minnesota power

AN ALLETE COMPANY

September 8, 2023

VIA E-FILING

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

Subject: Little Falls Hydroelectric Project (FERC Project No. 2532)
Sylvan Hydroelectric Project (FERC Project No. 2454)
Pillager Hydroelectric Project (FERC Project No. 2663)
Proposed Study Plan

Dear Secretary Bose:

ALLETE, Inc., doing business as Minnesota Power (MP or Licensee), the Licensee of the Little Falls Hydroelectric Project (Little Falls Project) (FERC No. 2532), Sylvan Hydroelectric Project (Sylvan Project) (FERC No. 2454), and Pillager Hydroelectric Project (Pillager Project) (FERC No. 2663) (Licensee), herein collectively referred to as the "Projects," electronically files with the Federal Energy Regulatory Commission (Commission or FERC) the Proposed Study Plan (PSP) for the relicensing of the Projects in accordance with the requirements of 18 Code of Federal Regulation (CFR) Part 5. The FERC licenses for Projects expire on March 31, 2028. The Licensee is using the Commission's Integrated Licensing Process (ILP) to relicense the Projects. Due to the proximity of the Projects to each other, the Licensee is conducting the relicensing processes concurrently, and is submitting a single PSP for the Projects. In accordance with 18 CFR §5.11 of FERC's regulations, MP is filing the PSP with FERC describing the studies that the Licensee is proposing to conduct in support of relicensing the Projects.

The Little Falls Project is a 4.72-megawatt (MW) run-of-river (ROR) facility located on the Mississippi River in Morrison County, Minnesota. The Sylvan Project is a 1.8 MW ROR facility located on the Crow Wing River in Cass, Crow Wing, and Morrison counties, Minnesota. The Pillager Project is a 1.52 MW ROR facility located on the Crow Wing River in Cass and Morrison counties, Minnesota.

On March 30, 2023, MP filed a Pre-Application Document (PAD) and associated Notice of Intent (NOI) with FERC to initiate the ILP. FERC issued Scoping Document 1 (SD1) for the Projects on May 26, 2023. SD1 was intended to advise resource agencies, Indian Tribes, non-governmental organizations, and other stakeholders as to the proposed scope of FERC's Environmental Assessment (EA) or Environmental Impact Statement (EIS) for the Projects and seek additional information to FERC's analysis.

On June 21, 2023 and June 22, 2023, FERC held public scoping meetings in Little Falls, Minnesota. During these meetings, FERC staff presented information regarding the ILP and details regarding the study scoping process and how to request a relicensing study, including FERC's study criteria. In addition, FERC staff solicited comments regarding the scope of issues and analysis for the EA or EIS. A public site visit of the Projects was conducted on June 21, 2023.

Stakeholders were provided a 60-day period to request studies and provide comments on the PAD and SD1. The comment period was initiated with FERC's May 26, 2023 notice and concluded on July 25, 2023. During the comment period, a total of seven letters were received providing comments on the PAD and SD1, and/or study requests.

Proposed Study Plan

MP has evaluated all the study requests and comments submitted by the stakeholders, with a focus on the requests that specifically addressed the seven criteria for study requests as set forth at 18 CFR§5.9(b) of FERC's ILP regulations. For the study requests that did not address the seven study criteria, where appropriate, MP considered the study in the context of providing the requested information in conjunction with one or more of MP's proposed studies.

The purpose of the PSP is to present the studies that are being proposed by MP and to address the study requests submitted. The PSP provides details of MP proposed studies. MP is proposing to conduct the following studies as described in detail in the PSP:

Little Falls Project

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

Sylvan Project

- Water Quality Study
- Desktop Fish Entrainment and Impingement Study
- Recreation Use and Facility Inventory Study
- Cultural Resources Study

Pillager Project

- Desktop Fish Entrainment and Impingement Study
- Recreation Use and Facility Inventory Study
- Cultural Resources Study

Please direct any questions pertaining to the Projects to me by phone at (218) 355-3191 or e-mail at gprom@allete.com.

Best Regards,

Greg Prom
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Attachments: Distribution List
Proposed Study Plan for the Little Falls Project (FERC P-2532), Sylvan Project (FERC P-2454), and Pillager Project (FERC P-2663)

Little Falls (P-2532), Sylvan (P-2454), Pillager (P-2663) Hydroelectric Projects
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Proposed Study Plan

Little Falls Hydroelectric Project
FERC P-2532

Sylvan Hydroelectric Project
FERC P-2454

Pillager Hydroelectric Project
FERC P-2663

Prepared for:
ALLETE, Inc.

Prepared by:
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September 2023

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DEFINITIONS OF TERMS, ACRONYMS, AND ABBREVIATIONS

APE	Area of Potential Effects
CFR	Code of Federal Regulations
Commission	Federal Energy Regulatory Commission
DLA	Draft License Application
DO	dissolved oxygen
EJ	Environmental justice
°F	degrees Fahrenheit
FERC	Federal Energy Regulatory Commission
FPA	Federal Power Act
ILP	Integrated Licensing Process
ISR	Initial Study Report
Licensee	ALLETE, Inc., doing business as Minnesota Power
Little Falls Project	Little Falls Hydroelectric Project, FERC P-2532
mg/L	milligram per liter
Minnesota DNR	Minnesota Department of Natural Resources
Minnesota PCA	Minnesota Pollution Control Agency
MP	Minnesota Power
MW	megawatt
NOI	Notice of Intent
NRHP	National Register of Historic Places
PAD	Pre-Application Document
Pillager Project	Pillager Hydroelectric Project, FERC P-2663
Project Vicinity	The area within ½ mile of the associated FERC Project Boundary
PSP	Proposed Study Plan
ROR	run-of-river
RSP	Revised Study Plan
SD1	Scoping Document 1
SHPO	State Historic Preservation Office
Sylvan Project	Sylvan Hydroelectric Project, FERC P-2454
TCP	Traditional Cultural Property
THPO	Tribal Historic Preservation Office
TPL	Trust for Public Land
USGS	U.S. Geological Survey
USR	Updated Study Report

1.0 INTRODUCTION

ALLETE, Inc, doing business as Minnesota Power (MP), is the Licensee, owner, and operator of the Little Falls Hydroelectric Project (P-2532) (Little Falls Project), Sylvan Hydroelectric Project (P-2454) (Sylvan Project), and Pillager Hydroelectric Project (P-2663) (Pillager Project), herein collectively referred to as the "Projects." The Little Falls Project is a 4.72-megawatt (MW) run-of-river (ROR) facility located on the Mississippi River in Morrison County, Minnesota. The Sylvan Project is a 1.80 MW ROR facility located on the Crow Wing River in Cass, Crow Wing, and Morrison counties, Minnesota. The Pillager Project is a 1.52 MW ROR facility located on the Crow Wing River in Cass and Morrison counties, Minnesota.

The Projects are licensed by the Federal Energy Regulatory Commission (FERC or Commission). There are no federal lands associated with the Projects. The Little Falls Project FERC license was issued October 27, 1993.[1] The Sylvan Project FERC license was issued October 29, 1993.[2] The Pillager Project FERC license was issued April 27, 1998.[3] The current operating licenses for each of the Projects expire on March 31, 2028. In accordance with FERC's regulations at 18 Code of Federal Regulations (CFR) §16.9(b), the Licensee must file its applications for new licenses for the Projects with FERC no later than March 31, 2026. The Licensee is using the Commission's Integrated Licensing Process (ILP) for the relicensing of the Projects.

On March 30, 2023, the Licensee filed with the FERC a Pre-Application Document (PAD) and three Notice of Intents (NOIs) for the Projects. The NOIs and PAD were distributed to Federal and state resource agencies, local governments, Native American tribes, non-governmental organizations, and others likely to be interested in the relicensing proceeding. FERC issued Scoping Document 1 (SD1) on May 26, 2023, which includes the ILP Process Plan and Schedule for the relicensing of the Projects. FERC held two scoping meetings, on June 21 and 22, 2023. Visits to the Projects were held on June 21, 2023. FERC provided agencies and interested parties an opportunity to file comments on the PAD and the SD1 and request studies by July 28, 2023.

Comments and/or study requests were received from Nienow Cultural Consultants LLC in a letter dated July 19, 2023, Sylvan Township on July 20, 2023, the Crow Wing County Historical Society in a letter dated July 21, 2023, the Minnesota State Historic Preservation Office (Minnesota SHPO) on July 24, 2023, the Friends of Old Crow Wing on July 25 and 27, 2023, the FERC on July 27, 2023, and Minnesota Department of Natural Resources (Minnesota DNR) on July 28, 2023. Minnesota Power held a meeting with Minnesota SHPO to discuss the agency's study requests on August 30, 2023 (Appendix A).

[1] 65 ¶ 62,084 (1993).
[2] 65 ¶ 62,094 (1993).
[3] 83 ¶ 62,073 (1998).

MP has evaluated the study requests and comments submitted by the stakeholders, The purpose of the Proposed Study Plan (PSP) is to present the studies that are being proposed by MP and to address the study requests submitted.

2.0 COMMENTS ON THE PROPOSED STUDY PLAN

Comments on the Licensee's Proposed Study Plan (PSP) (including any revised information or study requests) must be filed by December 10, 2023. Comments must also include "an explanation of any study plan concerns and any accommodations reached with [the Licensee] regarding those concerns" (18 CFR § 5.12). Further, any proposed modifications to the Licensee's PSP must address the criteria in 18 CFR § 5.9(b):

(1) Describe the goals and objectives of each study proposal and the information to be obtained;

(2) If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied;

(3) If the requester is not a resource agency, explain any relevant public interest considerations in regard to the proposed study;

(4) Describe existing information concerning the subject of the study proposal, and the need for additional information;

(5) Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements;

(6) Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge; and

(7) Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs.

3.0 INITIAL PROPOSED STUDY PLAN MEETING AND ADDITIONAL MEETINGS

The Licensee proposes to hold the PSP Meeting pursuant to 18 CFR § 5.11(e) on Wednesday, October 11, 2023 at 9:00AM-11:00AM Central Time. The meeting will be held virtually via videoconference. The purpose of the PSP Meeting will be to clarify the intent and contents of the Licensee's PSP, share any initial information or study responses, and identify any outstanding issues with respect to the PSP. Additional meetings may be scheduled after this meeting, as necessary, to discuss proposed studies.

4.0 PROGRESS REPORTS, STUDY REPORT, MEETINGS

The Licensee intends to conduct the studies outlined in Section 5.0 during the 2024 and 2025 field seasons.[4] The estimated start and completion dates for the proposed studies are provided in Table 1.

Table 1: Estimated Start and Completion Dates for Proposed Studies

Proposed Study	Estimated Start Date	Estimated Completion Date
Water Quality Study	June 2025	October 2025
Desktop Fish Entrainment and Impingement Study	May 2024	September 2024
Recreation Use and Facility Inventory Study	May 2025	October 2025
Historic Architectural Resources Survey	May 2024	September 2024
Archaeological Resources Survey	May 2024	September 2024

The Licensee will meet the progress reporting dates as specified in the ILP Process Plan and Schedule available in Appendix B of FERC's SD1. The Initial Study Report (ISR) will be filed by February 7, 2025, followed by an ISR meeting as specified in the ILP Process Plan and Schedule. The ISR is anticipated to include the results of the Desktop Fish Entrainment and Impingement Study, Historic Architectural Resources Study, and Archaeological Resources Study. The Water Quality Study and the Recreation Use and Facility Inventory Study are proposed to be conducted in the second study season (2025), and the results will be provided in the Updated Study Report (USR) by February 7, 2026.

[4] In an effort to spread out study costs, the Licensee is proposing to conduct the studies across two seasons.

5.0 INDIVIDUAL STUDY PLAN PROPOSALS

5.1 Water Quality Study

FERC requested a water quality study to evaluate dissolved oxygen (DO) and water temperature at the Little Falls Project and Sylvan Project.

5.1.1 Goals and Objectives

The goal of the Water Quality Study is to evaluate DO and water temperature conditions both upstream and downstream of the Little Falls Project and Sylvan Project to determine if they meet state water quality standards.

The objectives of the Water Quality Study are:

a) document the DO concentration and temperature of water entering the project intakes;

b) identify the degree and timing of any stratification that may occur;

c) identify temporal variations in DO and water temperature;

d) identify any instances where DO and water temperature levels do not meet applicable state standards; and

e) identify any differences in DO and water temperature in the river downstream of each Project.

5.1.2 Known Resource Management Goals

The State of Minnesota has established water quality standards (Minnesota Statute Chapter 7050) for the protection of water resources. Water quality standards applicable to the Crow Wing and Mississippi Rivers at the Little Falls Project and Sylvan Project are included in Table 2.

Sections 4(e) and 10(a) of the Federal Power Act (FPA) require FERC to give equal consideration to all uses of the waterway on which a hydroelectric project is located, and what conditions should be placed on any license that may be issued. Water quality information is necessary for FERC's public interest determination as it relates to aquatic conditions at the project, and their effect on public use opportunities. Documenting current baseline water quality conditions, and identifying potential project effects, will aid in FERC's public interest determination.

Table 2: Water Quality Standards Applicable to the Little Falls Project and Sylvan Project

Parameter	Numeric Criteria
Dissolved Oxygen (milligram per liter [mg/L])	Daily minimum of 5.0 mg/L
Temperature (degree Fahrenheit [°F])	Temperature must not exceed three degrees Fahrenheit above natural temperature in lakes, based on monthly average of maximum daily temperature, and shall not exceed a daily average temperature of 86 degrees Fahrenheit

Source: Minnesota Rules Statute 7050.0220

5.1.3 Background and Existing Information

The PAD, Section 5.2, *Water Resources*, provides existing water quality data collected upstream and downstream of the Little Falls Project and Sylvan Project. Water quality data at the Little Falls Project and Sylvan Project were documented during 1989-1990 in support of the previous relicensing. The Minnesota Pollution Control Agency (Minnesota PCA) collected additional dissolved oxygen and temperature data upstream and downstream of the Little Falls Project during 2010-2018, and of the Sylvan Project during 2008-2020.

5.1.4 Project Nexus

The Little Falls Project and Sylvan Project impound water on the Crow Wing and Mississippi Rivers, respectively. Operations may affect water quality parameters in the rivers, including DO and water temperature, depending on factors including impoundment stratification and operating conditions.

5.1.5 Methodology

The Water Quality Study will be used to document baseline information on water quality at the Little Falls Project and Sylvan Project to further expand on the water quality information that has been previously collected. The study will employ methodologies that are similar to those used for FERC-approved studies at other hydropower projects in the region, including those used during the Grand Rapids Project (FERC P-2362)[5], Prairie River Project (FERC P-2361)[6], and Brainerd Project (FERC P-2533)[7] relicensings.

