ENVIRONMENTAL ASSESSMENT
FOR
HYDROPOWER LICENSE

Gile Flowage Storage Reservoir Project
FERC Project No. 15055-001
Wisconsin

Federal Energy Regulatory Commission
Office of Energy Projects
Division of Hydropower Licensing
888 First Street, NE
Washington, D.C. 20426

December 2025

COMMISSION STAFF PAGE LIMIT AND DEADLINE CERTIFICATIONS

I certify that Commission staff has considered the factors mandated by the National Environmental Policy Act (NEPA) and that this environmental document represents a good-faith effort to disclose the most important considerations required by NEPA within the statutory page limit (42 U.S.C. § 4336a(e)) and the statutory deadline (42 U.S.C. § 4336a(g)). This certification reflects staff's expert judgment that the analysis contained within this environmental document is an accurate representation of the potential environmental effects of the proposed action and the analysis is substantially complete. In staff's judgment, any considerations addressed briefly or left unaddressed would not meaningfully inform the assessment of environmental effects.

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Director
Division of Hydropower Licensing

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ACRONYMS AND ABBREVIATIONS

Advisory Council	Advisory Council on Historic Preservation
APE	area of potential effects
BITP/A	Wisconsin Department of Natural Resources' Broad Incidental Take Permit/Authorization
BMPs	Best Management Practices
certification	water quality certification
C.F.R.	Code of Federal Regulations
cfs	cubic feet per second
Commission	Federal Energy Regulatory Commission
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dbh	diameter at breast height
DO	dissolved oxygen
EA	Environmental Assessment
EIA	U.S. Energy Information Administration
ESA	Endangered Species Act
˚F	degrees Fahrenheit
fps	feet per second
FERC	Federal Energy Regulatory Commission
FPA	Federal Power Act
FWS	U.S. Fish and Wildlife Service
Gile Association	Friends of the Gile Flowage Lake Association
Gile Project	Gile Flowage Storage Reservoir Project
HPMP	Historic Properties Management Plan
Interior	U.S. Department of the Interior
IPaC	Information for Planning and Consultation
kV	kilovolt
kW	kilowatt
LBB	little brown bat
mg/L	milligrams per Liter
Michigan DNR	Michigan Department of Natural Resources
Michigan EGLE	Michigan Department of Environment, Great Lakes, and Energy
Michigan HRC	Michigan Hydro Relicensing Coalition
MISO	Midcontinent Independent System Operator, Inc.
MRO	Midwest Reliability Organization
MW	megawatt
MWh	megawatt-hour
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Corporation
NHI	Wisconsin's Natural Heritage Inventory
NHPA	National Historic Preservation Act of 1966
NLEB	northern long-eared bat

Northern States	Northern States Power Company
Park Service	U.S. National Park Service
PAD	Pre-Application Document
PM&E	protection, mitigation, and enhancement
project	Gile Flowage Storage Reservoir Project
QR code	Quick Response code
REA	Ready for Environmental Analysis
River Alliance	River Alliance of Wisconsin
Saxon Project	Saxon Falls Hydroelectric Project
SD1	Scoping Document 1
SD2	Scoping Document 2
Superior Project	Superior Falls Hydroelectric Project
TCB	tricolored bat
THPO	Tribal Historic Preservation Officer
U.S.C.	United States Code
USGS	United States Geological Survey
West Fork	West Fork of the Montreal River
Wisconsin DOA	Wisconsin Department of Administration
Wisconsin DNR	Wisconsin Department of Natural Resources
Wisconsin SHPO	Wisconsin State Historic Preservation Officer

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1.0 INTRODUCTION

1.1 APPLICATION

On August 18, 2023, Northern States Power Company (Northern States) filed an application with the Federal Energy Regulatory Commission (Commission or FERC) for an original license to continue to operate and maintain the existing, unlicensed Gile Flowage Storage Reservoir Project No. 15055 (Gile Project or project). The project is located on the West Fork of the Montreal River (West Fork) in Iron County, Wisconsin. The project operates as a water storage facility that provides flow releases for hydroelectric generation at Northern States' Saxon Falls Hydroelectric Project No. 2610 (Saxon Project) and Superior Falls Hydroelectric Project No. 2587 (Superior Project), located downstream of the Gile Project on the Montreal River (Figure 1).[1]

1.2 PURPOSE OF ACTION AND NEED FOR POWER

1.2.1 Purpose of Action

The purpose of the project is to store water for hydroelectric generation at the downstream Saxon and Superior Projects (collectively referred to as the "downstream projects"). Therefore, under the provisions of the Federal Power Act (FPA), the Commission must decide whether to issue a license to Northern States for the project and what conditions should be placed on any license issued. In deciding whether to issue a license for a hydroelectric project, the Commission must determine that the project will be best adapted to a comprehensive plan for improving or developing the waterway. In addition to the power and developmental purposes for which licenses are issued (such as flood control, irrigation, and water supply), the Commission must give equal consideration to the purposes of: (1) energy conservation; (2) the protection of, mitigation of damage to, and enhancement of fish and wildlife resources; (3) the protection of recreational opportunities; and (4) the preservation of other aspects of environmental quality. Issuing an original license for the project would allow Northern States to augment electricity

[1] *See Northern States Power Company – Wisconsin*, 172 FERC ¶ 62,093 (2020) (order finding that the Gile Project is required to be licensed because it is part of a complete unit of development that includes the Saxon and Superior Projects). Northern States filed relicense applications for the Saxon and Superior Projects on December 30, 2022.

generation at its downstream projects for the term of a license, making electric power from a renewable resource available to the regional electric grid.

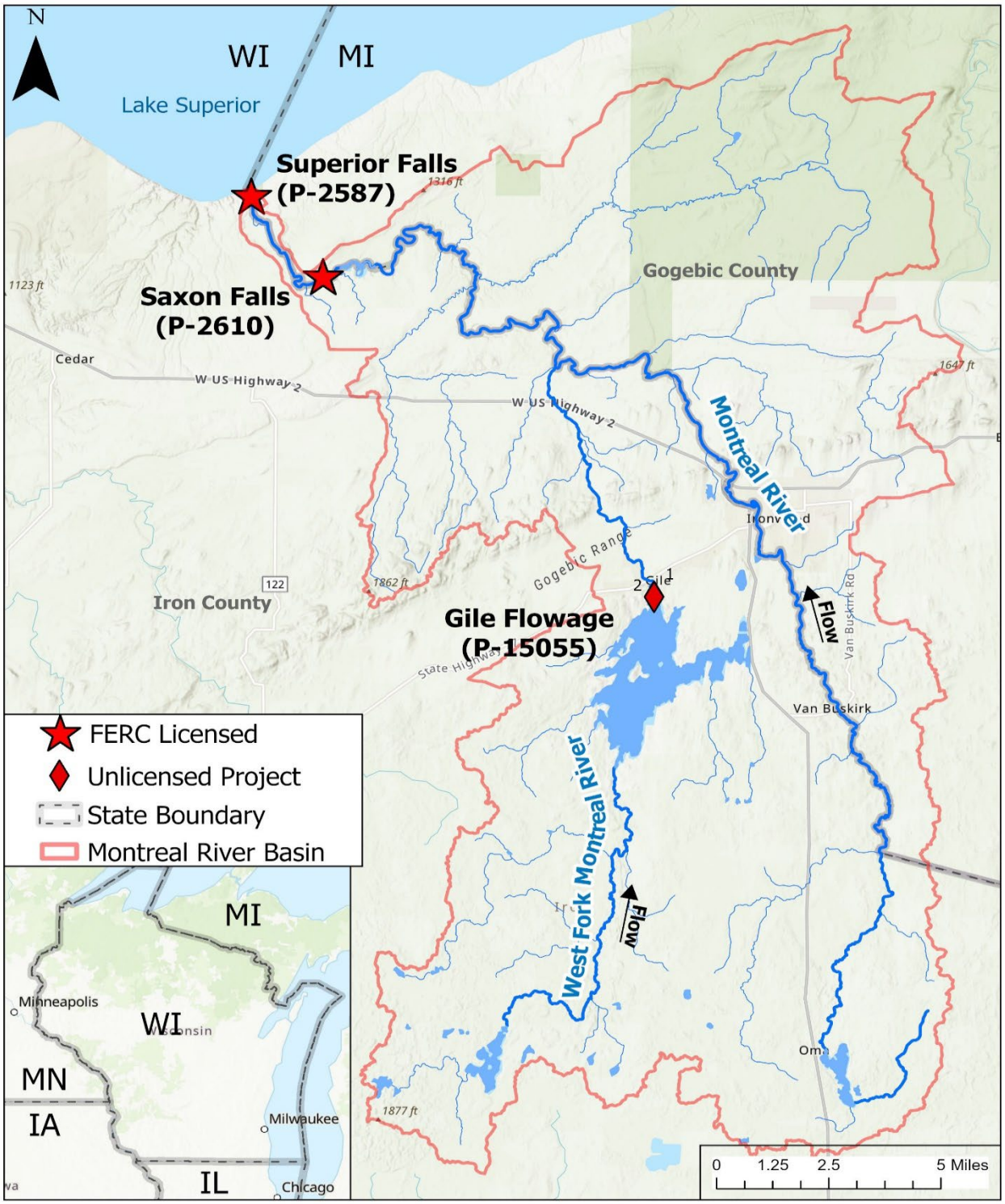

Figure 1. Location of the Gile Project and FERC-licensed hydroelectric projects in the Montreal River Basin (Source: Staff).

We prepared this environmental assessment (EA) in compliance with the requirements of the National Environmental Policy Act of 1969 (NEPA)[2] and the Commission's implementing regulations.[3] This EA assesses the environmental and economic effects associated with operation of the project and alternatives to the proposed project. It includes recommendations to the Commission on whether to issue a license, and if so, recommends terms and conditions to become a part of any license issued.

In this EA, we assess the environmental and economic effects of: (1) no action (No Action Alternative); (2) operating and maintaining the project as proposed by Northern States (Proposed Action); and (3) operating and maintaining the project as proposed by Northern States with additional and modified measures recommended by Commission staff (Staff Alternative). Under the No-Action Alternative, the project would continue to operate as it does currently and no new environmental protection, mitigation, or enhancement (PM&E) measures would be implemented. The primary issues associated with licensing the project are the effects of licensing the project on aquatic, terrestrial, recreation, and cultural resources, and federally listed endangered species.

1.2.2 Need for Power

The Gile Project provides water storage and releases that allow additional annual generation of approximately 2,103.1 and 2,401.6 megawatt-hours (MWh) at the Saxon and Superior Projects, respectively.[4]

To assess the need for power, we looked at the needs in the operating region in which the project is located. Power produced at the project is used to support demand in the Midcontinent Independent System Operator, Inc. (MISO) assessment area of the Midwest Reliability Organization (MRO) region. MRO is a regional electric reliability council in the North American Electric Reliability Corporation (NERC). NERC annually forecasts electrical supply and demand in the nation and region for a 10-year period. According to NERC's 2024 Long-Term Reliability Assessment for the period from 2025 through 2034, the annual total internal demand in the MISO assessment area is expected to increase from 122,328 MW in 2025 to 131,952 MW in 2034 (NERC, 2024). The anticipated reserve margin (i.e., the primary metric used to evaluate the adequacy of projected generation resources to serve forecasted peak load) in

[2] National Environmental Policy Act of 1969, amended (Pub. L. 91-190. 42 U.S.C. §§ 4321–4347, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, Pub. L. 97-258, §4(b), September 13, 1982, Pub. L. 118-5, June 3, 2023).

[3] 18 C.F.R. pt. 380 (2025).

[4] The Gile Project accounts for 21% of the total generation at each of the Saxon and Superior Projects. *See Northern States Power Company – Wisconsin*, 172 FERC ¶ 62,093, at P 5 (2020). According to the license applications filed on December 30, 2022, the average annual energy production is 10,015 MWh at the Saxon Project and 11,436.4 MWh at the Superior Project. Based on the Gile Project's 21% contribution to the annual energy production at the downstream projects, the Gile Project's operation results in an additional 2,103.1 MWh at the Saxon Project and 2,401.6 MWh at the Superior Project.

the assessment area is projected to decrease from 17% in 2025 to 4.2% in 2034. MISO's reference reserve margin (i.e., the targeted reserve margin) increases from 9.2% in 2025 to 9.7% in 2034 (NERC, 2025). The anticipated reserve margin for the MISO assessment area is forecasted to be below MISO's targeted reserve margin from 2031 through 2034.

Although the Gile Project does not generate power, it regulates and augments flows that result in increased generation at the downstream projects. This additional generation contributes to meeting power needs in the MISO assessment area. If licensed, the project would continue to contribute to efficient use of the downstream projects and help meet a need for power in the MISO assessment area in both the short and long term.

1.3 STATUTORY AND REGULATORY REQUIREMENTS

Any license for the project would be subject to numerous requirements under the FPA and other applicable statutes. The major regulatory and statutory requirements are described in Appendix D, *Statutory and Regulatory Requirements*.

1.4 PUBLIC REVIEW AND COMMENT

The Commission's regulations (18 C.F.R. § 5.1-5.16) require applicants to consult with appropriate resource agencies, Tribes, and other entities before filing an application for a license. This consultation is the first step in complying with the Fish and Wildlife Coordination Act (16 U.S.C. § 661 et seq.), Endangered Species Act (ESA) (16 U.S.C. § 1536), National Historic Preservation Act (NHPA) (54 U.S.C. § 306108), and other federal statutes. Pre-filing consultation must be completed and documented according to the Commission's regulations.

1.4.1 Scoping

Before preparing this EA, Commission staff conducted scoping to determine what issues and alternatives should be addressed for the project's proposed licensing. Scoping Document 1 (SD1) was distributed to interested agencies, Tribes, and others on January 19, 2021. On that same day, the Commission issued a notice setting March 17, 2021, as the deadline for filing comments on SD1. The notice was published in the *Federal Register* on January 26, 2021.[5] The following entities filed comments:

Commenting Entity	Filing Date
Wisconsin Department of Natural Resources (Wisconsin DNR)	March 5, 2021
Friends of the Gile Flowage Lake Association (Gile Association)	March 16 and 17, 2021
U.S. Environmental Protection Agency	March 16, 2021
American Whitewater	March 17, 2021

[5] 86 Fed. Reg. 7,089.

Michigan Hydro Relicensing Coalition (Michigan HRC)[6]	March 17, 2021
National Park Service (Park Service)	March 17, 2021
River Alliance of Wisconsin (River Alliance)	March 17, 2021

A revised scoping document (SD2) addressing the comments was issued on April 1, 2021.

1.4.2 Interventions

On October 10, 2024, the Commission issued a notice accepting the license application and setting December 9, 2024, as the deadline for filing protests and motions to intervene. The notice was published in the *Federal Register* on October 17, 2024.[7] U.S. Department of the Interior (Interior), on behalf of the U.S. Fish and Wildlife Service (FWS), Park Service, and Bureau of Indian Affairs, filed a timely notice of intervention on December 6, 2024.[8] The following entities filed timely, unopposed motions to intervene.[9]

Filing Entity	**Filing Date**
Michigan HRC	December 3, 2024
Wisconsin DNR	December 5, 2024
American Whitewater	December 9, 2024
River Alliance	December 9, 2024
Gile Association	December 9, 2024

No intervenors protested the licensing.

1.4.3 Comments on the Application

On October 10, 2024, the Commission issued a ready for environmental analysis (REA) notice setting December 9, 2024, as the deadline for filing comments, recommendations, terms and conditions, and fishway prescriptions. The notice also established a deadline of January 23,

[6] Michigan HRC includes the Michigan United Conservation Clubs, Michigan Council of Trout Unlimited, Great Lakes Council, Inc. of Fly Fishers International, Anglers of the Au Sable, and Michigan Steelhead and Salmon Fishermen's Association.

[7] 89 Fed. Reg. 83,683.

[8] Under Rule 214(a)(2) of the Commission's Rules of Practice and Procedure, FWS, Park Service, and Bureau of Indian Affairs became parties to the proceeding upon the timely filing of its notice of intervention. 18 C.F.R. § 385.214(a)(2) (2025).

[9] Timely, unopposed motions to intervene are granted by operation of Rule 214(c) of the Commission's Rules of Practice and Procedure. 18 C.F.R. § 385.214(c) (2025).

2025, for filing reply comments. The notice was published in the *Federal Register* on October 17, 2024.[10] The following entities filed comments and recommendations.

Commenting Entity	Filing Date
Jeffrey Barden	November 13, 2024
Rodney Claiborne	November 14, 2024
Greg Weiss	November 14, 2024
Christopher Evans	November 15, 2024
Jake Ring	November 18, 2024
Nick Kunath	November 19, 2024
Paul Janda	November 19, 2024
John Ray	November 19, 2024
Neal Schroeter	November 20, 2024
Ryan Whipple	November 20, 2024
Derek Grisbeck	November 25, 2024
Gary Grenda	December 2, 2024
Dan Newman	December 4, 2024
Brian Castillo	December 5, 2024
Michigan HRC[11]	December 6, 2024
Wisconsin DNR	December 6, 2024
Michigan Department of Environment, Great Lakes, and Energy (Michigan EGLE)[12]	December 9, 2024
American Whitewater	December 9, 2024
River Alliance	December 9, 2024
Interior	December 9, 2024
Gile Association	December 9, 2024

Northern States filed reply comments on January 14, 2025.

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 NO-ACTION ALTERNATIVE

The no-action alternative for the currently operating, but unlicensed project would be the continuation of current project operation. Thus, the no-action alternative would include the

[10] 89 Fed. Reg. 83,683.

[11] Michigan HRC and American Whitewater commented on Northern States' proposal for a 49-year, 5-month, license term. Northern States' proposal will be addressed in the final decision on the license application.

[12] Michigan EGLE commented on financial assurances for the project. The need for financial assurances will be addressed in the final decision on the license application.

existing facilities and current project operation. We use this alternative to establish baseline environmental conditions for comparison with other alternatives and to compare the benefits and costs of any measures that might be required under any license issued.

2.1.1 Existing Project Facilities

The Gile Project includes a 902.6-foot-long, 32.5-foot-high dam that includes:[13] (1) a 300-foot-long west earthen embankment; (2) a 27.6-foot-long gated section that includes a 6-foot-long sluice gate with a trashrack with 2.625-inch clear bar spacing, a 16-foot-long Ogee spillway that includes a Tainter gate with a crest elevation of 1,490.0 feet, and a gatehouse; and (3) a 575-foot-long east earthen embankment.

The dam creates a reservoir that has a surface area of 3,325 acres at a normal maximum surface elevation of 1,490 feet, and a usable storage capacity of 32,031 acre-feet between 1,475 feet and 1,490 feet. From the reservoir, water flows through the Tainter gate to a stilling basin created by a weir with a crest elevation of 1,468 feet. From the reservoir, water also flows through the sluice gate to a 37-foot-long sluiceway that discharges to the stilling basin. Water flows from the stilling basin to the West Fork of the Montreal River. The project does not contain any generating facilities. The project facilities are shown in Figure 2.

The project includes an existing hand-carry boat put-in site located on the east bank of the West Fork, immediately downstream of the stilling basin.

2.1.2 Project Safety

As part of the licensing process, Commission staff will evaluate the adequacy of the project's facilities. Special articles would be included in any license issued, as appropriate. Commission staff would inspect the project during the term of any license to ensure adherence to Commission-approved plans and specifications, special license articles relating to construction (if any), operation and maintenance, and accepted engineering practices and procedures.

[13] All elevations discussed in this EA are referenced to a vertical datum of National Geodetic Vertical Datum of 1929.

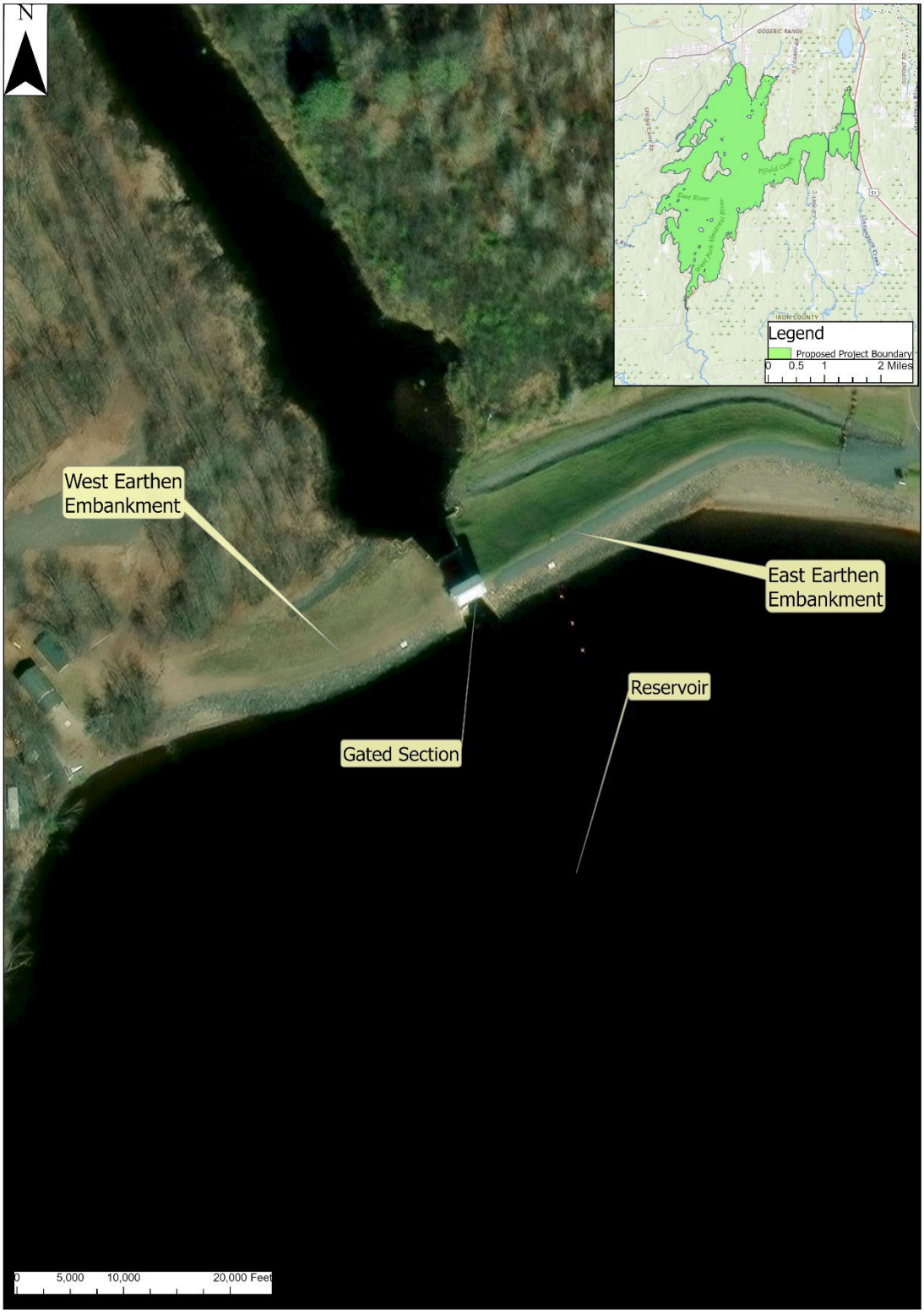

Figure 2. Gile Project facilities (Source: staff).

2.1.3 Current Project Operation

Northern States operates the project in a seasonal store-and-release mode to augment generation at the downstream projects during summer and winter low-flow periods. Northern States maintains minimum and maximum reservoir surface elevations of 1,475 and 1,490 feet, respectively. The summer drawdown typically begins around May 1 of each year, and the winter drawdown typically begins around December 1. Northern States typically operates the project with a summer drawdown that ranges from 4.2 to 7.6 feet and a winter drawdown that ranges from 4.6 to 8 feet. Project operators monitor the reservoir elevation with an electronic headwater monitoring device and headwater staff gage. Project operators manually operate the gates to adjust the reservoir elevation and discharge to the West Fork.

Northern States regulates releases from the dam such that the water released, when combined with the flow in the mainstem of the Montreal River, does not exceed the maximum hydraulic capacities of the powerhouses at the Saxon and Superior Projects (i.e., 170 and 220 cubic feet per second (cfs), respectively), to the extent possible. Operating the project in a store-and-release mode allows Northern States to maximize generation and avoid spilling water over the spillway or through the gates at the downstream projects. Northern States also restricts reservoir drawdowns to no more than 0.2 foot per day.[14] During both seasons, drawdowns typically continue until inflow refills the reservoir.

The project releases a year-round minimum flow of 10 cfs to the West Fork through the sluice gate. The maximum hydraulic capacities of the sluice gate and the Tainter gate are 1,000 and 2,200 cfs, respectively.

2.2 PROPOSED ACTION

2.2.1 Proposed Project Facilities

Northern States proposes to maintain the existing facilities described in section 2.1.1.[15] In addition, Northern States proposes to establish a hand-carry boat take-out site on the east end

[14] Except for emergencies beyond Northern States' control, which includes preemptive drawdowns for expected large inflow events due to precipitation or snow melt to reduce flooding and increased reservoir elevations at the downstream projects.

[15] In a letter filed on November 7, 2024, Northern States indicates that it is evaluating upgrades to the spillway to meet dam safety standards. In response to an additional information request issued by Commission staff on January 16, 2025, Northern States states that details regarding the spillway modifications and its associated impacts are unavailable at this time. Northern States states that prior to seeking the Commission's authorization for any future modifications, it will review the potential environmental effects associated with construction and file an environmental analysis as part of the construction approval process. Because Northern States has not filed any specific plans for spillway modifications in the license application, this EA does not consider any spillway modifications as part of the Proposed Action or analyze the effects of any such future modifications on the environment. To the extent Northern States

of the dam by installing a take-out sign in the rip-rap on the east earthen embankment.[16] Northern States also proposes to establish an approximately 500-foot-long portage trail that includes approximately 100 feet of the embankment and a 400-foot-long segment of a grass trail that extends from a non-project park to the boat put-in site.[17] Northern States proposes to install associated directional and Part 8 signage.[18]

2.2.2 Proposed Project Boundary

Northern States proposes to enclose approximately 3,328 acres of land and water in the project boundary, including the 3,325-acre reservoir and 3 acres of land associated with the project facilities described in section 2.1.1.[19]

2.2.3 Project Operation and Environmental Measures

Northern States proposes the following operational and environmental measures.

- Implement soil erosion and sediment control best management practices (BMPs), filed as Appendix E-27 of the application, prior to any ground-disturbing activities associated with project maintenance.

- Survey the reservoir shoreline and riverbanks within the project boundary for erosion every 5 years and file a report on each survey that includes recommendations on whether mitigation of any erosion site is warranted.

- Continue operating the project as a water storage facility and maintaining the reservoir elevation from a minimum elevation of 1,475 feet to a maximum elevation of 1,490 feet,

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proposes any spillway modifications in the future, those would be considered in a separate proceeding from this license proceeding.

[16] A hand-carry boat take-out site is currently located at the east earthen embankment adjacent to the gatehouse. Northern States is not proposing to maintain this existing take-out site.

[17] An approximately 100-foot-long boat portage route is currently located between the existing take-out and put-in sites. Northern States is not proposing to maintain this existing portage route.

[18] Part 8 of the Commission's regulations requires a licensee to post and maintain a sign that, at a minimum, identifies: (1) the FERC project name and number, and a statement that the project is licensed by the Commission; (2) the licensee name and contact information for obtaining additional project recreation information; (3) permissible times and activities; and (4) notice that the recreation facilities are open to all members of the public without discrimination. *See* 18 C.F.R. § 8.2.

[19] The proposed project boundary does not include the islands in the reservoir.

with annual summer and winter drawdowns to augment flows for hydroelectric generation at the downstream projects.

- To protect aquatic resources, continue to limit the reservoir drawdown rate to no more than 0.2 foot per day.

- To protect aquatic resources, continue releasing a minimum flow of 10 cfs to the West Fork downstream of the project.

- Develop an operation compliance monitoring plan to document compliance with project operation that includes the following provisions: (1) locations of headwater monitoring probes/gages; (2) frequency of monitoring; (3) procedures for maintaining and calibrating monitoring equipment; (4) standard operating procedures to be implemented outside of normal operating conditions, such as scheduled or emergency facility shutdowns or maintenance activities; (5) a schedule for installing and operating the monitoring equipment; and (6) notification procedures for planned and unplanned deviations.

- Notify the Commission and resource agencies of planned and unplanned deviations, and only modify project operation for short periods of time of up to 3 weeks, after mutual agreement with FWS and Wisconsin DNR.

- Implement Wisconsin DNR's Broad Incidental Take Permit and Broad Incidental Take Authorization (BITP/A) for Wisconsin Cave Bats, filed as Appendix E-20 of the application, to protect the northern long-eared bat (NLEB), tricolored bat (TCB), and little brown bat (LBB) when conducting project maintenance.[20]

- Implement the following measures to protect bald eagles from any project-related vegetation management and construction activities: (1) prior to any such activities, identify any existing eagle nests at the project by reviewing the Wisconsin Natural Heritage Inventory (NHI); and (2) establish a buffer zone of at least 660 feet between any nest and the project activity during the nesting season.

- To protect the wood turtle from project maintenance activities, implement Wisconsin DNR's BITP/A for wood turtles, filed as Appendix E-19 of the application.

- To help prevent the introduction and spread of invasive species, develop an invasive species management plan that includes provisions for conducting invasive species surveys every other year and removing or chemically treating any new invasive species.

- To provide recreation opportunities, maintain the new boat take-out site, new portage trail, and existing boat put-in site as project recreation facilities.

[20] Northern States indicates that it would implement guidance from the FWS to protect NLEB, but Northern States does not identify any specific FWS guidance or measures.

- To provide scheduled whitewater boating opportunities downstream of the project, develop a whitewater recreation plan that includes the following provisions: (1) two 3-hour whitewater flow releases of 1,200 cfs, beginning in the morning on a day in June and a day in September; (2) identify the day and timing of each flow release; (3) flow ramping for 1 hour before and after each whitewater flow release; and (4) publishing average daily discharge and reservoir elevation information on the internet.

- Develop a historic properties management plan (HPMP) to protect historic properties that are eligible for or listed on the National Register of Historic Places (National Register).

2.3 STAFF ALTERNATIVE

The Staff Alternative includes the following operational and environmental measures proposed by Northern States.

- Implement soil erosion and sediment control BMPs, filed as Appendix E-27 of the application, prior to any ground-disturbing activities associated with project maintenance.

- Survey the reservoir shoreline and riverbanks within the project boundary for erosion every 5 years and file a report on each survey that includes recommendations on whether mitigation of any erosion site is warranted.

- Continue operating the project as a water storage facility and maintaining the reservoir elevation from a minimum elevation of 1,475 feet to a maximum elevation of 1,490 feet, with annual summer and winter drawdowns to augment flows for hydroelectric generation at the downstream projects.

- To protect aquatic resources, continue to limit the reservoir drawdown rate to no more than 0.2 foot per day.

- To protect aquatic resources, continue releasing a minimum flow of 10 cfs to the West Fork downstream of the project.

- Develop an operation compliance monitoring plan to document compliance with project operation that includes the following provisions: (1) locations of headwater monitoring probes/gages; (2) frequency of monitoring; (3) procedures for maintaining and calibrating monitoring equipment; (4) standard operating procedures to be implemented outside of normal operating conditions, such as scheduled or emergency facility shutdowns or maintenance activities; (5) a schedule for installing and operating the monitoring equipment; and (6) notification procedures for planned and unplanned deviations.

- Notify the Commission and resource agencies of planned and unplanned deviations, and only modify project operation for short periods of time of up to 3 weeks, after mutual agreement with FWS and Wisconsin DNR.

- Implement the following measures to protect bald eagles from any project-related vegetation management and construction activities: (1) prior to any such activities, identify any existing eagle nests at the project by reviewing the Wisconsin NHI; and (2) establish a buffer zone of at least 660 feet between any nest and the project activity during the nesting season.

- To provide project-related recreation opportunities, maintain the new boat take-out site, new portage trail, and existing boat put-in site as project recreation facilities.

- To provide scheduled whitewater boating opportunities downstream of the project, develop a whitewater recreation plan that includes the following provisions: (1) two 3-hour whitewater flow releases of 1,200 cfs, beginning in the morning on a day in June and a day in September; (2) identify the day and timing of each flow release; (3) flow ramping for 1 hour before and after each whitewater flow release; and (4) publishing average daily discharge and reservoir elevation information on the internet.

The Staff Alternative includes the following modifications to the applicant's proposal and additional staff-recommended measures.

- To protect the federally listed endangered NLEB, avoid the removal of non-hazardous trees that are 3 inches dbh or greater in diameter from April 15 through September 30, instead of Northern States' proposal to implement Wisconsin DNR's BITP/A.

- Develop the proposed whitewater recreation plan with the following additional provisions: (1) publish the following additional information on the website: (a) instructions on how to access the put-in site, including parking and directions to the site; (b) the specific days and timing of scheduled whitewater flow releases; and (c) updates on any scheduled project maintenance that could affect access to the put-in site or scheduled whitewater flow releases; and (2) an annual whitewater release coordination meeting between Northern States and interested stakeholders to discuss the scheduled flow releases for the upcoming boating season, including whether any changes to the schedule are needed in light of foreseeable information on flows and potential scheduling conflicts.

- To enhance recreation at the project, develop a recreation management plan that contains the following provisions: (1) a description of all licensed project recreation facilities, including a map; (2) a description of operation and maintenance of the licensed project recreation facilities; (3) a description of all recreational signage required by the license, including the location and content of the signage; and (4) a schedule for completing all required recreation improvements.

- To enhance recreation access, implement the following improvements: (1) include, on the Part 8 sign, a map of the licensed project recreation facilities, the project website address, and a description of project operation that could affect recreation, including reservoir elevations, drawdown schedule/rate, minimum flow releases, and whitewater boating flow releases; (2) install a sign at the put-in site that warns boaters of potentially

dangerous boating conditions in the West Fork downstream of the dam and provides information on whitewater boating classifications; (3) remove rocks at the put-in site to ensure safe water access for whitewater boaters; and (4) remove barriers on the earthen embankment to provide fully accessible fishing access.

