August 26, 2020

VIA E-FILING

Ms. Kimberly D. Bose, Secretary
Mr. Nathaniel J. Davis, Sr., Deputy Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

RE: FERC Project No. 4108 – St. Cloud, Revised Study Plan

Dear Secretary Bose:

Pursuant to 18 CFR §5.13, the City of St. Cloud (City) herein electronically files with the Federal Energy Regulatory Commission (FERC) this Revised Study Plan (RSP)for relicensing the St. Cloud Hydroelectric Project, FERC Project No. 4108 (Project).

The City filed a Notice of Intent (NOI) and Pre-Application Document (PAD) for the Project on November 15, 2019. Following the filing of the NOI and PAD, the FERC prepared and issued Scoping Document 1 (SD1) on January 10, 2020 and issued an errata notice to the SD1 on January 17, 2020. The FERC held agency and public scoping meetings and site environmental review meetings on February 11 and 12, 2020. Interested parties were able to file comments on the PAD and SD1 and request studies until March 14, 2020. Within 45 days from the comment period of the PAD closing, the City was required to prepare and file a PSP. The City submitted the PSP on April 28, 2020. Interested parties filed comments on the PSP, and a conference call was held on May 20, 2020. The City then developed the RSP, incorporating the filed comments.

In accordance with the Commission's regulations, 18 CFR §5.1(d), the City is providing notification of the availability of the RSP to appropriate federal and state agencies, Indian tribes, local governments, and members of the public likely to be interested in the proceeding, as set forth on the attached distribution list. All interested parties can access and download the RSP from the City's public website: http://www.ci.stcloud.mn.us/1701/Relicensing-of-St-Clouds-Hydro-Facility or the FERC's website: https://ferc.gov/docs-filing/elibrary.asp.

Pursuant to 18 CFR §5.13, comments on the RSP must be filed within 15 days of filing the RSP, or by September 10, 2020. Comments must include an explanation of concerns with study plans and agreements reached with the City regarding the concerns (18 CFR §5.13). Additionally, proposed modifications to this RSP must address the study criteria in 18 CFR §5.9(b).

The City looks forward to working with the FERC and other interested parties on Project relicensing. If you have questions regarding the RSP, you may contact Ms. Whitney Hansen at 952-832-2931 or by email at whansen@barr.com or me at 320-255-7226 or by email at tracy.hodel@ci.stcloud.mn.us.

Sincerely,

City of St. Cloud

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Tracy Hodel
Public Services Director

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Revised Study Plan

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Revised Study Plan

Revised Study Plan

St. Cloud Hydroelectric Project
FERC License No. 4108

Prepared for:

CITY OF ST. CLOUD MINNESOTA

August 26, 2020

Available for Public Release

4300 MarketPointe Drive, Suite 200
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Revised Study Plan
St. Cloud Hydroelectric Project
August 26, 2020

Preface

The Revised Study Plan (RSP) for the St. Cloud Hydroelectric Project (Project) submitted by the City of St. Cloud to the Federal Energy Regulatory Commission (FERC) during the Integrated Licensing Process (ILP) is presented herein.

The City filed a Pre-Application Document (PAD) and Notice of Intent (NOI) for a license for the Project on November 15, 2019. The PAD provided a detailed description of the Project and serves as the foundation for issue identification, study plan development, and FERC's environmental analysis. Following the filing of the PAD, FERC prepared and issued Scoping Document 1 (SD1) on January 10, 2020. FERC issued an errata notice to the SD1 on January 17, 2020. FERC held agency and public scoping meetings and a site visit on February 11 and 12, 2020. Public agencies and interested parties were able to file comments on the PAD and SD1 and request studies by March 14, 2020. Within 45 days of the comment period closing on the PAD, the City was required to prepare and file a Proposed Study Plan (PSP), which addressed each of the study criteria, explained how the proposed studies addresses the issues raised during scoping, and filled information gaps identified by the stakeholders. Comments generated by the agencies and interested parties were incorporated into the development of the PSP. Comments on the City's PSP had to be filed within 90 days of filing the PSP, or by July 27, 2020. Comments received on the PSP were reviewed and considered in development of the City's RSP. Comments on the Revised Study Plan are due by September 10, 2020, and the FERC Director's Study Plan Determination will be issued by September 25, 2020.

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Revised Study Plan

August 26, 2020

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List of Appendices

Abbreviations and Acronyms

APE	area of potential effect
CFR	Code of Federal Regulations
cfs	cubic feet per second
City	City of St. Cloud
DO	dissolved oxygen
FERC	Federal Energy Regulatory Commission
GPS	global positioning system
ILP	Integrated Licensing Process
ISP	Individual Standard Permit
ISR	Initial Study Report
MNDNR	Minnesota Department of Natural Resources
MPCA	Minnesota Pollution Control Agency
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NRHP	National Register of Historic Places
PAD	Pre-Application Document
PSP	Proposed Study Plan
RSP	Revised Study Plan
SD1	Scoping Document 1
SHPO	State Historic Preservation Office
U.S.	United States
USACE	U.S. Army Corps of Engineers

1 Introduction

The City of St. Cloud (City) is filing this Revised Study Plan (RSP) with the Federal Energy Regulatory Commission (FERC) for the relicensing of the St. Cloud Hydroelectric Project, FERC No. 4108 (Project), as required by Title 18 of the United States (U.S.) Code of Federal Regulations (18 CFR) § 5.11.

1.1 Pre-Application Document Background

The City filed a Pre-Application Document (PAD) and Notice of Intent (NOI) for a new license for the Project on November 15, 2019. The PAD provides a detailed description of the Project and serves as the foundation for issue identification, study plan development, and FERC's environmental analysis. The City is not proposing any changes to the Project as part of relicensing. The City is using FERC's Integrated Licensing Process (ILP).

The City distributed the PAD and NOI simultaneously to federal and state resource agencies, local governments, Native American tribes, and other stakeholders interested in the relicensing proceedings. A PAD makes known all existing engineering, economic, and environmental information relevant to licensing a project that is reasonably available or can be reasonably obtained with due diligence. The purpose of the PAD was to provide participants in the relicensing process with the information necessary to identify issues and develop study requests; it served as the foundation for issue identification, study plan development, and FERC's environmental analysis. In Section 5 of the PAD, the City identified one potential study that could be used to address gaps associated with available information. The study included a Recreation and Inventory Planning Assessment.

Following the filing of the PAD, FERC prepared and issued Scoping Document 1 (SD1) on January 10, 2020. FERC issued an errata notice to the SD1 on January 17, 2020. FERC held agency and public scoping meetings and a site visit on February 11 and 12, 2020. Public agencies and interested parties were able to file comments on the PAD and SD1 and request studies by March 14, 2020. The letters received in response are included in Appendix H of the PAD.

1.2 Proposed Study Plan

A proposed study plan (PSP) was prepared and filed with the FERC on April 28, 2020. Following the requirements of 18 CFR § 5.11, the study plan addressed each of the study criteria, explained how the proposed studies address the issues raised during scoping, and filled information gaps identified by the stakeholders. Comments generated by the agencies and interested parties on the PAD were incorporated into the development of the PSP.

1.2.1 Proposed Study Plan Comments

The FERC content requirements for the PSP comment process are specified in 18 CFR §5.12. Comments on the project's PSP had to be filed within 90 days of filing the PSP, or by March 14, 2020. Per FERC regulations, comments must include an explanation of concerns with study plans and agreements reached with the City regarding the concerns (18 CFR §5.12). Additionally, proposed modifications to the PSP must

address the study criteria in 18 CFR §5.9(b). Two agencies, FERC and the Minnesota Pollution Control Agency (MPCA), submitted comments on the PSP. These comments are included in the letters found in Appendix A.

1.3 Initial Study Plan Meeting

As required by the ILP (18 CFR § 5.11e), the City held a PSP meeting on May 20, 2020 at 9 am Central Standard Time by teleconference call. Five (5) participants attended the meeting via teleconference call (aside from the City and its consultant). A copy of the minutes from this meeting are included in Appendix B. Due to some technical difficulties during the call, a follow up email was sent to all interested parties offering to provide detailed meeting minutes or set up an additional call if desired. No responses to this email were received.

The purpose of the PSP meeting was to describe the studies the City is proposing to complete and rationale for each. During this meeting, a request for any additional information or study requests was made, and outstanding concerns with any of the studies proposed in the PSP was discussed. No additional PSP meetings were requests or scheduled.

