EAGLE CREEK RENEWABLE ENERGY
— EXCELLENCE IN HYDRO —

Reusens Hydroelectric Project (FERC No. 2376)

Relicensing Joint Agency Meeting

Agenda

1. *Welcome and Introductions*
2. *Review of FERC Traditional Licensing Process and Schedule*
3. *Overview of the Project Features and Operations*
4. *Overview of Information Provided in the Pre-Application Document (PAD) and other sources*
5. *Public Utility Regulatory Policies Act (PURPA) Benefits*
6. *Proposed Resource Studies*
7. *Next Steps*
8. *Comments*
9. *Site Visit*

Review of FERC Traditional Licensing Process and Schedule – "Three Stage Process"

- ***First Stage***
  - Applicant issues NOI, PAD, request to use TLP, and newspaper notice;
  - Commission approves use of TLP (within 60 days of filing NOI);
  - Applicant conducts joint agency/public meeting and site visit (within 30 to 60 days of TLP Approval/Notice of Commencement);
  - Resource agencies and tribes provide written comments and study requests (no later than 60 days following the meeting);
  - Only if necessary, agencies, tribes, or Applicant request dispute resolution on studies with the Commission.
- ***Second Stage***
  - Applicant completes reasonable and necessary studies (usually one to two field seasons – spring through fall);
  - Applicant provides Draft License Application (DLA) and study results to resource agencies and tribes (usually a few months after the last study season);
  - Resource agencies and tribes comment on DLA (no later than 90 days after receipt of the DLA);
  - Only if necessary, the Applicant conducts a joint meeting if substantive disagreements exist.
- ***Third Stage***
  - Applicant files Final License Application with Commission and sends copies to agencies and tribes (no later than two years prior to license expiration).

TLP Process Overview

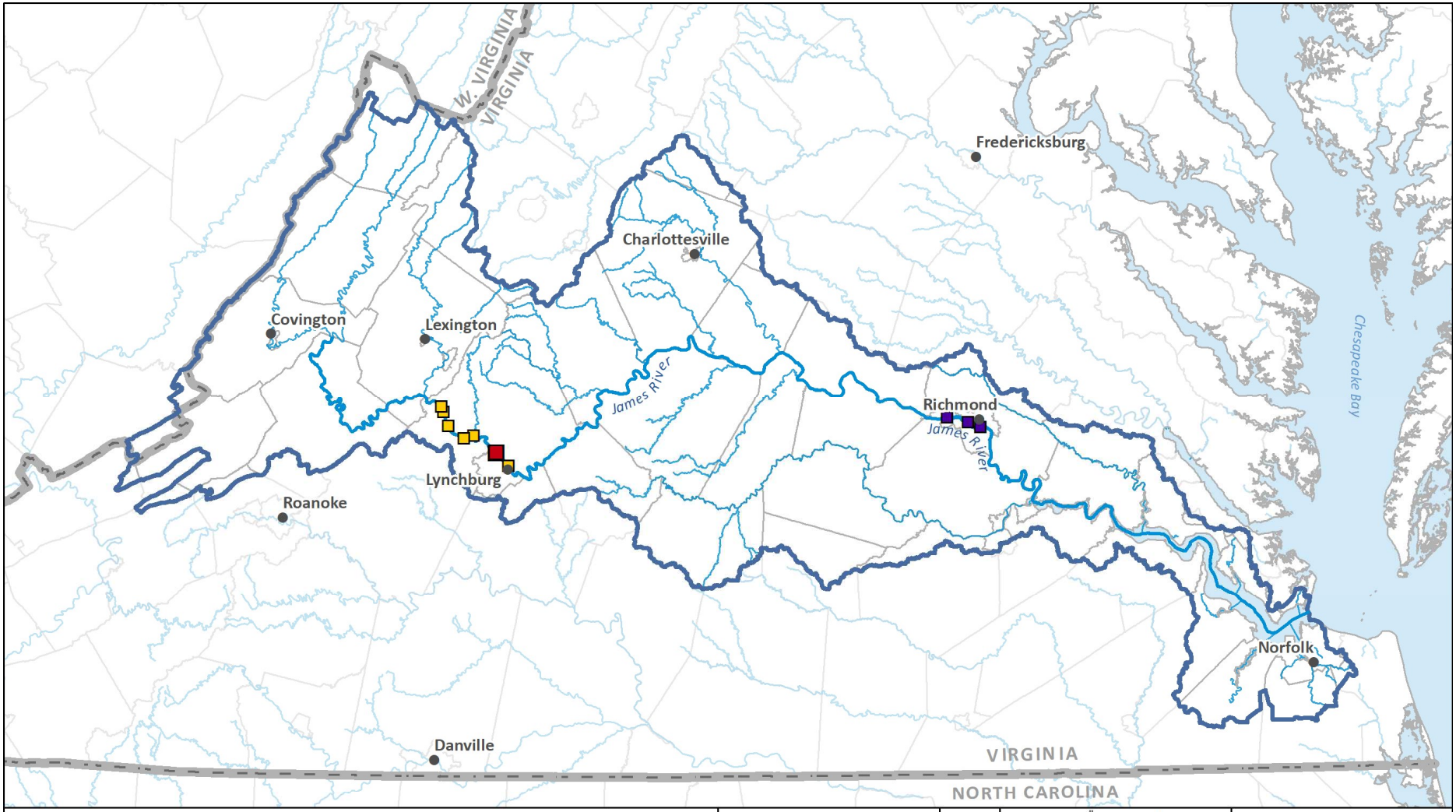
Party	Activity	Time Frame	Deadline
	TLP Stage 1		
Licensee	Deadline to File NOI and PAD	5 to 5 ½ years before license expiration	February 28, 2019
FERC	FERC issues Public Notice of NOI, PAD and TLP Request to agencies, tribes and interested public	Concurrent with NOI	March 1, 2019
FERC, Stakeholders	Comments on TLP Request	Within 30 days of Public Notice	April 1, 2019
FERC	FERC issues Notice of Commencement	Within 60 days of Public Notice	April 29, 2019 (issued April 16, 2019)
Licensee	Notify FERC of Joint Meeting and Publish Notice in Newspaper	At least 15 and 14 days in advance of meeting	May 7 and 8, 2019
Licensee	***Joint Public Meeting and Site Visit***	***30-60 days following Notice of Commencement***	***May 22, 2019***
Stakeholders	***Comments and Study Requests***	***Due 60 days after Joint Meeting***	***July 22, 2019***
Licensee	Study Plan Development	Following receipt of PAD comments and study requests	Through February 2020
	TLP Stage 2		
Licensee	Conduct Field Studies	One season of field studies	Spring – Fall 2020 / 2021
Licensee	Draft License Application and Study results	Produced following conclusion of studies	September 1, 2021
Stakeholders	Comments on Draft License Application	90-day comment period	November 30, 2021
	TLP Stage 3		
Licensee	Final License Application	No later than 2 years before current license expires	February 28, 2022
FERC	FERC issues Public Notice of Application	Within 14 days of final license application submittal	March 14, 2022
FERC	Current FERC License Expires		February 29, 2024