- To ensure recreation opportunities at the project remain throughout the term of any license, reserve the Commission's right to require additional recreation measures in the future and require Northern States to notify the Commission if operation ceases at non-project recreation sites that provide trailered boats with access to the reservoir.[21]

- To protect previously unidentified cultural resources that are discovered during project operation, maintenance, or other project-related work involving land-disturbing activities, stop all land-clearing and land-disturbing activities in the vicinity of the resource and consult with the Wisconsin SHPO and Tribes to determine the need for any cultural resource studies or measures.

- To protect cultural resources from any project modifications not specifically authorized by any license, consult with the Wisconsin SHPO and Tribes prior to implementing such project modifications, to determine the effects of the activities and the need for any cultural resource studies or measures.

3.0 ENVIRONMENTAL ANALYSIS

This section includes: (1) a general description of the project vicinity; (2) an explanation of the scope of our cumulative effects analysis; and (3) our analysis of the Proposed Action and recommended environmental measures.[22] Sections are organized by resource area (aquatics, terrestrial, recreation, etc.), with historic and current conditions described first. Current conditions are the baseline against which the environmental effects of the Proposed Action and alternatives are compared. Staff conclusions and recommendations are discussed in section 5.1, *Comprehensive Development and Recommended Alternative*, and in Appendix H, *Comprehensive Development*.[23]

[21] *See* section 3.3.4.1, *Recreation and Land Use, Affected Environment*, for a description of the boat access sites at Gile Park, Sucker Hole Landing, Town of Pence Landing, and County Highway C Landing.

[22] Appendix A, *Glossary of Terms*, includes definitions of selected terms relating to the project, environment, and our analysis.

[23] Unless otherwise indicated, the source of our information is the license application filed on August 18, 2023, and additional information filed by Northern States on September 26, 2023, December 18, 2023, November 7, 2024, and April 4, 2025.

3.1 GENERAL DESCRIPTION OF THE RIVER BASIN

The project is located on the West Fork near the towns of Gile and Montreal in Iron County, Wisconsin, approximately 8 miles upstream of the West Fork's confluence with the Montreal River. The Montreal River Basin has a total drainage area of 264 square miles, and the West Fork is the largest tributary of the Montreal River. The West Fork flows approximately 26 miles north from its headwaters in Iron County to its confluence with the Montreal River. From the confluence with the West Fork, the Montreal River flows approximately 18 miles northwest to Lake Superior. The drainage area of the project is approximately 70 square miles. The project is a water storage facility that provides flow releases for hydroelectric generation at the Saxon and Superior Projects located on the Montreal River approximately 21 and 25 miles downstream of the Gile Project, respectively.[24]

Land in the vicinity of the project is mostly forested, with some residential areas less than 1 mile northeast of the dam. The climate in the project area is characterized by cold, snowy winters and warm summers. The average monthly minimum temperature ranges from 3 degrees Fahrenheit (°F) in January to 56 °F in July, and the average monthly maximum temperature ranges from 21 °F in January to 77 °F in July. The mean annual precipitation near the project is 36 inches with an average snowfall of approximately 166 inches.

3.2 SCOPE OF CUMULATIVE EFFECTS ANALYSIS

A cumulative effect is the effect on the environment that results from the incremental effect of the action when added to the effects of other past, present, and reasonably foreseeable actions, regardless of what agency or person undertakes such other actions. Cumulative effects can result from individually minor, but collectively significant actions taking place over time, including hydropower and other land and water development activities.

Based on our review of the license application, as well as agency and public comments, we identified water quantity, water quality, aquatic habitat, fishery resources, and whitewater boating as having the potential to be cumulatively affected by licensing the project. We discuss cumulative effects on these resources in sections 3.3.2.3 and 3.3.5.3 of the EA.

3.2.1 Geographic Scope

Our geographic scope of analysis for cumulatively affected resources is defined by the physical limits or boundaries of: (1) the effects of the Proposed Action on resources, and (2) contributing effects from other hydropower and non-hydropower activities within the Montreal River Basin. We identified the geographic scope for water quantity, water quality, aquatic habitat, fishery resources, and recreation to include the Montreal River from the Gile Project, located on the West Fork, to the Montreal River confluence with Lake Superior. We chose this geographic scope because the operation of the Gile Project, in combination with the

[24] Northern States filed license applications for the Saxon and Superior Projects on December 30, 2022, in FERC Docket Numbers P-2610-012 and 2587-066, respectively.

Saxon and Superior Projects, may cumulatively affect flow, water quality, aquatic habitat, fishery resources, and recreation in this approximately 26-mile-long reach of the Montreal River.

3.2.2 Temporal Scope

The temporal scope of our cumulative effects analysis includes a discussion of past, present, and reasonably foreseeable future actions and their effects on each resource that could be cumulatively affected. Based on the potential term of any license, the temporal scope looks 30 to 50 years into the future, concentrating on the effects to the resource from reasonably foreseeable future actions. The historical discussion is limited, by necessity, to the amount of available information. The quality and quantity of information, however, diminishes as we analyze resources further in time from the present.

3.3 PROPOSED ACTION AND ACTION ALTERNATIVES

In this section, we discuss the effects of the Proposed Action and project alternatives on environmental resources. For each resource, we first describe the affected environment, which is the existing condition and baseline against which we measure effects. We then discuss and analyze the site-specific environmental issues.

Only the resources that have the potential to be affected are addressed in this EA. Based on this, Commission staff determined in the SD2 that geology and soils, aquatic resources, terrestrial resources, threatened and endangered species, recreation, land use, and cultural resources may be affected by the Proposed Action and action alternatives.

3.3.1 Geology and Soils

3.3.1.1 Affected Environment

The proposed project has approximately 36.5 miles of shoreline (excluding the island shorelines) with numerous areas of exposed bedrock. Approximately 90% of the shoreline is under public or Northern States ownership and is maintained in a natural, forested state. Bare rock faces and boulders are common along the shoreline. Most of the natural beaches along the reservoir are composed of gravel and cobble.

Northern States conducted a *Shoreline Stability Assessment* of the reservoir shoreline and West Fork downstream of Gile Dam in August 2022 to identify areas of shoreline erosion, mass soil movement, slumping, or other forms of instability.[25] None of the developed shorelines along the reservoir showed evidence of erosion, including roadsides, beaches, and docks. Six non-developed sites along the shoreline had active erosion with evidence of soil movement or slumping. All the erosion sites along the reservoir ranked low for bank erosion intensity. Five of the six sites were located on small islands where the erosion was limited to the thin soil layer atop the bedrock. No additional investigation or mitigation was recommended at these sites.

[25] *See* Northern States' August 18, 2023, Final License Application at Exhibit E, Appendix E-5, *Minimum Flow Habitat Evaluation Study and Shoreline Stability Assessment*.

The other site was located on private land above the maximum reservoir elevation of 1,490 feet. Northern States explains that the landowner appears to have excavated a portion of a trail that leads to the site, which destabilized the shoreline and caused trees to topple into the reservoir. Separately, one additional erosion site was identified on the west bank of the river, adjacent to the gated section of the dam, but was remediated in August 2023 in response to a FERC dam safety inspection.

3.3.1.2 Environmental Effects

Northern States proposes to continue operating the project as a water storage facility and maintaining the reservoir elevation from a minimum elevation of 1,475 feet to a maximum elevation of 1,490 feet, with annual summer and winter drawdowns to augment flows for hydroelectric generation at the downstream projects. Additionally, Northern States proposes to continue to limit the reservoir drawdown rate to no more than 0.2 foot per day, to prevent rapid dewatering of the shoreline that could lead to erosion.

Northern States is not proposing any specific ground-disturbing activities, but proposes to implement soil erosion and sediment control BMPs, as described in Appendix E-27 of the application, during any ground-disturbing activities associated with maintenance. Northern States also proposes to survey the reservoir shoreline and riverbank immediately downstream of the dam for erosion every 5 years. The survey would include an erosion inspection along the shoreline and riverbanks within the proposed project boundary, including identification of any new erosion and a review of previously identified sites (i.e., those noted in the *Shoreline Stability Assessment*). Northern States would file a report with the Commission and Wisconsin DNR that includes the survey results and recommendations on whether mitigation of any erosion site is warranted.

In its comments, Interior states that the proposed boat put-in site downstream of the dam needs maintenance and improvements to mitigate erosion and ensure safe access for boaters. In its comments, Gile Association states that it is concerned about the potential impact of whitewater flow releases on shoreline erosion. Gile Association states that fluctuating water levels contribute to shoreline erosion and deterioration of boat landings, which affects boater accessibility. Gile Association recommends that Northern States develop a boat landing maintenance and mitigation plan, including provisions for maintaining the four boat launches and mitigating erosion caused by fluctuating water levels in the reservoir.[26]

Our Analysis

There is an abundance of riparian and littoral vegetation along the reservoir shoreline and riverbank, along with numerous areas of exposed bedrock. Although erosion was documented in five areas on islands in the reservoir during the 2022 survey, the erosion was limited to a thin soil layer atop the bedrock and there was no indication that the erosion was adversely affecting the environment, such as aquatic, terrestrial, or cultural resources. The erosion identified on private land was above the maximum reservoir elevation of 1,490 feet and appears to have been caused

[26] Gile Association's recommendation for a boat landing maintenance and mitigation plan is discussed in section 3.3.5.2, *Recreation*.

by landowner activities that destabilized the shoreline, not project operation. Riparian and littoral vegetation along the reservoir shoreline would continue to maintain stable soils and protect the shoreline from erosion associated with natural events, such as flooding and freezing.

The proposed reservoir drawdown rate of no more than 0.2 foot per day would prevent rapid dewatering of the shoreline and could help prevent some erosion and sedimentation as water levels recede during drawdowns because sediments would dry and stabilize as water levels are drawn down slowly. However, operating the project in store-and-release mode, with a summer and winter drawdown of up to 15 feet, and two whitewater flow releases, have the potential to cause erosion along the reservoir's shoreline and in the tailwater area, respectively, as discussed by Interior and Gile Association.

Northern States' proposal to file an erosion report every 5 years would ensure that the Commission and Wisconsin DNR have an opportunity to evaluate the need for mitigation of any erosion caused by seasonal drawdowns and project discharges. Northern States' proposal to implement BMPs for any ground-disturbing activities would ensure that project maintenance does not cause erosion. Together, the two proposals would minimize adverse project effects on geology and soils.

3.3.2 Aquatic Resources

3.3.2.1 Affected Environment

Water Resources

The project reservoir has maximum depth of 25 feet and an average depth of 9.5 feet. Mean monthly flows at the project range from a low of 78 cfs in November to a high of 390 cfs in April, with an average annual flow of 147 cfs (Table C-1). Wisconsin classifies the West Fork upstream of the Highway 77 bridge[27] and the project reservoir as Fish and Aquatic Life Waters, with a standard that dissolved oxygen (DO) must be greater than or equal to 5.0 milligrams per liter (mg/L) at any time. Wisconsin established a daily maximum water temperature standard of no greater than 76 °F to 85 °F for the West Fork upstream of the Highway 77 bridge and no greater than 76 °F to 86 °F for the reservoir, depending on month (Table C-2).

Northern States conducted a *Water Quality Monitoring Study* from May through September 2022, and collected DO and water temperature measurements once per month at four locations on the West Fork, including: (1) a riverine section upstream of the reservoir; (2) a deep location in the reservoir (approximately 20 feet deep); (3) in the reservoir approximately 250 feet upstream of the dam; and (4) downstream of the project dam.[28] DO concentrations ranged from 6.61 to 9.51 mg/L and did not substantially differ across sites for each sampling event. Water temperatures ranged from 59.0 to 76.1 °F and did not substantially differ between the sites. The

[27] The Highway 77 bridge is approximately 0.6 mile downstream of the project dam.

[28] *See* Northern States' August 18, 2023, Final License Application at Exhibit E, Appendix E-9, *Water Quality Monitoring Study Report*.

greatest difference in temperature occurred in July when water temperatures were 5 °F higher upstream of the reservoir relative to the river downstream of the project dam. Water temperatures never exceeded the Wisconsin State standards at any time during the study. Discrete water quality sampling did not indicate stratification of the reservoir.

Fish and Aquatic Resources

The project reservoir supports a diverse fish assemblage. Walleye and smallmouth bass are the principal gamefish in the reservoir, while muskellunge, northern pike, and black crappie also contribute to the recreational fishery (Wisconsin DNR, 2005). Fish surveys have been conducted by Wisconsin DNR at the project during various years between 1955 and 2019. The predominant species collected in those surveys included: walleye, pumpkinseed, smallmouth bass, black bullhead, and bluegill (Table C-3).

Wisconsin DNR conducted macroinvertebrate sampling downstream of the project and in the tributaries to the reservoir during various years from 2010 through 2017. Macroinvertebrate populations indicate the tributaries had good or excellent water quality conditions, while the downstream sites exhibit excellent water quality conditions.

During the *Freshwater Mussel Study for the Gile Flowage Storage Reservoir* from June 22 through June 26, 2022*,* Northern States conducted surveys for freshwater mussels in a riverine section upstream of the reservoir, within the reservoir, and downstream of the project dam.[29] Abundance and species richness was low, with 1 live paper pondshell collected in the riverine section of the reservoir, no mussels collected downstream of the project, and 57 live paper pondshell and 1 live giant floater collected in the reservoir.

During the *Aquatic and Terrestrial Invasive Species Study* (Invasive Species Study) in June and July 2022,[30] Northern States observed the spiny water flea. Northern States also observed Chinese and banded mystery snails at the project.

3.3.2.2 Environmental Effects

Water Resources and Aquatic Habitat

Northern States proposes to continue operating the project as a water storage facility and maintaining the reservoir from a minimum elevation of 1,475 feet to a maximum elevation of 1,490 feet, with annual summer and winter drawdowns to augment flows for hydroelectric

[29] *See* Northern States' August 18, 2023, Final License Application at Exhibit E, Appendix E-13, *Freshwater Mussel Study Report*.

[30] *See* Northern States' August 18, 2023, Final License Application at Exhibit E, Appendix E-10, *Aquatic and Terrestrial Invasive Species Study Report*. Section 3.3.3 of this EA discuses aquatic invasive plants.

generation at the downstream projects. Northern States also proposes to continue to limit the reservoir drawdown rate to no more than 0.2 foot per day.[31]

Interior recommends, under section 10(j), that the project operate in a run-of-river mode with no hydroelectric peaking. Interior states that peaking produces fluctuating water levels in the project tailwater and reservoir, which adversely affects fish and other aquatic life. Interior states that, under run-of-river operation, the reservoir, tailwater, and downstream areas undergo changes similar to those occurring in an un-impounded river flowing under natural hydrological conditions, and the resulting habitats mimic those to which fish and other aquatic life have adapted. Interior states that reducing water level fluctuations also minimizes adverse impacts to wetland, shallow water, and shoreline habitats important to fish and wildlife resources.

In its comments, Wisconsin DNR states that it plans to issue a Clean Water Act section 401(a)(1) water quality (certification) that would require a water quality monitoring plan to ensure that dam operations are maintaining compliance with water quality standards and designated uses. Wisconsin DNR states that a water quality monitoring plan commonly requires data collection, reporting, and agency consultation. River Alliance recommends that Northern States develop, in consultation with resource agencies, a plan to monitor DO, water temperature, and other parameters deemed appropriate by Wisconsin and Michigan. River Alliance states that the plan should identify water quality criteria to ensure the project is operated within the States' criteria. River Alliance states that the water in the reservoir behind the dam could at times warm beyond the ambient river temperature, particularly in July, August, and September, which could decrease DO concentrations below the state standards and stress or kill fish, mussels, and other aquatic life. River Alliance indicates that its plan would protect fish and other aquatic life from low dissolved oxygen levels and high-water temperatures. Michigan HRC also recommends that Northern States monitor, among other things, water quality using state-of-the-art protocols and technologies like USGS gages.

In its comments, Wisconsin DNR states that it plans to issue a certification that would require a plan to assess fish movement associated with project drawdowns and measures for mitigating project effects. Wisconsin DNR states that it is concerned about fish migration associated with seasonal drawdowns and how the operation of the dam may contribute to the reduction of some fish species at the project.

In its reply comments, Northern States states that the project's main purpose is to release water for hydroelectric generation at the downstream projects. Northern States states that if the project is operated in a run-of-river mode, then it can no longer function as a storage reservoir and its value to Northern States becomes nil. Northern States clarifies that it does not release water from the dam to provide peaking benefits for downstream generation.

[31] In its application, Northern States states that the proposed maximum drawdown rate does not apply to scheduled whitewater releases or emergencies beyond Northern States' control, including preemptive drawdowns of the reservoir for expected large inflow events.

Our Analysis

During normal operation, Northern States uses the water storage potential of the reservoir on a seasonal basis by drawing down the reservoir in the summer and winter to supplement electricity generation at the downstream projects. The water released, when combined with the flow in the mainstem of the Montreal River, allows Northern States to maximize generation and avoid spilling water over the spillway or through the gates at the downstream projects. In the application, Northern States states that the maximum flow that would be released for augmenting downstream generation is approximately 200 cfs. Limiting releases to avoid spilling at the downstream projects helps conserve water in the reservoir and limits the magnitude of seasonal drawdowns. In a year with normal precipitation, the summer drawdown ranges from 4.2 to 7.6 feet and the winter drawdown ranges from 4.6 to 8 feet. From 1994 through 2021, a maximum drawdown of approximately 10 feet occurred in some years (Figure B-1). However, the drawdown can be as much as 15 feet under current operation, which uses 98% of the gross storage capacity of the reservoir (32,031 of 32,713 acre-feet) and reduces the surface area from 3,325 acres to approximately 400 acres. As seen in the bathymetric map,[32] portions of the reservoir are deeper than 15 feet, so aquatic habitat is still available in the deepest areas of the reservoir following a reservoir drawdown of 15 feet. Nevertheless, the seasonal drawdowns have the potential to adversely affect the breeding, feeding, and sheltering of aquatic organisms by dewatering a significant amount of aquatic habitat in the reservoir. Northern States' proposal to continue seasonal drawdowns would continue to dewater aquatic habitat, and would result in no change to the current environment relative to the No-Action Alternative.

Freshwater mussels, given their limited mobility, may be particularly vulnerable to water level drawdowns that exceed their ability to move and can result in stranding, desiccation, and mortality. The seasonal drawdowns could also mobilize sediment in the reservoir because water velocity and turbulence along the riverbed could increase as water levels decrease, thereby resuspending and transporting sediments downstream. As discussed in section 3.3.2.1, *Fish and Aquatic Resources*, freshwater mussels occur in the reservoir, although abundance and species richness is low at least in part due to the seasonal loss of aquatic habitat associated with drawdowns that would be continued under the Proposed Action. Northern States' proposal to continue to restrict reservoir drawdowns to no more than 0.2 foot per day would continue to protect fish and mussels from stranding and desiccation during the seasonal drawdowns. The proposed drawdown rate would also prevent rapid dewatering of the shoreline that could otherwise lead to erosion and sedimentation.

Interior's recommendation to operate the project in a run-of river mode would require Northern States to provide outflow that approximates inflow and to maintain stable water surface elevations in the reservoir. Operating the project in a run-of-river mode could increase the quality and quantity of aquatic habitat in the reservoir and downstream of the project by providing natural hydrological conditions for fish and other aquatic life. However, operating the project in run-of-river mode would not allow the project to meet its purpose of supplying water for hydroelectric generation at the downstream projects.

[32] *See* Northern States' August 18, 2023, Final License Application at Exhibit E, Appendix E-6, *Gile Flowage Storage Reservoir Bathymetric Map*.

DO is required at an adequate concentration to sustain aquatic resources. Operating a dam on a riverine system has the potential to affect water temperature and DO concentrations by increasing the residence time of water in a reservoir and exposing water at the surface to the heat of the sun, especially if any stagnation occurs during the summer drawdown period. Low DO concentrations can be harmful to fish and other aquatic resources, especially during the summer months when warmer water has less capacity to absorb oxygen. As discussed in section 3.3.2.1, *Water Resources*, DO concentrations upstream and downstream of the dam ranged from 6.61 to 9.51 mg/L, which is adequate to sustain aquatic life. In addition, water temperatures did not significantly differ between the riverine section upstream of the reservoir and downstream of the dam. Northern States' proposal to continue seasonal drawdowns would not result in any changes to water quality relative to current operation. Therefore, licensing the project as proposed would continue to provide adequate water quality that supports fish, and other aquatic life.

Developing a water quality monitoring plan and monitoring water quality, as suggested by Wisconsin DNR and recommended by River Alliance and Michigan HRC, could provide information about temperature and DO during the license term. However, current project operation maintains adequate DO and temperature conditions to support aquatic life within and downstream of the project. River Alliance, Michigan HRC, and Wisconsin DNR did not provide any measures to enhance water quality and monitoring itself would not provide any project-related benefits to water quality during the term of a license. Because the proposed project operation would continue to maintain adequate DO and temperature conditions to sustain aquatic life and monitoring itself would not enhance water quality, monitoring would not provide any project-related benefit to aquatic resources.

Wisconsin DNR originally raised the issue of studying fish movement in a letter filed on March 5, 2021, wherein it requested a fish movement study as part of the pre-filing process for the development of the license application. In its letter, Wisconsin DNR stated its assumption that fish were leaving the reservoir during seasonal drawdowns, but stated that it did not have quantitative evidence or information on fish movement and survival. Then, in a letter filed on July 29, 2021, Wisconsin DNR stated that it suspected there may be excessive movement of certain species from the reservoir as a result of drawdowns, which could be creating an imbalance in the impounded area. Wisconsin DNR clarified that it was specifically interested in movement of walleye and muskellunge. In its revised study plan filed on August 30, 2021, Northern States stated that significant fisheries data was available for the project and the upstream and downstream reaches of the West Fork, and it was not proposing to conduct the requested study. Wisconsin DNR did not file any comments on the revised study plan. In its study determination issued on September 24, 2021, Commission staff stated that absent any comments on the revised study plan, staff considered the issue to be resolved and therefore, did not discuss it in the determination. Therefore, staff did not require Northern States to conduct a fish movement study.

Significant information on fish abundance and diversity is available from fish surveys conducted by Wisconsin DNR from 1955 through 2019. As stated in section 3.3.2.1, *Fish and Aquatic Resources*, the project reservoir supports a diverse fish assemblage. The surveys indicate that walleye and stocked populations of muskellunge are available for recreational fishing. However, as stated above, seasonal drawdowns dewater a significant amount of aquatic habitat in the reservoir and have the potential to adversely affect the breeding, feeding, and

sheltering of fish. Therefore, it is possible that fish could move upstream or downstream of the reservoir to access additional wetted habitat in the West Fork during a seasonal drawdown. Although a fish movement study would provide additional information on the effects of seasonal drawdowns on fish movement, Wisconsin DNR has not suggested any project-specific measures for fish, and it is unclear how this study would benefit fish populations.

Minimum Flows

Northern States proposes to continue releasing a minimum flow of 10 cfs to the West Fork downstream of the project.

Our Analysis

In August 2022 and July 2023, Northern States conducted a *Minimum Flow Habitat Evaluation Study* at two reaches downstream of the project, Reach A located 3,000 feet downstream of the dam and Reach B located 2 miles downstream of the dam. The study evaluated the typical minimum flow release of 12 cfs under current operation[33] and two additional flows (24 cfs and 36 cfs) to determine the area of wetted habitat at each flow. Northern States compared water depth and velocity at each site to known habitat suitability curves to estimate the area of suitable habitat for 10 of the most common fish species collected during the 2017 Wisconsin DNR fisheries survey in the West Fork, including: longnose dace, creek chub, pumpkinseed, smallmouth bass, hornyhead chub, white sucker, yellow perch, common shiner, blacknose shiner, and walleye.

As flow increased from 12 to 36 cfs, the wetted area of Reach A increased by 13% and the wetted area of Reach B increased by 10.2%. While wetted area increased, suitable habitat increased for some species (e.g., creek chub) and decreased for others (e.g., blacknose dace). Overall, the average habitat suitability index (suitable area : total wetted area) for all species changed very little between the three flow rates, ranging from 45.5% at 12 cfs to 46.5% at 36 cfs at Reach A; and from 47.4% at 12 cfs to 49.8% at 36 cfs at Reach B. Each study flow (12, 24, and 36 cfs) received a "good" rating based upon the Wisconsin DNR's fish habitat scoring method.

Minimum flow releases also affect water levels in the Gile Project's reservoir. To evaluate the effects of 10, 12, 24, and 36 cfs minimum flow releases, Northern States modeled the effects of these flow releases for a dry, normal, and wet year.[34] The results showed that minimum flows of 24 and 36 cfs would result in end-of-year reservoir elevations that are

[33] In its study report filed on September 26, 2023, Northern States states that it typically releases 12 cfs to assure it does not release less flow than the minimum of 10 cfs. Northern States' operational data from 1994 through 2021 filed on December 18, 2023, shows that 11 or 12 cfs has typically been released since 2009.

[34] *See* Northern States' August 18, 2023, Final License Application at Exhibit E, Appendix E-28, *Whitewater Recreation Flow Study*.

approximately 2 to 4 feet lower, respectively, than current reservoir elevations in normal and dry years.

Maintaining a minimum flow of 10 cfs as proposed would maintain existing habitat conditions in the reservoir and downstream of the project and would not adversely affect aquatic habitat or aquatic organisms relative to the No-Action Alternative.

Whitewater Flows

Northern States proposes to develop a whitewater recreation plan that includes two 3-hour whitewater flow releases of 1,200 cfs, on a day in June and a day in September, and flow ramping for 1 hour before and after each whitewater flow release.[35]

Interior and American Whitewater support Northern States' proposal to develop a whitewater recreation plan. River Alliance states that releases should be scheduled during months of the ice-free season to avoid environmental impacts associated with drawing down the Gile Project's reservoir. Gile Association states that it is concerned about how whitewater releases would impact fish habitat.

Our Analysis

Northern States does not currently release flow for whitewater boating. As discussed above in *Mode of Operation*, during normal operation, Northern States currently releases a maximum flow of 200 cfs to augment generation at the downstream projects.

The proposed 1,200-cfs whitewater flow release in June and September would substantially increase flow in the West Fork relative to historical median flows (50% exceedance) that have ranged from 101 cfs in June to 35 cfs in September (Table C-1). As part of the whitewater study, Northern States reviewed the frequency of high flow releases from the project and determined that flows equal to or greater than 1,200 cfs occur at an average rate of 3.3 days per year. A substantial increase in flow velocities could render some habitat unsuitable and flush fish downstream along the West Fork and Montreal River. However, aquatic resources downstream of the project dam currently experience similar high flows each year. Also, the proposed whitewater flows would be temporary (3 hours) and infrequent (2 days per year). Ramping whitewater flow releases for 1 hour before and after each release would change flow gradually and allow fish in the West Fork and Montreal River to move to suitable habitat as flows increase or decrease. Because similar high flows already occur in the West Fork and Montreal River and the proposed whitewater flows would be temporary and infrequent, the proposed whitewater flows would not likely result in long-term adverse effects on water quantity, quality, aquatic habitat, or populations of aquatic resources.

[35] Northern States' proposed whitewater recreation plan and associated recommendations from stakeholders are discussed further in section 3.3.5.2, *Recreation*.

The proposed whitewater flow releases would also affect water storage/levels in the project's reservoir. Accounting for the typical median inflow and proposed ramping flows, Northern States estimates that the June whitewater release would result in a net decrease of 363 acre-feet of water in the reservoir, and the September whitewater release would result in a net decrease of 385 acre-feet of water in the reservoir. The corresponding decrease in reservoir elevation for the proposed June and September whitewater flow releases would be approximately 0.12 and 0.21 foot, respectively, assuming a starting reservoir elevation between 1,485 and 1,490 feet in June and 1,480 feet in September.[36] Such a decrease would be minor in comparison to the seasonal drawdowns, and would likely result in water levels within the typical range of the current seasonal and interannual water levels in the reservoir (i.e., drawdowns up to about 10 feet). Therefore, the whitewater releases would not substantially affect mussels, fish, or habitat in the reservoir relative to current conditions.

Operation Compliance Monitoring

Northern States proposes the following operational measures: (1) continue operating the project as a water storage facility and maintaining the reservoir elevation from a minimum elevation of 1,475 feet to a maximum elevation of 1,490 feet, with annual summer and winter drawdowns to augment flows for hydroelectric generation at the downstream projects; (2) continue limiting the reservoir drawdown rate to no more than 0.2 foot per day; and (3) continue releasing a minimum flow of 10 cfs to the West Fork downstream of the project.

Northern States proposes to develop an operation compliance monitoring plan to document compliance with the operational requirements of any license, including reservoir elevation and minimum flow requirements. Northern States proposes to include the following provisions in the plan: (1) locations of headwater monitoring probes/gages; (2) frequency of monitoring; (3) procedures for maintaining and calibrating monitoring equipment; (4) standard operating procedures to be implemented outside of normal operating conditions, such as scheduled or emergency facility shutdowns or maintenance activities; (5) a schedule for installing and operating the monitoring equipment; and (6) notification procedures for planned and unplanned deviations.

Interior recommends, under section 10(j), that Northern States develop an operation compliance monitoring plan that includes the following provisions: (1) mechanisms for documenting inflow and outflow from the project; (2) installation of staff gages that show the operating band of the reservoir; (3) installation of automatic water level recorders for reservoir and tailrace elevations; and (4) recording daily turbine operation, reservoir and tailrace

[36] Staff estimated the changes in reservoir elevations by scaling Northern States' estimates of elevation changes associated with a 300-acre-foot whitewater release in Northern States' August 28, 2023, Final License Application at Exhibit E, Appendix E-24, *Whitewater Recreation Flow Study Report*, P 40.

elevations, and flow releases through the powerhouse and spillway.[37] Interior states that these measures are intended to demonstrate compliance with project operation requirements. Interior states that compliance with run-of-river operation and other operating measures is necessary at all times to provide suitable living conditions for fish and wildlife, and to protect the habitats upon which they depend (e.g., spawning areas).

Michigan EGLE recommends that Northern States provide the calculated outflows through each release point at the project with remotely accessible data updated in real-time, similar to a USGS gage. Michigan EGLE states that this data would benefit water quality monitoring by providing flow context downstream for data interpretation and that remote access to the data will be helpful for operators, resource agencies, and members of the public interested in the proposed recreational flow releases

In its comments, Wisconsin DNR states that it plans to issue a certification that would require an operations plan that includes processes and operations to manage drawdown cycles at Gile Flowage and ensures operational compliance with water levels and flows. Wisconsin DNR states that an operation plan commonly includes methods to document water levels and flows, deviation reporting, low flow/high flow contingency, emergency management, etc.

To ensure compliance with the operational requirements of any license, River Alliance recommends that Northern States develop an operation compliance monitoring plan that includes provisions for: (1) daily inflow and discharge information; (2) the daily range of reservoir fluctuations; and (3) installation of a USGS gage to ensure accurate data collection. Michigan HRC recommends that Northern States monitor flows, reservoir elevations, and water quality using state-of-the-art protocols and technologies like USGS gages.

Our Analysis

Although compliance measures do not directly affect environmental resources, they do assist the Commission with verifying that a licensee is complying with the environmental requirements of a license. Northern States' proposed operation compliance monitoring plan would help it document compliance with the operational requirements of any license for the project and provide a mechanism for reporting deviations. The proposed plan would also help the Commission verify that Northern States is maintaining reservoir elevations from 1,475 feet to 1,490 feet, limiting the reservoir drawdown rate to no more than 0.2 foot per day, and releasing a minimum flow of 10 cfs to the West Fork, thereby facilitating administration of the license and avoiding misunderstandings.

Northern States maintains a staff gage that displays the reservoir elevation. Because Northern States already maintains a staff gage at the project, Interior's recommendation to install

[37] Northern States uses the Gile Project to store water for hydroelectric generation at the downstream projects, but no energy production occurs at the project itself. The project does not have a powerhouse, turbine, or tailrace. Staff assumes Interior intended to recommend recording daily reservoir elevations, flow releases through the gates, and daily tailwater elevations.

staff gages are not necessary to determine compliance with any proposed or recommended operating requirements and would not provide a compliance benefit.

Stakeholder recommendations to document reservoir elevation and inflow and outflow from the project, would provide mechanisms for ensuring compliance with reservoir elevations and minimum flow releases, including: (1) Interior's, Michigan EGLE's, River Alliance's, and Michigan HRC's recommendations to use flow and reservoir water level monitoring equipment, including USGS gages; (2) Michigan EGLE's recommendation to provide calculated outflows through each release point; (3) Interior's recommendation to record reservoir and tailwater elevations, and flow releases; and (4) Michigan EGLE's recommendation to provide continuous USGS-quality data. However, Northern States currently monitors the reservoir elevation with an electronic headwater monitoring device, maintains a staff gage that displays the reservoir elevation, and documents flow through the project based on gate openings. Northern States also maintains hourly records of reservoir elevation and calculated flow through the project. The existing equipment and monitoring procedures, which would be described in detail in the proposed operation compliance monitoring plan, should be sufficient to maintain and document compliance with any license issued. Therefore, it is unclear how the recommendations for documenting reservoir elevation and flow would provide a significant benefit for maintaining compliance with any proposed or recommended operating requirements.

Wisconsin DNR's comment about an operations plan does not include any specific measures. Without specific measures to analyze and consider under the FPA, staff cannot assess the benefits of an operations plan.

Project Maintenance and Emergencies

Northern States proposes to continue to limit the reservoir drawdown rate to no more than 0.2 foot per day, with annual summer and winter drawdowns to augment flows for hydroelectric generation at the downstream Saxon and Superior Projects. Northern States proposes to notify the Commission and resource agencies of planned and unplanned deviations from normal project operation, and only modify project operation for short periods of time of up to 3 weeks, after mutual agreement with FWS and Wisconsin DNR. For planned deviations exceeding 3 weeks, Northern States intends to file, for Commission approval, an application for a temporary amendment of license that would include a drawdown plan developed in consultation with resource agencies. Northern States would also file a report with the Commission after any unplanned deviations required by operating emergencies beyond its control.

