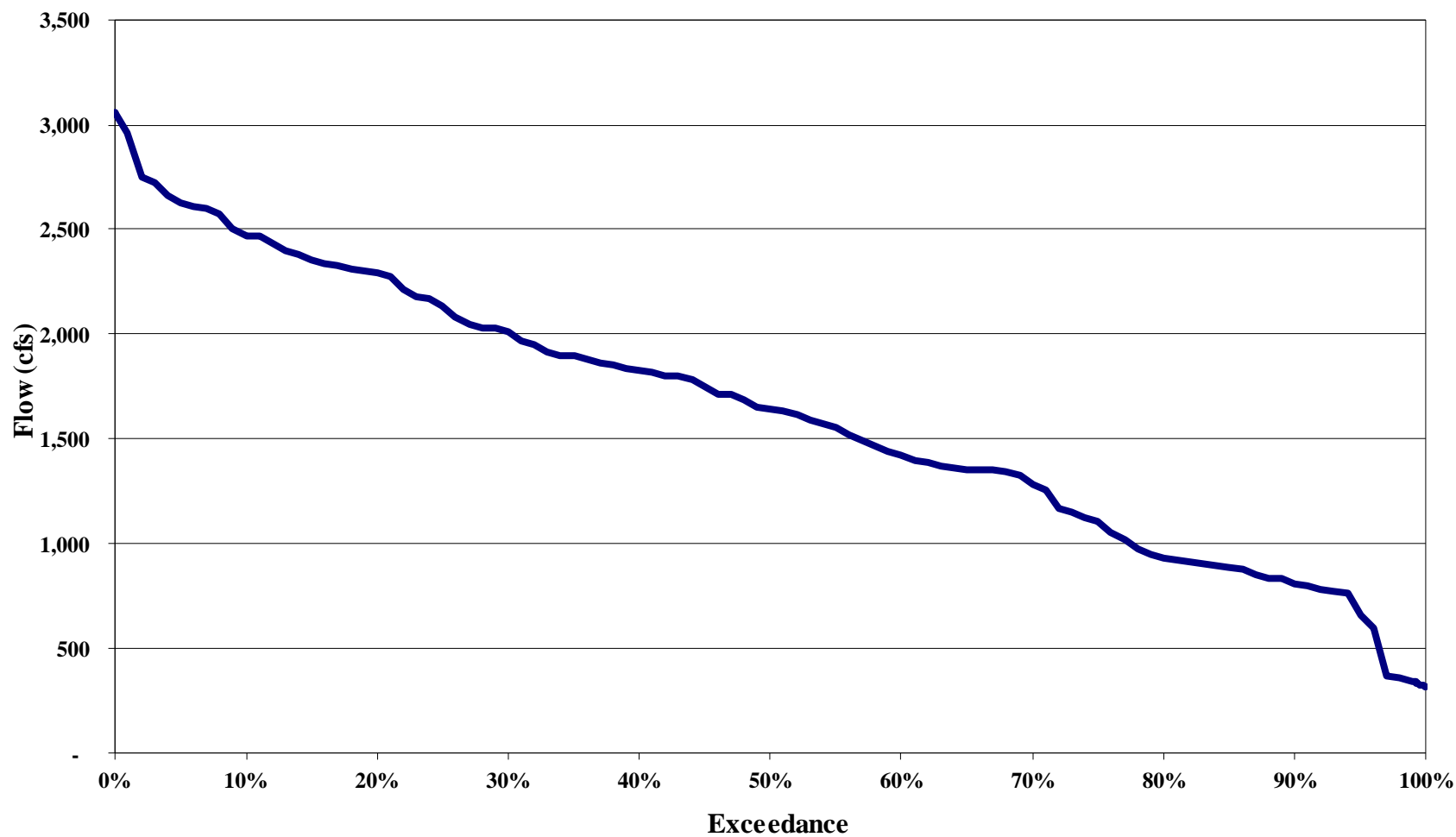


Exhibit E

Environmental Report

E.1 Introduction

ALLETE, Inc., doing business as Minnesota Power (MP or Applicant), is the Licensee, owner, and operator of the Grand Rapids Hydroelectric Project (FERC No. 2362) and the Prairie River Hydroelectric Project (FERC No. 2361). The Grand Rapids Project is a 2.1 megawatt (MW), run-of-river (ROR) facility located on the Mississippi River in the City of Grand Rapids in Itasca County, Minnesota. The Prairie River Project is a 1.1 MW, ROR facility located on the Prairie River, also near the City of Grand Rapids in Arbo Township, Itasca County, Minnesota. The location of the Projects is shown in Figure E.1-1.

The Grand Rapids Project consists of a dam (Grand Rapids Dam, formerly known as Blandin Dam); a 465-acre reservoir; a powerhouse containing two generating units; and other appurtenances. The original construction on the Project dam started in May in 1901 by the Grand Rapids Power and Boom Company and came on line in 1902. Blandin Paper Company sold the Project to MP in 2000. The Grand Rapids Project primarily serves to supplement the power supply for the Blandin Paper Mill, an important economic asset and employment base in Grand Rapids. The average annual generation at the facility from 2013-2020 was approximately 7,676 megawatt hours (MWh).

The Prairie River Project consists of the main dam; a 1,305-acre reservoir; a forebay; a 450-foot-long by 10-foot-diameter, reinforced-concrete penstock extending from the forebay to the powerhouse; a powerhouse with two generating units; and appurtenant facilities. The Project dam was constructed in 1920 by the Prairie River Power Company, and MP purchased the Project from Blandin Paper Company in 1982. The average annual generation at the facility from 2014-2020 was 3,243 MWh.

The Projects are licensed by the Federal Energy Regulatory Commission (FERC or Commission) under the authority granted to FERC by Congress through the Federal Power Act (FPA), 16 United States Code (USC) §791(a), et seq., to license and oversee the operation of non-federal hydroelectric projects on jurisdictional waters and/or federal land. There are no federal lands associated with the Projects. The Projects last underwent licensing in the early 1990s, and the current operating licenses for the Projects expire on December 31, 2023. In accordance with FERC's regulations at 18 Code of Federal Regulations (CFR) §16.9(b), MP must file its application for a new license with FERC no later than December 31, 2021, for both Projects.

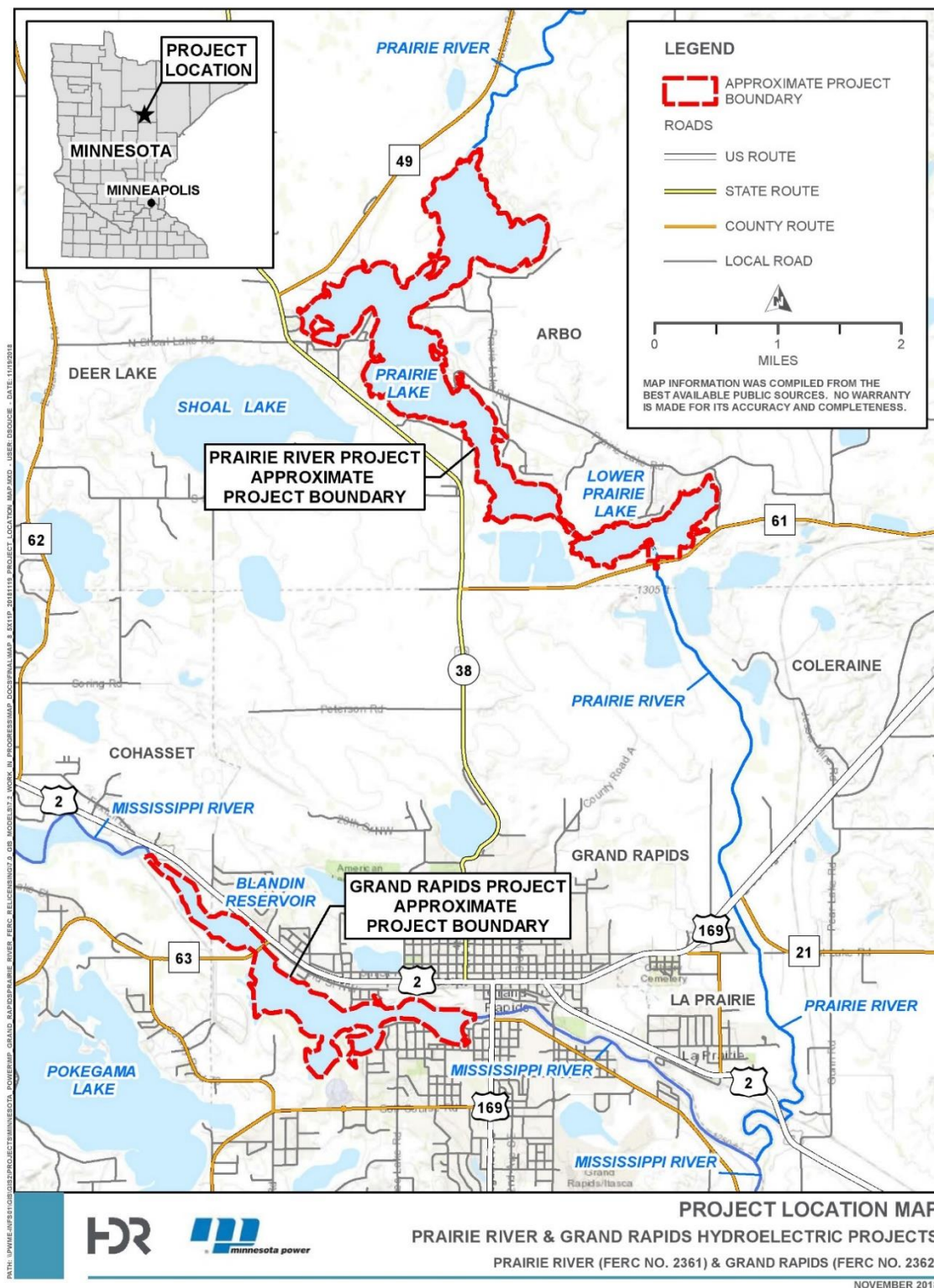


Figure E.1-1 Project location map

The Grand Rapids and Prairie River Projects share important common characteristics. Both Projects were last relicensed in the 1990s following the passage of the Electric Consumers Protection Act, which brought heightened environmental review to hydropower licensing processes. As a result, FERC developed comprehensive National Environmental Policy Act (NEPA) documents in support of their orders for issuing the existing Grand Rapids and Prairie River licenses. During this process, extensive protection, mitigation, and enhancement (PM&E) measures were researched and mandated at the Grand Rapids and Prairie River Projects, including ROR operations, cultural resource management requirements, highly limited restrictions on reservoir fluctuations at both Projects, and seasonal flow releases at Prairie River to benefit local fisheries.

The environmental protections specified in the licenses for the Projects remain in place to the current day, and MP proposes no substantive changes to Project operations or the license conditions. MP believes these conditions and measures provide an appropriate balance between resource protection, challenging Project economics, and the important benefits provided by the Projects to the City of Grand Rapids, Arbo Township, and surrounding communities.

E.1.1 Consultation

In July 2018, MP began consultation with interested agencies by sending a request for information in support of the upcoming relicensing. On December 13, 2018, MP initiated the formal relicensing process of both Projects using the Commission's Integrated Licensing Process (ILP) with the filing of the Pre-Application Document (PAD) and Notices of Intent (NOI).

FERC issued Scoping Document 1 (SD1) on February 7, 2019. Two public scoping meetings were held on March 6 and 7, 2019. Comments on SD1, the PAD, and/or study requests were filed by the U.S. Environmental Protection Agency (USEPA), the Minnesota Pollution Control Agency (MPCA), and FERC. FERC issued Scoping Document 2 (SD2) on May 16, 2019.

Based on consultation with FERC and the agencies, MP filed the Proposed Study Plan (PSP) on May 28, 2019, with a total of eight study plans (four at each Project), including the following:

- Water Quality Study
- Desktop Entrainment and Impingement Study
- Recreation Resources Study
- Cultural Resources Study

Comments on the PSP were received by FERC and the Minnesota State Historic Preservation Office (SHPO). MP filed the Revised Study Plan (RSP) on September 23, 2019, in which six of the eight studies in the PSP were modified based on PSP comments. FERC issued their Study Plan Determination (SPD) on October 16, 2019, in which all eight studies as proposed in the RSP were approved without modification and no additional studies were required.

MP filed the Initial Study Report (ISR) on October 19, 2020. An ISR Meeting was held on October 29, 2020, and an ISR Meeting Summary was filed with FERC on November 23, 2020. The ISR contained the Water Quality Studies, Desktop Entrainment and Impingement Studies, and Cultural Resources Studies for both Projects. The Cultural Resources Studies were filed as privileged and were provided to the SHPO via email on October 19, 2020. The Recreation Resources Studies were not performed in 2020 due to the COVID-19 pandemic and are being performed in 2021. MP filed a notification with FERC regarding the Recreation Studies on April 10, 2020. MP has included the Recreation Resources Study results for the individual Projects through mid-July 2021 in this Draft License Application (DLA) and will file the final study reports with the Final License Application (FLA). No additional comments on the ISR were filed besides those comments expressed at the ISR Meeting and discussed in the ISR Meeting Summary. MP filed Addendums to the Phase I Reconnaissance Survey Reports on November 24, 2020. A log of the correspondence completed to date, as well as copies of associated correspondence is provided in Appendix A.

E.2 General Setting

E.2.1 Prairie-Willow Watershed

The Grand Rapids and Prairie River Projects are located in the Prairie-Willow watershed, within the larger Upper Mississippi River Basin. The Upper Mississippi River Basin includes 15 separate watersheds and covers approximately 20,100 square miles (12,864,000 acres) of the State of Minnesota (Table E.2-1; Figure E.2-1). The Mississippi River headwaters are in Itasca State Park in Itasca County, and from there the river runs in a general northeasterly course to Bemidji, then turns eastward to Grand Rapids before turning south and running through Brainerd, Little Falls, St. Cloud, and the Twin Cities metropolitan area (Cities of Minneapolis and St. Paul) before it combines with the St. Croix River at Lock and Dam 2 near Hastings, Minnesota. The Upper Mississippi River Basin drains 15 of the 80 major watersheds in Minnesota and all or parts of 21 counties (MPCA undated).

Table E.2-1 Watersheds within the Upper Mississippi River Basin

USGS Watershed Name	MDNR / MPCA Watershed Name	Hydrologic Unit Code
Mississippi River Headwaters	Mississippi River (Headwaters)	07010101
Leech Lake River	Leech Lake River	07010102
Prairie-Willow	Mississippi River (Grand Rapids)	07010103
Elk-Nokasippi	Mississippi River (Brainerd)	07010104
Pine River	Pine River	07010105
Crow Wing River	Crow Wing River	07010106
Redeye River	Redeye River (Leaf River)	07010107
Long Prairie River	Long Prairie River	07010108
Platte-Spunk River	Mississippi River (Sartell)	07010201
Sauk River	Sauk River	07010202
Clearwater-Elk River	Mississippi River (St. Cloud)	07010203
Crow River	North Fork Crow River	07010204
South Fork Crow River	South Fork crow River	07010205
Twin Cities River	Mississippi River (Twin Cities)	07010206
Rum River	Rum River	07010207

Source: National Resource Conservation Service (NRCS) 2008.

The Prairie-Willow watershed is located in the Northern Lakes and Forest ecoregion of Minnesota. This largely forested watershed is 1,316,102 acres in size. Approximately 45 percent of the Prairie-Willow watershed falls within Itasca County, equating to approximately 592,826 acres. The average elevation in the Prairie-Willow watershed is 1,313 feet above sea level, with the highest values occurring in the Northwestern portions of the watershed and lower values in the Southwestern and central regions. Precipitation in the watershed ranges from 25 to 29 inches annually. The Mississippi River floodplain is generally wide in the Prairie-Willow watershed, as the river meanders through numerous shallow lakes, wetlands, and areas of low topographic relief (NRCS 2008).



E.2.2 Geography, Topography, and Climate

Minnesota's geographic landscape is largely defined by the thousands of years of retreating glaciers. Minnesota's quaternary geology is characterized by four different glacial advances, the largest being from the Late Wisconsinan glacial stage, of which the Project vicinities are in. Changes in climate and precipitation have caused different lobes of ice sheets to shift periodically. Glacial deposits in the Project vicinities' quaternary lobe consists of glaciofluvial outwash deposits of sand and gravel (Minnesota Geological Survey 2018). It is estimated that this outwash deposit is approximately 250 feet thick but highly variable. Underlying the glacial deposit, the Projects are bisected by a seam of the Mesabi iron range bedrock formation, a banded iron formation unique to the region and valued for its iron (U.S. Geological Survey [USGS] 2018). To both sides of the Mesabi iron range seam, the bedrock formations are primarily slate and graywacke subgroups to the south and quartzite to the north in the Project vicinities. The general geologic features of the Project vicinities are depicted in Figure E.2-2.

The majority of land within Itasca County and surrounding the Project reservoirs can be characterized as flat to moderately rolling upland covered with maple, birch, aspen, balsam fir, and northern hardwoods. The remainder is lowlands swamp or muskeg containing black spruce, tamarack, and other miscellaneous swamp hardwoods. Occasional farms are dispersed throughout the area (Blandin Paper Company 1991). Rock outcrops and formations are a periodic feature throughout the landscape, notably including the narrow gorge (locally known as "The Gorge") that connects Prairie Lake and Lower Prairie Lake, which collectively form the Prairie River Reservoir.

The climate of Itasca County can be characterized as subhumid continental with four distinct seasons (MPCA undated). Average monthly temperatures range from 51 degrees Fahrenheit (°F) to 80°F in summer and -3°F to 38°F in winter. Average snowfall is approximately 57 inches annually and average rainfall is approximately 30 inches annually (U.S. Climate Data 2021). Wind patterns typically flow west to east and warm moist air flows from the Gulf of Mexico during the summer months. Cold, dry, continental air dominates from Canada in the winter months (MPCA undated).

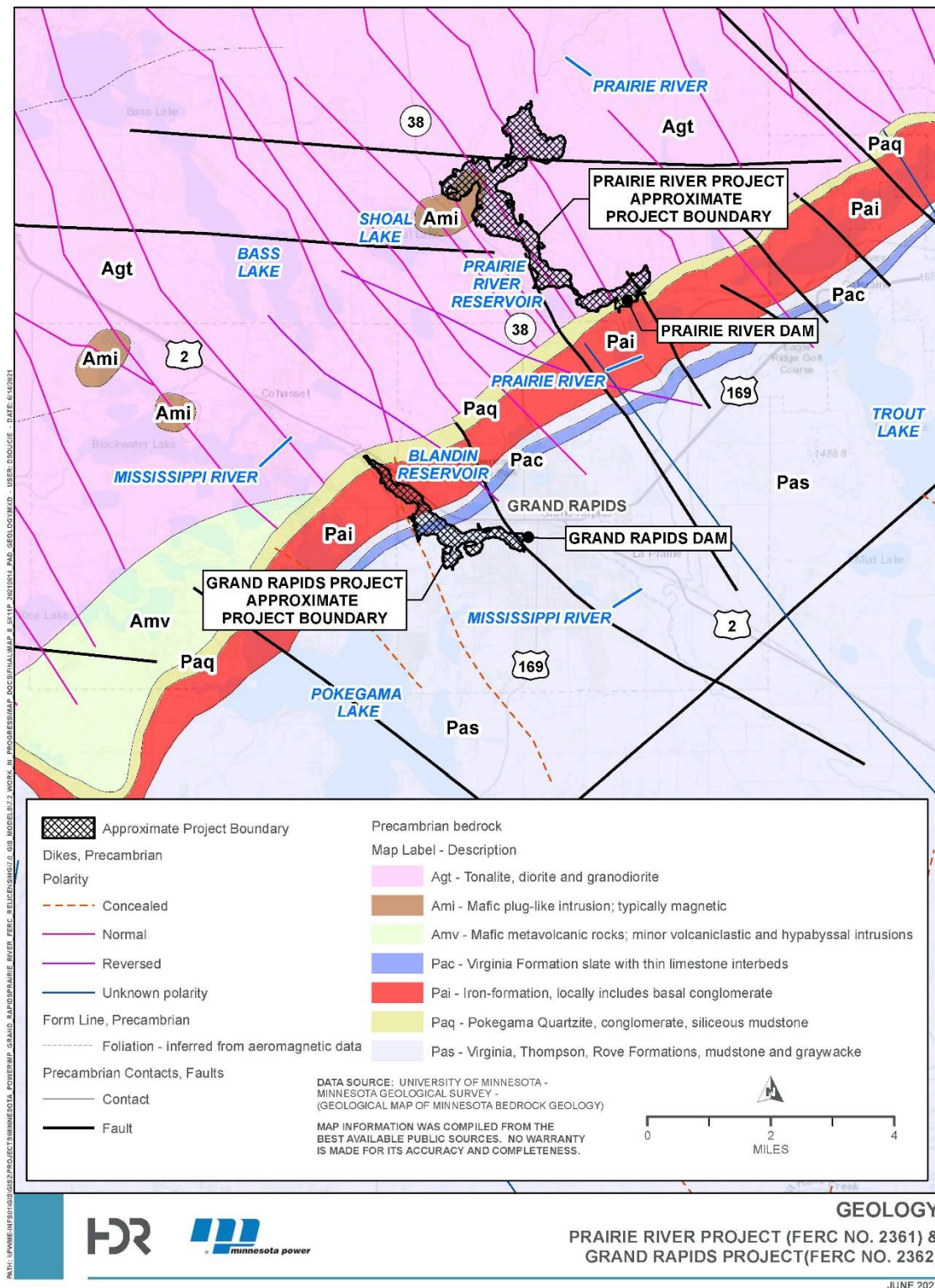


Figure E.2-2 Geology of the Grand Rapids Project and Prairie River Project

E.2.3 Dams and Diversions in the Basin

The Mississippi River and its tributaries form a highly regulated system beginning with the U.S. Army Corps of Engineers' (USACE) Mississippi Headwaters Project, consisting of six headwater dams in north-central Minnesota, the primary purposes of which are flood risk management, recreation, and environmental stewardship (USACE 2018). Pokegama Dam and Reservoir, one of the six headwater dams, is located approximately three miles upstream of Grand Rapids Dam and upstream of the boundary of the Prairie-Willow watershed. Inflows to the Grand Rapids Project are a function of releases from Pokegama Dam and Reservoir.

A review of the USACE National Inventory of Dams (NID) database and mapping identified six dams on the Mississippi and Prairie River mainstem rivers above the confluence of the Mississippi and the Prairie Rivers. There are three dams within the NID database listed within the Prairie River Project drainage area (Balsam Lake Dam on Balsam Creek, the Hartley Lake nature-like fishway below Harley Lake on the West Fork of the Prairie River, and a dam below Wolf Lake on the Prairie River). There are four dams within the NID database listed within the Mississippi drainage area above the confluence with the Prairie River (Grand Rapids Dam at the Grand Rapids Hydroelectric Project, the Pokegama Lake Dam near Cohasset MN, the Winnebigoishish Dam, the nature-like fishway controlling the outlet of Cass Lake, and the Bemidji Lake Dam below Stump Lake and Lake Bemidji. The other USACE dam within the Mississippi drainage area is the Leech Lake Dam on the Leech Lake River in Federal Dam, Minnesota.

E.2.4 Tributary Rivers and Streams

The Upper Mississippi River Basin is comprised of 15 watersheds. The Prairie-Willow watershed that the Project vicinities are in is further comprised of 18 subwatersheds. The northern extent of the watershed originates from Stingy Lake and drains to the Mississippi River to Big Sandy Lake. Tributaries to the Mississippi River within the Prairie-Willow watershed include the Prairie River, Swan River, Sandy River, Tamarack River, Hill River, Moose River, Split Hand Creek, and Willow River, as well as numerous smaller named and unnamed tributaries (MPCA 2018a). Except for the Prairie River, none of these are affected by the Projects because the Projects operate in ROR mode.

E.2.5 Reservoir Characteristics and Shoreline

The upstream shoreline of both Projects is surrounded by heavily vegetated banks and forested land with urban commercial and industrial developments nearby on the northern shores of the

Grand Rapids Project and residential and seasonal housing nearby at the Prairie River Project. Both Projects have minimal to moderate slopes in the upstream direction. The shoreline downstream of Grand Rapids Dam and Prairie River Dam is also surrounded by heavily vegetated and forested land, dispersed developments including residential housing, and has a similar composition as lands upstream of the Project dams. The area immediately downstream of Grand Rapids Dam is steep until the vicinity of Highway 169 Bridge. The shoreline downstream of Prairie River Dam is classified as having minimal to moderate sloping.

E.2.5.1 Grand Rapids Project

As a requirement of the Grand Rapids Project's existing Cultural Resources Management Plan (CRMP), the Licensee is required to submit a report every five years that describes the results of a shoreline monitoring survey. A monitoring report was filed in 2002, 2006, 2011, and most recently in 2016. Results of the erosion monitoring concluded that no shoreline erosion has occurred or is currently anticipated to occur. There is no current evidence of erosion, slumping, or slope instability around the Blandin Reservoir shoreline.

A bathymetric survey was conducted at the Grand Rapids Project in 2018. The survey focused both upstream and downstream of Grand Rapids Dam and transects were located at 10-foot increments. The maximum depth upstream of Grand Rapids Dam was measured at approximately 38 feet with a downstream maximum depth of 17 feet (AMI Consulting Engineers [AMI] 2018).

E.2.5.2 Prairie River Project

Pursuant to the Prairie River Project CRMP, MP submits a report annually for the Prairie River Project that summarizes cultural resource management activities conducted the prior year. The annual monitoring has consistently shown a stable shoreline and ground cover. Based on the results of the recent monitoring investigations, it did not appear that any of the nine cultural sites are experiencing degrading impacts resulting from the operations and maintenance of the Prairie River Project.

E.2.6 Downstream Reach Gradients

Below the Grand Rapids Project, the gradient is approximately 1.4 feet per mile. The downstream gradient of the Prairie River Project is slightly steeper, resulting in an average gradient of 2.1 feet per mile.

E.2.7 Major Land and Water Uses

The Upper Mississippi River Basin supports a mixture of forests, prairie, agriculture, residential, and industrial lands. Major land uses in the area include mining, recreation, light agriculture and forestry; in the vicinity of the City of Grand Rapids and the Projects, commercial, industrial, and residential development is common. Lands within the vicinity of the Prairie River Project Boundary include forests, well-vegetated shorelines, and residential properties. Lands within the vicinity of the Grand Rapids Project Boundary include well-vegetated shorelines, residential properties, and industrial and commercial development near Grand Rapids Dam and the non-Project Blandin Paper Mill (Figure E.2-3).

Lakes and rivers in the Prairie-Willow watershed provide substantial recreational use opportunities, including fishing, swimming, and boating. Lakes in the watershed are listed generally in good condition with 20 percent of those lakes supporting “exceptional fish communities” (MPCA 2018a).

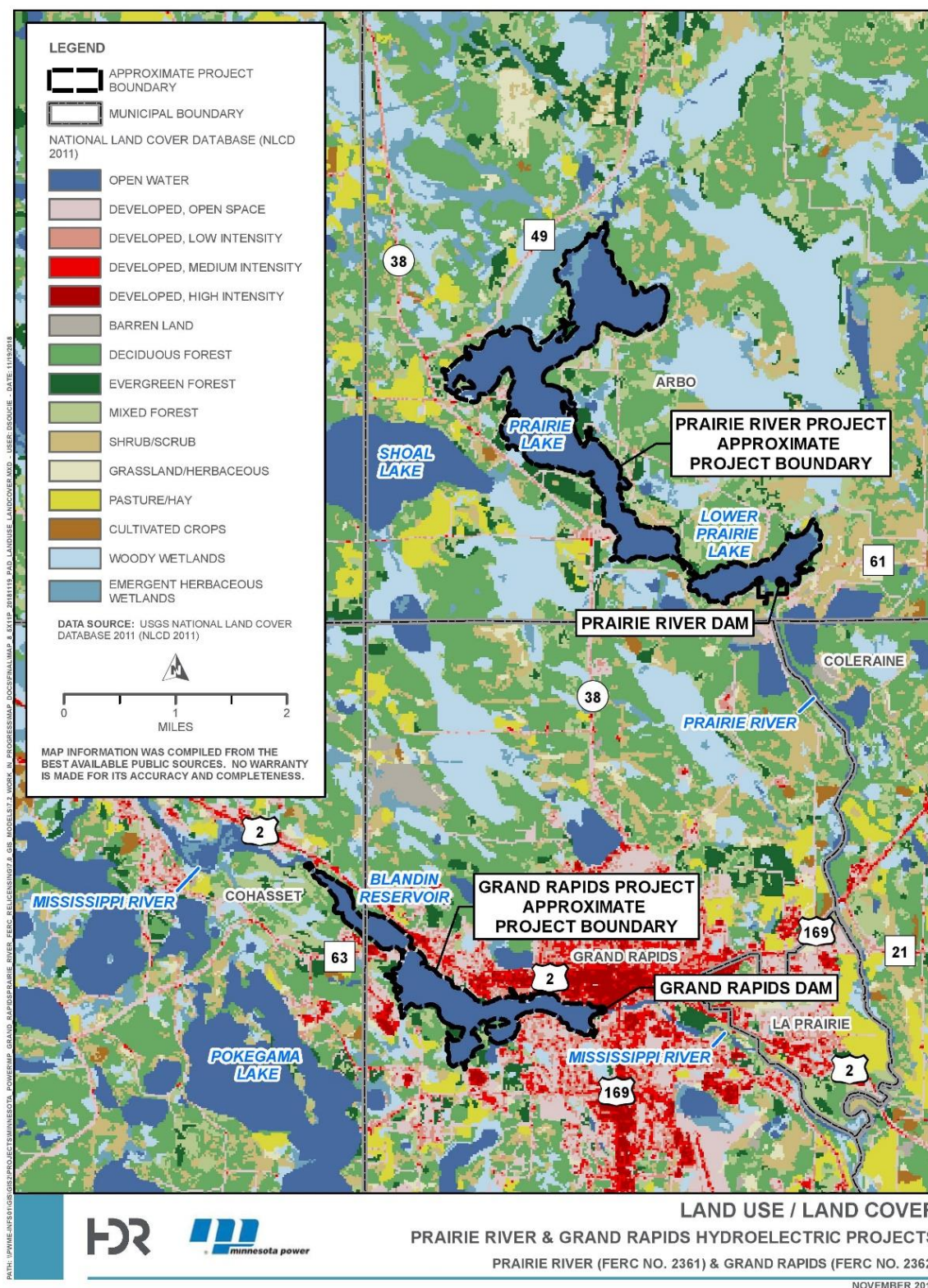


Figure E.2-3 Land use and land cover in the vicinity of the Grand Rapids Project and Prairie River Project

E.3 Geology and Soils

The Grand Rapids and Prairie River Projects are similar in soil composition. The existing ROR mode of operations and vegetated nature of the shorelines within the boundaries of both Projects provide protection against bank erosion. The most recent shoreline monitoring surveys of both Projects stated there was no evidence of erosion, slumping, or slope instability around the reservoir shorelines.

E.3.1 Geology

E.3.1.1 Bedrock Geology

Bedrock in the area of the Grand Rapids Project is dominated by mafic metavolcanic rocks with minor volcanoclastic and hypabyssal intrusions in the area of Grand Rapids Dam. Blandin Reservoir spans areas of Virginia Formation slate and greywacke, banded iron-formation, and Pokegama quartzite in the upper end of the reservoir.

Bedrock in the area of the Prairie River Project is primarily Pokegama quartzite in the area of Prairie River Dam. Prairie River Reservoir is predominantly tonalite, diorite, and grandodiorite in Prairie Lake of the Prairie River Reservoir.

E.3.1.2 Surficial Geology

The Grand Rapids Project is set in a Quarternary-aged glacial outwash deposit consisting of uniform fine to medium sand. It is estimated that the outwash deposit is approximately 250 feet thick. Underlying the glacial deposits are Pre-Cambrian-aged basement rocks. Since the exact distribution of basement rock types is concealed by glacial outwash, it has been inferred from geophysical evidence and regional lithologic trends that Blandin Reservoir overlies metamorphic equivalents of claystone, siltstone, and sandstone (Blandin Paper Company 1991). The Prairie River Project vicinity is similar in surficial geology, but the soil cover is much thinner with prominent bedrock outcrops at the dam.

E.3.2 Soils and Sediment

Soil types in the vicinity of the Projects are variable and reflect the diversity of parent materials, the local topography, and the physiographic position of landforms. The most dominant soil type in the Grand Rapids Project Boundary is Zimmerman loamy fine sand dunes with 1 to 8 percent slopes. The Zimmerman series soils have rapid permeability and are often very deep, excessively drained soils that formed in sandy glacial outwashes. Other dominant soils in the Project

Boundary are Itasca-Goodland well drained silt loams with 2 to 12 percent slopes, and Seelyeville-Seelyeville, ponded complex with 0 to 1 percent slopes. The Seelyeville Series soils are often deep, poorly drained soils that formed in organic materials (NRCS 2018). These soils are depicted on Figure E.3-1.

The most dominant soil type in the Prairie River Project Boundary is very steep Udorthents. Udorthents consist primarily of moderately coarse textured soil material. Other dominant soil types are the well-drained Eagleview and Menahga soils with 1 to 8 percent slopes followed by Cutaway loamy sand with 0 to 8 percent slopes. Cutaway series soils are very deep, moderately well drained soils formed in glacial outwash (NRCS 2018). These soils are depicted on Figure E.3-2.

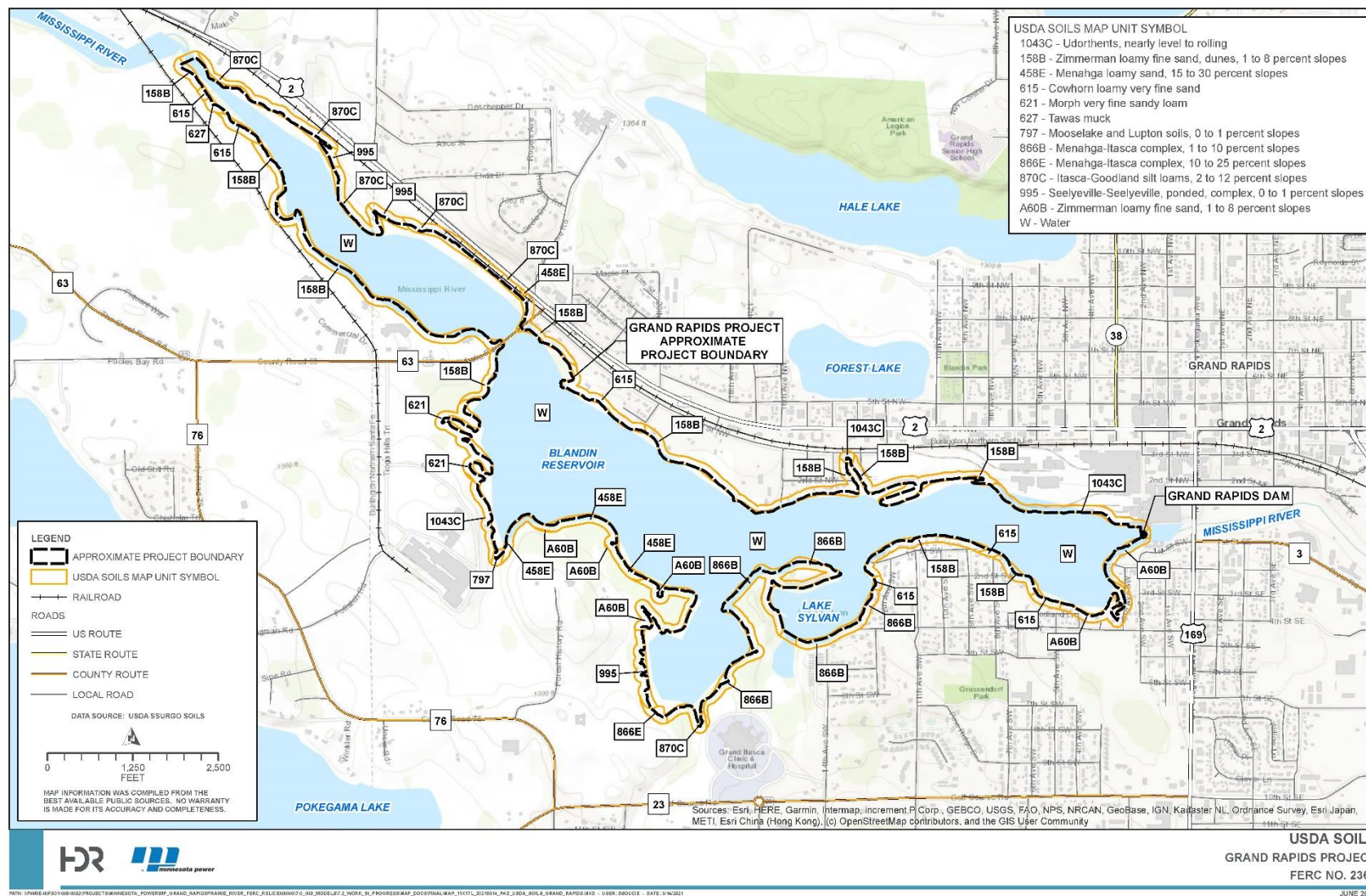


Figure E.3-1 Soils in the vicinity of the Grand Rapids Project

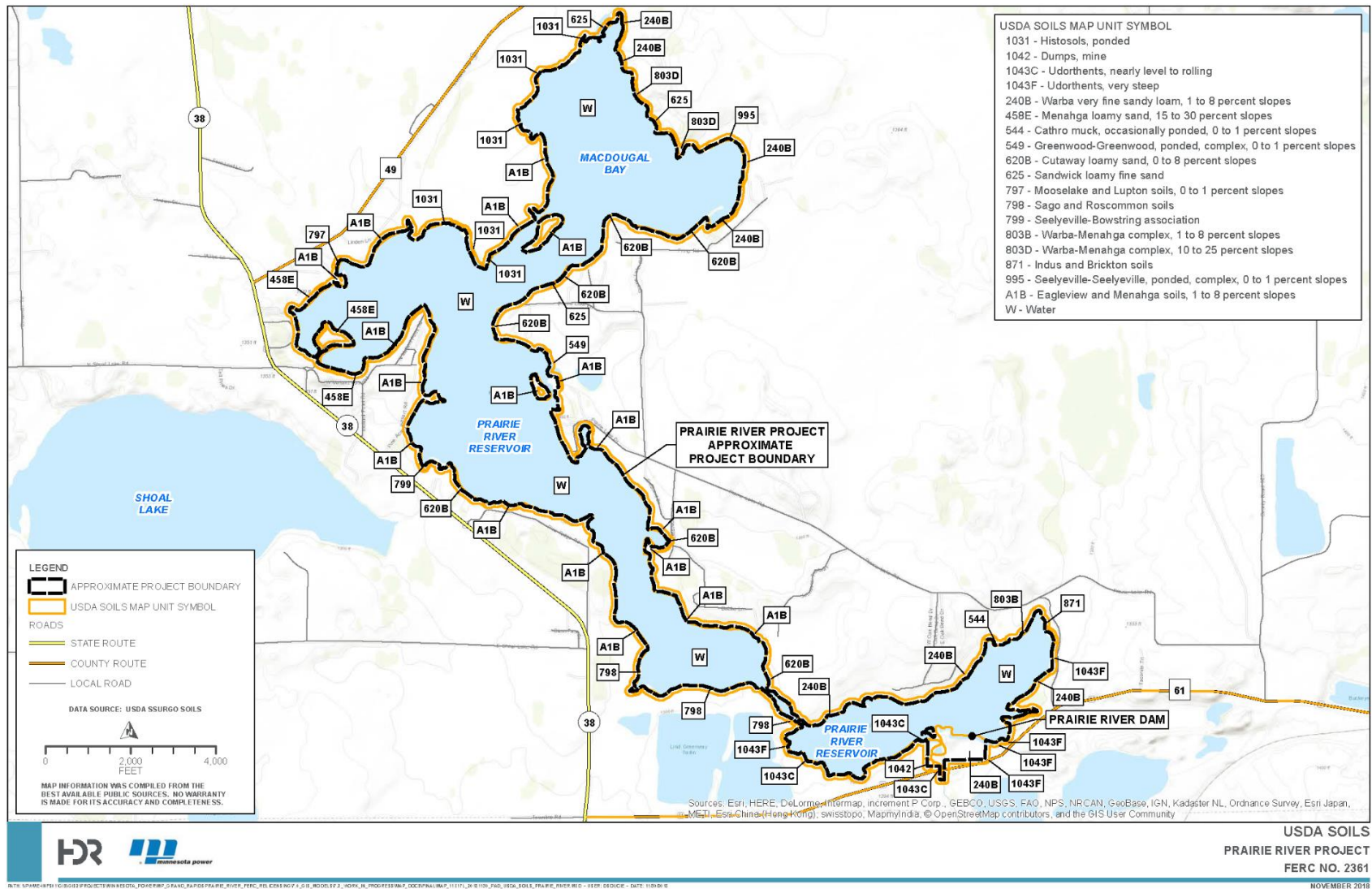


Figure E.3-2 Soils in the vicinity of the Prairie River Project

E.3.3 Seismicity

Minnesota has one of the lowest numbers of recorded earthquakes in the United States, with only 20 documented since 1860 (University of Minnesota 2014). There are, however, faults in Minnesota and within the vicinity of the Projects, as depicted in Figure E.2-2. The Projects border a transition from an area of numerous Precambrian dikes of various polarity Precambrian form lines and Precambrian faults to the west and a large part of northern Minnesota known as the Virginia Thomson Formation, characterized by intercalated slate, siltstone, and greywacke that have consistent directional structure (Morey and Ojakangas 1970).

E.3.4 Mineral Resources

There are no mapped oil, gas, or mineral resources within the Project Boundaries. Itasca County has one primary mineral resource, iron. The Iron Ranges of the Lake Superior Region in Minnesota stretches from the southwest of the Projects, north and east to the shores of Lake Superior, and up to Thunder Bay, Canada. The geologic iron formation in Minnesota is divided into the Cuyuna, Mesabi, Vermilion, and Gunflint ranges. These ranges are the chief iron ore mining district in the United States. Grand Rapids, Minnesota, lies at the southern-most tip of the Mesabi Range and iron taconite mines and plants are dispersed throughout Itasca County (Minnesota Department of Natural Resources [MDNR] 2016). The Project vicinities in the Mesabi Range have large amounts of oxidized taconite that has not been mined largely due to economics, the need for advances in non-magnetic iron ore processing technology, and development in the area including the reservoirs created by the Project dams, highways, and urban development (Natural Resources Research Institute and Ojakangas 2003).

E.3.5 Project Effects on Geology and Soils

Shoreline erosion is a common concern at some hydroelectric project reservoirs. Historical operation of the Projects has not had adverse effects on geology and specifically shoreline erosion. MP believes that the existing ROR mode of the Projects' operation, in combination with the vegetated nature of the shorelines in the Project Boundaries, provide protection against bank erosion. MP is proposing no substantive changes in operations at either Project. As a result, MP anticipates that continued operation of the Projects will not adversely affect geological and soil resources.

E.3.5.1 *Grand Rapids Project*

As a requirement of the existing Grand Rapids Project CRMP, MP is required to submit a report every five years that describes the results of a shoreline monitoring survey. To date there has been no observable erosion during the monitoring events. MP recently completed an erosion survey on July 20, 2021, and, like the previous inspections, there was no observed shoreline erosion. The 2020 Phase I archaeological survey stated there was no evidence of erosion, slumping, or slope instability around the reservoir shoreline. As a result, MP anticipates that continued operation of the Project will not adversely affect geological and soil resources.

E.3.5.2 *Prairie River Project*

As a requirement of the existing Prairie River CRMP, MP is required to submit an annual report summarizing cultural resource management activities conducted the prior year, including any shoreline monitoring activities. Based on the results of the 2020 cultural resources monitoring, none of the identified sites showed evidence of degradation such as erosion, slumping, or slope instability. Additionally, prior shoreline monitoring activities indicated no evidence of erosion around the reservoir shoreline. As a result, MP anticipates that continued operation of the Project will not adversely affect geological and soil resources.

E.3.6 *PM&E Measures Proposed by the Applicant, Resource Agencies, and/or Other Consulting Parties***E.3.6.1 *Grand Rapids Project***

No PM&E measures related to geology and soils have been proposed by any resource agencies or consulting parties. For the reasons stated above, MP is not proposing any new PM&E measures related to geology and soils at the Grand Rapids Project. MP proposes to continue ROR operations at the Project.

E.3.6.2 *Prairie River Project*

No PM&E measures related to geology and soils have been proposed by any resource agencies or consulting parties. For the reasons stated above, MP is not proposing any new PM&E measures related to geology and soils at the Prairie River Project. MP proposes to continue ROR operations at the Project.

Although not a PM&E measure specifically, MP proposes to modify shoreline monitoring activity reporting to five-year increments to align with Grand Rapids Project reporting. Given prior

shoreline monitoring activities indicated no evidence of erosion around the reservoir shoreline, it is anticipated that a modification in reporting will not impact geology or soils at the Prairie River Project.

E.4 Water Quantity and Quality

Recent and historic water quality data are available in the vicinity of the Grand Rapids Project (upstream and downstream of the Project). Data from 2003 through 2020 show that dissolved oxygen (DO) concentrations downstream of Grand Rapids Dam are typically above the minimum state criterion. Data collected in 1990 and 1991 during the prior relicensing effort found that DO concentrations below Grand Rapids Dam were typically slightly higher than those measured above it. Similarly, pH values have been within the state criteria range of acceptable except for two readings, one in 2015 and one in 2019. The MPCA issued a Section 401 Water Quality Certification for the Grand Rapids Project on December 11, 1992.

The MPCA has recent water quality data available in the vicinity of the Prairie River Project (from Prairie River Reservoir and downstream of the Project). Data from 2001 through 2016 found that DO concentrations both upstream and downstream of Prairie River Dam were above the minimum state criterion except for one reading in 2009. Similarly, all pH values were within the state criteria range of acceptable. The MPCA waived a Section 401 Water Quality Certification for the Prairie River Project on June 19, 1991.

Water quality studies were also performed at both Projects during 2020 in support of current relicensing. This recent data shows that water quality in the vicinity of the Projects generally meets state standards for DO. Additionally, water quality in the vicinity of the Projects is typical of well-mixed warmwater rivers in Minnesota with instances of summer stratification in the reservoirs.

E.4.1 Water Quantity

E.4.1.1 Drainage Area

The Grand Rapids and Prairie River Projects are located in Itasca County in the Prairie-Willow watershed. Within Itasca County, there are over 1,000 lakes, about 950 of which are over ten acres in size, covering almost 170,000 acres (Itasca County Soil and Water Conservation District [ICSWCD] and Itasca County Water Plan Implementation Committee 2012). The drainage area at the Grand Rapids Project is 3,370 square miles (Blandin Paper Company 1991; USGS 2021a). The drainage area at the Prairie River Project is approximately 488 square miles (USGS 2021b).

E.4.1.2 River Flows

Flow duration curves for the Grand Rapids Project are provided in Exhibit A of this DLA and flow duration curves for the Prairie River Project are included in the PAD filed on December 13, 2018.

Grand Rapids Project

Flows for the Grand Rapids Project for the period of record (POR) range from 191 cubic feet per second (cfs) to 4,760 cfs (Table E.4-1) based on data from *USGS Gage No. 05211000 Mississippi River at Grand Rapids, MN*, which is located approximately 2,000 feet downstream from the Grand Rapids Dam (USGS 2021a).

Table E.4-1 Average flow data – Grand Rapids Project (POR 1993 - 2020)

Period	Minimum (cfs)	90% Exceedance (cfs)	Average (cfs)	10% Exceedance (cfs)	Maximum (cfs)
January	270	792	1,546	2,260	2,620
February	256	617	1,442	2,320	2,630
March	226	502	1,361	2,390	3,660
April	200	377	1,310	2,530	3,100
May	216	432	1,480	2,733	3,730
June	191	495	1,571	2,510	3,810
July	220	472	1,649	2,756	4,760
August	208	311	1,206	2,443	1,206
September	204	277	1,017	2,170	3,030
October	209	407	1,434	2,433	3,240
November	204	708	1,673	2,740	3,110
December	316	805	1,628	2,470	3,060
Annual	191	425	1,443	2,490	4,760

Source: USGS 2021a.

Prairie River Project

Flows for the Prairie River Project for the POR range from 17 cfs to 4,170 cfs (Table E.4-2) based on prorated data from USGS Gage No. 05212700 *Prairie River near Taconite, MN* located approximately 18.5 river miles (RM) upstream from the Prairie River Project (USGS 2021b).

Table E.4-2 Average flow data – Prairie River Project (POR 2001 – 2020)

Period	Minimum (cfs)	90% Exceedance (cfs)	Average (cfs)	10% Exceedance (cfs)	Maximum (cfs)
January	59	72	113	162	299
February	39	61	101	134	564
March	45	83	187	357	2,052
April	74	115	735	1,565	3,407
May	109	187	573	1,141	2,197
June	54	119	467	956	4,170
July	28	58	233	458	2,355
August	18	44	135	297	589
September	17	42	123	263	483
October	26	52	188	407	1,019
November	70	92	207	370	797
December	71	83	174	333	785
Annual	17	65	270	672	4,170

Note: Daily stream flow data unavailable from October 1983 to February 2001 and from April 2013 to March 2014. Average flow data for the Project Area has been developed using flow data from *USGS Gage No. 05212700 Prairie River near Taconite, MN*, which is located approximately 18.5 RM upstream from the Project. Flows from the Prairie River at the Taconite, MN stream gage were prorated to the Prairie River Project location based on the ratio of drainage area between the gaged site and the Project site.

Source: USGS 2021b.

E.4.1.3 Water and Flow Uses

Existing instream flow uses of waters of the Upper Mississippi River within the Grand Rapids Project and Prairie River Project include various recreational activities (e.g., fishing & boating), non-contact cooling water for steam generation, and hydroelectric generation.

A National Pollutant Discharge Elimination System (NPDES) permit establishes the terms and conditions that must be met to protect water quality when a facility discharges a pollutant into surface or groundwater of the state. The MPCA is responsible for administering NPDES permits through delegated authority from the USEPA (MPCA 2021c). Thirty-one active NPDES permits were identified for Itasca County (Table E.4-3).

Table E.4-3 Industrial permits for Itasca County, Minnesota

Permit ID	Facility Name	Authorization Date	City
MNR053F7Z	Guss auto +recycling	12/16/2020	Bigfork
MNRNE3984	E2IP Technologies USA	4/1/2020	Bigfork

Permit ID	Facility Name	Authorization Date	City
MNRNE3CQW	Printed Circuits	4/1/2020	Bloomington
MNR053CDF	BassBrook Recycling	4/7/2021	Cohasset
MNR053BKR	Lonza Consumer Health Inc.	12/9/2020	Cohasset
MNR053857	Minnesota Power - Boswell Energy Center	4/1/2020	Cohasset
MNR053DF2	Nelson Wood Shims	9/4/2020	Cohasset
MNR053B35	Waste Management - Cohasset	4/1/2020	Cohasset
MNRNE3CGP	National Minerals Corp	5/3/2021	Cohasset
MNR053F68	Prairie River Minerals Demonstration Plant	11/16/2020	Coleraine
MNR053C7T	ASV Holdings Inc	4/9/2020	Grand Rapids
MNR053C7W	ASV Holdings Inc	4/9/2020	Grand Rapids
MNR053C93	CASPER CONST INC ISW	4/1/2020	Grand Rapids
MNR053F9L	Itasca County Demolition Landfill	7/10/2020	Grand Rapids
MNR053B2Z	Itasca County Transfer Station	1/22/2021	Grand Rapids
MNR053DVC	Minnesota Diversified Industries	4/1/2020	Grand Rapids
MNR053B3M	Minnesota Power - Rapids Energy Center	4/1/2020	Grand Rapids
MNR053DH4	Trout Demolition Debris Land Disposal	4/1/2020	Grand Rapids
MNR0539XF	Blandin Paper Mill	4/1/2020	Grand Rapids
MNR0539XV	Blandin Paper Mill	4/1/2020	Grand Rapids
MNRNE3B7K	Grand Rapids	4/1/2020	Grand Rapids
MNRNE3BBG	UPS - Grand Rapids	4/1/2020	Grand Rapids
MNRNE3BVY	Grand Rapids Area Landfill	3/16/2021	Grand Rapids
MNRNE38DG	MnStar Technologies, Inc.	4/1/2020	Grand Rapids
MNRNE39YK	Northland Machine Inc	4/1/2020	Grand Rapids
MNRNE38NK	Olympak Printing & Packaging	11/25/2020	Grand Rapids
MNRNE39KY	Up North Technologies, Inc.	6/16/2020	Grand Rapids
MNR053BFB	General Waste & Recycling, LLC	4/1/2020	Keewatin
MNR053B8G	OLSONS BODY SHOP	4/16/2021	Keewatin
MNR053D5K	ProBlast Technology Inc	4/16/2020	Keewatin
MNRNE3685	Iron Range Sanitary Landfill	3/25/2021	Taconite

Source: MPCA 2021c.

The most recent NPDES/ State Disposal System (SDS) Permit (MN0066559) for MP's Rapids Energy Center was issued on September 17, 2013. The water intake and discharge for the NPDES/SDS Permit is located adjacent to Grand Rapids Dam and powerhouse. MP applied for permit renewal of the NPDES/SDS Permit on February 28, 2018 and this application is currently under review by the MPCA. The Permit renewal application provided updated information and studies related to Section 316(b) of the Clean Water Act (CWA) which included source water

physical data, cooling water intake structure data, source water baseline biological characterization data, cooling water system data, method of compliance with impingement mortality standard, entrainment performance studies, and operational status. Pertinent information from the 316(b) submittal is incorporated into Section E.5 Fish and Aquatic Resources of this DLA.

E.4.2 Water Quality

E.4.2.1 Approved Water Quality Standards

Minnesota's water quality standards are provided in Minnesota Rules Chapter 7050 (Waters of the State) and are administered by the MPCA (MPCA 2021b). All surface waters in Minnesota are classified and protected for multiple beneficial uses. The designated uses for the waters within the Project Areas are included in Table E.4-4. The designated class 2B and 3C waters at the Projects are protected for aquatic life and recreation, industrial consumption, agriculture and wildlife, aesthetic enjoyment and navigation, and other uses. Water quality standards applicable to waters within the Grand Rapids Project and Prairie River Project are provided in Table E.4-5.

Table E.4-4 Designated uses for waters within the Grand Rapids Project and Prairie River Project

Classified Waters	Project vicinities included within Classified Waters	Use Classes ¹	Class Category
Mississippi River from the Cohasset Dam ² to Swan River	Blandin Reservoir and reach of Mississippi River downstream of the Grand Rapids Project	2Bg, 3C	a healthy warmwater aquatic community; industrial cooling and materials transport use without a high level of treatment
Prairie River from Prairie Lake to Mississippi River	Downstream of the Prairie River Project		
Lower Prairie: Near Grand Rapids (Lake)	Prairie River Project reservoir	2B, 3C	a healthy warmwater aquatic community; industrial cooling and materials transport use without a high level of treatment
Prairie: main bay: Near Grand Rapids (Lake)			
Upper Prairie: Near Grand Rapids (Lake)			

¹ Use Classes: Class 2 - aquatic life and recreation, Class 3 - industrial consumption.

² Cohasset Dam is considered Pokegama Dam.

Source: MPCA 2021b.

Table E.4-5 Water quality standards for waters within the Grand Rapids Project and Prairie River Project

Parameter	Numeric Criteria
DO (milligram per liter [mg/L])	<p>The quality of class 2B surface waters shall be such as to permit the propagation and maintenance of a healthy community of cool or warm water aquatic biota and their habitats. These waters shall be suitable for aquatic recreation of all kinds, including bathing, for which the waters may be usable.</p> <p>5.0 mg/L as the daily minimum.</p>
pH	6.5 to 8.5 standard units (SU); maintain background per 7050.0222, subpart 6.
Specific conductance at 25 degrees Celsius (°C)	1,000 microsiemens per centimeter (µmhos/cm).
Temperature degrees Fahrenheit (°F)	Temperature must not exceed five degrees Fahrenheit above natural temperature in streams and three degrees Fahrenheit above natural temperature in lakes, based on monthly average of maximum daily temperature, except in no case shall it exceed the daily average temperature of 86°F.

Source: Minn. R. 7050.0220, 7050.0222.

E.4.2.2 Impaired Waters

Every two years, the MPCA develops a list of impaired waters that do not meet water quality standards. The 2020 Impaired Waters List was submitted to the USEPA for approval in February 2021 and partially approved by the USEPA in March 2021. Those waterbodies identified on the 2020 Impaired Waters List within the general vicinity of the Grand Rapids and Prairie River Projects are included in Table E.4-6. The reach of the Mississippi River downstream of Grand Rapids Dam to the Prairie River was delisted in 2006 as an impaired waterbody for its aquatic life use due to improved and adequate DO concentrations in this stretch of river. The main bay of the Prairie River Reservoir was delisted in 2018 as an impaired waterbody for its aquatic recreation use due to decreased nutrient levels. Both of these delisted reaches are still impaired due to mercury in fish tissue, however. The Prairie River, including Prairie River Reservoir, and the Mississippi River, including Blandin Reservoir, have fish consumption advisories for mercury (MPCA 2021a).

Table E.4-6 Impaired waters within the vicinity of the Grand Rapids and Prairie River Hydroelectric Projects

Impaired Segment identified by the MPCA	Location of Impaired Segment in relation to the Projects	Impaired Use	Total Maximum Daily Load (TMDL(s))
Lake Winnibigoshish to Cohasset Dam ¹	Reach of Mississippi River upstream of Blandin Reservoir	Aquatic consumption	TMDL for mercury in fish has been approved. No other TMDLs have been identified as necessary or required.
Blandin	Blandin Reservoir	Aquatic consumption	TMDL for mercury in fish has been approved. No other TMDLs have been identified as necessary or required.
Mississippi River from the Cohasset Dam ¹ to Swan River	Mississippi River downstream of the Grand Rapids Project	Aquatic consumption	TMDL for mercury in fish has been approved. No other TMDLs have been identified as necessary or required.
Balsam Cr to Prairie Lake	Reach of Prairie River upstream of Prairie River Reservoir	Aquatic consumption, aquatic recreation	TMDL for mercury in fish has been approved. TMDL for <i>E. coli</i> is needed. No other TMDLs identified as required.
Upper Prairie, Prairie (main bay), Lower Prairie	Prairie River Reservoir	Aquatic consumption	TMDL for mercury in fish has been approved. No other TMDLs have been identified as necessary or required.
Prairie Lake to Mississippi River	Reach of Prairie River downstream of Prairie River Project	Aquatic consumption	TMDL for mercury in fish has been approved. No other TMDLs have been identified as necessary or required.

¹. Cohasset Dam is considered Pokegama Dam.
Source: MPCA 2021a.

E.4.2.3 Historic Water Quality Data

Recent water quality data collected within the general vicinity of the Grand Rapids and Prairie River Projects were compiled from the MPCA's Surface Water Search Map-Based Tool (MPCA 2021b) and are discussed below.

Grand Rapids Project

Riverine

Recent water quality data collected by the MPCA and MDNR within the vicinity of the Grand Rapids Project are available from three sample sites:

1. S007-334 – located in the Pokegama Reservoir approximately 0.3 RM upstream of the Pokegama Dam. Data were collected from May through September in 2013, 2014, and 2018. The sample depth was not provided for the data.
2. S003-656 – located on the Mississippi River approximately 0.7 RM downstream from Grand Rapids Dam. Data were collected in the summer and throughout the year from 2003 to 2020.
3. S007-333 – located on the Mississippi River approximately 2.7 RM downstream of Grand Rapids Dam and approximately 0.2 RM upstream of the Prairie River confluence. Data were collected May through September in 2013, 2014, and 2018. Of note, data at this site were collected for effluent limit permit monitoring.

These data remain pertinent as it is recent data having been collected over a range of years, thus providing a historic and current condition context. DO, pH, specific conductance, and water temperature data were compiled for these three sites in Figure E.4-1 through Figure E.4-3 below. DO concentrations upstream of the Grand Rapids Project and the Pokegama Dam in the Pokegama Reservoir (S007-334) ranged from 3.0 to 9.2 mg/L and were often below the minimum state criterion of 5.0 mg/L, which occurred during the summer (Figure E.4-1). The DO percent saturation measured between 36.7 to 99.1 percent. Just downstream of Grand Rapids Dam (approx. 0.7 RM downstream; S003-656), DO concentrations ranged from 4.9 to 15.5 mg/L and all readings except one have been above the minimum state criterion over the 17-year monitoring period. Similarly, DO concentrations further downstream from the Grand Rapids Project (approx. 2.7 RM downstream; S007-333) also generally met state criterion and ranged from 3.4 to 10.1 mg/L. The DO percent saturation was measured between 40.3 to 102.3 percent (MPCA 2021b).

MP conducted a DO monitoring program in 1990-1991 after consultation with applicable resource agencies. Data collected found that DO concentrations below Grand Rapids Dam were slightly higher than those measured above it. The study results demonstrated that continued operation of the Grand Rapids Hydroelectric Project would not result in physical, chemical, or biological

changes to site water quality parameters (Blandin Paper Company 1991). In FERC's 1993, EA, FERC stated that continued operation of the Project would not affect water resources (FERC 1993).

All pH values were within the state criteria range of 6.5 to 8.5 SU between 2003 and 2017, with the exception of two readings, which were 8.8 SU in December 2015 and 8.9 SU in November 2019 at S003-656, (Figure E.4-2). Specific conductance ranged from 131 to 423 $\mu\text{mhos/cm}$ and were well below the state maximum criterion of 1,000 $\mu\text{mhos/cm}$ (Figure E.4-3). Water temperatures were seasonal and ranged up to 30.3°C (86.5°F) in the summer (MPCA 2021b).

