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Crescent Project (P-4678)
Vischer Ferry Project (P-4679)

FERC Proposed Study Plan (PSP) Meeting
Hilton Garden Inn, Albany, NY
October 23, 2019

Agenda

- Introductions
- Purpose of the Proposed Study Plan Meeting
- Relicensing Milestones and Schedule
- Next Steps
- Study Plan Presentations

Purpose of Meeting

- Requirement under 18 C.F.R. § 5.11
- Meeting to discuss Proposed Study Plan (PSP)
- This is the next step in refining information needs for the studies that inform the License Application;
- The PSP is a product of NYPA's PAD, FERC's SD1 and public comments;
- Public comments were reviewed and NYPA has added five studies in response to the comments received.

Relicensing Milestones and Schedule

- Notices of Intent (NOI) and Pre-Application Document (PAD) were filed with FERC - May 3, 2019
- FERC issued Scoping Document 1 - June 10, 2019
- FERC held Scoping meetings and project site visits - July 10-11, 2019
- FERC issued Scoping Document 2 - September 20, 2019
- Power Authority filed Proposed Study Plan (PSP) with FERC - September 23, 2019
- **PSP Meeting (Today, October 23, 2019)**

Relicensing Milestones and Schedule

- **PSP Meeting (Today, October 23, 2019)**
- Stakeholder comments on PSP due December 22, 2019
- Power Authority to file Revised Study Plan (RSP) - January 21, 2020
- Stakeholder comments on RSP due February 5, 2020
- FERC issues Study Plan Determination - February 20, 2020
- 1st Year Studies commence in Spring 2020

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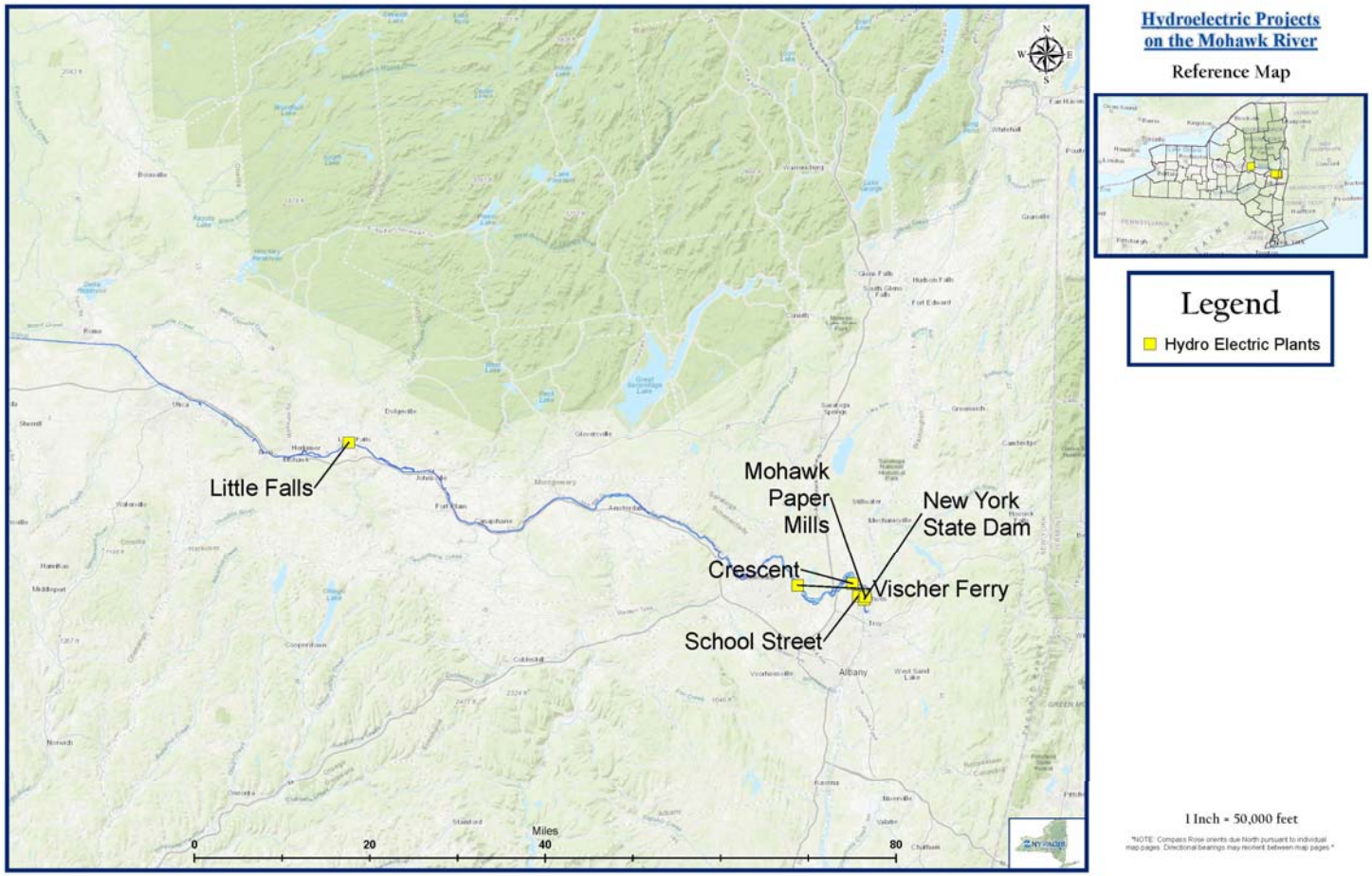
Location of Hydroelectric Projects on Lower Mohawk River