Overview - Project Location

- ***James River***
  - City of Lynchburg and in Bedford and Amherst Counties, VA
  - Reusens Dam is approximately at river mile 265 (265 miles upstream from the mouth at Chesapeake Bay)
  - Fifth of ten dams on the James River, and the first hydroelectric Project (from downstream)
  - First of six operating hydroelectric Projects on the river (downstream to upstream)
  - Upstream 3.7 river miles from the Lynchburg Dam; and 8.0 river miles downstream of the Holcomb Rock Hydroelectric Project (FERC No. 14425)

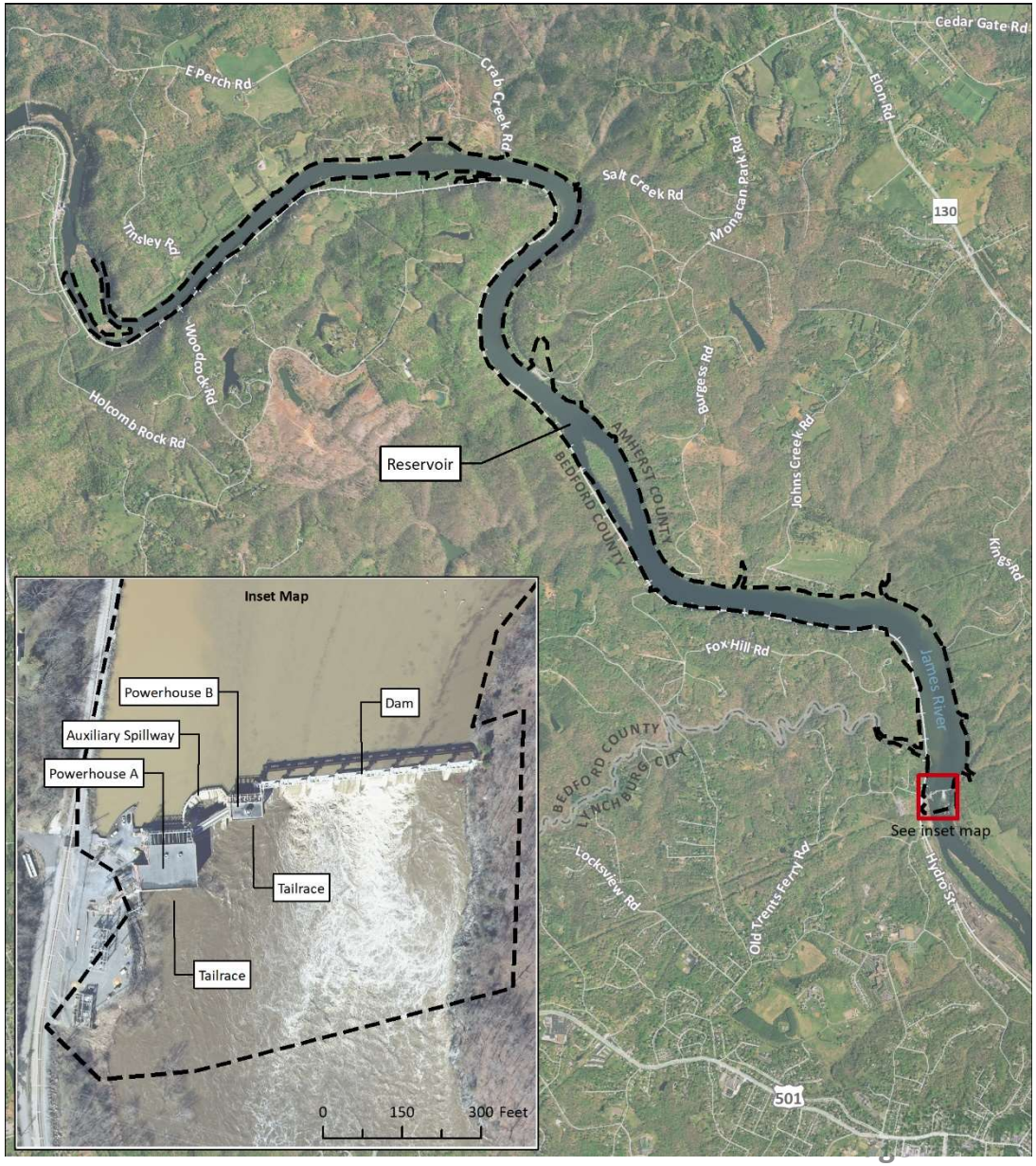
- ***Climate of the Project***
  - Northern inner piedmont ecoregion
  - Variable temperatures with mild winters and warm, humid summers
  - Average air temperature of 56.4°F;
  - Average liquid precipitation 41.5 inches, average snowfall 12.7 inches.

Overview - Project Location in the Basin



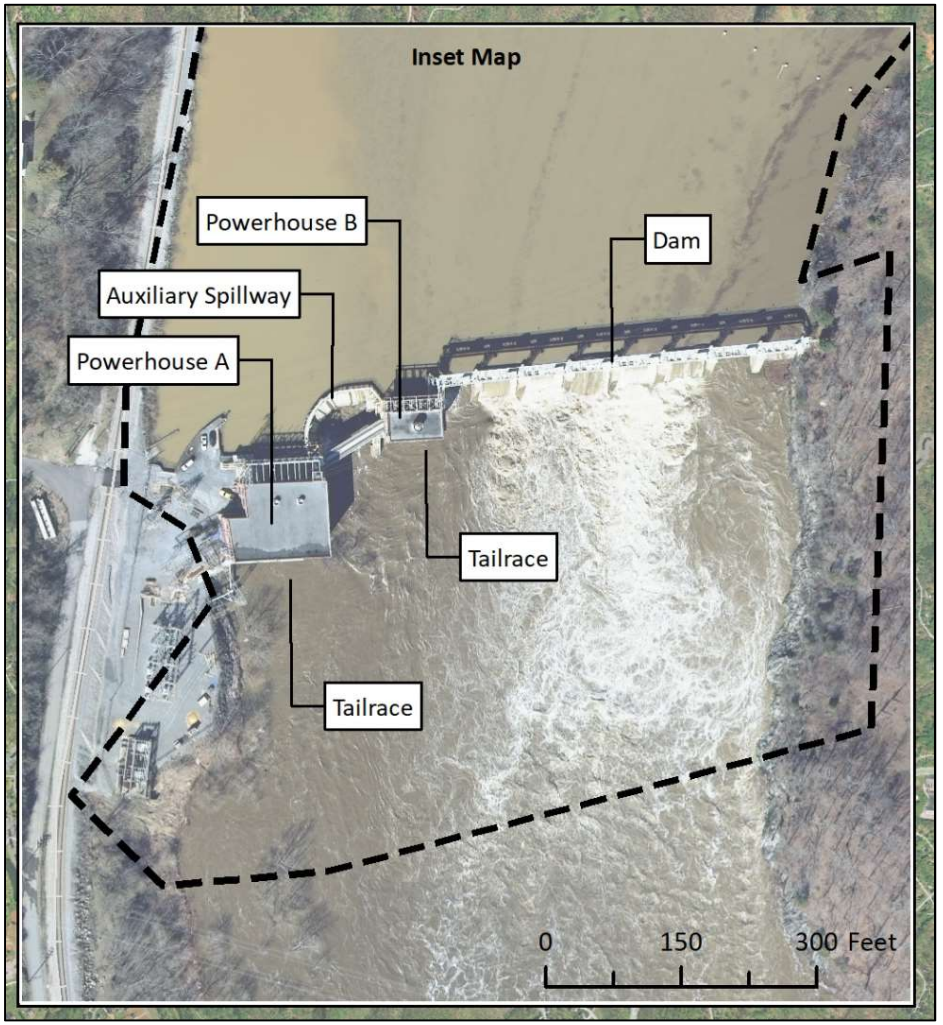
Overview – Project Boundary and Reservoir