1.4 Revised Study Plan

This RSP has been prepared in accordance with requirements of 18 CFR § 5.12 to include comments on the PSP and a description of the efforts made to resolve differences over study plan requests. FERC requested an additional study to evaluate dissolved oxygen and temperature during the PSP review/comment period; this study has been incorporated. In addition, the MPCA submitted a response to the City's rationale for not including the agency's requested bathymetric and accumulated sediment study as part of the PSP. The dam structure existed prior to 1984 – the year in which the hydropower Project was added to the dam and licensed by FERC. As such, the dam structure itself is what is retaining sediment, not the hydropower operation. The hydropower Project operations have no effect on sediment accumulation or sediment content. Additionally, the MPCA's proposed bathymetric and accumulated sediment study will not inform the development of license requirements. As such, this study has not been adopted for relicensing efforts.

2 Proposed Study Plan Comments and Responses

Written comments on the PSP were due on by July 27, 2020. FERC and the MPCA submitted comments on the PSP. Responses to comments are provided below, with the full comment letter provided in Appendix A. Additional information provided in follow up to a meeting held during the PSP review is provided in Appendix B.

2.1 FERC PSP Comments and Responses

Comment 1: In Section 5.1 of the proposed study plan, *Dissolved Oxygen and Temperature Study*, City of St. Cloud states that it has not adopted the staff-requested study because additional dissolved oxygen (DO) and temperature data was obtained from existing monitoring stations upstream and downstream of the project that would assist with comparing existing DO levels and water temperature against state water quality standards. While some existing point measurements of DO levels and temperature are available upstream and downstream of the project, a thorough assessment of DO levels and temperature has not been completed at the project. For example, there is no DO or temperature data available from the tailrace or scour pool downstream of the dam, nor is there any continuous monitoring data, which would be necessary to describe existing conditions and potential project effects throughout an entire 24-hour period and at different times of the summer, such as during warm and low flow periods. Therefore, City of St. Cloud should conduct a water quality study, as described in our March 12, 2020 study request.

Response 1: *Comment noted. This RSP incorporates a Dissolved Oxygen and Temperature Study.*

2.2 MPCA PSP Comments and Responses

Comment 1: If available, please forward the baseline conditions from 1984. The Impoundment Bathymetric Study and Sediment Accumulation and Contaminant Study should be conducted to measure any bathymetric and sediment changes from 1984 to 2020. If there is no baseline data from 1984, information obtained in 2021/2022 will serve as baseline data for future reference and use.

Response 1: *Impoundment bathymetry and accumulated sediment information from 1984 is not available.*

Comment 2: As in similar hydroelectric relicensing projects, the applicant is responsible to submit the Bathymetric Study and Sediment Accumulation and Contaminant Study methodology including the processes and procedures to obtain required data. The Studies are reviewed by MPCA for comment and completeness. They are then returned to applicant to conduct and implement the prescribed studies.

Response 2: *Comment noted.*

Comment 3: Without baseline information from 1984 and completing the requested studies for 2021-2022, there is no way to determine if the project has negatively affected sediment in the reservoir, exacerbates sediment in reservoir, or mobilizes sediment in the reservoir. These studies should be conducted to obtain data and establish a current baseline.

Response 3: *Comment noted.*

Comment 4: If no dredging or fill material are required for this project and a 404 Individual Standard Permit (ISP) will not be public noticed, please submit the specific permit that is required by the U.S. Army Corps of Engineers (USACE). What specific permitting vehicle would this project be required to follow? In addition, in the event an ISP is not required, baseline water quality data obtained would be beneficial for future licensing and a metric to current and future human activity.

Response 4: *The USACE regulates placement of dredge and fill in agency-jurisdictional waters under the Section 404 permitting program. The relicensing Project intends to continue to operate the facility in a manner consistent with the existing operations plan and FERC license. Since the relicensing Project is a continuation of current project operations, with no dredge, fill, or other construction activities, no USACE permits apply to the Project.*

3 Study Plan Proposals

3.1 Dissolved Oxygen and Temperature Study

FERC has requested a baseline DO and temperature study to evaluate the DO concentration and temperature of water in the project reservoir and immediately downstream of the dam in the Mississippi River during summer conditions.

3.1.1 Goals and Objectives

The goal of this study is to determine if DO and temperature at the Project meet state applicable state water quality standards. The objectives of this study are to:

- Identify do concentration and temperature of water entering the Project intakes;
- Identify any vertical DO concentration and temperature profiles within the Project reservoir;
- Describe spatial and temporal variations of DO concentration and temperature within the Project reservoir and immediately downstream of the powerhouse and dam;
- Identify conditions when discharge from the Project does not meet applicable state DO concentration and temperature standards and evaluate the frequency and duration of these events; and
- Quantify and describe any changes of DO concentration and temperature in the river downstream of the Project.

3.1.2 Known Resource Management Goals

The state of Minnesota has established water quality standards (Minnesota Rules, Chapter 7050) to protect water resources for uses such as fishing, swimming, and other recreation and to sustain aquatic life. These standards are a measure to identify polluted waters or healthy waters in need of protection and guide the limits on what regulated facilities can discharge to surface water. These rules are administered by the MPCA. The MPCA is continually working to revise, develop, and otherwise improve Minnesota's water quality standards.

3.1.3 Public Interest Considerations

FERC must give equal consideration to all uses of the waterway on which a project is located and what conditions should be placed on any license that may be issued. In making its license decision, FERC must equally consider the environment, recreation, fish and wildlife, and other non-developmental values of the Project, as well as power and other developmental values.

Water quality at the Project supports an aquatic ecosystem that provides public opportunities, including sport fisheries. FERC considers the effects of Project operation on water quality relevant to its public interest determination.

3.1.4 Background and Existing Information

The MPCA has a number of monitoring stations upstream and downstream of the Project, as noted in the April 28, 2020 PSP. However, there is no existing data available in the Project's tailrace. In addition, existing monitoring data is not continuous; as such, it cannot be used to discern existing conditions and potential project effects throughout an entire 24-hour period or at different times of the summer (i.e. warm periods or periods of low flow).

3.1.5 Project Nexus

Typically, lower DO concentrations are most likely to exist during summer months when water temperatures are increased. Collecting water temperature and DO data immediately upstream and downstream of the Project during the summer months helps determine if Project operation is negatively affecting water quality at the Project. Therefore, understanding current DO and temperature conditions would inform the need for and development of potential license conditions to protect aquatic resources at the Project.

3.1.6 Proposed Study Methodology

The proposed study methodology for the Dissolved Oxygen and Temperature Study is described in the following sections.

3.1.6.1 Data Collection

To sample the upstream portion of the Project, DO and temperature measurements will be taken in the reservoir upstream of the intakes at mid-depth (i.e. midway between the top and bottom of the water column). Turbines shall be operating at the time of the measurement. Field notes shall indicate the intake structure where measurements were taken. Habitat type, substrate, water depth, approximate water velocity, and global positioning system (GPS) coordinates of the sampling point(s) will be recorded. To the extent feasible, based on turbine operations, an attempt will be made to take measurements at consistent locations. In addition, DO concentration and temperature will be recorded at the upstream monitoring point twice per month using 3-foot (1-meter) intervals extending through the water column.

Downstream of the Project, DO concentration and temperature will be monitored and recorded at three sites in the Mississippi River as follows: Site 1 – in the tailrace or immediately downstream of the tailrace if the tailrace cannot be safely accessed; and Site 2 – downstream of the dam near the midpoint or east side of the dam to describe water quality conditions in the pool downstream of the dam. Samples will again be collected at mid-depth. Habitat type, substrate, water depth, approximate water velocity, and GPS coordinates of each sampling point will be recorded.

Upstream and downstream sampling will both take place using continuous sampling with measurements collected every 30 minutes from June 1 through September 30. The recording devices will be checked and downloaded every two weeks. At each data download visit, instantaneous DO concentration and temperature will be recorded and compared to the continuously recorded data. The reservoir surface elevation will be recorded during each data download visit, discharge in cubic feet per second (cfs) from

U.S. Geological Survey stream gauge #0527070 will be recorded, and ambient air temperature at the Project will be recorded.

YSI Optical DO Model EcoSense ODO200/OSO200M or equivalent YSI meters equipped with an optical DO prove will be used to collect measurements. The advantage of using an optical DO meter is that it does not require a "warm up" time, requires less frequent maintenance, and the calibration can hold for several months.

The YSI meters would require the following maintenance. The sensing element will be replaced annually in accordance with detailed instructions provided in the YSI user manual. Calibration will be performed at the beginning of the monitoring season, prior to deploying the meters. At each of the two-week data download visits, a calibration check will be performed to determine whether the calibration has drifted, thus requiring recalibration. If needed, recalibration will be conducted in accordance with the YSI user manual.