The information collected during this study will be used to assess the Little Falls Project and Sylvan Project potential effects on water quality and provide water quality information to compare with

[5] FERC Accession Number 20190923-5178
[6] FERC Accession Number 20190923-5178
[7] FERC Accession Number 20181210-5189

state water quality standards. MP will monitor DO and water temperature at the Little Falls Project and Sylvan Project. Water quality monitoring locations are described below, and in Figure 1 and Figure 2.

Water quality will be documented using a handheld YSI portable DO/temperature meter, or similar. The meter will be calibrated per factory specifications in advance of sampling efforts. All water quality monitoring locations will be georeferenced using Global Positioning System and general habitat conditions will be noted. Exact monitoring locations will be finalized with consideration for safe access. Measurements will be taken biweekly (every other week) to avoid data clustering. Data collection will occur from June through September 2025.

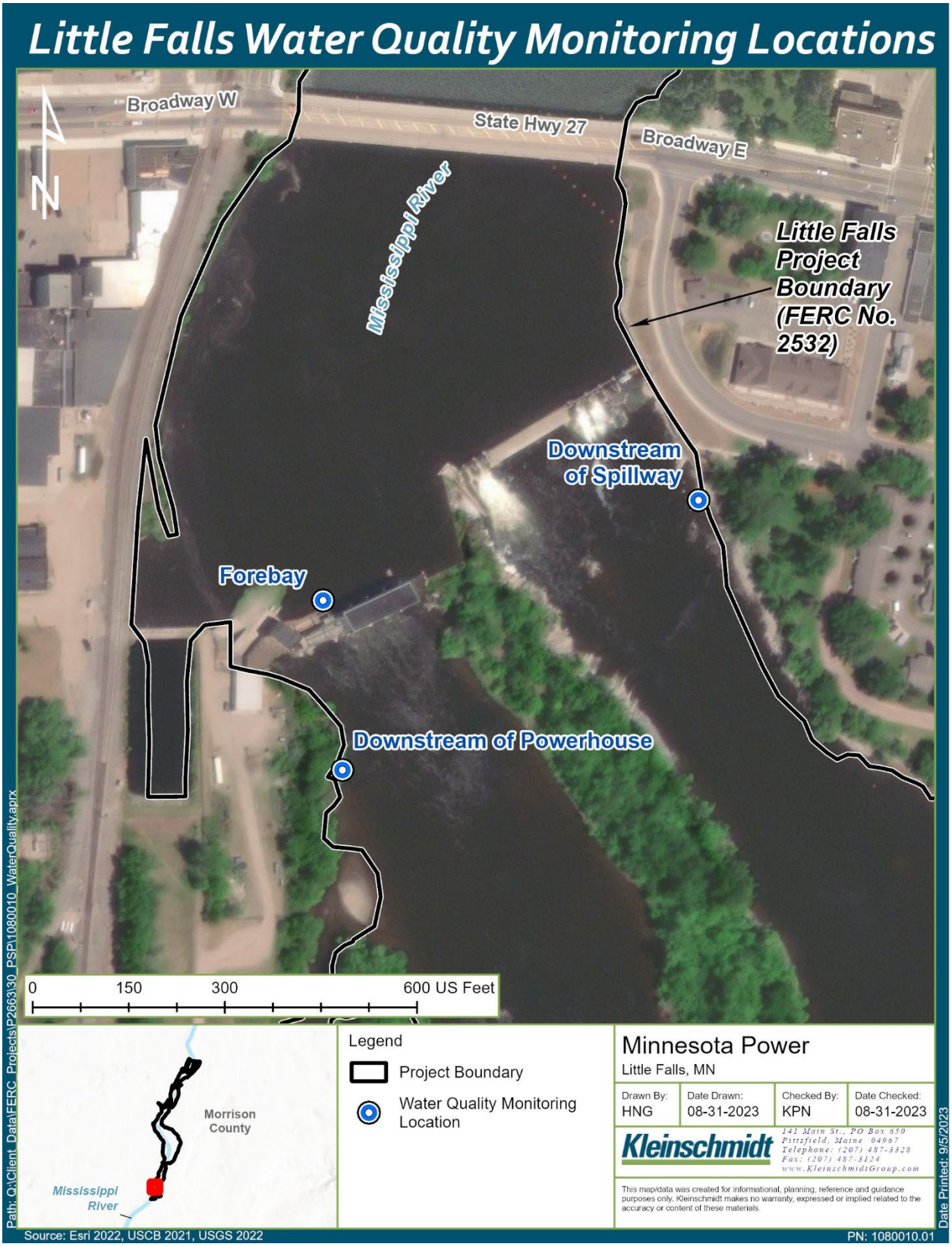
Additional information documented during the study will include:

- Discharge downstream of the Little Falls Project and Sylvan Project as recorded at United States Geological Survey (USGS) stream gage numbers 05247500 and 05267000;
- Ambient air temperature and current weather conditions; and
- Photographs of each sampling location.

5.1.5.1 Little Falls Project

DO and water temperature at the Little Falls Project will be documented at three locations: 1) forebay; 2) downstream of the spillway; and 3) downstream of the powerhouse. The Little Falls Project water quality monitoring locations are shown on Figure 1. Water quality data at the two upstream locations will be taken at 1-meter intervals in the water column from surface to bottom. Measurements at the locations downstream of the spillway and powerhouse will be taken from the river bottom.

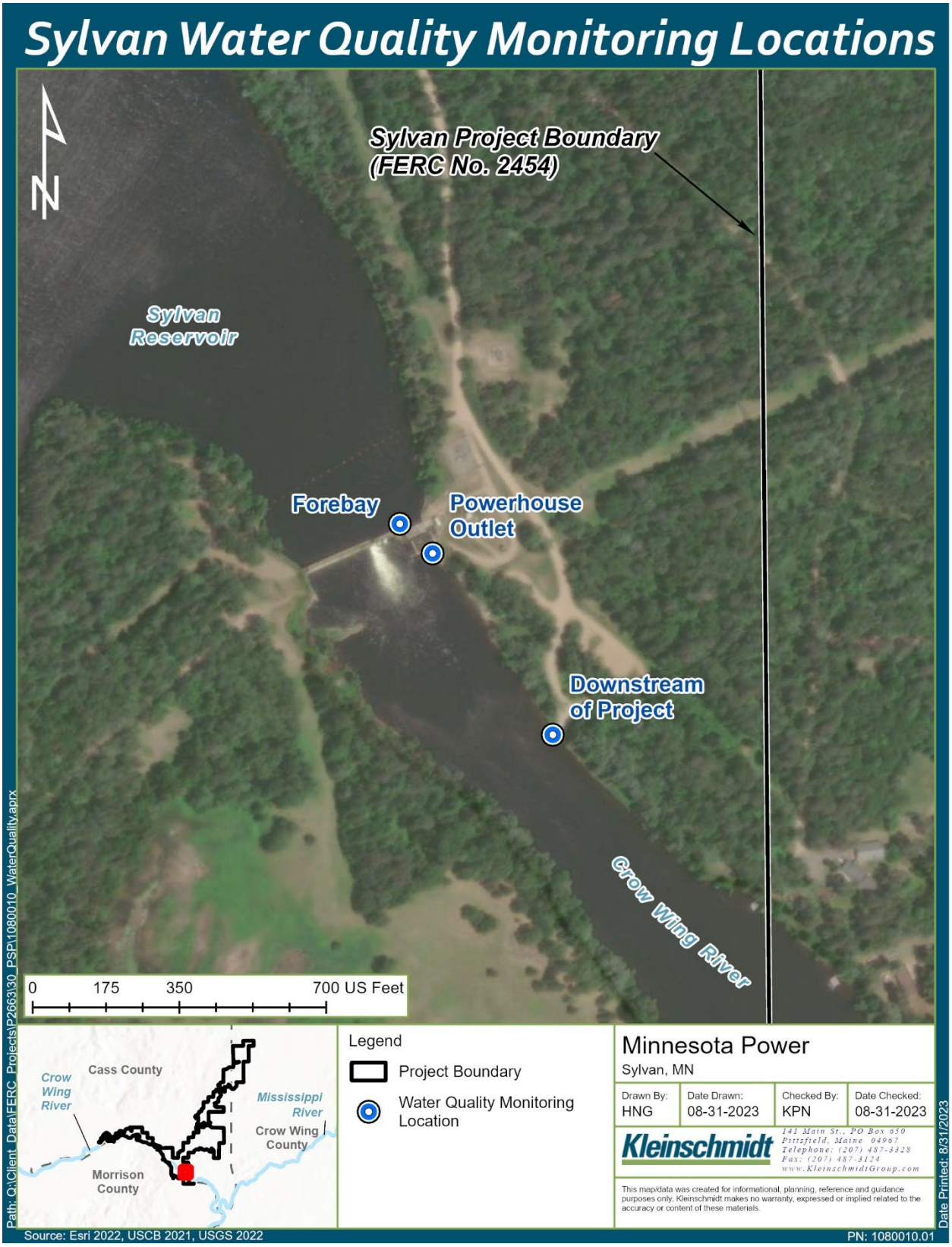
Figure 1: Little Falls Project Water Quality Monitoring Locations



5.1.5.2 Sylvan Project

DO and water temperature at the Sylvan Project will be documented at three locations: 1) upstream of the turbine intake area; 2) immediately downstream of the powerhouse; and 3) downstream of the Sylvan Project dam. The Sylvan Project water quality monitoring locations are shown on Figure 1. Water quality data upstream of the powerhouse will be taken at 1-meter intervals in the water column from surface to bottom. Water quality data at the powerhouse outlet will be taken from the surface, middle, and bottom of the water column. Water quality data at the downstream location will be taken from the river bottom.

Figure 2: Sylvan Project Water Quality Monitoring Locations



5.1.6 Consistency with Generally Accepted Scientific Practice

The proposed methods to monitor water quality are standard practice within FERC relicensings, and are consistent with accepted professional practices, including those utilized in the FERC-approved study plans for MP's Grand Rapids Project (FERC P-2362) and Prairie River Project (FERC P-2361) relicensing, and Brainerd Public Utility's Brainerd Project (FERC P-2533) relicensing.

5.1.7 Deliverables and Schedule

Water quality monitoring will occur at the Little Falls Project and Sylvan Project during June through September 2025. Reports for the Little Falls Project and Sylvan Project containing the results of the Water Quality Study will be prepared and provided in the ISR to be distributed to the relicensing parties and filed with the Commission in accordance with the Commission's ILP Process Plan and Schedule. The Water Quality Study Reports will include a descriptive summary and graphical representations of DO and water temperature data collected at all sites.

5.1.8 Cost and Level of Effort

The estimated cost of the proposed study is approximately $30,000, which includes data collection, data input and analysis, and report preparation.

5.2 Desktop Fish Entrainment and Impingement Study

FERC requested a study to assess the potential for fish entrainment and impingement at the Little Falls Project, Sylvan Project, and Pillager Project, and the potential effects of entrainment and impingement on the local fish communities.

5.2.1 Goals and Objectives

The goal of the Desktop Fish Entrainment and Impingement Study is to evaluate the potential for fish entrainment and impingement, assess survival of potentially entrained fish, and assess the effect that entrainment and impingement may have on the local fish communities.

The objectives of the Desktop Fish Entrainment and Impingement Study are:

a) Describe the physical characteristics of the Projects (i.e., intake structures and turbines), and document factors that could affect impingement, entrainment, and survival as they relate to intake dimensions, trashrack spacing, turbine specifications, intake velocity, and flow capacity;

b) Determine target fish species or family groups, and describe factors that influence their vulnerability to impingement, entrainment and turbine survival;

c) Estimate entrainment rates and turbine passage survival rates for target fish species or family groups; and

d) Describe potential effects to local fish communities from potential entrainment and impingement.

5.2.2 Known Resource Management Goals

Fish populations at the Little Falls Project, Sylvan Project, and Pillager Project support sport fisheries. Sections 4(e) and 10(a) of the FPA require FERC to give equal consideration to all uses of the waterway on which a hydroelectric project is located, and what conditions should be placed on any license that may be issued. Information on potential project effects to fish communities is necessary for FERC's public interest determination as it relates to aquatic conditions at the Projects, and their effect on public use opportunities including sport fishing. Documenting the potential for fish entrainment and potential, and identifying potential project effects, will aid in FERC's public interest determination.

5.2.3 Background and Existing Information

Existing information on the fish communities at the Pillager, Sylvan, and Little Falls Projects is summarized in PAD Section 5.3, *Fish and Aquatic Resources*. Fish assemblage surveys at the Projects have been conducted by the Minnesota DNR during recent years, and have documented abundant game fish species (e.g., smallmouth bass) and nongame species (e.g., cyprindids). Minnesota DNR surveys in the Mississippi River at Little Falls have been conducted since 1994, with a focus on smallmouth bass. All gamefish species encountered have been documented during these surveys. Additional surveys have been conducted by the Minnesota DNR and Minnesota PCA during recent years on the reaches of the Crow Wing River that include the Pillager Project and Sylvan Project, and through the larger Crow Wing River Watershed. Multiple sampling techniques, including gill netting, trap netting, and electrofishing, have been used to document the overall fish communities. Bluegill and smallmouth bass were among the most abundant gamefish species. Walleye are also present at the Projects, and the Minnesota DNR has maintained a walleye stocking program.

5.2.4 Project Nexus

Injury or mortality from entrainment can occur when fish pass downstream through hydroelectric dam intakes. Entrainment injuries or mortality can be caused by fish coming into contact with turbine blades, or from pressure changes and cavitation associated with operations at the Projects.

5.2.5 Methodology

Fish impingement and entrainment at the Projects may occur when fish enter into the intake flow field during periods of operation and become impinged on the trashracks or entrained through the turbines. Fish that are small enough to pass through the Projects trashracks will be considered susceptible to entrainment, while those physically excluded due to size (i.e. width) will be considered as potential candidates for impingement. Not all fish species occurring in the Projects impoundments will be equally susceptible to entrainment or impingement because of their behavior and swimming abilities relative to the intake velocity.

The primary inputs for this analysis will be as follows:

- Develop an entrainment and turbine mortality database that can be applied to the Projects.
- Calculate and estimate fish entrainment rates at the Projects. Entrainment rates are defined as: number of fish/volume of water entrained.
- Characterize the species composition of potential fish entrainment.
- Apply any physical or biological filters that may influence entrainment.
- Estimate the total annual entrainment for the Projects based on normal operation.
- Estimate potential turbine mortality for fish entrainment based on turbine mortality estimates from similar project studies.
- Estimate impingement mortality for fish eliminated from entrainment estimates.

These inputs are described in more detail below.