- ***Project Boundary***
  - Land necessary for operation and maintenance
  - Doesn't necessarily mean land ownership
  - Follows 551-foot elevation contour, except around the dam
- ***Reservoir***
  - Surface area is approximately 500-acres
  - 7.2 river miles in length
  - Gross storage capacity of 6,869 acre-ft of water
  - Normal water surface elevation of 550.7-ft NGVD
  - Minimum operating level is 547.0-ft NGVD
  - Usable storage 1,687 acre-ft of water



Overview – Project Facilities

- ***Dam***
  - 416-feet in length, 24-feet high, 8 spillway gates
- ***Auxiliary Spillway***
  - Curved, and connected the two powerhouses
- ***Powerhouses***
  - Two – A and B
  - Powerhouse A - has 3 identical 2.5 MW generators (7.5 MW in total), and 3 identical Francis turbines
  - Powerhouse B - has 2 identical 2.5 MW generators (5.0 MW in total), and 2 identical Francis turbines
  - Total Generating Capacity = 12.5 MW
  - Currently is 10.0 MW (rehabilitated)
  - Minimum hydraulic capacity is 900 cfs
  - Maximum hydraulic capacity is 6,460 cfs
- ***Tailraces***



Project Photographs - Dam

Project Photographs – Auxiliary Spillway

Project Photographs - Reservoir

Project Photographs – Powerhouse A

Project Photographs – Powerhouse B

Project Photographs – Tailrace

Project Operation – Normal Operations

- ***Peaking***
  - Operations Plan per Article 403 (approved by FERC December 10, 2018)

- ***Minimum Flow***
  - Article 401 – average hourly flow of 333 cfs or reservoir inflow, whichever is less, released from the dam as measured downstream from the Project tailrace
  - Met by passing water through either a turbine, an existing debris sluice between Powerhouse B and the main spillway, a floodgate at the Project dam, or a combination thereof the above
  - Compliance with the minimum flow requirement is determined based on records of generation and pond level combined with performance tables and curves for each source, as provided in the Operations Plan

- ***Reservoir Water Levels***
  - Article 402 – maintain the forebay at a minimum water surface elevation of 547.0 ft NGVD
  - Typical operations between 549.9 to 551.1 ft NGVD (middle 90%)
  - On a daily basis, the water surface elevation fluctuates by 0.3 ft (median).
  - Water levels are monitored via a transducer/well system and cross checked using a staff gage that is calibrated annually

- ***Generation***
  - Average monthly 1,220 to 5,414 MWh
  - Average annual 36,751 MWh (with four units operating); estimate 40,000 MWh with five units operating

Project Operation – Other Operations

- ***Supplement Discharges for Water Supply***
  - When reservoir inflows are less than 223 cfs, and if requested by the City of Lynchburg when an emergency situation exists at either or both of their water supply intakes, the Project releases additional water downstream, but only if existing storage and inflow is available.

- ***Project Maintenance***
  - Maintenance of spillway structures is usually performed using a bulkhead system, which allows maintenance work to be performed without lower the reservoir level below 547 ft NGVD.
  - If reservoir water levels need to be lowered below 547 ft NGVD, the City of Lynchburg is consulted

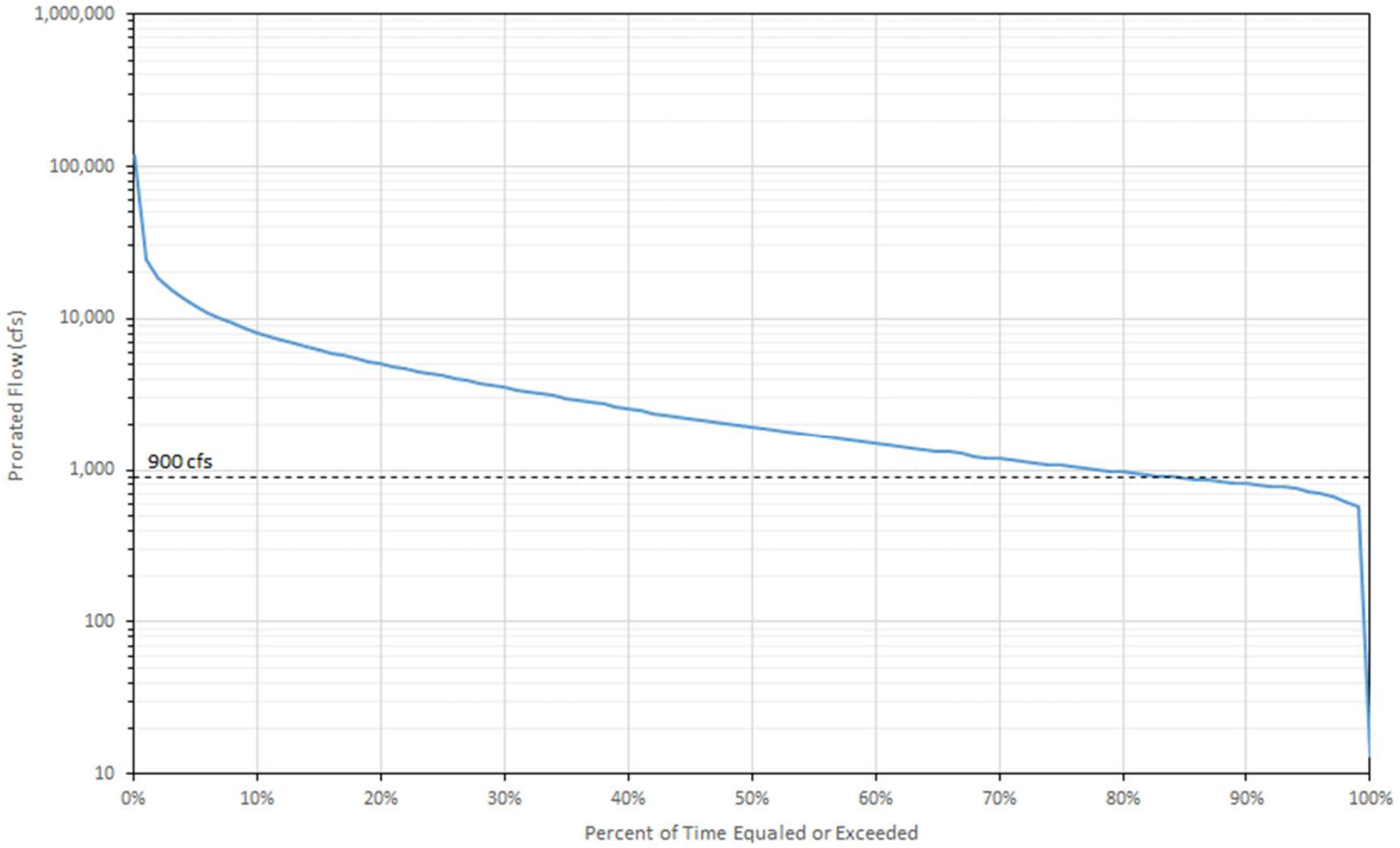
- ***Emergency Situations***
  - Four-part response to protect the City of Lynchburg's water supply intakes
    - 1 – Automated alarm alerts the operator;
    - 2 – Operator makes an assessment of the potential emergency impact and determines the corrective action;
    - 3 – Operator notifies personnel identified in the Project's Emergency Action Plan; and,
    - 4 – The City of Lynchburg is notified if the emergency situation could impact operation of the water supply intakes

