



LAKE LYNN  
HYDROELECTRIC  
PROJECT  
FERC No. 2459

RELICENSING MEETING AND SITE VISIT  
DECEMBER 12, 2019

**LAKE LYNN GENERATION, LLC**

# SITE VISIT AND MEETING

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## Overall Schedule

- Joint Meeting - 10:00 AM-12:30 PM
- Lunch Break - 12:30 PM-1:30 PM
- Site visit - 1:30 PM (meet at Sunset Beach Marina)
  - Sunset Beach Marina
  - Cheat Lake Park
  - Cheat Lake Trail (north end)
  - Tailwater Fishing Platform
  - Powerhouse

## Meeting Agenda

- Welcome and Introductions
- Overview of FERC Traditional Licensing Process and Relicensing Schedule
- Project Description
- Overview of Information Provided in the Pre-Application Document (PAD)
- Proposed Resource Studies
- Next Steps - Solicitation of Comments

# INTRODUCTIONS

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- Meeting Participants
- TRC
- Lake Lynn Generation, LLC

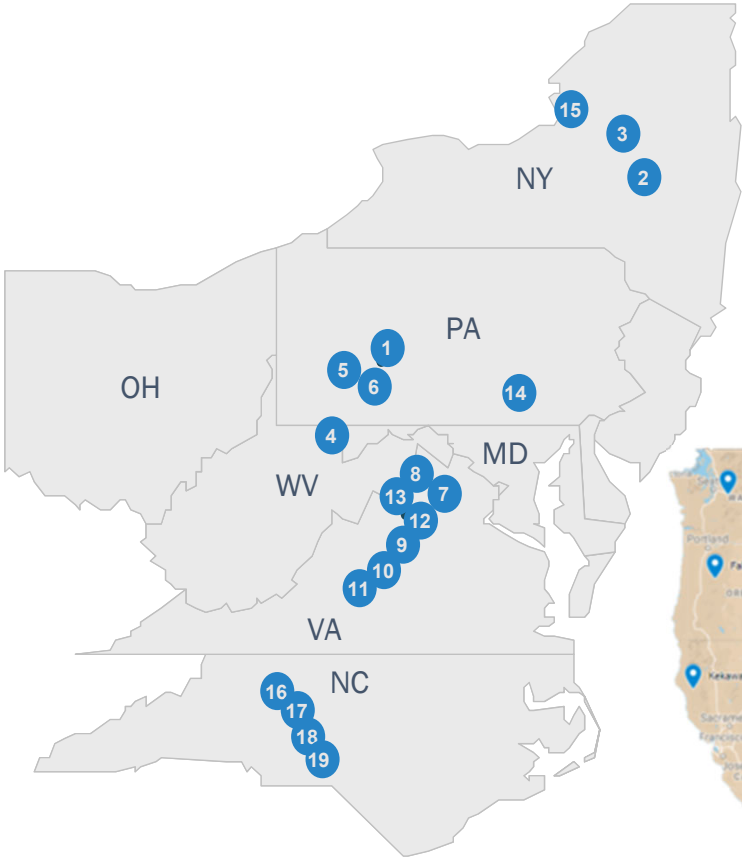
# OPG / Eagle Creek / Cube

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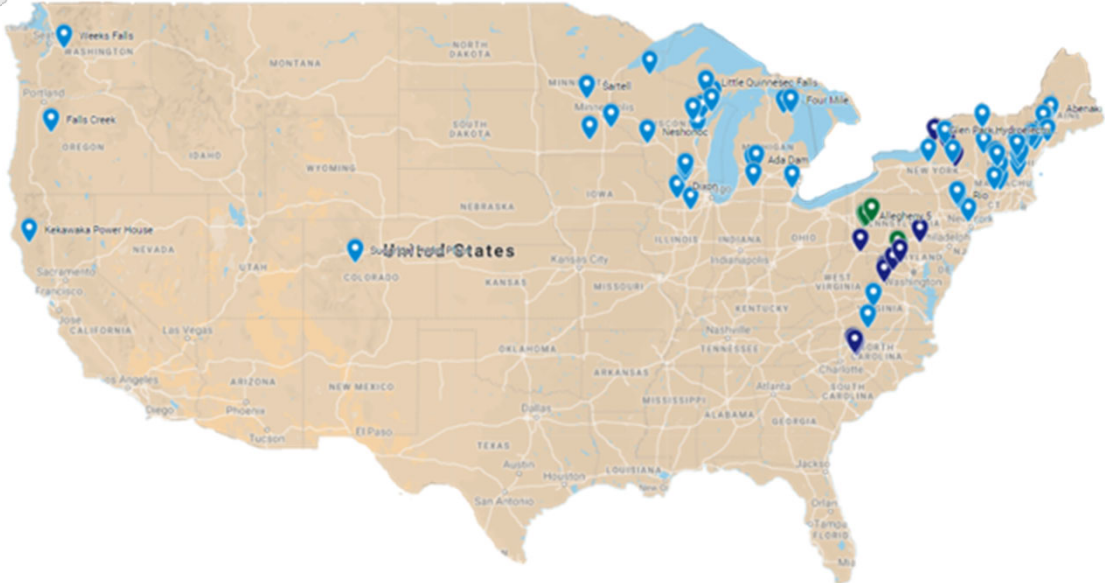
- Cube Hydro Partners has been a leading private hydropower company focused on developing, acquiring, optimizing and operating environmentally friendly run-of-river hydropower projects
- Cube managed 385 MW of installed capacity at 19 hydropower projects on 10 rivers in 5 states, generating approximately 1.5 million MWh annually
- Cube was recently acquired by OPG Eagle Creek US (October 2019)
- The two companies now collectively own and operate a total of 85 hydropower projects in the US (620 MW of capacity and 2.5M MWhs of clean energy annually)
- Our combined teams have experienced staff with extensive collective hydropower and energy experience, spanning engineering, power markets, legal and regulatory, and commercial expertise