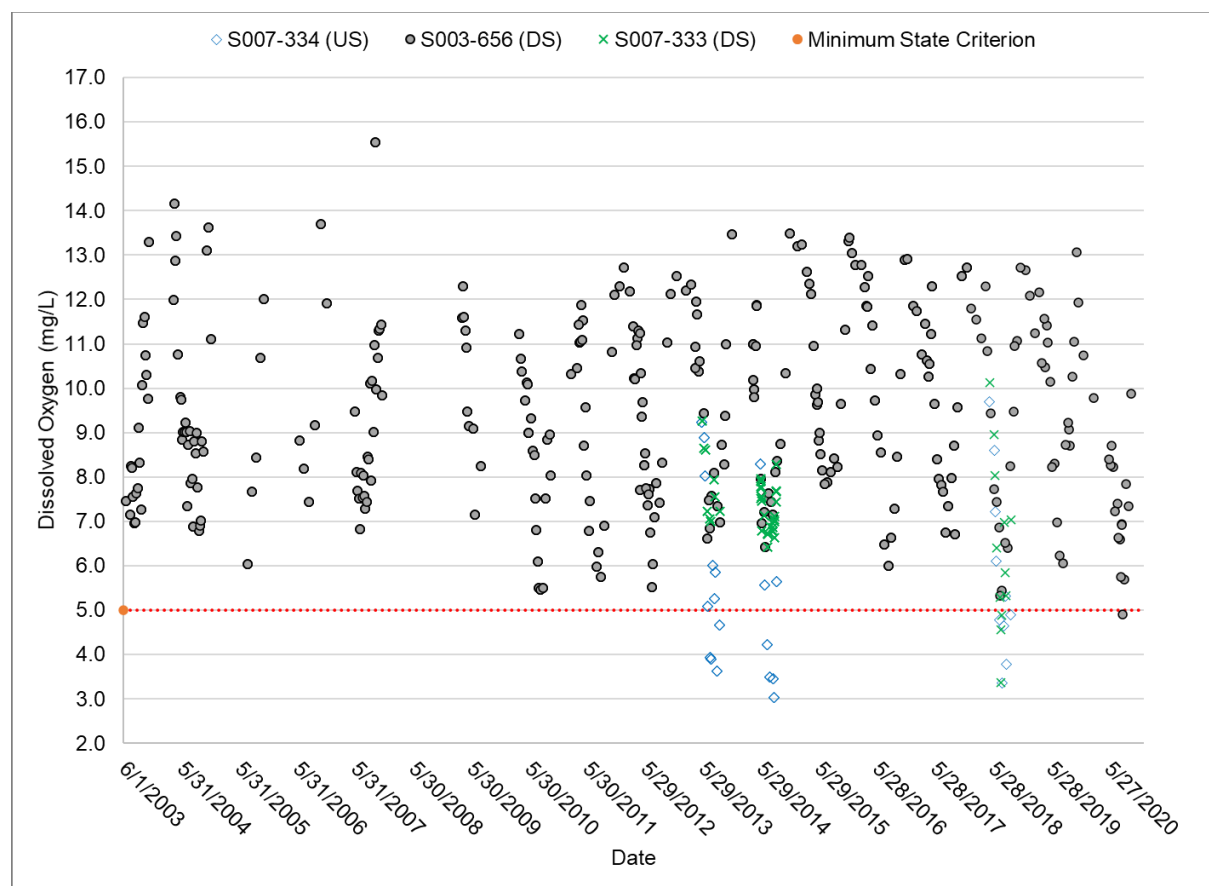


Figure E.4-1 DO concentrations (mg/L) at an upstream site (US) and two downstream sites (DS) of the Grand Rapids Project, 2003-2020 (MPCA 2021b)

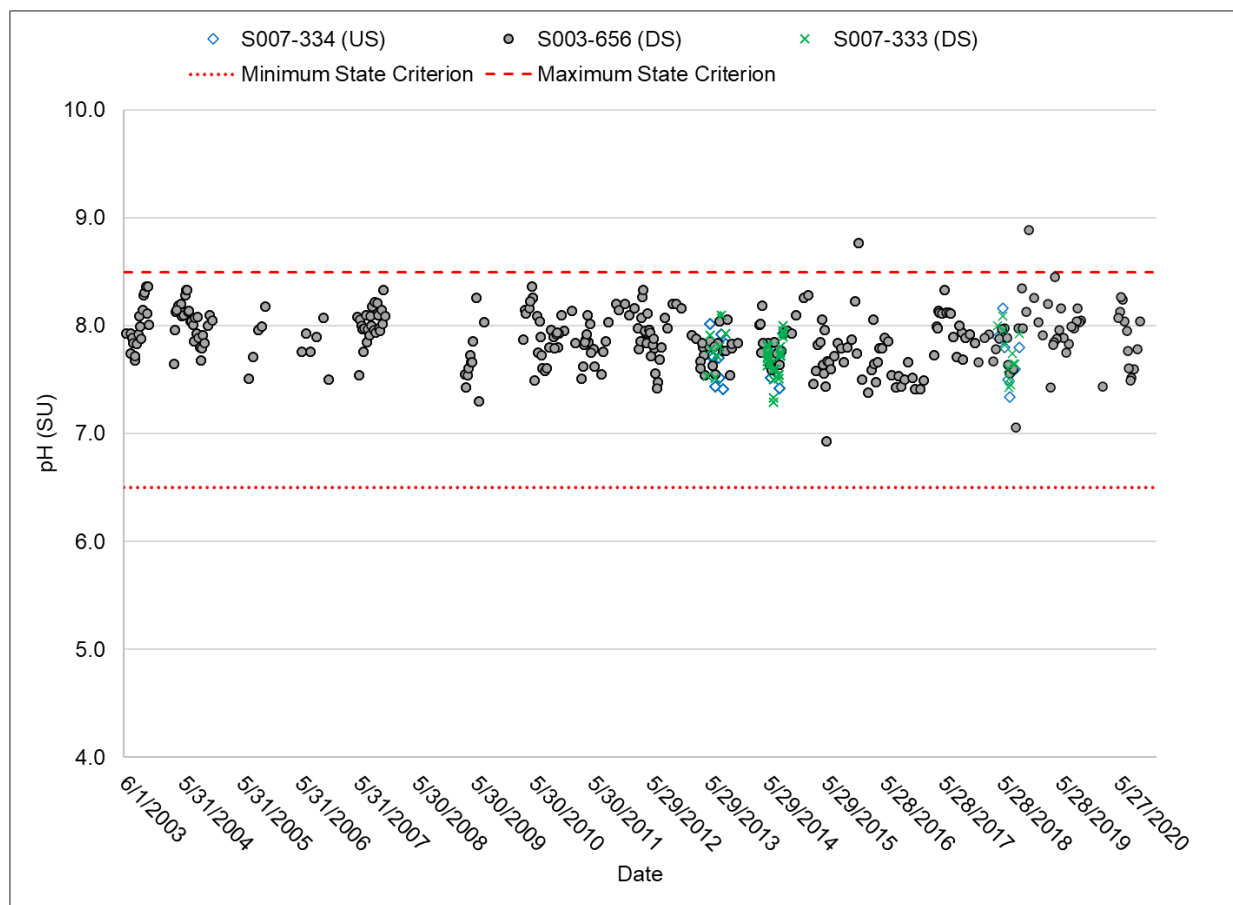


Figure E.4-2 pH measurements at an US and two DS of the Grand Rapids Project, 2003-2020 (MPCA 2021b)

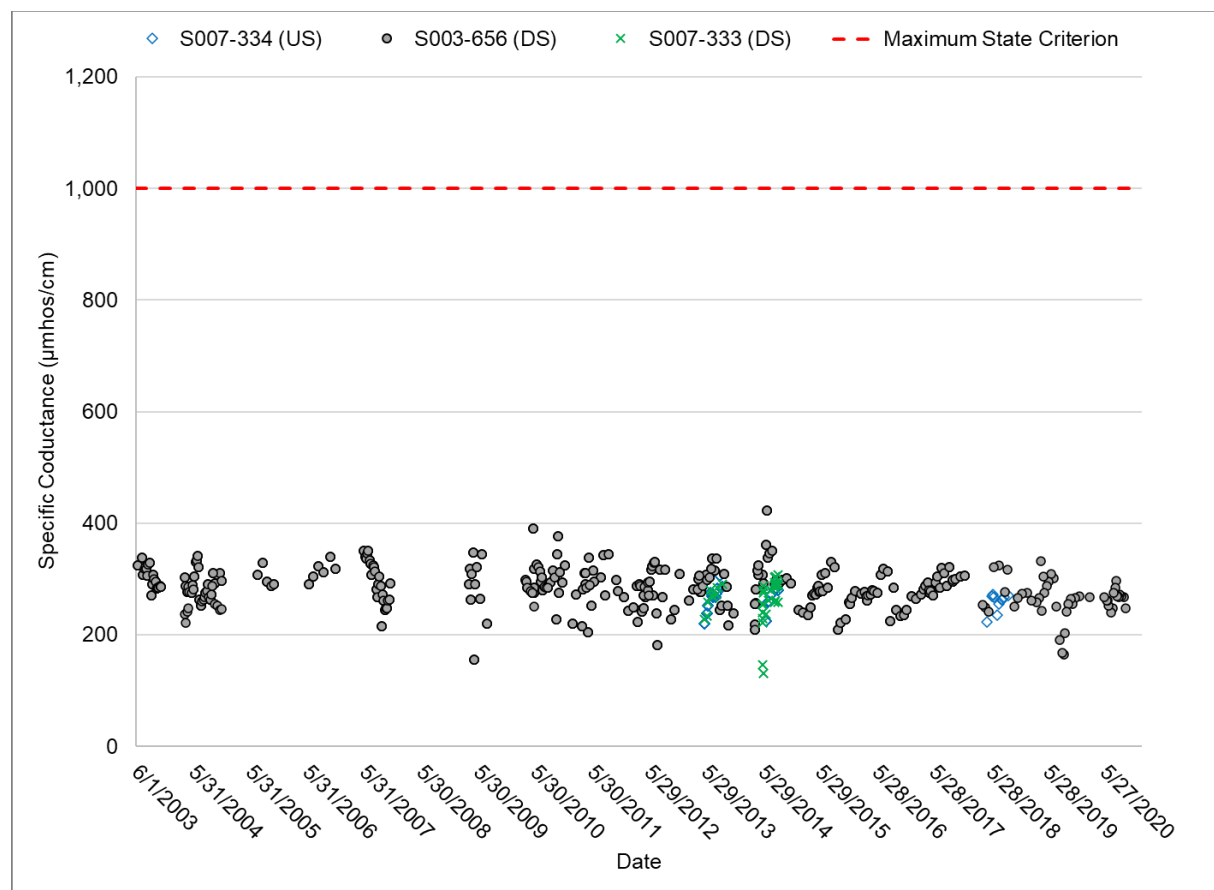


Figure E.4-3 Specific conductance measurements at an US and two DS of the Grand Rapids Project, 2003-2020 (MPCA 2021b)

Reservoir

Recent water quality data within the vicinity of Blandin Reservoir were compiled from the MPCA's Surface Water Search Map-Based Tool (MPCA 2021b) from one site:

1. S002-634 – located approximately mid-channel at the County Road 63 Bridge. Data were collected in the summer and during other months of the year (February through October) from 1991 through 1996. No sample depths were provided.

DO, pH, and specific conductance were collected for this site and are provided in Figure E.4-4 through Figure E.4-6 below. DO concentrations were generally above 5.0 mg/L except on a few occasions with the lowest value of 3.7 mg/L recorded in 1991. The pH ranged from 6.5 to 8.6 SU and were typically within the acceptable state criteria range with the exception of one event in June 1995. Specific conductance ranged from 170 to 342 µmhos/cm and were well below the maximum state criterion of 1,000 µmhos/cm.

Historical water quality data collected in Blandin Reservoir by the MDNR in 1973, 1983, and 1990 showed the reservoir stratified during the summer months at a depth of approximately 3 to 5 meters. Historical data found DO concentrations were less than 1.0 mg/L below a depth of 15 feet in two out of three of the sampling years during summer months (FERC 1993).

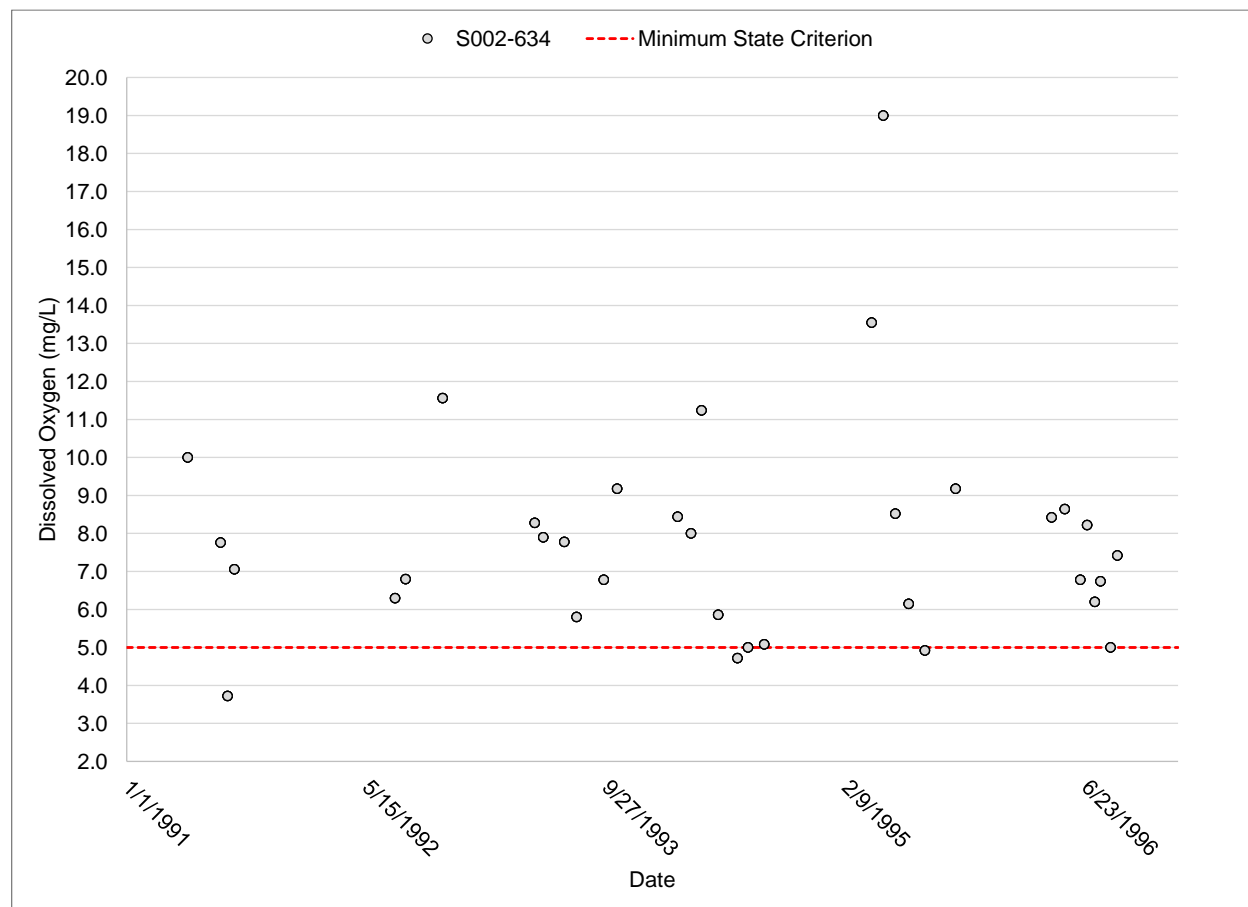


Figure E.4-4 DO in Blandin Reservoir at site S002-634, 1991-1996 (MPCA 2021b)

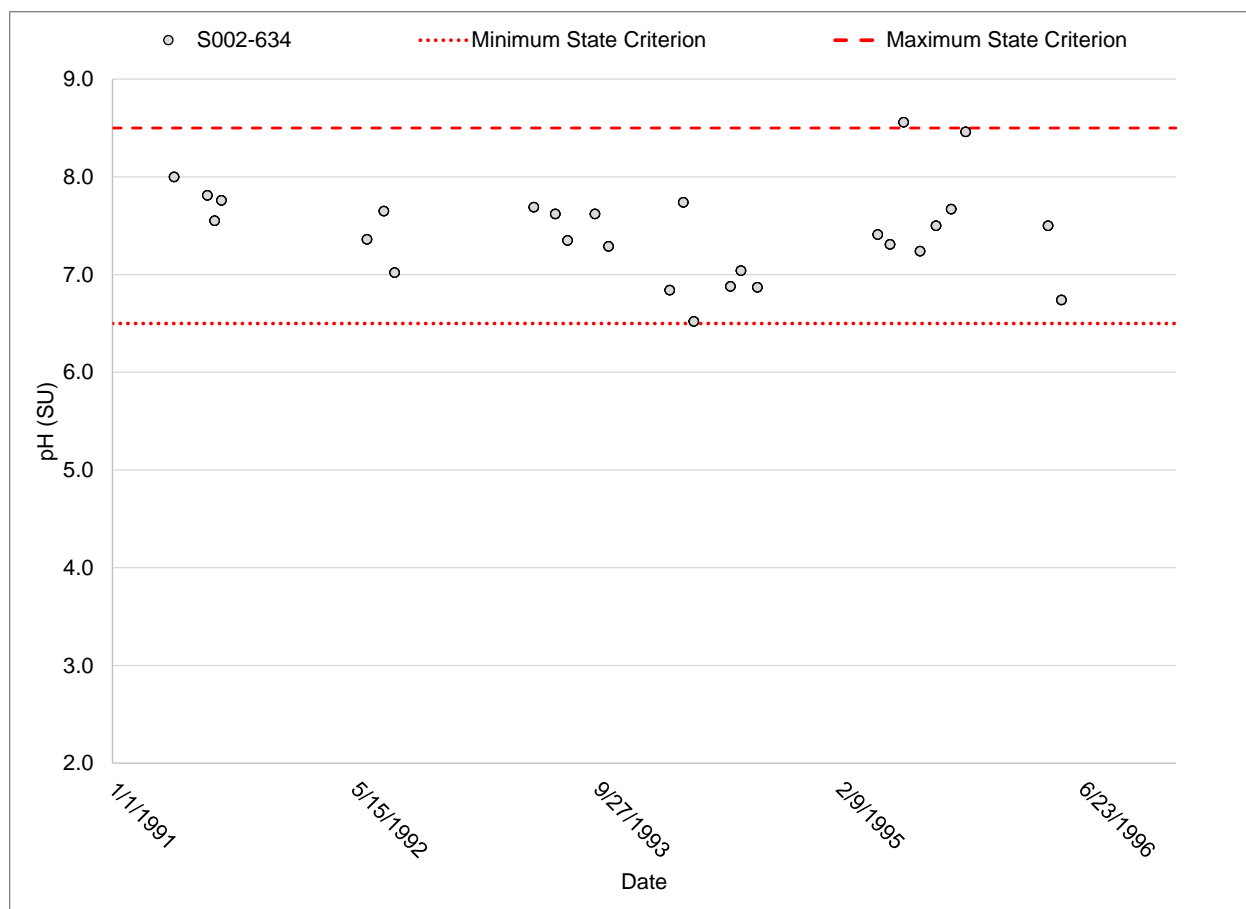


Figure E.4-5 pH in Blandin Reservoir at site S002-634, 1991-1996 (MPCA 2021b)

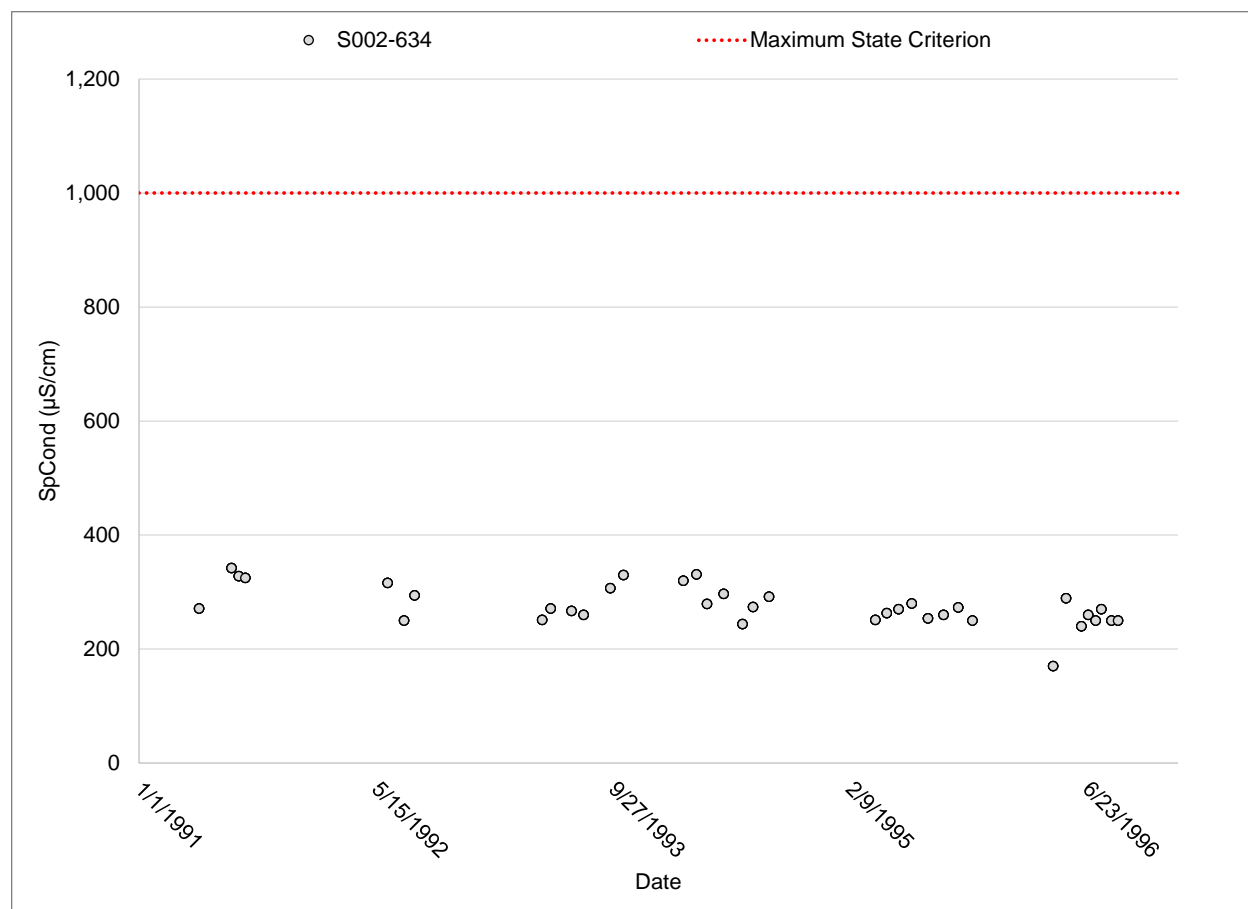


Figure E.4-6 Specific conductance in Blandin Reservoir at site S002-634, 1991-1996 (MPCA 2021b)

Prairie River Project

Riverine

Recent water quality data collected by MPCA within the vicinity of the Prairie River Project were available from two sites:

1. S003-667 – located on the Prairie River approximately 3.1 RM downstream from the Prairie River powerhouse. Data were collected during various months (April through October) in 2001 and from 2015 to 2016.
2. S005-499 – located on the Prairie River approximately 1.0 RM upstream from the confluence with the Mississippi River. Data were collected during various months (March through November) from 2007 to 2009.

DO, pH, and specific conductance data collected from these sites are presented in Figure E.4-7 through Figure E.4-9. DO concentrations ranged from 5.5 to 14.4 mg/L and were above the minimum state criterion at both sites (Figure E.4-7). All pH values were within the state criteria range of 6.5 to 8.5 SU, with the exception of one reading, which was 9.1 SU in September 2009, (Figure E.4-8). Specific conductance ranged from 58 to 247 $\mu\text{mhos/cm}$ and were well below the state maximum criterion of 1,000 $\mu\text{mhos/cm}$ (Figure E.4-9). Water temperatures were seasonal and were recorded as high as 25.8°C in the summer (MPCA 2021b).

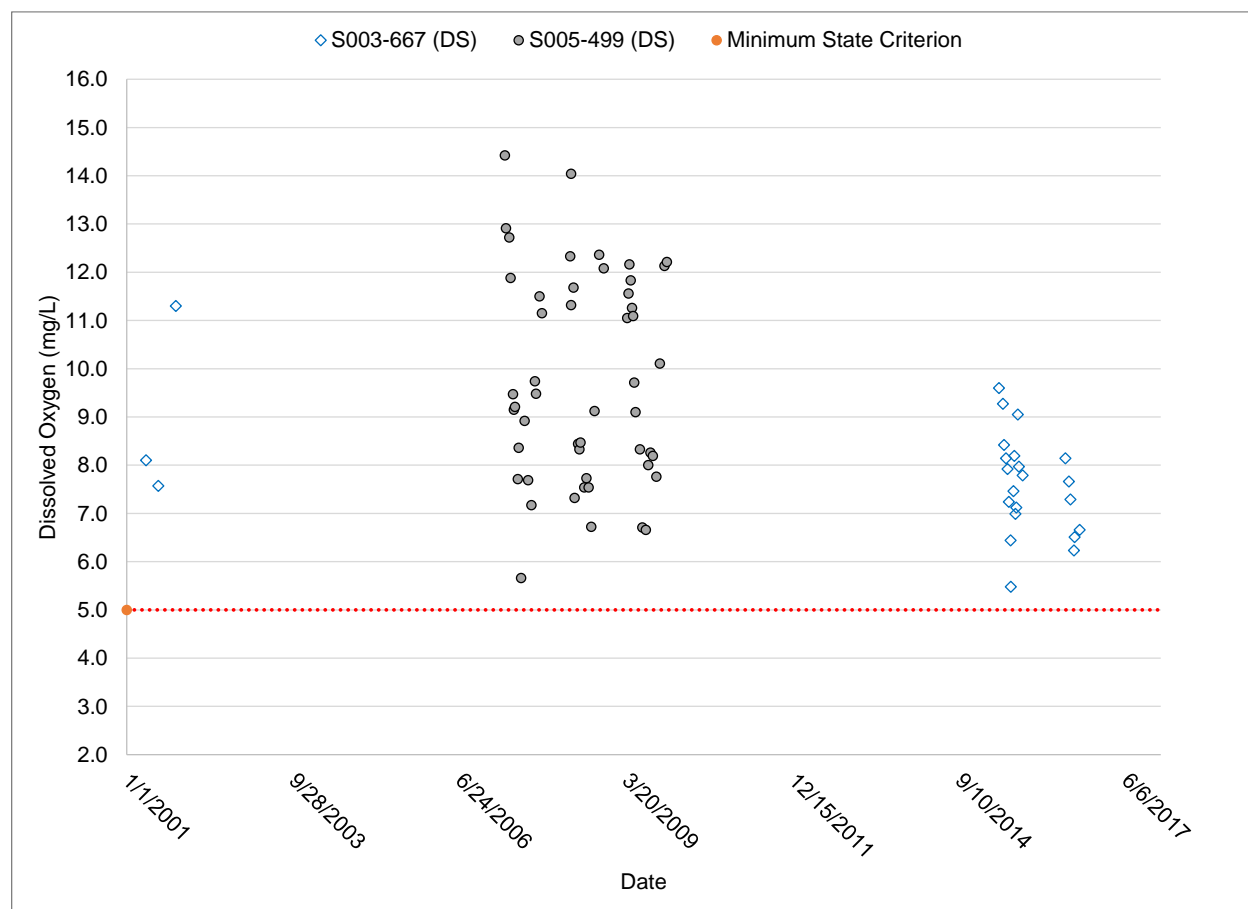


Figure E.4-7 DO concentrations at the two DS sites of the Prairie River Project, 2001-2016 (MPCA 2021b)

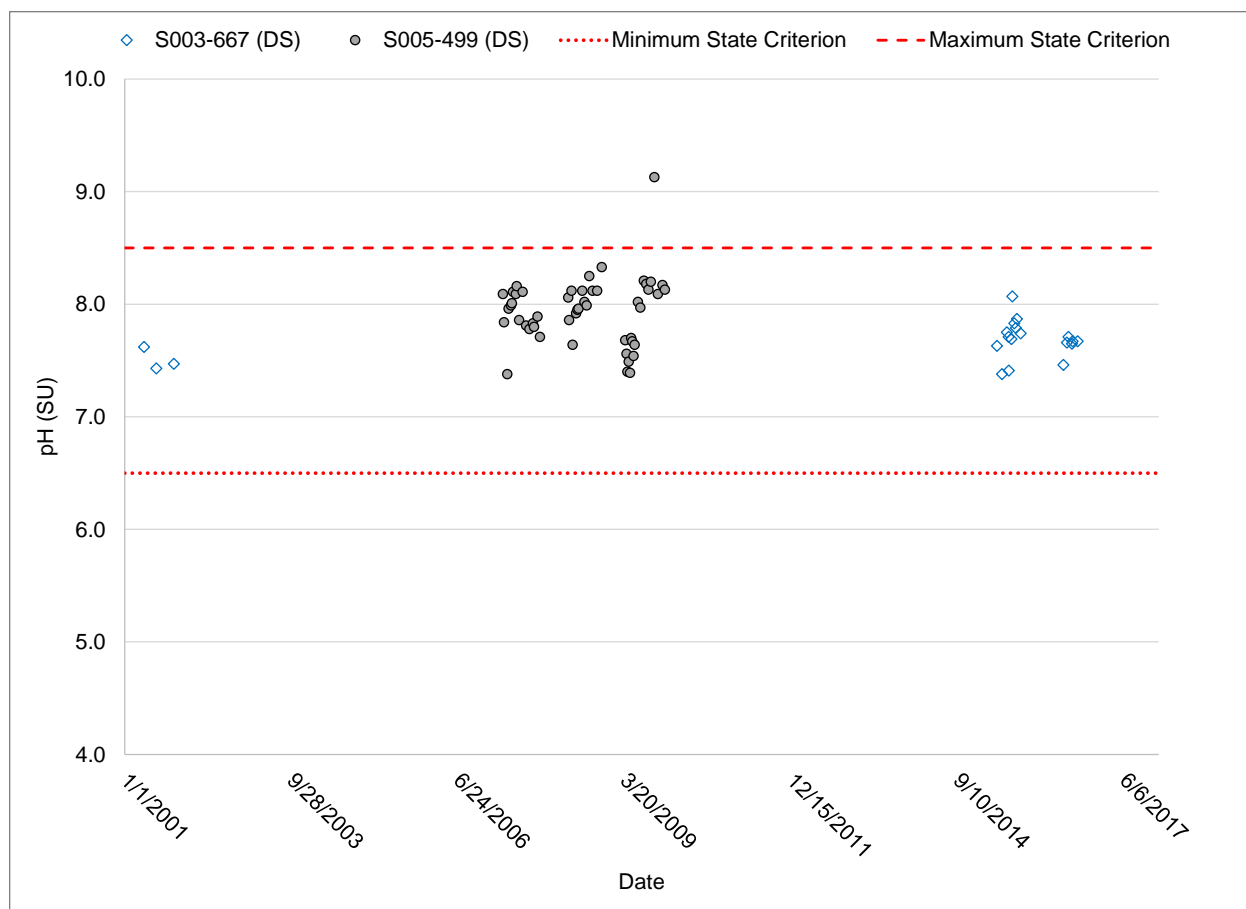


Figure E.4-8 pH at two DS sites of the Prairie River Project, 2001-2016 (MPCA 2021b)

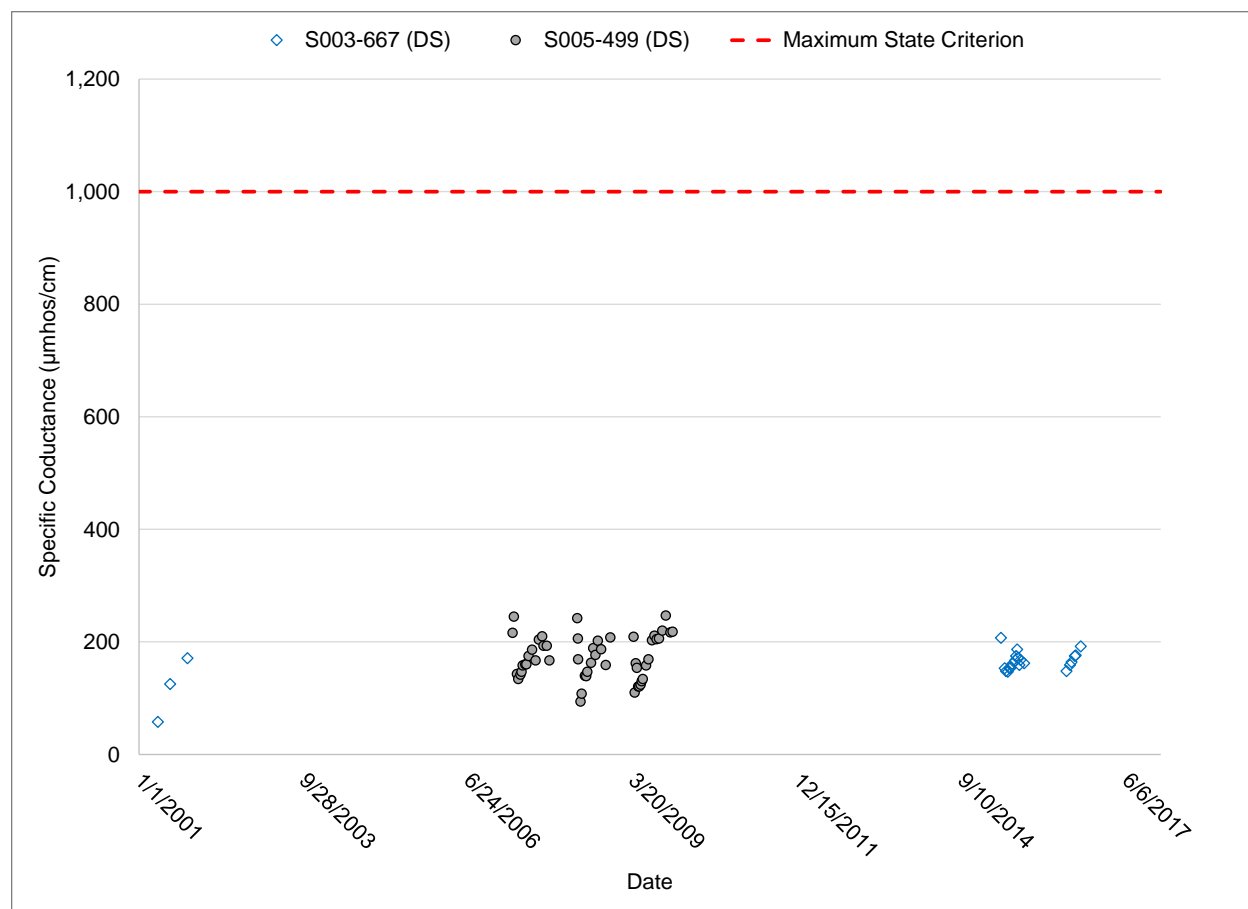


Figure E.4-9 Specific conductance at two DS sites of the Prairie River Project, 2001-2016 (MPCA 2021b)

Reservoir

Recent water quality data within the vicinity of Prairie River Reservoir (Lower Prairie Lake and Prairie Lake) were compiled from the MPCA's Surface Water Search Map-Based Tool (MPCA 2021b) from three sites:

1. 31-0384-02-102 – located mid-channel in the main bay of Prairie River Reservoir. Profile data were available May through September in 2006.
2. 31-0384-02-201 – located mid-channel in the main bay of Prairie River Reservoir. Profile data were available May through September from 2015-2016.
3. 31-0384-03-101 – located in the upper Prairie Lake portion of the Prairie River Reservoir. Profile data were available from May through September in 2006.

The DO and water temperature profile data collected from the above referenced sites are shown on Figure E.4-10 through Figure E.4-15 below. Based on this data, the reservoir appears to stratify at around 3 to 5 meters. DO concentrations often were lower towards the bottom of the water column, but typically were above 6.0 mg/L. The pH and conductivity at these sites during this period ranged from 7.3 to 8.9 SU and 129 to 239 $\mu\text{mhos/cm}$, respectively.

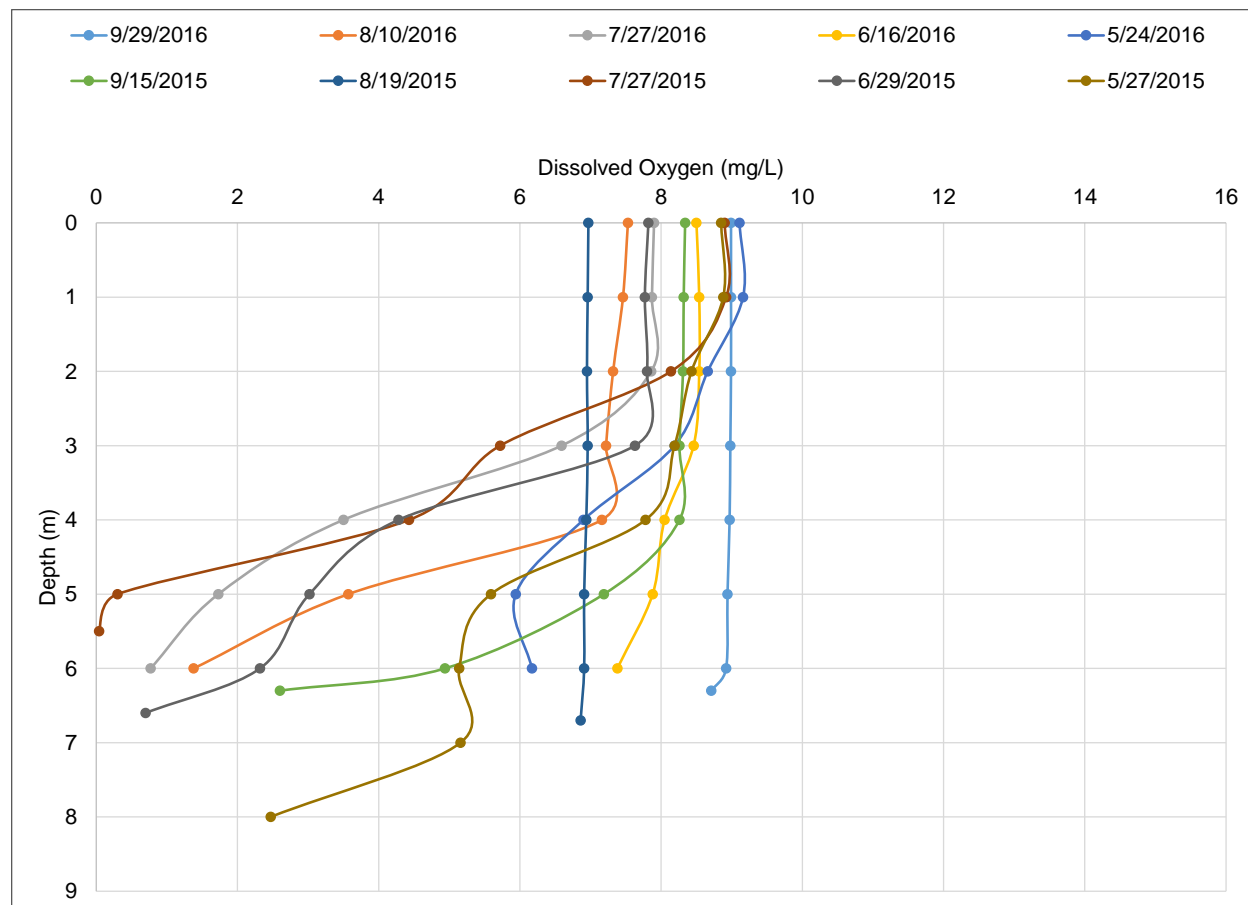


Figure E.4-10 DO profile at site 31-0384-02-201 in the main bay of Prairie River Reservoir, 2015-2016 (MPCA 2021b)

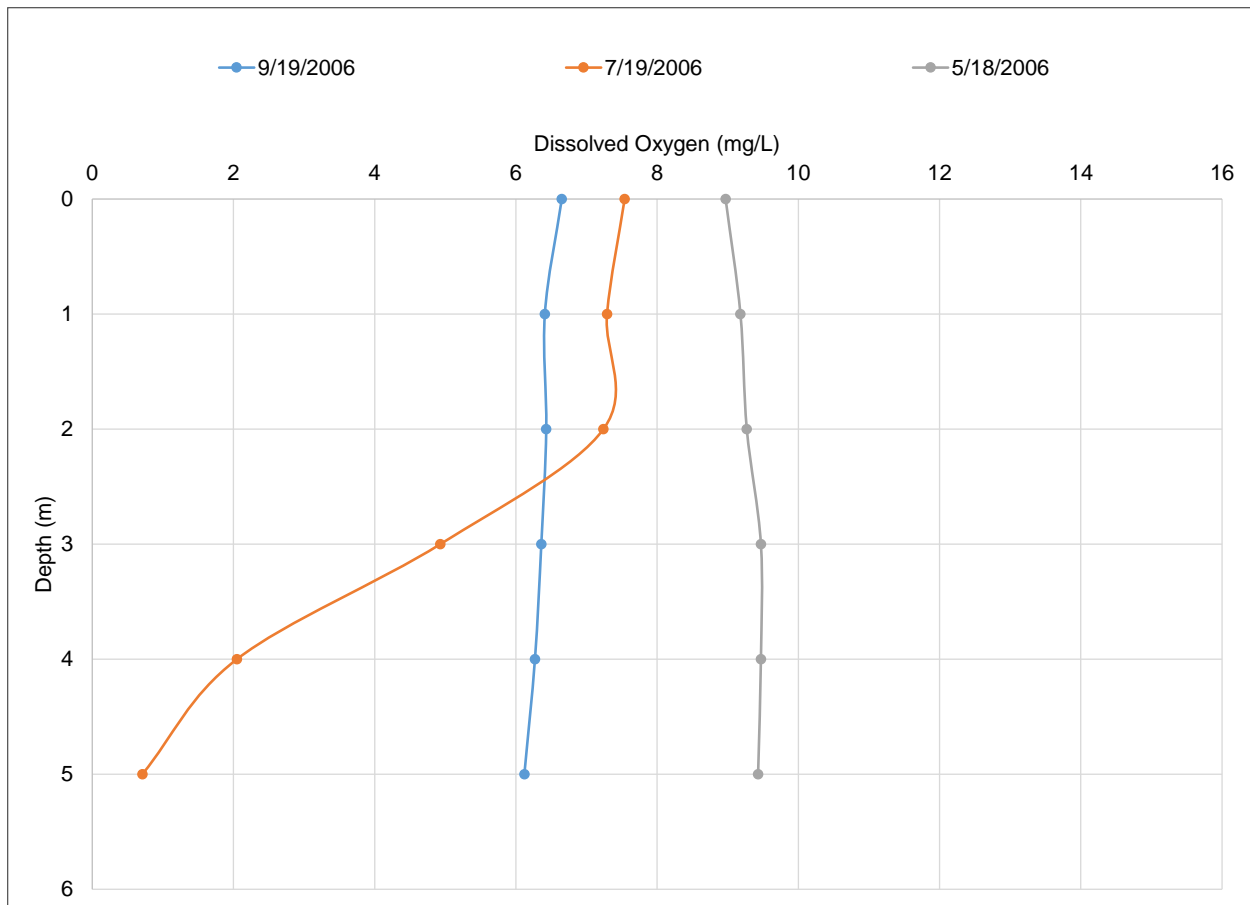


Figure E.4-11 DO profile at site 31-0384-02-101 in the upper Prairie Lake portion of Prairie River Reservoir, 2006 (MPCA 2021b)

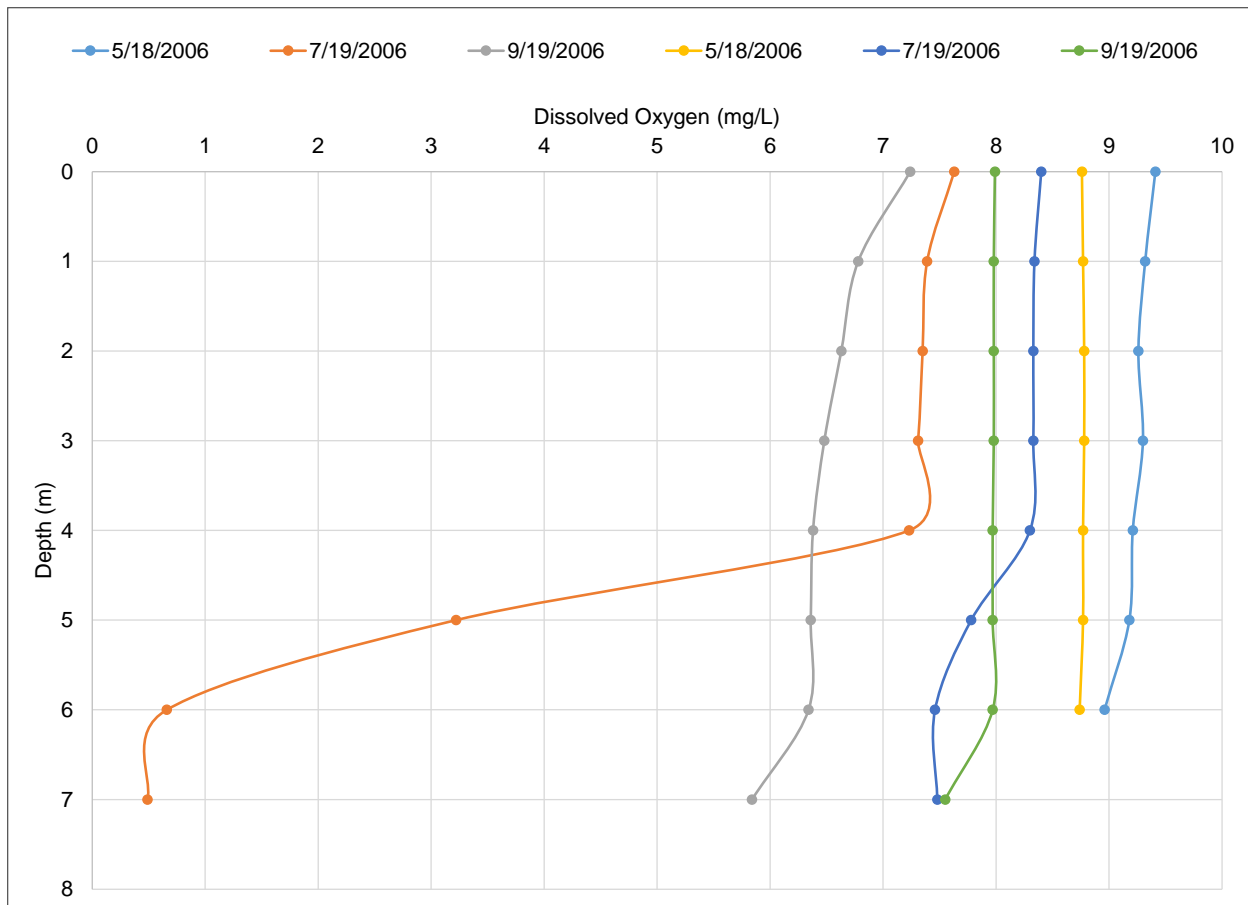


Figure E.4-12 DO profile at site 31-0384-02-102 in the main bay of Prairie River Reservoir, 2006 (MPCA 2021b)

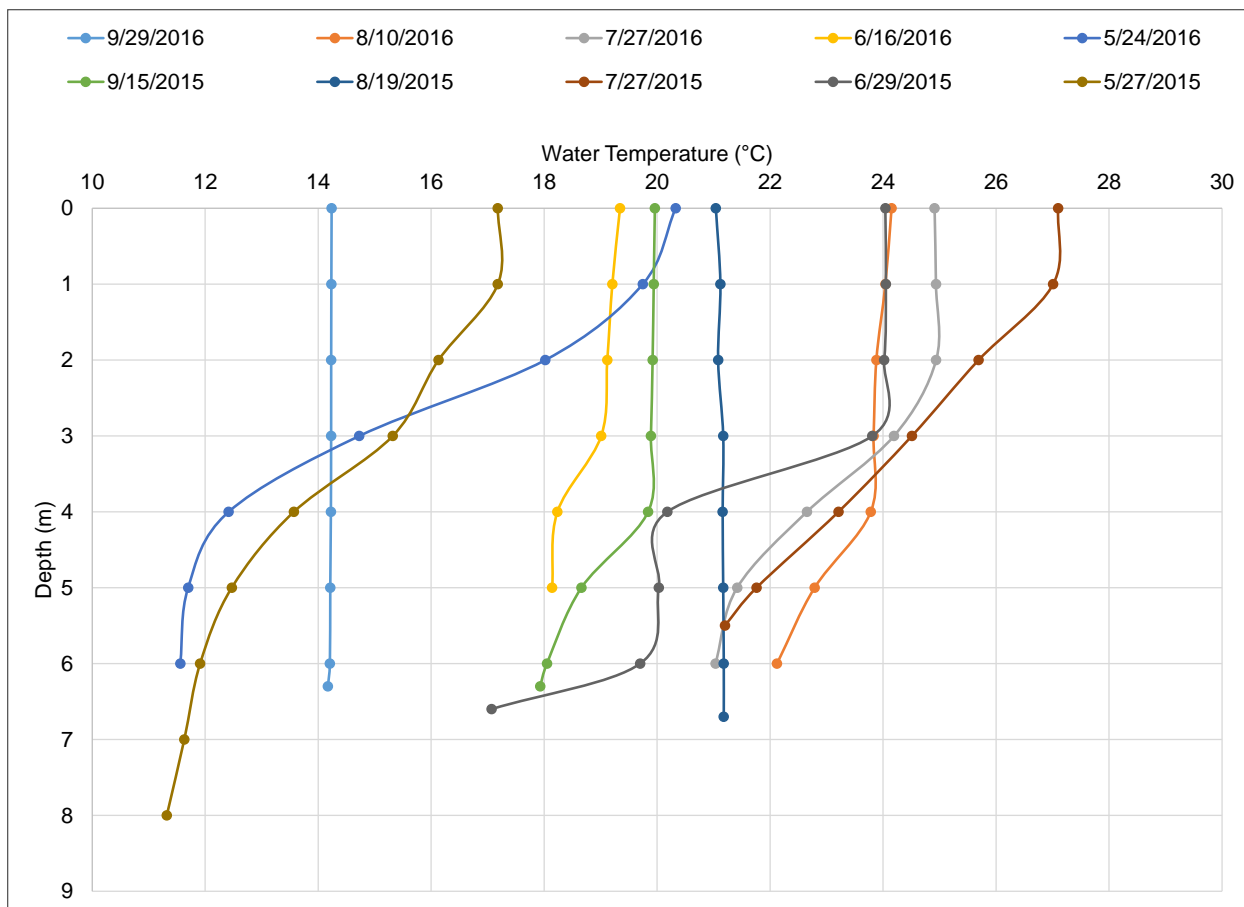


Figure E.4-13 Water temperature profile at site 31-0384-02-201 in main bay of Prairie River Reservoir, 2015-2016 (MPCA 2021b)

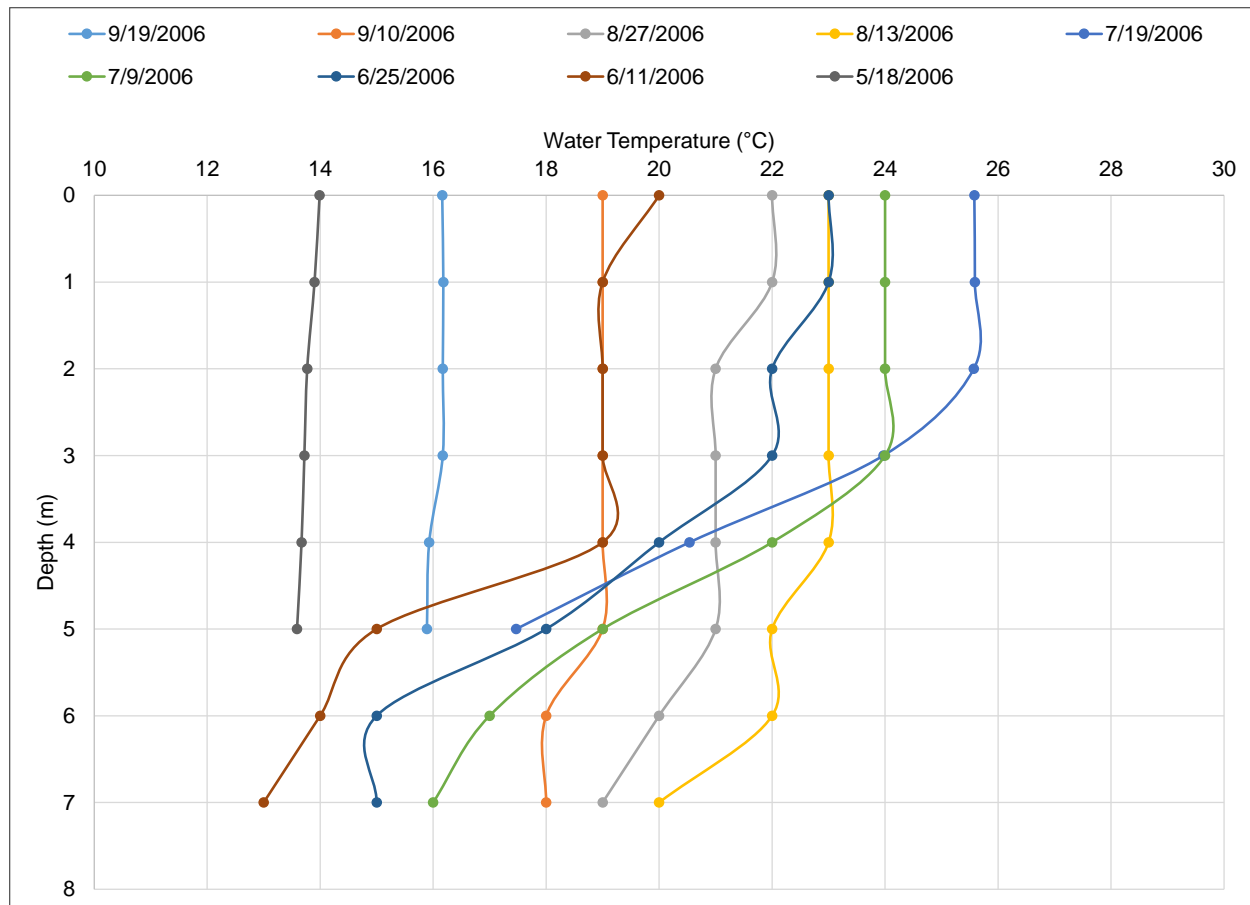


Figure E.4-14 Water temperature profile at site 31-0384-02-101 in the upper bay of Prairie River Reservoir, 2006 (MPCA 2021b)

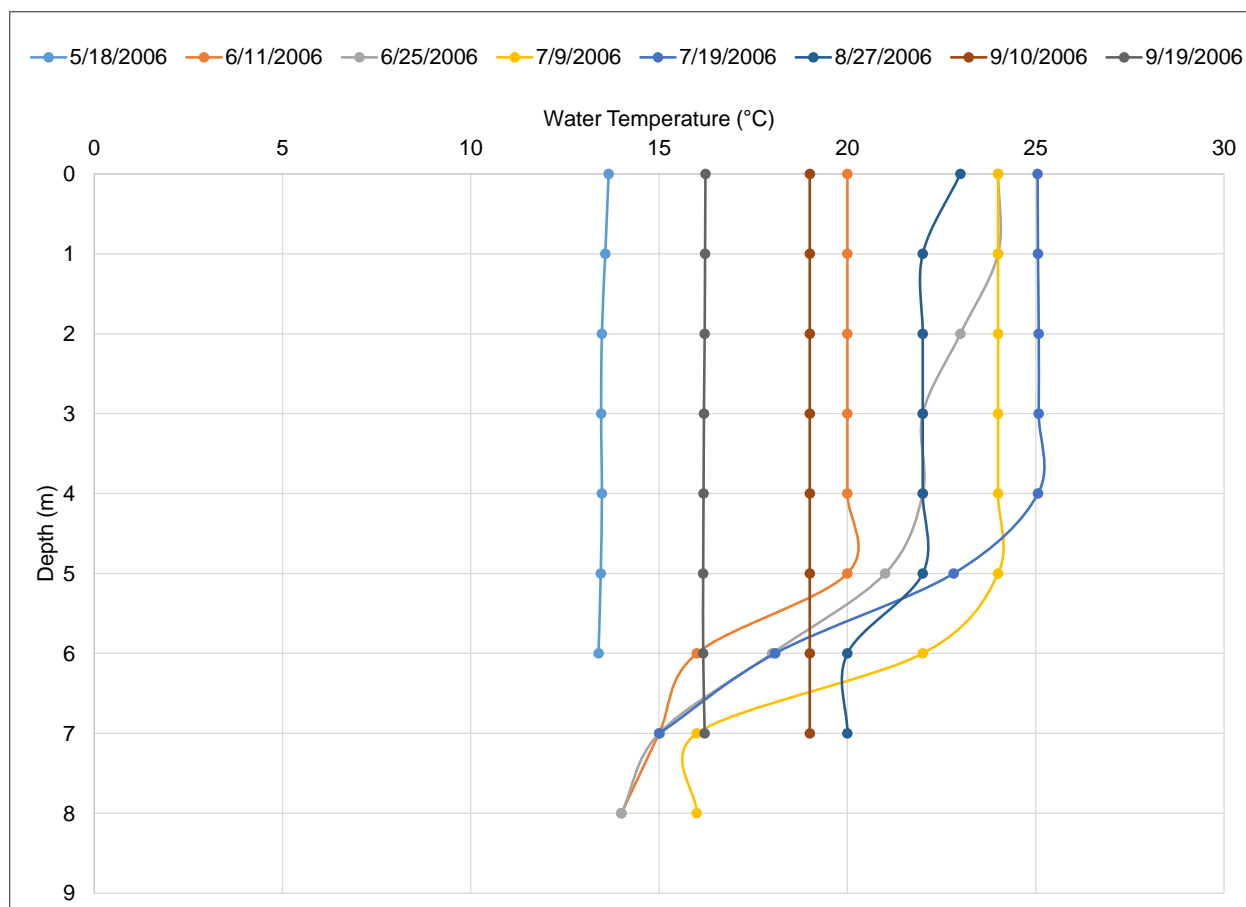


Figure E.4-15 Water temperature profile at site 31-0384-02-102 in the main bay of Prairie River Reservoir, 2006 (MPCA 2021b)

E.4.2.4 Recent Water Quality Data

MP has completed a Water Quality Study for each Project in accordance with the RSP and FERC's SPD. Measurements of temperature and DO were recorded from May through September 2020 in each of the Project reservoirs and downstream reaches. Besides one sampling event at the Grand Rapids Project, water quality measurements were above state standards for both Projects throughout the monitoring effort. The full Water Quality Study Reports are included in the ISR filed with FERC on October 19, 2020.

MP's Water Quality Study at Grand Rapids Project

MP's water quality study was performed from May through September 2020. The study collected water temperature and DO concentration approximately every two weeks at four locations in the Grand Rapids Project. The sampling locations included:

1. Blandin Reservoir – log boom corner;
2. Blandin Reservoir – turbine intake area;
3. Tailrace near retaining wall; and
4. Downstream of Highway 169 Bridge.

Measurements for DO and temperature at the upstream dam sampling locations were collected at 1-meter intervals from the surface to bottom of the water as these sites are relatively deep. The downstream location (tailrace and downstream of Hwy 169 bridge) were collected from the surface, middle, and bottom of the water column and included corresponding depth measurements. The downstream sites are both less than 2 meters deep.

Eleven bi-weekly water quality monitoring events took place in the 2020 monitoring season. Sampling was completed using a YSI 6920 V2 with 6560 Cond/Temp Probe & 6150 ROX Optical DO Probe. The meter was calibrated according to manufacturer instructions at the start of each day prior to beginning field monitoring. River discharge during the monitoring period ranged from 633–1,850 cfs. Water elevation at Grand Rapids Dam ranged from 1,268.16 feet to 1,268.23 feet above sea level. The dates of the sampling events and associated flow conditions on each date are provided in Table E.4-7.

Table E.4-7 Water quality sampling dates and associated river flow at the Grand Rapids Project

Date	Flow ¹ (cfs)
May 12, 2020	1,370
May 20, 2020	1,040
June 2, 2020	902
June 16, 2020	1,000
June 30, 2020	633
July 14, 2020	595
July 28, 2020	1,150
August 11, 2020	1,520
August 25, 2020	1,850
September 8, 2020	1,400
September 22, 2020	1,340

¹. Discharge data was obtained from USGS site 05211000 Mississippi River at Grand Rapids, MN.

Mean DO concentration across sites ranged from 7.38–7.71 mg/L and mean water temperature ranged from 19.7–19.9°C. Differences in DO between sites were minimal. The highest mean DO

concentration occurred at the downstream of Highway 169 Bridge site downstream of the dam and the lowest mean DO concentration occurred at the log boom corner site upstream of the dam. Differences in temperature between sites were also minimal, but mean water temperature was highest at the tailrace near retaining wall site. Mean water temperature was lowest at the log boom corner site. Over the course of the study, mean DO concentration at all sites generally decreased from May 12, 2020 to August 25, 2020. A summary of mean water temperature and DO at the Grand Rapids Project in 2020 is provided in Table E.4-8. Water temperature and DO profiles for all sampling sites are provided in Figure E.4-16 through Figure E.4-19.

Table E.4-8 Average DO and temperature recorded at the Grand Rapids Project

Sampling Location	DO (mg/L)	Water Temperature (°C)	Number of Measurements
Blandin Reservoir - Log Boom Corner	7.38	19.7	71
Blandin Reservoir - Turbine Intake Area	7.58	19.8	72
Tailrace Near Retaining Wall	7.55	19.9	32
Downstream of Hwy 169 Bridge	7.71	19.8	33

At all four sampling sites, water temperature generally increased over the course of the study until mid-July, corresponding to an increase in air temperatures over the summer months. Water temperatures decreased over the final five sampling events except for a short spike in temperature on August 25, 2020.

At the log boom corner site, water temperature measurements ranged from 10.1–25.7°C. DO measurements ranged from 4.24–10.4 mg/L with the lowest readings on August 25, 2020. DO measurements generally decreased from May to the end of August. DO measurements were all above the Class 2B warmwater stream standard of 5.0 mg/L except on one occasion, August 25, 2020, when they fell slightly below. On this date, DO measurements ranged from 4.42–4.52 mg/L. DO and temperature measurements were slightly higher on the surface and decreased with depth on several occasions (Figure E.4-16).

At the turbine intake area site, water temperature measurements ranged from 10.6–25.6°C. DO measurements ranged from 4.18–10.4 mg/L with the lowest readings on August 25th, 2020. DO measurements generally decreased over the course of the study until the end of August. DO measurements were all above the Class 2B stream standard except on one occasion, August 25, 2020, when they fell slightly below 5.00 mg/L. On this date DO measurements ranged from 4.18–4.55 mg/L. DO and temperature profiles taken during each sampling event show a well-

mixed site except on September 22, 2020, when DO concentrations were higher on the surface than the rest of the water column (Figure E.4-17).

At the tailrace near the retaining wall site, water temperature ranged from 10.3–25.6°C. DO measurements ranged from 4.24–12.0 mg/L and the lowest readings occurred on August 25, 2020. DO generally decreased over the course of the study until the end of August. DO measurements were all above the Class 2B stream standard except on August 25, 2020, when they fell below the 5.00 mg/l standard. On this date DO measurements ranged from 4.24–4.40 mg/L. Temperature and DO profiles taken during each sampling event show a well-mixed water column except on May 12, July 14 and 28, and August 11, 2020, when DO concentrations were slightly higher on the surface than the rest of the water column (Figure E.4-18).

