



# HYDROELECTRIC PLANT RELICENSING PROPOSED STUDY PLAN MEETING

December 13, 2016

# 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
	<b>\$380,000</b>

# 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





[otpc.com/Hydro](http://otpc.com/Hydro)