3.1.6.2 Reporting

Upon conclusion of DO and temperature-monitoring activities, a report will be compiled that includes analytical summaries and graphical representations of the data, including average DO concentration and average temperature with associated measures of confidence. The report will include a histogram of depth, DO, and temperature within the reservoir and a graphical representation of any changes of these components over the monitoring period. The report will also include a histogram of river distance, DO, and temperature content with a similar graphical representation of any changes of these components over the monitoring period.

If DO concentration or temperature conditions downstream of the Project do not meet applicable state water quality standards, the report would provide an analysis of the frequency and duration that the state standards are not met. The report will include all pertinent background information, including a description of calibration methods and records, methods used when downloading and maintaining the YSI meters, and quality assurance/quality control for data management and interpretation. All data points used to develop the report (including latitude/longitude coordinates, date, and time of data collection) will be included as a report appendix.

3.1.7 Cost and Level of Effort

The estimated cost of conducting this study is approximately $25,000 based on the level of effort described through Section 3.1. The Dissolved Oxygen and Temperature Study is expected to take place during one study season in 2021.

3.2 Desktop Fish Entrainment and Impingement Study

At the request of FERC, a desktop fish entrainment and impingement study evaluated fish entrainment (i.e., involuntary passage through intakes and turbines) and fish impingement (i.e., involuntary entrapment against Project features such as screens, trash racks, etc.) As described in Sections 3.2.1 through 3.2.6, this desktop assessment approach relies on results of published turbine passage survival studies and site-

specific turbine specifications to estimate entrainment rates and fish passage survival. Impingement was evaluated qualitatively using publicly available information about fish morphology, trash rack spacing, and calculated approach velocities at intake areas. Estimates derived from this desktop study are expected to be suitable for determining general potential for and levels of entrainment and impingement that may occur as a result of the Project; the findings should not be considered absolute quantitative results.

3.2.1 Goals and Objectives

The goal of this study is to evaluate the potential for fish entrainment and impingement at the Project and its potential effects on the health of this reach of the Mississippi River fishery. The objectives of this study are to:

- Describe the physical characteristics of the intake structures, including the location, dimensions, and the velocity distribution in front of each structure.
- Analyze fish species and/or species groups for factors that influence their vulnerability to impingement, entrainment, and turbine survival.
- Assess the potential for target fish species impingement at the Project.
- Estimate entrainment rates and turbine-passage survival rates for fish species at the Project.
- Describe the likely effects of Project-induced entrainment or impingement on fish resources, based on the physical characteristics of the Project.

3.2.2 Known Resource Management Goals

In Minnesota, fisheries and conservation programs are principally managed by the Minnesota Department of Natural Resources (MNDNR) at the state level and by the U.S. Fish and Wildlife Service (USFWS) at the federal level. MNDNR aims to sustain healthy waterways, conserve aquatic species and habitat, and provide the public access to outdoor recreational opportunities. To enhance fisheries in Minnesota, the MNDNR practices ecosystem-based fisheries management to ensure long-term health of fisheries in rivers and lakes, including the Mississippi River. As part of the MNDNR Ecological and Water Resources Division's 2018–2028 Strategic Plan, the agency emphasized a focus on managing water resources sustainably and preserving biological diversity (reference (1)). The goals of the agency include managing water resources sustainably and improving or maintaining water quality throughout the state. To protect local species, the agency aims to prevent the spread of invasive species and to minimize the impact of these invasive species if they do spread. Finally, the agency will focus in the coming years on protecting ecosystems from the impacts of climate change.

The USFWS also plays a role in managing fisheries on the Mississippi River. According to the agency's 2016–2020 Strategic Plan, it aims to conserve aquatic species through conservation, restoration, and enhancement of habitat (reference (2)). This includes managing aquatic invasive species, many of which threaten the Mississippi River. Additionally, the agency will promote and enhance recreational fishing and other public uses of aquatic resources and educate the public about conservation.

3.2.3 Public Interest Considerations

Sections 4(e) and 10(a) of the Federal Power Act require that FERC give equal consideration to all uses of the waterway on which a project is located. In making its license decision, FERC must equally consider the environmental, recreational, fish and wildlife, and other non-developmental values of the Project, as well as power and developmental values.

Fish populations in the Project boundary support a sport fishery. As such, the effects that operating the Project may have on fisheries resources are relevant to FERC's public interest determination.

3.2.4 Background and Existing Information

The powerhouse is a concrete structure that is approximately 122 feet long and 70 feet wide. The powerhouse is a two-bay intake structure, one for each turbine. Each intake bay is 29 feet, 10.5 inches wide and there is a 4-foot-wide concrete pier separating the bays. The top elevation of the upstream wall (water retaining portion) of the powerhouse is 995.0 feet. The intake bay sill elevation is 938.86 feet. This portion of the powerhouse accommodates the trash racks and upstream bulkheads. The trash racks consist of three horizontal steel beams that support the trash rack guides and bar panels. There are six trash rack panels of vertical bars per intake bay. Each panel slides between the trash rack guide members and bear on the horizontal steel beams. The trash rack bars consist of ¼-inch-wide and 6-inch-deep plates with a bar-clear spacing of 3.5 inches. Intake velocities in front of each turbine intake are unknown. The intake for the bay leads directly into the pit of the turbine and flows out of the powerhouse bay with an exit sill elevation of 940.34 feet.

Existing relevant and available information regarding the fish community was summarized in Section 4.3 of the PAD.

3.2.5 Project Nexus

The Project may result in the mortality of entrained or impinged fish during normal operations. In general, hydropower dams may affect fish species that are more likely to travel through the riverine system than fish species that may inhabit only certain portions of the riverine system (i.e., pools or the impoundment area) for their entire life cycles.

3.2.6 Proposed Study Methodology

The proposed study methodology for the Fish Entrainment and Impingement Study is described in the following sections.

3.2.6.1 Data Collection

The methodology for this analysis will follow standard methods and data sources previously accepted by FERC or standard methods used by fisheries management professionals for desktop evaluation of impingement, entrainment, and turbine mortality (references (3), (4), (5), (6)). Fish that are small enough to pass through the Project's trash racks will be considered susceptible to entrainment. Individuals large enough to be physically excluded due to size (length, width/body depth) will be considered as potentially

susceptible to impingement. Fish species found in the Project reservoir may not be equally susceptible to impingement or entrainment because of individual species habitat use, behaviors, or swimming abilities.

Fish species and abundance information available from the MNDNR and MPCA will be used to characterize the fisheries community composition upstream of the Project. Fish species will be grouped into family groups and size classes for evaluation. For species/family groups where no comparable or applicable data can be found, the survival rate reported for a similar group/size class will be substituted. Fish species/groups for evaluation will be developed in conjunction with the MNDNR. Preliminary review of fisheries data indicates evaluation of walleye, smallmouth bass, largemouth bass, channel catfish, yellow perch, northern pike, bigmouth buffalo, white sucker, shorthead redhorse, and silver redhorse will be considered as potential target species/groups.

Fish entrainment and mortality data from other similar hydroelectric projects (head, turbine type, flow capacity, etc.) will be selected from the databases available from the Electric Power Research Institute (reference (7)) and FERC (reference (3)) to develop a City project estimate using the Project-specific fish species/group assemblages. The evaluation will be sequenced with the following inputs:

1. Develop a matrix of entrainment/impingement/mortality studies that can be applied to the Project.

2. Calculate and estimate fish entrainment rates at the Project site based on available Project operation information. Maximum approach velocity at each turbine will be estimated based on the size of the intake area and the maximum hydraulic capacity at each turbine. Entrainment will be defined as the number of fish/volume of water entrained.

3. Utilize reservoir-specific species compositions in conjunction with applicable prior studies to characterize the composition of the fish community susceptible to impingement or entrainment.

4. Apply physical, biological, or reservoir factor filters that may impact susceptibility to impingement or entrainment at the Project.

5. Estimate the potential for turbine mortality of entrained fish based on turbine mortality estimates from project studies at similar sites. Utilize blade-strike mortality models developed by Franke et al. (reference (8)) if applicable studies are not available.

6. Estimate impingement mortality for fish eliminated from entrainment estimates.

3.2.6.2 Reporting

Reporting will include estimates of entrainment, mortality, and impingement on a monthly fish group/size per hour of Project operation and fish per volume of water passed through the Project. Estimated monthly entrainment and impingement rates will be reported based on the relative abundance of species according to existing fisheries data from the MNDNR.

3.2.7 Cost and Level of Effort

The estimated cost of conducting this study is approximately $25,000 based on the level of effort described throughout Section 3.2. The Desktop Fish Entrainment and Impingement Study is expected to take place over a 3-month period in 2021.