Michigan EGLE recommends that Northern States develop a drawdown plan in consultation with Michigan Department of Natural Resources (Michigan DNR) that includes measures to avoid drawdowns and minimize and mitigate the effects of any drawdowns, such as utilizing diving inspections instead of lowering reservoir levels; reducing the magnitude, duration, and rate of drawdowns and refills; and organism stranding and relocation efforts. Michigan EGLE states that the measures will help protect water quality, designated uses, and aquatic life.

To protect small fish, mussels, and other aquatic life from becoming stranded in the riverbed and exposed on dewatered riverbeds, River Alliance recommends that Northern States

develop, in consultation with resource agencies, a drawdown management plan for drawdowns associated with routine maintenance and emergencies. River Alliance states that maintenance drawdowns can cause adverse impacts to aquatic resources in the reservoir in many ways and especially to mussels.

In its reply comments, Northern States states that it supports the development of drawdown plan for planned and unplanned drawdowns that are less than 3 weeks in duration, including the following provisions: (1) drawdown and refill rates; (2) measures for stranded organisms; (3) scheduling non-emergency drawdowns during periods that minimize adverse effects on aquatic species, including during the fish spawning season, if possible; and (4) provisions for consultation with resource agencies 90 days prior to any planned drawdowns and reporting emergency drawdowns to the Commission and resources agencies within 24 hours of the emergency.

Our Analysis

Reservoir drawdowns for maintenance and emergencies can be brief or last for several weeks (or longer) and can involve a rapid dewatering of the reservoir. As with the seasonal drawdowns at the project,[38] dewatering aquatic habitat during a drawdown for maintenance or emergencies can impact the breeding, feeding, and sheltering of aquatic organisms, especially mussels. Also, drawdowns for maintenance and emergencies can mobilize sediment in the reservoir. Refill of a reservoir after a drawdown for maintenance and emergencies could also limit downstream flows, as inflow to the project would need to be stored for refill purposes.

The effects of any planned or unplanned drawdown for maintenance or emergencies on fish, mussels, and other resources within and downstream of the reservoir depend on the seasonal timing, magnitude, duration, drawdown and refill rates, and flow releases downstream of the project. Northern States' proposal to only modify project operation for short periods of time of up to 3 weeks, after mutual agreement with FWS and Wisconsin DNR and file an application for a temporary amendment of license for planned deviations exceeding 3 weeks, is similar to the current procedures for managing drawdowns such that specific measures would be developed in consultation with resource agencies for each planned drawdown. Obtaining agreement from the resource agencies on the planned drawdown (e.g., timing, duration, and environmental measures) prior to any planned drawdowns of up to 3 weeks would help protect aquatic resources. For any planned drawdown lasting 3 weeks or more, Northern States' proposal to file an application for a temporary amendment of the license would ensure that the Commission and resource agencies could consider the need for and effects of the proposed actions at that time. Finally, although resource agency consultation would not be possible in the event of an emergency that requires an immediate drawdown (e.g., dam failure), Northern States' proposal to file a report following the unplanned deviation, including documentation of any observed or reported environmental effects, a description of measures implemented to prevent similar deviations in the future, and any comments or correspondence received from the resource agencies, would help mitigate any adverse effects after the deviation.

[38] *See* section 3.3.2.2, *Mode of Operation*, for an analysis of the effects of seasonal drawdowns.

Northern States' proposal to continue to restrict reservoir drawdowns to approximately 0.1 feet per day, and not more than 0.2 feet per day would reduce the potential for fish and mussel stranding during planned drawdowns. Any planned maintenance drawdowns are likely to be short in duration and are unlikely to require complete dewatering of the reservoir. The proposed drawdown rate would prevent rapid dewatering of the shoreline that could otherwise lead to sedimentation and erosion. The proposed drawdown rate would continue to ensure that planned maintenance drawdowns have minimal effects on mussels, if any, in the reservoir.

Michigan EGLE's and River Alliance's recommendation to develop a general plan for all drawdowns could identify general procedures and potential environmental measures to protect resources during a drawdown. However, such a plan would likely need to be modified on a case-by-case basis to address the specific timing, duration, and magnitude of a drawdown and any associated environmental measures. For example, the need for measures for stranded organisms would depend on the magnitude of the drawdown. Thus, developing a general drawdown plan would provide little to no benefit relative to the Proposed Action, which includes a maximum reservoir drawdown rate of no more than 0.2 feet per day and an opportunity to develop specific measures in consultation with resource agencies on a case-by-case basis.

Fish Protection

Northern States uses the Gile Project to store water for hydroelectric generation at the downstream projects, but no energy production occurs at the project itself. The proposed project does not have any turbine-generator units. Northern States proposes to maintain the existing trashrack with 2.625-inch clear bar spacing at the sluice gate.

Interior recommends, under section 10(j), that Northern States install trashracks "above the intake(s) of the powerhouse(s) to minimize fish entrainment and turbine mortality." Interior recommends using trashracks designed to safely manage velocities "while small enough to minimize juvenile fish entrainment." Interior states that numerous entrainment and turbine mortality studies conducted in Wisconsin and Michigan have shown that thousands of fish are entrained annually at hydropower projects and that a portion of these fish entrained are killed by the turbines.

In its reply comments, Northern States states that the project is storage reservoir with no generating facilities. As such, there is no risk of fish injury or death due to turbine entrainment.

Our Analysis

As discussed in section 3.3.2.1, *Fish and Aquatic Resources*, the West Fork supports a diverse fish community of at least 23 species including walleye, smallmouth bass, and bluegill that account for 73% of the fish collected in historic fish surveys. These species do not require downstream passage from the reservoir to complete their life history requirements. Although fish in the reservoir do not require downstream passage, fish could still encounter the project intake when foraging or seeking new habitat in the reservoir. Water intake structures can injure

or kill fish that encounter intake screens/trashracks. Because the project does not include any turbines, there is no risk of fish injury or death due to turbine entrainment.

Fish that are wider than the clear spacing between the trashrack bars, and/or have burst swim speeds lower than approach velocities can become trapped against intake screens or bars of a trashrack. This process is known as impingement and can cause physical stress, suffocation, and death of some organisms (EPRI, 2003). The trashrack at the sluice gate has a clear bar spacing of 2.625 inches. The sluice gate typically acts as a minimum flow release structure and is also used to pass water downstream during periods of high flow or during winter when ice accumulation prevents operation of the radial gate.

The likelihood of a fish becoming impinged is a function of the spacing between the bars on an intake structure, as well as the size and body shape of fish. The project includes a trashrack with 2.625-inch clear bar spacing at the sluice gate. The highest calculated approach velocity at the trashrack is 2.1 feet per second (fps) at 200 cfs. Staff used proportional measurements (length/width) for walleye, smallmouth bass, and bluegill as reported by Smith (1985) to estimate the length of fish that would be physically excluded by the trashrack.[39] Staff chose these species because they are the dominant species found in the project reservoir. Based on the proportional estimates, walleye, smallmouth bass, and bluegill would have to be 21.0, 20.5, and 19.8 inches long, respectively, to be impinged on a trashrack with 2.625-inch clear bar spacing. However, smallmouth bass and bluegill do not grow to a length of 20.5 and 19.8 inches, respectively. Also, 21-inch-long walleye have a burst swim speed of 5.24 fps, which exceeds the highest calculated intake velocity of 2.1 fps at the trashrack (Katopodis and Gervais, 2016). Therefore, there is no risk of walleye, smallmouth bass, or bluegill being impinged at the project.

Because there are no turbines at the project that could result in injury or morality if fish were to pass through the trashrack, and because impingement on the existing trashrack is unlikely, Northern States' proposal to maintain the existing trashrack would not adversely affect fish populations.

Interior does not specify the bar spacing of its recommended trashrack. Therefore, staff cannot analyze the potential for impingement on Interior's recommended trashrack. However, because the existing trashrack is not adversely affecting fish populations and entrainment into a turbine is not a concern, there would be no project-related benefit to Interior's recommendation to installing a different trashrack at the project.

Aquatic Invasive Animal Species

Northern States states that recreational activities at the project have the potential to increase the risk of spread or transfer of aquatic invasive species. To help prevent the

[39] Staff used proportional measurements to calculate a scaling factor of body width to total length (scaling factor = width/total length), and then used the scaling factor to estimate the length that would be physically excluded by the 2.625-inch trashrack. For walleye, smallmouth bass and bluegill, we used scaling factors of 0.1248, 0.1240, 0.1278, and 0.1325, respectively.

introduction and spread of invasive species, Northern States proposes to develop an invasive species management plan that includes: (1) biennial surveys for invasive species at regularly maintained areas, including recreation sites, in July or August; (2) control measures that could include manual removal, mechanical removal, and chemical treatment; (3) installing invasive species informational signs, if provided by Wisconsin DNR; (4) notifying Wisconsin DNR within 5 days of identifying any new "rapid response" species; and (5) providing annual reports that include monitoring results and a summary of any control activities to Wisconsin DNR and the Commission.

In its comments, Wisconsin DNR states that it plans to issue a certification that would require an invasive species management plan to ensure compliance with state regulations on invasive species under Wisconsin NR 40.[40] Wisconsin DNR states that the plan would include methods, communications, reporting, and management actions.

River Alliance recommends that Northern States develop a plan for monitoring invasive species every 2 years. River Alliance also states that Northern States should use the "*Early Detection and Rapid Response Methodology*" to prevent emerging invasives from becoming established in the project boundary, and that Northern States should focus invasive species management on species listed as prohibited under Wisconsin NR 40.

Gile Association recommends the development of an invasive species mitigation plan to monitor invasive species and mitigate their spread through the implementation of an education and boat inspection program. Gile Association states that recreational activities at the project have the potential to increase the risk of spread or transfer of aquatic invasive species, including the spiny water flea that is known to occur at the project. Gile Association states that the reservoir is subject to being invaded by other species from neighboring waterbodies, including zebra mussels that can be transferred by boats and recreation users.

Our Analysis

As discussed in section 3.3.2.1, the invasive spiny water flea, Chinese mystery snail, and banded mystery snail are known to occur in the reservoir. These species are prevalent through the State of Wisconsin. There is no available information indicating that project operation and maintenance activities have caused the spread or proliferation of aquatic invasive animals. Northern States is not proposing any construction or modifications to project facilities or operation that would result in the introduction or spread of aquatic invasive species. Also, considering the wide distribution of the invasive species known to occur at the project and their propensity to disperse naturally, the potential for project-related recreational use to spread these invasive species to a new area is very low and inconsequential. Therefore, it is unlikely that the proposed operation and maintenance of the project would result in the expansion of aquatic invasive species.

Developing an invasive species management plan, as proposed by Northern States, recommended by River Alliance and Gile Association, and suggested by Wisconsin DNR, could

[40] Wisconsin DNR's list of prohibited invasive species is available at: https://dnr.wisconsin.gov/sites/default/files/topic/Invasives/nr40lists.pdf.

help determine if an invasive species is proliferating at the project during the term of any license and could reduce the proliferation of invasive species at the project during the term of any license. However, there is no information in the project record indicating that invasive species are adversely affecting aquatic habitat, that the Proposed Action would result in the expansion of invasive species, or that any control measures would successfully eradicate invasive species. Therefore, the project-related benefits of an invasive species management plan for aquatic resources are unclear.

3.3.2.3 Cumulative Effects on Aquatic Resources

As discussed in section 3.1, *General Description of the River Basin*, the Gile Project is approximately 21 miles upstream of the Saxon Project and 25 miles upstream of the Superior Project.[41] As proposed in the license applications filed on December 30, 2022, the downstream projects would continue to operate in run-of-river mode, which would not adversely affect water quantity or change water quantity relative to current conditions.

The Gile Project was constructed in 1940 and has operated in a seasonal store-and-release mode to augment generation at the downstream projects since operation began in 1941. The Gile Project has altered the natural flow pattern downstream of the project by storing flow associated with spring runoff and other high flow events while releasing additional flow during low flow periods in the summer and winter. The reservoir elevation has historically reached the minimum elevation of 1,475 feet, but Northern States typically operates the reservoir between 1,482 and 1,490 feet in years with normal precipitation and between 1,480 and 1,490 feet in dry years. As discussed in section 3.3.2.2, *Mode of Operation* and *Minimum Flows*, continuing to release water to augment generation at the downstream projects, limiting drawdowns of the reservoir to 0.2 foot per day during normal operating conditions, and releasing a minimum flow of 10 cfs would not affect water quantity relative to the No-Action Alternative. Therefore, continuing to operate the project in a seasonal store-and-release mode would not add to the cumulative effects of the Superior, Saxon, and Gile Projects in the Montreal River Basin.

As discussed in section 3.3.2.2, *Whitewater Flows*, Northern States proposes two whitewater flow releases that would draw an additional 748 acre-feet of water from the project reservoir and would decrease the reservoir elevation by a total of 0.33 foot relative to existing conditions. As discussed in the EA for the Saxon Project, Northern States proposes to increase the minimum aesthetic flow to the Saxon Project's bypassed reach from 5 cfs to 10 cfs from 8:00 am to 8:00 pm on weekends and holidays from the Saturday before Memorial Day to October 15. Increasing the aesthetic flow and decreasing the amount of flow available for generation at the Saxon Project could indirectly cause Northern States to release additional water from the Gile Project's reservoir to augment generation at the Saxon Project from the Saturday before Memorial Day until October 15. Northern States estimates that an additional 249 acre-feet of water could be released from the Gile Project's reservoir to augment generation and

[41] The EAs for the Saxon and Superior Projects, issued on November 24, 2025, address the effects of relicensing those projects and the potential cumulative effects of those projects with licensing the Gile Project.

provide the proposed increase in the aesthetic flow at the Saxon Project.[42] Based on the reservoir stage and storage information provided by Northern States,[43] the proposed increase in aesthetic flow at the Saxon Project would result in a minor decrease in water surface elevation at the Gile Project's reservoir (approximately 0.1 foot) relative to current conditions. The additional flow releases from the Gile Project for whitewater boating and to augment generation at the Saxon Project for the proposed 10-cfs aesthetic flow, would cumulatively affect water levels in the Gile Project's reservoir because these actions could result in Northern States releasing approximately 997 acre-feet of additional water (approximately 3% of gross storage) and a reservoir elevation that is approximately 0.43 foot lower by October 15 of each year, relative to current conditions. However, reservoir levels already fluctuate seasonally and interannually and are typically maintained between 1,480 and 1,490 feet under current operating conditions. Decreasing reservoir levels by approximately 0.43 foot would not substantially affect water levels in the reservoir because the current variability of water levels in the reservoir is much larger than 0.43 foot (i.e., up to 10 feet of variability). Operating the project as proposed would continue to limit drawdowns to approximately 10 feet or less in most years. Therefore, the additional cumulative effects associated with whitewater and aesthetic flows would not significantly affect water quantity in the Gile Project's reservoir.

Downstream of the project, the proposed whitewater flows would be short, infrequent, and similar to high flows that already occur under current conditions as discussed in section 3.3.2.2, *Whitewater Flows*. Any additional flows released from the Gile Project to augment generation at the Saxon Project during the 10-cfs aesthetic flow releases would be minor, up to 5 cfs on weekends and holidays, relative to the amount of flow already released to augment generation at the Saxon and Superior Projects (i.e., up to 200 cfs). The whitewater and aesthetic flow releases would occur at different times of the year but would slightly alter the current flow regime downstream of the project. As proposed in the license applications filed on December 30, 2022, the downstream projects would continue to operate in run-of-river mode, would pass any flow through downstream projects, and would not contribute to cumulative effects on flow in the Montreal River. Altogether, the continued operation of the Gile Project and proposed whitewater flow releases combined with any additional flow releases associated with the 10-cfs aesthetic flow would cumulatively affect flow downstream of the project, but would not significantly affect water quantity in the Montreal River Basin given that the flows are short, infrequent, and similar to flows that already occur in the Basin.

As described in the application, periodic water quality sampling within the reservoir and upstream of the project between 1994 and 2017 indicates that DO and temperature are suitable for fish and other aquatic life, and macroinvertebrate sampling (2010 to 2017) downstream of the project indicates that water quality is excellent. As discussed in section 3.3.2.2, *Mode of Operation*, Northern States' water quality study indicates that the Gile Project does not

[42] See Northern States' December 30, 2022 Final License Application for the Saxon and Superior Projects at Exhibit E, section 9.2.3.1, Saxon Falls Project.

[43] *See* Northern States' December 18, 2023 Additional Information Response for the Gile Project, Appendix AIR-4.

substantially affect DO or temperature in the West Fork. Continuing to operate the project in a store-and-release mode would not substantially alter water quality conditions downstream of the project. Any project effects would mostly attenuate as water mixes with the Montreal River and flows for a total of 21 miles before reaching the Saxon Project. As proposed in the license applications filed on December 30, 2022, the downstream projects would continue to operate in run-of-river mode, which would minimize the length of time water is retained in the reservoir and continue to minimize any effects on DO and temperature. Therefore, operating the Gile Project as proposed would not likely add to any cumulative effects on DO and temperature in the Montreal River Basin.

Construction of the Gile, Saxon, and Superior Projects collectively altered approximately 7.5 miles of mainstem riverine habitat to lentic habitat in the early 20th century. Despite seasonal drawdowns that dewater aquatic habitats and adversely affect aquatic organisms, the Gile Project reservoir currently supports a diverse fish community and some mussels. Continuing to limit the drawdown rate to no more than 0.2 foot per day would continue to protect fish and mussels from stranding and desiccation during the seasonal drawdowns, as discussed in section 3.3.2.2, *Mode of Operation*. Continuing to release a minimum flow of 10 cfs would also help provide adequate habitat for aquatic organisms downstream of the dam, as discussed in section 3.3.2.2, *Minimum Flows*. The proposed whitewater flow releases would temporarily render aquatic habitat unsuitable and could flush fish downstream, but would not likely result in long-term adverse effects on aquatic habitat or fish because similar high flows already occur in the West Fork and Montreal River and the proposed flows would be temporary and infrequent, as discussed in section 3.3.2.2, *Whitewater Flows*. Any additional flows released from the Gile Project to supplement generation at the Saxon Project during the proposed 10-cfs aesthetic flow releases at the Saxon Project could periodically increase the amount of wetted habitat downstream of the dam, but the current releases to support generation would diminish any effect of such flows on aquatic habitat and organisms and would likely be unnoticeable. As described above, additional flow releases from the Gile Project could draw down the reservoir by an additional 0.43 feet by October 15. This could dewater a relatively small amount of aquatic habitat and expose some additional aquatic organisms compared to existing drawdowns but would have an unnoticeable effect on aquatic habitat and organisms in most years as the typical range of seasonal drawdowns is up to 10 feet. As proposed in the license applications filed on December 30, 2022, the downstream projects would continue to operate in run-of-river mode, which helps maintain stable water levels in the reservoirs and protects fish spawning areas from being dewatered. Altogether, the continued operation of the Gile Project and proposed whitewater flow releases combined with any additional flow releases associated with the 10-cfs aesthetic flow at the Saxon Project, would add to cumulative effects on aquatic habitat and organisms that have occurred in the West Fork and Montreal River, but these effects would not significantly affect aquatic habitat or organisms in the Montreal River Basin.

3.3.3 Terrestrial Resources

3.3.3.1 Affected Environment

Northern States characterized terrestrial habitat during the Invasive Species Study conducted in 2022, including the reservoir shoreline and 26 islands in the reservoir. Terrestrial habitats include a heavily forested shoreline and scrub/shrub areas. In addition, approximately

87 acres of forested/shrub wetlands occur in the proposed project boundary. The state-listed threatened broad-leaved twayblade may occur in the project vicinity. The broad-leaved twayblade is found on seepage slopes and ravine bottoms in hardwoods or mixed forests.

The proposed project area supports a variety of large mammals including wide-ranging species such as the federally listed endangered gray wolf and threatened Canda lynx, and other mammals such as river otter, deer, and bats, including the federally listed endangered NLEB and the state-listed threatened LBB. A variety of herpetofauna occur in the project vicinity, including frogs, salamanders, snakes, and turtles, including the state-listed threatened wood turtle. Raptor species such as bald eagle also occur in the project vicinity. During the Invasive Species Study, Northern States identified the following invasive plant species: spotted knapweed, cattail, purple loosestrife, honeysuckle, glossy buckthorn, and tansy. The study concluded that the project supports a healthy plant community with small populations of invasive plants.

In 2022, Northern States conducted a *Wood Turtle Study* that included a survey for wood turtles to determine species presence/absence within three areas of suitable nesting habitat. Suitable nesting habitat was identified as sand or gravel substrate within approximately 200 feet of the waters' edge. The only wood turtle documented during the survey was upstream of the reservoir, where a creek contains flowing water. No wood turtles were observed in the project area where flow dissipates as it enters the reservoir. The study concluded that wood turtles could be foraging in some of the upper reaches of the reservoir in proximity to creeks flowing into the reservoir, but it is unlikely that wood turtles are nesting in reservoir areas.

3.3.3.2 Environmental Effects

Project Operation and Maintenance

Northern States proposes to continue operating the proposed project as a water storage facility and maintaining the reservoir elevation from a minimum elevation of 1,475 feet to a maximum elevation of 1,490 feet, with annual summer and winter drawdowns to augment flows for hydroelectric generation at the downstream projects. Additionally, Northern States proposes to continue to limit the reservoir drawdown rate to no more than 0.2 foot per day.

Current and proposed vegetation management activities include as-needed removal of hazard trees (hand cutting) at the area open to the public on Northern States-owned property near the dam (0.6 acre), mowing on the earthen embankments at least annually during the growing season (0.9 acre), and mowing at least twice per month during open water season (0.3 acre).

Northern States is proposing the following measures to protect bald eagles from any project-related vegetation management and construction activities during the term of any license: (1) prior to any such activities, Northern States proposes to identify any existing eagle nests at the project by reviewing the Wisconsin NHI; and (2) establish a buffer zone of at least 660 feet between the nest and any such activities. To protect LBB from project maintenance, Northern States proposes to implement Wisconsin DNR's BITP/A for cave bats, filed as Appendix E-20 of the application. The BITP/A includes measures for excluding/removing bats from structures and restricting tree cutting during maintenance of project facilities. Also, to protect wood turtles

from project maintenance, Northern States proposes to implement Wisconsin DNR's BITP/A for wood turtles, filed as Appendix E-19 of the application, which includes the following measures: (1) relocating any observed wood turtles out of harm's way; and (2) restricting the types of herbicides that can be used when turtles could be negatively impacted. Northern States lists several examples of maintenance work that could be applicable to protecting bald eagles and wood turtles, including but not limited to grading roads, vegetation management, and hazardous tree removal.[44]

In its comments, Wisconsin DNR states that several species could be impacted by dam operation, drawdowns, and repairs. Wisconsin DNR also states that it plans to issue a certification that would require various management plans and that management of state-listed species could occur through various processes including specific management plans for state-listed species. River Alliance recommends that Northern States develop a plan to protect bald eagles, ospreys, and their nests from land-disturbing activities, since these species are protected by the Migratory Bird Treaty Act.

River Alliance recommends that Northern States establish a 200-foot-wide, no-cut buffer within the project boundary. River Alliance states that a buffer would protect old growth timber, wildlife habitat, and water quality.

Our Analysis

Northern States currently uses the water storage potential of the reservoir on a seasonal basis by drawing down the reservoir by as much as 15 feet in the summer and winter to supplement electricity generation at the downstream projects. The seasonal drawdowns dewater wetlands[45] and, therefore, adversely affect the breeding, feeding, and sheltering of herpetofauna and the feeding of various wildlife such as shorebirds that utilize wetland habitat. Northern States' proposal to continue seasonal drawdowns would continue to dewater wetland habitat and would result in no change to the current environment relative to the No-Action Alternative. Continuing to limit the reservoir drawdown rate to no more than 0.2 foot per day (typically 0.1 foot per day) would minimize the degree of water level fluctuations in the reservoir and associated erosion on the shoreline. Also, continuing to mow lawns, trim vegetation, and remove hazard trees to maintain project access would not significantly affect terrestrial habitat or wildlife.

Loud and disruptive activities can cause eagles engaged in nest building, incubating, or other reproductive behaviors to abandon the nest. Project maintenance activities could result in limited tree removal in the project boundary that could disturb bald eagles during the nest building, incubation, and fledging phases of their life cycle. Avoiding construction,

[44] *See* Northern States' August 28, 2023, Final License Application at section 6 of Exhibit E.

[45] *See* Northern States' August 18, 2023, Final License Application at Exhibit E, Appendix E-11, *Wetlands within the Project Vicinity*, compared to Appendix E-6, *Gile Flowage Storage Reservoir Bathymetric Map*.

maintenance, and vegetation management activities within 660 feet of any bald eagle nests during the nesting season, as proposed, would protect bald eagles from tree removal activities.

In its comments about requiring management plans for state-listed species, Wisconsin DNR does not specify which species could be affected by project operation and does not identify any specific measures for state-listed species. Similarly, River Alliance's recommendation to develop a plan to protect bald eagles and osprey does not identify any specific measures to protect eagles or ospreys. Without specific measures to analyze and consider under the FPA, staff cannot assess the benefits of River Alliance's recommendation or analyze the benefits of management plans suggested in Wisconsin DNR's comments. Implementing the measures described above would protect bald eagles from maintenance activities. As to osprey, Northern States explains in its reply comments that osprey was not identified in the Wisconsin NHI review for the project. Without any known occurrences of osprey at the project, there would be no project effects on the species. However, implementing the proposed buffer zone for any bald eagle nests would also tangentially protect any raptor nests that occur within the respective activity buffer zones for bald eagle nests during the nesting season.

Suitable summer habitat for LBB is present within the project boundary and LBB could occur at the project.[46] Based on available information, LBBs typically roost in trees that are 5 inches or greater in diameter at breast height (dbh) (Bergeson *et al*., 2015) beginning in June or early July, and the pup season lasts for 6 weeks (until August) (Wisconsin DNR, 2013). Routine project maintenance could include limited tree removal that affects habitat used by LBB, including upland and riparian forest at the project that may provide suitable habitat for summer roosting and foraging activities. The BITP/A provides take limits and measures for various development and maintenance activities, some of which are unrelated to hydroelectric projects. Regarding the removal of bats from structures and tree cutting, the BITP/A ultimately requires consultation with Wisconsin DNR. However, consultation alone is an administrative measure and would not result in any foreseeable environmental benefit for LBB.

As discussed below in Appendix E, *Biological Assessment*, avoiding the removal of non-hazardous trees that are 3 inches dbh or greater in diameter from April 15 through September 30, would protect bats from harm. This tree removal restriction directly overlaps with the LBB roosting season. Studies suggest that LBB roost in trees between 5 and 24 inches dbh (Bergeson *et al*., 2015). Therefore, avoiding the removal of roost trees that are 3 inches dbh or greater in diameter from April 15 through September 30, would also protect LBB.

The wood turtle study found no evidence of wood turtles or wood turtle nesting at the project. The only direct wood turtle observation was upstream of the reservoir near a free-flowing creek, over 4 miles upstream of the dam. As discussed in the report, it is unlikely wood turtles are nesting at the reservoir since it does not include flowing water preferred by wood turtles. Also, no suitable habitat was identified near project facilities where maintenance activities could occur during the term of any license. Without any known occurrences of wood turtles at the project or any suitable wood turtle habitat in the proximity of project maintenance

[46] *See* Appendix E, *Biological Assessment*, for the analysis of project effects on federally listed species.

activities, the project would not affect wood turtles. Therefore, Northern States' proposal to implement Wisconsin DNR's BITP/A for wood turtles, including relocating any observed wood turtles out of harm's way and restricting herbicide use near wood turtle habitat, would provide no benefit to wood turtles.

River Alliance recommends a 200-foot-wide, no-cut buffer within the project boundary to protect old growth timber, wildlife habitat, and water quality. However, maintaining a 200-foot-wide, no-cut buffer is not operationally feasible because Northern States would need to periodically manage vegetation and remove hazard trees to maintain access to project facilities and safety for recreation users during the term of any license. Continuing vegetation management and hazard tree removal around project facilities would not significantly affect old growth timber, wildlife habitat, or water quality.

Invasive Plant Species Management

Northern States states that recreational activities at the project have the potential to increase the risk of spread or transfer of aquatic invasive species. To help prevent the introduction and spread of invasive species, Northern States proposes to develop an invasive species management plan that includes: (1) biennial surveys for invasive species at regularly maintained areas, including recreation sites, in July or August; (2) control measures that could include manual removal, mechanical removal, and chemical treatment; (3) installing invasive species informational signs, if provided by Wisconsin DNR; (4) notifying Wisconsin DNR within 5 days of identifying any new "rapid response" species; and (5) providing annual reports that include monitoring results and a summary of any control activities to Wisconsin DNR and the Commission.

In its comments, Wisconsin DNR states that it plans to issue a certification that would require an invasive species management plan to ensure compliance with state regulations on invasive species under Wisconsin NR 40. Wisconsin DNR states that the plan would include methods, communications, reporting, and management actions.

River Alliance recommends that Northern States develop a plan for monitoring invasive species every 2 years, including provisions for using the "*Early Detection and Rapid Response Methodology*" for invasive species listed as prohibited under Wisconsin NR 40. Gile Association also recommends that Northern States develop an invasives mitigation plan to monitor invasive species and mitigate their spread through the implementation of an education and boat inspection program. Gile Association states that the reservoir is subject to being invaded by Eurasian watermilfoil transferred via boaters and recreational users.

Our Analysis

As discussed above in *Project Operation and Maintenance*, Northern States currently draws down the reservoir by as much as 15 feet in the summer and winter, which dewaters wetlands and alters the water-soil interface. The seasonal drawdowns expose land that could be colonized by invasive plant species on a seasonal basis. However, when the reservoir is refilled and the land is inundated at the end of the season, invasive species that are not adapted to aquatic conditions would be eradicated. Northern States' proposal to continue seasonal drawdowns

would continue to dewater wetland habitat and would result in no change to the current environment relative to the No-Action Alternative.

The Invasive Species Study found few populations of invasive plants, with 6 invasive plant species that are prevalent throughout the State of Wisconsin. Northern States is not proposing any construction or modifications to project facilities or operation that would result in the introduction or spread of invasive plant species relative to current operation. Also, considering the wide distribution of the invasive species known to occur at the project and their propensity to disperse naturally, the potential for project-related recreational use to spread these invasive species to a new area is very low and inconsequential. Therefore, it is unlikely that the proposed operation and maintenance of the proposed project would result in the introduction or spread of invasive plants at the proposed project.

Developing an invasive species management plan, as proposed by Northern States, recommended by River Alliance and Gile Association, and suggested by Wisconsin DNR, could help determine if an invasive species is proliferating at the proposed project during the term of any license. However, there is no information in the project record indicating that invasive species are adversely affecting wildlife or its habitat, that the Proposed Action would result in the expansion of invasive plants, or that any control measures would successfully eradicate invasive species. Therefore, the project-related benefits of an invasive species management plan for terrestrial resources are unclear.

3.3.4 Threatened and Endangered Species

Section 7 of the ESA[47] requires federal agencies to ensure their actions are not likely to jeopardize the continued existence of any federally listed endangered or threatened species or result in the destruction or adverse modification of the critical habitat of such species. According to the FWS's Information for Planning and Consultation (IPaC) system, the federally listed endangered gray wolf (*Canis lupus*), endangered NLEB (*Myotis septentrionalis*), and threatened Canada lynx (*Lynx canadensis*) have the potential to occur in the project area.[48] IPaC also indicates that the proposed threatened monarch butterfly (*Danaus plexippus*) has the potential to occur at the project. No critical habitat for these species occurs at the project.

Although IPaC initially stated that the federally proposed endangered tricolored bat (TCB) (*Perimyotis subflavus*) has the potential to occur at the project,[49] the most recent IPaC list

[47] 16 U.S.C. § 1536.

[48] *See* Commission staff's September 12, 2025 Memorandum on Endangered Species Act List.

[49] *See* Commission staff's August 14, 2023 Memorandum on Endangered Species Act List.

does not include the TCB.[50] Commission staff reviewed the FWS's range map for this species and concludes that TCB does not have the potential to occur at the project (Figure B-2).

Our analyses of project effects on the federally listed and proposed species are presented in Appendix E, *Biological Assessment*. Based on the available information, we conclude that licensing the project would: (1) have no effect on the gray wolf or Canada lynx; (2) not likely adversely affect the NLEB; and (3) not likely jeopardize the continued existence of the TCB or monarch butterfly.

3.3.5 Recreation and Land Use

3.3.5.1 Affected Environment

Land use in the project area is rural and largely forested. The land immediately adjacent to the project boundary is primarily forested with a limited amount of medium intensity development on the north end of the reservoir associated with the City of Montreal. The proposed project boundary encompasses approximately 3,328 acres, including 3,325 acres of the reservoir,[51] and 3 acres of land associated with the project facilities listed in section 2.1.1, *Current Project Facilities*. There are 43 islands with a total land size of approximately 130 acres above an elevation of 1,490 feet in the reservoir, including 29 acres of land owned by Northern States. Based on the initial project boundary map filed on August 18, 2023, most of the small islands (less than 12 acres) are owned by Northern States. The two largest islands have a total of 92 acres of land and are owned by Iron County, while another island includes 5 acres of land and is owned by the State of Wisconsin, accounting for approximately 75% of the total land occupied by the 43 islands.[52] The islands are currently used for active and passive recreation.

There are numerous recreational opportunities near the project, including hiking, camping, paddling and boating, fishing, mountain biking, cycling, horseback riding, wildlife viewing, skiing and snowshoeing, ice fishing, and snowmobiling. As described in section 2.1.1.1, *Existing Project Facilities*, the project includes an existing hand-carry boat put-in site located on the east bank of the West Fork, immediately downstream of the stilling basin (Figure B-3). In addition to the put-in sites, the public can access project land and water via the following recreation sites.

- Boat Take-Out Site: A hand-carry boat take-out site is currently located at the east earthen embankment adjacent to the gatehouse. The site is maintained by Northern States.

[50] *See* Commission staff's September 12, 2025 Memorandum on Endangered Species Act List.

[51] The proposed project boundary does not include the islands in the reservoir.