5.2.5.1 Development of an Entrainment Database

Over seventy site-specific studies of resident fish entrainment at hydroelectric sites in the United States have been reported to date, which provide order-of-magnitude estimates of annual fish entrainment (FERC 1995). Descriptive information will be gathered from available entrainment studies and will include:

- Location: geographic proximity (preference given to same river basin).
- Project size: discharge capacity and power production.
- Mode of operation: e.g., peaking, run-of-river, etc.
- Biological factors: fish species composition.
- Impoundment characteristics: impoundment size, flow regime.

This information will be assembled into a "matrix" to be used as a database for the desktop study. After review, specific studies that are most applicable to the Projects will be selected for use in the entrainment database. Key criteria to be used in acceptance of candidate studies may include:

- Similar geographic location, with preference given to projects located in the same river basin.
- Similar station hydraulic capacity.
- Similar station operation (peaking, run-of-river, etc.).
- Biological similarities (fish species, assemblage and water quality).
- Availability and type of entrainment data.

Using these criteria, the list of potential surrogate studies will be narrowed to sites with characteristics similar to the Projects.

5.2.5.2 Estimation of Fish Entrainment

Fish entrainment by species at the Little Falls Project, Sylvan Project, and Pillager Project will be estimated to provide an order-of-magnitude fish entrainment estimate. Entrainment rates will be presented in fish entrained per hour of operation and fish per volume of water passed through turbines (fish/million cubic feet). The entrainment rates from each source study will be averaged to develop a mean entrainment estimate for each of the Projects.

5.2.5.3 Species Composition Analysis

Existing site-specific fish collection data will be used to characterize the fish communities that may be susceptible to entrainment. These data will be used to calculate the relative abundance of species and length class compositions for potentially entrained fish based on their overall abundance in the Projects impoundments.

5.2.5.4 Application of Physical or Biological Filters

Adjustment of fish entrainment rates based on site-specific characteristics of the Projects may be appropriate. Factors potentially affecting entrainment rates that may warrant adjustment of estimates include:

- Trashrack spacing.
- Site-specific fish community data

Project specific parameters will be used to calculate the approach velocity of water (feet per second) at the intakes. Velocity will then be compared to swimming speeds of fish that could potentially encounter the intakes to determine species or size classes of fish that are less

susceptible to entrainment. Fish swimming speeds will be estimated based on existing literature for species or size specific swim speed characteristics.

5.2.5.5 Total Annual Entrainment Estimate

Total fish entrainment for the Projects will be estimated on an annual basis to provide an order of-magnitude entrainment estimate. The total fish entrainment estimate will be produced based on operations during a typical water year. Estimates of total annual entrainment will be developed by multiplying the average annual entrainment rate by the estimated monthly generation flow for the Little Falls Project, Sylvan Project, and Pillager Project. Entrainment rates will be presented in fish per volume of water passed through project turbines (fish/million cubic feet).

5.2.5.6 Turbine Mortality

As fish move through hydroelectric turbines, a percentage are killed due to turbine mortality (i.e., blade strikes, shear forces, and pressure changes, etc.). Estimates of entrainment and the rate of mortality from turbine stressors will be calculated with a blade strike analysis. Inputs for the blade strike equations will use project specific turbine parameters. The blade strike model allows for the modification of parameters such as fish size or turbine characteristics to determine the relative effect on turbine passage survival for specific size classes of fish. The calculated mortality rates will be applied to the total entrainment estimates for each of the Projects.

5.2.5.7 Impingement Estimates

Fish eliminated from entrainment estimates due to their size in relation to the trashrack spacing will be considered susceptible to impingement. Swim speed information for these species and size groups will be compared to intake velocities to estimate the potential for impingement. Those species or size groups lacking the ability to avoid impingement will be considered impinged and subsequently killed due to impingement mortality.

5.2.6 Consistency with Generally Accepted Scientific Practice

The proposed methods to assess potential fish entrainment and impingement are standard practice within FERC relicensings and are consistent with accepted professional practices. The study will employ methodologies that are similar to those used for FERC-approved studies at other hydropower projects in the region, including those used during the Grand Rapids Project (FERC P-2362)[8], Prairie River Project (FERC P-2361) [9], and Brainerd Project (FERC P-2533)[10] relicensings.

[8] FERC Accession Number 20190923-5178
[9] FERC Accession Number 20190923-5178
[10] FERC Accession Number 20181210-5189

5.2.7 Deliverables and Schedule

Desktop entrainment and impingement analyses will be conducted during 2024 with an anticipated completion in September 2024. Reports containing the results of the Desktop Fish Entrainment and Impingement Study will be prepared and provided in the ISR to be distributed to the relicensing parties and filed with the Commission in accordance with the Commission's ILP Process Plan and Schedule. The reports will include a description of physical characteristics of the Projects, a description of local fish assemblages, estimates of annual fish entrainment, blade strike mortality calculations, and a description of potential project effects on the overall fish communities.

5.2.8 Cost and Level of Effort

The estimated cost of the proposed study is approximately $20,000 per Project, for a total approximate cost of $60,000. This cost estimate includes data input and analysis, and report preparation.

5.3 Recreation Use and Facility Inventory Study

FERC requested a recreation study, including a current inventory of recreation facilities and a study to collect information on existing recreation opportunities and use at the Sylvan Project and Pillager Project.

5.3.1 Goals and Objectives

The goal of the Recreation Use and Facility Inventory Study is to gather current information on recreation facilities, recreational use, and potential project effects to determine existing and future recreation use and capacity at the Sylvan Project and Pillager Project. Because all recreation sites in the Little Falls Project vicinity are owned and operated by the City of Little Falls, the study proposed below will only be administered at the Sylvan Project and Pillager Project.

The objectives of the Recreation Use and Facility Inventory Study are:

a) inventory and identify the condition of the recreation facilities and associated amenities at the Commission-approved Sylvan Project and Pillager Project recreation sites identified in Table 3 and Table 4 (including any erosion that may exist due to recreational use);

b) identify who owns, operates, and maintains each Sylvan Project and Pillager Project recreation site and/or facility;

c) describe each Sylvan Project and Pillager Project recreation site and/or facility in relation to its associated project boundary;

d) conduct user surveys during the recreation season to determine the adequacy of the Commission-approved Sylvan Project and Pillager Project recreation sites and if modifications to the sites would be needed to meet current or future recreation needs; and

e) determine the current and projected capacity at each Commission-approved Sylvan Project and Pillager Project recreation site and/or facility.

5.3.2 Known Resource Management Goals

Sections 4(e) and 10(a) of the FPA require FERC to give equal consideration to all uses of the waterway on which a hydroelectric project is located, and what conditions should be placed on any license that may be issued. Detailed information on the condition of Sylvan Project and Pillager Project recreation facilities, current use, and whether existing access facilities in the area are meeting recreation demand would inform a decision on whether additional public access and/or facilities at the Sylvan Project and Pillager Project are necessary to meet existing and future demand at the Sylvan Project and Pillager Project. Recreation is a project purpose for the Sylvan

Project and Pillager Project. Identifying effects of operations of the Sylvan Project and Pillager Project pertaining to recreation is relevant to the Commission's public interest determination in issuing new licenses for the continued operation of the Sylvan Project and Pillager Project.

5.3.3 Background and Existing Information

The PAD, Section 5.7, *Recreation and Land Use*, provides background information about recreation opportunities at the Projects. As the Licensee does not directly provide recreational facilities at the Little Falls Project, the PAD describes public recreation sites in the Little Falls Project Vicinity. For the Sylvan Project and Pillager Project, the PAD describes existing Sylvan Project and Pillager Project Commission-Approved Project Recreation Sites. These sites are listed in Table 3 and Table 4 and locations are depicted on Figure 3 and Figure 4.

Table 3: Sylvan Project Commission-Approved Project Recreation Sites

Site Name	Description	Operator
Wilder's Landing	Boat launch at the northwest end of the Crow Wing River. Concrete boat ramp and parking for approximately 15 vehicles.	Minnesota DNR
Fisherman's Bridge Boat Launch and Fishing Area	Located on the north end of Sylvan reservoir. Designated shorefishing area with parking for approximately five vehicles. Concrete boat launch and dock with parking for approximately 15 vehicles.	Minnesota DNR. MP leases the site to the Minnesota DNR.
Sylvan Dam Boat Access and Fishing Area	Concrete boat launch providing access to the Crow Wing River below the dam. The site provides 10 parking spaces for anglers and approximately 10 additional spaces for boaters.	Minnesota DNR. MP leases the site to the Minnesota DNR.
Canoe Portage	Portage around the dam. Located on the east side of the dam and approximately 200 yards in length.	MP

Table 4: Pillager Project Commission-Approved Project Recreation Sites

Site Name	Description	Operator
Alvah's Landing (Minnesota DNR Boat Launch)	Boat launch located approximately 2.5 miles upstream from the Pillager Project dam, on the south shore of the Crow Wing River. Parking for approximately 15 vehicles and a concrete boat ramp.	Minnesota DNR
Pillager Dam Public Boat Launch	Boat launch located on the north shore of Pillager reservoir, adjacent to the dam. Parking for approximately 15 vehicles and a concrete boat ramp.	Minnesota DNR and MP. (MP owns the land, and leases the land to Minnesota DNR)

Pillager Dam Public Canoe Portage and Shorefishing Access	Portage around the south end of Pillager dam. Approximately 300 feet in length.	MP
Crow Wing River Canoe Campsite	Two canoe-up primitive campsites on the north shore of the Crow Wing River, just downstream of Alvah's landing.	MP

Figure 3: Sylvan Project Recreation Sites

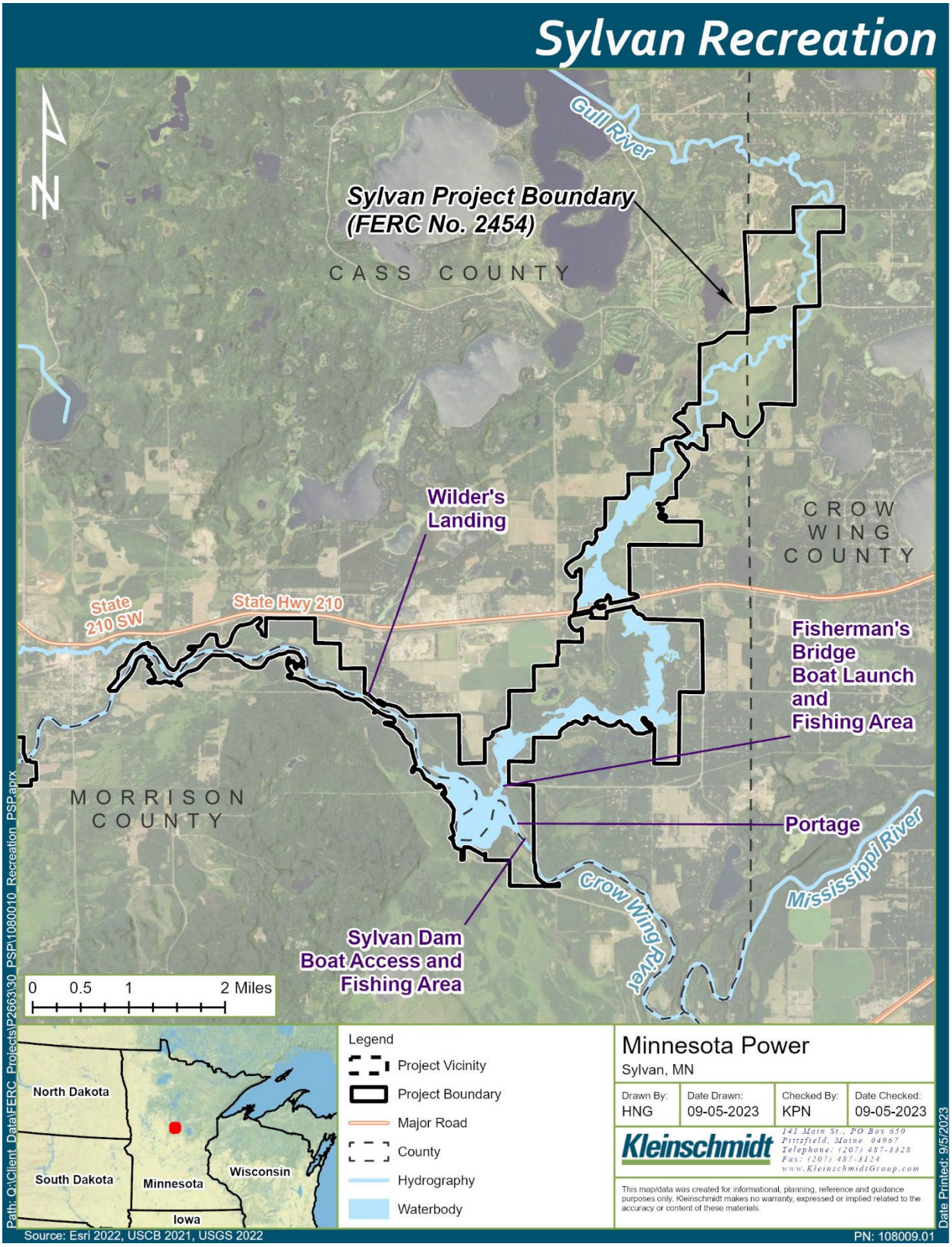
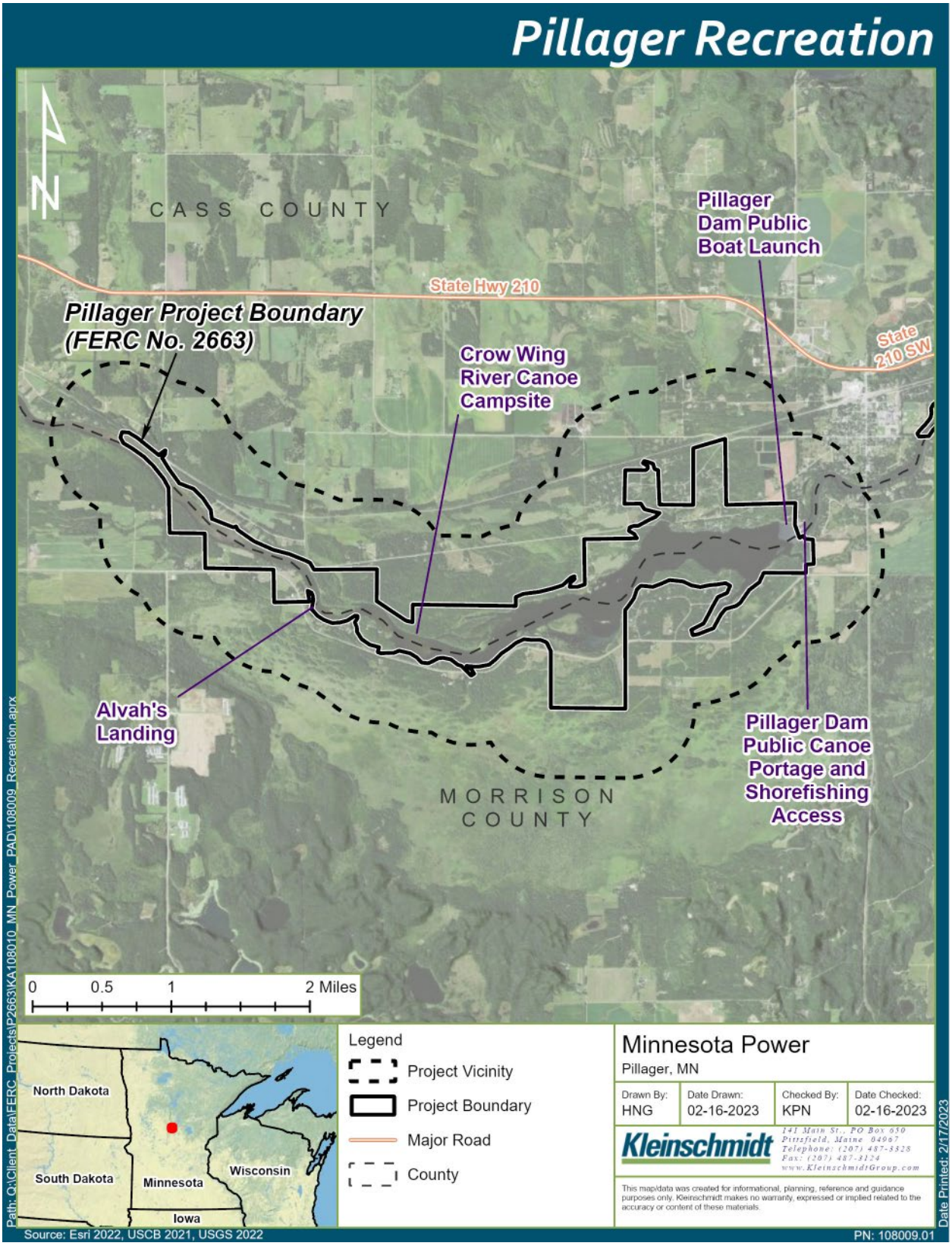