Existing Environment – Geology and Soils

- ***Bedrock Lithology***
  - Entirely Proterozoic gneiss and granite
- ***Low seismic activity***
- ***Soils***
  - 19 types; five most abundant types are silt loam mixtures
  - Very low to moderate erodibility
- ***Soil Sampling of Transformer Area and Sumps***
  - PCBs (polychlorinated biphenyls) detected but below EPA and VDEQ levels requiring remediation
  - PAHs (polycyclic aromatic hydrocarbons) detected along south boundary of the Project; levels were all below screening levels.
  - No further study is warranted
- ***I-3 Zone Designation, Heavy Industrial Use***

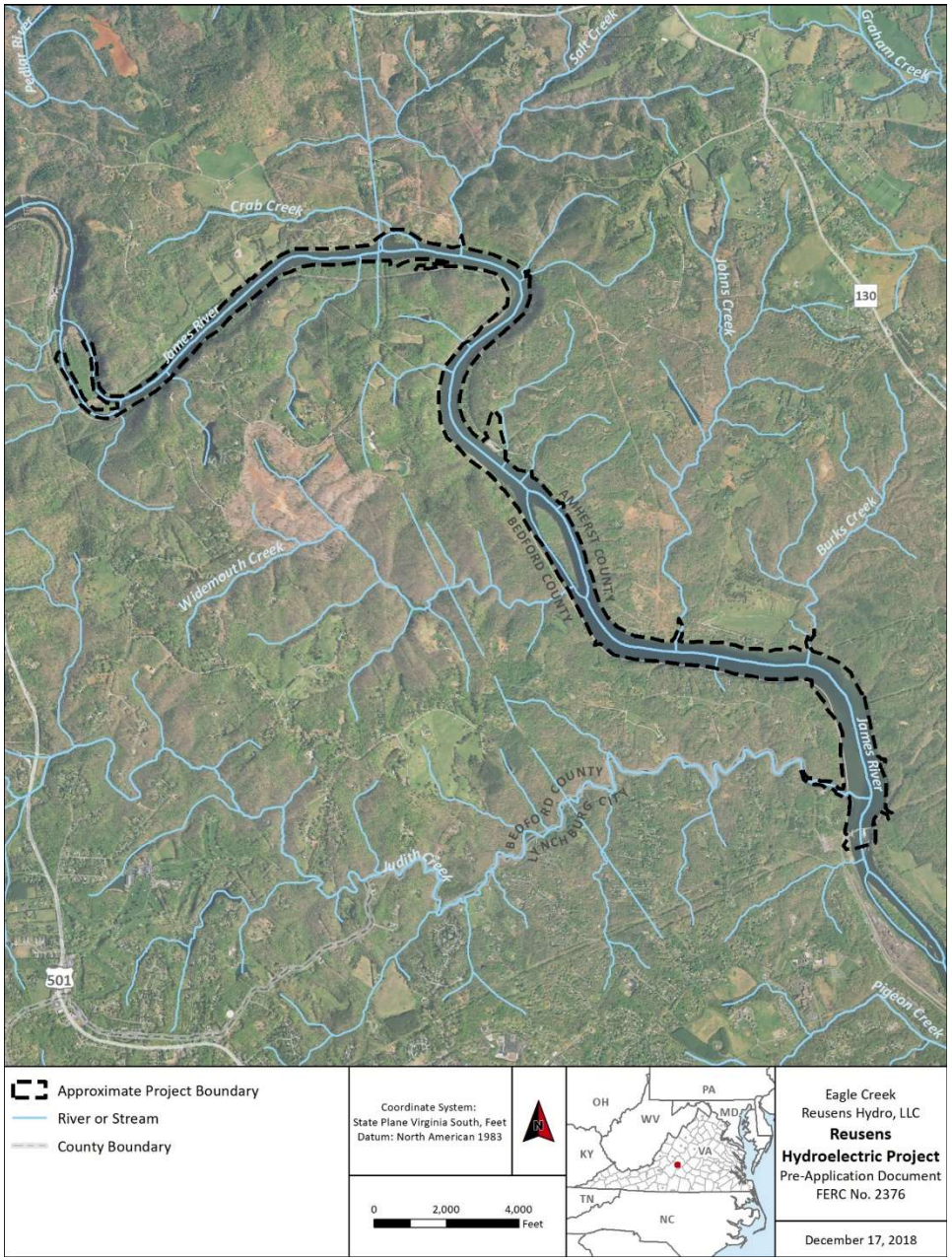
Existing Environment – Water Quantity, Hydrology

- ***James River Flows at the Project (based on USGS Holcomb Rock gage)***
  - Instantaneous hourly flows range from 13 to 117,211 cfs
  - Mean monthly flows range from 1,311 to 6,712 cfs
  - High flows typically in March and low flows occur in August
  - 7Q10 flow of 428 cfs



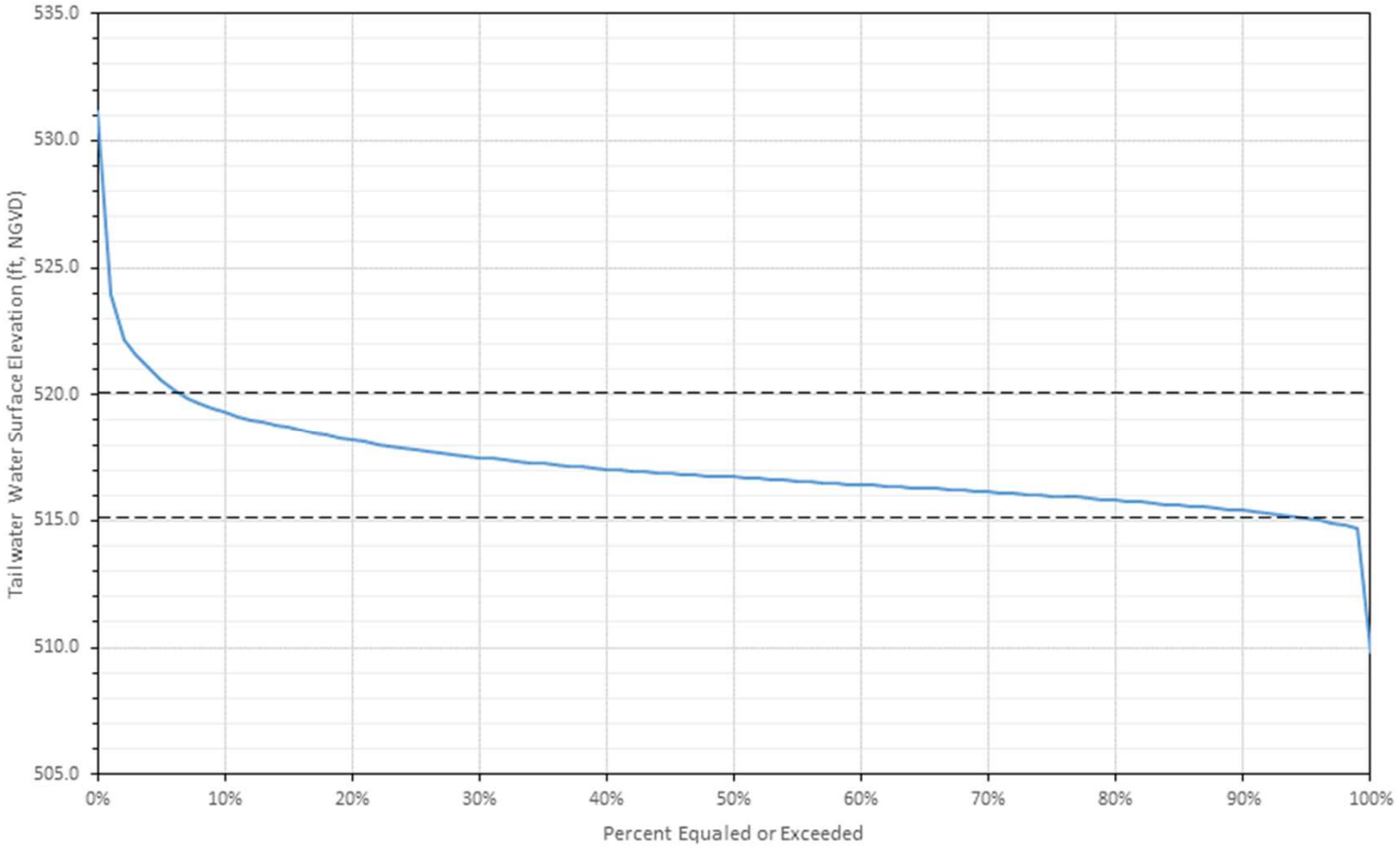
Existing Environment – Water Quantity, Reservoir