Hydroelectric Projects on the Mohawk River

Reference Map

Legend

Hydro Electric Plants

1 Inch = 50,000 feet

NOTE: Compass Rose orients due North pursuant to individual map pages. Directional bearings may reorient between map pages.

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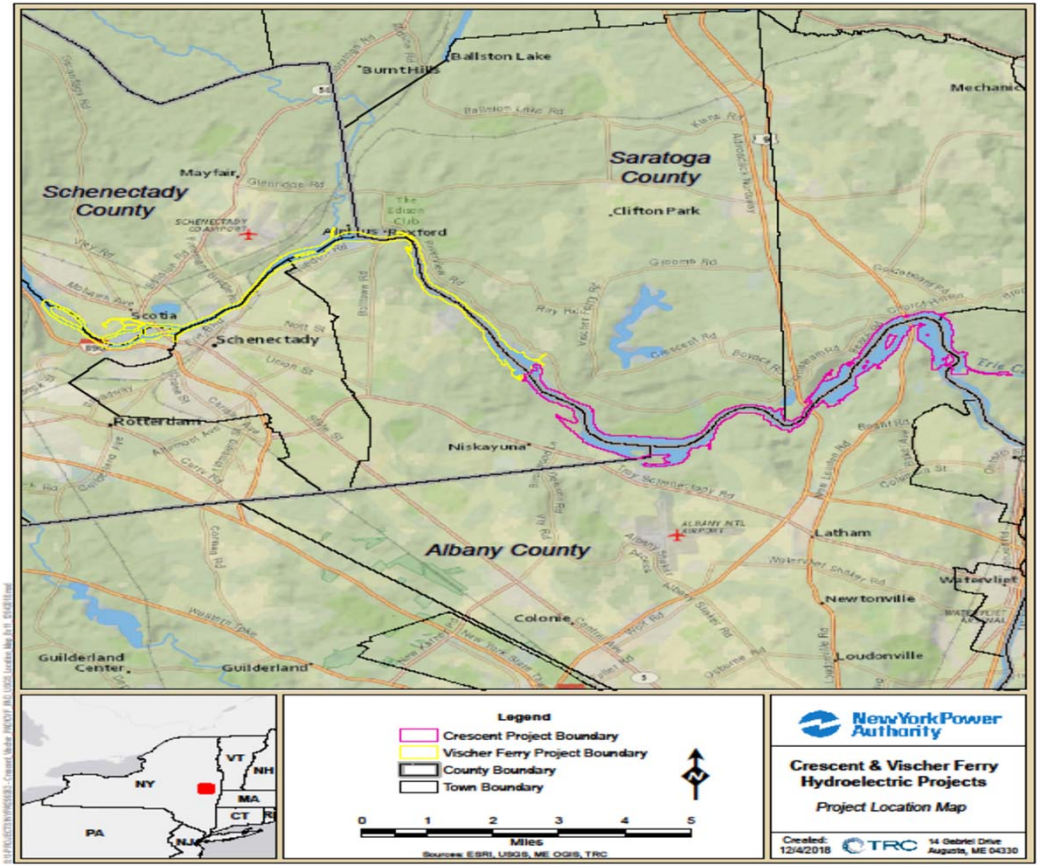
Location of Projects