# COMBINED HYDRO PORTFOLIO



**Cube Hydro Partners + Eagle Creek Renewable Energy**



# FERC LICENSING AUTHORITY

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- Under the authority of the Federal Power Act, as amended by the Electric Consumers Protection Act, FERC is responsible for issuing licenses for non-federal hydroelectric power plants.
- FERC issues licenses and relicenses for up to 50 years for constructing, operating and maintaining non-federal hydropower projects.
- Licenses issued by FERC must take into consideration the environmental as well as economic aspects of continued operation of the project.
- License conditions assure the best comprehensive use of the waterway where the project is located.

# TRADITIONAL LICENSING PROCESS (TLP) OVERVIEW

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- **First Stage**

- Applicant files NOI, PAD, request to use TLP, and newspaper notice (8/29/2019)
- FERC approves use of TLP (10/17/2019)
- Applicant conducts joint agency/public meeting and site visit (12/12/2019)
- Resource agencies, tribes, and stakeholders provide written comments and recommend resource studies (2/10/2020)

- **Second Stage**

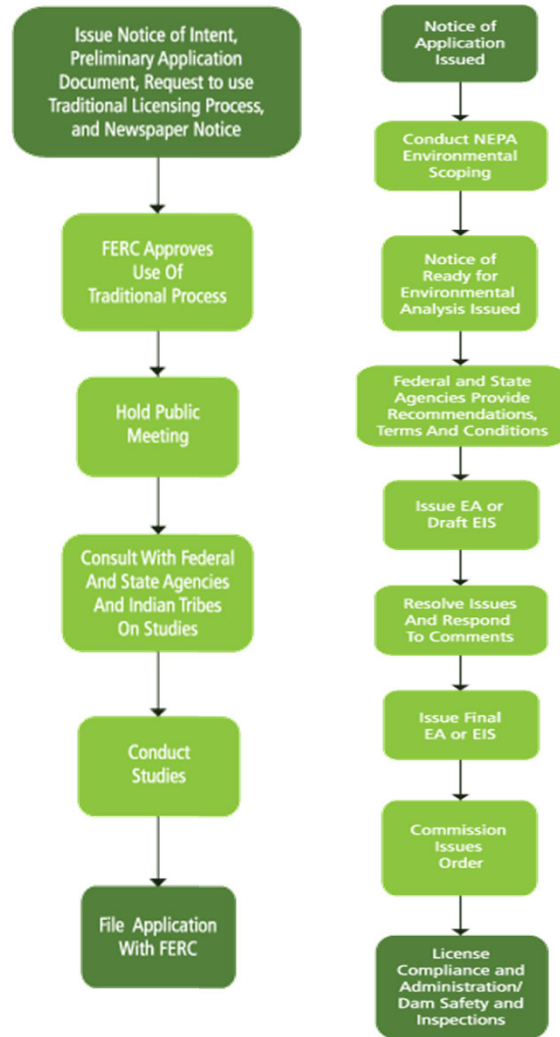
- Applicant completes reasonable and necessary studies
- Applicant provides draft license application and study results to resource agencies and tribes
- Resource agencies and tribes comment on draft license application
- Applicant conducts meeting if substantive disagreements exist

- **Third Stage**

- Applicant files final license application and sends copies to agencies and tribes

