



GREGORY B. JARVIS PROJECT FERC No. 3211
RELICENSING

Gregory B. Jarvis Relicensing Proposed Study Plan Meeting

January 11, 2018 at SUNY Polytechnic Institute

January 11, 2018



**NY Power
Authority**

Agenda

- **Introductions**
- **Purpose of the Proposed Study Plan Meeting**
- **Relicensing Process**
- **Next Steps**
- **Study Plan Presentations**
 - Hinckley Reservoir Bathymetric Survey
 - Tailwater Water Quality
 - Assessment of Fish Entrainment and Turbine Passage Survival
 - Recreation and Public Access

Purpose of the Meeting

- Requirement under the FERC ILP (18 C.F.R § 5.11)
- Discuss Proposed Study Plan (PSP) for the Gregory B. Jarvis Power Project (Project)
- This is the next step in refining information needs to inform the License Application
- The PSP is a product of the Power Authority's PAD, FERC's Scoping Document 1 (SD1), and public comments
- Comments were received from FERC staff and other licensing participants. In response , three studies were added to the PSP in addition to the study proposed in the PAD :
 - Hinckley Reservoir Bathymetric Survey
 - Tailwater Water Quality
 - Recreation and Public Access

Relicensing Process to Date

- **June 30, 2017:** Power Authority filed Notice of Intent and Pre-Application Document
- **August 29, 2017:** FERC issued SD1
- **September 26-27, 2017:** FERC held scoping meetings
- **October 28, 2017:** Public comments filed on PAD and SD1, study requests submitted by stakeholders
- **December 12, 2017:** Power Authority filed PSP
- **December 12, 2017:** FERC issued Scoping Document 2 (SD2)
- **January 11, 2018:** Proposed Study Plan Meeting

Next Steps

- **March 12, 2018:** Stakeholders may file comments on the PSP
- **April 11, 2018:** the Power Authority will issue its Revised Study Plan (RSP)
- **April 26, 2018:** Stakeholders may file comments on the RSP
- **May 11, 2018:** FERC issues its Study Plan Determination (SPD)

Study Plan Presentations

- **Hinckley Reservoir Bathymetric Survey**
- **Tailwater Water Quality**
- **Assessment of Fish Entrainment and Turbine Passage Survival**
- **Recreation and Public Access**

Hinckley Reservoir Bathymetric Survey

Study Goals and Objectives

- Collect depth and water surface elevation measurements along pre-determined transects in Hinckley Reservoir to determine bed elevation
- Develop a bathymetric contour map
- Develop new elevation-area-volume maps
- Consult with the New York State Canal Corporation (NYSCC) and Mohawk Valley Water Authority (MVWA) to determine what, if any, historic bathymetric data exists
- Compare the results of the bathymetric survey with historic data, to the extent historic data is available and of such quality that a comparison can be made

Hinckley Reservoir Bathymetric Survey

Methodology

• **Task 1: Bathymetric Survey Data Collection**

- Conduct during a period of high reservoir water levels
- Depth and water surface elevation data points will be collected by boat approximately every 10 feet along the predetermined track lines
- RTK-GPS and an Acoustic Doppler Current Profiler (ADCP), or similar technology, will be used to collect the data

• **Task 2: Data Processing and Bathymetric Calculations**

- Field collected data will be processed and undergo Quality Assurance/Quality Control (QA/QC)
- Depth measurements will be converted to bed elevations, which will be used to develop a bathymetric contour map in Geographic Information System (GIS) or Computer-aided Design (CAD)
- New elevation-storage curves will be developed using the bathymetric contour data

Hinckley Reservoir Bathymetric Survey

Methodology (cont.)