[52] The State of Wisconsin's parcel map is available at: https://maps.sco.wisc.edu/Parcels/.

- Boat Portage Route: An approximately 100-foot-long boat portage route is currently located between the existing take-out and put-in sites. The site is maintained by Northern States.

- Gile Park: A public park adjacent to the project boundary approximately 500 feet east of the dam. Gile Park has a picnic pavilion, ten picnic tables, restroom, trash receptacles, grills, swimming beach, two trailer boat launch ramps to access the project reservoir, and parking for 8 vehicles. Gile Park is owned and operated by the City of Montreal.

- Sucker Hole Landing: A single lane trailer boat ramp that provides public access to the project reservoir. The parking area can accommodate four vehicles with trailers, and additional parking is available along the access road to the boat ramp. The site is located approximately 3.8 miles upstream of the dam on the west shoreline of the reservoir and is owned and operated by Iron County.

- Town of Pence Landing: A single lane trailer boat ramp that provides public access to the project reservoir. The parking area can accommodate two vehicles with trailers. The site is located approximately 2.4 miles upstream of the dam on the west shoreline of the reservoir and is operated by the Town of Pence. The site is also known as Spring Camp Landing.

- County Highway C Landing: A two-lane trailer boat ramp that provides public access to the project reservoir. The parking area can accommodate 15-20 vehicles with trailers. The site is located approximately 2 miles upstream of the dam on the northeast shoreline of the reservoir and is operated by Iron County.

Northern States conducted a *Recreation Use Study*[53] in 2022, to evaluate the condition, use, and capacity of the recreation sites that provide access to the project reservoir and the West Fork. The study found that most visitors were participating in boat fishing, sight-seeing, swimming, and bank fishing, and that Gile Park was the most used recreational facility, followed by the County Highway C landing. Bank fishing is a popular recreation activity at all trailer boat sites. Approximately 85% of visitors rated the recreation site they were currently visiting as acceptable or totally acceptable. When asked to rate present or past activities at all of the reservoir access locations, 89% were acceptable or totally acceptable.[54] The study also found the average parking capacity used in 2022 was below 5% at all locations.

As part of the *Recreation Use Study*, Northern States analyzed reservoir elevation data to determine if water levels adversely impact recreation at the trailer boat access sites. Even though the concrete ramp at Sucker Hole Landing is shallow during much of the open water season,

[53] *See* Northern States' August 18, 2023, Final License Application at Exhibit E, Appendix E-23, *Recreation Study Report*.

[54] During their current visit, respondents were asked to rate the amenities as totally acceptable, acceptable, neutral, unacceptable, or totally unacceptable.

boaters continue to use this access site even though other ramps, such as Gile Park, are available. Visitors were asked to indicate if low water levels affected launching a boat or boating safety. During the lowest water level of the open water season (i.e., ice free), the responses ranged from: (1) a small problem for launching at Gile Park at a water elevation of 1,486.0 NGVD; to (2) a large problem for launching and a moderate problem for boater safety at the County Hwy C Landing at a water elevation of 1,486.2 NGVD. The West Fork is well known for whitewater boating, including beginner to advanced (class II to IV) rapids[55] within a 5-mile-long whitewater boating reach starting at Gile Falls[56] and extending to Kimball Town Park.[57] Paddlers generally boat in the spring when flows are higher and more predictable.

Northern States conducted a *Whitewater Study*[58] in 2022 to evaluate the effects of various flow releases from the project on the availability of whitewater boating opportunities on the West Fork. The study methodology was modeled after the Whittaker method and included Level 1, 2, and 3 assessments (Whittaker et al., 2005). During the controlled flow assessment (Level 3), 17 boaters paddled the 5-mile-long reach. The study included flows of 600 and 1,200 cfs. Boater evaluation forms show that the optimal flow whitewater flow is between 800 to 2,000 cfs. The average preferred flow was 1,220 cfs, and the majority of boaters stated that they would return for a release of 1,200 cfs.

3.3.5.2 Environmental Effects

Recreation

Northern States proposes to continue operating the project as a water storage facility and maintaining the reservoir elevation from a minimum elevation of 1,475 feet to a maximum elevation of 1,490 feet, with annual summer and winter drawdowns to augment flows for hydroelectric generation at the downstream projects.

Northern States proposes to continue to maintain the existing hand-carry boat put-in site downstream of the dam. Northern States also proposes to establish a hand-carry boat take-out site on the east end of the dam by installing a take-out sign in the rip-rap on the east earthen

[55] The International Scale of River Difficulty is a rating system used to compare rivers around the world from Class I (easy) to Class VI (expert), depending on the difficulty of the rapids on the river. The difficulty rating is determined by the flow magnitude and the number and challenge of the rapids. A river reach difficulty rating is generally based on the most difficult rated rapid.

[56] Gile Falls is located 0.35 mile downstream of Gile Dam.

[57] Kimball Town Park is located 5.7 miles downstream of Gile Dam. (https://kimballwi.gov/kimball-town-park-2/).

[58] *See* Northern States' August 18, 2023, Final License Application at Exhibit E, Appendix E-24, *Whitewater Recreation Flow Study Report*.

embankment.[59] In addition, Northern States proposes to establish an approximately 500-foot-long portage trail that includes approximately 100 feet of the embankment and a 400-foot-long segment of a grass trail that extends from Gile Park to the boat put-in site.[60] Northern States proposes to install associated directional and Part 8 signage. Northern States proposes to maintain the new boat take-out site, new portage trail, and existing boat put-in site as project facilities.

River Alliance recommends developing a recreation management plan. River Alliance includes several specific recommendations for relicensing the downstream projects, but only includes the following general recommendations that could apply to the Gile Project: (1) provide necessary parking facilities; (2) provide brochures showing the location of recreational facilities; (3) maintain all recreation facilities in good condition; (4) upgrade the recreational signage to current FERC standards throughout the project; and (5) install new recreational facilities over the period of the license on an as needed basis as demand dictates. In its comments, Wisconsin DNR states that it plans to issue a certification that would require a recreation management plan to ensure that the amenities meet department standards for public recreation, handicap accessibility, public rights, and safety.

Interior recommends installing informational signage at the project recreation facilities. Interior states that signage should show general information on reservoir water levels, flow releases, and other aspects of the project that affect recreation opportunities and experiences. Interior states that this would provide for advanced and more informed recreational decisions by the public, thereby improving the visitor experience and safety. Interior also recommends that Northern States include a Quick Response (QR) code and website address on signage to provide the public with access to information on real-time flows, reservoir elevations, flow release schedules, and how to access the boat put-in site.

Interior and American Whitewater support Northern States' proposal to establish a hand-carry take-out site and maintain the existing put-in site downstream of the dam. Interior recommends installing a sign for the put-in site below the dam, including information on the river environment, a map of the river, whitewater boating classifications, river hazards, and other information to indicate boating conditions and allow paddlers to make decisions based on the information described on the signage. American Whitewater states that the reservoir is used for flatwater recreation, whereas the West Fork is only appropriate for specialized whitewater craft. Therefore, American Whitewater states that these facilities are not "portage" facilities and safety signage should make clear the substantially different conditions and type of experience that is available between the reservoir and river. Gile Association recommends installing warning signage at the put-in site to alert boaters that the West Fork is only safe for specialized watercraft, especially in high water conditions.

[59] Northern States is not proposing to continue to maintain the existing take-out site that is adjacent to the gatehouse.

[60] Northern States is not proposing to maintain the existing 100-foot-long portage route that is located between the existing take-out and the put-in sites.

Interior recommends enhancing the put-in site to improve safety and meet demand for whitewater boating. Interior states that the site is used as a put-in for whitewater boating in the West Fork, but is not safe or adequate for whitewater boaters because there is riprap situated along the shoreline, a very short boardwalk to access the put-in site, and a waterlogged put-in site.

Interior states that Northern States closed the embankments for fishing and that fishing on the reservoir shoreline is currently impossible for people with disabilities and that parking in the project vicinity is insufficient for people with disabilities. To provide fishing access for people with disabilities, Interior recommends the installation of a fully accessible fishing area, including the following amenities: a fishing platform, parking lot, pathway, bathrooms, signage, and trash bins.

Interior recommends that Northern States provide maintenance and mitigation measures at the four public trailer boat sites that provide access to the reservoir. Interior states that Northern States should partner with land managers to conduct annual maintenance at the sites to ensure adequate, safe, and reliable public use. Interior states that the fluctuating reservoir levels affect reservoir access and degrade boat launching surfaces. Therefore, Interior states that Northern States should be responsible for mitigating access issues and improving the access sites.

Gile Association recommends developing a boat landing maintenance and mitigation plan to maintain the trailer boat sites. Gile Association states that maintenance of these sites will be necessary as erosion caused by fluctuating water levels deteriorates them and compromises boater accessibility and safety. Gile Association also states that it supports opportunities for whitewater kayaking downstream of Gile dam, but is concerned about how the amount and timing of whitewater releases could affect reservoir access at docks and boat landings.

Gile Association recommends that Northern States publish information on project operation on public recreation outreach materials published by Gile Association and Iron County, and at the four non-project public trailer boat sites, including information on project flow releases and reservoir levels.

In response to comments, Northern States states that it supports the development of a recreation management plan with the following provisions: (1) description of proposed recreation facilities, including signage; and (2) a schedule for completing all proposed improvements. Northern States states that it is not proposing to develop any recreation brochures, but is proposing to provide information about project recreation on a website and include the website address on project signage.[61] Because signage would include a project website address, Northern States states that a QR code on signage is not necessary.

[61] An analysis of the information on the project website is discussed below in *Whitewater Boating*.

In response to comments, Northern States states that it supports Interior's recommendation to add a sign at the put-in site warning of downstream hazards and supports rearranging riprap at the put-in site to make it more suitable for launching watercraft. However, Northern States does not support the installation of a boardwalk or dock/pier at the put-in site because the site is immediately downstream of the spillway and is subject to flooding during high flow events that would likely damage any structure. Northern States also states that it is not feasible to install a fully accessible dock/pier at the dam. Northern States states that Gile Park already includes the other amenities recommended by Interior.

Regarding Interior's recommendation to provide mitigative measures at the four public trailer boat sites, Northern States states that the trailer boat sites were developed by local governments with the understanding of the seasonal reservoir drawdowns. Northern States states that there is no indication that the local governments do not intend to continue maintaining the recreation facilities.

Our Analysis

An abundance of recreation opportunities exists in the immediate project vicinity, including opportunities for fishing, boating, sightseeing, and picnicking. Northern States' proposal to maintain a new hand-carry boat take-out site, new portage trail, and existing hand-carry boat put-in site, including directional signage and a Part 8 sign, would ensure project-related recreation opportunities continue over the term of any license, including hand-carry boat access to the reservoir and the West Fork downstream of the dam. The new take-out site and portage route would be easier for boaters to navigate because the proposed location at the end of the embankment is not as steep as the location of the existing take-out site and portage route.

Developing a recreation management plan, as recommended by River Alliance, suggested by Wisconsin DNR, and supported by Northern States, would benefit recreation users by providing a single reference document that describes all project recreation facilities, improvements, and maintenance during the term of any license.

The benefits of providing parking facilities and installing new recreation facilities as necessary, as recommended by River Alliance, do not include specific measures. Numerous recreation opportunities exist in the project vicinity and there is no indication that additional parking or recreation facilities are needed to meet recreation demand, as the *Recreation Study* showed that all sites that provide access to project land and water are currently underutilized.

River Alliance's recommendation to provide recreation brochures at the project that show the location of recreational facilities would provide similar benefits as Northern States' proposed directional and Part 8 signage. However, recreation brochures could be depleted and intermittently unavailable until refilled by Northern States.

Including the following provisions in the recreation management plan would be beneficial for recreation at the project: (1) a description of all licensed project recreation facilities, including a map; (2) a description of operation and maintenance of the licensed project recreation facilities; (3) a description of all recreational signage required by the license, including

the location and content of the signage; and (4) a schedule for completing all required recreation improvements

Interior recommends enhancing the put-in site for whitewater boaters to address access issues, such as large rocks that impede access to the river, the existence of a short boardwalk at the put-in site, and a waterlogged put-in site. Figure 3.10.1-4 of the license application, *View of the Canoe Portage Put-In and West Fork Downstream of the Gile Dam*, shows large rocks in the water at the put-in site that appear to create safety and accessibility issues for whitewater boaters. In response to comments, Northern States supports rearranging the rocks at the put-in site. Clearing the rocks at the put-in site would benefit recreation by providing safe water access for whitewater boaters.

Figure 3.10.1-4 of the license application shows a water-logged trail and a small platform (i.e., boardwalk) at the water's edge of the put-in site, as stated by Interior. However, in October 2023, Northern States cleaned and lined the ditches on the downstream side of the embankment with stone and wiers to allow for better drainage. Interior does not recommend any specific measures for further enhancing the trail. Without specific measures, staff cannot evaluate the benefits of Interior's recommendation.

In its response to comments, Northern States supports installing a sign at the put-in site that warns boaters of whitewater flows downstream of the dam, as recommended by Interior, Gile Association, and American Whitewater. Including information on whitewater boating classifications on a warning sign, as recommended by Interior, would inform the public of the types of whitewater boating opportunities available in the West Fork and enhance public safety by ensuring that boaters are aware of potentially hazardous boating conditions downstream of the dam. Interior's recommendations to include information on the river environment, a map of the river, river hazards, and other information to describe boating conditions on signage are not specific, and staff cannot identify any project-related benefits associated with these recommendations.

Interior states that its recommendation to install a fully accessible fishing area at the project is needed to ensure that people with disabilities have fishing access at the project, given that Northern States previously closed the dam's embankments for fishing. However, Gile Park, which is adjacent to the project dam, provides fully accessible amenities, including parking spaces, pathways, restrooms, and a picnic shelter. Also, in its response to comments on the draft license application (Appendix E-29 of the license application), Northern States states that it intends to relocate barriers on the earthen embankment to allow passage of wheelchairs, thereby reestablishing access to the dam for fishing. If fishing access is reestablished on the embankment for people with disabilities, Interior's recommendation to install a fully accessible fishing area at the project would not provide significant benefits for project access.

Posting information on project operation and recreation facilities on project signage, as recommended by Interior, could benefit recreation access by providing information on aspects of project operation that affect recreation (e.g., drawdowns and flow releases). The following information could be included on the proposed Part 8 sign: a map of the project recreation

facilities, reservoir elevations, drawdown schedule/rate, minimum flow releases, and whitewater boating flow releases.

Interior recommends including a QR code and website address on project signage to provide recreation users with the option of accessing information on flows, reservoir elevations, and access to the project recreation facilities. Including Northern States' website address on project signage, as supported by Northern States in its response comments, would ensure that recreation users are aware of the website and able to utilize the project recreation information posted by Northern States. Interior does not describe any specific benefits associated with including a QR code on project signage and staff is not aware of any additional benefits.

Based on the conclusions reached above, the following recreation improvements would enhance recreation access at the project: (1) include, on the Part 8 sign, a map of the licensed project recreation facilities, the project website address, and a description of project operation that could affect recreation, including reservoir elevations, drawdown schedule/rate, minimum flow releases, and whitewater boating flow releases; (2) install a sign at the put-in site that warns boaters of potentially dangerous boating conditions in the West Fork downstream of the dam and provides information on whitewater boating classifications; (3) remove rocks at the put-in site to ensure safe water access for whitewater boaters; and (4) remove barriers on the earthen embankment to provide fully accessible fishing access.

Interior's and Gile Association's recommendations for Northern States to provide annual maintenance and repairs at the four public trailer boat sites would ensure that the amenities at the sites can be utilized for access to the project's reservoir. Also, Gile Association's recommendation for Northern States to post website information for flows and reservoir elevations at the four public trailer boat sites would provide information about boating access in the reservoir. However, the public boat sites were developed by local governments and are still owned and maintained by the local governments. There is no indication that any of the owners are incapable of continuing to maintain the sites or intend to abandon the sites. Northern States included the owners on the distribution list for the application and none of the owners filed comments indicating they are not willing to continue to fund the maintenance of the trailer boat access sites during the term of any license. The local governments installed these facilities while Northern States was operating the reservoir with seasonal drawdowns. Therefore, there is no reasonably foreseeable project-related benefit to requiring Northern States to maintain the four public trailer boat sites as project recreation facilities and post project-specific information at these sites. However, to ensure recreation opportunities at the project remain throughout the term of any license, the Commission could require Northern States to notify it if any of the trailer boat sites cease operation, and the Commission could reserve its right to require additional recreation measures in the future if in the public interest.

Although wave action and fluctuating water levels in the project reservoir could degrade boat launching surfaces and other amenities at the sites over the term of any license, Northern States is not proposing any changes to current operation that would adversely affect the sites relative to current conditions. Although fluctuations do cause changes to launching conditions at the trailer boat access sites, including shallow water conditions during a drawdown, multiple sites are available around the reservoir. Town of Pence Landing and Gile Park provide access at typical low water levels during the primary recreation season. Because the trailer boat access

sites are all within a short drive from one another (a maximum of 4 miles upstream of the dam), recreation users have flexibility to choose the site that is most accommodating to their watercraft. Therefore, there is no substantial effect of project operation on recreation opportunities.

Gile Association's recommendation to publish information on project operation on public recreation outreach materials published by Gile Association and Iron County would provide information about recreation opportunities at the project, but those materials would be published by third parties over which the Commission does not have jurisdiction. Providing recreation information in a recreation management plan, on the proposed Part 8 sign, and a project website would already ensure the public has information about recreation opportunities at the project. With these measures in any license, Gile Association's recommendation would not provide any significant project-related benefit to recreation access.

As to Gile Association's comments about the effect of whitewater releases on reservoir access at the docks and boat lands, as discussed in section 3.3.2.2, *Whitewater Flows*, the proposed whitewater flow releases could have a small effect on reservoir levels resulting in a reservoir elevation that is approximately 0.33 foot lower relative to existing conditions; however, reservoir levels would likely remain within the typical range of current seasonal and interannual water levels (i.e., drawdowns up to about 10 feet). Accordingly, the proposed whitewater releases would not have a substantial effect on reservoir access at docks and boat landings relative to existing conditions.

Whitewater Boating

To provide scheduled whitewater boating opportunities in the West Fork downstream of the project, Northern States proposes to develop a whitewater recreation plan that includes the following provisions: (1) two 3-hour whitewater releases of 1,200 cfs, beginning in the morning on a day in June and a day in September; (2) identify the day and timing of each flow release; (3) flow ramping for 1 hour before and after each whitewater flow releases; and (4) publishing average daily discharge and reservoir elevation information on the internet.

Interior, American Whitewater, and Gile Association support Northern States' proposal to develop a whitewater recreation plan in consultation with interested stakeholders. Interior and American Whitewater recommend that Northern States provide real-time flow information for recreation users, including publishing the information on the internet and making it available for use by third-party sites using an Application Programming Interface for whitewater boaters. Interior states that providing information on the internet as recommended would allow the public to make more informed decisions about recreation use, thereby improving visitor experience and safety. American Whitewater states that the information will make it easier for the public to monitor flow conditions and take advantage of opportunities for whitewater recreation on the West Fork when adequate flows are available, beyond just the scheduled releases (such as in the spring). American Whitewater also recommends that the website should include any forecast or operational information that could affect instream flows. Gile Association recommends that Northern States provide real-time flow and reservoir level information on a website to improve user safety, accessibility, and experience.

Interior, American Whitewater, and Gile Association recommend that the whitewater recreation plan include a consultation requirement for an annual meeting to discuss measures, resolve flow implementation issues, and schedule whitewater opportunities at the Saxon and Gile Projects. American Whitewater also recommends a review of the whitewater recreation plan 3 years after its implementation and every 10 years thereafter, in consultation with American Whitewater, Park Service, Gile Association, and other interested parties, to assess the adequacy of public access, effects on Gile Flowage property owners, hydropower operations, public safety, and the suitability of the timing, duration, and magnitude of whitewater flows.

Jeffrey Barden and Greg Weiss filed comments supporting Northern States' proposal to provide whitewater releases and river access. Rodney Claiborne and Brian Castillo filed comments supporting more access and scheduled releases from the project. Christopher Evans, Jake Ring, Nick Kunath, Paul Janda, Neal Schroeter, Ryan Whipple, Derek Grisbeck, and Dan Newman, filed comments supporting a whitewater recreation plan that includes whitewater releases, real-time flow information, and improved river access. John Ray filed comments supporting whitewater releases occurring later in the day. Gary Grenda filed comments supporting whitewater releases as late as possible during the whitewater boating season.

In response to comments on the whitewater recreation plan, Northern States states that it supports consultation with stakeholders on the development of the plan and supports adding a provision requiring an annual meeting to evaluate each year's flow releases. Northern States states that reviewing the plan 3 years after implementation and every 10 years thereafter, as recommended by American Whitewater, is unnecessary as the plan already includes a provision to annually review the whitewater releases with boaters.

In response to comments, Northern States explains that it is proposing to provide daily flow information and reservoir elevation data on its website, not real-time flow information. Northern States is not proposing to provide any additional forecast or operational information on its website because it states that boaters have access to multiple weather forecast websites and Northern States' operational forecasts at the Gile Project vary little from day to day with the exception of runoff events. Northern States confirms that the website would include instructions on whitewater access and a link to the American Whitewater website. However, Northern States has website security concerns about providing an Application Programming Interface and suggests that stakeholders could put a link to Northern States' website on their own websites.

Our Analysis

Northern States does not currently provide any scheduled flow releases for whitewater boating. Based on the comments in the proceeding regarding interest in whitewater boating from numerous stakeholders, it is clear that whitewater boating is a valued recreation activity in the West Fork downstream of the project and that releasing whitewater boating flows would provide a recreation opportunity that would be utilized by visitors. Northern States' proposal to develop a whitewater recreation plan in consultation with resource agencies and interested stakeholders, including provisions for two, 1,200-cfs annual whitewater flow releases and flow ramping,

would benefit whitewater recreation by ensuring predictable boating opportunities on the West Fork each year.

Northern States' proposal to publish average daily discharge and reservoir elevation information on the internet could increase recreation opportunities by providing information to boaters that are interested in utilizing boating flows outside of scheduled whitewater release days. Including information on whitewater access on the website, as supported by Northern States in its response comments, would ensure boaters are aware of the whitewater boating opportunities. The following additional information could be posted on the website: (1) instructions on how to access the put-in site, including parking and directions to the site; (2) the specific days and timing of scheduled whitewater flow releases; and (3) updates on any scheduled project maintenance that could affect access to the put-in site or scheduled whitewater flow releases.

Interior and American Whitewater recommend that Northern States provide real-time flow information for recreation users on the internet and make the data available for use by third-party sites using an Application Programming Interface. In addition, Gile Association recommends that Northern States provide real-time flow and reservoir level information on the internet. These recommendations would provide more granular information on unscheduled whitewater boating flows and reservoir levels than Northern States' proposal to provide average daily flow and reservoir level information on the internet. American Whitewater's recommendation to provide a forecast or operational information that affects flows would also provide additional information on unscheduled whitewater boating flows. Real-time flow information could result in more boaters utilizing unscheduled whitewater flows compared to the No-Action Alternative and potentially result in more boaters utilizing unscheduled whitewater flows than under the Proposed Action if: (1) real-time flows significantly deviate from the average daily flow; and (2) those deviations result in whitewater boating flows (i.e., 800 to 2,000 cfs) that are not already captured by the average daily flow. The project record does not include information on intraday flows, so staff cannot quantify how often real-time flow information and operational forecasts would be beneficial for whitewater boaters in a given year. Real-time reservoir level information would not substantially improve the recreation experience in Gile Reservoir compared to the No-Action Alternative or Proposed Action because Northern States would continue to maintain a reservoir drawdown rate of no more than 0.2 foot per day; thus, intraday changes in reservoir level would be minor. Information in the record of the proceeding indicates that flow releases and reservoir elevations do not significantly change from day to day during normal project operation.[62] Because flow and reservoir elevation do not significantly change from one day to the next, it stands to reason that flow and reservoir elevation do not significantly change within a given day. Further, as Northern States states in its response to comments, operational forecasts at the Gile Project vary little from day to day. Therefore, there would not be a significant benefit to recreation associated with publishing real-time flow information, real-time reservoir elevations, flow forecasts, or operational information. Without a significant benefit associated with real-time flow information, real-time reservoir elevations, forecasts, and operational information, there would not be a significant benefit

[62] *See* Northern States' December 18, 2023 Response to Additional Information Request for the Gile Project, at Appendix AIR-4.

associated with Interior's and American Whitewater's recommendation to make the information available using an Application Programming Interface.

American Whitewater's recommendation to include provisions in the whitewater recreation plan for an annual consultation meeting to discuss whitewater boating flow releases for the upcoming boating season is supported by Northern States and would provide an opportunity to discuss any issues with the scheduled whitewater flows, such as whether any changes to the schedule are needed in light of foreseeable information on flows and potential scheduling conflicts.

American Whitewater's recommendation to review the whitewater recreation plan 3 years after initial implementation and every 10 years, in consultation with stakeholders, would provide interested parties with an opportunity to periodically assess the sufficiency of whitewater flow releases and consider potential changes to the flow releases. The *Whitewater Study* evaluated the effects of various flow releases from the project in consultation with stakeholders and concluded that boaters preferred whitewater flow releases averaging 1,200 cfs from May through September. There is no apparent project-related benefit associated with periodically reassessing flow releases during the term of any license.

Land Use

Northern States initially proposed to develop a land management plan for islands that it currently owns in the Gile reservoir, in order to formalize its existing land management policy and address issues regarding public access, signage, maintenance, and trash removal.[63] However, on November 7, 2024, Northern States withdrew its proposal to develop a land management plan because it intends to transfer ownership of land above the normal maximum reservoir elevation of 1,490 feet to Iron County, including land adjacent to the reservoir shoreline and islands within the reservoir. Northern States states that any transfer of ownership would require the lands to remain open to the public in perpetuity for recreational use.

Interior supports the selling and transfer of the islands to Iron County with the stipulation that they remain open to public use. However, considering that the sale and transfer are pending, Interior recommends developing a land management plan to manage recreation use of the islands to protect natural, riparian, aesthetic, and cultural resources until the sale and transfer are complete. Interior recommends that the plan include the following provisions for any islands remaining in Northern States' ownership: (1) a natural resource survey of existing plants and animals present on the islands; (2) management of recreation use through preventative and management measures, such as garbage bins, portable toilets or latrines, signage, visitor education, Leave No Trace policies, and safety measures; (3) monitoring islands and mitigating any litter and vandalism; and (4) cleaning islands, including maintaining toilets and garbage bins. Interior states that a land management plan would ensure that Northern States maintains the natural and recreational resources in good condition and litter free, and protect natural, riparian, cultural, and recreational resources while ensuring public safety and sanitation. Separately,

[63] *See* Northern States' August 18, 2023, Final License Application at section 3.8.3 of Exhibit E.

Interior recommends that Northern States continue to manage lands below an elevation of 1,490 feet, including any portions of islands exposed when the reservoir drops below this level.

Gile Association recommends developing a land and island management plan to manage recreation use of riparian, upland, and islands properties currently owned by Northern States in and around the reservoir. Gile Association states that it is recommending this management plan because Northern States has not yet sold the islands to Iron County. Gile Association recommends that the plan include the following provisions for any land owned by Northern States by the time any license is issued: (1) a natural resource survey of existing plants and animals present on the islands and recommendations to conserve them; (2) policies for recreational use on applicant-owned lands, especially camping and overnight use on islands, and a plan for disseminating the policies to the public through signage, education, and enforcement; (3) recreation management, monitoring, and mitigation for litter, sanitation, vandalism, environmental damage issues, including island clean-ups; and (4) public education about allowable recreation uses of land and strategies for mitigating user impacts on ecosystems, water quality, and aesthetics. Gile Association states that these provisions are needed to protect natural, riparian, cultural, and aesthetic resources while ensuring public safety and sanitation.

In response to comments, Northern States affirms that it intends to transfer ownership of land above an elevation of 1,490 feet to Iron County. Northern States supports the development of an interim land management plan in the event the land transfer is not complete prior to the issuance of a license.

Our Analysis

Land in the project area is largely forested and undeveloped, except for the proposed project facilities, non-project recreation facilities discussed above in *Recreation*, and limited residential areas around the reservoir shoreline. The proposed project boundary only includes the reservoir that has a surface area of 3,325 acres at a normal maximum surface elevation of 1,490 feet and 3 acres of land associated with project facilities. Therefore, project land use would be limited to project operation and maintenance activities on 3 acres of land above an elevation of 1,490 feet. Northern States is not proposing to alter land use on the 3 acres, except for developing a new take-out site and portage trail described above in *Recreation*. As discussed in section 3.3.3.2, *Project Operation and Maintenance*, continuing to mow lawns, trim vegetation, and remove hazard trees to maintain project access would not significantly affect terrestrial habitat or wildlife.

The proposed project boundary does not include any land outside of the 3 acres, including any land adjacent to the reservoir or the islands, and Northern States is not proposing any project operation or maintenance activities on any land other than the 3 acres. Therefore, licensing the proposed project would not alter land use on any land above a contour elevation of 1,490 feet, including land adjacent to the reservoir or the islands.

Interior's and Gile Association's recommended land management plans would ensure that land above 1,490 feet is managed to mitigate the effects of recreation on environmental resources. However, Interior and Gile Association do not specify any project purpose associated

with land above 1,490 feet, either for the land adjacent to the reservoir or the islands.[64] Although land above 1,490 feet is used for recreation, an abundance of recreation opportunities exists in the immediate project vicinity, as discussed above in *Recreation*, and there is no indication that the islands need to be maintained as part of the project in order to serve a project purpose associated with recreation. Therefore, there is no basis for including the lands in the project boundary or requiring the lands to be actively managed as part of the license. As stated above, Northern States is not proposing to include land adjacent to the reservoir or the islands in the project boundary and would not conduct any operation or maintenance activities on any land other than the 3 acres. Because the recreation management plan discussed above in *Recreation* would already ensure maintenance of project recreation facilities, the recommendations to develop a land management plan would not benefit land uses at the project.

Interior's recommendation to manage land below an elevation of 1,490 feet, including sections of islands exposed when the reservoir drops below 1,490 feet, does not include any specific measures. Therefore, staff cannot assess the benefits of the recommendation. As discussed in section 3.3.1.2, *Geology and Soils*, Northern States' proposal to file an erosion report every 5 years would ensure that the Commission and Wisconsin DNR have an opportunity to evaluate the need for mitigation of any erosion caused by seasonal drawdowns and project discharges.

3.3.5.3 Cumulative Effects on Recreation Resources

As discussed above in section 3.3.2.3, *Cumulative Effects on Aquatic Resources*, the Gile Project augments flows for generation at the Saxon and Superior Projects during summer and winter low-flow periods. Also, as discussed in section 3.3.5.2, *Whitewater Boating*, the Gile Project augments flows for whitewater boating on the West Fork and Montreal River, downstream of the Saxon Project. Prior to the development of the Superior, Saxon, and Gile Projects, the Montreal River and West Fork flowed freely. The dams on the Montreal River and West Fork now impede river flows for whitewater boating. However, river flows are available below these dams for whitewater boating. Nonetheless, the presence of multiple dams could have a cumulative effect on the magnitude of flows for whitewater boating on the Montreal River and West Fork.

Northern States' proposal to develop a whitewater recreation plan that includes provisions for two scheduled 3-hour whitewater flow releases of 1,200-cfs annually, beginning in the morning on a day in June and a day in September, would benefit whitewater recreation by ensuring predictable boating opportunities on the West Fork each year. Also, Northern States' proposal to publish average daily discharge and reservoir elevation information on the internet could increase recreation opportunities by providing information to boaters that are interested in utilizing boating flows outside of scheduled whitewater release days. Because the Proposed Action would provide more whitewater opportunities than the No-Action Alternative, licensing

[64] According to the Commission's regulations, project boundaries should enclose "only those lands necessary for operation and maintenance of the project and for other project purposes, such as recreation, shoreline control, or protection of environmental resources." 18 C.F.R. § 4.41(h)(2).

the project would be cumulatively beneficial for whitewater boating when added to other past, present, and reasonably foreseeable actions.

3.3.6 Cultural Resources

3.3.6.1 Affected Environment

Cultural resources represent things, structures, places, or archaeological sites that can be either prehistoric or historic in origin. Pursuant to section 106 of the NHPA, the Commission must take into account whether any historic property within the proposed project's area of potential effects (APE) could be affected by the issuance of a license for the project. Northern States describes the APE in its license application as lands enclosed by the proposed project boundary.

Tribal Consultation

By letter issued on January 15, 2021, Commission staff initiated tribal consultation with the Bad River Band of the Lake Superior, Fond du Lac Band of Lake Superior Chippewa, Fort Belknap Indian Community, Grand Portage Band of Chippewa Indians, Keweenaw Bay Indian Community, Lac Vieux Desert Band of Lake Superior Chippewa Indians, Lac du Flambeau Band of Lake Superior Chippewa Indians, Leech Lake Band of Minnesota Chippewa Tribe, Miami Tribe of Oklahoma, Mille Lacs Band of Ojibwe, Minnesota Chippewa Tribe, Red Cliff Band of Lake Superior Chippewa Indians, Sokaogon Chippewa Community of Wisconsin, Menominee Indian Tribe of Wisconsin, St. Croix Chippewa Indians of Wisconsin, and White Earth Band of the Minnesota Chippewa Tribe. Commission staff followed up with the Tribes via email and telephone on March 8, and April 13, 2021. On March 8 and 9, 2021, respectively, the St. Croix Chippewa Indians of Wisconsin and Miami Tribe of Oklahoma responded to staff that they would not be consulting on the project. On March 8, 2021, the Bad River Band of the Lake Superior Tribe of the Chippewa Indians indicated a potential interest in the project. The Tribe did not respond to follow-up by staff.[65]

In a notice issued on January 19, 2021, Commission staff designated Northern States as its non-federal representative for the purposes of conducting section 106 consultation under the NHPA. Pursuant to section 106, and as the Commission's designated non-federal representative, Northern States consulted potentially affected Tribes. Northern States provided the PAD, study plans and reports, and the draft and final license applications to the above-referenced Tribes and the following additional Tribes: Bay Mills Indian Community, Forest County Potawatomi Community of Wisconsin, Ho-Chunk Nation, Hannahville Potawatomi Indian Community, Keweenaw Bay Indian Community, Prairie Island Indian Community, Lac Courte Oreilles Band of Chippewa Indians, Iowa Tribe of Oklahoma, Oneida Nation of Wisconsin, Prairie Band Potawatomi Nation, Sac and Fox Nation of Mississippi in Iowa, Sac and Fox Nation of Missouri in Kansas and Nebraska, Sac and Fox Nation of Oklahoma, Sault Ste. Marie Tribe of Chippewa Indians, Red Cliff Band of Lake Superior Chippewa, and Stockbridge-Munsee Band of Mohican

[65] *See* Commission staff's April 14, 2021 Memorandum on Consultation with Tribes for the Gile Flowage Reservoir Project No. 15055.