Figure 4: Pillager Project Recreation Sites



5.3.4 Project Nexus

Recreation is a recognized project purpose under section 10(a) of the FPA. The Licensee will undertake measures including ongoing maintenance of recreation facilities for project purposes throughout the license term. Therefore, FERC would have ongoing responsibility to ensure compliance and that those recreation facilities meet recreational demand over the term of the new license.

5.3.5 Methodology

The recreation study will include two parts: 1) a Recreation Facility Inventory and Condition Assessment, and 2) Recreation Use Assessment.

5.3.5.1 Recreation Facility Inventory and Condition Assessment

The Licensee will perform a field inventory to document the existing recreation facilities and amenities at the Commission-approved recreation sites at the Sylvan Project and Pillager Project (Table 3 and Table 4). The inventory will include the following:

1) the location of facilities in relation to the associated project boundary;
2) the types and number of amenities provided at each site and/or facility;
3) the condition of the facility/amenities;
4) the entities responsible for the operation and maintenance of each facility;
5) hours/seasons of operation; and
6) accompanying photographs.

Additionally, field investigations at each recreation site will identify areas that have characteristics of erosion, slumping, or other forms of instability. The field investigation will include photographs of areas of instability. The Recreation Facility Inventory and Condition Assessment form that will be used is available in Appendix B. The conditions of the facilities will be assessed as follows:

N = Needs replacement (Facility is non-functional or has broken or missing components)

R = Needs repair (Facility has structural damage or is in an obvious state of disrepair)

M = Needs maintenance (Facility needs maintenance, such as cleaning or painting)

G = Good condition (Facility is functional and well maintained)

5.3.5.2 Recreation Use Assessment

The Recreation Use Assessment includes recreational observations and recreation use surveys at the FERC-approved recreation sites at the Sylvan Project and Pillager Project (Table 3 and Table 4), as described below.

The Recreation Use Assessment field observations and use surveys will be conducted over 40-minute intervals at different times of day on a rotating basis to account for time-of-day use patterns.[11] A designated observer will conduct the observations and surveys over the days as outlined in Table 5. Each weekday and weekend day will be randomly selected.

Table 5: Recreation Use Assessment Schedule

Month	Recreation Use Assessment Days
May	• Holiday weekend day (Either on Memorial Day [5/26/2025] or during the associated Memorial Day Weekend)
June	• Two weekend days • Two weekdays
July	• Two weekend or holiday days (One day will be on the Fourth of July or during the associated Fourth of July weekend) • Two weekdays
August / September	• Two weekend days (One day will be on Labor Day [9/1/2025] or during the associated Labor Day weekend) • Two weekdays

Spot Counts

MP will conduct spot counts at the FERC-approved recreation sites at the Sylvan Project and Pillager Project. The spot counts will represent short-term counts (approximately 5 minutes per site). For the spot counts, MP will record the number of vehicles parked at a site and the number of users observed. The Crow Wing River Canoe Campsite will be excluded from the spot counts, as data from the user-administered surveys should be adequate to document recreational use figures at this site. The spot counts will represent a snapshot-in-time depicting specific user groups and their activities during randomly selected intervals. An observation form (available in Appendix B) will be filled out by the designated observer during survey days outlined in Table 5. These observations will include the following information:

[11] MP believes that 40-minutes is a sufficient amount of time to make a snapshot-in-time recreation use observations and preform the recreation surveys at the eight sites, based on known use and the available FERC Form 80 data. The 40-minute intervals will allow for all sites to be visited on a single day, and allow for travel time between the sites. As the sites will be surveyed on a rotating basis, the most efficient route between sites may not be utilized.

- Date and time;
- Observer;
- Weather conditions;
- Number of people observed;
- Observed activities; and
- Pertinent notes.

Recreational Use Surveys

MP will administer recreation use surveys directly to users at the FERC-approved recreation sites at the Sylvan Project and Pillager Project (Table 3 and Table 4). The survey form that is proposed to be used is available in Appendix B. The purpose of the recreation use survey is to gain user opinions regarding the existing recreation facilities and opportunities. The survey will record the number of people in a party, their primary reason (recreational activity) for visiting the site, their perception of level of use, and their opinions regarding the amount and types of recreation opportunities offered within the Sylvan Project boundary and Pillager Project boundary.

The recreation use survey will be administered directly to visitors at the FERC-approved recreation sites at the Sylvan Project and Pillager Project, with the exception of the Crow Wing River Canoe Campsite at the Pillager Project. For the Crow Wing River Canoe Campsite site, a user-administered survey will be distributed and collected on-site through the use of waterproof envelopes, boxes, or other user-administered weatherproof means, such as a temporary shelter. Writing utensils will be provided. In addition to the paper user-administered surveys, a link or QR code may be provided to allow users to participate in an online version of the survey. User-administered surveys will be collected from the site (e.g., from a secure survey collection box) approximately once per month during the study season.

5.3.5.3 Report

A report summarizing the results of the recreation facilities inventory and the recreation use assessment will be prepared. The report will include a recreation facility inventory and condition assessment for the existing FERC-approved recreation sites at the Sylvan Project and Pillager Project (Table 3 and Table 4) with the information collected as proposed in Section 5.3.5.1 as well as the Recreation Use Assessment as proposed in Section 5.3.5.2.

5.3.6 Consistency with Generally Accepted Scientific Practice

Estimating use by conducting recreational observations / spot counts at recreation sites and conducting a recreation site inventory and assessment is a standard practice within FERC relicensing.

5.3.7 Deliverables and Schedule

Field work will occur May 2025 – September 2025. Reports containing the results of the Recreation Use and Facility Inventory Study will be prepared and provided in the USR to be distributed to the relicensing parties and filed with the Commission in accordance with the Commission's ILP Process Plan and Schedule.

5.3.8 Cost and Level of Effort

The estimated cost of the proposed Recreation Use and Facility Inventory Study is approximately $50,000, which includes field investigation, travel, data input and analysis, and report preparation.

5.4 Cultural Resources Study

MP will conduct a Cultural Resources Study comprised of two components: a Historic Architectural Resources Study and an Archaeological Resources Study. The studies will focus on historic properties, which are those resources that are listed or eligible for listing in the National Register of Historic Places (NRHP).

5.4.1 Historic Architectural Resources Study

FERC and the Minnesota State Historic Preservation Office (Minnesota SHPO) requested a cultural resources study, including an inventory of historic architectural resources within the Projects' Area of Potential Effects (APEs)[12] and their NRHP eligibility.

5.4.1.1 Goals and Objectives

The goal of the Historic Architectural Resources Study is to determine the potential effects of project operation on historic architectural resources that are listed or eligible for listing in the NRHP within the APEs at the Little Falls Project, Sylvan Project, and Pillager Project.

The objectives of the study are:

a) identify the APEs at the Projects in consultation with the Minnesota SHPO and interested tribes;

b) perform a literature review to identify historic architectural resources 45 years or older that are listed or eligible for listing in the NRHP within the APEs;

c) perform updated survey and evaluation documentation of the NRHP-eligible historic architectural resources at the Little Falls Project, Sylvan Project, and Pillager Project dams and associated facilities); and

d) evaluate potential Projects effects on historic architectural resources that are listed or eligible for listing in the NRHP within the APEs.

5.4.1.2 Known Resource Management Goals

Sections 4(e) and 10(a) of the FPA require that the Commission give equal consideration to all uses of the waterway on which a project is located. When reviewing a proposed action, the Commission must consider the environmental, recreational, fish and wildlife, and other non-developmental values of the project, as well as power generation and other developmental values.

[12] The APE is the geographic area within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if such properties exist.

Cultural resources are resources of particular interest to the public. Preserving and protecting cultural resources provides a venue for understanding our Nation's past and respecting the various cultures of this country. Project operation and maintenance may affect the value and integrity of National Register-eligible historic properties in the vicinity of the Projects. Ensuring that potential measures associated with cultural resources are analyzed is relevant to the Commission's public interest determination.

Pursuant to section 106 of the National Historic Preservation Act (section 106), the licensing of the proposed Projects would be a federal undertaking and licenses issued by the Commission would permit activities that may "…cause changes in the character or use of historic properties, if any such historic properties exist…" (see 36 CFR part 800.16(d) of the regulations implementing section 106). The Commission must, therefore, comply with section 106, which requires the head of any federal department or independent agency having authority to license an undertaking to take into account the effect of the undertaking on historic properties. In the case of these proposed Projects, assessment of historic properties would be conducted in consultation with the Commission, Minnesota SHPO, any tribes which express an interest in the Projects, and other interested parties. In the case of these proposed Projects, assessment of historic properties would be conducted in consultation with FERC, Minnesota SHPO, any tribes which express an interest in the Projects, and other interested parties.

5.4.1.3 Background and Existing Information

The PAD, Section 5.9, *Cultural Resources*, provides background information on historic architectural resources at the Little Falls Project, Sylvan Project, and Pillager Project. The Minnesota SHPO confirmed in their July 22, 2023, letter that the Licensee accurately described the currently recorded historic status of dams and associated facilities in the PAD (Table 6):

Table 6: Currently Identified Historic Architectural Properties at the Projects

Name	Description
Little Falls Hydroelectric Facilities [MO-LFC-00130]	A historic property determined eligible for listing in the in the NRHP in 1991 as part of the Little Falls Project's previous federal relicensing Section 106 review
Sylvan Hydroelectric Powerplant Facilities [CA-SLV-003]	A historic property determined eligible for listing in the in the NRHP in 1991 as part of the Sylvan Project's previous federal relicensing Section 106 review
Pillager Hydroelectric Generating Plant [CA-PLC-002]	A historic property determined eligible for listing in the in the NRHP in 1992 as part of the Pillager Project's previous federal relicensing Section 106 review

5.4.1.4 Project Nexus

Section 106 requires that federal agencies take into account the effect of proposed undertakings on any district, site, building, structure, or object that is included in or eligible for the NRHP. The study will identify potential adverse effects to historic properties resulting from continued operations of the Projects and help facilitate the Section 106 consultation process.

5.4.1.5 Methodology

The following methodology is consistent with a Reconnaissance or Phase 1 Survey and will be used for the Historical Architectural Resources Study.

MP proposes to use the existing FERC Project Boundary for the Projects' APEs (Figure 5, Figure 6, and Figure 7), which are further defined in Table 7. Pursuant to the implementing regulations of Section 106 at 36 CFR § 800.4(a), MP will consult with the Minnesota SHPO and interested tribes to finalize the APEs for the Projects.

Table 7: Projects' Proposed Area of Potential Effects

Project	Proposed Area of Potential Effects (APE)
Little Falls Project	The proposed APE encompasses the existing Little Falls reservoir and its marginal fee or flowage lands above and below the Little Falls dam, including the hydroelectric facilities and Mill Island, a rocky escarpment that anchors the dam at mid-channel. • Includes the floor of the reservoir (including submerged tracts), the present shorelines of both the reservoir and discharge pools, and parcels adjoining the electrical generation facilities, including Mill Island.
Sylvan Project	The proposed APE encompasses the existing Sylvan reservoir and its marginal fee and flowage lands and other areas subject to Sylvan Project flooding or erosion above and below the Sylvan dam[13]. • Includes the floor of the reservoir (including submerged tracts), the present shorelines of both the reservoir and discharge pool, the various wetland, floodplain, and upland areas adjoining the reservoir to which MP has fee or flowage rights, and in some rare instances, areas extending beyond the limits of MP-associated lands to the Sylvan Project "flood line."

[13] The Sylvan Project APE includes the lease lots located within the Sylvan Project Boundary.

Pillager Project	The proposed APE encompasses the existing Pillager reservoir and its marginal fee and flowage lands and other areas subject to Pillager Project flooding or erosion above and below the Pillager dam[14]. • Includes the floor of the reservoir (including submerged or partly submerged tracts), the present shorelines of both the reservoir and discharge pool, and the various areas adjoining the reservoir to which MP has fee or flowage rights. Also within the APE are the Pillager Project hydroelectric facilities.

MP will coordinate with a qualified professional to complete the Historic Architectural Resources Study. The study will consider the potential for historic districts and require background research and report preparation. The study includes:

- Review of Minnesota's SHPO Statewide Inventory Database[15] to identify previously recorded historic architectural resources 45 years or older within the APEs and review their NRHP eligibility status.

- Review of historic maps, aerial photographs, relevant documents from construction of the Projects, information from local repositories, historical accounts, etc. to gather history related to development and settlement patterns of the Projects and their associated APEs.

