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May 23, 2014

City of River Falls
Raymond French
222 Lewis Street
River Falls, WI 54022

RE: Wisconsin Department of Natural Resources Comments on Preliminary Application Document (PAD) and Study Requests, Relicense Application for River Falls Hydroelectric Project P-10489, City of River Falls, Pierce County, Wisconsin

Dear Mr. French:

The Department appreciates the opportunity to participate in the relicensing of the River Falls P-10489 hydroelectric dams. As part of the Stage 1 Consultation process, we offer the following comments on the Preliminary Application Document (PAD), and recommendations for studies.

The purpose of the PAD is to document existing information and needed information as it relates to the existing environment and potential impacts of the project (including cumulative impacts). Our comments on the PAD and recommended studies should be used as a guide for the development of the draft license application.

GENERAL COMMENTS:
The PAD takes a broad view of the watershed, but does not discuss the current environment of the two dams, tail water areas, impoundments, and the project boundary; nor does it discuss the cumulative resource impacts. Available information can be obtained for a wide variety of regional, state, and federal resources. We encourage the applicant to work with the resource agencies, local governments, local interest groups, and the university to develop a robust Draft License Application that acknowledges all the resources within the project boundary, and considers the cumulative impact of the two hydroelectric dams.

INFORMATION AND STUDY REQUESTS:

The WDNR has limited information regarding natural resource information associated with the two hydroelectric dams and their impoundments. We are recommending the following studies be completed to better understand the direct and cumulative impacts the dams have on the environment:

General Information:

- In the PAD the Applicant states the "City has engaged with partners to conduct studies on the physical quality of the dams and the quality of the environmental resources." Please provide all correspondence related to this issue.

- A copy of the existing license was provided, but amendments and revisions to the original license were only partially included in the PAD. We request a comprehensive summary of all license conditions, including the original license and amendments. Additionally we request a comprehensive summary identifying how the licensee is monitoring compliance with the license.

- We request the applicant provide detailed descriptions and maps for the entire project area including; topographic maps of each flowage, description of the river basin and sub-basin, drainage basins, length of stream reaches; major land and water use in the project area; all dams and diversion structures in the basin or sub-basin, regardless of function; tributary rivers and streams, topography, land use.

- We request a written description of the visual characteristics of the lands and waters within the project boundary. Components of this description should include a description of the dams, natural water features, and other scenic attractions of the project and surrounding vicinity. Photographs representing the written descriptions should be provided.

- We request the following information be provided regarding wetlands, riparian zones, and littoral habitat; wetland locations, types, acres summary, acres per type; description of riparian zone, including total linear distance per water feature, types of use, description of vegetation; littoral habitat should be described, including total linear distance per water feature, types of use, and description of vegetation. Photographs should be provided for visual aid.

Operations, Flows, Water Levels: Historical and current information addressing the relationship between the hydro operations and water levels was not adequately discussed in the PAD. Understanding this relationship is critical to assessing direct and cumulative impacts to the resource.

- USGS gaging station is 4.8 miles downstream from Powell Falls Dam, at Hwy F. In order to understand flows, water levels, fluctuations, degree of impact, and compliance at the project, the applicant should install water level sensors in the river and impoundments and monitor compliance with run-of-river operations within the project boundaries. Water level sensors should be installed at three river locations including; 1) above both dams, 2) below the first dam but above the second and 3) below both dams.

- Provide any reports and data, along with a comprehensive summary of any flow data studies conducted by USGS or other agencies within the last 20 years. We reserve the right to require a formal flow study, pending review of provided data.

- Identify the gradient for the entire project area. Map the linear gradient through the stream thread.

- We request a summary of the projects generation, compliance and outflow records for the five years preceding the filing of the PAD. The summary should include the monthly minimum, mean, and maximum recorded flows in cubic feet per second of the stream or other body of water at the power plant intake or point of diversion, specifying any adjustments made for evaporation, leakage, minimum flow releases, or other reductions in available flow. The summary should also include a monthly flow duration curve indicating the period of record and the location of gauging station(s), including identification number(s), used in deriving the curve; and a specification of the critical stream flow used to determine the project's dependable capacity. Compliance records should include a summary of all non-compliance events and any associated correspondence.