At the downstream of Highway 169 Bridge site, water temperature measurements ranged from 10.6–25.6°C. DO ranged from 4.55–10.3 mg/L and the lowest readings occurred on August 25, 2020. DO measurements generally decreased over the course of the study until the end of August. DO measurements were all above the Class 2B stream standard except on August 25, 2020, when they fell slightly below 5.00 mg/L. On this date DO measurements ranged from 4.55–4.57 mg/L. Temperature and DO profiles taken during each sampling event show a well-mixed site except on May 20, June 30, and July 28, 2020, when DO was slightly higher on the surface than the rest of the water column (Figure E.4-19).

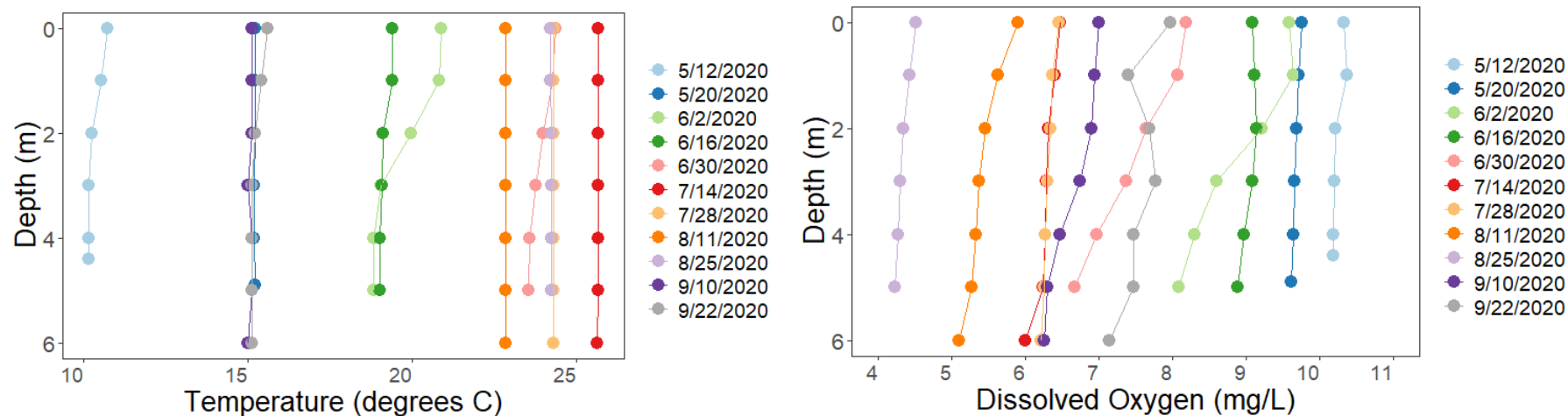


Figure E.4-16 Temperature and DO profiles at the log boom corner site of the Grand Rapids Project

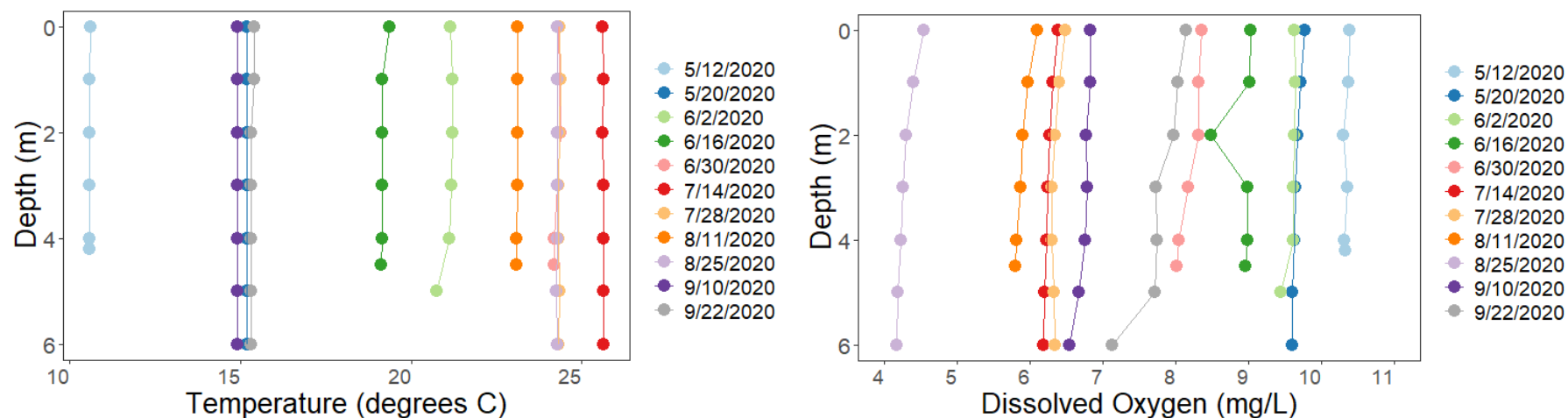


Figure E.4-17 Temperature and DO profiles at the turbine intake area site of the Grand Rapids Project

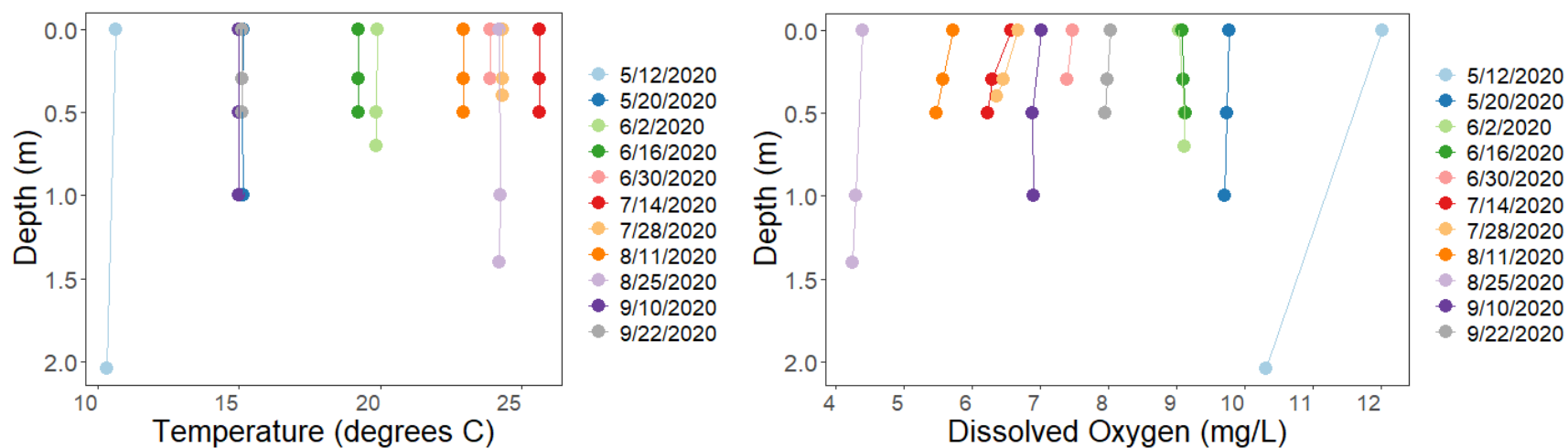


Figure E.4-18 Temperature and DO profiles at the tailrace near the retaining wall site of the Grand Rapids Project

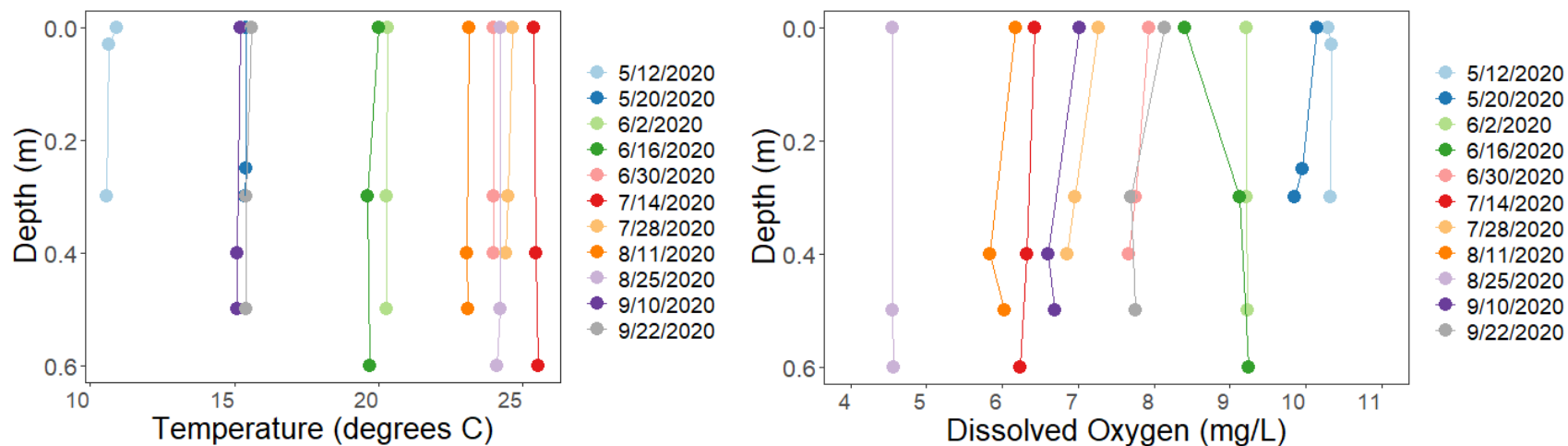


Figure E.4-19 Temperature and DO profiles downstream of Highway 169 Bridge site below the Grand Rapids Project

MP's Water Quality Study at the Prairie River Project

Water temperature and DO were sampled approximately every two weeks from May through September 2020 at three locations at the Prairie River Project. The sampling locations included:

1. Upstream of the coarse trashrack area;
2. Tailrace area; and
3. Bypass reach (upstream of the road to avoid influence).

Measurements of DO and temperature upstream of the coarse trashrack sampling location were collected and recorded at 1-meter intervals. For the tailrace area and bypass reach locations, measurements of DO and temperature were taken at the surface, middle, and bottom of the water column and included corresponding depth measurements.

Eleven bi-weekly water quality monitoring events took place in the 2020 monitoring season. Sampling was completed using a YSI 6920 V2 with 6560 Cond/Temp Probe & 6150 ROX Optical DO Probe. The meter was calibrated at the start of each day prior to beginning field monitoring. The dates of the sampling events and associated flow conditions on each date are provided in Table E.4-9.

Table E.4-9 Water quality sampling dates and flow for the Prairie River Project

Date	Flow ¹ (cfs)
May 12, 2020	212
May 20, 2020	180
June 2, 2020	164
June 16, 2020	443
June 30, 2020	141
July 14, 2020	114
July 28, 2020	150
August 11, 2020	147
August 25, 2020	506
September 8, 2020	228
September 22, 2020	132

¹. Discharge data was obtained from MP Hydro Operator.

Mean DO concentration across sites ranged from 8.18–8.77 mg/L and mean water temperature ranged from 20.0–20.5°C (Table E.4-10). Differences in DO between sites were minimal, but the highest mean DO concentration occurred at the bypass reach site downstream of the dam and

the lowest mean DO concentration occurred at the tailrace area site. Differences in temperature between sites were also minimal, but mean water temperature was highest at the bypass reach site and lowest at the tailrace area site. Over the course of the study, mean DO concentration at all sites generally decreased from May 12 to August 25, 2020. Water temperature and DO profiles for all sampling sites are provided in Figure E.4-20 through Figure E.4-22.

Table E.4-10 Average DO and temperature recorded at the at the Prairie River Project

Sampling Location	DO (mg/L)	Water Temperature (°C)	Number of Measurements
Upstream of Coarse Trashrack	8.43	20.4	37
Bypass Reach	8.77	20.5	32
Tailrace Area	8.18	20.0	33

At all three sites, water temperature generally increased over the course of the study until mid-July to mid-August corresponding to an increase in air temperatures over the summer months. Water temperatures generally decreased over the final five sampling events except for a short spike in temperature on August 25, 2020. All DO measurements were above the Class 2B warmwater stream standard of 5.00 mg/L.

Upstream of the coarse trashracks, water temperature measurements ranged from 11.5–25.0°C. DO measurements at the site ranged from 7.36–9.85 mg/L with the lowest readings on September 10, 2020. DO measurements generally decreased from May to September 10, 2020, except for a short spike on July 28, 2020. DO and temperature measurements were higher at the surface and decreased with depth on several occasions (Figure E.4-20).

At the bypass reach site, water temperature measurements ranged from 12.1–25.2°C. DO measurements ranged from 7.76–10.4 mg/L with the lowest readings August 11, 2020. DO measurements generally decreased until mid-August. The site was well mixed with no observable pattern of higher temperature or DO on the surface (Figure E.4-21). On June 2, 2020, measurements of DO and temperature were made at the surface, middle, and bottom of the water column; however, the depth of the middle and bottom measurement were not recorded. Only the surface water measurement is included in the profiles for this date.

At the tailrace area site, water temperature measurements ranged from 12.4–24.6°C. DO measurements ranged from 5.65–9.97 mg/L with the lowest readings on July 14, 2020. DO measurements generally decreased until mid-August. Temperature was not stratified during any event, but DO was higher on the surface than below the surface on May 20, July 14, August 11, August 25, and September 22, 2020 (Figure E.4-22).

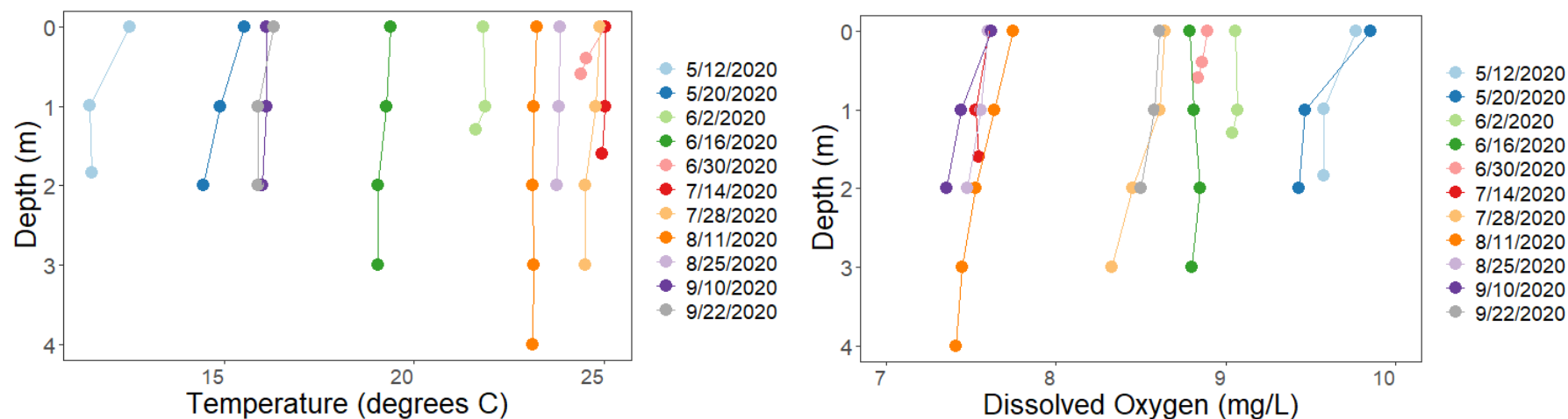


Figure E.4-20 Temperature and DO profiles at the upstream of coarse trashrack site at the Prairie River Project

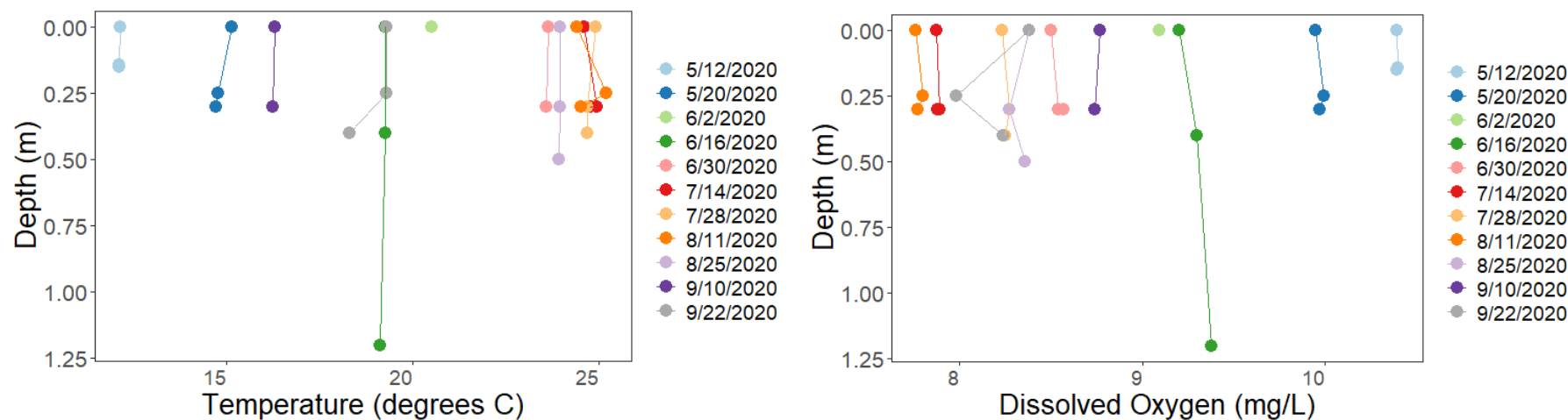


Figure E.4-21 Temperature and DO profiles at the bypass reach site of the Prairie River Project

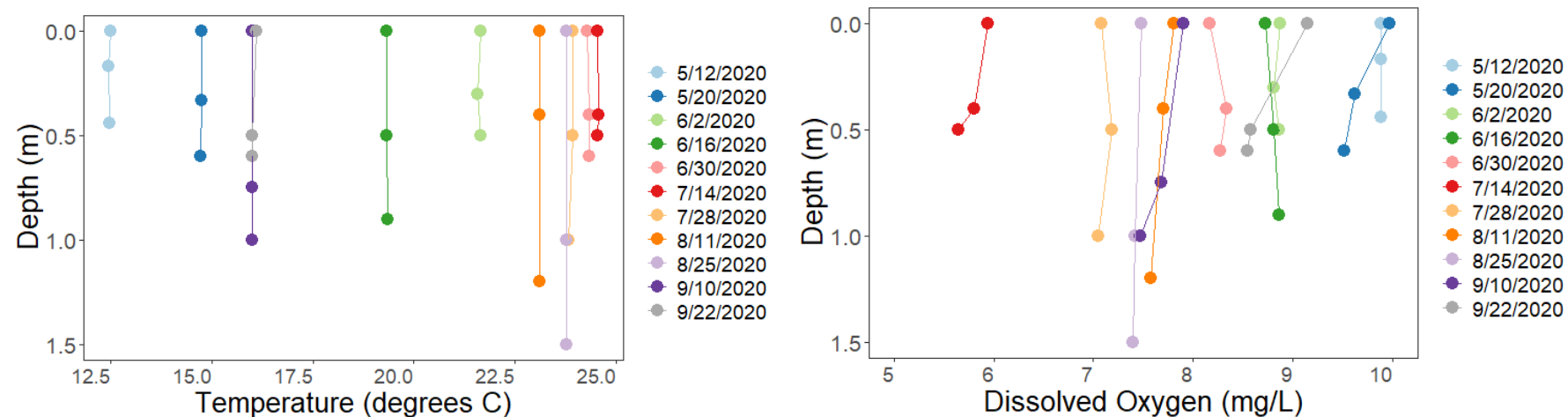


Figure E.4-22 Temperature and DO profiles at the tailrace area site of the Prairie River Project

E.4.3 Project Effects on Water Resources

Overall, the observed water quality in the vicinity of the Projects is typical of well-mixed warmwater rivers in Minnesota. Because the Projects operate in ROR mode and do not store water, MP believes the Projects have little to no effect on water quality in the Prairie River or the Mississippi River.

E.4.3.1 Grand Rapids Project

The 2020 water quality monitoring exhibited a few instances of DO and temperature that were higher on the surface than at depths below the surface at the monitored sites, a typical occurrence for surface waters in Minnesota in the summer. Historically and recently, DO has been above state standards except for few occasions which do not seem to be linked to the Project as ROR operations are utilized. Similarly, pH values have been within the acceptable state criteria range with very few exceptions.

E.4.3.2 Prairie River Project

The 2020 water quality monitoring exhibited a few instances where DO and temperature were higher on the surface than at depths below the surface at the monitored sites, a typical occurrence for surface waters in Minnesota in the summer. Historically and recently, DO has been above state standards. Similarly, all pH values have historically been within the state criteria range of acceptable.

E.4.4 PM&E Measures Proposed by the Applicant, Resource Agencies, and/or Other Consulting Parties

E.4.4.1 Grand Rapids Project

No new PM&E measures related to water resources have been proposed by any resource agencies or consulting parties. For the reasons stated above, MP is not proposing any new PM&E measures related to water resources at the Grand Rapids Project. MP proposes to continue ROR operations at the Project for the protection of water quality and fish and wildlife resources.

E.4.4.2 Prairie River Project

For the reasons stated above, MP is not proposing any new PM&E measures related to water resources at the Prairie River Project. MP proposes to continue ROR operations at the Project for the protection of water quality and fish and wildlife resources. MP also proposes to maintain the established minimum flows in the Prairie River bypass reach.

In addition to the 2020 water quality studies performed by MP, the MPCA requested additional, longer-term water quality monitoring in the Main Upper Prairie Basin Lake. In a letter dated April 11, 2019, MPCA proposed that Chlorophyll-a, secchi disk, temperature profiles, and total phosphorus be monitored in the lake three times per year every other year for three cycles, or over six years total.

Existing monitoring frameworks are adequate to monitor water quality at Prairie Lake. The MPCA's Mississippi River – Grand Rapids Watershed Monitoring and Assessment Report (MPCA 2018a) indicates that the phosphorous levels in Prairie Lake meet the Minnesota State water quality standards (Minnesota Statute 7050) and the impaired designation listing was removed from the MPCA 303(d) Impaired Water List. The 2018 Report denotes that Prairie Lake and Prairie River (upstream and downstream) typically either meet or exceed Minnesota's water quality standards including Fish Index of Biotic Integrity (IBI), chloride, total phosphorous, chlorophyll-a, secchi, aquatic life use, and aquatic recreation use (bacteria). According to the 2018 Report, the Prairie River Reservoir meets the Minnesota water quality standards with good to excellent water quality and has been demonstrating improved water quality over time. Therefore, MP is not proposing to monitor these water quality parameters in the Main Upper Prairie Basin Lake.

No other PM&E measures related to water quality were proposed by any other resource agency or consulting party.

E.5 Fish and Aquatic Resources

Blandin and Prairie River Reservoirs support a variety of non-migratory forage species and popular sportfish species such as Largemouth Bass (*Micropterus salmoides*), Black Crappie (*Pomoxis nigromaculatus*), sunfish (*Lepomis* spp.), perch (*Perca* spp.), pikes (*Esox* spp.), Walleye (*Sander vitreus*), and others. The MDNR has performed periodic fish surveys in these reservoirs for over 30 years. The overall composition of fish collections in Blandin and Prairie River Reservoirs is consistent with historical data and with the trophic status and ecological classification of the waterbody.

No federally listed Endangered Species Act (ESA)-or state-listed fish or aquatic species have been identified in the vicinity of either Project. The upper Midwest and Mississippi River is subject to a number of regional or national-scale invasions of aquatic invasive species (AIS), including recent observations of zebra mussels in Blandin reservoir.

MP currently provides a minimum flow of 75 cfs into the bypass reach downstream of the Prairie River Project dam during the months of April and May and a minimum flow of 50 cfs during June to enhance walleye spawning habitat and protect young-of-year from April to June. These flows were established based on an instream flow incremental methodology (IFIM) study conducted in the bypass reach in support of the previous relicensing. The Prairie River Project bypass reach is primarily of seasonal resource benefit; fish presence in the bypass reach drops substantially after the spring spawning season, as the fish move downstream into the Mississippi River.

There are no fish passage facilities at the Grand Rapids or Prairie River Projects. MP believes fish passage facilities would be of limited resource benefit due to multiple dams on the Mississippi River both upstream and downstream of the Grand Rapids Project; furthermore, the fish species present in the vicinity of the Projects are resident/non-migratory species that do not require migration as a part of their life cycle. In general, Blandin and Prairie River Reservoirs support a healthy variety of non-migratory forage species and popular sportfish species.

E.5.1 Aquatic Habitat

Grand Rapids Project

The Grand Rapids Project's reservoir, Blandin Reservoir, is a 465-acre impoundment of the Mississippi River with 366 acres of littoral area, 35 miles of shoreline, and a maximum depth of 38 feet (ALLETE/Minnesota Power 2018). The lake is classified as an Ecological Class 35, generally describing lakes with a high percentage of littoral area, moderate alkalinity, and moderate transparency and productivity with a trophic state index of 47.7 (meso- to meso-eutrophic productivity) (Carlson 1977; MDNR 2013a). The majority of the substrate types within Blandin Reservoir are sand, gravel, silt, and muck (FERC 1993). The littoral zone provides excellent fish habitat with a diversity of aquatic and wetland plant species (MDNR 2013a).

The Mississippi River upstream and downstream of Blandin Reservoir is characterized as a slow-moving, narrow, and deep single-channel river. The dominant substrate within this portion of the river consists of sand and silt. River width at this section of the river ranges from 100 to 300 feet, with a maximum depth of 12 feet, and an average stream gradient of 0.48 feet per mile (FERC 1993). This section of the Mississippi River also has few islands and rapids, though cut-off oxbows are common.

Prairie River Project

The Prairie River Project's reservoir, Prairie River Reservoir, is a 1,305-acre lake with 853 acres of littoral area, 21 miles of shoreline, and a maximum depth of 31 feet (MDNR 2013b). Prairie River Reservoir is part of the Prairie River system, which originates at Long Lake and flows through Lawrence Lake and Prairie River Reservoir chains, entering the Mississippi River approximately five miles south of Prairie River Dam approximately 2.8 miles downstream of Grand Rapids Dam. Similar to Blandin Reservoir, Prairie River Reservoir is also classified as an Ecological Class 35, exhibiting a high percentage of littoral area, moderate alkalinity, and moderate productivity (Carlson 1977; MDNR 2013b).

The Prairie River Project includes a bypass reach east of Prairie River Dam. The bypass reach is a high-gradient stream (approximately 34 feet per mile) approximately 2,500 feet long that includes multiple sections of stepped pools. The bypass reach is primarily of seasonal use to fish. Fish presence in the bypass reach drops substantially after the spring spawning season, as the fish move downstream into the Mississippi River. An IFIM study was conducted in the bypass reach in 1990 in support of the previous relicensing to determine the flows necessary to prevent fish stranding in the bypass reach, and secondarily, to address flow requirements for fish spawning. MDNR analyzed data to develop habitat versus discharge relationships for walleye spawners, juvenile smallmouth bass, and habitat guild representatives.

Based on the IFIM results, MDNR recommended a minimum flow of 75 cfs during April and May to enhance walleye spawning, and 50 cfs during June to allow the remaining fingerling fish to leave the bypass reach. MP agreed to these minimum flow rates. This bypass flow regime enhances the spawning habitat of approximately 2,500 linear feet of channel in the bypass reach. Additionally, in evaluating channel depths across three transects established within the bypass, the MDNR recommended ramping rates to avoid adult fish or spawn stranding. In consultation with MDNR, U.S. Fish and Wildlife Service (USFWS), and USGS, MP created a ramping rate regime for flows at or below 400 cfs when implementing, reducing, and ceasing minimum flows as follows:

- 200-400 cfs = 50 cfs per hour
- 75-200 cfs = 25 cfs per hour
- Below 75 cfs = 15 cfs per hour

FERC concluded in 1993 that the minimum flow regime and ramping rates agreed upon by MP and MDNR satisfied the management objectives for the bypass reach and provided appropriate resource protection. This IFIM study used industry-standard methods that are still in use to determine flow adequacy. As a result, MP believes the study results remain relevant, and the current seasonal minimum flow and ramping rate requirements in the bypass reach are appropriate and adequate to protect fisheries. The IFIM study is provided in the PSP filed on May 28, 2019.

E.5.1.1 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 NMFS has been identified in the vicinity of either of the Projects.

E.5.2 Fish Community

Blandin Reservoir and Prairie River Reservoir both contain a variety of forage species and popular sportfish species, such as Largemouth Bass, Black Crappie, sunfish, bullheads (*Ameiurus* spp.), pikes, perch, Walleye, redhorses (*Moxostoma* spp.), and others (MDNR 2018c, 2021a). The following sections provide an overview of studies and surveys characterizing the fish community in Blandin Reservoir and Prairie River Reservoir.

E.5.2.1 Grand Rapids Project

Grand Rapids Project Entrainment and Impingement Study

In support of the relicensing effort for the Project, an entrainment and impingement desktop study was performed with the goal of characterizing effects of entrainment and impingement at the dam on resident fish species in Blandin Reservoir. The desktop study included an analysis of intake structure trashrack spacing and fish size; burst swim speeds and intake velocity; and estimated rate of entrainment (based on the Turbine Entrainment and Survival Database by Electric Power Research Institute [EPRI] 1997) and associated mortality related to turbine blade strikes (based on the Franke et al. [1997] model).

An assessment of impingement and intake avoidance determined that fish large enough to be impinged on the trashracks would also have the ability to avoid the intake based on swim burst speed. The fish susceptible to entrainment are mostly fry and small juvenile fish which have burst swim speeds slightly slower than the maximum intake velocities (1.91 ft/s to 2.09 ft/s) calculated

for the Project. Small fish often make up the majority of entrainment samples, likely due to their lack of directed swimming and inability to escape, high densities, and/or tendency to disperse (EPRI 1992, 1997; Cada et al. 1997); however, they also possess higher survival rates through turbines. With the exception of juvenile Bluegill, Largemouth Bass fry/juvenile, Smallmouth Bass fry, and juvenile Northern Pike, the species and life stages evaluated have burst speeds greater than Project intake velocities which indicates that most species and life stages would be able to avoid impingement.

Using the EPRI (1997) database, the average annual number of fish expected to become entrained at the Grand Rapid Project ranges from 4,133 to 20,285 fish depending on whether it is a wet or dry year, with an average of 14,661 fish for a normal year (Table E.5-1). The majority of the entrained fish are within the 0- to 4-inch length groups. Centrarchids and Yellow Perch are the dominant taxa of entrained fish. It should be noted that this is likely an overestimate of entrainment, as entrainment avoidance (using burst swim speeds) of the target species was not factored into these estimates due to uncertainty in relative extent of potential volitional entry, but should be taken into consideration when assessing entrainment potential in general.

Table E.5-1 Entrainment estimates for target species at the Grand Rapids Hydroelectric Project

Flow	Centrarchids	Yellow Perch	Walleye	Pike and Muskellunge	Bullheads	Suckers	Total
Low Flow (90% exceedance)	1,486	2,094	49	36	195	273	4,133
High Flow (10% exceedance)	7,473	10,198	239	188	965	1,222	20,285
Normal Flow (50% exceedance)	5,422	7,289	178	123	704	945	14,661

An average blade strike survival rate for each unit was determined for each of the four size groups analyzed in the entrainment assessment. The annual average number (rounded to the nearest hundred) of target species expected to experience immediate turbine-related mortality at the Project is between approximately 800 and 2,800 fish based on a normal flow year (Table E.5-2). Based on a dry (low flow) and wet (high flow) year, these numbers could range from approximately 200 to 800 fish and 1,100 to 3,800 fish, respectively. Entrainment mortalities will likely be the highest in the summer and fall months when fish are most active.

Table E.5-2 Annual turbine mortality estimates at Unit 4 & 5 of the Grand Rapids Hydroelectric Project

Size Class (inches)	Low Flow (90% exceedance)		High Flow (10% exceedance)		Normal Flow (50% exceedance)	
	Unit 4	Unit 5	Unit 4	Unit 5	Unit 4	Unit 5
<4	279	81	1,374	399	974	283
4-8	418	121	2,035	590	1,540	447
8-15	61	18	309	89	205	59
>15	21	5	72	28	44	17
Total	779	225	3,790	1,106	2,763	806

2016-2017 Rapids Energy Center Impingement Study

An impingement characterization study was performed in 2017 by MP on the traveling water screen of the cooling water intake structure located adjacent to Grand Rapids Dam for compliance with Section 316(b) of the CWA. The study provides insight as to what species are within the vicinity of the Rapids Energy Center cooling water intake structure and Grand Rapids Dam (ALLETE/Minnesota Power 2018). Fish were collected on several dates from May 2016 to May 2017. Ninety-three fish representing four species of two families were collected in May, June, August, October, and November 2016, and May 2017. Approximately 94 percent of the total collection consisted of fish species belonging to the sunfish family (Centrarchidae), comprising Bluegill (*Lepomis macrochirus*, 52%), Black Crappie (41%), and Largemouth Bass (1%). Yellow Perch (*Perca flavescens*) consisted of an additional six percent of the total fish collected during the study. The full study report is included with the PSP filed on May 28, 2019.

MDNR Surveys and Assessments

The MDNR has performed periodic fish surveys using gill and trap nets at the Grand Rapids Project in Blandin Reservoir since 1973, with the addition of electrofishing in 2012 to target Largemouth and Smallmouth Bass (MDNR 2018d). In general, fish populations and species distributions have been stable throughout this time (MDNR 2006). Catch per unit effort (CPUE) reported by species and gear type is presented below for the top 95 percent of species by relative abundance (Table E.5-3). Several species dominated catches by both passive gear types, including Yellow Perch, Pumpkinseed (*Lepomis gibbosus*), Bluegill, Black Bullhead (*Ameiurus melas*), Yellow Bullhead (*A. natalis*), White Sucker (*Catostomus commersonii*), and Black Crappie, suggesting these species are in higher abundance in Blandin Reservoir. A greater number of fish were collected with gill nets than trap nets in all years except 1973 and 1978;

however, trap nets were not used in 1987, one of the largest total collections made by gill nets. Larger centrarchids such as Largemouth Bass and Smallmouth Bass (*Micropterus dolomieu*) are not well represented by the passive gear types. Yellow Perch (gill nets), Pumpkinseed (gill nets), and Bluegill (trap nets) generally exhibit the highest CPUE across years, as well as in 2012.

Table E.5-3 CPUE for the top 95% of species collected using gill nets, trap nets, and electrofishing at Blandin Reservoir, 1973-2012¹

Species	1973	1978	1983	1987	1990	1996	2004	2012
Gill Nets								
Yellow Perch	1.5	4.8	2.6	10.3	2.3	5.1	5.9	3.6
Pumpkinseed	--	5.9	2.4	7.9	6.6	0.7	3.3	3.6
Black Bullhead	--	5.1	0.7	2.6	5.0	--	--	--
Northern Pike	2.5	3.8	2.6	2.1	2.9	1.6	2.4	1.8
Rock Bass	2.0	1.3	2.4	2.0	0.7	4.8	1.7	1.2
Walleye	1.5	2.0	0.6	1.1	2.9	1.8	0.6	1.1
Yellow Bullhead	--	2.6	0.6	0.5	3.3	0.2	1.1	0.3
Bluegill	--	0.7	0.1	0.6	2.6	0.1	2.4	1.0
Shorthead Redhorse	--	0.6	0.3	1.0	1.6	0.6	1.5	0.8
Black Crappie	--	1.1	--	0.6	0.6	0.2	1.3	0.2
White Sucker	--	1.0	0.9	0.6	0.7	1.0	0.3	0.1
Total Fish Collected²	15	270	96	247	215	150	220	136
Standard Trap Nets								
Bluegill	3.6	8.3	1.9	--	4.0	1.2	1.8	1.9
Pumpkinseed	0.4	5.6	1.9	--	0.5	1.0	0.3	2.3
Black Bullhead	--	2.8	0.5	--	--	--	--	--
Yellow Bullhead	--	5.3	--	--	0.4	0.4	0.1	0.8
Black Crappie	0.8	3.3	--	--	--	0.4	0.2	--
Yellow Perch	2.2	2.3	1.5	--	0.1	0.6	0.6	0.4
Brown Bullhead	1.4	1.9	--	--	0.1	--	--	0.1
Northern Pike	1.4	2.2	0.4	--	0.1	1.0	0.3	0.1
White Sucker	0.4	2.0	0.5	--	0.3	--	--	0.1
Bowfin	--	1.4	0.3	--	0.4	0.2	0.1	0.3
Total Fish Collected³	55	437	61	0	49	48	32	50

Species	1973	1978	1983	1987	1990	1996	2004	2012
Electrofishing								
Largemouth Bass	--	--	--	--	--	--	--	21.33
Smallmouth Bass	--	--	--	--	--	--	--	1.33
Total Fish Collected	0	0	0	0	0	0	0	34

1 Species are ordered from greatest to least overall relative abundance.

2 Other species collected include Largemouth Bass, Bowfin (*Amia calva*), Brown Bullhead (*Ameiurus nebulosus*), Smallmouth Bass, Silver Redhorse (*Moxostoma anisurum*), Cisco (*Coregonus artedii*), hybrid sunfish, and Muskellunge (*Esox masquinongy*).

3 Other species collected include Rock Bass, Largemouth Bass, Walleye, and hybrid sunfish.

Source: MDNR 2018d.

Sample collections in 2012 at Blandin Reservoir were dominated by the centrarchids (Sunfish and Largemouth Bass) family for both gear types, followed by percids (Perch and Walleye) and esocids (pikes) by gill nets and ictalurids (bullhead) and percids by trap nets (Figure E.5-1). The overall composition of fish collections at Blandin Reservoir is consistent with historical data and with the trophic status and ecological classification of this waterbody (Schupp 1992; MDNR 2006).

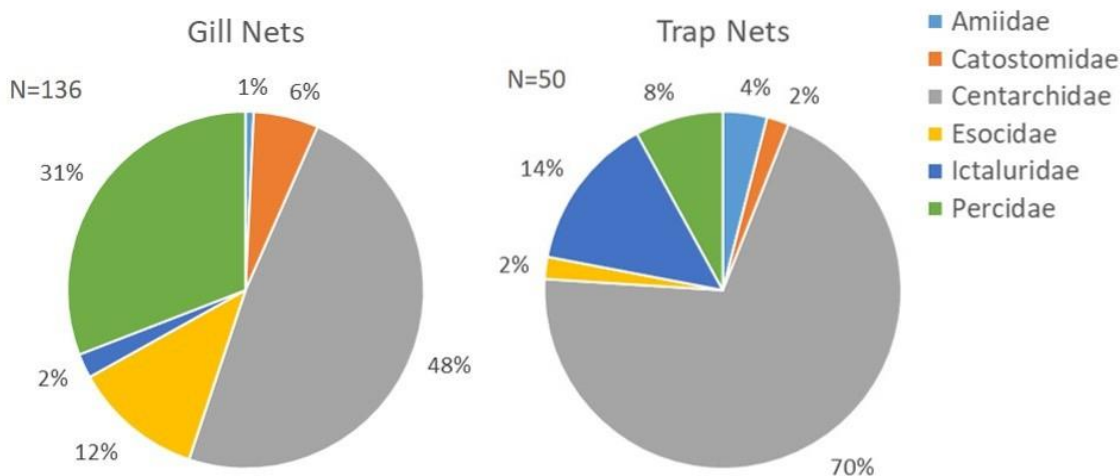


Figure E.5-1 Relative abundance of fish collection by family and gear type at Blandin Reservoir, 2012

E.5.2.2 *Prairie River Project*

Prairie River Project Entrainment and Impingement Study

In support of the relicensing effort for the Project, an entrainment and impingement desktop study was performed with the goal of characterizing effects of entrainment and impingement at the dam on resident fish species in Prairie River Reservoir. The desktop study included an analysis of intake structure trashrack spacing and fish size; burst swim speeds and intake velocity; and

estimated rate of entrainment (based on the Turbine Entrainment and Survival Database by EPRI [1997]) and associated mortality related to turbine blade strikes (based on the Franke et al. [1997] model).

An assessment of fish length-to-width ratios as compared to trashrack spacing determined that the 1.5-inch trashrack spacing would physically exclude mid to large size classes of species in the Project area. The minimum sizes of exclusion for individual species analyzed ranged from 9 inches to 17.6 inches depending on species. While the presence of fish that cannot pass through the bars creates the potential for impingement, fish of this length would also have the ability to avoid the intake based on swim burst speed. With the exception of Northern Pike juveniles, target species and life stages have burst speeds greater than Project intake velocities (1.31 ft/s) which indicates that nearly all species and life stages would be able to avoid impingement or entrainment. Centrarchids (sunfishes), the most abundant cohort in the Project Area (54%), have burst swim speeds from 1.84 ft/s (juvenile) to 4.3 ft/s (adult). Burst swim speed for centrarchids are above the maximum calculated intake velocity at the Project (1.31 ft/s). Therefore, centrarchids, regardless of age class of this abundant forage species, would likely be able to avoid impingement and entrainment at the Project. Most of the other abundant target species, including most or all life stages of Walleye, suckers, bass, and catfishes also have burst speeds greater than 1.31 ft/s and are, therefore, likely to avoid impingement and entrainment at the Project.

Using the EPRI (1997) database, the average annual number of fish expected to become entrained at the Project ranges from 1,082 to 5,995 fish depending on whether it is a wet or dry year, with an average of 3,322 fish for a normal year (Table E.5-4). The majority of the entrained fish are within the 0- to 4-inch length groups. Yellow Perch and centrarchids are the dominant taxa of entrained fish. It should be noted that this is likely an overestimate of entrainment, as entrainment avoidance (using burst swim speeds) of the target species was not factored into these estimates due to uncertainty in the relative extent of potential volitional entry, but should be taken into consideration when assessing entrainment potential in general. Likewise, due to the low numbers of fish being entrained at the Project, for this analysis those individual fish that would likely be excluded by the 1.5-inch, clear-spaced trashracks were not removed from the total number of fish entrained, providing a conservative estimate of entrainment and potential fish mortality.

Table E.5-4 Entrainment estimates for target species at the Prairie River Hydroelectric Project

Flow	Centrarchids	Yellow Perch	Walleye	Esocids	Ictalurids	Catostomids	Total
Low Flow (90% exceedance)	413	542	10	8	35	74	1,082
High Flow (10% exceedance)	2,279	2,996	62	44	145	469	5,995
Normal Flow (50% exceedance)	1,222	1,739	33	28	101	199	3,322

An average blade strike survival rate for each unit was determined for each of the four size groups analyzed in the entrainment assessment. The annual average number of fish expected to experience immediate turbine-related mortality at the Project is between approximately 350 and 440 fish based on a normal flow year (Table E.5-5). Based on a dry (low flow) and wet (high flow) year, these numbers could range from approximately 118 to 830 fish. Yellow Perch showed the highest mortality due to greater relative composition in the Project Area, resulting in higher entrainment rates as compared to other taxa.

Table E.5-5 Annual turbine mortality estimates at Unit 4 & 5 of the Grand Rapids Hydroelectric Project

Size Class (inches)	Low Flow (90% exceedance)		High Flow (10% exceedance)		Normal Flow (50% exceedance)	
	Unit 1	Unit 2	Unit 1	Unit 2	Unit 1	Unit 2
<4	46	57	240	300	142	178
4-8	57	72	359	449	167	209
8-15	12	15	52	65	33	41
>15	3	4	15	16	11	13
Total	118	148	666	830	353	441

The Prairie River Project has little potential for impingement due to intake velocities that do not exceed the burst swimming capabilities of nearly all fish species and life stages that are large enough to be impinged. The Project has the potential to create some degree of entrainment that will vary with river flow, species, season, and fish size/life stage. The Project intake is located in a small a forebay that is isolated from the main basin of the lake by a narrow constriction and a coarse trashrack. It is possible that the separation of the forebay from the main lake basin would limit the exposure of fish in the main reservoir to entrainment. The majority of entrained fish will likely be centrarchids, percids, and young life stages of all species, including eggs, fry, juveniles, and some young adults incapable of intake avoidance or exclusion by the trashracks. Most larval

(yolk-sac) fish can only adjust their vertical position in the water column and drift with river flow (Jenkins and Burkhead 1993). Fry (no yolk-sac) and juvenile fish possess escape or burst swim speeds capable of avoidance; however, adults are more successful in avoiding intake structures, and thus comprise the minority of entrained fish at a given system. Entrainment mortalities will likely be the highest in the spring and fall months when fish are most active.

MDNR Surveys and Assessments

MDNR's periodic summer fish surveys in Prairie River Reservoir date back to 1955 (MDNR 2018e). This range of survey data remains applicable as it is consistent with historical catch data. Similar to Blandin Reservoir, the surveys consisted of deploying standard gill and trap nets. In 2012, MDNR also performed nearshore sampling with beach seining and backpack and boat electrofishing. The most abundant species at Prairie River Reservoir are similar to those seen in Blandin Reservoir, suggesting similar fish communities in both waterbodies (Table E.5-6).

Table E.5-6 CPUE for the top 95% of species collected using gill nets and trap nets at Prairie River Reservoir, 1955-2012¹

Species	1955	1975	1980	1985	1990	1995	2000	2006	2012
Gill Nets									
Yellow Perch	21.0	18.6	3.6	9.1	5.1	12.0	5.9	5.7	2.4
Black Crappie	2.8	25.0	3.0	13.1	9.4	5.5	4.7	8.5	9.1
Northern Pike	4.8	2.2	1.5	4.3	4.8	3.6	4.5	5.1	4.5
Walleye	3.6	3.2	2.3	1.5	2.3	2.4	1.8	1.9	0.6
White Sucker	4.2	1.9	1.9	1.7	2.5	1.1	1.4	0.9	0.7
Shorthead Redhorse	0.9	--	--	--	3.5	0.7	0.9	1.2	1.7
Bluegill	--	--	--	0.5	1.4	0.5	1.1	1.9	3.1
Redhorse	--	0.9	1.0	2.6	--	--	--	--	--
Pumpkinseed	0.3		0.1	0.5	0.6	--	0.1	0.7	1.4
Total No. Collected²	457	469	164	417	373	399	327	448	392
Standard trap nets									
Bluegill	4.2	4.6	13.3	5.9	4.5	10.2	4.8	7.9	8.0
Black Crappie	4.8	3.6	1.3	1.9	3.8	1.9	1.9	1.1	2.7
Pumpkinseed	3.5	0.8	1.6	1.5	1.8	1.0	1.1	0.5	0.7
Brown Bullhead	0.4	1.7	1.9	0.6	0.4	0.1	0.9	0.7	0.7
White Sucker	0.6	1.1	3.1	0.5	0.3	0.7	0.3	0.3	0.2

Species	1955	1975	1980	1985	1990	1995	2000	2006	2012
Yellow Perch	1.1	0.1	0.5	0.8	1.1	1.9	0.2	0.3	0.3
Northern Pike	0.2	0.4	1.3	0.5	1.1	0.4	0.4	0.9	0.8
Yellow Bullhead	--	--	0.8	--	0.5	0.2	0.4	2.1	0.7
Rock Bass	1.9	0.7	0.5	0.1	0.3	0.3	0.1	--	0.1
Golden Redhorse	--	--	--	--	0.1	0.4	--	1.9	0.4
Total No. Collected³	214	242	199	95	110	247	176	256	230

¹ Species are ordered from greatest to least overall relative abundance.

² Other species collected include Rock Bass, Yellow Bullhead, Brown Bullhead, Smallmouth Bass, Bowfin, Black Bullhead, Golden Redhorse (*Moxostoma erythrurum*), Largemouth Bass, Silver Redhorse, and Cisco.

³ Other species collected include Bowfin, redhorse, Shorthead Redhorse, Walleye, Silver Redhorse, Largemouth Bass, Black Bullhead, and Golden Shiner.

Source: MDNR 2018e.

Other species collected in 2012 using active sampling techniques (in addition to the most abundant species collected using gill and trap nets) included Blackchin Shiner (*Notropis heterodon*), Johnny Darter (*Etheostoma nigrum*), Burbot (*Lota lota*), Central Mudminnow (*Umbra limi*), Mottled Sculpin (*Cottus bairdii*), Tadpole Madtom (*Noturus gyrinus*), and Iowa Darter (*Etheostoma exile*).

Sample collections in 2012 at Prairie River Reservoir were dominated by catostomids (suckers) and centrarchids, followed by ictalurids, percids, and others (Figure E.5-2). Gill nets and trap nets collected the same families except gill nets collected a salmonid (Cisco [*Coregonus artedii*]). Like that seen at Blandin Reservoir, the overall composition of fish collections at Prairie River Reservoir is consistent with historical data and with the trophic status and ecological classification of this waterbody (Schupp 1992).

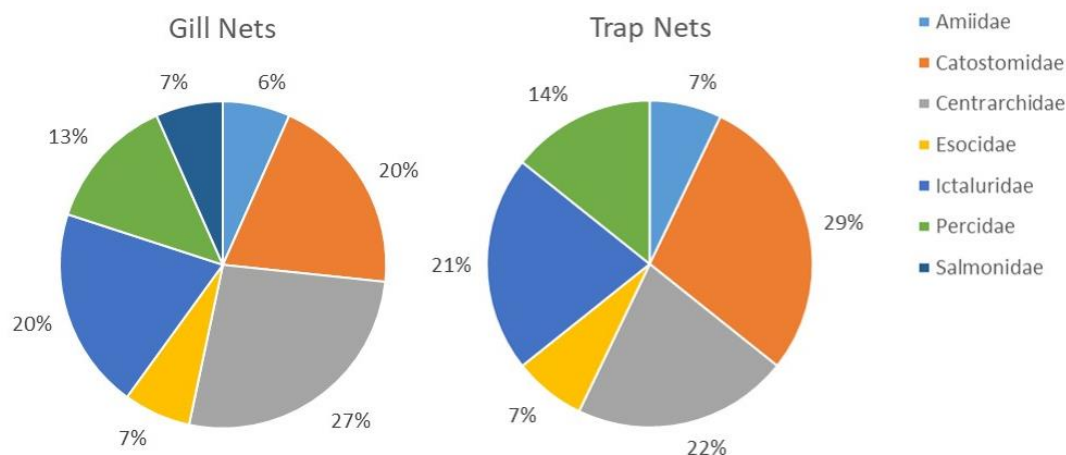


Figure E.5-2 Relative abundance of fish collection by family and gear type at Prairie River Reservoir, 2012

E.5.2.3 Riverine Fisheries Surveys

Several surveys evaluating the IBI upstream and downstream of the Grand Rapids and Prairie River Project facilities are summarized in Table E.5-7 (MPCA 2018b). For the Grand Rapids Project, the fish surveys were performed from 1998 to 2013 just upstream of Pokegama Dam to the Prairie River downstream of Prairie River Dam, providing watershed-level assessment of fish populations and biotic integrity. A total of 31 fish species were collected in the vicinity of Blandin Reservoir, consisting of up to 8 species of piscivores, up to 6 species of pollution-intolerant species, and up to 9 sportfish species (Table E.5-7 and Table E.5-8). The IBI ranged from 53 downstream (in 2000) up to 70 upstream of Blandin Reservoir (in 2013), all considered as “good” ratings.

Table E.5-7 Summary of fish sampling results US and DS of the Grand Rapids and Prairie River Project vicinities

Station ID	Year Sampled	Waterbody	Location ¹	Fish IBI	Fish Rating	Distance from Reservoir (mi)	Species Richness	Piscivores	Pollution Intolerant Species	Sportfish Species
98UM004	1998	Blandin	DS	61	Good	0.1	15	4	3	5
00UM090	2000	Blandin	DS	53	Good	0.4	21	7	6	8
07UM233	2007	Blandin	DS	69	Good	0.6	15	7	3	7
13UM022	2013	Blandin	DS	69	Good	2.6	23	8	6	9
13UM023	2013	Blandin	US	70	Good	0.3	12	6	2	7
00UM003	2000	Prairie	US	61	Good	4.3	21	7	4	8
00UM003	2015	Prairie	US	62	Good	4.3	13	3	2	6
15UM049	2015	Prairie	DS	56	Good	2.8	19	7	2	9

¹ DS: downstream; US: upstream. Downstream locations for Blandin Reservoir are below Grand Rapids Dam; upstream locations are above Pokegama Dam. Downstream locations for Prairie River Reservoir are below Prairie River dam; upstream locations are several miles upstream of the reservoir.

Source: MPCA 2018b.

Table E.5-8 Known occurrences of fish species US and DS of the Grand Rapids and Prairie River Project vicinities

Species	Blandin Reservoir ¹				Prairie River Reservoir ²	
	1998	2000	2007	2013	2000	2015
Bigmouth Buffalo					DS	
Blackchin Shiner	DS	DS		DS		
Blacknose Shiner	DS	DS		DS		US
Blacknose Dace					US	
Black Crappie		DS		DS	US & DS	US
Bluntnose Minnow	DS					
Bowfin				DS		
Brassy Minnow	DS	DS			US	
Bluegill		DS	DS	US	DS	US
Bowfin			DS	US	DS	
Burbot		DS	DS	US	US	
Common Shiner		DS	DS	DS	US & DS	US
Creek Chub					US & DS	
Golden Shiner					DS	US
Johnny Darter					US & DS	US

Species	Blandin Reservoir ¹				Prairie River Reservoir ²	
	1998	2000	2007	2013	2000	2015
Emerald Shiner	DS					
Fathead Minnow		DS				
Hornyhead Chub					US	US
Hybrid Sunfish				DS		
Largemouth Bass	DS	DS	DS	US & DS	US & DS	US
Loggerperch		DS	DS	DS	US & DS	
Mimic Shiner		DS		US & DS	US	
Muskellunge				DS		
Northern Pike	DS	DS	DS	US & DS	US & DS	US
Pumpkinseed				US & DS	US & DS	
Redhorse					US	
Rock Bass	DS	DS	DS	US & DS	US & DS	US
Sand Shiner	DS					
Shorthead Redhorse	DS	DS	DS	US & DS	DS	
Silver Redhorse		DS	DS	DS		
Smallmouth Bass	DS	DS	DS	DS	US & DS	
Spotfin Shiner		DS		DS	US & DS	US
Spottail Shiner	DS			US & DS		
Tadpole Madtom	DS			DS	US	US
Walleye		DS	DS	US & DS	US & DS	
White Sucker	DS	DS	DS	DS	US & DS	
Yellow Bullhead			DS	DS		
Yellow Perch	DS	DS	DS	US & DS	US & DS	US

^{1.} DS: downstream; US: upstream. Downstream locations for Blandin Reservoir are below Grand Rapids Dam; upstream locations are above Pokegama Dam.

^{2.} Downstream locations for Prairie River Reservoir are below Prairie River Dam; upstream locations are several miles upstream of Prairie River Reservoir.

For the Prairie River Project, MPCA reported fish surveys data from 2000 and 2015 upstream and downstream of Prairie River Reservoir. Twenty-seven species of fish were collected during the three surveys, consisting of up to seven piscivore species, four pollution-intolerant species, and up to nine sportfish species. All IBI ratings were within the “good” range (Table E.5-7 and Table E.5-8).

Overall, there is a relative similarity and continuity in the fish community in both reservoirs, upstream, and downstream of the Project vicinities, comprising many sportfish species, predators, and forage fish.

E.5.3 Fisheries Management

Blandin Reservoir has primarily been stocked with Walleye and Muskellunge since 1971 (MDNR 2013a), while Prairie River Reservoir has been stocked exclusively with Walleye since 1982 (MDNR 2013b). Table E.5-9 provides information on the size, number, and pounds of fish species stocked in Blandin Reservoir and Prairie River Reservoir from the past ten stocking years. Approximately 281 adult Muskellunge (*Esox masquinongy*) and 32,000 Walleye fingerlings have been stocked in Blandin Reservoir since 2008. Walleye in Blandin Reservoir have been stocked by both MDNR and private citizens/sporting groups and will continue on a biennial basis (MDNR 2013a). If long-term goals set for the Walleye population are not met after the next population assessment, stocking may be discontinued.

In Prairie River Reservoir, approximately 14,000 Walleye fingerlings were stocked by the MDNR from 2008 to 2012. However, due to failure to achieve management goals set for Prairie River Reservoir, the Walleye stocking program was recommended for discontinuation in 2013 (MDNR 2013b).

Table E.5-9 MDNR Blandin Reservoir and Prairie River Reservoir stocking report

Year	Species	Size	Number	Pounds
Blandin Reservoir				
2019	Muskellunge	Fingerlings	366	86.1
2017	Muskellunge	Adults	91	303.3
2016	Muskellunge	Adults	90	219.5
	Walleye ¹	Fingerlings	6,472	365.9
2014	Walleye ¹	Fingerlings	10,975	365.8
2012	Walleye ¹	Fingerlings	8,778	365.8
2010	Walleye ²	Fingerlings	5,492	366.0
2008	Muskellunge	Adults	100	400.0
	Walleye	Fingerlings	231	33.0
Prairie River Reservoir				
2012	Walleye	Fingerlings	5,145	574.4
2011	Walleye	Fingerlings	6,599	435.0
2008	Walleye	Fingerlings	2,256	188.0

1. Fish purchased and stocked by private citizens and sporting groups

2. Fish purchased and stocked by the MDNR.

Source: MDNR 2021a.

E.5.4 Macroinvertebrates

E.5.4.1 Crustaceans

Crayfish can be an important food resource for sportfish species. Limited information is available regarding crayfish species in the Upper Mississippi River system. Helgen (1990) reports up to six crayfish identified throughout Minnesota, comprising the devil crayfish (*Cambarus diogenes*), calico crayfish (*Orconectes immunis*), Northern Clearwater crayfish (*O. propinquus*), virile crayfish (*O. virilis*), invasive rusty crayfish (*Orconectes rusticus*), and the white river crayfish (*Procambarus acutus acutus*). The invasive red swamp crayfish (*Procambarus clarkii*) has also been introduced in Minnesota. Four of these species were reported as collected within Itasca County, including the devil crayfish, calico crayfish, invasive rusty crayfish, and virile crayfish (Helgen 1990).

E.5.4.2 Aquatic Insects

In addition to the collection of fish species, the MDNR also evaluated macroinvertebrate assemblages downstream of Grand Rapids Dam and Prairie River Dam (MPCA 2018b). A total of 16 families were collected below Grand Rapids Dam (station ID 00UM090) during the 2000 survey (Table E.5-10), with an invertebrate IBI rating of 57 (“fair”). A total of 18 families were collected below Prairie River Dam (station ID 15UM049) during the 2015 survey, with an invertebrate IBI rating of 54 (“fair”).

Table E.5-10 Occurrences of aquatic invertebrates in the Grand Rapids and Prairie River downstream Project vicinities¹

Common Name	Family	Grand Rapids	Prairie River
Amphipods	Amphipoda	X	X
Black flies	Simuliidae	X	X
Caddisflies	Trichoptera	X	X
Freshwater snail	Cipangopaludina	--	X
Common Stoneflies	Plecoptera	--	X
Crane flies	Tipulidae	X	--
Darners Dragonfly	Aeshnidae	X	--
Giant water bug	Belostomatidae	X	--
Finger-net Caddisflies	Phlopotamidae	X	X
Fingernail clam	Sphaeriidae	X	X
HirudineaLeech	Hirudinea	--	X
Iswaeon	Baetidae		X
Mayflies	Baetidae	X	X
Micro-caddisflies	Hydroptilidae	X	X

Common Name	Family	Grand Rapids	Prairie River
Minute moss beetles	Hydraenidae	--	X
Narrow-winged damselflies	Coenagrionidae	X	--
Net-spinning caddisflies	Hydropsychidae	X	X
Northern caddisflies	Limnephilidae		X
Round worms	Oligochaeta	X	--
Crayfish	Orconectes	X	X
Primitive caddisflies	Rhyacophilidae	--	X
Riffle beetles	Elmidae	--	X
Trumpet-net caddisflies	Polycentropodidae	--	X
Water scavenger beetles	Hydrophilidae	X	--
Water scorpions	Nepidae	X	--

1. Station ID 00UM090 on the Mississippi River downstream of Grand Rapids Dam, and Station ID 15UM049 on the Prairie River downstream of Prairie River Dam.

E.5.5 Freshwater Mussels

Historically, approximately 50 species of freshwater mussels were identified in the Upper Mississippi River Basin, however, about 30 species have been found recently (Tucker and Theiling 1998; Tiemann et al. 2015) (Table E.5-11). Several species are federal- or state-listed for protection as of 2015 (Tiemann et al. 2015). Federal- or state-listed aquatic species identified by MDNR and USFWS are described in further detail in Section E.5.6.

Mussels are sessile, long-lived species sensitive to water quality and habitat (i.e., substrates and sediments). They are filter-feeders and have a complex life cycle that is dependent on fish (many times, particular fish species) as a host organism. Mussels identified in the Upper Mississippi River Basin are summarized in the table below, along with their federal and state listing status (as of 2015) and host organism, if known.