Indians. On November 1, 2022 the Sokaogon Chippewa Community filed comments on the initial study report for the project.[66] No other Tribes filed comments requesting studies or stating that the project's licensing would have adverse effects on Tribal resources.

Cultural History

The project is in the ceded territory of the Ojibwe (Chippewa). Riverine fishing, hunting, and maple sugar and wild rice harvesting are significant aspects of the Ojibwe subsistence practices. In 1842, the Chippewa Tribes entered into a Treaty with the United States that ceded the land where the Gile Project is located to the United States.[67] Article II of the 1842 Treaty provides for the right of hunting and "the other usual privileges of occupancy." Tribal members may exercise off-reservation resource rights under agreements, permits, and regulations, which generally do not open private lands for such activities unless the land is otherwise open to the public.[68] Prior to European settlement, the area that would become the Gile Project contained a portion of the Flambeau Trail, originally used by Tribes.

Industrial History

The region is known for its industrial history of mining and milling. The Village of Gile is adjacent to the dam and was established in the late 1800s by the Montreal Mining Company. The Montreal River Lumber Company built the first dam across the river at Gile in 1885. The dam was installed to control water for flushing logs to a mill located on the east bank of the river approximately 1,000 feet north of the project dam (Sanborn Map Company, 1898). The mill was closed in the 1920s after local timber stands were exhausted. The dam was believed to have been either dismantled or washed out.[69]

The Gile Project was constructed to store water for hydroelectric generation at the downstream Saxon (1912) and Superior Projects (1917). The earthen embankment, concrete spillway, and gatehouse were built in 1940. The earthen embankment and gated spillway remain

[66] *See* Commission Staff's January 13, 2023 Determination on Requests for Study Modifications for the Gile Flowage Storage Reservoir Project.

[67] Treaty of 1842 (7 Stat 591).

[68] *See* Great Lakes Indian Fish and Wildlife Commission's regulations on exercising off-reservation treaty rights in Michigan. Available at: https://glifwc.org/exercising-treaty-rights/treaty-seasonal-harvest-regulations. See also *Wisconsin 1837 and 1842 – Off-reservation Conservation Code.* Available at: https://glifwc.org/sites/default/files/uploads/documents/2025-01/Wisconsin.1837.1842.Model_.Off_.Reservation.Conservation.Code_.2024Dec.pdf

[69] *See A brief History of the Gile flowage, Iron County, Wisconsin*. Available at: https://drive.google.com/file/d/0B75MzL2b1_KCNWhFZGxJNHpjTkE/edit?resourcekey=0-eBg1qmct1_LzWS2DL5CSiw.

largely unchanged while the gatehouse's window openings have been bricked in since its construction.

Historic Properties

To assess the potential effects of licensing the project on cultural resources, Northern States conducted a literature review of architectural and archaeological properties in the APE, an archaeological shoreline and erosion survey, and a National Register evaluation of architectural resources in the APE.[70] The literature review identified the Montreal Company Location Historic District (District) as overlapping approximately 1 acre of the APE (Figure B-4). The District was listed on the National Register on May 23, 1980, representing an excellent example of a planned industrial community with a period of significance from 1907 to 1930. The majority of the District is outside of the APE (approximately 199 of 200 acres total). The District includes 116 contributing buildings, as well as the No. 5 mine shaft area, waste rock piles, City Hall, the Roosevelt School, Firehall building, Hamilton Club building, garage, engine house, and shops. None of the resources that contribute to the District occur within the APE and the Gile Project facilities are not listed with the District (Taylor, 1979).

The project facilities meet the 50-year age requirement for evaluation of eligibility for listing in the National Register.[71] Northern States completed a National Register eligibility evaluation of the project facilities to determine if they were potentially eligible for the National Register. The September 1, 2022 evaluation determined that the facilities retain a moderate degree of integrity,[72] but do not constitute a historic property eligible for listing in the National Register under Criterion A or C.[73]

In August 2022, Northern States conducted shoreline monitoring for archaeological sites and to review erosion in the reservoir. The September 22, 2022 study did not identify any archaeological resources or potentially eligible archaeological sites in the APE. Five areas of erosion were observed during the survey, with one area identified in association with a shoreline adjacent to the District. This erosion area is located on private land and was caused by landowner activity that destabilized the bank.[74] The survey recommends monitoring area E-3 for any changes within 5 years of any license issued for the project. The survey also assessed the

[70] *See* Northern States' August 18, 2023 Final License Application at Exhibit E, Appendix E-26**,** *Cultural Resources Reports.*

[71] 36 C.F.R. § 60.4.

[72] Integrity is assessed on the basis of the presence of the essential physical features that enable a historic property to convey its historic identity (Park Service, 1990).

[73] The facilities do not constitute a significant resource within the context of hydroelectric generation in the region and the structures do not demonstrate any exceptional design elements relative to its function. *See* Northern States' August 18, 2023 Final License Application at Exbibit E, Appendix E-26, *Cultural Resource Reports*.

two areas where the historically map-documented Flambeau Trail intersects the reservoir and states both locations are stable, well vegetated, and void of cultural artifacts. No further investigation was recommended for this segment of the Flambeau Trail and it is not identified as potentially eligible for the National Register.

Based on the information above, there are no known National Register-listed or eligible archaeological resources in the APE. Northern States sought concurrence from the Wisconsin SHPO on the results and recommendations from the cultural resource studies and the potential effect of the project on cultural resources. On February 15, 2023, the Wisconsin SHPO concurred by electronic mail with the findings and recommendations in the archaeological shoreline and erosion survey and National Register evaluation.[75]

3.3.6.2 Environmental Effects

Northern States proposes to implement the statewide Programmatic Agreement that was executed by Commission staff and the Wisconsin SHPO on December 16, 1993 (FERC, *et al.*, 1993), which requires that an HPMP be developed to avoid, lessen, or mitigate adverse effects on identified and unidentified historic properties within the APE.

No stakeholders provided specific comments or recommendations for cultural resources in response to the Commission's notice that the application was ready for environmental analysis.

Our Analysis

The APE is the geographic area within which the proposed licensing may directly or indirectly cause alterations in the character or use of historic properties. Land and water enclosed by the proposed project boundary fully encompasses the geographic area in which the project's licensing may directly or indirectly cause alterations in the character or use of any historic properties, and there is no justification for including additional land in the APE outside of the proposed project boundary. Therefore, the APE should only include project land and water, as reflected by the proposed project boundary.

Hydropower facilities can affect cultural resources as a result of modifications to project facilities or project operation; project-related ground-disturbing activities; construction, modification, or maintenance of project recreation facilities and use of such facilities by visitors; project-induced shoreline erosion;[76] and vandalism. However, Northern States is not proposing any land-disturbing activities, construction, or modifications to project facilities or operation that would adversely affect cultural resources. As discussed in section 3.3.4, *Recreation,* Northern

[75] *See* Northern States' Documentation of Wisconsin SHPO Concurrence, filed February 16, 2023.

[76] Project-induced shoreline erosion does not include shoreline erosion attributable to flood flows or natural phenomena, such as wind-driven wave action, erodible soils, and loss of vegetation due to natural causes.

States' proposals to establish a hand-carry boat take-out site and establish a portage trail only include the installation of signage, which would not result in any adverse effects on cultural resources.

Northern States' evaluation of project facilities determined that the facilities are not eligible for listing in the National Register. Northern States' literature review and archaeological survey determined that there are no known National Register-listed or eligible archaeological resources in the APE. The Wisconsin SHPO concurred with the findings of the evaluation and the survey. Although the District's southeastern boundary overlaps with approximately 1 acre of the APE, none of the resources that contribute to the District occur within the APE.

As discussed above in *Cultural Resources, Historic Properties*, the erosion on the reservoir shoreline intersects with the District. However, as discussed in section 3.3.1.2, *Geology and Soils, Environmental Effects*, the erosion on the reservoir shoreline occurs above the maximum reservoir elevation of 1,490 feet and is not the result of project operation, but is instead the result of landowner activity. Moreover, the cultural resource studies did not identify historic architectural resources, archaeological sites, or artifacts where the erosion was occurring. As discussed in section 3.3.1.2, *Geology and Soils*, Northern States' proposal to file an erosion report every 5 years would ensure that the Commission and Wisconsin DNR have an opportunity to evaluate the need for mitigation of any erosion caused by seasonal drawdowns and project discharges.

Since there are no foreseeable project effects on historic properties in the APE, the proposed HPMP is not needed to protect any historic properties during the term of any license. Staff is not aware of any other project-related benefits of an HPMP.

It is possible that previously unidentified archaeological or cultural resources could be discovered during project operation, maintenance, or other project-related work involving land-disturbing activities. If cultural resources are discovered during such work, Northern States should stop all land-clearing and land-disturbing activities in the vicinity of the resource and consult with the Wisconsin SHPO and Tribes to determine the need for any cultural resource studies or measures.

To protect cultural resources from any project modifications not specifically authorized by any license, Northern States should consult with the Wisconsin SHPO and Tribes prior to implementing such project modifications to determine the effects of the activities and the need for any cultural resource studies or measures.

3.4 NO-ACTION ALTERNATIVE

Under the No-Action Alternative, the project would continue to operate as it has in the past. None of the applicant's proposed measures or the resource agencies' recommendations would be required.

4.0 DEVELOPMENTAL ANALYSIS

In this section, we look at the project's use of the West Fork for storing water for hydropower generation at the downstream Saxon and Superior Projects to see what effect various proposed or recommended environmental measures would have on the cost to operate and maintain the project and on power generation at the downstream projects. Under the Commission's approach to evaluating the economics of hydropower projects, as articulated in *Mead Corporation,*[77] the Commission compares the current cost to produce project power to an estimate of the cost to provide the same amount of energy and capacity for the region using the most likely alternative source of power (cost of alternative power). In keeping with the policy described in *Mead Corporation,* our economic analysis is based on current electric power cost conditions and does not anticipate or estimate changes in fuel costs that could occur during a project's license term.

For each of the licensing alternatives, our analysis includes an estimate of: (1) the annualized cost of providing the individual measures considered in the EA; (2) the cost of the most likely alternative source of project power; (3) the total annual project cost (i.e., for construction, operation, maintenance, and environmental measures); and (4) the difference between the cost of the current alternative source of project power and the total annual project cost. If the difference between the cost to produce an equivalent amount of power from an alternative source and the total annual project cost is positive, the project helps to produce power at a cost less than the cost of producing power from the most likely least-cost source of alternative power. If the difference between the alternative source of power's annual cost and the total annual project cost is negative, the project helps to produce power at a cost more than the cost of producing power from the most likely least-cost source of alternative power. This estimate helps support an informed decision concerning what is in the public interest with respect to a proposed license. However, project economics is only one of many public interest factors the Commission considers in determining whether, and under what conditions, to issue a license.

The power and economic benefits of the project, and the comparison of the cost of each alternative for the project, are discussed in Appendix F, *Developmental Resources*. Appendix G, *Costs of Environmental Measures*, presents the cost of the environmental enhancement measures considered in our analysis.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 COMPREHENSIVE DEVELOPMENT AND RECOMMENDED ALTERNATIVE

Sections 4(e) and 10(a)(1) of the FPA require the Commission to give equal consideration to the power development purposes and to the purposes of energy conservation; the protection, mitigation of damage to, and enhancement of fish and wildlife; the protection of recreational opportunities; and the preservation of other aspects of environmental quality. Any

[77] *See Mead Corp.,* 72 FERC ¶ 61,027 (1995). In most cases, electricity from hydropower would displace some form of fossil-fueled generation, in which fuel cost is the largest component of the cost of electricity production.

license issued shall be such as in the Commission's judgment will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. This section contains the basis for, and a summary of, our recommendations for licensing the project. Appendix H, *Comprehensive Development*, contains the basis for staff's recommendations and the rationale for modifying Northern States' proposal for the project. We weigh the costs and benefits of our recommended alternative against other proposed measures.

Based on our independent review of agency and public comments filed on this project and our evaluation of the environmental and economic effects of the Proposed Action and its alternatives, we selected the Staff Alternative as the preferred alternative for the project. We recommend this alternative because: (1) issuing a license for the project would allow the applicant to operate the project and store water for hydroelectric generation at the downstream Saxon and Superior Projects; (2) the additional generation allowed by the Gile Project, including 2,103.2 and 2,401.6 MWh at the Saxon and Superior Projects, respectively, comes from renewable resources that does not contribute to atmospheric pollution; (3) the public benefits of the Staff Alternative would exceed those of the No-Action Alternative; and (4) the recommended measures would protect and enhance aquatic, terrestrial, recreation, and cultural resources, and federally listed endangered species at the project.

In the following section, we make recommendations as to which environmental measures proposed by Northern States, or recommended by agencies or other entities, should be included in any license issued for the project. In addition to Northern States' proposed environmental measures listed below, we recommend additional staff-recommended environmental measures to be included in any license issued for the project, and we describe these requirements in the draft license articles in Appendix M, *Draft License Articles Recommended by Staff*.

5.1.1 Measures Proposed by the Applicant

Based on our environmental analysis of Northern States' proposal in section 3.0, *Environmental Analysis*, and the costs discussed in section 4.0, *Developmental Analysis*, we conclude that the following operation and environmental measures proposed by Northern States would protect and enhance environmental resources and would be worth the cost. Therefore, we recommend including the following measures in any license issued for the project.

- Implement soil erosion and sediment control BMPs, filed as Appendix E-27 of the application, prior to any ground-disturbing activities associated with project maintenance.

- Survey the reservoir shoreline and riverbanks within the project boundary for erosion every 5 years and file a report on each survey that includes recommendations on whether mitigation of any erosion site is warranted.

- Continue operating the project as a water storage facility and maintaining the reservoir elevation from a minimum elevation of 1,475 feet to a maximum elevation of 1,490 feet, with annual summer and winter drawdowns to augment flows for hydroelectric generation at the downstream projects.

- To protect aquatic resources, continue to limit the reservoir drawdown rate to no more than 0.2 foot per day.

- To protect aquatic resources, continue releasing a minimum flow of 10 cfs to the West Fork downstream of the project.

- Develop an operation compliance monitoring plan to document compliance with project operation that includes the following provisions: (1) locations of headwater monitoring probes/gages; (2) frequency of monitoring; (3) procedures for maintaining and calibrating monitoring equipment; (4) standard operating procedures to be implemented outside of normal operating conditions, such as scheduled or emergency facility shutdowns or maintenance activities; (5) a schedule for installing and operating the monitoring equipment; and (6) notification procedures for planned and unplanned deviations.

- Notify the Commission and resource agencies of planned and unplanned deviations, and only modify project operation for short periods of time of up to 3 weeks, after mutual agreement with FWS and Wisconsin DNR.

- Implement the following measures to protect bald eagles from any project-related vegetation management and construction activities: (1) prior to any such activities, identify any existing eagle nests at the project by reviewing the Wisconsin NHI; and (2) establish a buffer zone of at least 660 feet between any nest and the project activity during the nesting season.

- To provide project-related recreation opportunities, maintain the new boat take-out site, new portage trail, and existing boat put-in site, including directional signage and a Part 8 sign.

- To provide scheduled whitewater boating opportunities downstream of the project, develop a whitewater recreation plan that includes the following provisions: (1) two 3-hour whitewater flow releases of 1,200 cfs, beginning in the morning on a day in June and a day in September; (2) identify the day and timing of each flow release; (3) flow ramping for 1 hour before and after each whitewater flow release; and (4) publishing average daily discharge and reservoir elevation information on the internet.

5.1.2 Measures Recommended by Staff

Under the Staff Alternative, the project would be operated with Northern States' proposed measures identified above, and the following staff-recommended measures and modifications. We discuss the basis for the staff-recommended measures and the rationale for modifying Northern States' proposal in Appendix H, *Comprehensive Development*.

- To protect the federally listed endangered NLEB, avoid the removal of non-hazardous trees that are 3 inches dbh or greater in diameter from April 15 through September 30, instead of Northern States' proposal to implement Wisconsin DNR's BITP/A.

- Develop the proposed whitewater recreation plan with the following additional provisions: (1) publish the following additional information on the website: (a) instructions on how to access the put-in site, including parking and directions to the site; (b) the specific days and timing of scheduled whitewater flow releases; and (c) updates on any scheduled project maintenance that could affect access to the put-in site or scheduled whitewater flow releases; and (2) an annual whitewater release coordination meeting between Northern States and interested stakeholders to discuss the scheduled flow releases for the upcoming boating season, including whether any changes to the schedule are needed in light of foreseeable information on flows and potential scheduling conflicts.

- To enhance recreation at the project, develop a recreation management plan that contains the following provisions: (1) a description of all licensed project recreation facilities, including a map; (2) a description of operation and maintenance of the licensed project recreation facilities; (3) a description of all recreational signage required by the license, including the location and content of the signage; and (4) a schedule for completing all required recreation improvements.

- To enhance recreation access, implement the following improvements: (1) include, on the Part 8 sign, a map of the licensed project recreation facilities, the project website address, and a description of project operation that could affect recreation, including reservoir elevations, drawdown schedule/rate, minimum flow releases, and whitewater boating flow releases; (2) install a sign at the put-in site that warns boaters of potentially dangerous boating conditions in the West Fork downstream of the dam and provides information on whitewater boating classifications; (3) remove rocks at the put-in site to ensure safe water access for whitewater boaters; and (4) remove barriers on the earthen embankment to provide fully accessible fishing access.

- To ensure recreation opportunities at the project remain throughout the term of any license, reserve the Commission's right to require additional recreation measures in the future and require Northern States to notify the Commission if operation ceases at non-project recreation sites that provide trailered boats with access to the reservoir.[78]

- To protect previously unidentified cultural resources that are discovered during project operation, maintenance, or other project-related work involving land-disturbing activities, stop all land-clearing and land-disturbing activities in the vicinity of the resource and consult with the Wisconsin SHPO and Tribes to determine the need for any cultural resource studies or measures.

- To protect cultural resources from any project modifications not specifically authorized by any license, consult with the Wisconsin SHPO and Tribes prior to implementing such

[78] *See* section 3.3.4.1, *Recreation and Land Use, Affected Environment*, for a description of the boat access sites at Gile Park, Sucker Hole Landing, Town of Pence Landing, and County Highway C Landing.

project modifications, to determine the effects of the activities and the need for any cultural resource studies or measures.

In Appendix H, we discuss the basis for our staff-recommended measures and the rationale for modifying Northern States' proposal.

5.2 UNAVOIDABLE ADVERSE EFFECTS

Continued operation (i.e., seasonal store-and-release mode) of the project would continue to dewater aquatic and wetland habitat in the summer and winter, which would continue to adversely affect fish and wildlife resources by reducing available food and cover.

5.3 FISH AND WILDLIFE AGENCY RECOMMENDATIONS

Under the provisions of section 10(j) of the FPA, a hydroelectric license issued by the Commission should include conditions based on recommendations provided by federal and state fish and wildlife agencies for the protection, mitigation, and enhancement of fish and wildlife resources affected by the project. Section 10(j) of the FPA states that whenever the Commission finds that any fish and wildlife agency recommendation is inconsistent with the purposes and the requirements of the FPA or other applicable law, the Commission and the agency must attempt to resolve any such inconsistency, giving due weight to the recommendations, expertise, and statutory responsibilities of the agency.

In response to the October 10, 2024 REA notice, Interior timely filed 3 recommendations under section 10(j) on December 9, 2024. Appendix I, *Fish and Wildlife Agency Section 10(j) Recommendations*, lists Interior's recommendations filed pursuant to section 10(j). Appendix I also indicates whether the recommendations are included under the Staff Alternative, as well as the basis for our preliminary determinations concerning measures that we consider inconsistent with the FPA.

5.4 CONSISTENCY WITH COMPREHENSIVE PLANS

Section 10(a)(2)(A) of the FPA, 16 U.S.C. § 803(a)(2)(A), requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project. We reviewed eleven qualifying comprehensive plans that are applicable to the project. The comprehensive plans identified for this project are presented as Appendix J. No inconsistencies were found.

6.0 FINDING OF NO SIGNIFICANT IMPACT

If the project is licensed as proposed, with the additional staff-recommended measures and modifications, the project would continue to operate as it does today, while providing protection and enhancements for aquatic, terrestrial, recreation, and cultural resources, and federally listed endangered species in the project area.

Based on our independent analysis, issuance of a license for the project, as proposed with additional staff-recommended measures and modifications, would not constitute a major federal action significantly affecting the quality of the human environment.

7.0 LITERATURE CITED

The literature cited in this EA is presented as Appendix K.

8.0 LIST OF PREPARERS

The list of preparers of this EA is presented as Appendix L.

APPENDIX A

GLOSSARY OF TERMS

Archaeological resources: The material remains of past human activity, including, but not limited to: man-made or modified objects; refuse left through human occupation and consumption; and, earthworks and structural ruins associated with past human activity or occupation.

Architectural resources: Extant structures or infrastructure that may retain importance based on physical aspects of design, materials, form, style, or workmanship.

Area of Potential Effect (APE): The geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties (36 C.F.R. § 800.16(d)).

Burst Swim Speed: The fastest swimming speed that can be maintained for 20 seconds.

Capacity benefit: The benefit a project receives for providing capacity to the grid, which may be in the form of a dependable capacity credit or credit for monthly capacity provided.

Diameter at breast height: The diameter of a tree as measured about 4 to 4.5 feet above the ground.

Dissolved oxygen (DO): One of the most commonly employed measures of water quality, DO is the amount of gaseous oxygen in a liquid. Low DO levels can adversely affect fish and other aquatic life. In this document, DO is expressed in units of milligrams per liter (mg/L).

Habitat suitability curves: a graph of the relationship between an environmental variable or factor (e.g., water depth or velocity) and the probability of a particular species using that habitat ranging from 0 to 1, representing habitat that ranges from unsuitable to optimal, respectively.

Hibernaculum: A place where a bat hibernates over the winter, such as in a cave.

Historic District: A geographically definable area, urban or rural, that possesses a concentration, linkage or continuity of sites, buildings structures, or objects united by past events or aesthetically by plan or physical development (Park Service, 1990).

Historic Properties: Properties that are eligible for listing or listed on the National Register of Historic Places.

Intake velocity: the velocity of incoming water flow at the trashrack.

National Register of Historic Places (National Register): A catalog of America's significant districts, sites, buildings, structures, and objects related to architecture, archeology, engineering, and culture.

Pup season: Timeframe during late pregnancy and when most young are born until they can fly.

Tree removal: cutting down, harvesting, destroying, trimming, or manipulating in any other way the trees, saplings, snags, or any other form of woody vegetation likely to be used by the northern long-eared bat.

Undertaking: A project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on behalf of a federal agency; those carried out with federal financial assistance; and those requiring a federal permit, license, or approval." *See* 36 C.F.R. § 800.16. For purposes of this National Environmental Policy Act document, the undertaking is the issuance of any original license for the project.

White-nose syndrome: A fungal infection that agitates hibernating bats, causing them to rouse prematurely and burn fat supplies. Mortality results from starvation or, in some cases, exposure.

APPENDIX B

FIGURES

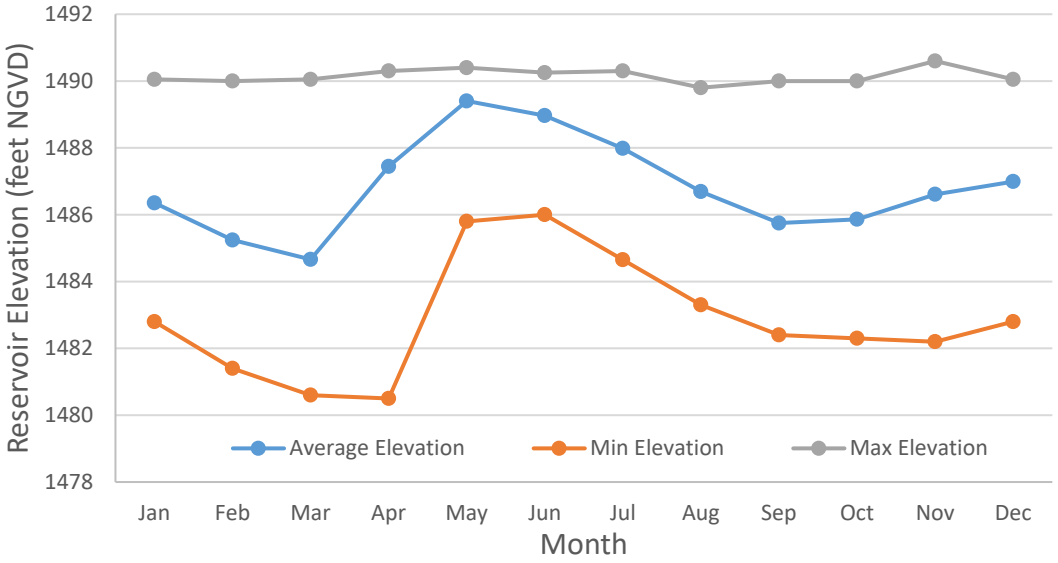

Figure B-1. Minimum, maximum, and average elevation at the Gile Project from 1994 through 2021, by month. (Source: Northern States, as modified by Staff).

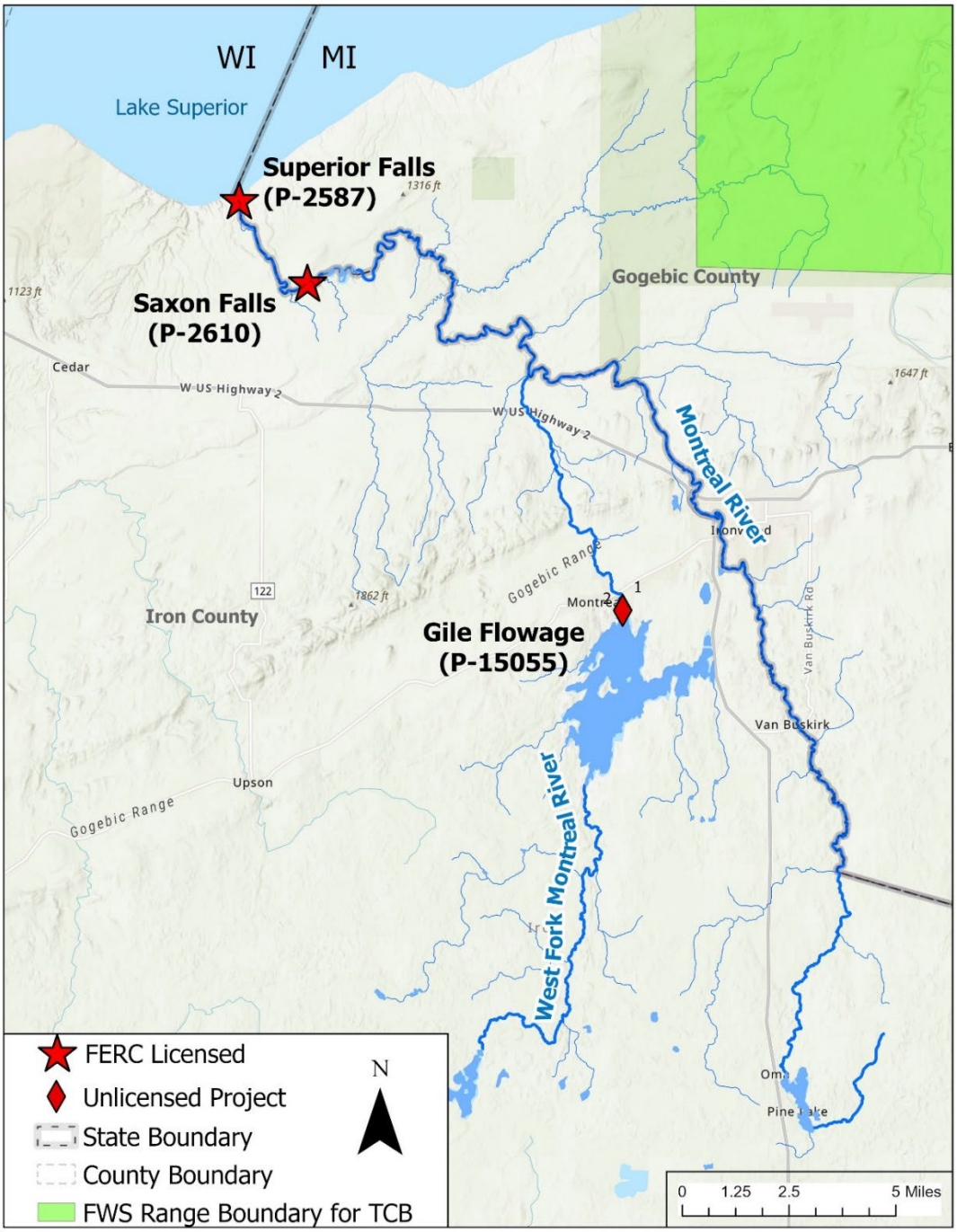

Figure B-2. FWS range boundary for the tricolored bat (TCB) in the project vicinity (Source: FWS, undated, as modified by Staff).

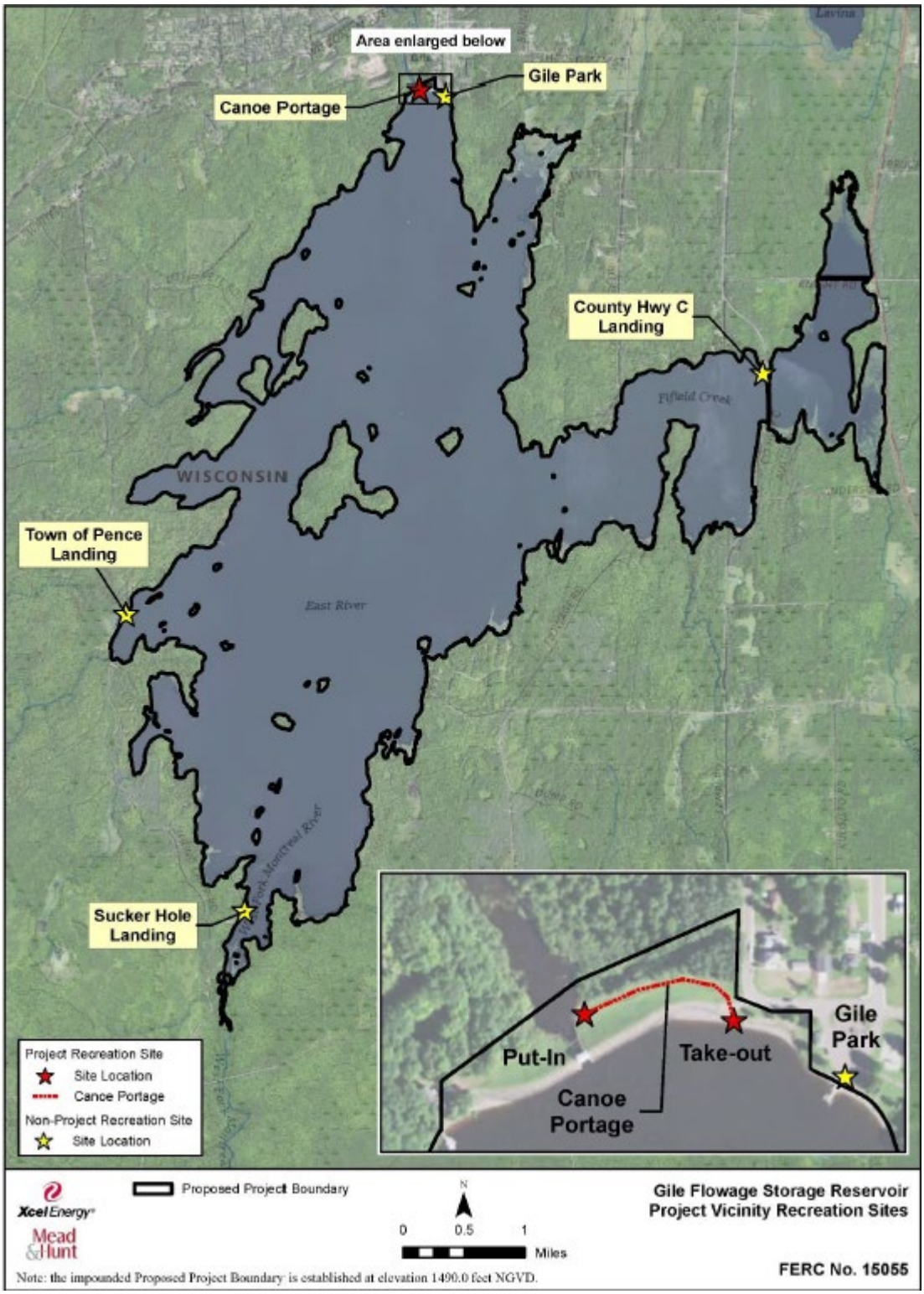

Figure B-3. Gile Project reservoir recreation sites (Source: Staff).