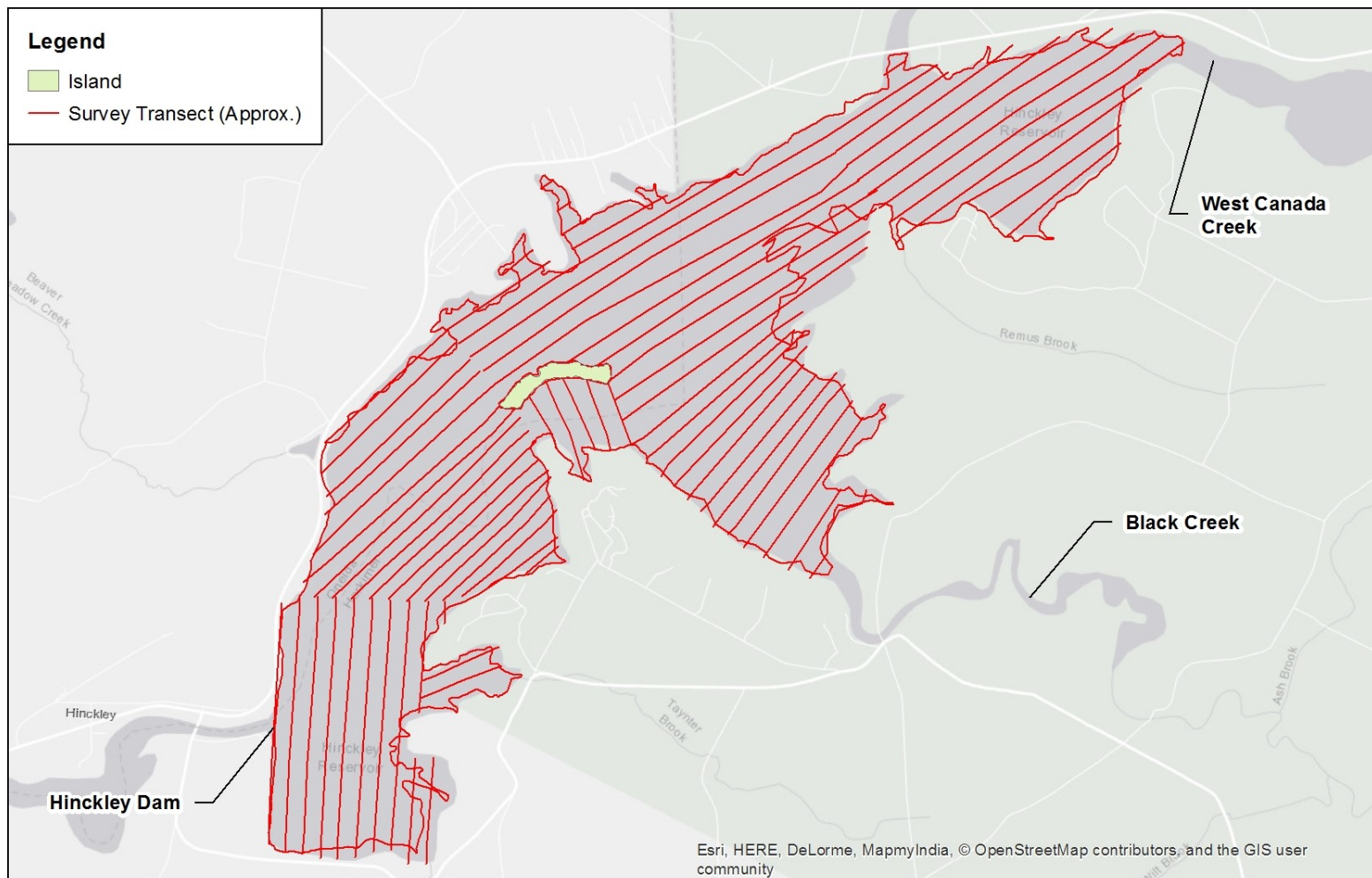
• Task 3: Comparison to Historic Information

- The Power Authority will consult with NYSCC and MVWA to determine what historic reservoir information may exist
- Updated elevation-storage information will be compared to the historic elevation-storage information, to the extent possible based on the limitations of the historic information
- The updated information will also be compared to the historic information to characterize the spatial extent and magnitude of infilling, if possible