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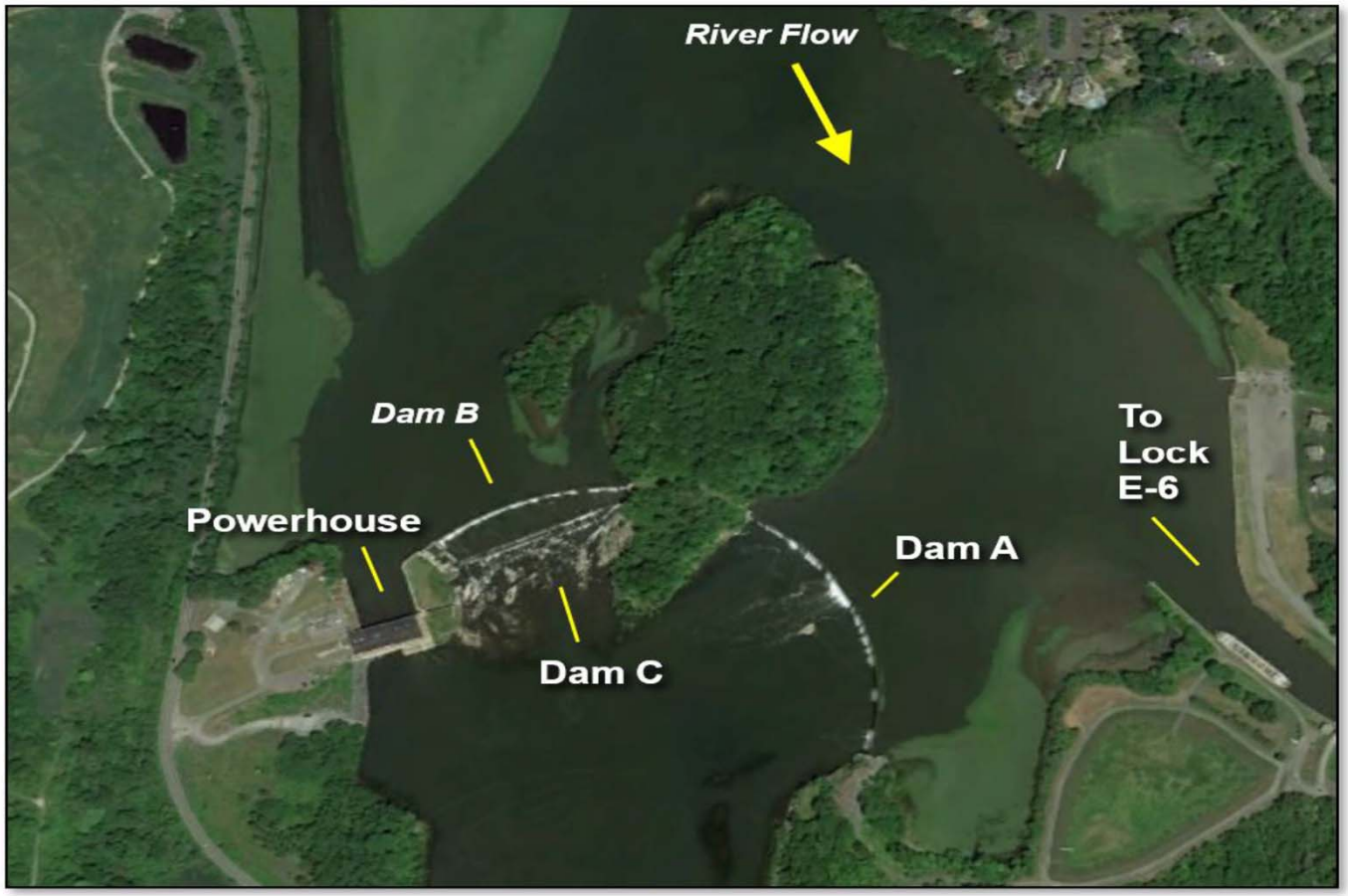
Crescent Hydroelectric Plant Features