Water Quality / Water Resources: Understanding the health of an aquatic ecosystem is an important part of assessing historical, current, and potential future impacts associated with the operations of the hydro dams, and the impoundments created by the dams. These studies are necessary to understand the relationship between the dam and the impoundments, and its impacts on the water quality throughout the project boundary.

- Water quality monitoring should be completed in both impoundments to document trophic conditions. Monitoring should follow DNR Lake monitoring protocol described in Wisconsin Consolidated Assessment and Listing Methodology (WISCALM, 2014). Data collection will include total phosphorus and chlorophyll *a* sampling, seechi disc readings and dissolved oxygen and temperature profiles. Sampling should be completed in summer for a two year period to assess trophic conditions and make an impairment determination.

- In addition to trophic condition monitoring bacteria sampling should be completed in both impoundments to determine if bacteria levels are a threat to human health. There is a large resident Canada goose population in the flowages and bacteria from their feces may be high enough to pose a threat to human health. Bacteria sampling should follow protocol identified in WDNR WISCALM guidance to determine the recreational threshold for beaches.

- As a result of watershed sedimentation, soft sediment profiling is needed from both flowages to understand the depth of soft sediments and scour potential. A bathymetric map showing the soft sediment profile and hard bed should be developed for both impoundments. In addition, sediment cores should be collected from both impoundments and analyzed for contaminants. WDNR should be consulted prior to sampling to recommend coring locations, the number of cores, and what chemical analysis is needed to address aquatic concerns and disposal issues.

- Summarize and evaluate thermal data collected at several sites on Kinnickinnic River and tributaries by Trout Unlimited for the past 5 years. Summaries and evaluation should include:

1) Develop a map showing exact temperature monitoring locations

2) Temperature data at each site should be summarized from June 1 through August 31. The summary should be completed for each year for the past 5 years. Summary statistics should include maximum mean daily temperature, maximum summer temperature and July mean temperature.

3) The temperature data should be summarized to evaluate the thermal effect of the impoundments individually and collectively on the Kinnickinnic River. Modeling should be completed to predict the future thermal impact of the impoundments (individually and collectively) on river temperatures below the impoundments. The modeling should incorporate temperature changes that would result from climatic change and increased development (storm water inputs) within the project boundaries. The assessment should include how current and future temperature regimes will affect the rivers ability to support a cold-water fishery.

4) Additional temperature monitoring may need to be completed depending on Trout Unlimited site locations.

- Dissolved oxygen analytical data should be collected to document conditions in the Kinnickinnic River as it leaves each impoundment. Continuous dissolved oxygen monitors should be deployed upstream, between and below both impoundments. Frequency and duration for monitoring should be coordinated with the local interest groups, and the resource agencies.

- Total phosphorus sampling should be completed in the Kinnickinnic River above and below both impoundments. The purpose to the monitoring is to evaluate total phosphorus concentrations entering and leaving the flowages. Growing season sampling should be completed monthly from May through October for one year following protocol described in WDNR WISCALM. WDNR should be consulted regarding exact sampling locations.

- Macro invertebrate sampling should be completed at multiple locations on the Kinnickinnic River to assess current invertebrate health. Some sites have not been surveyed since the completion of the watershed appraisal in the mid 1990s. Samples should be collected at four existing stations including two sites upstream and two sites downstream from both impoundments. Samples should be collected from Main Street (Swims Station 10011492), Maple Street (SWIMS Station 10037539), near Glenn Park (Swims Station 10020720) and at the confluence with Rocky Branch (SWIMS Station 10011488). WDNR protocol should be followed for the collection and preservation of samples. Samples should be sent to a certified lab and taxonomy should be completed to genus and species level. The data should be summarized by calculating various invertebrate indexes including Hilsenhoff Biotic Index (HBI) and macro invertebrate Index of Biotic Integrity (MIBI).

Fishery: Fishery data is needed to update the species status and health of the fish community, address public information needs and determine if any impacts are occurring related to the hydroelectric dams.

- A fish community assessment within the two impoundments is needed. Data collection should include relative abundance estimates (Catch Per Unit Effort) for each fish species present. Length, weight and aging data should be collected for evaluating size distribution, age and growth estimates, and condition factors on game and pan fish populations. As attempt should be made to estimate rough fish abundance and biomass within each impoundment.