# FERC TLP

## Applicant's Pre-Filing Process      FERC Application Process



# RELICENSING SCHEDULE

Activity	Responsibility	Timeframe and Regulations	Dates
File NOI, PAD, and Request to use TLP and publish Public Notice in newspapers	Lake Lynn	5 to 5 ½ years prior to license expiration	August 29, 2019
Comments on TLP Request	FERC, Relicensing Participants	Within 30 days of NOI/PAD/TLP request filing and newspaper notice	September 28, 2019
FERC issues Notice of Commencement	FERC	Within 60 days of NOI/PAD/TLP request filing	October 17, 2019
FERC approves use of TLP	FERC	Within 60 days of NOI/PAD/TLP request filing	October 17, 2019
Notify FERC of Joint Meeting and publish Notice in newspapers	Lake Lynn	At least 15 days in advance of meeting	November 21, 2019
Joint Meeting for consultation with agencies, tribes, and interested public	Lake Lynn	30-60 days following FERC approval of TLP	December 12, 2019
Comments and Study Requests	Relicensing Participants	Due 60 days after Joint Meeting	February 10, 2020
Study Plan Development	Lake Lynn	Ongoing following Joint Meeting	December 12-March 1, 2020
Conduct Field Studies	Lake Lynn	One season of field studies	April 1-November 1, 2020
DLA and Study Results	Lake Lynn	Following conclusion of studies	November 30, 2021
Comments on DLA	Relicensing Participants	90-day comment period	February 28, 2022
FLA filed with FERC	Lake Lynn	2 years prior to license expiration	November 30, 2022
FERC issues Public Notice of Application	FERC	Within 14 days of FLA submittal	December 14, 2022
FERC Issues New License on or before License Expiration Date	FERC		November 30, 2024