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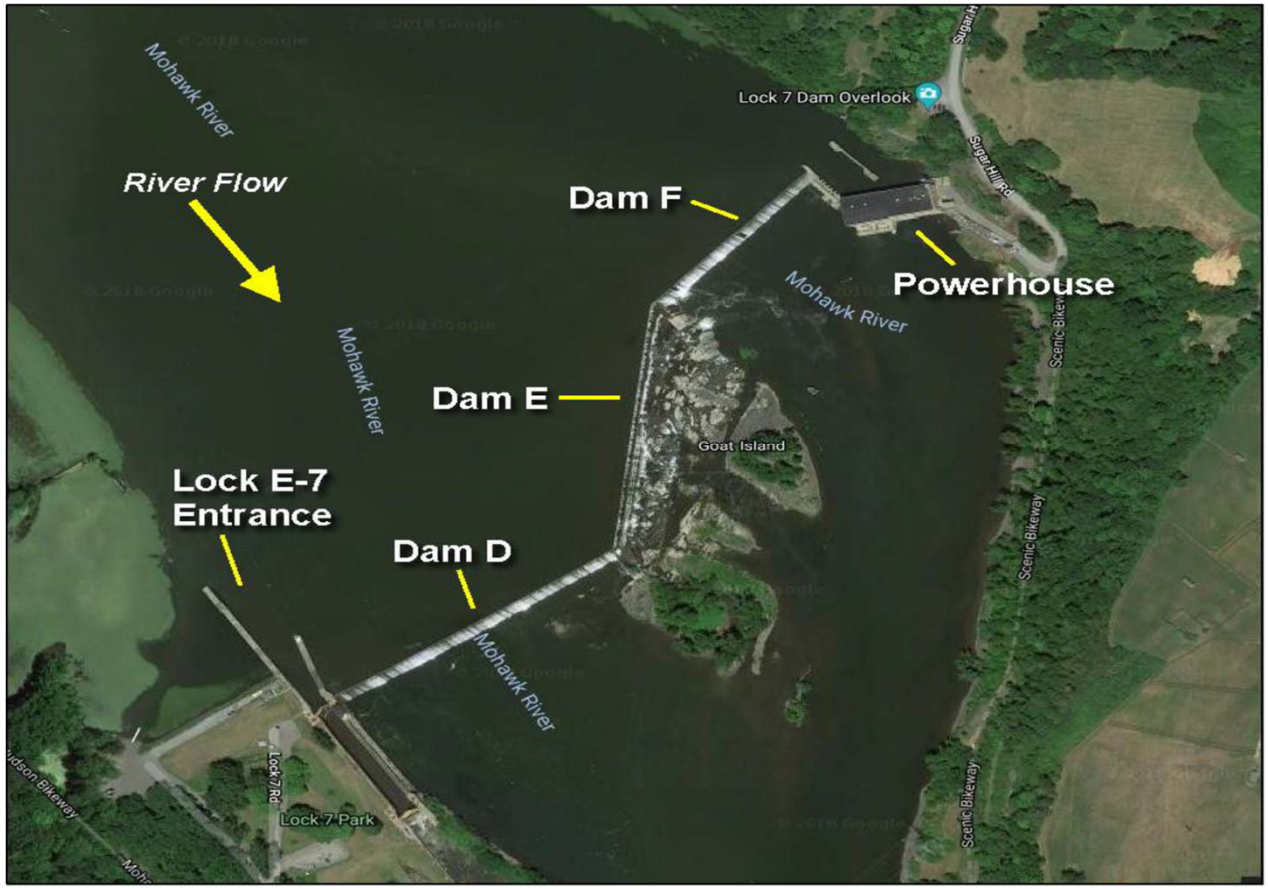
Crescent Project Operations

- Operated as run-of-river.
- 12-inch flashboards installed on the spillway crest during navigation season for canal operations.
- When the flashboards are installed, 250 cfs is spilled through an 80-foot-wide by 1-foot-high opening in Dam A flashboards to provide downstream passage for adult and juvenile blueback herring.
- During the non-navigation season, the minimum flow is 100 cfs and is typically passed through the turbines; rarely, when inflows are less than 350 cfs, the minimum flow is released through the sluice gate.
- An acoustic deterrent system is installed seasonally to guide fish away from the turbines and toward the fish passage system.