- ***Project Reservoir***
  - 7.2 river miles in length
  - Surface area of approx. 500-acres at 550.7 ft NGVD
  - Gross storage capacity of 5,182 acre-ft
  - 1,687 acre-ft of usable storage (between 547.0 and 550.7 ft NGVD)
  - Receives inflow from the James River and several named and unnamed tributaries



Existing Environment – Water Quantity, Tailwater

- ***Project Tailwater***
  - Median water level is 516.7 ft NGVD
  - Typical range (middle 90 % of the time) between 515.1 to 520.6 ft NGVD
  - Median daily water level change is 1.2 ft, and can range from 0.2 to 3.3 ft.
  - Impoundment created by the Lynchburg Dam can back-up to the base of the Project dam.



Existing Environment – Water Quantity, Uses

- ***Water Withdrawals***
  - Made from Project reservoir and downstream by the Amherst County Service Authority (reservoir) and the City of Lynchburg (reservoir and tailwater)

  - Amherst County Service Authority
    - Received FERC approval for Non-Project Use of Waters to install a tertiary water supply intake to withdrawal up to 3 million gallons per day
    - Not yet constructed, would be located about 1 mile upstream of the Project dam

  - City of Lynchburg
    - Abert Pumping Station within the reservoir, located 3.6 river miles upstream
    - Downtown Pump Station, 4.2 river miles downstream of the Project dam
    - Used during great water demand

- ***Future Uses***
  - Proposed Scotts Mill Hydroelectric Project at the Lynchburg Dam would use discharges from the Project for hydroelectric generation

Existing Environment – Water Quality

- ***The James River in the vicinity of the Project is classified as Section 11g and 11h, Class III Non-Tidal Waters***

- The most recent 2016 Water Quality Assessment Integrated Report for the James River basin indicates that recreation, aquatic life, fish consumption, public water supply, and wildlife designated uses are generally supported throughout the basin, but some river segments are impaired for recreation, aquatic, and fish consumption.
- Fish consumption and recreation in the Project area are impaired
  - Fish consumption is impaired due to elevated levels of PCBs in fish tissue
  - The source of PCBs is unknown, and the source of the impairment is unknown
  - The impairment is based on elevated levels discovered in 2004 samples of fish tissue.
  - A fish consumption advisory exists, and VDEQ has a high priority for developing a TMDL to address PCBs in the tissue of fishes in the James River
  - High e-coli levels from point- and non-point sources, such as combined sewer overflows, livestock, etc. A TMDL is in place

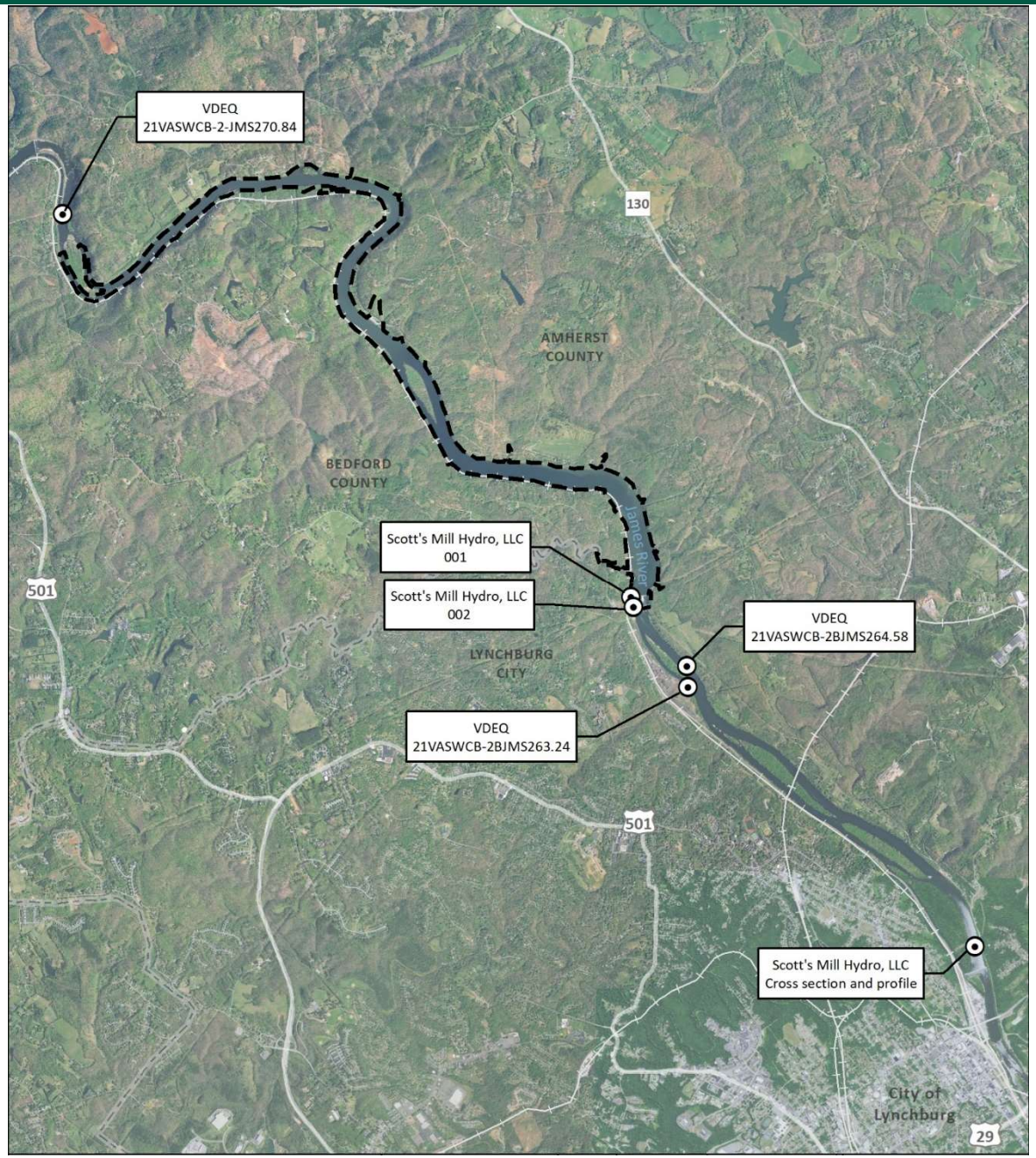
Existing Environment – Water Quality (Cont.)