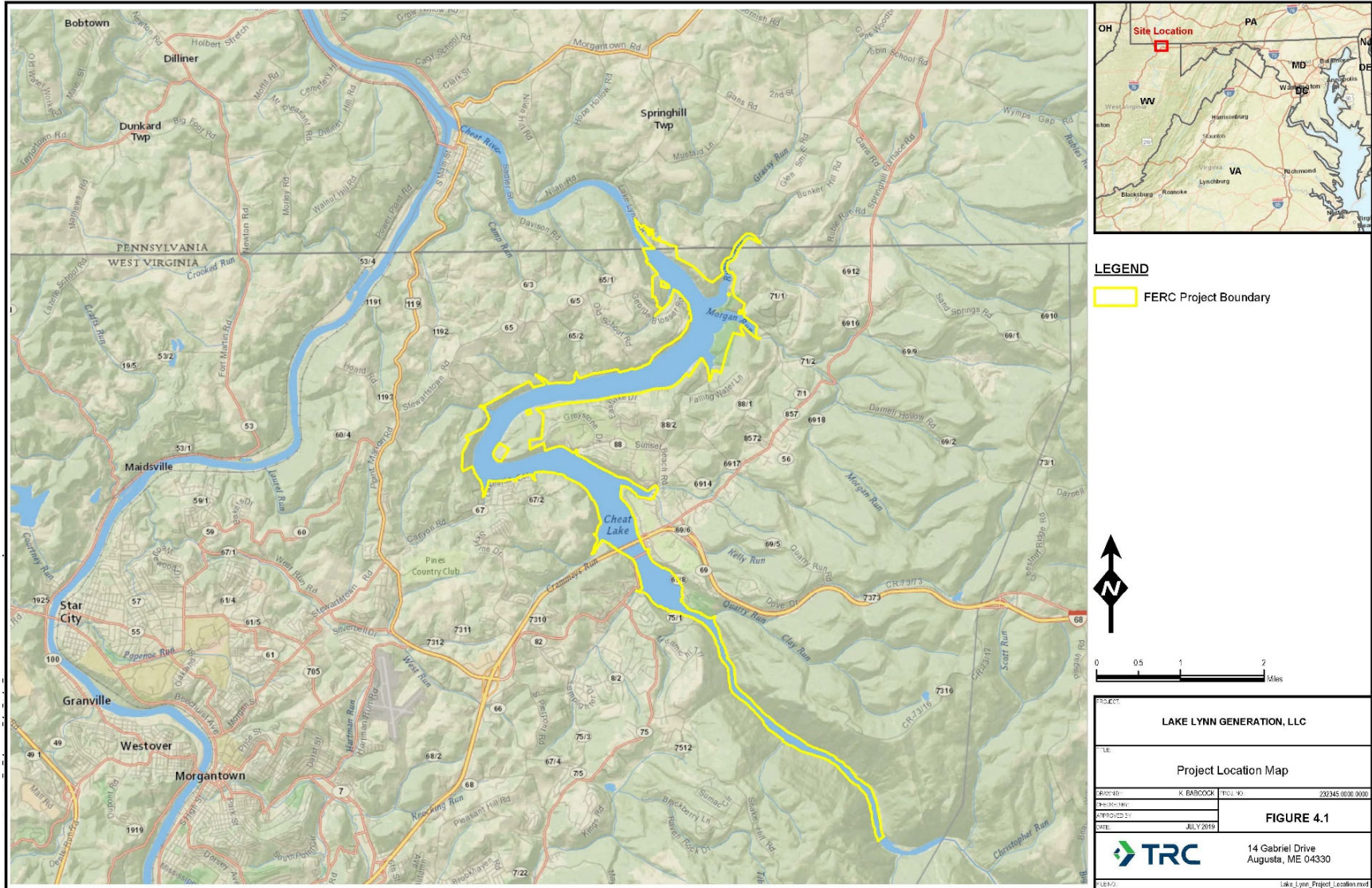


# PROJECT DESCRIPTION

LAKE LYNN GENERATION



# PROJECT AREA



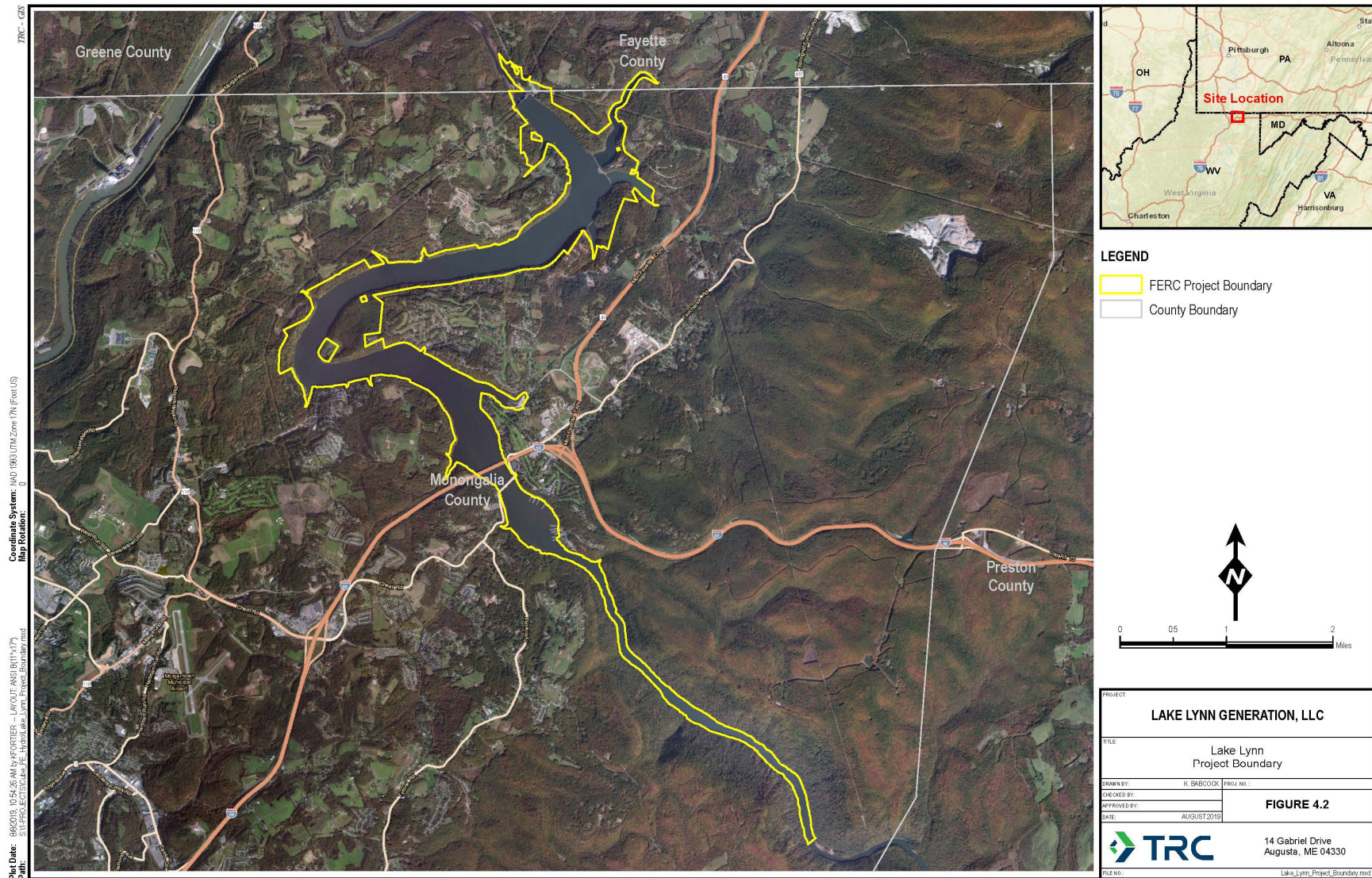
# **LAKE LYNN PROJECT (FERC NO. 2459)**

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- 51.2 MW
- Project produces a long-term average generation of 140,352 MWh of clean electricity annually
- Constructed in 1926
- New FERC license issued in 1994
- 30-year license term expires on November 30, 2024
- Located near Morgantown, WV
- On Cheat River approximately about 3.7 miles upstream of the confluence with the Monongahela River
- Drainage area at dam – 1,411 square miles
- USGS Gage for water surface elevations in the tailrace below the Project dam (Lake Lynn gage)
- USGS Gage on Cheat River (Albright gage) approximately 14 mi upstream of the Project



# PROJECT BOUNDARY



Plot Date: 8/6/2010 10:51:26 AM by JFORRIER - LAYOUT: ASB (11/17)  
 Path: C:\Users\jforrier\Documents\Projects\Lake Lynn Project\Boundary.mxd  
 Coordinate System: NAD 1983 UTM Zone 7N (Feet US)  
 Map Rotation: 0  
 TRC - GIS





# **Overview of Information Provided in the PAD**

# PROJECT FACILITIES

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- Concrete gravity-type dam with a spillway controlled by Tainter gates
- Reservoir with a surface area of 1,729 acres
- Log boom and trash racks at the intake facility
- Eight gated reinforced concrete penstocks
- Powerhouse containing four identical Francis generating units
- Dual 800-foot-long, 138-kV transmission lines
- Other appurtenant facilities



# PROJECT OPERATIONS

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- Operated as a dispatchable peaking hydroelectric facility with storage capability
- Ponding capability varies by season and allows for peaking to satisfy minimum flow requirement
  - Minimum flow requirement of 212 cfs from the dam, or inflow, whichever is less, with an absolute minimum flow of 100 cfs regardless of inflow
- Cheat Lake operations:

Time of Year	Lake Elevation (ft)
May 1 – October 31	868 – 870 ft
November 1 – March 31	857 – 870 ft
April 1 – April 30	863 – 870 ft



# EXISTING ENVIRONMENT AND PROJECT EFFECTS

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## Geology and Soils

- Shoreline erosion surveys of the entire Cheat Lake shoreline conducted every 3 years since 1995 to identify new areas of erosion