3.3 Cultural Resources Study

At the request of FERC, a cultural resources study is proposed to determine the potential effects of Project operation and maintenance on archaeological and historic resources that are included in or eligible for the National Register of Historic Places (NRHP).

3.3.1 Goals and Objectives

The goal of this study is to identify archaeological and historic resources included in or eligible for the NRHP and determine the potential effects of Project operation and maintenance on these properties. The objectives of this study are to:

- Identify the Project's area of potential effect (APE), with concurrence from the Minnesota State Historic Preservation Office (SHPO).
- After consultation with the Minnesota SHPO and interested tribes, conduct a Phase I field inventory within the APE to locate any historic or archaeological resources.
- Assess NRHP eligibility of historic resources, including the Project itself, on archaeological resources within the APE.
- Evaluate the potential effects the Project could have on historic properties.
- Assess the condition of the area where any historic and archaeological sites are located for shoreline stability and evidence of erosion.

3.3.2 Known Resource Management Goals

The National Historic Preservation Act (NHPA) of 1966 provided for a network of historic preservation offices in every state to lead state-level historic preservation initiatives and help carry out the nation's historic preservation program. The Minnesota SHPO was created in 1969 to provide statewide leadership in management and preservation of Minnesota's archaeological, historic, and architectural resources. The Minnesota SHPO consults with federal and state government agencies to identify historic properties in government project areas and advise on ways to avoid or minimize adverse effects to these resources.

In addition, pursuant to Section 106 of the NHPA, relicensing the Project is considered a federal undertaking. As such, FERC must comply with Section 106, which requires the agency to take into account the Project's effect on historic properties.

3.3.3 Public Interest Consideration

Sections 4(e) and 10(a) of the Federal Power Act require that FERC gives equal consideration to all uses of the waterway on which a project is located. In making its license decision, FERC must equally consider the environmental, recreation, fish and wildlife, and other non-developmental uses of the project, as well as power generation and other developmental values.

Cultural resources are often of particular interest to the public, and Project operation and maintenance may have the potential to affect the value and integrity of cultural resources in the APE. The Project's potential effects on cultural resources is relevant to FERC's public interest determination.

3.3.4 Background and Existing Information

A SHPO database review was completed as part of the PAD development. That review identified known cultural resources within or adjacent to the Project boundary; however, little cultural resources information is available for the immediate Project vicinity.

3.3.5 Project Nexus

Section 106 of the NHPA requires federal agencies to take into account the effects of proposed Projects on any NRHP listed or eligible district, site, building, structure, or other objects meeting listing criteria. Operation and maintenance of the Project could potentially adversely affect historic properties through wave action and associated shoreline erosion.

A cultural resources survey would provide information on existing cultural resources located in the APE, as well as project information on resources that would potentially be eligible for the NRPH and potential Project effects on historic properties. If there would be an adverse effect on historic properties, a historic properties management plan may be required to minimize or mitigate adverse effects.

3.3.6 Proposed Study Methodology

The proposed study methodology for the cultural resources study is described in the following sections.

3.3.6.1 APE Development

Prior to initiating cultural resources review, the Project's APE will be identified and consultation with the Minnesota SHPO and interested tribes completed to develop concurrence on the APE extents, proposed survey methods, potential direct and indirect effects on cultural resources, what properties in the APE are or are not eligible for the NRHP, and any other details relevant to survey and reporting work.

3.3.6.2 Phase I Cultural Resources Inventory

A Phase I Cultural Resources Inventory (Phase I or reconnaissance survey) will be completed according to Minnesota SHPO guidelines. The intent of the Phase I is to characterize properties in the APE with respect to historic context and make recommendations of whether a property is eligible for the NRHP. A literature review of Minnesota SHPO archives will be completed as part of the Phase I. In addition, a site visit will be completed by a qualified archaeologist to assess both current NRHP-listed resources within the APE, as

well as potential previously undocumented cultural resources. Site forms will be completed for previously undocumented resources that meet eligibility criteria and could be affected by the Project.

3.3.6.3 Reporting

A report summarizing findings of the literature review as well as the Phase I will be prepared and submitted to Minnesota SHPO, interested tribes, and FERC for review. The report will include an evaluation of potential direct and indirect Project-related effects to cultural resources. The report will be filed with FERC and other consulting parties as "privileged" and not available for public distribution.

3.3.7 Cost and Level of Effort

The estimated cost of conducting this study is approximately $35,000 based on the level of effort described through Section 3.3. The cultural resources study is expected to take place during one study season in 2021.

3.4 Recreation Use and Inventory Planning Study

A recreation and inventory planning study is proposed to assess the condition of recreation sites/facilities within the Project boundary and site use. FERC provided comments for consideration in study development.

3.4.1 Goals and Objectives

The goals of this study are to gather information on existing recreation sites/facilities, evaluate existing recreational use and capacity, and estimate future recreation demands within the Project boundary. The objectives of this study are to:

- Identify the condition of all informal and formal recreation sites and facilities wholly or partially within the Project boundary.
- Determine current and projected capacity at each recreation site/facility.
- Identify who owns, operates, and maintains each recreation site/facility.
- Conduct visitor surveys during the recreation season to determine the adequacy of Project recreation facilities and whether modifications or upgrades are needed to meet current or future recreation needs.

3.4.2 Known Resource Management Goals

The MNDNR aims to sustain healthy waterways, conserve aquatic species and habitat, and provide the public with access to outdoor recreational opportunities. The MNDNR's water recreation goal is to provide and maintain free, safe, and convenient access to public waters for recreation while protecting and enhancing natural resources through facility design, program management, and public education.

3.4.3 Public Interest Considerations

Sections 4(e) and 10(a) of the Federal Power Act require that FERC give equal consideration to all uses of the waterway on which a project is located. In making its license decision, FERC must equally consider the environmental, recreational, fish and wildlife, and other non-developmental values of the Project, as well as power and developmental values.

The Project allows for and supports several recreation opportunities, including boating, hiking, fishing, watersports, and passive recreation activities. As such, the Project's effects on recreational resources is relevant to FERC's public interest determination.

3.4.4 Background and Existing Information

The Project supports opportunities for fishing at the fishing pier on the west side of the dam, as well as a river trail that traverses the Project boundary. Several additional recreational facilities owned and operated by other entities are located adjacent to the Project boundary, as described in the PAD.

3.4.5 Project Nexus

The City provides recreational opportunities within the Project boundary in accordance with the conditions of its existing license. It also has the responsibility for ongoing maintenance of its recreational facilities (i.e., the fishing pier on the west side of the dam) throughout the license term. FERC requires licensed projects to provide reasonable public recreation opportunities consistent with the safe and effective operation of the Project. FERC also has ongoing responsibility to ensure that those recreation facilities meet recreational demand over the term of the new license.

3.4.6 Proposed Study Methodology

The proposed methodology for the Recreation Use and Inventory Planning Study is described in Sections 3.4.6.1 through 3.4.6.3.

3.4.6.1 Facility Inventory and Condition Assessment

The City will conduct a facility inventory and condition assessment at the fishing pier on the west side of the dam. The facility inventory and condition assessment will include a brief description of the site and location of the facility in relation to the Project boundary, as well as:

- Identification of whether or not the facility is located within the Project boundary;
- Ownership and party responsible for operation and maintenance of the facility;
- Hours and seasons of operation;
- Type, number, and condition of amenities provided, including parking and signage;
- General observations of site use and accessibility; and
- Identification of areas that show signs of erosion or other forms of instability.

Photographs will accompany the facility inventory and condition assessment, and coordination will take place with the facility operator to discuss projected capacity at the facility.

3.4.6.2 Spot Counts

Spot counts record the number of vehicles parked at the site and the number of visitors observed. Spot counts will be conducted at the fishing pier on the west side of the dam. Spot counts will last approximately 5 minutes and provide a snapshot of use at the recreation site. This information will be used in estimating site use.

Spot count days and times will be randomly selected. Spot counts will be completed at different times of the day to account for time of day use patterns. Each spot count will last for 5 minutes and will be conducted on four days per month, including two randomly selected weekdays and two randomly selected weekend days. If a month contains a three-day holiday weekend (e.g., Memorial Day, Independence Day, Labor Day), one day her holiday weekend will be included in addition to the standard spot count days. The spot counts will be completed during the active recreation season to capture recreational use while the fishing pier is open to the public. The recreation season for this Project is defined as the opening weekend of fishing season (mid-May) to the opening weekend of waterfowl hunting season (late September).

3.4.6.3 Reporting

The City will prepare a report that includes a discussion of the number of days spent monitoring the fishing pier on the west side of the dam, as well as a determination of the percent of the site's capacity that is currently being utilized. The report will also provide documentation of the facility inventory. Potential future recreation demand and needs over the term of the license will be assessed based on the results of the facility inventory and condition assessment, existing recreation use, estimated population projections, and the demand for future recreational resources.