- Existing raw data regarding the health and population of the Kinnickinnic River trout fishery is available from a variety of sources. All of this information should be gathered, summarized, and analyzed. Analyses should include a historic perspective of the fish community, both upstream and downstream of the impoundments and in response to hydroelectric development and operations over time. Data should be reported for both fish community health using Coldwater Index of Biotic Integrity (IBI) and relative abundance (Electrofishing Catch Per Unit Effort) of trout species. If found insufficient, additional IBI work may be necessary.

Mussels: Mussels are a valuable resource to the aquatic regime of the river. They are sensitive to changes in sediment dispersal, temperature, flows, and velocity. The current status of mussels within the project boundary is unknown. Basic information is needed to assess the health of any existing mussel communities.

- Complete a qualitative mussel survey for the impoundments, the upstream and downstream reaches of the River, backwaters and tributaries, and directly downstream of the project boundary. This information is necessary to evaluate any existing mussel populations, their locations, habitat conditions, and health. Areas containing mussels should also have quantitative surveys conducted to enumerate those populations.

Invasive Species: Invasive species can cripple a healthy riverine environment. Adequate information needs to be obtained to determine the presence, species, abundance, etc. of invasive species within the project boundary. Management of invasive is crucial to a healthy eco-community.

- A baseline terrestrial and aquatic invasive species survey is needed for the entire project area, including tributaries and other connected waterways that may contribute to the risk of invasive species.

- Evaluate the effectiveness of river elevation, and dam operations to be barriers to aquatic invasive species in the presence or absence of the dams. The evaluation should include variations in river elevations including flood stage, spring runoff, and drought conditions.

Wildlife and Plants: Wildlife use is unknown within the project boundary. Information is necessary to understand if operations, improvements, water levels, and general health of the environment may be impacting the flora and fauna that uses the project boundary for their life cycle.

- Complete general wildlife and habitat use survey for the project areas. Focus on the floodplain forest areas, and bluff habitat, as these types of habitat are limited and very important. Habitat types should be mapped.

- Complete a formal Wisconsin Endangered Resources Review Request Form. Based on the results of the review, complete an assessment of available habitat for any species identified in the review.

- Complete a desktop assessment of the potential for rare plant to be located within the project boundary. Complete a rare plant survey on all public lands within the project boundary.

- Complete a comprehensive bird use survey, documenting potential habitat, foraging areas, migratory corridors, and nesting.

Recreation: Hydro operations, management of impoundments, water level changes, etc. can have a significant impact on recreational value. Adequate information is necessary to determine what impacts may be occurring from the hydro operations, and what recreational opportunities may be enhanced.

- A general recreational use survey is needed, include both existing and proposed use, including kayaking, canoeing, tubing, fishing, scenic viewing, fishing, walking, biking, etc. This information will provide up-to-date information on current and future recreational use within the project boundary.

- Provide a map that depicts the “River Falls Park Inventory” features in relation to the FERC project boundary. The map should include public boating access and other recreational features identified in the plan.

Erosion Control: Erosion may occur within the project boundary due to the changes in water levels and flows, operations, maintenance and repairs, etc. These actions can result in impacts to water quality. More information is needed to understand the relationship of the hydro operations and potential erosion.

- Provide a description of reservoir shorelines and stream banks, including photographs.

- Complete an assessment for potential erosion, mass soil movement, slumping, or other forms of bank instability, including identification of project facilities or operations that are known to or may cause these conditions.

The licensee should continue to work with the Wisconsin Department of Natural Resources to collect resource information, and develop study plans and protocols. If new information becomes available through the relicensing process, we reserve the rights to require additional studies to gather appropriate information.

Please direct all inquiries to the Project Managers:
Dan Helsel, Water Leader, (715) 284-1431, Daniel.helsel@wisconsin.gov
Cheryl Laatsch, FERC Coordinator, (920)387-7869, Cheryl.laatsch@wisconsin.gov

If you have any questions or comments regarding our recommendations, please contact me at 920-387-7869, or Cheryl.laatsch@wisconsin.gov. We look forward to working with you.

Regards,

Cheryl Laatsch
Statewide FERC Coordinator
Wisconsin Department of Natural Resources

Cc:
Ms. Kimberly Bose, Federal Energy Regulatory Commission, Washington, D.C.
Nick Utrup, US Fish & Wildlife Service
Randy Thoreson, National Parks Service
Denny Caneff & Jim Fossum, River Alliance of Wisconsin DNR