  - Most recent survey (2017) of the entire Cheat Lake shoreline did not identify any new areas of erosion
- Annual shoreline erosion surveys of the Cheat Lake Park shoreline (Project dam to Cheat Haven peninsula) conducted since 1995
  - 2018 annual survey – no new areas of active erosion identified; previously identified areas exhibited minimal annual change in erosion levels
- Shoreline construction and reinforcement conducted in 2018 at two monitoring stations

No new issues anticipated related to geology and soils

# EXISTING ENVIRONMENT AND PROJECT EFFECTS

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## Water Resources

### Hydrology and Streamflow

- Six USGS gages in Project vicinity; closest measuring streamflow is Albright gage
- Annual flow statistics for Project (23 years of USGS gage records)

	Annual (cfs)
Lake Lynn Project at the Albright Gage	
Min	2,058
Mean	2,677
Max	3,568

### Water Quality

- Hourly DO, pH, water temperature, and conductivity monitored continuously from April 1 through October 31 annually since 1997 at three locations; reported annually
- Recent data suggests water quality conditions upstream and downstream of Project dam generally meet state standards and have generally improved over time, except for periods of low DO generally in late summer/early fall for most years (September and early October), particularly at Cheat Lake monitor

Continued Project operations not anticipated to create any new adverse effects on water quality

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# EXISTING ENVIRONMENT AND PROJECT EFFECTS

## USGS Gage/Licensee Water Quality Data, 2008-2018

Monitor/Gage	Water Temperature (°C)	pH	Dissolved Oxygen (mg/l)	Specific Conductance (µS/m at 25°C)
USGS Gage No. 03071590 Stewartstown Gage (Cheat Lake Site 07)	3.2 - 26.7	6.4 - 7.3	1.0 - 12.8	48 - 205
USGS Gage No. 03071605 Davidson Gage (Tailrace Site 08)	3.5 - 27.4	6.3 - 7.4	3.4 - 14.0	52 - 178
USGS Gage No. 03071690 Nilan Gage (Downstream Site 09 - from 2013 – Oct/Nov 2017)	6.0 – 27.2	5.3 – 7.4	3.1 – 13.0	54 - 217
USGS Gage 03071700 Point Marion Gage (Downstream Site 09 – site discontinued by USGS in September 2015 <sup>1</sup> )	0.2 – 27.5	4.0 – 8.3	5.5 – 15.2	61 – 681

<sup>1</sup> Data available through September 2015.