3.4.7 Cost and Level of Effort

The estimated cost of conducting this study is approximately $9,000 based on the level of effort described throughout Section 3.4. The Recreation Use and Inventory Planning Study is expected to take place during one study season in 2021.

4 Anticipated Study Plan Schedule

FERC's Study Plan Determination is anticipated by September 25, 2020, allowing the City to undertake most of the proposed studies in 2021, as noted in Table 4-1. Based on FERC's ILP regulations, the Initial Study Report (ISR) is due 1 year following FERC's Study Plan Determination (September 25, 2021). In order to obtain agency feedback prior to the 2021 field season, the City anticipates the ISR meeting will occur in October 2021. The updated master schedule that includes the RSPs is in Appendix C. Progress reports of the studies will be filled based on the regulatory deadlines. The progress reports will be filed in electronic pdf format to the FERC elibrary and posted to the City's website.

Table 4-1 Anticipated Study Plan Schedule

Study	Anticipated Study Start Date	Anticipated Study Completion Date
Dissolved Oxygen and Temperature study	May 2021	September 2021
Desktop Fish Entrainment and Impingement Study	May 2021	July 2021
Cultural Resources Study	May 2021	September 2021
Recreation Use and Inventory Planning Study	May 2021	September 2021

5 References

1. **Minnesota Department of Natural Resources.** Ecological and Water Resources Division Strategic Plan 2018-2028. 2018.

2. **U.S. Fish and Wildlife Service.** Strategic Plan for the U.S. Fish and Wildlife Service Fish and Aquatic Conservation Program: FY2016-2020. 2016.

3. **Federal Energy Regulatory Commission.** Preliminary Assessment of Fish Entrainment at Hydropower Projects: A Report on Studies and Protective Measures. June 1995. Paper No. DPR-10.

4. **Alden Research Laboratory Inc.** Guidelines for Hydro Turbine Fish Entrainment and Survival Studies. s.l. : Electric Power Research Institute, August 21, 1997. TR-107299.

5. **Cada, Glenn F., Coutant, Charles C. and Whitney, Richard R.** Development of Biological Criteria for the Design of Advanced Hydropower Turbines. Idaho Falls, Idaho : U.S. Department of Energy, March 1997. DOE/ID-10578.

6. **Bell, M. C.** Revised Compendium on the Success of Passage of Small Fish through Turbines. s.l. : U.S. Army Corps of Engineers, North Pacific Division, 1991.

7. **Alden Research Laboratories, Inc.** Turbine Entrainment and Survival Database - Field Tests. s.l. : Electric Power Research Institute, October 1997. TR-108630.

8. **Franke, G. F., et al.** Development of Environmentally Advanced Hydropower Turbine System Design Concepts. August 1, 1997. INEEUEXT-97-0063.

Appendices

Appendix A

Proposed Study Plan Comments

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D. C. 20426
July 20, 2020

OFFICE OF ENERGY PROJECTS

Project No. 4108-017 – Minnesota
St. Cloud Hydroelectric Project
City of St. Cloud

VIA FERC Service

Ms. Tracy Hodel, Public Services Director
City of St. Cloud
400 2nd Street South
St. Cloud, MN 56301

Reference: Staff Comments on the Proposed Study Plan for the St. Cloud Hydroelectric Project

Dear Ms. Hodel:

We have reviewed City of St. Cloud's proposed study plan for the St. Cloud Hydroelectric Project filed on April 28, 2020, and City of St. Cloud's additional information memorandum filed on June 30, 2020. We provided verbal comments on the proposed study plan during the May 20 and June 10, 2020, study plan meetings. In addition to the verbal comments, we provide written comments on the requested *Water Quality Study* that was not adopted in the proposed study plan in the attached Schedule A.

If you have any questions, please contact Nicholas Ettema at nicholas.ettema@ferc.gov or (312) 596-4447.

Sincerely,

Janet Hutzel, Chief
Midwest Branch
Division of Hydropower Licensing

Enclosure: Schedule A – Comments on Requested Studies Not Adopted

Comments on Requested Studies Not Adopted

Water Quality Study

In section 5.1 of the proposed study plan, *Dissolved Oxygen and Temperature Study*, City of St. Cloud states that it has not adopted the staff-requested study because additional dissolved oxygen (DO) and temperature data was obtained from existing monitoring stations upstream and downstream of the project that would assist with comparing existing DO levels and water temperature against state water quality standards. While some existing point measurements of DO levels and temperature are available upstream and downstream of the project, a thorough assessment of DO levels and temperature has not been completed at the project. For example, there is no DO or temperature data available from the tailrace or scour pool downstream of the dam, nor is there any continuous monitoring data, which would be necessary to describe existing conditions and potential project effects throughout an entire 24-hour period and at different times of the summer, such as during warm and low flow periods. Therefore, City of St. Cloud should conduct a water quality study, as described in our March 12, 2020 study request.

MINNESOTA POLLUTION CONTROL AGENCY

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ORIGINAL

July 23, 2020

Kimberly D. Bose, Secretary
Nathaniel J. Davis, Sr., Deputy Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Tracy Hodel, Public Service Director
400 2nd Street South
St. Cloud, MN 56301

RE: FERC Project No. 4108 – St. Cloud, Hydroelectric Relicensing Project
Proposed Study Plan Response to Comments

Dear Kimberly D. Bose, Nathan J. Davis, and Tracy Hodel:

The following are reasons the City of St. Cloud would not adopt studies recommended by the Minnesota Pollution Control Agency (MPCA) and the MPCA response.

- City of St. Cloud reason: Construction of the dam spillway began in 1969, and the powerhouse and Tainter gate spillway have been in place since initial FERC licensing in 1984. As such, any collected data reflects a changed condition rather than a baseline condition to fully assess the effects of the structure on water quality.

  MPCA Response: If available, please forward the baseline conditions from 1984. The Impoundment Bathymetric Study and Sediment Accumulation and Contaminant Study should be conducted to measure any bathymetric and sedimentation changes from 1984 to 2020. If there is no baseline data from 1984, information obtained in 2021/2022 will serve as baseline data for future reference and use. The following are additional reasons why these studies are recommended:
  - Need for baseline information on sediment contaminants.
  - Sediment deposition conditions formed as by product of hydroelectric dam construction.
  - Past practices of discharge and landscape use have occurred and changed greatly since the dam construction.
  - Deposition of contaminants that may be injurious to human use of Mississippi River surface water for drinking water source at and below St. Cloud.
  - Current (baseline) information is important to be prepared for future meteorological events and conditions.
  - Re-entrainment of sediment contaminants may impart unacceptable conditions in surface water for drinking water use.

By obtaining water quality baseline values the City of St. Cloud can apply that data and information to make risk-based decisions. Managers can use the baseline data to understand current water quality issues. It also will help managers understand the potential risks to receptors and know what areas would benefit from various types of water protection programs.

Baseline provides a snapshot of water quality at a particular point in time. It is used as a point of reference and can therefore be considered to represent a background condition. This concept works well for naturally-occurring chemicals, because concentrations of these chemicals in water should change slowly, if at all. For water sources, affected by human activity, baseline data is essential and needed because water quality may change in response to human activity.

- City of St. Cloud reason: The MPCA does not propose a study methodology that the agency adequately addresses its request for data.

  MPCA Response: As in similar hydroelectric relicensing projects, the applicant is responsible to submit the Bathymetric Study and Sediment Accumulation and Contaminant Study methodology including the processes and procedures to obtain required data. The Studies are reviewed by MPCA for comment and completeness. They are then returned to applicant to conduct and implement the prescribed studies.

  To assist in developing these studies, below is a draft sample outline used in similar type of FERC Hydroelectric relicensing projects:

  Introduction and Background.....

  Bathymetry Study .....
  Study Purpose .....
  Study Methods .....
  Study Results .....

  Sediment Study .....
  Study Purpose .....
  Study Methods .....
  Study Results .....

  Conclusion .....
  References .....

- City of St. Cloud reason: The MPCA does not indicate that Project operation:
  - Is negatively affected by the sediment stored in the reservoir;
  - Exacerbates sediment in the reservoir; or
  - Actively mobilizes sediment in the reservoir.

  MPCA response: Without baseline information from 1984 and completing the requested studies for 2021 -2022, there is no way to determine if the project has negatively affected sediment in

the reservoir; exacerbates sediment in reservoir; or mobilize sediment in the reservoir. These studies should be conducted to obtain data and establish a current baseline.

- City of St. Cloud reason: No dredging are proposed in the project boundary, nor is any additional construction planned that would disturb reservoir sediments.