- Completion of updated survey and evaluation of documentation for the NRHP-eligible Little Falls Project, Sylvan Project, and Pillager Project dams and associated facilities using the Secretary of the Interior's Standards for Identification and Evaluation and the Minnesota's SHPO current survey guidelines (outlined in Minnesota SHPO's *Historic and Architectural Survey Manual*).

- Evaluation of the potential effects the Projects (i.e., operations and maintenance) have on historic architectural resources that are listed or eligible for listing in the NRHP within the APEs.

[14] The Pillager Project APE includes the lease lots located within the Project Boundary.
[15] Minnesota SHPO's Database supplements the National Register of Historic Places Database and includes properties that have not been evaluated for nomination to the NRHP.

Figure 5: Little Falls Project Proposed Area of Potential Effects

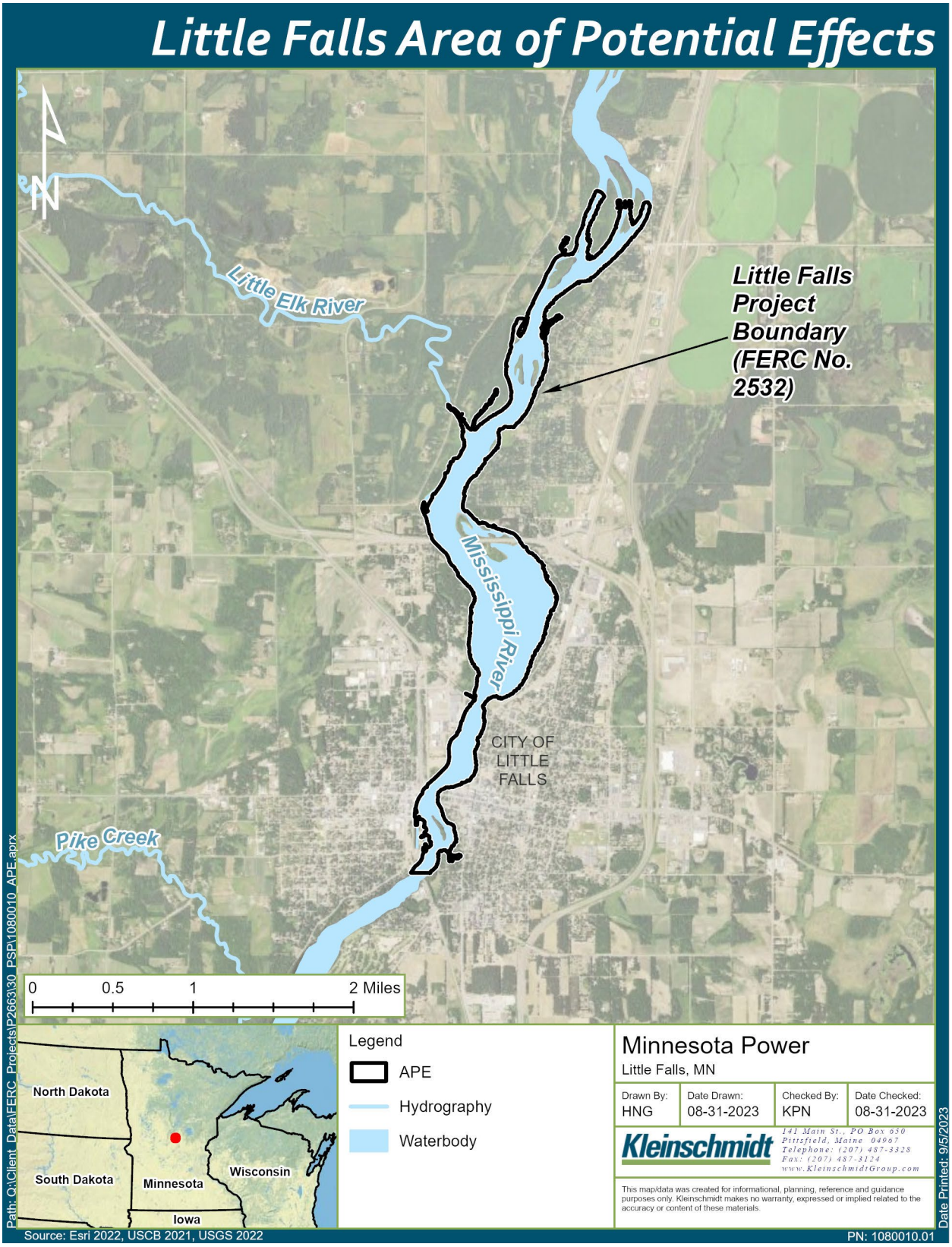


Figure 6: Sylvan Project Proposed Area of Potential Effects

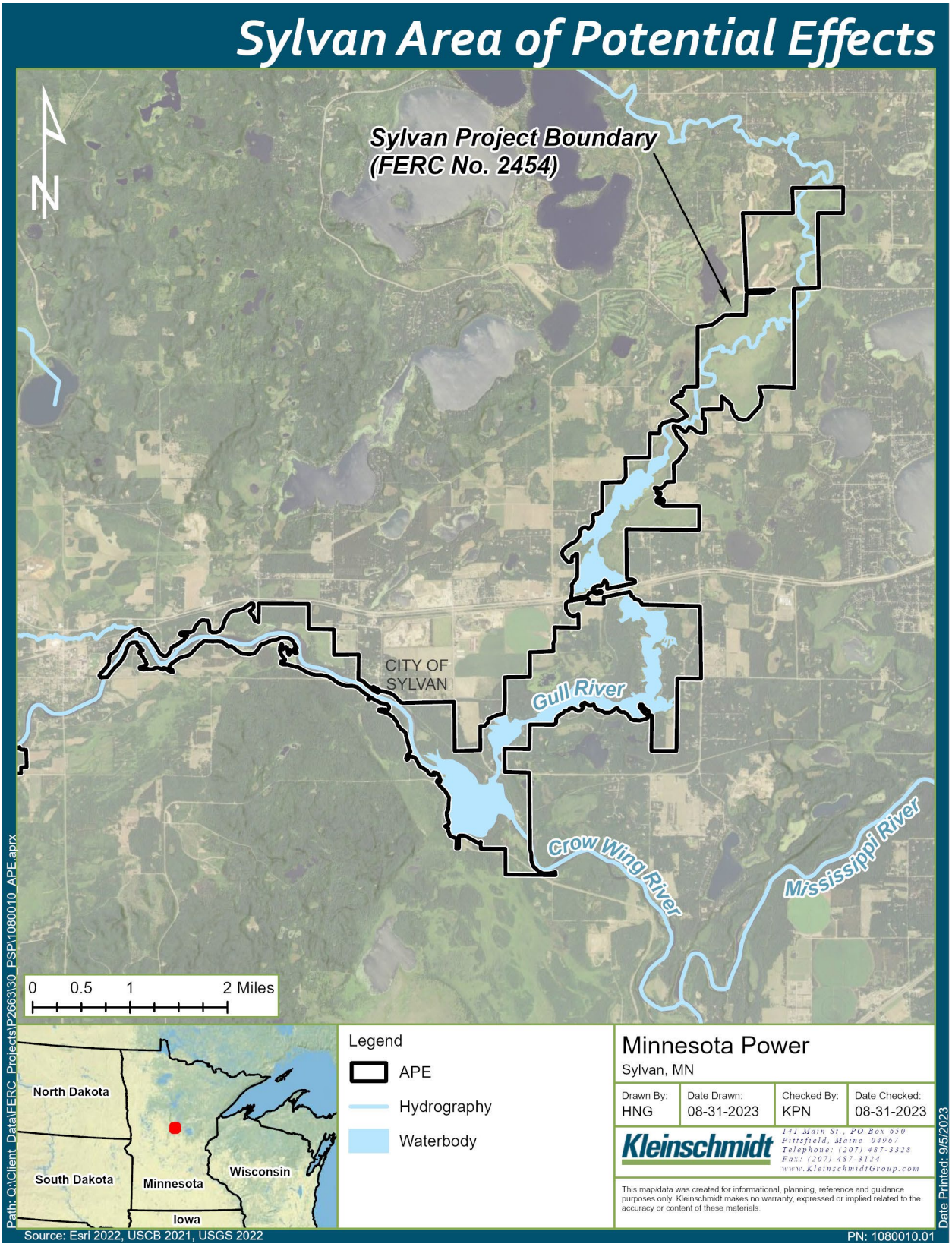
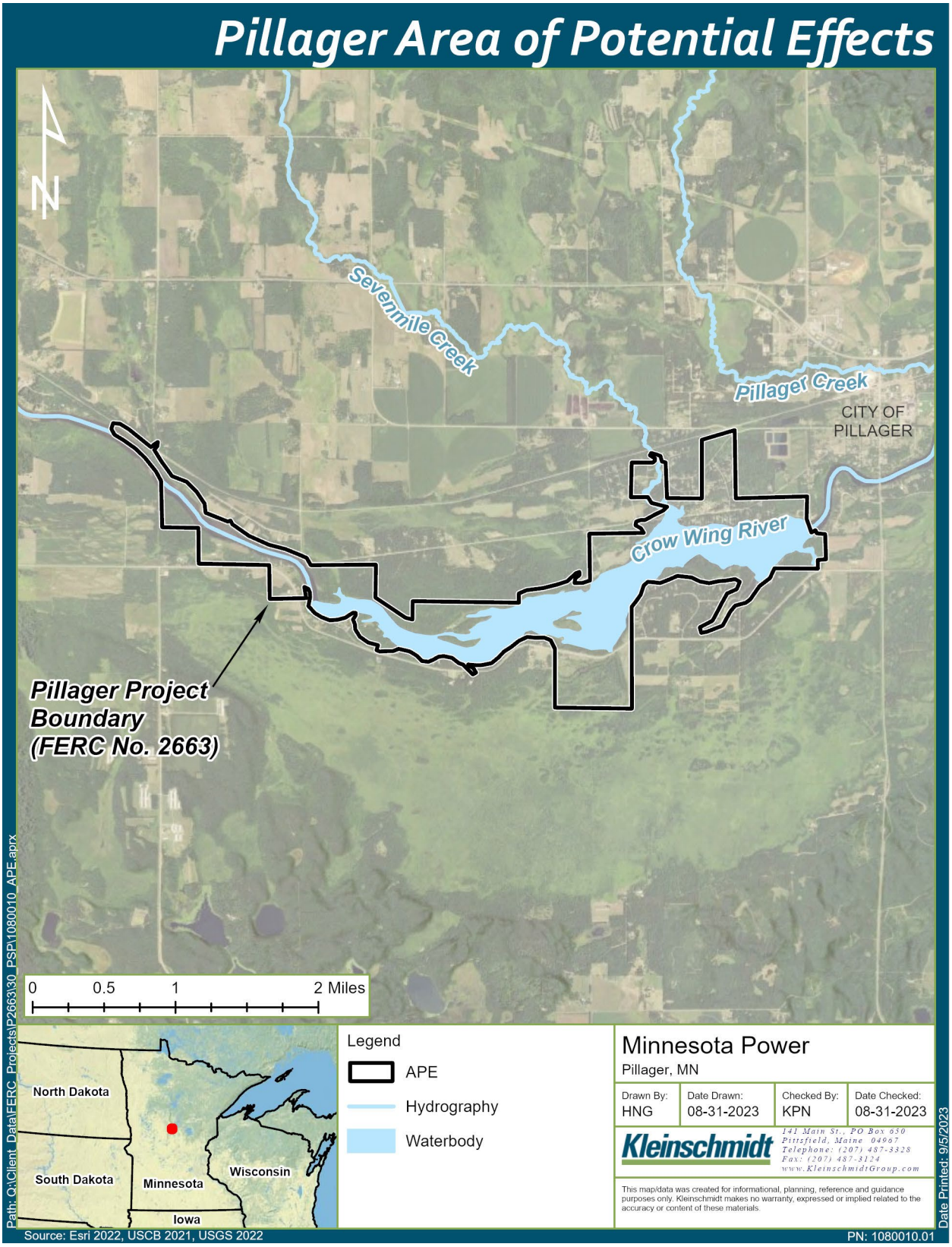


Figure 7: Pillager Project Proposed Area of Potential Effects



5.4.1.6 Consistency with Generally Accepted Scientific Practice

The proposed methods for this study are consistent with the Minnesota SHPO's *Historic and Architectural Survey Manual* and accepted professional practices commonly used in FERC relicensing proceedings.

5.4.1.7 Deliverables and Schedule

Reports containing the results of the Historic Architectural Resources Study will be prepared and provided in the ISR to be distributed to the relicensing parties and filed with the Commission in accordance with the Commission's ILP Process Plan and Schedule. Separate reports will be prepared for each of the Projects.

5.4.1.8 Cost and Level of Effort

The estimated cost of the proposed study is approximately $20,000 per Project for a total of $60,000, which includes literature review, field investigation (to complete updated documentation and evaluation of the Project dams and associated facilities), and report preparation.

5.4.2 Archaeological Resources Study

FERC and the Minnesota SHPO requested a cultural resources study, including a current inventory of archaeological resources within the Projects' Area of Potential Effects (APEs) and their NRHP eligibility. The Friends of the Old Crow Wing requested a re-evaluation of resources on the Chippewa Agency Historic District.

5.4.2.1 Goals and Objectives

The goal of the Archaeological Resources Study is to determine the potential effects of project operation on archaeological resources that are listed or eligible for listing in the NRHP within the APEs at the Little Falls Project, Sylvan Project, and Pillager Project.

The objectives of the study are:

a) identify the APE at the Little Falls Project, Sylvan Project, and Pillager Project in consultation with the Minnesota SHPO and interested tribes;

b) perform a desktop archaeological resources survey to compile existing information and identify known archaeological resources that are listed or eligible for listing in the NRHP within the APEs;

c) perform a conditions assessment (field visit) to document the current condition of archaeological resources that are listed or eligible for listing in the NRHP within the APEs;

d) conduct a reconnaissance survey of the Projects' APEs to determine if unrecorded archaeological resources are present; and

e) evaluate the potential effects the Projects would have on archaeological resources that are listed or eligible for listing in the NRHP within the APEs.

5.4.2.2 Known Resource Management Goals

Sections 4(e) and 10(a) of the FPA require that the Commission give equal consideration to all uses of the waterway on which a project is located. When reviewing a proposed action, the Commission must consider the environmental, recreational, fish and wildlife, and other non-developmental values of the project, as well as power generation and other developmental values.

Cultural resources are resources of particular interest to the public. Preserving and protecting cultural resources provides a venue for understanding our Nation's past and respecting the various cultures of this country. Project operation and maintenance may affect the value and integrity of National Register-eligible historic properties in the vicinity of the projects. Ensuring that potential measures associated with cultural resources are analyzed is relevant to the Commission's public interest determination.