# EXISTING ENVIRONMENT AND PROJECT EFFECTS

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Summary of WVDEP Ambient Water Quality Monitoring Data for Stations Closest to the Project, 2009-2019

Parameter	MC-0001-3.5 (near the Project dam)	MC-0001-30 (upstream of Project)
Dissolved Oxygen (mg/L)	5.31 – 15.41	6.15 – 14.98
Temperature (°C)	0.22 – 27.0	-0.07 – 29.03
pH	5.48 – 8.12	5.02 – 8.15
Conductivity (µS/m)	58.0 – 166.0	50.0 – 168.0
Fecal Coliform (colonies)	0 – 2,400 <sup>1</sup>	2 – 9,000 <sup>2</sup>
Total ammonia nitrogen (mg/l)	0.02 – 0.05	0.02 – 0.05

<sup>1</sup> Average number of colonies is 81.8 units.

<sup>2</sup> Average number of colonies is 290.9 units.

# EXISTING ENVIRONMENT AND PROJECT EFFECTS

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## Fish and Aquatic Resources

- Cheat River supports warm water and cool water fish species
- Popular game species include largemouth bass, smallmouth bass, trout, crappie, walleye, and channel catfish.
- Fish and aquatic resources monitored through Project Biomonitoring Plan (and Plan updates) developed in consultation with DOI (USFWS), WVDNR, and PFBC
- Table 5.9 in the PAD summarizes comprehensive biomonitoring conducted over the past 22 years (1997-2019) and activities planned for 2020

# EXISTING ENVIRONMENT AND PROJECT EFFECTS

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## Fish and Aquatic Resources

- Worked with WVDNR to conduct surveys 2005-2009 and WVU to conduct surveys March 2001-December 2015
  - Consisted of sampling water quality, physical habitat, and biota (fish and benthic macroinvertebrates)
  - Improvements in aquatic resources found
- Walleye Population Monitoring and Stock Assessment - Walleye stocking assessments and walleye surveys conducted 2005-2009 in Cheat Lake and Cheat Lake embayments



# EXISTING ENVIRONMENT AND PROJECT EFFECTS

## Fish and Aquatic Resources

- Monitoring Adult Walleye Movement - Seasonal movements and distribution of Cheat Lake walleyes were monitored using acoustic telemetry from 2012-2015
- Aquatic Vegetation Mapping - Worked with WVDNR and WVU to document the distribution and relative abundance of aquatic vegetation in Cheat Lake
- Aquatic Habitat Enhancement and Monitoring - Aquatic habitat enhancement structures installed March 2019; working with WVDNR and WVU to conduct pre-spawn, spawn, and post-spawn monitoring; consultation with resource agencies to be conducted to determine if additional enhancement/monitoring is warranted in 2020



# EXISTING ENVIRONMENT AND PROJECT EFFECTS

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## Fish and Aquatic Resources

- Angler Creel Survey - A creel survey (survey targeting recreational anglers) will be conducted in 2020
- American eel eDNA - Working with USFWS in 2018 and 2019 to conduct sampling in Project tailwater for American eel DNA
- Benthic macroinvertebrate surveys - Conducted in Cheat Lake tailwater in 1997, 1998, 2001, 2005, 2008, 2011, 2014, and 2015

No issues anticipated related to fish species inhabiting Project waters

# **EXISTING ENVIRONMENT AND PROJECT EFFECTS**

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## **Wildlife and Botanical Resources**

- Over 200 resident/transient bird species, 50 mammal species, and 37 amphibian species potentially occur in Cheat River habitats
- Botanical resources typical of Cheat River basin

## **Riparian, Wetland and Littoral Habitats**

- Most wetlands are open water lake areas followed by riverine habitat

## **RTE Species**

- List of federal/state listed RTE species potentially occurring, in vicinity of Project included in PAD – 2 bat species (Indiana bat and Northern Long-eared bat), 1 snail (Flat-spined Three-toothed Snail), and 1 plant (Running Buffalo Clover)

No known/expected issues related to wildlife, terrestrial botanical resources, or wetland/riparian habitat



# EXISTING ENVIRONMENT AND PROJECT EFFECTS

## Recreation

- Cheat Lake Park
- Cheat Lake Trail
- Tailrace Recreation Area
- Sunset Beach Marina Public Boat Launch
- Cheat Haven Peninsula Nature Viewing Area
- Morgan and Manning Run embayments Nature Viewing Area
- Nature Viewing Area Across from Cheat Haven
- Towers Run Nature Viewing Area