Vischer Ferry Hydroelectric Plant Features



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Vischer Ferry Project Operations

- Operated as run-of-river.
- 27-inch flashboards are installed on the spillway crest during navigation season for canal operations.
- There are two separate openings in the flashboards to provide downstream passage. One is to accommodate juvenile blueback herring, open from September through November; the second is for adults, open from May through July.
- A minimum flow of 200 cfs (or inflow, whichever is less) is required to be passed at the Vischer Ferry Dam.
- An acoustic deterrent system is installed seasonally to guide fish away from the turbines and toward the fish passage system.

Proposed Studies

1) Water Quality Study
2) Fish Entrainment Study
3) Blueback Herring Migration Study
4) Fish Community Study
5) Aquatic Mesohabitat Study
6) Bald Eagle Study
7) Recreation Study

Water Quality Study

Goals and Objectives:

- Evaluate the water quality effects, if any, of each of the Projects on dissolved oxygen and temperature
- Determine compliance with New York water quality standards for dissolved oxygen and temperature
- Characterize current water quality at the Projects.

Water Quality Study

Methods:

- Continuous monitoring of DO and temperature May through October 2020 (stations to be selected in consultation with NYSDEC)
- Additional monthly grab sampling for pH, turbidity and conductivity

Water Quality Study

Schedule and Reporting:

- Consultation March-April 2020
- Field Work May-October 2020
- Data Analysis November-December 2020
- Final report will be included in Initial Study Report (ISR) to be filed with FERC in February 2021.

Fish Entrainment Study

Goals and Objectives:

- Provide a qualitative literature-based assessment of the potential for fish entrainment and impingement at the Projects
- Use existing databases, tools and models to evaluate potential turbine survival rates for representative resident and migratory fish species/lifestages

Fish Entrainment Study

Methods:

- Gather existing details on Project and unit configuration (intake racks, unit type, rotation speeds, etc.)
- Collect velocity and depth measurements in front of Projects' intake structures using Acoustic Doppler Current Profiler (ADCP)
- Analyze collected water quality data to determine if entrainment might be affected by water quality conditions
- Using standard literature sources, evaluate the potential for impingement and entrainment at the Projects, based on size and swim characteristics of various fish species, behavior, and lifestages
- Use existing tools (I.e. EPRI database and Franke (1997) equation models) to develop estimates of turbine survival/mortality for representative species/lifestages

Fish Entrainment Study

Schedule and Reporting:

- Literature Search and Analyses March-September 2020
- Field Work (collection of velocity data) - Summer 2020
- Final report will be included in Initial Study Report (ISR) to be filed with FERC in February 2021.

Blueback Herring Migration Study

Goals and Objectives:

- Use hydroacoustic methods to assess the timing, duration and magnitude of the upstream adult migration of blueback herring via the canal and lock facilities (Locks E-6 and E-7) associated with the Projects

Blueback Herring Migration Study

Methods:

- Split beam transducer arrays deployed to monitor fish movement of adult BBH during a single migration season in the target areas (Locks E-6 and E-7)
- Exact location, orientation, and number of transducers to be determined
- Transducers mounted in areas to provide best monitoring of upstream fish movement
- Monitoring system configured to allow for ID of acoustic targets corresponding to adult BBH

Blueback Herring Migration Study

Methods:

- Data recorded and archived continuously
- Weekly transducer inspection and maintenance
- Data analysis using tools such as Echoview™ software
  - » Timing of fish movement relevant to lock operations, water temperature, climatic conditions, and river flow.
  - » Estimate the number of fish using the locks for passage
  - » Compare estimates of relative abundance to magnitude and timing of passage between the two lock locations.