Pursuant to section 106 of the National Historic Preservation Act (section 106), the licensing of the proposed Projects would be a federal undertaking and a license issued by the Commission would permit activities that may "…cause changes in the character or use of historic properties, if any such historic properties exist…" (see 36 CFR part 800.16(d) of the regulations implementing section 106). The Commission must, therefore, comply with section 106, which requires the head of any federal department or independent agency having authority to license an undertaking to take into account the effect of the undertaking on historic properties. In the case of these proposed Projects, assessment of historic properties would be conducted in consultation with the Commission, Minnesota SHPO, any tribes which express an interest in the Projects, and other interested parties. In the case of these proposed Projects, assessment of historic properties would be conducted in consultation with FERC, Minnesota SHPO, any tribes which express an interest in the Projects, and other interested parties.

5.4.2.3 Background and Existing Information

The PAD, Section 5.9, *Cultural Resources*, provides background information on cultural resources at the Projects. Archaeological surveys were conducted at the Little Falls Project, Sylvan Project, and Pillager Project in the 1990's during previous relicensing efforts and included literature reviews followed by field investigation for recommended sites. Since that time, literature reviews and field investigations were performed in selected areas prior to timber harvests and literature reviews were performed of lease lots at the Sylvan Project and Pillager Project. In addition, MP

submits annual reports to SHPO and FERC on all cultural resource management activities for the previous field season, including results of annual monitoring of the reservoir shorelines at the Projects.

5.4.2.4 Project Nexus

Section 106 requires that federal agencies take into account the effect of proposed undertakings on any district, site, building, structure, or object that is included in or eligible for the NRHP. The study will identify potential adverse effects to archaeological resources resulting from continued operations of the Projects and help facilitate the Section 106 consultation process.

5.4.2.5 Methodology

The following methodology is consistent with a Reconnaissance or Phase 1 Survey and will be used for the Archaeological Resources Study.

MP proposes to use the existing FERC Project Boundary for the Projects' APEs (further defined in Section 5.4.1.5). Pursuant to the implementing regulations of Section 106 at 36 CFR § 800.4(a), MP will consult with the Minnesota SHPO and interested tribes in to develop and finalize the APEs for the Projects.

MP will coordinate with a qualified professional to perform a desktop archaeological resources survey to compile existing information and identify known archaeological resources that are listed or eligible for listing in the NRHP within the APEs. Literature reviews are often used to assess the need for field survey, determine known sites within a project area, develop site locational models, determine areas of previous terrain disturbance to guide survey, provide historic context background to help evaluate site significance, provide background information for developing survey research designs and data recovery plans, and to provide sufficient background information for National Register nominations (Minnesota SHPO 2005). The desktop archaeological resources survey will consider the potential for historic districts and cultural landscapes and require background research and report preparation. Tasks include, but are not limited to:

- Review of Minnesota's SHPO Statewide Inventory Database to identify previously recorded archaeological resources within the APE and review their NRHP eligibility status.
- Review relevant sources mentioned in the Minnesota's SHPO Archaeological Survey Guidelines such as *The Minnesota Archaeologist* (journal published by the Minnesota Archaeological Society), the Minnesota Historical Society, and the University of Minnesota's Anthropology Department.

- Review of manuscripts, research files, historic maps, and relevant documents from local repositories (i.e., municipal libraries, county courthouses, and county historical societies) to gather information on the Contact and Post-Contact Periods associated with the Projects.

- Review relevant sources for the environmental context (i.e., physiography, bedrock geology, soils, climate, plant/animal communities, topography, hydrology, etc.) and prehistoric background information of the Project APEs.

Using the results of the desktop archaeological resources survey, a qualified professional will perform a conditions assessment (field visit) to document the current condition of archaeological resources that are listed or eligible for listing in the NRHP within the APEs. The conditions assessments would include the NRHP-listed Chippewa Agency Historic District[16] at the Sylvan Project. A reconnaissance survey will be performed using Minnesota's SHPO current survey guidelines (outlined in Minnesota *SHPO Manual for Archaeological Projects In Minnesota*) of the Projects' APEs to determine if unrecorded archaeological resources are present. If archaeological material is observed, the boundaries of the site will be delineated and recorded.

MP will then determine the potential effects the Projects (i.e., operations and maintenance) have on archaeological resources that are listed or eligible for listing in the NRHP within the APEs.

5.4.2.6 Consistency with Generally Accepted Scientific Practice

The proposed methods for this study are consistent with the *SHPO Manual for Archaeological Projects In Minnesota* and accepted practices commonly used in FERC relicensing proceedings.

5.4.2.7 Deliverables and Schedule

Reports containing the results of the Archeological Resources Study will be prepared and provided in the ISR to be distributed to the relicensing parties and filed with the Commission in accordance with the Commission's ILP Process Plan and Schedule. Separate reports will be prepared for each of the Projects.

5.4.2.8 Cost and Level of Effort

The estimated cost of the proposed study is approximately $40,000 for the Little Falls Project, $90,000 for Sylvan Project, and $60,000 for the Pillager Project for a total of $190,000, which

[16] The Friends of Old Crow Wing (non-profit) requested MP to reevaluate the archaeological resource known as the Chippewa Agency Historic District at the Sylvan Project. Nienow Cultural Consultants filed a letter of support regarding the study request. The Chippewa Agency District is located on the north shore of the Sylvan reservoir. The site is a multi-component site that was listed on the NRHP in 1972 (site #21CA55).

includes the Archaeological Resources Study as described in Section 5.4.2.5 and report preparation.

6.0 REQUESTED STUDIES NOT ADOPTED

As required by 18 C.F.R. § 5.11(b)(4), if the Licensee does not adopt a requested study, an explanation of why the request was not adopted, with reference to the criteria set forth in 18 C.F.R. § 5.9(b) must be included in the PSP. There are two requested studies which are not being adopted, as described below.

6.1 Fish Passage Feasibility Study

The FERC requested a Fish Passage Feasibility Study at the Little Falls Project in their letter dated July 27, 2023. The Licensee does not propose to conduct a Fish Passage Feasibility Study at the Little Falls Project. MP does not believe that there has been a demonstrated biological need for fish passage at the Little Falls Project, there are biological risks associated with fish passage, and MP does not believe that the costs of the installation and maintenance of fish passage facilities at the Little Falls Project are reasonable or justifiable. The Licensee is not intending to pursue the installation of fish passage facilities at the Little Falls Project, and for this reason, does not propose to conduct this study. Additional rationale on each point of reasoning is provided below.

There has not been a demonstrated biological need for fish passage at the Little Falls Project. The Minnesota DNR has noted that similar and diverse fish species compositions exist both upstream and downstream of the Little Falls Project; smallmouth bass, muskellunge, and redhorse species, and numerous other species are common in both reaches (Minnesota DNR 2009a, Minnesota DNR 2009b, Minnesota DNR 2009c). As described in detail in the PAD, more than 30 fish species have been documented both upstream and downstream of the Little Falls Project in the Mississippi River. The nine-mile reach downstream of the Little Falls Project, between the Little Falls and Blanchard Dams, supports angling opportunities for walleye, smallmouth bass, and muskellunge, and no lack of suitable habitat has been documented as a factor that limits the presence of these popular sportfish species. These popular sportfish species are also caught in the 40-mile upstream reach between the Little Falls and Brainerd dams. Populations for gamefish species are self-sustaining both upstream and downstream of the Little Falls Project. Negative impacts to migratory species have not been identified at the Little Falls Project.

The installation of a fish passage facility could allow for the spread of current or future invasive species. Current invasive species of concern include silver and bighead carp. Both species are prolific breeders and can outcompete multiple lifestages of native fish species for food and available habitat. Both silver and bighead carp have been documented in downstream reaches of the Mississippi River, and eDNA surveys have documented the potential presence of silver carp upstream of the Coon Rapids dam, approximately 95 miles downstream of the Little Falls Project. There is potential for these species to expand their range upstream in the Mississippi River

drainage, and the potential future presence of silver or bighead carp is a significant concern when considering risks associated with the installation of a fish passage facility.

Finally, the initial and continued cost of installation and maintenance of a fish passage facility, and the associated loss in generation capabilities from water diversions, would challenge the economic viability of the Little Falls Project. MP further believes that the cost of the study would be higher than that proposed by FERC, with a likely cost of $50,000 or more. The Licensee does not believe that the costs associated with the study are justified.

For the reasons stated above, MP does not agree to adopt the proposed fish passage study at the Little Falls Project. The Licensee does not believe that there is a demonstrated biological need for fish passage to be implemented at the Little Falls Project. There are concerns about the continued spread of aquatic invasive species in the Mississippi River system. Lastly, the initial and continued costs associated with a fish passage would add a significant financial burden onto the Little Falls Project.

6.2 Re-evaluation of the Chippewa Agency Historic District Site

The Friends of Old Crow Wing requested a study to re-evaluate resources of the Chippewa Agency Historic District and determine if this parcel is necessary for Sylvan Project purposes. MP's proposed study to evaluate Cultural Resources, which includes the Chippewa Agency Historic District, is included in Section 5.4. As outlined in more detail in Section 7.3, MP will evaluate the Project Boundary for each of the Projects, which will include thoughtful consideration of the parcel which contains the Chippewa Agency Historic District.

7.0 ADDITIONAL INFORMATION REQUESTED

7.1 Environmental Justice

Schedule B of FERC's July 27, 2023, letter, requests that the Licensee conduct an Environmental Justice Study. The geographic scope of analysis for the environmental justice (EJ) information provided in the March 30, 2023, PAD was a 0.5 mile radius from the FERC Projects Boundaries. The Licensee has updated this analysis using a 1-mile radius (instead of a 5-mile radius) from the FERC Projects Boundaries as there is no proposed construction associated with the relicensing. The results of this updated analysis are included below. The Licensee proposes to provide updated EJ data for the Projects in the DLA. The Licensee anticipates that the proposed action, which includes continued ROR operation, will not disproportionately adversely affect the identified EJ communities. No mitigation measures related to EJ are proposed. For the Projects, the Licensee does not propose to conduct additional public outreach efforts associated with the EJ communities beyond the regulatorily required consultation and public outreach associated with the relicensing effort. The Licensee is following the ILP for the Projects; ILP regulations, which define specific procedures and timelines for the relicensing process, are found in 18 CFR § 5. Specific consultation milestones are listed in the ILP Process Plan and Schedule (available in FERC's SD1 dated May 26, 2023) and include public consultation regarding studies and study plan development, as well as distribution of major relicensing documents (including the draft and final license applications).

Executive Order 14008, Tackling the Climate Crisis at Home and Abroad, and Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, as amended, requires federal agencies to consider if impacts on human health or the environment would be disproportionately high and adverse for minority and low-income populations in the surrounding community resulting from the programs, policies, or activities of federal agencies. The term "environmental justice community" includes disadvantaged communities that have been historically marginalized and overburdened by pollution. EJ communities include but may not be limited to minority populations, low-income populations, or indigenous peoples. Census block groups are statistical divisions of census tracts that generally contain between 600 and 3,000 people and the thresholds used for populations meeting EJ status are as follows:

- For minority populations, the meaningfully greater analysis method was used, where the minority population in a block group is at least 10 percent greater than that of the same population for the county (i.e., multiply the percent minority of the county by 1.1). This new percentage is the threshold that a block group's percent minority would need to exceed to qualify as an EJ community under the meaningfully greater analysis method.

- The "low-income threshold criteria" was used to identify EJ communities based on income level, where the percent of low-income population in the identified block group is equal to or greater than that of the county.

The Projects were screened for EJ communities as requested by FERC and using the methods above. Figure 8 depicts the environmental justice screening results and depicts the census blocks groups that intersect the Projects screened for EJ.

Table 8 provides associated race and ethnicity data and data on households in poverty of block groups within a 1-mile radius of the Little Falls Project boundary, as well as applicable counties and the state of Minnesota. Seven block groups were identified as EJ communities within a 1-mile radius of the Little Falls Project boundary (U.S. Census Bureau 2023).

Table 9 provides associated race and ethnicity data and data on households in poverty of block groups within a 1-mile radius of the Sylvan Project boundary, as well as applicable counties and the state of Minnesota. Two block groups were identified as EJ communities within a 1-mile radius of the Sylvan Project boundary (U.S. Census Bureau 2023).

Table 10 provides associated race and ethnicity data and data on households in poverty of block groups within a 1-mile radius of the Pillager Project boundary, as well as applicable counties and the state of Minnesota. No block groups were identified as EJ communities within a 1-mile radius of the Pillager Project boundary (U.S. Census Bureau 2023).

Table 8: Race and Ethnicity Data and Poverty Data for Applicable Block Groups at the Little Falls Project

Geographic Area	Race and Ethnicity Data										Low-Income Data
	Total Population (count)	White Alone, not Hispanic (count)	African American/ Black (count)	Native American/ Alaska Native (count)	Asian (count)	Native Hawaiian & Other Pacific Islander (count)	Some Other Race (count)	Two or More Races (count)	Hispanic or Latino (count)	Total Minority Population (%)	Below Poverty Data (%)
Minnesota	5,670,472	4,441,935	371,249	46,371	281,572	2,047	17,042	190,428	319,828	22%	9%
Morrison County	33,876	32,253	96	26	94	-	97	703	607	5%	10%
Census Tract 780600, Block Group 4	1,638	1,482	9	-	20	-	-	71	56	**10%**	**22%**
Census Tract 780300, Block Group 1	900	780	8	-	-	-	-	31	81	**13%**	6%
Census Tract 780600, Block Group 1	914	913	-	-	-	-	-	1	-	0%	**17%**
Census Tract 780600, Block Group 5	820	751	-	-	-	-	-	69	-	**8%**	**18%**
Census Tract 780600, Block Group 2	1,280	1,085	-	-	-	-	-	19	176	**15%**	**17%**
Census Tract 780700, Block Group 2	1,044	1,033	9	-	-	-	-	2	-	1%	4%
Census Tract 780300, Block Group 2	1,103	1,050	-	2	38	-	-	13	-	5%	2%
Census Tract 780200, Block Group 1	916	893	2	1	-	-	-	20	-	3%	8%
Census Tract 780200, Block Group 4	950	918	-	1	1	-	2	28	-	3%	6%
Census Tract 780600, Block Group 3	1,243	1,164	-	-	7	-	31	41	-	**6%**	**11%**
Census Tract 780300, Block Group 5	1,472	1,423	4	-	-	-	-	45	-	3%	7%
Census Tract 780700, Block Group 1	1,600	1,522	-	-	-	-	64	14	-	5%	**20%**

*Gray shaded cells indicate an environmental justice community.