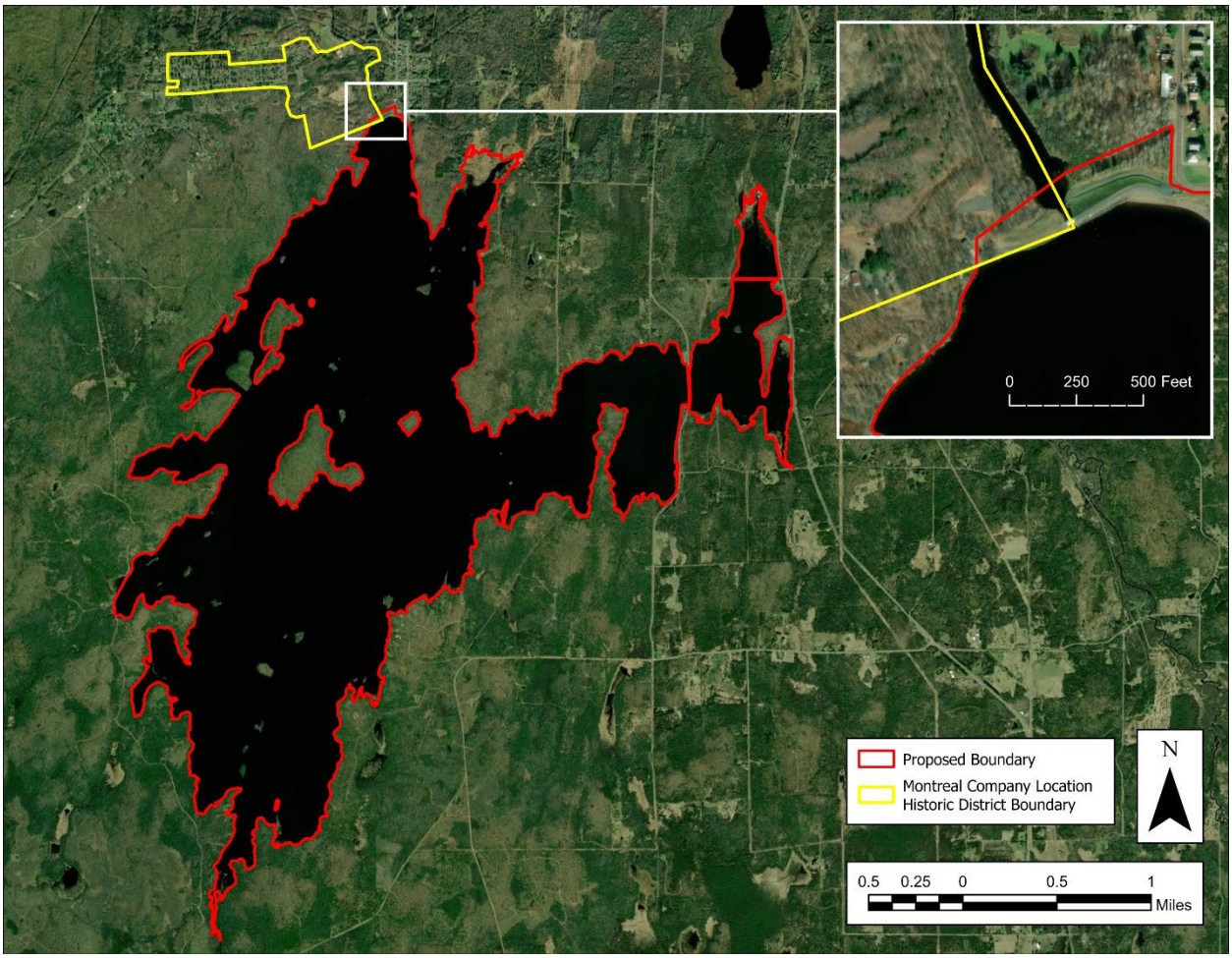

Figure B-4. Montreal Company Location Historic District boundary (Source: Staff).

APPENDIX C

TABLES

Table C-1. River flows by month for the Gile Project from January 1994 through December 2021 (Source: Northern States, as modified by Staff).

Month	10% Exceedance Flow	50% Exceedance Flow	90% Exceedance Flow	Mean Flow
January	157	50	11	84
February	161	65	10	86
March	439	51	10	166
April	1,182	126	11	390
May	807	102	17	284
June	271	101	20	158
July	223	82	21	138
August	194	57	18	92
September	210	35	15	117
October	226	13	12	93
November	228	12	10	78
December	146	50	10	79
Annual	305	58	10	147

Table C-2. Daily maximum temperature standards established by the State of Wisconsin for warm-small streams and northern lakes (Source: Northern States, as modified by Staff).

	Maximum Acute Temperatures (°F)	
Month	**West Fork, Upstream of Highway 77**	**Gile Flowage Storage Reservoir**
January	76	76
February	76	76
March	77	76
April	79	78
May	82	81
June	84	85
July	85	86
August	84	86
September	82	84
October	80	80
November	77	78
December	76	76

Table C-3. Fish species known to occur in the project reservoir (Source: Northern States).

Common Name	Scientific Name
Black bullhead	*Ameiurus melas*
Black crappie	*Pomoxis nigromaculatus*
Blacknose shiner	*Notropis heterolepis*
Bluegill	*Lepomis macrochirus*
Brown bullhead	*Ameiurus nebulosus*
Bullheads	*Ameiurus spp.*
Central mudminnow	*Umbra limi*
Common shiner	*Luxilus cornutus*
Crappies	*Pomoxis spp.*
Golden shiner	*Notemigonus crysoleuca*
Iowa darter	*Etheostoma exile*
Johny darter	*Etheostoma nigrum*
Muskellunge	*Esox masquinongy*
Northern pike	*Esox lucius*
Pumpkinseed	*Lepomis gibbosus*
Rock bass	*Ambloplites rupestris*
Smallmouth bass	*Micropterus dolomieu*
Spottail shiner	*Notropus hudsonius*
Suckers spp.	*Catostomus spp.*
Walleye	*Sander vitreus*
White sucker	*Catostomus commersonii*
Yellow bullhead	*Ameiurus natalis*
Yellow perch	*Perca flavescens*

APPENDIX D

STATUTORY AND REGULATORY REQUIREMENTS

Federal Power Act

Section 18 Fishway Prescriptions

Section 18 of the Federal Power Act (FPA), 16 U.S.C. § 811, states that the Commission must require construction, operation, and maintenance by a licensee of such fishways as may be prescribed by the Secretaries of the U.S. Department of Commerce or the U.S. Department of the Interior (Interior). No fishway prescriptions or reservations of authority were filed.

Section 10(a) Recommendations

Under section 10(a) of the FPA, 16 U.S.C. § 803(a)(1), each hydroelectric license issued by the Commission must be best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce; for the improvement and utilization of waterpower development; for the adequate protection, mitigation, and enhancement of fish and wildlife; and for other beneficial public uses, including irrigation, flood control, water supply, recreation, and other purposes.

On December 6, 2024, Michigan Hydro Relicensing Coalition timely filed one recommendation under section 10(a). On December 9, 2024, Interior; Michigan Department of Environment, Great Lakes, and Energy; American Whitewater; River Alliance of Wisconsin; and Friends of the Gile Flowage Lake Association filed 12, 2, 7, 8, and 9 recommendations under section 10(a), respectively.

We discuss these section 10(a) recommendations in section 3.3, *Proposed Action and Action Alternatives*, and Appendix H, *Comprehensive Development*.

Section 10(j) Recommendations

Under section 10(j) of the FPA, 16 U.S.C. § 803(j)(1), each hydroelectric license issued by the Commission must include conditions based on recommendations provided by federal and state fish and wildlife agencies for the protection, mitigation, or enhancement of fish and wildlife resources affected by the project. The Commission is required to include these conditions in any license unless it determines that they are inconsistent with the purposes and requirements of the FPA or other applicable law. Before rejecting or modifying an agency recommendation, the Commission is required to attempt to resolve any such inconsistency with the agency, giving due weight to the recommendations, expertise, and statutory responsibilities of such agency.

On December 9, 2024, Interior filed 3 recommendations under section 10(j). We summarize these recommendations in Appendix I, *Fish and Wildlife Agency Section 10(j) Recommendations*, and discuss them in section 3.3, *Proposed Action and Action Alternatives*, and in Appendix H, *Comprehensive Development*.

Clean Water Act

Under section 401(a)(1) of the Clean Water Act (CWA), 33 U.S.C. § 1341(a)(1), a license applicant must obtain either a water quality certification (certification) from the appropriate certifying authority verifying that any discharge from a project would comply with applicable provisions of the CWA or a waiver of such certification by the appropriate certifying authority. A waiver occurs if the certifying authority does not act on a request for certification within a reasonable period of time, not to exceed 1 year, after receipt of such request.

On November 12, 2024, Northern States applied to the Wisconsin Department of Natural Resources (Wisconsin DNR) for a section 401 certification for the project. Wisconsin DNR received the application on the same day. On August 20, 2025, Commission staff issued a notice pursuant to 40 C.F.R. § 121.6 and section 5.23(b)(2) of the Commission's regulations, notifying Wisconsin DNR that the reasonable period of time to act on the certification request is 1 year, and if Wisconsin DNR failed or refused to act on the request by November 12, 2025, then the agency's certifying authority would be deemed waived pursuant to section 401 of the CWA. Northern States has not filed a copy of the certification or evidence of waiver of certification.

Endangered Species Act

Section 7 of the Endangered Species Act (ESA), 16 U.S.C. § 1536, requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of such species. According to the U.S. Fish and Wildlife Service's (FWS) Information for Planning and Consultation (IPaC) system, the federally listed endangered gray wolf (*Canis lupus*), endangered northern long-eared bat (NLEB) (*Myotis septentrionalis*), and threatened Canada lynx (*Lynx canadensis*) have the potential to occur at the project.[79] Also, according to the IPaC system, the proposed threatened monarch butterfly (*Danaus plexippus*) has the potential to occur at the project. No critical habitat for these species occurs within lands affected by the project.

Although IPaC initially stated that the proposed endangered tricolored bat (TCB; *Perimyotis subflavus*) has the potential to occur at the project,[80] the most recent IPaC list does

[79] *See* Commission staff's September 12, 2025 Memorandum on Endangered Species Act List.

[80] *See* Commission staff's August 14, 2023 Memorandum on Endangered Species Act List.

not include this species.[81] Commission staff reviewed the FWS's range map for this species and concludes that TCB does not have the potential to occur at the project (Figure B-2).

Our analyses of project effects on federally listed and proposed species are presented in Appendix E, *Biological Assessment*. Based on the available information, we conclude that licensing the project would: (1) have no effect on the gray wolf or Canada lynx; (2) not likely adversely affect the NLEB; and (3) not likely jeopardize the continued existence of the TCB or monarch butterfly.

Coastal Zone Management Act

Under section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA), 16 U.S.C. § 1456(3)(A), the Commission cannot issue a license for a project within or affecting a state's coastal zone unless the state CZMA agency concurs with the license applicant's certification of consistency with the state's CZMA program, or the agency's concurrence is conclusively presumed by its failure to act within 6 months of its receipt of the applicant's certification.

The Wisconsin Department of Administration (Wisconsin DOA) is the state agency responsible for administering the state's CZMA program. On February 23, 2023, Northern States submitted a request to Wisconsin DOA's Coastal Management Program to determine whether the Gile Project is consistent with the state's CZMA program.[82] Wisconsin DOA did not respond to Northern States. Because Wisconsin DOA did not respond within 180 days of its receipt of the consistency certification, Wisconsin DOA's concurrence with Northern States' CZMA certification is presumed.

National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA), 54 U.S.C. § 306108, requires that every federal agency "take into account" how each of its undertakings could affect historic properties. Historic properties are districts, sites, buildings, structures, traditional cultural properties, and objects significant in American history, architecture, engineering, and culture that are eligible for inclusion in the National Register of Historic Places (National Register).

In a notice issued on January 19, 2021, Commission staff designated Northern States as its non-federal representative for the purposes of conducting section 106 consultation under the NHPA. Pursuant to section 106, and as the Commission's designated non-federal representative, Northern States consulted with the Wisconsin State Historic Preservation Officer (Wisconsin SHPO) and potentially affected Tribes to identify historic properties, determine National

[81] *See* Commission staff's September 12, 2025 Memorandum on Endangered Species Act List.

[82] A copy of the request is available in Northern States' December 18, 2023 Additional Information Response for the Gile Project, Appendix AIR-6.

Register eligibility, and assess potential adverse effects on historic properties within the project's area of potential effects. [83]

Northern States sought concurrence from the Wisconsin SHPO regarding the area of potential effect, the potential effect of the project on cultural resources, and its proposal to implement a historic properties management plan. On February 15, 2023, the Wisconsin SHPO concurred by electronic mail with the findings and recommendations in the archaeological shoreline and erosion survey and National Register evaluation.[84]

Our analysis presented in section 3.3.6.2, *Cultural Resources, Environmental Effects*, concludes that licensing the project would not adversely affect any historic properties. Therefore, the Commission's requirements pertaining to section 106 of the NHPA have been satisfied.

[83] *See* Commission staff's January 19, 2021 *Notice of Intent to File License Application, Filing of Pre-Application Document (PAD), Commencement of Pre-filing Process and Scoping; Request for Comments on the PAD and Scoping Document; and Identification of Issues and Associated Study Requests*, at para. M.

[84] *See* Northern States' Documentation of Wisconsin SHPO Concurrence, filed February 16, 2023.

APPENDIX E

BIOLOGICAL ASSESSMENT

Affected Environment

Gray Wolf

The gray wolf is federally listed as endangered in most of the lower 48 contiguous states.[85] The gray wolf is listed as threatened in Wisconsin and endangered in all or part of 44 other states. The gray wolf was delisted by U.S. Fish and Wildlife Service (FWS), effective January 4, 2021, but the delisting rule was vacated by federal court on February 10, 2022. Gray wolves are the largest member of the canid family with adults weighing 40 to 80 pounds. They are predominantly gray or black and have a broader muzzle than coyotes. Gray wolves have a narrow chest and typically measure 5 to 6 feet in length (Wisconsin DNR, 2024).

This highly adaptable species can exist in a variety of habitats provided they have access to sufficient prey. Gray wolves can thrive in range habitats from temperate forests to grasslands and deserts, which reflects their adaptability as a species. Prey includes medium and large hooved mammals, such as white-tailed deer. Once established, packs are very resilient barring human-caused mortality. Gray wolves are endangered mostly due to negative human encounters that lead to mortality, injury, and disease. Habitat loss and fragmentation create a greater likelihood that wolves will encounter humans, domestic animals, and various human infrastructure (Wisconsin DNR, 2024). These encounters can result in wolves being shot intentionally by unauthorized individuals, hit by vehicles, being controlled by government agents after becoming involved in depredations on domestic animals, being trapped or shot accidentally, or contracting diseases from domestic dogs. Fragmentation of habitat, with resulting areas becoming too small for populations with long-term viability, is a threat in areas around human population centers.

Critical habitat for the gray wolf has been designated in Michigan and Minnesota (FWS, 2024a). However, no critical habitat for this species has been designated within the project vicinity.

Canada Lynx

The Canada lynx was listed as threatened on March 24, 2000.[86] In the United States, the southern-most extent of the lynx's range occurs in the Northeast, western Great Lakes region, northern and southern Rockies, and northern Cascades.

Canada lynx is uncommon in Wisconsin. There are no known established populations of lynx in Wisconsin, although lynx are thought to cross into Wisconsin from Canada

[85] 43 Fed. Reg. 9,607 (Mar. 9, 1978).

[86] 65 Fed. Reg. 16,053 (Mar. 24, 2000).

periodically.[87] Its habitat includes large areas of young, dense stands of spruce and fir, approximately 12 to 30 years old, which have dense understory vegetation that support abundant snowshoe hares. Areas of prime habitat shift with time as stands mature and new areas of growth are opened up by disturbance. Populations of snowshoe hare have a direct effect on lynx populations that fluctuate in response to prey availability. No critical habitat for this species has been designated within the project vicinity (FWS, 2024b).

Northern Long-Eared Bat

The northern long-eared bat (NLEB) was listed as threatened on May 4, 2015,[88] and reclassified as endangered on November 29, 2022[89] with an effective date of March 31, 2023.[90] No critical habitat has been designated for this species.

The NLEB is a medium-sized bat species with a body length of 3 to 3.7 inches, wingspan of 9 to 10 inches, and longer ears than other species in the *Myotis* genus (FWS, 2023). The species ranges across 37 states, including most of the central and eastern United States, as well as the southern and central provinces of Canada, coinciding with the greatest abundance of forested areas.

The NLEB is insectivorous and found in a variety of forested habitats in the summer season. During this time, bats roost singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees that are equal to or greater than 3 inches in diameter at breast height (dbh). In the fall season, NLEBs leave their forest habitats to hibernate in caves, mines, and other similar habitat. The bats arrive at hibernacula between August and September, enter hibernation between October and November, and emerge between March and April. During the winter, small groups typically hibernate in cracks and crevices in the walls or ceilings of caves or abandoned mines with high humidity, cool temperatures, and no air currents, although hibernation has also been observed in buildings, railroad tunnels, and other man-made structures.

Hibernacula and surrounding forest habitats play important roles in the life cycle of the species, beyond the time when bats are overwintering, including for fall-swarming[91] and spring-

[87] *See* Wisconsin DNR's Furbearers webpage (https://dnr.wi.gov/topic/wildlifehabitat/furbearers.html), last accessed by staff on September 5, 2025.

[88] 80 Fed. Reg. 17,974 (Apr. 2, 2015).

[89] 87 Fed. Reg. 73,488 (Nov. 30, 2022).

[90] 88 Fed. Reg. 4,908 (Jan. 26, 2023).

[91] Fall-swarming occurs between summer and winter hibernation and provides opportunities for the introduction of juveniles to potential hibernacula, copulation, and gathering at stop-over sites on migratory pathways between summer and winter regions.

staging[92] activities. Reproduction is limited to one pup per year in late spring and, therefore, populations can be slow to rebound from anthropogenic and naturally occurring mortality events. The primary threat to this species is white-nose syndrome,[93] which was first observed in New York state in 2006 and has since spread beyond the Northeast and into the Midwest and Southeast (FWS, 2023). Other threats include impacts to hibernacula and loss or degradation of summer habitat.

The proposed project is located in Iron County, which is designated as a county with known hibernacula infected white-nose syndrome (FWS, 2020). Although there is no documentation of NLEB at the proposed project and no known NLEB hibernacula sites occur within 0.25 mile of the proposed project, upland and riparian forest at the proposed project may provide suitable habitat for NLEB summer roosting and foraging activities.

Tricolored Bat

On September 14, 2022, FWS proposed to list the tricolored bat (TCB) as endangered,[94] based on the range-wide impacts of white-nose syndrome that have caused estimated declines of more than 90% in affected colonies. TCB are known to occur in 39 states, including Wisconsin (FWS, undated). No critical habitat is being designated because current or threatened destruction, modification, or curtailment of the species' habitat or range is not having large range-wide effects on the species.

Male and female TCB converge at cave and mine entrances between mid-August and mid-October to swarm and mate. During the winter, TCB hibernate in caves and mines, although in some areas where caves are sparse, TCB may hibernate in road-associated culverts and sometimes in tree cavities and abandoned water wells.

During the spring, summer, and fall (i.e., non-hibernating seasons), TCB disperse and primarily roost in foliage of live or recently dead deciduous hardwood trees. Female TCB exhibit high site fidelity, returning year after year to the same summer roosting locations. Female TCB form maternity colonies and switch roost trees regularly (e.g., between 1.2 days and 7 days at roost trees in Indiana). Females typically give birth to two pups between May and July

[92] Spring-staging occurs between winter hibernation and migration to summer habitat and allows bats to gradually emerge from hibernation and exit hibernacula to feed and then re-enter the same or alternative hibernacula to resume daily bouts of torpor (i.e., a state of mental or physical inactivity).

[93] White-nose syndrome is the main threat to the northern long-eared bat and has caused precipitous declines in bat numbers (in many cases, 90 to 100%) where the disease occurs.

[94] 87 Fed. Reg. 56,381 (Sep. 14, 2022).

(FWS, undated). Limited reproductive potential severely limits the ability of bat populations to respond quickly to perturbations.

Upland and riparian forest at the proposed project may provide suitable habitat for TCB summer roosting and foraging activities.

Monarch Butterfly

On December 12, 2024, FWS proposed to list the monarch butterfly as a threatened species.[95] Adult monarch butterflies rely on diverse food sources during breeding and migration, including milkweed species and nectar-rich flowers. Monarch butterflies are also dependent on milkweed species as host plants during egg-laying and larval development. In eastern North America, the monarch butterfly migrates between Mexico and Canada over a period of two to three successive generations. In Wisconsin, the monarch butterfly may be present during the summer months (FWS, 2021).

The proposed project is located within the range of the monarch butterfly. Although there is no documentation of the monarch butterfly at the proposed project, milkweed plants that provide suitable habitat for monarch butterfly reproduction and foraging could potentially occur within the proposed project boundary.

Environmental Effects

Gray Wolf

Northern States does not propose any measures for the protection of the gray wolf, and no agency recommendations were received regarding the gray wolf.

Our Analysis

Wisconsin DNR actively monitors gray wolf populations in the state and reported that in 2022-2023 there were 23 confirmed gray wolf sightings and an estimated 360 individuals in zone 1 (including portions of the 8 northwestern-most Wisconsin counties and most of Iron County) (Wisconsin DNR, 2024). There is no documentation of gray wolf at the project and Wisconsin's Natural Heritage Inventory does not identify any occurrences of wolves within 1 mile of the project. There is no indication that project operation and maintenance would affect gray wolf or its habitat. Also, Northern States is not proposing any activities that would affect the gray wolf, or its habitat and food availability.

Because Northern States is not proposing any project activities that would affect gray wolf and there are no known occurrences of gray wolf at the proposed project, we conclude that licensing the proposed project would have no effect on the gray wolf.

[95] 89 Fed. Reg. 100,622 (Dec. 12, 2024).

Canada Lynx

Northern States does not propose any measures for the protection of the Canada lynx, and no agency recommendations were received regarding the Canada lynx.

Our Analysis

There is no documentation of Canada lynx at the project, and there is no suitable habitat characterized by deep snow and dense horizontal forest cover that support adequate densities of snowshoe hares. Lynx may be transients in the project area during mass dispersal events following cyclic decreases in snowshoe hare abundance in more northern home territories. Northern States is not proposing any activities that would affect the Canada lynx, or its habitat and food availability. Because Northern States is not proposing any project activities that would affect Canada lynx and there are no known occurrences of Canda lynx at the project, we conclude that licensing the proposed project would have no effect on the Canada lynx.

Northern Long-Eared and Tricolored Bat

To protect the NLEB and TCB when conducting project maintenance, Northern States proposes to implement Wisconsin DNR's Broad Incidental Take Permit and Broad Incidental Take Authorization (BITP/A) for Wisconsin Cave Bats, filed as Appendix E-20 of the application. The BITP/A includes measures for excluding/removing bats from structures and restricting tree cutting during maintenance of project facilities.

River Alliance recommends that Northern States protect trees that are used for roosting or nesting habitat by NLEB.

Our Analysis

Suitable summer habitat for NLEB is present within the project boundary and NLEB could occur at the project. Routine project maintenance could include limited tree removal that affects habitat used by NLEB, including upland and riparian forest at the project that may provide suitable habitat for summer roosting and foraging activities. Any other tree removal would likely be limited to periodic removal of trees that are a threat to human life, property, or safe operation of the project (hazard trees).

The BITP/A provides take limits and measures for various development and maintenance activities, some of which are unrelated to hydroelectric projects. Regarding the removal of bats from structures and tree cutting, the BITP/A ultimately requires consultation with Wisconsin DNR. However, consultation alone is an administrative measure and would not result in any foreseeable environmental benefit for NLEB.

Because NLEBs typically roost in cavities, cracks, or under bark, removing an occupied roost tree (i.e., a tree with 3 inches dbh or greater in diameter), may harm or kill adult and flightless young that may not be able to safely exit the roost (FWS, 2024e). FWS states that NLEB may not flush from a tree given their propensity to form larger colonies and to roost in tree cracks/crevices. To avoid direct effects to NLEBs while they are roosting in trees, FWS's guidance documents state that suitable roost trees should only be removed when the species is

not likely to be present (FWS, 2024e). FWS specifies that tree removal should be avoided during the summer occupancy season, and that the chance that NLEBs may be adversely affected by tree removal activities outside the summer occupancy activity period is discountable since individuals are more likely to roost singly or in smaller groups during this time, and the dispersed nature greatly reduces the risk (FWS, 2024e).[96] The summer occupancy period for NLEB in Wisconsin is April 15 through September 30 (FWS, 2024b). Avoiding the removal of non-hazardous trees that are 3 inches dbh or greater in diameter from April 15 through September 30, would protect NLEB from harm. With the implementation of a cutting restriction for non-hazardous trees of 3 inches dbh or greater in diameter from April 15 through September 30, staff concludes that licensing the project is not likely to adversely affect the NLEB.

River Alliance's recommendation to protect trees that are used for roosting or nesting habitat by NLEB does not define any specific measures for protecting trees, such as tree removal restrictions or time periods for any such restrictions. Without specific measures to analyze and consider under the Federal Power Act, staff cannot assess the benefits of River Alliance's recommendation. As stated above, avoiding the removal of non-hazardous trees that are 3 inches dbh or greater in diameter from April 15 through September 30, would protect NLEB from harm.

There is no documentation of TCB at the proposed project. According to FWS's range map for this species, the proposed project is at least 10 miles away from the furthest extent of the known range of the species (Figure B-2). Therefore, Northern States' proposal to implement Wisconsin DNR's BITP/A for Wisconsin Cave Bats would not benefit TCB. Because TCB does not occur at the proposed project, licensing the proposed project would have no effect on TCB and would not jeopardize the continued existence of the TCB.

Monarch Butterfly

Northern States is not proposing any land-disturbing activities, but does conduct vegetation mowing and trimming as needed to maintain project facilities and access to proposed project recreation areas. Northern States is not proposing any measures for the protection of the monarch butterfly, and no agencies filed recommendations regarding the monarch butterfly.

Our Analysis

Current maintenance activities at project facilities are conducted on a routine basis during the growing season. Therefore, it is unlikely that extensive stands of milkweed species are present for monarch butterfly reproduction or foraging within managed areas of the project. In areas within the project boundary where routine vegetation maintenance does not occur, potential monarch butterfly habitat would not likely be disturbed during the growing season. Any project effects on the monarch butterfly would likely be incidental and minor. Therefore, we conclude

[96] 87 Fed. Reg. 73,488 (Nov. 30, 2022).

that licensing the project would not jeopardize the continued existence of the monarch butterfly or adversely affect the species.

APPENDIX F

DEVELOPMENTAL RESOURCES

Power and Economic Benefits

Table F-1 summarizes the assumptions and economic information used in the analysis. Most of this information is provided by the applicant in its license application. Some is developed by Commission staff. The values provided by the applicant are typically reasonable for the purposes of our analysis. If they are not, it is noted below. Cost items common to all alternatives include: taxes and insurance; estimated capital investment required for major modifications for licensing; licensing costs; normal operation and maintenance cost; and Commission fees. All costs are adjusted to December 2024 dollars.

Table F-1. Parameters for the economic analysis of the Gile Project (Source: Northern States and Staff).

Parameter	Value
Installed capacity [a]	0 MW
Average annual generation [b]	4,505 MWh
Period of analysis	30 years
Federal income tax rate	Included in the operation and maintenance cost
Local tax rate	Included in the operation and maintenance cost
Insurance rate	Included in the operation and maintenance cost
Interest rate	8%
Construction cost	$0
Application cost	$750,796
Operation and maintenance	$45,721
Estimated Commission annual charges	$0/year
Alternative source of power's cost (2024) [c]	
1) Energy cost	$17.53/MWh
2) Capacity benefit cost	$128.53/kW-year

(Source: Northern States and Staff).

[a] The project has no generation facilities but contributes to hydroelectric generation at the downstream Saxon and Superior Projects.

[b] *See* note 4 of the EA for an explanation of the annual energy production attributed to the Gile Project.

[c] The alternative source of power cost is based on the current cost of providing the same amount of generation and capacity from a natural gas-fired combined cycle plant, as reported by the U.S. Energy Information Administration (EIA), Annual Energy Outlook 2025, for the Division 3, East North Central Region (EIA, 2025). The alternative source of power cost reported in Table F-2 is a combination of the cost of energy and capacity benefit.

Comparison of Alternatives

Table F-2 summarizes the installed capacity, annual generation, capacity benefit, alternative source of power's cost, estimated total project cost, and difference between the alternative source of power's cost and total project cost for each of the alternatives considered in this EA: No-Action Alternative, Proposed Action, and the Staff Alternative.

Table F-2. Summary of the annual cost of alternative power and annual project cost for the three alternatives for the Gile Project (Source: Staff).

	No-Action Alternative	Proposed Action	Staff Alternative
Installed capacity	0 kW	0 kW	0 kW
Annual generation [a]	4505 MWh	4505 MWh	4505 MWh
Capacity benefit	0 kW	0 kW	0 kW
Current alternative source of power cost [b]	$78,970	$78,970	$78,970
Total annual project cost [c]	$84,183	$115,068	$96,374
Difference between the alternative source of power cost and total annual project cost [d]	($5,213)	($36,098)	($17,404)

(Source: Staff)

[a] The Gile Project accounts for 21% of the total generation at each of the Saxon and Superior Projects. *See Northern States Power Company – Wisconsin*, 172 FERC ¶ 62,093, at P 5 (2020).

[b] The alternative source of power's cost for the project is based on the alternative source of power's cost in the East North Central Region, as identified in Table F-1.

[c] The project costs include the cost of environmental measures listed in Appendix G, and the costs identified in Table F-1. All project costs were adjusted to 2024 dollars.

d A number in parentheses denotes that the difference between the alternative source of power's cost and the total project cost is negative; thus, the project's cost to produce power is greater than the alternative source of power cost.

No-Action Alternative

Under the No-Action Alternative, the project would have an average annual generation of 4505 MWh. The alternative source of power's current cost to produce the same amount of energy is $78,970. The total annual project cost is $84,183. Subtracting the total annual project cost from the alternative source of power's current cost, the project's cost to produce 4,505 MWh of power is $5,213 more than that of the alternative source of power's cost.

Applicant's Proposal

Under the Proposed Action, the project would have an average annual generation of 4505 MWh. The alternative source of power's current cost to produce the same amount of energy is $78,970. The total annual project cost is $115,068. Subtracting the total annual project cost from the alternative source of power's current cost, the project's cost to produce 4,505 MWh of power is $36,098 more than that of the alternative source of power's cost.

Staff Alternative

Under the Staff Alternative, the project would have an average annual generation of 4505 MWh. The alternative source of power's current cost to produce the same amount of energy is $78,970. The total annual project cost is $96,374. Subtracting the total annual project cost from the alternative source of power's current cost, the project's cost to produce 4,505 MWh of power is $17,404 more than that of the alternative source of power's cost.

Cost of Environmental Measures

Appendix G, *Costs of Environmental Measures*, presents the cost of each environmental enhancement measure considered in our analysis for the Gile Project. All costs are in 2024 dollars. We convert all costs to equal annual (levelized) values over a 30-year period of analysis to give a uniform basis for comparing the benefits of a measure to its cost.

APPENDIX G

COSTS OF ENVIRONMENTAL MEASURES

Table G-1. The cost of environmental measures considered in assessing the environmental effects of operating the Gile Project (Source: Northern States and Staff).