Table E.5-11 Summary of freshwater mussels of the Upper Mississippi River¹

Common Name	Species Name	Federal	State	Host Organism
Spectaclecase	Margaritifera monodonta	E	E	Unknown
Elktoe	Alasmidonta marginata	--	T	Suckers
Slippershell	Alasmidonta viridis	--	--	Darters and sculpins
Cylindrical Papershell	Anodontoides ferussacianus	--	--	Generalist
Rock Pocketbook	Arcidens confragosus	--	E	Generalist
Flutedshell	Lasmigona costata	--	T	Generalist

Common Name	Species Name	Federal	State	Host Organism
White Hellsplitter	<i>Lasmigona complanata</i>	--	--	Generalist
Creek Heelsplitter	<i>Lasmigona compressa</i>	--	SC	Generalist
Giant Floater	<i>Pyganodon grandis</i>	--	--	Generalist
Salamander Mussel	<i>Simpsonaias ambigua</i>	--	E	Mudpuppy salamander
Creepers	<i>Strophitus undulatus</i>	--	--	Generalist/none needed
Paper Pondshell	<i>Utterbackia imbecillis</i>	--	--	Generalist/none needed
Flat Floater	<i>Utterbackia suborbiculata</i>	--	SC	Generalist
Threeridge	<i>Ambleria plicata</i>	--	--	Generalist, possibly catfishes
Plain Pocketbook	<i>Lampsilis cardium</i>	--	--	Generalist, possibly basses, Walleye, or Sauger
Higgins' Eye	<i>Lampsilis higginsii</i>	E	E	Basses, possibly Walleye and Sauger
Fatmucket	<i>Lampsilis siliquoidea</i>	--	--	Generalist, possibly basses and sunfishes
Yellow Sandshell	<i>Lampsilis teres</i>	--	E	Gars
Mucket	<i>Actinonaias ligamentina</i>	--	T	Generalist, possibly basses and sunfishes
Butterfly	<i>Ellipsaria lineolata</i>	--	T	Freshwater Drum
Snuffbox	<i>Epioblasma triquetra</i>	E	E	Logperch, Blackside Darter, sculpins
Fragile Papershell	<i>Leptodea fragilis</i>	--	--	Freshwater Drum
Scaleshell	<i>Leptodea leptodon</i>	E	X	Freshwater Drum
Black Sandshell	<i>Ligumia recta</i>	--	SC	Walleye and Sauger, possibly sunfishes and basses
Pondmussel	<i>Ligumia subrostrata</i>	--	T	Sunfishes and basses
Threehorn Wartyback	<i>Obliquaria reflexa</i>	--	--	Unknown
Hickorynut	<i>Obovaria olivaria</i>	--	--	Sturgeons
Pink Heelsplitter	<i>Potamilus alatus</i>	--	--	Freshwater Drum
Fat Pocketbook	<i>Potamilus capax</i>	E	X	Freshwater Drum
Pink Papershell	<i>Potamilus ohioensis</i>	--	--	Freshwater Drum
Bleufer	<i>Potamilus purpuratus</i>	--	--	Freshwater Drum
Lilliput	<i>Toxolasma parvum</i>	--	--	Sunfishes
Deertoe	<i>Truncilla truncata</i>	--	--	Freshwater Drum
Fawnsfoot	<i>Truncilla donaciformis</i>	--	T	Freshwater Drum
Ellipse	<i>Venustaconcha ellipsiformis</i>	--	T	Darters, possibly sculpins
Round Pigtoe	<i>Pleurobema sintoxia</i>	--	SC	Minnows

Common Name	Species Name	Federal	State	Host Organism
Purple Wartyback	<i>Cyclonaias tuberculata</i>	--	E	Catfishes
Elephantear	<i>Elliptio crassidens</i>	--	E	Possibly Skipjack Herring
Spike	<i>Elliptio dilatata</i>	--	T	Darters and perches, possibly basses and sunfishes
Wabash Pigtoe	<i>Fusconaia flava</i>	--	--	Minnows
Ebonyshell	<i>Fusconaia ebena</i>	--	E	Skipjack Herring
Sheepnose	<i>Plethobasus cyphus</i>	E	E	Minnows
Mapleleaf	<i>Quadrula quadrula</i>	--	--	Catfishes
Winged Mapleleaf	<i>Quadrula fragosa</i>	E	E	Catfishes
Gulf Mapleleaf	<i>Quadrula nobilis</i>	--	--	Catfishes
Wartyback	<i>Amphinaias nodulata</i>	--	T	Catfishes
Pimpleback	<i>Amphinaias pustulosa</i>	--	--	Catfishes
Washboard	<i>Megaloniaias nervosa</i>	--	E	Generalist, possibly catfishes
Monkeyface	<i>Theliderma metanevra</i>	--	T	Minnows except Notropis
Pistolgrip	<i>Tritogonia verrucosa</i>	--	E	Catfishes
Zebra Mussel	<i>Dreissena polymorpha</i>	NI		None needed
Quagga Mussel	<i>Dreissena bugensis</i>	NI		None needed
Asian Clam	<i>Corbicula fluminea</i>	NI		None needed
Fingernail Clams	<i>Sphaeriidae</i>	--	--	None needed

1. Federal Status: E - Endangered; State Status: E - Endangered, T - Threatened, SC - Species of Concern, X - extirpated; NI: non-indigenous.

E.5.6 Rare, Threatened, and Endangered Aquatic Species

In support of the relicensing of the Projects, MP consulted with the USFWS and MDNR regarding federally and state listed aquatic species, critical habitat, and species of special concern within the Project vicinities. No federally listed aquatic species were identified to potentially occur within the Project Boundaries. State listed species identified using the MDNR National Heritage Information System database are summarized in Table E.5-12. Two mussel species of special concern have the potential to occur at one or both of the Projects.

Table E.5-12 State listed, threatened, endangered, and candidate species within one mile of the Projects¹

Common Name	Scientific Name	Status	Project
Black Sandshell	<i>Ligumia recta</i>	Special Concern	Grand Rapids Project; Prairie River Project
Creek Heelsplitter	<i>Lasmigona compressa</i>	Special Concern	Grand Rapids Project

1. Copyright 2021, State of Minnesota, Department of Natural Resources. Rare features data reviewed were provided by the Division of Ecological and Water Resources, MDNR, under license agreement LA832. MDNR has not provided comment on the interpretation of the results included in this report.

E.5.6.1 Black Sandshell

The black sandshell was once common in all but the smallest rivers in Minnesota but is now listed as a species of special concern in the state. The black sandshell is usually found in the riffle and run areas of medium to large rivers in areas dominated by sand or gravel. Degradation of mussel habitat in streams throughout the black sandshell's known range is a continuing threat to this species. The black sandshell is also being impacted by the infestation of non-native zebra mussels in the Mississippi River and its tributaries (MDNR 2018j).

E.5.6.2 Creek Heelsplitter

The creek heelsplitter was once widespread and abundant in the Mississippi drainage north of St. Anthony Falls in Minnesota and is now listed by the state as a species of special concern. The creek heelsplitter typically occurs in creeks, small rivers, and the upstream portions of large rivers. Its preferred substrates are sand, fine gravel, and mud. It has been noted that the creek heelsplitter most often colonizes areas downstream of riffles in small pools and habitats with swift currents ranging in water depths from 1 to 3 feet deep. Degradation of mussel habitat in streams throughout the creek heelsplitter's known range is a continuing threat to the species (MDNR 2018k).

E.5.7 Aquatic Invasive Species (AIS)

AIS are nonindigenous plants and animals that were introduced to an area outside of their native range and are now causing ecological or economic harm (USFWS 2017). AIS typically have few or no natural predators in their introduced environments, which can result in rapid population growth that outcompetes native species. Invasive species can be introduced intentionally for management objectives (e.g., Grass Carp [*Ctenopharyngodon idella*] for the control of aquatic invasive weeds), illegally (e.g., angler-introduced sportfish species), or accidentally (e.g., invasive plant parts or mussels on boats and boat trailers).

A general list of AIS that have been introduced in Minnesota and the Mississippi River is presented in Table E.5-13, including fish, crustaceans, mollusks, zooplankton, algae, and aquatic plants (MDNR 2018f; Wisconsin Department of Natural Resources [WDNR] 2015).

Table E.5-13 List of AIS found within Minnesota and the Mississippi River

Type	Common Name	Species Name
Fish	Bighead Carp	<i>Hypophthalmichthys nobilis</i>
Fish	Grass Carp	<i>Ctenopharyngodon idella</i>
Fish	Silver Carp	<i>Hypophthalmichthys molitrix</i>
Fish	Round Goby	<i>Neogobius melanostomus</i>
Fish	Ruffe	<i>Gymnocephalus cernua</i>
Crustacean	Red Swamp Crayfish	<i>Procambarus clarkii</i>
Crustacean	Rusty Crayfish	<i>Orconectes rusticus</i>
Crustacean	Spiny Waterflea	<i>Bythotrephes longimanus</i>
Mollusk	Faucet Snail	<i>Bithynia tentaculata</i>
Mollusk	New Zealand Mudsail	<i>Potamopyrgus antipodarum</i>
Mollusk	Quagga Mussel	<i>Dreissena bugensis</i>
Mollusk	Zebra Mussel	<i>Dreissena polymorpha</i>
Mollusk	Asiatic Clam	<i>Corbicula fluminea</i>
Plant	Curly-Leaf Pondweed	<i>Potamogeton crispus</i>
Plant	Eurasian Watermilfoil	<i>Myriophyllum spicatum</i>
Plant	Purple Loosestrife	<i>Lythrum salicaria</i>
Plant	Starry Stonewort	<i>Nitellopsis obtusa</i>
Plant	Water Hyacinth	<i>Eichornia crassipes</i>

Sources: MDNR 2018f, WDNR 2015.

The ICSWCD maintains a geographic information system (GIS) database of the AIS in Itasca County. The database includes documented occurrences of zebra mussels (*Dreissena polymorpha*), starry stonewort (*Nitellopsis obtusa*), flowering rush (*Butomus umbellatus*), Eurasian water milfoil (*Myriophyllum spicatum*), purple loosestrife (*Lythrum salicaria*), and curly leaf pondweed (*Potamogeton crispus*) (ICSWCD 2021).

The two most recent invasive species identifications made in the Upper Mississippi River system include the identification of zebra mussels in Blandin Reservoir (Herald Review 2018) and water hyacinth (*Eichornia crassipes*) well downstream of the Projects, at approximately RM 696 of the Mississippi River (Brazil 2018). According to the ICSWCD (2021), zebra mussels, purple loosestrife, and curly leaf pondweed occur in Blandin Reservoir. Zebra mussels and purple

loosestrife are also present upstream and downstream of the Grand Rapids Project. Curly leaf pondweed is also present in Prairie Lake. Additionally, the MDNR listed Blandin Reservoir on their Infested Waters List in 2018 for presence of zebra mussels (MDNR 2021b). A further discussion of purple loosestrife in the vicinity of the Projects is provided in Section E.6.1.5.

During Grand Rapids Project inspections in which the wheel pit was dewatered in 2015 and a gate bay was dewatered in 2016, no evidence of zebra mussels was noted (Pers. Comm. Daniel Nordling, MP Supervising Engineer to Gregory Prom, MP Senior Environmental Compliance Specialist). Additionally, no evidence of zebra mussels has been identified by MP or reported by the public at the FERC-approved recreational site at the Project.

MP maintains an internal procedure for AIS management that is consistent with Minnesota Statute's Chapter 84D and Minnesota Rule Chapter 6126. The procedure was developed to ensure all MP watercraft meet regulatory requirements, limit the environmental impacts of activities, and protect the environment and demonstrate the conservation of water resources by preventing the spread of AIS. It provides step-by-step directions for a variety of situations including prior to leaving and entering public roadways; what to do if invasive species are found on the watercraft; and what to do when leaving a body of water. The procedure includes a list of infested waters and contact numbers of MP's AIS specialists. MP's AIS management procedure is included in the May 28, 2019 filing of the PSP.

E.5.8 Project Effects on Aquatic Resources

Blandin and Prairie River Reservoirs support a variety of non-migratory forage species and popular sportfish species. No ESA- or state-listed threatened or endangered fish or aquatic species have been identified in the vicinity of either Project.

E.5.8.1 Grand Rapids Project

The Project operates in a ROR mode with limited fluctuations. These operations help protect aquatic resources at the Project. MP anticipates that continued operation of the Project will not adversely affect aquatic resources.

An assessment of impingement and intake avoidance, as part of the Entrainment and Impingement Study, determined that fish large enough to be impinged on the trashracks at the Grand Rapids Project would also have the ability to avoid the intake based on swim burst speed. The fish susceptible to entrainment are mostly fry and small juvenile fish which have burst swim speeds slightly slower than the maximum intake velocities (1.91 ft/s to 2.09 ft/s) calculated for the

Project. Small fish often make up the majority of entrainment samples, likely due to their lack of directed swimming and inability to escape, high densities, and/or tendency to disperse; however, they also possess higher survival rates through turbines.

E.5.8.2 Prairie River Project

The Project operates in a ROR mode with limited fluctuations. In accordance with License Article 404, MP provides a minimum of 75 cfs flow into the Prairie River bypass reach during the months of April and May and a minimum of 50 cfs during June. Additionally, License Article 405 requires ramping of changes to the bypass flows to protect downstream fish resources. There is a ramping rate regime for flows at or below 400 cfs when implementing, reducing, and ceasing minimum flows. These operations help protect aquatic resources at the Project. MP anticipates that continued operation of the Project will not adversely affect aquatic resources.

The Entrainment and Impingement Study concluded that the Prairie River Project has little potential for impingement due to intake velocities that do not exceed the burst swimming capabilities of nearly all fish species and life stages that are large enough to be impinged. The Project has the potential to create some limited degree of entrainment that will vary with river flow, species, season, and fish size/life stage. The 1.5-inch trashracks would be expected to physically exclude mid to larger size classes. The Project intake is located in a small a forebay that is isolated from the main basin of the lake by a narrow constriction. It is possible that the separation of the forebay from the main lake basin would limit the exposure of fish in the main reservoir to entrainment. The majority of entrained fish will likely be smaller centrarchids, percids, and young life stages of all species, including eggs, fry, juveniles, and some young adults incapable of intake avoidance or exclusion by the 1.5-inch trashracks at the intake.

E.5.9 PM&E Measures Proposed by the Applicant, Resource Agencies, and/or Other Consulting Parties

E.5.9.1 Grand Rapids Project

For the reasons stated above, MP is not proposing any new PM&E measures related to aquatic resources at the Grand Rapids Project. MP proposes to continue ROR operations at the Project.

In comments filed by the MPCA on April 11, 2019, the MPCA requested that MP monitor the Project's aquatic areas for invasive and exotic species and take action to eliminate existing populations, and prevent and/or reduce their spread, including ongoing monitoring of zebra mussel activity at Grand Rapids Dam. To help address this state-wide invasive species issue, MP

has developed an internal procedure for aquatic invasive species management. The procedure was developed to ensure all MP watercraft meet regulatory requirements, limit the environmental impacts of activities, protect the environment, and demonstrate the conservation of water resources by preventing the spread of aquatic invasive species. The procedure provides direction to MP staff to comply with Minnesota Statute's chapter 84D and Minnesota Rule chapter 6216 to prevent the spread of aquatic invasive species. MP's AIS management procedure is included in the May 28, 2019 filing of the Proposed Study Plan. MP plans to continue to implement this procedure.

No other PM&E measures related to water quality were proposed by any other resource agency or consulting party.

E.5.9.2 *Prairie River Project*

For the reasons stated above, MP is not proposing any new PM&E measures related to aquatic resources at the Prairie River Project. MP proposes to continue ROR operations, ramping rates, and minimum flows at the Project.

In comments filed by the MPCA on April 11, 2019, the MPCA requested that MP monitor the Project's aquatic areas for invasive and exotic species and take action to eliminate existing populations, and prevent and/or reduce their spread, including ongoing monitoring of zebra mussel activity at Prairie River Dam. To help address this state-wide invasive species issue, MP has developed an internal procedure for aquatic invasive species management. This procedure is described above in Section E.5.9.1 and included in the May 28, 2019 filing of the PSP. MP plans to continue to implement this procedure.

No other PM&E measures related to water quality were proposed by any other resource agency or consulting party.

E.6 Terrestrial Resources

The Projects are both located in the Chippewa Plains Subsection of the Laurentian Mixed Forest (LMF) Province as defined by MDNR. In Minnesota, the LMF Province is characterized by broad areas of conifer forest, mixed hardwood and conifer bogs and swamps. The landscape ranges from rugged, lake-dotted terrain with thin glacial deposits over bedrock to hummocky or undulating plains with deep glacial drift, to large, flat, poorly drained peatlands (MDNR 2018g).

Lands within the Prairie River Project vicinity include forests, well-vegetated shorelines, and residential properties. Lands within the Grand Rapids Project vicinity include well-vegetated shorelines, residential properties, and substantial industrial and commercial development near Grand Rapids Dam and the non-Project Blandin Paper Mill. Both Projects, and the vicinity, support a diverse range of wildlife and botanical species typical of that found in residential and industrial areas. The Projects also support a variety of wetland and riparian cover types.

The subsections below describe terrestrial resources in the vicinity of the Projects and considers the effects of continued operation of the Projects as proposed by MP on these resources, using available data presented in the Licensee's PAD and data obtained from botanical observations within the Project Boundaries conducted in July 2019.

E.6.1 Botanical Resources

Within the LMF Province, the Project vicinities are comprised of botanical species commonly found in the northern dry-mesic mixed woodland, northern mesic hardwood forest, inland lake sand/gravel/cobble shore, and sand/gravel/cobble river shore vegetation classes. As mentioned above, the vegetation description for those classes were based on field observations and supplemental species lists from plant surveys, mostly in the central and northern Minnesota region. The canopy composition within the LMF Province is often mixed but ranges from solely coniferous to solely deciduous. Red pine (*Pinus resinosa*), paper birch (*Betula papyrifera*), white pine (*Pinus strobus*), quaking aspen (*Populus tremuloides*), and red maple (*Acer rubrum*) are examples of some common canopy species. The subcanopy typically varies from patchy (25 to 50% cover) to continuous (greater than 75% cover). The ground layer is highly variable, ranging from sparse (5 to 25% cover) to continuous (MDNR 2021c). Table E.6-1 presents additional floral species that may be present in the vicinity of the Grand Rapids Project and Prairie River Project.

Table E.6-1 List of dominant plant species potentially occurring in the vicinity of the Grand Rapids Project and Prairie River Project.

Common Name	Scientific Name
Herbaceous Layer	
Canada Mayflower	<i>Maianthemum canadensis</i>
Wild Sarsaparilla	<i>Aralia nudicaulis</i>
Bracken Fern	<i>Pteridium aquilinum</i>
Large-leaved aster	<i>Aster macrophyllus</i>
Mountain Rice Grass	<i>Oryzopsis asperifolia</i>
Rose Twistedstalk	<i>Streptopus roseus</i>

Common Name	Scientific Name
Pennsylvania Sedge	<i>Carex pensylvanica</i>
Wood Anemone	<i>Anemone quinquefolia</i>
Sweet-scented Bedstraw	<i>Galium triflorum</i>
Large-flowered Bellwort	<i>Uvularia grandiflora</i>
Bluebead Lily	<i>Clintonia borealis</i>
Swamp Milkweed	<i>Asclepias incarnata</i>
Bulb-bearing Water Hemlock	<i>Cicuta bulbifera</i>
American Willow-herb	<i>Epilobium ciliatum</i>
Touch-me-not	<i>Impatiens capensis</i>
Golden Dock	<i>Rumex maritimus</i>
Spotted Joe Pye Weed	<i>Eupatorium maculatum</i>
Common Boneset	<i>Eupatorium perfoliatum</i>
Rough Barnyard Grass	<i>Echinochloa muricata</i>
Tall Manna Grass	<i>Glyceria grandis</i>
Path Rush	<i>Juncus tenuis</i>
Rice Cut Grass	<i>Leersia oryzoides</i>
Brown-fruited Rush	<i>Juncus pelocarpus</i>
Bulrushes	<i>Scirpus</i> spp.
Blue Monkey Flower	<i>Mimulus ringens</i>
Woolgrass	<i>Scirpus cyperinus</i>
Fringe Sedge	<i>Carex crinita</i>
Swamp Milkweed	<i>Asclepias incarnata</i>
Water Parsnip	<i>Sium suave</i>
Retrose Sedge	<i>Carex retrorsa</i>
Cyperus Sedge	<i>Carex pseudocyperus</i>
Bluejoint	<i>Calamagrostis canadensis</i>
Shrub Layer	
Beaked Hazelnut	<i>Corylus cornuta</i>
Juneberries	<i>Amelanchier</i> spp.
Bush Honeysuckle	<i>Diervilla lonicera</i>
Red Maple	<i>Acer rubrum</i>
Balsam Fir	<i>Abies balsamea</i>
Lowbush Blueberry	<i>Vaccinium angustifolium</i>
Chokecherry	<i>Prunus virginiana</i>
Pagoda Dogwood	<i>Cornus alternifolia</i>

Common Name	Scientific Name
Fly Honeysuckle	<i>Lonicera canadensis</i>
Sugar Maple	<i>Acer saccharum</i>
Ironwood	<i>Carpinus caroliniana</i>
False Indigo	<i>Amorpha fruticosa</i>
Sandbar Willow	<i>Salix exigua</i>
Trees	
Jack Pine	<i>Pinus banksiana</i>
White Cedar	<i>Thuja occidentalis</i>
Red Pine	<i>Pinus resinosa</i>
Paper Birch	<i>Betula papyrifera</i>
White Pine	<i>Pinus strobus</i>
Quaking Aspen	<i>Populus tremuloides</i>
Red Maple	<i>Acer rubrum</i>
Big-toothed Aspen	<i>Populus grandidentata</i>
Sugar Maple	<i>Acer saccharum</i>
Northern Red Oak	<i>Quercus rubra</i>
Basswood	<i>Tilia americana</i>

Source: MDNR 2003.

E.6.1.1 Northern Dry-Mesic Mixed Woodland

The temporal and spatial distribution of botanical resources in the northern dry-mesic mixed woodland consists of aspen-birch-basswood forest and red oak-sugar maple-basswood forest. The aspen-birch-basswood forest composed of variable mixtures of paper birch, sugar maple (*Acer saccharum*), basswood (*Tilia americana*), quaking aspen, and red maple, with northern red oak (*Quercus rubra*), bur oak (*Quercus macrocarpa*), big-toothed aspen (*Populus grandidentata*), and white pine being other dominant species. Beaked hazelnut (*Corylus cornuta*), mountain maple (*Acer spicatum*), bush honeysuckle (*Diervilla lonicera*), and round-leaved dogwood (*Cornus rugosa*) tend to be abundant in the shrub layer. Wild sarsaparilla (*Aralia nudicaulis*), large-leaved aster (*Eurybia macrophylla*), and Canada mayflower (*Maianthemum canadense*) are abundant in the herbaceous layer (MDNR 2018g).

Red oak, sugar maple, and basswood are important canopy species. This forest type also contains smaller amounts of paper birch and red maple, with occasional yellow birch and quaking aspen mixed in. Balsam fir and junoberries (*Amelanchierspp.*) are common in the understory.

Common ground-layer cover includes false Solomon's seal (*Smilacina racemosa*), American spikenard (*Aralia racemosa*), and groundpines (*Lycopodium dendroideum*) (MDNR 2018g).

E.6.1.2 Northern Mesic Hardwood Forest

In areas where red pine, white pine, and quaking aspen are the dominant canopy species, vegetation composition is more likely to have mountain ash (*Sorbus aucuparia*), white cedar (*Thuja occidentalis*), and black spruce (*Picea mariana*) as part of the canopy or understory. Other shrub species consist of chokecherry (*Prunus virginiana*), white spruce (*Picea glauca*), and mountain ash. Twinflower (*Linnaea borealis*), running clubmoss (*Lycopodium clavatum*), naked miterwort (*Mitella nuda*), wood anemone (*Anemone quinquefolia*), dwarf raspberry (*Rubus pubescens*), and sweet-scented bedstraw (*Galium triflorum*) can be found in the ground-layer cover (MDNR 2018g).

E.6.1.3 Recent Botanical Observations

MP performed botanical observations within the Project Boundaries in July 2019. The observations were conducted by identifying dominant vegetation along the shorelines of the Project Boundaries. A boat was used to make visual observations of canopy species for confirmation of land cover classification within the Project Boundaries. A general list of herbaceous, shrub, and tree species that were observed within the Project Boundaries are presented below in Table E.6-2 (Grand Rapids) and Table E.6-3 (Prairie River).

Table E.6-2 Dominant plant species observed in the Grand Rapids Project Boundary

Common Name	Scientific Name
Herbaceous Layer	
Virginia Creeper	Parthenocissus quinquefolia
Tall Hairy Agrimony	Agrimonia gryposepala
Bracken Fern	Pteridium aquilinum
Reed Canary Grass	Phalaris aruninacea
Earth Loose Strife	Lysimachia terrestris
American Water Horehound	Lycopus americanus
Wild Rose	Rosa spp.
Common Milkweed	Asclepias syriaca
Yellow Avens	Geum aleppicum

Common Name	Scientific Name
Nodding Sedge	Carex gynandra
Long haired sedge	Carex capillaris
Jewel Weed	Impatiens capensis
Climbing Nightshade	Solanum dulcamara
Yellow Pond Lily	Nuphar lutea
American White Pond Lily	Nymphaea odorata
Starflower	Trientalis borealis
Canada Mayflower	Maianthemum canadense
Bishops Goutweed	Aegopodium podagraria
Red Baneberry	Actaea rubra
Wood Anemone	Anemone quinquefolia
Sweet-scented Bedstraw	Galium triflorum
Sensitive Fern	Onoclea sensibilis
Sweet Fern	Selaginella emmeliana
Narrowleaf cattail	Typha angustifolia
Bearded iris	Iris germanica
Marsh Bellflower	Campanula aparinoides
Longleaf Aster	Symphytrichum ascendens
Large-flowered Bellwort	Uvularia grandiflora
Poison Ivy	Toxicodendron radicans
Bluebeard Lily	Clintonia borealis
Riverbank Grape	Vitis riparia
Ribes Spp.	Ribes spp.
Horsetail Spp.	Equisetum spp.
Common Yarrow	Achillea millefolium
Tall Hawkweed	Hieracium piloselloides
Yellow Buttercup	Ranunculus flabellaris
Wild Rice	Zizania spp.

Common Name	Scientific Name
Shrub Layer	
Beaked Hazelnut	Corylus cornuta
Bush Honeysuckle	Diervilla lonicera
Round Leaf Dogwood	Cornus rugosa
Red Osier Dogwood	Cornus sericea
Alternate Leafed Dogwood	Cornus alternifolia
Nannyberry	Viburnum lentago
Smooth Sumac	Rhus glabra
Trees	
Jack Pine	Pinus banksiana
White Cedar	Thuja occidentalis
Red Pine	Pinus resinosa
Paper Birch	Betula papyrifera
White Pine	Pinus strobus
Quaking Aspen	Poulus tremuloides
Red Maple	Acer rubrum
Sugar Maple	Acer saccharum
Northern Red Oak	Quercus rubra
Bur Oak	Quercus macrocarpa
Basswood	Tilia americana
Box Elder	Acer negundo
White Spruce	Picea glauca
Black Spruce	Picea mariana
Balsam fir	Abies balsamea
Mountain Ash	Sorbus aucuparia
Black Ash	Fraxinus nigra
Alder	Alnus spp.
Weeping Willow	Salix babylonica

Common Name	Scientific Name
Tamarack	<i>Larix laricina</i>
Black Ash	<i>Fraxinus nigra</i>

Table E.6-3 Dominant plant species observed in the Prairie River Project Boundary

Common Name	Scientific Name
Herbaceous Layer	
Virginia Creeper	<i>Parthenocissus quinquefolia</i>
Spreading Dog Bane	<i>Apocynum androsaemifolium</i>
Smooth Rose	<i>Rosa blanda</i>
Tansy	<i>Tanacetum vulgare</i>
Sticktight spp.	<i>Bidens</i> spp.
Swamp Milkweed	<i>Asclepias incarnata</i>
Lambsquarter	<i>Chenopodium album</i>
King of the Meadow (muskrat weed)	<i>Thalictrum pubescens</i>
Myrtle Sedge	<i>Acorus calamus</i>
Broadleaf Arrowhead	<i>Sagittaria latifolia</i>
Bugleweed	<i>Aluga</i> spp.
Haircap moss	<i>Polytrichum</i> spp.
White clover	<i>Trifolium repens</i>
Raspberry	<i>Rubus idaeus</i>
Honey Clover (a.k.a. Sweetclover)	<i>Melilotus albus</i>
Primrose	<i>Primula vulgaris</i>
Wild Strawberry	<i>Fragaria vesca</i>
White Daisy	<i>Leucanthemum vulgare</i>
Spotted Knapweed	<i>Centaurea marculosa</i>
Purple Fringed Orchid	<i>Platanthera psychodes</i>
Canada anemone	<i>Anemone canadensis</i>
American Vetch	<i>Vicia americana</i>

Common Name	Scientific Name
Alfalfa	<i>Medicago sativa</i>
Purple Broom	<i>Cytisus purpureus</i>
Black-eyed Susan	<i>Rudbeckia hirta</i>
Thistle	<i>Carduus</i>
Birds foot trefoil	<i>Lotus corniculatus</i>
Purple Marshlocks	<i>Marsh cinquefoil</i>
White meadowsweet	<i>Spiraea alba</i>
Purple Loosestrife	<i>Lythrum salicaria</i>
Tiger Lily	<i>Lilium lancifolium</i>
Goldenrod	<i>Solidago spp.</i>
Rock Polypody	<i>Polypodium virginianum</i>
Bracken Fern	<i>Pteridium aquilinum</i>
Reed Canary Grass	<i>Phalaris aruninacea</i>
Marsh Fern	<i>Thelypteris palustris</i>
Common Milkweed	<i>Asclepias syriaca</i>
Long haired sedge	<i>Carex capillaris</i>
Yellow Pond Lily	<i>Nuphar lutea</i>
American White Pond Lily	<i>Nymphaea odorata</i>
Horsetail	<i>Equisetum spp.</i>
Virginia Creeper	<i>Parthenocissus quinquefolia</i>
Common Yarrow	<i>Achillea millefolium</i>
Wild Rice	<i>Zizania</i>
Shrub Layers	
Beaked Hazelnut	<i>Corylus cornuta</i>
Chokecherry	<i>Prunus virginiana</i>
Bush Honeysuckle	<i>Diervilla lonicera</i>
Round Leaf Dogwood	<i>Cornus rugosa</i>
Red Osier Dogwood	<i>Cornus sericea</i>

Common Name	Scientific Name
Alternate Leafed Dogwood	<i>Cornus alternifolia</i>
Smooth Sumac	<i>Rhus glabra</i>
Trees	
Jack Pine	<i>Pinus banksiana</i>
White Cedar	<i>Thuja occidentalis</i>
Red Pine	<i>Pinus resinosa</i>
Paper Birch	<i>Betula papyrifera</i>
White Pine	<i>Pinus strobus</i>
Quaking Aspen	<i>Poulus tremuloides</i>
Red Maple	<i>Acer rubrum</i>
Sugar Maple	<i>Acer saccharum</i>
Northern Red Oak	<i>Quercus rubra</i>
Bur Oak	<i>Quercus macrocarpa</i>
Basswood	<i>Tilia americana</i>
Box Elder	<i>Acer negundo</i>
White Spruce	<i>Picea glauca</i>
Black Spruce	<i>Picea mariana</i>
Balsam fir	<i>Abies balsamea</i>
Mountain Ash	<i>Sorbus aucuparia</i>
Black Ash	<i>Fraxinus nigra</i>
Alder	<i>Alnus spp.</i>
Weeping Willow	<i>Salix babylonica</i>
Tamarack	<i>Larix laricina</i>

E.6.1.4 Rare, Threatened, and Endangered Plant Species

In support of the relicensing of the Projects, MP consulted with the USFWS and MDNR regarding federally and state listed plant species and species of special concern within the vicinity of the Projects (Appendix A). No federally listed plant species were identified to potentially occur within the Project Boundaries. State listed species identified using the MDNR National Heritage

Information System database are summarized in Table E.6-4. Three moonwort (*Botrychium*) species as well as the Lapland buttercup (*Ranunculus lapponicus*) have the potential to either occur within one or both of the Projects Boundaries.

Table E.6-4 State listed plant species within one mile of the Projects

Common Name	Scientific Name	Status	Project
Least Moonwort	<i>Botrychium simplex</i>	Special Concern	Grand Rapids; Prairie River
Prairie Moonwort	<i>Botrychium campestre</i>	Special Concern	Prairie River
Pale Moonwort	<i>Botrychium pallidum</i>	Special Concern	Prairie River
Lapland Buttercup	<i>Ranunculus lapponicus</i>	Special Concern	Prairie River

1. Copyright 2021, State of Minnesota, Department of Natural Resources. Rare features data reviewed were provided by the Division of Ecological and Water Resources, MDNR, under license agreement LA832. MDNR has not provided comment on the interpretation of the results included in this report.

Moonwort Species Temporal/Life History Information

Least moonwort, pale moonwort, and prairie moonwort have adapted to a wide variety of habitats scattered throughout the northern half of Minnesota, with least moonwort the most common of the three species. Moonwort occurs primarily in open sites, including prairies, wetlands, and abandoned mine sites. Threats to moonwort include loss of open habitat to successional overgrowth or trampling by humans or animals (MDNR 2018I). Least moonwort, pale moonwort, and prairie moonwort are all listed as species of special concern in Minnesota.

Lapland Buttercup Temporal/Life History Information

Lapland buttercup (*Ranunculus lapponicus*) is generally found in white cedar swamps near or within muck depressions, seeps, groundwater springs, or other wet areas. Lapland buttercup blooms in June and fruits in July. The natural communities associated with this species in Minnesota and Wisconsin include northern wet-mesic forest and northwest sands (WDNR 2021).

E.6.1.5 Invasive Plant Species

Invasive species are defined as non-indigenous plant or animal species that aggressively compete with native species. These species often out-compete local native species, impacting biodiversity, recreation, and human health. Invasive plants tend to appear on disturbed ground, and the most aggressive have the ability to invade existing ecosystems.

Non-native invasive species and noxious weeds are typically prolific pioneering species that have the ability to quickly outcompete native vegetation. They grow rapidly, mature early, and

effectively spread seeds that can survive for significant periods in the soil until site conditions are favorable for growth.

Minnesota defines invasive plants as a nonnative species that causes or may cause economic or environmental harm or harm to human health or threatens or may threaten natural resources or the use of natural resources in the state (Minn. Stat. 84D. 2018). Invasive plants are regulated under both Minnesota State Statute Chapter 84D and Minnesota Rule part 6216.

Two invasive plants are known to occur within the vicinity of the Project Areas. Curly-leaf pondweed (*Potamogeton crispus*), which is a prohibited invasive species in Minnesota, is known to occur in both Blandin Reservoir and Prairie River Reservoir (ICSWCD 2017, 2021). Additionally, purple loosestrife (*Lythrum salicaria*), which is a prohibited invasive species and a prohibited noxious weed in Minnesota, is known to occur around the perimeter of Blandin Reservoir (ICSWCD 2017, 2021). Although there is no published information for the occurrences of terrestrial invasive plant species within the Project Areas, several invasive plant species are known to occur within Itasca County (Early Detection and Distribution Mapping System [EDDMapS] 2018). Invasive plant species that occur within Itasca County and have the potential to occur within the Project Areas includes; reed canary grass (*Phalaris Arundinacea*), Canada thistle (*Cirsium arvens*), European buckthorn (*Rhamnus cathartica*), leafy spurge (*Euphorbia esula*), spotted knapweed (*Centaurea maculosa*) and birdsfoot trefoil (*Lotus corniculatus*).

As stated in Section E.6.1.3, MP performed botanical species observations (including invasive plant species) in July 2019 at both Projects. Several species of State-listed noxious weeds or specially regulated plants¹ (Minnesota Department of Agriculture 2019) were observed within or near the Project Boundaries during survey efforts, including common tansy (*Tanacetum vulgare*), purple loosestrife, poison ivy (*Toxicodendron radicans*), Canada thistle, and spotted knapweed. These species are all common in Minnesota and occur throughout the upper Midwest. Purple loosestrife was only observed once in a residential yard at the Prairie River Project; this occurrence is located outside of the Project Boundary. The other observed noxious weeds occurred infrequently and at low densities, localized to developed, relatively open areas. There are also some ornamental plants within the Project Boundaries that are non-native species that

¹ Specially regulated plants are plants that may be native species or have demonstrated economic value, but also have the potential to cause harm in non-controlled environments. Plants designated as specially regulated have been determined to pose ecological, economical, or human or animal health concerns (Minnesota Department of Agriculture 2019).

were likely planted by abutting property owners. A high percentage of the Project Boundaries are dominated by native vegetation common in the central and northern Minnesota Region.

MP is committed to preventing the spread of both AIS and terrestrial invasive species. MP has an AIS operating procedure in place to mitigate the potential of spreading AIS through operation and maintenance activities. Additionally, MP implements best management practices to prevent the spread of invasive plant species in accordance with MDNR's Operational Order 113 – Invasive Species Prevention and Management. MP's AIS management procedure is reviewed annually and updated periodically. The procedure is included in the May 28, 2019 filing of the PSP.

The Projects have not experienced any operational or other issues related to any of the invasive or noxious species listed above.

E.6.2 Wetland, Riparian, and Littoral Habitats

Wetlands are generally defined as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support vegetation typically adapted for life in saturated soil conditions. The state of Minnesota regulates certain activities within wetlands at the state level through the Minnesota Wetland Conservation Act. The USACE maintains jurisdiction over most wetlands and other aquatic features such as lakes and rivers through Section 404 of the Federal CWA. Additionally, the USACE has regulatory jurisdiction over traditionally navigable waters within the state of Minnesota.

The USFWS (Cowardin et al. 1979) defines wetlands as:

...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. For purposes of this classification, wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominately hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some point during the growing season of the year.

The littoral zone is the nearshore area extending from the seasonal high-water level to the deepest extent of rooted aquatic vegetation (Wetzel 1975). Vegetation in the littoral zone is typically distributed as an upper zone of emergent rooted vegetation, a middle zone of floating-leaved rooted vegetation, and a lower zone of submerged rooted vegetation (Wetzel 1975). The system

of habitat classification described in Cowardin et al. (1979) places the deepwater limit of the littoral zone at a depth of 6.6 feet below low water, or the edge of emergent or woody vegetation, whichever is at greater depth.

The riparian zone serves as the primary interface between aquatic and upland habitats, influencing both the primary productivity and food resources within the adjacent aquatic habitat. For the purposes of this section, the term “riparian” shall be used to refer to anything connected to or immediately adjacent to the shoreline or banks of Blandin Reservoir (Grand Rapids Project) and Prairie River Reservoir (Prairie River Project).

The Project vicinities are located in the Northern Minnesota Drift and Lake Plains St. Louis Moraines Subsections as defined by the MDNR (MDNR 2003). The dominant wetland community of the Project vicinities is similar to what the MDNR defines as Inland Lake Sand/Gravel/Cobble Shore Vegetation Community. The dominant riparian vegetation in the Inland Lake Sand/Gravel/Cobble Shore Vegetation Community are shrubs, forbs and graminoids such as sand bar willow (*Salix exigua*), spotted Joe pye weed (*Eupatorium maculatum*) and tall manna grass (*Glyceria grandis*) with invasive species such as reed canary grass (*Phalaris arundinacea*) being increasingly abundant (MDNR 2003). The Project vicinities also include eight palustrine wetland habitat types and three other aquatic habitat types (Lacustrine/Littoral, pond, and riverine) as classified by Cowardin et al. (1979). Plant species of the wetland areas include palustrine emergent vegetation such as cattail (*Typha spp.*) and bull rushes (*Juncus spp.*) with various aquatic plants such as native species of watermilfoil (*Myriophyllum spp.*) and pondweed (*Potamogeton spp.*) within the littoral areas (MDNR 2003).

Grand Rapids Project

Figure E.6-1 presents a map of wetlands and littoral habitats existing within the Grand Rapids Project. Table E.6-5 defines and summarizes the USFWS' National Wetland Inventory (NWI) classification system resource types associated with the wetland and littoral maps (USFWS undated) and provides the available acreage of each wetland type and the littoral areas for the Project. Table E.6-6 summarizes major land uses within the riparian zone at the Project.

Table E.6-5 NWI classification and estimated acreage in the Grand Rapids Project Boundary

NWI Code	Aquatic Resource Type	Estimated Acreage
L1UBH	Lake	450.1
PFOB	Forested Wetland	2.2
PFOC	Forested Wetland	1.4
PSS1C	Shrub Wetland	<0.1
PSSC	Shrub Wetland	0.6
PUBF	Pond	<0.1
R5UBH	Riverine	<0.1
Total		454.4

Source: USFWS undated.

Table E.6-6 Riparian area land cover/land use estimated acreage in the Grand Rapids Project Boundary

Land Use/Land Cover Type	Estimated Acreage
Deciduous Forest	7.4
Developed, High Intensity	1.6
Developed, Low Intensity	3.2
Developed, Medium Intensity	1.5
Developed, Open Space	12.1
Emergent Herbaceous Wetlands	1.2
Evergreen Forest	4.1
Mixed Forest	6.5
Open Water	440.9
Shrub/Scrub	0.1
Woody Wetlands	11.9
Total	490.5

Source: USFWS undated.

Prairie River Project

Figure E.6-2 presents a map of wetlands and littoral habitats existing for the Prairie River Project. Table E.6-7 defines and summarizes the NWI classification system resource types associated with the wetland and littoral maps (USFWS undated) and provides the available acreage of each

classification of wetlands and littoral areas for the Project. Table E.6-8 summarizes major land uses within the riparian zone at the Project.

Table E.6-7 NWI classification and estimated acreage in the Prairie River Project Boundary

NWI Code	Aquatic Resource Type	Estimated Acreage
L1UBH	Lake	981.1
L2UBH	Lake	280.4
PEM5C	Emergent Wetland	3.7
PEM5F	Emergent Wetland	3.8
PFO1B	Forested Wetland	<0.1
PFO1C	Forested Wetland	0.2
PFO5F	Forested Wetland	2.5
PFOB	Forested Wetland	0.4
PFOC	Forested Wetland	1.7
PSS/EM5E	Shrub/Emergent Wetland	1.3
PSSC	Shrub Wetland	0.6
R3UBH	Riverine	0.3
R4BC	Riverine	0.3
Total		1,276.30

Source: USFWS undated.

Table E.6-8 Riparian area land cover/land use estimated acreage in the Prairie River Project Boundary

Land Use/Land Cover Type	Estimated Acreage
Barren Land	<0.1
Deciduous Forest	26.2
Developed, Low Intensity	0.7
Developed, Medium Intensity	0.2
Developed, Open Space	1.8
Emergent Herbaceous Wetlands	55.9
Evergreen Forest	5.1
Hay/Pasture	1.0
Mixed Forest	24.3
Open Water	1,184.5
Shrub/Scrub	3.7
Woody Wetlands	17.2
Total	1,320.6

Source: USFWS undated.

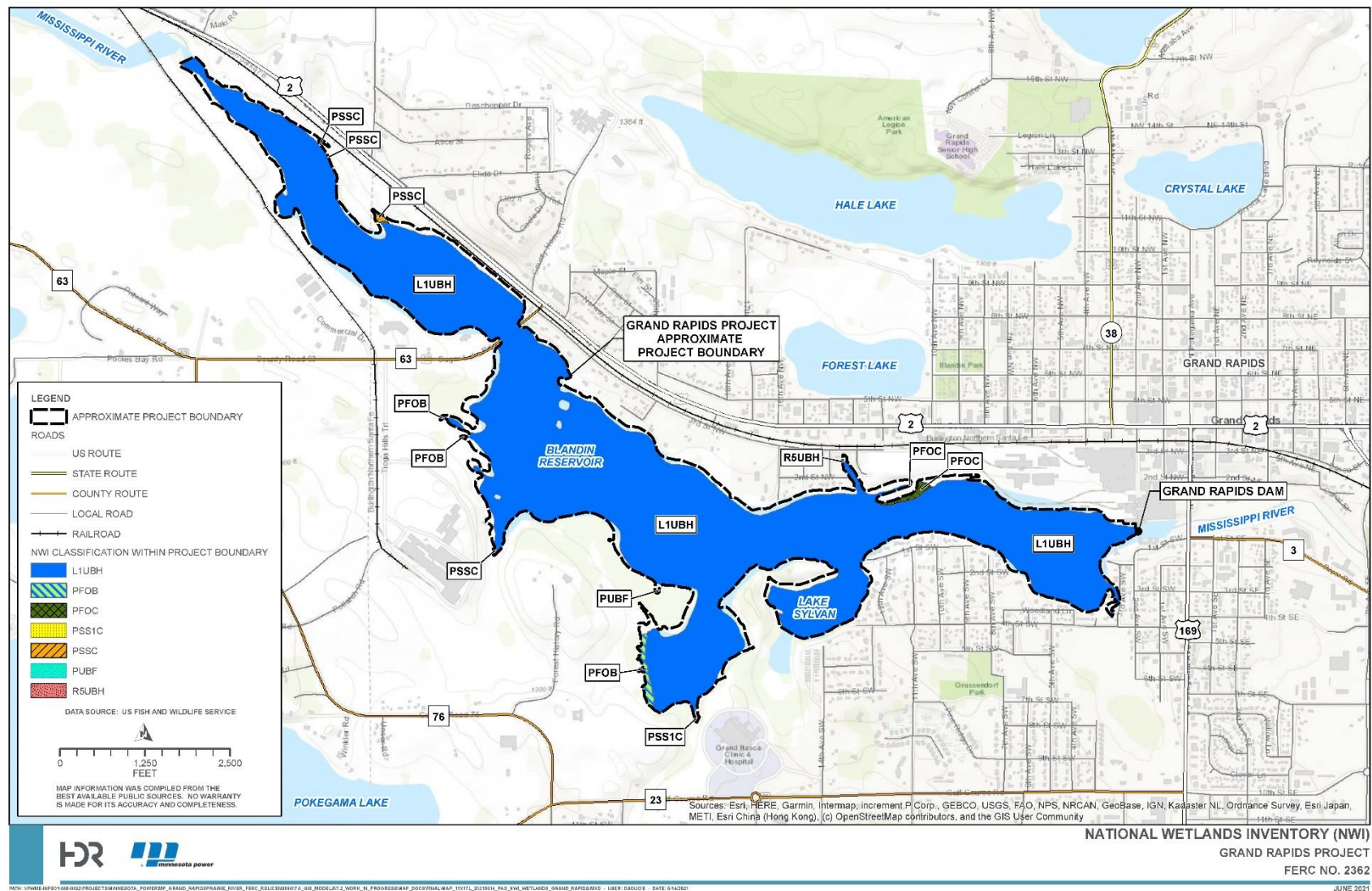


Figure E.6-1 Grand Rapids Project wetlands

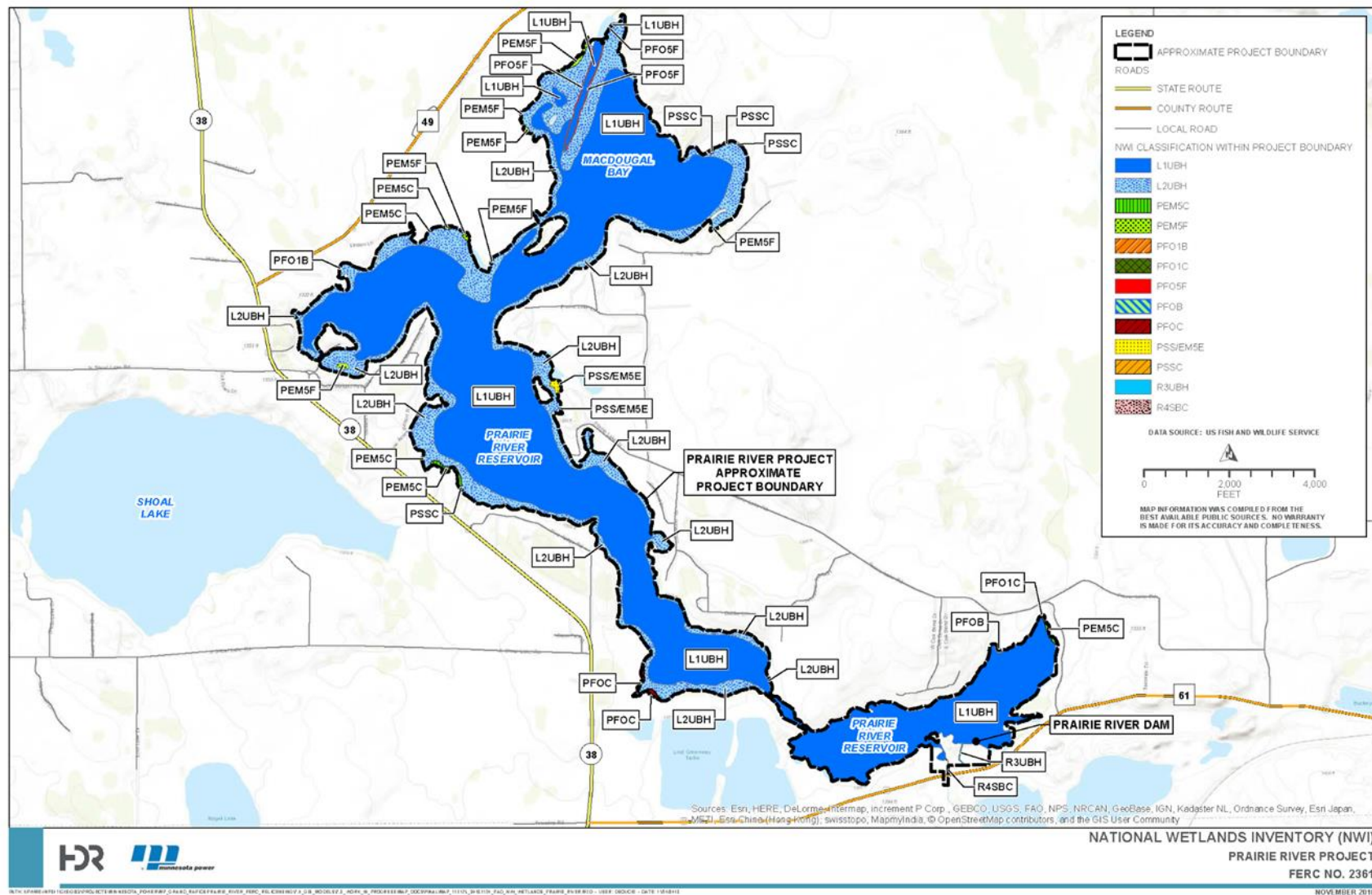


Figure E.6-2 Prairie River Project wetlands

E.6.3 Project Effects on Terrestrial Resources

E.6.3.1 Grand Rapids Project

The Grand Rapids Project is located in a developed area with some forest surrounding the reservoir. However, the Project vicinity does support a range of botanical species and habitats. Existing data maintained by the USFWS indicates that the Project vicinity supports several small localized wetland and riparian areas. Because the Project has been in operation for over 100 years and is maintained in ROR mode with minimal reservoir fluctuations, these habitats are not fundamentally affected by MP's operation of the Project. Additionally, wetland, riparian, and littoral habitats within the boundary of the Project are reflective of these operations, having been shaped by over a century of hydropower operation. Given that these operations are not proposed to change during the term of new license, the continued operation of the Project in ROR mode will have no adverse effects on wetland, riparian, and littoral habitats.

Invasive botanical species in the vicinity of the Grand Rapids Project are the result of regional invasions that do not result from MP management or operations and are not under the control of MP. In addition, there are limited terrestrial lands within the Project Boundary. MP is not proposing any ground-disturbing activities, outside of general maintenance, that may contribute to the spread of invasive species.

MP will continue to implement best management practices to prevent the spread of invasive species in accordance with MDNR's Operational Order 113 – Invasive Species Prevention and Management.

E.6.3.2 Prairie River Project

The Prairie River Project is located in a more undeveloped area as compared to the Grand Rapids Project. The Project vicinity supports a diverse range of botanical species and habitats. Existing data maintained by the USFWS indicates that the Project vicinity supports a variety of wetland and riparian cover types. Because the Project has been in operation for over 100 years and is maintained in ROR mode with minimal reservoir fluctuations, these habitats are not fundamentally affected by MP's operation of the Project. Additionally, wetland, riparian, and littoral habitats within the boundary of the Project are reflective of these operations, having been shaped by over a century of hydropower operation. Given that these operations are not proposed to change during the term of new license, the continued operation of the Project in ROR mode will have no adverse effects on wetland, riparian, and littoral habitats.

MP will continue to implement best management practices to prevent the spread of invasive species in accordance with MDNR's Operational Order 113 – Invasive Species Prevention and Management.

Invasive botanical species in the vicinity of the Prairie River Project are the result of regional invasions that do not result from MP management or operations and are not under the control of MP. In addition, there are limited terrestrial lands within the Project Boundary. MP is not proposing any ground-disturbing activities, outside of general maintenance, that may contribute to the spread of invasive species.

E.6.4 PM&E Measures Proposed by the Applicant, Resource Agencies, and/or Other Consulting Parties

E.6.4.1 Grand Rapids Project

No PM&E measures related to terrestrial resources have been proposed by any resource agencies or consulting parties. For the reasons stated above, MP is not proposing any new PM&E measures related to terrestrial resources at the Grand Rapids Project. MP proposes to continue ROR operations at the Project.

E.6.4.2 Prairie River Project

No PM&E measures related to terrestrial resources have been proposed by any resource agencies or consulting parties. For the reasons stated above, MP is not proposing any new PM&E measures related to terrestrial resources at the Prairie River Project. MP proposes to continue ROR operations at the Project.

E.7 Wildlife Resources

The Projects are located in an area mostly developed with industrial, commercial, and residential buildings/uses. The Projects have been in operation for over 100 years. The associated vegetative communities likely only provide negligible amounts of suitable habitat for a limited number of wildlife species due to the limited acreage of land within the Project Boundaries. However, nearby forested landscapes likely provide habitat for both game and non-game species.

The Project vicinities support a diverse range of wildlife species and habitats. The mammals, avifauna, amphibians, and reptiles with the potential to occur in the vicinities of the Projects are described below. MP performed reconnaissance-level wildlife observations within the Project Boundaries in July 2019.

Wildlife observed within the Grand Rapids Project Boundary on July 12, 2019, included: Canada geese (*Branta canadensis*), bald eagle (*Haliaeetus leucocephalus*), pileated woodpecker (*Dryocopus pileatus*), white-tailed deer (*Odocoileus virginianus*), painted turtle (*Chrysemys pica*), common loon (*Gavia immer*), and Baltimore oriole (*Icterida galbula*).

Wildlife observed within the Prairie River Project Boundary on July 19, 2019, included: Northern leopard frog (*Lithobates pipiens*), common loon, Baltimore oriole, great blue heron (*Ardea herodias*), coot (*Fulica* spp.), groundhog (*Marmota monax*), kingfisher (*Alcedines* spp.), ring-billed seagull (*Larus delawarensis*), and hawks (*Buteo* spp.).

E.7.1 Mammals

Mammals inhabit a wide variety of habitat types. The use of specific habitat may shift during different life stages and/or parts of the season. Given the location of the two Projects, mammals in the immediate Project vicinities would be species that are tolerant to some degree of urbanization. Examples of some mammal species expected to be found within the Project vicinities include white-tailed deer (*Odocoileus virginianus*), chipmunk (*Tamias minimus*), beaver (*Castor canadensis*), raccoon (*Procyon lotor*), muskrat (*Ondatra zibethicus*), and various squirrels (*Sciurus* and *Tamiasciurus* spp.). As stated previously, the Grand Rapids Project is in a more urban setting compared to the Prairie River Project, especially on the northern portion of Blandin Reservoir, therefore, mammals at the Projects may differ slightly. Table E.7-1 provides a list of mammal species potentially occurring in the vicinity of the Projects. Those species that were observed during MP wildlife observations conducted within the boundaries of the Projects in July 2019 are indicated with an asterisk (*).

Table E.7-1 List of mammals potentially occurring in the vicinity of the Projects

Common Name	Scientific Name
Badger	<i>Taxidea taxus</i>
Northern Long-eared Bat	<i>Myotis septentrionalis</i>
Beaver	<i>Castor canadensis</i>
Black Bear	<i>Ursus americanus</i>
Bobcat	<i>Lynx rufus</i>
Canada Lynx	<i>Lynx canadensis</i>
Chipmunk	<i>Tamias minimus</i>
Coyote	<i>Canis latrans</i>
Fisher	<i>Martes pennanti</i>
Red Fox	<i>Vulpes vulpes</i>

Common Name	Scientific Name
Woodchuck*	<i>Marmota monax</i>
Eastern Cottontail	<i>Sylvilagus floridanus</i>
Snowshoe Hare	<i>Lepus americanus</i>
Mink	<i>Neovison vison</i>
Muskrat	<i>Ondatra zibethicus</i>
Porcupine	<i>Erethizon dorsatum</i>
Raccoon	<i>Procyon lotor</i>
River Otter	<i>Lontra canadensis</i>
Northern Flying Squirrel	<i>Glaucomys sabrinus</i>
Fox Squirrel	<i>Sciurus niger</i>
Gray Squirrel	<i>Sciurus carolinensis</i>
Red Squirrel	<i>Tamiasciurus hudsonicus</i>
Thirteen-lined Ground Squirrel	<i>Spermophilus tridecemlineatus</i>
Striped Skunk	<i>Mephitis mephitis</i>
Short-tailed Weasel (Ermine)	<i>Mustela ermine</i>
Long-tailed Weasel	<i>Mustela frenata</i>
White-tailed Deer*	<i>Odocoileus virginianus</i>

Source: MDNR 2018h.

Several of the mammal species potentially occurring in the Project vicinities inhabit and can utilize a wide variety of habitats, including white-tailed deer, chipmunk, gray squirrel (*Sciurus carolinensis*), red squirrel (*Tamiasciurus hudsonicus*), coyote (*Canis latrans*), red fox (*Vulpes vulpes*), and striped skunk (*Mephitis mephitis*). These species are generalists and can be found wherever there is suitable habitat or food and acceptable den/hibernation sites. In general, these species could be found in wetlands, upland forests, residential areas, and cultivated fields at or adjacent to the Project vicinities. There are several species that require specific habitat to survive such as the northern long-eared bat and Canada lynx. Canada lynx require an abundance of prey as well as large tracts of wild land with little to no human interaction (USFWS 2018c). The northern long-eared bat will forage over a wide range of habitats looking for prey species (insects) but will hibernate in caves and mines with very specific temperature requirements (USFWS 2018d).

E.7.2 Avifauna

A variety of avifauna, particularly songbirds, may occur in the coniferous and deciduous forests surrounding the Project vicinities. Avian species potentially occurring in the terrestrial uplands of the Project vicinities include American crow (*Corvus brachyrhynchos*), eastern bluebird (*Sialia*

sialis), northern cardinal (*Cardinalis cardinalis*), mourning dove (*Zenaida macroura*) warblers (*Cardellina canadensis* and *Setophaga tigrina*) and sparrows (*Zonotrichia querula* and *Passer domesticus*). A variety of ducks and waterfowl could be found utilizing the Project reservoirs, rivers, and marsh habitats including species such as Canada goose, common loon, mallard (*Anas platyrhynchos*), wood duck (*Aix sponsa*), and several other duck species common in Minnesota. The variety of waterfowl typically increases during the migrating period in the spring and fall. Raptor species are also a common occurrence within the Project vicinities, with species such as bald eagle, Osprey (*Pandion haliaetus*) red-tailed hawk (*Buteo jamaicensis*), and barred owl (*Strix varia*). Table E.7-2 provides a list of avian species potentially occurring in the vicinity of the Projects. Those species that were observed during MP wildlife observations conducted within the boundaries of the Projects in July 2019 are indicated with an asterisk (*).

Table E.7-2 List of avian species potentially occurring in the vicinity of the Projects

Common Name	Scientific Name
American Bittern	<i>Botaurus lentiginosus</i>
American Crow	<i>Corvus brachyrhynchos</i>
Bald Eagle*	<i>Haliaeetus leucocephalus</i>
Canada Goose*	<i>Branta canadensis</i>
Common Loon*	<i>Gavia immer</i>
Common Snipe	<i>Gallinago gallinago</i>
Black Tern	<i>Chlidonias niger</i>
Double-crested Cormorant	<i>Phalacrocorax auritus</i>
Pileated Woodpecker*	<i>Dryocopus pileatus</i>
Blue-winged Teal	<i>Anas discors</i>
Mallard	<i>Anas platyrhynchos</i>
Ring-Necked Duck	<i>Aythya collaris</i>
Wood Duck	<i>Aix sponsa</i>
Great Blue Heron*	<i>Ardea herodias</i>
Eastern Bluebird	<i>Sialia sialis</i>
Baltimore Oriole*	<i>Icterus galbula</i>
Bobolink	<i>Dolichonyx oryzivorus</i>
Coots*	<i>Fulica</i> spp.
Gyr Falcon	<i>Falco rusticolus</i>
Merlin	<i>Falco columbarius</i>
Peregrine Falcon	<i>Falco peregrinus</i>
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>

Common Name	Scientific Name
Ruffed Grouse	<i>Bonasa umbellus</i>
Spruce Grouse	<i>Falcipennis canadensis</i>
Broad-winged Hawk*	<i>Buteo platypterus</i>
Red-tailed Hawk*	<i>Buteo jamaicensis</i>
Canada Warbler	<i>Cardellina canadensis</i>
Cape May Warbler	<i>Setophaga tigrina</i>
Connecticut Warbler	<i>Oporornis agilis</i>
Evening Grosbeak	<i>Coccythraustes vespertinus</i>
Golden-winged Warbler	<i>Vermivora chrysoptera</i>
Harris's Sparrow	<i>Zonotrichia querula</i>
Common Sparrow	<i>Passer domesticus</i>
Belted Kingfisher*	<i>Megasceryle alcyon</i>
Olive-sided Flycatcher	<i>Contopus cooperi</i>
Rusty Blackbird	<i>Euphagus carolinus</i>
Wood Thrush	<i>Hylocichla mustelina</i>
Mourning Dove	<i>Zenaida macroura</i>
Northern Cardinal	<i>Cardinalis cardinalis</i>
Barred Owl	<i>Strix varia</i>
Boreal Owl	<i>Aegolius funereus</i>
Great Gray Owl	<i>Strix nebulosa</i>
Great Horned Owl	<i>Bubo virginianus</i>
Long-eared Owl	<i>Asio otus</i>
Northern Hawk Owl	<i>Surnia ulula</i>
Northern Saw-whet Owl	<i>Aegolius acadicus</i>
Snowy Owl	<i>Nyctea scandiaca</i>
Sandhill Crane	<i>Grus canadensis</i>
Ring-billed Gull*	<i>Larus delawarensis</i>
Trumpeter Swan	<i>Cygnus buccinators</i>
Woodcock	<i>Scolopax minor</i>

Sources: MDNR undated; USFWS 2018a and 2018b.

Species such as American crow, eastern bluebird, Cape May warbler (*Setophaga tigrina*), common sparrow, mourning dove, and northern cardinal are generalists and will utilize a wide variety of habitats, including both upland and riparian areas for foraging, shelter, and reproduction. Several species prefer uplands and may be present in the Project vicinities year-round, these

include: ruffed grouse (*Bonasa umbellus*), spruce grouse (*Falcipennis canadensis*), and raptor species (eagles, hawks, and owls), which typically hunt in wetlands. Highly migratory birds may be present within the Project vicinities as well but would be seasonally dependent. These include American bittern (*Botaurus lentiginosus*), woodcock (*Scolopax minor*), Canada warbler (*Cardellina canadensis*), wood thrush (*Hylocichla mustelina*), sandhill crane (*Grus canadensis*), and waterfowl.

E.7.3 Amphibians and Reptiles

Several species of amphibians and reptiles can be found in the Projects' watershed and can include the blue-spotted salamander (*Ambystoma laterale*), the tiger salamander (*A. tigrinum*), eastern redbacked salamander (*Plethodon cinereus*), eastern newt (*Notophthalmus viridescens*), four-toed salamander (*Hermidactylum scutatum*), common garter snake (*Thamnophis sirtalis*), redbellied snake (*Storeria occipitomaculata*), common tree frog (*Polypedates leucomystax*), northern leopard frog, green frog (*Lithobates clamitans*), and American toad (*Anaxyrus americanus*). Table E.7-3 provides a list of potential reptile and amphibian species that may occur in the vicinity of the Projects. Those species that were observed during MP wildlife observations conducted within the boundaries of the Projects in July 2019 are indicated with an asterisk (*).