  MPCA response: If no dredging or fill material are required for this project and a 404 Individual Standard Permit (ISP) will not be public noticed, please submit the specific permit that is required by the U.S. Army Corps of Engineers (USACE). What specific USACE permitting vehicle would this project be required to follow? In addition, in the event an ISP is not required, baseline water quality data obtained would be beneficial for future licensing and a metric to current and future human activity.

Thank you for your time and consideration in this matter and if you have any questions to these comments, please contact Bill Wilde 651-757-2825.

Sincerely,

Anna Hotz
Supervisor
Agency Rules Unit
Resource Management and Assistance Division

AH/BW/ds

cc: Allison Lunde, Barr Engineering

Appendix B

Preliminary Study Plan Meeting Minutes

resourceful. naturally.
engineering and environmental consultants

BARR

Meeting Notes

City of St. Cloud Hydroelectric Facility

Proposed Study Plan Meeting

May 20. 2020
9:10 am CST – 10:30 am CST

Attendees:

FERC: Nicholas Ettema, Laura Washington, Shana Wiseman, Michael Davis

City of St. Cloud: Lisa Vollbrecht, Tracy Hodel, Daryl Stang, Emma Larson

Barr: Allison Lunde, Whitney Hansen, Shanna Braun, Kaitlin Werner

MNDNR: Charlotte Cohen

Agenda Topics:

- Introductions
- Proposed Study Plan (PSP) meeting goals and objectives
- Proposed Studies in PSP
- Studies not proposed in PSP
- Open Discussion
- Future Dates

Introductions

- Two tribes expressed interest in calling in to this meeting. FERC suggested that we contact them after this meeting, explain that we had technical difficulties with the call, and ask if they would like a separate meeting scheduled to review the PSP.
- Welcome
- Current Status:
    - City filed Notice of Intent and Pre-Application Document on November 15, 2019 to initiate the licensing process.
    - FERC provided Scoping Document 1 on January 10, 2020 and errata notice to SD1 on January 17, 2020.
    - FERC held agency and public scoping meetings and site environmental review meeting on February 11 and 12, 2020.
    - Comments to the PAD and SD1 and requested studies were asked to be filed by March 14, 2020.
    - The City and Barr have taken the information provided by FERC and commenters to develop the Proposed Study Plan document, which we are meeting today to provide a brief overview of the studies being proposed and not being proposed and to hear feedback. The feedback and comments from the PSP will be used to develop a Revised Study Plan (RSP) that will be issued later in 2020.
- Reviewed agenda topics
- We will have time for comments specific to each study (proposed or not included) after the summary of each study. There will also be time for open discussion following conclusion of discussion of all studies.
- Introductions

Proposed Study Plan Meeting Goals and Objectives

- Thanked FERC for feedback throughout project.
- Will go over studies in PSP and those not proposed.
- Main goals to describe PSP so far and listen to feedback. Feedback will be evaluated further after this meeting and used to revise the study plan, as needed.

Proposed Studies in PSP

- Desktop Fish Entrainment and Impingement Study
    - Requested by FERC
        - Purpose: evaluate potential for fish entrainment (involuntary passage through intakes and turbines) and impingement (involuntary entrapment against project features).
        - Desktop approach relies of combination of published turbine passage survival studies and site-specific turbine specifications to generate estimate-based findings.
    - Brief review of goals and objectives
        - Describe physical characteristics of intake structures.
        - Analyze fish species for factors that influence vulnerability to entrainment and/or impingement.
        - Assess potential for target fish species impingement – what specific project features contribute.
        - Estimate entrainment rates and turbine-passage survival rates for fish species.
        - Describe likely effects of Project-induced entrainment or impingement on fisheries resources based on physical characteristics of the Project.
    - Brief overview of proposed study methodology
        - Study proposed to follow standard desktop methods and using data sources previously accepted by FERC and fisheries professionals.
        - Fish that are small enough to pass through trash racks will be considered susceptible to entrainment; individuals large enough to be physically excluded due to size will be considered susceptible to impingement.
        - Data from other similar hydroelectric projects will be selected from databases available from the Electric Power Research Institute to develop a Project estimate using project-specific fish species/group assemblages. Based on data from MNDNR.
    - Anticipated schedule
        - Study anticipated to be completed across a 3-month period in 2021.
    - Open discussion
        - MNDNR noted the agency will be submitting comments by July 27. MNDNR will have significant comments on this study.
        - MNDNR requested who is doing the study, Barr or a contractor? Barr stated a contractor for this study has not yet been selected.
- Cultural Resources Study
    - Requested by FERC
        - SHPO database review indicates cultural resources within or adjacent to Project boundary; however, little cultural resources data exists in direct relation to the Project.
    - Brief overview of goals and objectives
        - Develop area of potential effect (APE) in concurrence with SHPO.

        - After consultation with SHPO and interested tribes, conduct Phase I field inventory within APE to locate any historic or archaeological resources.
        - Assess National Register of Historic Places (National Register) eligibility of identified resources within the APE, including the Project itself.
        - Evaluate potential effects Project could have on historic properties.
        - Assess condition of shoreline stability or evidence of erosion at areas where historic/archaeological sites are located.
    - Brief overview of proposed study methodology
        - APE development (in coordination with SHPO and interested tribes).
        - Phase I Cultural Resources Inventory of APE, including site visit to assess sites currently on National Register, as well as potential for undocumented cultural resources.
        - Complete site forms for previously undocumented resources that meet eligibility criteria and could be affected by the Project.
    - Anticipated schedule
        - One study season in 2021.
    - Open discussion
        - FERC noted concern that methodology of the study is not described in detail in the study plan, specifically how the Phase I will be completed.
- Recreation Use and Inventory Planning Study
    - Applicant-proposed study
    - Brief overview of goals and objectives
        - Assess condition of Project recreation sites/facilities.
        - Determine recreation facility ownership, operation & maintenance responsibilities.
        - Determine current and projected capacity of facility.
    - Brief overview of proposed study methodology
        - Per FERC comment on proposed study, the fishing pier downstream on the west side of the river channel will be evaluated.
        - Facility inventory and condition assessment will identify:
            - project's location in relation to Project boundary; ownership; operation & maintenance responsibilities;
            - operational hours;
            - type, number, and condition of site amenities (parking, signage, availability of trash receptacles, other);
            - general observations of use and accessibility;
            - indications of erosion.
        - Facility inventory and condition assessment will also collect site photos and document conditions using a worksheet.
        - Use will be evaluated by spot counts at the fishing pier downstream of the west side of the dam.
            - Spot counts will last approx. 5 minutes to provide a snapshot of use at the site.
            - Spot counts will be completed on randomly selected days, including weekdays/weekends/holidays and will be completed at randomly selected times.
            - Spot counts will last for 5 minutes, 4 times a month from mid-May (fishing opener) to late September (open weekend of waterfowl hunting season.
    - Anticipated schedule
        - One study season in 2021

- Open discussion
  - MNDNR asked for confirmation that the City is proposing to do this study 2021 and not 2020? Barr confirmed the study is planned for 2021. MNDNR stated that their staff will not be doing field work in 2020. A past problem with studies at other sites is whether they are proposed at good and appropriate times when recreational activities are happening. It is important to look into particular points in time during April-June that are not good for certain nesting birds and other natural resources. MNDNR wants to make sure what those periods of time are evaluated since timing has to be sensitive to natural resources in the area. MNDNR will look into timing and plans to include the information in the comment letter they will send.
  - FERC discussed spot count to make sure dates and times of the counts are logged and included in the study report. FERC will want the ability to go back and look at the data logs.
  - FERC noted clarification on recreation inventory items within or within near vicinity of the facility, specifically a downstream canoe portage access and a downstream boat ramp, to determine if these features are considered project or non-project facilities. Barr clarified that the current study proposal is to only inventory the fishing pier. FERC requested that the canoe portage and boat ramp be evaluated for project applicability and, if applicable, included in the revised study plan.
  - FERC commented that some of the facilities are shown on Exhibit G drawings. A dive into the project record might shed some light on which facilities were required with the issuance of the last license. FERC requested additional background on project-related recreation facilities prior to issuing comments.
- ACTION ITEM: Barr and City to review canoe portage access and boat ramp for association with project and provide information in a follow up call with FERC and MNDNR.