Blueback Herring Migration Study

Schedule and Reporting:

- Consultation/Meetings March 2020
- Field work late-April through mid-July 2020
- Data Analysis Fall 2020
- Final report will be included in Initial Study Report (ISR) to be filed with FERC in February 2021

Fish Community Study

Goals and Objectives:

- Utilize existing fisheries data to conduct a comprehensive desktop assessment of the fish community at the Projects, including a determination of species composition and relative abundance

Fish Community Study

Methods:

- Gather existing fish data that has been collected in the lower Mohawk River by NYSDEC, USGS, and others
  - » Source data for 15 fisheries reports, papers, and articles has been requested from NYSDEC
- Digitize field survey data and create a database
- Conduct desktop analysis of fish data to characterize the fish assemblage in the vicinity of the Projects
  - » Species composition
  - » Relative abundance
  - » Fish condition factors
  - » Creel data
  - » Temporal changes

Fish Community Study

Schedule and Reporting:

- Consultation March-May 2020
- Background Research Spring-Summer 2020
- Data Analysis Fall 2020
- Final report will be included in Initial Study Report (ISR) to be filed with FERC in February 2021

Aquatic Mesohabitat Study

Goals and Objectives:

- Identify, characterize and map key aquatic habitat types found at the Projects, including wetlands, SAV, and riparian habitats
- Identify and document areas of substantial shoreline erosion, areas of invasive exotic species, and any observed rare, threatened, and endangered species

Aquatic Mesohabitat Study

Methods:

- Identify wetland, littoral, and riparian cover types using aerial imagery
- Verify habitat types through field reconnaissance
- Document any observed and identified T&E plant species
- Document and delineate substantial stands of invasive exotic species, including invasive European water chestnut

Aquatic Mesohabitat Study

Methods continued:

- Document any mussels observed
- Document shallow water areas occupied by fish nests
- Document areas of shoreline erosion and obtain representative photographs

Aquatic Mesohabitat Study

Schedule and Reporting:

- Background Research Spring-Summer 2020
- Field Work Summer-Fall 2020
- Data Analysis Fall 2020
- Final report will be included in Initial Study Report (ISR) to be filed with FERC in February 2021.

Bald Eagle Study

Goals and Objectives:

- Identify and map areas of existing and potential bald eagle nesting, roosting, and foraging habitats at the Projects
- Monitor and record bald eagle activities in both Project areas

Bald Eagle Study

Methods:

- Consult with NYSDEC to determine availability of bald eagle habitat/nesting data within the Projects' boundaries
- Identify other sources of Bald Eagle information
- Conduct reconnaissance level surveys in the spring and summer to observe and document Bald Eagle use
- Conduct routine checks of eBird and other on-line birding sites for documentation of Bald Eagle observations in the area
- Analyze habitat and observation data and create GIS-based maps showing the location of various eagle habitats within the Projects' boundaries

Bald Eagle Study

Schedule and Reporting:

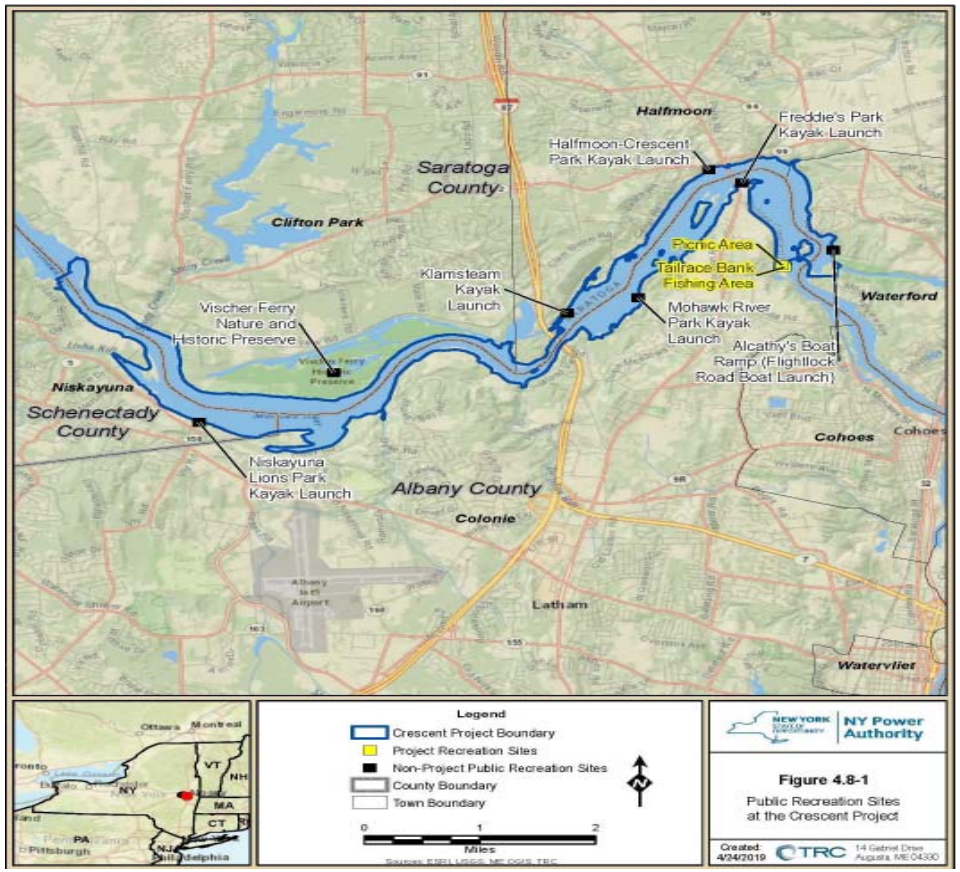
- Consultation March-May 2020
- Background Research Spring-Summer 2020
- Field Work Spring-Summer 2020
- Data Analysis Fall 2020
- Final report will be included in Initial Study Report (ISR) to be filed with FERC in February 2021.