- ***Water Quality Monitoring***
  - VDEQ Sampling
  - Three stations in the Project area (one near Holcomb Rock USGS gage, and two others about 0.6 to 0.7 miles downstream)
  - 56 parameters sampled over the past 10 years
  - Water temperatures range 0.2 to 29.5°C, dissolved oxygen ranges from 6.5 to 15.7 mg/L and pH ranges from 6.7 to 8.7
  - Indicates waters of the James River in the vicinity of the Project are consistent with the water temperature, dissolved oxygen, and pH State surface water quality standards

  - Scott's Mill Water Quality Study
  - Sampled water temperature and dissolved oxygen in the Reusens Reservoir and the Lynchburg Dam impoundment downstream of Reusens during a hot and dry summer period.
  - Results indicate that during dry hot conditions, waters of the James River in the vicinity of the Project are well-oxygenated and remain above State surface water quality standards

- ***Water Quality Effects***
  - A 2014 FERC-prepared Environmental Assessment concluded that Project operations have little effect on water quality of the James River

Existing Environment – Water Quality (Cont.)



Existing Environment – Fish and Aquatic Resources

- ***Mixture of warm water species***
- ***Common species include:***
  - Redbreast sunfish, rock bass, shorthead redhorse, smallmouth bass, largemouth bass, white sucker, black crappie, bluegill, common carp, flathead catfish, and green sunfish
- ***Popular Game Species include:***
  - Smallmouth bass, muskellunge (musky), and catfish species.
- ***Diadromous species in the James River include***:
  - American shad, alewife, blueback herring, striped bass, sea lamprey and American eel
  - American eel only diadromous species in the vicinity of the Project
  - No upstream fish passage facilities at the Project
  - Downstream Lynchburg dam (proposed Scotts Mill Project) has no fish passage facilities
    - Undergoing FERC licensing and proposed upstream and downstream fish passage for American eel and sea lamprey
- **Mussels**
  - Surveyed for in 2002, 2008, and 2017 in the Project vicinity
  - Eastern elliptio and northern lance present
  - No special status mussels discovered

Existing Environment – Fish and Aquatic Resources (cont.)

- ***Aquatic Habitat***
  - Limited to the impoundment and tailwater area
  - Impoundment has 16-miles of shoreline, with a large and small vegetated island. Depth is variable with deep areas near the dam.
  - Tailwater area is relatively small, with depth ranging between 3 and 15 ft, with cobble and boulder substrate, and rocky shoal areas.

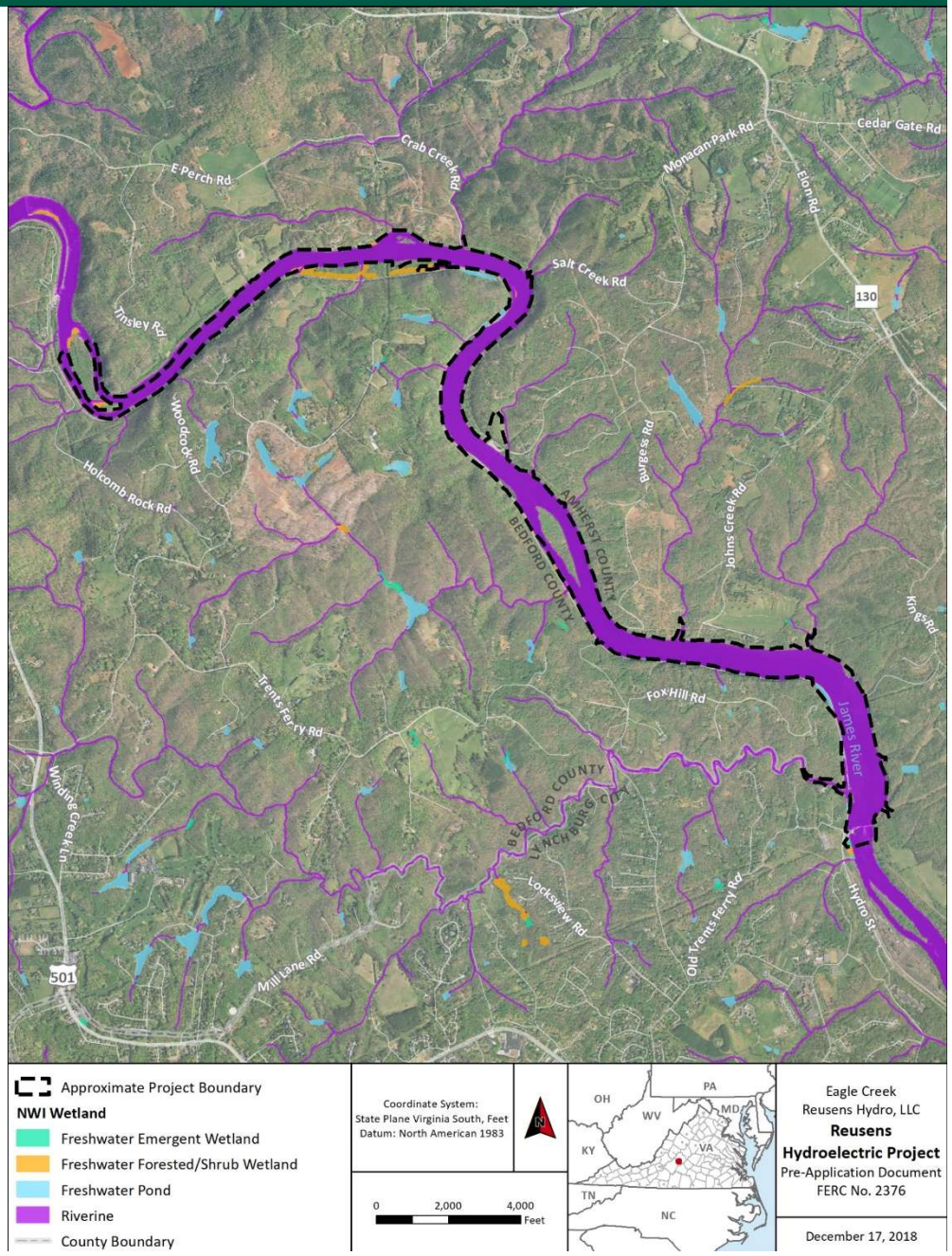
- ***No Essential Fish Habitat present.***

