

HYDROELECTRIC PLANT RELICENSING PROPOSED STUDY PLAN MEETING

AGENDA

- Introductions
- Goals for the meeting
- Ground rules
- Relicensing process
- Responses to additional information requests
- Proposed Study Plan
- Recap and next steps

GOALS FOR THE MEETING

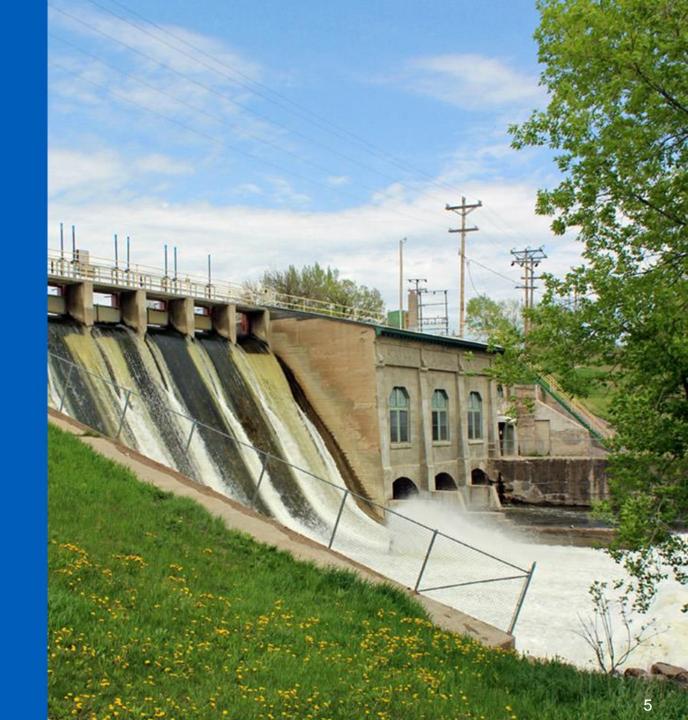
- Review relicensing process
- Review schedule
- Discuss Proposed Study Plan
 - Take comments
 - Answer questions
- Review next steps

GROUND RULES

- Mute cell phones
- Be mindful of the meeting goals
- The Parking Lot
- Allow everyone an opportunity to speak
- No talking when others are talking
- Stay focused on the issues No "grandstanding"
- We'll take breaks as needed



RELICENSING PROCESS



RELICENSING PROCESS

- Initial scoping
 - Pre-Application Document
 - Comments
- Studies
 - Study planning
 - Field work
 - Study results
- Application
 - Draft License Application
 - Comments and recommendations
 - Final License Application
- FERC Review
 - Additional information
 - Environmental Assessment
 - Licensing decision

STUDY PLANNING

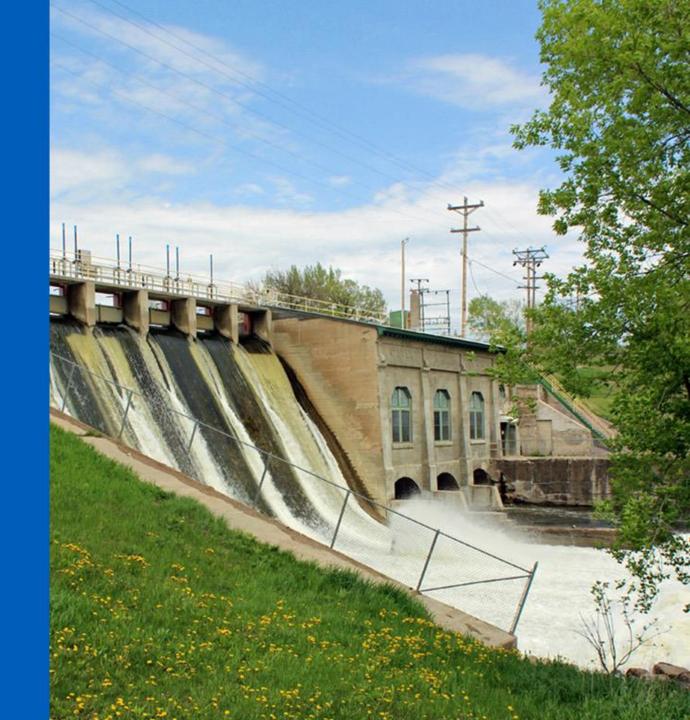
- Proposed Study Plan
- Study Plan Meeting
- Comments
- Revised Study Plan
- FERC's Study Plan Determination

SCHEDULE

- Study Plan Meeting December 13, 2016
- Comments on Proposed Study Plan February 13, 2017
- Revised Study Plan March 15, 2017
- Comments on Revised Study Plan March 30, 2017
- Director's Study Plan Determination April 14, 2017
- First Year Studies (2017)
- First Year Study Report April 14, 2018
- Initial Study Report Meeting June 1, 2018
- Initial Study Report Meeting Summary June 15, 2018
- Second Study Season 2018
- Second Year Study Report April 14, 2019
- Updated Study Report Meeting April 26, 2019
- File Preliminary Licensing Proposal July 2, 2019