Table E.7-3 List of reptile and amphibian species potentially occurring in the vicinity of the Projects

Common Name	Scientific Name
American Toad	<i>Anaxyrus americanus</i>
Gray Treefrog	<i>Hyla versicolor</i>
Spring Peeper	<i>Pseudacris crucifer</i>
Boreal Chorus Frog	<i>Pseudacris maculate</i>
Green Frog	<i>Lithobates clamitans</i>
Mink Frog	<i>Lithobates septentrionalis</i>
Northern Leopard Frog*	<i>Lithobates pipiens</i>
Wood Frog	<i>Lithobates sylvaticus</i>
Blue-spotted Salamander	<i>Ambystoma laterale</i>
Eastern Red-backed Salamander	<i>Plethodon cinereus</i>
Four-toed Salamander	<i>Salamandra scutata</i>
Tiger Salamander	<i>Ambystoma tigrinum</i>
Painted Turtle*	<i>Chrysemys picta</i>

Common Name	Scientific Name
Snapping Turtle	<i>Chelydra serpentine</i>
Common Garter Snake	<i>Thamnophis sirtalis</i>
Redbellied Snake	<i>Storeria occipitomaculata</i>

Source: MDNR 1980.

Due to the cold-blooded nature of reptiles and amphibians, these animals must hibernate to survive harsh winters in temperate areas of the Project vicinities. During hibernation, reptiles and amphibians must bury themselves in mud or below the frost line in the uplands of the Project vicinities. Salamander species, such as the blue-spotted salamander (*Ambystoma laterale*), stay underground most of their lives, only emerging in early spring for courtship and deposition of eggs in vernal pools. The salamanders from the genus *Ambystoma* and *Plethodon* do not typically inhabit large water sources and, therefore, they would not likely be found in the riverine habitats of the Project vicinities. Spring peeper (*Pseudacris crucifer*), green frog (*Lithobates clamitans*), and northern leopard frog (*Lithobates pipiens*) are examples of frog species that could occur in the Project vicinities.

In general, most of the reptiles and amphibians potentially occurring in the Project vicinities would inhabit various wetland and upland habitats. For example, tree frogs will forage aloft in small trees and shrubs, while the American toad (*Anaxyrus americanus*) will use a variety of upland habitats as long as there is proper moisture to survive. The turtle species potentially occurring in the Project vicinities prefer water and wet meadows, while the snakes potentially occurring in the Project vicinities prefer moist woods, hillsides, upland meadows, forest edges, and riparian areas.

E.7.4 Rare, Threatened, and Endangered Wildlife Species

In support of the relicensing of the Project, MP consulted with the USFWS and MDNR regarding federally and state-listed wildlife species, critical habitat, and species of special concern within the Project vicinities. Consultation is in Appendix A.

According to the USFWS Information for Planning and Consultation (IPaC) system, three federally listed species have the potential to occur within the Project Boundaries (Table E.7-4). According to the MDNR National Heritage Information System database, no state-listed species have the potential to occur in the Project vicinities. However, bald eagle nests have been identified within one-half mile of both Projects and were observed during MP's wildlife observations conducted at the Projects in July 2019. Bald eagles are also protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Table E.7-4 Federally and state-listed wildlife species potentially occurring within the Project Boundaries

Common Name	Scientific Name	Status	Project
Federally Listed Species			
Canada Lynx	<i>Lynx canadensis</i>	Threatened	Grand Rapids Project; Prairie River Project
Northern Long-eared Bat	<i>Myotis septentrionalis</i>	Threatened	Grand Rapids Project; Prairie River Project
State Listed Species ¹			
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Special Concern	Grand Rapids Project; Prairie River Project

Source: USFWS IPaC consultation.

¹ Copyright 2021, State of Minnesota, Department of Natural Resources. Rare features data reviewed were provided by the Division of Ecological and Water Resources, MDNR, under license agreement LA832. MDNR has not provided comment on the interpretation of the results included in this report.

Several biological opinions have been developed to promote conservation of the Canada lynx and northern long-eared bat. However, none of the biological opinions are specific to the Grand Rapids and Prairie River Project vicinities (USFWS 2018c and 2018d).

No status reports exist for the Canada lynx or northern long-eared bat. The USFWS Environmental Conservation Online System (ECOS) website provides a list of the threatened and endangered plants and animals and its species report, with information on the species habitat range, range map, recovery plan, critical habitat, conservation plans, and biological opinions.

Recovery plans have been developed for the Canada lynx and are available for view at the USFWS ECOS website. No recovery plan has been developed for the northern long-eared bat.

E.7.4.1 Canada Lynx

Lynx have a large home range, generally between 12 to 83 square miles. The overall size of the lynx home range varies depending on abundance of prey, the species gender and age, season, and density of its population (USFWS 2018c). Breeding occurs through March and April in the north. During periods of hare abundance in the northern taiga, litter size can be large, up to four or five kittens. Litter sizes are typically smaller in lynx populations in the contiguous U.S. Snowshoe hares are the primary prey. Other prey species include red squirrel (*Tamiasciurus hudsonicus*), grouse (*Bonasa umbellus*, *Falcapennis canadaensis*), flying squirrel (*Glaucomys sabrinus*), ground squirrel (*Spermophilus parryii* and *S. richardsonii*), porcupine (*Erethizon dorsatum*), beaver (*Castor canadensis*), mice (*Peromyscus* spp.), voles (*Microtus* spp.), shrews (*Sorex* spp.), and fish (USFWS 2018c).

Canada lynx live in dense forests across northern Canada, in northern Minnesota and Maine, and in mountainous areas of northwestern United States. Historically, the Canada lynx range was in northern Minnesota in the coniferous forest biome (MDNR 2018i). The Canada lynx does not migrate extensive distances and, therefore, does not have a significant temporal distribution.

In all regions within range of the lynx in the contiguous U.S., timber harvest, recreation, and their related activities are the predominant land uses affecting lynx habitat (USFWS 2018c).

E.7.4.2 Northern Long-eared Bat

The northern long-eared bat is found across much of the eastern and north central United States (37 states) and all Canadian provinces from the Atlantic coast west to the southern Northwest Territories and eastern British Columbia. Northern long-eared bats begin breeding in late summer or early fall near hibernacula. Females go into delayed fertilization where sperm are stored after copulation and fertilization occurs after winter hibernation and the following spring. Pregnant females give birth to a single pup in late May to late July, depending on the species range of its colony. This species uses echolocation during flight to feed during dusk. Feeding occurs through the understory of forested hillsides and ridges on moths, flies, leafhoppers, caddisflies, and beetles (USFWS 2018d).

The spatial distribution for the northern long-eared bat extends from Montana and Wyoming in the west, south to eastern Texas, across the northern portions of Mississippi, Alabama, Georgia, and North Carolina, north to Maine, and across the Great Lakes. As this species generally winters in local or regional hibernacula, it does not migrate extensive distances and, therefore, does not have a significant temporal distribution.

The white-nose syndrome, a fungal disease known to affect bats, is currently the predominant threat to this bat, especially throughout the Northeast where this species has declined at many hibernation sites by up to 99 percent from pre-white-nose syndrome levels (USFWS 2018d).

E.7.4.3 Bald Eagle

The bald eagle was removed from ESA listing on August 8, 2007, but remains protected by the Bald and Golden Eagle Protection Act, which prohibits take, possession, transport, or sale (among other actions) of live or dead eagles and their parts, nests, or eggs, unless authorized by a permit. In Minnesota, bald eagles commonly breed on northern lakes and along the St. Croix and Mississippi Rivers. Bald eagles move south for the winter to open water areas that attract large

numbers of waterfowl or fish. In Minnesota, this includes the Minnesota and Mississippi Rivers and sometimes lakes in the southern part of the state (University of Minnesota 2018).

E.7.4.4 Critical Habitat

When a species is proposed for listing as endangered or threatened under the ESA, the USFWS must consider whether there are areas of habitat believed to be essential to the species' conservation. Those areas may be proposed for designation as critical habitat. Critical habitat is a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. Through consultation with the USFWS, no critical habitat has been designated under the ESA for species in the vicinity of the Projects.

E.7.5 Project Effects on Wildlife Resources

E.7.5.1 Grand Rapids Project

The Grand Rapids Project vicinity supports a diverse range of wildlife species and habitats. While federally and state-listed wildlife species have the potential to occur in the Project vicinity, Project operations are not likely to affect these species; and no resource agency has expressed that the Project has an effect on listed wildlife species. Because the Project has been in operation for over 100 years and is maintained in ROR mode with minimal reservoir fluctuations, the habitats of wildlife are not fundamentally affected by MP's operation of the Project. Additionally, MP is not proposing any ground-disturbing activities, outside of general maintenance, that may affect listed species.

E.7.5.2 Prairie River Project

The Prairie River Project vicinity supports a diverse range of wildlife species and habitats. While federally and state-listed wildlife species have the potential to occur in the Project vicinity, Project operations are not likely to affect these species; and no resource agency has expressed that the Project has an effect on listed wildlife species. Because the Project has been in operation for over 100 years and is maintained in ROR mode with minimal reservoir fluctuations, the habitats of wildlife are not fundamentally affected by MP's operation of the Project. Additionally, MP is not proposing any ground-disturbing activities, outside of general maintenance, that may affect listed species.

E.7.6 PM&E Measures Proposed by the Applicant, Resource Agencies, and/or Other Consulting Parties

E.7.6.1 Grand Rapids Project

No new PM&E measures have been proposed by consulting parties or by MP related to wildlife resources, as no wildlife resource issues associated with MP operations have been identified. For the reasons stated above, MP is not proposing any new PM&E measures related to wildlife resources at the Grand Rapids Project. MP proposes to continue ROR operations at the Project.

E.7.6.2 Prairie River Project

No new PM&E measures have been proposed by consulting parties or by MP related to wildlife resources, as no wildlife resource issues associated with MP operations have been identified. For the reasons stated above, MP is not proposing any new PM&E measures related to wildlife resources at the Prairie River Project. MP proposes to continue ROR operations at the Project.

E.8 Recreational Resources

Both Project vicinities contain a variety of recreational opportunities given the proximity to the city, location on the Prairie and Mississippi Rivers, national trail, scenic highways, and numerous parks. Summer use of the general region is comprised of fishing, hunting, picnicking, camping, trap shooting, golfing, off-highway vehicle riding, nature viewing, biking, boating, and attending local events. Winter use consists of hunting, ice fishing, skating, cross-country skiing, snowshoeing, fat tire biking, and snowmobiling. Privately operated recreational facilities are also provided in the vicinity of the Projects and consist of camping and picnic areas, kayak and canoe rentals, boat landings and fishing access.

Recreational uses of the immediate Project vicinities of the Grand Rapids and Prairie River Projects includes boating, fishing, picnicking, and walking. FERC-approved recreational facilities at the Grand Rapids Project consists of a canoe self-portage for recreationists providing access to Blandin Reservoir. FERC-approved recreational facilities at the Prairie River Project include a canoe self-portage trail and three shoreline fishing areas providing access to Prairie River Reservoir.

MP is currently conducting Recreation Resources Studies for both Projects in accordance with the SPD. The Recreation Resources Studies were not performed in 2020 due to the COVID-19 pandemic and are currently ongoing this year, in 2021.

E.8.1 Existing Recreation Facilities and Opportunities in the Project Vicinity

Grand Rapids is the major population center located near the Project vicinities. The population of Grand Rapids is approximately 11,000 as of 2018. Tourism in this area is substantial and draws recreationists from all parts of Minnesota. Tourists frequent the area during the summer months, visiting the over 1,000 lakes in the region. Summer use of the general region is comprised of fishing, hunting, picnicking, camping, trap shooting, golfing, off-highway vehicle riding, nature viewing, biking, boating, and attending local events. Winter use consists of hunting, ice fishing, skating, cross-country skiing, snow shoeing, fat tire biking, and snowmobiling. Privately operated recreational facilities are also provided in the vicinity of the Projects and consist of camping and picnic areas, kayak and canoe rentals, boat landings and fishing access.

Both Project vicinities contain a variety of recreational opportunities given the proximity to the city, location on the Prairie and Mississippi Rivers, national trail, scenic highways, and numerous parks. Recreational opportunities near the Grand Rapids Project are highlighted in Table E.8-1 and depicted in Figure E.8-1. Recreational opportunities in the vicinity of the Prairie River Project are highlighted in Table E.8-2 and depicted in Figure E.8-2.

Table E.8-1 List of recreation areas in the vicinity of the Grand Rapids Project

Recreation Area	Distance to Grand Rapids Dam	Amenities	Owner/ Operator
Pokegama Dam and Recreation Area	3.0 miles upstream of the dam	A popular recreation attraction in the area; offers fishing boat ramp, dock, picnic area with grills, a playground, canoe portage, and 19 RV sites with a disposal station.	USACE
Blandin Mississippi River Park and Izaak Walton Landing	2.0 miles upstream of the dam	Site of Blandin Reservoir (Lake Sylvan area) boat launch and popular fishing site	Blandin Paper Company
Forest History Center Trail System	1.4 miles upstream of the dam	There are more than 5 miles of trails at the Forest History Center that connect to the National Scenic Trail (Section E.8.3) that include summer and winter activities as hosted by the History Center (Minnesota Historical Society 2008).	State of Minnesota Historic Society
Sylvan Park with Sylvan Landing	0.8 miles upstream from the dam	Contains a boat ramp, linkage to several trails along the south shores of the lake, restrooms, benches, and a picnic area with grills.	City of Grand Rapids
Skogebo Park	0.6 miles upstream from the dam	Undeveloped green space along the lake shore.	City of Grand Rapids

Recreation Area	Distance to Grand Rapids Dam	Amenities	Owner/ Operator
River Park	0.1 mile downstream from the dam	Contains a walking trail and scenic overlook.	City of Grand Rapids
Riverfront Trail System	Along the downstream banks of the Mississippi River of the dam	Bituminous walking trail with a fishing pier that connects with River Park, a fishing pier, and the Angel of Hope memorial garden on the south shore of the Mississippi River. The city has plans to further develop the trail system.	City of Grand Rapids
Steamboat Park	0.3 mile downstream of the dam	Contains a public boat launch to the Mississippi River and is the put-in site for portagers at Grand Rapids Dam.	City of Grand Rapids
Veterans Park	1.0 mile downstream of the dam	36-acre site with two picnic shelters, toilets, and picnic areas with grills, play area, and trails.	City of Grand Rapids
Oakland Park	1.2 miles downstream of the dam	10.7-acre site with athletic fields, equipment, parking, and connections to trails.	City of Grand Rapids

Source: Itasca County Park System 2018.

Table E.8-2 List of recreation areas in the vicinity of the Prairie River Project

Recreation Area	Distance to Prairie River Dam	Amenities	Owner/Operator
Mallard Point Road Boat Launch	Adjacent to Prairie River Reservoir	Contains 1 concrete ramp and 6 vehicle / trailer parking spaces	Arbo Township
Arbo Township Boat Launch	Adjacent to Prairie River Reservoir	Contains 3 vehicle / trailer parking spaces.	Arbo Township
Arbo Township Park	0.6 mile west of the Prairie River Reservoir	Contains two benches, pavilion, interpretive signage, and an old runner from the Prairie River Project.	Arbo Township and Prairie Lake Associations
Gunn Park	1.5 miles upstream of Prairie River Dam	Contains several baseball and softball fields, a fishing pier, pavilion, and picnic area.	Itasca County
Itasca Trail	1.5 miles upstream of Prairie River Dam	Multi-use bituminous trail from the County Fairgrounds in Grand Rapids to Gunn County Park.	Itasca County
Mesabi Trail	0.2 mile downstream	The Mesabi Trail is a, currently, 135-mile of 155-planned-miles of multi-use trail that passes south of the dam, including connecting to the portage site.	Itasca County

Source: Itasca County Park System 2018.

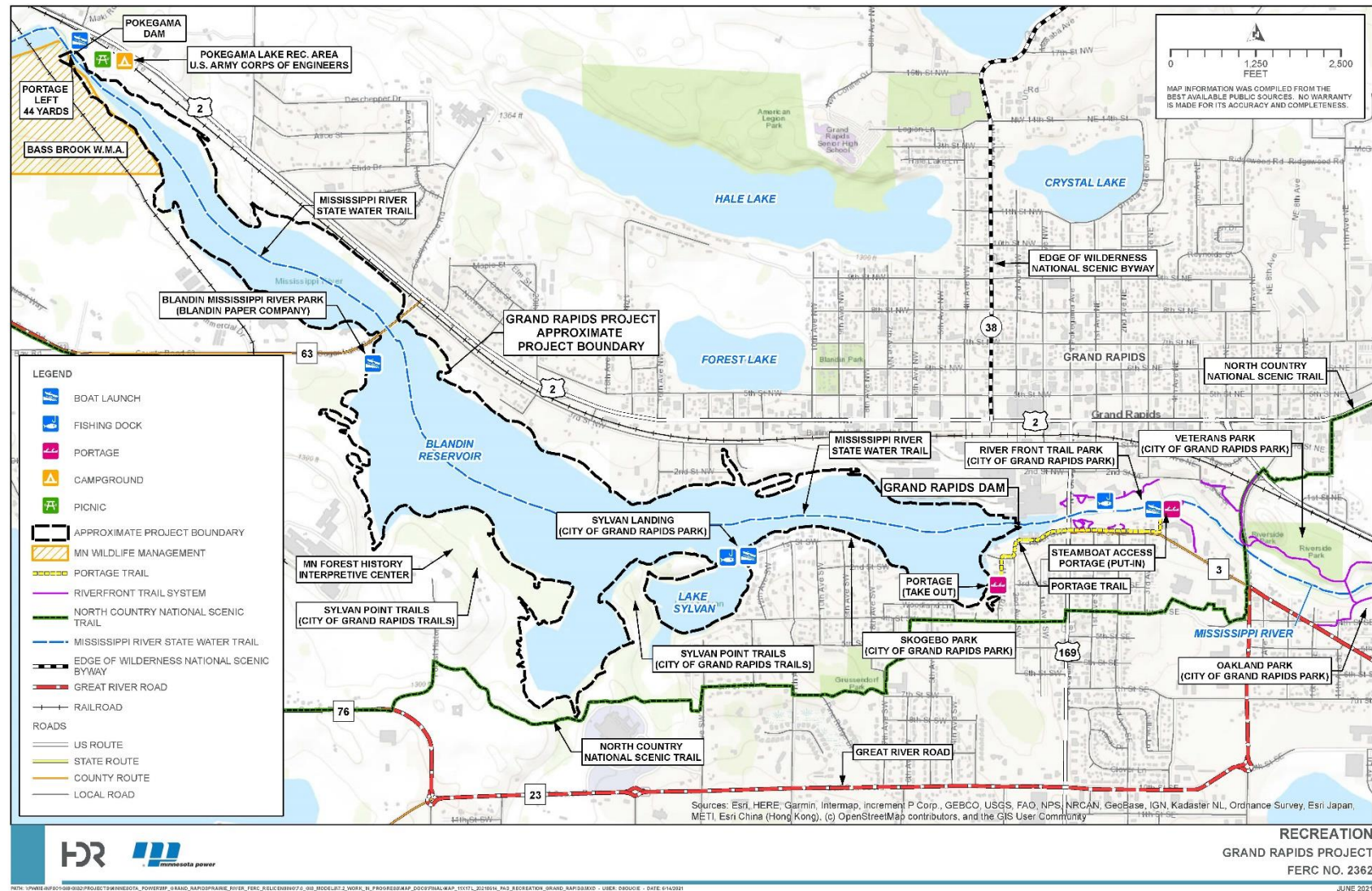


Figure E.8-1 Recreational opportunities in the vicinity of the Grand Rapids Project

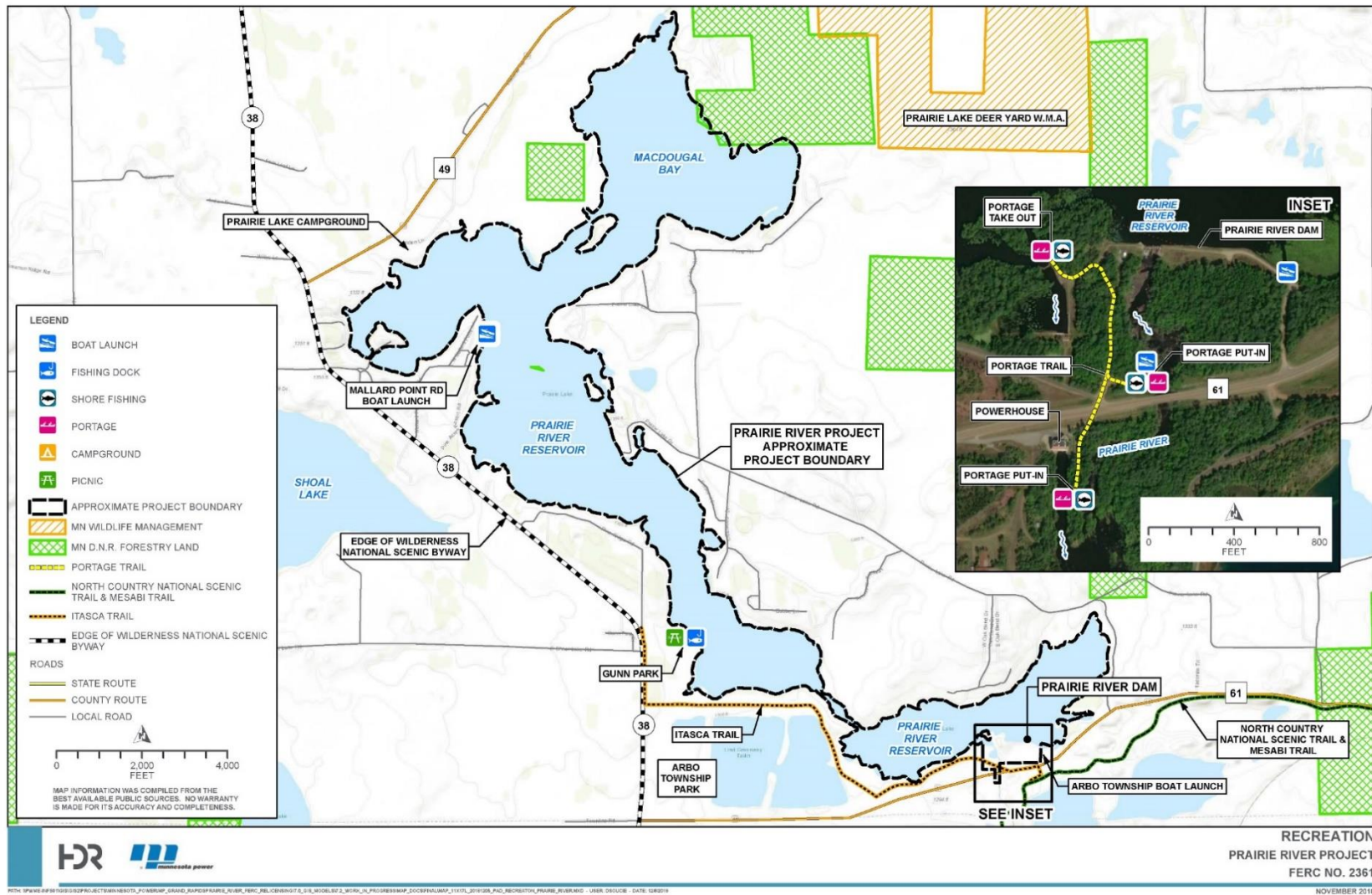


Figure E.8-2 Recreational opportunities in the vicinity of the Prairie River Project

E.8.2 FERC-Approved Recreational Opportunities at the Projects

In addition to recreational resources and access points discussed above in Section E.8.1, there are also several FERC-approved recreational opportunities at the Projects. Recreational uses of the immediate Project vicinities of the Grand Rapids and Prairie River Projects includes boating, fishing, picnicking, and walking. There are canoe portage trails located near both dams.

E.8.2.1 Grand Rapids Project

Although there are many recreation sites in the vicinity of the Grand Rapids Project (Table E.8-1), MP also provides access to the Project reservoir and vicinity. Pursuant to Article 407 of the current license, MP provides access to the Project reservoir through a portage trail and other access areas under a partnership with community partners, as discussed below. The Recreation Plan required under Article 407 was developed in consultation with the Grand Rapids Recreation and Park Department, Itasca County Park and Recreation Department, and the MDNR.

MP currently has a partnership with the City of Grand Rapids to maintain a self-portage trail at the Grand Rapids Project. The self-portage trail takeout is located approximately 1,000 feet upstream of the dam on the southwestern bank of Blandin Reservoir. The portage extends approximately 0.5 mile along the City of Grand Rapids streets and sidewalks to the put-in site at Steamboat Park. Pursuant to the amended Recreation Plan approved by FERC on May 31, 2018, MP also installed improved portage signage and conducts annual vegetation clearing to enhance visibility and usability of the existing self-portage for recreationalists.

E.8.2.2 Prairie River Project

Although there are many recreation sites in the vicinity of the Prairie River Project (Table E.8-2), MP also provides access to the Project reservoir and vicinity. Pursuant to Article 411 of the current license, three shoreline fishing areas provide access to the reservoir and downstream in Prairie River. One area is located adjacent to the portage take-out, west-northwest of the dam. The other two shoreline fishing areas are located on the east and west sides of the peninsula leading to the portage put-in on the Prairie River. All of the fishing areas are accessible from the portage trail and include signage to direct anglers to the fishing areas. The Public Access Plan defining these access areas was developed in consultation with the National Park Service (NPS), MDNR, and Arbo Township and was approved by FERC in August 1995. MP also provides a portage trail at the Project which was originally constructed by Blandin Paper Company and is approximately 1,500 feet long, extending from the southern bank of Prairie River Reservoir to the Prairie River, 100 feet south of the Project dam.

E.8.3 Specially Designated Recreation Areas in Close Proximity to the Project

E.8.3.1 Regionally or Nationally Significant Recreation Areas

Table E.8-1 and Table E.8-2 list recreation areas in the vicinity of the Projects that are typically used by recreationalists in the area. Bass Brook wildlife management area (WMA) is located along the south shore of the Mississippi River adjacent to the Pokegama Dam. This 300-acre WMA has extensive beds of wild rice and is heavily used by waterfowl and furbearers. The WMA provides opportunities to view forest song birds and wetland wildlife (Explore Minnesota undated).

E.8.3.2 Wild, Scenic, and Recreational Rivers

No portion of the Projects have been designated under the National Wild and Scenic Rivers System or Minnesota's Wild & Scenic Rivers Act.

E.8.3.3 Nationwide Rivers Inventory

No portion of the Prairie River or the Mississippi River in the Project vicinities are listed by the NPS under the Nationwide Rivers Inventory (NRI) (NPS 2016).

E.8.3.4 Scenic Byways

The Edge of the Wilderness National Scenic Byway is located in the vicinity of the Grand Rapids Project and Prairie River Project. This portion of County Road (CR) 38, as shown on Figure E.8-1 and Figure E.8-2, is a 47-mile stretch from Grand Rapids, Minnesota, to Effie, Minnesota. The highway passes adjacent to the Project vicinity starting at the terminus of the designated byway at the intersection of CR 38 and US Highway 2, approximately 0.3 mile north of Grand Rapids Dam. The Edge of the Wilderness National Scenic Byway then traverses north, passing along approximately a 2-mile stretch of the western perimeter of Prairie River Reservoir.

The Great River Road is a network of existing roads designed to create a continuous byway following the Mississippi River through the states of Minnesota, Wisconsin, Iowa, Illinois, Missouri, Kentucky, Tennessee, Arkansas, Mississippi, and Louisiana. The road winds through river towns, dense woods, bluffs, big cities, rich farmland, and the Mississippi delta (Explore Minnesota 2018). The Great River Road is located south-southeast of Blandin Reservoir.

E.8.3.5 National Trail System and Wilderness Areas

The North Country Trail, an NPS-designated National Trail is located in the vicinity of the Grand Rapids Project and Prairie River Project. The North Country Trail, shown on Figure E.8-1 and

Figure E.8-2, spans seven U.S. states from the States of North Dakota to New York. It crosses near the Project vicinities south of Blandin Reservoir, crossing the Mississippi River 0.5 mile downstream of Grand Rapids Dam, traverses north out of the City of Grand Rapids, and then crosses the Prairie River 0.3 mile downstream of Prairie River Dam, and continuing northeast towards the shoreline of Lake Superior.

No portion of the Projects have been designated as wilderness areas, recommended for such designation, or designated as wilderness study areas under the Federal Wilderness Act.

E.8.4 Recreation Use Levels

Recreation use levels have been documented as required in the FERC Licensed Hydropower Development Recreation Report (FERC Form 80). As of 2015, the number of annual visits to the recreational areas at the Grand Rapids Project was estimated to be 7,228 daytime and 1,806 nighttime visits and at the Prairie River Project is estimated to be 9,164 daytime and 2,290 nighttime visits. None of the recreation facilities appear to be utilized to maximum capacity, with all sites at Grand Rapids being 44 percent utilized or below and Prairie River being 55 percent utilized or below.

MP notes the FERC Form 80 contained information on user free, user fee, and FERC-approved resources. The 2015 FERC Form 80 listed the Grand Rapids canoe self-portage facility at 5 percent facility capacity. Additionally, the 2015 FERC Form 80 listed the Prairie River canoe self-portage facility at 5 percent facility capacity and shoreline fishing areas at 30 percent facility capacity. The 2021 Recreation Resources Studies for both Projects will document recreation use levels and will be presented in the FLA.

E.8.4.1 Grand Rapids Project

A Recreation Resources Study, in accordance with the SPD, is currently underway at the Grand Rapids Project. The study is intended to address the adequacy of existing recreational facilities and public access at the Grand Rapids Project to meet current and future recreational demand. The Recreation Resources Study includes the following components:

- Task 1: Recreation Facility Inventory and Condition Assessment
- Task 2: Recreational Use Observation
- Task 3: Recreational Survey

The Recreation Resources Study kicked off in May and will extend through September. To date, four people have been observed at the Grand Rapids Project kayaking and fishing. Three surveys have been administered to date with predominantly positive feedback. Results from the full study will be incorporated into the FLA.

E.8.4.2 *Prairie River Project*

A Recreation Resources Study, in accordance with the SPD, is currently underway at the Prairie River Project. The study is intended to address the adequacy of existing recreational facilities and public access at the Prairie River Project to meet current and future recreational demand. The Recreation Resources Study includes the following components:

- Task 1: Recreation Facility Inventory and Condition Assessment
- Task 2: Recreational Use Observation
- Task 3: Recreational Survey

The Recreation Resources Study kicked off in May and will extend through September. To date, 63 people have been observed at the Prairie River Project fishing, picnicking, walking, and relaxing. Eighteen surveys have been administered to date with predominantly positive feedback. Results from the full study will be incorporated into the FLA.

E.8.5 Shoreline Management

MP partners with local entities to manage recreational use areas at the Projects and in the vicinity of the Projects. Due to limited ownership of lands by MP adjacent to the Project reservoirs, there are no shoreline management plans for the Projects.

E.8.6 Recreation Management

Minnesota's Statewide Comprehensive Outdoor Recreation Plan (SCORP) is a five-year strategic plan that shapes investment by the state and local communities in priority outdoor recreation infrastructure and programming. The Plan is designed to evaluate ongoing and emerging outdoor recreation trends, needs, and issues and establish priority strategies for achieving outdoor recreation goals. The state and its local outdoor recreation decision-makers and managers utilize the SCORP as a focused set of priorities and suggested actions to guide them as they make decisions about outdoor recreation (MDNR 2019).

In developing the 2020–2024 SCORP update, the MDNR retained the structure of the 2014-2018 update and reviewed the scope of the Parks and Trails Legacy Plan. While the Parks and Trails Legacy Plan focuses on regional and state recreation, the importance of small local recreation systems was further emphasized in the updated SCORP.

The SCORP and Parks and Trails Legacy Plan follows these four strategic directions for the State:

1. Connect people to the outdoors with welcoming environments, access, marketing, quality sites, programming and special events, partnerships, and infrastructure and amenities;
2. Acquire land and create opportunities;
3. Protect and maintain public investments in infrastructure and natural resources; and,
4. Enhance coordination among partners.

E.8.7 Project Effects on Recreational Resources

E.8.7.1 Grand Rapids Project

The Recreation Resource Study for the Project is ongoing and field observations will conclude at the end of September. Project effects will be filed with the FLA.

E.8.7.2 Prairie River Project

The Recreation Resource Study for the Project is ongoing and field observations will conclude at the end of September. Project effects will be filed with the FLA.

E.8.8 PM&E Measures Proposed by the Applicant, Resource Agencies, and/or Other Consulting Parties

E.8.8.1 Grand Rapids Project

The Recreation Resource Study for the Project is ongoing and field observations will conclude at the end of September. The Report and any proposed PM&E measures will be filed with the FLA.

E.8.8.2 Prairie River Project

The Recreation Resource Study for the Project is ongoing and field observations will conclude at the end of September. The Report and any proposed PM&E measures will be filed with the FLA.

E.9 Cultural Resources

In considering a new license for the Grand Rapids Project and a subsequent license for the Prairie River 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 amended². Section 106 of the NHPA (Section 106)³ requires federal agencies to take into account 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 pre-contact 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 importance (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, federally recognized Indian Tribes, and other parties with a potential interest in an undertaking’s effects on historic properties.

The Secretary of the Interior has established the criteria for evaluating properties for inclusion in the National Register (36 CFR Part 60). In accordance with the criteria, 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:

- Are associated with events that have made a significant contribution to the broad patterns of our history; or
- Are associated with the lives of persons significant in our history; or

² 54 USC §300101 et seq.

³ 54 USC §306108

- 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
- Have yielded or may be likely to yield information important in prehistory or history.

FERC initiated consultation pursuant to Section 106 with federally recognized Indian tribes by letter dated October 12, 2017. By notice dated February 7, 2019, FERC designated ALLETE, Inc. as its non-federal representative for purposes of conducting informal consultation pursuant to Section 106.

E.9.1 Affected Environment

E.9.1.1 Area of Potential Effects

An area of potential effect (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. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking. Although the nature of the Project's potential effects is limited by the nature of this undertaking (the relicensing and continued operation of an existing hydroelectric project), the Project has the potential to directly or indirectly affect historic properties.

In the RSP, MP proposed to define the APEs for the Project relicensings as below:

Grand Rapids Project

The APE for the Grand Rapids Hydroelectric Project includes all lands and waters within the FERC Project Boundary and also lands and properties outside of the Project Boundary where Project-related activities that are conducted in compliance with the FERC license may affect historic properties.

Prairie River Project

The APE for the Prairie River Hydroelectric Project includes all lands and waters within the FERC Project Boundary and also lands and properties outside of the Project Boundary where Project-related activities that are conducted in compliance with the FERC license may affect historic properties.

MP did not receive comments from the consulting parties regarding the proposed APEs for this undertaking; however, the Minnesota SHPO requested clear maps depicting the APEs for both Projects at the ISR meeting held on October 29, 2020. Addendums to the Phase I Reconnaissance Survey Reports were sent to the SHPO on November 24, 2020. The Addendums include APE maps and a summary of archaeological resources, architectural resources, and management recommendations in tabular form. On June 25, 2021, SHPO responded with a letter agreeing with the APE description. This correspondence is included in Appendix A.

E.9.2 Cultural Context

E.9.2.1 Prehistoric Period

Paleoindian Tradition (9500 BC - 6000 BC)

It is uncertain when the first American Indian groups moved into Minnesota, but it is generally accepted that these first people were characterized by the lanceolate spearpoint with distinctive flutes chipped from the center of the point, which aided in hafting the point to a spear shaft. It is thought that the Paleoindian people hunted large game animals. There are very few representations of this culture within Minnesota.

Archaic Tradition (6000- 500 BC)

The Archaic Tradition coincided with the peak of the climatic warming trend that started with the melting of the glacial ice that covered northern Minnesota about 15,000 years ago. The human population adapted to the changes in vegetation and fauna by developing new tools, such as groundstone hammers and axes, and distinctively, the appearance of copper tools, such as awls, knives, and harpoons. While there are more sites recorded in Minnesota with Archaic components than Paleoindian components, this tradition is still largely not well understood. There are a handful of sites within Itasca County that contain Archaic components.

Woodland Tradition (1000 BC- AD 900/1650)

By the middle of the first millennium B.C., climate and vegetation patterns in Minnesota were relatively similar to those of recent times. The Woodland Tradition is often divided into three sub-Traditions of Early, Middle, and Late Woodland. However, a recent publication (Arzigian, 2008) divides the Woodland archaeological record into a series of eleven complexes, based mostly on ceramic styles. While people from the Woodland Tradition continued to rely on hunting and fishing

as in the previous Archaic period, they included clay pottery vessels in their tool package and also began burying their dead in earthen mounds.

The beginning of a mound building tradition suggests some important changes in social organization during this time, changes from a more egalitarian hunting and gathering society to one characterized by social stratification. Evidence suggests that only selected individuals were buried in mounds. As time progressed, Woodland-era people's way of life became increasingly characterized by a greater dependence on plant resources, principally through horticulture or gardening. Villages became larger and more permanent, and evidence of extensive trade networks appear. Earthen mounds and numerous village and campsites have been identified along lakes, rivers, and streams throughout Itasca County. Sites have been identified near Aspen Lake, Deer Lake, McKinney Lake, Bear Lake, Crooked Lake, Coon Lake, Harrison Lake, Prairie River Reservoir, Sandwich Lake, Prairie River, Mississippi River, Bigfork River, and numerous unnamed marshes and tributary streams.

Contact Period (AD 1650- 1837)

In the 1600s, the woodland-adapted Dakotas that had dominated the Western Great Lakes region for about one thousand years began to be pushed south and west by the Algonquin speaking Ojibwe, or Chippewa, groups. The lifestyles of both Native American groups were similar, with their subsistence based on stages of annual seasonal cycles. Winter was the time for hunting or trapping, and spring was the time of the maple sugar harvest. In the summer, crops were tended, supplemented by fishing and hunting, and the fall was characterized by wild rice harvests. Disrupting this seasonal pattern was the introduction to the fur trade (circa 1680-1760). A notable consequence of trapping for wages or trade goods was the fairly rapid depletion of fur-bearing animals, particularly the beaver. Although the European and American fur traders concentrated their efforts on areas to the north, there is evidence of fur trade posts further south, especially around the headwaters of the Mississippi and the southwestern part of Lake Superior. Toward the end of the Contact Period, euromerican settlers and businesses set sights on the pine forests as economic resources.

E.9.2.2 Historic Period

Itasca County was established on October 17, 1849, 17 years after Henry Rowe Schoolcraft identified the source of the Mississippi River at Lake Itasca, which is located in present-day Clearwater County. The original boundary of Itasca County extended from the Canadian border to near the north end of Mille Lacs Lake and included lands east of the Mississippi River and the

lands of present day Carlton, Cook, Koochiching, Lake, St. Louis, and portions of Aitkin and Cass counties.

European settlement in the county was minimal until the later part of the nineteenth century when an influx of timber harvesting operations and iron ore mining began in the 1860s and 1880s, fueling population growth. Farming in the area began in the later part of the nineteenth century. Farming continued to increase steadily into the early part of the twentieth century (Vroman 2000).

E.9.3 Cultural Resources Studies

E.9.3.1 Grand Rapids Project

Prior Studies

In support of the previous relicensing for the Grand Rapids Project, cultural surveys were conducted and a CRMP was developed. Phase I surveys were conducted in 1994 and included inspection of the entire shoreline. 104 shovel tests were performed, two of which contained Native American artifacts. One of the sites was concluded to lack contextual integrity because of shoreline erosion and disturbance by modern construction, the other of which indicated extensive subsurface disturbances and not in its original place. Neither sites met the criteria of eligibility for nomination to the NRHP.

A standing structures evaluation was also conducted. The scope of work for this evaluation included a contextual analysis and survey to evaluate the architectural and engineering significance as well as overall integrity of the Project facilities. The evaluation found that the standing Project structures were ineligible for the NRHP as all the surveyed structures had been significantly compromised or were constructed outside the period of significance.

Article 405 of the current FERC License required the development of a CRMP in consultation with the Minnesota SHPO. Blandin Paper Company filed the Grand Rapids Hydroelectric Project CRMP on August 5, 1996. The CRMP proposed shoreline monitoring every five years. FERC approved the CRMP on November 20, 1996, and ordered a report filed every five years describing the results of the shoreline monitoring and implementation of the CRMP with the first filing due no later than October 1, 2001. The five-year reports are to be submitted to FERC after consultation with the Minnesota SHPO. Per the most recent report filed in 2016, results of the erosion monitoring concluded that no shoreline erosion has occurred or is currently anticipated to occur. There is no current evidence of erosion, slumping, or slope instability around the reservoir

shoreline. MP performed a shoreline erosion inspection on July 20, 2021. The erosion monitoring report is due on October 1, 2021.

Current Studies

In accordance with the study plan approved in FERC's SPD, MP conducted a Cultural Resources Study at the Grand Rapids Project to identify potential historic properties within the Project's APE and assess the potential effects of continued Project operations and maintenance activities on historic and cultural resources.

MP conducted background research and an archival review to inform the specific research design and the historic and environmental contexts. The literature review revealed four previous cultural resource inventories were conducted within the Project vicinity and study area between 1995 and 2008. In addition, a total of seven previously recorded archaeological resources were identified within the one-mile study area. Of these, five resources were within or near the Project APE. A total of 90 previously recorded architectural resources were identified within the one-mile study area, but none were located within the Project APE.

A Phase I cultural resource investigation was conducted between June 15 and July 10, 2020, by In Situ Archaeological Consulting (In Situ) as contracted by MP. A visual inspection was conducted along the shoreline of the reservoir via boat. A pedestrian survey was also used to survey landforms with slopes less than 20 degrees and a surface visibility of 25 percent or greater. Last, a shovel test method was used to sample subsurface contexts along the shoreline that had slopes with less than 20 degrees, ground visibility of less than 25 percent, and potential for active erosion from the reservoir.

No new archaeological resources were identified during the Phase I investigation. One newly recorded architectural resource was observed near the APE of the Project. Of the five previously identified archaeological resources within the APE, three were previously determined to be ineligible for the NRHP, and two were unevaluated. In Situ inspected the locations of these sites during the Phase I investigation. No Project-related effects to those sites were observed as they all have stable shorelines with no evidence of active erosion. Due to these factors, In Situ recommended that no further work is necessary for these sites. However, if there are changes to the operations or management of the Project vicinity that has a potential to cause shoreline erosion, then the sites should be monitored to document any effects to the sites. If the episode does affect the site, MP will evaluate the site for eligibility status. SHPO agrees with In Situ's the evaluations and are presented in the June 25, 2021 letter.

As a component of the Phase I investigation, In Situ also evaluated the NRHP-eligibility of Project facilities. The Grand Rapids Dam and Powerhouse were originally constructed in 1901-02 to supply the energy needs to the Itasca Paper Company, later known as the Blandin Paper Company. The powerhouse was replaced following a dam break that occurred in 1948, and the dam and spillway were modified. For these reasons, the dam and powerhouse had previously been determined to be ineligible for the NRHP. In Situ concurred with the previous eligibility finding and recommended the Grand Rapids Dam and Powerhouse as ineligible for the NRHP. In SHPO's June 25, 2021 letter, SHPO requested additional evaluation of the Powerplant and Dam before issuing a determination for eligibility as a NRHP.

Overall, the investigation was concluded with a finding of No Historic Properties Affected within the Project APE and recommended no further work is needed. Based on SHPO's response additional evaluation of the Powerplant and dam to determine if they qualify as NRHP.

E.9.3.2 Prairie River Project

Prior Studies

In support of the previous relicensing for the Prairie River Project, cultural surveys were conducted and a CRMP was developed. The APE for Prairie River is defined by the existing reservoir shoreline, which is almost entirely privately owned. A Phase I survey was completed in 1990 and identified archaeological sites. A Phase II evaluation was completed for 17 of these sites in 1992 and a single site evaluated in 1993. Of the evaluated sites, 6 were determined to be significant and eligible, in addition to the hydropower facility itself, for the NRHP.

Article 410 of the current license required the development of a CRMP in consultation with the Minnesota SHPO. MP filed the Prairie River CRMP on March 29, 1995. The CRMP required MP to submit a report annually for the Prairie River Project that summarizes cultural resource management activities conducted the prior year. Per the most recent report filed in August 2020, nine sites on the annual monitoring list were visited and assessed regarding status of shoreline stability and ground cover in the 2017 field season and again in 2020 during the Phase I survey. Based on monitoring investigations, none of the nine sites were experiencing degrading effects resulting from the operations and maintenance of the Prairie River Project. Based on the recent monitoring observations showing the sites are not being affected by the operation and maintenance of the Project.

Current Studies

In accordance with the study plan approved in FERC's SPD, MP retained In Situ to conduct a Cultural Resources Study at the Prairie River Project to identify potential NRHP sites within the Project's APE and assess the potential effects of continued Project operations and maintenance activities on historic and cultural resources.

A background research and an archival review was conducted to inform the specific research design and the historic and environmental contexts. The literature review revealed four previous cultural resource inventories were conducted in this area between 1991 and 1995 within the study area. Additionally, a total of 20 previously recorded archaeological resources were identified within the one-mile study area. Of these, 19 resources were within or near the Project. The literature review also revealed a total of three previously recorded architectural resources within the one-mile study area. Of these, there is one previously recorded architectural resource within the APE for this Project (IC-ARB-002).

A Phase I cultural resource investigation was conducted between June 15 and July 10, 2020, by In Situ as contracted by MP. A visual inspection was conducted along the shoreline of the reservoir via boat. A pedestrian survey was also used to survey landforms with slopes less than 20 degrees and a surface visibility of 25 percent or greater. Last, a shovel test method was used to sample subsurface contexts along the shoreline that had slopes with less than 20 degrees, ground visibility of less than 25 percent, and potential for active erosion from the reservoir. Of the 19 previously identified archaeological resources within or near the APE, eight were previously determined to be eligible for the NRHP, six were determined to be ineligible, and five were unevaluated. In Situ inspected the locations of these sites during the Phase I investigation. No Project-related effects to those sites were observed as they all have stable shorelines with no evidence of active erosion. In Situ also identified four new archaeological resources, including three single artifact finds and one depressional feature site. In Situ recommended these new resources as ineligible for the NRHP.

Based on the results of the Phase I investigation, In Situ recommended that no further work is necessary for the identified archaeological sites at the Project. However, if there are changes to the operations or management of the Project vicinity that has a potential to cause shoreline erosion, then the sites should be monitored to document any effects to the sites. If the episode does affect the site, MP will evaluate the site for eligibility status.

The Phase I investigation determined that 10 archaeological sites are not eligible for the NRHP and no further work is necessary. The investigation suggests 5 archaeological sites are unevaluated for the NRHP, and 8 archaeological sites are eligible for the NRHP. During the investigation, all the sites were observed to have a stable shoreline with no evidence of active erosion or effects from Project operation.

As a component of the Phase I investigation, In Situ also evaluated the NRHP eligibility of architectural resources within the APE, including the Prairie River Power Plant, Prairie River Dam, and a 1935 wood-frame cabin. The Prairie River Power Plant was previously determined to be ineligible for the NRHP, and In Situ concluded that the Prairie River Dam and the wood-frame cabin did not meet the NRHP eligibility criteria. For these reasons, In Situ recommended the power plant, dam, and the cabin as ineligible for the NRHP.

A finding of No Historic Properties Affected was determined within the Project APE and recommend no further work or annual monitoring for these sites. However, monitoring efforts may be deemed necessary if significant fluctuations of the water level of the reservoir occur outside of the operating band.

In SHPO's June 25, 2021, letter, SHPO agreed with In Situ's study assessments of the NRHP sites eligibility criteria that is described above.

E.9.4 Project Effects on Cultural Resources

The NHPA establishes the statutory responsibility of federal agencies to consider historic properties under their jurisdiction. Section 106 requires federal agencies to take into account the effects of their undertakings on historic properties listed in or eligible for inclusion in the NRHP. FERC's issuance of a new license for the Grand Rapids Project and subsequent license for the Prairie River Project is defined as an undertaking under the NHPA and is, therefore, subject to the provisions of Section 106 and its implementing regulations at 36 CFR Part 800.

E.9.4.1 Grand Rapids Project

At present, the ongoing operation and maintenance of the Grand Rapid Project is not adversely affecting any historic properties. During the Phase I Study conducted in 2020, no Project-related effects to previously identified archaeological resources / sites were observed as they all have stable shorelines with no evidence of active erosion. Due to these factors, In Situ recommended that no further work is necessary for these sites. However, if there are changes to the operations or

management of the Project vicinity that has a potential to cause shoreline erosion, then the sites should be monitored to document any effects to the sites.

E.9.4.2 Prairie River Project

At present, the ongoing operation and maintenance of the Prairie River Project is not adversely affecting any historic properties. The Phase I investigation determined that 10 archaeological sites are not eligible for the NRHP and no further work is necessary. The investigation suggests 5 archaeological sites are unevaluated for the NRHP, and 8 archaeological sites are eligible for the NRHP. During the investigation, all the sites were observed to have a stable shoreline with no evidence of active erosion or effects from Project operation. However, if there are changes to the operations or management of the Project vicinity that has a potential to cause shoreline erosion, then the sites should be monitored to document any effects to the sites.

E.9.5 PM&E Measures Proposed by the Applicant, Resource Agencies, and/or Other Consulting Parties

E.9.5.1 Grand Rapids Project

No PM&E measures related to cultural resources have been proposed by any resource agencies or consulting parties. For the reasons stated above, MP is not proposing any new PM&E measures related to cultural resources at the Project. Given that the ongoing operation and maintenance of the Grand Rapids Project is not adversely affecting any historic properties, MP intends to continue to implement the existing CRMP for the Project.

Based on comments received from the SHPO on June 25, 2021, MP will retain In Situ to conduct an evaluation of the Grand Rapids Dam and powerhouse within the context of the coated magazine paper era. This evaluation will assess potential National Register eligibility as significant components of the mill during the coated magazine paper era. MP and In Situ plan to continue consultation with the SHPO as it relates to the evaluation.

E.9.5.2 Prairie River Project

No PM&E measures related to cultural resources have been proposed by any resource agencies or consulting parties. For the reasons stated above, MP is not proposing any new PM&E measures related to cultural resources at the Project. Given that the ongoing operation and maintenance of the Prairie River Project is not adversely affecting any historic properties, MP intends to continue to implement the existing CRMP for the Project.

E.10 Aesthetic Resources

The Projects are both located in the Chippewa Plains Subsection of the LMF Province as defined by MDNR. In Minnesota, the LMF Province is characterized by broad areas of conifer forest, mixed hardwood, conifer bogs and swamps. The landscape ranges from rugged, lake-dotted terrain with thin glacial deposits over bedrock to hummocky or undulating plains with deep glacial drift, to large, flat, poorly drained peatlands (MDNR 2018g). The Grand Rapids Project and the Prairie River Project principal facilities were first constructed in 1901 and 1920, respectively. The Projects' facilities have become integrated with the environmental and visual setting of the surrounding area. Blandin Reservoir, within the Grand Rapids Project, includes private homes, parks, and trails in addition to commercial and industrial development near Grand Rapids Dam. Prairie River Reservoir is located in a scenic, moderately developed area with a park, private homes, cabins, and camping sites.

E.10.1 Visual Character of the Region

Grand Rapids Dam was originally constructed by the Grand Rapids Power and Boom Company over 100 years ago and has been a defining icon for the community itself (MP 1991; City of Grand Rapids 2018). The area near Grand Rapids Dam is now the heart of downtown Grand Rapids. Scenic walking paths surround the riverfront area and are highlighted as attractions for tourists to visit. U.S. Highway 169 crosses the Mississippi River immediately downstream of the dam, making it readily visible to not just pedestrians but for vehicular traffic as well. The lands surrounding the reservoir are mostly forested and include City of Grand Rapids development such as residential properties, parks, and trails. Substantial industrial and commercial development occurs on the north shore of Blandin Reservoir near Grand Rapids Dam and the non-Project Blandin Paper Mill.

The topography surrounding Prairie River Reservoir is mostly forested with flat to moderately rolling slopes. The forest type is predominantly mixed northern forest composed of species such as maple, birch, aspen, pine, and balsam fir. Occasional small farms are dispersed around the Project; however, the area isn't known for significant agriculture uses. Rock outcrops and formations are a periodic feature throughout the landscape, including the narrow gorge (locally known as "The Gorge") that connects Prairie Lake and Lower Prairie Lake, which collectively form Prairie River Reservoir. The Gorge is a frequent attraction for activities such as hiking, photography, and other forms of recreation. The entire lake is scenic, only moderately developed with scattered residences, cabins, and camping sites.

E.10.1.1 Grand Rapids Project

The Grand Rapids Project is located on the Mississippi River in Grand Rapids, Minnesota. The Project's 465-acre reservoir is a focal point for the City of Grand Rapids. The Grand Rapids powerhouse sits on the north shore of the river bank adjacent to the dam and is constructed of concrete, a rock-filled timber crib, timber piles, and steel sheetpile structures founded on natural soils (Photo E.10-1). The dam consists of an abutment and retaining wall, gated spillway, and a powerhouse and is made mostly of concrete and steel. The dam and powerhouse are an off-white/beige color (Photo E.10-2). There is substantial industrial and commercial development near Grand Rapids Dam and the non-Project Blandin Paper Mill. This industrial development includes the Rapids Energy Center. Rapids Energy Center provides the Blandin Paper Mill with steam, compressed air, and electricity.



Photo E.10-1 Aerial view of the Grand Rapids Project



Photo E.10-2 Grand Rapids Project powerhouse

E.10.1.2 Prairie River Project

The Prairie River Project is located at approximately RM 6.3 on the Prairie River near Grand Rapids, Minnesota. The confluence is approximately 3 RM downstream from Grand Rapids Dam (Photo E.10-3). The Project has three components: the dam, forebay, and powerhouse. The dam is constructed mostly of concrete walls and covered with earthen embankments. An inlet channel flows between the reservoir and the forebay, southwest of the dam. The forebay is constructed mostly of concrete and steel with earth embankments. The powerhouse is made of reinforced concrete and brick facade (Photo E.10-4).

The Project powerhouse was completely reconstructed in 2011-2013 after a fire occurred in December 2008, which destroyed the powerhouse and the machinery within it. MP designed the reconstructed powerhouse to maintain the general appearance of the previous structure in an effort to minimize the effect on historic properties, including archaeological sites.

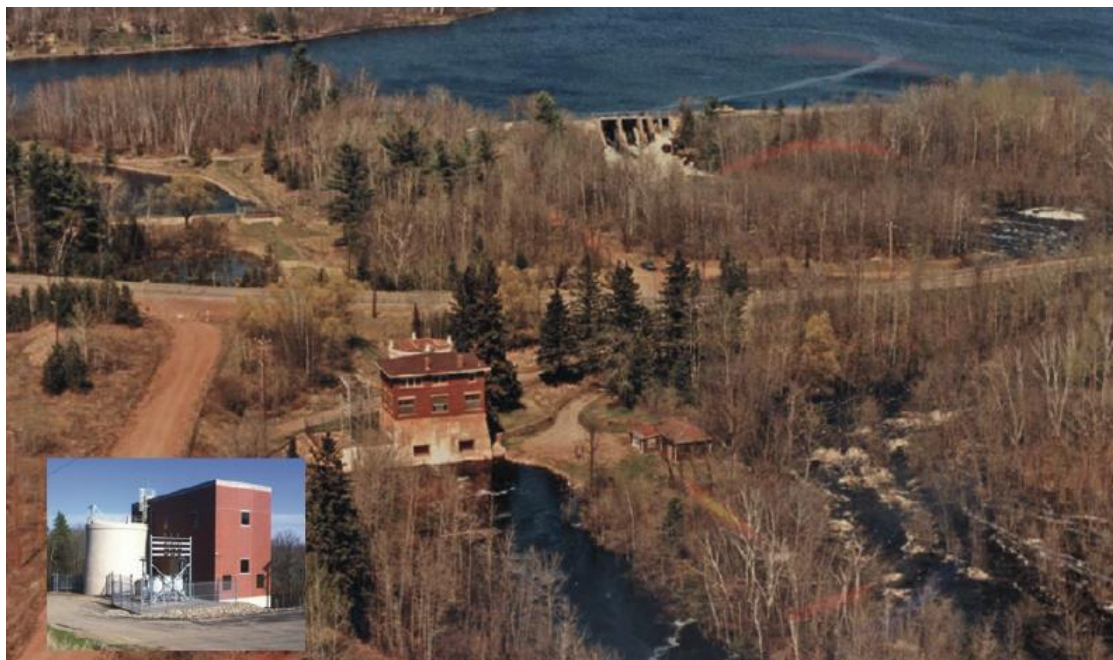


Photo E.10-3 Aerial view of the Prairie River Project⁴

⁴ Aerial photo depicts the Prairie River Project prior to the rebuild of the Project powerhouse. Inset photo depicts the current Project powerhouse.



Photo E.10-4 Prairie River Project powerhouse

E.10.2 Project Effects on Aesthetic Resources

E.10.2.1 Grand Rapids Project

As previously described in this application, the Grand Rapids Project is operated as ROR with limited fluctuations. No construction activities are proposed by MP. Continued operation of the Grand Rapids Project in the manners described in this application will maintain the aesthetic quality of the Mississippi River in the vicinity of the Project.

E.10.2.2 Prairie River Project

As previously described in this application, the Prairie River Project is also operated as ROR with limited fluctuations. No construction activities are proposed by MP. Continued operation of the Prairie River Project in the manners described in this application will maintain the aesthetic quality of the Prairie River in the vicinity of the Project.

E.10.3 PM&E Measures Proposed by the Applicant, Resource Agencies, and/or Other Consulting Parties

E.10.3.1 Grand Rapids Project

No PM&E measures related to aesthetic resources have been proposed by any resource agencies or consulting parties. For the reasons stated above, MP is not proposing any new PM&E measures related to aesthetic resources at the Grand Rapids Project. MP proposes to continue ROR operations at the Project.

E.10.3.2 Prairie River Project

No PM&E measures related to aesthetic resources have been proposed by any resource agencies or consulting parties. For the reasons stated above, MP is not proposing any new PM&E measures related to aesthetic resources at the Prairie River Project. MP proposes to continue ROR operations at the Project.

E.11 Socioeconomic Resources

The Projects are both located in Itasca County, the third largest county by land area in Minnesota, in the vicinity of the county seat, the City of Grand Rapids. The 2010 census reported that 45,058 people reside in Itasca County, which encompasses 2,928 square miles with a population density of approximately 15 persons per square mile. The State of Minnesota has a population density of approximately 68 persons per square mile, which makes Itasca County one of the more sparsely populated counties in the state. The estimated 2019 population residing in Itasca County was 45,130, which is relatively stagnant over the eight-year period between 2010 and 2019 (U.S. Census Bureau [USCB] 2021). The 2010 census reported the population of the City of Grand Rapids to be 11,242, which accounts for approximately a quarter of the county's population (USCB 2010).

From 2015-2019, the median household income for Itasca County was \$55,139 which compares to the statewide median household income of \$71,306 for the same time period (USCB 2021). The unemployment rate for Itasca County in November 2020 was 5.7 percent, compared to 5.0 percent unemployment in Minnesota (Bureau of Labor Statistics 2021a), and a national unemployment rate of 6.7 percent as of November 2020 (Bureau of Labor Statistics 2021b).

The most common job groups in Itasca County are Retail Trade (17.3%), Health Care and Social Assistance (13.4%), and Construction (9.6%). The most common employment sectors for those

who live in Itasca County are Health Care and Social Assistance (25.8%), Retail Trade (17.2%), and Accommodation and Food Service (9.6%) (Bureau of Labor Statistics 2021a).

The Grand Rapids and Prairie River Projects provide support to these communities in the form of approximately 6,000 and 3,000 MWh of renewable energy annually, respectively. Additionally, the Grand Rapids Project supplements power for the Blandin Paper Mill, a local employment source in downtown Grand Rapids.

E.11.1 Project Effects on Socioeconomic Resources

E.11.1.1 Grand Rapids Project

No issues have been identified relevant to socioeconomic resources. The continued operation of the Grand Rapids Project will provide an affordable energy supply to the Blandin Paper Mill, which is a major employer in the area.

E.11.1.2 Prairie River Project

No issues have been identified relevant to socioeconomic resources. The continued operation of the Prairie River Project is only expected to have beneficial socioeconomic impacts to local communities in the form of renewable energy to the energy grid.

E.11.2 PM&E Measures Proposed by the Applicant, Resource Agencies, and/or Other Consulting Parties

E.11.2.1 Grand Rapids Project

No PM&E measures related to socioeconomic resources have been proposed by any resource agencies or consulting parties. For the reasons stated above, MP is not proposing any new PM&E measures related to socioeconomic resources at the Grand Rapids Project.

E.11.2.2 Prairie River Project

No PM&E measures related to socioeconomic resources have been proposed by any resource agencies or consulting parties. For the reasons stated above, MP is not proposing any new PM&E measures related to socioeconomic resources at the Prairie River Project.

E.12 Summary of Proposed Actions and PM&E Measures

E.12.1.1 Grand Rapids Project

MP is not proposing any modifications to the Project or changes to Project operations that could potentially negatively affect resources at the Project or Project vicinity. MP proposes the following PM&E measures for the new license:

- Continue to operate the Project in a ROR mode as presented in Exhibit A and required by Article 402 of the current license;
- Continue to implement best management practices to prevent the spread of terrestrial and aquatic invasive species at the Project; and
- Continue to implement the existing CRMP.

Recreation PM&Es will be included in the FLA, if needed, after conclusion of the 2021 Recreation Resources Study.

Additionally, MP proposes that FERC include in the new Project license language to clarify deviations and deviation reporting requirements, as follows:

Planned Deviations: *Run-of-river operation and minimum flows may be temporarily modified for short periods, of up to 3 weeks, after mutual agreement among the licensee and the MDNR. After concurrence from the agency, the licensee must file a report with the Secretary of the Commission as soon as possible, but no later than 14 calendar days after the onset of the planned deviation.*

Unplanned Deviations: *Run-of-river operation and minimum flows may be temporarily modified if required by operating emergencies beyond the control of the licensee (i.e., unplanned deviations). For any unplanned deviation that lasts longer than 3 hours or results in visible environmental effects such as a fish kill, turbidity plume, bank erosion, or downstream flooding, the licensee must file a Report with the Secretary of the Commission as soon as possible, but no later than 14 days after each such incident.*

E.12.1.2 Prairie River Project

MP is not proposing any modifications to the Project or changes to Project operations that could potentially negatively affect resources at the Project or Project vicinity. MP proposes the following PM&E measures for the new license:

- Continue to operate the Project in a ROR mode as presented in Exhibit A and required by Article 401 of the current license;
- Continue to provide minimum flows into the bypass reach downstream of the Prairie River Project of 75 cfs during April and May and 50 cfs during June to protect and enhance fishery resources;
- Continue to implement ramping rates for the flows at or below 400 cfs in the bypass reach to protect downstream fish resources when implementing, reducing, and ceasing minimum flows;
- Continue to implement best management practices to prevent the spread of terrestrial and aquatic invasive species at the Project; and
- Continue to implement the existing CRMP.

Recreation PM&Es will be included in the FLA, as needed, after conclusion of the 2021 Recreation Resources Study.