Enhancement/Mitigation Measure	Entity	Capital Cost (2024$)	Annual Cost[a] (2024$)	Levelized Annual Cost[b] (2024$)
Project Operation				
Continue operating the project as a water storage facility and maintaining the reservoir elevation from a minimum elevation of 1,475 feet to a maximum elevation of 1,490 feet, with annual summer and winter drawdowns to augment flows for hydroelectric generation at the downstream projects.	Northern States, Staff	$0	$0	$0
Operate the project in a run-of-river mode with no hydroelectric peaking.	Interior[c]	$0	$0	$0[d]
To protect aquatic resources, continue to limit the reservoir drawdown rate to no more than 0.2 foot per day.	Northern States, Staff	$0	$0	$0
To protect aquatic resources, continue releasing a minimum flow of 10 cfs to the West Fork downstream of the project.	Northern States, Staff	$0	$0	$0

Enhancement/Mitigation Measure	**Entity**	**Capital Cost (2024$)**	**Annual Cost[a] (2024$)**	**Levelized Annual Cost[b] (2024$)**
Develop a drawdown plan in consultation with Michigan DNR that includes measures to avoid, minimize, and the effects of drawdowns.	Michigan EGLE	$5,000[e]**Error! Bookmark not defined.**	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost
Develop a drawdown plan that includes measures to protect fish, mussels, and other aquatic life for drawdowns associated with routine maintenance and emergencies.	River Alliance	$5,000[e]	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost
Develop an operation compliance monitoring plan to document compliance with project operation that includes the following provisions: (1) locations of headwater monitoring probes/gages; (2) frequency of monitoring; (3) procedures for maintaining and calibrating monitoring equipment; (4) standard operating procedures to be implemented outside of normal operating conditions, such as scheduled or emergency facility shutdowns or maintenance activities; (5) a schedule for installing and operating the monitoring equipment; and (6) notification procedures for planned and unplanned deviations.	Northern States, Staff	$5,000[e]	$0	$444

Enhancement/Mitigation Measure	Entity	Capital Cost (2024$)	Annual Cost[a] (2024$)	Levelized Annual Cost[b] (2024$)
Develop an operation compliance monitoring plan that includes the following provisions: (1) mechanisms for documenting inflow and outflow from the project; (2) installation of staff gages that show the operating band of the reservoir; (3) installation of automatic water level recorders for reservoir and tailrace elevations; and (4) recording daily turbine operation, reservoir and tailrace elevations, and flow releases through the powerhouse and spillway.	Interior[cc]	$6,300	$1,000	$1,560[f]
Develop an operation compliance monitoring plan that includes: (1) daily inflow and discharge information; (2) the daily range of reservoir fluctuations; and (3) installation of a USGS gage to ensure accurate data collection.	River Alliance	$35,000	$25,000	$28,109[g]
Provide the calculated outflows through each release point at the project with remotely accessible data updated in real-time, similar to a USGS gage.	Michigan EGLE	$30,000	$25,000	$27,665[h]
Monitor flows, reservoir elevations, and water quality using state-of-the-art protocols and technologies like USGS gages.	Michigan HRC	$30,000	$25,000	$27,665**Error! Bookmark not defined.**
Notify the Commission and resource agencies of planned and unplanned deviations, and only modify project operation for short periods of time of up to 3 weeks, after mutual agreement with FWS and Wisconsin DNR.	Northern States, Staff	$0	$0	$0

Enhancement/Mitigation Measure	Entity	Capital Cost (2024$)	Annual Cost[a] (2024$)	Levelized Annual Cost[b] (2024$)
Geology and Soils				
Implement soil erosion and sediment control BMPs prior to any ground-disturbing activities associated with project maintenance.	Northern States, Staff	$0	$0	$0
Survey the reservoir shoreline and riverbanks within the project boundary every 5 years and file a report on each survey that includes recommendations on whether mitigation of any erosion site is warranted.	Northern States, Staff	$0	$2,557[i]	$2,557
Aquatic Resources				
Develop a plan to monitor DO, water temperature, and other parameters deemed appropriate by Wisconsin and Michigan.	River Alliance	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost
Install trashracks above the intake(s) of the powerhouse(s) to minimize fish entrainment and turbine mortality.	Interior[cc]	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost

Enhancement/Mitigation Measure	Entity	Capital Cost (2024$)	Annual Cost[a] (2024$)	Levelized Annual Cost[b] (2024$)
Terrestrial Resources				
To protect NLEB, TCB, and LBB, implement Wisconsin DNR's Broad Incidental Take Permit and Broad Incidental Take Authorization for Wisconsin Cave Bats when conducting project maintenance.	Northern States	$0	$0	$0
Protect trees that are used for roosting or nesting habitat by NLEB.	River Alliance	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost
To protect NLEB, avoid the removal of non-hazardous trees that are 3 inches dbh or greater in diameter from April 15 through September 30.	Staff	$0	$0	$0
Implement the following measures to protect bald eagles from any project-related vegetation management and construction activities: (1) prior to any such activities, identify any existing eagle nests at the project by reviewing the Wisconsin NHI; and (2) establish a buffer zone of at least 660 feet between any nest and the project activity during the nesting season.	Northern States, Staff	$0	$0	$0

Enhancement/Mitigation Measure	Entity	Capital Cost (2024$)	Annual Cost[a] (2024$)	Levelized Annual Cost[b] (2024$)
Develop a plan to protect bald eagles, ospreys, and their nests from land-disturbing activities.	River Alliance	$5,000[e]	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost
To protect the wood turtle from project maintenance activities, implement Wisconsin DNR's BITP/A for wood turtles.	Northern States	$0	$1,000	$1,000
Establish a 200-foot-wide, no-cut buffer within the project boundary to protect old growth timber, wildlife habitat, and water quality.	River Alliance	$0	$0	$0
Develop an invasive species management plan that includes provisions for conducting invasive species surveys every other year and removing or chemically treating any new invasive species.	Northern States	$5,000	$16,827[j]	$17,271
Develop a plan for monitoring invasive species every 2 years, including provisions for using the "*Early Detection and Rapid Response Methodology*" for invasive species listed as prohibited under Wisconsin NR 40.	River Alliance	$5,000	$16,827[j]	$17,271
Develop an invasive species mitigation plan to monitor invasive species and mitigate their spread through the implementation of an education and boat inspection program.	Gile Association	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost

Enhancement/Mitigation Measure	Entity	Capital Cost (2024$)	Annual Cost[a] (2024$)	Levelized Annual Cost[b] (2024$)
Recreation and Land Use Resources				
To provide project-related recreation opportunities, maintain the new boat take-out site, new portage trail, and existing boat put-in site as project facilities.	Northern States, Interior,[k] American Whitewater, Staff	$6,000	$750	$1,283[l]
Include general information on reservoir water levels, flow releases, and other aspects of the project that affect recreation opportunities and experiences on informational signage.	Interior, Staff	$0	$0	$0[m]
Include a QR code and website address on signage so the public can access up-to-date information on real-time flows, reservoir elevations, flow release schedules, and how to access the boat put-in site.	Interior	$0	$0	$0[m]
Install a sign for the put-in site below the dam, to warn boaters of whitewater flows downstream of the dam.	Interior, American Whitewater, Gile Association	$2,000	$0	$178
Enhance the put-in site to improve safety and meet demand for whitewater boating.	Interior	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost[n]

Enhancement/Mitigation Measure	Entity	Capital Cost (2024$)	Annual Cost[a] (2024$)	Levelized Annual Cost[b] (2024$)
Install a fully accessible fishing area, including the following amenities: a fishing platform, parking lot, pathway, bathrooms, signage, and trash bins.	Interior	$85,000	$10,000	$17,550[o]
Develop a recreation management plan with the following provisions: (1) provide necessary parking facilities; (2) provide brochures showing the location of recreational facilities; (3) maintain recreation facilities in good condition; (4) upgrade the recreational signage to current FERC standards throughout the project; and (5) install new recreational facilities over the period of the license on an as needed basis as demand dictates.	River Alliance	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost[p]
To enhance recreation at the project, develop a recreation management plan that contains the following provisions: (1) a description of all licensed project recreation facilities, including a map; (2) a description of operation and maintenance of the licensed project recreation facilities; (3) a description of all recreational signage required by the license, including the location and content of the signage; and (4) a schedule for completing all required recreation improvements.	Staff	$5,000[q]	$0	$444

Enhancement/Mitigation Measure	Entity	Capital Cost (2024$)	Annual Cost[a] (2024$)	Levelized Annual Cost[b] (2024$)
To enhance recreation access, implement the following improvements: (1) include, on the Part 8 sign, a map of the licensed project recreation facilities, the project website address, and a description of project operation that could affect recreation, including reservoir elevations, drawdown schedule/rate, minimum flow releases, and whitewater boating flow releases; (2) install a sign at the put-in site that warns boaters of potentially dangerous boating conditions in the West Fork downstream of the dam and provides information on whitewater boating classifications; (3) remove rocks at the put-in site to ensure safe water access for whitewater boaters; and (4) remove barriers on the earthen embankment to provide fully accessible fishing access.	Staff	$6,500[r]	$0	$577
Provide maintenance and mitigation measures at the four public trailer boat sites that provide access to the reservoir.	Interior	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost
Develop a boat landing maintenance and mitigation plan to maintain the trailer boat sites.	Gile Association	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost

Enhancement/Mitigation Measure	Entity	Capital Cost (2024$)	Annual Cost[a] (2024$)	Levelized Annual Cost[b] (2024$)
Publish information on project operation on public recreation outreach materials published by Gile Association and Iron County, including information on project flow releases and reservoir levels.	Gile Association	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost
Post information on project operation at the four non-project public trailer boat sites, including information on project flow releases and reservoir levels	Gile Association	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost
To ensure recreation opportunities at the project remain throughout the term of any license, reserve the Commission's right to require additional recreation measures in the future and require Northern States to notify the Commission if operation ceases at non-project recreation sites that provide trailered boats with access to the reservoir.	Staff	$0	$0	$0
To provide scheduled whitewater boating opportunities downstream of the project, develop a whitewater recreation plan that includes the following provisions: (1) two 3-hour whitewater flow releases of 1,200 cfs, beginning in the morning on a day in June and a day in September; (2) identify the day and timing of each flow release; (3) flow ramping for 1 hour before and after each whitewater flow releases; and (4) publishing average daily discharge and reservoir elevation information on the internet.	Northern States, Interior, American Whitewater, Gile Association, Staff	$55,000	$2,000	$6,886[s]

Enhancement/Mitigation Measure	Entity	Capital Cost (2024$)	Annual Cost[a] (2024$)	Levelized Annual Cost[b] (2024$)
Provide real-time flow information for recreation users on the internet and make it available for use by third-party sites using an Application Programming Interface.	Interior, American Whitewater	$45,000	$26,000	$29,997[t]
Include any forecast or operational information that could affect instream flows on the website for real-time flow information.	American Whitewater	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost[u]
Provide real-time flow and reservoir level information on a website to improve user safety, accessibility, and experience.	Gile Association	$60,000	$38,500	$43,830[v]
Include a requirement for an annual meeting in the proposed whitewater recreation plan to discuss measures, resolve flow implementation issues, and schedule whitewater opportunities at the Saxon and Gile Projects.	Interior, American Whitewater, Gile Association	$0	$0	$0
Conduct a review of the whitewater recreation plan 3 years after its implementation, and every 10 years thereafter to assess the adequacy of public access, effects on Gile Flowage property owners, hydropower operations, public safety, and the suitability of the timing, duration, and magnitude of whitewater flows.	American Whitewater	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost

Enhancement/Mitigation Measure	Entity	Capital Cost (2024$)	Annual Cost[a] (2024$)	Levelized Annual Cost[b] (2024$)
Develop the proposed whitewater recreation plan with the following additional provisions: (1) publish the following additional information on the website: (a) instructions on how to access the put-in site, including parking and directions to the site; (b) the specific days and timing of scheduled whitewater flow releases; and (c) updates on any scheduled project maintenance that could affect access to the put-in site or scheduled whitewater flow releases; and (2) an annual whitewater release coordination meeting between Northern States and interested stakeholders to discuss the scheduled flow releases for the upcoming boating season, including whether any changes to the schedule are needed in light of foreseeable information on flows and potential scheduling conflicts.	Staff	$0	$0[w]	$0
Develop a land management plan that includes: (1) a natural resource survey of existing plants and animals present on the islands; (2) management of recreation use through preventative and management measures, such as garbage bins, portable toilets or latrines, signage, visitor education, Leave No Trace policies, and safety measures; (3) monitoring islands and mitigating any litter and vandalism; and (4) cleaning islands, including maintaining toilets and garbage bins.	Interior	$5,000[e]	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost

Enhancement/Mitigation Measure	Entity	Capital Cost (2024$)	Annual Cost[a] (2024$)	Levelized Annual Cost[b] (2024$)
Manage lands below an elevation of 1,490 feet, including the section of islands exposed when the reservoir drops below this level.	Interior	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost
Develop a land and island management plan to includes: (1) a natural resource survey of existing plants and animals present on the islands and recommendations to conserve them; (2) policies for recreational use on applicant-owned lands, especially camping and overnight use on islands, and a plan for disseminating the policies to the public through signage, education, and enforcement; (3) recreation management, monitoring, and mitigation for litter, sanitation, vandalism, environmental damage issues, including island clean-ups; and (4) public education about allowable recreation uses of land and strategies for mitigating user impacts on ecosystems, water quality, and aesthetics.	Gile Association	$5,000[e]	Unknown – recommendation lacks specificity needed to estimate a cost	Unknown – recommendation lacks specificity needed to estimate a cost
Cultural Resources				
Develop an HPMP to protect historic properties that are eligible for or listed on the National Register of Historic Places.	Northern States	$5,000[e]**Error! Bookmark not defined.**	$0	$444

Enhancement/Mitigation Measure	Entity	Capital Cost (2024$)	Annual Cost[a] (2024$)	Levelized Annual Cost[b] (2024$)
To protect previously unidentified cultural resources that are discovered during project operation, maintenance, or other project-related work involving land-disturbing activities, stop all land-clearing and land-disturbing activities in the vicinity of the resources and consult with the Wisconsin SHPO and Tribes to determine the need for any cultural resource studies or measures.	Staff	$0	$0	$0
To protect cultural resources from any project modifications not specifically authorized by any license, consult with the Wisconsin SHPO and Tribes prior to implementing such project modifications, to determine the effects of the activities and the need for any cultural resource studies or measures.	Staff	$0	$0	$0

(Source: Northern States and Staff).

[a] Annual costs typically include operational and maintenance costs and any other costs that occur on a yearly basis.
[b] All capital and annual costs are converted to equal annual costs over a 30-year period to give a uniform basis for comparing costs.
[c] Recommendation filed under section 10(j) of the FPA.
[d] This measure will result in a loss of 2,103 MWh and 2,402 MWh of generation at the downstream Saxon and Superior projects, respectively.
[e] The capital cost includes $5,000 associated with the administrative cost of developing the plan.
[f] The capital cost includes $5,000 associated with developing the plan, $1,000 associated with installing 2 automatic water level recorders, and $300 associated with installing a staff gage. The annual cost of $1,000 is associated with increased maintenance and recordkeeping costs associated with the water level recorders.

[g] The capital cost includes $5,000 associated with developing the plan and $30,000 associated with installing a USGS-type gage capable of real-time reporting. The annual cost includes $25,000 associated with maintaining the USGS-type gage.

[h] The capital cost includes $30,000 associated with installing a USGS-type gage capable of real-time reporting. The annual cost includes $25,000 associated with maintaining the USGS-type gage.

[i] The cost of conducting a shoreline erosion survey would be $15,000 per event. However, the cost is discounted to account for the implementation schedule.

[j] The cost of conducting an invasive species survey would be $35,000 per survey event. However, the cost is discounted to account for the proposed implementation schedule of biennial surveys.

[k] Interior recommends installing informational signage at the project recreation facilities which is consistent with Northern States' proposal.

[l] The capital cost includes $6,000 for a take-out sign, directional sign along the trail, and a Part 8 sign. The annual cost of $750 is associated with increased operation and maintenance costs of the new portage take-out and trail.

[m] The cost of this measure would be nominal.

[n] Interior generally recommends that Northern States enhance the boat put-in site. While Interior describes access issues such as large rocks that impede access to the river, the existence of a short boardwalk at the put-in site, and a waterlogged put-in site, it does not include specific measures in its recommendation. Staff estimates that the capital and levelized annual costs of removing the large rocks would be $3,000 and $266, respectively. Staff cannot estimate the cost associated with other enhancements, based on the lack of information in Interior's filing.

[o] The capital cost includes construction of the facilities including a 5-foot-wide, 30-foot-long fishing pier, paved parking for 3 accessible spaces, and a 2-person capacity permanent restroom. The annual cost includes $10,000 to maintain the facilities.

[p] Staff estimates that the capital cost and annual cost of providing brochures would be $1,000 and $240, respectively. The levelized annual cost of providing brochures would be $329. Staff cannot estimate the cost associated with other enhancements, based on the lack of information in River Alliance's filing.

[q] The cost includes $5,000 to develop a recreation management plan.

[r] The cost includes $500 for including a map of the project recreation facilities on a Part 8 sign, $2,000 to install a warning sign at the put-in site, $3,000 to clear the large rocks at the put-in site, and $1,000 to provide fully accessible fishing access on the embankment. The cost of posting the website address and information on project operation that could affect recreation on a Part 8 sign would be nominal.

[s] The capital cost includes $5,000 for plan development and $50,000 to publish average daily discharge and reservoir elevation information on the internet. The annual cost includes $1,000 for personnel to provide whitewater flow releases and $1,000 to operate and maintain a website for flow information.

[t] The capital cost includes $30,000 for a new gage to provide real-time flow data on the internet and $15,000 for the Application Programming Interface. The annual cost includes $25,000 associated with maintaining the new real-time flow gage and $1,000 for maintaining the website and application.

[u] The cost of the website is included in the previous measure. The cost of providing forecast or operational information that could affect flow is unknown because American Whitewater did not provide sufficient detail to estimate a cost for this measure.

[v] The capital cost includes $60,000 for two new gages to provide real-time flow and reservoir elevation data on the internet. The annual cost includes 37,500 associated with maintaining the real-time gages and $1,000 for maintaining the website.

[w] The annual cost to implement these measures would be nominal.

APPENDIX H

COMPREHENSIVE DEVELOPMENT

This appendix discusses the basis for the measures listed in section 5.1.2, *Measures Recommended by Staff*, including the additional measures and modifications to Northern States' proposal recommended by Commission staff. In addition, this section discussed the basis for measures that are not recommended by staff.[97]

Measures Recommended by Staff

Bat Protection

As discussed in Appendix E, *Biological Assessment*, suitable summer habitat for the federally listed endangered northern long-eared bat (NLEB) is present in the proposed project boundary and project maintenance could require periodic tree removal that may affect NLEB habitat. Avoiding the removal of non-hazardous trees that are 3 inches in diameter at breast height (dbh) or greater in diameter from April 15 through September 30, would protect NLEB pups and adults from harm related to project operation and maintenance. There would be no cost associated with this tree removal restriction and staff recommends it.

Whitewater Recreation Plan

As discussed in section 3.3.5.1, *Recreation and Land Use, Affected Environment*, whitewater boaters use an existing put-in site immediately downstream of the dam, to access a section of the West Fork of the Montreal River (West Fork) that provides whitewater boating opportunities. Northern States Power Company (Northern States) proposes to maintain the put-in site as a project recreation facility, which staff recommends in section 5.1.1, *Measures Proposed by the Applicant*.

Northern States proposes to develop a whitewater recreation plan that that includes the following provisions: (1) two 3-hour whitewater flow releases of 1,200 cubic feet per second (cfs), beginning in the morning on a day in June and a day in September; (2) identify the day and timing of each flow release; (3) flow ramping for 1 hour before and after each whitewater flow release; and (4) publishing average daily discharge and reservoir elevation information on the internet. U.S. Department of the Interior (Interior), American Whitewater, and Friends of the Gile Flowage Lake Association (Gile Association) support Northern States' proposal to develop a whitewater recreation plan in consultation with interested stakeholders.

As discussed in section 3.3.5.2, *Whitewater Boating*, Northern States' proposal to develop a whitewater recreation plan, in consultation with resource agencies and interested stakeholders, would benefit whitewater recreation by ensuring predictable boating opportunities

[97] *See* section 5.1.1, *Measures Proposed by the Applicant*, for the list of applicant-proposed measures recommended by staff based on the environmental analyses in section 3.0 and the costs in section 4.0.

on the West Fork each year. In section 5.1.1, *Measures Proposed by the Applicant*, staff recommends Northern States' proposed whitewater recreation plan. The following discussion analyzes the costs and benefits of stakeholder modifications and additional measures for the whitewater recreation plan.

Interior and American Whitewater recommend that Northern States provide real-time flow information for recreation users, including publishing the information on the internet and making it available for use by third-party sites using an Application Programming Interface for whitewater boaters. American Whitewater also recommends that the website should include any forecast or operational information that could affect instream flows. Gile Association recommends that Northern States provide real-time flow and reservoir level information on a website.

Interior, American Whitewater, and Gile Association recommend that the whitewater recreation plan include a consultation requirement for an annual meeting to discuss measures, resolve flow implementation issues, and schedule whitewater opportunities at the Saxon Falls Hydroelectric Project (Saxon Project) and Gile Project. American Whitewater also recommends a review of the whitewater recreation plan 3 years after its implementation and every 10 years thereafter, in consultation with interested stakeholders, to assess the adequacy of public access, effects on Gile Flowage property owners, hydropower operations, public safety, and the suitability of the timing, duration, and magnitude of whitewater flows.

As discussed in section 3.3.5.2, *Whitewater Boating*, Northern States' proposal to publish average daily discharge and reservoir elevation information on the internet could increase recreation opportunities by providing information to boaters that are interested in utilizing boating flows outside of scheduled whitewater release days. As discussed in section 3.3.5.2, posting the following additional information on the website would ensure boaters are aware of the recreation opportunities: (1) instructions on how to access the put-in site, including parking and directions to the site; (2) the specific days and timing of scheduled whitewater flow releases; and (3) updates on any scheduled project maintenance that could affect access to the put-in site or scheduled whitewater flow releases. Including this additional information on the website would have no additional cost and staff recommends it.

As discussed in section 3.3.5.2, *Whitewater Boating*, publishing real-time flow information as recommended by Interior, American Whitewater, and Gile Association; and publishing forecasts and operational information on internet as recommended by American Whitewater could result in more boaters utilizing unscheduled whitewater flows than under the No-Action Alternative and potentially result in more boaters utilizing unscheduled whitewater flows than under the Proposed Action. Publishing real-time reservoir elevations, as recommended by Gile Association, would not substantially improve the recreation experience in Gile Reservoir compared to the No-Action Alternative or Proposed Action because Northern States would continue to maintain a reservoir drawdown rate of no more than 0.2 foot per day; thus, intraday changes in reservoir level would be minor. Overall, staff concludes that the recommendations would not significantly benefit recreation at the project because flow releases, reservoir levels, and operational forecasts do not significantly change from day to day during normal operating conditions. Staff estimates that the levelized annual cost associated with

publishing real-time flow information and operational forecasts would be at least $29,997[98] and that the levelized annual cost of publishing real-time reservoir elevation information would be $13,833.[99] Staff concludes that the benefits of publishing real-time flows, real-time reservoir elevations, and forecasts/operational information on the internet would not outweigh the costs, and does not recommend them.

As discussed in section 3.3.5.2, *Whitewater Boating*, American Whitewater's recommendation to include provisions in the whitewater recreation plan for an annual consultation meeting to discuss whitewater boating flow releases for the upcoming boating season is supported by Northern States and would provide an opportunity to discuss any issues with the scheduled whitewater flows, such as whether any changes to the schedule are needed in light of foreseeable information on flows and potential scheduling conflicts. This additional measure would have no additional cost and staff recommends it. However, there is no apparent project-related benefit associated with American Whitewater's recommendation to periodically reassess the sufficiency of flow releases and consider changes to the flow releases during the term of any license, and staff does not recommend it.

Based on the analyses discussed above, including the following provisions in the whitewater recreation plan would be beneficial for recreation at the project: (1) two 3-hour whitewater flow releases of 1,200 cfs, beginning in the morning on a day in June and a day in September, as proposed; (2) identification of the day and timing of each scheduled whitewater flow release, as proposed; (3) flow ramping for 1 hour before and after each scheduled whitewater flow release, as proposed; (4) publishing average daily discharge and reservoir elevation information on the internet, as proposed, and provide the following additional information on the website: (a) instructions on how to access the put-in site, including parking and directions to the site; (b) the specific days and timing of scheduled whitewater flow releases; and (c) updates on any scheduled project maintenance that could affect access to the put-in site or scheduled whitewater flow releases; and (5) an annual whitewater release coordination meeting between Northern States and interested stakeholders to discuss the scheduled flow releases for the upcoming boating season, including whether any changes to the schedule are needed in light of foreseeable information on flows and potential scheduling conflicts. Staff estimates that there would be no additional cost associated with the modifications described above, and recommends them.

Recreation Management Plan

As discussed in section 3.3.5.2, *Recreation*, Northern States proposes to maintain an existing hand-carry boat put-in site as a project facility during the term of any license. Northern States also proposes to establish a hand-carry boat take-out site on the east end of the dam and an approximately 500-foot-long portage trail by installing directional signage. Northern States

[98] The additional cost of providing operational forecasts is unknown because American Whitewater did not provide sufficient detail to estimate a cost for this measure.

[99] Gile Association's recommendation to provide real-time flow and reservoir level information has a total levelized annual cost of $43,830 which is $13,833 more than the cost of providing real-time flow information alone.

proposes to maintain the boat take-out site and portage trail as project facilities during the term of any license. In section 5.1.1, *Measures Proposed by the Applicant*, staff recommends Northern States' proposal to maintain the proposed recreation facilities.

River Alliance of Wisconsin (River Alliance) recommends developing a recreation management plan with the following provisions: (1) provide necessary parking facilities; (2) provide brochures showing the location of recreational facilities; (3) maintain all recreation facilities in good condition; (4) upgrade the recreational signage to current Federal Energy Regulatory Commission (FERC or Commission) standards throughout the project; and (5) install new recreational facilities over the period of the license on an as needed basis as demand dictates.

As discussed in section 3.3.5.2, *Recreation*, in response to comments, Northern States supports the development of a recreation management plan that includes the following provisions: (1) description of proposed recreation facilities, including signage; and (2) a schedule for completing all proposed improvements. Developing a recreation plan as recommended by River Alliance and supported by Northern States, would benefit recreation users by providing a single reference document that describes all project recreation facilities, improvements, and maintenance during the term of any license. Staff estimates that the administrative cost of developing the plan would be $5,000, which would result in a levelized annual cost of $444.

River Alliance's recommendations to provide parking facilities and install new recreational facilities as necessary do not include specific measures. Without specific measures to analyze and consider under the Federal Power Act (FPA), staff cannot assess the benefits or costs of the recommendations and do not recommend them. Moreover, as discussed in section 3.3.5.2, *Recreation*, there is no indication that additional parking or recreation facilities would be needed to meet recreation demand during the term of any license.

As discussed in section 3.3.5.2, *Recreation*, River Alliance's recommendation to provide brochures showing the location of recreational facilities would provide similar benefits as Northern States' proposed directional and Part 8 signage. However, recreation brochures could be depleted and intermittently unavailable until refilled by Northern States. Staff estimates that the levelized annual cost of providing brochures at the project would be $329. Staff concludes that the benefits of the brochures do not outweigh the cost, and therefore, does not recommend it.

Based on the conclusions reached above, including the following provisions in the recreation management plan would be beneficial for recreation at the project: (1) a description of all licensed project recreation facilities, including a map; (2) a description of operation and maintenance of the licensed project recreation facilities; (3) a description of all recreational signage required by the license, including the location and content of the signage; and (4) a schedule for completing all required recreation improvements.

Recreation Improvements

Interior, Gile Association, and American Whitewater recommend installing signage at the put-in site to warn boaters of the whitewater flows downstream of the dam. Interior states that

the sign should include information on the river environment, a map of the river, whitewater boating classifications, river hazards, and other information to indicate boating conditions and allow paddlers to make decisions based on the information described on the signage.

Interior recommends enhancing the put-in site to improve safety and meet demand for whitewater boating. Interior states that the site is used as a put-in for whitewater boating in the West Fork, but is not safe or adequate for whitewater boaters because there is riprap situated along the shoreline, a very short boardwalk to access the put-in site, and a waterlogged put-in site. To provide fishing access for people with disabilities, Interior recommends the installation of a fully accessible fishing area, including the following amenities: a fishing platform, parking lot, pathway, bathrooms, signage, and trash bins.

Interior recommends that project signage include general information on reservoir water levels, flow releases, and other aspects of the project that affect recreation opportunities and experiences. Interior also recommends that Northern States include a Quick Response code (QR code) and website address on the signage to provide the public with access to information on real-time flows, reservoir elevations, flow release schedules, and how to access the boat put-in site.

As part of its recommendation to enhance the put-in site, Interior states that large rocks at the put-in site impede river access for whitewater boating. As discussed in section 3.3.5.2, *Recreation*, clearing the large rocks at the put-in site would benefit recreation by providing safe water access for whitewater boaters. In its response comments, Northern States supports rearranging the large rocks at the put-in site to improve access. Staff estimates that the capital cost of clearing the rocks would be $3,000, which would result in a levelized annual cost of $266. Staff concludes that the benefits of clearing the rocks from the put-in site outweigh the costs, and recommends it. While Interior also discusses other access issues at the put-in site, including the existence of a short boardwalk and a waterlogged put-in site, Northern States made improvements in 2023 to allow for better drainage at the put-in site. Interior does not recommend any specific measures for further enhancing the put-in site. Without specific measures to analyze and consider under the FPA, staff cannot assess the benefits or costs of further enhancements and does not recommend them.

In its response to comments, Northern States states that it supports the installation of a warning sign at the put-in site as recommended by Interior, Gile Association, and American Whitewater. As discussed in section 3.3.5.2, *Recreation*, installing a warning sign at the put-in site that warns boaters of whitewater flows downstream of the dam and provides information on whitewater boating classifications, as recommended by Interior, would inform boaters of the types of whitewater boating opportunities available in the West Fork and enhance public safety by ensuring that boaters are aware of potentially hazardous boating conditions downstream of the dam. Staff estimates that the capital cost of installing the warning sign at the put-in site would be $2,000, which would result in a levelized annual cost of $178. Staff concludes that the benefits of installing the warning sign outweigh the cost, and recommends it. Interior's recommendations to include information on the river environment, a map of the river, river hazards, and other information to describe boating conditions on signage are not specific. Therefore, staff cannot identify any project-related benefits associated with these recommendations, and does not recommend them.

Interior's recommendation to install a fully accessible fishing area at the project, including a fishing platform, parking lot, pathway, bathrooms, signage, and trash bins, would provide fishing access that is not currently available for people with disabilities. Staff estimates that the levelized annual cost of installing a fully accessible fishing area would be $17,550. Although not proposed by Northern States as part of its license application, Northern States suggested an alternative measure in its response to comments on the draft license application.[100] Specifically, Northern States states that it intends to relocate barriers on the earthen embankment to allow the passage of wheelchairs. Staff estimates that the capital cost of relocating the barriers to enable fully accessible fishing would be $1,000, which would result in a levelized annual cost of $89. Also, as discussed in section 3.3.5.2, *Recreation*, Gile Park, which is immediately east of the project dam, also provides fully accessible amenities, including parking spaces, pathways, bathrooms, and a picnic shelter. In staff's judgment, relocating barriers to enable fully accessible fishing on the earthen embankment strikes the more appropriate balance between costs and benefits for recreation access. Therefore, staff recommends that Northern States remove barriers on the earthen embankment to provide fully accessible fishing access, and does not recommend Interior's fully accessible fishing area.

As discussed in section 3.3.5.2, *Recreation*, Interior's recommendation to post information on project signage about recreation at the project would benefit recreation access. The following information could be included on the proposed Part 8 sign: a map of the project recreation facilities, reservoir elevations, drawdown schedule/rate, minimum flow releases, and whitewater boating flow releases. Staff estimates that the capital cost of including a map of the project recreation facilities on a Part 8 sign would be $500, which would result in a levelized annual cost of $44. The cost of posting information on Part 8 signs about reservoir elevations, drawdowns, and flow releases would be nominal. Staff concludes that the benefits of posting the map and information on project operation would outweigh the costs, and recommends it.

As discussed above in *Whitewater Recreation Plan*, Northern States proposes to establish a website for project recreation and staff recommends it as part of the whitewater recreation plan. Interior's recommendation to include Northern States' website address on project signage, such as Part 8 signage, would ensure that recreation users are aware of the website and able to utilize the information posted by Northern States. The cost of posting the website address on Part 8 signs would be nominal and staff recommends it. However, Interior does not describe any benefits associated with including a QR code on project signage. Without any additional benefit to recreation access, staff does not recommend including a QR code on project signage.

Conclusions

Based on the analyses discussed above, the following improvements would enhance access and benefit recreation at the project: (1) include, on the Part 8 sign, a map of the licensed project recreation facilities, the project website address, and a description of project operation that could affect recreation, including reservoir elevations, drawdown schedule/rate, minimum flow releases, and whitewater boating flow releases; (2) install a sign at the put-in site that warns boaters of potentially dangerous boating conditions in the West Fork downstream of the dam and

[100] *See* Northern States' August 18, 2023, Final License Application at Exhibit E, Appendix E-29, *Comments on DLA and NSPW's Responses*.

provides information on whitewater boating classifications; (3) remove rocks at the put-in site to ensure safe water access for whitewater boaters; and (4) remove barriers on the earthen embankment to provide fully accessible fishing access. Staff estimates that the total levelized annual cost associated with these measures would be $577. Staff concludes that the benefits associated with these measures would outweigh the costs, and recommends them.

Reservation of Authority at Trailer Boat Sites

As discussed in section 3.3.5.1, *Recreation and Land Use, Affected Environment*, the following recreation sites provide trailered boats with access to the reservoir: Gile Park, Sucker Hole Landing, Town of Pence Landing, and County Highway C Landing. These four public trailer boat sites are currently owned and maintained by local governments.

Interior recommends that Northern States provide maintenance and mitigation measures at the four public trailer boat sites that provide access to the reservoir. Gile Association recommends developing a boat landing maintenance and mitigation plan to maintain the trailer boat sites. Gile Association also recommends that Northern States post information on project operation at the four non-project public trailer boat sites, including information on project flow releases and reservoir levels.

As discussed in section 3.3.5.2, *Recreation,* there is no reasonably foreseeable project-related benefit to requiring Northern States to maintain the four public trailer boat sites as project recreation facilities and post project-specific information at these sites. Therefore, staff does not recommend Interior's or Gile Association's recommendations to provide maintenance, mitigation, or information at the sites. However, if the local governments cease to maintain the sites, then boating access to the reservoir could be detrimentally affected. To ensure trailered boat access to the reservoir remains throughout the term of any license, Northern States could notify the Commission if any of the previously discussed recreation facilities ceases operation, and the Commission could reserve its right to require additional recreation measures in the future. This measure would benefit recreation at the project by ensuring continued motorboat access to the reservoir at no additional cost to Northern States, and staff recommends it.

Cultural Resources Protection

As discussed in section 3.3.6.2, *Cultural Resources, Environmental Effects*, there are no known historic properties in the area of potential effects (APE) of the project, and Northern States is not proposing any land-disturbing activities, construction, or modifications to project facilities or operation that would adversely affect cultural resources. During the term of any license, the applicant would occasionally need to conduct maintenance activities at the project that could include ground-disturbing activities that have the potential to affect undiscovered historic and archaeological resources.

To protect previously unidentified cultural resources that are discovered during project operation, maintenance, or other project-related work involving land-disturbing activities, Northern States could stop all land-clearing and land-disturbing activities in the vicinity of the resource and consult with the Wisconsin State Historic Preservation Officer (Wisconsin SHPO) and Tribes to determine the need for any cultural resource studies or measures. In addition, to

protect cultural resources from any project modifications not specifically authorized by any license, Northern States could consult with the Wisconsin SHPO and Tribes prior to implementing such project modifications, to determine the effects of the activities and the need for any cultural resource studies or measures. Implementing these measures would have no cost and we recommend that they be included in any license issued for the project.

Measures Not Recommended

Mode of Operation

Northern States proposes to continue operating the project as a water storage facility and maintaining the reservoir elevation from a minimum elevation of 1,475 feet to a maximum elevation of 1,490 feet, with annual summer and winter drawdowns to augment flows for hydroelectric generation at the downstream projects. Interior recommends, under section 10(j) of the FPA, that the project operate in a run-of-river mode with no hydroelectric peaking.