RESPONSES TO ADDITIONAL INFORMATION REQUESTS



ADDITIONAL INFORMATION

- Water resources
 - Review of water rights
 - Elevation datum
- Aquatic resources
 - Fish Entrainment Reports
 - Fish protection measures
 - Additional mussel information
- Cultural resources
 - SHPO consultation and APE
 - Historic Context Report
- Developmental resources
 - Hydraulic capacities
 - Point of interconnection
 - Dependable capacity
 - Project outflow and generation records
 - Project data



PROPOSED STUDY PLAN



PROPOSED STUDIES

Study	Cost
Impoundment Bathymetry Survey	\$20,000
Sediment Accumulation and Sediment Contaminant Study	\$30,000
Fish Entrainment Study	\$40,000
Friberg Bypassed Reach Instream Flow Study	\$40,000
Minimum Flow Evaluation	\$40,000
Fish Passage Feasibility Study	\$30,000
Fisheries Survey	\$25,000
Mussel Survey	\$25,000
Wildlife Resources Study	\$30,000
Botanical Resource Surveys	\$20,000
Facilities Inventory and Recreation Use Study	\$50,000
Cultural Resources Study	\$30,000
	\$380,000

IMPOUNDMENT BATHYMETRY SURVEY

- A survey of bathymetry at Central, Pisgah, and Dayton Hollow impoundments
- Develop maps of impoundment bottoms
- Conduct in 2017 in conjunction with Accumulation and Sediment Contamination Study

SEDIMENT ACCUMULATION AND SEDIMENT CONTAMINANT STUDY

- A study of the volume and accumulation of sediment in the Central, Pisgah, and Dayton Hollow impoundments and a contaminants screening analysis
 - Characterize physical sediment properties
 - Estimate the amount of sediment accumulated
 - Estimate sedimentation rates
 - Provide information on any possible sediment contamination
- Conduct in 2017

FISH ENTRAINMENT STUDY

- A desktop fish turbine entrainment mortality study
 - Estimate entrainment rates of target species at each development
 - Estimate turbine passage survival of target fish at each development
- Conduct in 2018

FRIBERG BYPASSED REACH INSTREAM FLOW STUDY

- A study of flows in relation to available aquatic habitat and recreation opportunities in the Friberg development bypassed reach
 - Collect measurements of water depth, velocity, and substrate at a series of flow releases from the Friberg dam
 - Compare the data to habitat suitability indices for select target species
 - Evaluate the navigability of the reach at several releases from the dam
- Conduct in 2017

MINIMUM FLOW EVALUATION

- A re-evaluation of the existing minimum flows and the associated schedule at the Hoot Lake Diversion Dam development
 - Perform a flow demonstration in the diversion channel
 - Conduct observations and measurements of water depth, velocity, and substrate at a series of flow releases
 - Compare the data to habitat suitability indices for select target species
 - Evaluate the navigability of the reach at several releases from the dam
- Conduct in 2017

FISH PASSAGE FEASIBILITY STUDY

- A conceptual evaluation of fish passage and alternatives at all five development locations
 - Upstream
 - Downstream
- Conduct in 2017

FISHERIES SURVEY

- Fishery surveys to examine the current fish assemblage in Otter Tail River Project waters
 - Perform fishery surveys using gill nets with a range of mesh sizes to catch fish of different species and life stages
 - Identify and enumerate all fish and obtain length and weight measurements on target species
 - Develop a better understanding of the size and age structure of lake sturgeon in the Otter Tail River Project area during the fall and spring
- Conduct in 2017

MUSSEL SURVEY

- Mussel surveys above, within, and below the Otter Tail River Project area to characterize the mussel community composition
- Conduct in 2017

WILDLIFE RESOURCES STUDY

- Reconnaissance level field survey of wildlife resources and habitat in the Otter Tail River Project area, including for rare, threatened or endangered (RTE) species or unique habitat
 - Desktop review of habitat
 - Field verification
- Conduct in 2017

BOTANICAL RESOURCE SURVEYS

- Reconnaissance-level field survey of botanical resources within the Otter Tail River Project area, including for RTE and non-native invasive botanical species
- Study in conjunction with wildlife survey
- Conduct in 2017

FACILITIES INVENTORY AND RECREATION USE STUDY

- A recreation facilities inventory and survey of existing recreation opportunities and use
 - Inventory and map existing public recreation sites and access areas within the immediate project vicinity
 - Identify who owns, operates, and maintains each recreation site
 - Evaluate the condition of the recreation sites within and adjacent to the project boundary
 - Identify and photograph any areas that have characteristics of erosion, slumping, or other forms of instability due to recreational use
 - Estimate current recreation use and the current and projected use capacity at each Project recreation site
 - Conduct visitor surveys during the recreation season
- Conduct in 2017

CULTURAL RESOURCES STUDY

- A literature review inventory within the Area of Potential Effect (APE)
 - Confirm the APE
 - Assess Natural Register-eligibility of resources within the APE
 - (If necessary) conduct Phase I reconnaissance survey
 - Evaluate effects of project on cultural resources
 - Assess condition of relevant sites
- Conduct in 2017

REQUESTED STUDIES NOT ADOPTED

- Recreation Safety Study
- Pisgah Dam Safety Reclassification Study
- Economic Impact Study



RECAP AND NEXT STEPS





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