• Task 4: Report

- A final report summarizing methods, results, and analyses will be prepared

Hinckley Reservoir Bathymetric Survey



Hinckley Reservoir Bathymetric Survey

Proposed Schedule

Task	Schedule
FERC Study Plan Determination	May 11, 2018 (<i>anticipated</i>)
Task 1. Bathymetric Survey Data Collection	Spring 2018 (<i>weather dependent</i>)
Task 2. Data Processing and Bathymetric Calculations	Summer / Fall 2018
Task 3. Comparison to Historic Information	Fall 2018
Task 4. Report	Within one year of SPD (<i>likely May 11, 2019</i>)

Tailwater Water Quality

Study Goals and Objectives

- Determine if the Project has an effect on downstream water quality parameters such as dissolved oxygen (DO), temperature, or pH
- Determine compliance with NYS water quality standards
- Collect continuous DO, temperature, and pH data in the Project tailwater during warm summer and early fall months

Tailwater Water Quality

Methodology

• Task 1: Water Quality Data Collection

- June through September 2018 - One water quality meter will be installed below Hinckley Dam in a representative location. DO, temperature, and pH will be collected every 15 minutes
- The site will be visited approximately twice per month for data download and to service the meter. Spot measurements will be collected during site visits as a means of independent verification

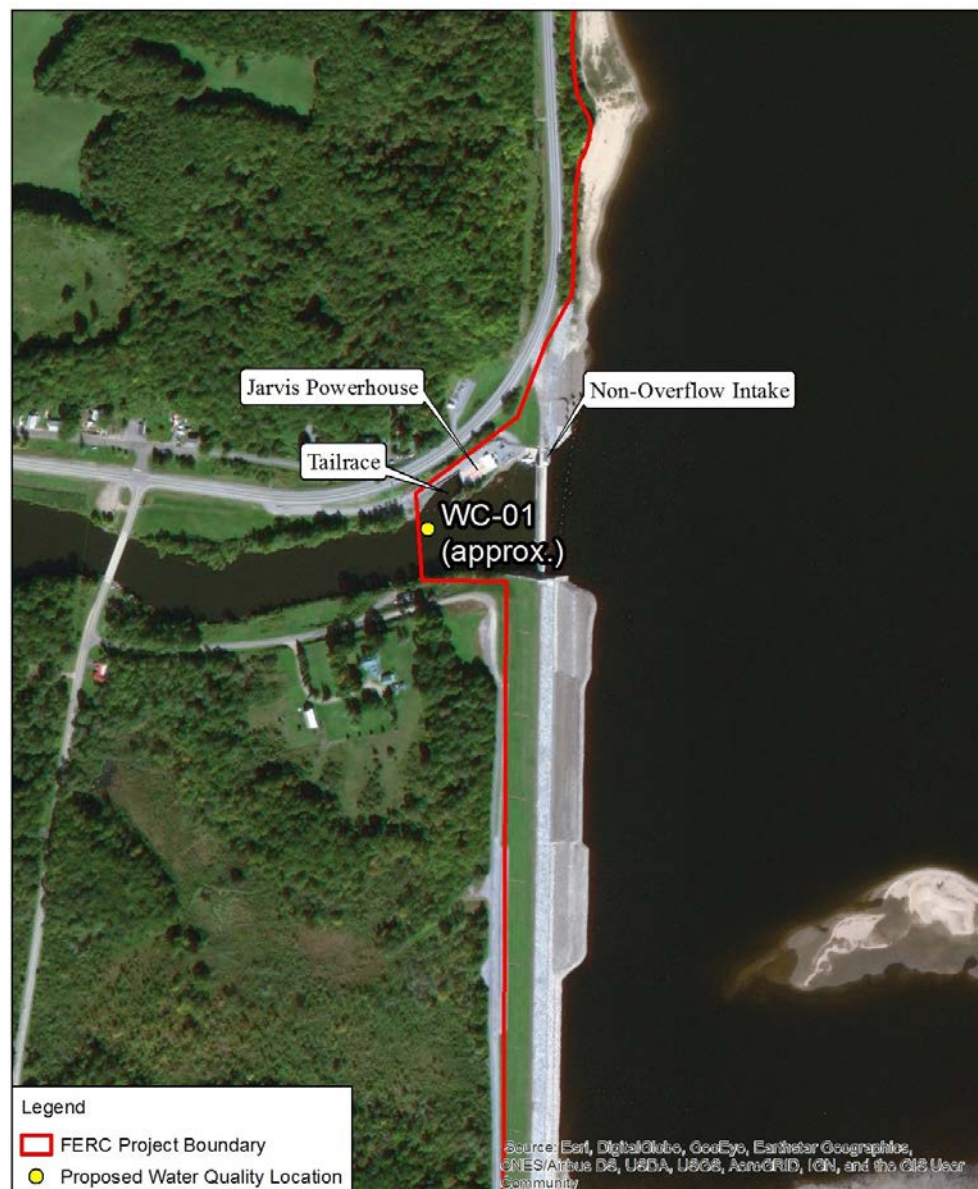
• Task 2: Data Analysis

- All data will undergo a thorough QA/QC process
- Water quality data will be compared to Jarvis generation, flow, and meteorological data

• Task 3: Report

- A final report summarizing methods, results, and analyses will be prepared

Tailwater Water Quality



Tailwater Water Quality

Proposed Schedule

Task	Schedule
FERC Study Plan Determination	May 11, 2018 (<i>anticipated</i>)
Task 1. Water Quality Data Collection	June – September 2018
Task 2. Data Analysis	Summer / Winter 2018
Task 3. Report	Within one year of SPD (<i>likely May 11, 2019</i>)

Assessment of Fish Entrainment & Turbine Passage Survival

Study Goals and Objectives

- Provide a description of physical characteristics of the Project
- Conduct a literature review for species of interest in the context of downstream passage and turbine entrainment and survival
- Assess the potential for entrainment and estimate turbine passage survival rates for target species
- Information compiled and analyzed will be used as a basis of discussion with resource agencies related to fish passage and/or protection

Assessment of Fish Entrainment & Turbine Passage Survival

Methodology