Source: U.S. Census Bureau 2023

Table 9: Race and Ethnicity Data and Poverty Data for Applicable Block Groups at the Sylvan Project

Geographic Area	Race and Ethnicity Data										Low-Income Data
	Total Population (count)	White Alone, not Hispanic (count)	African American/ Black (count)	Native American/ Alaska Native (count)	Asian (count)	Native Hawaiian & Other Pacific Islander (count)	Some Other Race (count)	Two or More Races (count)	Hispanic or Latino (count)	Total Minority Population (%)	Below Poverty Data (%)
Minnesota	5,670,472	4,441,935	371,249	46,371	281,572	2,047	17,042	190,428	319,828	22%	9%
Cass County	29,917	24,105	118	2,895	170	1	122	1,777	729	19%	12%
Census Tract 960801, Block Group 1	1,004	969	-	7	1	-	-	9	18	3%	3%
Census Tract 960801, Block Group 2	1,185	1,071	-	4	-	-	-	25	85	10%	6%
Census Tract 960803, Block Group 1	1,947	1,732	6	4	-	-	-	203	2	11%	9%
Census Tract 960801, Block Group 3	1,489	1,466	10	-	-	-	-	13	-	2%	6%
Crow Wing County	65,879	62,080	448	477	282	-	231	1,341	1,020	6%	11%
Census Tract 951304, Block Group 1	1,760	1,563	39	36	-	-	-	37	85	**11%**	0%
Census Tract 950901, Block Group 1	1,115	1,070	-	25	20	-	-	-	-	4%	**16%**
Census Tract 950902, Block Group 2	1,786	1,782	-	-	-	-	-	4	-	0%	4%
Census Tract 951301, Block Group 1	2,099	2,083	1	-	9	-	-	6	-	1%	6%
Morrison County	33,876	32,253	96	26	94	-	97	703	607	5%	10%
Census Tract 780200, Block Group 1	916	893	2	1	-	-	-	20	-	3%	8%
Census Tract 780100, Block Group 3	997	961	4	2	-	-	-	12	18	4%	6%

*Gray shaded cells indicate an environmental justice community.

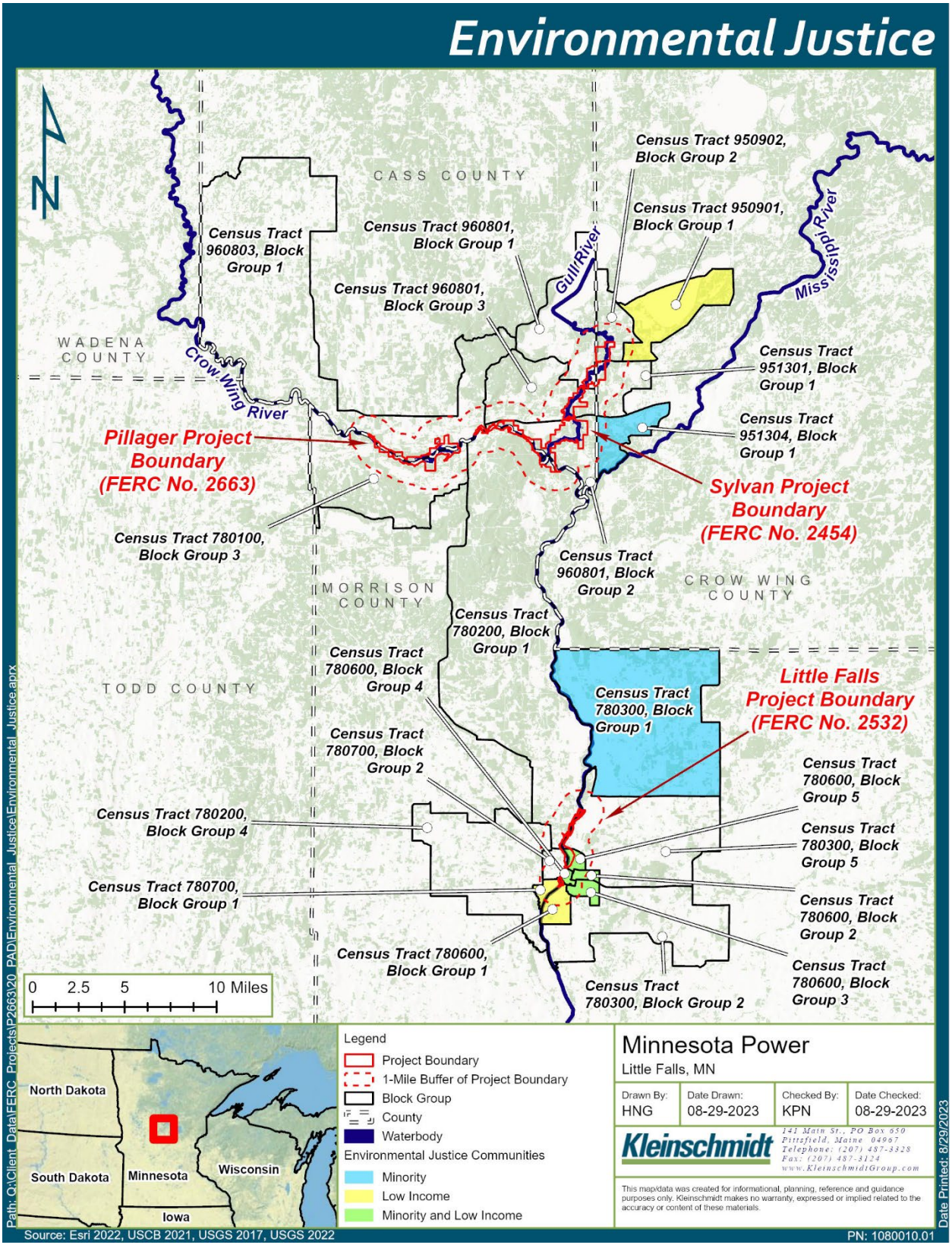
Source: U.S. Census Bureau 2023

Table 10: Race and Ethnicity Data and Poverty Data for Applicable Block Groups at the Pillager Project

Geographic Area	Race and Ethnicity Data										Low-Income Data
	Total Population (count)	White Alone, not Hispanic (count)	African American/ Black (count)	Native American/ Alaska Native (count)	Asian (count)	Native Hawaiian & Other Pacific Islander (count)	Some Other Race (count)	Two or More Races (count)	Hispanic or Latino (count)	Total Minority Population (%)	Below Poverty Data (%)
Minnesota		4,441,935	371,249	46,371	281,572	2,047	17,042	190,428	319,828	22%	9%
Cass County	29,917	24,105	118	2,895	170	1	122	1,777	729	19%	12%
Census Tract 960803, Block Group 1	1,947	1,732	6	4	-	-	-	203	2	11%	9%
Morrison County	33,876	32,253	96	26	94	-	97	703	607	5%	10%
Census Tract 780200, Block Group 1	916	893	2	1	-	-	-	20	-	3%	8%
Census Tract 780100, Block Group 3	997	961	4	2	-	-	-	12	18	4%	6%

Source: U.S. Census Bureau 2023

Figure 8: Environmental Justice Screening for the Projects



7.2 Aquatic Resources

Schedule C item (1) of FERC's July 27, 2023 letter requested that the Licensee file electronic copies of the following references from Section 4.3, *Fish and Aquatic Resources*, of the PAD: Minnesota DNR 2003, Minnesota DNR 2007, Minnesota DNR 2009a, Minnesota DNR 2009b, Minnesota DNR 2014a, Minnesota DNR 2014b, Minnesota DNR 2021a, Minnesota DNR 2021b, Minnesota DNR 2022a, Minnesota DNR 2022b, Minnesota PCA 2014, MPLC 1991a, MPLC 1991b, MPLC 1991c, MPLC 1995, and MP 2022. MPLC 1991c was not referenced in the PAD and is not included. The complete references have been provided in Appendix C.

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Minnesota Department of Natural Resources (Minnesota DNR). 2022b. Invasive Carp Sampling Report: January-December 2021. Upper Mississippi River Pools 1-9, Lower St. Croix River Below St. Croix Falls, Minnesota River Below Granite Falls. February 22, 2022.

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Minnesota Power & Light Company (MPLC). 1995. Application for New License Major Water Power Project. Pillager Hydroelectric Project. FERC Project No. 2663.

Minnesota Power (MP). 2022. Preventing the Spread of Aquatic Invasive Species Guidance. 4 pp. Revised March 29, 2022.

7.3 Recreation and Land Use

Schedule C item (2) of FERC's July 27, 2023, letter requests that the Licensee obtains user information for sites owned by the City of Little Falls within the Little Falls Project Vicinity. The Licensee understands FERC is requesting user information to assist with FERC's assessment of existing and future recreation demand at the Little Falls Project. The Licensee proposes to limit the requested information to the recreation sites in the Little Falls Project Vicinity that are adjacent to or provide access to the Little Falls Project, as listed in Table 11 (and as depicted on Figure 9). MP will consult with the City of Little Falls to confirm their ownership of the recreation sites listed in Table 11, and will request that the City of Little Falls provides available recreation user information of those sites. The Licensee will provide the available information to FERC in the ISR.

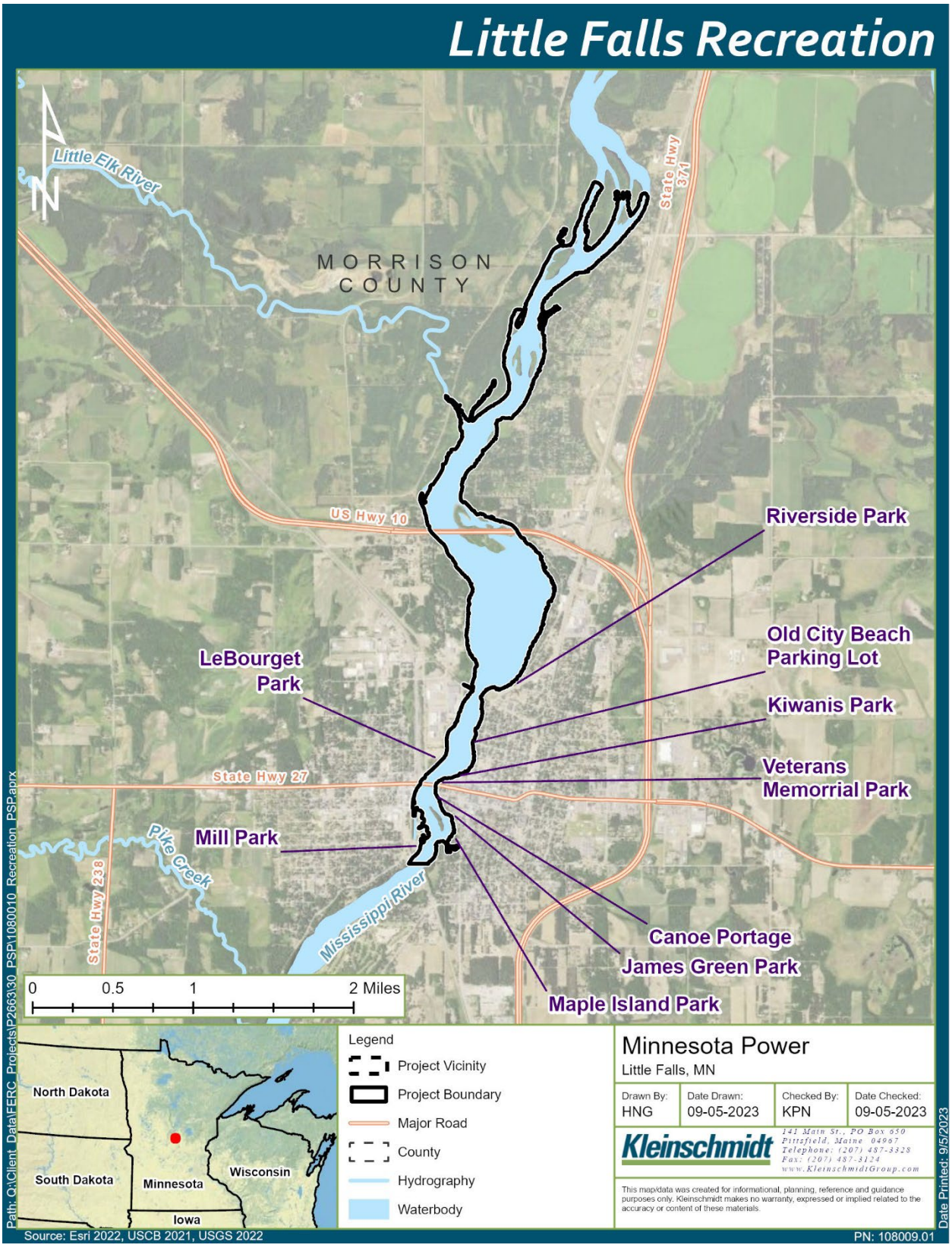
FERC further requests that the Licensee provide details on how the Licensee helps the city to maintain the canoe portage at the Little Falls Project. MP will provide this requested information in the ISR.

Schedule C item (3) of FERC's July 27, 2023, letter requests that the Licensee review each project boundary to ensure that it only include land necessary for project purposes for each project. MP is in the process of reviewing each project boundary and will request any proposed changes to the project boundaries in the Draft License Application.

Table 11: Recreation Sites to Obtain Available Recreation Use Information in the Little Falls Project Vicinity

Site Name	Description
Mill Park	615 Lindbergh Drive South. Mill Park is located at the former site of Hennepin Paper Company. Amenities/activities include: walking, fishing, artifacts from the Hennepin Paper Mill, park area, and views of the Mississippi River. (City of Little Falls 2023a).
Maple Island Park	59 3rd Avenue SE. Paved walking trails, pavilion, restrooms, and views of the Mississippi River. (City of Little Falls 2023a).
James Green Park	38 1st Avenue SE. Paved walking paths and views of the Little Falls Dam on the Mississippi River. (City of Little Falls 2023a).
Veterans Memorial Park	25 Broadway Avenue East. Memorial wall, memorial bricks, picnic area, and views of the Mississippi River. (City of Little Falls 2023a).
Kiwanis Park	59 1st Avenue NE. Picnic area and fishing pier on the Mississippi River. (City of Little Falls 2023a).
Old City Beach Parking Lot	501 1st Street NE. Boat landing on the Mississippi River. (City of Little Falls 2023a).
Canoe Portage	Located at Front Street and Broadway East. Canoe portage around dam. (City of Little Falls 2023a).
LeBourget Park	300 Paul Larson Memorial Drive. Amphitheater, kiosks, picnic area, boat landing, and fishing pier on the Mississippi River. (City of Little Falls 2023a).
Riverside Park	901 1st Street NE. Picnic area and views of the Mississippi River. (City of Little Falls 2023a).