Existing Environment – Wildlife and Botanical Resources

- ***Wildlife resources in the general vicinity of the Project consist of various species of mammals, birds, and reptiles characteristic of oak-hickory forests, rural and sparsely developed areas of Virginia***
  - Important game species include: white-tailed deer, black bear, fox and gray squirrel, eastern cottontail rabbit, wild turkey, ruffed grouse, bobwhite quail, mourning dove, mallard and wood duck
  - Wildlife Management Plan
    - Annual inspections of undisturbed lands of Chestnut Island for evidence of increased human disturbance.
    - Every five years after the license issuance Reusens Hydro is required to consult with VDGIF and the USFWS regarding the success of the WMP and file a report with the Commission
    - Most recent report was filed with the Commission on November 11, 2015, which indicates no changes have occurred
- ***Botanical resources are limited to the shoreline areas and islands***
  - Dominant species are hickory, shortleaf pine, loblolly pine, white oak, and post oak

Existing Environment – Wetlands and Riparian Habitat

- ***Wetlands***
  - 4 Types: riverine (484 acres), freshwater forested/shrub (3.2 acres), freshwater pond (2.4 acres) and freshwater emergent (0.4 acres)
- ***Riparian and Littoral Habitat***
  - Exists along shoreline areas of the tailrace and areas of the reservoir immediately upstream of the Project
  - On~~e~~ the river-right bank, the riparian area is bounded by the CSX rail line.



Existing Environment – Rare, Threatened, and Endangered Species

- ***Federal and State Listed Species***
- <u>Federal Species</u>
  - USFWS's Information for Planning and Consultation tool:
    - 1 known species with potential to occur in the Project area, the northern long-eared bat
    - Known hibernacula and roosting trees are not in the area, and there is no designated critical habitat in the Project area
- <u>State Species</u>
  - Preliminary research suggests 12 special-status species could occur in the Project area.
    - Mammals - Northern Long-eared Bat (FT,SPT), Little Brown Bat (SPE), Tri-colored Bat (SPE)
    - Birds - Peregrine Falcon (ST), Loggerhead Shrike (ST), Henslows's Sparrow (ST)
    - Mussels - James Spinymussel (FE, SE), Atlantic Pigtoe (ST), Green Floater (ST), Yellow Lance (FPT)
    - Fish - Roanoke Logperch (FE, SE) believe to be extinct from the basin
    - Reptile - Timber Rattlesnake (CC)

Existing Environment – Recreation and Land Use

- ***The Project is within a short distance of major recreation resources that include the George Washington and Jefferson National Forests, the Peaks of Otter Recreation, and the Blue Ridge Parkway***

- ***In Project vicinity there are numerous recreational opportunities:***
  - James River Natural Heritage Trail
  - Capt. John Smith Chesapeake National Historic Trail
  - City of Lynchburg parks and trails
  - Monacan Park
    - Owned by Reusens Hydro and leased to and maintained by Amherst County
    - The park provides picnic areas, restrooms, boat ramp, dock, and trailer parking

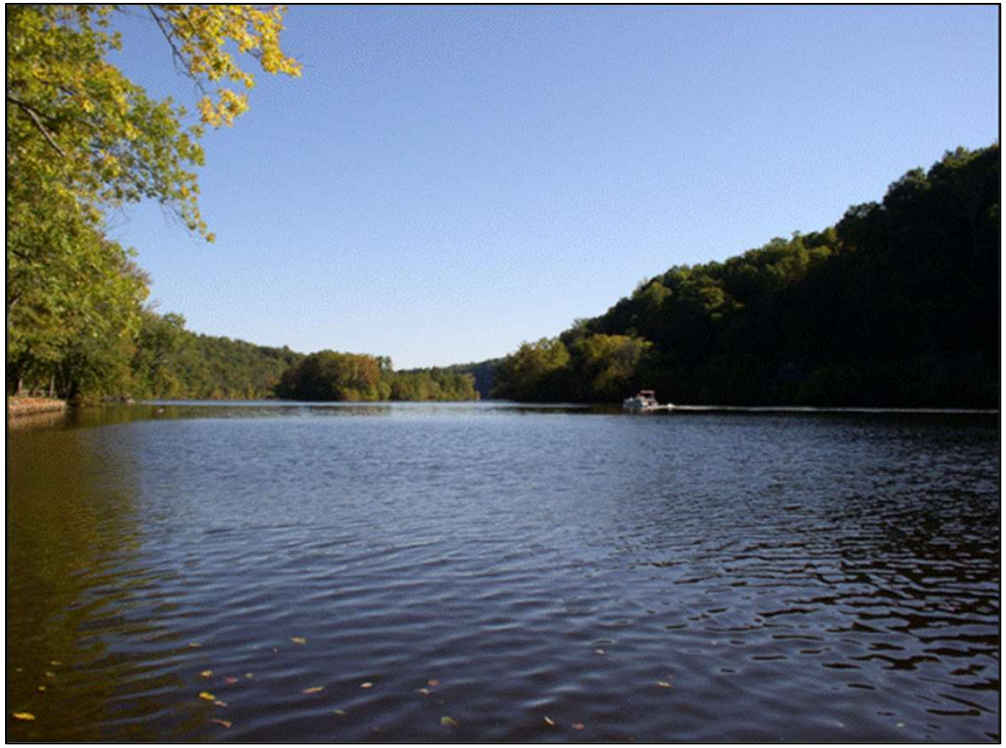
- ***Most Recent FERC Form 80 (recreation report) indicates the Project had a total of 22,068 recreation days in 2014***
  - Fishing is the most popular activity, followed by boating and picnicking

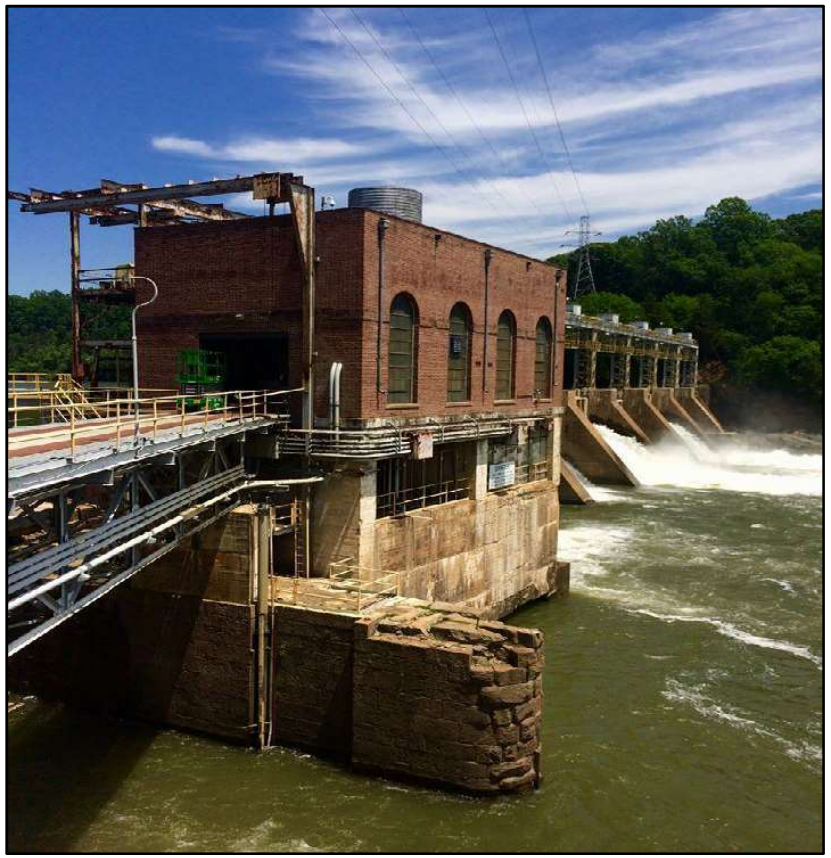
- ***Voluntary Recreation Flow Releases***
  - James River Batteau Festival