• Task 1: Data Collection, Current Conditions

- Collect and compile site-specific data to document existing conditions regarding factors likely to influence the potential for entrainment including: (1) intake location relative to shore and littoral habitat; (2) depth of intakes; (3) hydraulic capacity; (4) intake velocities; and (5) generating unit specifications
- Depth and velocity data in front of the powerhouse intakes and minimum flow release structures will be collected over the full range of operational flows (i.e., 160 cfs, 300 – 1,800 cfs) via ADCP or similar equipment

• Task 2: Literature Review for Species of Interest

- A literature survey will be conducted to compile the life history and swim speed characteristics of species of interest (gamefish) and groups representing non-game fish, as necessary
- Factors likely to influence the potential for entrainment including the prevalence of littoral species and obligatory migrants are of particular interest

Assessment of Fish Entrainment & Turbine Passage Survival

Methodology (cont.)

- **Task 3: Estimate Entrainment and Turbine Passage Survival**
 - Desktop analysis
 - The likelihood of entrainment for a particular species will be qualitatively assessed through comparison of site-specific intake characteristics to literature reported swim speeds, body dimensions, and other life history characteristics
 - A review of entrainment studies conducted at other hydroelectric projects (i.e., EPRI, 1997) will be conducted to derive entrainment rates for target fish species
 - Entrainment survival for target fish species will be estimated using data from survival studies conducted at other hydroelectric facilities with similar characteristics and the Franke blade strike probability equation

Assessment of Fish Entrainment & Turbine Passage Survival

Methodology (cont.)

• Task 4: Report

- Results, including estimates of entrained fish survival through the Project turbines, will be summarized in a report
- All supporting data will be provided in an appendix
- The results of this study will provide the basis of discussion with resource agencies related to fish passage and/or protection

Assessment of Fish Entrainment & Turbine Passage Survival

Proposed Schedule

Task	Schedule
FERC Study Plan Determination	May 11, 2018 (<i>anticipated</i>)
Task 1. Data Collection – Current Conditions	June – September 2018
Task 2. Literature Review for Species of Interest	Summer / Fall 2018
Task 3. Estimate of Entrainment and Turbine Passage Survival	Summer / Fall 2018
Task 4. Report	Within one year of SPD (<i>likely May 11, 2019</i>)