Studies Not Included in PSP

- Dissolved Oxygen and Temperature Study
  - Requested by FERC
  - Not adopted as additional water quality raw data was obtained from monitoring stations upstream and downstream of the Project to assist with comparing temperature and dissolved oxygen against standards. This level of detail was not included in the PAD.
    - Data was pulled from MPCA monitoring stations 400 feet and 3.1 miles upstream of the dam structure, as well as a monitoring station 2.2 miles downstream of the dam.
    - According to the MPCA's Lakes and Streams Water Quality Dashboard, this reach of the Mississippi River is rated "good" for overall condition rating, biological ranking and recreational use. Generally, this means the state has determined this reach of the river is suitable for swimming and wading, has low bacteria levels, and has a thriving community of fish and other organisms.
  - Since the MPCA indicates this reach of the Mississippi River had good water quality and available water quality data indicate both consistency with state water quality standards with no significant change upstream or downstream of the Project, a the DO and temperature study has not been adopted.
  - Open discussion

        - MNDNR asked if comments where received from MPCA yet? Barr noted that MPCA comments on the PSP have not been received and that the MPCA requested a bathymetric study and contaminant study, but did not submit comments about DO, temperature, or other water quality studies.
        - FERC requested clarification on the data in the PSP Tables 5-1 and 5-2, whether the data is point/grab samples or if it reflects daily averages. Barr noted that the raw data does not indicate the sampling methodology and stated that questions of this nature would need to be directed to the MPCA FERC noted that spatial and temporary effects of the dam can be evaluated from a study. FERC will review the MPCA data to determine if it is adequate for a NEPA analysis.
- Wildlife Resources Study
    - Requested by FERC
    - Not adopted as additional wildlife data has been obtained from state and other sources to address FERC's intended purposes of the study. This information was not in the PAD.
        - Project is located in highly urbanized setting, and the PAD contained representative vertebrate mammal species common to the project area. As part of the PSP, the MNDNR native species lists, suitable habitat characteristics and known ranges were assessed in greater detail, yielding the potential for additional species of reptiles and amphibians to be found in the Project boundary. These were not noted in the PAD.
        - The PAD addresses the presence of rare, threatened, endangered species or associated habitats in the project area and notes that the federal threatened Northern long-eared bat may occur in the Project vicinity. A number of trees in the riparian corridor may provide suitable habitat for this species. This was not clearly stated in the PAD.
        - The PAD noted the Project is located on the Mississippi Flyway of North America but did not include further information on potential bird species that may be found in the Project vicinity. The Minnesota Bird Atlas was reviewed and information specific to the Project is included in the PSP.
    - A wildlife resources study has not been adopted as additional information beyond what was in the PAD has been compiled to address FERCs intended purpose of this study.
    - Open discussion
        - FERC noted they will review the information provided and provide additional comments, if necessary.
        - MNDNR noted the agency supports the FERC's request for this study. The MNDNR felt the PSP was unclear about federal versus state listed species. Barr clarified that the PSP mentions federal species in relation to FERC's request and that state species are discussed in the PAD.
- Botanical Resources Study
    - Requested by FERC
    - Not adopted as additional botanical information has been obtained from state and other sources to address FERC's intended purposes of the study. This information was not in the PAD.
        - Review of USFWS data indicates no federally listed threatened or endangered species or designated critical habitats for federally listed species in Sherburne, Stearns, or Benton Counties where the project is located.
        - Updated review of MN Dept of Agriculture Noxious Weed Mapper yields no known noxious week records in Project vicinity.

        - Minnesota Biological Survey provides data on native plant communities. According to the MN Biological Survey, there are no native plant communities or designated sites of biodiversity significance in the Project area
        - Project is located in urban setting with vegetation heavily altered from native conditions. Dominant vegetation is urban landscaped vegetation (mowed turf grasses and landscape planted trees/shrubs) with a narrow riparian corridor adjacent. Riparian vegetation is primarily voluntary, secondary growth.
            - MNDNR Ecological Classification System notes that urban development has overtaken pre-settlement vegetation in this region. The Ecological Classification System was not described in the PAD
            - MNDNR's Land Cover Classification System classifies the shoreline area as more than 50 percent impervious cover with deciduous trees and smaller areas of altered, non-native deciduous trees. The MN Land Cover Classification System was not described in the PAD.
            - Project is operated as run-of-river project, meaning adjacent lands experience little change in water elevation, posing minimal change to vegetation communities and habitat types
            - The only land the City owns is immediately adjacent to the dam and auxiliary facilities. These areas are mowed. The Project is not authorized to manage lands beyond the Project boundary and is not authorized to dictate vegetation management, including noxious weed control, of these lands.
    - A botanical resources study has not been adopted as additional information beyond what was in the PAD has been compiled to address FERCs intended purpose of this study.
    - Open discussion
        - FERC will review information to determine if additional information is adequate for NEPA purposes.
        - MNDNR supports the FERC's request for a study.
- Impoundment Bathymetric Study and Sediment Accumulation and Containment Study
    - Requested by MPCA to establish baseline data to evaluate future water quality impacts and address water quality degradation
    - Not adopted for the following reasons:
        - MPCA considers studies providing baseline data. However, project construction began in 1969 for the overflow spillway and the powerhouse and tainter gate spillway were added to the site with the FERC license issued in 1984 and became operational in 1988. As such, any newly collected data reflects a changed condition rather than a baseline condition to fully assess the effects of the dam structure on water quality.
        - MPCA does not propose a study methodology in its study request.
        - MPCA does not indicate that Project operation is negatively affected by sediment in the reservoir, exacerbates sediment in the reservoir, or actively mobilized reservoir sediment
        - No dredging or additional construction is planned that would disturb reservoir sediments.
    - Open discussion
        - MNDNR noted they would like to see MPCA's proposed comments. Additionally, MNDNR noted that this study has importance for the MPCA for the terms of potential water quality certification.

Open Discussion

- FERC recommended Barr/City send an email to the PSP distribution list offering to host an additional meeting PSP review meeting with interested parties who were not able to participate today due to technology challenges at the beginning of the meeting.

Future Dates

- Thank you for your time, feedback, and comments
- Comments on the Proposed Study Plan are due by July 27, 2020 by submitting to FERC
- City will file to FERC a Revised Study Plan by August 26, 2020
- Comments on the Revised Study Plan are due by September 10, 2020
- FERC Director's Study Plan Determination will be issued by September 25, 2020

Whitney Hansen

From: Allison A. Lunde
Sent: Wednesday, May 20, 2020 3:24 PM
Subject: Update on St. Cloud Hydroelectric Facility Proposed Study Plan Meeting

Interested Stakeholders:

This morning, Wednesday, May 20, 2020 at 9 am CST, the City of St. Cloud (City) and Barr Engineering Co. (Barr) hosted the Proposed Study Plan meeting between the Federal Energy Regulatory Commission (FERC) and interested parties. We encountered technical difficulties with the original conference call number and member access code that was published in the Proposed Study Plan document. Without a specific RSVP list, we were not aware of all individuals that planned to participate and were not able to provide the updated conference call information to all parties. The Proposed Study Plan meeting did occur as planned between the City, Barr, FERC and Minnesota Department of Natural Resources (MNDNR). We apologize for any inconvenience that occurred on your end due to this technical difficulty.

If you are interested in the meeting minutes for the proposed Study Plan meeting that was held between the City, Barr, and the FERC this morning on Wednesday, May 20, 2020, please let me know and we will pass along the meeting minutes. Additionally, if you would like a separate call to discuss the Proposed Study Plan for the St. Cloud Hydroelectric Facility, please notify me at the below contact information and we can set up a conference call.

Again, we deeply apologize for the technical difficulties that occurred this morning for the St. Cloud Hydroelectric Facility Proposed Study Plan meeting. We appreciate the flexibility of all parties.

Have a wonderful and safe Memorial Weekend,
Allison

Allison A. Lunde, PE

Structural Engineer
Minneapolis, MN office: 952.842.3570
cell: 320.583.1044
alunde@barr.com
www.barr.com

Appendix C

Process Plan and Schedule

Process Plan and Schedule

This appendix provides a description of the process plan and schedule. The Federal Emergency Regulatory Commission (FERC) content requirements for this section are specified in 18 CFR §5.6(d)(1) with some modifications for readability.

C1.1 Process Plan and Schedule Overview

The process plan and schedule outline actions required to be taken by the FERC, The City of St. Cloud (City), and/or other participants in the Integrated Licensing Process (ILP) through the filing of the license application. The process plan and schedule is based on Appendix B St. Cloud Project Process Plan and Schedule by FERC Scoping Document 1 in letter dated January 10, 2020.

C1.2 Process Plan and Schedule Phases

The process plan and schedule have been separated into the following five distinct phases:

- Phase 1: Relicensing Initiation (Table C1) - Completed
- Phase 2: Scoping Document Process (Table C2) - Completed
- Phase 3: Study Plan Development (Table C3) - Underway
- Phase 4: Conduct Studies (Table C4)
- Phase 5: Filing of License Application (Table C5)

C1.3 Process Plan and Schedule Tables

The process plan and schedule are tabulated in Table C1 through Table C5. Each table represents a phase of the process plan.