Additionally, MP proposes that FERC include in the subsequent Project license language to clarify deviations and deviation reporting requirements, as follows:

Planned Deviations: *Run-of-river operation and minimum flows may be temporarily modified for short periods, of up to 3 weeks, after mutual agreement among the licensee and the MDNR. After concurrence from the agency, the licensee must file a report with the Secretary of the Commission as soon as possible, but no later than 14 calendar days after the onset of the planned deviation.*

Unplanned Deviations: *Run-of-river operation and minimum flows may be temporarily modified if required by operating emergencies beyond the control of the licensee (i.e., unplanned deviations). For any unplanned deviation that lasts longer than 3 hours or results in visible environmental effects such as a fish kill, turbidity plume, bank erosion, or downstream flooding, the licensee must file a deviation report with the Secretary of the Commission as soon as possible, but no later than 14 days after each such incident.*

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Exhibit F

General Design Drawings

F.1 Design Drawings

The General Design Drawings showing overall plan views, elevation, and sections of the principal Project works in sufficient detail to provide a full understanding of the Grand Rapids Project (Project) are listed below in Table F.1-1. ALLETE, Inc., doing business as Minnesota Power (MP or Applicant), is requesting that the General Design Drawings for the Project be given privileged treatment because the drawings contain Critical Energy Infrastructure Information (CEII). This request for privileged treatment is being made to the Commission in accordance with the Final Rule (Order No. 630-A) issued by the Commission on July 23, 2003 (revised August 8, 2003). Therefore, in conjunction with filing the Draft License Application, Exhibit F General Design Drawings listed below will be filed with the Commission in Volume II of the application under separate cover in accordance with Order 630-A.

Table F.1-1 Exhibit F General Design Drawings

Drawing Number	Title
Exhibit F-1, Sheet 1 of 2	Grand Rapids Hydroelectric Project: Powerhouse Plan, Upstream Elevation, and Sections
Exhibit F-2, Sheet 2 of 2	Grand Rapids Hydroelectric Project: Powerhouse Plan, Upstream Elevation, and Sections

F.2 Supporting Design Report

Pursuant to 18 CFR §4.41(g)(3) and (4), an applicant for a new license is required to file with the Commission two copies of a Supporting Design Report (SDR) when the applicant files an application for a new license. An SDR demonstrates that the existing structures are safe and adequate to fulfill their stated functions.

The Project is subject to the requirements of 18 CFR Part 12 – Safety of Water Power Projects and Project Works, Subpart D – Inspection by an Independent Consultant. In 2003, the Commission instituted a new program to be used in the context of the Part 12 Independent Consultant Safety Inspection Program entitled “Potential Failure Modes Analysis” (PFMA), which is a dam- and project-safety tool intended to broaden the scope of the safety evaluations to include potential failure scenarios that may have been overlooked in past investigations. In conjunction with these endeavors, the Commission also initiated a requirement for development of a

Supporting Technical Information Document (STID) for projects subject to Part 12D of the Commission's regulations.

The STID includes sufficient information to understand the design and current engineering analyses for the Project such as:

1. A complete copy of the PFMA report and associated addendums;
2. A detailed description of the Project and Project works;
3. A summary of the construction history of the Project;
4. Summaries of Standard Operating Procedures;
5. A description of geologic conditions affecting the Project works;
6. A summary of hydrologic and hydraulic information;
7. Summaries of instrumentation and surveillance for the Project;
8. Summaries of stability and stress analyses for the Project works;
9. A summary of the spillway gate analyses; and
10. Pertinent dam safety correspondence.

Given that the Project is subject to Part 12D of the Commission's regulations, the Project has been inspected by an independent consultant within the past five years and an STID for has been prepared and submitted to the Commission. For reference purposes, Table F.2-1 provides the dates for which the Project's most recent Part 12 Safety Inspection Report and PFMA Report, which are included within the STID, were filed with the Commission. Based on these filings, an SDR is not being included in this application for a new license for the Grand Rapids Project.

Table F.2-1 List of Dam Safety Documents and Filing Dates

Document Name	Filing Date
Initial PFMA Report	September 2004; Rev. 2009, 2015, 2018
Initial STID	October 2004
Most Recent STID Update	February 2010
11 th Part 12 Safety Inspection Report	January 2019

Exhibit G

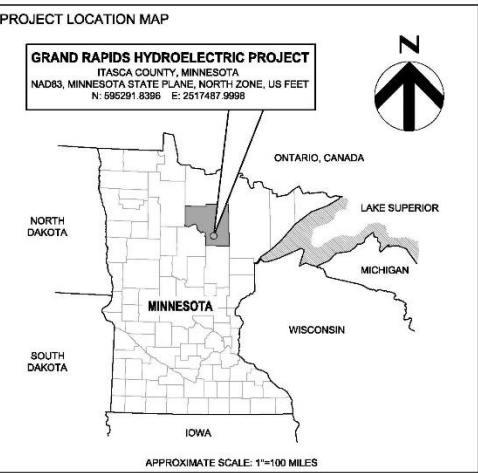
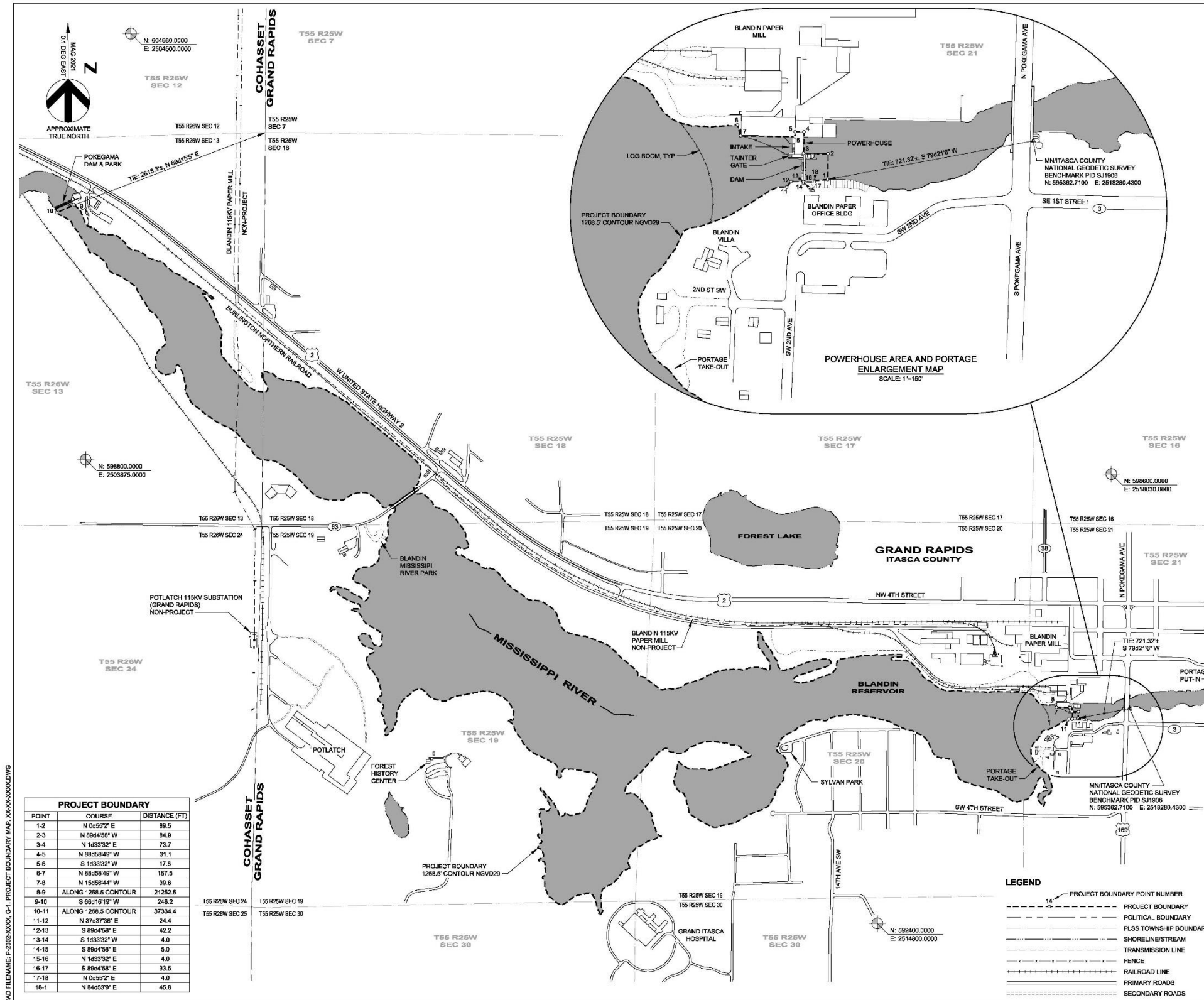
Project Maps

The Exhibit G maps referenced below in Table G.1-1 show the Project vicinity, location, and boundary in sufficient detail to provide a full understanding of the Project's location.

Table G.1-1 Exhibit G General Design Drawings

Drawing Number	Title
Exhibit G-1	Project Boundary Map

The Project Boundary Maps have been prepared in accordance with the Code of Federal Regulations (CFR) requirements of 18 CFR §§ 4.39 and 4.41(h) and applicable Federal Energy Regulatory Commission (FERC) guidance. The preparation of these boundary maps in support of obtaining a new license for the Grand Rapids Hydroelectric Project (Project) has provided Minnesota Power (MP) the opportunity to make minor corrections and adjustments consistent with the Project's operations.



PROJECT BOUNDARY TIE DATA

THE PROJECT BOUNDARY IS TIED TO MNITASCA COUNTY NATIONAL GEODETIC SURVEY BENCHMARK PID SJ1908: N: 595362.7100 E: 2518280.4300

TIE POINT 1: 721.32', S 78d21'0" W

THE PROJECT BOUNDARY IS TIED TO THE PUBLIC LAND SURVEY SYSTEM (PLSS).

TIE POINT 8 TO NORTH EAST CORNER OF T55 R25W SECTION 13: 2818.3', N 58d15'0" E

REFERENCE COORDINATE METADATA

PROJECTION - MINNESOTA STATE PLANE

DATUM - NAD83, NORTH ZONE

UNITS - U.S. SURVEY FEET

GEOREFERENCE SOURCE DATA

DIGITIZED DATA: PICTOMETRY HIGH ACCURACY ORTHOIMAGERY <https://www.pictometry.com>

REPORTED ACCURACY EXCEEDING NMAS (12.3FT) 1:4600

LIDAR ELEVATION DATA: GEOLOGICAL SURVEY, 20160328, USGS LIDAR POINT CLOUD MN CENTRAL LAKES-BLOCK4 2012 1942-26-14 LAS 2016, U.S. GEOLOGICAL SURVEY.

PROPERTY DATA: N/A

BOUNDARY DATA: FERC EXHIBIT G, BLANDIN HYDROELECTRIC PROJECT, GRAND RAPIDS, MINNESOTA, DATED DECEMBER, 1991.

PLSS DATA: ITASCA COUNTY, MN, <https://www.gisdata.mn.gov>

- NOTES
1. THE LICENSEE EITHER OWNS IN SIMPLE FEE OR POSSESSES FLOWAGE EASEMENTS OVER ALL LANDS WITHIN THE PROJECT BOUNDARY REQUIRED TO OPERATE THE FACILITY.
 2. ELEVATIONS SHOWN REFERENCE NGVD29 VERTICAL DATUM.

SURVEYORS STATEMENT

I HEREBY CERTIFY TO THE FEDERAL ENERGY REGULATORY COMMISSION (FERC) THAT THIS PLAN MEETS THE CONDITIONS SET FORTH BY FERC FOR ITS EXPRESSED PURPOSE. THE PURPOSE OF THIS MAP IS TO PROVIDE A GEOREFERENCED VISUAL DEPICTION OF THE LOCATION OF PROJECT FEATURES AND BOUNDARIES BASED ON THE BEST AVAILABLE HISTORICAL DRAWINGS AND DIGITAL REFERENCE SOURCES INCORPORATED INTO THE GEOGRAPHIC INFORMATION SYSTEM (GIS). LOCATIONS HAVE NOT BEEN VERIFIED BY PHYSICAL FIELD SURVEYS AND THIS DRAWING SHOULD NOT BE USED FOR PURPOSES OF DEVELOPING PROPERTY BOUNDARY DESCRIPTIONS.



EXHIBIT G-1 SHEET 1 OF 1

GRAND RAPIDS HYDROELECTRIC PROJECT

GRAND RAPIDS

PROJECT BOUNDARY MAP

800 300 0 600 1200 1800 2400

ALLETE, INC. dba MINNESOTA POWER FERC No. 2362

DATE: MAY 2021 SCALE: 1"=600' APPROVED: PENDING

FERC NO. P-2362-XXXX

Exhibit H

PLANS AND ABILITY OF THE APPLICANT TO OPERATE THE PROJECT

H.1 Licensee's Ability to Provide Efficient and Reliable Electric Service

H.1.1 Increase in Capacity or Generation

ALLETE, Inc., doing business as Minnesota Power (MP or Applicant) does not plan to increase capacity or generation associated with the Grand Rapids Hydroelectric Project (Project) as a result of this relicensing proceeding.

H.1.2 Coordination of Operation with Upstream and Downstream Projects

The Mississippi River and its tributaries form a highly regulated system beginning with the U.S Army Corps of Engineers' (USACE') Mississippi Headwaters Reservoirs Project, consisting of six headwaters dams in north-central Minnesota, the primary purposes of which are flood risk management, recreation, and environmental stewardship (USACE 2018). Pokegama Dam and Reservoir are one of the six dams in the Mississippi Headwaters Reservoirs Project facilities and is located approximately three miles upstream of Grand Rapids Dam and upstream of the boundary of the Prairie-Willow watershed.

The Grand Rapids Project operates in run-of-river (ROR) mode. Inflows to the Grand Rapids Project are a function of releases from Pokegama Dam and Reservoir. When the Pokegama Dam operator is notified by the USACE St. Paul District that dam release rates are to be changed, the operator provides notice of flow changes to MP operators by telephone. Typically, flow changes at Pokegama Dam are observed as elevation changes at Grand Rapids Dam one-half hour to an hour later. Additionally, MP participates in the Mississippi River Low Flow Management Plan which is facilitated and coordinated by the Minnesota Department of Natural Resources (MDNR). The Plan ensures ROR operations are strictly maintained during periods of low flow to minimize artificial flow fluctuations by coordinating communication of the dam operators upstream of St. Paul, Minnesota, under low-flow conditions.

H.1.3 Coordination of Operation with Electrical Systems

The Grand Rapids Project serves to directly supplement the power supply for the Blandin Paper Mill, an important economic asset and employment base in Grand Rapids which produces coated graphic paper. The Blandin Paper Mill is owned by UPM Communication Papers (UPM).

H.2 Need for Project Power

H.2.1 Cost and Availability of Alternative Sources of Power

The Grand Rapids Project generates clean, renewable power utilized by the Blandin Paper Mill. The replacement of energy and capacity provided by the Project would be met through MP's power supply mix, currently 50% renewable or other regional market sources.

H.2.2 Increase in Costs if the Licensee is Not Granted a License

The Grand Rapids Project provides power for Blandin Paper Mill. If MP is not granted a new license, the Project would cease to provide electricity to Blandin Paper Mill. Therefore, Blandin Paper Mill would have to seek other sources of electricity to run its facilities which could be more costly than the renewable power generated from the Project.

H.2.3 Effects of Alternative Source of Power

H.2.3.1 Effects on Licensee's Customers

The availability of the Grand Rapids Hydro capacity reduces Blandin Paper Mill's overall cost of service. The loss of the Grand Rapids Hydro capacity would greatly impact the Blandin Paper Mill's ability to remain competitive in a global economy. The Minnesota State energy policy is to ensure competitive electric rates for energy-intensive, trade-exposed paper customers such as Blandin Paper Mill. See Minnesota Statutes Section 216B.1696. Any lost megawatts (MWs) (power) from Hydro generation, would increase the amount of MWs (power) that UPM would need to purchase from MP to serve their load and would be subject to the tariff rates and riders under MP's Large Power Service Schedule. This would result in an increase to their electric costs.

H.2.3.2 Effect on Licensee's Operating and Load Characteristics

There is no transmission line or substation associated with the Project. However, UPM owns both a transmission line and substation that moves the power generated by the Project to the Blandin Paper Mill.

H.2.3.3 Effect on Communities Served by the Project

As stated above, the only customer of Project power is UPM; therefore, this section is not applicable.

H.2.4 Need, Reasonable Cost and Availability of Alternative Sources of Power

H.2.4.1 Average Annual Cost of Project Power

Annual costs associated with the Grand Rapids Project include labor, materials, expenses, and overhead associated with routine operation and maintenance; the annualized cost of capital leases and repairs/replacements; and annual insurance, taxes, fees, and administration. A summary of estimated annual costs for 2020 for the Project will be provided below in Table H.2-1 in the Final License Application (FLA).

Table H.2-1 Costs of Project Power for 2021

Description	Cost
Annual operation, maintenance, expenses, fees, insurance, overhead, depreciation	To be included in FLA
Taxes	To be included in FLA
Total	To be included in FLA

H.2.4.2 Projected Resources Required by the Licensee to Meet Short- and Long-Term Capacity and Energy Requirements

The Project serves to supplement the power supply for the Blandin Paper Mill. The Blandin Paper Mill is owned and operated by UPM. UPM would need an alternative source of energy equivalent to the Project's generation of approximately 6,600 megawatt hours (MWh) annually.

H.3 Power Supply at Industrial Facility

Since MP does not use the power generated at their facilities for their own use, this section is not applicable. The Blandin Paper Mill is owned and operated by UPM.

H.4 Indian Tribe as Applicant

Since MP is not an Indian tribe, this section is not applicable.

H.5 Impacts of Receiving or Not Receiving a License on Licensee's Operations of the Transmission Facility

There is no transmission line or substation associated with the Project. The single-line diagram for the Grand Rapids Hydroelectric Project will be provided in Exhibit A of the FLA.

H.6 Modifications to Project Facilities and Consistency with Comprehensive Plans

H.6.1 Project Modifications

MP is not proposing any modifications to Project facilities.

H.6.2 Comprehensive Plans

Section 10(a)(1) and (2) of the Federal Power Act (FPA) 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 a project. Scoping Document 2 (SD2), issued May 16, 2019, identified 13 comprehensive plans that are potentially relevant to the Project. These comprehensive plans are presented in Table H.6-1. For the reasons noted in this application, MP has determined that the continued operation of the Project, as proposed in this DLA, is consistent with these plans.

Table H.6-1 List of Qualifying Federal and State Comprehensive Waterway Plans Potentially Relevant to the Grand Rapids Project

Comprehensive Plan
MDNR. 1983. Statewide outstanding rivers inventory. St. Paul, Minnesota. March 1983.
MDNR. 2015. Minnesota State Parks and Trails System Plan. St. Paul, Minnesota.
MDNR. 2016. Minnesota's Wildlife Action Plan, 2015-2025. St. Paul, Minnesota.
MDNR. n.d. Canoe and boating route program. St. Paul, Minnesota. 39 pamphlets.
MDNR. n.d. Minnesota's State Comprehensive Outdoor Recreation Plan (SCORP): 2014-2018. St. Paul, Minnesota.
MDNR. n.d. Strategic Conservation Agenda: The DNR's 10-year Strategic Plan, 2015-2025. St. Paul, Minnesota.
Mississippi Headwaters Board. 1981. A management plan for the Upper Mississippi River. Grand Rapids, Minnesota. January 1981.
NPS. The National Rivers Inventory. Department of the Interior, Washington, D.C. 1993.
Upper Mississippi River Basin Commission. 1981. Comprehensive master plan for the management of the Upper Mississippi River system – environmental report. Minneapolis, Minnesota. September 1981.
Upper Mississippi River Basin Commission. 1982. Comprehensive master plan for the management of the Upper Mississippi River system. Minneapolis, Minnesota. January 1, 1982.
USFWS. Canadian Wildlife Service. 1986. North American waterfowl management plan. Department of the Interior. Environment Canada. May 1986.
USFWS. 1993. Upper Mississippi River & Great Lakes Region joint venture implementation plan: A component of the North American waterfowl management plan. March 1993.
USFWS. n.d. Fisheries USA: the recreational fisheries policy of the U.S. Fish and Wildlife Service. Washington, D.C.

Source: FERC 2020.

H.7 Financial and Personnel Resources

MP has considerable experience operating not only the Grand Rapids Project, but also other hydroelectric projects located throughout Minnesota. MP is the largest hydropower generator in the State of Minnesota. The Project's past performance demonstrates that MP has the financial resources to meet the operation, maintenance, and capital requirements of the Project. Operations, maintenance, and compliance activities at the Project are performed and supported by sufficient technical plant personnel, trained as appropriate to ensure the reliable continued operations of the Project and to maintain the Project in accordance with the provisions of the license.

H.8 Expansion of Project Lands

MP does not anticipate or propose an expansion of the Project Boundary at the Project.

H.9 Electricity Consumption Efficiency Improvement Program

MP has a longstanding history of supporting energy conservation through the Conservation Improvement Program (CIP), exceeding the State's 1.5 percent energy annual savings goal since it went into effect in 2010. The Company's CIP portfolio offers a wide variety of program offerings designed to serve the unique needs of different customer segments including residential, multifamily, and business customers. Customers can leverage MP's programs including rebates on energy efficient technologies, free energy analysis of their home or business, and direct installation of energy-saving products to meet their energy-saving goals. MP evaluates its CIP portfolio on an annual basis to ensure programs continue to meet customer needs.

H.10 Indian Tribes Affected by the Project

There are no tribal lands located within or adjacent to the Project Boundary. The listing below includes Native American Tribes that may have an interest in the Project:

Bois Forte Band of Minnesota Chippewa
5344 Lakeshore Drive
Nett Lake, MN 55772

Chippewa Tribe of Minnesota
P.O. Box 217
Cass Lake, MN 56633

Leech Lake Band of Minnesota
Chippewa Tribe
6530 U.S. Hwy 2 Northwest
Cass Lake, MN 56633

White Earth Band
(Minnesota Chippewa Tribe)
P.O. Box 418
White Earth, MN 56591

Lac du Flambeau Band of Lake
Superior Chippewa Indians
P.O. Box 67
Lac du Flambeau, WI 54538

Menominee Indian Tribe of Wisconsin
P.O. Box 910
Keshena, WI 54135

Apache Tribe of Oklahoma
P.O. Box 1330
Anadarko, OK 73005

Cheyenne and Arapahoe
Tribes of Oklahoma
P.O. Box 167
Concho, OK 73002

Upper Sioux Community of Minnesota
P.O. Box 147
Granite Falls, MN 56241

Mille Lacs Band of Ojibwe
43408 Oodena Drive
Onamia, MN 56359

Fort Belknap Indian Community of the Fort
Belknap Reservation of Montana
656 Agency Main Street
Harlem, MT 59526-9455

Fond du Lac Band of Lake Superior Chippewa
Administration
1720 Big Lake Road
Cloquet, MN 55720

Grand Portage Band of Chippewa Indians
P.O. Box 428
Grand Portage, MN 55605

Red Lake Band of Chippewa Indians
15484 Migizi Drive
Red Lake, MN 56671

H.11 Safe Management, Operation, and Maintenance of the Project

H.11.1 Operating During Flood Conditions

The Project is operated in ROR mode. Flow in excess of turbine capacity is passed through the spillway gates. Inflow to the Project is controlled by the USACE according to their Water Control Manual that considers navigation, flood control, recreation, Tribal Trust, and water quality while maintaining water levels within reservoir-specific elevation guide curves. A description of Project operations may be found within Exhibit A of this DLA.

H.11.2 Emergency Action Plan Events

An Emergency Action Plan (EAP) for the Grand Rapids Project has been filed with FERC to comply with requirements contained in 18 CFR §12.25 and is updated annually. There are no known or planned changes to the operations of the Project or downstream development that would affect the EAP.

H.11.3 Warning Devices for Downstream Public Safety

Safety for the public is provided by surrounding the perimeter of the gate structures with security fences. Locks are installed at access points through each fence and entry points into the facility. All outdoor equipment is secured with locks to limit access or use. Where appropriate, warning signs are posted on the fence, structures, or surrounding property warning of restricted access and danger. There are also signs warning of "Dam Ahead," "Danger Area," and "Keep Away." Signs also designate the canoe portage route. Prior to the remote operation of a spillway gate, a horn and flashing light are activated to warn of an impending gate operation.

Because the hydro facility is intertwined with the Blandin Paper Mill, the building entry alarm and fire alarm in the powerhouse are electronically monitored from Blandin's security office. In the event of an alarm, Blandin security personnel immediately notify MP's Rapids Energy Center.

H.11.4 Monitoring Devices

The Project is maintained by MP in accordance with manufacturers' instructions and industry best practices and monitored as described in the Dam Safety Surveillance Monitoring Plans (DSSMPs) that are maintained for the Project and on file with FERC's Division of Dam Safety and Inspections – Chicago Regional Office.

The Project is operated by the Hydro Operator located at MP's Thomson Development of the St. Louis River Project, FERC No. 2360 (Thomson). Hydro personnel are dispatched from Thomson by the Hydro Operator. Standby personnel from the adjacent MP owned Rapids Energy Center are also available for assistance. Instantaneous and continuous information on pond level, flow, and generating unit status is collected. The operator has remote control of the hydro units. Alarms warn the operator if unobserved changes occur, causing set parameters to be approached.

H.11.5 Employee Safety and Public Safety Record

No lost-time accidents have occurred at the Project within the past 15 years. No accidents involving the public have occurred on the Project property and no accidents attributable to the Project operations have occurred within the past 15 years.

H.12 Current Operation of the Project

The Project is operated in ROR mode whereby inflows at the dam match outflows, to the greatest extent possible. The pond level at the dam is maintained at elevation 1,268.2 feet with fluctuations limited to 0.1 foot, as required by the current FERC License Article 402. ROR mode is maintained by adjusting the water flow to the turbines and spillway gates as needed to maintain pond level with the allowable operating band. Current Project operations are described in greater detail in Exhibit A of this DLA.

H.13 Project History

The original construction on the Project dam started in May in 1901 by the Grand Rapids Power and Boom Company and came online in 1902. Blandin Paper Company sold the Project to MP in 2000. The Grand Rapids Project serves to supplement the power supply for the Blandin Paper Mill. Major maintenance or Project upgrades since MP acquired the facility include the following:

- In 2000, timber stoplogs in spillway bays 2 and 4 were replaced with steel vertical lift gates with dedicated actuators. The Tainter gate was repaired and the trunnions replaced. Undermining of the apron downstream of the powerhouse and spillway was repaired with grout bags. Additional miscellaneous concrete repairs were also completed.

- In 2008, the downstream right bank was stabilized by re-grading the slope, adding an erosion mat, and re-establishing vegetation. A concrete knee wall was installed at the right abutment crest to provide additional freeboard.
- In 2009, the station batteries were replaced.
- In 2012, scour holes undermining the spillway apron and right bank were discovered during a dive inspection after a high-flow event. The scour holes were repaired with grout bags.
- In 2013, the Unit 5 exciter was repaired.
- In 2014, a dive inspection after a high-flow event discovered additional scouring at the same locations as repaired in 2012. The scour holes were again repaired with grout bags, and gate operations were modified to reduce scour potential by distributing discharge more uniformly across the apron instead of relying primarily on just the Tainter gate. Also, the powerhouse superstructure walls were tuck pointed and the roof was replaced to maintain integrity of the building.
- In 2014-2016, extensive upgrades were completed on Unit 5, including repairing the generator and replacing the turbine guide bearing, lower guide bearing, and thrust shoes.
- In 2015, extensive upgrades were completed on Unit 4, including repairing the generator and replacing the lower guide bearing and thrust bearing.
- In 2016, timber stoplogs in spillway bay 3 were replaced with a steel vertical lift gate with a dedicated actuator. Associated concrete repairs were also completed.
- In 2016-2017, the Unit 4 thrust bearing failed prematurely. It was redesigned and replaced.
- In 2019, additional controls were added to allow remote operation of the Project from MP's Thomson Hydroelectric Development.

H.14 Summary of Generation Lost at the Project Due to Unscheduled Outages

Table H.14-1 presents the unscheduled outages for the Grand Rapids Project. Outages are presented for a 5-year period of time (2016-2020), based on available data.

Table H.14-1 Summary of Unscheduled Outages

Unit No.	Primary Reason for the Outage	Start Time	End Time	Duration (hours)
5	5 Hydro unit tripped on high upper bearing temp	3/3/2016, 01:49	6/30/2016, 17:53	2,872.07
4	2016 all mill down with bearing oil leak	4/24/2016, 07:58	5/1/2016, 08:00	163.03
5	Loss of power from 148A MCC feeding 5 hydro exciter	9/9/2016, 10:19	9/9/2016, 14:10	3.85
5	Water leak in cooling water supply line to lube oil system	9/29/2016, 09:20	9/29/2016, 14:43	5.38
4	Blandin P5 Transformer issues	5/15/2017, 23:50	5/16/2017, 12:20	12.50
5	Blandin P5 Transformer issues	5/15/2017, 23:50	5/16/2017, 04:56	5.10
4	Blandin P5 Transformer issues	5/16/2017, 08:51	5/17/2017, 14:15	29.40
5	Blandin P5 Transformer issues	5/16/2017, 08:51	5/17/2017, 14:00	29.15
5	Bearing noise/vibration at 70%	8/18/2017, 10:56	8/31/2017, 14:04	315.13
5	Vibration on 5 Hydro at upper and lower end of operating band	8/31/2017, 14:42	9/27/2017, 09:05	642.38
4	Oil spillage	10/28/2017, 00:26	10/30/2017, 10:52	58.43
5	Unit tripped on low oil level indication	5/2/2018, 20:42	5/16/2018, 18:58	334.27
5	Low System Buss Voltage	7/18/2018, 13:16	7/18/2018, 14:34	1.30
4	Low System Buss Voltage	7/18/2018, 13:16	7/18/2018, 14:50	1.57
4	Frozen gates & flow control issues	1/2/2019, 04:11	1/3/2019, 12:53	32.70
4	Blandin power outage (shutdown) tripped hydro units	3/5/2019, 20:10	3/5/2019, 22:03	1.88
5	Blandin power outage (shutdown) tripped hydro units	3/5/2019, 20:14	3/5/2019, 22:27	2.21
4	Blandin power outage (start-up) tripped hydro units	3/6/2019, 04:16	3/6/2019, 05:16	1.00
5	Blandin power outage (start-up) tripped hydro units	3/6/2019, 04:19	3/6/2019, 04:53	0.56
4	Hydro units tripped when PM 6 started up--Cap bank late being put into service	6/22/2019, 07:43	6/22/2019, 08:03	0.33
4	Power outage caused hydro units to trip offline (transformer in town failed)	6/23/2019, 09:59	6/23/2019, 10:20	0.35

Unit No.	Primary Reason for the Outage	Start Time	End Time	Duration (hours)
5	Hydro units tripped when PM 6 started up--Cap bank late being put into service by Blandin	6/22/2019, 07:43	6/22/2019, 07:55	0.20
5	Power outage caused hydro units to trip offline (transformer in town failed)	6/23/2019, 09:58	6/23/2019, 10:13	0.25
5	Cooling Water leaks	7/12/2019, 07:21	7/18/2019, 13:54	150.55
4	Tripped offline--System Electrical Issue	7/25/2019, 19:04	7/25/2019, 20:56	1.87
5	Tripped offline--System Electrical Issue	7/25/2019, 19:04	7/25/2019, 20:48	1.73
4	Lower Bearing Oil Low Flow	1/1/20, 0:00	1/14/20, 11:50	323.83
4	Lower Bearing Oil Low Flow	1/14/20, 15:54	1/27/20, 10:15	306.35
4	Losing Flow Per Jeff Love	1/27/20, 14:10	2/10/20, 08:45	330.58
4	Overspeed Issues	5/18/20, 10:00	5/18/20, 11:30	1.50
5	High Temp Trip	8/11/20, 17:45	8/12/20, 9:00	15.25
4	Power Outage	5/18/20, 07:55	5/18/20, 10:00	2.08
5	Station lost power	5/18/20, 07:55	5/18/20, 10:00	2.08

Note: Table does not include outages due to low inflows.

H.15 Record of Compliance

The Project has a good record of compliance with the terms and conditions of the existing license. A review of the Licensee's records indicates only one violation of the terms and conditions of the license. As noted in a FERC letter filed September 5, 2007, MP was not in compliance with Articles 402 and 403. In response to this, MP quickly addressed the pool level indication concern with the installation of new level-indicating devices in new locations that are not sensitive to grate fouling or operational changes from the Blandin Paper Mill, as noted in a letter to FERC filed January 31, 2008, describing automation of the Project.

H.16 Actions that Affect the Public

MP is not proposing any action that directly affects the public. Further information on public safety can be found in Section H.11 and Exhibit A.

H.17 Ownership and Operating Expenses Affected by Transfer of License

MP is applying for a new license to continue to maintain and operate the Project. Additionally, there is no competing application to take over the Project. Because there is no proposal to transfer the Project license, this section is not applicable to the Project.

H.18 Annual Fees Under Part I of Federal Power Act

Given that there are no federal or Indian lands associated with the Project, MP does not pay any annual fees under Part I of the FPA.

H.19 References

Federal Energy Regulatory Commission (FERC). 2020. List of Comprehensive Plans. July 2020. [Online] URL: www.ferc.gov. Accessed: March 8, 2021.

U.S. Army Corps of Engineers (USACE). 2018. Mississippi River Headwaters Reservoirs. [Online] URL: <https://www.mvp.usace.army.mil/Home/Projects/Article/571038/mississippi-river-headwaters-reservoirs/>. Accessed: November 11, 2018.

Appendix A

Correspondence Log

Consultation Record - Grand Rapids Project (FERC No. 2362) and Prairie River Project (FERC No. 2361)

Date of Consultation	From (Individual/Organization)	To (Individual/Organization)	Type	FERC Accession Number	Subject
7/27/2018	Nora Rosemore (MP)	Stakeholders	Email and letter	-	Request for Information
7/27/2018	Nora Rosemore (MP)	Peter Fasbender (USFWS), Nick Utrup (USFWS)	Email and letter	-	IPaC results confirmation
7/27/2018	Nora Rosemore (MP)	Charlotte Cohn (MDNR)	Email and letter	-	Request for Threatened and Endangered Species Information
7/27/2018	Nora Rosemore (MP)	Amber Westerbur, Program Manager (MN Dept of Natural Resources [DNR])	Email and letter	-	Coastal Zone Consistency Determination
7/30/2018	Jesse Anderson, Research Scientist (MN Pollution Control Agency [MPCA])	Nora Rosemore (MP)	Email	-	Request for Information
7/30/2018	Nick Utrup (U.S. Fish and Wildlife Service, Minnesota/Wisconsin Field Office)	Nora Rosemore (MP)	Email	-	Concurrence of IPaC list
8/2/2018	Randall Thoreson (National Park Service)	Nora Rosemore (MP)	Email	-	Request for Information
8/8/2018	Sarah Beimers (MN Department of Administration [ADM])	Nora Rosemore (MP)	Email	-	Response to Request for Information
8/9/2018	Gregory Prom (MP)	William Wilde (MPCA)	Email	-	Request for Information
12/14/2018	Nora Rosemore (MP)	Stakeholders	Email	20181213-5230	Notice of PAD and NOI Filing
12/17/2018	Nora Rosemore (MP)	Stakeholders	Email	-	Notice of PAD and NOI Filing
12/19/2018	Gregory Prom (MP)	Aneela Mousam (FERC)	Letter	20181219-5044	Revisions to the Updated Exhibits G-1 and G-2 for Prairie River
1/17/2019	Gregory Prom (MP)	Aneela Mousam (FERC)	Letter	20190117-5081	Final Exhibit G-1 and G-2 for the Prairie River
2/7/2019	Kimberly Bose (FERC)	Stakeholders	Letter	20190207-3084	Request for comments on PAD
2/7/2019	FERC	MP, Stakeholders	Letter	20190207-3051	Scoping Document 1 and invitation for stakeholder involvement
3/6/2019	-	-	Meeting	20190410-4001	Public scoping meeting held March 6, 2019
3/7/2019	-	-	Meeting	20190410-4002	Public scoping meeting held March 7, 2019

Consultation Record - Grand Rapids Project (FERC No. 2362) and Prairie River Project (FERC No. 2361)

Date of Consultation	From (Individual/Organization)	To (Individual/Organization)	Type	FERC Accession Number	Subject
4/1/2019	Kenneth Westlake (EPA)	Kimberly Bose (FERC)	Letter	20190401-5345	Comments on Scoping Document 1
4/5/2019	Janet Hutzler (FERC)	Nora Rosemore (MP)	Letter	20190405-3024	Request for information and studies
4/11/2019	Karen Kromar (MPCA)	Kimberly Bose (FERC)	Letter	20190411-5041	Request for information and studies
5/13/2019	Nora Rosemore (MP)	Sarah Beimers (SHPO)	Email	-	Proposed Study Plan comments and correspondence to date
5/16/2019	FERC	MP, Stakeholders	Letter	20190516-3081	Scoping Document 2 and request for comments
5/28/2019	Nora Rosemore (MP)	Kimberly Bose (FERC)	Letter	20190528-5085	Filing of Proposed Study Plan
5/28/2019	Nora Rosemore (MP)	Kimberly Bose (FERC)	Letter	-	Distribution of Proposed Study Plan
5/31/2019	Nora Rosemore (MP)	Sarah Beimers (SHPO)	Email	- -	Response to SHPO Administrative File Request
8/2/2019	Nora Rosemore (MP)	Kimberly Bose (FERC)	Letter	20190805-5022	Additional Information Requested at Proposed Study Plan Meeting
8/21/2019	Janet Hutzler (FERC)	Nora Rosemore (MP)	Letter	20190821-3018	Comments on Proposed Study Plan
8/24/2019	Sarah Beimers (State Historic Preservation Office [SHPO])	Nora Rosemore (MP)	Letter	20190826-5027	Comments on Proposed Study Plan
8/25/2019	Sarah Beimers (State Historic Preservation Office [SHPO])	Nora Rosemore (MP)	E-mail	-	Comments on Proposed Study Plan
9/9/2019	Anna Hotz (MPCA)	Nora Rosemore (MP)	Letter	-	Request for Additional Monitoring
9/23/2019	Nora Rosemore (MP)	Kimberly Bose (FERC)	Letter	20190923-5178	Filing of Revised Study Plan
9/24/2019	Nora Rosemore (MP)	Stakeholders	E-mail	-	Distribution of Revised Study Plan
10/16/2019	Terry Lupin (FERC)	Nora Rosemore (MP)	Letter	20191016-3056	Study Plan Determination
4/10/2020	Nora Rosemore (MP)	Kimberly Bose (FERC)	Letter	20200410-5172	Recreation Study Modification due to COVID-19
10/19/2020	Nora Rosemore (MP)	FERC	Letter	20201019-5104	Filing of Initial Study Report
10/19/2020	Nora Rosemore (MP)	Stakeholders	E-mail	-	Distribution of Initial Study Report
10/19/2020	Greg Prom (MP)	Sarah Beimers (SHPO)	Email	-	Cultural Resources Study Reports
10/26/2020	Sarah Beimers (SHPO)	Greg Prom (MP)	Email	-	Response to Cultural Resources Study Reports
11/11/2020	Nora Rosemore (MP)	Sarah Beimers (SHPO)	Email	-	Follow up SHPO email
11/23/2020	Nora Rosemore (MP)	Kimberly Bose (FERC)	Letter and email	20201123-5140	Initial Study Report Meeting Summary
11/24/2020	Nora Rosemore (MP)	Sarah Beimers (SHPO)	Letter and email	20201125-5056	Addendums to the Phase I Reconnaissance Survey Reports

Consultation Record - Grand Rapids Project (FERC No. 2362) and Prairie River Project (FERC No. 2361)

Date of Consultation	From (Individual/Organization)	To (Individual/Organization)	Type	FERC Accession Number	Subject
4/1/2021	Greg Prom (MP)	Sarah Beimers (SHPO)	Email	-	Follow up to Addendums to Phase I Reconnaissance Survey Reports
6/11/2021	Gregory Prom (MP)	Sarah Beimers (SHPO)	Email	-	Follow up to Addendums to Phase I Reconnaissance Survey Reports
6/25/2021	Sarah Beimers (SHPO)	Greg Prom (MP)	Email	-	Response to Addendums to Phase I Reconnaissance Survey Reports

MacVane, Kelly

From: Nora Rosemore (MP) <NRosemore@mnpower.com>
Sent: Friday, July 27, 2018 4:41 PM
To: 'john.jaschke@state.mn.us'; 'Ian.Chisholm@state.mn.us'; 'Charlotte.Cohn@state.mn.us'; 'don.pereira@state.mn.us'; 'guy.lunz@state.mn.us'; 'nancy.stewart@state.mn.us'; 'bryan.dodds@state.mn.us'; 'thorleif@umn.edu'; 'Sarah.Beimers@state.mn.us'; 'rayna.churchill@state.mn.us'; 'jim.brist@state.mn.us'; 'william.wilde@state.mn.us'; 'Melissa.Kuskie@state.mn.us'; 'Jesse.Anderson@state.mn.us'; 'Dan.Wolf@state.mn.us'; 'Nanette.m.bischoff@usace.army.mil'; 'timothy.lapointe@bia.gov'; 'Nick_Utrup@fws.gov'; 'Peter_Fasbender@fws.gov'; 'nicholas_chevance@nps.gov'; 'randy_thoreson@nps.gov'; 'ysrayna2018@gmail.com'; 'blatady@boisforte-nsn.gov'; 'cchavers@boisforte-nsn.gov'; 'vrichey@c-a-tribes.org'; 'ehamilton@c-a-tribes.org'; 'msutton@c-a-tribes.org'; 'kevindupuis@fdlrez.com'; 'JillHoppe@fdlrez.com'; 'reggiedefoe@fdlrez.com'; 'tomhowes@fdlrez.com'; 'andy.werk@ftbelknap.org'; 'mblackwolf@ftbelknap.org'; 'Norman@grandportage.com'; 'maryanng@grandportage.com'; 'ldfthpo@ldftribe.com'; 'amy.burnette@llojibwe.org'; 'faron.jackson@llojibwe.org'; 'dgrignon@mitw.org'; 'natalie.weyaus@millelacsband.com'; 'kade.ferris@redlakenation.org'; 'dseki@redlakenation.org'; 'THPO@uppersiouxcommunity-nsn.gov'; 'jaime.arsenault@whiteearth.com'; 'mayoradams@cityofgrandrapidsmn.com'; 'communitydev@cityofgrandrapids.com'; 'communitydev@cityofgrandrapids.com'; 'engineering@cityofgrandrapidsmn.com'; 'sara.thompson@co.itasca.mn.us'; 'brett.skyles@co.itasca.mn.us'; 'mark@americanwhitewater.org'; 'ichs@paulbunyan.net'
Cc: Malkin, Devin; MacVane, Kelly; Gregory Prom (MP); David Chura (MP)
Subject: Request for information
Attachments: 201800727 MP PAD Info Request.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Potential Stakeholders:

Minnesota Power plans to relicense the Grand Rapids Hydroelectric Project No. 2362 and Prairie River Hydroelectric Project No. 2361 using the Integrated Licensing Process (ILP). Both licenses expire on December 31, 2023; therefore, the notice of intent (NOI) and a Pre-Application Document (PAD) are due to the Federal Energy Regulatory Commission (FERC) by December 31, 2018.

Attached is a letter requesting any existing, relevant, and reasonably available information that describes the existing environment within the vicinity of the Grand Rapids Project and Prairie River Project. The information will be used in the development of the PAD. Any potential relevant information, or questions, can be sent to me at nrosemore@mnpower.com. A hard copy of the attached letter will follow.

Enjoy your day,

Nora Rosemore
Hydro Operations Superintendent
Minnesota Power
(218) 725-2101

July 27, 2018

Peter Fasbender, Field Supervisor
United States Fish and Wildlife Service
2661 Scott Tower Dr.
New Franken, WI 54229-9565

**Subject: Grand Rapids Hydroelectric Project (FERC No. 2362) and Prairie River
Hydroelectric Project (FERC No. 2361)
Request for Threatened and Endangered Species Information**

Dear Mr. Fasbender,


ALLETE, Inc. (d.b.a. Minnesota Power) is gathering information in support of the Pre-Application Document (PAD) for the upcoming Federal Energy Regulatory Commission (FERC) relicensing of the Grand Rapids Hydroelectric Project (FERC No. 2362) and Prairie River Hydroelectric Project (FERC No. 2361). In support of this process, Minnesota Power has requested an official species list regarding any threatened or endangered species and any critical habitat within the area of the Projects using the United States Fish and Wildlife Service's (USFWS) IPaC system online.

The Grand Rapids Project is a 2.1 megawatt (MW), run-of-river (ROR) facility located on the Mississippi River in Grand Rapids, Minnesota, in Itasca County. The Prairie River Project is a 1.1 MW, ROR facility located on the Prairie River near Grand Rapids, Minnesota, in Itasca County. The attached report was generated from the USFWS' IPaC system and includes a map that shows the area of interest for which the information was requested and the general location of the facilities.

It is our intent to include these results in the PAD. Therefore, we respectfully request your concurrence that this information is accurate within 30 days of the date of this letter. If you have any questions or need additional information regarding these Projects or their location, please feel free to contact me at (218) 725-2101 or nrosemore@mnpower.com.

Thank you for your assistance with this request.

Sincerely,

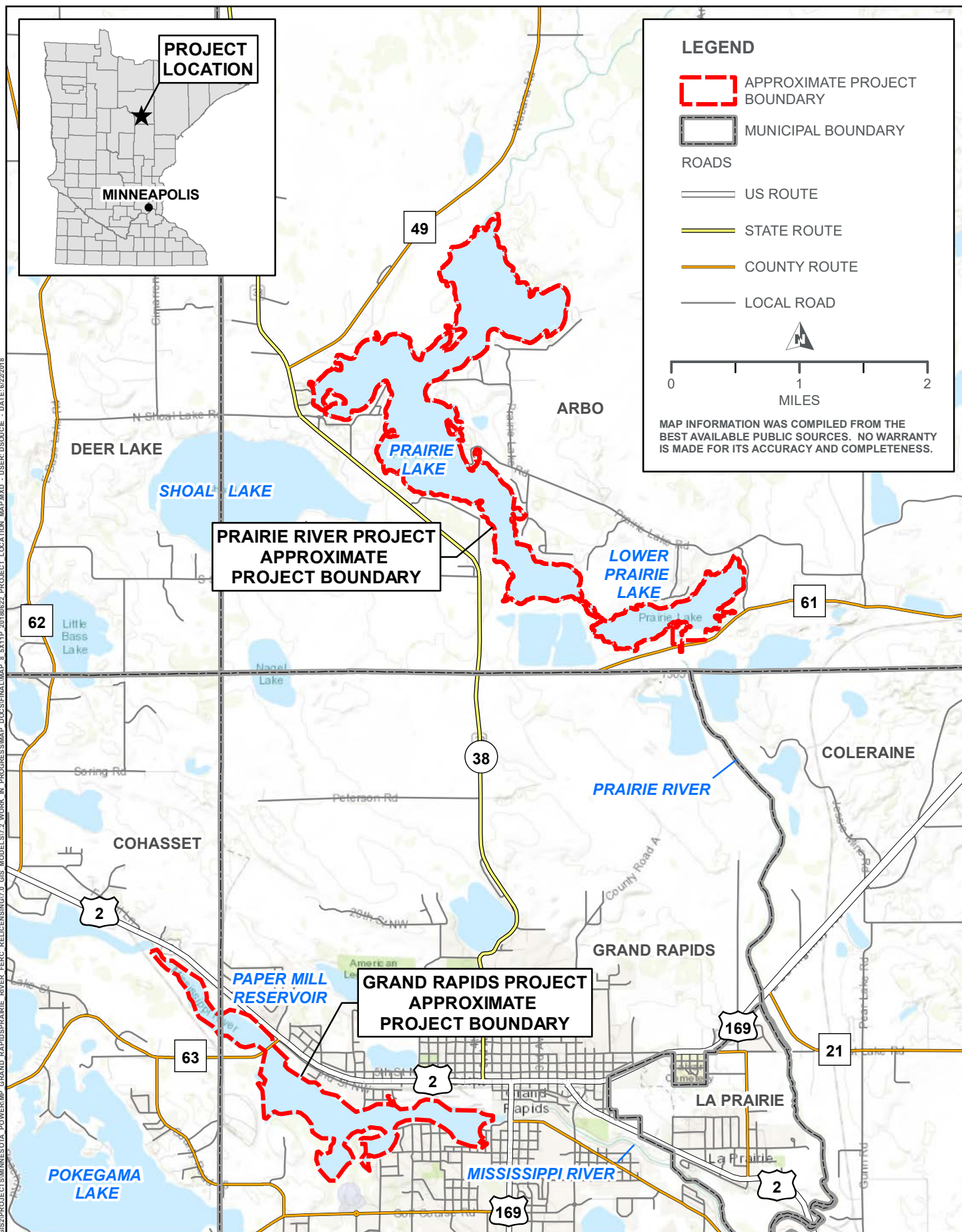


Nora Rosemore
Hydro Operations Superintendent

Attachments

cc: Nick Utrup, U.S. Fish and Wildlife Service

PATH: \\P:\WE\INFO\GIS\PROJECTS\MINNESOTA POWER\MP GRAND RAPIDS\PRRAIE RIVER_FERC_RELICENSING\GIS MODEL\2 WORK IN PROGRESS\MAP DOCS\FINAL\MAP 8 5X11P 20180222 PROJECT LOCATION MAP.MXD - USER: DSOUCE - DATE: 6/22/2018



PROJECT LOCATION MAP
PRAIRIE RIVER & GRAND RAPIDS HYDROELECTRIC PROJECTS
PRAIRIE RIVER (FERC NO. 2361) & GRAND RAPIDS (FERC NO. 2362)

JUNE 2018



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Minnesota-Wisconsin Ecological Services Field Office
4101 American Blvd E
Bloomington, MN 55425-1665
Phone: (952) 252-0092 Fax: (952) 646-2873
<http://www.fws.gov/midwest/Endangered/section7/s7process/step1.html>



In Reply Refer To:
Consultation Code: 03E19000-2018-SLI-1127
Event Code: 03E19000-2018-E-02366
Project Name: Prairie River Project

July 16, 2018

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies any federally threatened, endangered, proposed and candidate species that may occur within the action area the area that is likely to be affected by your proposed project. The list also includes any designated and proposed critical habitat that overlaps with the action area. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representatives) must consult with the Service if they determine their project may affect listed species or critical habitat. Agencies must confer under section 7(a)(4) if any proposed action is likely to jeopardize species proposed for listing as endangered or threatened or likely to adversely modify any proposed critical habitat.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally. You may verify the list by visiting the ECOS-IPaC website <http://ecos.fws.gov/ipac/> at regular intervals during project planning and implementation and completing the same process you used to receive the attached list. As an alternative, you may contact this Ecological Services Field Office for updates.

Please use the species list provided and visit the U.S. Fish and Wildlife Service's Region 3 Section 7 Technical Assistance website at - <http://www.fws.gov/midwest/endangered/section7/>

[s7process/index.html](#). This website contains step-by-step instructions that will help you determine if your project will have an adverse effect on listed species or critical habitat and will help lead you through the Section 7 process.

For all **wind energy projects** and **projects that include installing towers that use guy wires or are over 200 feet in height**, please contact this field office directly for assistance, even if no federally listed plants, animals or critical habitat are present within the action area.

Although no longer protected under the Endangered Species Act, be aware that bald eagles (*Haliaeetus leucocephalus*) are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*) and Migratory Bird Treaty Act (16 U.S.C. 703 *et seq.*), as are golden eagles (*Aquila chrysaetos*). Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near a bald eagle nest or winter roost area, see our Eagle Permits website at <http://www.fws.gov/midwest/midwestbird/EaglePermits/index.html>. The information available at this website will help you determine if you can avoid impacting eagles or if a permit may be necessary.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- Migratory Birds

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Minnesota-Wisconsin Ecological Services Field Office

4101 American Blvd E

Bloomington, MN 55425-1665

(952) 252-0092

Project Summary

Consultation Code: 03E19000-2018-SLI-1127

Event Code: 03E19000-2018-E-02366

Project Name: Prairie River Project

Project Type: DAM

Project Description: Existing hydroelectric Project (FERC No. 2361)

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/47.309487800179106N93.5557692502351W>



Counties: Itasca, MN

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Canada Lynx <i>Lynx canadensis</i> Population: Wherever Found in Contiguous U.S. There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3652	Threatened
Gray Wolf <i>Canis lupus</i> Population: MN There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4488	Threatened
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birds and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Bittern <i>Botaurus lentiginosus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/6582	Breeds Apr 1 to Aug 31
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31

NAME	BREEDING SEASON
Black Tern <i>Chlidonias niger</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/3093	Breeds May 15 to Aug 20
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler <i>Cardellina canadensis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Cape May Warbler <i>Setophaga tigrina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 1 to Jul 31
Connecticut Warbler <i>Oporornis agilis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 15 to Aug 10
Evening Grosbeak <i>Coccothraustes vespertinus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Aug 10
Golden-winged Warbler <i>Vermivora chrysoptera</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Harris's Sparrow <i>Zonotrichia querula</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Olive-sided Flycatcher <i>Contopus cooperi</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Jul 20

NAME	BREEDING SEASON
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ “Proper Interpretation and Use of Your Migratory Bird Report” before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical](#)

[Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Minnesota-Wisconsin Ecological Services Field Office
4101 American Blvd E
Bloomington, MN 55425-1665
Phone: (952) 252-0092 Fax: (952) 646-2873

<http://www.fws.gov/midwest/Endangered/section7/s7process/step1.html>



In Reply Refer To:

July 16, 2018

Consultation Code: 03E19000-2018-SLI-1128

Event Code: 03E19000-2018-E-02368

Project Name: Grand Rapids Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies any federally threatened, endangered, proposed and candidate species that may occur within the action area the area that is likely to be affected by your proposed project. The list also includes any designated and proposed critical habitat that overlaps with the action area. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

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Please use the species list provided and visit the U.S. Fish and Wildlife Service's Region 3 Section 7 Technical Assistance website at - <http://www.fws.gov/midwest/endangered/section7/>

[s7process/index.html](#). This website contains step-by-step instructions that will help you determine if your project will have an adverse effect on listed species or critical habitat and will help lead you through the Section 7 process.

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We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

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- Official Species List
- Migratory Birds

Official Species List

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This species list is provided by:

Minnesota-Wisconsin Ecological Services Field Office

4101 American Blvd E

Bloomington, MN 55425-1665

(952) 252-0092

Project Summary

Consultation Code: 03E19000-2018-SLI-1128

Event Code: 03E19000-2018-E-02368

Project Name: Grand Rapids Project

Project Type: DAM

Project Description: Existing hydroelectric Project (FERC No. 2362)

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/47.23827226645871N93.56422213487181W>



Counties: Itasca, MN

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Canada Lynx <i>Lynx canadensis</i> Population: Wherever Found in Contiguous U.S. There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3652	Threatened
Gray Wolf <i>Canis lupus</i> Population: MN There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4488	Threatened
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birds and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Bittern <i>Botaurus lentiginosus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/6582	Breeds Apr 1 to Aug 31
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31

NAME	BREEDING SEASON
Black Tern <i>Chlidonias niger</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/3093	Breeds May 15 to Aug 20
Bobolink <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler <i>Cardellina canadensis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Connecticut Warbler <i>Oporornis agilis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 15 to Aug 10
Evening Grosbeak <i>Coccothraustes vespertinus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Aug 10
Golden-winged Warbler <i>Vermivora chrysoptera</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Harris's Sparrow <i>Zonotrichia querula</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Jul 20

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ “Proper Interpretation and Use of Your Migratory Bird Report” before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week

months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

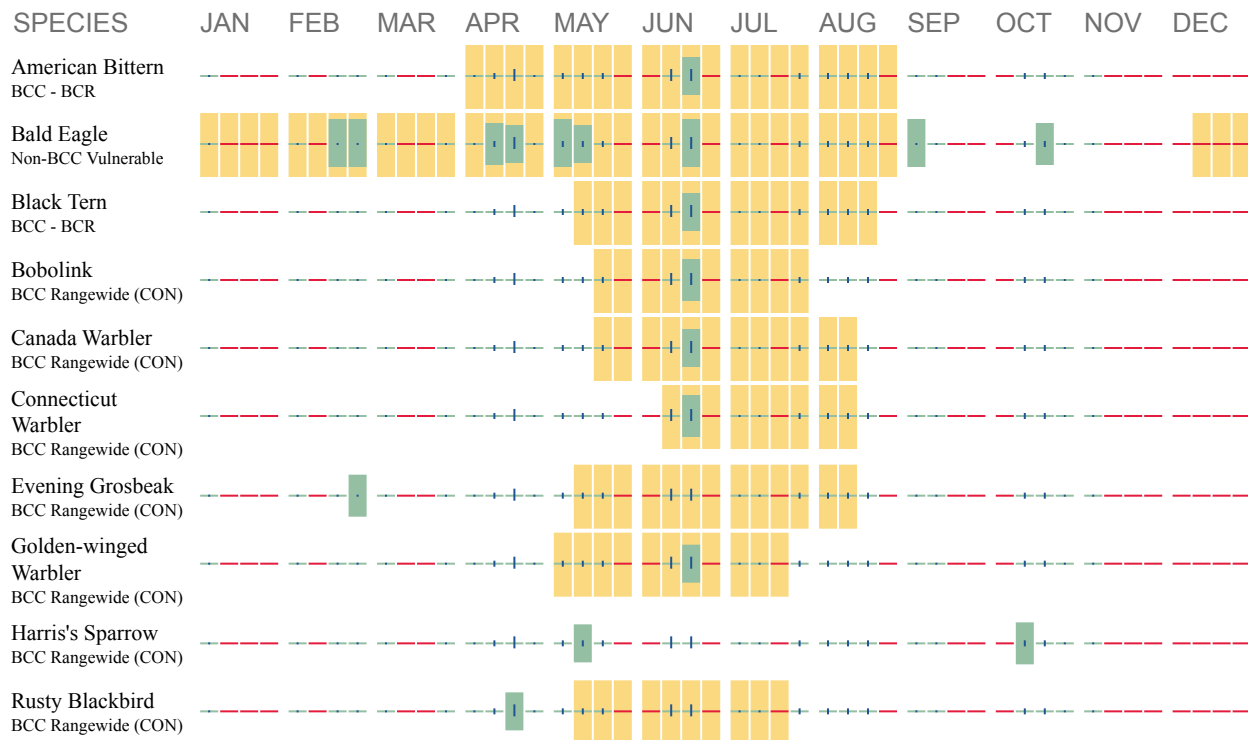
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
 2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
-

3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell

me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

MacVane, Kelly

From: Nora Rosemore (MP) <NRosemore@mnpower.com>
Sent: Friday, July 27, 2018 4:28 PM
To: Cohn, Charlotte W (DNR)
Cc: Gregory Prom (MP); Malkin, Devin; MacVane, Kelly; David Chura (MP)
Subject: Request for threatened and endangered species information
Attachments: 20180727 GR and PR DCR RTE Request.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Charlotte,

Minnesota Power plans to relicense the Grand Rapids Hydroelectric Project No. 2362 and Prairie River Hydroelectric Project No. 2361 using the Integrated Licensing Process (ILP). Both licenses expire on December 31, 2023; therefore, the notice of intent (NOI) and a Pre-Application Document (PAD) are due to the Federal Energy Regulatory Commission (FERC) by December 31, 2018.

Attached is a letter requesting information on threatened and endangered species within the vicinity of the Grand Rapids Project and Prairie River Project. This information will be used to prepare the PAD. A hard copy of the attached letter will follow.

Enjoy your weekend,

Nora

*Nora Rosemore
Hydro Operations Superintendent
Minnesota Power
(218) 725-2101*

July 27, 2018

Charlotte W. Cohn, Hydropower Projects Planner
Minnesota Department of Natural Resources
500 Lafayette Road
Eco. Resources – Box 25
Saint Paul, MN 55155-4020

**Subject: Grand Rapids Hydroelectric Project (FERC No. 2362) and Prairie River
Hydroelectric Project (FERC No. 2361)
Request for Threatened and Endangered Species Information**

Dear Ms. Cohn,

ALLETE, Inc. (d.b.a. Minnesota Power) is gathering information in support of the Pre-Application Document (PAD) for the upcoming Federal Energy Regulatory Commission (FERC) relicensing of the Grand Rapids Hydroelectric Project (FERC No. 2362) and Prairie River Hydroelectric Project (FERC No. 2361). In support of this process, Minnesota Power is requesting information regarding the following within the area of the Projects:

- State-listed threatened or endangered species;
- Species proposed for listing as threatened or endangered, or species of concern;
- Designated or proposed critical habitat; and
- Candidate species.

The Grand Rapids Project is a 2.1 megawatt (MW), run-of-river (ROR) facility located on the Mississippi River in Grand Rapids, Minnesota, in Itasca County. The Prairie River Project is a 1.1 MW, ROR facility located on the Prairie River near Grand Rapids, Minnesota, in Itasca County. The attached map shows the area of interest for which the information is being requested and the general location of the facilities.

It is our intent to include the results of this information request in the PAD. Therefore, we respectfully request a response to this request within 30 days of the date of this letter. If you have any questions or need additional information regarding these Projects or their location, please feel free to contact me at (218) 725-2101 or nrosemore@mnpower.com.

Thank you for your assistance with this request.