As discussed in section 3.3.2.2, *Water Resources and Aquatic Habitat*, Interior's recommendation to operate the project in a run-of river mode would require Northern States to provide outflow that approximates inflow and to maintain stable water surface elevations in the reservoir. Operating the project in a run-of-river mode could increase the quality and quantity of aquatic habitat in the reservoir and downstream of the project. However, operating the project in run-of-river mode would not allow the project to meet its purpose of supplying water for hydroelectric generation at the downstream projects. Operating in a run-of-river mode would result in a loss of 2,103 megawatt-hours (MWh) and 2,402 MWh of generation at the downstream Saxon Project and Superior Falls Hydroelectric Project (Superior Project), respectively. Staff finds that the benefits of run-of-river operation to aquatic habitat in the reservoir and downstream of the Gile Project would not outweigh the generation losses at the Saxon and Superior Projects, and therefore, staff does not recommend a license requirement for run-of-river operation at the Gile Project.

Water Quality Monitoring

River Alliance recommends that Northern States develop, in consultation with resource agencies, a plan to monitor dissolved oxygen (DO), water temperature, and other parameters deemed appropriate by Wisconsin and Michigan. Michigan Hydro Relicensing Coalition (Michigan HRC) also recommends that Northern States monitor, among other things, water quality using state-of-the-art protocols and technologies like United States Geological Survey (USGS) gages.

As discussed in section 3.3.2.2, *Water Resources and Aquatic Habitat*, developing a water quality monitoring plan and monitoring water quality, as recommended by River Alliance and Michigan HRC, respectively, could provide information about temperature and DO concentrations during any license term. However, River Alliance and Michigan HRC did not provide any specific measures to enhance water quality, and monitoring itself would not provide any project-related benefits to water quality during the term of a license. Without specific measures to analyze and consider under the FPA, staff cannot assess the project-related benefits or costs of River Alliance's recommended plan and Michigan HRC's recommendation to

monitor water quality. Therefore, staff does not recommend these measures. However, operating the project as proposed by Northern States and recommended by staff in section 5.1.1, *Measures Proposed by the Applicant*, would continue to maintain adequate DO and temperature conditions to sustain aquatic life.

Operation Compliance Monitoring

Northern States proposes to develop an operation compliance monitoring plan to document compliance with the operational requirements of any license, including reservoir elevation and minimum flow requirements. Northern States proposes to include the following provisions in the plan: (1) locations of headwater monitoring probes/gages; (2) frequency of monitoring; (3) procedures for maintaining and calibrating monitoring equipment; (4) standard operating procedures to be implemented outside of normal operating conditions, such as scheduled or emergency facility shutdowns or maintenance activities; (5) a schedule for installing and operating the monitoring equipment; and (6) notification procedures for planned and unplanned deviations. We estimate that the levelized annual cost of Northern States' proposed operation compliance monitoring plan would be $444.

Interior recommends, under section 10(j), that Northern States develop an operation compliance monitoring plan that includes the following provisions: (1) mechanisms for documenting inflow and outflow from the project; (2) installation of staff gages that show the operating band of the reservoir; (3) installation of automatic water level recorders for reservoir elevations; and (4) recording daily operation, reservoir elevations, and flow releases through the sluice gate. We estimate that the levelized annual cost of Interior's recommended operation compliance monitoring plan would be $1,560.

Michigan Department of Environment, Great Lakes, and Energy (Michigan EGLE) recommends that Northern States provide the calculated outflows through each release point at the project with remotely accessible data updated in real-time, similar to a USGS gage. We estimate that the levelized annual cost of Michigan EGLE's recommendation would be $27,665.

River Alliance recommends that Northern States develop an operation compliance monitoring plan that includes provisions for: (1) daily inflow and discharge information; (2) the daily range of reservoir fluctuations; and (3) installation of a USGS gage to ensure accurate data collection. We estimate that the levelized annual cost of River Alliance's recommended operation compliance monitoring plan would be $28,109. Michigan HRC recommends that Northern States monitor flows, reservoir elevations, and water quality using state-of-the-art protocols and technologies like USGS gages. We estimate that the levelized annual cost of Michigan HRC's recommendations would be $27,665.

Overall, as discussed in section 3.3.2.2, *Operation Compliance Monitoring,* Northern States' proposed operation compliance monitoring plan would help the Commission verify that the project is maintaining compliance with reservoir elevation limits, drawdown rates, and minimum flow releases, thereby facilitating administration of the license and avoiding misunderstandings. In section 5.1.1, *Measures Proposed by the Applicant,* staff recommends Northern States' proposed plan.

Section 3.3.2.2, *Operation Compliance Monitoring,* provides a comprehensive analysis of all recommendations. Several of the measures recommended by Interior, Michigan EGLE, Michigan HRC, and River Alliance are included in Northern States' proposed operation compliance monitoring plan. Additional measures for documenting inflow and outflow from the project, including but not limited to Interior's, Michigan EGLE's, Michigan HRC's, and River Alliance's recommendations to use flow and reservoir water level monitoring equipment, including USGS gages, would provide mechanisms for ensuring compliance with reservoir elevations and minimum flow releases. However, Northern States currently monitors the reservoir elevation with an electronic headwater monitoring device, maintains a staff gage that displays the reservoir elevation, and documents flow through the project based on gate openings. Northern States also maintains hourly records of reservoir elevation and calculated flow through the project. As concluded in section 3.3.2.2, it is unclear how the additional measures recommended by stakeholders would provide a significant benefit for maintaining compliance with any proposed or recommended operating requirements. Therefore, we conclude the benefits associated with the additional measures recommended by Interior, Michigan EGLE, Michigan HRC, and River Alliance do not outweigh the costs, and staff does not recommend them.

Drawdown Management Plan

Northern States proposes to limit the reservoir drawdown rate to no more than 0.2 foot per day, with annual summer and winter drawdowns to augment flows for hydroelectric generation at the downstream Saxon and Superior Projects. Northern States proposes to notify the Commission and resource agencies of any planned and unplanned deviations from normal project operation, and only modify project operation for short periods of time of up to 3 weeks, after mutual agreement with U.S. Fish and Wildlife Service (FWS) and Wisconsin Department of Natural Resources (Wisconsin DNR). In section 5.1.1, *Measures Proposed by the Applicant*, staff recommends Northern States' drawdown rate and notification procedures.

Michigan EGLE recommends that Northern States develop a drawdown plan in consultation with Michigan Department of Natural Resources (Michigan DNR) that includes measures to avoid drawdowns and minimize and mitigate the effects of any drawdowns, such as utilizing diving inspections instead of lowering reservoir levels; reducing the magnitude, duration, and rate of drawdowns and refills; and organism stranding and relocation efforts. To protect small fish, mussels, and other aquatic life from becoming stranded in the riverbed and exposed on dewatered riverbeds, River Alliance recommends that Northern States develop, in consultation with resource agencies, a drawdown management plan for drawdowns associated with routine maintenance and emergencies.

As discussed in section 3.3.2.2, *Project Maintenance and Emergencies,* Michigan EGLE's and River Alliance's recommendations to develop a drawdown plan do not include any specific measures. Although Michigan EGLE mentions organism surveying and relocation efforts, it does not describe any specific efforts, such as when surveying would be necessary (e.g., all drawdowns or only drawdowns below certain depths) and procedures for relocating mussels. Without specific measures to analyze and consider under the FPA, staff cannot assess the benefits or costs of the recommendations and does not recommend them.

As discussed in section 3.3.2.2, *Project Maintenance and Emergencies*, the effects of any planned or unplanned drawdowns for maintenance and emergencies on fish, mussels, and other resources within and downstream of the reservoir depend on the seasonal timing, magnitude, duration, drawdown and refill rates, and flow releases downstream of the project. Northern States' proposal to only modify project operation for short periods of time of up to 3 weeks, after mutual agreement with FWS and Wisconsin DNR, would allow for specific measures to be developed in consultation with resource agencies for each planned drawdown. Obtaining agreement from the resource agencies (e.g., on timing, duration, and environmental measures) prior to any planned deviation of up to 3 weeks would help protect aquatic resources. For any planned deviation lasting 3 weeks or more, Northern States would file an application for a temporary amendment of the license, which would ensure that the Commission and resource agencies have an opportunity to consider the need for and effects of the proposed actions at that time.

Fish Protection Measures

Northern States proposes to maintain the existing trashrack with 2.625-inch clear bar spacing at the sluice gate. In section 5.1.1, *Measures Proposed by the Applicant*, staff recommends Northern States' proposal.

Interior recommends, under section 10(j), that Northern States install trashracks "above the intake(s) of the powerhouse(s) to minimize fish entrainment and turbine mortality." Interior's recommendation lacks any specific measures. Without specific measures to analyze and consider under the FPA, staff cannot assess the project-related benefits or costs of this recommendation and does not recommend it. As discussed in section 3.3.2.2, *Fish Protection*, the existing trashrack with 2.625-inch clear bar spacing would continue to protect fish populations in the reservoir.

Bat Protection

To protect NLEB, the federally proposed threatened tricolored bat (TCB), and the state-listed threatened little brown bat (LBB) when conducting project maintenance, Northern States proposes to implement the Wisconsin DNR's Broad Incidental Take Permit and Broad Incidental Take Authorization (BITP/A) for Wisconsin Cave Bats, filed as Appendix E-20 of the application. River Alliance recommends that Northern States protect trees that are used for roosting or nesting habitat by NLEB.

As discussed in Appendix E, *Biological Assessment*, and section 3.3.3.2, *Project Operation and Maintenance*, the BITP/A provides take limits and measures for various development and maintenance activities, some of which are unrelated to hydroelectric projects. Regarding the removal of bats from structures and tree cutting, the BITP/A ultimately requires consultation with Wisconsin DNR. Consultation alone is an administrative measure and would not result in any foreseeable environmental benefit for bats. Because there is no foreseeable environmental benefit associated with implementation of the BITP/A, staff does not recommend it.

River Alliance's recommendation to protect trees that are used for roosting or nesting habitat by NLEB does not define any specific measures for protecting trees, such as tree removal restrictions or time periods for any such restrictions. Without specific measures to analyze and consider under the FPA, staff cannot assess the benefits or costs of River Alliance's recommendation and does not recommend it.

As discussed above, in *Measures Recommended by Staff*, staff is recommending that Northern States avoid the removal of non-hazardous trees that are 3 inches dbh or greater in diameter from April 15 through September 30. As discussed in section 3.3.3.2, *Project Operation and Maintenance*, implementing this measure would also protect LBB. As discussed in Appendix E, there is no documentation of TCB at the project and, according to FWS's range map for this species, the project is at least 10 miles away from the furthest extent of the known range of the species (Figure B-2).

Wood Turtle Protection

Northern States proposes to implement Wisconsin DNR's BITP/A for wood turtles, filed as Appendix E-19 of the application, which includes the following measures: (1) relocating any observed wood turtles out of harm's way; and (2) restricting the types of herbicides that can be used when turtles could be negatively impacted. As discussed in section 3.3.3.2, *Project Operation and Maintenance*, the project would not affect wood turtles and Northern States' proposal would provide no benefit to wood turtles. Therefore, staff does not recommend the proposed measure.

Sensitive Species Protection

River Alliance recommends that Northern States develop a plan to protect bald eagles, ospreys, and their nests from land-disturbing activities.

As discussed in section 3.3.3.2, *Project Operation and Maintenance*, River Alliance's recommendation does not include any specific measures to protect eagles or ospreys. Without specific measures to analyze and consider under the FPA, staff cannot assess the benefits or costs of the recommendation, and does not recommend it. As discussed in section 5.1.1, *Measures Proposed by the Applicant*, staff recommends Northern States' proposal to protect bald eagles at the project, prior to any construction, maintenance, or vegetation management activities, by identifying any existing eagle nests at the project, establishing a buffer zone of at least 660 feet between any nest and the project activity.

Vegetation Management Buffer Zone

River Alliance recommends a 200-foot-wide, no-cut buffer within the project boundary to protect old growth timber, wildlife habitat, and water quality. However, as discussed in section 3.3.3.2, *Project Operation and Maintenance*, Northern States is only proposing to maintain vegetation to access project facilities and remove hazard trees. Continuing vegetation management and hazard tree removal around project facilities would not significantly affect old growth timber, wildlife habitat, or water quality. Moreover, maintaining a 200-foot-wide, no-cut buffer is not operationally feasible because Northern States would need to periodically manage

vegetation and remove hazard trees to maintain access to project facilities and safety for recreation users during the term of any license. Because Northern States' proposed vegetation management practices would not significantly affect wildlife or wildlife habitat, and a no-cut buffer as recommended by River Alliance is not operationally feasible, staff does not recommend a no-cut buffer.

Invasive Species Management

Northern States proposes to develop an invasive species management plan that includes: (1) biennial surveys for invasive species at regularly maintained areas, including recreation sites, in July or August; (2) control measures that could include manual removal, mechanical removal, and chemical treatment; (3) installing invasive species informational signs, if provided by Wisconsin DNR; (4) notifying Wisconsin DNR within 5 days of identifying any new "rapid response" species; and (5) annual reporting of monitoring results and a summary of any control activities to Wisconsin DNR and the Commission. River Alliance recommends that Northern States develop a plan for monitoring invasive species every 2 years, including provisions for using the "*Early Detection and Rapid Response Methodology*" for invasive species listed as prohibited under Wisconsin NR 40. Gile Association also recommends that Northern States develop an invasives mitigation plan to monitor invasive species and mitigate their spread through the implementation of an education and boat inspection program.

As discussed in section 3.3.2.2, *Aquatic Invasive Animal Species*, and section 3.3.3.2, *Invasive Species Management*, invasive aquatic animal species and invasive plant species at the project are prevalent throughout the State of Wisconsin. Northern States' proposed invasive species management plan and River Alliance's and Gile Association's recommended invasive species plans could help determine if an invasive species is proliferating at the project during the term of any license and could reduce the proliferation of any such species at the project during the term of any license. However, there is no information in the project record indicating that the project has caused or will cause the spread or proliferation of invasive species; that the invasive species currently at the project are adversely affecting wildlife or its habitat; or that any control measures would be successful at reducing invasive species. Therefore, there is no apparent benefit from any of the proposed or recommended invasive species plans. Accordingly, Northern States' and River Alliance's plans would not be worth the estimated levelized annual cost of $17,271, and staff does not recommend them. Gile Association's recommended plan does not identify specific measures needed to estimate a cost. However, with no apparent project-related benefits associated with an invasive species plan, staff concludes that the plan would not be worth the cost and, therefore, staff does not recommend it.

Publishing Information on Project Operation

Gile Association recommends that Northern States publish information on project operation on public recreation outreach materials published by Gile Association and Iron County, including information on project flow releases and reservoir levels.

As discussed in section 3.3.5.2, *Recreation*, Gile Association's recommendation would provide information about recreation opportunities at the project, but providing recreation information on the proposed Part 8 sign and a project website, as recommended by staff above in

Recreation Improvements, would already ensure the public has information about recreation opportunities at the project. With these measures in any license, Gile Association's recommendation would not provide any significant benefit to recreation access. Gile Association does not provide specific information needed to estimate a cost. Based on the lack of project-related benefits associated with the measure and the fact that the public outreach materials are published by third parties over which the Commission does not have jurisdiction, staff does not recommend Gile Association's recommendation.

Land Management Plan

Interior recommends developing a land management plan that include the following provisions for any islands remaining in Northern States' ownership: (1) a natural resource survey of existing plants and animals present on the islands; (2) management of recreation use through preventative and management measures, such as garbage bins, portable toilets or latrines, signage, visitor education, Leave No Trace policies, and safety measures; (3) monitoring islands and mitigating any litter and vandalism; and (4) cleaning islands, including maintaining toilets and garbage bins. Interior also recommends that Northern States continue to manage lands below an elevation of 1,490 feet, including any portions of islands exposed when the reservoir drops below this level.

Gile Association recommends developing a land management plan that includes the following provisions for any land owned by Northern States by the time any license is issued: (1) a natural resource survey of existing plants and animals present on the islands and recommendations to conserve them; (2) policies for recreational use on applicant-owned lands, especially camping and overnight use on islands, and a plan for disseminating the policies to the public through signage, education, and enforcement; (3) recreation management, monitoring, and mitigation for litter, sanitation, vandalism, environmental damage issues, including island clean-ups; and (4) public education about allowable recreation uses of land and strategies for mitigating user impacts on ecosystems, water quality, and aesthetics.

As discussed in section 3.3.5.2, *Land Use*, Interior's and Gile Association's recommended land management plans would not benefit land uses at the proposed project. Staff estimates that the administrative cost of developing a land management plan would be $5,000, but neither Interior nor Gile Association provided specific measures needed to estimate a levelized annual cost. Without any benefit to land uses at the proposed project, staff concludes that developing the plan is not worth the cost and does not recommend it.

Interior's recommendation to manage land below an elevation of 1,490 feet, including sections of islands exposed when the reservoir drops below 1,490 feet, does not include any specific measures. Without specific measures to analyze and consider under the FPA, staff cannot assess the benefits or costs of the recommendation. Therefore, staff does not recommend it. As discussed in section 5.1.1, *Measures Proposed by the Applicant*, staff recommends Northern States' proposal to survey the reservoir shoreline and riverbanks within the project boundary for erosion every 5 years and file a report on each survey that includes recommendations on whether mitigation of any erosion site is warranted.

Historic Properties Management Plan

Northern States proposes to develop a historic properties management plan (HPMP). However, an HPMP is only needed to mitigate for adverse effects to historic properties within a project's APE. If there are no historic properties or no adverse effects to historic properties, then an HPMP would have no project-related benefit and therefore would not be needed. As discussed in section 3.3.6.2, *Cultural Resources*, there are no known historic properties in the APE and no foreseeable project effects on historic properties. Therefore, the proposed HPMP is not needed to protect any historic properties during the term of any license. Staff is not aware of any other project-related benefits of the HPMP for cultural resources and concludes that implementing the proposed HPMP is not worth the levelized annual cost of $444.

Post-Licensing Consultation

Interior states that issues frequently come up throughout the term of a license, such as power outages, low flows, and unexpected emergencies that may pose a threat to fish and wildlife and recreation resources in the vicinity of the project. Interior recommends Northern States consult with FWS, Bureau of Indian Affairs, Tribes, Wisconsin DNR, and Michigan DNR on matters affecting fish and wildlife resources and National Park Service and Wisconsin DNR on recreational use throughout the term of any license.

Consultation alone is an administrative measure and would not result in any foreseeable project-related environmental benefit for fish, wildlife, or recreation resources. However, Northern States proposes and staff recommends developing an operation compliance monitoring plan that would include consultation with resource agencies. Northern States also proposes and staff also recommends notifying the Commission and resource agencies of planned and unplanned deviations (e.g., reservoir drawdowns), and only modifying project operation for short periods of time of up to 3 weeks, after mutual agreement with resource agencies. Staff also recommends developing a recreation management plan and whitewater recreation plan in consultation with resource agencies and other interested stakeholders, to enhance recreation at the project.

In addition to the staff-recommended operation compliance monitoring plan, standard license Article 15[101] provides that the licensee shall, for the conservation and development of fish and wildlife resources, construct, maintain, and operate the project works, and comply with modifications required by the Commission upon its own motion or upon the recommendation of the Secretary of the Interior or state fish and wildlife agencies, after notice and opportunity for hearing. In addition, standard article 3 states that no substantial changes to project works or operation will be permitted without prior Commission approval. Article 3 only permits minor changes in project works or in uses of project land if such changes will not result in an adverse environmental impact. A licensee must file an application to amend the license and receive

[101] *See Standardized Conditions for Inclusion in Preliminary Permits and Licenses Issued Under Part I of the Fed. Power Act*, Order No. 540, 54 FPC 1792 (1975) (providing Form L-3, Article 15).

Commission authorization before substantially modifying project works or operation.[102] Further, before filing an amendment application, the licensee must consult with any resource agency whose interests would be affected by the amendment,[103] such as FWS if fish and wildlife species would be affected by the amendment.

Because the staff-recommended operation compliance monitoring plan, deviation procedures, recreation management plan, whitewater recreation plan, and the Commission's standard license articles and regulations already provide post-license notification and consultation procedures, Interior's recommendation for consultation would have no incremental project-related benefits, and staff does not recommend it.

[102] *See id.* at Article 3.

[103] *See* 18 C.F.R. §§ 4.38(a) and 4.200 (2025).

APPENDIX I

FISH AND WILDLIFE AGENCY SECTION 10(J) RECOMMENDATIONS

Table I-1. Analysis of Interior's fish and wildlife recommendations for the Gile Project (Source: Staff).

Recommendation	Within the Scope of Section 10(j)	Levelized Annual Cost	Adopted?
Operate the project in a run-of-river mode with no hydroelectric peaking.	Yes	$0	No. Measure is inconsistent with sections 4(e) and 10(a) of the FPA because the benefits to aquatic habitat would not outweigh the loss of water for hydroelectric generation at the downstream projects and associated reduction in downstream hydroelectric generation.
Develop an operation compliance monitoring plan that includes the following provisions: (1) mechanisms for documenting inflow and outflow from the project; (2) installation of staff gages that show the operating band of the reservoir; (3) installation of automatic water level recorders for reservoir and tailrace elevations; and (4) recording daily turbine operation, reservoir and tailrace elevations, and flow releases through the powerhouse and spillway.	Yes	$1,560	No. Measure is inconsistent with sections 4(e) and 10(a) of the FPA because the benefits do not outweigh the costs. Staff recommends Northern States' proposed operation compliance monitoring plan.
Install trashracks above the intake(s) of the powerhouse(s) to minimize fish entrainment and turbine mortality.	Yes	Unknown – recommendation lacks specificity needed to estimate a cost	No. Interior has not provided specific fish protection measures; therefore, staff cannot analyze the benefits or costs, or consistency with sections 4(e) and 10(a) of the FPA.

APPENDIX J

COMPREHENSIVE PLANS

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APPENDIX K

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APPENDIX L

LIST OF PREPARERS

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APPENDIX M

DRAFT LICENSE ARTICLES RECOMMENDED BY STAFF

Draft Article 4XX. *Project Operation*. In addition to implementing minimum flow requirements, the licensee must maintain the reservoir elevation between a minimum elevation of 1,475 feet and a maximum elevation of 1,490 feet National Geodetic Vertical Datum of 1929. The licensee must limit the reservoir drawdown rate to no more than 0.2 foot per day.

Reporting of Planned Deviations

The licensee may temporarily modify reservoir elevations, drawdown rates, and minimum flow releases for periods of up to 3 weeks after mutual agreement between the licensee and the U.S. Fish and Wildlife Service and Wisconsin Department of Natural Resources (collectively, resource agencies). After obtaining concurrence from the resource agencies, the licensee must file a report with the Secretary of the Commission as soon as possible, but no later than 14 calendar days after the onset of the planned deviation. Each report must include: (1) the reasons for the deviation and how project operation was modified; (2) the duration and magnitude of the deviation; (3) any observed or reported environmental effects; and (4) documentation of consultation with the resource agencies. For planned deviations exceeding three weeks, the licensee must file an application for a temporary amendment of the operational requirements of this license and receive Commission approval prior to implementation.

Reporting of Unplanned Deviations

The licensee may temporarily modify reservoir elevations, drawdown rates, and minimum flow releases if required by operating emergencies beyond the control of the licensee (i.e., unplanned deviations).

For any unplanned deviation that lasts longer than 3 hours ***or*** results in observed or reported environmental effects such as a fish kill, a turbidity plume, bank erosion, or downstream flooding, the licensee must file a report as soon as possible with the resource agencies, and with the Commission no later than 14 calendar days after each such incident. The report must include: (1) the cause of the deviation; (2) the duration and magnitude of the deviation; (3) any pertinent operational and/or monitoring data; (4) a timeline of the incident and the licensee's response; (5) any comments or correspondence received from the resource agencies, or confirmation that no comments were received from the resource agencies; (6) documentation of any observed or reported environmental effects; and (7) where applicable, a description of measures implemented to prevent similar deviations in the future.

For unplanned deviation lasting 3 hours or less that do not result in observed or reported environmental effects, the licensee must file an annual report, by April 1, describing each incident that occurred during the prior January 1 through December 31 time period. The report must include for each deviation: (1) the cause of the deviation; (2) the duration and magnitude of the deviation; (3) any pertinent operational and/or monitoring data; (4) a timeline of the incident and the licensee's response; (5) any comments or correspondence received from the resource agencies, or confirmation that no comments were received from the resource agencies; and (6) a description of measures implemented to prevent similar deviations in the future. If no such deviations occurred

during the reporting period, the licensee must still file a report with the Commission by April 1, stating that no such deviations occurred.

Draft Article 4XX. *Minimum Flow Releases*. The licensee must release a year-round minimum flow of 10 cubic feet per second to the West Fork downstream of the project.

Draft Article 4XX. *Operation Compliance Monitoring Plan.* Within 6 months of license issuance, the licensee must file, for Commission approval, an operation compliance monitoring plan that describes how the licensee will document compliance with the operational requirements of this license. The plan must include, at a minimum, the following provisions: (1) a detailed description of how the licensee will maintain, monitor, and document compliance with the operational requirements of the license, including: (a) the monitoring and recording frequency for each gage and/or measuring device; and (b) a provision to maintain a log of project operation; (2) a description of the gages and other measuring devices that will be used to monitor compliance with license requirements, including the locations of the measuring devices; (3) a description of the procedures for maintaining and calibrating monitoring equipment; (4) standard operating procedures to be implemented outside of normal operating conditions, including during: (a) scheduled facility shutdowns and maintenance; and (b) emergency conditions such as unscheduled facility shutdowns and maintenance; (5) a schedule for installing any monitoring equipment needed to document compliance with the operational requirements of the license; and (6) a description of the notification procedures for planned and unplanned deviations.

The licensee must prepare the plan in consultation with the U.S. Fish and Wildlife Service and Wisconsin Department of Natural Resources (collectively, resource agencies). The licensee must include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been provided to the resource agencies, and specific descriptions of how the resource agencies' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the resource agencies to comment, make recommendations, and approve the plan before filing it with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. The licensee must not implement the plan until the Commission notifies the licensee that the plan is approved. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

Draft Article 4XX. *Erosion Control*. The licensee must implement the soil erosion and sediment control best management practices described in Appendix E-27 of the license application filed on August 18, 2023, prior to any ground-disturbing activities associated with project maintenance.

Draft Article 4XX. *Shoreline and Riverbank Erosion Surveys*. The licensee must survey the reservoir shoreline and riverbanks within the project boundary for erosion every 5 years and file a report containing the survey results with the Commission no later than December 31 of the year in which the survey is conducted. The report must include recommendations on whether mitigation of any erosion site is warranted.

The licensee must allow a minimum of 30 days for Wisconsin DNR to comment and to make recommendations on the report before filing it with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information. The Commission reserves the right to require the licensee to take remedial action based on the report.

Draft Article 4XX. *Northern Long-Eared Bat Protection*. To protect northern long-eared bats, the licensee must not remove non-hazardous trees of 3 inches or greater in diameter at breast height on project land from April 15 through September 30. Tree removal from April 15 through September 30 is not prohibited if the removal is necessary to ensure public or project safety (e.g., removing dead trees that are in danger of falling on recreation sites and project facilities). If trees are removed during this time period on an emergency basis, the licensee must notify the U.S. Fish and Wildlife Service within two business days of the unplanned safety/emergency action and provide details of the action and response.

For purposes of determining compliance with this article, tree removal means cutting down, harvesting, destroying, trimming, or manipulating in any other way the trees, saplings, snags, or any other form of woody vegetation likely to be used by northern long-eared bats.

Draft Article 4XX. *Bald Eagle Protection*. To protect bald eagles at the project from any project-related vegetation management and construction activities, the licensee must implement the following measures: (1) prior to any such activities, identify any existing eagle nests at the project by reviewing the Wisconsin Department of Natural Resources' Natural Heritage Inventory, and (2) establish a buffer zone of at least 660 feet between any nest and the project activity during the nesting season.

Draft Article 4XX. *Recreation Management Plan*. Within one year of license issuance, the licensee must file, for Commission approval, a Recreation Management Plan that includes the following provisions, at a minimum:

(1) a description, including a map, of the type and location of the licensed project recreation facilities in relation to the project boundary, including:
    a. a new hand-carry boat take-out site on the reservoir shoreline on the east end of the dam;
    b. A new, approximately 500-foot-long, portage trail; and
    c. An existing hand-carry boat put-in site located on the east bank of the West Fork of the Montreal River, immediately downstream of the project's stilling basin;

(2) a description of operation and maintenance of the licensed project recreation facilities;

(3) a description of all recreational signage required by the license, including the location and content of proposed directional signage; and

(4) a schedule for completing all required recreation improvements.

The licensee must prepare the plan after consultation with the U.S. Department of Interior, Friends of the Gile Flowage Lake Association, River Alliance of Wisconsin, and American

Whitewater (collectively, resource agencies and stakeholders). The licensee must include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the resource agencies and stakeholders, and specific descriptions of how the resource agencies' and stakeholders' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for resource agencies and stakeholders to comment, make recommendations, and approve the plan before filing it with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan must not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

Draft Article 4XX. *Recreation Improvements*. To enhance recreation access, the licensee must implement the following improvements:

(1) include, on the Part 8 sign, a map of the licensed project recreation facilities, the project website address, and a description of project operation that could affect recreation, including reservoir elevations, drawdown schedule/rate, minimum flow releases, and whitewater boating flow releases;

(2) install a sign at the put-in site that warns boaters of potentially dangerous boating conditions in the West Fork downstream of the dam and provides information on whitewater boating classifications;

(3) remove rocks at the put-in site to ensure safe water access for whitewater boaters;

(4) remove barriers on the earthen embankment to provide fully accessible fishing access.

Draft Article 4XX. *Reservation of Authority for Recreation Access.* The licensee must notify the Commission if Gile Park, Sucker Hole Landing, Town of Pence Landing, or County Highway C Landing cease operation. Authority is reserved to the Commission to require the licensee to implement additional recreation measures if in the public interest.

Draft Article 4XX. *Whitewater Recreation Plan*. Within one year of license issuance, the licensee must file, for Commission approval, a whitewater recreation plan. The plan must include, at a minimum, provisions for: (1) two 3-hour whitewater flow releases of 1,200 cubic feet per second, beginning in the morning on a day in June and a day in September; (2) identification of the day and timing of each whitewater flow release; (3) flow ramping for 1 hour before and after each whitewater flow release; (4) publishing the following information on a project website: (a) average daily discharge; (b) average daily reservoir elevation; (c) instructions on how to access the put-in site, including parking and directions to the site; (d) the specific days and timing of scheduled whitewater flow releases; and (e) updates on any scheduled project maintenance that could affect access to the put-in site or scheduled whitewater flow releases; and (5) an annual whitewater release coordination meeting between the licensee and interested stakeholders, including the resource agencies and stakeholders consulted on the development of this plan, to discuss the

scheduled flow releases for the upcoming boating season, including whether any changes to the schedule are needed in light of foreseeable information on flows and potential scheduling conflicts.

The licensee must prepare the plan after consultation with the U.S. Department of the Interior, Friends of the Gile Flowage Lake Association, River Alliance of Wisconsin, and American Whitewater (collectively, resource agencies and stakeholders). The licensee must include with the plan, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the resource agencies and stakeholders, and specific descriptions of how the resource agencies' and stakeholders' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the resource agencies and stakeholders to comment, make recommendations, and approve the plan before filing it with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan must not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

Draft Article 4XX. *Protection of Cultural Resources*. Prior to implementing any project modifications not specifically authorized by this license, including, but not limited to, maintenance activities, land-clearing or land-disturbing activities, or changes to project operation or facilities, the licensee must consult with the Wisconsin State Historic Preservation Officer (Wisconsin SHPO) and federally recognized Tribes to determine the effects of the activities and the need for any cultural resource studies or measures. If no studies or measures are needed, the licensee must file with the Commission documentation of its consultation with the Wisconsin SHPO and federally recognized Tribes.

If a project modification is determined to affect a historic property, the licensee must file, for Commission approval, a historic properties management plan (HPMP). The HPMP must be prepared by a qualified cultural resource specialist after consultation with the Wisconsin SHPO and federally recognized Tribes. In developing the HPMP, the licensee must use the Advisory Council on Historic Preservation and the Commission's *Guidelines for the Development of Historic Properties Management Plans for FERC Hydroelectric Projects,* dated May 20, 2002. The HPMP must include the following items: (1) a description of each historic property; (2) a description of the potential effect on each historic property; (3) proposed measures for avoiding or mitigating adverse effects; (4) documentation of consultation; and (5) a schedule for implementing mitigation and conducting additional studies.

The Commission reserves the right to require changes to the HPMP. The licensee must not begin implementing the plan until the Commission notifies the licensee that the plan is approved. Upon Commission approval, the licensee must implement the HPMP, including any changes required by the Commission.

Draft Article 4XX. *Protection of Previously Undiscovered Cultural Resources.* If the licensee discovers any unidentified cultural resources during the course of constructing, maintaining, or operating project works or other facilities at the project, the licensee must stop all land-clearing and land-disturbing activities in the vicinity of the resource and consult with the

Wisconsin State Historic Preservation Officer (Wisconsin SHPO) and federally recognized Tribes to determine the need for any cultural resource studies or measures. If no studies or measures are needed, the licensee must file with the Commission documentation of its consultation with the Wisconsin SHPO and federally recognized Tribes.

If a discovered cultural resource is determined to be eligible for listing in the National Register of Historic Places (National Register), the licensee must file, for Commission approval, a historic properties management plan (HPMP) prepared by a qualified cultural resource specialist after consultation with the Wisconsin SHPO and federally recognized Tribes. In developing the HPMP, the licensee must use the Advisory Council on Historic Preservation and the Commission's *Guidelines for the Development of Historic Properties Management Plans for FERC Hydroelectric Projects*, dated May 20, 2002. The HPMP must include the following items: (1) a description of each discovered property, indicating whether it is listed in or eligible to be listed in the National Register; (2) a description of the potential effect on each discovered property; (3) proposed measures for avoiding or mitigating adverse effects; (4) documentation of consultation; and (5) a schedule for implementing mitigation and conducting additional studies. The Commission reserves the right to require changes to the HPMP.

The licensee must not resume land-clearing or land-disturbing activities in the vicinity of a cultural resource discovered during construction, or implement any project modifications, other than those specifically authorized in this license, until informed by the Commission that the requirements of this article have been fulfilled.