Recreation Study

Goals and Objectives:

- Inventory both formal and informal, non-commercial, recreation sites that provide public recreational access to the Projects
- Evaluate current use and future needs through the conduct of recreation use counts and recreational user surveys at the five Project recreation sites

Crescent Project Recreation Sites



Recreation Site Name	Recreation Amenities
Tailrace Bank Fishing Area	Informal tailwater fishing area
Picnic Area	Small picnic area near tailrace and powerhouse

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Vischer Ferry Project Recreation Sites

Recreation Site Name	Recreation Amenities
Project Forebay Scenic Overlook	Provides views of the impoundment and parking for access to the shoreline for fishing and hiking
Tailrace Parking Facilities	Parking for fishing and hiking along the shoreline of the tailrace
Town of Niskayuna Boat Ramp (also known as Lock E-7 (upper end) Boat Ramp)	Boat ramp and parking area that is integrated with the NYSCC Lock 7 State Canal Park

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Recreation Study

Methods:

- Conduct a recreation facility inventory and condition assessment of formal and informal recreation sites (project and non-project) that provide public access to Project lands and waters.
  - » Use a standardized inventory form to document site facilities and amenities
  - » Identify ADA related facilities and amenities
  - » Assess the condition of the sites, facilities and amenities, and document condition issues, including areas of erosion
  - » Document recreation sites, facilities, and amenities with GPS data points and photographs, and prepare a map or sketch of each site showing location of facilities and amenities.

Recreation Study

Methods continued:

- Conduct a single season (May-Oct) assessment of the 5 Project recreation sites use using trail cameras or, if necessary, spot counts.
- Conduct a survey of Project recreation site users to get their perceptions on site use, adequacy, and condition
- Analyze use data and user surveys to evaluate the adequacy of the Project Recreation Sites to meet existing and future demand

Recreation Study

Schedule and Reporting:

- Background Research March-May 2020
- Field Work May-October 2020
- Data Analysis November-December 2020
- Final report will be included in Initial Study Report (ISR) to be filed with FERC in February 2021.

Project Relicensing Schedule (ILP)

- Proposed Study Plan (PSP) Meeting - **October 23, 2019**
- Comments on PSP due - **December 22, 2019**
- Power Authority to file Revised Study Plan (RSP) - **January 21, 2020**
- FERC issues Study Plan Determination - **February 20, 2020**
- 1st Year Studies Commence - **Spring 2020**
- Initial Study Report (ISR) - **February 2021**

Federal Energy Regulatory Commission (FERC)

Website: www.ferc.gov

E-library: Docket Numbers P-4678, P-4679

Online Support: FERCOnlineSupport@ferc.gov

Relicensing Website: www.nypa.gov/cvf

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