# EXISTING ENVIRONMENT AND PROJECT EFFECTS

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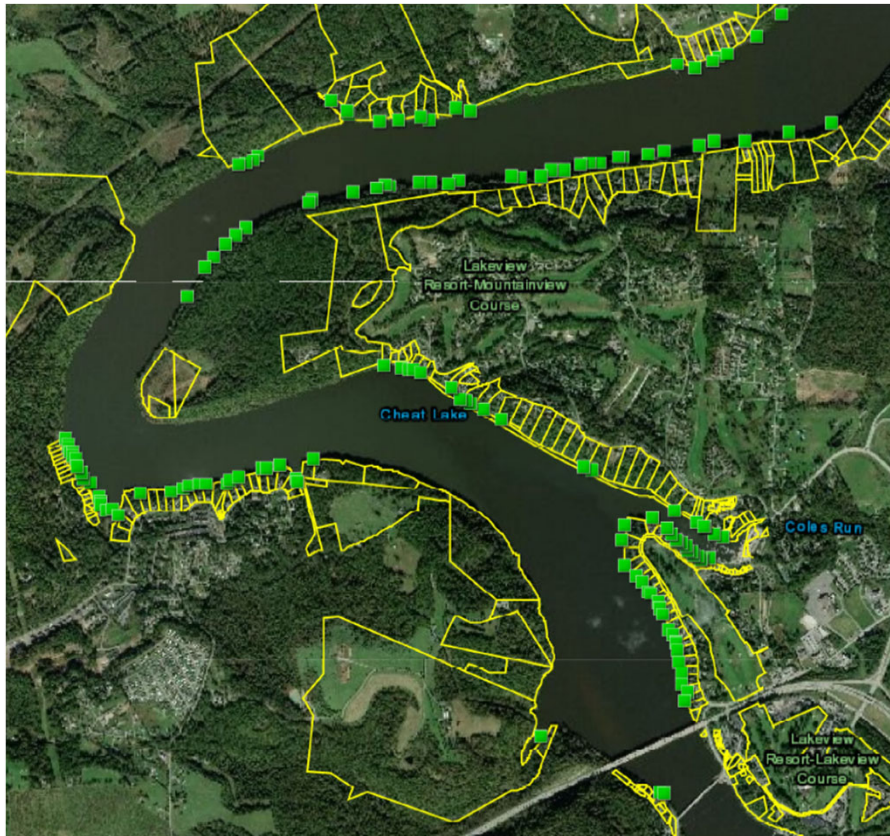
## Recreation

- Recreation data collected 2000 through 2017
- Recreation Plan Updates filed every three years from 2003 through 2018
- Recreation use remained about the same over the 17-year monitoring period
- Cheat Lake boating carrying capacity study conducted in 2017
- No new permits for private piers or boat docks will be issued until after relicensing

No adverse effects to recreational opportunities anticipated

# EXISTING ENVIRONMENT AND PROJECT EFFECTS

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## Land Use

- Project boundary generally follows the normal full pool elevation of the impoundment, except for several nature viewing areas, and includes certain lands immediately surrounding the Project facilities including the dam, powerhouse, access roads, and appurtenant facilities
- Leases and permits (“privilege permits”) for private recreation access were historically granted
- Shoreline inventory conducted in 2013 to inventory boat docks along the Cheat Lake shoreline; inventory completed again in 2019 (after filing of the PAD)
- No new permits for private piers or boat docks will be issued until after relicensing



# **EXISTING ENVIRONMENT AND PROJECT EFFECTS**

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## **Aesthetic Resources**

- No scenic highways or byways or National Wild and Scenic Rivers within the Project boundary or adjacent to the Project boundary

No issues identified relative to aesthetic resources

## **Cultural Resources**

- Two potentially significant cultural resources within the Project boundary – the railroad bed along the Cheat Lake Trail (a linear historic archaeological site) and the Lake Lynn powerhouse and dam (potentially eligible for the NRHP); no other historic properties identified within Project boundary

No new issues identified; no changes to the Project or Project operations

# **EXISTING ENVIRONMENT AND PROJECT EFFECTS**

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## **Tribal Resources**

- 19 tribes identified as potentially interested in Project relicensing
- No tribal interests or issues identified to date

## **Socioeconomic Resources**

- No issues identified

# PROPOSED RESOURCE STUDIES

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## Geology and Soils

- Continue to conduct shoreline erosion surveys in accordance with the existing FERC License - no new studies

## Water Resources

- Continue to collect and report water quality data in accordance with the existing FERC License - no new studies

## Fish and Aquatic Resources

- Continue to conduct biomonitoring activities in accordance with the existing FERC License and the Biomonitoring Plan - no new studies

# PROPOSED RESOURCE STUDIES

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## RTE Species

- Presence/absence surveys for RTE species likely to occur within FERC Project boundary