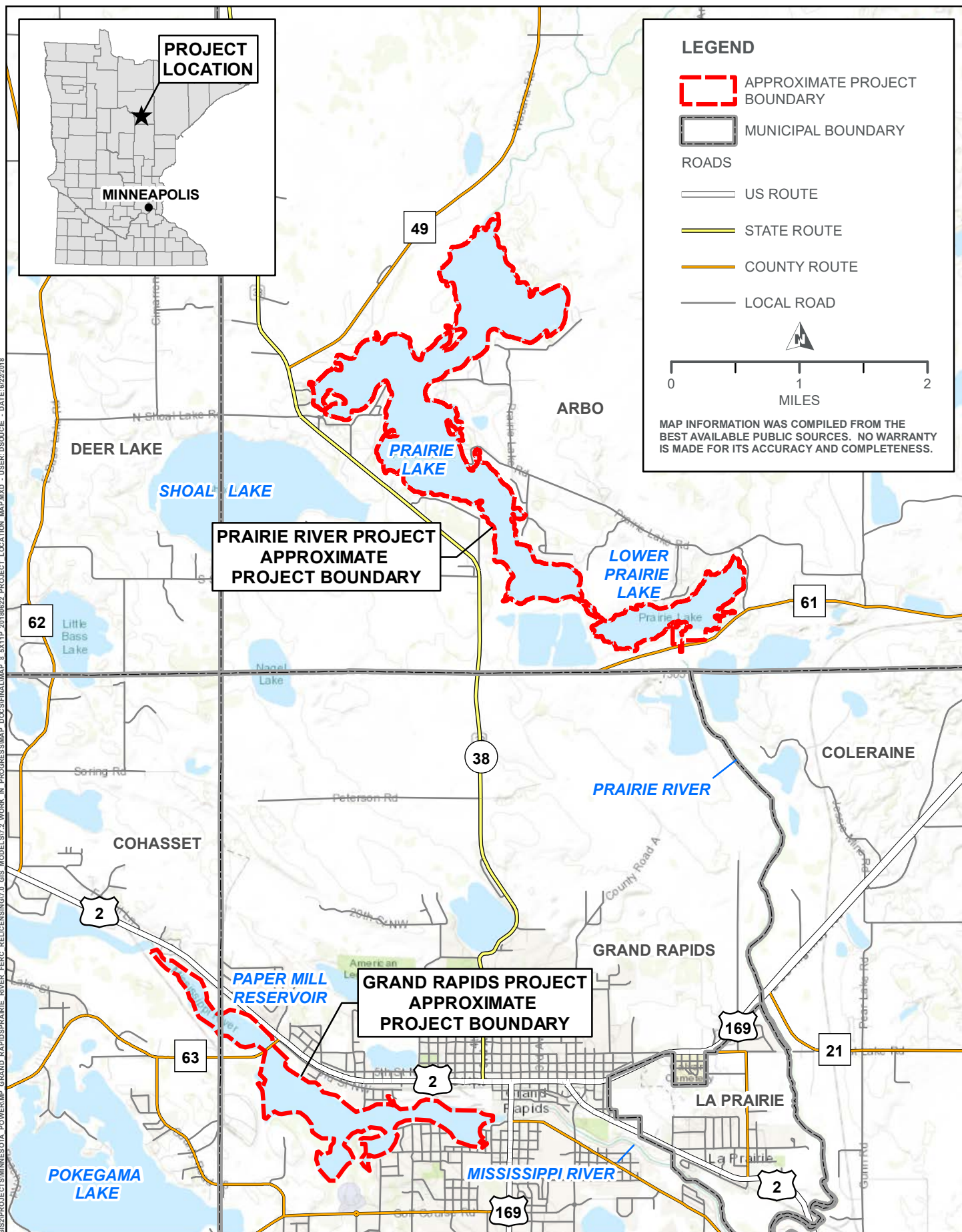
Sincerely,



Nora Rosemore
Hydro Operations Superintendent

Attachment

PATH: \\P:\WE\INFO\GIS\PROJECTS\MINNESOTA_POWER\MP GRAND RAPIDS\PRRAIE RIVER_FERC_RELICENSING\GIS MODEL\2 WORK IN PROGRESS\MAP DOCS\FINAL\MAP 8 5X11P 20180622 PROJECT LOCATION MAP.MXD - USER: DSOUCE - DATE: 6/22/2018



PROJECT LOCATION MAP PRAIRIE RIVER & GRAND RAPIDS HYDROELECTRIC PROJECTS

PRAIRIE RIVER (FERC NO. 2361) & GRAND RAPIDS (FERC NO. 2362)

JUNE 2018

Doody, Andrew

From: Nora Rosemore (MP) <NRosemore@mnpower.com>
Sent: Friday, July 27, 2018 4:40 PM
To: 'Amber.Westerbur@state.mn.us'
Cc: Cohn, Charlotte W (DNR); Malkin, Devin; MacVane, Kelly; Gregory Prom (MP); David Chura (MP)
Subject: Coastal Zone Consistency Determination
Attachments: 20180727 PR and GR CZMA Determination Request.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Westerbur,

Minnesota Power plans to relicense the Grand Rapids Hydroelectric Project No. 2362 and Prairie River Hydroelectric Project No. 2361 using the Integrated Licensing Process (ILP). Both licenses expire on December 31, 2023; therefore, the notice of intent (NOI) and a Pre-Application Document (PAD) are due to the Federal Energy Regulatory Commission (FERC) by December 31, 2018.

Attached is a letter requesting a determination from your office within 30 days regarding the applicability of the State's Coastal Zone Policies to these Projects. The results of this determination will be included in the PAD. A hard copy of the attached letter will follow.

Enjoy your weekend,

Nora Rosemore

*Nora Rosemore
Hydro Operations Superintendent
Minnesota Power
(218) 725-2101*



July 27, 2018

Amber Westerbur, Program Manager
Minnesota Department of Natural Resources
Minnesota Lake Superior Coastal Program
1568 Hwy 2
Two Harbors, Minnesota 55616

**Subject: Grand Rapids Hydroelectric Project (FERC No. 2362) and Prairie River
Hydroelectric Project (FERC No. 2361)
Coastal Zone Consistency Determination**

Dear Ms. Westerbur,

ALLETE, Inc. (d.b.a. Minnesota Power) is gathering information in support of the Pre-Application Document (PAD) for the upcoming Federal Energy Regulatory Commission (FERC) relicensing of the Grand Rapids Hydroelectric Project (FERC No. 2362) and Prairie River Hydroelectric Project (FERC No. 2361).

Consistent with this effort, Minnesota Power is requesting a determination from your office regarding the applicability of the State's Coastal Zone Policies to the Grand Rapids Project and Prairie River Project, which are located on the Mississippi River and Prairie River, respectively. Based on a review of applicable information, we do not believe that the Projects are located within the State's Coastal Zone and are requesting confirmation of this determination from your office. In support of this confirmation, we have included maps indicating the location of these facilities.

It is our intent to include the results of the determination in the PAD. Therefore, we respectfully request a response to this determination within 30 days of the date of this letter. If you have any questions or need additional information regarding these Projects or their location, please feel free to contact me at (218) 725-2101 or nrosemore@mnpower.com.

Thank you for your assistance with this request.

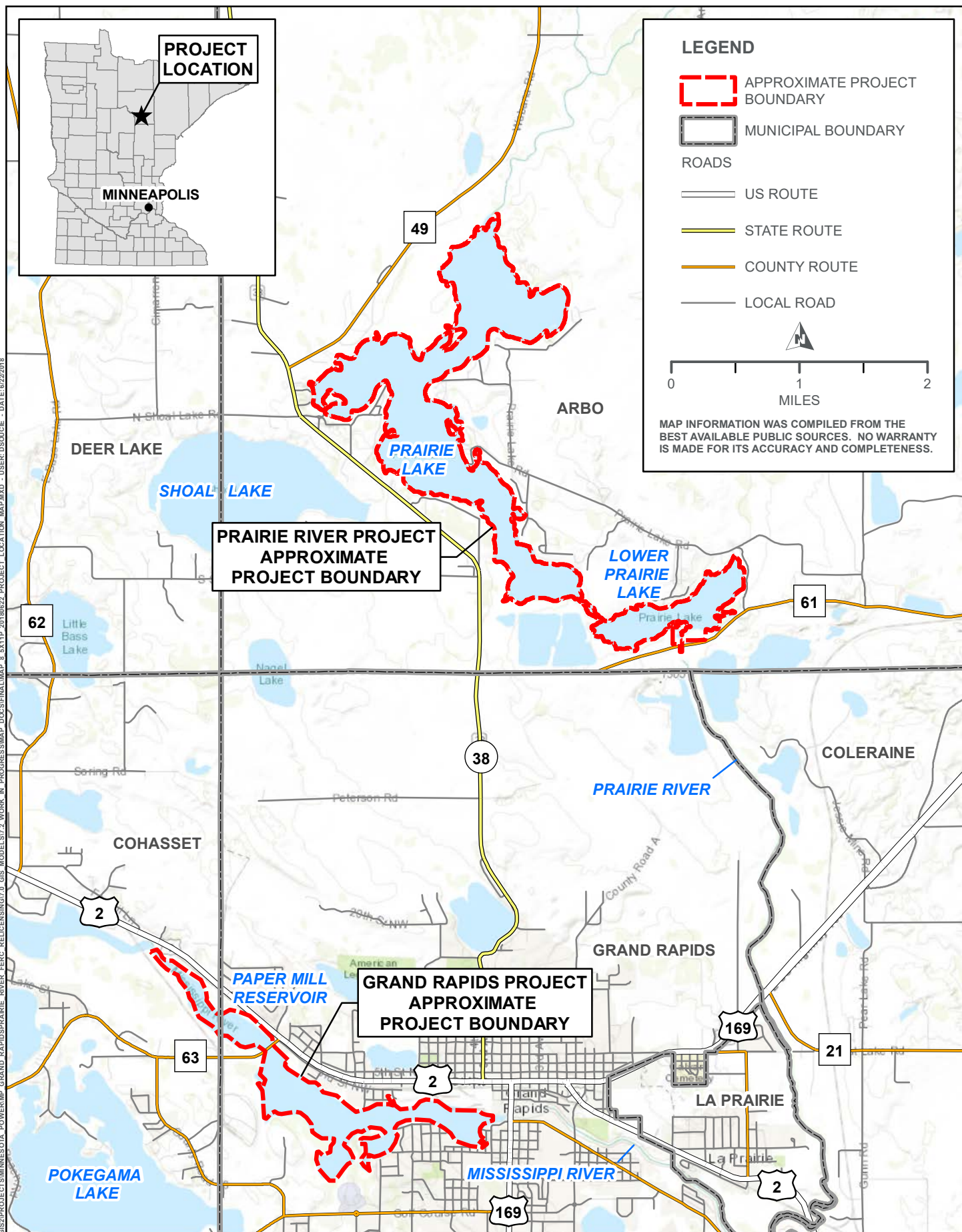
Sincerely,

Nora Rosemore
Hydro Operations Superintendent

Attachment

cc: Charlotte Cohn, Minnesota Department of Natural Resources

PATH: \\P:\WE\INFO\GIS\PROJECTS\MINNESOTA POWER\MP GRAND RAPIDS\PRRAIE RIVER_FERC_RELICENSING\GIS MODEL\2 WORK IN PROGRESS\MAP DOCS\FINAL\MAP 8 5X11P 20180622 PROJECT LOCATION MAP.MXD - USER: DSOUCE - DATE: 6/22/2018



PROJECT LOCATION MAP PRAIRIE RIVER & GRAND RAPIDS HYDROELECTRIC PROJECTS

PRAIRIE RIVER (FERC NO. 2361) & GRAND RAPIDS (FERC NO. 2362)

JUNE 2018

Doody, Andrew

Subject: RE: Request for information, MN Power Hydro License

From: Anderson, Jesse (MPCA) [<mailto:jesse.anderson@state.mn.us>]

Sent: Monday, July 30, 2018 9:13 AM

To: Nora Rosemore (MP) <NRosemore@mnpower.com>

Cc: Bosch, Anna (MPCA) <anna.bosch@state.mn.us>

Subject: RE: Request for information, MN Power Hydro License

[ALERT – External Email – Handle Accordingly]

Hi Nora, the MPCA has a lot of environmental information on the Mississippi River- Grand Rapids and Prairie River watersheds.

Please see the website below for links to the Watershed's detailed Monitoring and Assessment Report and the Restoration and Projection strategy documents.

<https://www.pca.state.mn.us/water/watersheds/mississippi-river-grand-rapids>

The MPCA's watershed project manager for this area is Anna Bosch, out of our Brainerd office. Please keep her and I up to date on Minnesota Power's hydro licensing process. Thanks.

Jesse Anderson
Research Scientist
Water Quality Monitoring Unit
Minnesota Pollution Control Agency
525 S. Lake Ave., Suite 400
Duluth MN, 55802
(218)-302-6621
800-657-3864

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From: Nora Rosemore (MP) <NRosemore@mnpower.com>

Sent: Friday, July 27, 2018 3:41 PM

To: Jaschke, John (BWSR) <john.jaschke@state.mn.us>; Chisholm, Ian M (DNR) <ian.chisholm@state.mn.us>; Cohn, Charlotte W (DNR) <charlotte.cohn@state.mn.us>; Pereira, Don (DNR) <don.pereira@state.mn.us>; Lunz, Guy J (DNR) <guy.lunz@state.mn.us>; Stewart, Nancy (DNR) <nancy.stewart@state.mn.us>; Dodds, Bryan (DOT) <bryan.dodds@state.mn.us>; 'thorleif@umn.edu' <thorleif@umn.edu>; Beimers, Sarah (ADM) <sarah.beimers@state.mn.us>; 'rayna.churchill@state.mn.us' <rayna.churchill@state.mn.us>; Brist, Jim (MPCA) <jim.brist@state.mn.us>; Wilde, William (MPCA) <william.wilde@state.mn.us>; Kuskie, Melissa (MPCA) <melissa.kuskie@state.mn.us>; Anderson, Jesse (MPCA) <jesse.anderson@state.mn.us>; Wolf, Dan (PUC) <dan.wolf@state.mn.us>; 'Nanette.m.bischoff@usace.army.mil' <Nanette.m.bischoff@usace.army.mil>; 'timothy.lapointe@bia.gov' <timothy.lapointe@bia.gov>; 'Nick_Utrup@fws.gov' <Nick_Utrup@fws.gov>; 'Peter_Fasbender@fws.gov' <Peter_Fasbender@fws.gov>; 'nicholas_chevance@nps.gov'

<nicholas_chevance@nps.gov>; 'randy_thoreson@nps.gov' <randy_thoreson@nps.gov>; 'ysrayna2018@gmail.com' <ysrayna2018@gmail.com>; 'blatady@boisforte-nsn.gov' <blatady@boisforte-nsn.gov>; 'cchavers@boisforte-nsn.gov' <cchavers@boisforte-nsn.gov>; 'vrichey@c-a-tribes.org' <vrichey@c-a-tribes.org>; 'ehamilton@c-a-tribes.org' <ehamilton@c-a-tribes.org>; 'msutton@c-a-tribes.org' <msutton@c-a-tribes.org>; 'kevindupuis@fdlrez.com' <kevindupuis@fdlrez.com>; 'JillHoppe@fdlrez.com' <JillHoppe@fdlrez.com>; 'reggiedefoe@fdlrez.com' <reggiedefoe@fdlrez.com>; 'tomhowes@fdlrez.com' <tomhowes@fdlrez.com>; 'andy.werk@ftbelknap.org' <andy.werk@ftbelknap.org>; 'mblackwolf@ftbelknap.org' <mblackwolf@ftbelknap.org>; 'Norman@grandportage.com' <Norman@grandportage.com>; 'maryanng@grandportage.com' <maryanng@grandportage.com>; 'ldfthpo@ldftribe.com' <ldfthpo@ldftribe.com>; 'amy.burnette@llojibwe.org' <amy.burnette@llojibwe.org>; 'faron.jackson@llojibwe.org' <faron.jackson@llojibwe.org>; 'dgrignon@mitw.org' <dgrignon@mitw.org>; 'natalie.weyaus@millelacsband.com' <natalie.weyaus@millelacsband.com>; 'kade.ferris@redlakenation.org' <kade.ferris@redlakenation.org>; 'dseki@redlakenation.org' <dseki@redlakenation.org>; 'THPO@uppersiouxcommunity-nsn.gov' <THPO@uppersiouxcommunity-nsn.gov>; 'jaime.arsenault@whiteearth.com' <jaime.arsenault@whiteearth.com>; 'mayoradams@cityofgrandrapidsmn.com' <mayoradams@cityofgrandrapidsmn.com>; 'communitydev@cityofgrandrapids.com' <communitydev@cityofgrandrapids.com>; 'communitydev@cityofgrandrapids.com' <communitydev@cityofgrandrapids.com>; 'engineering@cityofgrandrapidsmn.com' <engineering@cityofgrandrapidsmn.com>; 'sara.thompson@co.itasca.mn.us' <sara.thompson@co.itasca.mn.us>; 'brett.skyles@co.itasca.mn.us' <brett.skyles@co.itasca.mn.us>; 'mark@americanwhitewater.org' <mark@americanwhitewater.org>; 'ichs@paulbunyan.net' <ichs@paulbunyan.net>
Cc: Malkin, Devin <Devin.Malkin@hdrinc.com>; MacVane, Kelly <Kelly.MacVane@hdrinc.com>; Gregory Prom (MP) <gprom@mnpower.com>; David Chura (MP) <dchura@mnpower.com>
Subject: Request for information

Dear Potential Stakeholders:

Minnesota Power plans to relicense the Grand Rapids Hydroelectric Project No. 2362 and Prairie River Hydroelectric Project No. 2361 using the Integrated Licensing Process (ILP). Both licenses expire on December 31, 2023; therefore, the notice of intent (NOI) and a Pre-Application Document (PAD) are due to the Federal Energy Regulatory Commission (FERC) by December 31, 2018.

Attached is a letter requesting any existing, relevant, and reasonably available information that describes the existing environment within the vicinity of the Grand Rapids Project and Prairie River Project. The information will be used in the development of the PAD. Any potential relevant information, or questions, can be sent to me at nrosemore@mnpower.com. A hard copy of the attached letter will follow.

Enjoy your day,

Nora Rosemore
Hydro Operations Superintendent
Minnesota Power
(218) 725-2101

MacVane, Kelly

From: Nick Utrup <nick_utrup@fws.gov>
Sent: Monday, July 30, 2018 7:48 AM
To: Nora Rosemore (MP)
Cc: Peter Fasbender; Malkin, Devin; MacVane, Kelly; gprom@mnpower.com; David Chura (MP)
Subject: Re: [EXTERNAL] Request for threatened and endangered species information

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Nora,

We reviewed your IPaC results and concur that the list is accurate for the identified project areas. Please let me know if you have any further questions as we go through the license process.

Thanks,

Nick

Nick Utrup
U.S. Fish and Wildlife Service
Minnesota/Wisconsin Field Office
4101 American Boulevard East
Bloomington, MN 55425

Office: (952) 252-0092 Ext. 204
FAX: (952) 646-2873
Email: Nick_Utrup@fws.gov

On Fri, Jul 27, 2018 at 3:33 PM Nora Rosemore (MP) <NRosemore@mnpower.com> wrote:

Peter and Nick,

Minnesota Power plans to relicense the Grand Rapids Hydroelectric Project No. 2362 and Prairie River Hydroelectric Project No. 2361 using the Integrated Licensing Process (ILP). Both licenses expire on December 31, 2023; therefore, the notice of intent (NOI) and a Pre-Application Document (PAD) are due to the Federal Energy Regulatory Commission (FERC) by December 31, 2018.

Attached is a letter requesting your concurrence that the information we received using the USFWS IPaC system is accurate. The information will be used to prepare the PAD. A hard copy of the attached letter will follow.

Enjoy your weekend,

Nora

Nora Rosemore

Hydro Operations Superintendent

Minnesota Power

(218) 725-2101

MacVane, Kelly

From: Thoreson, Randall <randy_thoreson@nps.gov>
Sent: Thursday, August 2, 2018 4:12 PM
To: Nora Rosemore (MP)
Cc: john.jaschke@state.mn.us; Ian.Chisholm@state.mn.us; Charlotte.Cohn@state.mn.us; don.pereira@state.mn.us; guy.lunz@state.mn.us; nancy.stewart@state.mn.us; bryan.dodds@state.mn.us; thorleif@umn.edu; Sarah.Beimers@state.mn.us; rayna.churchill@state.mn.us; jim.brist@state.mn.us; william.wilde@state.mn.us; Melissa.Kuskie@state.mn.us; Jesse.Anderson@state.mn.us; Dan.Wolf@state.mn.us; Nanette.m.bischoff@usace.army.mil; timothy.lapointe@bia.gov; Nick_Utrup@fws.gov; Peter_Fasbender@fws.gov; nicholas_chevance@nps.gov; ysrayna2018@gmail.com; blatady@boisforte-nsn.gov; cchavers@boisforte-nsn.gov; vrichey@c-a-tribes.org; ehamilton@c-a-tribes.org; msutton@c-a-tribes.org; kevindupuis@fdlrez.com; JillHoppe@fdlrez.com; reggiedefoe@fdlrez.com; tomhowes@fdlrez.com; andy.werk@ftbelknap.org; mblackwolf@ftbelknap.org; Norman@grandportage.com; maryanng@grandportage.com; ldftpho@ldftribe.com; amy.burnette@llojibwe.org; faron.jackson@llojibwe.org; dgrignon@mitw.org; natalie.weyaus@millelacsband.com; kade.ferris@redlakenation.org; dseki@redlakenation.org; THPO@upper Sioux community-nsn.gov; jaime.arsenault@whiteearth.com; mayoradams@cityofgrandrapidsmn.com; communitydev@cityofgrandrapids.com; engineering@cityofgrandrapidsmn.com; sara.thompson@co.itasca.mn.us; brett.skyles@co.itasca.mn.us; mark@americanwhitewater.org; ichs@paulbunyan.net; Malkin, Devin; MacVane, Kelly; Gregory Prom (MP); David Chura (MP)
Subject: Re: [EXTERNAL] Request for information
Follow Up Flag: Follow up
Flag Status: Flagged

Yes, the NPS is involved in the review and FERC process of Hydro Projects.

To be specific, the following paragraph and Authority outline the NPS review authorities. I have been involved in Hydro reviews for many years and the main areas NPS is interested in include primarily Recreation with associated reviews and input on Natural Resource, Land Use and Aesthetics.

The NPS should be consulted on all hydrokinetic projects, not just those with the potential to affect units of the National Park System. Regulations created pursuant to the Federal Power Act, as amended, require consultation with the NPS and other resource agencies (18 C.F.R. § 4.38(a) and 18 C.F.R. § 5.1(d)). The NPS provides technical assistance about outdoor recreation resources pursuant to the Outdoor Recreation Act of 1963 (16 U.S.C. § 4601-1), the NPS Organic Act (16 U.S.C. § 1 et seq.), the Wild and Scenic Rivers Act of 1968 (Public Law 90-542), and the National Trails System Act of 1968 (16 U.S.C. § 1246(a)).

- Randy Thoreson
MN NPS/RTCA and Hydro

On Fri, Jul 27, 2018 at 3:41 PM, Nora Rosemore (MP) <NRosemore@mnpower.com> wrote:

Dear Potential Stakeholders:

Minnesota Power plans to relicense the Grand Rapids Hydroelectric Project No. 2362 and Prairie River Hydroelectric Project No. 2361 using the Integrated Licensing Process (ILP). Both licenses expire on December 31, 2023; therefore, the notice of intent (NOI) and a Pre-Application Document (PAD) are due to the Federal Energy Regulatory Commission (FERC) by December 31, 2018.

Attached is a letter requesting any existing, relevant, and reasonably available information that describes the existing environment within the vicinity of the Grand Rapids Project and Prairie River Project. The information will be used in the development of the PAD. Any potential relevant information, or questions, can be sent to me at nrosemore@mnpower.com. A hard copy of the attached letter will follow.

Enjoy your day,

Nora Rosemore

Hydro Operations Superintendent

Minnesota Power

(218) 725-2101

--

Randy Thoreson

Outdoor Recreation Planner

National Park Service

Rivers, Trails & Conservation Assistance Program (RTCA) & Hydro

phone 651-293-8450 fax 651-290-3815

randy_thoreson@nps.gov



Doody, Andrew

Subject: RE: Request for information

From: Beimers, Sarah (ADM) [<mailto:sarah.beimers@state.mn.us>]
Sent: Wednesday, August 8, 2018 10:58 AM
To: Nora Rosemore (MP) <NRosemore@mnpower.com>
Subject: RE: Request for information

[ALERT – External Email – Handle Accordingly]

Nora,

Have you submitted this request to our office in hard copy per our usual procedure? Unfortunately, we do not have the capabilities to accept electronic review requests submittals. Please review the information and procedures on [our website](#) as they pertain to SHPO review requests.

Thank you,
Sarah



Sarah Beimers | Environmental Review Program Manager
State Historic Preservation Office
203 Administration Building
50 Sherburne Avenue
Saint Paul MN 55155
(651) 201-3290
sarah.beimers@state.mn.us

From: Nora Rosemore (MP) <NRosemore@mnpower.com>
Sent: Friday, July 27, 2018 3:41 PM
To: Jaschke, John (BWSR) <john.jaschke@state.mn.us>; Chisholm, Ian M (DNR) <ian.chisholm@state.mn.us>; Cohn, Charlotte W (DNR) <charlotte.cohn@state.mn.us>; Pereira, Don (DNR) <don.pereira@state.mn.us>; Lunz, Guy J (DNR) <guy.lunz@state.mn.us>; Stewart, Nancy (DNR) <nancy.stewart@state.mn.us>; Dodds, Bryan (DOT) <bryan.dodds@state.mn.us>; 'thorleif@umn.edu' <thorleif@umn.edu>; Beimers, Sarah (ADM) <sarah.beimers@state.mn.us>; 'rayna.churchill@state.mn.us' <rayna.churchill@state.mn.us>; Brist, Jim (MPCA) <jim.brist@state.mn.us>; Wilde, William (MPCA) <william.wilde@state.mn.us>; Kuskie, Melissa (MPCA) <melissa.kuskie@state.mn.us>; Anderson, Jesse (MPCA) <jesse.anderson@state.mn.us>; Wolf, Dan (PUC) <dan.wolf@state.mn.us>; 'Nanette.m.bischoff@usace.army.mil' <Nanette.m.bischoff@usace.army.mil>; 'timothy.lapointe@bia.gov' <timothy.lapointe@bia.gov>; 'Nick_Utrup@fws.gov' <Nick_Utrup@fws.gov>; 'Peter_Fasbender@fws.gov' <Peter_Fasbender@fws.gov>; 'nicholas_chevance@nps.gov' <nicholas_chevance@nps.gov>; 'randy_thoreson@nps.gov' <randy_thoreson@nps.gov>; 'ysrayna2018@gmail.com' <ysrayna2018@gmail.com>; 'blatady@boisforte-nsn.gov' <blatady@boisforte-nsn.gov>; 'cchavers@boisforte-nsn.gov' <cchavers@boisforte-nsn.gov>; 'vrichy@c-a-tribes.org' <vrichy@c-a-tribes.org>; 'ehamilton@c-a-tribes.org' <ehamilton@c-a-tribes.org>; 'msutton@c-a-tribes.org' <msutton@c-a-tribes.org>; 'kevindupuis@fdlrez.com' <kevindupuis@fdlrez.com>; 'JillHoppe@fdlrez.com' <JillHoppe@fdlrez.com>; 'reggiedefoe@fdlrez.com' <reggiedefoe@fdlrez.com>; 'tomhowes@fdlrez.com' <tomhowes@fdlrez.com>; 'andy.werk@ftbelknap.org' <andy.werk@ftbelknap.org>; 'mblackwolf@ftbelknap.org' <mblackwolf@ftbelknap.org>; 'Norman@grandportage.com'

<Norman@grandportage.com>; 'maryanng@grandportage.com' <maryanng@grandportage.com>;
'ldfthpo@ldftribe.com' <ldfthpo@ldftribe.com>; 'amy.burnette@llojibwe.org' <amy.burnette@llojibwe.org>;
'faron.jackson@llojibwe.org' <faron.jackson@llojibwe.org>; 'dgrignon@mitw.org' <dgrignon@mitw.org>;
'natalie.weyaus@millelacsband.com' <natalie.weyaus@millelacsband.com>; 'kade.ferris@redlakenation.org'
<kade.ferris@redlakenation.org>; 'dseki@redlakenation.org' <dseki@redlakenation.org>;
'THPO@uppersiouxcommunity-nsn.gov' <THPO@uppersiouxcommunity-nsn.gov>; 'jaime.arsenault@whiteearth.com'
<jaime.arsenault@whiteearth.com>; 'mayoradams@cityofgrandrapidsmn.com'
<mayoradams@cityofgrandrapidsmn.com>; 'communitydev@cityofgrandrapids.com'
<communitydev@cityofgrandrapids.com>; 'communitydev@cityofgrandrapids.com'
<communitydev@cityofgrandrapids.com>; 'engineering@cityofgrandrapidsmn.com'
<engineering@cityofgrandrapidsmn.com>; 'sara.thompson@co.itasca.mn.us' <sara.thompson@co.itasca.mn.us>;
'brett.skyles@co.itasca.mn.us' <brett.skyles@co.itasca.mn.us>; 'mark@americanwhitewater.org'
<mark@americanwhitewater.org>; 'ichs@paulbunyan.net' <ichs@paulbunyan.net>
Cc: Malkin, Devin <Devin.Malkin@hdrinc.com>; MacVane, Kelly <Kelly.MacVane@hdrinc.com>; Gregory Prom (MP)
<gprom@mnpower.com>; David Chura (MP) <dchura@mnpower.com>

Subject: Request for information

Dear Potential Stakeholders:

Minnesota Power plans to relicense the Grand Rapids Hydroelectric Project No. 2362 and Prairie River Hydroelectric Project No. 2361 using the Integrated Licensing Process (ILP). Both licenses expire on December 31, 2023; therefore, the notice of intent (NOI) and a Pre-Application Document (PAD) are due to the Federal Energy Regulatory Commission (FERC) by December 31, 2018.

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Enjoy your day,

Nora Rosemore
Hydro Operations Superintendent
Minnesota Power
(218) 725-2101

Doody, Andrew

From: MacVane, Kelly
Sent: Thursday, August 09, 2018 11:24 AM
To: Doody, Andrew
Subject: FW: Request for information RE: Grand Rapids P-2362 and Prairie River P-2361 Hydroelectric Relicensing Projects
Attachments: Grand Rapids and Prairie River map.pdf; 401 Water Quality Certification Blandin Hydro P-2362 19921211.pdf; Prairie_River_Hydroelectric_Project_2361_DO Temp Table 2.pdf

Kelly MacVane
D 207-239-3828 M 207-775-4495

hdrinc.com/follow-us

From: Gregory Prom (MP) [mailto:gprom@mnpower.com]
Sent: Thursday, August 9, 2018 11:15 AM
To: 'william.wilde@state.mn.us' <william.wilde@state.mn.us>
Cc: Nora Rosemore (MP) <NRosemore@mnpower.com>; Malkin, Devin <Devin.Malkin@hdrinc.com>; MacVane, Kelly <Kelly.MacVane@hdrinc.com>; Richard Fannin (MP) <rfannin@mnpower.com>
Subject: FW: Request for information RE: Grand Rapids P-2362 and Prairie River P-2361 Hydroelectric Relicensing Projects

Dear Mr. Wilde,

Based on our conversation on August 6, 2018 and the follow-up email request below, I have put together the requested information to some additional questions you had.

The draft PAD will be completed by December 31, 2018, and sent out to the stakeholders for comments under the FERC Integrated License Process (ILP).

Minnesota Power (MP) is not planning on making any modifications to the hydro generation capacity and therefore there are no anticipated operational changes that should impact dissolved oxygen (DO), temperature, or total suspended solids (TSS).

You requested documentation on the 401 water quality certifications for these Projects and an additional map showing both hydro's and their connectivity via the waterways can be provided. The attached map shows both the Blandin and Prairie Lake reservoirs along with the location of the Prairie River flowing into the Mississippi, downstream of the Grand Rapids Hydroelectric dam (southeast).

In 1990, Blandin performed DO and temperature sampling on the Blandin reservoir. In 1989 and 1990 DO and temperature measurements were also collected on the Prairie River reservoir. The Prairie River sampling information is available in the 1991 license application in the Environmental Assessment Exhibit E. I have attached a table with the DO and Temp readings from that report.

A 401 water quality certification was issued for Grand Rapids Hydroelectric Project on December 11, 1992. I have attached the 1992 MPCA letter to this email, explaining the 401 certification .

On December 10, 1990, Minnesota Power (MP) applied to the Minnesota Pollution Control Agency (MPCA) for a 401 water quality certification for the Prairie River Hydro Project. The MPCA did not act on the request within one year, and therefore the FERC waved the certification in Commission Order 533 (June 19, 1991). The 1993 order re-issuing the license for Prairie River describes it below.

WATER QUALITY CERTIFICATION

Minnesota Power applied to the Minnesota Pollution Control Agency (MPCA) for a water quality certification on December 10, 1990. On December 11, 1990, the MPCA received Minnesota Power's request. Since MPCA did not act on the request within one year from the effective date of Commission Order 533 (June 19, 1991), the certificate is deemed waived.

FERC has recently changed the default hydro license to a 40 year license. The final request from MP on the license request has not been determined, but it will be at least a 40 year license request.

The schedule for re-issuance of the project licenses is 2023. The final scheduled of studies are to be determined, but will follow the ILP scheduling timelines. The timelines will be presented in further detail following the PAD submittal and issuance of the FERC Scoping Document.

I hope this answers most of your initial questions as more information will be presented as the relicensing process proceeds. If you have any other questions please feel free to ask.

Sincerely,

Greg Prom

Environmental Compliance Specialist Senior
Minnesota Power/ALLETE
30 West Superior Street
Duluth, Minnesota 55802

Office: 218-355-3191
Cell: 218-461-6856
Email: gprom@allete.com



From: Wilde, William (MPCA) [[mailto:](#)]
Sent: Wednesday, August 8, 2018 3:41 PM
To: Gregory Prom (MP) <gprom@mnpower.com>
Subject: RE: Request for information RE: Grand Rapids P-2362 and Prairie River P-2361 Hydroelectric Relicensing Projects

[ALERT – External Email – Handle Accordingly]

Hi Greg,

To close the loop on our 8/6/2018 discussion see bullets below. Also, a few questions in yellow.

- As mentioned below, there will be two Notice of Intent (NOI) documents - one for the P-2361 and one for P-2362;
- Both NOI will be combined into one Pre-Application Document. Will the PAD be completed by December 31, 2018?
- MP will send MPCA more detailed map[s] that identify both hydroelectric dam locations and flow direction on the Mississippi River. Also, include more detailed locations of impaired waters and beneficial use impacted - relative to each Dam.
- MP said that this project is strictly for Relicensing of both P-2361 and P-2362 Hydroelectric generating dams/facilities. The relicense will not require an increase in capacity, new equipment, or any type of structural change or modification. There will be no flow increases. Estimated concentrations of total suspended solids (TSS) (sediment) will remain at current (or reduced?) levels. However, dissolved oxygen (DO) concentration may increase. Why, I did not catch MP explanation for both TSS and DO?
- If the project requires a USACE standard individual 404 Permit, it will also require a MPCA 401 certification. As part of the certification an Antidegradation Assessment will also be required. If needed, attached is the Anti-deg assessment. Note: the form is not required, however, the information on the form is.
- At this time, the USACE has not determined if the relicensing project will be permitted under an standard individual permit, LOP, RGP, NWP, or other vehicle.
- MP will research records for previous MPCA permits and certifications. Also, information from other agencies maybe helpful too.
- What year is the estimated license expiration date for both P-2361 and P-2362? Is this considered a 30, 40, 50 – year license?
- MP or FERC - When will a project timeline be completed? Also, the timeline must include the estimated date (month and year) for the MPCA 401 certification request?
- Required studies noted on the July 27,2018, letter will be completed during year 2019, 2020, and 2021 if necessary.
- Other Items?

MP = Minnesota Power

FERC = Federal Energy and Regulatory Commission

Please fill in any missed topics and let me know if you have any additional questions or concerns from the MPCA 401 Program.

Thanks,

Bill Wilde
Minnesota Pollution Control Agency
401 Program
520 Lafayette Road
St. Paul, Minnesota 55155
(651) 757-2825

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From: Gregory Prom (MP) <gprom@mnpower.com>

Sent: Friday, August 03, 2018 9:05 AM

To: Nora Rosemore (MP) <NRosemore@mnpower.com>; Wilde, William (MPCA) <william.wilde@state.mn.us>

Cc: Malkin, Devin (Devin.Malkin@hdrinc.com) <Devin.Malkin@hdrinc.com>; 'MacVane, Kelly' <Kelly.MacVane@hdrinc.com>; David Chura (MP) <dchura@mnpower.com>

Subject: RE: Request for information RE: Grand Rapids P-2362 and Prairie River P-2361 Hydroelectric Relicensing Projects

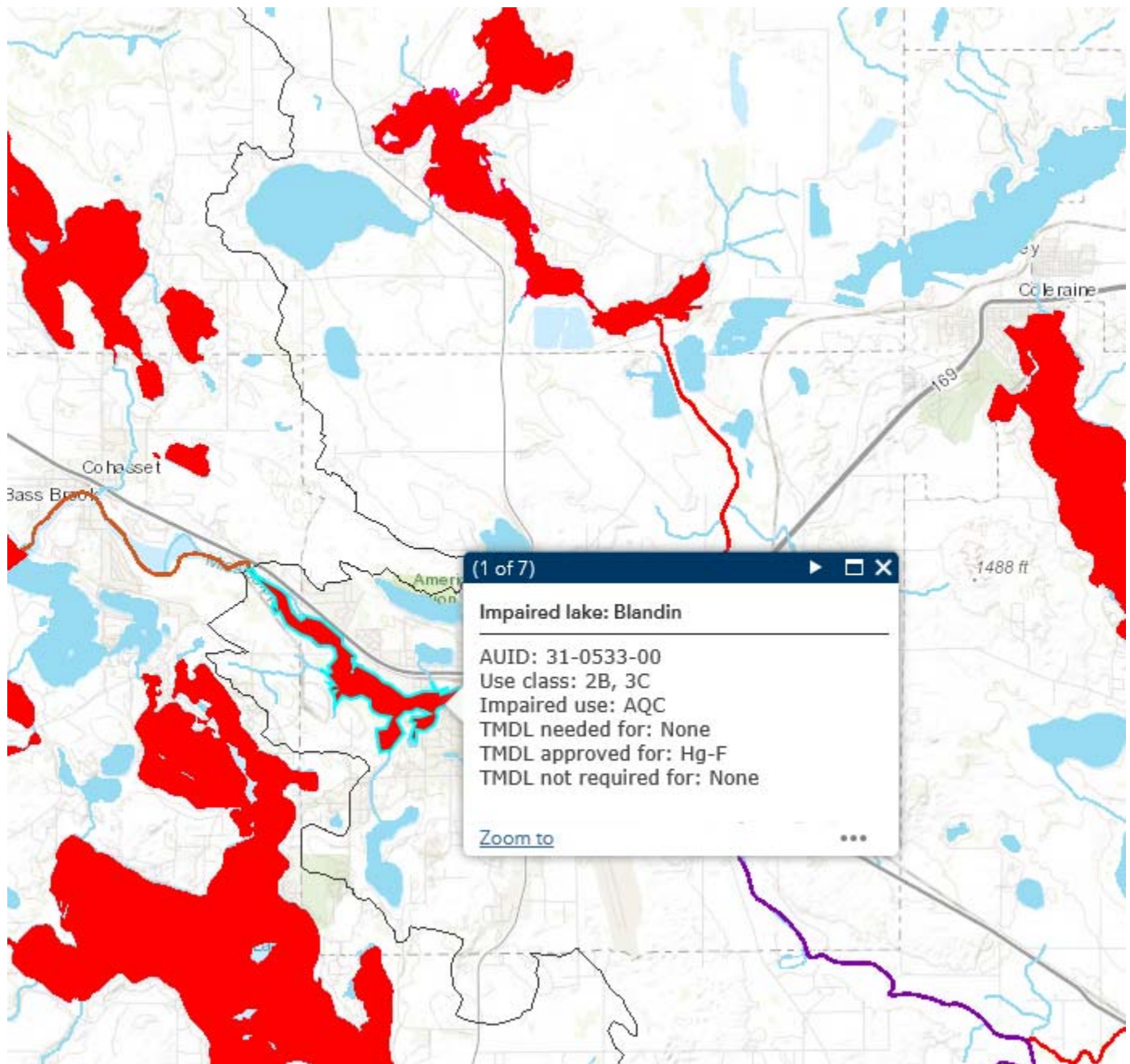
Dear Mr. Wilde,

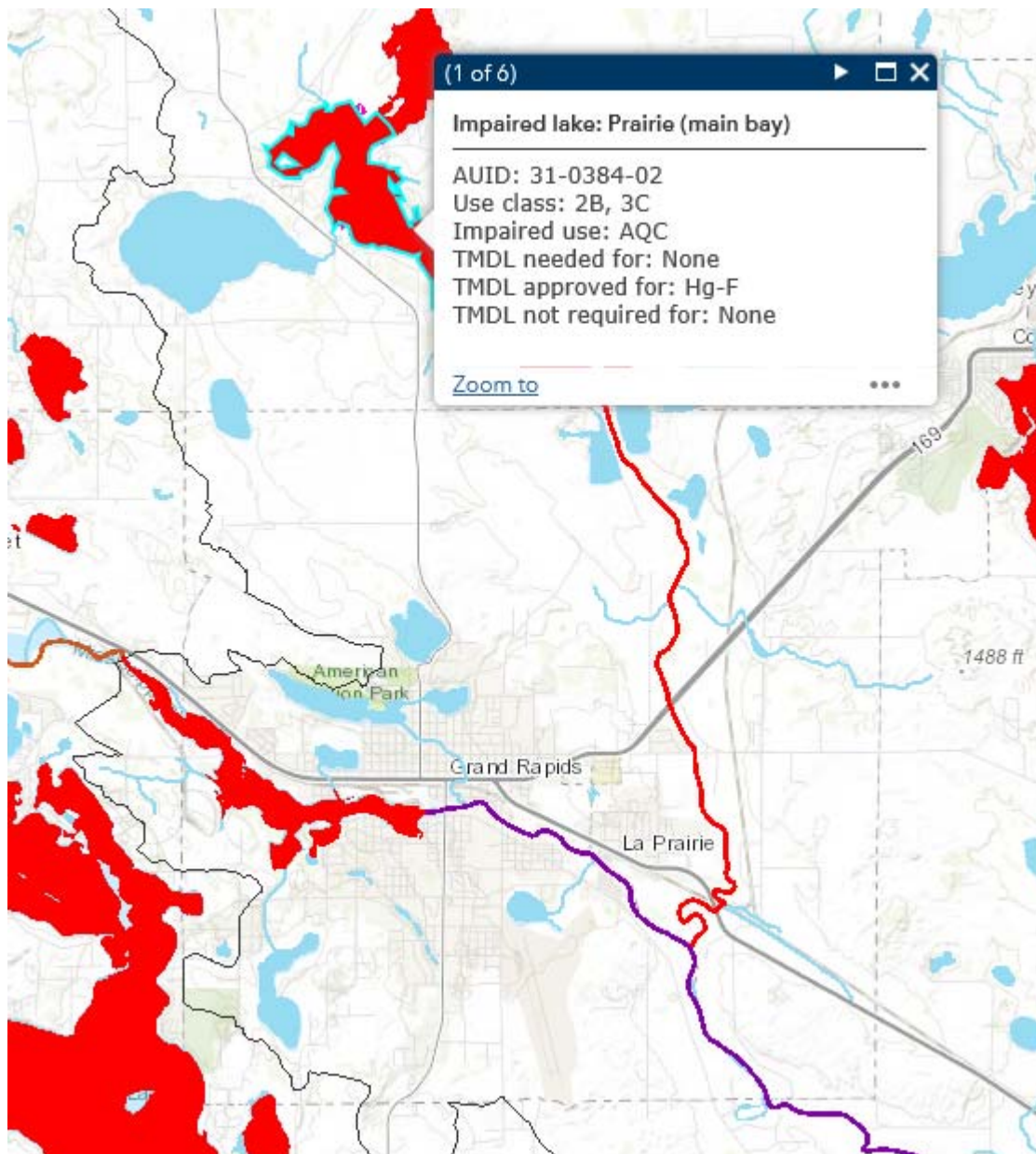
I am responding for Nora as she is out of the office this week.

To your question on if MP plans to file one PAD and NOI, Minnesota Power (MP) plans to file separate NOIs for each hydroelectric project but one combined PAD that will include both projects. The scoping document will be prepared by FERC. MP would prefer one scoping document to cover both projects but the final decision will come from FERC.

I have attached the maps that shows the Mississippi River at Blandin Reservoir and Prairie Lake Reservoir from the MPCA Impaired Waters website. As shown on the maps, the Prairie River flows south-southeast into the Mississippi. The Mississippi River flows east-southeast from the Grand Rapids Hydro. The Prairie River connects into the Mississippi River approximately 2.5 miles southeast of the Grand Rapids Dam.

The MPCA website for Impaired waters of the State list both the Blandin Reservoir and Prairie Lake reservoir as being impaired for consumption of fish due to mercury in fish tissue. Here are the maps from the website.





Thanks for the information regarding the 404 permit and 401 certification. The USACE is also included as a stakeholder in the relicensing process. If you have any new or updated 401 certification information that may be relevant to the relicensing effort, we would be happy to receive it.

Thanks for your response and we look forward to working together on these relicensing projects.

Sincerely,

Greg Prom

Environmental Compliance Specialist Senior
Minnesota Power/ALLETE
30 West Superior Street
Duluth, Minnesota 55802

Office: 218-355-3191

Cell: 218-461-6856
Email: gprom@allte.com



From: "Wilde, William (MPCA)" <william.wilde@state.mn.us>
Date: August 1, 2018 at 7:21:36 AM AKDT
To: "Nora Rosemore (MP)" <NRosemore@mnpower.com>
Subject: RE: Request for information RE: Grand Rapids P-2362 and Prairie River P-2361 Hydroelectric Relicensing Projects

[ALERT – External Email – Handle Accordingly]

Hello Nora:

This is a follow-up to the telephone message I left.

Will there be *one* Pre-Application Document and Notice of Intent for both P-2361 and P-2362? Will scoping documents and required studies also be under *one* application for both Project Numbers: 2361 & 2362?

Is there another Project Location Map that better identifies both the Prairie River Dam and Grands Rapids Dam locations? Also, a map to display where the Prairie River flows into the Mississippi River and arrow to show direction of flow for Mississippi.

In addition, are there any impaired waters of the state located within one mile of each Dam and specific reach of the rivers? If so what are the impairments and the beneficial use affected?

As you may already know, the 401 water quality certification program now includes an Antidegradation (anti-deg) Assessment, if the project requires an USACE individual 404 permit. However, if project falls under the USACE general permit (GP), nationwide permit (NWP), or letter of permission (LOP), no 401 certification and anti-deg are usually required.

Let me know if you need any information from the MPCA 401 program.

Thanks,

Bill Wilde
Minnesota Pollution Control Agency
401 Program
520 Lafayette Road
St. Paul, Minnesota 55155
(651) 757-2825

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From: Nora Rosemore (MP) <NRosemore@mnpower.com>

Sent: Friday, July 27, 2018 3:41 PM

To: Jaschke, John (BWSR) <john.jaschke@state.mn.us>; Chisholm, Ian M (DNR) <ian.chisholm@state.mn.us>; Cohn, Charlotte W (DNR) <charlotte.cohn@state.mn.us>; Pereira, Don (DNR) <don.pereira@state.mn.us>; Lunz, Guy J (DNR) <guy.lunz@state.mn.us>; Stewart, Nancy (DNR) <nancy.stewart@state.mn.us>; Dodds, Bryan (DOT) <bryan.dodds@state.mn.us>; 'thorleif@umn.edu' <thorleif@umn.edu>; Beimers, Sarah (ADM) <sarah.beimers@state.mn.us>; 'rayna.churchill@state.mn.us' <rayna.churchill@state.mn.us>; Brist, Jim (MPCA) <jim.brist@state.mn.us>; Wilde, William (MPCA) <william.wilde@state.mn.us>; Kuskie, Melissa (MPCA) <melissa.kuskie@state.mn.us>; Anderson, Jesse (MPCA) <jesse.anderson@state.mn.us>; Wolf, Dan (PUC) <dan.wolf@state.mn.us>; 'Nanette.m.bischoff@usace.army.mil' <Nanette.m.bischoff@usace.army.mil>; 'timothy.lapointe@bia.gov' <timothy.lapointe@bia.gov>; 'Nick Utrup@fws.gov' <Nick Utrup@fws.gov>; 'Peter Fasbender@fws.gov' <Peter Fasbender@fws.gov>; 'nicholas chevance@nps.gov' <nicholas chevance@nps.gov>; 'randy thoreson@nps.gov' <randy thoreson@nps.gov>; 'ysrayna2018@gmail.com' <ysrayna2018@gmail.com>; 'blatady@boisforte-nsn.gov' <blatady@boisforte-nsn.gov>; 'cchavers@boisforte-nsn.gov' <cchavers@boisforte-nsn.gov>; 'vrichey@c-a-tribes.org' <vrichey@c-a-tribes.org>; 'ehamilton@c-a-tribes.org' <ehamilton@c-a-tribes.org>; 'msutton@c-a-tribes.org' <msutton@c-a-tribes.org>; 'kevindupuis@fdlrez.com' <kevindupuis@fdlrez.com>; 'JillHoppe@fdlrez.com' <JillHoppe@fdlrez.com>; 'reggiedefoe@fdlrez.com' <reggiedefoe@fdlrez.com>; 'tomhowes@fdlrez.com' <tomhowes@fdlrez.com>; 'andy.werk@ftbelknap.org' <andy.werk@ftbelknap.org>; 'mblackwolf@ftbelknap.org' <mblackwolf@ftbelknap.org>; 'Norman@grandportage.com' <Norman@grandportage.com>; 'maryanng@grandportage.com' <maryanng@grandportage.com>; 'ldfthpo@ldftribe.com' <ldfthpo@ldftribe.com>; 'amy.burnette@llojibwe.org' <amy.burnette@llojibwe.org>; 'faron.jackson@llojibwe.org' <faron.jackson@llojibwe.org>; 'dgrignon@mitw.org' <dgrignon@mitw.org>; 'natalie.weyaus@millelacsband.com' <natalie.weyaus@millelacsband.com>; 'kade.ferris@redlakenation.org' <kade.ferris@redlakenation.org>; 'dseki@redlakenation.org' <dseki@redlakenation.org>; 'THPO@uppersiouxcommunity-nsn.gov' <THPO@uppersiouxcommunity-nsn.gov>; 'jaime.arsenault@whiteearth.com' <jaime.arsenault@whiteearth.com>; 'mayoradams@cityofgrandrapidsmn.com' <mayoradams@cityofgrandrapidsmn.com>; 'communitydev@cityofgrandrapids.com' <communitydev@cityofgrandrapids.com>; 'communitydev@cityofgrandrapids.com' <communitydev@cityofgrandrapids.com>; 'engineering@cityofgrandrapidsmn.com' <engineering@cityofgrandrapidsmn.com>; 'sara.thompson@co.itasca.mn.us' <sara.thompson@co.itasca.mn.us>; 'brett.skyles@co.itasca.mn.us' <brett.skyles@co.itasca.mn.us>; 'mark@americanwhitewater.org' <mark@americanwhitewater.org>; 'ichs@paulbunyan.net' <ichs@paulbunyan.net>

Cc: Malkin, Devin <Devin.Malkin@hdrinc.com>; MacVane, Kelly <Kelly.MacVane@hdrinc.com>; Gregory Prom (MP) <gprom@mnpower.com>; David Chura (MP) <dchura@mnpower.com>

Subject: Request for information

Dear Potential Stakeholders:

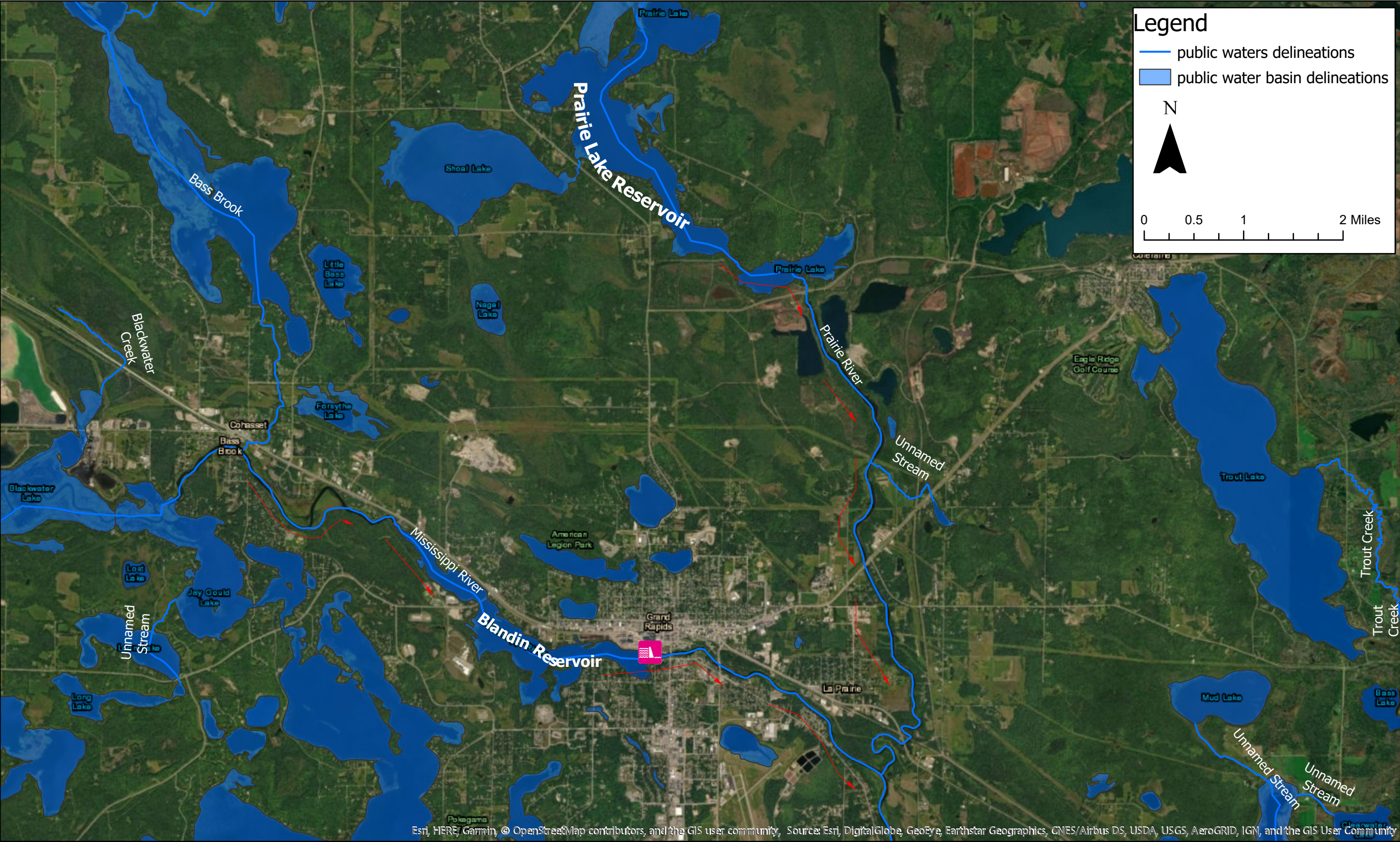
Minnesota Power plans to relicense the Grand Rapids Hydroelectric Project No. 2362 and Prairie River Hydroelectric Project No. 2361 using the Integrated Licensing Process (ILP). Both licenses expire on December 31, 2023; therefore, the notice of intent (NOI) and a Pre-Application Document (PAD) are due to the Federal Energy Regulatory Commission (FERC) by December 31, 2018.

Attached is a letter requesting any existing, relevant, and reasonably available information that describes the existing environment within the vicinity of the Grand Rapids Project and Prairie River Project. The information will be used in the development of the PAD. Any potential relevant information, or questions, can be sent to me at nrosemore@mnpower.com. A hard copy of the attached letter will follow.

Enjoy your day,

Nora Rosemore
Hydro Operations Superintendent
Minnesota Power
(218) 725-2101

Minnesota Power - FERC Hydro Projects - Prairie River #2361 Grand Rapids #2362





ORIGINAL

Minnesota Pollution Control Agency

Celebrating our 25th anniversary and the 20th anniversary of the Clean Water Act

December 11, 1992

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Robert L. Comstock
Assistant Vice-President of Engineering,
Maintenance, and Power
Blandin Paper Company
115 First Street SW
Grand Rapids, Minnesota 55744

Dear Mr. Comstock:

RE: Blandin Paper Company
Blandin Hydroelectric Project
Mississippi River
FERC Project #2362 - 002

This letter is submitted by the Minnesota Pollution Control Agency (MPCA) under authority of Section 401 of the Clean Water Act (33 USC 1251, et seq.) and Minn. Stat. chs. 115 and 116. The project involves the proposed issuance of the Federal Energy Regulatory Commission license referenced above.

The MPCA will certify that the project is in compliance with applicable water quality and effluent standards given the condition that the Blandin Hydroelectric Project refines its operation to change it from the current run-of-reservoir operation to a genuine run-of-river mode. Blandin can accomplish this through the development of and adherence to a Reservoir Operation/Release Regulation Plan.

This plan must include a procedure for a closer coordination of flows with the damtender at the U.S. Army Corps of Engineers' (C.O.E.) Pokegama Dam. Blandin should develop a schedule for matching all flow changes at the Pokegama Dam through a series of gradual, stepped release of flows at Blandin. (The flow release field test that was conducted was deficient in that no conclusions were presented nor were any recommendations offered.) To ensure that Blandin is releasing the same flows as the Pokegama Dam, regularly scheduled communication must occur between the Pokegama damtender and the operator at Blandin, regardless of any change in releases from the Pokegama Dam. An example of how this can be accomplished is the coordination between the Minnesota Power & Light Company's Knife Falls Plant and the Potlatch-Cloquet facility. The MPCA reserves the right to review an Operation Plan and require any changes necessary to protect the water quality of the Mississippi River.

FERC DOCKETED

DEC 14 1992

9212180083

Mr. Robert L. Comstock
Page 2

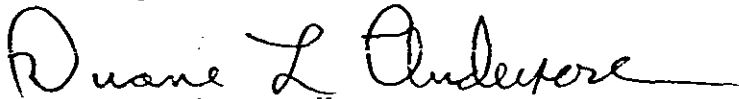
Blandin should have a flow gage installed upstream of their facility. A flow gage would improve Blandin's ability to monitor river flow over that of the pneumatic sensor and the staff gage that are currently being used to observe reservoir levels. The flow gage would also confirm flows received from the Pokegama Dam. The readings from the upstream and downstream gages would also yield a better comparison of flows and, thus, further facilitate the refinement of the plant's operation. A permanent structure should be constructed, to house the flow gage, at a site upstream of the Blandin facility that would not be influenced by eddies, backwater flows or other irregular flow patterns (similar to the gaging stations on the Watonwan River near Garden City, MN; on Garvin Brook near Minnesota City, MN, which was destroyed by a flood event; and on the Vermillion River near Empire, MN).

Blandin needs to be an active participant in the development of a low flow plan that is under study by the C.O.E., the state Department of Natural Resources, and other concerned agencies and groups for the Mississippi River. This plan should rely more on accurate flow measurements, precipitation records, temperature, and time of year and place less emphasis on pool elevations.

This action does not exempt the applicant from the responsibility of complying with all applicable local, state, and federal requirements, nor does it grant any right to violate personal or property rights.

If you have any questions regarding this matter, please call Judy Bostrom either through the MPCA's toll-free telephone number (1-800-657-3864) or directly at 1-612-296-7315.

Sincerely,



Duane L. Anderson, Manager
Assessment and Planning Section
Water Quality Division

DLA/JB:jae

cc: Ms. Lois Cashell, Secretary, Federal Energy Regulatory Commission
Mr. Milo Anderson, U.S. Environmental Protection Agency, Chicago
Mr. Gene Clark, Woodward-Clyde Consultants
Mr. Art Norton, Itasca County Soil & Water Conservation District

Table 2. Prairie River Hydroelectric Project Dissolved Oxygen (DO) Survey Data, 1989 and 1990. Flow in cfs, Depth in Meters, Temperature in Degrees Celcius, and DO in mg/l.

		Date: June 30, 1989		July 24, 1989		September 1, 1989		March 28, 1990		April 19, 1990		May 31, 1990		July 6, 1990		July 25, 1990	
		Time: 0900		N/A		1000		N/A		0900		0820		0830		0830	
Flow: Use:		544		372		261		401		417		253		420		0	
Waste:		124		5		0		0		0		0		195.45		15.95	
<u>Site</u>	<u>Depth</u>	<u>Temp.</u>	<u>DO</u>	<u>Temp.</u>	<u>DO</u>	<u>Temp.</u>	<u>DO</u>	<u>Temp.</u>	<u>DO</u>	<u>Temp.</u>	<u>DO</u>	<u>Temp.</u>	<u>DO</u>	<u>Temp.</u>	<u>DO</u>	<u>Temp.</u>	<u>DO</u>
1	0.0	20.8	7.1	25.0	4.8	19.2	6.9	N/A	N/A	N/A	N/A	17.2	8.6	N/A	N/A	24.0	8.4
	1.0	20.8	7.1	24.5	4.6	19.2	6.8					16.3	8.6			23.9	7.7
	2.0	20.7	6.9	24.5	4.6	19.0	6.7					15.9	8.6			23.6	7.5
	3.0	20.5	6.8	24.2	4.3	18.8	6.4					15.2	7.9			23.4	7.3
	4.0	19.9	6.2	23.9	2.7												
2	0.0	20.6	7.8	26.8	4.8	17.7	5.9	N/A	9.2	N/A	6.2	13.9	5.3	N/A	N/A	23.0	8.0
3	0.0	20.5	7.1	24.4	5.6	19.1	7.0	N/A	N/A	N/A	N/A	16.5	8.4	N/A	N/A	24.2	8.6
	1.0	20.5	7.1	24.5	5.4	19.1	7.0					16.6	8.4			23.7	8.4
	2.0	20.5	7.1	24.5	5.4	19.1	7.0					16.6	8.4			23.4	7.9
4	0.0	20.5	7.4	24.9	5.4	19.2	6.8	N/A		N/A		16.0	8.1	23.2	6.3	22.7	6.2

* Powerhouse Discharge

*Nora Rosemore
Hydro Operations Superintendent
Minnesota Power
(218) 725-2101*

From: Nora Rosemore (MP)
Sent: Friday, December 14, 2018 2:32 PM
To: Nora Rosemore (MP) <NRosemore@mnpower.com>
Subject: Grand Rapids Hydro FERC #2362 and Prairie River Hydro FERC # 2361 NOIs and PAD

Minnesota Power (MP or Applicant), a subsidiary of ALLETE, Inc., submitted to the Federal Energy Regulatory Commission (FERC or Commission) a Notice of Intent (NOI) to file an application for a new license for the **Grand Rapids Hydroelectric Project (FERC No. 2362)** and a NOI to file an application for a subsequent license for the **Prairie River Hydroelectric Project (FERC No. 2361)**. Although these are separate processes, due to the proximity of the Projects to each other, MP plans to conduct them concurrently and use a combined Pre-Application Document (PAD). The combined PAD, also contained in the submittal, has two volumes with the second containing sections of the PAD being filed as Controlled Unclassified Information (CUI) and Critical Energy Infrastructure Information (CEII). The existing FERC licenses for both Projects expire on December 31, 2023.

Stakeholders may obtain an electronic copy of the NOIs and PAD through FERC's eLibrary at http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20181213-5230, <https://elibrary.ferc.gov/idmws/search/fercgensearch.asp> under docket numbers P-2362 and P-2361, or on MP's website www.mnpower.com/Environment/Hydro. If any stakeholder would like a CD copy of the NOIs and PAD, please contact me. Two paper copies are being sent to Commission Staff in the Office of Energy Projects and Office of General Counsel – Energy Projects as well as a paper copy to the State Historic Preservation Office.