Recreation and Public Access

Study Goals and Objectives

- Identify, describe, and photo document each formal and informal public recreation site and facility in the study area
- Assess the condition of Project recreation facilities, including erosion that may exist due to recreational use at the Power Authority boat launch
- Assess accessibility of existing Project recreation facilities
- Create GIS-based map layers denoting the recreation sites/facilities populated with information from the three goals above
- Conduct visitor surveys and spot counts during the recreation season to determine the use and adequacy of Project recreation facilities

Recreation and Public Access

Geographic Scope

- The study area encompasses lands and waters available for public recreation within and bordering (i.e., touching) the Project boundary

Recreation and Public Access

Methodology

• Task 1: Literature Review and Outreach

- Identify commonly used formal and informal public recreation access sites within the study area
- Obtain available facility use and capacity and user survey results, if any, from the NYSDEC
- Survey readily known recreational organizations and governmental agencies regarding recreational use and adequacy in study area

Recreation and Public Access

Methodology (cont.)

• **Task 2: Recreation Field Inventory of Access, Condition, and Use**

- Conduct a recreational field inventory to confirm public access sites identified in Task 1, document any additional sites, and gather information on readily identified public access sites
- Shoreline within the study area accessible by passenger vehicle will be visually surveyed to document formal and informal locations, which will be captured via GPS
- Collect the following information for each public access point:
 - (1) Physical description of the type of recreational feature; (2) type of recreation opportunity provided; (3) type (if any) of vehicular access and parking; and (4) photographic documentation
- For Project recreation facilities, the following additional information will be recorded:
 - (1) Condition and accessibility of facility and amenities; and (2) recreation-induced erosion observed at the Power Authority boat launch (if any)

Recreation and Public Access

Methodology (cont.)

• Task 3: Recreation Field Survey of Existing Use

- Conduct field surveys at Project recreation sites from May 12 to October 8, 2018 to estimate current recreational usage
- Survey days will be stratified by weekdays, weekends, and holidays, with the majority of the surveys conducted during the peak recreation season (Memorial Day to Labor Day)
- Survey routes will be completed on a rotating basis and at different times of day to account for time-of-day patterns
- Surveys will consist of spot counts and visitor intercept surveys and will occur at the (1) Power Authority boat launch; (2) scenic overlook; and (3) tailwater fishing area

Recreation and Public Access

Methodology (cont.)

• Task 4: Report

- Report will summarize the methods and results of the study
- Data collected from previous tasks will be compiled and undergo statistical analysis
- Using the information gathered, the Power Authority will assess the overall adequacy of Project recreation facilities

Recreation and Public Access

Proposed Schedule

Task	Schedule
FERC Study Plan Determination	May 11, 2018 (<i>anticipated</i>)
Task 1. Literature Review and Outreach	Spring – Summer 2018
Task 2. Recreation Field Inventory of Access, Condition, and Use	Summer 2018
Task 3. Recreation Field Survey of Existing Use	May 2018 – October 2018
Task 4. Report	Within one year of SPD (<i>likely May 11, 2019</i>)

Relicensing Information

<http://www.jarvis.nypa.gov>



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Hydroelectric Project**
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News and Announcements

If you have a relicensing question or would like to join our mailing list please email Jarvis.Relicensing@nypa.gov

- December 12, 2017 - NYPA Files Proposed Study Plan
- January 11, 2018 - 9:00 AM Proposed Study Plan Meeting, SUNY Polytechnic Institute

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[New York State Department of Environmental Conservation](#)

[New York State Office of Parks, Recreation & Historic Preservation](#)





The New York Power Authority's (NYPA) Gregory B. Jarvis hydropower dam is located on the Hinckley Reservoir in Herkimer and Oneida Counties. The Federal Energy Regulatory Commission (FERC) issued NYPA a 40 year license in July 1982 to construct and operate the 9 Megawatt (MW) Project. The Project first produced power in 1986 and was renamed the Gregory B. Jarvis Plant in honor of local astronaut and hero who died in the 1986 Space Shuttle Challenger tragedy.