Figure 9: Recreation Sites to Obtain Available Recreation Use Information in the Little Falls Project Vicinity



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APPENDIX A

SUMMARY OF AUGUST 30, 2023 MEETING WITH MINNESOTA SHPO AND MINNESOTA POWER

Little Falls (P-2532), Sylvan (P-2454), and Pillager (P-2663) Hydroelectric Projects

Minnesota SHPO Proposed Study Plan Discussion Meeting

August 30, 2023, 2:00 Central Time

Meeting Summary

1) **Introductions – meeting attendees:**
   - Sarah Beimers, Minnesota State Historic Preservation Office (Minnesota SHPO)
   - Lucy Harrington, Minnesota SHPO
   - Greg Prom, Minnesota Power (MP), Project lead
   - Matt Radzak, MP
   - Lesley Brotkowski, Kleinschmidt Associates (Kleinschmidt), Project Manager
   - Sandra Wash, Kleinschmidt, Assistant Licensing Coordinator
2) **Overview of Little Falls (P-2532), Sylvan (P-2454), and Pillager (P-2663) Hydroelectric Projects (Projects) and MP's Proposed Study Plan (PSP) for Cultural Resources**
   - Greg Prom kicked off the meeting and described basic information on the three Projects and summarized the Federal Energy Regulatory Commission (FERC) Study Plan Process, highlighting additional comment periods on the study plan. The PSP will be filed with FERC and distributed to stakeholders in early September 2023. Greg noted that we appreciate their time to meet with MP prior to finalizing the PSP to get clarification on Minnesota SHPO's study request and discuss proposed methodology.
   - Greg summarized cultural studies that have been conducted to date at the Projects and initial thoughts for the cultural resources studies for the relicensings.
3) **Clarification of Minnesota SHPO's July 22, 2023 study request letter**
   - Lesley Brotkowski reviewed items from Minnesota SHPO's study request letter.
   - Area of Potential Effects (APE)
     - Participants discussed the Projects APEs, and the group agreed that the FERC project boundary is typically used to define the APE for FERC relicensing proceedings.
     - Lucy Harrington requested confirmation that the lease lots at the Sylvan Project and Pillager Project were included in the Projects APEs. Lesley confirmed they are included.
     - Lucy noted that the Chippewa Agency Historic District site is of particular interest at the Sylvan Project.
     - Lucy requested MP include maps of the proposed Projects APEs in the PSP. In addition, Minnesota SHPO requested the APE shapefiles.
   - Historic Architectural Resources
     - Sara Beimers confirmed that the Projects Facilities are considered eligible for listing in the National Register of Historic Places (NRHP), and that the Minnesota SHPO is requesting updated historic architectural resources surveys and documentation for the Projects, as the existing documentation is dated greater than 10 years.

- Archaeological Resources
    - Lucy stated that MP's proposal to start with a desktop evaluation, followed by fieldwork, is a good idea.
    - Lucy noted that the use of "phases" to describe a study can be confusing due to inconsistencies amongst different entities and recommended MP focus on identifying historic properties and exclude phase designations.
    - Lucy noted that there are provisions in the previous Projects' Cultural Resource Management Plans (CRMPs) that were not in Minnesota SHPO's files and was unclear if those provisions have been completed. The desktop evaluation could help clarify the status of those items.
    - Lucy suggested MP conduct a desktop evaluation combined with a conditions assessment (field visit) to document the current condition of known archaeological sites and perform a reconnaissance survey of the Projects APEs to determine if unrecorded archaeological resources are present.
    - In addition, Lucy suggested MP make an effort to identify tribal resources such as Traditional Cultural Properties (TCPs) within the APEs by consulting with applicable Tribal Historic Preservation Offices (THPOs).

4) Timeline and Next Steps

- Provide Minnesota SHPO shapefiles of the Projects APEs when MP files the PSP.
- Lesley reviewed the study plan timeline and next steps in the FERC relicensing process.

5) End of Meeting

- Greg and Lesley thanked everyone for their time and the Minnesota SHPO noted their appreciation for MP's proactive efforts consulting on the PSP.

Appendix B

Recreation Facility Inventory and Condition Assessment Form and Recreation Use Survey Form

Sylvan Project (P-2454), Pillager Project (P-2663)

Recreation Facility Inventory and Condition Assessment Form

Surveyor: _____ **Date/Time**: _____

Project: ☐ Sylvan / ☐ Pillager

Sylvan Recreation Site: ☐ Wilder's Landing; ☐ Fisherman's Bridge Boat Launch and Fishing Area; ☐ Sylvan Dam Boat Access and Fishing Area; ☐ Sylvan Canoe Portage

Pillager Recreation Site: ☐ Alvah's Landing (Minnesota DNR Boat Launch); ☐ Pillager Dam Public Boat Launch; ☐ Pillager Dam Public Canoe Portage and Shorefishing Access; ☐ Crow Wing River Canoe Campsite

GPS Coordinates: _____

*Please note:
1) Photos of **all** facilities, amenities, signs, parking areas, roads, and areas of erosion should be taken. Location of each needs to be specified via GPS coordinates or on sketch.
2) If there is more than one facility/amenity of the same type, and they are in different conditions, this needs to be distinguished in notes on this form. Location of each needs to be specified via GPS coordinates or on sketch, and condition should be specified in some way to distinguish the varied conditions for the same facility/amenity type.
3) If there is not sufficient space on this form for notes, pages may be added as needed.

Site Type:

☐ Boat Launch Area ☐ Fishing Area ☐ Picnic Area
☐ Trail ☐ Campsite ☐ Other: _____

Road Access: Condition Description (N-replace, R-repair, M-maintain, G-good):

entrances _____ # lanes _____ Condition _____

Parking Area: Condition Description (N-replace, R-repair, M-maintain, G-good): _____

Type	# Estimated Spaces	Delineation
Designated Handicap Spaces	_____	☐ Signage
Regular Spaces	_____	
Vehicle & Trailer Spaces	_____	

Other Notes: _____
_____
_____

Site Amenities (if needed, please provide additional specifications on additional pages):

#	Type	Condition (N-replace, R-repair, M-maintain, G-good) for each[1]
_____	Restrooms	_____
_____	Fishing Pier/Platform	_____
_____	Boat Launch	_____
_____	Boat Dock	_____
_____	Pedestrian Trail	_____
_____	Firepit/ring	_____
_____	Information Kiosk	_____
_____	Informational Signage	_____
_____	Safety Signage	_____
_____	Campsite (primitive)	_____
_____	Campsite (improved)	_____

Other (specify)_____
_____

Boat Launch: Condition Description (N-replace, R-repair, M-maintain, G-good):
_____

☐ Hard surface ☐ Gravel ☐ Unimproved (informal) _____ # of Lanes

Other notes: _____
_____
_____
_____

Boat Dock / Fishing Pier: Condition Description (N-replace, R-repair, M-maintain, G-good):
_____

☐ Boat Dock (can secure boat to platform) ☐ Fishing Pier (cannot secure boat to platform)

Other notes (include dimensions): _____
_____

Trails (within the recreation site): Condition Description (N-replace, R-repair, M-maintain, G-good)
Type: _____ Condition: _____
Type: _____ Condition: _____
Type: _____ Condition: _____

Other notes: _____

[1] If more than one and different conditions, distinguish the condition/location of each. Can label by number and indicate on sketch. If all are the same condition, don't need to specify with label.

Signage / Interpretive Information: Condition Description (N-replace, R-repair, M-maintain, G-good)

☐ Part 8 Quantity: _____ Condition: _____
☐ Trail Markers Quantity: _____ Condition: _____
☐ Historical Quantity: _____ Condition: _____
☐ Fishing Regulations Quantity: _____ Condition: _____
☐ Boating Safety Quantity: _____ Condition: _____
☐ Informational Quantity: _____ Condition: _____ Content: _____
☐ Other: _____ Quantity: _____ Condition: _____

Restrooms: Condition Description (N-replace, R-repair, M-maintain, G-good)

Flush: _____ # Portable: _____ Condition: _____

Erosion:

☐ Areas of noticeable erosion, slumping, or other forms of instability

Description of Erosion:

_____
_____

Evidence of use at site: _____
(C) Compaction, (E) Erosion, (L) Litter, (UI) Unauthorized improvements, (V) Vandalism, (O) Other (Specify)

Evidence of overcrowding: _____
(A) Anecdotal information, (I) Improper parking, (SD) Site degradation, (U) Unauthorized sites, (W) Waiting lines, (O) Other (Specify)

Notes (including general condition, any restrictions/alerts, invasive species, etc.):

_____
_____
_____
_____
_____
_____
_____
_____

Sketch of Site, including <u>all</u> facilities and amenities:

Sylvan Project (P-2454), Pillager Project (P-2663)

Recreational Observations / Spot Counts

Observer: _____ **Date**: _____ **Time**: _____

Weather: □ Sunny; □ Partly Cloudy; □ Cloudy; □ Light Rain; □ Heavy Rain

Approximate Temperature (°F): _____

1. **Project:** □ Sylvan / □ Pillager

2. **Sylvan Recreation Site:**
   - □ Wilder's Landing
   - □ Fisherman's Bridge Boat Launch and Fishing Area
   - □ Sylvan Dam Boat Access and Fishing Area
   - □ Sylvan Canoe Portage

3. **Pillager Recreation Site:**
   - □ Alvah's Landing (Minnesota DNR Boat Launch)
   - □ Pillager Dam Public Boat Launch
   - □ Pillager Dam Public Canoe Portage and Shorefishing Access

4. **Number of People Observed:** _____

5. **Observed Activities:**
   - □ Fishing from the shore
   - □ Fishing from a boat
   - □ Motorized boating
   - □ Canoe / Kayaking / Stand-up Paddle Boarding
   - □ Waterskiing / Wakeboarding / Tubing
   - □ Swimming
   - □ Hiking / Walking / Jogging
   - □ Bicycling
   - □ Picnicking
   - □ Camping
   - □ Viewing Wildlife / Birdwatching
   - □ Photography
   - □ Other: _____

6. **Notes:**

_____
_____
_____

Sylvan Project (P-2454), Pillager Project (P-2663)

Recreational Use Survey Form

A. **Observer**: _____
B. **Date**: _____
C. **Time**: _____
D. **Project:** □ Sylvan / □ Pillager
E. **Sylvan Recreation Site:**
   □ Wilder's Landing
   □ Fisherman's Bridge Boat Launch and Fishing Area
   □ Sylvan Dam Boat Access and Fishing Area
   □ Sylvan Canoe Portage
   Pillager Recreation Site:
   □ Alvah's Landing (Minnesota DNR Boat Launch)
   □ Pillager Dam Public Boat Launch
   □ Pillager Dam Public Canoe Portage and Shorefishing Access

1. **The purpose of the survey is to obtain information about recreation user experience at the site and to determine adequacy of the site. This recreational use survey is in association with the relicensing process for the Sylvan and Pillager Hydroelectric Projects. The survey will take approximately 5 minutes and is completely anonymous. No personal information will be collected. Would you be willing to participate in the survey?**
   □ Yes □ No

2. **Including yourself, how many people are in your party today?** _____

3. **Of the activities listed above, please indicate which is the primary activity of this trip?** *(Choose only one)*
   □ Fishing from the shore
   □ Fishing from a boat
   □ Motorized boating
   □ Canoe / Kayaking / Stand-up Paddle Boarding
   □ Waterskiing / Wakeboarding / Tubing
   □ Swimming
   □ Hiking / Walking / Jogging
   □ Bicycling
   □ Picnicking
   □ Camping
   □ Viewing Wildlife / Birdwatching
   □ Photography
   □ Other: _____

4. **On a scale from 1 to 5, with 1 being infrequently and 5 frequently, how much do you perceive this site is used for recreation?** *(Circle one number)*

1	2	3	4	5
Infrequently		Moderately		Frequently

5. **In your opinion, are the amount and types of recreation opportunities offered at this site sufficient?**
   □ Yes; □ No; □ N/A

   If no, please explain:

   _____

6. **On a scale from 1 to 5, with 1 being poor and 5 excellent, how would you rate the overall condition of this site?** *(Circle one number)*

1	2	3	4	5
Poor	Fair	Satisfactory	Good	Excellent

   If your rating is 1-2, please explain:

   _____

7. **Do you have any additional comments about public recreation opportunities and facilities at this recreation site? (Please be as specific as possible):**

   _____
   _____
   _____
   _____
   _____
   _____
   _____

Thank you for participating in this survey!

Sylvan Project (P-2454), Pillager Project (P-2663)

Recreational Use Survey Form – Crow Wing River Canoe Campsite

A. **Name**: _____
B. **Date**: _____
C. **Time**: _____
D. **Email (optional):** _____

1. **The purpose of the survey is to obtain information about recreation user experience at the site and to determine adequacy of the Crow Wing River Canoe Campsite. This recreational use survey is in association with the relicensing process for the Sylvan and Pillager Hydroelectric Projects. The answers to your responses should be specific to the Crow Wing River Canoe Campsite.**

2. **Including yourself, how many people are in your party today?** _____
   Please note the names of others in your party also taking the survey: _____
   _____

   What is the duration of your current visit (number of days/nights)? _____

3. **Of the activities listed above, please indicate which is the primary activity of this trip** *(Choose only one)***:**
   □ Fishing from the shore
   □ Fishing from a boat
   □ Motorized boating
   □ Canoe / Kayaking / Stand-up Paddle Boarding
   □ Waterskiing / Wakeboarding / Tubing
   □ Swimming
   □ Hiking / Walking / Jogging
   □ Bicycling
   □ Picnicking
   □ Camping
   □ Viewing Wildlife / Birdwatching
   □ Photography
   □ Other: _____

4. **On a scale from 1 to 5, with 1 being infrequently and 5 frequently, how much do you perceive this site is used for recreation?** *(Circle one number)*

1	2	3	4	5
Infrequently		Moderately		Frequently

5. **In your opinion, are the amount and types of recreation opportunities offered at this site sufficient?**
   □ Yes; □ No; □ N/A

   If no, please explain:
   _____

6. **On a scale from 1 to 5, with 1 being poor and 5 excellent, how would you rate the overall condition of this site?** *(Circle one number)*

1	2	3	4	5
Poor	Fair	Satisfactory	Good	Excellent

If your rating is 1-2, please explain:

_____

7. **Are there any modifications to the site that you think should be made?**
□ Yes; □ No; □ N/A

If yes, please explain:

_____

8. **Do you have any additional comments about public recreation opportunities and facilities at this recreation site? (Please be as specific as possible):**

_____
_____
_____
_____
_____
_____
_____
_____
_____

Thank you for participating in this survey!

APPENDIX C

REQUESTED REFERENCES

Appendix C has been filed with FERC as a separate PDF due to the large file size.