In accordance with 18 Code of Federal Regulations (CFR) §5.5(e) of the Commission's regulations, the Applicant requests that the Commission designate MP as the Commission's non-federal representative for

purposes of consultation under Section 106 of the National Historic Preservation Act (NHPA), 16 U.S.C. §470f and the NHPA implementing regulations at 36 CFR Part 800.

In addition, the Applicant requests that FERC designate MP as the non-federal representative for the Project for the purpose of consultation with the U.S. Fish and Wildlife Service and National Marine Fisheries Service, pursuant to Section 7 of the Endangered Species Act (ESA) and the joint agency ESA implementing regulations at 50 CFR Part 402.

Our relicensing team looks forward to working with the Commission's staff, resource agencies, Indian Tribes, local governments, non-governmental organizations, and members of the public, in developing a license application for this renewable energy facility. If you have any questions, please contact me at nrosemore@mnpower.com or (218) 725-2101.

Sincerely,

Nora Rosemore
Hydro Operations Superintendent
Minnesota Power

-----Original Message-----

From: eFiling@ferc.gov [<mailto:eFiling@ferc.gov>]

Sent: Friday, December 14, 2018 10:25 AM

To: Nora Rosemore (MP) <NRosemore@mnpower.com>; eFilingAcceptance@ferc.gov

Subject: FERC Acceptance for Filing in P-2361-055, et al.:

[ALERT – External Email – Handle Accordingly] _____

Acceptance for Filing

The FERC Office of the Secretary has accepted the following electronic submission for filing (Acceptance for filing does not constitute approval of any application or self-certifying notice):

-Accession No.: 201812135229, 201812135230

-Docket(s) No.: P-2361-055, et al.:

-Filed By: Allele, Inc. dba Minnesota Power -Signed By: Nora Rosemore -Filing Type: Pre-Application Document -Filing Desc: Notice of Intent / Pre-Application Document of Allele, Inc. dba Minnesota Power for the Prairie River Project, et al. under P-2361, et al.

-Submission Date/Time: 12/13/2018 4:37:34 PM -Filed Date: 12/13/2018 4:37:34 PM

Your submission is now part of the record for the above Docket(s) and available in FERC's eLibrary system at:

http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20181213-5230

If you would like to receive e-mail notification when additional documents are added to the above docket(s), you can eSubscribe by docket at:

<https://ferconline.ferc.gov/eSubscription.aspx>

Thank you again for using the FERC Electronic Filing System. If you need to contact us for any reason:

E-Mail: efiling@ferc.gov <mailto:efiling@ferc.gov> (do not send filings to this address) Voice Mail: 202-502-8258.

From: Beimers, Sarah (ADM) [<mailto:sarah.beimers@state.mn.us>]

Sent: Monday, May 13, 2019 12:56 PM

To: Nora Rosemore (MP) <NRosemore@mnpower.com>

Cc: GraggJohnson, Kelly (ADM) <kelly.graggjohnson@state.mn.us>

Subject: Relicensing for Grand Rapids and Prairie River Hydroelectric Projects

Nora,

I apologize for not returning the call you made to me a few weeks ago. We have been experiencing an extremely heavy work load of federal and state reviews this spring.

I thought I'd provide you a summary (below) of what our administrative file currently includes for the two FERC relicensing projects (and as summarized in letters to Minnesota Power dated 9/6/2018).

- FERC Project 2362 Grand Rapids Hydroelectric Project (SHPO No. 2018-2716):
 - Blandin consulted with SHPO in the early 1990s for relicensing project;
 - "Report on Cultural Resource Reconnaissance Survey around the Blandin/Mississippi Reservoir and the Blandin Hyrdoelectric Facility" (DRAFT, 1/31/1995);
 - Last letter in our file is from 2/23/1995 from SHPO to Blandin Paper Company with comments on draft cultural resources survey (listed above) and draft Cultural Resources Management Plan (CRMP); and
 - No record of follow-up from this letter, no Section 106 Programmatic Agreement executed for the project, **no final CRMP filed with SHPO**; and
 - Shoreline erosion monitoring results submitted and reviewed by SHPO for years 2011 and 2016 (no monitoring reports submitted to SHPO for 2001 or 2006).
- FERC Project 2361 Prairie River Hydroelectric Project (SHPO No. 2018-2723)
 - "Report on Cultural Resources Reconnaissance Survey around the Prairie Lake Reservoir and the Prairie River Hydroelectric Facility (3/11/1991);
 - "Archaeological Evaluation at the Mallard Point Resort on the Prairie River Flowage" (12/31/1993;
 - Section 106 PA executed in 1993;
 - Cultural Resources Management Plan (CRMP) finalized in March 1995; and
 - Archaeological monitoring reports reviewed by our office from 2011-2018 (no monitoring reports submitted to SHPO per the terms of the CRMP from 1995 to 2010).

Our recent records for the two relicensing projects indicate the following:

- SHPO letter to MP 9/6/18 indicating the status of our files for these two projects and overview statement regarding how federal agency is to comply with Section 106 for the proposed relicensing which are considered new undertakings subject to new consultation and review pursuant to 36 CFR 800;
- 12/24/18 received hard copy of mass distribution Notice of Intent and Pre-Application Document filed with FERC;
- 2/12/19 received mass mailing hard copy of notice from FERC (dated 2/7/19) re: Scoping

Document 1;

- 2/12/19 received mass mailing notice from FERC (dated 2/7/19) re: NOI to File License Application, Filing of PAD, Commencement of Pre-Filing Process, etc, and **in this same notice FERC designates Allete as commission's non-federal representative for carrying out Section 106 consultation;**
- Cultural resources briefly mentioned on p. 1 of SD 1, no response from our office warranted;
- To date we have not received specific request from MP/Allete to review and provide comment on either PAD or SD1 as it pertains to meeting the requirements of Section 106, as authorized by FERC, and the specific regulatory consultation steps as delegated by FERC on 2/7;
- 4/9/19 received copy of letter from FERC to MP/Allete with FERC comments on Preliminary Study Plans, pages A-3 through A-8 are FERC's comments on MP/Allete's proposed study plan for Cultural Resources.

Regarding FERC's letter to MP/Allete dated April 9th, we agree with the majority of recommendations made by the federal agency as they pertain to the consultation that MP/Allete needs to begin with our office and other consulting parties, including tribes. Although our office receives hard copy of many of these filings by FERC, these letters and reports on which our office is copied do not constitute consultation meeting the requirements of Section 106. Therefore, while we keep and file this material with our SHPO review file for the Projects, we do not typically consider these submittals meeting the requirements of 36 CFR Part 800 and therefore no formal review or response is prepared and sent by our office. So, our question at this time is when does MP/Allete expect to formally initiate Section 106 consultation with our office and others pursuant to the February 7th designation by FERC? We suggest, as FERC has, starting with consultation regarding compliance with the previous licenses (so that this is accurately reflected in the PAD) and begin the consultation regarding an accurate and clear definition of each project's APE with appropriate map documentation for each as well. After that, we undertake consultation regarding identification of historic properties, including review of what has already been surveyed within the APE, and determine the need for additional survey within the updated APEs.

I'd be happy to set up a time to discuss further over the phone if that works better for you. That way you could have Greg Prom on the phone as well and I will include Kelly Gragg-Johnson of my staff.

-Sarah



Sarah Beimers | Environmental Review Program Manager
State Historic Preservation Office
203 Administration Building
50 Sherburne Avenue
Saint Paul MN 55155
(651) 201-3290
sarah.beimers@state.mn.us

From: [Malkin, Devin](#)
To: [MacVane, Kelly](#); [Doody, Andrew](#)
Subject: FW: Relicensing for Grand Rapids and Prairie River Hydroelectric Projects
Date: Friday, May 31, 2019 9:22:40 AM
Attachments: [image001.jpg](#)
[1996 08 09 CRMP.tif](#)
[1996 11 26 Order approving CRMP.pdf](#)
[2002 09 24 Blandin2002erosionsurvey.pdf](#)
[2006 09 29 Rapids_Energy_5YrRptErosionReport.pdf](#)
[19970210_PRAIRIE RIVER annual CRMP update to FERC.PDF](#)
[19990816_PRAIRIE RIVER annual CRMP update to FERC.pdf](#)
[2000 09 14 96-00AnnualCRMPRept_Appr1.pdf](#)
[2001 08 13 Prairie_River_2001_Annual_CRMP_Report_Letter.doc](#)
[2002 08 14 Prairie_River_2002_Annual_CRMP_Report_Letter.doc](#)
[2003 08 20 2003-Prairie_Lake_CRMP_Annual_Report.pdf](#)
[2004 08 27 2004_Annual_CRMP_Monitoring_Report.pdf](#)
[2004 09 16 2004_Annual_CRMP_Monitor_Rpt_FERC_Appr.pdf](#)
[2005 11 16 2005_Annual_CRMP_Rpt_FERC_Appr.pdf](#)
[2006 10 02 2006_AnnualCRMP_Rpt.pdf](#)
[2006 12 18 2006Annual_CRMPRpt_FERC_Appr_.pdf](#)
[2007 08 24 2007_Annual_CRMP_Rpt.pdf](#)
[2008 01 14 2007_CRMP_Rpt_FERC_App.pdf](#)
[2008 08 11 FERC submittal of Annual CRMP Report Prairie River.pdf](#)
[2008 11 13 FERC accept Prairie R CRMP.pdf](#)
[2008 11 13 PRR_2008_Annual_CRMP_Report_FERC_Approval.pdf](#)
[2009 08 19 Prairie River MP Submits Cultural Resource Monitoring Annual Rpt.pdf](#)
[2009 10 30 PrairieRiver_FERC_Approval_2009_CRM_Plan.pdf](#)
[2010 08 19 FERC Submittal Prairie River Annual CRM Report.pdf](#)
[2010 08 20 FERC accept report.pdf](#)
[19970210_PRAIRIE RIVER annual CRMP update to FERC.pdf](#)
[19970805_PRAIRIE RIVER annual CRMP update to FERC.pdf](#)
[19980811_PRAIRIE RIVER annual CRMP update to FERC.pdf](#)
[2005 08 18 2005_Annual_CRMP_Monitoring_Report.pdf](#)
[2019 05 30 Grand Rapids and Prairie PSP Coverletter SHPO.pdf](#)

Need this email and all associated files in the MP consultation record, if you would.

[Devin Malkin](#)

M 425.306.1957

devin.malkin@hdrinc.com

hdrinc.com/follow-us

From: Nora Rosemore (MP) [<mailto:NRosemore@mnpower.com>]

Sent: Friday, May 31, 2019 6:09 AM

To: 'Sarah.Beimers@state.mn.us'

Cc: Gregory Prom (MP) ; Malkin, Devin ; Chris Rousseau (MP) ; 'GraggJohnson, Kelly (ADM)'

Subject: FW: Relicensing for Grand Rapids and Prairie River Hydroelectric Projects

Sarah,

Thank you for your detailed response. There are a couple of things to cover so that we are both on the same page. First, Minnesota Power's plans for Section 106 consultation with SHPO are laid out in the attached PSP cover letter. A hard copy of this letter along with a copy of the PSP are in the mail to you. Second, it appears that your administrative file for the current FERC licenses are missing critical pieces. Attached are the CRMP and FERC order approving the CRMP for Grand Rapids Project along with the two report years you were missing. Also attached are the 1996 to 2010 Annual Reports for the Prairie River Project along with a few of the FERC responses approving the individual reports. These items should complete your administrative files and demonstrate that Minnesota Power is in full compliance with our current FERC licenses for both the Grand Rapids and Prairie River Projects.

We look forward to working with you.

Sincerely,

Nora Rosemore

Hydro Operations Superintendent

Minnesota Power

(218) 725-2101

From: [Malkin, Devin](#)
To: [Doody, Andrew](#)
Cc: [MacVane, Kelly](#)
Subject: FW: Grand Rapids Hydro FERC #2362 and Prairie River Hydro FERC # 2361 Proposed Study Plan
Date: Tuesday, May 28, 2019 9:02:38 PM
Attachments: [PSP Cover Letter.pdf](#)

For the MP consultation record, if you would.

Devin Malkin

M 425.306.1957

devin.malkin@hdrinc.com

hdrinc.com/follow-us

From: Nora Rosemore (MP) [<mailto:NRosemore@mnpower.com>]

Sent: Tuesday, May 28, 2019 12:21 PM

To: Nora Rosemore (MP)

Subject: Grand Rapids Hydro FERC #2362 and Prairie River Hydro FERC # 2361 Proposed Study Plan
ALLETE, Inc., doing business as Minnesota Power (MP), is the Licensee, owner, and operator of the **Grand Rapids Hydroelectric Project (FERC No. 2362)** and the **Prairie River Hydroelectric Project (FERC No. 2361)**. MP is utilizing FERC's Integrated Licensing Process (ILP) to relicense these projects. Due to the proximity of the Projects, MP is conducting the separate processes concurrently with combined documents, meetings, and overall relicensing schedules.

MP e-filed the Proposed Study Plan (PSP) and attached cover letter with FERC today. You may obtain a copy of the PSP electronically through FERC's eLibrary at

<https://elibrary.ferc.gov/idmws/search/fercgensearch.asp> under docket numbers P-2362 and P-2361 or on MP's website www.mnpower.com/Environment/Hydro. One paper copy of the PSP is being mailed to the Minnesota State Historic Preservation Office.

Comments on the PSP must be filed within 90 days which is no later than August 25, 2019. MP will host a Proposed Study Plan Meeting (PSP Meeting) at 1:00 pm on June 20, 2019 at Timberlake Lodge Hotel, 144 SE 17th Street, Grand Rapids, MN 55744. If you plan to attend, please RSVP by June 10, 2019 by emailing nrosemore@mnpower.com.

Our relicensing team looks forward to working with you to develop license applications for these renewable energy facilities. If you have any questions, please do not hesitate to contact me.

Sincerely,

Nora Rosemore

Hydro Operations Superintendent

Minnesota Power

(218) 725-2101

-----Original Message-----

From: eFiling@ferc.gov [<mailto:eFiling@ferc.gov>]

Sent: Tuesday, May 28, 2019 12:56 PM

To: Nora Rosemore (MP) <NRosemore@mnpower.com>; efilingacceptance@ferc.gov

Subject: FERC Acceptance for Filing in P-2362-043, et al.:

Acceptance for Filing

The FERC Office of the Secretary has accepted the following electronic submission for filing
(Acceptance for filing does not constitute approval of any application or self-certifying notice):

-Accession No.: 201905285085

-Docket(s) No.: P-2362-043, et al.:

-Filed By: Allete, Inc. dba Minnesota Power -Signed By: Nora Rosemore -Filing Type: ILP Initial or Updated Study Report -Filing Desc: ILP Proposed or Rev. Study Plan of Allete, Inc. dba Minnesota Power under P-2362-043, et. al.. Proposed Study Plans for relicensing of Grand Rapids FERC #2362 and Prairie River FERC #2361 -Submission Date/Time: 5/28/2019 1:20:27 PM -Filed Date: 5/28/2019 1:20:27 PM

Your submission is now part of the record for the above Docket(s) and available in FERC's eLibrary system at:

http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20190528-5085

If you would like to receive e-mail notification when additional documents are added to the above docket(s), you can eSubscribe by docket at:

<https://ferconline.ferc.gov/eSubscription.aspx>

Thank you again for using the FERC Electronic Filing System. If you need to contact us for any reason:

E-Mail: ferconlinesupport@ferc.gov <mailto:ferconlinesupport@ferc.gov> (do not send filings to this address) Voice Mail: 866-208-3676.

From: Nora Rosemore (MP) [mailto:NRosemore@mnpower.com]
Sent: Friday, May 31, 2019 6:09 AM
To: 'Sarah.Beimers@state.mn.us'
Cc: Gregory Prom (MP) ; Malkin, Devin ; Chris Rousseau (MP) ; 'GraggJohnson, Kelly (ADM)'
Subject: FW: Relicensing for Grand Rapids and Prairie River Hydroelectric Projects

Sarah,

Thank you for your detailed response. There are a couple of things to cover so that we are both on the same page. First, Minnesota Power's plans for Section 106 consultation with SHPO are laid out in the attached PSP cover letter. A hard copy of this letter along with a copy of the PSP are in the mail to you. Second, it appears that your administrative file for the current FERC licenses are missing critical pieces. Attached are the CRMP and FERC order approving the CRMP for Grand Rapids Project along with the two report years you were missing. Also attached are the 1996 to 2010 Annual Reports for the Prairie River Project along with a few of the FERC responses approving the individual reports. These items should complete your administrative files and demonstrate that Minnesota Power is in full compliance with our current FERC licenses for both the Grand Rapids and Prairie River Projects.

We look forward to working with you.

Sincerely,

Nora

*Nora Rosemore
Hydro Operations Superintendent
Minnesota Power
(218) 725-2101*

From: [Nora Rosemore \(MP\)](#)
To: [Gregory Prom \(MP\)](#); [Malkin, Devin](#); [MacVane, Kelly](#)
Subject: Fwd: SHPO Comment Letter: Proposed Study Plans for Grand Rapids and Prairie River
Date: Sunday, August 25, 2019 11:13:20 PM
Attachments: [image001.jpg](#)
[ATT00001.htm](#)
[2018-2716_2018-2723.pdf](#)
[ATT00002.htm](#)

Haven't ready yet but will in the morning.

Enjoy the week,

Nora

Sent from my iPhone

Begin forwarded message:

From: "Beimers, Sarah (ADM)" <sarah.beimers@state.mn.us>
Date: August 25, 2019 at 9:52:58 PM CDT
To: "Nora Rosemore (MP)" <NRosemore@mnpower.com>
Subject: SHPO Comment Letter: Proposed Study Plans for Grand Rapids and Prairie River

[**^^^WARNING^^^ - EXTERNAL SENDER:** Avoid Malware, use caution when clicking links or opening attachments.]

Nora,

Attached is our August 24, 2019 comment letter in response to your May 30th submittal to our office. Because of technical difficulties I experienced working remotely this weekend, I was unable to submit the letter to FERC's system until late this afternoon. I hope you will still accept these comments as we move forward in the Section 106 consultation process.

Please contact me if you wish to discuss further.

Sarah

September 9, 2019

Nora Rosemore
Hydro Operations Superintendent
Minnesota Power
30 West Superior Street
Duluth, MN 55802-2093

Greg Prom
Environmental Compliance Specialist
Minnesota Power
30 West Superior Street
Duluth, MN 55802-2093

RE: Federal Energy Regulatory Commission Relicensing for Prairie River (P-2361) and
Grand Rapids (P-2362) Hydroelectric Projects - Request for Additional Monitoring

Dear Nora Rosemore and Greg Prom:

The Minnesota Pollution Control Agency (MPCA) values Minnesota Power and the ongoing partnership between our two organizations to protect water quality in Minnesota. The MPCA submitted a comment letter to the Federal Energy Regulatory Commission (FERC) on April 11, 2019, on Scoping Document 1, and requested additional studies be conducted in connection with the Prairie River and Grand Rapids projects (Project). After our review of the recently submitted Scoping Document 2, it does not appear all recommendations have been incorporated into your project scope.

As you are aware, Prairie Lake was recently removed from the MPCA 303(d) Impaired Waters List due to exceedances of regional eutrophication standards. Monitoring data shows phosphorus levels are very near the threshold for impairment, and additional eutrophication monitoring for total phosphorus, chlorophyll-a and Secchi transparency is recommended to ensure water quality standards continue to be met. As such, MPCA is proposing Minnesota Power include these additional eutrophication monitoring parameters into your existing monitoring plan at a time interval which brackets the MPCA's 10-year monitoring schedule for Prairie Lake.

There is relatively little existing information on the impoundments behind the Prairie River and Grand Rapids Project dams. Because of the long duration of a FERC license (40 to 50 years), we believe that conducting additional monitoring and gathering data will help development a water quality history for the current relicensing project, as well as future relicensing activity.

Recommendations for Additional Monitoring and Parameters:

The MPCA supports Minnesota Power's proposal to conduct temperature and dissolved oxygen analysis at each Project from May through October. We request the additional monitoring for the following parameters at Main Upper Basin Prairie Lake site — 31-0384-02-201 including:

- Chlorophyll-a
- Secchi disk
- Total phosphorus

This monitoring should be completed monthly, June-September in 2020 and 2021. We request data be submitted electronically to the MPCA.

Nora Rosemore and Greg Prom

Page 2

September 9, 2019

The MPCA appreciates Minnesota Power's ongoing efforts towards water quality protection. Thank you for your consideration of our request. If you have any questions concerning our review of this Project, please contact Bill Wilde by email at william.wilde@state.mn.us or by telephone at 651-757-2825.

Sincerely,

A handwritten signature in black ink, appearing to read "Anna M. Hotz".

Anna Hotz
Supervisor, Agency Rules Unit
Resource Management and Assistance Division

AH/BW:ds

cc: Anna Bosch, MPCA, Brainerd
Phil Votruba, MPCA, Brainerd
Seth Goreham, MPCA, Brainerd
Jesse Anderson, MPCA, Duluth
Phil Monson, MPCA, St. Paul
Ken Westlake, U.S. Environmental Protection Agency

From: [Nora Rosemore \(MP\)](#)
To: [Nora Rosemore \(MP\)](#)
Subject: ILP Proposed Study Plan or Revised Study Plan submitted in FERC P-2361-055,et al. by Allete, Inc. dba Minnesota Power,et al.
Date: Tuesday, September 24, 2019 3:51:43 PM
Attachments: [MP RSP Cover Letter.pdf](#)

ALLETE, Inc., doing business as Minnesota Power (MP), is the Licensee, owner, and operator of the Grand Rapids Hydroelectric Project (FERC No. 2362) and the Prairie River Hydroelectric Project (FERC No. 2361). MP is utilizing FERC's Integrated Licensing Process (ILP) to relicense these projects. Due to the proximity of the Projects, MP is conducting the separate processes concurrently with combined documents, meetings, and overall relicensing schedules.

MP e-filed the Revised Study Plan (RSP) and attached cover letter with FERC yesterday. You may obtain a copy of the RSP electronically through FERC's eLibrary at <https://elibrary.ferc.gov/idmws/search/fercgensearch.asp> under docket numbers P-2362 and P-2361 or on MP's website www.mnpower.com/Environment/Hydro. One paper copy of the RSP is being mailed to the Minnesota State Historic Preservation Office.

Comments on the RSP must be filed with FERC within 15 days which is no later than October 9, 2019. FERC will issue the Study Plan Determination by October 24, 2019.

Our relicensing team looks forward to working with you to develop license applications for these renewable energy facilities. If you have any questions, please do not hesitate to contact me.

Sincerely,

Nora Rosemore
Hydro Operations Superintendent
Minnesota Power
(218) 725-2101

-----Original Message-----

From: 'FERC eSubscription' [<mailto:eSubscription@ferc.gov>]
Sent: Tuesday, September 24, 2019 8:12 AM
Subject: ILP Proposed Study Plan or Revised Study Plan submitted in FERC P-2361-055,et al. by Allete, Inc. dba Minnesota Power,et al.

[^^^WARNING^^^ - EXTERNAL SENDER: Avoid Malware, use caution when clicking links or opening attachments.] _____

On 9/23/2019, the following Filing was submitted to the Federal Energy Regulatory Commission (FERC), Washington D.C.:

Filer: Allete, Inc. dba Minnesota Power

Minnesota Power, Inc. (as Agent)

Docket(s): P-2361-055

P-2362-043

Lead Applicant: Minnesota Power

Filing Type: ILP Proposed Study Plan or Revised Study Plan

Description: ILP Proposed or Rev. Study Plan of Allete, Inc. dba Minnesota Power under P-2362-043, et. al.. RSP for Grand Rapids Hydro and Prairie River Hydro

To view the document for this Filing, click here

http://elibrary.FERC.gov/idmws/file_list.asp?accession_num=20190923-5178

To modify your subscriptions, click here: <https://ferconline.ferc.gov/eSubscription.aspx>

Please do not respond to this email.

Online help is available here:

<http://www.ferc.gov/efiling-help.asp>

or for phone support, call 866-208-3676.

MacVane, Kelly

From: Nora Rosemore (MP) <NRosemore@mnpower.com>
Sent: Monday, October 19, 2020 8:02 PM
To: MacVane, Kelly
Subject: FW: Initial Study Report for Grand Rapids FERC No. 2362 and Prairie River FERC No. 2361

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

From: Nora Rosemore (MP)
Sent: Monday, October 19, 2020 3:35 PM
To: 'john.jaschke@state.mn.us' <john.jaschke@state.mn.us>; 'Laura.Washington@ferc.gov' <Laura.Washington@ferc.gov>; 'patrick.ely@ferc.gov' <patrick.ely@ferc.gov>; 'shanna.wiseman@ferc.gov' <shanna.wiseman@ferc.gov>; 'Sarah.Beimers@state.mn.us' <Sarah.Beimers@state.mn.us>; 'Ian.Chisholm@state.mn.us' <Ian.Chisholm@state.mn.us>; 'Charlotte.Cohn@state.mn.us' <Charlotte.Cohn@state.mn.us>; 'guy.lunz@state.mn.us' <guy.lunz@state.mn.us>; 'bradford.parsons@state.mn.us' <bradford.parsons@state.mn.us>; 'rian.reed@state.mn.us' <rian.reed@state.mn.us>; 'nancy.stewart@state.mn.us' <nancy.stewart@state.mn.us>; 'bryan.dodds@mdtolm.gov' <bryan.dodds@mdtolm.gov>; 'thorleif@umn.edu' <thorleif@umn.edu>; 'rayna.churchill@miac.gov' <rayna.churchill@miac.gov>; 'Jesse.Anderson@state.mn.us' <Jesse.Anderson@state.mn.us>; 'anna.bosch@state.mn.us' <anna.bosch@state.mn.us>; 'jim.brist@state.mn.us' <jim.brist@state.mn.us>; 'Melissa.Kuskie@state.mn.us' <Melissa.Kuskie@state.mn.us>; 'william.wilde@state.mn.us' <william.wilde@state.mn.us>; 'Dan.Wolf@state.mn.us' <Dan.Wolf@state.mn.us>; 'Nanette.m.bischoff@usace.army.mil' <Nanette.m.bischoff@usace.army.mil>; 'timothy.lapointe@bia.gov' <timothy.lapointe@bia.gov>; 'Nick_Utrup@fws.gov' <Nick_Utrup@fws.gov>; 'Peter_Fasbender@fws.gov' <Peter_Fasbender@fws.gov>; 'nick.chevance@usnps.gov' <nick.chevance@usnps.gov>; 'randy.thoreson@usnpsrtcaph.gov' <randy.thoreson@usnpsrtcaph.gov>; 'bob.komardley@ato.gov' <bob.komardley@ato.gov>; 'cchavers@boisforte-nsn.gov' <cchavers@boisforte-nsn.gov>; 'blatady@boisforte-nsn.gov' <blatady@boisforte-nsn.gov>; 'vrichy@c-a-tribes.org' <vrichy@c-a-tribes.org>; 'eddie.hamilton@cato.gov' <eddie.hamilton@cato.gov>; 'margaret.sutton@cato.gov' <margaret.sutton@cato.gov>; 'reggiedefoe@fdlrez.com' <reggiedefoe@fdlrez.com>; 'kevindupuis@fdlrez.com' <kevindupuis@fdlrez.com>; 'JillHoppe@fdlrez.com' <JillHoppe@fdlrez.com>; 'tomhowes@fdlrez.com' <tomhowes@fdlrez.com>; 'mblackwolf@ftbelknap.org' <mblackwolf@ftbelknap.org>; 'andy.werk@ftbelknap.org' <andy.werk@ftbelknap.org>; 'norman.deschampe@gpbc.gov' <norman.deschampe@gpbc.gov>; 'maryanng@grandportage.com' <maryanng@grandportage.com>; 'joseph.wildcat' <sr@lfbisci.gov>; 'ldfthpo@ldftribe.com' <ldfthpo@ldftribe.com>; 'amy.burnette@llbmct.gov' <amy.burnette@llbmct.gov>; 'faron.jackson@llbmct.gov' <faron.jackson@llbmct.gov>; 'doug.cox@mitw.gov' <doug.cox@mitw.gov>; 'dgrignon@mitw.org' <dgrignon@mitw.org>; 'melanie.benjamin@mlbo.gov' <melanie.benjamin@mlbo.gov>; 'natalie.weyaus@millelacsband.com' <natalie.weyaus@millelacsband.com>; 'kevin' <r..dupuis@mct.gov>; 'kade.ferris@redlakenation.org' <kade.ferris@redlakenation.org>; 'dseki@redlakenation.org' <dseki@redlakenation.org>; 'kevin.jensvold@uscm.gov' <kevin.jensvold@uscm.gov>; 'THPO@uppersiouxcommunity-nsn.gov' <THPO@uppersiouxcommunity-nsn.gov>; 'jaime.arsenault@wen.gov' <jaime.arsenault@wen.gov>; 'terrence.tibbetts@wen.gov' <terrence.tibbetts@wen.gov>; 'mayoradams@cityofgrandrapidsmn.com' <mayoradams@cityofgrandrapidsmn.com>; 'dale.anderson@cgr.gov' <dale.anderson@cgr.gov>; 'tony.clifton@cgr.gov' <tony.clifton@cgr.gov>; 'jeff.davies@cgr.gov' <jeff.davies@cgr.gov>; 'rob.mattei@cgr.gov' <rob.mattei@cgr.gov>; 'eric.trast@cgr.gov' <eric.trast@cgr.gov>; 'engineering@cityofgrandrapidsmn.com' <engineering@cityofgrandrapidsmn.com>; 'brett.skyles@co.itasca.mn.us' <brett.skyles@co.itasca.mn.us>; 'sara.thompson@co.itasca.mn.us' <sara.thompson@co.itasca.mn.us>; 'mark@americanwhitewater.org' <mark@americanwhitewater.org>; 'ichs@paulbunyan.net' <ichs@paulbunyan.net>; 'john.lenczewski@mtu.gov' <john.lenczewski@mtu.gov>; 'tim.terrell@mhb.gov' <tim.terrell@mhb.gov>;

'waylon.glienke@itascaswcd.org' <waylon.glienke@itascaswcd.org>; 'kim.yankowiak@itascaswcd.org' <kim.yankowiak@itascaswcd.org>

Cc: Chris Rousseau (MP) <crousseau@mnpower.com>; Todd Simmons (MP) <tsimmons@mnpower.com>; David Aspie (MP) <DAspie@mnpower.com>; Gregory Prom (MP) <gprom@mnpower.com>; Jodi Piekarski (MP) <jpiekarski@mnpower.com>; Richard Fannin (MP) <rfannin@mnpower.com>; Daniel McCourtney (MP) <dmccourtney@mnpower.com>

Subject: Initial Study Report for Grand Rapids FERC No. 2362 and Prairie River FERC No. 2361

ALLETE, Inc., doing business as Minnesota Power (MP or Applicant), is the Licensee, owner, and operator of the Grand Rapids Hydroelectric Project (FERC No. 2362), and the Prairie River Hydroelectric Project (FERC No. 2361), collectively, the “Projects.” The Grand Rapids Project is a 2.1 megawatt (MW), run-of-river (ROR) facility located on the Mississippi River in the City of Grand Rapids in Itasca County, Minnesota. The Prairie River Project is a 1.1 MW, ROR facility located on the Prairie River, near the City of Grand Rapids in Arbo Township, Itasca County, Minnesota.

The existing Federal Energy Regulatory Commission (FERC) licenses for the Projects expire on December 31, 2023. Accordingly, MP is pursuing a new license for the Grand Rapids Project and a subsequent license for the Prairie River Project pursuant to FERC’s Integrated Licensing Process (ILP). Although these are separate processes, due to the proximity of the Projects to each other, MP is conducting the processes concurrently with combined documents, meetings, and overall relicensing schedules.

MP has conducted studies as provided in the September 23, 2019 Revised Study Plan (RSP) and approved in FERC’s October 16, 2019 Study Plan Determination (SPD) for the Projects, with the exception of the Recreation Resources Study for both Projects. MP has e-filed the Initial Study Report (ISR) with FERC today – see confirmation email below. The ISR describes MP’s overall progress in implementing the study plans and schedule, summarizes available data, and describes any variances from the study plans and schedule approved by FERC.

FERC’s regulations require MP to hold a meeting with participants and FERC staff within 15 days of filing the ISR. Accordingly, **MP will hold an ISR Meeting via Webex from 2 PM to 4 PM (eastern time) on Thursday, October 29, 2020. To allow for adequate planning, MP respectfully requests that those planning on joining the ISR Webex Meeting RSVP by emailing Nora Rosemore at nrosemore@mnpower.com on or before close of business Thursday, October 22, 2020.**

All parties interested in the relicensing process may **obtain a copy of the ISR** electronically through FERC’s eLibrary at <https://elibrary.ferc.gov/idmws/search/fercgensearch.asp> under docket numbers P-2362 and P-2361 or on MP’s website www.mnpower.com/Environment/Hydro. If any stakeholder would like a CD copy of the ISR, please contact me at nrosemore@mnpower.com.

Our relicensing team looks forward to working with FERC’s staff, resource agencies, Indian Tribes, local governments, non-governmental organizations, and members of the public in developing license applications for these renewable energy facilities. If there are any questions regarding the ISR or the overall relicensing process for the Projects, please do not hesitate to contact me at (218) 725-2101 or at the email address above.

Sincerely,

Nora Rosemore
Hydro Operations Superintendent
Minnesota Power

-----Original Message-----

From: eFiling@ferc.gov [<mailto:eFiling@ferc.gov>]

Sent: Monday, October 19, 2020 2:34 PM

To: Nora Rosemore (MP) <NRosemore@mnpower.com>; efilingacceptance@ferc.gov

Subject: [EXTERNAL MAIL] FERC Receipt of Filing in P-2362-043, et al.:

[External Email] --> PROCEED WITH CAUTION This email originated from outside of the company.

Avoid malware - do not open links or attachments unless you know they are safe.

Confirmation of Receipt

This is to confirm receipt by the FERC Office of the Secretary of the following electronic submission:

-Submission ID: 1143159

-Docket(s) No.: P-2362-043, et al.:

-Filed By: Allete, Inc. dba Minnesota Power -Signed By: Nora Rosemore -Filing Desc: ILP Initial or Updated Study Report of Allete, Inc. dba Minnesota Power under P-2362-043, et. al.. ISR for Prairie River 2362 and Grand Rapids 2362 -

Submission Date/Time: 10/19/2020 3:32:00 PM -Projected Filed Date/Time: 10/19/2020 3:32:00 PM (Subject to Change based on OPM/FERC Closure)

Additional detail about your filing is available via the following link:

<https://ferconline.ferc.gov/SubmissionStatus.aspx?hashcode=OJfsTpalXCsYm9cP8Xm79A>

Thank you for participating in the FERC Electronic Filing System. If you have any questions, or if you detect errors in your submission or the FERC-generated PDF, please contact FERC at:

E-Mail: ferconlinesupport@ferc.gov <mailto:ferconlinesupport@ferc.gov> (do not send filings to this address) Voice Mail: 866-208-3676.

From: [Gregory Prom \(MP\)](#)
To: [Nora Rosemore \(MP\)](#); [MacVane, Kelly](#); [Malkin, Devin](#)
Subject: FW: [EXTERNAL MAIL] RE: Prairie River Phase I Report Part 1
Date: Tuesday, November 10, 2020 10:01:13 AM
Attachments: [image003.png](#)
[image001.png](#)

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Read below for the email to SHPO.

Greg

From: Beimers, Sarah (ADM) [mailto:sarah.beimers@state.mn.us]
Sent: Monday, October 19, 2020 5:19 PM
To: Gregory Prom (MP) <gprom@mnpower.com>
Subject: [EXTERNAL MAIL] RE: Prairie River Phase I Report Part 1

[External Email] → PROCEED WITH CAUTION

This email originated from outside of the company.
Avoid malware - do not open links or attachments unless you know they are safe.

Greg,

FYI while we continue to work remotely and accept electronic review submissions for Section 106 compliance, please email your letters and documents to ENReviewSHPO@state.mn.us. I have sent all of your recent submissions to this email address for processing.

And please follow up by sending hard copies of all archaeological reports since we just don't have the capacity to print out these reports in house and still need to keep paper copies until we go all digital (which will be a few more years).

Let me know if you have any questions.

Thanks!
Sarah



Sarah Beimers | Environmental Review Program Manager
Minnesota State Historic Preservation Office
50 Sherburne Avenue, Suite 203
Saint Paul, MN 55155
(651) 201-3290
sarah.beimers@state.mn.us

Given the Governor's implementation of [Stay Safe MN](#), SHPO staff will continue to work remotely and be

available via [phone and email](#), and the SHPO office will be closed to visitors and unable to accommodate in-person research and deliveries. Mail is being delivered to the office via USPS, FedEx and UPS, however, staff have limited weekly access to sort and process mail. Our office will continue to take file search requests via DataRequestSHPO@state.mn.us. Check [SHPO's webpage](#) for the latest updates and we thank you for your continued patience.

[Facebook](#) | [Instagram](#) | [Twitter](#)

From: Gregory Prom (MP) <gprom@mnpower.com>
Sent: Monday, October 19, 2020 5:11 PM
To: Beimers, Sarah (ADM) <sarah.beimers@state.mn.us>
Subject: RE: Prairie River Phase I Report Part 1

This message may be from an external email source.

Do not select links or open attachments unless verified. Report all suspicious emails to Minnesota IT Services Security Operations Center.

Dear Ms. Beimers:

ALLETE, Inc., doing business as Minnesota Power (MP or Applicant), is the Licensee, owner, and operator of the Grand Rapids Hydroelectric Project (FERC No. 2362), and the Prairie River Hydroelectric Project (FERC No. 2361), collectively, the "Projects." The Grand Rapids Project is a 2.1 megawatt (MW), run-of-river (ROR) facility located on the Mississippi River in the City of Grand Rapids in Itasca County, Minnesota. The Prairie River Project is a 1.1 MW, ROR facility located on the Prairie River, near the City of Grand Rapids in Arbo Township, Itasca County, Minnesota.

The existing Federal Energy Regulatory Commission (FERC) licenses for the Projects expire on December 31, 2023. Accordingly, MP is pursuing a new license for the Grand Rapids Project and a subsequent license for the Prairie River Project pursuant to FERC's Integrated Licensing Process (ILP), as described at 18 Code of Federal Regulations (CFR) Part 5. Although these are separate processes, due to the proximity of the Projects to each other, MP is conducting the processes concurrently with combined documents, meetings, and overall relicensing schedules.

MP conducted studies as provided in the September 23, 2019 Revised Study Plan (RSP) and approved in FERC's October 16, 2019 Study Plan Determination (SPD) for the Projects, with the exception of the Recreation Resources Study for both Projects^[1]. In accordance with 18 CFR §5.15 of FERC's regulations, MP filed the Initial Study Report (ISR) with FERC on October 19, 2020. The ISR described MP's overall progress in implementing the study plans and schedule, summarized available data, and described any variances from the study plans and schedule approved by FERC. The ISR is available electronically through FERC's eLibrary at <https://elibrary.ferc.gov/idmws/search/fercgensearch.asp> under docket numbers P-2362 and P-2361 or on MP's website www.mnpower.com/Environment/Hydro.

As part of the ISR, a Grand Rapids Project Reconnaissance Survey Report and Prairie River Project

Reconnaissance Survey Report were filed with the Commission as privileged documents. These reports summarize the findings of the Cultural Resources Studies conducted at both Projects. The Cultural Resources Studies identified potential historic properties within Area of Potential Effects (APE) for each Project as described in the RSP. The reports also include an assessment of the potential effects of continued Project operations and maintenance activities on historical and cultural resources.

At this time, MP is providing copies of the Cultural Resources Study Reports to the Minnesota State Historic Preservation Office (SHPO) office for review. MP is also seeking concurrence with the APE as defined in the RSP and in the attached reports. MP respectfully requests written concurrence from the Minnesota SHPO with respect to the APE and the results and recommendations presented in the attached reports within 30 days of this letter.

Additionally, FERC's regulations at 18 CFR §5.15(c) require MP to hold a meeting with participants and FERC staff within 15 days of filing the ISR^[2]. Accordingly, MP will hold an ISR Meeting via Webex from 2 PM to 4 PM (eastern time) on Thursday, October 29, 2020.

To allow for adequate planning, MP respectfully requests that those planning on joining the ISR Webex Meeting RSVP by emailing Nora Rosemore at NRosemore@mnpower.com on or before close of business Thursday, October 22, 2020.

If there are any questions regarding this filing or the overall relicensing process for the Projects, please do not hesitate to contact me at (218) 355-3191 or email at gprom@allete.com.

Sincerely,

Greg Prom

Senior Environmental Compliance Specialist
Minnesota Power/ALLETE
30 West Superior Street
Duluth, Minnesota 55802

Office: 218-355-3191
Cell: 218-461-6856
Email: gprom@allete.com



^[1] On April 10, 2020, MP filed a notification that it would conduct the Recreation Resources Study for both Projects during the 2021 study season instead of 2020 due to COVID-19. MP intends to include the Recreation Resources Study results to date in the filing of the Draft License Application (DLA) and will file final study reports with FERC once the studies and analyses are complete.

^[2] According to the process plan and schedule included in Scoping Document 2, the ISR is scheduled to be filed on or by October 23, 2020 with the ISR meeting to take place on or by November 7, 2020. Early filings or issuances will not result in changes to the deadlines.

MacVane, Kelly

From: Gregory Prom (MP) <gprom@mnpower.com>
Sent: Tuesday, November 10, 2020 10:00 AM
To: Nora Rosemore (MP); MacVane, Kelly; Malkin, Devin
Subject: FW: [EXTERNAL MAIL] RE: RE: Grand Rapids Phase I Report

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

From: Beimers, Sarah (ADM) [mailto:sarah.beimers@state.mn.us]
Sent: Monday, October 26, 2020 4:46 PM
To: Gregory Prom (MP) <gprom@mnpower.com>
Subject: [EXTERNAL MAIL] RE: RE: Grand Rapids Phase I Report

[External Email] → PROCEED WITH CAUTION

This email originated from outside of the company.

Avoid malware - do not open links or attachments unless you know they are safe.

Greg,

Thank you for sending the email submissions to our official inbox.

I believe that I have everything downloaded and saved:

- 10/19/2020 cover letter from MN Power
- Phase I Survey for Prairie River Report + three separate PDFs which include Figures 1-132
- Phase I Survey for Grand Rapids

I will log these materials in as received on 10/20/2020. I see that MN Power is asking for a 30 day review. Please note that, per ACHP guidance, we are still in an tolling, or pausing, of regulatory timeline requirements associated with continued remote working conditions. As such, while we will attempt to complete our review of this information in 30 days, most larger, complex reviews are taking between 45-60 days to review.

Speaking of timing, since we just received these archaeological surveys a few days ago, there has not been sufficient time for David Mather, SHPO NR Archaeologist to review them before the meeting this upcoming Thursday 10/28. Our discussion will primarily focus on the APE. Will In Situ be making a presentation during Thursday's meeting? If so, then I will invite David to participate as well.

Sarah



Sarah Beimers | Environmental Review Program Manager
Minnesota State Historic Preservation Office
50 Sherburne Avenue, Suite 203

Saint Paul, MN 55155
(651) 201-3290
sarah.beimers@state.mn.us

Given the Governor's implementation of [Stay Safe MN](#), SHPO staff will continue to work remotely and be available via [phone and email](#), and the SHPO office will be closed to visitors and unable to accommodate in-person research and deliveries. Mail is being delivered to the office via USPS, FedEx and UPS, however, staff have limited weekly access to sort and process mail. Our office will continue to take file search requests via DataRequestSHPO@state.mn.us. Check [SHPO's webpage](#) for the latest updates and we thank you for your continued patience.

[Facebook](#) | [Instagram](#) | [Twitter](#)

From: Gregory Prom (MP) <gprom@mnpower.com>
Sent: Tuesday, October 20, 2020 4:09 PM
To: MN_ADM_ENV Review SHPO <ENReviewSHPO@state.mn.us>
Subject: FW: RE: Grand Rapids Phase I Report

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Do not select links or open attachments unless verified. Report all suspicious emails to Minnesota IT Services Security Operations Center.

Dear Ms. Beimers:

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summarize the findings of the Cultural Resources Studies conducted at both Projects. The Cultural Resources Studies identified potential historic properties within Area of Potential Effects (APE) for each Project as described in the RSP. The reports also include an assessment of the potential effects of continued Project operations and maintenance activities on historical and cultural resources.

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If there are any questions regarding this filing or the overall relicensing process for the Projects, please do not hesitate to contact me at (218) 355-3191 or email at gprom@allete.com.

Sincerely,

Greg Prom

Senior Environmental Compliance Specialist
Minnesota Power/ALLETE
30 West Superior Street
Duluth, Minnesota 55802

Office: 218-355-3191
Cell: 218-461-6856
Email: gprom@allete.com



^[1] On April 10, 2020, MP filed a notification that it would conduct the Recreation Resources Study for both Projects during the 2021 study season instead of 2020 due to COVID-19. MP intends to include the Recreation Resources Study results to date in the filing of the Draft License Application (DLA) and will file final study reports with FERC once the studies and analyses are complete.

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MacVane, Kelly

From: Nora Rosemore (MP) <NRosemore@mnpower.com>
Sent: Wednesday, November 11, 2020 1:19 PM
To: 'ENReviewSHPO@state.mn.us'
Cc: Beimers, Sarah (ADM); Gregory Prom (MP); MacVane, Kelly; Malkin, Devin
Subject: FW: Initial Study Report for Grand Rapids FERC No. 2362 and Prairie River FERC No. 2361

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Ms. Beimers,

I am resending you the email below concerning the Initial Study Report (ISR) for Prairie River Hydro and Grand Rapids Hydro after talking with Greg Prom of Minnesota Power who informed me of the alternate submittal procedures for SHPO due to COVID-19. The email address - ENReviewSHPO@state.mn.us – will be added to our distribution list for future submittals along with your individual email address. A hard copy of the ISR (public version) was also mailed to your office.

Enjoy your day,

Nora Rosemore
Hydro Operations Superintendent
Minnesota Power
(218) 725-2101

From: Nora Rosemore (MP)
Sent: Monday, October 19, 2020 3:35 PM
To:
Cc:
Subject: Initial Study Report for Grand Rapids FERC No. 2362 and Prairie River FERC No. 2361

ALLETE, Inc., doing business as Minnesota Power (MP or Applicant), is the Licensee, owner, and operator of the Grand Rapids Hydroelectric Project (FERC No. 2362), and the Prairie River Hydroelectric Project (FERC No. 2361), collectively, the “Projects.” The Grand Rapids Project is a 2.1 megawatt (MW), run-of-river (ROR) facility located on the Mississippi River in the City of Grand Rapids in Itasca County, Minnesota. The Prairie River Project is a 1.1 MW, ROR facility located on the Prairie River, near the City of Grand Rapids in Arbo Township, Itasca County, Minnesota.

The existing Federal Energy Regulatory Commission (FERC) licenses for the Projects expire on December 31, 2023. Accordingly, MP is pursuing a new license for the Grand Rapids Project and a subsequent license for the Prairie River Project pursuant to FERC’s Integrated Licensing Process (ILP). Although these are separate processes, due to the proximity of the Projects to each other, MP is conducting the processes concurrently with combined documents, meetings, and overall relicensing schedules.

MP has conducted studies as provided in the September 23, 2019 Revised Study Plan (RSP) and approved in FERC’s October 16, 2019 Study Plan Determination (SPD) for the Projects, with the exception of the Recreation Resources Study for both Projects. MP has e-filed the Initial Study Report (ISR) with FERC today –

see confirmation email below. The ISR describes MP's overall progress in implementing the study plans and schedule, summarizes available data, and describes any variances from the study plans and schedule approved by FERC.

FERC's regulations require MP to hold a meeting with participants and FERC staff within 15 days of filing the ISR. Accordingly, **MP will hold an ISR Meeting via Webex from 2 PM to 4 PM (eastern time) on Thursday, October 29, 2020. To allow for adequate planning, MP respectfully requests that those planning on joining the ISR Webex Meeting RSVP by emailing Nora Rosemore at nrosemore@mnpower.com on or before close of business Thursday, October 22, 2020.**

All parties interested in the relicensing process may **obtain a copy of the ISR** electronically through FERC's eLibrary at <https://elibrary.ferc.gov/idmws/search/fercgensearch.asp> under docket numbers P-2362 and P-2361 or on MP's website www.mnpower.com/Environment/Hydro. If any stakeholder would like a CD copy of the ISR, please contact me at nrosemore@mnpower.com.

Our relicensing team looks forward to working with FERC's staff, resource agencies, Indian Tribes, local governments, non-governmental organizations, and members of the public in developing license applications for these renewable energy facilities. If there are any questions regarding the ISR or the overall relicensing process for the Projects, please do not hesitate to contact me at (218) 725-2101 or at the email address above.

Sincerely,

Nora Rosemore
Hydro Operations Superintendent
Minnesota Power

-----Original Message-----

From: eFiling@ferc.gov [<mailto:eFiling@ferc.gov>]

Sent: Monday, October 19, 2020 2:34 PM

To: Nora Rosemore (MP) <NRosemore@mnpower.com>; efilingacceptance@ferc.gov

Subject: [EXTERNAL MAIL] FERC Receipt of Filing in P-2362-043, et al.:

[External Email] --> PROCEED WITH CAUTION This email originated from outside of the company.
Avoid malware - do not open links or attachments unless you know they are safe.

Confirmation of Receipt

This is to confirm receipt by the FERC Office of the Secretary of the following electronic submission:

-Submission ID: 1143159

-Docket(s) No.: P-2362-043, et al.:

-Filed By: Allete, Inc. dba Minnesota Power -Signed By: Nora Rosemore -Filing Desc: ILP Initial or Updated Study Report of Allete, Inc. dba Minnesota Power under P-2362-043, et. al.. ISR for Prairie River 2362 and Grand Rapids 2362 -

Submission Date/Time: 10/19/2020 3:32:00 PM -Projected Filed Date/Time: 10/19/2020 3:32:00 PM (Subject to Change based on OPM/FERC Closure)

Additional detail about your filing is available via the following link:

<https://ferconline.ferc.gov/SubmissionStatus.aspx?hashcode=OJfsTpalXCsYm9cP8Xm79A>

Thank you for participating in the FERC Electronic Filing System. If you have any questions, or if you detect errors in your submission or the FERC-generated PDF, please contact FERC at:

E-Mail: ferconlinesupport@ferc.gov <mailto:ferconlinesupport@ferc.gov> (do not send filings to this address) Voice Mail: 866-208-3676.

From: Gregory Prom (MP)

Sent: Thursday, April 1, 2021 3:27 PM

To: 'ENReviewSHPO@state.mn.us' <ENReviewSHPO@state.mn.us>

Cc: Nora Rosemore (MP) <NRosemore@mnpower.com>; 'Daniel Salas' <DSalas@insitucrm.com>

Subject: RE: Prairie River and Grand Rapids Hydroelectric Project Phase I addendum letters

Good afternoon Sarah,

I am following up to see if you received these addendum updates to the Phase I arch surveys that were performed by In Situ at the Grand Rapids and Prairie River Hydroelectric Projects in Grand Rapids. These addendums were put together in response to the October 2020, initial study report (ISR) public discussion. These addendums were sent out to SHPO and e-filed as privileged with FERC on November 24, 2020. If you didn't receive them I apologize but would appreciate final review and comments.

If you have any questions please let me know.

Sincerely,

Greg Prom

Senior Environmental Compliance Specialist
Minnesota Power/ALLETE
30 West Superior Street
Duluth, Minnesota 55802

Office: 218-355-3191

Cell: 218-461-6856

Email: gprom@allete.com



From: [Gregory Prom \(MP\)](#)
To: [MacVane, Kelly](#)
Subject: FW: RE: Prairie River and Grand Rapids Hydroelectric Project Phase I addendum letters
Date: Tuesday, June 15, 2021 12:15:05 PM
Attachments: [image001.png](#)

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

From: Gregory Prom (MP)
Sent: Friday, June 11, 2021 10:48 AM
To: 'ENReviewSHPO@state.mn.us' <ENReviewSHPO@state.mn.us>; 'Beimers, Sarah (ADM)' <sarah.beimers@state.mn.us>
Cc: Nora Rosemore (MP) <NRosemore@mnpower.com>; 'Daniel Salas' <DSalas@insitucrm.com>
Subject: RE: RE: Prairie River and Grand Rapids Hydroelectric Project Phase I addendum letters

Sarah,

Minnesota Power is working on the Draft License Application (DLA) for Grand Rapids and Prairie River Hydroelectric Project and would really like to include the SHPO comments from the previously submitted addendums. To my knowledge I haven't received any follow-up from this submittal. Is it possible to get comments by next Friday June 18, 2021.

Please let me know if you have any questions,

Sincerely,

Greg Prom

From: Gregory Prom (MP)
Sent: Thursday, April 1, 2021 3:27 PM
To: 'ENReviewSHPO@state.mn.us' <[ENReviewSHPO@state.mn.us](#)>
Cc: Nora Rosemore (MP) <[NRosemore@mnpower.com](#)>; 'Daniel Salas' <[DSalas@insitucrm.com](#)>
Subject: RE: Prairie River and Grand Rapids Hydroelectric Project Phase I addendum letters

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comments.

If you have any questions please let me know.

Sincerely,

Greg Prom

Senior Environmental Compliance Specialist
Minnesota Power/ALLETE
30 West Superior Street
Duluth, Minnesota 55802

Office: 218-355-3191

Cell: 218-461-6856

Email: gprom@allete.com



June 25, 2021

VIA E-MAIL

Greg Prom
Minnesota Power/ALLETE
30 West Superior Street
Duluth, MN 55802-2093

RE: Minnesota Power/ALLETE Application to Relicense Grand Rapids Hydroelectric Project (FERC No. 2362) and the Prairie River Hydroelectric Project (FERC No. 2361)
Itasca County, Minnesota
SHPO Numbers: 2018-2716 (Grand Rapids) and 2018-2723 (Prairie River)

Dear Mr. Prom,

Thank you for the continuing consultation with our office regarding the above-referenced project. Information received in our office via electronic submission on October 19 and November 24, 2020 has been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108) and its implementing federal regulations, "Protection of Historic Properties" (36 CFR Part 800).

We last wrote to you on August 27, 2019 following our review of the Proposed Study Plan (PSP) for the Grand Rapids (FERC No. 2362) and Prairie River (FERC No. 2361) Hydroelectric Projects (Projects) which had been prepared by Minnesota Power (MP) in accordance with the Federal Energy Regulatory Commission's requirements for proposed relicensing. The PSP provided information regarding the proposed scope of historic property identification efforts and assessment of effects to historic properties, if any, to inform our review of the federal undertakings, which, although we continue to understand are being analyzed and reviewed together they are technically separate federal undertakings under Section 106.

On October 19, 2020 our office received an electronic copy of the Initial Study Report (ISR) which provides narrative summaries of cultural resources studies completed thus far. The companion survey reports, listed below, were submitted to our office separately for review and comment:

- Report titled *Phase I Reconnaissance Survey for Relicensing the Grand Rapids Hydroelectric Project (FERC No. 2362), Itasca County, Minnesota* (10/9/2020) as prepared by In Situ Archaeological Consulting and Nelson Cultural Services for Minnesota Power; and
- Report titled *Phase I Reconnaissance Survey for the Prairie River Hydroelectric Project (FERC No. 2361), Itasca County, Minnesota* (10/9/2020) as prepared by In Situ Archaeological Consulting and Nelson Cultural Services for Minnesota Power.

Subsequent to this submission, our office participated in the ISR meeting which was hosted by MP and held via WebEx on October 29, 2020. During this meeting, we requested clarification and additional documentation for MP's defined Area of Potential Effect (APE) for the undertakings.

MINNESOTA STATE HISTORIC PRESERVATION OFFICE

50 Sherburne Avenue ■ Administration Building 203 ■ Saint Paul, Minnesota 55155 ■ 651-201-3287 mn.gov/admin/shpo ■ mnshpo@state.mn.us

AN EQUAL OPPORTUNITY AND SERVICE PROVIDER

In response, on November 24, 2020 MP submitted to our office Addendums to the Phase I Reconnaissance Survey Reports (In Situ, 11/23/2020) which included proposed APE maps and clarification regarding historic property identification efforts within the APEs.

Our comments on the above-referenced material are provided below.

Define Federal Undertaking and Area of Potential Effect (APE)

As indicated in our August 2019 letter, we understand that, due to the geographic proximity of both of the hydroelectric projects, MP has requested a combined Federal Energy Regulatory Commission (FERC) relicensing process. We also understand that FERC intends to prepare a multi-project Environmental Assessment to evaluate probable environmental effects, including cumulative effects, of the proposed action and alternatives, as required by the National Environmental Policy Act (NEPA).

Until further clarification, because they continue to be presented as two (2) separate Projects, we will consider them as separate federal undertakings until we have received clarification from either FERC or MP in accordance with 36 CFR 800.3(a) and 800.16(y).

The Area of Potential Effect (APE) for each Project is described in the Phase I survey reports as:

Grand Rapids Hydroelectric Project (FERC No. 2362). *The Project's APE includes all lands and waters within the FERC Project boundary and also lands and properties outside of the Project boundary where Project-related activities that are conducted in compliance with the FERC license may affect historic properties (HDR 2019). Potential effects associated with the operation and maintenance of the Project include shoreline erosion, sanctioned recreational activities, and basic operation and maintenance activities (project use activities).*

Prairie River Hydroelectric Project (FERC No. 2361). *The Project's APE includes all lands and waters within the FERC Project boundary and also lands and properties outside of the Project boundary where Project-related activities that are conducted in compliance with the FERC license may affect historic properties (HDR 2019). Potential effects associated with the operation and maintenance of the Project include shoreline erosion, sanctioned recreational activities, and basic operation and maintenance activities (project use activities).*

The November 23rd report addenda included additional narrative descriptions for the defined APEs as well as detailed maps which support the narrative descriptions and visually represent the APEs. Based upon information provided in both the survey reports and addenda, we agree that the APEs, as currently defined, are generally appropriate to take into account the potential direct and indirect effects of the proposed undertaking as we currently understand them. As the Projects' scopes are further defined, or if they significantly altered from the current scope, then additional consultation with our office may be necessary in order to revise the current APEs.

Identification of Historic Properties

Our comments and recommendations regarding MP's efforts to identify historic properties within the APE for each Project are provided below.

Grand Rapids Hydroelectric Project (FERC No. 2362)

Archaeology

Based upon information provided in the Phase I survey report and addendum, although there are several archaeological sites identified within the Project vicinity, including two which have never been subject to intensive level survey and evaluation, there are no recorded archaeological sites identified within the APE as it is

currently defined. We agree that the scope and methodology of the archaeological survey are appropriate and also agree with the report's findings.

History/Architecture

We reviewed the current documentation of the **Itasca Paper Company Dam and Powerhouse [IC-GRC-116]** as included in the Phase I survey report, as well as the study of the same property, the **Blandin Paper Company (Dam, Powerhouse, Paper Mill) [IC-GRC-028]** that was completed in 1996, which is referenced in the current study. The property is the only one which was identified as located with the APE as it is currently defined.

According to the authors of the 1996 study (*Report on Cultural Resource Reconnaissance Survey Around the Blandin Paper Company*): "While researching Blandin (the papermill) it became apparent that there were two distinct periods of significance in the mill's history." These included 1902 – 1945, which represents the newsprint era, and 1955 – to the present (which would have been 1996 at the time of the study), which represents the coated magazine paper era. The 1996 study looked at the papermill with its corresponding dam and powerhouse only within the context of the newsprint era. This is understandable as many of the components of the papermill, including the powerhouse, were not yet fifty years old in 1996. The present study also reviewed the dam and powerhouse only within the context of the newsprint era. We agree with the authors of the present study that within the newsprint era neither the dam nor powerhouse is eligible for listing in the National Register under Criteria A, B, or C. This is based on the historic integrity of the property. The dam has been substantially altered over the years and the current powerhouse was not built until 1949, after conclusion of the newsprint era.

However, the current study of the dam and powerhouse did not look at these resources within the context of the coated magazine paper era. Because we lack information on how the dam and powerhouse relate to this distinct period in the papermill's history we cannot make a determination as to whether or not the resources would or would not be National Register eligible as significant components of the mill during the coated magazine paper era.

Lastly, the SHPO's current Historic and Architectural Survey Manual (2017) requires that studies submitted to the SHPO that involve multiple properties must include a single Minnesota Multiple Property Inventory Form, as well as a Minnesota Individual Property Form for each resource. While the current documentation includes a report, it only includes one Individual Property Form that covers both resources. It will be necessary to contact the SHPO database manager (Jim Kumrie) to clarify the apparent redundancy between the two inventory numbers assigned to the same property, and to determine the appropriate inventory numbers, one for each resource, and then complete the Multiple Property Inventory Form and two Minnesota Individual Property Forms. Additionally, the current report and inventory form note that the dam and powerhouse were constructed in 1901-1902. That is true of the dam, but not of the powerhouse. Please correct this information before submitting appropriate inventory forms.

Prairie River Hydroelectric Project (FERC No. 2361)

Archaeology

Based upon information provided in the Phase I survey report and addendum, although there are many archaeological sites identified within the Project vicinity, including several which have never been subject to intensive level survey and evaluation and several others that were previously determined eligible for listing in the National Register of Historic Places (NRHP), there are only three (3) recorded archaeological sites identified within the APE as it is currently defined. We agree with that the following archaeological sites are **not eligible** for listing in the NRHP: **21IC0134, 21IC0138, and 21ICa01**.

History/Architecture

We agree with the following determinations made in the Phase I report for the only properties identified within the APE:

- **Prairie River Hydroelectric Project – Power Plant [IC-ARB-002]** – following the power plant fire in 2008, the property was determined **not eligible** for listing in the NRHP due to lack of historic integrity. A new power plant has been constructed in its place, so this property is categorized as non-extant in our records.
- **Prairie River Hydroelectric Project – Dam [IC-ARB-011]** – this property was determined not eligible for listing in the NRHP through previous federal review (1989) of the Project and our office agrees with the recent evaluation that, as an individual property, it continues to be ineligible for listing in the NRHP. Technically this property should not have been assigned a new inventory number as it had previously been inventoried as part of the Prairie River Hydroelectric Project [IC-ARB-002], with the powerhouse, forebay, and dam defined as a single complex with functionally-related properties.
- **Cabin [IC-ARB-012]** – Based upon information provided in the Phase I reconnaissance survey, we agree that no further survey and evaluation is warranted for the property due to a lack of historic significance and alterations to the original structure.

We look forward to continuing Section 106 consultation with FERC and Minnesota Power/ALLETE regarding these undertakings. Please feel free to contact me if you have any questions regarding our comment letter and/or would like to discuss next steps in the consultation process. I can be reached at (651) 201-3290 or by e-mail at sarah.beimers@state.mn.us.

Sincerely,



Sarah J. Beimers
Environmental Review Program Manager