## Recreation

- Conduct inventory of existing Project recreation sites
- Collect recreation use data in 2020 and file the next Recreation Plan update by March 31, 2021 (consistent with FERC's Order modifying and approving the 2018 Recreation Plan Update)
- Conduct a creel survey (survey that targets recreational anglers) in 2020 (consistent with 2018 Biomonitoring Plan)

# PROPOSED RESOURCE STUDIES

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## Cultural Resources

- Consult with the WVSHPO and PHMC and submit the Project to the SHPO for formal review



# NEXT STEPS

## RELICENSING SCHEDULE

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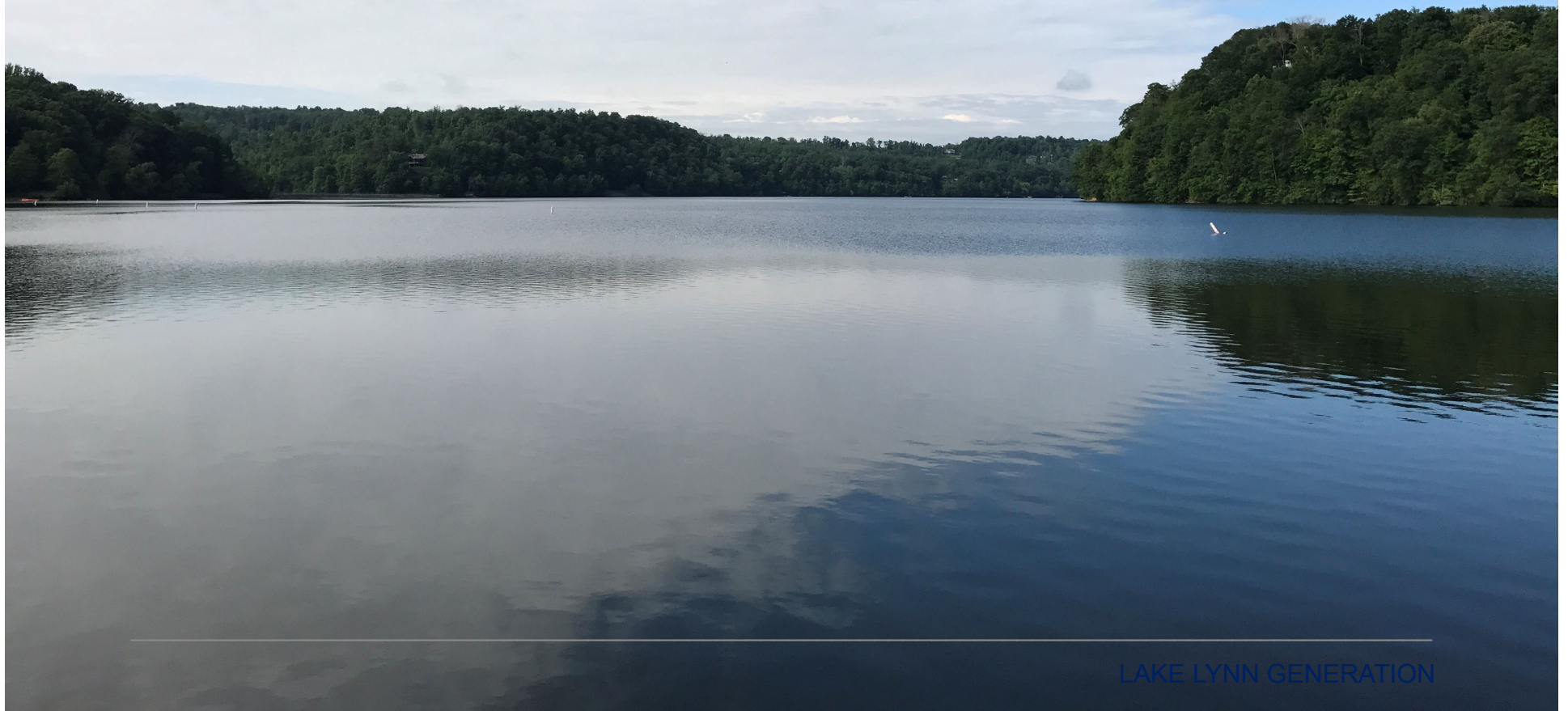
# FERC STUDY CRITERIA

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1. Describe goals and objectives of study proposal
2. Explain relevant resource management goals
3. Describe any existing information
4. Explain relevant public interest if requester is not a resource agency
5. Nexus to project operations and effects and how study results would inform development of license requirements
6. Methodology consistent with accepted practice
7. Consideration of level of effort and cost and why alternative studies would not suffice

# COMMENTS OR QUESTIONS?

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# CONTACT

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