- ***Land Use is predominantly developed land, open water, and deciduous forest***

Existing Environment – Aesthetics Resources

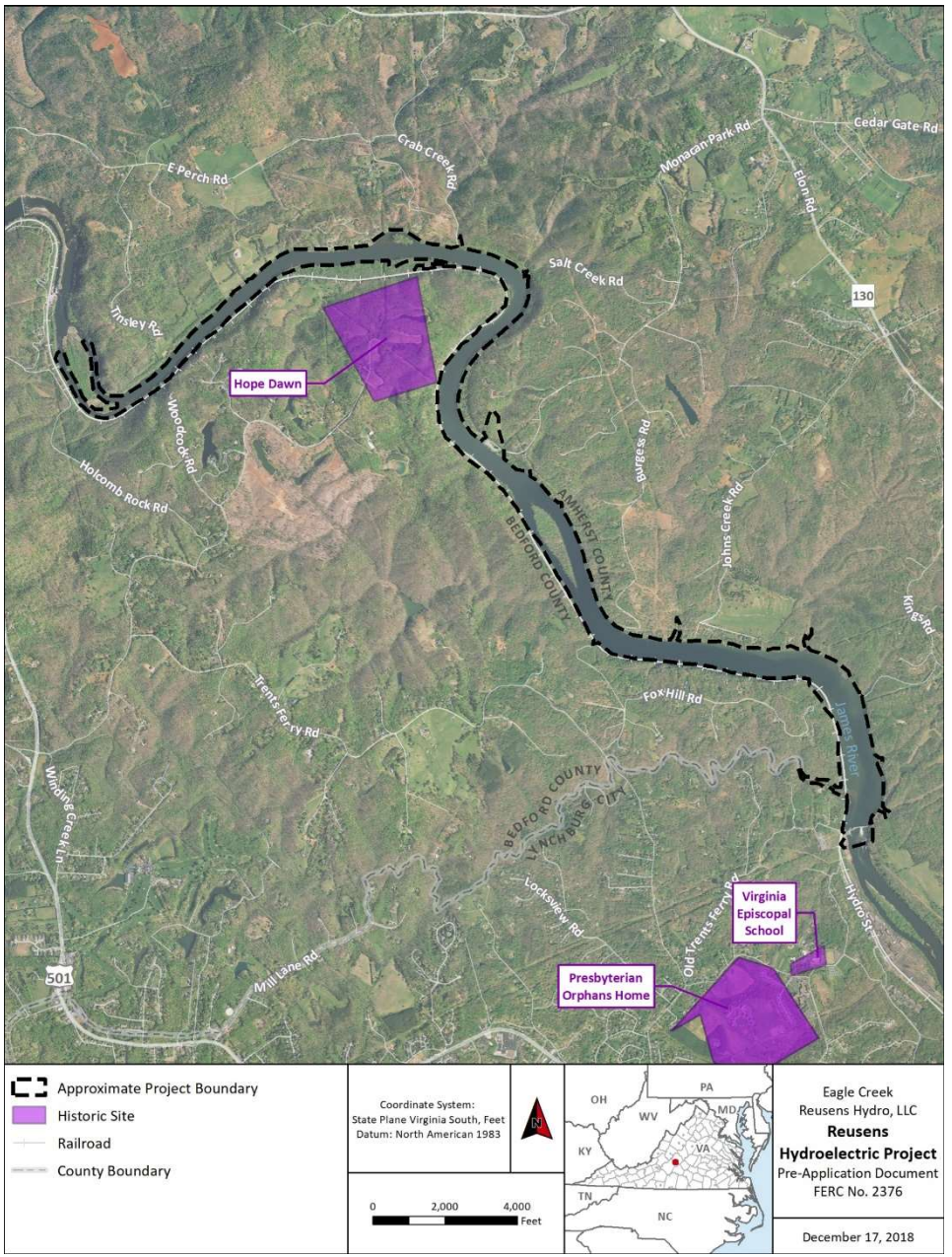
- ***Public view of the Project is limited to Monacan Park and the public road used to access the Project***
- ***View of the Project from other surrounding areas is obscured by deciduous forest***
- ***The visual character of the Project facilities are maintained following a Cultural Resources Management Plan.***





Existing Environment – Cultural Resources

- ***There are two historic properties within one mile of the Project***
  - Hope Dawn
  - Virginia Episcopal School
- ***The Project is eligible for inclusion in the National Register of Historic Places***
- ***Project facilities are maintained following a Cultural Resources Management Plan, includes:***
  - Maintenance of interior and exterior structures
  - Monitoring and reporting
- ***Reusens Hydro is unaware of any tribal resources in the area***



Proposed Operations

- ***For the next license term, Reusens Hydro proposes to continue to operate the Project in accordance with the existing license with no proposed changes in operations.***

Public Utility Regulatory Policies Act (PURPA)

- ***What are PURPA benefits?***
  - Benefits under section 210 of the Public Utility Regulatory Policies Act of 1978 (PURPA) requires electric utilities to purchase electricity from, and to sell electricity to, qualifying facilities, which may include hydroelectric projects.
- ***Reusens Hydro intends to seek PURPA benefits***
- ***Reusens Hydro currently sells power to the power grid***

Proposed Resource Studies and Next Steps

- ***Reusens Hydro is not proposing any resource studies at this time.***

NEXT STEPS

- ***Submit comments and/or study requests to Eagle Creek Renewable Energy with a courtesy copy to Louis Berger w/in 60 days – by Monday July 22, 2019***

- ***FERC ILP study request criteria create better study requests:***

1. Describe goals and objectives of each study proposal and information to be obtained;
2. Explain the relevant resource mgmt. goals of the agencies or Indian tribes with jurisdiction over the resource to be studied;
3. If the requester is not a resource agency, explain any relevant public interest considerations;
4. Describe existing information concerning the subject of the study proposal and the need for additional information;
5. Explain any nexus between project operations and effects on the resource to be studied and how the study results would inform the development of license requirements;
6. Explain how any study methodology is consistent with generally accepted practice in the scientific community;
7. Describe consideration of level of effort and costs, and why any proposed alternative studies would not be sufficient to meet the stated information needs.

Comments or Questions?

PLEASE SEND ANY COMMENTS OR QUESTIONS TO:

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Louis Berger
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(518) 727-5453

Site Visit

- ***There is Site Visit after today's meeting at 1:00 PM***
- ***Site Visit will consist of walking around the Project, but not on the dam***
- ***A tour of the Project Powerhouse will be limited to those 16 years of age and older***

4400 Hydro Street, Lynchburg, VA

(Use 4300 for GPS)