Table C1 Process Plan and Schedule—Phase 1: Relicensing Initiation

FERC 18 CFR §	Relicensing Activity	Responsible Party	Activity Time Frame	Date/Deadline(1)
5.5 5.5 (d)	**Filing of NOI**	City	5 to 5½ years prior to existing license expiration. Filed concurrent with the PAD.	November 15, 2019
5.5(e)	Request to be non-federal representative under Section 7 of the Endangered Species Act (ESA)			
5.5(e)	Request to initiate consultation under Section 106 of the National Historic Preservation Act (NHPA)			
5.6 5.6(a)	**Filing of PAD**	City	5 to 5½ years prior to existing license expiration. Filed concurrent with NOI.	November 15, 2019

(1) Dates and deadlines based on Appendix B St. Cloud Project Process Plan and Schedule by FERC Scoping Document 1 in letter dated January 10, 2020.

Table C2 Process Plan and Schedule – Phase 2: Scoping Document Process

FERC 18 CFR §	Relicensing Activity	Responsible Party	Activity Time Frame	Date/Deadline[1]
5.7	**Initial tribal consultation meeting**	FERC	Within 30 days following filing of NOI/PAD	December 15, 2019[1]
5.8 5.8(a)	**Notice of commencement of proceeding and scoping document**	FERC	Within 60 days of filing NOI/PAD	January 14, 2020
5.8(a)(b) 5.8(b)(iv)	Issue notice of NOI/PAD and request for comments			
5.8(b)(2)	Decision regarding Licensee request to initiate informal consultation under Section 7 of the ESA and/or Section 106 of the NHPA			
5.8(c)	**Issue scoping document 1 (SD1)**			
5.8(b)(3)(viii)	**Conduct public scoping meeting and site visit**	FERC	Within 30 days of the notice of commencement of proceeding	February 11 and 12, 2020
5.9(a)	File comments on NOI/PAD and SD1 and provide study requests	Participants	Within 60 days following the notice of commencement of proceeding	March 14, 2020
5.10	Issue scoping document 2 (SD2, if necessary)	FERC	Within 45 days following the deadline for filing of comments on SD1	April 28, 2020

(1) Dates and deadlines based on Appendix B St. Cloud Project Process Plan and Schedule by FERC Scoping Document 1 in letter dated January 10, 2020.

Table C3 Process Plan and Schedule – Phase 3: Study Plan Development

FERC 18 CFR §	Relicensing Activity	Responsible Party	Activity Time Frame	Date/Deadline[1]
5.11(a)	**File proposed study plan**	City	Within 45 days following the deadline for filing of comments on the PAD and providing study plan requests	April 28, 2020
5.11(e)	File proposal for conducting study plan meeting(s) during 90-day proposed study plan review period			
5.11(e)	**Conduct initial study plan meeting**	City	No later than 30 days after the deadline for filing the proposed study plan	May 28, 2020
5.12	File comments on proposed study plan or submit revised study requests	Participants	Filed within 90 days after the proposed study plan is filed	July 27, 2020
5.13(a)	File revised study plan	City	Within 30 days following the deadline for filing comments on the proposed study plan	August 26, 2020
5.13(b)	File comments on revised study plan	Participants	Within 15 days following filing of the revised study plan	September 10, 2020
5.13(c)	Issue study plan determination	FERC	Within 30 days following filing of revised study plan	September 25, 2020
5.13(d) 5.14(a)	**File notice of study dispute**	Mandatory conditioning agencies	Within 20 days of the study plan determination	October 15, 2020
5.13(d)	**Study plan approved if no notice of study dispute is filed**	FERC	20 days following study plan determination	October 15, 2020
Formal Study Dispute Resolution Process (if necessary)				
5.14(d)	Third dispute panel member selected	Dispute Panel		October 30, 2020
5.14(d)	Convene dispute resolution panel	Dispute Panel	Within 20 days of the notice of study dispute	November 4, 2020
5.14(i)	File with Commission and serve upon panel members comments and information regarding dispute	City	No later than 25 days following the notice of study dispute	November 9, 2020
5.14(j)	Dispute resolution panel technical conference	Dispute Panel		November 14, 2020
5.14(k)	Issue findings and recommendations regarding the study plan dispute to Director of the Office of Energy Projects	Dispute resolution panel	No later than 50 days following the notice of study dispute	December 4, 2020
5.14(l)	Issue written determination on study plan dispute	FERC	No later than 70 days from the date of filing of the notice of study dispute	December 24, 2020

(1) Dates and deadlines based on Appendix B St. Cloud Project Process Plan and Schedule by FERC Scoping Document 1 in letter dated January 10, 2020.

Table C4 Process Plan and Schedule – Phase 4: Conduct Studies

FERC 18 CFR §	Relicensing Activity	Responsible Party	Activity Time Frame	Date/Deadline[1]
5.15(a)	Conduct first-year studies (for plans not under dispute)	City	January 2021–December 2021	
5.15(a)	Desktop Fish Entrainment and Impingement Study	City	May 2021 – July 2021	September 25, 2021
5.15(a)	Cultural Resources Study	City	May 2021 – September 2021	September 25, 2021
5.15(a)	Recreation Use and Inventory Planning Study	City	May 2021 – September 2021	September 25, 2021
5.15(b) 5.15(c)(1)	File progress report and initial study report (ISR)	City	Within 1 year after Commission approval of study plan	September 25, 2021
5.15(c)(2)	Conduct ISR meeting	City	Within 15 days of filing ISR	October 10, 2021
5.15(c)(3)	File ISR meeting summary, including any study modification or new studies	City	Within 15 days following the ISR meeting	October 25, 2021
5.15(c)(4)	File disagreement with ISR meeting summary	FERC and participants	Within 30 days following the filing of the ISR meeting summary	November 24, 2021
5.15(c)(7)	If no disagreements are filed, approve ISR meeting summary and any proposed study plan amendments	FERC	30 days after filing of the ISR meeting summary	November 24, 2021
5.15(c)(5)	If disagreements are filed, file responses to disagreement with ISR meeting summary	City	Within 30 days of the filing of disagreement with ISR meeting summary	December 24, 2021
5.15(c)(6)	Resolve disagreements and amend approved study plan as appropriate	FERC	Within 30 days following the due date for responses to disagreement	January 23, 2022
5.15(f)	Conduct second-year studies (for plans not under dispute)	City	January 2022–December 2022	
5.15(f)	File updated study report (USR)	City	Within 2 years of Commission approval of study plan	September 25, 2022
5.15(c)(2)	Conduct USR meeting	City	Within 15 days of filing the USR	October 10, 2022
5.15(c)(3)	File USR meeting summary, including any study modification or new studies	City	Within 15 days following the USR meeting	October 25, 2022
5.15(c)(4)	File disagreement with USR meeting summary	FERC and participants	Within 30 days following the filing of the USR meeting summary	November 24, 2022

FERC 18 CFR §	Relicensing Activity	Responsible Party	Activity Time Frame	Date/Deadline[1]
5.15(c)(7)	If no disagreements are filed, approve USR meeting summary and any proposed study plan amendments	FERC	30 days after filing of the USR meeting summary	November 24, 2022
5.15(c)(5)	If disagreements are filed, file responses to disagreement with USR meeting summary	City	Within 30 days of filing the disagreement with USR meeting summary	December 24, 2022)
5.15(c)(6)	Resolve disagreements and amend approved study plan as appropriate	City	Within 30 days following the due date for responses to disagreement	January 23, 2023

(1) Dates and deadlines based on Appendix B St. Cloud Project Process Plan and Schedule by FERC Scoping Document 1 in letter dated January 10, 2020.

Table C5 Process Plan and Schedule – Phase 5: Filing of License Application

FERC 18 CFR §	Relicensing Activity	Responsible Party	Activity Time Frame	Date/Deadline[1]
5.16(a)	**File preliminary licensing proposal or draft application**	City	No later than 150 days prior to the deadline for filing a new license application	July 3, 2022
5.16(e)	**File comments on preliminary licensing proposal or draft license application**	FERC and participants	Within 90 days of the filing date of the preliminary licensing proposal or draft application	October 1, 2022[1]
5.17(a)	**File license application**	City	No later than 24 months before the existing license expires	November 30, 2022
5.17(d)(2)	**Issue Public Notice of License Application Filing**	FERC		December 14, 2022
	License expiration			November 30, 2024

(1) Dates and deadlines based on Appendix B St. Cloud Project Process Plan and Schedule by FERC Scoping Document 1 in letter dated January 10, 2020.